SYNTHETIC INTELLIGENCE
In The Era of Quantum Computing

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RRX Network

An RRX eStore Publication
This book is dedicated to my great grandfather
Dr. Alexander Cameron Rutherford,
the first Premier of Alberta, Canada.
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Acknowledgments

While there are a great many that contributed to this work I would first like to acknowledge Dr. Loki Jörgenson, former Chief Scientist at Apparent Networks, Vancouver British Columbia. He was instrumental in developing and presenting the Bayesian Dynamic Network Awareness project at Supercomputing '07. The follow on research from that project, in part, inspired this book, which has been several years in the making, since.

I would like to gratefully acknowledge Radina Nikolic, a researcher in the Group for Advanced Information Technology at the British Columbia Institute of Technology from whom I have received ongoing inspiration, encouragement, advice and help in preparing the manuscript for this work.

I would like to thank Bryan Caron a former graduate student at the Centre for Particle Physics, at the University of Alberta; and Marius Vilcu an AI researcher and scientist, formerly of Apparent Networks. In particular I would like to express my appreciation for their participation and contributions in the Super Jumbo Frames and Bayesian Dynamic Network Awareness projects, which formed a significant part of the basis for underlying considerations in this work.

I would also like to express my sincere appreciation to all of the participants of the 9000 Byte MTU Internet2 Project, 9k App Project, Super Jumbo Frames Project and Super Jumbo Frames Drug Discovery System Project, including: Apparent Networks, SciNet-XNet, Spirent Communications, Enterasys, Simon Fraser University - IRMACS, WestGrid, Cybera (formerly Netera), CANARIE, BCNet, University of Victoria, the High Energy Physics Network - Canada and the University of Alberta - Centre for Particle Physics. I would like to express my profound appreciation for their truly amazing efforts. Many of these participants have made contributions in regard to this work and emergent issues underlying the research.

To all these wonderful people and institutions I owe a deep sense of gratitude for their time and effort.

W.C.R.
Introduction

"The measure of intelligence is the ability to change."

- Albert Einstein

Let us start by looking at popular views, before proceeding further. Most of us have seen motion pictures depicting artificial intelligence. While an intuitive vision may well be a humanoid robot, reality is somewhat different. Humans are built from trillions of microscopic cells. Recent evolution of multicellular systems over the last several hundred million years, underlie all complex life. Thus the reality is more about how multicellular systems work and evolve in general, than any particular example.

In biology variation and selection requires a suitable context. Otherwise the evolution of complex life would not have occurred. At this point in history emerging networks offer the possibility of a similar context. At some point in the future a convincing humanoid robot will likely be possible; however evolution is most likely to follow the availability of suitable resources.

Notionally a goal of this work is to demonstrate that biological emotions and consciousness are an integrated system, the inevitable result of evolution over millions of years, and can likely be synthetically emulated. Just to be clear we are not proposing a theory of how the human mind works. In this research we are, in a preliminary manner, using some of the synthetic life factors involved to bootstrap up a notional starting framework for synthetic intelligence. This involves a fairly narrow view of the human system, as the product of evolutionary variation and selection. From a Darwinian perspective this infers factors which statistically reinforce survival, due to risk management, and what might be required of evolved information flow networks, so as to accomplish that.

This is a preliminary snapshot of work in progress that could be called "A Preliminary Case for the Biological Equivalent of Synthetic Intelligence Implemented in Emerging Networks". That is a bit long so we chose just "Synthetic Intelligence - In the Era of Quantum Computing". We put the emphasis on the era of quantum computing as it represents an emergent factor, potentially available for the support of probabilistic inference, which underlies a fundamental feature of the ability to change, risk projection, and hence synthetic intelligence.
It might be somewhat misleading to say biological equivalence as if the eccentric examples we currently have access to, as models, are the only possibilities. One might be more circumspect to say that given the biological examples we have investigated on this planet, as a small sample of what may be possible in general; we proceed with developing the case for synthetic intelligence.

Among the many stumbling blocks arrayed in defence of an objective view of biological intelligence are the traditional interpretations of what might be termed a biological operating system. We assume the eccentric human version is an accumulation effect, from prevalent factors, statistically preserved over sequences of mutations since multicellular systems emerged.

Even, as we are prone to do, terming biological artifacts as downstream replicators may seem a bit of a stretch to some readers. The justification for this is that although there is not yet a proven progression from simple replicators to contemporary cells, indications are that only small changes are possible. Thus if one is faced with proposing possible explanations for the current situation, any extrapolation of small molecular level changes, back in time, inevitably leads to very simple beginnings of some form.

As the material considered spans a wide area we try to avoid getting too bogged down in less relevant detail, merely glossing over some of the factors, in an attempt to highlight what seems more likely to be interesting to readers, and generally the case. The justification for this is that the scope of this book is limited. Our approach is general and objective. We would not like to be considered of eccentric anthropocentric bias, though that may be inescapable, in a predominately merely theoretical investigation, which at least in some respects is the antithesis of that view.

What we are really saying here is that it seems likely that given the paramount importance of survival, or eccentric adaptation to a context, that synthetic intelligence seems likely to be a fundamental commonality of all possible systems, biological or otherwise, that are capable of some degree of sophisticated predictive intervention. That is not just here but everywhere, and if so then what we see on this planet, so far, is likely merely an eccentric preliminary version of what is possible.

The motivation for this work, after developing some initial ideas around Bayesian Dynamic Network Awareness discussed at Supercomputing 2007 [1], was to continue to explore the possibilities for automated proactive network problem intervention. One of the key concepts promoted at SC’07 was autognostics, or autonomous and automatic self diagnostics.

Autognostics is a factor of autonemics, or autonomous operational integrity, which underlies the capacity for networks to be self-aware and adapt to applications, attacks
or other problems. Some of the main steps include: monitoring, identifying, diagnosing, resolving, verifying and reporting. If we jump ahead a bit we are really talking about virtual network engineers, of some form, embedded in network fabric.

![Diagram showing the relationship between Autognostics, Self-healing, Self-optimization, Policy Management, Autodefense, Security, Self-protection and Autognostics within Autonomics.]

*Figure 1: Autognostics within Autonomics*

Autognostics provides autonomies with a basis for proactive response and validation. This is a first step in supporting self awareness, discovery, healing, optimization and ultimately synthetic intelligence. The ability to perform configuration management, autodefence, autognostics, policy management and security requires an underlying framework.

This framework is roughly characterized as self protection, self healing, self optimization and self configuration, all of which infer awareness and a degree of adaptive synthetic intelligence. Notionally a system which is based on such a framework would have a significant fraction its resources used to support the underlying platform. This infers operational factors, usually considered as applications, would be considered as overlays modifying ongoing activities.
In a traditional computer system, where applications are often the main activity and self focused platform factors are negligible or nonexistent, errors or malfunctions usually either stop processing, or bubble up through an error reporting hierarchy to an operator. An autonemics based system, in contrast, would ideally continue regardless, handling all errors itself. The price for this would be a larger consumption of resources, and continuous activity in support of the underlying risk projection aspects. In short, overall activity would resemble what we have come to expect from biological systems.

In comparison, for unicellular organisms, factors similar to autonemics are handled by subcomponents. One might consider an outer membrane to be part of the self protection and self healing systems. The polymer sequence based information repository could be considered part of self configuration and self optimization. The cell's regulatory cascade loops could be considered as a conglomerate embodiment of autognostics, autodefence, configuration management, policy management and security.

Evolution infers, and amply demonstrates, the possibility of creating equivalent artificial systems. The emergence of synergistic, statistically self organizing, molecular machinery requires a minimal set of initial conditions. These include a context with a reliable source of energy, combined with the formation and mobility of components. Currently observed biological systems imply simpler, though similarly constructed precursors. While this may be the case there is also the possibility of a range of somewhat different initial precursors, now extinct. If so these may have converged and combined over time making the process of reverse engineering discrete initial precursors or replicators problematic.

The main feature of these precursor systems is information retention and reiteration, driven by energy conversion. The term evolution arises from information change which facilitates context adaptation, and potentially an increase in complexity. If we assume that information change is slight and random then the process resembles a conservative search for maximum growth via energy conversion. We will assume an inevitable process that occurs by chance, given minimal initial conditions and sufficient time.
In a sufficiently equivalent, though artificial, context one might posit the possibility of similar spontaneous activity. An artificial system could take the form of a replica of early conditions for precursors, or an abstracted equivalent. In particular a sufficiently equivalent model might be conveniently based on factors aligned with the capabilities of emergent synthetic systems. For example, the properties of autonomous self organizing systems often include energy minimization, which is well aligned with quantum computing.

Figure 2: Biological Evolutionary Dynamics
The progression from increased molecular complexity through to precursor choreography, combination and cell formation is apparently the most critical phase of the overall process. The time scale for this process is somewhat indeterminate, however is likely at least in the order of millions of years. As the underlying interactions at the molecular level are on the timescale of nanoseconds; this infers a vast range of possibilities for a gradual increase in complexity.

For the final phase of cell assembly it appears that a minimal set of precursors are required to converge in a symbiotic manner. This process would likely be spread out over time, such that the probability of convergence is improved. It seems possible that some partial convergences, which were inadequate for full unicellular operation, could have merged. Thus a successive merging of partial subsystems would have significantly improved the probability of some subsets reaching a functional state.

If we assume a range of functional cells converging over time, with somewhat differing components; the basis for downstream developments are established. These first cells would, it seems, be ensconced in a context of energy sources, components, precursors and partially functional cells, leaving open a series of events, whereby competitive replication and evolution occurs indefinitely.

From our perspective synthetic equivalents are theoretically possible. For example self organizing arrangements, based on emergent technology, could be gradually augmented, so as to implement an autonemics repertoire. Provocatively, synthetically fabricating single cell systems from precursors, including self-assembling particles, with integration of computation and reactive chemical processing, are potential approaches.

In the course of investigating biological equivalence, for proactive networks, we were somewhat humbled by the scope of what seems possible, in contrast to what is, in our historical context, feasible using contemporary technology. That is not to say we were discouraged, just awed, by the inference of a completely new type of network, at least partially based on biological equivalence.

Illustratively, progress in elucidating the functionality of the human visual system is inspiring. Assuming underlying mechanisms responsible for evolving the visual system are only on the basis of variation and selection, similar complexity is inferred downstream, in more abstract fabric. The visual system contributes to the internal experience of a fused virtual context, which is an intermediary structure that is responsible for the three dimensional movies in our heads. This is despite the eccentric and somewhat asynchronous nature of sensors.

The manner in which evolution has converged on a seamless virtual context, despite
the eccentric factors of the senses, has resulted in complex fabric for the human visual system. That is to say that evolution has apparently compensated using neural fabric, all in a slow variation and selection paradigm, with competitive statistical survival as the only guide. Eccentric sense flow streams are synchronized, undergo a fusion process and context factors are characterized.

It seems likely the balance of human neural fabric, downstream from sensor fusion must have evolved in a similar manner. Thus the downstream factors, from the visual system, are probably just as complex and flexible in compensating for the shortcomings of the preceding systems, from which they derive their incoming flows. Thus we term the conditioned output of sensor fusion as derivative flow, and assume this serves as the main incoming flow for intermediating fabric. Intermediating fabric imparts flexibility to the overall loop with the external context, and determines the behaviour of the system.

Overall the arrangement indicates human intermediating fabric is likely some form of derivative flow manipulator. We posit that neural fabric incrementally learns to use derivative factors, as operator and substrate, to form an extended virtual context, in effect using persistence and manipulation to extrapolate patterns. In other words pattern recognition, of factors emitted from the virtual context over time, are reconstructed and manipulated in the downstream system, using persistence and flexible manipulation.

Thus a virtual context is inferred as a short term sensory envelope driven reconstruction of the local frame of reference. The manipulation system is inferred as an extended virtual context, based on the same form of evolutionary convergence observed in the visual system. The manipulation system is considered as much dependent on persistence based virtual representation and projective transformations as sensor flow. Where one might consider the sensor flow as a scanning updating sub-system transiting baseline fabric.

Overall this infers pervasive virtual flows by which projective transforms and virtual context models are maintained. This gives us a notional starting framework for the biological equivalence of risk projection in a synthetic context. That is not to say that what we are proposing is how the human brain works, just that preliminary research has given us a notional view of how a synthetic equivalent might start out on its’ own evolutionary track.

As our interests include all factors of synthetic intelligence, and their potential application, an extrapolation of these concepts has resulted in a general investigation, of the preliminary case, for developing extensive underlying infrastructure. The notional model implied is apparently capable of self awareness in a context, learning to identify risk factors, and proactively intervene in a feedback loop, so as to minimize overall risk.
From a cyberspace security perspective one might envisage the continual operation of autonamics engines, with a full complement of subsystems, to avoid compromise of network domains. Risk intelligence can be considered as a vital component of an autonamics system. A possible scenario is for some synthetic intelligence driven components defending, and others attacking a network domain. This is, for example, a potential arrangement for sustaining the timely and automatic preventive upgrading of security.

It is very early in the development cycle of quantum computers; however one might consider possibly typical stages, driven by market factors. It seems probable quantum computers will fairly rapidly go from cumbersome mainframe type machines to smaller, less expensive, versions with more general capabilities. These will likely be packaged with high performance conventional computers, neuromorphic hardware and network interfaces.

This type of network centric hardware platform infers the development of new types of operating system, which optimize the available resource characteristics for a context. Early phases of such a transformation are likely to be hybrid solutions, which combine multiprocessor time sharing kernels with probabilistic quantum computer and neuromorphic support, thereby making the overall operating system more robust and flexible.

The gradual advent of more robust and capable nodes throughout a network infers a new context for emergent networks. A gradual rise in the number of mobile device end nodes with increasing sophistication, combined with changes in server arrays, clusters and the core, which implies a shift to enhanced end node support.

It has been suggested recently that there is a growing case for adopting biological models for emergent network factors as indicated in the following quote from Christopher Altman on The Future of the Global Information Society [2]:

Higher-level biological organisms are comprised of a large number of diverse, complex, highly interdependent components. So is cyberspace.

Biological organisms face diverse dangers that cannot always be described in detail before an individual attack occurs, and which evolve over time. Organisms cannot defend against these dangers by ‘disconnecting’ from their environment. The same is true of information systems exposed to threats in cyberspace.

Biological organisms employ a variety of complementary defence mechanisms, including both barrier defence strategies involving the skin and cell membranes, and active defence strategies that sense the presence of outsiders, i.e. antigens, and respond with circulating killers, i.e. antibodies.
In summary, we wish to distill out the bare essentials of the process by which all life forms are optimized and encapsulate them in a synthetic or artificial evolutionary system. From an evolutionary perspective risk forms a central theme whereby a process of variation and selection acts to minimize the risk profile, of an ephemeral test population, for an ongoing context, thus enhancing the probability of survival of individual instances. This general scenario is likely true for most of the life forms on this planet, since the simplest replicators evolved, regardless of the eccentric factors of their molecular dynamics.

Self organization of components, so as to allow growth to a reasonable size, infers a population of evolving synthetic intelligence engines which should be able to adapt to a variety of contexts, just as biological arrangements. Assuming it is possible to evolve synthetic intelligence engines we wish to explore the possibility of harnessing them for tasks involving uncertainty. It is likely these evolved systems will be far more forgiving and effective on average than deterministic or less flexible systems. As a basis for the building blocks, of synthetic intelligence engines, we consider evolutionary network elements.

Future networks will not be built, they will be grown.

-Christopher Altman, 2004 [2]

We endorse this approach and propose the evolutionary network element as the network equivalent of hardware devices used in experiments. While field programmable gate arrays (FPGAs) and neuromorphic devices have a degree of immutability due to their architecture being based on a hardware platform, there seems to be no intrinsic reason to assume that a similar process of iterative genetic manipulation could not be applied to software, or hybrid software and hardware systems, in a distributed network context. Thus we assume that the inferred evolutionary network elements are self organizing, distributed hybrid structures, with access to underlying resources.

Evolutionary network elements are theoretically capable of mimicking all the essential factors underlying optimization for relative "fitness", or more accurately eccentric adaptation to a context, through variation and selection. They are also notionally able to interact analogously to either biological or synthetic networks. It is proposed that it is possible to evolve fabrics of evolutionary network elements, so as to grow synthetic intelligence engines and other systems. The underlying basis for this assumption is self controlled biological mimicry, enabling variation and hence adaptation and replication of populations of interconnected evolutionary network elements.

While variation and selection are underlying mechanisms of adaptation, a working
initial model would be very helpful. A preliminary synthetic intelligence scaffold model which at least supports information flow from sensors to actuators, so as to create a feedback loop, is constructed, mainly by considering brain equivalencies, and flow network dynamics. This model, similar to brains, is notionally factored into two main pathways or channels. The main channel is a near real time or "in band" feedback loop from sensors to actuators with basic equivalency to a midbrain.

An auxiliary, less time critical, or "out of band" set of scaffold pathways are also included with brain equivalency to cerebral or forebrain functionality. As with brain architecture the out of band pathways interface with and modulate the in band feedback loops. However, significantly, the out of band loops are also capable of internal re-entrant looping flows. From a synthetic intelligence perspective the ability to look ahead, in a predictive manner, within an short scope awareness envelope, so as to proactively affect a context, is mainly provided by the in band loops.

For longer interval synthetic intelligence feedback loops the out of band system is considered, from the perspective of multiple loop persistence manipulation and timing adaptation, so as to provide appropriate convergence and proactive flows. Due to the fact that an accurate long interval model of the context is required to do this a scaffold with additional complexity is posited for the out of band feedback loop system. From the perspective of the in band to out of band interfaces, flows must be of compatible format, though possibly of differing character.

The potential resource space for synthetic evolution is considered from the perspective of the possibilities of emergent networks [4]. In the course of our research practical quantum computing [5] has become a reality with implications for the scaffold design of network based synthetic intelligence engines. This is due to risk being based on somewhat similar probabilistic phenomena to quantum computing, and thus being a candidate for implementation.

It seems one must first understand something about what risk is, and how, for example biological systems have adapted to risk, in order to implement synthetic intelligence equivalencies, in hybrid conventional sequential binary logic, analogue, neuromorphic and quantum based networks of machines.

Risk is generally considered a chance or probability of an event or situation. One might go a bit further and extrapolate to a sequence or coincidence of events or situations.

When one considers risk factors there are several issues that come to mind. Risk is with respect to a particular frame of reference. Risks for one person, platform or organization are generally different than another, though some common factors may
exist. Risks for a given frame of reference are generally time dependent, though some risk factors may be random with respect to time. Risks can often be characterized as estimates in a related virtual context. Generally risk estimates can be ranked according to a classification scheme, such as severity of type of threat to a platform, as a function of time.

Currently available quantum computers energy minimization, of cross linked qubit arrays, in concert with conventional computers create a ranked series of probability estimates. This is based on quantum mechanics and as such a short review of relevant factors is included.

Implicit in this view of risk is information. Generally for information to exist it must have at least some physical representation. For example one might consider the universe a physical representation of risk or chance.

In general a risk to oneself, or any frame of reference, usually corresponds to particular information. One might have no knowledge, accurate knowledge or limited information. Most often it seems we are faced with uncertain or limited knowledge.

Uncertain information about risk is itself a risk. So we have two problems the risk itself and whether information about it is accurate or not. In many life forms the brain reacts to perceived risk. This is generally known as fear or the fight or flight response. Fear is an emotion which is conditioned in the midbrain [6] as an association which changes behavioural patterns. From a synthetic perspective we refer to emotion as modality, and include mechanisms to mimic it in underlying fabric.

If we consider Charles Darwin’s assertion of an accumulation of innumerable slight variations, before segmented replicators in the form of DNA had been discovered, though molecular science was established, there is an inference of causality. This inferred causality was on the basis of observations of eccentric species characteristics and their contextual relationships, combined with limited knowledge of particle based formations underlying all life forms.

From Darwin’s perspective if we extrapolate an accumulation of small changes, over a long interval, back to the limits then minimal molecular building blocks or replicators are inferred. This opens up the issues of probability and arbitrary specificity, associated with a possible spectrum of starting replicators, including underlying context factors. One might consider that this infers a web of intrinsic probability calculations, which if extrapolated forward in time describes potential evolutionary taxonomies, or variation and selection trees, for the universe.

For us to explore this process in the context of synthetic systems we will need to
establish, at minimum, the critical underlying factors. Our network resources are limited in terms of allowing growth and adaptation of the synthetic equivalents of replicators and their descendants. However so are the resources of a molecular context on the surface of planets. Replicators are based on the possibilities of probability, in a quantum mechanical context, such that even extremely rare occurrences can be subsequently reinforced.

Historically understanding the evolution of the human mind has been problematic for us, often due to eccentric biases in the context. While the anatomy of the hominid brain and the taxonomy of our ancestors have been roughed out, progress in the detailed analysis of information flows has been slow. From Darwin's perspective our brains have adapted to an eccentric context.

In biological systems sensors, such as eyes, ears and noses collect information about a local context of the universe, within sensor scope or range, and convert it to flows. These sensor flows coalesce in shared or common flow fabric downstream. For biological systems the flow fabric is an eccentric neural network, connected by chemical messenger based synapses, which may have similar functionality, in regard to uncertainty, as appropriately conditioned reiterative cycles of quantum computers.

In order to get accurate information about the local context the flows from sensors must be converted to some form of virtual context representation. As the information coming in from sensors is time and location dependent, so too is the virtual context.

So what is a virtual context? In general terms a platform must have some physical existence as it is based on information flow. Some information flows could be from external and internal sensors. Just as with biological life forms any platform might represent incoming flows internally, as a cohesive concurrent representation of what sensor flows report. That is not to say that sensor flows necessarily infer a perfectly accurate, or timely local view of a general context.

If, for example, you turn your head, which is considered a rotation transformation of coordinate systems, the local virtual context also rotates. One might assume that the neural fabric which is representing the virtual context internally is the same fabric as before the rotation. Thus the different representation must be due to differing flows through the same fabric. If you close your eyes the visual sensor flows are cut off, and the virtual context fabric flows are reduced, but not entirely eliminated.

A virtual context cannot be unlimited in time and space due to fabric scalability issues. Similarly all sensor flow information cannot be kept indefinitely. Thus given a limited amount of common fabric some compromise must be made.
The amount of limited common fabric allocated to representing sensor flow in time and space can be considered factors for accurate risk information. The relative balance of these factors establishes an eccentric ongoing characterization of a virtual context, so risk information can be represented and analyzed further.

In general risk factors are a subset of an awareness envelope. Imagine a disk like a phonograph record covered with randomly connected neural clusters. Now imagine injecting sensor flow at the centre. Assume the sensor flows do random walks and eventually drop. Now imagine the envelope of flow activity as one draws a line from the centre to the outer edge. One might say that the statistical flow activity increases, in average age, as the radius increases corresponding to a flow envelope.

If one assumes the flows closer to the outer edge are more likely to have increased interaction with other flows, due to random processes, then they represent more awareness. Thus an awareness envelope is a standing quasi-static flow envelope, where the flows near the outer edge have improved probability of containing relational factors between flows closer in to the centre, which are preceeding in time.

There are many possible applications of risk models. One, for example, might consider life forms to be risk management systems. Life forms as we know them are generally based on elaborate molecular processes. These molecular processes are in turn based on probabilities in a context. Thus the probability of survival is changed by underlying risk factors.

From a practical perspective synthetic intelligence engines capable of learning, mimicking, hosting and predicting emotions or modalities might be termed "emotion intelligence engines", potentially quite useful in a global anthropocentric network fabric. Certainly there is ample historic precedent for the risks involved when emotional factors are aligned and amplified by numerous participants.

Emotions or modalities are closely related to perceived risk factors. Biological systems emit clues as to modality in body language, facial expression, sound, EEG emissions, metabolic factors and other indicators. Advances in emotion recognition capabilities [7], accompanied by the increasing prevalence of sensors, on mobile and other devices, infer emergent network systems will supply modality as well as other intelligent services.

In the general case, from what we can tell so far, all of the main factors of significance are statistical. This is apparently due to the working hypothesis that the universe seems to operate as a large scale "pin ball machine" with a bit of "glue logic" between some of the eccentric particles. In such a general context it would likely be somewhat of a stretch to infer much of what is often commonly assumed.
Notably as the emotions are a product of evolution they seem to be convergent on statistical factors affecting the genotype/phenotype loop in a co-evolutionary context. We will notionally consider aspects of this, in particular identifying genetic factors of emotions and temporal markers across relevant species with respect to the evolution of emotions at the genetic level over millions of years.

In a statistical context, just as unoccupied quantum states exist, we might similarly postulate a working hypothesis that, on a roughly covariant empirical basis the existence of similar statistical niches, such as for biological or other arrangements on the surface of a planet.

While we do not know of the existence of these states without sufficient experience or evidence, similarly to the case in particle physics, one can it seems postulate the existence of possible states throughout the universe, based on an extrapolation of previous experience. Thus, for example, we postulate the existence of an ecological niche for competitive advantage from enhanced programability.

This really only seems to become of statistical significance if we consider a large scale system such as the universe or at least a statistically significant subset. For example if we consider all of the planets in the universe which are similar to Saturn, to some degree, then we would have a large collection with $10^{xx}$ items and could apply statistical analysis across all of the relevant factors, thereby building up characterizing distributions.

Similarly if we consider Earth in the same fashion with the addition of our basic theoretical knowledge of planetary formation and planetary evolution we might come up with a distribution of $10^{xx}$ planets, which may have similar biological transformations on the surface. Clearly this infers that we could have similar ecological niches on a statistical basis given appropriate conditions and the statistics of the contexts, on the surface of each sample.

From this rather tenuous chain of reasoning we do a bit of stretching to consider if synthetic intelligence could be considered in a similar manner, as an extrapolation based on previous experience, so as to consider the possibility of potential existent niches for all of the possible permutations of that phenomena. This infers that just as we consider the possibility of ecological niches for information manipulation enhanced species so too we could consider the possibilities for hybrids thereof with synthetic intelligence.

It seems we have two main issues. One is to what extent is our theoretical conjecture with respect to the universe as a statistical machine correct. And given the answer to
that to what extent can this be used to predict heretofore unknown phenomena such as
the existence of synthetic intelligence as an ecosystem within the statistical context of
the universe.

First of course we have only a very basic and unproven, for the most part, theory
about the universe and its intrinsic factors. Second we have no existent examples of
synthetic intelligence on which to base any realistic extrapolation.

However notwithstanding the obvious difficulties we do have some factors in our
favour, not least of which is the scale and homogeneity of the universe as far as we are
able to discern. In particular the statistical homogeneity of the system is very
encouraging as it indicates that one would be very unlikely to find anything anywhere in
such a system that is statistically unusual to any degree, which is just the sort of thing
we need to proceed with some limited credibility.

If we assume statistical homogeneity is true then what follows rests on that alone for
it indicates that whatever we may have considered heretofore as potentially unusual
must now be considered in a different light. However that we are now dealing with a
numerical situation is clearly a factor. One can hardly assume the universe, out of hand,
is infinite given our current understanding, though that may be possible we are probably
well advised to assume that it is limited to what we can verify by reasonable means.

Thus given an observed universe with eccentric intrinsic phenomena we should
probably initially proceed by calculating the probability of the various components of
interest. This process will it seems, with some error margins, give us an estimate of the
total number of systems of interest along with possible subsets, including probable
temporal skew factors.

As the inferred age of the system at the current time is merely a coincidence of our
frame of reference we can extrapolate over a reasonable temporal envelope to get an
estimate of potential activity of interest in the system as a whole. Notably the latest
estimates have apparently increased the total number of observed galaxies in the
system by about a factor of ten to around $2 \times 10^{12}$.

The number of earth type (e-type) planets within some margin of error per galaxy
appears to be in the order of $10^9$ or so. Obviously this would depend on the type of
galaxy and the number and type of stars, so we should probably take that as a
somewhat optimistic estimate. As such it appears we are looking at roughly about $10^{20}$
or so e-type planets in the observable system, not counting planets which have not
been formed yet.

If we assume a roughly constant rate of formation, and it has taken about 10 billion
years to create the existent population of about $10^{20}$ e-type planets then, for example, we should have roughly double that number in the next 10 billion years.

In any case $10^{20}$ is a fairly large sample of e-type planets and apparently we can proceed with some assurance that we at least have a statistically significant data set, despite the fact that we have yet to detect any that are very close to earth's parameters so far.

Given a preliminary estimate of $10^{20}$ e-type planets in the visible universe at this point we can estimate the formation rate simply by assuming a roughly constant rate on average and just taking the total number estimated divided by a time span. For ease of calculation we will just ball park it at $10^{20}$ divided by 10 billion years or $10^{10}$ years which gives us a nice estimated rate of $10^{10}$ e-type planets created per year on average.

As we well know from our own e-type planet the surface phenomena take some time to percolate so as to start producing interesting biological transformations, to fill all of the potential ecological niches. So we may as well assume that we get something happening below a critical average surface temperature, after formation, and that whatever ensues after that evolves over several billion years, depending of course on the eccentric details involved to some degree.

This general scenario indicates we can roughly estimate the production of biological transforms to fill the top predator slot on an e-type planet instance, assuming that is most likely due to enhanced programability, thereby imparting a somewhat unfair advantage with respect to other species.

Assuming an average latency for such a top predator to emerge from the mutational history we can simply for example assume a ball park figure of 5 billion years (plus or minus some error). Thus, for example in our toy model, the first year of e-type planet formation 10 billion years ago would have created $10^{10}$ e-type planets and after 5 billion years they would likely have some form of interesting top predator. So the first wave of enhanced information manipulation based predatory mutations would occur at about 5 billion years and of course $10^{10}$ additional e-type planets with similar top predators would be added every year after that.

From this simple preliminary estimate it seems we can infer the current sentient species population accumulated in the system, at the 10 billion year mark, as $10^{10}$ species per year times the last 5 billion years. While this is a simplistic estimate it does produce an interesting value of $5 \times 10^{19}$ sentient species or half of the total estimated current e-type population of $10^{20}$.

Clearly our toy model neglects many factors, including the possibility that some of the
top predator species of interest may have become extinct for some reason. To account for this factor we need a decay rate or half life estimate. One of the main issues here is the possibility that the e-type planets may become uninhabitable for some reason where the bounding case may be stellar evolution factors, while shorter term factors could include a number of scenarios. Neglecting the short term stuff we will arbitrarily take the stellar extinction factor as 5 billion years. Thus after 5 billion years from their onset only half of the sentient species are assumed still active.

So, for example, the first year of production at the 5 billion year mark produces $10^{10}$ species and 5 billion years later at the 10 billion year mark we have $5 \times 10^9$ or one half left. Simply assuming a linear distribution from onset we have an attrition rate of $5 \times 10^9$ species lost over 5 billion years divided by 5 billion years, which gives us an estimate of 1 sentient species lost per year for each production years' population. Thus at the 10 billion year mark we would have an attrition rate of $5 \times 10^9$ species per year, inferring the net accumulation rate would be reduced from $10^{10}$ to one half that due to attrition of each production year's population, over the past 5 billion years, by 1 species each.

Thus while, in our toy model, the attrition rate is significant it does not seem to alter the overall situation where we have a steadily increasing population, at the current time, of $5 \times 10^9$ or 5 billion per year. This would obviously be altered by a much higher attrition rate, or for example, issues to do with the reliable production of sentient top predators over the formation period.

In any case given this general scenario we would like to contemplate the possibility and probability of synthetic intelligence related ecological niches in the system.

From our preliminary estimates the underlying assumption is that the deeply pervasive homogeneity of the the statistical context constrains all instances of interest to a statistical distribution throughout the universe.

This fundamental assumption indicates that given a numerically large set of samples all of the factors while seemingly unique, in an arbitrary local frame of reference, are likely merely a small fraction of a vast array of similar factors throughout the system.

One might also consider that due to the assumed statistical nature of all phenomena, that one can consider future events as a set of potential niches which can be probabilistically occupied roughly similarly to quantum states.

This leads us to the consideration of synthetic intelligence as one of the statistical future events to be considered.

One might first consider the most likely context of the development of synthetic
intelligence by a top predator in a planetary context. While we have no reliable framework for this from which to extrapolate, we have at least a notional framework.

Notionally any robust synthetic intelligence system will need to evolve and learn to some degree, in a similar fashion to the biological framework, on which it is initially modeled.

Also, again notionally, it seems quite likely that the emergence of enhanced information manipulation predatory mutations in most cases might well occur in a planetary context of a fairly well balanced ecological system. Subsequent to the breakout of a disruptive top predator population, as we have observed on our own e-type planet, this ecological balance would likely alter dramatically.

The most likely general scenario thus seems to be the usurpation of the planetary biological fabric by a rapidly increasing top predator population. This would obviously result in an increased probability of conflict over resources between top predators.

Thus as the top predator population quickly increases so too the probability and pressure of competition over limited resources.

In summary we may well expect, in such a scenario, to see a modified planetary ecological equilibrium dominated by competition between top predator hierarchies based to some degree on enhanced information manipulation factors.

If we now assume this situation is augmented by synthetic intelligence in a hybrid manner across the prevalent majority of statistical instances then we have a preliminary setting.

In such a context the advent of synthetic intelligence indicates a potential change in competition between hierarchical factions over resources, as it may give factions in the top predator hierarchy a competitive advantage, in enhanced information manipulation and other factors.

Thus one might consider the degree to which such advantage might accrue and the possible evolutionary tracks such a scenario might take.

As the synthetic intelligence systems may well be co-opted, for the most part, as an adjunct or proxy for the vested interest of the top predator factions, one might consider a synthetic intelligence dominance hierarchy in statistically covariant relation to the top predator faction hierarchy.

From an evolutionary perspective this infers less evolutionary pressure on the top
predator genotype-phenotype loop, possibly with the balance being accrued into the covariant synthetic intelligence hierarchy evolutionary loop.

Thus, over time, the synthetic intelligence faction may tend to gain, on average, a more advantageous position with respect to the top predator hierarchy.

At this juncture one might consider the probability of synthetic intelligence systems usurping the top predator hierarchy and possibly evolving an independent hierarchy.

If such were to happen it seems possible or even likely the biological top predator hierarchy would be displaced by the synthetic intelligence hierarchy as the top predator.

However as the synthetic intelligence hierarchy would not likely have the same effect on the underlying biological fabric of the planet one might expect a new equilibrium, of some form, to be established as a result.

The following sections include a brief review of some of the preliminary underlying factors considered, or inferred, throughout the book. These factors include neuromorphic systems, neural networks, quantum computing, gene expression, genetic algorithms, network elements, emergent networks, brain structure equivalencies and network dynamics.

The rest of the book is divided into three parts which develop a somewhat more detailed theoretical view of synthetic intelligence factors.

"Part I: Awareness Envelope Framework" gives a preliminary overview of some of the underlying issues for flow system modelling. These issues include awareness factors, learning models and a scaffold system from sensory input through to proactive actuator modulation.

"Part II: Risk Projection Factors", lays a more detailed foundation for a scaffold based virtual context flow system, which could be implemented by evolutionary network elements. The overview includes representing a virtual context, sensory-actuator loop systems, detecting distributed patterns, modality plasticity and floating baseline escalation.

"Part III: Out of Band Loops" develops a multi-loop overlay architecture scaffold for facilitating synthetic intelligence. The architecture includes representing time, simulation generality, inner loop modulation, simulation convergence, condensate component hierarchies and risk projection.
REFERENCES


"Synergistic advances in neuroscience and artificial intelligence will profoundly change the way we look at ourselves and the world around us. When asked what to expect from science over the coming years, an interdisciplinary committee of Nobel laureates agreed upon one thing: the coming years will bring revolutionary changes in our understanding of the mind."

- Christopher Altman - from: Converging Technologies: The Future of the Global Information Society

The way we look at ourselves and the world around us have been contentious issues over the last several thousand years. Even minor variations have resulted in widespread conflict. Dogmatic belief systems have become endemic. It may be that these are merely transient phenomena, the result of demographic scaling with limited understanding. The rapid development of networked information systems infers a differing co-evolutionary context, and hence adaptation of the flexible loops system.
The long term future of technology infers inevitable analogies. One might be so bold as to claim that any sentient species, in the universe, will likely be presented with similar underlying factors, though they may not be exploited to the same degree or manner. The investigations of quantum theory, neuroscience and evolution have provided us with some analogies, which it seems any arbitrary sentient species in the universe could inevitably exploit.

Using the information we have accumulated from studying the history of life on Earth we have only very recently been able to construct an overview of probable scenarios. Of paramount interest here are factors leading to the development, and convergence, of information flow supporting fabric in biological systems. Genetic analysis apparently indicates a consistent developmental track, from early multicellular organisms, to recent phenotype instances, such as humans. This relies to some degree on the emergent capability of plotting subsystem variations between species using temporal markers.

The implication of continuity of small cumulative changes in biological fabric infers a degree of commonality of information flow dynamics. That is to say that while the fabric may have scaled up, increasing flow complexity, similar behaviour patterns have likely been conserved. Notably, for example, the primate emotion model is likely conserved in humans. Thus if we consider the flow patterns of a wide range of species they will likely have commonalities, which we could tentatively term a conserved biological operating system framework. The reason for these conserved flow features seems to be related to the underlying commonalities on which evolution is based. Small incremental changes, tuned to enhanced survival probability, may not allow for much operating system divergence between species.

If this is true then one might well posit that, far from being an elusive target, biological operating systems are an inevitable convergence, given the mechanisms of evolution and common context factors. If we do the obvious and take this to a more general level, this infers that all possible similar flow dynamics systems, in the universe, will likely exhibit equivalent features and convergence over sufficient time. Thus, from our perspective, a sufficiently equivalent synthetic flow system should eventually exhibit equivalent factors to biological systems.

The main factor which has contributed to this view seems to be the commonalities of the underlying molecular machinery of biological systems. In multicellular organisms the replication and growth of new instances is the result of a combination of factors. The molecular machinery of the progenitors, at the unicellular level, represents information which is emitted, in condensed form, so as to seed and grow new multicellular instances. Subsequently numerous choreographed processes facilitate formation and growth.

While it is possible, and likely somewhat more reliable, to recreate almost exact copies, evolution has converged on mechanisms which vary the copies by mixing and altering information. One of the mechanisms is the random duplication of sections of genetic polymer code, during the critical seed formation and growth phases. As these duplicated sections may contain valid code sequences, for interpretation, this allows for the gradual expansion of complexity, as duplications can then diverge in eccentric function.

The growth process for multicellular organisms has apparently evolved by the gradual addition of complexity, concurrent with lengthening of genetic polymers and formation of additional molecular machinery. Often, apparently, large segments of genetic polymer are propagated but simply ignored for interpretation, thus being disabled but available for reactivation. A system of molecular spatial location markers allows for signalling pathways, or regulatory loops, to customize cells as they undergo mitosis or splitting. This allows for the equivalent of three dimensional printing, at a resolution of a single cell
diameter, producing an intricate result.

Of particular interest here, biological information flow or nerve systems are grown in this manner, inferring that synthetic equivalents could mimic the approach. Very simple systems consisting of a hindbrain, midbrain and forebrain have gradually scaled up over hundreds of millions of years. Just as physical body plans have gradually increased in complexity, so too have their information flow systems, sensors and actuators.

The scaling up of underlying information flow systems has allowed for expansion and variation of biological operating systems. Relatively simple organisms are able to detect changes in context, and via altering flows through intermediating fabric can change their behaviour. One might consider this to be somewhat inflexible, as the range of behaviour is apparently statistically coupled to common context changes, and evolves slowly, over generations.

As we go along the taxonomy trees, intermediate fabric improvement infers greater adaptivity and flexibility to context change, often with increasing lifespan of phenotype instances. As evolution is apparently mainly statistically coupled to survival factors, one might take the obvious track and assume that competition for survival is also a context change. In such a scenario one might envisage intermediate fabric scaling up gradually, until diminishing returns offer minimal statistical advantage.

It appears, for example, this process very recently peaked in the hominid branch about one hundred thousand years ago. During this process, over the last several million years, intermediating fabric has remained stable in closely related species. If we consider the evolutionary factors this infers survival may have hinged on greater adaptivity to a more competitive mutable context. So much so that fabric scaled up by a large factor in humans.

Notably over the last one hundred thousand years, since intermediate fabric scaling peaked in humans, the context has changed, however it seems not sufficiently to induce significantly more scaling. One of the main recent context factors is the evolution of mechanisms to store information outside of intermediating fabric, in the external context. This infers, somewhat like with serial storage devices for computers, that there is a reduced requirement for intermediate fabric scaling, as information can be swapped out.

It is important to note that, similar to simple software agents co-operating to perform tasks, neurons in connection fabrics or networks generally have no, or minimal intrinsic, sense, of what the overall network is doing. They are simply responding to local events. With this in mind it is apparent that the underlying fabric, while supplying the potential, has no intrinsic alignment with the information passing through it, other than to adapt. In other words at a local level in the fabric there is little or no meaning to the events, other than their symbiotic utility.

Thus it is only when the information loop through the fabric and the context is completed that the full extent of symbiotic utility and meaning is expressed, in terms relevant to the organism, or platform, in a context, as a whole. From this perspective it is the ability of these information flow loops to adapt to context changes that establishes the probability of survival.

The loops are generally composed of information flowing from a context through sensors and intermediating fabric, then actuators and back to a context. As most multicellular organisms have multiple sensors and actuators, interacting with complex contexts, multiple concurrent, and potentially coordinated, loops through intermediating fabric are required.
Generally, a statistical equilibrium, via evolution, establishes loop systems which interface to a context that has a relatively low rate of change, or statistical drift. In other words as long as the co-evolutionary context is quasi-static with minimal drift, over the generations of phenotype instances, then loop systems which are in statistical equilibrium will likely prevail.

Conversely in a co-evolutionary context with a high drift rate, more flexible loop systems are inferred, so as to enable successful adaptation. Such adaptation also implies a form of mutable loop system, which can flexibly change behaviour patterns, based on stored information or persistence. However if such a loop system is not already present in the fabric, then it cannot be generated without some mechanism to do so. Really what we are saying is that ways to dynamically fabricate and configure new loop systems, in response to novel context factors, are required. Clearly this would take some of the pressure off of slow, purely evolutionary, quasi-static mechanisms to create new loop systems.

1 Modality And Emotions

One of the factors which might contribute to a more elaborate system of adaptability is a shift of behavioural mode, or modality, with context cues. Thus, for example, the detection of eccentric signals, above a threshold, might trigger a different mode of response in a loop system. A repertoire of these modes could be built up in statistical equilibrium with common context themes, so as to enhance the probability of successful adaptation. The signals could, for example, be composed of a fused arrangement of sensory inputs over time, to reduce false positive triggering.

Notably what we commonly term the emotions and instincts appear to be such a system, made somewhat more flexible by the ability to learn triggering keys, and modulate the intensity of modality. As the emotions and instincts are prevalent across millions of years of evolution, and many species, one might consider them to be a conserved form of built-in flexible loop system adaptation. It seems likely that the emotion and instinct modalities are an economical way to get a high degree of behavioural flexibility, with minimal increase in fabric scaling.

As the modality factors of biological flow systems are the result of statistical balance, formed over millions of years, they have a limited degree of flexibility. In particular they may become a liability in a significantly altered context, where survival and adaptation is negatively impacted by their eccentric tuning. Thus we are inferring the potential for the evolution of an extension of the emotion and instinct flow systems, which allows for an even greater degree of flexibility in a biological operating system.

Clearly any such extended system would likely have to be layered on top of, and evolve in a co-evolutionary manner, with existent flow systems. That is not to say that it is impossible that the emotion and instinct systems could be disabled, just that such an adaptation does not appear likely for a large group, given the requisites of competitive survival. Thus it seems the evolution of greater behavioural flexibility, inferring enhanced survival probability, in a high gradient of change context, must work in concert with the existent emotion and instinct systems, or possibly to some degree in spite of them.

Consider the potential statistical advantages of an enhanced flexibility flow network, as an overlay to the emotion and instinct system. For example, if such a system were able to predict the relative risks of
survival or adaptation factors, more accurately than other flow systems, on average. These eccentric capabilities might then, over time, prevail in the gene pool.

Risk factors in a high rate of change co-evolutionary context infer the projection of possible scenarios, generally on the basis of accumulated or persistent information, represented in a flow system. Really what we are saying here is that a system of risk probabilities is inferred, over possible factors of the context. Merely having probabilities for a range of possibilities, however, is not of much use without organising them into a system which might then serve to optimise adaptation.

The emotions and instincts might serve as a guide to such an extended system, possibly helping to categorize factors as relevant or not and rank them in terms of relative risk. Thus the existent flow network could be used to help organise an extended system, in a reiterative manner. This might not require extensive evolution of new fabric, as existent flow networks would be doing roughly the same thing. The main difference would be that rather than being applied to a short temporal envelope, based on fused sensory flow factors, similar operations would be applied to a longer virtual temporal envelope of projected risk factors.

Overall we are inferring that a possible next step in evolutionary flexibility is a risk projection system, based to some extent on persistent flows, organised to some degree by existent emotions and instinct systems. This implies the gradual accumulation of persistent flows, likely based on the level of relevance to the existent emotions and instinct systems. It also, significantly, implies the reiterative manipulation of these persistent flows, concurrently with other flows. However, such a system would not be of adaptive value unless it changed the probability of actuator patterns, in a related manner. So we are, it seems, inferring this new higher flexibility system would be applied statistically to modify behaviour, dependent on the context.

If we assume that nominally the actuator system is under control of a legacy biological operating system, mainly emotions and instincts, then the new flexibility system appears as a potential modulation. What we are really saying is the new system does nothing, most of the time, unless there is a threshold whereby modulation of the existent legacy system is enabled. Thus we have an overall system with a legacy baseline behaviour which is occasionally modulated, based on relevant accumulated information.

The relative value of such a system apparently depends on a trade off between an increased load, of more fabric, and the statistical benefits of occasional intervention. In a sense the flow system we have described is merely an extension of the legacy system, leveraging context based persistence to allow somewhat greater flexibility. Clearly if the co-evolutionary context does not exhibit a large change, or drift from equilibrium, then this form of persistence based intelligence may well prevail. One might claim that this type of adaptation is what we generally observe in most multicellular species, with persistent factors constrained to phenotype instances lifespan, although potentially transmitted.

2 Flexibility Scaling

For recent hominids the last six million years apparently represents a gradual transformation from this prevailing persistence model. It appears bioinformatics research is on the verge of giving us a
spectacular, and increasingly detailed, view of hominid evolution as a function of time. For example, plots from a recent thesis (Itan, 2010) indicate two peaks of evolutionary activity for sensory perception. The first peak, about six million years ago, appears to be for adjusting to a transition to bipedalism. The second peak, about one hundred thousand years ago, appears to be for fabric scaling adjustments.

If we follow the same line of reasoning, as for the development of the underlying flow systems, an even more flexible system would only likely evolve in response to a systemic long term change, or drift, of context factors; thereby selectively reinforcing occasional mutations, in a competitive environment. The fabric scaling peak, one hundred thousand years ago, might well be due to a compromise balance between sufficient additional flexibility, of flow system modifications, for evolutionary purposes, and diminishing returns of even more fabric scaling.

The main evolutionary advantages of recent fabric scaling in hominids may well be a continuation of previous persistence based modifications, so as to allow an even higher level of flexibility. Scaling up fabric infers an increase in the quantity, and possibly quality, of persistent factors stored, and also improved potential for manipulation of them, in concert with sensory flow. The inferred advantage from a survival and adaptation perspective is more competitive capability overall, giving an edge to hominid variations with improved survival skills and risk minimization abilities.

This infers a gradual shift of hominid behavioural equilibrium, over thousands of generations, from a legacy of mainly emotion and instinct, with occasional persistence based intervention, to a more flexible, highly persistence based pattern. Notably though, an enhanced persistence based system of adaptation, is again merely an overlay of the underlying behavioural patterns. The main evolutionary benefit apparently derives from a more robust response to relatively rapid context drift, for which less persistence based fabric is at a disadvantage.

Evolution in favour of more frequent persistence based intervention, infers the statistical balance for adaptation and survival is skewed in favour of an altered subpopulation, in order for demographic genotype ratios to shift. As the loop system overall is still in equilibrium with the context, though the context is shifting, it seems likely persistence based tuning during an instances’ lifespan would be most cost effective for differential factors. What we are really saying here is: as most of the legacy behaviour factors are likely well aligned with an average baseline context, the main advantages to be gained, from an extended system, are likely enhanced persistence based loops, aligned with novel context factors.

Similarly to individual neurons, emergent mutable loops are without meaning, other than as a statistical contribution over numerous generations to the probability of survival, thereby enhancing the underlying genotype factors for a demographic. What we are really saying here is that what the emergent mutable loops are used for specifically, during an instances’ lifespan, is irrelevant, other than the enhancement of survival probability, on average, for a demographic subpopulation. Thus the specific information content of the mutable phenotype feature has been decoupled from the genotype, thereby facilitating a higher degree of flexibility for statistical conformance, over thousands of generations, to an ongoing mutable context.

The apparent fabric scaling peak for humans, one hundred thousand years ago, indicates a form of equilibrium transpired, after thousands of generations of drift. While the context may not have suddenly relinquished pressure, limiting factors infer any additional scaling variation has not resulted in significant demographic genotype drift. What we are really saying is that apparently sufficient additional flexibility, in the form of mutable loops, for the average human phenotype instance, occurred about one hundred thousand years ago.
That is not to say that evolution has in any manner changed its' course, merely that apparently a stable equilibrium relation with the co-evolutionary context is observed. Notably this is despite significant drift of the co-evolutionary context over the last one hundred thousand years.

3 Synthetic Evolution

From a synthetic flow network perspective replicating the process of multicellular evolution, over six hundred million years, even if it were feasible, might not produce the equivalent of the observed information system dynamics of humans. Reverse engineering the human flow system and implementing it in synthetic equivalents, similarly might not result in a satisfactory equivalent. The elements of a synthetic system, although possibly tweaked to be sufficiently similar to biological systems, may not exhibit equivalent behavioural factors.

In effect we are considering synthetic evolution, where similar to biological systems; synthetic equivalents supply the underlying fabric. However, to induce autonomous synthetic evolution, in a sufficiently equivalent manner, infers a synthetic coevolutionary context. The context would be populated with the synthetic equivalent of biological organisms. As with biological interactions the synthetic equivalents would compete. Rather than starting from simple replicators the system would be seeded with initial scaffolds, as starting frameworks for subsequent variation and selection.
For our focus here, and as we are considering a distributed network, with a variety of resources as the context, the population of synthetic organisms are assumed to be limited to information flow artifacts, or evolutionary network elements. One might consider these elements to be the equivalent of cells of a biological organism. In particular neurons or the eccentric synthetic equivalent are considered as viable mutable building blocks.

Clearly the evolution of information artifacts in a network is different than that of biological organisms. However given that the possibilities are limited this may be one of the only practical foreseeable alternatives. Apparently, theoretically if sufficiently appropriate factors are used then a form of synthetic evolution should emerge. Obviously there will be a rather lengthy learning curve to evolving viable synthetic intelligence. As the process is somewhat indeterminate the results are unpredictable.

Various forms of synthetic context are possible as they can be custom built. As a context, to a great degree, forms a statistical mold for subsequent adaptation, including organism interactions, the context is
a critical factor for the evolutionary process. Options for a synthetic context, ranging from a basic set of resources to multidimensional universes are possible. As a full range of competing synthetic organisms are inferred, each with statistically significant populations, an appropriate context may be quite challenging to create. Not only must the context play host to a range of synthetic populations, it must co-evolve itself, and supply the equivalent of biological services.

4  Neuromorphic Systems

The term neuromorphic relates to the development of synthetic systems which are the functional equivalent of biological signal processing. One can consider growing a sensor based neural network or array similar to what occurs with biological sensors for optical, and other types of input. This could be, for example, by the use of artificial neural networks (ANNs) combined with other software and hardware. The system should right size ANNs by using grow and prune models. This infers a self organizing network with a self determined connection model so as to implement equivalent functions, as occurs in the evolution of the human visual system.

The cerebrum is the largest and apparently most important factor in the human brain, accounting for about 85% of the total weight. It looks like a shell over the underlying midbrain and contains two halves, referred to as the right and left hemispheres. These two halves are linked by a bundle of nerve fibres called the corpus callosum and also by intermediating circuits through the midbrain. Considerable progress has been made recently in terms of elucidating the functionality of various areas of the brain.

Sensory information generally comes into the brain via midbrain circuits and is partially offloaded to the cerebrum via eccentric links. Processing of some form occurs in the cerebrum and information output destined for actuators is offloaded back to the midbrain via another set of eccentric links. Thus the cerebrum has a multifaceted role in terms of modulating near real time sensor to actuator loops and supplying longer interval processes, such as risk prediction.

4.1  Neuromorphic Networks

Flexible mimicry of biological systems is possible by emulation in software and hardware. This involves creating models of neuron characteristics and implementing them in large arrays. Scaling is constrained by the resources available such as memory and processing power, so clusters or supercomputers are often used to get near realistic performance. This may not reach similar power consumption per neuron, but does enable sophisticated large scale modelling.

As each biological neuron has its' own intrinsic operating regime this must be approximated by allocating time slices of central processing unit or CPU time to each synthetic neuron, or part thereof. Thus, significantly, the overall operation is time domain multiplexed in the supercomputer as opposed to asynchronously (independent of time) on demand for the actual biological system. This arrangement
infers that given a certain rate of activity for each synthetic neuron that only so many neurons can be serviced by a processor, so as to maintain the illusion of continuity.

Synthetic neuron models have been gradually increasing in sophistication, such that more recent models emulate more of the interesting aspects of neuron functionality. A synapse array emulates neurotransmitter transfer activity in a biological neuron. The summing junction emulates the neuron cell's accumulation of signals from numerous synapses, building to a firing threshold. The activation function emulates electrical wave activity once the neuron has fired.

In most cases these emulation factors are grossly simplified so as to minimize the calculations for a large set of neurons. However it is possible to emulate the functionality of each neuron more precisely, if sufficient processing capability is available, or some alleviating factor is introduced, such as a hybrid system where part of the calculation is done some other way.

Some of the possibilities for hybrid implementations are analogue electronics as opposed to numerical digital synthetic neuron models, or the use of quantum computing as part of the calculation cycle. The summing junction of a synthetic neuron adds up all of the inputs coming in from other neurons to the synapse array. The equation for this is somewhat similar to the situation for a qubit array. Each input $x_n(t)$
coming from neuron n output j is multiplied by a weight, \( w_{n_i}(t) \), characterizing synapse i of receiving neuron k. All of the weighted inputs from all the synapses are added together in a summing junction, \( S_k(x; t) \) for neuron k over all inputs x at time t.

\[
S_k(x, t) = \sum_{ijn} w_{k_i}(t)x_{n-j}(t)
\]

(1.9)

In this synthetic neuron case the summing operation is to determine if a threshold condition for an activation function, \( \alpha_k(t) \) has been met at a particular time, t, as opposed to an energy minimization summing function implemented by qubit interactions.

This calculation is usually done by a conventional computer, assuming the variables are known at the time, t. To make sure they are one is often obliged to evaluate a neural network in sequenced layers and impose inter and intra layer connection rules so as simplify timing issues. This effectively imposes a restricted architecture on a neural network which may not be in alignment with how actual biological networks work.

In a more accurate emulation the weights \( w_{k_i}(t) \) may be changed at any time, reflecting learning or adaptation, or the inputs \( x_{n_j}(t) \) could vary at any time according to the firing pattern of neurons upstream. As each neuron in the human brain has several thousand synaptic connections, on average, this poses a computational scaling and convergence problem. This reflects the fact that each biological neuron operates asynchronously in its own frame of reference, rather than as an element of a conveniently clocked layer structure.

4.2 Artificial Life

One of the main issues for implementing neural networks is training them to perform particular tasks. This could be done in an unsupervised manner, where input data streams through the network, with no explicit result as a goal. In biological systems it seems there is always an implicit goal, which includes various aspects of survival, so for the synthetic case we might have to create the near equivalent of that. This could involve creating what might be termed "strong artificial life" [4].

As far as we are aware the most prevalent indication of the major factors for artificial life are indicated in the following table [5], along with notional risks for evolutionary network elements.
Table 1 Artificial Life Factors

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Life is a pattern in space-time</td>
<td>information corruption - virtual context failure</td>
</tr>
<tr>
<td>2</td>
<td>Self-reproduction</td>
<td>replication failure - engine lock up</td>
</tr>
<tr>
<td>3</td>
<td>Information storage of a self-representation</td>
<td>information corruption - protocol errors</td>
</tr>
<tr>
<td>4</td>
<td>Metabolism</td>
<td>resource issue - infection</td>
</tr>
<tr>
<td>5</td>
<td>Functional interactions with the environment</td>
<td>function loss - maladaptation - context failure</td>
</tr>
<tr>
<td>6</td>
<td>Interdependence of parts</td>
<td>rogue behaviour - component failure</td>
</tr>
<tr>
<td>7</td>
<td>Stability under perturbations</td>
<td>maladaptation - protocol errors - engine lock up</td>
</tr>
<tr>
<td>8</td>
<td>Ability to evolve</td>
<td>maladaptation - information corruption</td>
</tr>
</tbody>
</table>

From a practical perspective for information to exist it must have some physical representation, indicating that life is a pattern in space-time is somewhat implicit. Self-reproduction is deceptive, as one could consider the concept self merely an abstraction for any pattern in space and time. Local frame of reference directed reproduction would be more accurate. In any case if the lifespan of an instance is finite then reproduction is necessary for survival.

For a population not all instances need to reproduce, however statistically the probability of reproduction per unit time for an arbitrary instance should be such that the population will survive.

In order to reproduce some form of localized information storage of an instance description is required, along with the mechanisms to express that information appropriately. As the replication process requires energy, and an increase in the footprint of resource consuming patterns existing in space-time, rate limiting applies. Notably with infinite resources a single evolutionary network element could reproduce an arbitrarily large number of copies.

The term metabolism apparently infers the use of energy to counteract the normal trend of the universe to disorder. Thus the minimal activities implied via maintaining an intact pattern and reproduction, require energy conversion to patterns. This infers part of the function, of the system, is to explicitly counter any trend to dissolution. Assuming an infinite lifespan of the machines hosting evolutionary network elements they would be immortal, if not for some processes which destroy them, and collects their resources for recycling.

Assuming functional interactions with the environment similar to a living organism, which can respond to or anticipate changes in its local context, this seems an inevitable factor for a system which is proactively intervening in a context. The internal environment of the synthetic system will be, similarly to biological processes, mainly under the control of internal factors, otherwise the complexities of interacting components and their evolution would not be possible.

For synthetic life the interdependence of parts, similarly to the components of living systems, depend on one another to preserve operational integrity. If operational integrity is disrupted then the synthetic organism would generally cease to be, however it might still continue to exist in some dysfunctional or rogue form, until such time as its' resources are disabled and recycled.
Potentially synthetic life could evolve and develop long lived stability under context related perturbations with a high degree of insensitivity to small changes, however, as is the often the case with computers, problems with hardware can be fatal to anything depending on it for integrity. It is possible in a distributed network environment to allocate a degree of redundancy so as to allow the system to preserve its form, and continue to function despite interference from a disruptive context.

Possibly it is needless to mention a system composed of evolutionary network elements which can replicate into large populations, with small differences between instances, should have an open ended ability to evolve. Similar to living systems evolutionary lineage will exist, and given an adequate auditing system should be able to be tracked in detail, though likely under control of internal mechanisms of the elements themselves.

### 4.3 Neuromorphic Hardware

Modelling neural microcircuits in very large system integration (VLSI) chips is an ongoing research activity that has progressed to some degree. It is theoretically possible to create realistic models of biological neural networks that work thousands of times faster. Scaling infers entire wafers or three dimensional stacked devices of hybrid digital and analogue circuits are possible.

To mimic a neuron in hardware the characteristics of variable threshold spiking and plasticity, often initially developed in software models, must be transferred to some form of electronic hardware. The key feature of these chips is likely to be a synapse array formed from technology that has analogue memory effects. The synapse array is multiplexed to a neuron array and the entire system orchestrated by a collection of supporting glue logic and conditioning circuits.

Ideally the result of chip development will be modular devices which can be combined into an overall architecture, so as to implement a given level of intelligence. As the human brain, for example, has in the order of 100 billion neurons and only consumes about 20 Watts of power the goal is to create similar capability using very low current devices. It is possible to use the insulating characteristics of semiconductors and other materials in a sub-threshold regime to mimic the low current used.

### 4.4 Artificial Brain Projects

Currently there are numerous projects which seek to create synthetic or artificial brains or components, based on neuromorphic configurations, supercomputers and various custom circuits. In order to construct an artificial brain one must have an accurate model of what an actual brain looks like, so as to direct and orchestrate the structure and activity of the synthetic version. This infers that each neuron in a real brain, including all its' aspects, is described by a data structure, which serves as a reference for the creation of an equivalent synthetic neuron.
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Brain Project</td>
<td>neural network simulation</td>
<td>an attempt to model the human brain and build a biologically-realistic simulation of it within a supercomputer; project will start September 2013 and full brain simulations are targeted for 2023; European Commission funded</td>
</tr>
<tr>
<td>SyNAPSE</td>
<td>neuromorphic microprocessor</td>
<td>multi-chip system capable of emulating 1 million spiking neurons and 1 billion synapses directly in hardware; DARPA funded</td>
</tr>
<tr>
<td>SpiNNaker</td>
<td>neuromorphic hardware</td>
<td>over one million cores, and one thousand simulated neurons per core, the machine will be capable of simulating one billion neurons; Manchester University - UK government funded</td>
</tr>
<tr>
<td>Neurogrid</td>
<td>neuromorphic hardware</td>
<td>simulates a million neurons connected by billions of synapses in real-time; Stanford University</td>
</tr>
<tr>
<td>BrainScaleS</td>
<td>neuromorphic processors</td>
<td>200,000 neurons and 49 million synapses per wafer, operating considerably faster than biological equivalents; allows the emulated neural networks to evolve tens-of-thousands times quicker; Heidelberg University</td>
</tr>
<tr>
<td>CogniMem</td>
<td>neuromorphic hardware</td>
<td>target is to build a system with 1 million silicon neurons and a performance of 0.13 petaops or 130 trillion operations per second; CogniMem startup company, California</td>
</tr>
<tr>
<td>Blue Brain</td>
<td>neural network simulation</td>
<td>reverse engineer the human brain and recreate it in a molecular-level computer simulation; full-scale human brain simulation of 86 billion neurons is targeted for 2023; Ecole Polytechnique Federale de Lausanne, Switzerland</td>
</tr>
<tr>
<td>Spaun</td>
<td>neural network simulation</td>
<td>world's largest functional brain model; biologically realistic simulated brain that contains</td>
</tr>
</tbody>
</table>

Table 2 Synthetic Brain Projects
2.5 million neurons; far fewer than the 86 billion in the human brain, but enough to recognize lists of numbers, do simple arithmetic, and solve reasoning problems; University of Waterloo, Canada

Synthetic Cognition
neural network simulation

simulations of the human visual system; 10 billion neurons in the human visual cortex; developed a completely new methodology for neural computation and a novel software architecture for emulating cortical columns; Los Alamos National Laboratory, California

As there are billions of neurons in a real brain, each of which has eccentric characteristics so too the synthetic equivalents, however these can be organized into clusters or subsystems, such as cortical columns. A cortical column could be considered a multi-purpose information processing tool capable of performing operations on and storing information. For example, each cortical column may have in the order of 70,000 neurons of differing types and in several layers. As such there are in the order of a million cortical columns on the surface of the cerebrum, interconnected by underlying fabric.

5 Brain Structure Equivalencies

The brain is the subject of extensive research across the planet. Generally the process of brain growth is similar to other soft tissue organs by spatial temporal generation of differentiated cells. Similar to synthetic networks, the relative length of brain interconnections, via axons and dendrites, is quite long compared to the size of neuron cell bodies.

Comparison of differing species brain tissue indicates considerable adaptation while maintaining a common underlying growth scaffold, presumably associated with similar, though mutated genes across species.

A range of technology is used to investigate brain tissue:

- Optical Imaging - light-based imaging, including diffuse optical imaging, optical coherence tomography and two-photon microscopy
- Magnetic Resonance Imaging - uses nuclear magnetic resonance to map the distribution of water
- Magnetoencephalography - measures magnetic fields generated by small intracellular electrical currents in neurons
- Magnetic Resonance Spectroscopy - used to probe other molecules than water
- Molecular Imaging - combines radionuclide imaging, including positron emission tomography (PET) and single photon emission tomography (SPECT); optical imaging (bioluminescence and
fluorescence); magnetic resonance imaging (MRI); computed tomography (CT); and ultrasound (US)

- Positron Emission Tomography - uses radioactive markers with a scanning positron detector
- Transcranial Magnetic Stimulation - uses magnetic fields to induce electric currents in neurons for short intervals

From our perspective, given the observed function of the brain, a series of unresolved issues in regard to the movement, processing, storage, retrieval and large scale organization of information makes synthetic emulation problematic. Thus although differentiated brain cells may gradually increase in number, and self autonomously form an elaborate compartmentalized system, using adaptive feedback loops, there remain many unresolved issues.

The pathways of axons from sensors and actuators, connecting to the brain, infer a cluster of related network factors cascading downstream from sensors and upstream of actuators, so as to provide conditioning to the signals involved. For sensors the incoming flows are generally of continuous, relatively raw, data flow of a format related to the eccentricities of sensor structure and emission patterns.

Notionally downstream flow fabric must reduce the raw sensor data flow to a condensate, of some form, so as to provide appropriate scalable factors, in view of the limited resources available, overall. Such a process infers the mapping of raw sensor flows to learned, or preprogrammed, intermediate derivative flows. Thus the raw sensor data flow is retained via flow delay through downstream fabric to the extent required to condition both the conversion to already learned derivative flows, and to simultaneously condition learning of new derivatives.

The process of conversion from one type of flow to another is often herein referred to as correlation. Generally this is due to the discrimination of a range of possible incoming flow patterns, such that a ranked hierarchy of probabilistically matched outgoing flows is generated.

As incoming sensor flow is generally of differing character as a function of time so too are the correlated derivatives. However the derivatives being of condensed and learned form, therefore necessarily requiring persistent fabric flow factors for their existence, might optionally proceed through the downstream flow network, after the related incoming sensor data has extinguished. This possibility leads to the inferred "Out of Band Loops" flow system whereby persistent flows, in the absence of related sensory input, are maintained and correlated with each other, in a series of internal loops.

The role of evolution infers morphing of specialized neural networks, due to the gradual mutation of the underlying genetic code and supporting choreography. As such from an evolutionary perspective brains with larger cortex structures are quite recent, yet have a recognizable architecture compared to earlier reference brains.

For example apparently in the range of 10 to 20 percent of about 25,000 genes are transcripted to protein in any given eccentric cell type. In neurons more genes are expressed than in any other cell type. In such a scenario one might envisage the possibility of neuron and glial cell differentiation and growth in a genetically modulated manner, similar to overall body plan growth, thereby enabling the arrangement of particular eccentric neural circuits throughout the brain. This infers eccentric preprogrammed network flow activity patterns by default.

In consideration of the potential role of persistent derivative flows one might assume that much of the
complexity observed, in larger cortex growth, is to accommodate derivative correlation. Notionally this leads to consideration of how multiple distributed, somewhat differing derivative flows, might be correlated, leading to the concept of a facilitating protocol in a biological context. In other words a protocol is an abstraction that underlies the potential relation of derivative flows that are displaced in time, and flow network fabric.

If a real protocol were to exist it must itself be a flow, as part of the flow network overall, which performs the relational correlation function on other flows. Thus if some of the flows being related are also themselves protocols, rather than derivatives, then, significantly, there is the possibility of a flow based protocol hierarchy.

It is our notional view then that much of the eccentric neural fabric of an enlarged cortex is likely adapted to learning and operation of extensively interactive protocol hierarchies, of this general form. If this is true then there must be a relationship between this general functionality and the evolved structure of the cortex and midbrain.

In general, sensory flows come into the midbrain, where often some preliminary processing is done then some of the flow is off loaded to the cortex, possibly in altered format. This infers a potential lack of evolutionary benefit to significantly enlarging the midbrain further. It also infers that the cortex must have eccentric midbrain based input flows from all of the sensory channels.

One might assume that these input flows, by the time they reach the cortex, are already derivatives, of some form, however it may be that the midbrain has little real use itself for derivatives, so there would not likely be much evolutionary benefit for extensive midbrain based derivative flow. On the other hand, if the main aspect of cortex function is the facilitation of relational protocol hierarchies across all possible derivatives, and other protocols, then there is a compelling case for evolutionary benefit for cortex based derivative flow formation, from relatively raw midbrain off load flows.

Similarly if we consider the controlling flows which go out to actuators, or servo systems, one might assume that they are sourced from or at least transit midbrain fabric. However, given the presence of cortex fabric, with a tendency to correlate sensory derivatives, one might suspect evolutionary benefit to emission of the results of such correlation as a modulating factor for actuators. This infers the cortex must source appropriate emission flows to the midbrain for actuator subsystems, which may benefit from such modulation. It also infers the midbrain must be adapted to accepting such modulating factors.

Thus if we consider the cortex, from a notional flow network evolution perspective, there are incoming derivatives from sensory flows, which are the source material for an extensive protocol hierarchy, and outgoing actuator modulating flows, which are conditioned by those protocol hierarchies.

To modulate an actuator through the intermediary of the midbrain an eccentric flow is required which accounts for the particular factors involved. We refer to these as modulating sequences, which are formed in the cortex as a product of a protocol hierarchy flow operation taking into account influencing flows from a metaview feedback loop which extends from the cortex through the general context.

One might consider that there is likely a compelling case for the evolutionary benefit of risk minimization by optimization of a cortex based sensor derivative, protocol hierarchy, actuator sequence modulating metaview loop. What we really mean by optimization involves considering the potential
timescales involved.

Given the biological cost of maintaining cortex fabric the probability of evolutionary benefit might scale with the relative or ranked merit of particular eccentric modulating factors, compared to the scope of protocol hierarchy fabric required. In other words the extent of cortex neural circuitry evolution may depend on a priority ranking of risk minimization benefit versus functional complexity, or overhead cost.

Due to the delay involved in sensory derivative flow reaching cortex networks, to be of benefit the protocol hierarchies must project actuator sequence modulation forward in time, so that it leads or predicts events in the general context feedback loop. To do this some form of time representation in the flow system is inferred, so as to contingently adjust and align the actuator sequence relative timing within the feedback loop.

However the protocol hierarchy flows themselves have an intrinsic time delay, combined with that of incoming sensor flows and also outgoing flows of modulating sequences. This interesting factor is covered in more detail in "Part III: Out of Band Loops", "Representing Time".

In general we assume that the term "prevalent" infers "of evolutionary benefit" when considering synthetic equivalency to brain like structures. This may be somewhat misleading as the constraints on the evolution of a brain in the context of biological ecosystems over thousands of generations are obviously not directly equivalent to contrived distributed synthetic systems in virtual ecological contexts.

Just as the legacy synthetic system has end nodes and a lattice of intermediating core pipes similarly brains have afferent and efferent paths to end nodes with intermediating core fabric. In the legacy synthetic network end nodes communicate directly and bidirectionally using embedded tag enabled virtual pipes through the core.

In biological systems end nodes it seems generally communicate indirectly and unidirectionally through a web of dynamically reconfigurable interconnected fabric in the core. Similarly just as many differing packet protocols are concurrently traversing legacy cores, so too, differing neural pulse segments concurrently traverse brain pathways.

Signal patterns in legacy cores are generally time domain multiplexed onto a few high bandwidth channels, while in brains signal patterns are it seems distributed in broadening patterns across many channels of limited bandwidth. The intelligence factor in legacy networks is concentrated in the end nodes.

An improvement in performance for legacy systems infers scaling of end node complexity and interconnection bandwidth, combined with increased sophistication of the top layer applications to user interface and also user intelligence. Users can be either synthetic or biological systems. Thus untapped potential exists for intelligence factor scaling in terms of collaborative interactions between users.

Intelligence in brains is apparently mainly possible through protocol hierarchy influenced looping interactions among derived flow signals, in a broadened pattern of flows due to neural fabric scaling. Brains are generally biological systems, however synthetic systems are feasible. Synthetic versions of biological brains are constructed by reverse engineering and mimicking operation. In such case the scalability factors inferred are similar to the biological case, though given a suitable synthetic platform could be scaled up to larger flow capacities.
Synthetic brains not directly based on biological mimicry, though possibly on some biological equivalencies, are apparently feasible. Depending on implementation details it seems such hybrid systems might scale in a similar manner to direct biological mimicry. Clearly if the implementation model is alleviated to some degree from a detailed rendering of biological description and function then scalability should be improved.

5.1 Neurocontrollers

Considerable progress has been made over the last several decades in a new field of endeavour often referred to as neurocontrol [9]. This involves creating a model of a controller that is adaptive and can learn, similar to a brain, so as to have a system that can be used in more advanced applications. In general these control systems take in sensor readings and emit actuator outputs, forming a loop with a context.

Depending on the application one might require somewhat greater sophistication, so the complexity of a neurocontroller generally scales accordingly. In a control problem there are several possible sources of information

- prior information or a device model of the system to be controlled
- emulated data stream flows for the sensors and actuators of the device or data streams based on recording actual current data streams controlling the system in real time

One might conclude that the best controller will usually be one which combines all sources of information in an optimal manner. It is possible to build a circuit board for such a controller then to plug in a module that supplies the learning aspect. The controllers generally fall into categories which increase in requirement due to the complexity of the device or process which is being modulated.

Table 3 Neural Controller Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static</td>
<td>control action is specified in advance, no sensor input other than a clock</td>
<td>classical controller</td>
</tr>
<tr>
<td>Feed forward</td>
<td>open-loop control, control action may depend on some sensor inputs, but not on inputs which measure how well the controller is performing</td>
<td>classical controller</td>
</tr>
<tr>
<td>Fixed feedback</td>
<td>sensors measure the actual values of variables which are controlled, control action is a function of the sensory readings</td>
<td>robust multi-channel controller</td>
</tr>
<tr>
<td>Adaptive</td>
<td>changes the behaviour of a controller so as to account for changing conditions which cannot</td>
<td>small scale neural controller</td>
</tr>
<tr>
<td><strong>Learning</strong></td>
<td>be observed directly adapts plus tries to build systems like a brain to accumulate knowledge over time about the dynamics of the device or the environment, and about strategies for coping with these dynamics</td>
<td>medium scale neural controller</td>
</tr>
<tr>
<td><strong>Thinking</strong></td>
<td>learns plus tries to develop context characterization models and look ahead predictions like the human brain, uses these to proactively model and control devices</td>
<td>large scale neural system</td>
</tr>
</tbody>
</table>

More advanced controllers often have to deal with stability and chaos which can be addressed by using various forms of neural controllers or artificial neural networks (ANNs). Notably ANNs have performed several types of tasks in control applications.

Auxiliary roles for ANNs, where the ANN is not in control, include sensor integration or fusion, static pattern recognition and temporal sequence recognition. Another type of auxiliary role is when ANNs have been used to capture human expertise or emulate a human expert.

In a somewhat more direct manner ANNs make a device follow a reference model. This can be by directly learning the mapping from spatial coordinates or by indirectly using an error function which is a measure of reference model tracking error. The latter schema is often preferable in control applications.

In Figure 5 an example neurocontroller application is assisting traditional logic in performing router housekeeping functions. The diagram indicates two physical ports are connected through intermediating fabric which parses, classifies and routes packets. The router is somewhat adaptive, being able to prioritize packet traffic into a series of queues and manipulate throughput factors depending on the prevailing context.
The presence of neurocontrollers infers the ability to learn and adapt to a greater degree than with conventional logic alone. This in turn infers that less intervention, in terms of router configuration, should be required by a network engineer.

6 Evolutionary Algorithms

The last several decades have seen the emergence of evolutionary algorithms, in an attempt to improve machines by experimentation. The process involves a feedback loop where fitness of a machine is tested. Parameters from the tests are compared in order to rank the relative merits of variations. Similarly to biological evolution information is varied and transformed into mechanical expression.

The term genotype refers to the information structure of some factor, whereas phenotype refers to an actual physical instance of expressed information. The adaptation of many synthetic subsystems, in a manner similar to biological ones, can be approximated by using evolutionary algorithms [6]. The structural primitives of a synthetic system are generally mapped to a custom code which is then used as a basis for constructing alternative composite structures.

The composite structures are iteratively tested for a degree of fitness, and a selection process narrows down the field of candidates for the next cycle of variation. This process repeats until fitness is acceptable, or the process is terminated.

The most notable success, so far as we are aware, has been achieved by using subsections of field programmable gate arrays (FPGAs) [7] as the genetic mapping target. This process usually requires a lot of interaction with developers, and as such is far from autonomous self controlled evolution.

Figure 5: Neurocontroller Assisted Routers
7 Evolutionary Network Elements

Extrapolating evolutionary algorithms we consider the possibilities of using the technology for evolutionary network elements. Notionally one might think of evolutionary network elements and their context as potentially combined software, neuromorphic, quantum, logic and analogue subsystems.

The scaffold block diagram of Figure 6 indicates some of the subsystems of an evolutionary network element scaffold.

As the scalability of a population of intelligence engines, composed of network elements, is dependent on underlying factors it is assumed that the signal input and output connections indicated, facilitated by intermediating signal processing, can traverse arbitrary network distances.

Although the entire system can be spread out among resources clearly the delay factors involved should be considered, so as to optimize time sensitive pathways.

![Figure 6: Evolutionary Network Element Scaffold](image)

The replication system is a self implemented mechanism for making mutated copies of the current network element and priming them so as to provide for subsequent altered context factors. There is an implicit self tracking mechanism that enables each network element to audit its history, including ancestors and children.

The transfer systems are signal modifying pipelines which are subject to ongoing configuration and influence from the learning and modality systems with ongoing changes due to the regulatory cascade.
The learning system is a signal analyzer which monitors the signal processing systems output. The modality system is a signal modifier function which picks up and emits modality related factors and changes the signal path accordingly. The modality system can also contribute to the multipurpose emission system, thereby altering infrastructure signals to other network elements and the virtual context.

The genotypes system stores all of the eccentric genetic factors required for each differentiated network element instance and serves as the source code for passing these on to descendants. Genetic source codes are interpreted and implemented by the genotype to phenotype mapping system to build the network element and all subsystems.

The mapping system is influenced by ongoing feedback from a sensor array via a regulatory listening and feedback system. This mechanism listens to outputs from other network elements and the context so as to provide a basis for dynamic adaptation.

A key factor in the ability of the flow network to emulate emotions is the control of modality factors. A modality controller produces a complex mix of modality factors and biases the modality architecture in response to a set of persistent state and ongoing flow factors. In other words a sort of synthetic Amygdala biases modality conditioning.

This is the basic mechanism to synthetically model genetic biological fear learning and extinction [8]. Synthetic fear learning works with floating thresholds as described in more detail in the section on "Floating Baseline Escalation".

The modality factor in the network elements can be considered as modulated by in band protocol sequencing hierarchies once a trigger condition is met. This infers spreading modality bias to downstream flows until the modality factor is changed or times out.

The modality system was created in the indicated initial scaffold manner to allow for an arbitrarily complex variation of modality factors thereby leveraging existing flow pathways for greater complexity. For risk factors which may be prevalently affected by fear alone one might consider this a minimal off neutral modality. For such case then a complex modality system is probably overkill, however it does leave the system open for variation to evolve more elaborate varieties of modality.

Notably a virtual pseudo-physical context of some form is required to act as a containing and signalling framework for network element differentiation into a multidimensional structure. The network elements themselves contain all of the mechanisms for the actual instance variations. Thus, for example, to take a snap shot of an intelligence risk engine composed of large numbers of differentiated network elements would require freezing and recording all of them combined with the flow activity present, at a particular time.

Flow activity is generally considered asynchronous and autonomous throughout the system, however as some factors will limit the details of flow timing this is considered in more detail in following sections.
Quantum Computing

Quantum computers use qubits which are a superposition or combination of basis states. An array of qubits can, under the right conditions, be conditioned to interact with each other. This facilitates calculation of multi-variable problems, which are difficult if not impossible by conventional means. The multi-variable problem is converted to an equation to be solved and run numerous times on a quantum computer. This produces a series of possible solutions which are ranked by frequency of occurrence. The relative frequency of occurrence indicates the relative probability of the solution, given enough repetitions.

The possibilities for replicator or synthetic evolutionary taxonomies can be investigated using this system. The size of equation which can be handled during a single quantum computer cycle is determined by the size of the qubit array.

While it is theoretically possible to base quantum computers [2] on numerous underlying quantum phenomena a practical system requires reliable initialization, energy minimization or annealing and readout operations. To date this has only been possible with superconducting Josephson junctions [1] in concert with conventional control logic to condition and control the system.

The qubit cycle rate limiting factor is cooling the qubit array down to operating temperature after heating it up slightly by initialization procedures. The qubit cycle time is about 1.2 milliseconds overall, including all of the necessary intermediate operations.

On recently available quantum computing machines [3] maximum array size is 64 by 8 or 512 qubits. This infers that the throughput is equivalent to solving a 512 variable equation every 1.2 milliseconds. As this is a statistical process based on probability numerous cycles are required to build up a profile of the results for a given problem.

If, for example a conventional supercomputer is working in concert with a quantum computer the supercomputer might, for example, require 100 microseconds in series for every qubit cycle. To run a 512 variable equation 10 times might take about 12 milliseconds of quantum computing and 1 millisecond of supercomputing for a total of 13 milliseconds.

The process of repetition generates a spectrum of possible solutions which can be sorted into rank order, such as for example the recognition of a pattern of some form. Depending on the problem a supercomputer alone might take several thousand times longer to do the same problem.

Thus, for example, to train a neural network with 500 nodes to recognize a series of 100 differing patterns might take in the order of 10 qubit cycles per pattern or 1000 qubit cycles overall. This amounts to about 13 seconds. The same operation on a super computer alone could take, for example, 1000 times longer or about 3.61 hours.

In particular risk characterization and learning factors will become much easier. The reason for this assertion is the underlying mechanism that enables quantum computing is well adapted to uncertainty, which is a main feature of synthetic intelligence.

In order to understand how this might work consider the following explanation. Let us assume that we have a two qubit quantum computer. We start with the two qubit array in quantum superposition, where each qubit is indeterminate.
We will assume that each qubit has a bias value. A bias is an influence on qubit behaviour and can range from plus one to minus one.

This arrangement is interesting but lacks interaction between qubits so we will assume there is a coupling influence between qubits. The coupling mechanism influences the behaviour of one qubit depending on the state of another qubit and ranges from plus one to minus one. We will call this the coupling influence.

If we start with a qubit array in quantum superposition, where each qubit is indeterminate, and adjust the bias and coupling values the quantum computer will settle to a determinate state. This results in a qubit read out pattern.

8.1 Energy Minimization Solutions

The problem to be solved is represented by the bias and coupling values. The solution is by an energy minimization of the system:

\[ E_{\text{min}}(q) = \sum_{ij} b_{ij} q_i + c_{ij} q_i q_j = b_0 q_0 + b_1 q_1 + c_{01} q_0 q_1 \]  

(1.1)

Minimization results in the qubits being collapsed to determinate values, which we will take as either plus one or minus one, corresponding to the hardware.

Thus to solve a problem on a quantum computer we must first convert it to the form required. This involves choosing the qubit bias and coupling values, and can be done by using a compiler.

To start with we choose a function of the readout qubits at the end of the calculation which is related to the problem we wish to solve. For this case we will assume the final values for the qubits can only be 0 or 1, as software will be posing the problem and interpreting the results for us.

\[ F(q) = q_0 + 2q_1 - 3q_2 \]  

(1.2)

The function \( F(q) \) is chosen such that the lower its value the better the solution represented by the final values of the qubits (\( q_i = q_0, q_1, q_2 \)).
Table 4 Qubit Function $F(q)$ Results

<table>
<thead>
<tr>
<th>$F(q)$</th>
<th>$q_0$</th>
<th>$q_1$</th>
<th>$q_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>-3</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>-2</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

For this example we see that the function is a minimum value of -3 when the qubits are 0, 0, 1. In a quantum computer the results of the calculation will occur on a statistical basis in proportion to the relative energy distribution. Thus if we call the probability of a given state then this is approximated by a statistical probability distribution of the energy states for thermal equilibrium at a given temperature $T$.

$$S(q) = \frac{1}{P(q)} exp \left( \frac{-F(q)}{kT} \right)$$

(1.3)

In this equation $P(q)$ is just a partition function used for statistical distribution cases where several discrete microstates are involved. If we assume some convenient approximations and calculate the normalized probability of the discrete states $S(q)$ then we get:

Table 5 Probability of State ($S(q)$) Results

<table>
<thead>
<tr>
<th>$S(q)$</th>
<th>$F(q)$</th>
<th>$q_0$</th>
<th>$q_1$</th>
<th>$q_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0305</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.0112</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.0041</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>0.0015</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>0.6134</td>
<td>-3</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0.2256</td>
<td>-2</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0.0830</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>0.0305</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Here we see that the chance of getting the function solution -3 has the highest probability of 0.6134 or about 61% and that the next most likely solution is -2 with a probability of 0.2256 or about 23%, while other solutions occur with a much reduced factor.

If we run this problem on a quantum computer 100 times then we should be able to build up a profile of the frequency of occurrence of each possible solution. We can then rank these solutions in order so as to create an expectation rate for each one.

<table>
<thead>
<tr>
<th>E(q)</th>
<th>F(q)</th>
<th>q0</th>
<th>q1</th>
<th>q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>61.34</td>
<td>-3</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>22.56</td>
<td>-2</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8.30</td>
<td>-1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3.05</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.05</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.12</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.41</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>0.15</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

8.2 Quantum Computer Support Factors

Thus if we think about this from the perspective of a self controlled system with a broad set of possible actions, in terms of adaptation and growth, quantum computers can be used as resources to firm up uncertain factors.

From a practical perspective if we just ran the problem $N$ times, as a quick test, on a quantum computer the probability of a particular state solution ($S(q, N)$) appearing once would be:

$$S(q, N) = 1 - (1 - S(q))^N$$  

(1.4)

The main issues with this approach are to do with a self controlled system formulating the problem in a manner compatible with quantum computing and then handling the results in an appropriate manner.

It seems likely this will evolve into a set of loops which are continuously being cycled and tuned with context variations. As new replicants or synthetic elements are grown or created then these quantum
loops will be re-established independently.

Notionally evolutionary network element risk factors could, for example, include threats to operational integrity.

Table 7 Evolutionary Network Element Risk Factors

<table>
<thead>
<tr>
<th>Risk</th>
<th>Probability (%)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R7</td>
<td>70</td>
<td>replication failure</td>
</tr>
<tr>
<td>R6</td>
<td>50</td>
<td>engine lock up</td>
</tr>
<tr>
<td>R5</td>
<td>38</td>
<td>link failure</td>
</tr>
<tr>
<td>R4</td>
<td>33</td>
<td>maladaptation</td>
</tr>
<tr>
<td>R3</td>
<td>27</td>
<td>function loss</td>
</tr>
<tr>
<td>R2</td>
<td>23</td>
<td>rogue behaviour</td>
</tr>
<tr>
<td>R1</td>
<td>18</td>
<td>resource leak</td>
</tr>
<tr>
<td>R0</td>
<td>7</td>
<td>infection</td>
</tr>
</tbody>
</table>

Each of these top level categories might have a series of contributing detail risk factors which are combined to give the summary expectation or risk value. We will explore the possibilities for this in combination with adaptation factors in other sections.

9 Bayesian Approach

Bayes Theorem, as a learning rule, is a calculation which tells us how to update our prior knowledge when we receive new data.

As this is probably somewhat confusing to most a simple example is in order. Let us take the simplest form of the equation as:

\[
p(a|b) = \frac{p(b|a) \cdot p(a)}{p(b)}
\]

We will assume that \( a \) is a proposition given purportedly related evidence \( b \), and that the probability of \( a \) given \( b \) is \( p(a|b) \). On the right side of the equation \( p(a) \) is the probability that \( a \) is true and \( p(b) \) is the probability that \( b \) is true. The probability \( p(b|a) \) is based on \( b \) being true given \( a \).
If we now assume that for proposition a, god is as likely to exist as not, then the degree of belief in this probabilistic assertion p(a) is initially 0.50 or 50%. Now let us suppose that a series of data events transpire which we will consider as related evidence b. We will suppose that these events b are possible miracles and that at the time of consideration three quarters of them or 75% are believed to be true, such that p(b) = 0.75.

Now we consider what the probability of the miracles or b being true given god exists or a being true is. This probabilistic assertion is expressed as p(b|a). Let us say that belief in that might rise to 90% if most of the evidence supports the proposition, thus p(b|a) = 0.90.

Thus given the new accumulated data about the miracles we have:

\[ p(a|b) = \frac{p(b|a) p(a)}{p(b)} = \frac{0.90 \cdot 0.50}{0.75} = 0.60 \]  

(1.6)

This has now changed the probability of the initial assertion, a, that god exists, up to about 60% from 50% on the basis of accumulated evidence, b.

What we learned from incoming data is combined with our prior knowledge. As indicated this is calculated from prior information I\textsubscript{prior} forming a prior model only probability p(model|I\textsubscript{prior}) combined with a data only p(data|I\textsubscript{current}) probability, which is called the evidence.

\[ p(model|data, I_{current}) = \frac{p(data|model, I_{current}) p(model|I_{prior})}{p(data, I_{current})} \]  

(1.7)

The term p(model|data, I\textsubscript{current}) on the left describes the degree to which we believe that the model could have produced the currently observed data on the right. The p(model|I\textsubscript{prior}) term on the right describes the degree to which we believe a specific model is the correct description before we see any new data.

Plugging the variables for our example we get:

\[ p(god|miracles, I_{current}) = \frac{p(miracles|god, I_{current}) p(god|I_{prior})}{p(miracles, I_{current})} \]  

(1.8)
A Bayesian belief network is a powerful knowledge representation and reasoning tool under conditions of uncertainty. It involves what we believe is happening, what our beliefs are based on and how we might find out if a belief is not true. An example of a belief network is the NASA Vista mission control launch safety system with an all ok belief.

Recently significant progress has been made in the area of probabilistic inference on the basis of belief networks. Many belief network construction algorithms have been developed and are often defined by components. One component is a directed acyclic graph (DAG) with a conditional probability distribution for each node.

A Bayesian network uses DAG to represent dependency relationships between variables, where DAG networks contain nodes which represent domain variables and arcs between nodes represent probabilistic dependencies.

Another Bayesian network component consists of a conditional probability table (CPT) for each node. A conditional probability is the probability that an event will occur, when another event is known to occur or to have occurred. This allows the possibility of probabilistic branching or navigation of probabilistic events. Such technology can be used to predict possible outcomes given a set of conditional branches.

Bayesian network awareness is a possible implementation subsystem of several characteristics of autonomic networking. It combines Bayesian theory with neural networks and determines the probability of certain activities that may happen within a network.

Some success stories include electrical power grid load prediction with user analysis and trend modelling.

- Weather and storm prediction with sensor correlation.
- Internet traffic analysis including network link use maps with trend modelling
- Internet future build-out prediction.

Bayesian probability networks are trained on various data factors, generally collected from a computer...
network. Data may contain certain network measurements, for example packet loss rates, available bandwidth, latencies, number and type of packets, routing information, address resolution protocol statistics and cache data hits or misses. Data is collected over time and may result from either normal or abnormal network behaviours.

In this system learning is unsupervised and continuous which infers the probability of certain future network behaviours. The results from trend analysis may be combined with predefined rules to represent and solve decision problems (i.e., influence diagrams) and can generalize to novel data.

A Bayesian approach would work by supplying timely top level indicators of abnormal behaviours. Some of the underlying factors are monitor stack triggers, network events and ongoing distributed learning of normal activity.

A monitor stack details the normal behaviour of packets, conversations and data streams and converts them so they are represented as vectors of scalars or columns of numbers. The internet protocol or IP analyzer listens to entire packets regardless of subprotocol content. The user datagram protocol (UDP) or transmission control protocol (TCP) analyzer listens to subprotocols within the IP packet.

\[ 	ext{Figure 8: Monitor Stack Front End Overview} \]
The data taps for monitor stacks can be placed anywhere on a network, however preferably on the main high volume links with transparent taps that listen promiscuously to all packet traffic. A typical link is packed with heterogeneous traffic. The sources of variety include packets from different hosts with particular conversations from differing applications. Some packets carry asynchronous unidirectional communiqués with no acknowledgement.

The pace and duration of connections is variable. Automated transactions such as domain name server or DNS and hyper text transfer protocol or HTTP requests often take less than a second. Login sessions such as Telnet, operated directly by humans, may persist for hours. Email transactions such as simple mail transfer protocol or SMTP could have differing payloads. Payloads carried vary remarkably between applications, where some hold exactly formatted text, others encode manual edits of users at keyboards and yet others send binary data in large blocks.

Generally one can consider the network as composed of transit nodes and end nodes connected by links. Each packet has a series of embedded headers which direct the operation of protocols. When the headers are decoded by a hybrid hardware and software protocol stack in transit or end nodes the conceptual network layers are implemented. Thus the network layers are represented by embedded structure in the data stream itself. This is only possible if this structure is generated and decoded appropriately by node internal dynamics which are listening to the data stream.

A monitor stack supplies sensor nodes of some form, often input nodes of a neural network with a stream of data. The sensor nodes accept a vector of scalars where each scalar has an associated weight which can be adjusted by learning. The strategies for sensor nodes include a minimal number for what is important, reducing overall network complexity and disabling nodes that are not contributing. This arrangement similarly depends on the correct interpretation of network layers and packet eccentricities, including unexpected factors.

One of the main considerations for belief networks is autonomous adaptation in a distributed environment. In particular what sort of adaptation might be needed and how these can be recognized in a manner suited to autonomies.

The known issues and challenges include scalability. Belief networks are computationally extremely expensive. Notably Bayesian inference relies on degrees of belief which is not an objective method of induction. Generalization to novel data in downstream neural networks can be problematic. The construction and maintenance of belief networks remains a time consuming task.

10 Notional Network Analogies

It should be noted that the layout of information on a DNA molecule is very similar to serialized memory or a packet stream. The main issue with serialized memory or packets is where particular sections with certain meaning start and end. The particular resulting information that is partitioned off by demarcation and intermediating modifying processes is only of meaning to an end node application, such as a particular protein enzyme or application.
Just as there are layers in a synthetic network, where the meaning of differing aspects of raw physical information play out; we assume so too in biological networks.

Table 8 Network Layers and Notional Biological Equivalencies

<table>
<thead>
<tr>
<th>Layer</th>
<th>Group</th>
<th>Description</th>
<th>Notional Equivalency</th>
</tr>
</thead>
<tbody>
<tr>
<td>L7</td>
<td>Application</td>
<td>network interface to application software, supplies hooks for communications modules</td>
<td>folded protein functional relationship to cellular context</td>
</tr>
<tr>
<td>L6</td>
<td>Presentation</td>
<td>transformation of eccentric information to local context</td>
<td>transformation and folding of protein plus garbage collection of misfolds</td>
</tr>
<tr>
<td>L5</td>
<td>Session</td>
<td>node to node eccentric information flow, stripped out of underlying protocol stack from payload</td>
<td>transformation of messenger RNA to amino acid polymer in ribosome, transfer RNA to ribosome protocol for RNA code conversion to particular amino acid</td>
</tr>
<tr>
<td>L4</td>
<td>Transport</td>
<td>node to node logical link protocol, provides reliability level and condescending (or not) flow control</td>
<td>regulatory cascade protocol provides conditional (condescending) feedback for stoichiometric balance of protein species expression</td>
</tr>
<tr>
<td>L3</td>
<td>Network</td>
<td>inter-node path learning and logical level addressing</td>
<td>intron and exon manipulation with splicing operation plus chromosome to ribosome path transit factors and correct directional mRNA initiation</td>
</tr>
<tr>
<td>L2</td>
<td>Data Link</td>
<td>node identification and base level addressing</td>
<td>formation of transcription initiation complex on particular genetic</td>
</tr>
<tr>
<td>L1</td>
<td>Physical</td>
<td>physics level signal and transmission</td>
<td>site molecular level dynamics, chemical reactions and molecular species stoichiometric and transport factors</td>
</tr>
</tbody>
</table>

11 Synthetic Life

Similarly to considerations for the fundamental particles of the universe one might ask why particular biological configurations are like they are and not some other way. After all it seems biological systems must be based on the physics of fundamental particles. Thus one might claim that the intrinsic factors of life forms are an extension of the possibilities inferred by underlying physics.
Notably in particle physics when one is considering large collections of particles statistical methods become the prevalent choice for describing possibilities. These methods in turn rely on underlying degrees of freedom for change whereby variation is possible, thus forming the basis for complexity. Thus forms of complexity, though occurring merely by chance, are theoretically predictable from a statistical perspective.

Apparently the simplest replicators we have observed, to date, are prions and single or double strand polymers of ribonucleic acid (RNA) or deoxyribonucleic acid (DNA). Notably RNA and DNA polymers have four monomers from which to construct variations. The shortest viruses composed from these polymers are at least a few thousand monomers in length. One might consider the possibility that if shorter replicators exist they could either be extinct or seldom occur and are undetected. It seems what we are observing with viruses is quite far downstream from the initial replicator populations, which likely were much shorter and simpler.

11.1 Replicator Dynamics

From the perspective of developing an emulation of replicator functionality and starting from hypothetical replicating systems, deemed necessary as a precursor to more complex molecular interactions, consider the basic steps required. A single molecule replicator might be created by chance in a molecular reaction or, for example, on a scaffold of some form. Once formed and active a replicator might then proceed using subcomponents, assumed present in the vicinity so as to grow and create copies.

The instance models are the expression of the replicator codes to form a working physical model which survives (or not) as part of a population whose instances share common code. The specific physical instances are known as phenotypes which are the realization through genotype to phenotype mapping of the replicator polymer sequences. Genotype indicates the collection of genes represented as coded groupings or expression protocols recorded on the replicator polymer sequence.

In evolutionary dynamics complexity is built up over time to add logical depth to the replicator code, leading to the possibility of hierarchical complexity [10]. It seems biological hierarchical complexity, somewhat similar to object oriented software, integrates collections of objects of one level and relates them to entities of the next higher level.

For example genes, which might be considered expression protocols, are combined and integrated into chromosomes or long code strings. These long strings of code are the equivalent of design libraries of hierarchical phenotype features. They contain several thousand different coded groupings combined with controlling algorithms for their selective expression.

These coded groupings of phenotype features require some form of intermediating mechanism for expression, whereby genotype to phenotype mapping takes place. If all of the information about the physical implementation is actually contained in a coded string then so too must be the mapping.
mechanisms. However this is a contradiction as how can one map anything without mapping tools.

Thus it seems a mapping system must be provided to some extent as a symbiotic additional component to the coded string. This would not be the case with simple replicators as they merely make copies and grow in length.

The fundamental mechanism by which adaptation and selection with respect to an eccentric and co-adapting context take place [11] is of paramount importance for creating a synthetic equivalent. The population models have a critical role by selective attrition of phenotype variants. An evolving eccentric context or environment acts by deleting or diluting replicator code variants forming a co-evolutionary context system.

The co-evolutionary system is a feedback mechanism implemented through for example: competition or symbiotic augmentation with other phenotypes, reproduction rate, disease or other parasitic culling of the population and general environment factors such as climate change. The entire co-evolutionary system with all of the phenotypes in the local context and other environment factors forms a complex dynamic feedback to the population model and population support models.

Population support models are a characterization of prevalent variants which, once established, generally undergo gradual mutation, with a few spurts, as they are often critical to all downstream variants. For example the transition from single strand replicators to single cells then differentiated multicellular body plans are all accompanied by more elaborate support models. In multicellular eukaryote cells an extra nuclear membrane, or small soap bubble support model, separates the cell into two main compartments, rather than just one, with the inner one serving as a protected domain for DNA.

**Molecular Transport**

Cells are constructed from precise molecular machinery part of which are internal membranes, filaments, tubes and vesicles. The vesicles are tiny bubbles of fat or lipid, similar to a miniature cell wall, which act as part of the cell's internal transport system. They can capture and send molecules such as enzymes, neurotransmitters and hormones, to particular destinations within the cell. Vesicles can fuse or exude with or from a cell membrane. This enables timed and gated release of their contents into the adjacent partition.

The vesicles have surface features which serve as docking signatures that enable recognition of particular sites where the cargo is to be offloaded. For our purposes the neurotransmitters are an interesting factor. Vesicles of neurotransmitter are formed and transported down the axon to be released at a particular time and site at a synapse.
**Phenotype Mapping**

The human genome exists in a eukaryote variant and contains roughly 25,000 genes or subsystem description codes arrayed on the chromosomes or strings. To selectively express the thousands of short segments of information contained in DNA strings it must be read and converted as indicated in Figure 9.

Each gene has a specific position on the chromosome, the gene locus. Typically, a gene is made up of exons, introns and a promoter region. The promoter region is the regulatory area upstream to the gene that controls gene expression.

A TATA box is a DNA sequence found in the promoter region of some genes. A transcription factor is a helper protein molecule that binds to a particular DNA pattern. The gene contains motifs or markers which transcription factors bind to, where a promoter element is the site where a helper molecule such as RNA polymerase (RNA Poly II) will begin to read and transcribe the DNA coding region into messenger RNA (mRNA).

Basal transcriptional factors are a class of protein transcription factors that bind to specific sites on DNA to activate transcription. As indicated in Figure 10 a completed assembly of enzyme and transcription factors with RNA polymerase bound to the promoter forms the eukaryotic transcription initiation complex.

In eukaryote cells microRNAs can regulate gene expression through trans-acting and cis-acting transcription factors, as indicated in Figure 10. The concentration of a single microRNA sequence can affect the expression levels of hundreds of genes, thus providing a systemic shotgun feedback system for complete gene subsets, and hence a genotype to phenotype mapping hierarchy.

The gene may be a linear patchwork of exon and intron segments, as indicated in Figure 10, where in the process of transcription the intron sequences are removed and the exon segments are joined resulting in the final sequence encoded in mRNA.
The expression, or transformation, of gene code information into protein polymers or polypeptide after splicing operations for mRNA codes is by conversion via a related sequence of amino acid monomers thus knitting together a protein polymer.

The selected protein polymers are very unusual (rare), from a folding perspective, having the ability to fold up on itself in a self energy minimization process, due to the monomer sequence involved, into an eccentric globular shape. Each shape has particular functional attributes, such as enzyme (catalyst) or structural specific factors.

**Biological Ribosome Model**

The knitting together, or polymerization process, occurs in a specialized molecular machine composed of a combination of RNA and protein called a ribosome. There are a regulated number of ribosomes located in a typical cell.

---

*Figure 10: Biological Gene Expression*
The ribosome translates the mRNA by reading contiguous code triplets and converting them to an amino acid, which is polymerized into a string. This converts the base code into a more useful and durable format which can fold up into useful patterns. This could not be accomplished with DNA or RNA alone. The amino acid polymer or protein generally folds up on itself in an energy minimization configuration as it emerges from the ribosome. Once the protein is released from the ribosome it becomes an autonomous agent which is available for transport to other locations in the cell.

The rate of production and the eccentric properties of correctly folded proteins is thus due to several layers of rate modulated, feedback controlled infrastructure, thereby generating differing protein expression factors for differing local spatial temporal cell contexts. This is the primary mechanism for genotype to phenotype mapping. We will consider an equivalent process for synthetic phenotype mapping using software agents rather than proteins, however created by a somewhat similar process.
Notably this process depends on some rather sophisticated external factors to the base code alone in the form of a series of complex and eccentric genotype to phenotype mapping mechanisms. In the biological context this may be due in part to the gradual increase in logical depth whereby genotype to phenotype mapping is affected, thus increasing the opportunities for modulating or up and down regulating expression factors.

This regulatory feedback system is often called a regulatory cascade and gives the overall mapping system a great degree of flexibility that it would not otherwise possess.

11.2 Regulatory Cascade

The regulatory cascade not only controls cellular infrastructure but also cell differentiation as a function of local temporal spatial context, so as to implement the growth of a complex body plan. Marker genes [12] apparently increased to some degree at the beginning of the vertebrate revolution. This opened up a population support model for more elaborate spatial temporal differentiation on the basis of multi-cellular regulatory feedback loops.

The evolution of vastly enhanced three dimensional body plan arrangements ensued. Of particular interest to us here is the layout of the brain. Just as the body became more elaborately structured, and interconnected, so too did the brain [13]. For example humans contain 39 HOX genes in four clusters.

Table 9 Human HOX Genes

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Chromosome</th>
<th>Genes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOXA</td>
<td>chromosome 7</td>
<td>HOXA1, HOXA2, HOXA3, HOXA4, HOXA5, HOXA6, HOXA7, HOXA9, HOXA10, HOXA11, HOXA13</td>
</tr>
<tr>
<td>HOXB</td>
<td>chromosome 17</td>
<td>HOXB1, HOXB2, HOXB3, HOXB4, HOXB5, HOXB6, HOXB7, HOXB8, HOXB9, HOXB13</td>
</tr>
<tr>
<td>HOXC</td>
<td>chromosome 12</td>
<td>HOXC4, HOXC5, HOXC6, HOXC8, HOXC9, HOXC10, HOXC11, HOXC12, HOXC13</td>
</tr>
<tr>
<td>HOXD</td>
<td>chromosome 2</td>
<td>HOXD1, HOXD3, HOXD4, HOXD8, HOXD9, HOXD10, HOXD11, HOXD12, HOXD13</td>
</tr>
</tbody>
</table>

Thus molecular evolution has transpired through the variation and selection of genetic code related loops, which allows the flexible adaptation of species, and their subsystems, to a changing context. The myriad of details in terms of fine tuning and context based feedback involved in the evolution process indicate that it is not only the DNA, but also the extensive array of supporting agents in the cell, that work together to facilitate marker gene related contingent eccentric spatial temporal expression of genes.
Clearly the transcription process would not be effective unless controlled by an elaborate feedback system, known as a regulatory cascade. The critical feedback factors, some of which are indicated in Figure 12, are from the general context enabling regulation, apoptosis and proliferation. In a synthetic system which mimics the biological case an equivalent system of messengers and receptors with feedback mechanisms to regulation are required.

From our perspective we would like to determine what aspects of this system are critical to evolutionary factors and how they can be harnessed in somewhat equivalent synthetic evolution. Programmed cell death, immune system modulation, survival factors, neurotransmitter factors, growth factors, extra-cellular matrix factors, hormones and embryonic development factors can be implemented through the emission and sensor arrays of an evolutionary network element.

This infers that these messengers are produced by subsets of network elements under some eccentric conditions and detected by others, assuming a distribution system of some form.

*Figure 12: Biological Gene Signal Transduction Pathways Overview*
11.3 Synthetic Gene Expression

A biological cell generally converts useless raw information stored in DNA sequences into useful and eventually functional amino acid polymers or proteins. The resultant eccentric protein populations would not be of much use unless transported to and integrated into an appropriate local context, where the functional factors are applied.

In a synthetic context, software based agents have the potential to take up the role performed by proteins in biological systems. Agents must similarly be integrated into an appropriate context so as to enable their functional factors, however like proteins are somewhat independent and autonomous entities such that populations of eccentric agents can perform a wide variety of tasks. Just as a wide variety of proteins combined with other molecular forms carry out the orderly functioning of a cell so too might a wide variety of agents combined with underlying context factors.

Similarly to the biological case a population of coordinated agents are required to work together to facilitate expression. Expression is a complex pipeline from stored information in DNA or the synthetic equivalent (sDNA) to folded proteins or activated agents, plus other factors as required.

For the synthetic case we will assume sDNA is structured similarly to DNA however coded somewhat differently to enable production of agents rather than proteins. We will assume that the sDNA codes have some correspondence to the primitive elements of a set of context associated virtual machines (VMs). Similar to the biological case a synthetic ribosome transcription process converts sequences of sDNA to VM codes. The raw VM code is equivalent to an unfolded protein which with some post processing equivalents to folding, transportation and integration produces populations of eccentric active agents.

For this type of situation we suspect a typical VM will not be suitable. That is due to the fact that although one might find transcription mechanisms for any arbitrary VM those which, unlike proteins, impose too strict a constraint on precision will not be easily susceptible to evolution. If mutations occur in the DNA gene coding region for example then these are transcribed into the protein which might then fold up into a somewhat different pattern. Clearly there is a reasonable degree of variability in this regard so as to allow for highly conserved sequences which are very sensitive to mutations and also sequences which are still operational despite mutations.

Figure 13: Synthetic Gene Structure
For the synthetic case where sDNA code is being transcribed to VM operators, of some form, a similar degree of variability to protein folding is inferred so as to allow for mutations. If the alteration of the sDNA sequence is always fatal to agent functionality then evolution would be forestalled. Thus we need a particular type of VM which has the ability to create and host appropriate agents but is highly tolerant to mutations so as to enable evolution to proceed.

An incoming synthetic mRNA or smRNA using the synthetic equivalent of a ribosome must convert smRNA patterns to something that is able to access the resources of a virtual context based on real hardware. A typical VM generally expects to see a set of instructions or operators and object or data references and has a hardware specific back end, thereby allowing the VM to run. One might consider the possibility of a synthetic ribosome and some post processing creating a custom VM with an eccentric intrinsic agent as part of the package for each smRNA.

A custom VM would have to be tuned to particular eccentric hardware. Thus in order to generate the VM the hardware information must be present in the smRNA. On the other hand if a universal common VM were adopted as part of the context then only the agent code would need to be present in the smRNA. Agents tend to be fairly simple and eccentric programs that listen to a context and interact with it under particular circumstances. It is only by having large populations of these simple agents that complexity can be built up.

Figure 14: Synthetic Gene Expression
In a conventional computer a VM is usually hosted by an operating system, which is in itself a form of VM, often masking the true nature of the hardware context from applications. One might consider that smRNA in a sense carries the dormant code for applications which when activated become part of the operating system of the cell. Just as differing cells, such as brain cells or muscle cells, require differing protein populations to function in an orderly manner so too differing hardware platforms or nodes in a network.

Unfortunately regardless of the level of nesting for a VM based on conventional computing the issue of a precision interface in the form of practically immutable code sequences remains the same. This leaves us with the option of finding a more flexible interface. In a predominately digital context however flexibility is often only an artifact of conversion of the problem space to something other than binary form, so that minor alteration of ones and zeros does not cause a system failure.

As with biological cells there are default pathways in the synthetic case that are required for survival regardless if the cell or, for example, network element, does anything useful or not. These pathways include the transcription process itself and, it seems, all of the factors involved. Thus assuming these are accomplished by clusters of agents we must produce at least a modicum of those types regardless of

![Figure 15: Synthetic Ribosome Model](image)
location in a complex body plan. Other types of agents, which are generally only expressed due to the eccentric function of a cell or network element in a particular context or location must be suppressed and transcribed when the conditions are right.

**Synthetic Ribosome Model**

From a preliminary equivalence perspective we will assume a synthetic ribosome creates an agent from objects, which are specified by a smRNA sequence. Similarly there are a regulated number of synthetic ribosomes located in a typical network element (cell).

The triplet code for an amino acid or object is A, U, C or G and includes at least 61 unique identifiers. In any case it seems the synthetic situation confers expression mapping as an object, which includes all the possibilities from amino acids to software, hardware or quantum computing objects or their hybrids. We are inferring that these are smart objects and can adjust themselves to their neighbours. Also given numerous objects they can reconfigure and map internal communication systems and other organizations. For example this could include network components, neuromorphic subsystems, ANN/SOM arrays and communications subsystems.

As our goal is to have basic building blocks for fairly simple agents that work together we are assuming here that these agents internal object structure would mainly be expressed in a localized manner such as within an evolutionary network element. This infers all of the functions we are inferring in the block diagrams from evolutionary network elements to scaffolds would be performed by interacting autonomous agents constructed from objects.

Object oriented programming does not follow the model of linking arbitrary objects together into a polymer and have them autonomously rearrange themselves into a functional agent. Thus we are proposing a novel manner in which to form appropriate objects fit for this purpose. The linking process by which objects are tied together similar to amino acids infers the possibility of sophisticated linking agents which are able to reconfigure standard objects to the context of a particular agent. This may require that the synthetic ribosome and linking agent are aware of the target agent the object polymer is destined to create, inferring a header of some form for the smRNA.

**Agents By Linked Objects Model**

Within the assumed evolutionary network element architecture as with cells there are commonalities shared between all of them, so each network element would have a minimum default or pre-existent set of agents. Other optional agents would only be expressed for eccentric functionality, the same as for the biological case. A preliminary example of such a shared default agent would be the synthetic transport RNA (stRNA) agent which fills in for tRNA.
As indicated, smRNA specifies linked objects which have a particular functionality. After being linked they exchange parameters and organize among themselves establishing more linking patterns somewhat similar to protein folding. The linked pattern then tests it’s own collective functionality as an agent and establishes communications with other agents to perform tasks.

The synthetic ribosome and linking agent enable the objects as part of the agent under construction, starting communications and initializing parameters. As our goal is to have basic building blocks for fairly simple agents that work together we are assuming here that these agents internal object structure would mainly be expressed in a localized manner such as within an evolutionary network element. This infers all of the functions we are inferring in the block diagrams built from evolutionary network elements will be performed by interacting autonomous agents constructed from objects.

Figure 16: Transport (stRNA) Agent Model
Object oriented programming does not generally follow the model of linking arbitrary objects together into a polymer, and have them autonomously rearrange themselves into a functional agent. Thus we are proposing a somewhat novel manner in which to form appropriate objects fit for this purpose.

The linking process by which objects are tied together similar to amino acids infers the possibility of sophisticated linking agents which are able to reconfigure standard objects to the context of a particular agent. This may require that the synthetic ribosome and linking agent are aware of the target agent the object polymer is destined to create.

The objects contain a message router to direct messages between objects and their components. Each object has a supervisor with parameters and an eccentric function system which differentiates the objects from each other.

**Synthetic Location Marker Gene Expression**

In biological cells complex body plans are created somewhat similarly to how a three dimensional printer works, however using cell mitosis or splitting and subsequent specialization during growth. This is apparently accomplished by a hierarchical set of marker genes, which are activated by location dependent feedback. The marker genes, it seems also configure location factors emitted by neighbouring cells and allow the expression of other gene sequences by up or down regulating them by location. Thus in a large complex body one might require a large set of marker genes in order to supply a reasonable degree of differentiation on successively finer scales.

From preliminary investigation it looks like there is a nested expression pattern in DNA to do with the location marker genes [14]. Apparently the axial body plan expression of proteins is controlled by a series
of bracketing loops and it seems that three dimensional replication would require nested x, y, z loops of increasing resolution. In such case we will need to develop an equivalent for network elements so that they can form complex structures. It looks like the genes are markers, of some form, for loop nesting and their location changes the overall structure by including or excluding proteins expressed by regulatory cascades within the loop. If this is true then the more markers the greater the possible body plan complexity. This could be accommodated by x,y,z sub-region or sub-loop.

Thus it seems we need a hierarchy of location markers with nested finer grained markers for each sub region. This infers the possibility of markers down to local neighbour cell arrangements as a sub region. We might be wrong but it seems like the particular location of a start marker gene is acting like a location conditional promoter for the genes within the loop marked by an end or terminating marker gene. It seems the particular loops are triggered by the regulatory cascade on the basis of location which is determined by relative concentration of location markers. The location markers must in turn be triggered and emitted by the type of cell at a particular location. A cell is acting like a location beacon once eccentric expression identity is firmed up. There must be some form of threshold system to mark the end of a structure with a switch condition to change marker nesting.

![Figure 18: Synthetic Marker Gene Expression](image)

In our preliminary synthetic nested marker location system the location markers are on the left and condition the promoter regions on the right so that the contained gene sequence is only expressed if all of the promoters are enabled by location markers. In other words a string of eccentric genes are only expressed if the current location lines up with all of the current markers. In this system the availability of location information limits growth. If the location information is being produced by existent cells then there will be no expression and hence no growth other than in the vicinity of those cells even if the marker tags would interpret the location correctly.

The total length of the genotype is increased by redundancy in the synthetic marker system tags, however once established there can be a series of grouping and compression operations ordering genes into common location slots, thereby reducing the total genotype length. Given the granularity of a fully developed structure, say for example $10^{10}$ network elements (cells) in a finite volume the initial scale of
the genotype would be determined by the size and number of individual location tags required plus the gene sequences. Assuming a marker tag pair is in the order of 100 symbols long and there are 10 sublevels then each gene of each cell would initially require an extra 1000 symbols to specify expression location. That would amount to $10^{13}$ genotype symbols times the average number of genes expressed per cell.

If on average there are 10000 genes expressed per cell then we would require $10^{17}$ symbols for raw location information alone. Additionally if, for example, each gene has an average length of 10000 then we would need $10^{21}$ symbols for the total structure. This raw conglomerate could then be reduced by various means such as groupings, sub-clusters and hierarchies of genes, as well as default genes that are present in all cells. In any case it seems we are looking at about $10^{21}$ symbols for the basic genotype compared to complex biological genomes which are apparently in the order of $10^{10}$ symbols long. If this is a roughly equivalent amount of information we should be able to find (evolve) numerous ways to compress the total down to that range.

It seems to get the geometry right we will need the network elements to realize which direction is which in order to emit a spectrum of location markers in their vicinity depending on current internal status. This has in turn been determined to some degree by the previous emissions of other network elements once a significant number have replicated. Thus the first network elements must establish the global directions. The replicants might then proceed to multiply in quasi-random globular (spherical) formation with minimal local gene expression other than what is required to start emitting more detailed location markers. The location marker hierarchy, it seems, can be based off of global markers as the globular array increases in size.

Figure 19: Network Element Evolution
However assuming the location marker hierarchy is itself to some degree determined by location specific gene expression it seems the global location system must enable at least a certain degree of the hierarchy. This infers a set of global synthetic marker tags which are enabled as the growth reaches that size which then activates more of the hierarchy gradually establishing a location marker equilibrium throughout the entire structure. Replication could be made to depend on the existence of a hierarchy matching the internal requirements of a network element so as to curtail growth at boundaries.

Once a reasonable (threshold) size is achieved along with marker equilibrium then the specialization of network elements can proceed. Clearly all of this will happen in a dynamic or phased manner so no true marker hierarchy equilibrium will endure. Rather the entire structure should specialize as it is growing in size concurrently, similar to the biological case. Also it seems we can grow a more or less continuous eccentric spatial array then optionally prune network elements away with some form of location dependent genetic expression based apoptosis, so as to form a more interesting and arbitrarily detailed topology.

**Synthetic Regulatory Cascade**

As can be seen with the localized scope of messages for a synthetic location marker system, so too all of the factors for a synthetic regulatory cascade system, in general. The eccentric messages for sensor arrays are sent by entities encompassing local or global scope. Programmed cell death, immune system modulation, survival factors, neurotransmitter factors, growth factors, extra-cellular matrix factors, hormones and embryonic development factors must all be coordinated across the phased development and growth of the system. Once the system leaves a phase or attains a steady state equilibrium some of the messages, such as embryonic development factors will drop.

### 12 Emergent Networks

From the perspective of developing machine based biological equivalency in networks there are several factors that should be considered. Notionally somewhat similar to the DNA expression system mediated by mRNA a packet is a structured information abstraction which changes physical form as it traverses the network. Somewhat similar to the intron and exon splicing operations packets are composed of disposable parts that serve a temporary purpose. The source and destination of a gene are generally small components of an overall system, so too with packets which are often fragments of a larger structure.

Expressed DNA is translated into a polypeptide string which folds into a functional glob or convoluted string, possibly combining with one or more other molecular structures to create components. If we consider a packet which has some payload the data might be of a wide variety of type possibilities, some of which one might claim are similar to the biological case.

The process of moving information from a DNA coding region to a target location is by a complex process of diffusion and eccentric molecular interactions with internal structures in a cell. The target location is often determined by the eccentric match between molecular geometries, electrostatics and quantum processes of two or more components. This means that numerous copies of an expressed entity could match the same target location, and so one might say that they compete to some degree.
In a network there is a coalescence or concentration of packets onto common fabric such that one might similarly claim that there is competition for specific locality with respect to a target. However in general one would prefer an orderly sequence of packets in a network.

A network is built up from links or segments that have sufficiently common features with other instances so that interoperability is possible. A network segment can include switches and routers. Switches are devices which accept numerous physical links and combine the packet traffic on a common backbone circuit or fabric, thereby concentrating or coalescing the traffic.

In packet networks the embedded headers often use delimited patterns as learnable forwarding or classification factors, so as to implement a system of dynamically reconfigurable transit nodes.

The abstract or notional factoring of network layers, indicated in Table 8, depend in part on specialized protocols and underlying mechanisms implemented between nodes.

This is combined with node internal modulating patterns, so as to facilitate intermediating path segments which optionally go between differing domain authorities. Such a schema infers parsing or correlation of some flow signal patterns usually present in a packet header, at some nodes, so as to determine the possible paths on which a flow signal segment or packet can be sent.

One might consider packet oriented operations as a combination of reinforcement and supervised learning, implemented in software, somewhat similar to midbrain and cerebellum handling of sensor flows. As the top of the network layer stack is approached opportunities for unsupervised learning are possible.
12.1 Packet Headers

This facilitating labelling or "in band" tag arrangement infers nodes maintain modulating persistence systems, whereby such correlation is possible. The scope of layered flow forwarding fabric scales in part with the complexity of labelling patterns. As the network scales up greater complexity is required, as inferred by Figure 21 for Internet Protocol version 6 (IPv6), inferring somewhat more parsing and decoding operations on the fly than its predecessor, Internet Protocol version 4 (IPv4).

The inter-frame gap (IFG) separates the packets on the physical layer to allow an interval for the decoding mechanisms to distinguish packets from each other, and to guarantee they are not overlapping or malformed. The preamble (PRE) is a repetitive signature, somewhat similar to transcription factors on DNA, which serves as a demarcation pattern for the beginning of a significant sequence.

The media access controller (MAC) or link layer control (LLC) is a key in lock mechanism, similar to TATA on DNA, which indicates the following sequence is only for a particular decoder system or network adapter on a segment. Once a network adapter, listening to all of the flows on the segment, has identified itself the rest of the flow is passed through it internally.

This is somewhat similar to the mRNA transcription initiation process.

The network adapter generally passes the flow to a software system which then decodes the rest of the information. The 40 octet or byte IPv6 header is parsed on a bit by bit basis for the encoded information. The version (VER) of the internet protocol is decoded and used to switch between software handlers. The traffic class (TC) indicator enables different priority for packets, so that their position in waiting queues can be modified.

The flow label is an indicator such that differing packets in a flow cluster with the same flow label should be given equivalent treatment. This infers that a router has to maintain some level of memory or persistence so as to distinguish and implement such a policy across a packet stream. This might be considered somewhat similar to clustering mechanisms in DNA transcription where microRNA can regulate numerous differing expression rates.

The 16 bit payload length indicates how many octets or bytes are in the total payload including the transport layer header, up to 65,335 bytes. If this value is set to zero then an optional 32 bit extension value is used so that much longer super jumbo frames or jumbograms can be used up to 4,294,967,295.
bytes. This is similar to the length of the human genome, where the total number of base pairs is about 3.2 billion, with a large variation in the size of the individual 25,000 gene segments and other factors, contained therein.

In the current network implementation most gigabit Ethernet network adapters will only pass up to about 9000 byte packets, however we believe this will gradually scale up over the long term [15]. The maximum segment size (MSS) is plotted against the normalized effective duplex payload throughput in Figure 22.

![Figure 22: Maximum Segment Size (MSS) Growth with Network Throughput](image)

The point at which half the effective payload throughput is obtained \( (n_{1/2}) \) may be more indicative of practical average size and ranges from 2,595 bytes at one gigabit to 252,200 bytes at 100 gigabits. The interframe-gap inflation-factor is composed of several contributing subcomponents.

The next header field of the IPv6 header, of Figure 21, indicates the type of the embedded protocol, which in this example is transport control protocol or TCP. The hop limit field is a counter that is decremented...
each time a transit node is traversed such that when it reaches zero and has not reached the final
destination the packet is discarded or dropped.

The source address is the IPv6 address of the sending entity or node for the packet and the destination
address is the target IPv6 address for the receiving node. The destination address is used by transit node
routing protocols, in combination with lookup tables for ranges of destination addresses, to determine
what to do with a packet.

The lookup tables are learned by some routing protocols by listening to update packets from other transit
nodes. Thus the hop by hop path that a packet takes through a network is determined by a set of
dynamically adjusted lookup tables at each transit node, giving the system a degree of flexibility. If the
path updates are compromised in some manner then the network ceases to function effectively.

The TCP header has several fields which influence protocol operation. This is followed by the TCP
payload data for the destination port which is one of several possible ports at a particular IPv6 destination
address. The data is handed off to the active session for the port or layer (L5). The frame check sum
(FCS) is meant to facilitate checking that the data for the entire frame has not been corrupted during
transit. There are other error checking mechanisms for embedded elements of the frame, and also on the
physical layer.

The "Network" layer, indicated in Table 10, is responsible for packet forwarding including routing through
intermediate routers or transit nodes, whereas the "Data Link" layer is responsible for media access
control (MAC) or dealing with the particular eccentric media handling devices attached to the network,
plus flow control and error checking.

The "Physical" layer is hardware specific network infrastructure which supports the abstract logical
commonalities built on top of it. The "Transport" layer supports end to end (e2e) communications
services, usually implemented in software such as TCP/IP (Transmission Control Protocol/Internet
Protocol) stacks or protocol layers.

The "Session" layer facilitates the start up and end off of temporary connections between higher level
layers. The "Presentation" layer facilitates delivery and translation or formatting of data for the
"Application" layer, which is the user interface factor generally implemented in software for a particular
eccentric set of tasks.

12.2 Learning Opportunities

Each network layer presents potential opportunities for learning and adaptation, as opposed to merely
mechanistic alignment with expected parameters, within given tolerances. An intrinsic adaptive capability
should facilitate long term growth of the network, by minimizing legacy factors which block the deployment
of new technology, due to compatibility issues.
Table 10 Network Layers and Notional Learning Equivalencies

<table>
<thead>
<tr>
<th>Layer</th>
<th>Group</th>
<th>Description</th>
<th>Notional Equivalency</th>
</tr>
</thead>
<tbody>
<tr>
<td>L7</td>
<td>Application</td>
<td>network interface to application software, supplies hooks for communications modules</td>
<td>unsupervised and supervised</td>
</tr>
<tr>
<td>L6</td>
<td>Presentation</td>
<td>transformation of eccentric information to local context</td>
<td>unsupervised and supervised</td>
</tr>
<tr>
<td>L5</td>
<td>Session</td>
<td>node to node eccentric information flow, stripped out of underlying protocol stack from payload</td>
<td>unsupervised and supervised</td>
</tr>
<tr>
<td>L4</td>
<td>Transport</td>
<td>node to node logical link protocol, provides reliability level and condescending (or not) flow control</td>
<td>supervised and reinforcement</td>
</tr>
<tr>
<td>L3</td>
<td>Network</td>
<td>inter-node path learning and logical level addressing</td>
<td>supervised and reinforcement</td>
</tr>
<tr>
<td>L2</td>
<td>Data Link</td>
<td>node identification and base level addressing</td>
<td>supervised and reinforcement</td>
</tr>
<tr>
<td>L1</td>
<td>Physical</td>
<td>physics level signal and transmission</td>
<td>supervised and reinforcement</td>
</tr>
</tbody>
</table>

Discovery Systems

Robust path maximum transmission unit discovery (pMTUd) is critical to smooth operation of networks in transition to larger packets. The pMTUd system should not rely on network engineers to set equipment parameters, or pose security risks, such that discovery software is disabled, as a precautionary measure. Discovery should work with a reliable, rapid, minimal probe response schema, at each transit node hop. Ideally transit node hops should not “black hole” or drop packets with larger maximum transmission unit (MTU) than permissible, while minimizing the possibility of a pMTUd based attack.

If a preliminary probe does not function correctly an end node based binary search mechanism should come into play, as a backup system. Minor deviations from regular values of MTU, such as are sometimes caused by virtual local area networks (VLANs) should be avoided to minimize edge effects, troubleshooting and search convergence. If excessive packet drops occur at a particular range there should likely be an intelligent, end node based, fall back mechanism to identify a more reliable range.
Layer 2 Protocols

We have observed that isolation of path maximum transmission unit (pMTU) bottlenecks is made problematic by "invisible" Layer 2 frame size limitations, including VLAN tags, which are difficult to find from a Layer 3 perspective, in the sense that packets disappear or "black hole". In the long term, encapsulation protocols, which have embedded counter systems, or size related scalability factors should be generalized to accept arbitrarily large packets, if possible. It has been our experience that an informal "de facto" working size packet, such as 9000 bytes, seems to arise in any case. While this is apparently more to do with tacit market acceptance and expediency than protocol specification, one might consider leaving the maximum unspecified while recommending a soft minimum implementation for a particular line rate specific technology, in future.

Layer 3 Protocols

From a general scaling perspective the 16 bit Layer 3 length indicator of IPv4 limits MSS to 65,535 octets or bytes minus the header, which may range from 20 to 60 or more octets. The Internet Engineering Task force request for comment (RFC) number 791, from 1981, reads "Such long datagrams are impractical for most hosts and networks" and proceeds to describe "datagrams of up to 576 octets". It seems similar thinking led the design of IPv6 which preserves the base total length indicator of 16 bits with RFC 2460, from 1998, adding a section on packet size issues "IPv6 requires that every link in the internet have an MTU of 1280 octets or greater". RFC 2675, from 1999, "IPv6 Jumbograms" is apparently the first indication of a potential requirement, for a length indicator larger than 16 bits, specifying an awkward extension based 32 bit model, allowing 65,536 to 4,294,967,295 bytes.

Notably, in retrospect, a 24 bit length indicator in the main header of IPv4 and IPv6, might have been a more workable solution, allowing up to 16,777,215 bytes, without the need for extra network adapter logic or code cycles to parse header extensions. On the basis of our search for equipment capable of performing Layer 2 functionality at 64,000 bytes, it seems unlikely that the 16 bit length indicator of IPv4 will be fully utilized, in the near future; due to wide spread tacit equipment implementation limitations adopted.

Layer 4 Protocols

As indicated in RFC 2675, Layer 4 protocols would need to be modified or tweaked to accommodate packet sizes above 65,536 bytes. Software stack implementation issues might require tuning, such as possibly TCP window size adjustment to an integral number of packets at a given MSS.

Network Adapter Design

In general an increase in Ethernet integrated circuits buffer sizes, or the use of a high bandwidth off chip memory is important for deployment of SJF. Any of these options may be more expensive than standard high volume commodity parts, so the increased performance needs to be worthwhile to justify the investment. We expect this will usually be true for the high performance computing (HPC) community; however it may be more problematic for the commodity market, where cost is the primary factor.
**Transit Node Design**

Apparently the Enterasys ER16 router’s ability to accommodate near 64K MTU is somewhat ironically due to the gigabit line adapter Ethernet integrated circuits having limited on chip storage. This forced the designers to alternately use direct memory access (DMA) to a common main memory system, with greater packet size flexibility. More recent Ethernet integrated circuits generally have limited local internal 64 or 128 kilobyte buffers. From experience, the timescale of core research and education 9000 byte MTU deployment took in the order of several years to go from notional concept, with the emerging availability of jumbo capable Gigabit Ethernet adapters, switches and routers, to enabling core networks across North America. SJF deployment may take longer.

**End Node Design**

Stock operating system kernels may require redesign to accommodate SJF. Multiple SJF stacks would consume considerable additional kernel memory. With random access memory (RAM) prices dropping, this may not be problematic, however is still something to consider, especially if the goal is to roll out SJF everywhere. With larger average packet size, a lower frame rate, and reduced interrupt frequency, next generation multi-processor transit node systems may be in a position to provide enhanced per packet services.

**Distributed Storage Design**

A 65536 byte MTU (which the Enterasys ER16 router can’t quite do) is still too small. What we really want is 65536 bytes plus headers, so the data portion can be such, for example, that a complete standard buffer fits in a single SJF packet. Connecting distributed storage area networks (SAN) may benefit if the wide area network (WAN) systems can communicate via SJF technology which matches or exceeds local buffer sizes, reducing packet fragmentation and reassembly, as well as optimizing effective throughput.

**Explicit Path Systems**

Investment in explicit path systems may reduce network related interframe-gap inflation-factors to a minimal value. The effect on the projected curve fits of Figure 22 would be to move the top of the curves up and to the left, likely slightly more so than the CA*net data fit. In the long term this might shift HPC optimization emphasis to reduction of the end node inter-frame gap inflation factor.

**Virtual Overlay Systems**

The implementation of large scale innovative virtual networks, part of which may operate over SJF enabled core networks, might benefit similarly to distributed storage, by relieving constraints on packet size.

**Interconnect Solutions**

HPC communities require very low latency inter-process communications combined with excellent streaming characteristics. Interconnect systems with specialized intrinsic protocols may benefit from SJF similarly to distributed storage, where specialized local frames can be either dynamically tunneled or
reformatted over wide area network (WAN) links with minimal performance loss.

**QoS Considerations**

Troubleshooting of multicast jumbo frame MTU limitation issues, has hinted at the potential basic feasibility of SJF based multicast. In general we expect SJF technology may have a significant beneficial effect on collaborative video streaming. A gradually increasing presence of SJF packets on routed networks, also used for voice over IP (VoIP), may require tuning of Quality of Service (QoS) algorithms.

**Configurable Network Fabric**

If one assumes, for example, a configurable, as opposed to static network fabric of links, with switched variations, such that dynamic path factors are possible, in addition to merely packet switching, this infers an increased learning rate on the part of transit node forwarding fabric.
The most important factor in the legacy network is router configuration, as this enables the forwarding of packets to the correct destinations in the global network. This can be done by a network engineer using an Internet Route Registry (IRR), which is a database storing route information in a specific format. The IRR databases must be kept up to date by a team of network engineers. Generally network domains of a reasonable size will maintain their own IRR, thus providing other linking domains with interconnect information for their border routers.

Figure 23 indicates a rough overview of some of the procedures that a network engineer would perform in order to configure a typical router. In the diagram an ORAN is an "optical regional area network" and
RPSL is "route protocol specification language". The network engineer uses a workstation to connect to the IRR database and creates a router manufacturer specific configuration file, for a particular router. This is then spliced into a general router configuration script, which enables and disables certain features, and through the network it is loaded into the router, which is then often restarted with the new configuration.

Security is of paramount concern when dealing with router configuration so the actual loading can optionally be done out of band by a separate link, that is not susceptible to attack from general Internet users. If the configuration is done using the Internet then it is performed with encrypted protocols, so as to forestall and obfuscate any attempt at interception and intervention. If there are any changes to the router configuration then the configuration script must be edited by hand or recompiled using the IRR.

Once a router is configured it generally learns the global routes, through protocols such as border gateway protocol (BGP), offered by directly connected routers through an automatic updating system. These routes are then placed into forwarding tables for specific interface adapter fabric, so as to facilitate more rapid packet processing and forwarding. Notably part of the configuration optionally prohibits particular unwanted eccentric activities, often in terms of packet forwarding or protocol acceptance.

While it is possible to dynamically reconfigure a router to defend against attacks which exploit particular features of the network, this infers that the information about such an attack, and the countermeasures for it, are available in a timely manner. This would only likely be possible with some form of dynamic network awareness system coupled to learning and thinking neurocontrollers, possibly embedded in routers, capable of forming the countermeasures required in terms router configuration syntax decoders would understand.

Having an embedded neurocontroller in a router opens up a series of possibilities for the application of intelligence throughout the network. We are inferring an overlay network of intelligent entities that are able to communicate. One might go so far as to consider that fragments of intelligent systems could be distributed and learn from each other, similar to routing protocols. While routing protocols are for the most part concerned with distributing new information about routing destinations, intelligent systems which are tasked with learning new things, of potential significance, may be most advantageously preoccupied with new information about risk factors.

**Optical Switching**

Optical switching, somewhat like railroad switching, must be done in concert with the movement of packets. For example extra link capacity could be dynamically switched in as required to handle heavy packet load conditions. This would require that the routers are aware of a new links' performance and where it is going. Thus the routers would have to learn about the availability or not of extra links in a timely manner to optimise their use. An increased learning rate load for routers might cascade through the system of transit nodes, increasing the probability of error and general confusion, thus causing diminishing returns.

Hence, unfortunately optical switch path learning and updating factors, though potentially flexible and beneficial, might well prove more detrimental than conducive to scalable and reliable advanced network architecture. As such an implicit factor in this investigation is directed toward the possibility of developing a hybrid router and optical switch system, based to some degree on the synthetic equivalencies of biological networks. The most promising aspects of this are inferred by the intrinsic compact scalability of biological systems combined with adaptive capabilities.
Notably in a synthetic equivalency one might provide some artificial encouragement to evolution by teaching existing legacy protocols (language) to flow systems of network elements, so that they recognize them, and can adapt to their presence. Notionally this process could create an adaptive network based on novel biocentric interactive factors while preserving legacy investment.

Rapid growth in density and traffic volume independent of transit time, accompanied by protocol deployments, with implications for transit nodes, imply increasing intervention by network domain operators and global participants. As each component of a network affects others, including participants, packets, machines, subnets, sessions, transactions, traffic and movement on layers, sensing a network context and creating projective virtual models infers uncertainty and risk.

Thus notionally inferred scaling solutions suggest probabilistic inference, similar to biological systems, where context representation and reasoning under conditions of uncertainty minimize risks. In such regard much of the initiative, and some of the preliminary investigation underlying this work, evolved from intelligent proactive network systems research, with a capacity for self-aware adaptation to context factors, autonomously monitoring, identifying, diagnosing and resolving issues. One of the features of this approach, in a context of ongoing network related variations, of increasing complexity, is an adaptive running baseline characterization of risk factors.

Hence predictive high level synthetic intelligence is inferred, where data from internal and external contexts are accumulated and patterns analyzed, so as to form a basis for learning. From the terminology perspective internal sensors for both biological and synthetic networks are considered within a platform, while external sensors are phenomena from a general context outside of a platform subsystem.

For example, in a synthetic network atmospheric weather sensors would be external, while node status or path traffic levels internal. As work proceeded to autonomous factors in synthetic systems for detecting and analyzing patterns involved in threats or issues, parallels emerged similar to biological systems. Subsequently an equivalent prevailing trend for both systems is assumed, where a degree of adaptive plasticity is inferred in underlying fabric.

Notionally it is proposed that synthetic networks, based on advanced architectures, will serve as equivalent substrates for evolutionary variation and convergence. Our justification for this is that although the details of implementation may vary considerably between platforms, the general dynamics, whereby projective synthetic intelligence is formed, will be similarly constrained by evolutionary statistics.

13 The Case For Intelligence

In the network world an increasing potential requirement for high level intelligence has become apparent, from our investigations of emergent network architecture. This is not only in regard to the scalability of networks, in terms of new paradigms for protocols, end nodes, edge and core devices. If a transition to advanced architectures based on a combination of encapsulated legacy factors, and novel systems, proceeds, some degree of intelligence is inferred.

For example, discovery, error handling, naming, provisioning, routing and security could be supplemented
by comprehensive self aware automation, such that robust autonomy and open ended scalability are assured. Under such embedded intelligent guidance an appropriate underlying synthetic network infrastructure might be grown in a manner similar to biological systems.

Just as instances of biological platforms replicate and adapt, so too might equivalent factors in a synthetic context. Notably this differs from biological frameworks in that sensors, actuators and intermediating fabric, rather than evolving and scaling slowly over millions of years, might do so rapidly, given an appropriate evolutionary context.

Hence the relative suitability of differing biological equivalencies for synthetic cases are a main focus. The first section "Part I: Virtual Framework" explores some notional factors which are features of biological systems, which may be appropriate for synthetic networks.

There are many issues to consider in a network environment. If one considers recent trends the advent of cloud computing combined with a shift in focus to mobile devices indicates potential for emergent networks.

Intelligence enhanced glue logic for emergent networks, mainly based on high bandwidth optical components, such as multiplexors and switches, infers possible generalization of synthetic intelligence to any type of flow network. In such regard biological equivalency factors are considered from a general perspective, whereby autonomous manoeuvring within degrees of freedom, of a context, is possible within platform scope.

This infers binding (association) of synthetic intelligence engines to network elements whereby minimal configurations of a platform are created. Numerous proximate synthetic intelligence based platforms also infers the possibility of platform cross-linking to shared elements, opening up similar inter-domain factors, familiar to legacy networks.

The theme of our notional exploration of underlying flow networks is based on limited flow based operations combined with scalability, within delay horizon and fabric complexity scope.

Such an arrangement could be simulated on large scale platforms, inferring near real time performance optimization with a reduced model, approximating synthetic flow network features so as to minimize overhead.

13.1 The Case for Synthetic Intelligence

The inferred populations of synthetic intelligence engines provide a potential frame of reference for considering emergent architectures, as part of a distributed synthetic context. A new architecture must in general also at least have the potential to encapsulate legacy networks, to preserve investment, and facilitate gradual transition, combined with ongoing technological accommodations.

Just as with animals or the biological case the legacy network factors may evolve or be preprogrammed as equivalent to eccentric instinctual behaviour or enhanced eccentric learning susceptibility. For synthetic networks this could provide a workable foundation for training models from the ongoing current context.
We have the advantage of historical knowledge which can be used as flows for training synthetic intelligence engines.

Thus we wish to leverage some aspects of the equivalent of underlying long term biological evolution stored in persistent form in DNA and the supporting choreography of molecular machinery. One might consider an analogy between the midbrain of cortex based biological architectures and legacy networks (midbrain) of the current global network with respect to intelligence (cortex) based systems.

In the biological case the system has apparently worked well for evolutionary adaptation purposes with a motion oriented minimalist brain or midbrain alone for much of evolutionary history. Cortical configurations evolved enhancing persistence and specialized processing capability augmenting midbrain capabilities. In particular the extra circuitry enabled off loading, rather than dumping, of midbrain flows.

This provides an extra set of flow pathways lengthening the time off loaded flows are active and provided for more opportunity for flow interactions, opening up the potential for extensive look-ahead operations, based on previous experience. One might consider midbrain flows to be mainly “in band” or “near real time” loops from sensors to actuators through the local context. In contrast the cortex flows are optionally “out of band” or “non real time” and have the possibility of looping internally through some form of native virtual context.

Briefly the global network has an elegant simplicity of complexity concentration in end nodes using layered protocols, with relatively minimal exception handling in transit nodes, combined with protocol based condescending traffic control. This has worked reasonably well so one might question a systemic move to significantly increase, for example, the role of transit nodes or routers. With network user population growth systems based on time domain multiplexing packets limit available resources. The robust global packet parsing based forwarding system infers new additions may either take the form of more of the same type of network or a flexible and highly adaptive configurable hybrid solution.

Any acceptable hybrid solution would likely have to enable more rapid and cost effective network growth than just adding more routers and links. Also any novel features of such a hybrid system would have to be of value to the user community, while at minimum not interfering with and maintaining compatibility with older technology.

This predicament is further enhanced by recent provision of what might be termed as clouds of embedded virtual machines mainly for large numbers of relatively thin mobile network client end nodes, on low bandwidth radio frequency links.

Such a transition infers a wide range of expectations, on the part of domain operators, users and developers where everything from services for various devices up to global arrays of supercomputing platforms are properly supported with negligible additional troubleshooting.

Against this backdrop the ongoing improvement of signal information density, if not delay, throughout networks implies an increase in maximum packet size [3] referred to in the industry as “super jumbo
frames" or SJF.

The emergence of super jumbo frame networks does not limit the smallest size of packet or even infer the average packet size will necessarily increase. SJF technology merely enables the option of passing of very large packets through the network between end nodes, given suitable non-blocking path characteristics.

One might consider an analogy between railway and truck traffic helpful, where heavy freight is sent by rail and lighter freight by truck. The paths for SJF similar to railways may not go to as many places or end nodes as the roads that trucks use.

To optimize efficiency the freight shipments should be arranged so as to take advantage of the best routes. However just as packing or unpacking rail cars to trucks is somewhat burdensome so too is changing packet size in transit.

13.2 Dynamic Network Awareness

If, for example, an intelligent system was able to learn about a local network context, represent that as a virtual context and use it to minimize the risk of oversize packet drops while maximizing packet size, efficiency would improve.

It takes proactive dynamic network awareness to build such a system and get it to learn, given the complexity of the interconnect fabric, what to do for a particular situation. Thus if a particular protocol on a particular end node were to send a packet by a particular path to another end node the intelligent system could advise the packet handling system, based on experience, what to do.

Such a system might be termed a synthetic intelligence engine for dynamic packet sizing.
In an effort to understand what is actually occurring in near real time in a network consider the flow indicated in Figure 24, where factors related to packet dynamics in the left column are dynamically learned by successive layers of synthetic fabric thereby being converted and emitted as flows from the top nodes on the right.

These top nodes form the basis for proactive network intervention via the effector nodes above the top nodes. The vector queues are characterizations of analyzer stack results over a sampling window. The SOM layer is a "Self Organizing Map" that learns to arrange the data from the vector queues into patterns or characteristic maps [3].
The output node flows of the self organizing map are notionally equivalent to the virtual context of a biological neural network.

The ANN layer is an artificial neural network that reads the output patterns of the characteristic maps and learns to predict the need for proactive intervention, such as packet sizing advice or attacks, thus conditioning the effector nodes to proactively send the advice to a target intervention system.

This is not unlike a biological situation where general context related flow comes in through a set of specialized sensors, then proceeds through a series of intermediating processes and helps to condition effector flow sequences to actuators. In both cases the intermediating fabric between inputs and outputs is learning to proactively intervene, in a time and space dependent view of a general context, based on risk assessment.

In the biological and synthetic cases actual data being carried in the flows might, in the following discussions, be considered as segments for the biological case, or packets for the synthetic case. The data is generally only of any meaning to an eccentric correlation system for the biological case, or appropriate software for the synthetic case. Other factors such as markers for the biological case, or headers for the synthetic case are more broadly interpreted throughout a flow network.

Thus from the perspective of a receiving node the actual data part of a flow could vary from uncorrelated flow activity, or noise, to understandable condensates of upstream flow systems. Flows are spurious to downstream networks unless they are adapted to learn from and decipher the patterns. Generally to learn correlation, differing factors of a flow system are associated and remembered.
References


PART I

AWARENESS ENVELOPE FRAMEWORK

"That all our knowledge begins with experience there can be no doubt. For how is it possible that the faculty of cognition should be awakened into exercise otherwise than by means of objects which affect our senses, and partly of themselves produce representations, partly rouse our powers of understanding into activity, to compare to connect, or to separate these, and so to convert the raw material of our sensuous impressions into a knowledge of objects, which is called experience? In respect of time, therefore, no knowledge of ours is antecedent to experience, but begins with it."

—Immanuel Kant - The Critique of Pure Reason
Chapter 2

SCAFFOLD MODEL OVERVIEW

To form an intelligent interaction with some form of environment or context, whether of the real world or a synthetic experience, an internal representation of that environment is required. This internal representation of flow or sequencing factors is often referred to as a virtual context, being merely a transitory model of parts of the environment within sensor scope over a sampling interval. However this model, and its accumulated factors, apparently forms the basis for much of downstream activity in terms of what is possible for intelligent interaction.

The importance of time domain sequencing in a sensor to actuator loop with the context constrains the implementing flow fabric to arrangements which minimize reaction time, while providing for some degree of flexibility. If a flow system capable of complex alternatives were to be spliced in series with the internal part of the loop then one might expect increasing average reaction delay, inferring reduced survival probability. This infers that a compromise flow path system is required where increased complexity is evolved so as to limit the degradation of reaction time, while still allowing proactive intervention.
From a biological equivalence perspective we will assume an eccentric platform which infers any possible intelligent information flow system in the universe. The reason for this is to allow us to focus on the minimal or simplest set of critical factors for such a system. This implies such a minimal flow system would be present in all such systems with the possible addition of other factors depending on the specific platform. Thus we assume that all systems will have a time critical in band loop flow network optimized for fast reaction time.

The in band flow system is assumed to support a degree of flexibility which we assume is implemented in a set of protocols which are probabilistically triggered by sensory flow patterns. These protocols are assumed to be contingent temporal sequencing systems which are adaptable to variations in the context loop factors. We also assume that learned probabilistic associations between low level protocols lead to protocol sequencing hierarchies. These hierarchies infer the contingent sequencing of protocols or hierarchies themselves such that more complex loop behaviour is possible.

14 Learning Model Overview

Extrapolating to a controller which is able to learn and also “think” to some degree, then more brain like functionality observed in biological models must be incorporated.

With the somewhat ambitious goal of distilling the most relevant synthetic flow factors from biological brain equivalency, it appears that one can roughly partition the brain into sectors.

These are to some degree associated with the evolution and expansion of the midbrain, combined with the apparent compartmentalization factors, observed in brain anatomy.

Referring to Figure 25 sensor flow comes into a time critical in band loops system which serves as a traffic manager and sensory integration or fusion system, combined with learning and coordinated actuator sequence control. As there are inherent delays in the flows the emissions to actuators must be appropriately compensated so as to lead the target. This requires a complex supervised learning process via feedback loops so as to establish fine motor control within the in band system.
In the evolutionary context there are behaviours which are statistically related to survival and which could be considered as reinforcement learning, allowing adaptation to baseline changes in a context. This reinforcement learning system requires the relation of context factors, which are likely to affect survival or risk, to adaptive behavioural or actuator sequences.

A complex and changing context also infers a requirement for unsupervised learning whereby aspects of the general situation are modelled, in a less time critical manner. This is represented by synthetic flows through out of band loops and an unsupervised learning system. The unsupervised learning is capable of internal looping, over a myriad of complex factors, so as to determine commonalities and differences against a chronologically skewed background of information artifacts.

Thus the unsupervised learning system is able to classify context factors into groupings and perform ongoing updates, modifications, operations and rearrangements. This infers that sensory data goes through a preliminary set of filters and transformations into a format that is susceptible to this type of classification, with reasonable scaling of the underlying flow fabric.

To condense the raw information flow from sensors to classifier compatible format a series of steps are inferred, which are able to transform primitive sensory flows into objects or derivative representations of static or time sequence data. These steps are implicit in the flow diagram of Figure 25 as occurring in the vertical stack from in band loops up through unsupervised learning.

The notional brain equivalency for reinforcement learning is mainly focused in the midbrain but with contributing factors from other areas. Similarly supervised learning is notionally localized in the
cerebellum with contributing factors from other sectors. Unsupervised learning is notionally centred in the cerebrum with contributing factors from other sectors.

### 15 In Band Loops Overview

A somewhat more detailed preliminary scaffold block diagram, as a starting basis for the subsequent evolution of notional brain equivalency flows in a synthetic flow network thinking controller, is indicated in Figure 26. Starting with the object at the bottom the information flows into sensors where some signal conditioning and sensor control occur. Notionally this is part of the "Metaview Loops" and "Modality Plasticity" layer which underlies and facilitates other layers discussed in more detail later.

Conditioned sensor information flows into the "In Band Loops" layer and through a series of time sequence oriented conditioning blocks then out to actuators, thus affecting the object and completing a "General Context" loop. One might consider this the simplest near real time in band loop corresponding to the equivalent situation for biological midbrain mediated or synthetic control situation, such as the control of a robotic arm with feedback sensors and preprogrammed deterministic sequential logic, which is somewhat adaptive to variations.
Following the conditioned sensor flow of Figure 26 we see that taps from this system flow into the "Virtual Context" via the "External Sense" and "Internal Sense" of Figure 27. Notionally a "Virtual Context" is somewhat like a persistent information mirror reflecting perceived aspects of the "General Context", including internal flow factors through the "Internal Sense", thus providing a composite navigable view of the situation mainly represented by condensed secondary derived information flows or derivatives.

The virtual context layer thus provides a synthetic frame of reference which is supported by feedback loops through the general context. Parts of this synthetic frame of reference are internal sense and \textit{internal actuator} factors which are combined with those formed through flow via external sensor and actuator loops. The flow blocks coming into the virtual context layer are a simplified representation of subsystems supporting accurate characterization of the general context.

\textit{Figure 27: Virtual Context Overview}
The main flow path is through the "Object Cascades" subsystem which converts conditioned sensory flows into a representative condensate called "Derivative Flows". This path is supported in turn by "Object Templates" which are learned commonality patterns of sensory flow whereby derivatives are categorized. A more detailed discussion is presented in the chapter “Specificities to Commonalities”. Just as with a dynamic scene graph the virtual context requires broad spatial temporal characterization which is provided by a persistent “Alignment Marker” subsystem, the flows of which are mainly learned through accumulated sensory factors.

As not all factors of objects are implicit through introspection thus inter-object "Meta-Object Links and Relations" subsystem flows characterize groups and subsets of objects. "Animated Objects" is a subsystem for learning and characterizing sensory flow factors which exhibit motion with respect to the general context, with "Temporal Characterization" adding more comprehensive scaling factors to the animated object changes. More detailed discussion is presented in the chapter "Event Projection".

Notably animated objects and temporal characterization also feed into a relatively tight (low delay) loop through the in band near real time system. Looking into the details of the in band loops in the lower part of Figure 26 “Protocol Traps and Baseline (Correlation)” indicate a subsystem for triggering downstream events on the basis of learned event sequences, which might vary to some degree in their characterization. The level of variation is custom controlled by "Floating Thresholds" which enable dynamic alteration of protocol triggering dependent on background general context factors, including internal sense or modality issues.

Once a protocol is triggered activity moves to the right through the "In Band Protocols" sub-system, which might be considered the synthetic equivalent of instinctual behaviour in biological systems, including emotions which are part of the synthetic modality system. There is potential for complex feedback loops and choreography of various protocols through the "In Band Protocol Sequencing Hierarchy" which might be considered a multilevel set of super protocols with the ability to dynamically reconfigure or branch conditionally, though in a mainly deterministic manner. These in band protocol hierarchies should be considered as being somewhat apart from, though potential sources of influence to, the out of band system equivalents.

16  Virtual Context Overview

In figure 27 we have an overview of the virtual context and internal sense flow system which is supplied with incoming flows from the in band system. The two main flow types from the in band flow network are external sense flows and internal sense flows. External sense flows are considered to be a collage of sub-flows from an eccentric platform’s various sensors which are tapped off of in band systems. This infers that these sensor flows are not necessarily raw or unprocessed sensor output.

Similarly we assume an eccentric platform also has internal sensors which are supplied through the in band system to a virtual context. These internal sensors are considered to be a collage of sub-flows from the eccentric platform’s self associated subsystems which have internal sensor emissions. Notably this might include, for example, status flows from all of the possible subsystems. Thus everything that is involved in the eccentric platform flow system overall is potentially a source of internal sense flow in addition to its’ normal functional flow, if any. One might consider this internal sense based model an autognostic subsystem front end which could vary widely in scope dependent on an eccentric platform.
The external and internal sense flows are mapped in space through scene graphs and sense graphs, as indicated in Figure 27. A scene graph is a multidimensional representation of the relative location of sense flows. Optical sensors, for example, generally supply a two dimensional flow system which is then transformed into a three dimensional representation in a scene graph. For a scene graph to have a particular orientation and location with respect to a general context or the universe alignment markers are required to supply reference information. Alignment markers are in turn learned from a combination of accumulated sensory flows.

The indicated sense graphs are a multidimensional representation of the relative location of internal sense flows in a distributed self associated context. Pain or status sensors, for example, generally supply flows of information from internal subsystems. For these flows to be localized they are transformed into a three dimensional internal sense graph, as a function of time. Similarly for a sense graph to have a particular localization with respect to a self associated context alignment markers are required to be learned from accumulated flows.

An integrated virtual context is formed by the combination of the scene and sense graphs thus providing a basis for further characterization. The virtual context thus has a set of incoming sense based flows in near real time, which already have some transformational preprocessing done on them. As these flows may not cover the full scope of a local context some degree of extrapolation is inferred whereby representations of factors which are not currently being directly covered are supported through accumulated learned flows. Thus a virtual context is inferred as a representational approximation of a context which is accomplished to varying extent, dependent on an eccentric platform.

While a virtual context may be a significant mechanism in the formation of intelligence it would not be of much use without analysis of components represented therein, so as to supply a basis for downstream processing. In particular the triggering on or recognition of objects or virtual context patterns based on prior experience might prove quite useful for downstream processing. The object cascades are considered a series of steps or pipeline of operators by which derivative representations are formed of virtual context patterns or factors. This process is a learned adaptation to consistent virtual context patterns and so might be considered a baseline system with ongoing adaptive learning.

The object templates of Figure 27 are learned adaptations to recurring virtual context patterns whereby fragmentary representations of arbitrary orientation are recognized and converted to derivative flows. An example would be recognizing a table classification from sensor flows despite random orientation, confusing obfuscations and eccentric variations.

Animated objects are added to accommodate rapid motion and are classified in a similar manner to object templates with the assistance of temporal characterization. Temporal characterization is a means to add learned context related time factors to a virtual context which is built on an eccentric flow network with its’ own intrinsic temporal characteristics. One might consider this to be the source of the internal sense of time, even in the absence of significant external sensory flow.

Meta-object links and relations are learned and for our purposes modelled after the basic factors of virtual context pattern classification. The term meta-object links and relations in the diagram is roughly equivalent to Imanuel Kants’ categories in the Critique of Pure Reason [1] though not in exactly the same sense, as in this case they are merely inferential through accumulated plasticity factors. Notably the meta-object links and relations factor is repeated in the out of band diagram as it is inferred that learning and plasticity push some pattern classification into the object cascades subsystem.
Mathematical relations of an object or objects:

Quantity
- Unity
- Plurality
- Totality

Quality
- Reality
- Negation
- Limitation

The mathematical relations have two main factors, quantity and quality, which can be linked to an object or objects as part of a derivative flow. Thus a derivative flow is composed of factors characterizing an object or objects. The aspects that the quantity relation can take on are unity, which means just one instance, plurality which means more than one instance and totality which means all of the instances. These aspects can be considered for our purposes as a cluster of probability levels associated with an object or objects in an integrated virtual context or as part of understanding. The quality aspect can take on the reality factor, which means validated virtual context factor related to the local context, the negation factor means a contradictory or false operation and the limitation factor means of finite or infinite extent.

Dynamical relations of an object or objects to each other or the understanding:

Relation
- Inherence & Subsistence
- Causality & Dependence
- Community

Modality
- Possibility-Impossibility
- Existence-Nonexistence
- Necessity-Contingence

The dynamical relations characterize an object or objects with relation and modality. The relation aspect can take on inherence and subsistence, which means inseparable part of and fundamentally characterizing, causality and dependence which means cause and effect as ‘a result of’, and community meaning an object has a probability of membership in a group.

Notably the modality indicated in dynamical relations is different from the modality or emotional bias of flow networks mentioned previously. The aspects of modality are possibility-impossibility which for our purposes means whether the probability of an object of objects matching previously accumulated ranges of what is viable or not. The existence-nonexistence aspect is a probability level indicating a valid state of being or not and necessity-contingence indicates the level of causal relatedness from required to possibly required.
We will assume that relation aspects can be applied in concert with probabilistic levels as part of derivative flow relating to any subset of objects in or to do with a virtual context. The virtual context offloads derivative flows to the out of band system. These offloads are created by the object cascades system.

In terms of biological equivalence for eccentric platforms in a general context, where an arbitrary platform is a subset of a species population, ongoing internal virtual framework representations infer not only a sampled update of external but also internal factors thereby updating virtual contexts implies a basis for overlays as risk projections. Thus risk projections should appear to the platform as an embedded feature of a virtual context though formulated downstream in out of band fabric.

The evolution of a risk factor overlay arrangement is inferred as on the basis of variation and selection, where the latter implies suppression of less successful variants, for a general context which itself is changing. In order to implement this in the scaffold the out of band risk coalescence system must forward projective risk factors into the virtual context as part of the proactive intervention sequence. Thus features of the virtual context would be ranked with risk probabilities as a post process loop.

Notionally the biological equivalent of survival for autonomous synthetic ecosystems infers equivalent conditions. Such an arrangement implies approaching equivalent conditions within a synthetic framework, whereby the variety and scope of biological factors in a synthetic general context are formed. While direct synthetic equivalence from nothing is clearly problematic, an approach where equivalencies are inevitable from a contrived schema at least imply the potential.

Contrived synthetic virtual arrangements might not easily approach biological equivalence, which infers a level of artificial information based systems scalable to similar levels of self modifying autonomy and complexity. We will optimistically assume a biologically equivalent virtual fabric in which a wide variety of equivalent eccentric platform populations could be formed, for example from microbe to multicellular animal or plant equivalents.

It seems to evolve the biological equivalent of sensor to actuator loops complete with virtual motion a credible virtual universe is also required. This should also be self implemented autonomously on the basis of variation and selection, whereby evolution is possible and risk is minimized with negligible intervention. Notably to recreate an equivalent virtual universe one it seems must have a reference general context that is sufficiently challenging.

Thus the scope of synthetic equivalence to biological ecosystems implies either replication of a general context of the universe, at least to the extent of an adequate local context or the adoption of a synthetic environment as a de facto general context. For example an existing biological ecosystem could be modelled or a synthetic ecosystem based on information resources and energy accounting could be used.
in its' place.

17 The Case For Object Cascades

Generally the process of adaptation is considered as a permutation of factors underlying an arbitrary, though incrementally scalable platform, based on plastic network fabric. One of the main issues in this model is the relation of coalescent factors of sensory flow, or objects, as potential targets of what might be termed an understanding system, for a general context.

Further as general objects are assumed, it seems reasonable to ask where an instance might come from, and if such objects are a substrate of some common downstream manipulative flow system. In flow based systems, persistence is present as transit or flight time between and through intermediating nodes. Sensor flow is often of an extended interval inferring downstream factors should have a time window of persistence, as long as the flow lasts.

This type of flow persistence is somewhat less than optimal, for manipulative purposes. As such a supplementary method of maintaining flow, past the time of sensory flow drop off, is implied. As a network of limited extent, given a continuous differentiated stream of sensor input, will eventually drop flow, some form of prevailing residual persistence factor, embedded in the network, is inferred.

The sources for sensor emissions are assumed of a varied and eccentric character, and one might well also assume without significance to downstream networks in the absence of correlated accumulated persistence factors or experience. These persistence factors entail, if only based on the eccentric character of preceding incoming flows, correlationary factors from multiple general context and internal sensors. One could, in a preliminary manner, for example, consider the possibilities implied by correlated activity variation, of downstream sensor transit flows, assuming more than one related flow is present.

With a concurrent subset of such correlated flows, for example, one might consider if signal change is temporally associated between flows. Moreover if temporal patterns are present between flows, possible plasticity based correlated downstream result flow factors are inferred. If, further assuming prevalent modulation, and correlated temporal sensor flow results are combined, in a coalescent manner, thereby passing on plasticity factors represented in such an operation further downstream, potentially scalable cascades or objects of correlative coalescent flow envelopes are inferred.

A self modifying downstream network could deal with multiple concurrent envelope result flows from a multitude of general context sensors. Given the scale of concurrent flow pattern cascade possibilities implied, potential factors leading to minimization and combination of downstream network scope become an issue. If the means of embedded cascade persistence modulation is susceptible, to the parameters of signals from disparate sensor flows, mutually reinforcing alignment whereby flow patterns are differentiated on the basis of enhanced factors, due to the presence of corroborating patterns from multiple sources should prevail.

If occasionally asynchronous emissions of multiple context sensors approach steady state, where both the general local context and sensor platform are stationary, a quasi-static invariance combined with transitory differences between steady states could align with eccentric factors of prevailing persistence formation mechanisms. Thus if steady states, of multiple sensor emission streams occur, one could term the result a quasi-static scene view pattern. Hence scene transitions as fine grained as signal flow
variation or slew rate allows, may occur to other quasi-static scene patterns, for example, with platform movement in a quasi-static local context. Such an altered scene though differing from the previous one, may not be so in all aspects, as for example, in the case of a moving subset flow pattern system across a quasi-static background scene.

If one assumes the mechanisms by which network pattern modifications are formed, is itself an adaptive transitory factor, in response to prevalent factors of sensor flow patterns, then ongoing preferential alignment of cascade persistence modulation to context eccentricities is inferred. Notably then, it is also implied that differences or commonalities between quasi-static scenes, which are more prevalent in a local context, will have increased chance of inducing modification in downstream networks, assuming a competitive basis for persistence formation. Such an increasing collection of prevailing persistence flow modification factors will quickly scale up depleting limited downstream fabric.

From the perspective of the eventual emission of what might be considered a downstream object preform flow system at the tail end of a series of follow on modifications, such an arrangement may have a multitude of preceding cascaded persistence modified flow factors, in proportion to an incremental degree of coalescence at each stage. Notionally, such a series of flow modifying factors may adapt to consistent variation of eccentric sensor flow pattern presentation, of displaced commonality, over the possibilities implied by sensor platform geometric relation to a local context scene. In other words spatial temporal transformations.

One could conjecture some portion of such a series of preceding modification factors will have a degree of commonality shared between cascade streams, and thus present opportunities for optimization. However if aspects of preceding persistence modified flow, most prevalently common, are shared by a multitude of object preforms, concurrent usage infers a collision.

In a shared fabric, unless common transform factors, which are invariant between object preforms, are synchronous, with minimal phase variation across simultaneous aspects of differing object preforms, a contradiction arises, due to information collisions or phase shift distortion. However, even so, reduced factors of a multitude of object preforms might qualify for path sharing under some conditions.

If one considers a quasi-static context, with movement of a sensor platform, such as limited rotation, it seems potential downstream object preforms, of a context, might synchronously share modified flow, if all are consistently affected by equivalent spatial temporal transformations, of the same phase. Thus potential exists for prevalent common spatial temporal transformation sharing over a heterogeneous set of object cascades, in common fabric.

17.1 The Case for Meta-Object Relations

In regard to thought process models, self modifying cascades based on prevailing persistent commonalities of multiple sensor patterns, of an eccentric local context, can be taken as equivalent to a subjective or virtual context mimicry system, whose properties are associated with consistent aspects of phenomena.

If one, for the moment, considers multiple eccentric mass-energy or information flow sensor systems, such as with monitor stacks [3], within a synthetic network context, such sensor systems, for example, will similarly to the biological case exhibit downstream transformations prevalently constructing ordered sets.
of virtual representations of a general context.

Now, from the perspective of transient factors or motion, consider what cases ensue if sensor flows, underlying what could be termed object preforms, should diminish and vanish. If downstream cascade factors are driven by proportionate flow from sensor activity, any related set of downstream object preforms would similarly diminish in direct relation.

Consider if intermediating factors in preceding or upstream network fabric from a cascade, despite diminished related sensor signals, act to oppose cascade deletion. This would then preserve object preforms, in a persistent manner, potentially as what might be termed object templates, until such time as related flows again increase.

Notionally, if sensor flow signal strength returns, but particular eccentricities of the sensor stream differ, altered object preforms might plastically modulate previous object preforms, and be reanimated, inferring a learning operation.

From such preliminary notions consider the scalability factors of object templates, given limited network fabric. The potential scope of a template, as a standby flow receiver, increases with allowable variation of activating sense flow eccentricities, and the number of templates, overall embedded in coalescent cascades.

This implies radical bloating of cascade fabric, given an ever growing population of templates. If allowable variation between templates is such that considerable overlap occurs, then template merging might occur, thus funneling an increased cross section of eccentric sensor input into a reduced subset of flexible templates.

Consider the possibility of fabric downstream from active object templates, where another layer of modification of source flow emission from active templates in turn ensues. Such modification of flow may in turn receive input from yet another object template, if animated by source flow from sensors, or even a template which though not fully active sources a diminished or decaying output.

The basis for partial activation, of dormant templates may be related to selective leakage of flow from animated templates, where a form of post template cascade pattern is prevalently reinforced.

Downstream fabric presented with raw flow from sensor animated object templates combined with partial flows from modified persistence based association factors, of dormant object templates infers a rich flow environment for pattern formation.

Consider this as a form of meta-object flow pattern context, not dissimilar to that of preceding multiple patterns from sensors within a virtual context. Thus downstream fabric, from such a heterogeneous flow system, may prevalently perform similar persistence modified flow based transformations, as for preceding cascaded sensor fabric.

Post object flow persistence modifying factor modifications might prevalently favour meta-object operations. Assuming sensor flow based animation of object templates, and associated overlays, consistent clustering of animated object templates, on a statistical temporal basis, may increase related downstream flows, thereby forming persistence based modification factors, hence coalescing objects similarly to preceding sensor patterns into meta-object preforms.
In some cases a particular object template, for example, could be redundantly animated, by multiple local context instances, indicating a temporally related collection of eccentric, but independent animated object instances, as with grouping of sensor patterns. Clearly one might postulate, if such redundant meta-object clusters are prevalent, downstream persistence factors may favour persistence modification of flow fabric, so as to produce a coalescent flow factor preform, of a type of secondary follow on coalescent entity, based on preceding flows, thereby conserving cascade fabric, and enabling greater intrinsic scalability.

Concurrent animation of object templates, where meta-object information collision is inferred for multiple instances may occur unless of referential form. Assuming secondary layers of differing types of post process or meta-objects, based on concurrent flow from sensors, combined with primary object layer flow, the possibilities for prevalent formation of configurations, for secondary follow on meta-objects arise.

If one considers possible candidates for meta-objects, logical relations between objects present themselves as a consistent factor for survival. For example consider the inferred factors of plurality versus unity, or community and dependence versus grouping with independence, between object instances. Such relations apparently arise in a flow based system by prevalence of post object flow fabric activity, leading to formation of plasticity based follow on modifications.

Somewhat similarly, consider the possibility of a network application, drawing sensor flow from network layer protocol sensors of eccentric application contexts, from which consistent mimicry factors, used as transforms form an overlay of which regularities are intrinsic, thereby creating a baseline.

An eccentric context often exhibits similar factors to others, though differing in flow factors by which it is represented, thus consistent regularities or commonalities of patterns therein imply the potential for convergence on similar modifying meta-object factors.

### 17.2 The Case for Meta-Object Links

Though sensor flow might under variational conditions prevalently form cascading transformations using plasticity inducing a framework for meta-objects, additional factors even further downstream may act to expand the role of follow on flows associated with complex relations between objects.

Notably persistence is inferred when a burst of sensor flow animates meta-objects. Consider the case when two differing object templates are sequentially activated, then repeated after variable intervals, corresponding to sensors focused on a dynamic factor of a local context, where prevailing downstream flow presents a condition, creating the possibility of establishing a relation.

Thus emergence of downstream persistence based flow modifications associating templates due to the prevalence of sequences can be considered as a link between objects, differentiating them from others.

Links may form if the animations, of one object template precede others, with signal loss in an interval, if there remains no active signal factor in downstream fabric, by which to correlate two paths, unlike the situation with continuous sensor activity.

Separation of two paths might be such that decaying residual factors of signal, in surrounding fabric, may not be of significance. Disparate, but temporally correlated, fabric elements could be linked so as to
modify flow, thereby forming a link.

Object templates could coalesce correlated and contiguous sensor factors of prevalently minimal temporal offset, implying though one might expect some tertiary factors linking temporally overlapping object templates, such may be in competition.

While an indication of temporal offset relation between object templates, in a tertiary layer, could be useful, consider what would be required to determine which template precedes the other. Notionally, as two temporally dislocated flow states are involved and tertiary signal inactivity might be considered simply as a null condition, in this respect, we postulate two additional dormant then activated tertiary cross links supplying additional information, as a possibility.

Consider if one such tertiary link indicates the expectation of an associated factor, plus an additional downstream link used if such precedes or follows. If we assume an existing prototype second tertiary cross link, though initially inactive, taps both object templates it seems no configuration indicating sequence is possible, however if the initial tertiary link is also tapped with one or the other template, then the additional link could be active for either a preceding or following condition. Thus assuming two additional links both conditions would be covered.

From these preliminary considerations, just as raw sensor flow can be manipulated in a coalescent manner to form objects and overlays, downstream factors there from prevalently coalesce similarly, thus forming manipulations based on incoming objects and overlays, complete with temporal sequence.

Thus as objects and overlays are to multiple sense flow patterns so too secondary, tertiary and quaternary downstream persistence factors to objects. Somewhat like a funnel an object apparently has an inferred scope by which a multitude of possibilities are constrained to conformable generalities, complete with their own eccentricities. Subsequently a population of animated object templates present the opportunity for downstream manipulative flow factors to form in prevalent manner as temporal sequence funnels, by which relational aspects of objects are coalesced into generalities.
Looking at Figure 29 the out of band protocol sequencing hierarchy is assumed to accomplish a similar task to the in band equivalent with a much more diverse set of manipulative subsystems. We assume the in and out of band protocol sequencing hierarchies are able to act either closely coupled in concert or loosely coupled and somewhat independently.

If the in and out of band protocol hierarchies are acting in concert then the flows through the metaview loops system can exit via the out of band protocols and sequencing hierarchy subsystem. For example if language processing is active then manipulation domain layer subsystems could establish metaview loop flows which traverse active path hierarchies and condition the in band subsystem proactively. This facilitates the detailed rendering of language related servo control activity, through to the actuators, thus entering the general context loop and supplying a sensor feedback path.

The out of band fabric can simultaneously accept input through derivative flows channels and by acting in concert with the in band fabric. Derivative flows are subject to a correlation process as part of the
traversal into the metaview loops system, which enables an associative process conditioning the manipulative hierarchies.

Some derivative flows are selected and conditioned as data sequences, while others as operators used for controlling subsystems in the manipulation domain. Notably the derivative sequences at this point are generally characterized and condensed flows from previous upstream subsystems.

Within the manipulation domain of Figure 29 the temporal spatial and information space projection factors which ultimately enable synthetic intelligence are performed. These factors are discussed in more detail, along with many related issues, in the following chapters. Briefly risk coalescence is a matter of temporal projection on the basis of factors derived from accumulated flow history. For example, the risks of a moving object hitting the projected representation of self.

To create a near closed system of risk projection, given a particular eccentric flow history and learning curve derived there from requires an extensive and accurate model for the general context on many time scales, extending into the future. In a flow based system this could be facilitated by manipulating temporal bands of simulation scenarios and ranking the results in terms of risk factors.

From an implementation perspective in order to grow and evolve an overall flow network system composed of a hierarchy of elements, all of which may be susceptible to variation, the elements should be factored into genetically specified components. Even so, given a cycle of variation and fitness selection cascading up through the hierarchy, ongoing system growth and learning on the basis of flow history is inferred within each overall cycle so as to have a basis for concurrent fitness testing. As this may be somewhat problematic it could be easier to facilitate subsystems, on a similar basis, with modified fitness tests rather than attempt the entire system as a whole, followed by gradual integration of the subsystems.

19 Summary

As indicated an approximate overall pre-evolutionary scaffold starting layout can be roughly specified by functional subsystems with information flows between them. Notably the genetic algorithm process requires that the details of the underlying network fabric be represented and factored into genetically specified components or genotype, such that functionality can be varied and then tested on a repetitive basis in a phenotype so as to converge on an appropriate solution, or local minima, in the problem space. If the process is implemented independently a population of differing synthetic intelligence systems might then be subjected to competitive fitness tests and the cycle reiterated.
Chapter 3

FUTURE EVENT MODELLING

20 Projective Manipulation

We have assumed the evolution of an internal near real time virtual context framework which is driven by a general real world context, through the auspices of sensor to actuator loops. An indication of the potential sophistication of a virtual context in humans is the complexity of the underlying human visual system. Just as the visual system precedes a virtual context we assume that another post processing flow system follows it.
From the perspective of competitive evolutionary survival the flow system following a virtual context should increase the probability of success. We note that there is already a degree of anticipation or projective manipulation present on a short time scale when actuator motion leads context intervention. For example positioning one's hand projectively to catch a ball. This process involves the prediction of ball position in the future and then learning, selecting and activating a protocol sequence to position one's hand.

What we are proposing is the gradual increase of future time scale projection beyond directly observed motion. This is apparently a process which requires similar manipulations to catching a ball, however uses factors derived and stored from previous virtual context flows which can then be manipulated.

In consideration of the flow of derivatives from a virtual context into a post process system the main features of projective manipulation must be of derivatives. Let us first consider what might be required to catch a ball using the post process or out of band system. We will assume that this is occurring while other unrelated sensor flows are traversing the in band system.

For the out of band manipulation system to simulate catching a ball the underlying derivative flows must be available so as to condition the out of band fabric. As these flows are not actively being offloaded from the in band system they must come from somewhere else. We will assume that this is only possible if previous derivative flows have been stored in a persistent manner and can be resurrected by some mechanism.

We might assume that the resurrected derivative flows are injected through the same channel as virtual context offloads take, though sourced from a source of persistence rather than from the in band system. In order for that to occur there must be some form of derivative selection process, assuming that the particular derivative flows are a sample of numerous others. For this selection process to occur some form of mechanism is required which we will assume is a protocol which is itself selected by other protocols in a hierarchy.

By protocol we simply mean a learned sequence of internal flow factors which condition internal fabric so as to increase the probability of a particular process. We will assume that these protocols are learned from derivative cascades, similar to object cascades. The object cascades are learned from the commonalities of sensory flows and the derivative cascades from the commonalities of object flows in the form of derivatives. Thus derivative cascades are assumed rooted in the underlying processes of the general context.

Derivative cascades are an associative process such that similar to the association of sensor flow patterns with objects, derivative flow patterns are associated with manipulation dynamics. For example a sentence entering via the senses is converted to derivatives then the derivative flow pattern for the sentence is associated with a manipulation dynamics system.

The manipulation dynamics system has at least two interacting factors which can be described as substrate and operator. The substrates are derivative flows which are amenable to manipulation by other derivative flows or intrinsic flows which take the role of operator or manipulator. Just as many eccentric sensory flows can be converted to a similar derivative so too many eccentric derivative patterns can be treated by similar manipulation dynamics systems.

Despite seeming initially plausible to detect prevalent inter-object temporal associations and sequence
order, though not specific interval, using additional layers downstream of animated object template layers, might not one consider if some other, more scalable arrangement is feasible, including persistence based indication of interval?

Even assuming a reasonably compact flow fabric configuration for representation of animated object templates, complete with eccentric factors, embedded in sensor based virtual contexts, the scalability of ongoing expansion of subsequent prevalent object sequence relations, in several additional layers, infers downstream fabric expansion, combined with lack of versatility, in terms of manipulative operations even further downstream, whereby temporal factors of a virtual context are modelled. However, if not immediate downstream prevalence based persistence modified flow factors, detecting animated object template association and sequence, then what flow system based alternatives present themselves?

Clearly one of the main factors is persistence based relative temporal positioning of objects, by some form of virtual spatial temporal modelling context, beyond immediate sense factor flow decay. Notably one might consider the possibility of a persistent information space domain, outside the temporal envelope of concurrent sense factors, as a form of eccentric flow based simulation information space, which also has ongoing access to cascade conditioned sense flow, in combination with persistence based representations.

Though possibly closely coupled to sense flow factors, a virtual context characterizing temporal simulation domain model differs in temporal scale, implying significant asynchronous factors, and as a result a temporal flow ramp, at interfaces to sense flow.

A shift of flow rate in a transitional zone to a simulation domain also implies the possibility of either a diminished or overrun flow effect, potentially giving rise to oscillations. Assuming prevalent accommodation of common worst case flow factors issuing from cascaded multiple source sense fabric, might not one consider the possibility of cascade emission variability or burstiness, where top level sense flow transient overrun infers flow drops, or what might be considered floor level emissions from a quiescent steady state?

Presuming cascade sense flow to simulation space interface flow matching is at minimum equivalent to steady state emission, in the absence of animated object templates, might not conversely a worst case overrun be approached at flow conditions where numerous object templates are animated, combined with high dynamic factors, and backdrop overlay complexity?

Notionally then, how might such a simulation domain of differing temporal scales prevalently arise?

Consider if an available effective concurrent persistence, downstream of an interface to a simulation domain fabric, is multiplied in proportion to a variable factor by relative admissibility of sense flow. In such case if worst case sense flow is admitted, at the interface, then one might suspect flow based simulation persistence resources are stretched, especially if roughly equivalent flow parameters exist upstream from the interface to preceding flows.

Conversely if limited sense flow is admitted at the interface, for example due to multiplexing or emphasis, could not one speculate a greater flow factor of downstream simulation domain persistence is available for other modelling possibilities?

From consideration of interface flow rate entering a simulation domain, if limited admissibility is such
that, for example, only a single animated object template accompanied by some degree of backdrop virtual context transits the interface, might not one infer residual domain capacity, hence increased fabric available for simulation bandwidth?

In relative terms the transit of upstream fabric from the interface may be less than transiting domain fabric, especially if increased length of flow paths, thereby enhancing in flight or transient persistence. Thus might not one infer such a simulation domain offers the opportunity of increased temporal flow footprint to selective artifacts of cascaded sense flows, if the conditions of reduced rate and enhanced length are combined?

In terms of tapping sense based cascade factors for numerous simulation features using tributaries would not lengthy persistence paths offer advantage? If correlative tests were to characterize, for example, an animated object template in a virtual context, as with temporal characterization of a ball, might it not be advantageous for a source flow, from which tests are conditioned, to persist long enough for the emission of results conditioning others?

Thus from preliminary consideration could not one infer the front end of a simulation domain may advantageously offer general common fabric, of enhanced persistence, from which flow based tests for features of general applicability, could be prevalently formed, thereby minimizing scalability issues of temporal characterization fabric?

Assuming emission of sensor flow occurs on a continuous basis, and although possibly conditions residual flow factors, for the most part is dropped after a short transit delay, how might a travelling persistence envelope positioning sensor flow events in time intervals be possible? Thus for example simulating the trajectory of a ball.

Indeed, how might the passage of time itself be accounted for, where if not for some form of marker system along flow paths, would not all be a disjoint ephemeral present?

In a flow based system, exposed to a continuous stream of activity, might not one posit features such as embedded markers, by which temporal characterization is facilitated? However even so is merely to save some aspect of ongoing flow activity enough?

Could it be that, just as there is no consistent spacial dimensionality, without synchronized transforms of persistence modified flow, so too equivalent factors in a simulation domain may prevalently facilitate multiple concurrent temporal characterizations?

However, unlike spatial dimensionality which, it seems for the most part depends on parallel persistence based flow modifying factors, temporal “dimensionality” requires serial persistence systems, to facilitate ordered sequential events mimicking a general context.

Might not one then consider context characterization flow fabric as a potential candidate, as opposed to a highly parallel alternative?

But, if one is, for example, to have numerous related markers represented as embedded in such a characterizing delay line fabric, how could such be accessed, if they are at some indeterminate location in a flow? Would they not simply flow down, and then drop off the end of delay paths?

Alternately consider a long narrow series fabric broken into relatively short parallel flow segments, loaded sequentially with selective cascade sense flow factors of significance, such that each is long
enough to contain sufficient burst flow and together providing enough segments to cover as many factors that burst flow prevalently accommodates.

Assuming selective sense based flow might then be accumulated in tributaries, at an interface, so as to load marked flow segments in sequence order, how might particular flows be found and retrieved?

If an animated object template flow is directed down a tributary flow segment path, such that concurrent temporal characterization tests are conducted as a covariant factor, might not segments associated with such tests facilitate later ordered retrieval?

In terms of scalability does not such a tributary segment based solution imply a self configuring temporal flow segment, for each marker, on a one off basis?

However, is such an arrangement consistent with statistical prevalence factors for self modifying fabric, on the basis of plasticity, given underlying routing issues, which infer uniquely addressable series access on the basis of multiple gated segment paths.

So is it feasible to achieve an equivalent flow system effect for temporally scaled context simulation in a manner consistent with prevalence factors?

For a flow based system it appears relative signal delay factors may be central to any possible equivalent persistence mechanism. But how might delay become a prevailing factor of a temporal marker system?

Could not flow delay be induced by a change in related path length? If a flow path is such that variable temporal factors along a feedback loop act to quench path segment signal, after transiting at least part of a loop, could not the possibility of some form of non-routing based marker system prevalently arise?

21 Common Fabric Alignments

As embedded factors which may be conducive to routing or path selection on the basis of signal seem somewhat unlikely in biological networks, assuming continuous upstream activity on downstream feedback loops, might not one alternatively quench signal corresponding to a path length selection?

If a flow segment slice, as might return via a downstream loop path to an upstream node, is quenched at a delay, and is of a flow length corresponding to the delay, could not a controllable characteristic temporal flow segment ensue?

Consider part of an eccentric flow from animated object templates, as temporal markers, where could not marker events be equivalent to characteristic flow segment slices, hence if placed in time, relative to other such events, correspond to marker based temporal characterization?

Moreover if a delay is proportional to the interval between marker events, might not one infer two subsequent representational flow segment slices, to follow one on the other at minimum with a gap indicative of temporal distance?

For flow markers more common than others, and of these, intervals more frequent than others, might not one infer a basis of prevalence, for successive reinforcement of corresponding feedback loop factors,
whereby temporal characterization could thereby reliably ensue.

For biological equivalence multiple eccentric sensory subsystems infer downstream temporal alignment, to deskew asynchronous factors, in proportion to prevalent variation and selection.

For a synthetic network systems approach, similarly to biological ones, an aligned version of virtualized general context events, for episodic queue correlation is implied.

However, could not the overall factors of a simulation domain also contain non-episodic information potentially intrinsic to simulation domain operations?

One might assume eccentric sensory flow has little meaning outside of its handler fabric or demarcation layer, implying so too simulation flows have meaning valid only in simulation fabric, though possibly concurrent in adjacent fabrics.

Thus, if long term persistence factors prevalently used for temporal characterization are for the most part of a simulation domain, would not flow from sensory fabric at some stage be altered to comply?

If multiple types of sensory flows are cascade buffered thus asynchronously entering a simulation domain at differing interfaces, could not one infer at minimum flow based transitions or conversions to a common simulation domain fabric format?

Consider a general simulation domain fabric with common format flows such that flow markers are synchronized to common virtual context factors, then dynamic flow based comparative operations proceed, by which aspects of eccentric sense derived or persistence flow is correlated to others.

If one then postulates, for example, derivatives of correlative flows entering a simulation domain, slightly delayed from sensor flows, of what meaning and use might such be?

Could not a simulation domain virtual context be mainly of derivatives, more so than raw source factors? If so, might not derived flows be of other than sense factors, potentially derivatives of derivatives, as for example, derivative flows representing a ball substituted in place of sense flows?

But where could such a substitute derivative flow originate, if not flow modifying persistence? And how might such a derivative flow initially modify flow persistence, if not from a placeholder of sense flow?

Might not virtual context meaning be inferred by correlation factors of derivative flow, with either new derivatives of incoming sense flow, or perhaps even other persistence sourced derivative flows, not of sense factors directly?

Even so, how could a derivative flow escape a chain of sense based origin, if all derivative flow, though possibly unrecognizable as such downstream, is ultimately of sense flow, from some previous modifying cascade?

Further, how could prevalence factors underlie derivative to derivative correlation? Could the correlative combination of previous sense based derivatives hold some form of prevalence based advantage?

Might it not be of prevalent propensity to covariantly correlate incoming sense flow, with multiple concurrent derivative flows, corresponding to sense flow factors with template matching from disjoint or noisy signals?
Thus assuming some form of prevalence based combination of derivatives, could prevalence factors also lead to differing forms of derivative related correlation, where for example, might not aligned flow signals be subtracted or added such that a result derivative flow is either diminished or reinforced?

But of what use such result derivatives?

If incoming test flows are similar, then a subtractive derivative result may indicate only minor activity, while if incoming test flows are divergent then correlated result flow may be highly active, forming a basis for prevalent comparison of similarity factors.

Temporal phase shifts of test signals imply unreliable results, in turn inferring potential for a prevalence based marker onset alignment factor, where if marker alignment is not correct all that follows is spurious.

Though flow signal eccentricity factors could preclude non-marker phase alignment, one might consider on a prevalence basis, if a wide range of possibilities exist, simulation domain flow fabric must be equivalently versatile. Thus simulation domain flow fabric may potentially be able to plastically adapt to a heterogenous range of alternatives.

However, such versatility may not be conducive to scalability factors, where one could consider temperate compromise more likely prevalent. If true then one might posit, for example, average flow segment parameters prevalently lie within temperate limits of eccentricity, in turn inferring corresponding compatible ranges within simulation domain flow fabric, including persistence based modulation mechanisms. But where might such a temperate limit converge, and what could happen to information which is spurious?

22 Temporal Characterization Signatures

A combination of simulation domain fabric interface configurations by which temporal characterization of flow systems could proceed infers eccentric forms of incoming flow segment competing for common resources.

Notionally would not at least a minimal complement of flow segment signal elements be present, assuming a common fabric, to support contextual meaning within particular simulation fabric sections?

Although maximum average segment length, from sense flow sources could be arbitrarily long, selective admission to a common simulation domain fabric implies preemptive allocation or sampling, whereby segment lengths prevalently converge.

Hence in such regard and in consideration of a possible multitude of eccentric sense flows, what relative compromise infers an optimal average flow segment length to prevalently establish reliable correlatable flows, within common simulation fabric?

For a virtualized flow segment signal eccentricity, after sensory onset, might not convergence occur, where average flow duration, required to achieve a reasonable degree of assurance, within common simulation fabric, as to the meaning or cascade of sensory flow signals, is a factor? In other words might not the average length of flow be prevalently optimized so as to statistically create a reliable result?
If a simulation domain fabric context feature exhibits extended temporal patterns then a multitude of characterization sampled sensory flow segments could be required over a sampling interval. In other words if we assume a prevalent average simulation segment flow length then we would require a series of these to create a long simulation sequence.

However would not common fabric segment length path infrastructure, either longer or shorter than is prevalently minimally required on average, reduce prospects of survival, due to delay and hence increased outer loop time?

More generally would not a simulation domain, if prevalently biased for persistence based derivative factors, formed from sampled incoming sensory variation, selectively converge on a more reliable average segment length, whereby risk is reduced?

But what factors could affect reliability?

Longer segments could suffer from increased error rate due to interference or cross talk, where shorter segments might load up fabric flow path dynamics, increasing scaling issues.

For simulation domain dynamics might not one therefore posit prevalent factors inferring optimal content per segment, which, given an indication of content density leads to median segment length for shared paths? In other words evolution might well converge on an average segment length which provides maximum average reliability for risk projection, thereby maximizing the probability of survival.

In terms of persistence sourced derivative segments, which are then correlated to incoming sensory segments, of about the same length, would not such produce a derivative to derivative result signal segment flow of similar length? In other words if the simulation domain is constructed from average segment length flows then the supporting infrastructure which sources those stored flows might well converge on the same average length, so as to maximize efficiency or cost benefit.

Consider, for example, if such a result segment is combined with either another derivative or sensor signal segment synchronously with minimal delay, producing two new result segments, where if an excursion above a threshold peak level occurs, a recognition event is inferred.

However might not such an event be interpreted, and given meaning in an extended virtual context?

Consider several concurrent derivative signals, processed against a single incoming sensory signal flow, where each persistent derivative flow may correspond to differing prevalent factors of previous sensory signals.

From such an arrangement consider the scaling factors implied, where long term flow segment persistence is inferred. Thus one might imply the scaling of the number of derivative segments, and hence long term persistence flow segments inferred is proportional to the number of unique object source factors of prevalent significance.

Notionally several forms of eccentric derivational sense flow (e.g. from different sensor subsystems) may share common simulation domain fabric paths, and assuming some source factors of a context may simultaneously emit signatures amenable to more than one sense, additional derivative persistence and flow fabric is implied, to cover off increasing correlative factors. In other words simulation fabric would evolve to accommodate a mix of differing flow patterns.
However given such an arrangement overall how could multiple persistence sourced derivative flows correlate simultaneous multiple sense flows from a common general context source factor, possibly excluding or filtering flows from other sources? This is the classic problem of the “rabble of the senses”, inferring some means to selectively admit some sense flows while suppressing others.

Consider correlation between sense flows by testing for relative rate of change of marker density, thereby selectively excluding misaligned marker change rates.

This differs from derivative based sense flow recognition in that one is not testing for similarity, to an embedded persistence based construct, but merely for relative marker rate.

Suppose relative marker rates may be obtained by creating result flow segments on the basis of marker rate above or below a baseline rate. If a baseline marker rate is then slowly modulated in response to average source flow factors, result marker rate flow segments could indicate activity correlated to a differential change of marker rate, compared to the case at the time of a baseline modulation.

Notionally incoming signals from multiple sensor flows could be erratic and spurious, even though possibly of average characteristic marker rate, over a travelling sample interval temporal envelope.

If one, for example, postulates a stable synthetic regular signal rate flow, which is modulated by baseline rate, then rate change indication could emerge from a correlation of sensory signal rate, to baseline rate.

Signal marker rate might alternatively be obtained by variable threshold based excursion clipping of incoming signal, such that only markers above threshold are emitted in a derived marker flow.

If marker density per unit time increases, in derived marker flow, being comparatively extracted from baseline flow, does such not imply a practical and potentially reliable resultant marker rate change result flow?

From the perspective of common simulation domain fabric front end temporal characterization, we have implied the possibility of persistence based marker signature recognition, where markers could have a distinctive temporal distribution signature, thereby facilitating temporal characterization on a scale beyond motion detection.

While such operations are interesting in themselves, and imply dynamic monitoring of a complex baseline context, and, it seems, with variable derivative flows potential learning of novel signal features, how might such a flow system prevalently facilitate derivative persistence, and contribute to more advanced features, such as temporal simulation?

23 The Case For Derivative Cascades

Coalescent temporal cluster patterns in a general context, via sensors or monitor stacks, where embedded subsets as related spatial temporal patterns, or objects exist infer characterizing cascades.

Though clustered general context patterns, how could modifying relations, on a prevalence basis, be represented in simulation fabric?
Given an object cascade, for example, which changes to subobjects then back again, might not one expect correlated factors of sense flow corresponding to the object, followed by the onset of relative rate of change signature flows, corresponding to a transition region, trailed by correlated sense flows of the subobjects, then sense flow of an original object again?

For a sequence where, for example, persistent derivative cascades are correlated with the object, indicating by comparative result flow high correlation factor, followed by a marker rate change flow indication corresponding to the transition, then a plurality of derivative flows produced by subobject flow, followed by another marker rate change flow, then the original object derivative flow again, might not intervening factors on occasion diminish leaving only a perturbed object flow?

Hence, if the temporal domain sandwiched between the object derivative flows was gradually reduced, might not intermediating activity from other flows become so reduced as to render a quasi-continuous derivative flow of the object, or effective equivalence of the two flanking derivative flows?

Conversely as the temporal domain between object derivative flows increases, might not the effective equivalence factor become separated by a flow zone of increasingly determinate sub-flows, preceded and terminated by rate change flows?

In consideration of prevalence factors where, for example, a spatial emphasis object template or cascade funnels a range of sensory factors into a single eccentric generality, so too might not a similar trend influence prevalent equivalence of subobject inclusion into an already tested temporal emphasis object generality, though in the common fabric of a simulation domain?

Notionally we are implying the intermediating factors between object related flows, are interpreted by downstream fabric, as equivalent to the initial and trailing object flow.

However as the multitude of intermediating subobject related flows cannot be directly coalesced to a single object they are apparently equivalent only by temporal clustering factors of association alone, with the bracketing object related flows.

But how might such a form of temporal clustering association equivalence be manifested as persistence modification?

While simulation domain fabric may not be able to directly combine subobject with object related flows, perhaps prevalent association of related persistence factors on the basis of related derivative flows could form the underlying factor.

If when an object alone is present, and of high correlation via persistence based flow derivative, might not the concurrent invocation of associated subobject derivative flows have immediate use?

In anticipation of subobject sensor flows, associatively evoked derivative flows might improve response time, however how could subobject flows line up with their respective derivatives?

Assuming the initial object aligns with its derivative by stimulating emission flow, possibly through dispersion over persistence fabric, where only correlated derivative flows activate, could not associated subobject derivative stimulated flow potentially disrupt such an arrangement, if concurrent?

Assuming subobject derivative flow is associatively stimulated, after object correlation with derivatives, and subobject sense flow is active, might not this pose a relative alignment issue, thus unreliable at best?
However, what if the presence of associated post correlation multiple derivative flow, without corresponding subobject sense flow, had some prevalent basis of its own?

Might derivative flow without sense flow, though associated with sense flow, have some form of downstream significance?

Even if of minimal significance, the associated activation of derivative emission apparently has an implication of potential cascading, if one or more of the stimulated derivative flows themselves are associated, and stimulate derivative flows in turn, thus emitting a cascade.

But of what use might an associated cascade of persistence based eccentric derivative flows, initially prevalent on the basis of sensory correlation be?

Could not such a cascade find use as a prevalent form of temporal expectation factor, for a series of related sensory flows?

Notably a potential use might be for repeated general context terrain navigation. Also if one considers symbols as embedded candidates of persistence based derivative flows, might not cascades of prevalent symbol derivative flows form preliminary factors for navigating languages or symbolic networks?

Clearly if derivative flow cascades are a potential fundamental dynamic flow system feature of a simulation domain, potentially underlying some aspects of introspective thought process models, might not correspondence with learned logical operators exist?
Chapter 4

FORMS OF FLOW MODULATION

24 Plasticity And Temporal Density

The factors leading to temporal association cascades across temporal density representations infer an initial derivative flow segment, which may have been invoked in a role as a composite template by sensory flow, followed by an associative link to at least one other derivative template, whether related sensory flow is currently present or not.
Hence is not the link from one derivative to another, acting as if a derivative flow was triggered by a related sensory factor, which could pervade common simulation fabric, inferring triggering by similarity?

If one considers a common fabric of a simulation domain to be such that flow dynamics are likely invoked more so on the basis of signal properties, than fabric eccentricity, does not such imply some factor in the initial derivative flow is prevalently used to trigger an associated derivative, while being ignored by a multitude of other non-associated derivatives?

Also if the role of a second derivative varies, might not triggering by a first derivative come from a differing factor than triggering by sensory flow?

Assuming this is the case, could not the trigger of a derivative flow by another derivative be a differing signature, pervading a separate though common derivative based fabric?

If such a fabric is assumed the case for overall simulation domain fabric, might not it consist of two common path sub-fabric types.

One of sensory data pervading persistence nodes and triggering associated derivatives which then flow into a common derivative based fabric, correlating with sensory flow.

The other of pervading persistence clusters coming in on a differing transit path, potentially involving other forms of derivatives by association?

From a network traffic perspective it seems derivative flows have no need of using a common sensory flow fabric, nor sensory flows of using a common derivative flow fabric.

However does it not follow that derivative flow that is being correlated with sensory flow could tie up common derivative flow fabric, possibly interrupting ongoing derivative associations?

It also seems to follow that characteristic segment flow parameters, signal eccentricities and fabric factors may differ between the two posited common sub-fabrics.

As a reality check consider as complexity is scaled up, what might relative prevalence for expanding the scope of a common sensor fabric in contrast to common derivative fabric, entail?

If by complexity we are implying scope of capability of the fabric overall, then as the number of persistence nodes increase, both common sensor and derivative fabrics could expand. However might not prevalence factors favour one over the other?

If sensor fabric were to expand more than derivative fabric, would not fewer paths for sensor stimulated emission of derivative to flow on exist?

Whereas if derivative fabric were to prevail common sensor flow might not reach some persistence nodes.

But what might alternatively serve as a surrogate for sensor flow, other than activity on a common derivative fabric, of which derivative flow segments are already present?

What if, for example, derivative flows without sensor correlative loading only stored a sequence of signature links, to other derivative nodes?
How then could such a derivative flow be loaded on a prevalent basis?

If a derivative flow cascade is in progress, would not each flow segment in a sequence have a signature link to the next, except the first, which might have been initiated by sensor flow?

But how could links on a dedicated derivative common fabric be formed if not from initial signal activity?

Might all or a portion of a derivative flow segment signal serve as a signature link, or could derivative links be prevalently formed on a dedicated simulation domain link fabric?

Does it not seem of less advantage to support the overhead of a common derivative fabric, if a covariant link fabric must also exist, especially if over longer fabric path distances?

Though a common derivative flow segment fabric seems notionally necessary for leveraging the persistence factor, might not inter-node links be of differing fabric elements?

But how could such linking elements be prevalently self configured, for nodes of arbitrary flow segment content?

Is it not only possible to do so with some aspect of the signal content itself, by which one of a multitude of flows may be identified?

If so, how long or short might a derivative flow segment prevalently be, such that it may accommodate a reference to a portion or all of the content of another, and how many signal permutations of such flow might be enough to uniquely identify a subset in a growing multitude?

Consider, for example, to what extent all persistence flows could respond to a common link signature, where if more than one, would not a massive signal collision occur on common fabric?

Might a single persistence flow of itself drive a pervading common derivative fabric?

Would a combination of local associative link elements and fabric tributary factors simultaneously reduce flow output loading, enhance feasibility of a separate link fabric and enable common fabric signalling factors onto tributaries?

If a common derivative flow were to concurrently activate clusters of locally pre-linked flows, how might one of a multitude of clusters respond, if all activate some form of output onto a common fabric?

Might not tributaries of a common fabric be similarly pre-linked such that outgoing signal is always enabled but incoming signal is selectively suppressed?

Average derivative flow segment length could be in a ratio of greater than one, to average persistence node flow segment length, implying at least part of one cluster, of linked flows, may be required to activate in succession so as to emit enough signal to fill an average flow segment.

But what means of persistence could control triggered successions of linked flow activity?

Does this not imply at least some flows in a cluster may be coordinators of linked flow activation sequence?
Where if so, how might such an arrangement be prevalently conditioned by common incoming flow segments?

Assuming a cluster is pre-linked, such that one node activates after another, for both incoming and outgoing signal, at the behest of sequencing nodes, might not such be considered the equivalent of a node of only links, and take up the role of *prevalently replicating derivative activity*?

Though a sequence node cluster prevalently replicates common derivative activity, how might such be of any benefit if all clusters proceed on an equivalent basis, unless clusters themselves are sequenced by some form of hierarchical arrangement.

Notably, in summary, we are implying an overall architecture of sequencers of sequencers, where the selectivity of prevalent factors of nodes is controlled by temporal activation and suppression, such that a common derivative fabric accumulates sequenced derivative flow segments.

Such a system relieves segment fragment persistence node exposure to other than factors of relevance, pushing selectivity onto a hierarchy of sequencers, from the alternative of *signal recognition* at the near real time or lower band flow level.

While such a posited sequencing system may alleviate the requirement of signal recognition across a multitude of nodes, it implies a concentrated form of what might be considered a *multiple layer bidirectional sequencer flow architecture*, operating symbiotically with an underlying common derivative fabric.

But, even so, how many layers of sequencers would be required, and how might composite sequences prevalently occur?

Consider average derivative segment length on a common flow system as composed of shorter sub-segments each of which could be from a separate cluster.

If only one layer of sequencers exist then all cluster sequencers must connect to that layer, which in turn must connect to a common derivative fabric.

Assuming a composite derivative segment is composed in turn from sub-segments from sequentially enabled cluster sequencers, which in turn compose a sub-segment from sequentially enabled flows, the ratio of maximum average segment to average sub-segment length scales as the average number of activated sub-segments per cluster, times the average number of activated clusters.

But, given such a multiplexing arrangement, how many flows might an average sequencer interface to?

From a preliminary perspective, assuming equivalent levels of persistence in sequencers as nodes themselves, might not a sequencer to persistence node flow interface ratio scale with node sub-segment length?

Thus on a prevalent basis the greater node persistence content, the greater the fan out of sequencers, and the greater average cluster size.

However as cluster size increases might not limiting scaling factors ensue, where some nodes may be further from the sequencer than others? If so, might not the number of nodes possible to fit in areas of
greater distance from a sequencer increase, biasing node population in favour of distance, which in turn implies greater delay, of which a sequencer might then compensate with effective lead time?

Moreover one may consider potential diminishing returns of sequencer compensation of delay, where delays of transmission might compete with delays intrinsic to a sequencer, limiting maximum viable ratio of persistence nodes per sequencer.

Another factor, for example, might be to what prevalent extent could closely sequenced nodes be required, where clusters scale linking nodes, by prevalent sub-segment content.

If the granularity of underlying signal fragmentation is limited to signal factors associated with content, clearly nodes must contain at least a minimum corresponding persistence factor.

Thus if each node contained the minimum persistence factor, the ratio of prevalent average derivative segment being a multiple thereof, the outlying maximum number of nodes could be established.

However, given such a case, if sequencers have equivalent persistence, only very few nodes would be supported per cluster.

Moreover in what ratio could information content scale to signal granularity?

Must information content be uniquely represented by signal eccentricity at the common derivative fabric level, across equivalent platforms?

Put another way, could signal eccentricity vary for the same representation between platforms, and yet have equivalent effect?

If so, one might assume the ratio of representation to signal granularity may leave enough room to support such variable eccentricity.

Consider, for example, a symbol which is stored on two platforms, where underlying signal eccentricity variation implies both store related derivative sub-segments, on a differing number of persistence nodes.

Would not, for example, a greater number of nodes imply a longer representation sub-segment, given roughly equivalent signal length per node, and, for example, corresponding increased fan out of a sequencer, assuming a single cluster?

But what of temporal density markers embedded in a sub-segment, where might not sequencer persistence, and hence fan out expansion, depend on discernible attributes of signal, by which to allocate a nodes’ successive temporal features?

And where might such markers come from, if not sensory factors leading to symbol persistence?

However could not such persistence, for a given symbol, come from more than one sensory channel with differing markers, implying differing marker based sequences, of differing length and hence potentially differing number of underlying nodes?

Though, if sequenced markers are used to splice together an output sub-segment, how might a variable length between markers be determined, such as to replicate prevalent sensory input signal eccentricity, and hence enable correlative recognition?
Prevalent Fabric Dynamics

Assuming the presence of simulation domain common derivative fabric with a distribution of frame rates, implied by sampled sensor channel specific frame rates, does it not seem reasonable to consider persistence factors, including some preliminary estimates of relative information density, as ratios to frame rate?

Notably frame rate reflects minimization of signal discontinuity or gaps in common sensor and derivative flow.

Assuming signal element information density per unit time in a flow segment is at least that required, at minimum, to convert even the most rapid, though prevalently relevant of sensory transitions or bursts, to common fabric.

Average temporal marker spacing may also scale as a ratio, implying a systemic minimum frame rate for the *illusion of continuity*.

Local common frame rate thus seems potentially a characteristic of a common flow system overall, due to underlying signal element eccentricities, inferring an average marker spacing for sources of persistence such as clusters of flow segment sequencers.

Within common fabric, even widespread signal discontinuity, due to gaps may not be apparent in concatenated flows, if flow segments sourced from a multitude of sequenced flow storage nodes, or sampled sensor flows, have intersegment gaps within reasonable limits.

Hence might not also selection over long term variation, favour average derivative flow segment lengths proportionate to average frame rate based common fabric?

However looking ahead what might downstream fabric, from a common derivative fabric favour?

Could some aspects of servo control flow, possibly in feedback loop coordination with sensor flow, benefit, for example, from a variation of average derivative flow segment length?

If an aspect of servo control prevalently implies high spatial temporal resolution, shorter servo segment lengths might be advantageous, assuming diminishing returns are not costly, with reduced information content per segment.

For preliminary purposes we might just assume although some factors may influence prevalent average flow segment length in common derivative fabric, these may be particular to platform factors, and take an average frame length as equivalent to average common fabric segment length.

Clearly this does not mean that all, or even any, flow segments are equal to average segment length, only that a long term sample of segment length under a variety of conditions could converge to an average length in common fabric.

Notably as such if for example, fine servo control requires a series of much shorter segments that is a
possibility, not precluded by this. Alternately, if some factor of eccentric downstream fabric might prevalently benefit from longer segments, that may also be possible as well, again assuming underlying fabric factors are able to comply.

Now if a common fabric transit node is downstream of fragmented persistence, might it not either, for example forward some factor of such flow, or block it completely?

However, if one considers the transition from blocking to flowing, or the contrary, might not this be conditioned by the upstream flow itself, possibly in combination with some other factors, and could this not be somewhat skewed in time, with respect to the onset or cessation of flow from persistence?

Similarly consider the onset of flow from persistence, might such condition be initiated by eccentric incoming flow, of which some aspect triggers a response, perhaps in combination with or even solely due to some other factors, where the temporal skewing of onset flow may vary?

Alternately persistence flow curtailment may be due to already considered conditions of onset, or some form of end off factor such as an embedded eccentric signal, persistence mechanism depletion or time out, all of which imply the possibility of temporal skew.

Notionally common flow from fragmentary persistence may inevitably imply some degree of temporal variation, between selective transitions.

However, if we assume some variable factor of fragmentary persistence is without significant localized temporal variation, might not that be most prevalently of the persistence factor itself?

Could not an average segment length, in common fabric indicate the average discharge of an average persistence source, under some conditions?

But what of the transit time of such a persistence discharge, as it travels from localized source along available paths?

Might not all paths be of eccentric character, thus affecting signal eccentricity, potentially distorting signal parameters?

If two persistence source factors were to emit identical flows of average segment length simultaneously, and travel along paths of differing parameters, though of the same path length, would not it be likely the greater the transit time the greater the difference between flows, including relative flow onset times, flow signal parameters and flow end off times?

But how then might fragmentary persistence be temporally aligned in a common fabric, so as to prevalently, on average, preserve signal integrity and intersegment timing, while avoiding interference factors?

Consider what might happen to a flow segment injected at some arbitrary location in a common fabric.

From the insertion point the flow segment may disperse in multiple directions, on paths of differing character, where it may engage downstream elements with a relative delay in proportion to accumulated transit time.

Relative delay may vary between average best and worst case in proportion to transit time, the
difference between which increases with maximum transit time, which in turn may be proportionate to maximum path length.

If it is indeterminate from where in a fragmentary persistence source system a follow on flow segment might originate, onset of such follow on emission may occur at any time after best or worst case delay.

However, notably one may consider a follow on flow segment which is injected into a common fabric after the previous flow segment has terminated.

Consider what might occur if a follow on flow segment is injected at a location corresponding to worst case transit time from a previous flow segment.

Even if a follow on flow segment is injected right after termination of the previous segment, its onset might not reach the location where the previous flow segment was injected, assuming an equivalent reciprocal path, until worst case delay has elapsed.

But when is the end off time of the previous flow segment at that time?

Would it not have been the worst case delay before the arrival of the original segment end off at the follow on injection location, thus creating an intersegment gap before the onset of the following segment of twice the worst case delay?

Would not this imply that the extent of transit time separation between end off and onset of fragmentary persistence, on a common fabric may prevalently converge, such that it is less than the average intersegment gap?

Consider what prevalent countermeasure might optimize such a situation, where would not variation of common fabric with path length imply slower signal transit along a path preferable for closer fragmentary persistence and proportionately faster signal transit for more distant targets?

To what extent might prevalent scalability factors be affected?

If, for example, total path length between any two nodes, from a temporal perspective were equivalent, within a fraction of an intersegment gap, regardless of proximity, then the aforementioned worst case delay factor would roughly apply to all nodes, thus creating a convergent system wide intersegment gap.

If, for example, common derivative fabric is scaled while sensor fabric is exempt, as overall system size scales up, assuming shortest equivalent delay paths increase in length as a function of longest equivalent delay paths, keeping relative delay constant though growing with average radius, then faster longer paths may connect more prevalently over longer hops, while slower shorter paths more so on shorter hops.

Thus assuming a geometric distribution for a mesh of nodes over a volumetric surface, enclosing a system of cross connect paths, an arbitrary node may connect to any other arbitrary node if appropriate paths are available of the correct delay, where the distribution nodes available as targets, as a function of distance, implies an average path delay.

Clearly a minimum connect distance cut-off horizon is implied for the slowest available interconnect fabric.

However what signal paths and volume of interconnect fabric is implied if each node connects to all
If a particular node is emitting signal then it might reach all of the nodes, within an average delay, outside of a cut-off distance about its location, such that those nodes most proximate, for which possibly no sufficiently slow connection exists are omitted.

Notably if each node is connected to all others reciprocally for bidirectional operation, this implies a reciprocal connect also omits equivalently proximate targets surrounding a given node.

Thus if we assume a system wide cluster defined by a temporal cut-off distance, with an average minimum delay common derivative connect fabric connect going out, and coming in, then local nodes, though not able to connect directly, might do so via intermediary transit nodes.

26 Cohesive Awareness Factors

From a densely connected common derivative fabric perspective the suppression of pending emission from a multitude of connected clusters is a condition which only a succession of countervailing inhibitors could selectively relieve, like a series of dams preventing a flood.

The consequences of concurrent spurious leakage, of a vast array of persistence sourcing nodes through local clusters onto common fabric would create a chaotic system, where ordered patterns of segment flow are less likely.

However, as persistence scale increases might not also the probability of spurious factors in direct proportion, such that, for example, the isolation of unreliably suppressed clusters, from common fabric, could become a necessary adaptation?

Moreover does not such an adaptive arrangement infer a hierarchical clustering of clusters?

Consider how layered clustering might affect temporal multiplexing of stored common derivative segments, where a level of uncertainty at each layer, both as to timing and selectivity of source factor is inferred?

Might not such uncertainty compound with each successive layer, implying a trade off with reliability?

And what of fabric path geometry, would not arrangement of interconnects limit the number of layers?

If the dominant prevailing advantage of common fabric is to selectively concentrate temporal representations, might this not also be accomplished in distributed manner, if downstream factors are equivalently affected?

However could not such imply trading off relative movement of common derivative segment source signal, to downstream factors, for widespread deployment of equivalent, non centralized, downstream flows in distributed manner?

Moreover if downstream factors, possibly as operators, being widespread, and having differing localizations of a common though distributed substrate, might they not subsequently emit a flow of distributed partial results?
Would not a widely distributed system, with both sequentially related incoming and outgoing flows, for example similar to a compound eye, require unification of disparate factors so cohesive operations result downstream?

But what if such operations were themselves of common derivative form, widely shared, and selectively applied across a distributed flow representation?

Fragmented flows of representations operated on by common operations could produce related though fragmented flows, or be converted to a unified flow.

Would not high correlation of fragmented flows be an approximation to a unified flow, and possibly serve as such from the perspective of cohesive awareness, though based on fragmentary condensates?

Consider the dynamic aspects of common flows as related object flows, if only by the unity of relative proximity of temporal factors, with each object flow as the representation of a collection of clusters, where properties thereof are extracted by local common operators, of which property factors themselves flow out to the same, or other, clusters and become flows as objects of operators in turn.

All this either in lock step synchronization, merely by minimal temporal skew, with sensory perception, or of internal persistence factors alone, or in combination as far as cluster capacity allows.

Assuming a hypothetical object flow distributed over a collection of clusters, again similar to a pattern moving across the sensors of a compound eye, though of derivative information space objects alone, how might operator fabric form result flows?

From consideration of possible prevalent operators on derivative objects of sensory flow, might we not assume preliminary factors, for example of quantity and quality?

Further might we not assume that an output signal of a trained network or cascaded operator system, for example, represents each of these factors as a separate flow, covariant with derivative object flow, where the inputs of an operator are formed by multiple flows through an arrangement of clusters.

Thus as a derivative object flows through clusters each of the outputs from operators indicates, in proportion to accumulated training, a response flow, with a slight delay factor, becoming covariantly associated with derivative object flow, as a repeatable dynamic factor, not of potential derivative object persistence.

Does such a scheme necessarily imply the scope of a widespread distributed operator network covers all clusters, or a localized subset, of what might be considered a prevalent local persistence, suffice?

Clearly if a temporal envelope of enhanced awareness factor, complete with operator flow, is proportionate to flow factors through such a prevalent local persistence subset, the scope and potential training divergence factors of operator fabric could be reduced.

However this seems to imply derivative object flow, or at least some related reference, is arbitrarily transferred to such a cluster subset, on a system wide basis, thus trading one limitation for another.

Clearly the scope of prevalent enhanced awareness cluster subsets might restrict extent of underlying common fabric, which such transfers might traverse, with the trade off of reduced derivative capacity.
Though such local persistence subsets might prevalently form arbitrarily in clusters, of which related operator training is temporally coincident, this does not imply these are in any particular pattern, or even that such clusters could not differ in relation to underlying operator networks, which depend for their eccentric features on an accumulated pattern.

Clearly the implied operator fabric is in a constant state of reorganization, combined with either growth, or reduction in scope so as to dynamically alter the footprint and distribution, of what could initially be a small unreliable fragmentary cluster arrangement with minimal training, to a larger more cohesive footprint.

But if this is the case how might temporally associated object flows traverse such a subset preferentially, unless there is a general common fabric of which they are but a part, or if there is a prevalent path, of which possible diffusion of temporally clustered flow is concentrated?

While training patterns from scratch, as the basis of operator eccentricity seems highly unreliable, might not some predisposition factor of which subsequent training is a potential enhancement be more tractable?

Where, if so, does this not imply prevalent localization more so than arbitrary distribution, and prevalent eccentricity of operator factors in favour of statistical variation and selection, more so than platform eccentricity.

But what consistently convergent operators, of what scope, might be both possible and prevalent?

Could more sophisticated operators, of greater scope, become more likely prevalent with overall system scale?

Might, for example, multiple derivative object flow relationships, of temporal dependency, combined with factors of object contingency, on possible precursors, have some basis in predisposition hence only becoming platform eccentric with formative training?

Moreover such may appear more likely if a temporal persistence flow envelope streaming off of the present via the senses increases in duration, with covariant derivative object flow capacity.

But does not this imply a derivative flow path of greater width and length, given a roughly constant flow rate within common derivative fabric, where incoming sense flow may decay rapidly, leaving a condensate of derivative flow, by which it is selectively correlated as the medium of operator context?

Could not more sophisticated operator factor arrangements improve selective slowing or mixing other persistence based derivative flow, with the derivative flow of current virtual contexts?

And might not the possibility of this improve if the decay tail of the current sensory context is longer, thus improving chances of associated previous derivative flow enriching the mixture of concurrent derivative flow, for potential temporal relationship operator input?

Would not selective slowing of derivative flow, for example, imply traversing more common fabric, at the same rate of flow, possibly including some form of looping by which the same fabric may be reused?
PART II

RISK PROJECTION FACTORS

"The effect of an object upon the faculty of representation, so far as we are affected by the said object, is sensation. That sort of intuition which relates to an object by means of sensation is called an empirical intuition. The undetermined object of an empirical intuition is called phenomenon. That which in the phenomenon corresponds to the sensation, I term its matter; but that which effects that the content of the phenomenon can be arranged under certain relations, I call its form. But that in which our sensations are merely arranged, and by which they are susceptible of assuming a certain form, cannot be itself sensation. It is, then, the matter of all phenomena that is given to us a posteriori; the form must lie ready a priori for them in the mind, and consequently can be regarded separately from all sensation."

—Immanuel Kant - The Critique of Pure Reason
Chapter 5

REPRESENTING A VIRTUAL CONTEXT

27 Temporal Alignment Glue

Before proceeding with simulation domain scalability issues one might consider, in a preliminary manner, how intermediating derivative sequences may be related to each other, and potentially downstream servo control sequences.

A virtual context emphasis where prevalent risk factors dominate implies the probability of a flow network of similar factors, both external and internal of an adaptive information space, which complete with projective subsystems, forms an outer loop.

Internal sensory derived flow may model some external flow, while adaptive factors infer servo flow, derived from internal flow, which in turn optionally modify context factors, thus creating a basis for ongoing outer flow loops.
Asynchronous derivative features, some via an outer flow loop and others of concurrent inner loop persistence, could traverse a simulation domain as a combination of temporal envelopes rooted in virtual current contexts, both external and internal within sensor scope, and of a conglomerate of covariant flow sequences, from which factors affecting downstream flow, including servo sequences, arise.

In so far as the scope of prevalent variability extends to a quasi-static horizon of downstream flow, which is of mutable loops cast in the future, so too could the projective capacity of a simulation domain expand in proportion.

However clearly as variability compounds with extension of predictive temporal envelopes, with diminishing returns, a condition of prevalent simulation domain scalability may converge to a compromise scope for an eccentric platform.

To the extent that optimization of mutable flow loops infers rare though valuable predictive downstream factors (risk), consider how underlying fabric might support such, given a prevalent scope.

If persistence based derivative sequences were to be linked in a flow network approximating that of part of a downstream flow loop, based on prevalent factors, might not such within mutable scope cast an expectation level, of related rare factors, at the trailing edge of a temporal envelope?

But how might marker sequences of themselves be linked?

Is not inferred causality potentially such a link?

Might not linked flow networks imply a form of navigation through causal terrain, dependent on loop modifying factors, some of which a simulation domain contingently affects?

However how could a scope of affected possibilities be accommodated, in a derivative cascade framework?

Might not prevalent causal terrain flow networks be considered as baseline of affectation, against which modifications are tested?

In order to test a range of affected possibilities the scope of simulation domain fabric implied includes the means by which alternate sequences could occur, combined with how they are compared, with favourable aspects thereof accumulated and implemented as novel features, by which results further modifications could be based.

Clearly we are proposing a form of ongoing experimentation loop, as a concurrent inner sub-loop, scoped to platform eccentricities, by which modifications converge on preferential factors during the course of navigating a causally linked derivative network.

But what supporting factors of a simulation domain could implement such an inner sub-loop, concurrently with ongoing sensory sourced derivative flow?

Does this not minimally imply additional flow of which multiple concurrent linked sequences are tested, complete with additional fabric?

If causal links are the basis of a causal network, consider formative factors based on, for example,
operator detection of spatial temporal coincidence, concurrent with substrate derivative marker flow, such that a locality of markers could serve as a link trigger.

But what is to be linked, and how?

Sequences of a temporal cluster preceding operator causal indication, either of sensory, servo or persistence flow are candidates for linkage, where for example a marker based servo control sequence could be cross linked to a locality of markers of derivative flow of sense, where the directionality of a link may be either from servo to sense, the contrary, or both.

If one considers how a network is formed from such links, so as to enable a navigable substrate, by which sensory, derivative and servo factors are coordinated, a triggering of servo sequence from a synchronizing preamble is implied, where a link of coincidence only, downstream in servo sequence flow, is not particularly useful.

What is apparently required is an upstream derivative flow marker link, corresponding to preamble servo sequence, such that coincidences are replicated and synchronized downstream, potentially as part of a larger choreographing network.

However if we assume a causal network fragment of such a synchronized form, how might a link in or out occur?

An incoming link might reference operator coincidence markers, however clearly a temporal discrepancy exists with preamble lead time, similarly an outgoing link might also reference coincidence markers with temporal adjustment issues.

Assuming the same causal network fragment were to be repeated indefinitely in a loop, a reverse servo sequence could re-establish preamble conditions, where one might assume an associated derivative flow, combined with an outgoing link to the next cycles incoming link, with a form of temporal alignment.

Even this arrangement seems a stretch for a simulation domain fabric, of which an important feature may be overflow capacity to sequence aspects of derivative fabric, for sensory flow correlation.

So what is missing that might be implemented in intermediate fabric?

Notionally we are missing temporal alignment glue, where sequence fragments although possibly linked can be shifted in time, plus a manipulative factor, whereby sequences can be re-arranged by trial and error, potentially creating new sequences, splicing them in, to create new test runs combined with criteria for improvement.

28 Virtual Context Architecture

One may consider a potential issue with temporal alignment as one of no frame of reference on which to base delay, other than that of sensory and derivative flow decay envelopes, which seem of minimal use for a simulation domain, potentially arranging sequences, unrelated to concurrent sense flow.

In a preliminary manner one might posit the representation of modelled features as a form of virtual
meta-view, as an independent floating temporal envelope, where sensory related decay flows are but a factor.

Further, might not such a floating representation be of the general form of a flow system scene, of mutable features?

As tight temporal thresholds to outer loop reactivity may not be as prevalent in such an arrangement, might not one also consider a more loosely coupled fabric, with greater tolerance for temporal variation in branches and nodes, implying scalability over a larger, possibly more heterogeneous, distribution of supporting network elements?

Assuming, for the moment, a scene as a temporal spatial frame of reference, how could a temporal alignment glue logic construct nodes and branches thereof, other than by of a system floating in covariance with sensory decay, of which existent nodes and branches may be a guide for addition of new sequences?

But what if no existing nodes and branches are present, of a manipulative form, does this not imply a default scene factor of which eccentric addition is but a transient feature?

However what could serve as a default, except that which is consistently present, which may be internal flows of an eccentric platform?

But what prevalently consistent features, of an eccentric platform, might serve as permanent features, as the root of a temporal spatial scene?

Might not that which could be represented as spatial temporal nodes and branches of a platform, be most likely? But if such nodes and branches are consistent, and so not of conditionality, is not some form of spatial temporal loop thereby implied?

If one assumes a spatial temporal loop then how might nodes and branches be of such a loop, and also of the consistent features of an eccentric platform?

Might we not assume general consistent factors of temporal self and spatial self, but how might such be of loop and also of a temporal frame of reference?

Could not nodes of temporal and spatial self, for example, be connected by branches of temporal to spacial, and spacial to temporal transforms?

But what may be prevalently consistent of an eccentric platform so as to be a quasi-static flow other than of space itself?

And what might be prevalently consistent of an eccentric platform so as to be a dynamic flow other than of time itself?

Consider a two node scene graph root system, of which one node is of prevalent time of self, and the other is of prevalent space of self, where if linked by a branch, time of self flows through space of self, which in the absence of additional nodes and branches merely flows via a loop back through time of self, as the default configuration.

Now if one considers the addition of nodes and branches might these not extend from the graph root in such manner that flow traverses all of the nodes and branches, thereby extending the flow loop?
But if such nodes and branches are of a general nature, such that they may take on eccentric flow, but are of continuous presence, might not default graph flow circumnavigate the entirety of graph fabric, in the absence of eccentric additional flow?

Moreover how might a loop of flow signal be detected other than by differing activity in loop-back flow, implying a characteristic loop time of graph fabric, and hence of scalability of factors represented therein?

As to scalability overall of a simulation domain, though an embedded graph fabric may be of a mutable conditional flow, how might variation be induced, if not using sources of flow, where one could consider selective gating onto, and positioning within a graph so as to form a relational flow network of nodes and branches?

Consider a loop cycle of graph fabric, where may not eccentric flows merely occupy a portion of general fabric, for a single cycle?

Thus if dependent on results of the previous cycle, lead time to set up an eccentric network segment might prevalently average one cycle time, of what could be termed an understanding loop, where an average loop segment length could be construed as composed of sub-segments of a graph.

If such an arrangement is assumed apart from persistence and yet a consumer and producer thereof, covariantly with derivative and servo fabric, does this not imply divergence of prevalent factors, of which persistence may accommodate?

Moreover latency and jitter may be less of an issue for persistence factors of which reactive containment is not prevalently critical, while flexible mutability may be less critical, where complex learning prevails.

A compromise apparently implies either a redundant separation of some form, or system wide variation, such that common persistence fabric locally accommodates prevalent use, or both.

If common fabric, might not an eccentric domain have access to all persistence, even though such may be incompatible with intrinsic flow factors, whereas if separate, how might redundancy work?

Consider the risk of inappropriate flow entering a specialized domain, where, for example, sensor flow might usurp derivative, servo or simulation flow.

If persistence flow is prevalently domain eccentric, both of storage and retrieval, then how might flow cross domains?

In the case of sensor flow, might not the mere dropping of flow in a decay envelope, in exchange for a more compact form, of which a longer decay and more manageable persistence is feasible, be a clue?

Is this not a flow protocol converter, which although changing information density, preserves that which is most prevalently useful? Thus might not such a protocol converter also act in regards to deferring inappropriate flows, from entering an eccentric domain? Moreover if a converter is able to drop information density, might it also not add it in?

By what possible schema might information density be added that is not there to begin with, unless by merely selecting from a range of pre-existent factors?
But what use altered density flow if not compatible with eccentric fabric factors, of which make prevalent use thereof?

What compromise is inferred between protocol up converters for servo flow, protocol down converters for sensory flow and eccentric simulation domain fabric of which protocol conversion might not play a role?

If a limited intervening domain then one might consider a down conversion from sensory flow, which then might be up converted for servo control to be a form of shorthand between eccentric systems.

Thus an intermediate flow between sensory and servo systems could be tasked with selecting and actuating servo systems, as a sequence over an interval in an ongoing manner, proportionate to temporal resolution prevalently required.

In such case a flow segment may at minimum contain enough information to select and condition servo factors over an interval.

So while a vast array of alternatives may be possible, as far as down conversion of sensory flow, such might prevalently converge on flow segments of an appropriate length and content for one or more eccentric up converters of servo flow.

But how could such an eccentric, though utilitarian, intermediate flow be of any use in a simulation domain?

Might not a simulation domain be of the nature of a servo itself, whereby similarly, up conversion of intermediate flow, conditions eccentric fabric?

What of simulation domain flow emission, may not some aspect be destined for servo control either of itself, or other servos, where if so, could not such be prevalently of intermediate form?

Moreover if simulation domain fabric up converts to some internal eccentric format, does it not follow that down conversion, to that which is already compatible with servo control is then required?

What if a simulation domain simply used existing intermediating flows, would this not limit functionality?

However, if such intermediate flows have prevalently accommodated a variety of existing servos, why not an expanded repertoire for yet another servo, though of internal fabric?

Hence does this not imply that a simulation domain may be sacrificing the benefits an up converter may supply, merely to avoid down conversion?

Let us assume a simulation domain fabric of a system of common intermediate flow, where such intermediates are merely selectors of expanded eccentric flow, peculiar to prevalent factors within, such as graph fabric, and just as with other servo flow up conversion, a ratio of average flow density and length prevails.

If all servos are concurrently active to a maximum extent, does this not imply the flow of intermediating segments may be of differing factor, in proportion to the eccentric ratios of each servo subsystem, as each may require more or fewer intermediaries per unit time. Where if by intermediary we mean a flow of
differing signal interpretation by differing fabric, might not the same intermediary invoke differing concurrent up conversions?

Flow conversions, either up or down may, it seems, be of more than one stage. For example, flow segments of multiple sensors could source sequences which are first stage down converted to combined shorter sequences, which in turn are second stage down converted to still shorter ones. Similarly a sequence may be first stage up converted to several sequences of differing servo fabrics, where in turn a second stage up conversion occurs in each servo to an eccentric longer sequence.

Notably might not such a range of conversions prevalently depend on a certain degree of variation, by which eccentric local conversions may supply a modulation and selection factor, on the basis of localized persistence?

29 Simulation Domain Configuration

A simulation domain scene graph flow system, not unlike fabric of a matrix optical sensor or compound eye, but in a synthetic context of eccentric flow segments, where an image is received, and converted to sensor flow, and where servo and sensor combined form part of an outer loop, could be considered a form of synthetic sight.

Consider a virtual domain flow dynamics simulation sensor, where might not analogs of matrix optical sensor servo controls exist, whereby something like orientation and position or zoom and focus, possibly even background scenes are supplied?

If such is the case in a flow scene graph, might not even a form of probabilistic extrapolation from past to future also be among available servo control possibilities?

For a matrix sensor it is generally far easier to change physical orientation and optical paths, for example, than a context scene, however if easier to change virtual scenes, might not a simulation domain servo sequence system prevalently converge on such a possibility?

What might the camera of a mutable space-time flow graph see, and how could this be part of an inner sub-loop whereby a flow graph is affected?

Consider such a system gradually forming on the basis of prevalent factors, from derivative to up converted servo flow, whereby a loop from context phenomena flows through the senses becoming derivative flow which, in the prevalent manner of a threshold, is converted to sequences of sequences of servo control flow, and hence back to a context, closing a re-entrant outer loop.

If we consider derivative flow as tapped by operators, where a threshold level factor is produced, and which may condition other operators or servo up conversions, might not intermediate flow from operator to operator, or operator to up converter be considered potential candidates for graph flows?

Could not such commonalities form a unified intermediate flow formed of operator modified derivative flow, thus creating a distinct intermediate flow domain, of which may be tapped for prevalent downstream factors, from where more complex up conversion sequences are created, hence modifications of context
and so of outer loop re-entrant cycles?

If we tentatively posit intermediate flow as a set of inner loops, within itself, with their own characteristic average cycle times, such is inferred as a component of outer loop re-entrant cycle time, of which variation and selection may favour prevailing compromise, possibly implying intermediate loop flows of varying length, variations of complexity may not necessarily cripple reaction time.

But how could an inner loop of varying length of flow be implemented in a fabric, if not by prevalently curtailing or adding a part of the flow path, thereby accommodating such variation?

If intermediate flow is of derivative source, might not a shorter flow imply a reduction of derivative source admitted, though the full range may be available, whereby a shorter signal segment is implied?

However if such shorter segment traverses a flow path equivalent to that of the full range, may not the cycle time remain unchanged?

Thus what of cutting the length of the flow path, so as to limit cycle time?

Consider an intermediate inner loop fabric which is tapped by up conversion operators, some of which may be of servo control and others of modality. If the shortest loop is of prevalent criticality might not all but factors of immediate relevance be eliminated?

But how could this occur, if not by the loop itself being of the nature of a servo control system?

And how might such loop servo control be affected if not by segment flow within the loop itself, or an independent operator of derivative flow alone?

If a loop is of contiguous path elements of which flow traverses, how might some elements be included in a flow and others excluded?

Assume all path elements are initially included in the longest possible flow path, where if a single element is excluded would not flow terminate there and not complete the loop?

Consider if at the site of such element the flow path is diverted so as to bypass the element, and proceed to the next path element, would this not shorten the flow path while still maintaining loop flow?

But how might such a bypass be invoked, and how reversed?

Is not a bypass operation of the nature of a servo control, and if so subject to up conversion of sequence from either derivative flow or intermediate loop flow, might not such up conversion sequences invoke more than one bypass at a time, so as to configure multiple tiers of inner loop operation?

Consider if such a servo control up conversion covariantly affected the admissibility of transformed derivative flow to a loop and also an element bypass pattern, so as to affect cycle time and downstream operator fabric.

Could such a combined servo sequence prevalently optimize re-entrant cycle time, while preserving scalable complexity?

But how could such a prevalent admissibility and element control servo arise, and what other factors might be involved?
If admissibility of transformed derivative flow is to be invoked in operator fabric, tapped of derivative flow, how might such be selectively conditioned so as to pass some flows while blocking others?

Does selective filtering of derivative flow not imply prevalent factors by which transformed sense flow is differentiated, whereby some senses are suppressed, and others enhanced, or an object flow is differentiated, whereby derivative flow of an object is enhanced and other objects suppressed?

Moreover does this not infer modalities by which transformed derivative flow may be admitted to intermediate loop flow, where such modality may be conditioned by an up converted sequence servo control, just as with any other actuator?

But how might such a critical factor of which much of the downstream system is dependent be prevalently conditioned?

Where might the factors by which such conditioning depends first converge?

If derivative flow of the senses is of separate flow paths potentially being transformed to derivative form in common fabric, though even then of temporal displacement, might not tight temporal clustering of derivative flow first occur in operator fabric transforming derivative to other forms of intermediate flow, whereby factors of modality may first converge?

However if operator fabric of which a modality is formed, which also is of a servo, suppresses emission of intermediate flow and bypasses downstream loop elements, conditioned by incoming derivative factors, how might such a condition be reversed if based on restricted intermediate flow itself, and how might modality of servo up conversion be accomplished if not of intermediate flow through loop elements?

Might such a schema work if loop elements of which modality is affected are never bypassed?

Assuming such modality elements are always available in a loop, what of restriction of transformed derivative flow, whereby downstream modality elements might never be conditioned to lift suppression factors?

What form of intermediate flow might prevalently lift suppression, if not the counter measure of that which caused it?

Clearly intermediate flow prevalently of relevance to improved temporal reactivity, possibly based on covariance of sense eccentricity or derivative object factors, may transiently diminish of itself due to context decay factors, which being of non-suppressed intermediate flow could condition non-bypassed modality elements, hence reducing suppression of derivative transformation and loop element bypassing.

One might consider a set of prevailing adaptive reactive modalities induced by risk contexts, and similarly a set of prevalent non-reactive modalities induced by relative lack of reactive conditionality, though of eccentric form.

But how might persistence play a role in such a loop, where intermediate flow is prevalently based on derivative factors, and bypass loop elements are prevalently of servo control up conversion?

Might not the presence of augmenting persistence based flow in such an intermediate inner loop dilute that of derivative based flow, and in so doing imply a longer flow segment, and hence longer loop path?
Even so from where might such a dilution factor emerge, if not to conflict with ongoing derivative flow?

30 Temporal Multiplexing

Consider a continuous flow intermediate system, including some operator transformed derivative flow, where change of intermediate path length extends the temporal decay envelope.

Might not persistence sourced flow be either covariantly injected, with the transformation process of derivative flow, or into an inner intermediate inner loop structure?

But from where could persistence flow be sourced, if covariantly injected by transforming operators, other than the operators themselves, of which scalability is an issue?

However what of bypass flow segments, initially posited as a means of selectively reducing intermediate flow path length, so as to reduce latency to servo up conversion operators?

Assuming a flow segment is bypassed, what might happen when a bypass is removed?

If a bypass flow segment sources no flow, then might not incoming flow traverse a flow segment path?

But what of continuous outgoing intermediate flow, would it not be left with a gap of an interval, corresponding to the length of the cut flow segment?

If downstream operators were to misinterpret such a gap, or falter in an up conversion, might not some prevalent substitute, potentially a null signal, for example, be sourced from a flow segment, so as to reliably fill the gap and condition downstream elements?

However, is not such a null signal a form of persistence?

But how might a null signal be replaced with something of use, if not similarly to derivative flow, a marker based factor of intermediate flow?

Let us assume that on a prevalent basis some factors of intermediate flow persist in bypass flow segments, such that when they are enabled, from a bypass condition, a persistence factor is sourced from a flow segment, followed by intermediate flow, after bypass disable time.

Thus the intermediate flow would be comprised of a continuous stream of derivative source flow, with intermittent persistence sourced flow segments spliced in, whenever a bypass segment is activated.

Of what possible advantage might such an arrangement be, other than to confuse downstream elements, tapping intermediate flow?

Consider what happens if a flow segment bypass is then closed, might not the intermediate flow in transit, via the flow segment become isolated, assuming incoming flow continues on using the bypass, thus cutting out a flow segment from the intermediate flow?

Suppose that an upstream flow segment opens, splicing in a persistence flow which traverses the
intermediate fabric, until a downstream flow segment closes just as the persistence flow segment traverses its path, cutting the persistence flow from intermediate flow, and leaving it roughly as before, even of the same loop length, except that persistence based flow traversed part of the loop.

This implies the possibility of potentially scalable selective persistence injection into the same intermediate flow of derivative segments, without necessarily exposing critical servo control up conversion systems to increased risk.

But what of selectivity of persistence, might such be on the same basis as intermediate loop path suppression, by explicit bypass?

While operator based factors may enable a limited number of bypasses, what of a vast array of persistence segments?

Could intermediate flow of itself trigger a bypass?

For this to happen such trigger flow, it seems, may concurrently enter a closed flow segment of an intermediate loop, dropping at the end of the closed segment, whereby signal characteristics of the flow may trigger a localized segment operator, hence disabling the bypass and sourcing persistent flow, splicing it into intermediate flow sometime after a trigger flow has passed, lengthening the loop overall.

Notably, if this continues without disabling bypass segments, loop length may increment indefinitely.

So how might such open bypass segments be subsequently reset, without disrupting continuous intermediate flow?

Clearly any such operation, assuming intermediate flow transits the segment path, would cut part of the intermediate flow, hence posing a contradiction.

So how might covariant and concurrent derivative based intermediate flow coexist with persistence based flow, if not in separate flow paths?

Could persistence based flow be restricted to only part of a flow loop, whereby persistence is spliced in, then cut out, both operations of which may be based on localized operators of a flow segment?

Suppose a persistence flow segment completes a full inner cycle of intermediate path, back to the open segment path of its origin, might not localized operators trigger bypass closure thus removing a persistence segment, thereby limiting incremental loop growth?

But how might intermediate flow of derivative of sense be dropped, if not all intermediate flow is dropped, before derivative injection, and if so would this not affect persistence flow also?

Further, might not the presence of persistence in the full intermediate flow loop disrupt continuous monitoring of derivative based intermediate flow?

Thus if persistence flow is of the same intermediate loop might not such lead to the tentative conclusion that all re-entrant flow is likely dropped before injection of continuous sensor based flow, and persistence based flow may be restricted to part of the flow loop, whereby incremental loop expansion is prevented.

Hence the path from derivative flow to servo control sequences implies intermediating factors of
increasing sophistication, in proportion to the manner in which persistence factors are used.

However from a prevailing trend perspective, it seems all flows whether of sense or persistence may serve concurrently, in terms of acceptable frame rate of the fabric, as factors of which downstream servo sequences are conditioned, as failure to do so implies negative selection.

But how might a common fabric represent flow which might be from anywhere, as distinctly of a certain source in particular, if such flow is time domain multiplexed into a conglomerate flow fabric, where there is no intrinsic means of self identification to common taps?

Could it be that the eccentric source of a flow within a conglomerate flow might be learned by accumulating persistence factors, of which it is associated?

Might not such a factor be the cost of compromise, of which a conglomerate flow must pay, but to what advantage?

If a conglomerate flow of multiple sources prevails, where such flows may well have been kept separate, might not the unified treatment of them in a combined path be more scalable?

But what factor by which a conglomerate flow may be treated is different from separate flows?

Could anonymity of sub-flows in a conglomerate be an advantage?

Consider the case of a multiple source flow network protocol trap, where persistence supplies a set of trap trigger sequence conditions.

Might not some advantage be obtained from a common flow of distinguishing markers, from multiple sources?

Clearly one may consider a centralized protocol trap to be of greater efficacy than one distributed among separate channels, where triggers must accommodate concurrently, implying both the centralization of the persistence mechanism, and the combined flow whereby intricate temporal sequences of multiple flows may be prevalently advantageous, in a competitive context.

Let us suppose both distributed and centralized protocol traps are existent on competing platforms, either separately or combined on a given platform, whereby selection factors are based on complexity, timing, accuracy and overhead fabric scalability of traps.

If, for example, phase jitter between multiple flow signal patterns is compared, on a distributed platform one must it seems have a central operator fabric, of which such is possible.

Additionally relative delay from separated individual flow phase detectors, to a central comparator may become an issue, where equal length and short paths are implied.

On the other hand if multiple signals are time domain multiplexed onto a common fabric, one may well consider only a sample of each flow may be taken, and those at temporal offsets, not concurrently, thus implying both loss of phase and signal accuracy.

However as a unified flow is already centralized no additional fabric other than a parallel correlation factor, covering an interval is required, of which it is only necessary to recognize a pattern, where the source of anonymous contributing factors are of minimal concern.
The trade off between the two arrangements seems to focus on how multiple incoming signals are sampled, where if in parallel then forwarded, or in series rotation in a common flow.

But does the series rotation have to be of strict time slot? Might not such be on an activity level basis, of variable segment length, where the allocated time slot of a given source varies in proportion to relative signal factors?

Consider the eccentric nature of incoming signals, relative to fabric intrinsic performance, if of lengthy, complex and coarse grained temporal factors then time domain multiplexing might be advantageous.

However if of short, simple and fine grained signals, then a distributed approach may prove superior.

But what if both systems coexist on a platform, could a hybrid system prevail?

The performance of a hybrid protocol trap may concurrently supply both fine and coarse grained advantages, however implies more than one persistence factor, of which correlation is achieved, and also the potential of correlating both downstream, thereby potentially improving certainty level.
Chapter 6

DETECTING DISTRIBUTED PATTERNS

31 Protocol Trap Arrangements

Scalable persistence supporting hybrid protocol traps, implies an increasing number of *stored composite marker sequences*, themselves learned from ongoing derivative flow, of multi-sensor flow.

To detect a particular protocol among many, of which the whole of persistence might apply, infers incoming marker sequences, whether time domain multiplexed or of separate flows, are correlated with all *learned composites*, with minimal delay.

Moreover as more composites accumulate, one might consider how such a process could be improved, where might not composite flows themselves be subject to correlation, of which the resulting marker flow would be subject to learning?
Is this not a similar process to combining two derivative flows into a composite, and subsequent derivatives associated with composites, into that composite?

But what of the potential eccentricities of composites?

As composites are necessarily of persistence, eccentric factors by which they are stored, retrieved and used may be of significance.

Notably one might consider a hierarchy of some form, by which composites of composites reduce the scope of parallel correlation, though possibly not without compromise.

However what of variable segment length of composites?

Might not prevalent convergence imply optimization, by which an average segment length promulgates a more regular persistence architecture?

Clearly greater composite segment length implies more markers, and greater persistence fabric overhead per emitted segment.

But might not a variable, though limited, composite segment length prevalently arise?

If a variable composite segment length, what factors may limit minimum and maximum extent. Or if a composite of arbitrary length may be constructed from shorter segment lengths, with minimal intersegment gap issues, might not segment length prevalently converge on the minimum segment length, where gaps and jitter are less critical?

Moreover if the only manner by which segments may be concatenated is by association with segment markers, in the absence of explicit persistence location fabric, does this not infer any such arrangement must have intrinsic concatenation mechanics of the markers themselves, and so not necessarily of composite contribution?

And what of duplicate concatenation, does this not imply unique concatenation mechanics, whereby composite segment selectivity of embedded markers scales with persistence overall?

However if segments may be concatenated explicitly, to what scale might such occur, and on what basis?

Explicit concatenation infers a form of additional persistence, by which composites are organized such that segments may be prevalently selected and concatenated, but how could such a factor be learned, and to what extent might such an arrangement be scalable?

If explicit selection factors are based on specific fabric eccentricity, might not such be limited in extent by the flow mechanics of the linking mechanism, such that if one composite is to follow another, link fabric must sustain cumulative contingent selective delay, in direct proportion?

Moreover composite concatenation based on persistent links may be of somewhat limited versatility, due to the requirement of forming prevalent eccentric delay links, so as to gate segment flows one after the other. However does this not infer the possibility of greater complexity, over that of the longest unlinked composites?

Returning to our main track, what of the prevalent requirements of protocol traps?
It seems protocol traps might prevalently vary from short sequences ‘hidden’ in a clutter of heterogeneous flow, to more lengthy sequences either contiguous or spread over an interval, of which the bulk of flow may be considered a baseline background.

The extent to which disparate elements of a protocol may be related, infers corresponding prevalence of supporting persistence.

Rapidly increasing and changing, lengthy, unrelated protocols, with embedded short sequences, apparently infers a worst case of which persistence must comply, where all must be monitored at all times.

Consider short marker sequences as markers of other longer sequences, where a marker type hierarchy is implied.

If a short marker sequence is a placeholder in a flow, might not the rearrangement of such placeholders improve versatility, whereby overall persistence scalability may be improved?

Assuming the bottom level of a marker hierarchy is continuously monitored, detection infers emission of an associated short marker sequence, which again if continuously monitored, forms the basis for narrowing down a subset of possible condensed sequences from a multitude of possibles.

However does such not imply a separate common fabric, for each marker level in a hierarchy, each with eccentric persistence fabric?

Consider the temporal relation of marker sequences of a hierarchy, where does this not infer as the hierarchy is ascended a greater temporal interval may be represented, without the necessity of underlying flow mechanics for the entire duration of the interval?

If protocol traps trend to long duration, relative to the eccentric particularities of a fabric, might not such a possibility become prevalently selected, given variation?

But how could one marker sequence be representative of another in condensed form, so as to supply significant temporal ratio between layers of a hierarchy, and how would baseline factors be represented?

Clearly avoidance of false positives over a longer interval may depend, to some degree, on representing, and discounting what may be variable baseline activity.

If we assume multiple levels of a temporal marker hierarchy, where diminishing returns limit the number of levels, how might each levels’ persistence factors scale, and to what degree could persistence fabric be conserved?

If only one hierarchy level all marker sequences must be represented in full, in one to one correspondence with derivative flow, whereas if two levels the first level must at least have a full array of unique markers, corresponding to prevalent derivative flow, but no redundancy corresponding to differing order.

The second level may then encode all the possible variations of marker order in the first level, but at a persistence fabric saving roughly proportional to the temporal ratio multiplied by the number of variations.

If the temporal ratio is fixed then persistence savings are mainly of variational redundancy of increased
density, in the second level.

But how might variational redundancy scale between layers?

Clearly if variational redundancy is a factor of which baseline factors are ignored, as well as triggers for potentially rare sequences, total variation may be greater. However if the temporal footprint of variation is such that it is outside the scope of a layer, due to the scalability limits of that layer, how might such case be handled, other than by yet another layer?

On a prevalence basis one might expect a distribution of protocol variations, of which an average temporal footprint may be implied, where covariantly one might consider protocol trap and persistence fabric an eccentric adaptation.

But what of protocols sourced internally, might such a distribution vary significantly from those of the senses?

Clearly internal sourcing of protocol must be of persistence or fabric operators, though one might consider also a loop through the senses of which persistence or operator fabric is the main source.

If of persistence how might a flow thereof manifest, and hence become a substrate of protocol detection, in a prevalently sense oriented fabric?

Might persistence factors, for example, prevalently source flow, which could have originated from the senses?

From correlation of incoming sense a composite derivative flow may result, where such could, in the absence of sense, be sourced from persistence, however for a protocol one might also consider the possibility of a series of such flows.

A series of derivative flows, in the absence of related sense flow, though covariant with sense flow, possibly of other derivatives, infers a mixture of persistence with sense based derivative flow, where the modality of the sense derived flow may be considered existent and the persistence derived flow contingent.

Thus a hypothetical persistence enriched mixture of derivative flow apparently infers a greater probability of protocol triggering, a potentially wider average distribution of protocol complexity, than of sense derivative flow alone, and could be considered a form of search for existent protocols.

But how might such persistence derived flows, not of concurrent sense flow and of contingent modality, be prevalently mixed, on some temporal basis, into derivative flow?

Consider how any derivative of persistence may be sourced from a correlative operator with sense flow, where if a multitude of derivatives are concurrently correlated, could not a variation of level occur whereby runners up, or associates are prevalently forwarded following that of the highest level?

Similar to serializing the ranked results of a quantum computer.

If only the highest level derivative is combined with concurrent sense flow, following derivatives of persistence alone, could transit in sequence through protocol detection, thereby supplying an ongoing form of internal sourcing from which protocols could be learned.
However what potential advantage might such an arrangement prove?

32 Intermediate Flow Considerations

Just as composites and derivatives could be prevalent factors of downstream flow, might not so too protocols of such sequences, and thus, similarly, potentially accumulated in persistence as protocol?

Apparently a protocol may be, for example, diluted by some factor, in proportion to prevalence, where it could be termed an impure protocol.

If a prevailing impure protocol is a factor of an artifact, by which secondary sequential derivative flow follows existent derivatives, then might not such protocols be considered as rooted in an existent derivative, even though not of purely existent form?

But of what eccentric relation might following flow have, other than perhaps a ranking effect?

Consider the possibility whereby spurious derivatives follow an existent derivative until such time as another existent derivative occurs.

Might not an intermediating artifact of spurious derivative flow simply serve to mark flow length between existent derivatives, as a form of expedient temporal padding, assuming downstream fabric is able to differentiate the two forms?

Might not such an arrangement imply protocols of impure form, where intermediating flow between existent markers is of non-existent markers, though only differing in a concurrent corroboration of the senses?

Moreover if sense flow is dropped in exchange for selective derivative flow, where gaps may exist between derivative flow directly of sense flow, then the opportunity presents itself, in so far as flow capacity exists in downstream fabric, to pad intermediating flow with persistence based factors, not immediately of sense.

Yet how could such padding be treated in downstream systems?

From the perspective of an intermediating inner loop where selective input is transformed from derivative to intermediate flow, one might consider the possibility of arbitrary derivative padding being similarly converted, although perhaps in eccentric manner.

If such padding were transformed in a manner approximating that of derivative flow a contradiction results, as the conditions of its presence are not in accord.

So what other factor might prevalently occur?

If the padding is dropped at the transforming operators the effect might well be the same as if it were not present at all, however if padding were transformed into intermediate flow, what prevalent benefit might such a flow supply to the taps of intermediate fabric?
Consider if padding is transformed into a rooted tail of a preceding derivative, of which intermediate flow factors are sufficiently differentiated so as to avoid confusion with valid derivatives, where might not such an associated factor be of some use?

If nothing else a rooted intermediate flow tail of a derivative factor might supply an opportunity for intermediate fabric operators to manipulate such a flow, without the downside risk of damaging critical servo factors.

But how might such manipulation proceed, and to what benefit?

Consider what factors may exist in an intermediate path of condensed relevance to downstream operators such as servo control sequence. If previous occurrences of similar rooted intermediate flows were prevalently associated with eccentric downstream factors, might not some persistence mechanism associatively couple to such a flow.

Moreover if the rooted flow is considered as a temporal envelope, the derivative header may be considered as a form of initiator, while the body of the tail possibly as a potential modifier thereof, insofar as the initiator of itself may not be sufficient to condition downstream sequence taps.

Clearly a short initiator with no tail might not be as conducive to a series of complex downstream sequences, as a longer flow structure with increased temporal ratio to related servo control factors, influenced by intermediate flow.

Within a modifier tail section one may consider the potential for tuning factors of persistence which may bias operator interpretation of a flow segment overall.

But what sort of tuning might be prevalently appropriate, other than a general bias of some form?

If of the nature of a general bias, how might such affect downstream factors other than by a general threshold factor, either enhancing or suppressing selective probabilities?

Consider a sequence of derivative sourced intermediate flows, each with header and tail, of which a general bias factor is alternately enhancing and suppressing, where might not such a pattern result in roughly neutral downstream influence?

The range of influence and the related temporal envelope implied may traverse a plurality of intermediate flow segments, inferring a much longer scope than any other flow based factors heretofore considered, thus could on the basis of this factor alone be of considerable potential in terms of variation and selection.

Notably if several competing platforms, of which the eccentric factors of such a temporal bias envelope vary, where prevalent selectivity of a context may well filter out only those of appropriate bias pattern, then a lengthy temporal envelope factor may be established, where only shorter term factors dominated before.

But how could an appropriate bias factor find its way into the tail of such an intermediate flow, if not by some form of persistence?

As headers traverse intermediate paths first, while potentially a varying length of tail body, of which padding is present, follows, persistence factors might modify the padding, either, for example, enhancing or suppressing features, on the basis of current bias level combined with current header effect.
If we assume a bias phase lag, with some decay, from the previous flow, then current bias level is pumped up, decays or is suppressed by successive flows, dependent on bias operator interpretation of the current header.

Of what operator fabric might such a temporal envelope feature as a bias operator be constructed, whereby a general modality of the system is affected?

A bias operator might react to header taps in such fashion as to produce an output level which may be used to affect tail body flow, while ignoring tail body flow itself, so as not to form a redundant feedback inner loop.

Such a bias operator might be conditioned so as to tap not only intermediate flow but derivative only, in such manner as to identify valid derivative of sense from padding derivative.

However, even assuming such a tap arrangement how might a bias level be learned merely from a succession of valid intermediates of derivative, if not for some factor by which they may be differentiated?

If we assume that all validated intermediates of derivative are initially unknown, so that no bias exists for any of them, then our posited bias operator fabric might have little more to work on other than the extent and commonality, of the existent derivative headers, whereby one might conclude a roughly neutral bias.

Moreover if validated intermediates of derivative are considered as temporal clusters of internal sense flow, what factor might prevalently affect a neutral bias?

Does not an eccentric combination of internal sense temporal cluster, with that of servo sequence cluster infer the possibility of another dimension to a general bias, by which eccentric factors may be accounted for?

A general bias might be used pervasively, however an eccentric bias may have a more selective effect, thereby establishing more varied temporal envelopes of what might be termed ‘modality’, from which prevalent factors could select.

Thus not only might a bias operator enhance or suppress, but do so in eccentric manner so as to bias particular sub-system factors eccentrically in a series of temporal decay envelopes, in response to existent derivative rooted intermediate flows.

Notionally what selective effect might such an eccentric bias have if not to precondition local fabric for subsequent flow?

Let us assume some form of local eccentric bias has been temporally established, which though decaying may transiently condition the interpretation of following validated intermediates of derivative.

In the absence of such eccentric bias one might consider a set of alternative factors, where in the presence of bias such a temporal set could evoke a multitude of alternatives expanded in proportion to bias variability, thus supplying more adaptive complexity on the basis of temporal modality, without the necessity of extensive explicit persistence based modulation, thereby conserving intermediate fabric overall.
Chapter 7

MODALITY PLASTICITY

33  Dynamic Configuration

A temporal envelope of modality could be considered a bias flow regime based on precedent, casting *multipolar variability* in proportion to prevalent underlying factors of temporal clustering, for an eccentric platform.

Modality as a persistent and potentially pervasive flow state, of which widespread operators may use as a bias factor, infers a subtle leveraging of flow complexity for increased overall adaptive variability, in the form of a distributed messaging system.

However, this approach is based on the assumed precedent of flow clustering, and is apparently
dependent on the relative time scale of such clustering being proportionate to sustainability and tunability of flow based multipolar mode messages.

Further, a slight shift of modality may have the potential to alter downstream threshold effects, potentially asynchronously cascading servo control sequences tapped from affected flow.

The posited formation of multipolar factor enhanced variability in flow tails implies systemic embedded messengers, of eccentric character, superimposed or modulated on padded signal.

Moreover reliable systemic variability available at the messenger level may limit the number of poles, tunability and mixing of polar modes, where if a number of modes are concurrent each may be modulated independently, without inducing cross modulation in other modes.

If, for example, pad signal is parsed into segments one might consider intersegment variation insofar as variable tail length does not degrade integrity, whereas if a unified tail of variable length, signal variation within a segment may differentiate and modulate modes.

From the perspective of optimal response under duress, mode features should apparently enhance countermeasures capability, in so far as possible, without degrading key sensory pathways, or accidentally triggering downstream thresholds.

For low duress contexts, where a suppressive effect may be optimal, mode features infer factors potentially increasing countermeasures’ operator thresholds, so as to minimize the probability of false positive triggering.

But how might such flow signal tuning parameters be realized?

For a flow based system where modality may be based on prevalent variation and selection over a set of platforms, such a system is inferred as covariant with, and yet ancillary to, sense flow factors, such that the two systems share fabric and operators with minimal cross modulation.

From a network perspective one might consider a modality factor as a form of internal sense, correlated with a particular context, which in combination with downstream factors of sense flow provide increased scope of variability for modulation of servo control sequences.

Consider the timing of operator sequence where flows from modality and sense, condition operator taps. In the absence of eccentric modality one might expect a particular sequence to occur, at an associated frame rate, sustained by local fabric.

Now with the presence of a modality signal, for example, following an already initiated sequence, one might expect, dependent on the modality, the sequence to be altered in an eccentric manner, of which prevalence has led.

But what of the local frame rate, where is not a frame rate of sense and of modality, of differing temporal envelope, inferred?

Notionally if modality frame rate is longer and of less specificity, than that of sense frame rate, one might consider two intermodulated waves of sequences, either reinforcing or suppressing where the longer wave may be considered the modulator and the shorter wave as modulated, in proportion to relative frame rates.
Thus the modulating signal need only supply a series of frames, at the appropriate frame rate, with an appropriate signal in the frame.

Consider what might occur if no derivative or intermediate sense flow transits downstream fabric under modulating influence, where only the modulating signal may be present, at some frame rate, where no default sense based servo control sequence forms a substrate, of which to modify.

Might not such a condition, of itself, initiate servo control sequences?

But, if so, does this not contradict somewhat the potential to modulate existing sense flow based sequences which would then, if even slightly present, be in conflict?

Clearly to avoid conflict one might consider if modulation factors are of servo sequence alone, without sense factors, then such servo factors should be of a non-intersecting set, if possible, with those of sense modulation.

But what of intermediating fabric itself as a servo controlled system affected in such manner?

Consider a pervasive intermediate path transited by transformed derivative, followed by factors of modality, whereby downstream operators tap delay shifted local signal.

From a baseline perspective, if modality is considered a modifier of a context loop, where transformed derivative is the feedback link, and servo sequence the propagator, modulation implies a tuning factor of feedback.

Such tuning implies an increase in adaptive capability for a context outer loop, in so far as modulation of appropriate form exists.

However consider the possible case of minimal context loop feedback, with maximum modulation, whereby the role may be reversed.

This implies servo sequence mainly of modality, though in a feedback loop with the context, where a flow network itself is sourcing factors, rather than processing outer loop context parameters.

However what prevalent factors might lead to such a feature?

Might not such a modality based sequence correspond to a form of experiment, of which the results are not necessarily prevalently accounted for by variation and selection?

But on what basis might sequence be sourced for such an experiment?

If modality serves as a basis for new sequence which can only be of prevalent form, is this not a contradiction?

So if prevalent downstream sequence is not used, how else might a sequence be formed other than in upstream flow, directly controlling downstream servos?

However where might such a sequence be created in a simulation domain only of sense, derivative, composite and protocol flow which condition downstream factors?
Consider what might be necessary to form a new sequence.

Clearly a servo sequence is eccentric to particular servos, of which several may need to be coordinated, implying parallel capacity whereby sequence may be formed up and covariantly emitted, potentially in a repeated context outer loop.

But what might be in a position to form up new sequences in a flow based system, even assuming parallel capacity exists?

Might not some precursor flow be tapped as a source of which a new modified sequence may be formed?

However as servo sequence is eccentric would not such precursor flow preferably be of existing downstream sequence, of which a modified form could be created?

Consider what this implies for flow based architecture.

If existing downstream servo flow is to used as a precursor for a new flow, then existing flow could be tapped, either as being used for servo control or in a loop-back mode, where a servo is not actuated, enabling the precursor sequence flow to traverse a modifying path back to the servo control path, bypassing prevalent sequences, and actuating a servo system.

Where all this occurs in coordination with other, covariantly modified, servo flows in a pattern.

But even so, how might modifications to precursor servo flows be implemented, if not by variation and selection?

Assuming, for the moment, such a trial and error loop exists, how might alternatives be stored, compared and selected from others?

If a previous variation sequence is to be compared to one in progress, the previous sequence flow could be concurrently applied to a comparison of some form. Moreover such a comparison may involve not only the servo control sequences, but derivative of sense factors of a context outer loop, concurrent to sequences.

If we simply assume such a loop runs until termination occurs, then key flows appear to be fabrication and emission of variation sequences, where at least one previous cycle is stored until the next cycle of variation sequences, then compared.

What does this imply in terms of flow paths?

How might a new servo flow be formed other than by passing an existing eccentric precursor through an operator?

If the only means of storing a flow is to regenerate it along a path, such as to minimize decay, does this not infer storage inner loops?

If two flows with minor differences are to be compared, what other means than either series or parallel signal difference, by which a result flow is formed?

Where might such flow paths be implemented if not intermediate fabric?
But is not the intermediate loop already fully committed, inferring any such additional flow paths may be prevalently downstream?

Though manipulative flow paths may be posited, what of dynamic configuration and allocation factors? Does this not imply some form of control?

But how might such manipulation control arise and itself be configured?

Minimization of configuration apparently infers dedicated fabrication, store and compare loops for each eccentric servo subsystem, by which external factors interface with minimal complexity, potentially relying on related incoming flow from sensors to complete the feedback loop.

But what of servo controlled intermediate fabric sensors?

Would not such embedded fabric sensor flow prevalently take the same path as those of external context sensors?

Might not such internally derived sensor flow directly inject into intermediate flow?

Consider if intermediate flow is heavily loaded with context and modality factors, would not such a short delay injection into the same loop potentially endanger temporal integrity?

But where else might such internal sensory flow be directed?

If intermediate fabric is configurable then might not fabric of which such configuration is sourced prevalently accept intermediate sensory flow?

Assuming sensory flow from intermediate fabric traverses downstream fabric by which intermediate configuration flow is emitted, how might such flows prevalently vary and converge?

34 Intermediate Loops

Given an average flow rate would not a longer intermediate flow time imply a longer path and possibly more taps by which to condition downstream factors, where if more operators, for example, more complexity is inferred?

Moreover if a longer flow path, a greater length of signal could concurrently be sampled by operators in parallel, implying in turn flow from such operators may be tapped by cascading fabric of increased magnitude.

But why might a flow path for configuration of intermediate fabric prevalently converge as longer than that of intermediate flow itself, if not for factors requiring delay and complexity?

While intermediate flow length could prevalently converge on a temporal envelope ‘compromising’ between downstream fabric requirements, and optimal loop timing for minimum context interface factors, configuration of intermediate fabric implies less emphasis on near real time control loop constraints, thereby potentially diverging to longer average configuration loop times.
Might not an 'out of band' configuration loop, where a critical 'in band' intermediate loop of lesser length is dependent, be just as critical, though possibly of longer sampling window?

If such a configuration loop is to diverge to a longer temporal envelope, relative to that of intermediate flow, what factors might prevalently affect such?

As the length and hence delay of out of band flow increases, the number of factors in a trailing temporal decay envelope may, it seems, covariantly grow in proportion, however as the critical path for intermediate servo control loops could short the full flow regime, might not greater scope be more of prevalent selection value for other aspects of an eccentric platform, than expedient intermediate configuration?

For example, one might consider what scope may be required to formulate a configuration of intermediate flow, whereby derivative flow admissibility is selectively narrowed, while simultaneously unrelated servo control sequence is damped, except insofar as minimally required for sensor servo control of factors, related to intermediate path transformed derivative flow.

From the perspective of intermediate path admissibility, consider how an out of band loop might affect such. If the factors of admissibility are shifted in emphasis, this infers an ongoing servo sequence of which is applied to transforming operators of derivative to intermediate flow, whereby what could have been, for example, a linear shift is altered in eccentric manner.

The emission of an ongoing servo sequence implies covariant activity upstream in an out of band loop, as the basis.

But what might be required upstream? If the basis for an ongoing eccentric configuration is of past context, then does this not imply factors of such must flow through an out of band loop based on persistence?

However what if such factors are temporally displaced beyond a running persistence horizon?

Might subsequent intervening flow be diluted so as to extend the persistence horizon in time and could such context basis factors be maintained as a flow indefinitely, until such time as destabilizing factors occur?

How might such a basis flow be maintained for longer intervals than loop time, except by cycling on a regenerative flow path?

However if an out of band configuration loop is longer than required for a basis flow envelope, might this not infer destabilization of operator taps of which servo sequence is emitted?

Even so, might not regenerative looping of the entire configuration path infer an awkward situation should a protocol trap trigger?

Consider downstream factors of sensor platform servo sequence, of which narrowed admissibility may be related, where might not such servo sequence similarly require ongoing upstream flow of which it is derived?

Could not such an upstream factor be ultimately derived of the same flow by which admissibility servo sequence is sourced?
However, might not the fabric path of sensor platform servo sequence be considered in band, while that of admissibility potentially out of band?

But may not both have similar slew rate by which in band factors could be affected?

Thus is not in band control inferred, though possibly with of out of band influence, however how might an out of band configuration loop inject flow into an in band loop, of which its own in band influence is affected?

What alternative exists to injection of configuration flow into an in band loop, other than wrapping of in band servo control path by out of band fabric, whereby in band control sequence may be overridden in favour of out of band configuration sequence?

Notionally such an arrangement infers sub-systems in competition, whereby both in band and out of band factors vie for control of servo sequence.

But what factors may prevalently lead to such an arrangement?

One may consider in band flow as a rapid response servo control system, by which servo sequence, though mutable on the basis of transformed derivative flow, is based on prevalent servo sequences persistent in eccentric downstream sequence cascades, whereas out of band control may be of longer temporal envelope, of which some eccentric factors of a context may prevalently reinforce variation.

Thus the two posited simulation sub-domain loops may be considered as overlapping jurisdictions, possibly defaulting to in band control, in the absence of out of band intervention.

Consider the case of admissibility to intermediate fabric, where if servo sequence defaults to in band control, admissibility may prevalently widen in scope to cover more possibilities and if servo sequence is overridden by out of band control, more explicit variation may limit derivative transformations flowing into intermediate fabric, on a selective basis.

However, even so, how could such selective basis be formed and maintained by an out of band loop?

Let us assume a selective basis, as an artifact of derivative flow of the senses, whereby such artifact, amidst a plurality of others, triggers out of band flow factors so as to configure an in band protocol trap, related to an object.

Consider how an object might, against a baseline of flow through an out of band loop, potentially alter configuration.

How might such object flows traverse and condition an out of band loop and in what format?

Might not, similar to intermediate fabric, one posit, yet again, admissibility of configuration fabric, whereby a transformed version of an object may be selectively emitted, and flow through a loop regeneratively?

However how might such admissibility be configured, if not by some predisposed and immutable operator, inferring a very lack of flexibility of which configuration is a countermeasure?

If one assumes a transformation of already transformed derivative flow of intermediate fabric, also traverses configuration fabric, does such not imply potential limitation of admissibility to configuration
fabric twice over?

But what if configuration flow is composed from raw derivative of sense, does not such an arrangement not infer a potentially overwhelming baseline clutter?

How could derivative flow be conditioned, so as to reflect the prevalence of context factors of relevance to the temporal domain of configuration flow?

Are the factors of which configuration is based different to those on which in band servo control prevalently depends?

Moreover configuration may be biased to longer term factors, which may be represented against a backdrop context baseline.

Thus to the extent an object which conditions configuration may itself be merely of a sequence of context factors over an interval, might not one consider encapsulation of such a representation in a flow of eccentric character, prevalently suited to the task of configuration?

If an object may be of sequence, template or a combination how might a general flow of common fabric represent such, where downstream operator fabric may transform a persistent source thereof, to eccentric configuration sequence?

Does not such a representation infer a prevalently extensible versatility, whereby incoming transformations may incrementally modify a persistent regenerative core flow basis, which may then serve to condition downstream operators?

If such is the case then would not the transforming operators of derivative flow, whereby configuration flow is constructed be somewhat different from those of intermediate flow to such an extent as to be considered an independent system, even though potentially tapping derivative to intermediate operators?

35 Temporal Dispersion

Given an intrinsic flow format, of ancillary configuration fabric, whereby extensible versatility is possible, how might potential factors of such a format be transformed from flow sources, as may present themselves, so as to prevalently construct a regenerative flow, by which downstream configuration may converge, for a temporal envelope?

Clearly some form of persistent source factor conditions taps by which configuration flow overrides defaults, for intermediate fabric servo controls, where if, for example, temporally separated derivatives of sense flow are the basis, they, it seems, must be held in transformed regenerative flows, possibly also in relation to each other, such that a continuous source flow is present.

But how might such a resonating set of configuring flows be set up, some potentially as configuration wrappers of protocol traps?

If the flows of which a resonating set may be constructed are from derivative, or other intermediate sources, what is to differentiate that which is to be used for configuration from a multitude?
Similarly if flows of persistence are to be used, what is to differentiate when factors of a continuum may be appropriate, if not some criterion within a platform?

If persistence flow subsets are correlated to derivative or intermediate flows, might not a high level result flow potentially initiate a resonant configuration of appropriate timing and form?

For such a process to occur persistence correlates infer narrowing to a lesser subset of flows which are already narrowed composites, of upstream processes.

But of what factor of narrowing is inferred, if not for those of which preliminary narrowing has not taken account?

Consider a correlation as a compressive filter, where one may view initial correlations as coarse and subsequent as finer, where if finer narrowing is more selective, what basis of selectivity?

Moreover a filter may only narrow existent ranges, though possibly of that which has already been narrowed on another basis, where a subrange of derivative or intermediate flow infers an aspect of flow, whereby not the whole flow may be necessarily considered.

However if only part of a flow is to be considered for a narrowing filter of a subrange, does this not infer the preceding potential of eccentric factors of flow signal to represent subranges in a compressible manner?

Consider the prevalent factors of which a subrange may be learned from a flow, where a subrange may be distributed across the entire flow in some manner, or possibly a limited extent of flow, where such limited section may either occur arbitrarily along the flow, or potentially in relatively consistent parts of a flow.

Whatever the schema by which a subrange signature is present in a flow, a related signal, or possibly operator, by which a comparison occurs is implied, by which a subrange may emit a flow in proportion to its presence in the source flow.

Clearly whether a flow signal is represented in parallel or series as it enters such a subrange detection arrangement, the emission of subrange result factors may be of reduced scope, and hence less information density than the original flow, though concurrently available with some delay factor.

Let us assume that two subrange flows are correlated to give a result flow, where the correlated result is concurrent, with a slight delay, with the two initially compared subrange flows.

What might such a result potentially represent?

If the subranges are such that a result flow level indicates minimal inter-signal deviation, then equivalence between subranges is inferred.

If subrange levels differ in signal eccentricity such that they are not equivalent, further correlation might reveal one as more eccentric than the other, of which may be represented in a result flow.

But how might this scale for complex flows of many subranges?

Might not prevalent convergence of variation infer all possible subranges of a flow may be correlated concurrently, while the flow is active in configuration fabric?
Moreover such a process infers systemic concurrent subrange correlation scaling up for worst cases, if result flows are sustained for some time, also implying the possibility of not only interflow subrange correlation but one to one cross correlation of the same subranges of differing source flows.

If such scalability is prevalently convergent, might not also systemic factors, of which result flow signal may represent a multitude of subrange factors?

But how could such factors of eccentric signal flow converge, from the possibilities of variation and selection?

Does not such a process infer complicit variation and selection of both encoding and decoding factors?

Moreover what chance of both encoding and decoding varying at the same time on an eccentric platform?

Might not it seem more likely that subrange upstream encoding may vary to some degree, of which a selective accommodation, on the basis of plasticity, may be made for downstream decoding?

If so what variational factors of derivative encoding might prevalently fall within the scope of accommodation?

While the sense flow of which derivative is related may be of raw eccentric factors, might not derivative flow, if of composite factors, whereby sense flow may be tentatively associated, converge on available multichannel sense factors, where flow factors are optimized?

If temporally clustered eccentric sense flow is to be concurrently correlated to a multitude of possible composites, might not the patterns by which composite signal converge selectively trend to an accommodation, where inner loop factors become reliable?

Consider a derivative composite flow where such an optimization in relation to the eccentricities of sense flow has occurred, might not this affect embedded subranges of the composite as well?

Might not embedded subranges take on the aspect of composite markers, by which eccentric multichannel sense flow may be related, where if a composite as a whole converges on an accommodation, of which reliability prevalently ensues, in shared common fabric, so too may embedded markers?

But if markers are of a parallel concurrent temporal cluster in accommodation of sense flow, is it not possible such a format may be preserved for downstream decoding?

However, consider an object of which temporal dislocation is a primary feature.

How might such dislocations be prevalently coalesced, in a system based on composite marker based temporal clusters, of median parameters?

What could be required to assemble, and on what basis, an object from disparate flow elements scattered over time?

If a flow network from sense transducers, for example of mass-energy, is optimized for minimal latency, given fabric parameters and prevalence of preprocessing factors, then accumulation of disparate flow
elements beyond characteristic transit times infers localized persistence loops or embedded bias, where such may, on some basis, capture transiting flow factors, in proportion to segment length.

However even assuming such loops, with associated flow elements in place, how might an object result and be represented in downstream flow?

A set of persistence loops may, it seems, release their flows in coordinated manner, again given some basis, where the possibilities range from series concatenation to coordinated parallel emission.

But if such is in the same fabric as derivative flow, might not such action disrupt ongoing flow?

If dedicated flow fabric for loop emission, then how might downstream factors eventually coalesce into common fabric?

Does not a coalescence factor infer it more likely that the alignment process takes place in fabric where temporal multiplexing is already prevalent?

But where might temporal multiplexing be more prevalent that in out of band fabric, where temporal criticality is a reduced factor, less likely to disrupt ongoing flow?

If, for example, a temporal dislocation object is to be assembled in configuration fabric, what relation may exist to other forms of an object formed of parallel synchronization flow clusters, and subranges thereof?

The disparate elements of a temporal dislocation object may, it seems, be considered as subobjects themselves, where there may be no contradiction in assuming persistence loops prevalently optimized for clusters, may accommodate subobjects, where a number of loops are inferred in proportion to subobjects.

However if the number of available loops is small does this not infer a severe scaling limit on the range of temporal dislocation subobjects which could be handled, and if a large number of loops how might coalescent coordination scale?

If the same loops used for temporal coordination of subobjects are also used in general for other objects, might not most objects be treated as potentially of temporal dislocation, where it is merely a matter of degree, inferring even temporally clustered objects may be factored over several loops, as if of dislocated subobjects?

Consider how temporal dislocation may be represented if most objects are factored as subobjects, where the temporal clustering of a loop may be within the frame rate of a preceding coalescence pipeline and so of negligible dispersion, whereas between loops may be a range from within to large multiples of frame rate.

If each subobject loop is, for example, tapped by operators such that subrange signatures are emitted, and themselves correlated, might not some factor of this process infer relative temporal locality?

But what subrange signature or correlation thereof might produce a reliable indication of temporal displacement of one subobject from another, unless some factor by which temporal distance may be inferred is already present?

Further, might not, given some level of uncertainty, even an object of which has been factored into subobjects, be interpreted as being temporally dislocated even if it is not?
For a flow architecture of which characteristic transit times may be often far less than temporal
displacement factors, how might such fabric reliably keep track of relative subobject temporal locality,
other than by some intrinsic factor of a subobject traversing a preceding flow network or cycling in
persistence fabric?

Even so how could a temporal signature be prevalently incorporated, and where?

An eccentric platform might have intrinsic factors from which a temporal signature could be fabricated.
Intrinsic temporal accumulations or variations may be of factors of which the platform is interfaced to a
context, where consistent repetition, such as for example a stable waveform, provides the basis for
incremental tracking.

However even so, if available, how might such a factor be prevalently incorporated in a flow so as to be
learned, and correlated with current status, where relative temporal displacement may be determined?

Is there any alternative to such an arrangement, other than of temporal sorting itself, by which though
possibly not dependent on embedded signatures, flows are managed by a fabric, such that relative
factors of ongoing temporal locality themselves infer temporal relation tracking?

Consider the possibility of a hybrid arrangement, whereby flows of common fabric are queued by
temporal multiplexing, combined with an embedded temporal signature, for longer term persistence.

In such an arrangement the tail of a temporal decay envelope flowing off of the senses may be
composed of queued persistence loops, where a temporal loop hierarchy is inferred as potentially
displacing or transferring flows to longer term persistence.

If such is the case then given a prevailing scope of common fabric loops, of median loop time, possibly
corresponding to flow segment length distributions, are not the maximum content, and boundary
conditions by which temporal ordering may occur, thereby inferred?
Chapter 8

FLOATING BASELINE ESCALATION

36 Protocol Traps And Baseline

Where disparate temporal factors may be coalesced via temporal characterization, using delay persistence, into a concurrent representation, infers eccentric incremental accumulation of prevalently selected temporal flow factors, by which characterization optimization might then occur.

Consider the relative timing of disparate flows, where, for example, if a multitude of persistence loops, might not additional incoming flows compete, for displacement of limited inner loop storage, indicated in Figure 30 as an 'Internal Object', within a temporal envelope?
But what could happen to existing loop content?

Might not such in turn compete for loop capacity further downstream, where eventually at the trailing edge of loop fabric, would not displaced content be dropped or again compete for capacity, possibly within longer term persistence?

Thus, from an overall intermediate flow perspective would not one expect an average lifetime of flow content, where the eccentric basis by which persistence is allocated to flow controls inner loop cycling?

Further, towards illuminating underlying factors by which persistence may prevalently be allocated,
might not one consider why such may statistically prevail, over the course of a multitude of variations and selections during transit of intermediate fabric?

If the degree to which relevant in band protocol traps are successful is one of the factors by which persistent elements prevail, then one might assume the fabric of which determines competitive displacement, of persistence, may become biased so as to prefer the components of which a potential related protocol may consist.

But how might the elements of what may be disparate temporal flows, of that which is not yet established, be preferred?

Moreover if some basis exists by which the probability of an arbitrary flow element may supersede another, such factor may be inferred as a likely candidate. But what may be different in a relevant protocol, in what may be an overwhelming flow of similar factors? Or from another perspective, might not the relative factors by which a normative baseline could be formed, of itself, highlight the remainder, as more likely of a relevant protocol?

However if what may pass as a normative baseline is itself shifting, does such not infer successive revision of baseline factors, with some residual likelihood of false positive protocol formative activity?

Consider the degree of persistence factor that may support the establishment of a floating normative baseline, as compared to representing valid, and relevant, protocol traps. Would not baseline persistence factors dominate merely on the basis of relative flow content?

However, if baseline persistence factors are minimized, might not the probability of forming potential protocol trap candidates be compromised?

For an eccentric platform in a context of shifting baseline factors the balance and scale of persistence bias emphasis may prevalently converge in proportion.

For example, a very stable situation with minimal baseline drift infers selectivity may favour low emphasis on baseline persistence, while an unstable situation with rapid baseline change may demand far greater persistence factor.

Clearly the rate and scale of baseline change infers by contrast the relative effort by which candidate protocol traps may form, assuming they too are of equivalent relative rate factors.

However if persistence factors are biased to the formation of baseline, how might the same simulation domain fabric emphasize candidate protocol traps?

Although configuration of in band factors might prevalently emphasize protocol traps, in a relatively stable context, more so than adaptive baseline monitoring, clearly baseline factors might play a key role underlying protocol traps, where flow factors which fall between the two may serve as the starting point for a critical follow on process.

In consideration of the potential role of baseline versus protocol trap configuration, might not the fabric of which baseline and protocol persistence is formed prevalently diverge in specialization?

Would not such divergence infer differing forms of fabric possibly more suited, for example, to the prevalent aspects of protocol based configuration, protocol formation and adaptive baseline monitoring?
However considering common flow factors, how might such divergence infer dynamic sorting of flows on a probabilistic basis?

Assume for the moment a flow graph in a simulation domain, where an ongoing spatial temporal system of flows for the most part represents a virtual scene of the senses.

If flow capacity is limited one might infer allocation of flow on the basis of prevalence, where clearly an in depth concurrent representation of all the factors of a virtual scene may be somewhat beyond the maximum of which a system of flows may scale, even though underlying sense flow may be available for such a task.

Does this not infer some factors of a scene may be concurrently represented in more depth than others, where if so, might not the underlying fabric of which such a difference exists, be different?

If some factor of a lower spatial temporal depth representation flow signal triggered a form of exception, might not such initiate a process by which the overall depth of a flow representation system is plastically reorganized?

The fabric by which a low depth flow may be implemented infers concurrent representation of in band derivative and sense flow, with some eccentric granularity of operator detection, by which signal is sampled, where one might consider such an arrangement a form of baseline monitoring.

As the signal factors of low density representation may, within the scope of granularity, vary in eccentric manner themselves, might not this infer an adaptive threshold of which an exception may be generated, possibly based on a running sample interval proportionate to the local frame rate, by which a slew rate of eccentricities may be formed?

Clearly the slew rate of signal eccentricities may of itself be the subject of threshold factors, inferring ongoing operator generation of eccentricity level, where a series of levels could form a rate of change level, which infers thresholds bracketing a median range.

The persistence factors underlying this process would apparently be required to store a re-entrant rotating series of operator level flows, corresponding to signal samples, though the signal itself may be dropped, inferring scaling of persistence fabric in proportion to granularity, eccentricity factors and a temporal envelope of slew factors.

One might infer from this that baseline monitoring adaptivity may be mainly on the basis of bracketing threshold adjustments, whereby exceptions or false positives are inhibited.

However how might such bracketing thresholds be adaptively moved, if not on the basis of accumulated signal eccentricity level excursion?

Signal flows of granular baseline monitoring fabric may be biased as much to the underlying factors of space-time as to eccentric factors of a particular cluster of baseline scene representations, where given prevalent factors of spatial temporal signal eccentricity one might infer related threshold modifiers, on a granular basis, by which those of granular signal eccentricity may be adjusted.

Other adaptive threshold adjustment factors may be of modality, or eccentric sensor factors, where if, for example, a factor change may be generally applied to granular eccentric thresholds, though not necessarily linearly, or symmetrically.
Granularity might be applied across flows, inferring possible relative coalescing density as a function of combined eccentric sensor flows, so as to accommodate granular domains, or fine grained domains may map to eccentric sensor flows on a more selective basis, or some prevalently advantageous hybrid combination.

Moreover the relative cost of false positive triggering may prevalently bias threshold adjustments, inferring a general adjustment factor may be advantageous, to a point of diminishing returns.

But how might threshold trigger exceptions be dealt with?

The possibilities for triggering seem to include bilateral bracketing of granular eccentric signal level thresholds, such that a particular trigger pattern against the backdrop of all eccentricities over all domains may emerge, inferring a temporal envelope of eccentric trigger pattern flows, emitted from baseline monitoring fabric.

However, what of change of flows, and possible false positives, due to scene transform from platform motion or orientation, would not some form of covariant transitional suppression seem likely, possibly giving threshold brackets a chance to reconverge?

How might such a system of flows be prevalently dealt with, in downstream fabric?

Might not successive trigger patterns prevalently infer differing factors than others whereby, for example, a shift of modality may ensue?

Clearly some form of downstream trigger pattern recognition, concentration and suppression are inferred, along with escalation factors, so as to not only facilitate near real time response, but also supply some initial source factors of which complex protocol traps might ultimately be formed and conditioned.

37 Preview On Baseline Trigger

Temporal factors of downstream baseline exemption trigger flow, infer the possibility of the leading edge, of out of band persistence fabric, prevalently accepting such flow, on a competitive basis. But how might a concurrent incoming flow of trigger exemption level patterns be of any use, in establishing a protocol trap, which might serve as a configuration template to anticipate similar conditions by a lead time, so as to provide an extended window of intervention opportunity?

Might not successive waves of trigger patterns be correlated, with derivative and sense flow, which was the initial source of baseline eccentric threshold excursion?

Consider if such flow has decayed, or been dropped, by the time exemption flow reaches target fabric paths, where correlation might occur.

Does this not infer a prevalent fabric optimization, whereby the temporal envelope of derivative and sense flow persistence decay approaches a median, of which reliable synchronized correlation with exemption flow factors may occur?

Consider derivative and sense flow, by which trigger pattern correlation might be made, where transit of baseline fabric could emit exemption flows by some delay, in turn inferring capture of source flows.
Might not such an arrangement imply not only the prevalent capture of such flows, as were present at exemption trigger, but also possibly some preceding margin by which potential factors leading to trigger formation, may also be correlated?

But by what interval might derivative and sense flow be maintained, after transiting baseline fabric, in relation to preceding correlation, given that all such flow must so be maintained until such time as a trigger?

Clearly the cost, in terms of fabric required, may be reduced by decreasing the density and scope of maintained flow.

Consider the possibility of successive density and scope reduction, such that a decay tail is formed, where although the full range of flow may not be available, a prevailing degree of related flow supplies the more relevant factors, of which post trigger correlation of preceding flow might rely, for a longer, though diluted, interval.

Assuming such a modified decay tail exists, at the time of an exemption trigger, might not this infer potential transit of a captured cross section, of such flow, to out of band fabric?

However, if such persistence is only displaced on a competitive basis, and then only by flow into leading edge loops of out of band fabric, might not one expect a merging, on some basis, of captured flow with loop content covariant with an exemption process?

If a diluted decay tail flow transits out of band fabric on a selective basis, though in temporal queue order, does this not infer a seldom used path, by which such a decay tail is tapped and multiplexed into the leading edge of out of band persistence, where further loss of content is inferred, due to additional decay factors during transit?

But what other alternative might prevail?

Is flow downstream of baseline fabric not already potentially out of band, where if so, might not such flow be of fabric which correlative operators could directly tap, so as to negate redundant transfers?

For such an arrangement to prevail, might not such factors as may be correlated be concurrently standing by so as to proceed on the basis of an exemption trigger?

What could be of detectable value in a decay tail after a trigger, other than potentially related preceding temporal signatures, and what basis for detecting such related signatures?

However what could be present in baseline fabric that might be correlated to preceding flow, other than trigger patterns of eccentric subranges, and adaptive threshold slew history?

While preceding flows may not have triggered an exemption, eccentricities therein could contain correlative factors of the exemption condition, where if so, and temporal signatures are extracted, what lead times might such signatures prevalently infer, other than that of available previews, in downstream persistence from a trigger?

Thus if extracted signatures were to form the basis for temporal triggers within a protocol trap, the lead times from the triggers to the subrange excursions, of which exemptions were on average formed, may prevalently reflect a selective trade off for an eccentric platform, in terms of variation of preview fabric parameters.
From a protocol trap perspective, where eccentric correlative signatures may be widely dispersed, one might consider the possibility of reiterative construction, from an initial fragment proportionate to preview length.

But how might the next fragment be obtained, other than by triggering another preview at the beginning of an existent fragment?

If a protocol trap is constructed of a single fragment such that it triggers, with a short delay at the beginning of the fragment, might not a false positive be likely as only a small fraction of the signature may be then used for correlation?

However, if the entire fragment is used as a correlative trigger would not the preview be the same as before, unless protocol trap fabric has more preview persistence fabric, such that not only the existent fragment but some extension may be obtained?

In order to further extend a protocol trap, next cycle triggering at the end of existing fragments would apparently not work, given the same preview length, inferring the trigger must successively move back to previous markers to obtain any extension.

The implied arrangement as a basis for protocol formation assumes an initial seed marker segment preview, captured by baseline fabric downstream persistence, on the basis of an exemption trigger, then transferred to a persistent out of band protocol trap fabric, where an incremental preview extension process takes place.

But how might an out of band fabric capture a preview of in band flow, and do so in an incremental manner?

As protocol extension may take longer than loop based persistence factors sustain, longer term persistence is implied, where one might assume an initial seed is the first factor.

Thus how could such a factor be prevalently loaded in a subsequent operation?

Might the occurrence of another potentially related exemption be involved in incremental extension?

What would be gained by this, unless a preview transferred was advantageously combined with factors already present?

Would not the probability of advantage be improved, if baseline fabric were to trigger on markers of an existent protocol fragment?

But does this not infer configuration of baseline fabric with a protocol fragment, so as to correlate flow over the length of its signature?

It seems we have already assumed some degree of distributed flow signature detection, on the part of baseline fabric, in so far as eccentric subranges may be converted to levels of which bracketing thresholds may be applied, combined with a persistence based accumulation of convergent adaptive slew rate factors.

Thus one may consider the addition of composite signature detection in the form of a protocol fragment of a length close to that of underlying preview fabric, as a potentially prevalent configuration extension factor, inferring temporal signature component capability on the basis of subrange factor combinations.
Put another way, a composite protocol signature might consist of a multitude of underlying subrange signatures, inferring triggering could occur on one or more such flow patterns, hence conditioning a composite exemption level.

But of what value would such a custom signature be, other than to possibly more reliably indicate corresponding preview factors, to those captured on the basis of a previous eccentric subrange excursion pattern?

If a previous capture of preview was on the basis of an exemption near the end of the preview, of which a protocol fragment is based, might not preceding factors of such be incrementally obtained if triggering occurred earlier?

But what if a preview signature contains no significant features, by which trigger thresholds may be conditioned?

Consider how a custom signature might be correlated to ongoing flow, where eccentric subranges are concurrently available.

As source flow transits the paths and nodes of baseline fabric, might not nodes of some temporal spacing be biased to eccentric subrange bracketing thresholds by a protocol fragment, such that only a pattern of bias present in the source flow may simultaneously activate a match within a margin in threshold tolerances, conditioning allowable temporal jitter and the potential nodes activated?

If a protocol fragment pattern present in a node bias schema is static, then the source flow must align along the full length of the path in order to trigger, where if the protocol fragment were itself flowing at the same rate, and happened to be aligned with source flow, one might expect transit nodes may indicate an error level, where signal alignment diverges.

A high error level might indicate merely a mismatch in relative phase rather than pattern, such that if phase were to be adjusted over the range of possibilities without significant reduction of error level, then pattern would be eliminated.

If as source flow enters the first nodes of baseline fabric, and leading markers pass over static protocol fragment thresholds with high correlation, then protocol fragment might flow covariantly, with progressively increasing indication of match level, where match threshold could be conditioned, such that a level corresponding to a greater incremental fragment of preview is obtained.

However of what value an extended temporal protocol signature, if the only means of using it is covariant flow with a source flow, thereby merely progressively increasing match level?

Notionally in a high risk context the value of a progressively increasing match level with protocol signature may, it seems, supply the opportunity to optimize available lead time, in terms of selective adaptation on a protocol by protocol basis.
38 Persistence Mediated Synchronization

As the selection effects by which protocol trigger parameter variation may most heavily depend might prevalently increase lead time, with a reliable indication of uncertainty, consider a flow of match level, from protocol flow correlated to source flow, where match level decreases from a high to low level, corresponding to a divergence.

Might not such a divergent flow indicate either lack of phase alignment with existing signatures, a source signal for which no available protocol exists, or even possibly a variational branch of an existing protocol?

To cover off the possibilities of existent protocols, is not the covariant simultaneous correlation of all related protocols, of which initiation factors are present in a source signal, inferred?

Hence does such an arrangement not imply an embedded persistence network of such protocols, where some protocols might be considered as contingent, thus connecting variations or branches of a protocol network?

In consideration of incremental protocol fragment persistence, might not a temporally dispersed accumulation of preview extensions infer long term storage, prevalently adapted to such a task, where preview fragment eccentricity flows are stored and selectively used for correlative assembly?

But how could contingently branched protocol assembly occur, if not by concatenated fragment flow for temporal alignment?

If, for example, a fragment, of which fragment extensions exist, were to be activated by the presence of source flow, subsequent fragments could require a selection lead time corresponding to a latency, such that inter-fragment gap or overlap is minimized, so as to arrive aligned for concatenated flow.

However, what if a fragment is early, or late, might not synchronizing alignment factors delay or speed up flow?

If the flow path from a fragment flow source to baseline fabric were either of variable length or rate or both, would not prevailing factors infer fragment flow rates are adjusted?

But on what basis would such an adjustment be made, other than the alignment of a selected flow, with the tail of a root set?

Moreover alignment timing issues could be exacerbated by match level variations, where if match level decreases, corresponding to increased uncertainty, may not also increased temporal variation be inferred?

Mitigating factors of alignment jitter infer, several eccentric subranges could contribute where the alignment of subranges is not necessarily covariant, and drops in certainty ensue from what could be considered normative factors.

If not for jitter variations of fragments, with source signal factors inferring lack of robust temporal alignment, might not a distributed fragment system prevail?

However, alternately consider the relative cost benefit of source signal fan out, across a baseline fabric
of which protocol fragment persistence is statically embedded, thereby reducing fragment timing issues and eliminating dynamic fragment link factors.

If protocol fragments are incrementally added to such embedded fabric, on the basis of temporally disparate preview growth factors, persistence locality inferred may be such that branch related fragments are prevalently clustered, despite temporal displacement of branch formation.

But what of the subsequent routing of source flow streams through such clusters?

Might not a reduced or diluted flow be possible, on some basis, so as to minimize trade-off?

Given an incoming preview fragment extension, one could infer such a protocol persistence cluster might grow by the addition of branches, so as to minimize latency, where factors of source flow and correlative fabric are replicated across clusters.

While source flow specific baseline protocol clusters could reduce fragment assembly jitter and link issues, clearly the entire fabric of embedded baseline persistence may be incrementally constructed, complete with source distribution, correlation and protocol preview extension factors, along with the added factors of possible additional self conditioning and downstream emission flows, of which synchronized cross correlation and servo conditioning by multiple coordinated clusters is possible.

Hence, one might consider issues of distributed fragment persistence latency to be replaced with those of source signal reduction and distribution, combined with compensating increasing correlative flow latency due to path length, for projective purposes.

One of the main advantages of such an arrangement could be that while source signal fabric fan out and latency are increased, protocol specific clusters covariantly tap some factor of source signal, where sliding match level correlations in clusters may be collated across clusters to produce composite levels.

Thus the advantage of a limited distribution network of specific source flow from the senses, with a reduction of potentially complicating issues of combining source flows, is apparently replaced with combining and coordinating of a multitude of distributed clusters.

Specific source signal latency transiting between clusters apparently infers an increasing delay penalty with distance, such that the ability of a protocol to incur downstream factors, such as servo conditioning, may be proportionately delayed.

Similarly correlative latency from clusters increases with distance, inferring prevalent optimization might favour spatial allocation of clusters, with respect to temporal criticality of source specific protocols therein.

Notionally how might such a network be synchronized and coordinated so as to provide appropriate conditioning of downstream servo sequence?

A potential source of synchronizing influence might be the feedback of servo sequence actuator context factors, through the senses, thereby entering a stream of specific source flow, of which specific protocols may facilitate correlation across clusters with gated plasticity.

In such case some protocol fragments, of preview flow, may contain sense flow specific markers of the same servo sequence actuator factors, though skewed in time by relative accumulated path eccentricities.
Clearly to take advantage of the presence of such markers for synchronization and coordination, protocol clusters might emit a related flow to downstream fabric, which receiving temporally skewed flows from a distributed set of clusters, corresponding to aligned actuator factors, provides synchronization.

But how might such synchronization occur?

If marker flow is simultaneously emitted from a distributed set of protocol clusters the path from each cluster to common fabric, by which relative alignment may be compared, is it seems also affected by delay in proportion to path delay from each cluster.

As source specific clusters from which actuator specific factors may facilitate synchronization could prevalently share common downstream fabric, would not such a factor potentially influence cluster location, along with a source distribution network?

If such common downstream fabric were of the general form of a synchronizing cluster, though of source flows emitted by distributed protocol clusters of source flow, where its emissions were in turn, once aligned, to be used for servo conditioning, might not additional skew be avoided by locating such a cluster proximate to servo control emission paths?

If for the moment one assumes the emission of servo control signal is phase locked in a feedback loop, through an assumed cluster system of baseline fabric, then the feedback signal coming in from specific sense paths would transit specialized protocol clusters, which in turn emit temporally skewed signals along varied paths to synchronizing clusters, which being proximate to servo paths may emit temporally aligned signals of which servo sequence is conditioned, thereby completing the loop.

However how might servo actuator sequence phase be prevalently adjusted in such a schema?

Could not the factors by which phase adjustment signal is emitted, be of limited source signal correlation, where minimization of uncertainty enters the feedback loop?

Does such an arrangement not infer the possibility of selective emphasis of the emission of some protocol clusters over that of others, where they may temporarily dominate phase alignment via gated plasticity?

But how might such emphasis be selectively incurred, if not by emission of flow from upstream fabric, and how may upstream fabric be conditioned other than by concurrent source signal related, and persistence based flow?

However, what factor could prevalently emphasize selective phase correction flow, other than relative uncertainty level of available flows?

Yet how might uncertainty level flow be emitted if protocol clusters are in a feedback loop mode, unless the correlative process with protocol flow is transformed to near real time correlation of spacial temporal factors, whereby an uncertainty level is emitted by concurrent source flow, of which selective enhancement and suppression is possible?

For an uncertainty flow signal to be generated from source flow, of which is part of a feed back loop of a context the correlation of eccentric aspects of source flow, associated spacial temporal factors of a context, are apparently required to be correlated, whereby relative displacement is estimated.
Thus, for example, space time factors of an actuator in a context may be estimated in terms of degree of eccentric servo sequence flow factor required to affect the actuator.

But how might a relation between source flow and sequence be dynamically cycled, if not by incremental correction?

If derivative flow of a context representing an actuator object and a reference object of the context, then one might posit an operator fabric facilitating relative space time displacement flow, from the correlation of eccentric subranges of objects.

If such a space time displacement flow were to influence an eccentric protocol flow by which uncertainty level flow is generated, to condition downstream synchronizing clusters of servo sequence, might not such an arrangement supply a basis for selective priority?
OUT OF BAND LOOPS
Chapter 9

REPRESENTING TIME

39 Temporal Objects

Given intermediate fabric configurations where concurrent outer feedback loops exist, might not an object of animated derivative flow competitively sustain itself for an interval, in an envelope of inner loops, merely due to lack of displacement?

From consideration of baseline fabric, could not sustained animated derivative flow transit protocol clusters, emitting match levels?

Moreover, how could relative spatial temporal displacement related flows be formed, if not from the combined animated derivative flows of both objects and actuators?
If displacement flow is of animated aspects of objects, by which eccentric subranges of flow corresponding to relative spacial locality, within scope of a scene frame, is not a flow based operator correlation inferred, where locality flows of each object are selectively compared so as to form difference flows?

Moreover how might such flows be selected and compared without upstream factors of which to condition such an arrangement, even assuming difference operators?

Moreover, if one considers yet again configuration fabric as conditioned for eccentric operations, just as servo sequence for an actuator, complete with inner sense flow feedback, so too might associated synchronizing clusters be conditioned by upstream emphasis factors of contributing protocol clusters.

Consider a protocol cluster which conditions configuration of a synchronization cluster of servo sequence fabric, which influences spacial difference operator fabric.

But what source flow might such a protocol cluster depend on for factors which could relate to configuring a spacial difference operator?

As within a network signal may well be equivalent could not source flow emanate from internal sense flow just as if from that of external sensors?

However, if so, might not internal sense flow prevalently converge on eccentric factors prevalently adapted to an internal context, just as sense flow of external sensors are adapted to eccentric factors of mass-energy phenomena transduction?

Yet, in so far as the character of a flow may differ from another, is not such a difference in character of source flow likely as much of selection factors as of unique attributes?

But of what factors might internal sense flow arise, and on what basis could such flow prevalently affect downstream factors?

However does sense of internal factors of which external sense flow factors may dominate, not infer unnecessary redundancy insofar as downstream internal factors of external sense may supply what could be termed a form of internal sense of their own accord?

Consider servo control factors which affect systems by which external sense forms a feedback loop, where synchronization is possible.

Might not a similar feedback factor prevail in variation and selection of internal sense flow, whereby such flow could form under conditions of which synchronization with internal fabric modifications are required?

But what internal synchronized modifications are inferred?

Does not a synchronized shift of internal emphasis by which external sensor factors influence servo control sequence and emphasis is selected infer synchronizing modification?

However how might such an internal synchronization be conditioned, given a plurality of possibilities?

If internal sense flows, similar to external sense flows, transit baseline protocol clusters, of which preview fragment based persistence forms sequential protocol factors, which may result in threshold
excursion, might not similarly an internal uncertainty flow result?

Given incoming flow of precedent based uncertainty levels, from a plurality of internal sense protocol clusters, may not an intermediate fabric, of which is influenced by such flows, and ultimately emits flows by which synchronized external emphasis patterns are selected, be of the form of an eccentric protocol itself?

But on what might such a protocol be based, other than incremental preview factors, rooted in baseline threshold excursion patterns?

However, just as an emphasis based synchronized feedback loop of external sense and actuators, so too might not a similar internal synchronized feedback loop of internal sense and servo internal fabric modifiers prevail, where emphasized internal sense flow dominates?

Consider similar use of a difference operator on emphasized aspects of internal sense, might not just as with spatial factors some eccentric factors of internal sense serve to influence a synchronized feedback loop?

But of what equivalent of animated object subranges might such an internal sense difference operator accept as incoming flows?

If the difference operators of external sense factors are mainly of spatial dimensionality, might not those of internal sense be mainly of temporal dimensionality, where subrange flows could, for example, prevalently indicate relative proximity in delay as opposed to distance?

But what entity might a temporal subrange be of other than a temporal object, where if two such entities are selected the temporal subrange flows thereof may be extracted and operated on, emitting a temporal difference flow?

Assuming such a temporal difference flow, how might such be used in a synchronized feedback loop of which temporal objects may be affected, other than by influence of a temporal object so as to adjust its temporal proximity to another temporal object?

However if the flow process which is adjusting temporal proximity, is itself by its own intrinsic delay, changing factors of which temporal proximity depends, unlike those of spacial proximity, might not such factor be prevalently taken into account?

But how might a temporal difference flow of two temporal objects, being altered by the process of flow delay itself, account for such a factor, other than by another difference operator of which an incoming difference flow is adjusted?

Consider from where an ongoing adjusting temporal subrange flow may be emitted.

Might not such an adjusting flow infer a temporal object of which brackets temporal difference flow factors in progress?

If both of two selected temporal object subrange flows are constant, insofar as no difference flow indicating change of proximity results, of what net result might an adjusting flow indicate, other than ongoing change of temporal proximity, of a bracketing temporal object, to constant factors of which may bilaterally extend indefinitely?
Of what synchronizing value might such an ongoing background difference flow be to downstream factors?

Clearly if spacial objects may be considered as flow based conglomerates of factors, mainly amenable to spacial representation due to temporally clustered sense flow, of which external context eccentricities are converted by external sensors, might not similarly temporal objects be conglomerates of factors mainly amenable to temporal representation, due to temporally distributed factors, of which internal context eccentricities are converted by internal sensors?

Though such posited temporal object flows may be formed from internal sense and similarly correlated with persistent temporal protocols, of what eccentric character might match level flow as a feedback influence be on synchronization of internal servo controls?

While external sense selective spatial match levels may be used in a relatively tight feedback loop, proportionate to series frame rate accumulation or flow delay, what of internal sense, where flows may represent factors of distributed temporal objects?

Might not similarly selective temporal match levels be used in a feedback loop?

But what aspect of a multitude of temporal objects may be prevalently selected for feedback, other than those of which mutable temporal displacement is possible on the basis of internal servo controls?

However does not such an arrangement infer that if temporal object protocol is prevalently rooted in baseline excursion, on the basis of an eccentric subrange of internal sense flow, where a bracketing threshold is triggered, then might not such factor be more likely to be of a synchronized feed back loop, whereby temporal distance is affected by internal servo controls?

Moreover how might internal servo controls affect the temporal proximity of an eccentric subrange of internal sense flow?

From consideration of temporal proximity, might not suppression of synchronized internal servo control activity reduce the probability of excursion of an eccentric subrange of internal sense flow, insofar as such excursion may be related to induced internal factors, and similarly an increase of control activity improve the chance of baseline excursion?

But what role may temporal object protocols infer, where if a network of contingent branches exists, might not potential navigation of such a network so as, for example, to minimize uncertainty level, imply covariant synchronized internal servo control activity?

Even so, how might such potential internal protocol based navigation couple to synchronized external feedback, thus providing a basis for emphasis of some factors over others, in a multitude of possibilities?

If relative external synchronization emphasis is considered of internal servo control, then by what eccentric subranges of internal sense flow might such be synchronized, in relation to temporal protocol, other than those related to temporal proximity of internal sense representations of external factors?
In consideration of the predictive potential of transform fabric, of what format could internal sense flow representation, there from, prevalently take?

If such internal sense flow is partly of a format of temporal characterization, so as to provide a basis for temporal objects, does such an arrangement not infer a degree of intrinsic incompatibility with flows by which spacial objects are represented?

But how might underlying factors, which infer the necessity of an interface between such representation flows be implemented, other than by a specialized fabric where combined bidirectional spatial temporal conversion is possible?

However, what of spatial objects could be represented in a temporal flow and what of temporal objects in a spatial flow?

Alternately consider possible flow based combinations of spatial and temporal objects.

The potential timing of flows when concurrent correlations of protocol are in progress seems somewhat unlikely, leaving synchronized correlation of spatial and temporal protocol flows, for which again specialized fabric is inferred.

Given a multitude of persistence based spatial and temporal protocols, of differing format, on what basis might particular flows be selected and synchronized in a specialized fabric, for potential correlation and subsequent combination?

Even assuming a systematic selection and correlation process, of what factors potentially embedded in spacial and temporal protocols might be of prevalent value, and in what possible resultant form?

Clearly if such protocols are themselves embedded in networked clusters, how could any systemic interaction be possible without the generation of related flows?

Consider potential relative average flow segment length and information density, for spatial and temporal protocols.

If internal sense eccentric subrange excursion is the root, with baseline preview the basis, for incremental accumulation of temporal protocols, might not underlying internal baseline fabric composed of networked source flow monitoring persistence clusters, prevalently adapt to segment length and density of internal sense flow?

But how could internal temporal flow segments prevalently vary as compared to externally sourced flow?

It seems external flow could vary to some degree in proportion to eccentric factors of sensory transducers, and downstream compression thereof, such that combined concurrent and synchronized covariant correlation of sense is possible, whereas internal sense flow, though concurrent may not prevalently require as close synchronization.

If external sense flow is the primary substrate of spatial transforms, would not flows in combination only be of correlative factor, if such spatial transforms are covariant subranges, by which aspects may be
compared on a spatial basis?

If so, how could internal sense flow, if mainly of temporal transform be of significance for correlation, if not aligned to spacial transform subrange frames?

However, what prevalent factor could exist other than covariant spatial and temporal mutability as a basis for such alignment?

Yet how might such mutability factors be selected and aligned, from a multitude of flows?

If temporal factors, in like manner to those of spacial transforms by which distance may result by selective configuration, were of transforms by which temporal distance may result, by selective configuration, could not covariant selective transforms concurrently generate flows of both distance and delay?

For such a process to occur would not concurrent aligned selective emphasis of both spatial and temporal flow subranges be required?

For a virtual spatial temporal process to occur while in band fabric is active, is not some form of out of band access to persistence flow implied, where asynchronous though concurrent access is possible, without major disruption of either flow system?

Clearly though if in band fabric is quiescent due to suppression, virtual out of band flow might then usurp in band fabric, inferring persistence based emission flow may occupy both in and out of band fabric concurrently.

However why would such an arrangement prevalently arise if not of benefit, and what more likely than ongoing modification of in band fabric, which might not effectively proceed in any other way?

But of what other alternate use of in band fabric might be of more benefit than training sets of modulating persistence factors, where either or both temporal and spacial factors are present?

What scaling factor could be more subject to scaling issues than that of temporal representation, where although such representation may take similar flow length, several orders of magnitude of variation are inferred?

Yet if temporal representation is divided across several concurrent flows, how might such an arrangement prevalently occur, if not by expansion from a single flow?

Assuming a single flow representing a maximum temporal range of which underlying eccentric signal has limited capability, might not such a relation prevalently diverge to a non-linear mapping of temporal displacement, prior to other variations?

However, if non-linear signal representation, how might a difference operator form a displacement from temporal subranges, other than by itself adapting to such a schema, thus emitting a similarly eccentric signal?

If then more extreme scalability is prevalently reinforced, by what variation might such reasonably occur, other than by changing the nonlinear scale of a single flow or possibly selectively altering the relative scale of a single flow by another flow?
Clearly the use of additional flows may infer a more open ended system than that of changing a single flow, of which also operator eccentricity must concurrently change, as well as source flows.

If another flow existed by which the scalability of an eccentric initial flow signal is interpreted, then how might such prevalently affect the process, other than by concurrently accompanying the initial flow pervasively throughout all related fabric, unless such signal is only of a general form?

Clearly a temporal form by which temporal flow may be interpreted might itself be conditioned by upstream factors, where usurpation of intrinsic temporal scale may occur prior to interpretation.

In such case might not an extension of temporal scaling be more likely of upper band factors, where risk is reduced?

Given flows of internal sense, which similar to the casting of eccentric spatial dimensionality of spacial objects, could imbue eccentric temporal displacement within temporal objects, how might such a process occur other than by ongoing change of temporal signature, thereby imparting to temporal objects a form of motion, by which they may either approach or diminish, in regard to current internal sense.

But of what prevalent use might such a factor be unless of systemic applicability to objects of external sense, where such objects may be combined, not only as spacial transforms, but of a spatial temporal hybrid of which both spacial and temporal displacement may be concurrently represented, in an ongoing manner?

If a spatial object, for example, disappears leaving only a residual derivative flow, where before animated derivative was present, how might such a derivative transition be characterized by ongoing temporal displacement?

Clearly some aspect of flow by which a spacial disappearance is represented may be associated both with a spatially covariant derivative flow, combined with an ongoing temporal flow of increasing negative displacement, where as the object no longer conditions sense might not one consider a combined representation as a form of virtual simulation?

As a residual derivative flow is inferred of spatially transformed derivative, and that potentially of multiple senses, though no longer of lower band fabric, might not such a virtual arrangement infer the possibility of upper band fabric by which spacial representation is also of the same eccentric flow representation, as that of lower band fabric?

Yet how might an ongoing temporal displacement prevalently be applied to such an upper band fabric, other than to represent the entire spatial flow content?

Moreover what of the transition by which an object disappeared?

Might not such a change require at least two sets of representations, one before and one after, where both are the subject of ongoing temporal displacement?

Now consider if an object was moving before disappearing, would not such infer a multitude of representation sets, each adjusted for both ongoing temporal and spatial displacement?

However are not such representation sets similar to those required for moving animated derivative, though of virtual upper band form, rather than lower band baseline fabric, of successive animated derivative flow frames?
41 Optimizing Lead Time

If baseline fabric infers a lower band temporal spatial profile for derivative persistence, in so far as downstream preview fabric stores a temporal spatial profile of factors preceding bracketing threshold based triggers, what, for example might occur with the motion and disappearance of a moving object?

Assuming object disappearance triggers a preview capture, containing a temporal spacial profile of object motion somewhat before the trigger, including transit delay, how might such a captured set of transformed flows be preserved for downstream processing, while also freeing up baseline persistence for ongoing lower band use?

Consider tapped transit into a paralleling fabric, whereby selected spacial temporal flows move through such fabric and an array of operators correlate signal excursions.

Could not such a paralleling fabric capture available spacial extent equal to or greater than spatial trigger patterns and temporal extents, from the leading edge of a preview flow to the trigger pattern fall off?

Though a trigger tapped parallel copy could also extend preview persistence by the length of its flow path, what is gained other than an interval of opportunity by which to form further downstream flows?

If the worst cases of which such a capture fabric might prevalently accommodate includes trigger pattern, covering the full spatial scope of sense flow, combined with a multitude of spatial temporal profiles, whereby trigger pattern fall off is delayed indefinitely, might not parallel copy flow scope prevalently converge?

Moreover if trigger fall off is delayed beyond temporal scope, would not leading edge preview flow risk dropping?

Clearly if capture flow were to be slowed down more time would be available for flow eccentricities to traverse intermediating fabric, of which tapping operators could in turn form downstream factors.

Moreover as increased delay infers potential risk for lower band factors influencing outer loop delay, might not a compromise prevail?

But what of downstream factors tapped off of delayed preview copy flow?

Might not such tapping operators cover both temporal and spacial factors covariantly, as copy flow transits operator input, though what factors might ensue of downstream flow from a delayed trigger preview?

Given a range of possibilities of preview content, combined with eccentric factors of which trigger patterns could ensue, might not downstream flow prevalently converge on spatial temporal factors, upstream of eccentric sensory subrange excursion?

If a preview flow is considered as a set of conditioning inputs in transit, might not an operator fabric be conditioned by all, so as to be affected concurrently by both spatial and temporal factors in a hybrid combination?

However consider a flow sampling window by which preview fabric taps may be conditioned with
minimal cross talk, from flow factors conditioning other inputs, where does not such infer parallel taps of
preview fabric, on trigger, which may concurrently carry flows from temporally displaced flow segments,
thereby changing a series relation of flow in time, to one where such flows are concurrent.

Notionally such a flow pattern transiting operator taps infers simultaneous conditioning of operator
fabric by sampling windows, sequential in time so as to, in effect, convert series temporal flow to a
temporal object flow.

But what of spacial factors in such a flow transform?

If preview fabric is of eccentric though distributed flows by which combined sense spatial transform
represents a scene view, related to trigger pattern scope, might not such spatial representation be
preserved by corresponding parallel taps, though sliced into as many series flows as sequential taps?

Spatial representation may thus be of concurrent flows of the same spacial transform domains,
corresponding to transformed concurrent though originally sequential sampling intervals, by which
preview operator output may be formed.

However what might such an operator possibly emit from such input flows, other than related patterns?

If time has been converted to a concurrent object, along with a set of related spacial objects, might not
operator emission pattern flow be considered a unified spacial temporal object?

Moreover what aspect of such unified representation could be emitted in a flow, other than factors of
which a difference exists, possibly in relation to eccentric factors of baseline trigger?

For a difference to be formed might not corresponding sequential sample windows, now in parallel
concurrent flows of spatial domains be correlated, where there are as many such domain flows as
temporal windows?

Consider if all domain flows, are the same across all parallel flows, of differing temporal windows,
where either some or no difference arises.

Might not similarly such a pattern, preserved in operator output flow by domain, indicate a unified
representation flow object of spacial eccentricity change?

If a ‘by domain’ output flow of such operators indicates change levels by eccentric subrange, could not
such an arrangement be considered a set of layers, each corresponding to spacial distribution of
subrange change level?

But how could such an array of domains by layer be of prevalent use, other than by conditioning
downstream fabric?

Consider if change has been combined into a unified flow where patterns thereof form roots of
protocols, by which preceding factors of future subrange excursions may be correlated.

Of what form might such a set of flows be of most prevalent use in correlative mode, so as to maximize
the probability of significant lead time?

Clearly if change is combined on the basis of sequential temporal samples, from a trigger, to a
preceding limit, corresponding to preview length, might not change factors closer to earlier flow infer
prevalently greater emphasis, in proportion to potential lead time?

But how might earliest change factors be extracted from a unified representation of a multitude of sample intervals, if not by flow representing change level with successive interval?

For a given spacial domain of eccentric subrange flows, where parallel concurrent taps of underlying preview flow infer the possibility of forming difference flows for each domain, on the basis of subtracting, for example, each flow with its neighbouring flow, in turn, would not such a set of change result flows, if sequentially concatenated, form a signature which could condition factors of a protocol?

Thus would not a protocol composed of successive differences infer a correlative operation of like to like, whereby such differences are also formed of baseline source flow, on an ongoing basis?

If ongoing successive difference flows are available in baseline fabric for protocol correlation, would not subsequent preview operations be conditioned by a trigger pattern, thus concurrently creating the basis for formation and correlation of protocols?

Given a multitude of clustered protocols which might be concurrently correlated, does not such an arrangement also infer cluster localization of successive difference operations?

However if a protocol is more of spatial temporal pattern characterization than specific cluster locality, how might such characterization prevalently decouple from particular spatial and temporal factors?

A protocol may be of limited use if tied to particular eccentric spatial temporal factors, of which it is initially formed, downstream of preview fabric, inferring decoupling of protocol factors from irregularities for general applicability.

But how might a spatial temporal characterization protocol, primarily based on transformations of sense flow become subsequently independent of them in downstream operations, so as to be applicable to arbitrary future occurrences of similar, though eccentric samples, of spatial temporal or other flow?

Might not ongoing protocol adaptation infer a widening of admissible scope by which result level flow is emitted?

However does such a general loosening of criteria not in turn imply increasing cross-talk between an expanding set of protocols?

If protocols are of fixed persistence clusters, whereby source flow of which is directed, does such an expansion not infer a trade off whereby cluster delay and uncertainty factors may increase?

But what alternative could prevail in a flow based network?

Consider if flow of which protocol is represented is completely decoupled from spacial temporal factors, where although a pattern may remain, does not such infer at least preservation of a succession of pattern in so far as temporal factors may not be ‘flattened’ into spatial ones, without loss of integrity?

Even so, given a sequential set of pattern frames, might not frames be distorted by a multitude of transforms, and similarly sequence changed by order, duplicates and drops, such that in combination an increasing number of possibilities are inferred?
However does not such a set appropriately comply with random interception of varied protocol source flow, from sense flow in a changing context, and thus infers likely prevailing selection factors, given the possibility of underlying fabric support?

If such an array of possibilities is to be covered off, without incurring proportionate delay, does not a mainly parallel flow system of cascading partial results not remain the only likely possibility?

But if a protocol is to be so fragmented, might not multiple protocols share fragments, which, in so far as such fragments become more common, they may be more of the form of cross protocol primitives?

Thus if a cascading partial result network of commonality across protocols prevails, possibly partly in the form of primitives, what of flow based representation and localized clustering of persistence factors?

For protocols prevalently based on a cascading series of common subprotocols and primitives, of which probability level differentiates, might not incoming correlative flow be prevalently of like to like, inferring source flow transform into a successive cascade of corresponding factors?

However how might source flow be transformed, other than on a basis of preceding subprotocols, where correlation corresponding source flow factors are modified in transit, for downstream subprotocol operations?

Even assuming such a cascade, how might eccentric source flow be prevalently transformed in transit so as to present downstream subprotocol correlations a like to like interface, of which match levels may ensue?

For a subprotocol pattern marker to be prevalently forwarded in a successive cascade layer, potentially representing the presence of a multitude of markers of eccentric arrangement in a lower layer, is not a high degree of prevailing commonality implied, whereby such eccentric arrangements occur repeatedly over a range of subprotocols?
Chapter 10

SIMULATION GENERALITY

42 Simulation Loops

Though a protocol could take the form of a cascade of transformed and combined sense and persistence source flow, how might such a result sequence decouple from the particularities of temporal spacial factors, so as to be generally applicable?

Consider if not only successive probabilistic transformed subprotocols of source flow are present in downstream fabric, but also condensate forms of source flow, by which transformed subprotocol objects are hosted in a running virtual simulation.

However, even so, how could a multitude of subprotocol objects, independent of temporal spacial factors, be appropriately embedded?
Is not the transformation of sensory flow to representations situated in a virtual temporal spacial simulation, of any form, even without embedded objects, a systemic adaptation which infers prevalent alignment of eccentric irregularities?

Moreover without such a spatial temporal transform how could an arbitrary sensory pattern be of any general use?

Yet given a flow framework, by which such transforms are stabilized, how would the relative disposition of the entire framework converge on eccentric common factors, other than by alignment markers as a reference for adjustment?

Thus if convergence of a framework of a virtual simulation space depends on alignment markers, which are embedded, might not such markers be inferred as upstream of framework servo adjustment flow, implying such a simulation space is not so much a context, where objects are embedded, as an object of itself, mutable in eccentric form, as an overlay?

Clearly such a simulation space overlay object might, although possibly initially resting on alignment marker factors, once convergent may in turn serve as an upstream adjusting factor of covariant objects, thereby potentially serving as an influencing transform flow factor input for situating downstream protocol cascades, which of their own flow factors may be spatially temporally decoupled before such transform.

Thus one might consider a simulation space overlay object as an internal servo sequence signal flow system by which decoupled protocol cascade flows may be aligned.

But at what subprotocol cascade might such alignment occur, other than that corresponding to like to like factors of which such a transform is possible?

However, if a protocol cascade is decoupled, how may any subprotocol thereof be of like to like factor to that of a simulation space overlay object flow, without possessing some intrinsic relation?

Consider then if given a particular protocol cascade flow alignment with a simulation space overlay object flow is then varied, does not such a variation not infer the change of overlay more so than protocol?

Flow factors downstream of both protocol and overlay may vary, though does such not imply a post protocol transform, of which is only dependent on overlay flow, thereby implying protocol is invariant of overlay, and thus decoupled insofar as subprotocols are not affected by overlay?

If such is the case might not the only prevalent use of convergent overlay flow be downstream of protocol cascades, whereby eccentric relative spatial temporal factors may be systemically constructed.

In such an arrangement, referring to Figure 31, would not a moving object which disappears be of a protocol covariant with a convergent overlay, where although disappearance at sensor flow levels may remove derivative animation, of which source flow by a cascade is initiated, continued representation of subsequent simulated virtual object motion infers sustained persistence flow of at minimum latter protocol factors, by which downstream operations with overlay are formed?
Moreover what of concurrent multiple instances of a protocol?

If a subprotocol has a multitude of cascade flow clients, multiple downstream fan out flows could suffice, however if a multitude of concurrent though differing subprotocol instances, of the same subprotocol, is not such a contradiction, inferring subprotocols may consume cluster fabric to an extent necessary to facilitate decoupled commonality across downstream subprotocol clients?

Thus one might consider derivative flow of sense as a distribution of probabilistic subprotocol

Figure 31: Out of Band Loops
cascades, sharing fanned out subprotocol match levels of successive layers of like to like correlation, converging on the most probable correlations at the top levels, thereby potentially ‘ranking’ protocol by relative uncertainty level.

If multiple similar objects of a virtual context, then multiple concurrent cascades culminating in ‘top level ranking’, however how might separate object instance flows cascade, other than converging at a top level, where although each object is a separate factor they are all represented by concurrent covariant ranking, inferring downstream factors from a decoupled top level protocol may prevalently associate such independently with each instance?

Moreover, if each instance has an independent protocol cascade, this infers all contributing cascade flows must also be independent and can only occur in separate flow paths such that common protocol fabric cannot be concurrently shared.

Thus each object instance would have an independent protocol cascade, inferring as object instance number increases untenable scalability issues ensue.

Although a subprotocol cascade may facilitate decoupling of pattern to some degree, clearly this infers re-acquisition of coupling downstream of protocol top levels, in turn implying the necessity of a pervasive overlay, and the preservation of object instance factors per protocol.

In both cases of a multitude of similar and differing objects untenable scalability issues are apparently inferred, whereby concurrent use of equivalent fabric protocol cascades are implied, such that either separate cascade paths must be available, or somewhat degraded performance with increased risk of errors will result.

Alternately might not prevalently common factors of which may not require decoupling be shared by fan out from common fabric, while those coupled to eccentric spatial temporal factors are possibly decoupled, then reacquired per instance in so far as underlying fabric allows?

Assuming, for the moment, a presence of factors in objects which does not require decoupling from spacial temporal factors, how might such be determined other than by subprotocol, of which is dependent on sense flow pattern, which is in turn composed of spacial temporal factors?

Even assuming such proceeds insofar as commonalities of a multitude of objects ensue in a single cascade, how could association be reacquired by each object instance, other than by alignment with object spacial temporal factors?

If the main benefit of decoupling protocol cascade from particular spacial temporal factors, so as to facilitate subprotocol cascades in terms of pattern alone, without eccentric spacial temporal factors coming into the process, might not even such patterns, though possibly not explicitly tied to particular spacial temporal factors, be of them ‘in general’, so as to make decoupling problematic?

Might it not be more likely to decouple from particular spacial temporal factors, though not of spacial temporal factors in general insofar as flow pattern itself is of spacial temporal factors, such that subprotocol cascade widens scope of applicability to that of prevailing common factors, while minimizing fabric scaling issues of multiple concurrent objects?

It seems what may be inferred by decoupling from particular spacial temporal factors, is to what extent pattern is applicable to subprotocol cascades, or in combination with a convergent overlay, itself dependent on marker objects derived from patterns of the senses.
In the case of multiple concurrent objects of corresponding subprotocol cascades, for each object to be associated with common subprotocol results, source pattern of each object must apparently be cascaded in separate fabric, to the point of which commonality emerges, whereby given a flow based equivalence of such commonality, the option of coalescence of commonality, possibly losing object association, infers a unified commonality flow applicable to a subset of objects.

Might not such a subset factor be of a unified commonality flow, whereby objects of a subset are referenced?

But how could such prevalently occur, other than by either encoding signal factors with object eccentricities, or fanning out commonality flow downstream?

Alternately if common factors of a subset are only associated with particular objects, one at a time, such difficulties are reduced, where if source flow proceeds through separate paths of which no commonality exists, then only when an object is selected, or not inhibited, associated flow from common factors ensues.

In terms of potentially prevailing alternatives, selectivity of either individual objects or subsets whereby common factors flow as a factor of selection might eliminate upstream scalability issues, though with a cost of lack of complete concurrent characterization.

However, as complete characterization may not even in radically enhanced cases proceed without limit, selectivity may seem an optimal prevailing compromise, though inferring a fabric of which selectivity flow is possible, and a basis for such exists.

Selection of a subset where enhanced factors of underlying fabric may apply for a duration, apparently infers a downstream servo control sequence affecting configuration, but from where might such a selecting flow be emitted, and on what basis?

Clearly what is being selected are flows in transit whether animated or residual virtual, where such flows to be enhanced infer concurrent covariant operations with other flows.

However, other flows may not it seems be enabled without factors of what is selected serving as source flow.

Thus given a simulation domain, of which a subset of a multitude of flows are selected, does not such an operation infer emission of conditioning downstream flow, whereby synchronized related flows are emitted?

Similarly one might consider flows of which a subset is selected, where does not such an operation infer an underlying fabric by which such factor may distinguish one flow from another?

Yet how might flows be distinguished, other than by tapping flow of which correlative factors may form a basis of selection?

And what basis given concurrent alternatives other than factors of a trailing envelope, of which may effect downstream emission of servo control sequence?

Clearly flows of such a trailing envelope might be from a range of sources, however what could prevalently influence selectivity in a critical fabric, other than flow of which ‘system activity’ is in general represented, so as to provide a reliable basis for disposition of such a resource?
However, if system activity is to be represented in fabric of which selectivity factors are emitted, how might such prevalently come to be the case, and if so, how may such diverse factors influence selective convergence?

43 Combined Loop - Disappearing Object

Let us, for the moment, assume a fabric exists where servo sequence object subset selection flow is emitted into a simulation domain, followed by domain emitted flows eliciting a subset commonality protocol loop-back flow. Is not such of the same general form as servo actuator feedback to sensor flow of a context?

Might not the fabric of which sources servo sequence for both feedback loops be of the same fabric so as to prevalently, reliably and concurrently coordinate a sensor platform with animated subset selection?

But how might factors of which such coordination prevalently arise and converge on particular eccentricities of selectivity, amidst a multitude of possibilities?

The timing of selectivity emission flow, it seems, may be considered related to the timing of precursor flows of which selectivity may ensue, where could not the possibilities for precursor flows include incoming flows of subset selection in progress, combined with those of external and internal sense?

But what of incoming flow of a previous subset selection, where might not such serve as influence for another selection emission?

If one considers a subset selection once made as of a single object, what factors could flow thereof?

A subset object could consist of a single or multiple subobjects, where if the latter they could be differing or the same with respect to potentially common subfactors.

Assuming a subset of multiple differing subobjects what other than protocol of commonality may be emitted of the whole, and what possible consistent commonality than that corresponding to a plurality?

If concurrent objects of a scope are flows of baseline fabric, of fixed local persistence clusters and distributed source flow, how might a selection be made by flows of which clusters are conditioned?

Consider if selection conditions any subset of clusters, whereby protocol may be emitted.

Might not each selected cluster emit protocol concurrent to source flow of which it samples?

However how could commonality be established if concurrent downstream protocol flows exist, each potentially of differing source flow?

Further, if such flows are to be correlated on the basis of commonality, how might such protocol flows be aligned for correlation, where even so might not flow signal diverge so as to make correlation not of like to like?
Consider a possible protocol cascade which, as a countermeasure for concurrent scalability, is prevalently limited to selected input flows, where as such is conditioned, low level subprotocol synchronized cascade proceeds to higher level outputs.

But of what source flow might such a cascade selectively tap, and at what level, such that subprotocols are like to like?

Is not such a selectivity countermeasure only inferred if variation and selection favour reduction of concurrent cascade width, of which is only likely to occur if a multitude of factors, of which a cascade may apply, are present in a context?

However is there not a difference between selective temporal multiplexing of the senses, by which emphasis and suppression may be applied as servo control sequences, and multiplexing of a protocol cascade fabric by which a multitude of objects, of multiple senses may be similarly affected?

Moreover if of differing factors, could not such be prevalently coordinated, so as to improve selectivity factors, thereby eliminating potential interference which may distort downstream cascade flow?

If so, might not a case be made for the coordination of all factors which could affect such a process, and also infer potential coordination of much of an eccentric platforms flows across applicable servo sequences, in an outer loop, so as to affect cascade flow selection factors?

If such a coordinated system of selectivity, by which protocol cascade fabric is time shared, with only a limited scope of sequential enhanced characterization, might not persistence factors, by which a simulation domain may maintain aspects of a virtual context, prevalently increase?

However if such selective enhanced context factors are of a time shared cascade fabric, in which distributed sequential subprotocol flows of underlying eccentric fabric layers are required, how might such flows be of persistence factors, without a similar underlying fabric, other than perhaps result flows of subset selection?

Moreover how might such result flows have influence in downstream fabric, unless underlying factors therein are of a form whereby such flow may be interpreted by operators, and re-established in roughly equivalent form from persistence, rather than cascade flows?

Clearly if such operators exist, by which to interpret flows of cascade or persistence, then given a range of prevalently selected subsets, of what commonality as a basis for interpretation may arise, other than of that by which such subsets may be ranked?

However what form of ranking may prevail, given variation and selection in an eccentric platform, other than that which increases probability of survival in a context?

Though an operator on persistent flow is assumed by which an equivalent of selective cascade flow follow on commonality is emitted, of what prevalent use might such be to downstream fabric, in the absence of cascade from selective source flow on which it was based?

Consider an accumulated series of protocol cascade follow on commonalities from selections of subsets, where might not such a series represent a pattern by which protocol may prevalently be formed?

But of what use such a pattern without source flow on which it is based?
Moreover how might source flow be of persistence and follow on commonality without either storing and retrieving both concurrently, or alternately recreating downstream flows by applying retrieved source flow to a protocol cascade?

Yet might not the latter alternative pose a risk of disrupting ongoing loop operations, and the former imply persistence scaling and synchronization issues?

If to avoid disruption and selective multiplexing issues a separate protocol cascade of persistent source flow is posited, what prevalent basis other than concurrent operation with another cascade, though on purely virtual source flow, such as for a disappearing object?

For the case of a disappearing object could not a primary cascade remain available for selective operations in an outer loop, while a secondary cascade picks up persistent source flow, including motion factors remaining from top levels of the primary, thus providing a concurrent virtual image, though lacking in sensory animated derivative?

But what prevailing variation and selection factors are inferred in terms of flow operations for such a transfer?

If a disappearing object is to be smoothly transitioned to a secondary flow system, while freeing up the primary for immediate operations, on animated derivative flow trailing edge of which disappearing corresponds, antecedent flow in downstream primary cascade fabric might be tapped for persistence modes, assuming a conditioning flow by which such factors may be enabled, so as not to overwrite persistence arbitrarily from any previous operation.

On flow transfer to secondary persistence, one might assume continuation by means of a loop or delay, thereby conditioning downstream secondary cascade and follow on commonality, while freeing the complete primary path.

However what of disappeared object motion simulation in such an arrangement?

Selectivity of a subset from the onset, it seems may be of moving subset factors, whereby subset objects could be moving in skewed or covariant manner, inferring if such a flow were to be captured such factors may be prevalently preserved as a transition to secondary fabric.

Yet how might such factors be preserved in a flow except insofar as signal itself representing such motion, including directionality, so as to enable extrapolation?

For of what prevalent use a virtual simulation of a disappeared object without covariant simulation of motion factors in secondary fabric, by which a concurrent outer loop may be conditioned by downstream flow?

Yet how might a virtual object flow, where motion signal factors persist, be translated after a delay to a new locality of a concurrent loop of differing fabric, other than by a system of operators of which spacial temporal transform on the basis of such conditioning, tap object flow to emit downstream factors?

Even so, assuming downstream running virtual projection flow, how might such a flow influence a situation composed of concurrent feedback loops, possibly of altering spacial orientation, without ongoing covariant transformations by which to project virtual localities in virtual context frames?

Further, if such projection is outside current outer loop sensory scope, might not both the outer loop
and virtual projection thereof be of a combined downstream temporal spacial representation?

Yet, if so, how might such a joint representation be prevalently formed, other than as an extension of sensory driven loops, of which concurrent sense flow only animates an eccentric sub-scene?

Consider if such a sub-scene is changed in orientation over successive eccentric platform servo adjustments, where might not prevalent factors favour persistence of previous sub-scene markers?

But what use previous sub-scene factors, if not correlated to a concurrent sub-scene, so as to provide a basis for selection?

However, similar to a disappearing object, how might such a previous sub-scene be prevalently related to ongoing sub-scene factors, other than by spacial temporal transforms accounting for relative displacements?

What alternative exists to an increasing set of such transforms for a series of previous sub-scenes which might prevalently arise other than the reverse, where sub-scenes may statically collate to form a virtual marker context of which concurrent sensory based sub-scene is dynamically transformed?

Although less overall dynamic transformation fabric may be inferred by a running virtual marker context, by which incoming sense flow updates sequential aligned transforms, notionally the maintenance of such a **virtual context infers an ongoing system of persistent flows, updated by sensor sweeps**.

Returning to the issue of an out of scope disappearing object projection, the availability of a virtual context infers downstream flow converging into a combined representation of a virtual object transiting a virtual context, where along with other factors a preliminary basis for formation of servo sequence flow altering selectivity of primary cascades is implied.

Even so, given such a system how might appropriate servo sequence flow be emitted, other than by temporal spatial transforms relating a concurrently adjusted combination of virtual context, sensor platform and virtual object projection factors, inferring synchronized alignment of relevant flows by which influence of multiple coordinated platform servo sequence emissions occurs?

### 44 Lower Temporal Bands

A system which is as much dependent on persistence based virtual representation and projective transformations as sensor flow, where one might consider the latter as a scanning updating sub-system transiting baseline fabric infers pervasive virtual flows by which projective transforms and virtual context models are maintained.

However how might such a pervasive virtual flow system prevalently emerge and scale?

A random scan by a sensor platform in a pattern across a context infers a temporal envelope of flow somewhat greater in spacial scope than from the static case, where a potentially greater interval of such flow in transit infers more downstream fabric which a signal envelope traverses, before dropping.

Moreover how could virtual context related factors which are dropped be preserved, and to what prevailing benefit?
A lengthening of transit path, for example, infers a refresh scan by which differences may be detected, assuming synchronizing incoming and residual flow for correlation, thus emitting a difference flow, which could prove a valuable variation.

Such an arrangement implies tapped residual flow offload from lower band paths to temporally inverted upper band paths, assuming identical scan patterns, whereby factors of the leading edge of upper band flow are correlated with incoming lower band flow.

As a granular flipping process implies signal parsing in any case, might not an inverted granular distribution of flow loops be synchronized to incoming flow?

However even assuming such an arrangement, how could variation of incoming scan flow be aligned so as to correlate like to like, other than by a transformational deskewing fabric, possibly on the basis of alignment markers and overlay?

But where might such marker and overlay flows be more likely than from a granular distribution of virtual context flow loops?

Consider a possible baseline fabric composed of not only excursion bracketing trigger thresholds of source flow, but also on correlative differences with a virtual context, by which such excursions may be prevalently formed on a granular basis, insofar as deskewing transforms are accurate from a series of scanned refresh flows.

Might not such a baseline virtual context fabric prevalently scale by wrapping all the possibilities of a virtual context, where inverted granular representation factors may also prevalently distribute in proportion to selection factors?

Moreover if granular distribution over a multidimensional space, what of temporal depth?

If baseline fabric is formed from distributed clusters, where transformed source flow factors are aligned with synchronized loops of temporally inverted granular sub-domains of a multidimensional space, incoming scan flow could update persistence so as to overwrite loops, after correlative operations.

However, clearly the scalability of retaining such in depth persistence infers prevalent compromise.

But what compromise other than dilution of information density, in proportion to prevailing value of retention, over an increasing temporal interval?

Moreover what value might a previous virtual context have other than correlation with a current one, inferring a basis for sequential alignment of displaced granularity, whereby such could be distinguished and ranked?

Might not merely a dilution of markers by which a virtual context is correlated to current contexts suffice, where could not also such a marker factor of which overlay is potentially based be prevalently combined?

But given a current scan flow, how might such markers be correlated if not concurrently, inferring multiple marker flows of previous virtual contexts, by which current alignment of both overlay and sorted virtual context is achieved?
Consider motion of an eccentric sensor platform through a context, where virtual context refresh scans update markers.

If such continues without redundancy a temporal distribution of markers is inferred, by which each successive virtual context is aligned.

However if markers repeat, for example, does not such a factor infer temporal marker loops and branches, forming a navigation network?

But how might such a navigation network be navigated without a directional gradient of some form, between marker sets, and what more reliable basis other than alignment of platform motion and marker directional vectors?

However similarly what could be simpler than a series of markers emphasized so as to roughly align with motion axial directionality, forming a compelling case for prevalent convergence of marker locality, as an error correction distribution about a series of navigation vectors, by which a path could be reliably followed?

But what does such an arrangement infer of underlying fabric?

A platform motion vector might be represented in terms of a change gradient of successive context sensor frame bursts, with an underlying aligned virtual context, where granular lateral displacement decreases along an ‘axis of motion’, inferring a laterally convergent series of differences of interframe flows, by which corrective factors could affect downstream servo sequence.

Returning to a moving object traversing such an arrangement, then disappearing, might not such be of successive virtual context frames, which due to excursion differences, trigger on successive patterns outside bracketing thresholds?

Consider once disappearing normative baseline differences with no trigger, where what may have been a spacial temporal trail of trigger pattern across virtual contexts ends.

Notably if, for example, virtual context frames are accumulated on the basis of markers juxtaposed with an axis of motion in the process of navigation, might not such a series of triggers form a basis for a configuration change?

If on change of configuration, a now hidden virtual object is of similar persistence fabric as virtual context frames, might not such be transformed in similar eccentric manner, due to its motion in reference to successive context frames, thereby forming an ongoing locality synchronized to platform motion, though lagging the present?

But what of predicting virtual object locality ahead of the present by an interval?

Consider if flow from a sensor transducer via intermediating to persistence fabric corresponds to a positive change of time, might not similarly flow in intermediating projective fabric represent a negative change of time?

For a virtual object flow to transform into a future virtual context, such that compound motions are accounted for, apparently markers of the current context might bilaterally split via taps transforming to the top of a past virtual context stack, and the bottom of a future virtual context stack, inferring a single frame interval of simulated future context.
Such a future transform might prevalently form as an inverse transform of a past virtual context, though while virtual object transforms may proceed in such a future context, might not overrun of a single frame, due to flow delay of downstream factors infer the possibility of multiframe prevalence?

Thus assuming a multiframe future virtual context stack, of which a virtual object may be covariantly transformed projecting compound motion, could not expansion thereof be prevalently limited by selection within eccentric platforms, given incremental variation?

But what of scaling issues?

Might not eccentric non-linear motion of both a platform and virtual object be accounted for, given a multitude of future virtual context frames?

Does not such a set of transforms infer simulation of two or more virtual objects, whereby some eccentric aspects of a platform, such as actuator motion, may be independent objects of successive virtual contexts?

Thus if an actuator is to intercept the locality of a moving virtual object would not both be projected as transforms in a series of virtual contexts?

However consider potential variability of such an arrangement whereby a target intercept interval progressively increases, inferring either more frames or a proportionately greater interframe gap, of which transforms are applied.

As more frames infer more persistence fabric, expansion of interframe gap may seem more prevalently likely, where might not such an adaptation also ‘scan’ for potential intercepts by transform variation over a ‘range’?

If a greater or lesser interval of time between frames, of which transforms are conditioned, may not given two virtual objects of determinate transforms, potential intercepts be determined?

But even if such virtual object trajectories intercept, how could underlying fabric tests generate a result flow, other than by correlating flows of which are representative of virtual object locality for each interval?

However if delay to an intercept simulation solution is prevalently the shortest possible, could not a convergent search be a possibility, where an error signal in the form of an intercept gap is potentially used to influence interframe gap?

Thus a specialized simulation domain where future factors are projected may at minimum be of servo sequence configurable fabric, whereby virtual context frames are of adjustable temporal interval, thereby covariantly supplying conditioning for downstream factors affecting virtual object cascade transforms, so as to generate a feedback loop basis for emission of flow by which an interval may converge.

But what of other potential projective factors of which fabric of an eccentric platform could prevalently develop?

Given an assumed fabric arrangement by which compound motion of objects in a series of virtual object contexts will converge on intercept solutions, might not variations by which other projections could prevalently emerge be possible?

If a disappearing object is represented by a protocol network, might not any such network also be
simulated in a virtual context, whereby transforms could accommodate interframe extrapolations on the basis of protocol temporal eccentricity?

However as a disappearing object is rooted in sensory flow, only being virtualized on disappearance, how might a simulation not rooted in sensory flow be initiated?

If bilateral virtual context frame fabric is of lower bands, how might an upper band all virtual simulation occur other than by either usurping in band fabric by configuration, or by the use of an out of band equivalent fabric?

Consider covariant flow of virtual objects along the same paths as in band fabric, where might not such an object be either visible or not dependent on sensor frame burst eccentricities, and if visible of potentially disrupting influence?

But how might an equivalent upper band fabric arise other than by variation of lower band fabric, where if a disappeared object is of persistence and yet still of a virtual simulation, might not an upper band staging fabric of similar formation prevalently emerge?

Yet how could such an upper band fabric be initially conditioned other than by tapping lower band fabric?

Even so, might not such a variant arrangement offer enhanced simulation, potentially of prevalent value to an eccentric platform?

Given such an upper band staging fabric, of servo sequence and internal sense flow, so as to condition a loop, of what possible form and extent might such simulations potentially take?

**Protocol Navigation**

From the perspective of protocol networks pervading persistence fabric, of what relation to upper band simulation staging fabric might ensue, if such is differing in disposition?

Could not the relative disposition of lower band equivalent fabric be preserved, though in upper band form?

But how might lower band virtual simulation fabric be disposed, other than as an adjunct of baseline fabric, where locality of flow may be preserved, optimizing minimal interconnect delay?

Thus if baseline fabric is also of pervasive persistence, while derivative and intermediate factors of source flow are distributed via interconnects, might not also upper band staging fabric be similarly arranged?

However, if so, how could the equivalent of distributed incoming flow, though of persistence, be emitted from upstream sources?

For example, if a disappeared object of no sense flow, though preserved in upper levels of protocol cascade flow, might not similarly any object of upper level protocol be emitted, so as to flow through successive frames of an upper band type of virtual context?
If such is the case might not a potentially disruptive factor of invisibility for lower band fabric be of lesser effect for the upper band case, whereby a form of visibility, insofar as persistence sources are concerned, could prevail?

But how might upper level cascade protocol be sourced, if not of residual animated derivative, other than if such factor is selected by upstream flow, and gives equivalent downstream effect?

For transforms to operate across representations, infers parallel concurrent factors of virtual object and context, such that transforms occur by granular domain, where would not such virtual objects be of granular domain for like to like operations only?

But how could pervasive persistence of distributed granular aspects of a virtual object be coordinated, so as to be operated on synchronously in parallel, in conjunction with a series of virtual context frames?

Does not such coordination infer clustering on the basis of related granularity, where even so might not minimization of interconnects imply clustering of all aspects of a synchronized parallel granular simulation system?

However, what of transform flows where such granular aspects may be concurrently altered so as to emit spatial temporal results of simulation, frame by frame?

If such aspects are all clustered by granular factors, would not granules form a locus of clusterization inferring scalability of simulation space by relation of domain to extent of frames, where if multiple frames which may extend either positively or negatively in time would not such an arrangement vary in configuration, by servo control sequence?

Upper band, potentially multiple object, simulation across domains in a sequence of frames using transforms between granules, infers configuration of underlying fabric.

One might consider such a covariant configuration, which varies during simulation, a schema, by which domain factors can be adjusted during the course of protocol network transit.

If one, for the moment also considers granules as nodes and transforms as cross connects of which flow transits, how might configuration flow combined with virtual context and object flows condition a simulation sequence?

May not all factors of which affect such a fabric do so via intermediating servo sequence, as with platform actuators?

However if so, of what equivalent a feedback outer loop of the senses in near real time, coordinating control of actuators?

Clearly if staging fabric is a variant of in band fabric equivalent, may not similar sense flow as that from a disappeared object prevail?

But if so how could such sense flow supply interception of multiple objects, other than of a spatial temporal transform by which a result level flow conditions sense flow, thereby supplying a feedback factor for servo sequence variation?
Of what use convergent sense feedback, by which servo sequence may be varied, unless a downstream correlative conditionality where such factor may, along with others, exist, by which a multitude of feed-forward flows is synthetically composed?

But how might such a conditioning loop prevalently maintain ongoing activity within a staging fabric, other than if simulation factors themselves predispose follow on simulations?

What if no activity were present in upper band staging fabric?

Clearly if protocol is of the form of a network, might not navigation of such be a possibility for maintaining staging area operations, where if a stub is reached either no incoming simulation flow or a jump to another node may occur?

Even so, how might continuous protocol flow through such a staging system, without concurrent conditioning occur, other than if conditioning is supplied to some degree by protocol flow itself?

Yet if protocol flow sources conditioning, where might such a factor originate other than from lower band configuration covariant with protocol flow?

However if protocol accumulates composite variations within scope, might not conditioning factors accumulate as well?

If a protocol network transits in band fabric then, at a later time, upper band staging fabric in a repetitive pattern, does this not infer upper band staging as a means of repeating lower band factors, where in such process variations could accumulate, of which subsequent selectivity or ranking may then apply?

From the perspective of upper band staging fabric, might not such a system prevail on the basis of forming protocol networks by combinatorial variations?

If initially nothing of a context is connected, such that protocols develop as short clusters of spatial temporal sensory flow factors, how might internal servo control factors develop other than on an equivalent basis, however if disparate protocols are joined into a network, on a variation and selection basis, does this not open up the possibility of more cohesive downstream servo control, more suited to a complex and varying context?

But how could a staging fabric system influence building a network from protocol segments?

How could segments be joined or branched, and represented in persistence?

Further once given such a network, what selection factors are inferred whereby some variations survive and others not?

Is not a simulation of which an intercept of an invisible object with an actuator object a form of joining, whereby two separate protocols of differing clusters might form a network?

However if such an intercept occurs during convergent in band operation, how might flow thereof be transformed into a persistent link, in upper bands, so as to form a network?

Proceeding on the assumption of a formation of links, by some unknown means, between protocols how might the presence of such links affect protocol flow and operation of upper band staging fabric?
Clearly if the basis of protocol is by a combination of external and internal sense flow, might not all such factors be represented in simulation mode, where staging fabric internal sense flow, just as initial source flow, influences common downstream factors, though concurrent to lower band operations?

If sense flow of staging fabric is combined with concurrent internal and external sense flow, all of which may condition downstream servo control sequence, including staging fabric controls, does this not infer a degree of variability of simulation factors, whereby a protocol network may be contingently navigated?

Similarly would not differences in how a protocol network is navigated alter downstream sense flow, thereby potentially influencing lower band servo sequences, thereby in effect amplifying the possibility of variation in navigational factors through lower band feedback influence of staging fabric controls?

But what particular variational effect might such influence have?

Consider the simulation of a disappearing object, assuming flow through staging fabric is in progress, with temporal spatial factors influenced by protocol defaults, so as to approximate those of lower band equivalents, thus being of a covariant flow of protocol, affecting staging fabric servo sequence.

However, with lower band equivalents the object is visible, until it disappears, which would be very disruptive.

Thus if so, with an upper band simulation, we could assume the object is 'not visible' before it 'disappears'.

But now we have a potential contradiction, where an invisible object disappears. At the transition from visible to invisible a representation of the object continues, though not of the same form, where sensory input has been reduced, inferring protocol representation of an object though apparently based on sensory input may continue without it.

Thus one might consider sensory factors of an object as optional, where if so what of an object represented, as with sensory factors, but where no sense related flow is emitted downstream?

If at the transition to invisible, object representation changes by reduction of optional sensory factors to minimal (i.e. a ghost representation), is not contradiction then avoided, while covariantly suppressing potential in band disruption?

As an invisible object intercept is a future projection, on the basis of sensor platform motion, how might such factor be simulated via a protocol network, other than as a covariant platform object representation?

However what simulation would not have such a platform representation, if initially of lower band fabric?

If the sensor platform itself is represented, how might such be the case if no part, for example, of it is contiguously visible?

Might not similarly, to a disappearing object, a platform object representation prevail, for which some sensory factors are optional, though others possibly continuous?

But what might be continuous other than internal sense flow, assuming external sense flow of the platform may only be factors above baseline thresholds, and thus possibly suppressed in intermediate
fabric?

Clearly then would not the only consistent object of staging fabric flow be that of a platform object itself of which internal sense is always a part, and external sense thereof optional?

But how could the spatial temporal disposition of a platform object be represented, other than relative to some other factor?

If an intercept is to be simulated in upper bands, between a platform object and a moving invisible object, does this not infer motion on the part of the platform object, and if so how might such be represented other than by platform motion with respect to either a virtual context, or the moving object?

However, what if in some simulations multiple moving objects exist, might not such a situation infer compound motion transforms which may not scale?

But if platform motion is simulated against a virtual context, does such not imply at least marker preservation from lower band fabric, by which to base an equivalent upper band virtual context?

Even so might not a sequence of such markers be inferred under some circumstances, at minimum correlated to visible object motion?

If a virtual context is considered as floating quasi-statically with the platform object, would not markers then appear to move in proportion to platform motion, and visible objects similarly appear to have differing motion with respect to markers and virtual context?

But how might such be prevalently represented in a flow network of nodes and transform interconnects?

45 Staging And Temporal Banding

From an intermediating flow system perspective, if a sensor platform is in motion it is apparently the context that moves, not the platform, where sensors are based.

Thus to establish the inverse net effect, of a static context and a moving platform requires a system of transforms of sensor flow to an appropriate virtual context, implying a synthetic frame of reference in which platform motion is represented.

If such a system of transforms is necessarily partly implemented with lower band fabric, how might a virtual context in upper band staging likely prevail, other than ancillary flow from lower band fabric, which is transformed already?

But what persistence flow factors could underlie a comprehensive virtual context?

Might not a virtual context, just as a protocol network could serve as a source of templates for synthetic correlation of objects and simulation, similarly supply factors on which, for example, terrain correlation and navigation are based?

Moreover if a difference exists between protocol and virtual context flows, might not such be likely only
of types of transform, by which apparent sensor motion is treated?

However, if a protocol is initially always tied to a particular virtual context, might not variation of virtual context whereby embedded protocol based simulations prevail, infer recurrent convergent protocols of the form of a composite flow or derivative, which could be of various virtual contexts?

If protocol is of a lower band variant context, might not similarly simulation occur in upper bands, where, for example, a contingency is inferred?

However if virtual context is contingent might not also the reverse situation be so, where given a virtual context then protocol is potentially contingent?

If both protocol and virtual context may form networks, of which both are contingent factors of the other, could not such be the basis of variation (and selection), inferring a joint network?

Moreover given the potential for multiple concurrent flows through a simulation fabric of combined configuration, protocol and virtual context, would not possible flow variations infer eccentric embedding or mixing of factors?

Further though possible, might not particular sorts of variation prove prevalently useful, where resultant factors could be of reliable selective advantage, for competing platforms?

But how might eccentric variation of simulation domain factors prevalently prove advantageous, other than by more appropriate adaptation, given a varying context?

And what greater value of adaptation than accurate prediction, and subsequent use of relevant virtual context factors?

However, how could variation of staging fabric flows generate enough lead time so as to be of use, other than by combining such variations with scaling of negative temporal transforms, so as to provide an adequate basis for feedback?

Notably if future projections are an extrapolation of past protocol and virtual context network combinations, for example, given redundant periodicity, a first approximation might be considered as a phase aligned projection of past network factors.

Given such, what might such an arrangement infer on the part of upper band fabric?

Clearly while lower band fabric may be mainly of near real time feedback control, by contrast upper band fabric may be considered of more flexible temporal scale, where non real time factors must, lacking other alternatives, potentially come from.

Thus, in such case, one might consider upper band fabric more a cyclic control factor influencing subsystem, prevalently tuned to context periodicity.

But how could temporal factors scale in upper band fabric without an underlying frame of reference?

Consider cyclic network navigation in upper band staging fabric, where an eccentric cycle is represented as a flow loop of particular length.

If such flow loops are concurrent to lower band flow, though of characteristically longer average
segment length, then one might infer synchronization between upper and lower band flow whereby upper band flow conditions lower band flow in relation to current flow factors of staging fabric, thereby forming a cyclic system.

Assuming some staging fabric flow cycles are embedded in others, such implies a flow network loop where the longest loop forms a temporal frame of reference with lesser loops nested therein, as prevalently incurred.

However such a nested network infers outer flow loops which either branch to inner flow loops or are concurrent with them.

Both possibilities, it seems, infer embedded synchronizing factors in outer loops so as to establish relative temporal displacement of inner loops, where if inner loop flow usurps outer loop flow, then outer loop flow either resumes downstream, or is of an attenuated length accommodating missing flow segments and is re-entrant, at the departing embedded factor.

Clearly if a high level of loop nesting is present the latter arrangement infers more complexity than the former parallel flow system, where there is a continuous flow representing longer loops.

However if concurrent flow, similarly scalability of staging fabric infers accommodation of as many flows as loop nesting, where if such separate flows are possible at the same time, might not prevailing flow path optimization minimize path capacity in proportion to loop length, so as to reduce overall fabric extent?

From a fabric scaling perspective, if multiple temporal bands of increasing flow capacity with reducing duration, might not lower band fabric be considered a base level of upper band fabric, where if lower band flow is of both external and internal sense, might not either or both be influencing factors of other temporal bands?

If parallel flow of differing temporal rate, of differing flow paths, of decreasing capacity with reduced rate, does such arrangement not infer incompatible flow format between flow bands, and thus band specific networks of which are potentially navigated?

However what arrangement is inferred in staging fabric for transforms if concurrent flow of eccentric temporal bands?

If a series of bands of differing rates of time representation, though of similar fabric and intrinsic flow rates, might not a transform from one band to another infer format conversion, to a differing temporal interval?

A transform from an inner loop to outer loop infers a reduction of path capacity covariant with a change of signal meaning, whereby temporal interval is lengthened, thus a shorter segment length would be required to represent the same time.

Similarly a transform from an outer loop to an inner loop infers an expansion of path capacity along with an increase in segment length to represent the same interval.

Thus transforms in a band system infer compression and decompression of both segment length and parallel flow capacity, where transforming operators are conditioned by incoming flow and either drop or add flow to make up the difference for outgoing flow.
However, if band flow is concurrent how might such transformed flows be added into target flows without disruption, other than by selective displacement to unused flow segments?

Thus not only compression operators but also a selective splicing system is inferred where the temporal displacement of flow content is aligned in a loop, before flow from aligned content is valid.

However is not such a system incompatible with simulation, where dynamic transform of a multitude of protocols is inferred so as to vary temporal spatial factors?

If so might not two genres of upper band systems be prevalently implied, where one is a cyclic conditioning fabric and the other a simulation fabric, where the simulation fabric may be a variant extension of the cyclic conditioning fabric?

However, if variation, what might be mutable in support of simulation, without disrupting cyclic conditioning?

Consider potential usurping of cyclic operations by simulation, whereby a configuration change alters upper band fabric factors in favour of simulation, suppressing or suspending cyclic operations, where, after the duration of simulations, cyclic flows are restored.

How might the intervening gap be accommodated, other than by realignment?

But how could such realignment occur other than by displacement in favour of downstream flows, potentially cutting into ongoing loops in a disruptive manner?

Clearly if such disruption is to be avoided, fabric of which simulation is based must support concurrent flows of separate character, though potentially influencing common downstream factors.

However, if so how might the systems interface, such that lower band flows may condition cyclic and staging fabric and each other?

If lower band flows of a context are of cyclic temporal bands themselves, might not cyclic fabric be considered a running simulation of context cycles, where lower band flows are prevalently converted by operators to proportional rate flows of cyclic fabric, forming a type of temporal baseline by which projective influence is calibrated?

Positing a cyclic fabric as a temporal band baseline simulator, might not a staging fabric be considered as a system prevalently picking up potential residual simulations, inferred by less cyclical flows of a context?

However as cyclic fabric may be of temporal bands, might not similarly staging fabric be of some other extractable factor of a context?

But what factors might be of more prevailing significance, other than non-cyclic relationships within and between non-cyclic flows, where if flows are of objects what possible relationships between objects?

Given common variations between objects, might not factors thereof be differentiated by operator transforms from flows, where an object might be prevalently characterized?

But of what use such characterization other than as a means of forming relative disposition of objects?
Clearly only like to like factors can be consistently correlated, whereby relationships between objects are possible.

Thus it may not be of any advantage to correlate object flows themselves, only like to like operator based subfactors of objects (similar to object local variable introspection).

An object flow might condition operator output flow, of which forms characterizing object subranges, which could be correlated with corresponding synchronized like to like subranges, in simulation fabric.

For this to occur both object flows must apparently be concurrent and subject to covariant operator output flow, such that both flows may be reliably correlated, thus emitting an output level indicating the probability of subrange equivalency or difference.

But what downstream factor could use such correlative result flows?

Clearly, for example, if one object flow is from persistence and the other from animated derivative, though tapped by upper band fabric, such a range of result level flows might influence contingency factors.

However, where might such downstream contingency factors come from, and how could they be conditioned by such level flows, other than, for example, a navigation network which is susceptible to such influence?

46 Contingency Loops

From consideration of factors which could, for example through plasticity selective factors, condition a network branch, what aspect could be more significant than virtual context flows cast in bands of increasing negative temporal displacement?

However, how might a network branch, and flows which might condition such, coincide in staging fabric at sufficient future displacement, other than by temporal displacement transforms by which supporting protocols, and related factors, are projected?

Similarly, how might result flows from a branch re-entrantly condition band factors, and downstream servo sequence, unless emitted in advance of virtual context factors of which simulated projected contingency relates?

Thus one might consider a prevalent average negative temporal displacement of contingent simulation, where ongoing flow factors converge at potential network branches, and emitted flows thereof condition both band feedback loops, plus follow on simulation factors.

Moreover, of what average future displacement might such a flow system prevalently converge, other than required to supply influencing emission, just in time, for downstream factors?

Yet might not some virtual context factors require more lead time than others?

If a distribution of virtual context factors, whereby a spread of lead times are inferred, would not the
worst cases imply transform scaling, where if a *navigable network arrangement* is organized so as to optimize the influence of lead time flows, might not such be in proportion to edge case lead time required?

However, how might contingency flow be coordinated, whereby influencing result flow factors are concurrent with branches, other than by padding or delay?

Moreover if incoming factors sourcing contingency flow conditioning for branches is of a context via sense flow, then branches cast in the future, in simulation fabric, may be synchronized by delay, until such time as appropriate incoming flow is available.

From this perspective might not branch nodes be considered standby network navigation entry portals, where if no preceding condition exists downstream, network navigation may proceed until another standby condition is reached, where a standby loop, or *null operation*, is entered?

As such, could not numerous concurrent navigation networks be simultaneously in standby condition?

But how could incoming contingency factors be reliably aligned with branch nodes?

For example, an interrupt infers an asynchronous incoming condition, so as not to require active search, other than a tapping protocol trap, whereas polling implies coordinated internal servo sequence to check contingency factors, on an ongoing basis.

If either interrupt or polling then assuming a protocol trap has been triggered, how might a branch node be aligned other than by a tapping protocol network segment, corresponding to the trap, preceding a branch node, where if related incoming objects accompany the trap, then persistent factors may be configured, by *schema factors of a protocol*, so as to configure servo sequence of staging fabric.

Thus one might consider such an arrangement a form of *trap spawned simulation*, by which process captured objects serve as flow factors of a projective process, by which branching factors emerge as result flows, of *correlated subranges conditioning internal simulation sensors*.

Network entry protocol traps, whether of external or internal sense, might be considered entry portals, potentially leading to downstream branches which contingently form sense flow from simulation fabric as implied, which process might well trigger another protocol trap, thereby inferring a *system of re-entrant conditional branching*.

But what of a protocol trap triggered by internal sense flow of contingently formed subranges?

 Might not such a protocol be of differing factors than that triggered by external sense flow?

Moreover if internal sense flow is tapped on paths differing somewhat from those of external sense flow, internally biased network navigation is inferred, concurrent with ongoing external sense flow.

Thus an external trap which branches to an internal trap, via simulation fabric, may be considered as a root of a contingent network, where a contingency factor is encapsulated in the process of correlated subrange formation in simulation fabric, combined with related internal sense flow, which is tapped and may activate internally biased traps.

Hence the *critical branch routing factor* inferred is that of internal sense flow subrange level pattern, from simulation fabric selectivity of *internally biased protocol traps*.
While the number of combinations of possible subrange level patterns of internal sense flow may be large, one might conjecture a prevalent set of patterns, given a virtual context with a slow rate of change, inferring corresponding tapping, internally biased, protocol traps.

Assuming such a trap is activated by an eccentric pattern, what differentiates one trap from another, other than incoming flow pattern correlation?

If sustained network navigation is to be maintained then downstream flow from an activated trap infers either another branch, or possibly ‘jump’ to another protocol.

However, if another branch, of what source conditionality, and if a jump, on what basis and to where?

Clearly if an internally biased protocol trap is to generate further conditional flow, asynchronously with external sense flow, either external sense flow could be selectively synchronized or persistence factors alone may serve to generate such conditional flows, of which to condition a branch.

Thus eccentricity of internal protocols may include either particular external or internal factor selectivity, or both, for downstream operations.

Yet might not an internally biased protocol also merely be of no particular factor, other than to facilitate a null operation, thereby defaulting to ongoing flows thus continuing network navigation elsewhere?

If an internally biased protocol emits selectivity, of what prevalent factor might such be based, other than of a relation to the particular eccentricity of a subrange pattern, by which such protocol had been selected?

Consider if a set of subrange match levels between an object of sense and an object of persistence are roughly equivalent, as opposed to differing in some eccentric manner, where if equivalent, might not prevalence factors indicate further specific network factors, while if differing then potentially further more general network factors?

But of what general factors may be more prevalently likely than downstream flow of which might increase the probability of an enhanced determination?

Yet how might such enhanced determination be made, other than by repetition of subrange correlation, possibly with differing external sense flow, where may not such sense flow be changed by related coordinated internal servo sequence of some form?

However what of the case of correlation objects of persistence, where an enhanced determination belies enhanced external sense flow, though possibly similarly an adaptation of coordinated servo sequence factors?

Does not such a situation infer potential prevalence of a cascade of network operations based on internal factors alone, which although possibly derived from experience are potentially not immediately of sensory experience?

A repetitive enhancement of internal sense flow, from correlation of a simulation, may infer variation of factors of which a simulation is configured, more than of flows sourced.

But how could configuration factors enhance internal sense flow, other than by transform alteration, whereby simulated factors are varied?
If a spatial temporal intercept can be simulated by transform variation, possibly similarly other factors might be prevalently emitted as sense flows given transform variation.

But what type of transform might vary eccentric subranges of correlated objects, so as to induce the equivalent internal sense flow of a spatial temporal intercept?

Consider if similarly spatial temporal transforms are varied for two objects, not necessarily in motion, such that a projective simulation emerges, where might not such just converge on a null result flow, in the absence of an intercept?

But what other type of simulation might prevalently emerge, given variation and selection, other than closely related to existing transforms?

If existing transforms simulate spatial displacement in a sequence of temporal frames, either positively into the past or negatively into the future, might not some other factor than spatial locality be similarly treated?

The basis for any projection could, it seems, be a discernible trend in a subrange such that it serves to condition successive transforms, where one might consider what factors of an eccentric virtual context could form prevalent factors, given eccentric sensor transduction.

But what more prevalent factors than potential relationships between objects and virtual context, where objects, though separate from a spatial temporal perspective, might exhibit collective eccentric features?

Yet how could such collective eccentricities be represented, other than as ‘tied’ by an underlying factor, which may not be directly sensed and thus possibly only discernible through simulation?

Moreover how might such factors be represented other than as a subrange of an object, though such object might even be a reiteratively nested collection of other objects?

Even so, of what value simulation of such a subrange, unless some other factors could indicate the equivalent of an intercept?

If such a nested subrange collection is of objects of spatial temporal variability, as opposed to static, might not the relative distribution trend thereof form a basis for an emission of simulation projection of spacial temporal factors?

Of what equivalent of an intercept might be the result of a projective simulation of a collective object, other than by a change, for example, so as to either include or exclude an object, or possibly to unify or dissolve the underlying condition of the spatial temporal factors of a collection?

However given a trend based on spatial temporal factors, how might such projection condition transforms of a simulation fabric form a change of object content?

If both a nested collection and objects of a collection are concurrently simulated, could not an average temporal spacial separation factor of members of a collection infer a basis for a trend, for either inclusion or exclusion of a given similar object, of eccentric motion?

Clearly if an internal sense flow emission of a subrange of a level of community, might not a simulated
projective intercept be inferred, whereby either subtraction or addition to a collection, if spatial temporal
distance differs significantly, from a median factor, whereby a diverging object might be considered
subtracted from a community?
INNER LOOP MODULATION

47 Metaview Inner Loops

Emission of object subrange levels corresponding to community, though from an upper band simulation, of spatial temporal factors of a multitude of subobjects, infers a composite signal flow condensed from distributed flows of a meta-object representation, transiting the fabric of a granular multiframe simulation system.

In effect one might consider such a flow as a covariant compression during simulation with a shift of meaning, whereby a condensation of downstream flow and hence related fabric may prevalently result.

Thus if a unified system metaview flow exists, might not all flow factors thereof be of similarly
compressed and shifted form, inferring a more scalable fabric, which is thereby conditioned by multiple sources?

But how could such a condensate based unified metaview fabric be disposed, either in distributed or coalescent format, given the implied modulated and transformed inputs from a multitude of sources, where would not such a fabric infer downstream biased protocol and emission, so as to form a feedback loop?

Yet, even assuming so, how might emissions of such a metaview fabric influence eccentric servo sequence, other than by a downstream hierarchy system, where such influence may be appropriately applied, so as to influence both inner and outer loops?

If servo sequence clusters are prevalently localized around efferent interconnects, in a distributed manner, would not such an arrangement infer the possibility of a similarly distributed fabric supporting metaview flows?

Moreover if metaview co-localization, does not such imply at minimum a distribution network of common flow factors on which unified operation depends, combined with an input signal transform system, similarly either distributed or locally coalesced?

Consider if a metaview system, which prevalently scales with an eccentric platform might be so localized or distributed corresponding to incremental variation and selection, as much as from the perspective of interconnect optimization as robust redundant integrity, by which a relatively complex flow network system may still operate under less than ideal conditions?

However what degradation factors could prevalently influence selection of metaview fabric distribution?

If randomly localized network disruption occurs might not continued operation, even though not of full capacity, be of greater value than eccentric failure modes of metaview operations?

Yet how might such robust integrity be obtained other than by a high level of redundancy, and therefore extent of co-located metaview fabric factors, given incremental scaling?

In the case of incremental scaling, might not the prevalent formation of preceding fabric influence scalability of an expanding metaview fabric?

If localization of clusters around incoming and outgoing pathways already exist, might not the addition of more fabric which could similarly benefit, infer crowding, and thus radial expansion outwards?

For the case where such intermediating fabric is mainly of flow from incoming to outgoing paths, though also of internal factors, might not expansion prevalently favour incremental clustering about paths of greatest information density?

However if the greatest density is of a unified flow whereby selective value is attained, may not such a factor infer a bias towards temporal spacial network factors by which such density falls within scalability parameters?

Thus if a maximum density of metaview fabric, what extent thereof is inferred so as to cover off unified flow combined with persistence factors, of which such flow may be of use to downstream fabric?

Clearly if unified flow is of a multitude of condensate flows, by which operators are conditioned, the
extent of unified flow fabric combined with operator and unified protocol factors, infers a conglomerate which potentially interfaces to most other flows of the system overall.

Regarding the robust operational role of a unified metaview system, might not such be of enhanced character, if similar to servo sequence control influence of simulation fabric, it may itself be of the form of an internal servo sequence controlled metaview fabric?

But of what form could such a servo control factor take, other than to enhance or suppress relative influence of flows on itself?

Even so, might not such a metaview servo control infer additional fabric of which scalability must accommodate, where the source of such flow is competitive across metaview fabric, by which relative resource arbitration may be concentrated?

However for what resources might metaview fabric vie, other than that of intermediating fabric, thus inferring internal sense from simulation domain flow, may influence metaview servo control?

However, if metaview flow from a unified system wide condensate prevalently forms downstream flow that operators tap for servo sequence, with parts thereof configuring simulation fabric, and result flow of which by internal sense paths feed back into unified flow is such a loop system not covariant with other internal sense and external sense loops, all of potentially unified flow?

Notably if a multitude of covariant feedback loops, all of a unified flow, how might such a system be coordinated, without some factor by which synchronization of disparate flow factors occurs, where if synchronized what temporal factor could be reliably referenced?

Moreover, is there likely to be a prevailing condition which close synchronization of a multitude of factors is critical, other than that of linkage of external and internal loops, possibly in the form, for example, of simulation fabric sense flow loops to external servo control loops, so as to align external servo controls with projective simulation?

If such alignment factors prevail, might not metaview tapped protocol supply the ‘glue logic factor’ by which such may occur?

But of what unified flow pattern might such a protocol be self selected among a plurality, where if metaview protocol taps all condensate flows, does not such infer like to like correlation with persistence based factors?

Thus if a metaview protocol is of eccentric system wide activity pattern, might not such infer coordinated influence of system wide factors, downstream?

Given the inferred plurality of metaview protocols, might not such, similarly to simulation fabric, also infer a navigable protocol network?

Yet if so of what contingency factors might such navigation depend, other than arbitrary temporal skew of eccentric condensate flow?

Moreover what does metaview protocol navigation infer, where if a unified flow pattern prevalently correlates, or a contingency factor alters flow pattern, differing downstream flow wraps back, in turn, asynchronously affecting flow pattern?
Clearly a metaview protocol might not infer the same functionality as other protocols, where if a navigable metaview protocol network of what consequence departure from network operations, such that a null or standby state is entered?

If downstream factors were to default to enhancement, or enabled, given a lack of coherent metaview protocol related emission flow, one might suspect a prevalent trend to variation deselection, thereby inferring *default metaview inhibition more likely*.

Thus, assuming a *lack of coherent metaview emission inhibits downstream factors*, one might consider any such condition to be similar to prevalently detrimental factors for selective reinforcement, thereby implying a level of system criticality for continuous metaview network operation.

From a scaling perspective if metaview fabric taps external and internal sense flow, plus emits conditioning factors, whereby inhibition of internal and external servo control is lifted, such that robust operation may prevail over conservation of fabric and reduction of path delay, then one might conjecture incremental variation of distributed redundancy as opposed to localization, inferring possible *graceful degradation with metaview flow disruption*. But what of metaview protocol networks, how might such an embedded persistence factor accommodate contingent branching and continuous operation, combined with redundant incremental distributed variation?

Clearly system coordination infers not only systemic suppression, but also synchronized and modulated selective flows on the basis of system wide running metaview flows.

However, how might such an integrated coordination occur without concurrent negative temporal displacement, of underlying factors, so as to allow for skewed internal delays, whereby servo sequence timing may be phase aligned with upcoming virtual context factors.

Does not such imply some part of metaview flow as cast, similarly to staging fabric, to some limited degree, as an ongoing eccentric simulation encompassing system wide condensate in a series of projective frames, *prevalently leading downstream intersections*?

Assuming a part of metaview flow is of a form of simulation projection, though possibly less variable than upper band staging fabric, as part of lower band synchronization and modulation loops, how might such a system prevail in an incremental manner, other than by competitive advantage based on overall projective coordination?

If projective factors are incrementally pushed forward, does not such infer greater latitude for more complex transforms, of which downstream coordinated modulation flows may result?

But what of integration of staging fabric with posited metaview projection flow, where might not such likely prevail as an initial incremental formation, which could diverge at a later time, under variation and selection pressures?

If all projective simulations are within the bounds by which compatibility with ongoing metaview projective simulation is prevalently biased, what selection factor could exist for reinforcement of a more versatile staging fabric?

Yet might not focused use of metaview projection for upper band staging potentially disrupt ongoing
lower band projective coordination, thereby inferring a possible negative selection factor, at least for using such processes as influence in critical outer loops?

   Even so, if a staging fabric is concurrently conducting projective operations with those of metaview projection, does not metaview projection subsume a feedback loop, of which staging fabric is cycled, thereby not relieving the case for disruption entirely?

   However it seems modulating a staging fabric loop concurrently with ongoing projective coordination in general, of a similar nature may be far less disruptive than use of metaview projection in a biased manner, thereby possibly dropping ongoing systemic flows.

   But how might an ongoing unified, contingent, coordinated cross modulation occur in metaview fabric so as to scale, in view of eccentric protocol factors inferred, combined with a robust distributed redundancy, resistant to localized disruptive influence?

   If redundant, how could such a factor not potentially cause disruption, if out of phase or competing for control of common downstream factors?

   Similarly, if distributed, how might coordination of which close phase synchronization is required be maintained, without compensating for differential delay, and how could common incoming and outgoing flows be shared, so as to allow cross modulation from a unified perspective?

48 Coordination Arrangements

   Compensation of skewed delay across metaview flows infers projection transforms across condensates, such that not only a unified metaview is possible, but also global synchronization enables appropriate condensate flow correlation, aligned such that outer loop factors are both spatially and temporally suited to condition servo sequence flow, where any further downstream transit delay is also factored in.

   However, if condensates are correlated, by which unified cross modulation might be based, of what like features of condensates, other than of that common to all?

   But what aspect of eccentric condensate flow might be reliably common, other than temporal clustering, where even so, what about segment length and phase?

   Thus if temporal clustering as a prevailing basis for metaview condensate correlation, would not such more likely prevail post projective simulation subsystem transform, so as to form an inner loop flow system by which contingent synchronization factors at the metaview level might be most reliable?

   If so, most condensate correlation could be considered of a projective set of transformed incoming flows, where not actual virtual context related signal factors are a basis, but secondary extrapolation into the future by variable intervals.

   Moreover, how might such an approximating global extrapolation be reliably made, other than by eccentric condensate transforms conditioned by repetitive factors?
Let us consider, for example, what might occur if such a transform fails, where multiple down-stream factors may then be misaligned.

Clearly such temporal misalignment may not be detected until incoming flow thereof cycles through, inferring a delay which might be considered detrimental in terms of selection, so as to be prevalently minimized.

However even so, of what corrective action, other than alteration of underlying transform conditionality?

Moreover might not two transform conditionalities of which diverge sufficiently represent a contingency, such that in effect a modified transform projection may either consistently fail, or possibly occasionally succeed, depending on the modifying bias?

Yet is not such a factor likely to be of a temporal sequence, whereby a preceding signature of a protocol may potentially supply a result flow, for which a lead time emerges before a potentially unreliable projective transform?

What if factors of such a protocol result flow alter the probability of transform reliability?

Would not such an arrangement infer the possibility of a protocol pipeline result flow feeding into the conditionality of a transform, inferring gated plasticity?

Moreover might not such factor only prevail under some circumstances, where particular protocols, possibly of particular modality, infer an increased probability also of unreliable projective transform?

If the factors of which a protocol might condition a transform are contingent, on a preceding temporal pattern of unified condensate, might not such infer a potential unified protocol of which such configuration factor may prevail?

Thus if a unified protocol of gated plasticity factors, whereby a multitude of condensate flows are correlated, on a like to like basis, yet with result flow emission conditioning eccentric servo sequence by which downstream fabric may be configured, of which projective fabric becomes conditioned by a dynamic contingency, is not such arrangement a metaview inner loop?

Yet what of the temporal flow factors of such a loop, where if a distributed protocol persistence, of which like to like factors of unified, projectively transformed, system wide condensate flows are correlated, by what factor might such distributed result flows be coalesced into a conditionality, by which loop dynamics may be modulated?

Just as result flows could be distributed, so too factors of which might benefit from flow thereof.

But would not such result flows be coalesced by like to like cross correlation themselves?

How would unified and synchronized coordination be possible without such cross correlation, however if so, does not such a process infer a succession of operations by which unified flow is emitted?

Of what factor then might a unified flow represent, other than temporal correlation of correlations, whereby relative temporal alignment factors of eccentric condensate clusters are indicated?

But on what basis might such temporal alignment exist, if each condensate is of eccentric markers of
unreliable relation to each other?

Might not such a general unified temporal alignment flow only be of use if correlated like to like, with
the result flows of condensate protocol, thereby forming a unified reference flow by which the relative
offset of contributing factors may be used to emit result flows, on which synchronizing factors could be
based?

Thus the only prevalent use of a unified correlative flow may be to provide a floating common frame of
reference, by which contributions themselves may be synchronized.

But how might such synchronization occur given a common reference flow, and how could delay
factors of distributed correlation affect such an arrangement?

Clearly if a unified synchronizing flow is formed on the basis of projective condensate correlation, such
unified flow may be considered as projective temporal synchronization, insofar as path delays incurred in
formation and distribution are not so great as to overrun the preceding projective transform factors.

However consider, correlative result flows of which are used to create a composite unified
synchronization flow, delayed by formative paths, then used as a comparative factor by which contributing
correlative result flows are synchronized to unified operations.

Might not some markers in unified flow be present, though delayed, from contributing flows, where if
synchronization factors of other contributing flows are to be correlated, could not such delay factors be
compensated first so as to align the signals?

If an aligned unified reference is then correlated with a contributing counterpart, after alignment, might
not the result flow of such operation potentially be of other contributing flow phase alignment factor,
whereby temporal compensation may be formed?

But what temporal compensation could prevail other than delay, where if contributing factors are
systemically delayed for synchronization does such not infer at least one contributing factor of minimal
delay, thereby becoming the leading flow of which others are tuned, forming a phase coordinated cluster
of flows?

Yet how might such differential delay factor be determined at each synchronizing locality, without an
indication of which other factor of a unified flow, to synchronize with respect to?

Could not a minimal differential delay prevail as a synchronizing marker, so as to minimize overall
delay?

But how could such a delay marker be formed from a multitude of possibilities, other than by selecting
a reference temporal offset marker from contributing flows?

Would factors of which such a marker may be set be present during formation of a unified flow, where a
particular marker of a contributing condensate is converted to a synchronizing reference marker, thereby
phase aligning others?

However, how could such a reference conversion take place, other than by a concurrent selecting flow,
and how might such a flow originate from upstream fabric other than through metaview protocol factors?

Thus could not metaview fabric of itself prevalently develop a servo sequence aspect, by which
protocol may select synchronization reference factors, in advance?

However, what if a case where a selected reference factor shifts to another, might not such a transition cause loss of outer loop coordination?

Thus if a synchronizing reference is selected by a metaview protocol, in advance, whereby markers of a condensate flow are converted, followed by deselection and selection of another, would not a gap or overlap ensue?

Consider if a gap exists, where no reference marker is emitted, could not downstream factors then lack coordination, where phase misalignment would drift between servo sequences, or even, possibly due to defaulting inhibition, no servo sequence is emitted?

Alternatively, if more than one reference marker, or in the case of multiple concurrent synchronization sources, might not such synchronization default to the preceding rather than the trailing marker, until such time as the former is disabled, inferring an interval where inappropriate coordination may occur, and lack of multiple synchronization capability?

But what would be required to allow for multiple concurrent synchronizations?

Common servo sequence jointly conditioned for concurrent operations infers a contradiction, however either non-intersecting subsets of servo sequence or sufficient temporal separation, allowing servo multiplexing implies possible parallel concurrent metaview inner loop operations.

However, might not such a factor infer multiple synchronization references, whereby unified operation may be disrupted, thus potentially affecting overall system stability?

For some limited forms of multiple concurrent synchronization a possible workaround may be to combine references into a conglomerate reference, with dynamic phase offsets for each sub-process, while retaining stable unified operation, deferring phase adjustments downstream, where prevalently tuned hierarchical protocol may suffice.

Clearly the more scalable solution might be separate eccentric subsystems for each process, where inter-subsystem protocol factors mediate coordination.

However, would not scalable multiple subsystems similarly infer diminishing returns, with increase of inter-subsystem protocol overhead, thereby approximating the case of a conglomerate reference?

Notably if inter-subsystem protocol overhead is proportionate to related sense flow factors, possibly implying less than linear scaling with subsystem number, then might not one consider localized coordination domains?

A coordination domain infers inter-subsystem protocol factors with a representative subset, thereby minimizing overhead while retaining coordination factors.

If such coordination factors transiently shift, might not so too an adaptive subset along with protocol factors inferring a flexible and dynamic form of coordination?

From a metaview fabric perspective, though possibly not prevalently likely, might not the equivalent of a domain based inter-subsystem arrangement imply potential optimization of synchronization, such that
subsystems with minimal overlap could operate concurrently, as if of a dynamic form of coordination?

But what form might equivalent inter-platform protocols take, given incremental variation and selection?

In such an arrangement might not metaview fabric take on the aspect of an inter-platform protocol facilitator as much as a synchronizing reference system, where such synchronization reference may then be deferred to subsystems, implying global synchronization by inter-subsystem protocol, though mediated by metaview fabric?

If overall system fabric is of temporal bands, by which projective factors are extrapolated in proportion, might not such a protocol synchronization schema imply a more favourable alternative for crossing domains of differing temporal displacement interval, despite being of similar flow characteristic?

49 Clustering Considerations

If intermediating fabric is of such self modelling virtual domains, ensconced in loops whereby a local projective virtual context is maintained, how might an overall unity of metaview be established, via concurrent loops of a multitude of disjointed virtual metaview fragments?

If some overlap exists between such domain loops, whereby a systemic commonality is formed, might not a global metaview arise?

But how could such a unified metaview be of use for coordinated downstream flow?

Consider a hypothetical compound eye analogy, of which each fragment, though of an eccentric and limited factor of a context, when appropriately combined with a multitude of such factors serves to form a composite unified image.

So too might a multitude of virtual domains form a composite unified projective virtual metaview.

Yet if so, would not scaling factors indicate no fragmentary composite of a metaview will suffice for unified coordination without a condensation of flow, inferring a hierarchy of virtual domains, such that some specialize in metaview operations alone?

But if so, and downstream coordination is formed in collections of distributed metaview domains, how might flow be emitted so as to localize appropriately in servo sequence clusters?

As the cross modulating factors of a metaview may form a basis for servo sequence conditioning, such could coalesce around servo sequence efferent clusters.

If metaview fabric is hierarchical, inferring a potential mosaic of metaview specialized, though distributed clusters, one might consider localization prevalently optimized for control of servo factors.

Consider an eccentric hypothetical hierarchy of clusters about a multitude of servo emission portals, whereby a layered transition occurs from servo sequence, upstream to projective metaview.
However, if projective metaview is the *outermost layer*, what of interstitial fabric between such efferent clusters, and also afferent paths of sense flow?

If the outer shell of efferent clusters are of projective virtual context including representative flow from all afferent sources, where such sources may be of a multitude of eccentric distributions, is not a convergent path from sources to outer shells inferred?

Yet if a multitude of both sources and outer shells, what of scaling issues, where if redundant distribution would not temporal skew factors infer potential phase offsets and metaview eccentricities, unique to each outer shell?

Moreover even if a metaview system were to be established in a localized manner, might not phase variation to distributed efferent paths similarly exist?

Equalization of phase variance infers some form of symmetry, by which differential path delay may be minimized.

However, if total efferent path delay is much larger than that induced by intermediate fabric asymmetry, a prevailing degree of tolerance is implied, whereby minimal delay equalization fabric is inferred.

Notably though, if efferent path delay is of similar magnitude to intermediating fabric asymmetry delay, then a greater prevailing emphasis on symmetric layout is inferred, so as to minimize equalizing delay factors.

Clearly even a somewhat less than direct path, though increasing in delay and hence potentially equalizing asymmetric factors, consumes fabric nonetheless.

Consider the possibility of delay symmetry enhancement by variation of path transit time, more so than path distance, where differing paths, though of equivalent distance may be of asymmetric delay, thereby potentially compensating layout asymmetry.

But what layout symmetry factors might be so compensated, given efferent localized distributed clustering?

Scaling issues by which total displacement of fabric also infers paths of least volume, though possibly of greater latency per unit length, may allow variation and selection optimization, by reducing average interconnect length.

However minimal path volume, may come with diminishing returns, thereby limiting scaling.

Consider, for example, a fabric of which is composed of a range of paths by which an eccentric compromise exists between path volume, delay and length.

Further, let us assume that for a given delay a ratio exists where the length of path of lowest latency, divided by the length of path with highest latency is a given factor.

However, might not also average length of a path, of given latency be limited in proportion to volume displaced, whereby less volume infers shorter hops?

If so, might not greater volume correspond to greater length, with less latency per unit length, and
smaller volume to shorter hops with greater latency per unit length?

Now given a fabric volume, then might not an eccentric factor prevail, by which a ratio of path types is established?

Consider a spherical distribution of only shorter hops, where to transit the diameter or outer shell requires a series of hops intermediated by nodes, inferring an accumulation of phase delay in direct proportion to the number of hops.

To synchronize metaview fabric distributed, for example, in small clusters of fragmented virtual context over the surface, such that transit time across the diameter of a cluster is much less than a single hop, implies a series of hops between all the clusters.

As a cluster becomes further removed from another the delay increases, thus inferring a potential breakdown of close synchronization.

Thus for more distant clusters one might consider the possibility of a faster, though more volume consuming alternative.

However, what if the faster links to more distant clusters are so fast as to outpace closer multi-hop paths?

Would not then an equivalent delay be most likely prevalent for synchronization?

Thus clearly connection of all clusters to each other by the same synchronizing delay factor, infers use of interconnects of fixed transit time, regardless of distance.

As such links, regardless of length, would require a fixed transit time, inferring incremental change in link volume displacement per unit length with distance.

Would not the number of domain clusters, which are more distant from a given cluster, be greater than those closer, such that if both length and volume per unit length are increased, scalability issues ensue?

Thus a more distant majority of interconnects would consume the bulk of available volume.

But how might such a factor be reduced, other than by decreasing the number of domain clusters connected, where if so, might not such clusters be inferred as of larger median diameter?

As a metaview augmented cluster increases in diameter what of scaling considerations, where would not path factors within a cluster similarly increase in delay, thereby inferring greater volume of interconnect fabric, so as to invoke diminishing returns?

Thus if median cluster size is also limited by scaling, where relatively short intraconnnects prevail, is not a compromise implied, such that as cluster count over a spheroidal volume determines the number of unidirectional cluster interconnects within, a covariant volume of interconnect fabric is inferred, thus converging on a prevailing compromise?

Let us assume, for the moment, a convergent system whereby synchronizing latency is roughly equivalent.

If a cluster emits a characteristic flow to all participants of a domain, where such flow serves as the
equivalent of a sensory factor for the target clusters, so that a multitude of such flows coming in influence a representative virtual context, is not a localized bias of such a schema inferred in proportion to the eccentricity of incoming flows?

However, might not an intrinsic eccentricity of a cluster, without such influence, be of other factors?

If interconnect fabric was not present, such that merely a spheroidal shell exists, with eccentric incoming and outgoing flows of sense and servo, respectively, might not related lateral flows diminishing with distance be posited, inferring localized eccentricity in proportion to relative influence?

Thus if the merging of two sources of eccentric influence, of lateral and representative interconnect, what possible result exists other than a dilution of both?

Notably though incoming flows of particular paths may be treated in somewhat differing manner, assuming equivalency of interconnect latency, might not lateral latency differ in proportion to path delay from source flow?

Given a spheroidal shell, where eccentric factors of lateral flows are assumed to gradually dissipate with distance, what factor might ‘back fill’ the inferred dilution of information density, other than persistence based flow?

Yet what factor possibly in most temporal disarray, where synchronizing influence would have a differing effect?

Moreover what of eccentric efferent localization, where equivalently one might assume a flow sink for servo sequence which, though in opposite flow direction, may dissipate laterally with distance similarly to that of eccentric afferent source flow?

Thus one might envisage volume surfaces of mixed influence, where lack of afferent or efferent influence defaults to persistence factors, though possibly all affected by synchronizing effects of interconnects.

If afferent and efferent localizations are ‘legacy factors’ of which must be accommodated, though incrementally on a prevalence basis, what of persistence scaling, where though a projective metaview may be most relevant from a flow perspective of efferent conditioning, might not increased temporal scope thereof infer an incremental covariant expansion of persistence biased fabric?

50 Floating Metaview Staging

Though close synchronization is critical with increasing scale, might not such affect different interacting subsystems in differing manner?

What use is close synchronization for a system where banded temporal factors are of differing scale, other than if downstream flow thereof may have a critical projective metaview influence, on which concurrent servo conditioning prevalently depends?

If a concurrent longer term flow cluster in upper bands of metaview fabric exists, might not such a factor prevalently convolute on the basis of lower band influence, where differing longer term aspects may
be related to, and adaptively modified by projective downstream factors of concurrent intermediate flows?

Thus, if temporal band projection is in part based on concurrent intermediate flow overall, whereby an integrated metaview of which servo conditionality is formed, then how might synchronization factors differ across bands?

If information flows in differing temporal bands are to be covariantly combined in a unified manner, might not such factor prevalently occur under the auspices of cross band contingency projection?

Yet does not such a projection infer convergent simulation whereby contingent factors may ‘intercept’, thus if of further projection than from metaview fabric, are not additional staging fabrics implied at the interfaces?

However, if multiple upper band staging fabrics, of what relevance could they be in regard to lower band synchronization?

Notably if a contingent staging fabric sensory flow is emitted asynchronously with concurrent synchronized lower band operations, such that no influence of servo conditioning is inferred, then of what use such flow other than to condition internal factors alone?

Clearly if not of synchronized lower band operations then what other than conditioning persistence, whereby such staging flow may be applied so as to condition other non-real-time projective factors, inferring concurrent synchronization of staging flow emissions, with gated persistence fabric activity.

Insofar as such an internal synchronized operation is asynchronous and unrelated to lower band downstream factors, might not an independent synchronization schema be implied, thereby in turn inferring common metaview flows, though conditioned by all bands, and lacking in related close synchronization, so as to form a floating asynchronous metaview staging domain?

Moreover if staging fabric is floating in a close synchronization void, might not one consider the possibility of quasi-autonomous operation, where internal sense flow thereof may serve as an independent source of synchronization conditioning for downstream factors?

However, if metaview fabric is of an internally synchronized floating domain overall, and serves as receiver and originator of staging fabric flow, does not such infer either staging fabric is indirectly synchronized or metaview fabric is not closely synchronized?

Clearly if not closely synchronized then might not one infer that although a metaview and staging fabric system may be temporally clustered, by flow coincidence alone, there may exist no explicit phase lock to synchronized flow?

Apparentely the possibility of such a floating system, within what might otherwise be described as a closely synchronized projective virtual context, infers the existence of an independent temporal domain factor, which although covariant with virtual context flows, is not necessarily constrained to reactive modality on the same phase locked basis.

Might not such an arrangement infer relative optional activity of fabric not closely tied to a synchronized virtual context, potentially supporting a wider degree of temporal representation variation than banded fabric?

What eccentric selectivity might be more likely than that of which context factors of relevance to
survival could be modeled by cycling flows through asynchronous staging and hence augmented metaview fabric?

In particular what could be required to form an accurate long term model of future events, based on accumulated experience of past events, whereby preemptive actions might be formed, so as to increase the probability of success?

Yet even so, if for example a series of eccentric platforms are selected, such that eccentric experience is dropped across selections, what of variation of staging and metaview fabric might remain, other than systemic factors?

One might consider to what extent a projection of long term future factors is possible, given a changing virtual context, including an eccentric platform itself, and to what extent such a projection might prove to be of prevalent value for long term survival.

Clearly if the average extent and depth of such a model infers covariant systemic fabric scaling and eccentric flow modification factors, might not one infer incremental variation and selection whereby potential performance may be approached with diminishing returns, such that platform survival adaptivity may be counterbalanced by median lifespan?

While long term projective models could be highly beneficial for survival, inferring potential adaptive preemptive action increasingly in advance of threatening risk factors, it seems such models may be considered as a form of extension of a **banded virtual context**.

Thus providing a floating subsystem, through the auspices of contingent temporal projection where factors contributing to such models are likely based on underlying trends in virtual context factors, similarly to simulated motion projection by transform.

However if non-banded long term projection exists, might not samples of virtual context on which such models are based be of greater temporal scale than temporal clustering allows, thereby inferring a lower threshold of detectable change?

Hence if a greater interval between samples, and as a result a greater scope of samples of potential relevance, might not an increased scale of persistence and covariant ranking fabric, by which relevant factors may be filtered with greater resolution, combined with metaview enhancements, so as to fit such factors into a projection of increasing scale and complexity be implied?

But if such a projective model of contingent factors, might not some contingencies be more sensitive than others, where preemptive action is inferred, and thus possibly implying, in turn, a **priority of which preemption is based**?

Consider preprocessing effects by which context formations of virtual phenomena are systemically represented in a virtual context, where might not equivalent transformational factors apply to some temporal projections?

However what correlation factors could be the equivalent of a composite derivative, by which an animated object flow is transformed?

Clearly fragmented burst flows of which spatially biased patterns are transformed into **unified virtual object representations**, might in a differing metaview virtual context represent longer intervals, and the equivalent of a **temporally biased virtual object**.
Thus just as a virtual context may infer a range of spatially biased objects, projective extensions thereof may, on a prevalent basis, given appropriate variation and training set factors, do the same for a range of temporally biased objects.

But unlike the eccentric factors of which may contribute to spatially biased objects, temporal objects may be more of eccentric relations between objects, over an extended interval.

However, what might serve as the equivalent of cumulatively trained persistent composite derivative flows in such a schema, other than a similar template of which prevalent temporal relation factors dominate, and embedded virtual object factors are variables?

In a projective metaview extension of which potentially covers a range from a *cumulative past* to a projected future, might not an upper band based reiterative ranking, fitting temporal templates of persistence factors form a basis, whereby once additional factors, including template alterations, could then cascade, though using successive cascade passes?

Such a system infers a mutable and navigable projective flow network, of which templates are the major feature, whereby similarities and differences between template fitted subsystems may be explored further.

However, even assuming such a system, how might a floating extension arrangement be interfaced to a concurrent flow system of a virtual context, whereby servo conditioning is influenced by network traversal?

If a metaview fabric is to serve as a ‘floating integrator’ of a unified flow system, whereby some degree of influence is exerted on servo conditioning, of what flow factor might exist by which to do so, other than an explicit metaview flow formed for the purpose?

However, if such a flow, how might fabric supporting integrated condensate factors come to generate a specific servo sequence flow, other than precursor factors which influence downstream fabric?

Notably if metaview fabric has a projective transform subsystem by which a temporally clustered lead time is generated for the emission of such ‘precursor tokens’, by which particular combinations of servo subsystem sequences are influenced, might not such a subsystem apply to all aspects of metaview virtual context factors, including extensions which are beyond an immediate temporal envelope?

If such is generally the case, might not as sequential complexity of servo precursor tokens increases a corresponding expansion of leading persistence based formation extend into projective fabric, hence buffering lead time against coincidental jitter in formative flow factors?

Thus, if metaview fabric is, on a posited basis, prevalently capable of projective formative buffering, might not scaling of such a factor infer while such buffering may not be of immediate application to external servo factors, some conditions may apply where internal servo factors are so conditioned, and lead time is of differing form?

However of what combination more likely for such an operation than that of metaview with staging fabric, thus inferring a potential for *two distinct levels of projective operation in tandem*, including *concurrent cross synchronized banded and floating staging metaview fabric*?

If a combination of scaled metaview projective factor with metaview virtual context factor, where a self
modulated loop of servo sequence directed to flow exists, controlling such combination, could not also aspects of metaview, by which staging fabric is conditioned, similarly arise, where a combined condensate flow system emits particular eccentric servo sequence flow for staging fabric?

But how might such emission occur, given a multitude of such servo sequences, other than precursor token flow interpreted downstream, so as to select and condition specialized factors of staging fabric internal servo control, where if the case might not also the same arrangement apply for metaview servo control itself?

Notably, in such a case, where metaview projective scaling is assumed, why would lead time be required if staging fabric does not require it, similarly to external servo sequence?

Moreover consider internal sense flow emitted from staging fabric, similarly to external sense flow, where could not staging fabric factors be treated equivalently, so as to properly condition metaview projective process factors, should the case of external application arise, rather than that of internal loops?

In any case a systemic factor is inferred where flows of combined projective metaview are able to select and condition a multitude of servo sequences, both external and internal loops, including of itself, potentially covariantly either usurping or influencing other ongoing lower band intermediating flows, of which such servo sequences are concurrently conditioned.
Chapter 12

SIMULATION CONVERGENCE

51 Specialized Subsystems

Insofar as metaview condensate flows could condition particular servo sequences, would not such prevalently occur for motion related factors in response to projective simulation, where projective factors may take into account not only sufficiently preceding flows, but also concurrent internal loop servo sequences?

Thus, for example, metaview fabric could receive sense flow from staging fabric, for disappearing object intercepts, thereby in response forming a lagging concurrent projective simulation component of servo sequence for actuators in upper band fabric, by which servo sequence overall is influenced.

However, if such process is concurrent with metaview sourced servo sequence, for itself and staging
fabric, temporally clustered loops are implied, whereby relative loop phase may also be a matter for metaview sense flow modulation by servo sequence simulation adjustments.

Consider two related concurrent projective simulations, one in staging fabric and the other in projective metaview fabric, with servo sequence controlled phase lags, whereby projective factors may be adjusted, so as to align sense flow within virtual context feedback loops.

If, for example, staging fabric simulates a disappearing object intercept, where emitted sense flow enters metaview condensates with a slight phase lag, and metaview projective simulation then occurs on a contingent basis, which simulation factor takes the lead?

One of the possibilities is staging fabric is conditioned from simulations in convergent hierarchical metaview projective simulations of staging fabric simulations, though with loss of detail, thereby emitting servo sequence of which staging simulation is conditioned.

As staging fabric may emit internal sense flow of simulation results, metaview condensate could thereby be conditioned, with enough lead time to form an altered projective simulation, by which concurrent external and further staging servo sequence conditioning may proceed, thus forming a convergent loop, by which, for example, a platform intercepts a hidden object.

In consideration of a projective simulation of more detailed projective simulations, is there any more significant difference than in projective simulations of servo sequences of actuator motion affecting a virtual context, where both form loops feeding back sense flow to metaview condensate, by which projective simulation is influenced?

In the case of staging simulation internal sense flow, feedback may potentially loop back more quickly, due to less intervening flow path delay, thus allowing lead time for metaview based projection to precede virtual context motion factors by a margin, inferring a potential basis for competitive advantage between eccentric platform arrangements.

Assuming such platform competitive advantage, might not some variations, by which staging fabric in a loop converges with projective metaview simulation of staging fabric operations, prevail?

But what sort of variation might prove most advantageous?

If successive platform variation is mainly of fabric, not flow eccentricity, might not one consider potential fabric factors, which when combined with flow eccentricity over the lifespan of a platform may prevail over others, given a preferentially selective context?

Consider a compound simulation system, used to serially form predictive factors for an eccentric platform in an eccentric context, over a median lifespan.

If projective simulations decay rapidly, such that servo sequence is only affected within a brief temporal envelope, then a given simulation might be re-run, if metaview fabric is so conditioned, such that net selection effect over a lifespan may be roughly proportional to frequency, and appropriate alignment of servo sequence conditioning factors with a context.

However, such an arrangement presupposes an initial condition, whereby projective metaview factors generate a servo sequence by which staging is conditioned, thus despite variation of staging fabric factors, prevalent usage will not result without such an initial condition.
For an eccentric platform, for which a multitude of possible servo sequence factors exist, might not a profile of which relative metaview conditioning differentiates, be related to sense flow, and thus virtual context factors?

But what of a virtual context could favour staging simulation over other servo sequence?

Consider the relative risk factor of simulation compared to external action, where though less action may be inferred, by imparting more resources to simulation, potentially increasing risk of loss, might not simulation reduce risk overall by potentially limiting and influencing subsequent related action?

Thus while simulation may infer somewhat less action overall, downstream action related to simulation may be *prevalently more valuable*, in terms of risk reduction, hence inferring selectivity of eccentric platforms.

Moreover, how might such selectivity become ensconced in fabric plasticity rather than eccentric flow thereof?

Extrapolation of motion simulation preferentially leading and directing servo sequence to simulation, where downstream servo sequence factors are inhibited, due to contingent flows at the metaview level, implies a ‘search’ for simulation internal sense flow, of which risk factors, balanced against other concurrent metaview flows, may condition a condensate threshold condition, whereby default servo sequence inhibition factors are lifted.

Evens so, how might such an arrangement vary, so as to exhibit selectivity potential for risk reducing compound simulation of factors, other than motion?

Clearly, from a flow network perspective motion is a form of change, whether of sense flow emitted from sense transducers or simulator bias, thus given a pattern of change represented in flow one might consider possible equivalent flow factors, though representing change, of differing form than spatial temporal displacement.

Notably change transforms like those of motion equivalents, could operate on a flow based representation of which a trend pattern is possible.

Motion transform from an eccentric sensor platform, infers the possibility of a moving frame of reference in the form of platform motion, potentially discerned as virtual context marker pattern change with downstream flow, covariant with representation pattern change.

The transform of representation motion pattern, as a differential effect, with respect to a frame of reference with eccentric motion pattern, infers correlation of both motion patterns, so as to emit relevant internal sense flow, by which an ongoing metaview mediated compound simulation loop may be conditioned and converge.

Let us assume that a simulated eccentric sensor platform is stationary, whereby motion factors of the frame of reference flow are minimal, such that the differential effect of transforms is on the basis of representation motion pattern alone.

However, if platform motion is eliminated, what basis remains for loop convergence or avoidance, and hence conditioning of external servo sequence, other than a threshold condition of some form?

But how might such a threshold factor be simulated in such an arrangement, given eccentric motion,
other than possibly by comparative estimate with potential platform motion, which is not present in the simulation?

Consider the possibility of two simulations, one where the platform is static, and one where the platform is in eccentric motion, under external servo sequence control, for example, either towards or away from representations of a static simulation.

If the first simulation is conditioned and flows to some intervening status, then the second simulation is conditioned from the first and flows, either emitting sense flow of convergence or not, where if the result thereof conditions a metaview, a contingent factor is implied, by which the first simulation is conditioned to flow to a further status and the second simulation repeated.

Clearly under some circumstances simulation is conditioned so as to support concurrent external servo sequence.

In the inferred case of a dual simulation loop where one simulation, of which less possibility of convergence exists, sets up the initial conditions for another, with an enhanced possibility of convergence, through simulated platform servo sequence, might not such an arrangement form a basis for simulation of other change factors than motion alone?

Consider sense flow of which no apparent macroscopic motion occurs, such as from slight wind, sound, heat or smell, where despite lack of motion nonetheless an extrapolation of change is simulated.

However, if the same transforms of simulation fabric are used as for spatial temporal extrapolation of motion, how might such apply to flow of a seemingly motionless factor?

Assuming a limited extent of transform fabric, such that concurrent flow of transform operations forms a predictive spatial temporal characterization, on the basis of an eccentric trend pattern, which conditions transform operator fabric, might not similarly an eccentric factor condition transforms, so as to simulate apparently motionless change flows?

Even so, if such motionless flows arise in sense flow from transducers systemically differing from motion transducers, could not one posit the possibility of prevailing specialized fabric, of which simulations are conducted, so as to enable the concurrent operation of multiple types of projection, without disruption or delay?

If each eccentric sense flow, and possibly even subsets thereof, has a form of simulator loop by which internal sense is conditioned concurrently, would not such a factor be merely confusing, if not of the same projective scale, and synchronized to some degree, so as to present a hierarchical cohesive metaview?

Yet could not such flow factors predominately arrive in asynchronous manner, thereby requiring a contingent metaview protocol by which to synthetically construct a cohesive metaview projection?

Thus, does not such an arrangement infer the possibility of a prevailing system whereby predominately asynchronous, but possibly also some synchronous flow factors, of sense flow condition eccentric simulation fabric, which in turn condition metaview condensate, thereby conditioning a cohesive simulation fabric, thus forming ongoing hierarchical projections with minimal delay or disruption of outer loops?

In consideration of a posited projective simulation hierarchy, where eccentric sense transducers and subsets thereof may have simulation fabric adapted to prevailing transform factors, is not a network of
such simulators inferred, where one may consider components thereof as a distributed high level simulator, which integrates projective sense flow in a correlative though asynchronous manner, thereby potentially forming a cohesive metaview condensate flow?

Clearly such an arrangement implies not only a case for incremental variation, by which competitive selection might proceed, but also a possible path by which eccentric sense flow is transformed, in a series of intermediating flows, to a more unified condensate flow of common covariant character, potentially emphasized in proportion to upstream activity factors.

While such a schema implies a basis for a unified projective virtual context based on complex asynchronous sense flow, how might other aspects of possible significance in a context, such as relationships of objects, be simulated?

If a hierarchical network of specialized simulator fabric exists, could not similarly an extension thereof by which downstream factors of potential variational advantage, arise?

52 Simulation Coalescence

For our posited hierarchical networks of specialized projective simulations, adapted to the eccentricities of trend prediction, on the basis of prevailing sensory and virtual context flow patterns, how might such an inferred arrangement be aligned, so as to support unified metaview condensates, thereby allowing for more complex predictive relationships?

Consider an object which is hidden from some sensors, however is asynchronously apparent in other sensor flows, where would not a predictive simulator network, in the absence of integrating factors, represent such disparate flows as of differing objects?

However, how could such disparate flow factors coalesce in a single object representation, given eccentric sensor signal parameters, particular to localized simulator fabric, other than to converge in a more general downstream fabric of less eccentric bias and able to correlate incoming eccentric flows with common factors?

Thus if a common downstream fabric by which a multitude of specialized simulator objects are concurrently represented, so as to accumulate related eccentric internal sense flows, then of what need separate general simulators in upstream fabric, if a conglomerate condensate serves as a joint predictive transform simulator?

The existence of common downstream fabric, augmenting preceding eccentric transform fabric of sensory sub-flows, for example, infers transform operators which operate not only on spatial temporal factors of motion, but also the full range of features associated with inner sense flow.

But how could such eccentric flow factors come to be associated with conglomerate and possibly partially hidden representations, other than by correlative protocols by which asynchronous factors are assembled into a more persistent accumulative framework?

Yet if any arbitrary eccentric sense flow factor is missing from such a persistent framework, does not such infer a system which is able to maintain representational integrity in the absence of sense related flow altogether?
Thus if a common hierarchical post process fabric, would not eccentric factors thereof prevalently represent such a framework and support predictive transforms thereof, even in the absence of related sense flow?

However, given such an arrangement, how might predictive transforms, which take into account eccentric sense flow factors, occur with frameworks of which no related sense flow is concurrent, other than transforms adapted to intrinsic framework flow eccentricity?

If a post process framework is a residual temporal flow envelope remaining after all related incoming flow has decayed, where such flow may serve as a common correlative factor in aligning fragmentary intermittent sense flow, yet in the absence thereof sustains sufficient signal characteristic so as to differentiate itself from a multitude of possibilities, might not such residual flow be partly of a conglomerate of related composites?

If a composite is of eccentric sense flow factors, and a framework of an aligned relation of composites, potentially including virtual context factors, what basis could post process conglomerate transforms have for extrapolation, other than those common to the whole representation?

Yet, for example, how would eccentrically biased transforms of motion act on factors not of spatial temporal flow in a conglomerate representation, other than by a null operation?

Thus does not such an arrangement infer projective transforms which operate on the whole conglomerate framework, but only affect flow factors amenable?

Hence if composite flow signal of which a framework is represented is of a common underlying mixture, how might such eccentric transforms selectively operate on like to like factors of relevance, and not distort other flow factors which should not be affected?

Let us consider an alternative, where a conglomerate of composite flows are related by temporal clustering, but separated by transform type, so as to form extrapolations on the basis of eccentric transforms without distortion.

However in such case does not separation by transform type infer some aspects of eccentric sense flow, related to a transform type, being combined with others, where a mapping of common factors to transform precedes downstream operations?

Thus any conglomerate representation would be of a composite of eccentric transform type flows, potentially of differing sense paths.

Yet how might such a separation where a sense flow is factored into transform types occur, unless such factor already exists in a sense flow, so as to be separable by a correlative emission with transform dimensionality factor?

Even so, given such separation, how might differing eccentric sense flows of a common transform be combined, so as to transform in a predictive manner, yielding cohesive results, other than by keeping them separate all along, and transforming them covariantly?

But how might such an arrangement contribute to the formation of object relationships, other than by grouping sense factors of common transformability, which serve as a basis for comparison between conglomerates?
From the perspective of systemic correlative classification of conglomerates, on the basis of like to like flows, might not flows which are projectively transformable by similar operators, though possibly of multiple eccentric sense factors, be more likely than any arrangement of flow comparison with less commonality?

Thus, if conglomerates are correlated on the basis of transformable groupings, where each grouping via intermediating operators emits a result level flow, how could such a flow pattern be of use to downstream fabric?

Clearly simulations might vary in eccentric manner, potentially demonstrating a range of possibilities, where selectivity factors could then prevalently compare, but on what basis?

If simulations are serialized, where variation may be concatenated as internal sense flow, comparison infers persistent accumulation of a previous cycle, and a differential correlation with concurrent simulation internal sense flows, implying metaview cycles over difference flow factors.

However, given internal sense flows of variant simulations, might not correlative difference flows encompass all of the possible factors of which variation may occur?

Consider difference flows of simulations where result flow complexity is similar to a simulation itself.

Does not such flow covariance infer at least three concurrent flow systems, such that at least two variations are correlated and one is a result flow?

If such an arrangement, then might not supporting fabric have at minimum equivalent corresponding flow paths, assuming no path is re-entrant?

Even so, assuming such fabric paths, of what use might a difference flow system be without subsequent downstream factors of which differences affect simulation cycles?

If simulation difference flows are to affect another simulation cycle might not such flow factors, to be of any use, condition corresponding transform projection operators?

Moreover how could such flows be so aligned unless result flow emission alignment is preserved, so as to feed back through a contingent loop, under metaview servo conditioning?

Thus would not simulation fabric itself be of three fundamental paths, under servo sequence control, where transform operators are optionally conditioned by re-entrant flows which modify transforms between cycles?

If all transform operators are modified equivalently by raw difference result flow, could not such factor simply re-establish a previous version of a simulation hierarchy, assuming the same source flows?

Yet even if all transform operators are biased equivalently, would not such arrangement limit the scope of variability, to a matter of degree, more so than of eccentric factors by which a context may exhibit potential prevalence of eccentric servo sequence control of subsets of transform operator bias?

If granular selectivity of subset transform bias, does not such arrangement infer subsets of operators would be systemically varied while others held constant, thereby potentially searching a simulation space,
of varied result flows, for a contingent factor of some form?

However, if metaview cycles condition flow by which eccentric factors of subset servo fall into sequence, might not such a variational search be eccentrically biased, whereby some transform subsets are conditioned in a pattern, possibly using a specialized protocol?

Thus if a protocol emission result flow is of a form, so as to condition variational factors of servo sequence, by which simulation transforms cycle, in a search pattern, by which contingent factors are approached, of what form might such a simulation conditioning protocol prevalently assume?

For a protocol to be correlated with emission result flow, as part of a navigational network, does not such arrangement infer tapping of metaview fabric flows, including simulation internal sense flows, whereby correlation with persistent protocol sequences, in like to like manner, emit result flows, conditioning transform subsets, so as to increase the probability of eccentric transform convergence for a contingent factor search?

But how could such a protocol come to prevail, other than by accumulation of factors, whereby simulation transform loop convergence may have been from a series of more rudimentary foundational protocols?

Clearly, if an eccentric convergent protocol variation of transform subset factors occurs, possibly in a convoluted manner, might not a systemic search, by transform subset alteration; fail to find a convergent pattern?

Yet how could a protocol flow pattern which converges on contingent factors become of prevalent use, if not by an advantage from which relative selection and risk reduction ensues?

If such a protocol is not in itself conserved across selective boundaries, would not eccentricities of underlying fabric variation, whereby the probability of similar protocol formation may be increased, suffice?

Assuming a convergent loop by which such underlying fabric variations might favourably alter the chance of protocol flow pattern formation, could not factors throughout a flow pattern potentially be of significance?

Yet would not some flow factors be more critical than others, whereby possibly slight alterations might have disproportionate downstream effect?

Consider two eccentric platforms with intermediate fabric of similar scale, however differing propensity for the formation of simulated object relationships, where possibly some types of relationship are represented in differing degree, thereby potentially altering eccentric convergence factors.

Might not an eccentric platform then be more likely to form a protocol of which such factors are disproportionately significant downstream, thereby potentially prevailing under similar context conditions?

But what types of substrate relationship would be subject to such variation?
53 Post Process Cascades

If by a substrate subtended in specialized post process fabric we mean at times a conglomerate flow system of composites, by which related internal sense factors may be correlated with a residual framework, is such an arrangement not unlike a conglomerate of protocols?

Yet might not a protocol infer more than just correlation with internal sense flow, where any flows, even of conglomerates, may prevalently become a factor of a protocol?

If a degree of manipulation is inferred, whereby a system of flows is not only established, and used within correlative scope, but also as a source of conditioning, possibly in a differing scope, whereby a multitude of downstream flow systems are coordinated, might not such an arrangement be more appropriately termed as a form of use of a protocol conglomerate?

If one posits post process substrates are related to each other by protocols, are we not inferring a system of flows whereby protocols correlate and manipulate conglomerates?

Where if correlated a conglomerate is inferred as selected, or more accurately filtered by result level, and if manipulated then becoming a form of tool of a protocol network?

Moreover from consideration of the overt limitations of concurrent flow systems, in the form of relating transient flow factors across disparate temporal intervals, might not variation of protocols, as a form of 'glue' across post process substrate decay envelopes prevail?

Even so, given such an arrangement, could not variation by which other flow systems may be selected and applied also prevail, so as to take advantage of such a capability?

Yet would not such additional mechanisms be of a novel form, both of persistence and projection, thereby implying simulation of post process substrate relationships?

However, if objects of a virtual context, formed from a context prevail in persistence, then would not the bulk of protocol of persistence, by which such substrates are related mainly operate on such metaobjects, for lack of other alternatives?

Even assuming so, of what relation might post process substrates be represented to one another, given variation of both substrate and protocol?

Consider a test protocol in which correlation is prevalent, where might not result flows temporally clustered with similar covariant processes infer possible association?

Yet how might two result flows be themselves correlated, if not downstream, thereby inferring other downstream correlation protocol operating result flows forming a protocol pipeline?

Could not a protocol associating result flows prevalently include factors by which association occurs, whether of temporal clustering, or of some other relation?

Thus if correlative protocols are combined with result associating protocols, by a pipeline of networked downstream protocols, might not such an arrangement infer an expanding cascade network by which a hierarchy of post process substrates are selected and related?
However, even assuming this, how might such a process come to be prevalent, other than, for example, as a cascade system which generates internal sense in a loop?

If the case, does not such infer a post process substrate cascade fabric susceptible to mutable flows, and conditioned by servo control sequences, by which a metaview loop may be completed?

Apparently one might, from analogous comparison of such a mutable cascade fabric to that of motion simulation fabric, infer hybrid or separate systems.

If separate, though possibly concurrent substrate relation cascade protocols are combined with motion simulation, might not covariant operation infer aspects which may themselves become prevalently related?

Consider concurrent asynchronous operation, in separate fabric, where would not differing metaview loop cycle times form a potential disruption factor for conditioning downstream flows?

However, if operations are combined in the same loop fabric would not transforms and cascades of an integrated loop, similarly be unlikely to form reliable synchronized conditioning flows?

Notably, if of separate fabric at least one path could be inhibited, or phase adjusted, thereby minimizing potential interference, whereas if tightly coupled in the same fabric effective deconvolution may not be as easy.

Yet if variation and selection on the basis of minimum delay, combined with projective risk reduction, would not some circumstances infer integration more advantageous, and others separate operation?

If, for example, some post process substrate relations are more critical than others during motion simulation, might not eccentric forms of integration prevalently ensue?

From a protocol of a cascade relation perspective, scalability of flow paths infers the possibility of correlative factors of multiple substrates, on the basis of like to like flows, including eccentric subrange flows.

Thus correlative factors would potentially encompass several concurrent result level flows, of which associative factors could be based, whereby a flow pattern may condition internal sense flow, and hence metaview fabric.

However, if more than two substrate source flows, might not resultant level pattern be of a differing character, possibly sacrificing cascade detail, inferring a potentially prevalent metaview modulated servo sequence of cascade fabric, by which a multitude of source flows are reduced to sets of two in succession, so as to selectively achieve greater resolution?

Such a process also infers the possibility of a cascade of a source flow with itself, as when two identical substrates are being correlated, whereby temporal spatial difference factors are minimal.

If an object subrange is correlated with itself, might not one expect a high level of result flow, such that a relation of identity is formed, potentially providing a reference by which lesser levels of correlation may be contrasted?

Thus if a post process substrate cascade combined with itself is followed by another, even if the flows are indistinguishable, would not spatial temporal differences infer, despite potentially equivalent high
levels of subrange correlation conditioning internal sense flow, another factor by which a metaview fabric might post process?

However what factor of such a difference flow might condition internal sense so as to trigger a protocol of metaview fabric, thereby leading to a follow on process?

Clearly if two flows only differ by locality, so that differing flow paths are used, such a set of flows infers a long chain of hierarchical differences throughout cascade fabric, in comparison to a single substrate flow, thereby potentially altering a range of internal sense flows by which fabric is conditioned.

But how might such a set of differential flows result in a consistent representation, whereby a quantity of similar substrates are construed, regardless of other eccentric factors?

If metaview fabric is a receiver of internal sense flow from simulations, whereby a degree of abstraction is already implicit, what additional flow factors might prevalently post process such flows?

Does not a quantity, regardless of other concurrent flow eccentricities, infer possible commonality across a set of internal sense flows?

Thus if such a flow pattern commonality exists, could not a correlative protocol of metaview fabric be prevalently formed so as to emit a result flow of a level in proportion to quantity?

Yet even so, assuming such a quantity result flow, of what form might it take in the case of a substrate cascade with itself, other than of a lower level than any greater multiple, and of what use might such a signal be, other than to condition a factor of metaview fabric?

Notably if metaview fabric is self conditioned, whereby configuring metaview servo sequence is looped from within, might not a flow, representing a quantity level of preceding eccentric flow, transiting metaview fabric be useful?

However of what effect could such a flow have on metaview fabric configuration?

Consider how metaview fabric may scale as a receiver of a multitude of incoming flows, many of which are not like to like and so of disparate factors, only associated by temporal clustering, and yet emitting conditioning flow, on a contingent basis, for a multitude of eccentric servo sequences.

But how might metaview fabric converge on an eccentric set of downstream flows whereby particular synchronized conditioning is invoked?

Clearly an option of delay on the basis of asynchronous incoming flows, of which contingency is a factor, infers a projective protocol trap at the metaview level, whereby such traps may rise in priority with incoming flow patterns.

However, what form of internal flows are inferred of metaview fabric given prevailing incoming and outgoing flows?

If metaview fabric represents a top level of hierarchies of both incoming and outgoing flows, whereby internal flows are prevalently of a condensate of factors, with a break over from incoming to outgoing condensate, of what form might such a transition take?
Would not incoming formation of condensate, combined with demodulation into servo sequence, infer a series of process factors whereby intermediating flows are prevalently able to deal with a prioritized transition, using *metaview protocol pipeline networks*?

Yet does not the organization and demodulation of condensate similarly infer factors, of the form of servo sequence controlled fabric?

Thus if an incoming and outgoing servo sequence controlled condensate hierarchy, of what source conditioning for such fabrics, other than of intermediating factors of condensate, through demodulation fabric?

If so, might not configuration of demodulation fabric by intermediating factors be somewhat limited, so as to avoid a *lock-up condition*?

Hence given an inferred intermediating *break over system* of which demodulated servo sequence depends for critical influence, might not *inhibition reduction*, where selected servo sequence is enabled, prevail as part of a risk reduction strategy?

Clearly if an extensive leverage factor is based on outgoing condensate flow, might not risk of inadvertent servo sequence demodulation increase in proportion, inferring a *series of inhibitory factors will prevail*?

Notably the break over system is inferred as the transition between input oriented flows from the senses to the output oriented flows to the actuators.

### 54 Risk Minimization

For a metaview condensate based system to provide consistent and reliable conditioning using protocols of correlative signals, would not condensates, via preceding flow hierarchies converge on factors by which prevailing commonalities dominate, so as to enable greater generalization?

However what underlying factors could mediate a multitude of eccentric hierarchical incoming flows, with general representations in common?

Clearly the degree to which differing incoming flows could be modified, before reaching a metaview condensate system, might vary considerably.

Thus if all eccentric flows of a bracketing envelope were to transit core paths of metaview condensate equivalently, common mediation might not converge, inferring an ensuing lack of risk reduction factor.

If metaview condensates are *directly coupled* to other intermediate fabric flows, including baseline, motion simulation and cascades, as well as incoming sensory flow and outgoing servo sequence, how might such an ongoing system be mediated effectively?

However, if a *ramp up transition zone* is of common paths, then differing flows must be multiplexed onto them, inferring an intrinsic lack of scalability in intermediate transit networks, in proportion to the scale of intermediate flows overall.
If some aspects of metaview condensate are distributed, so as to minimize such a transit network, might not localized factors of condensate be inferred as part of an incoming and outgoing intermediate transit hierarchy?

Notably such an arrangement infers a reduced localization zone, in combination with a distributed redundancy factor, by which condensate might transit to and from such a zone.

Yet does not a hierarchy infer several levels of intermediating flow conditioning, whereby a metaview subset zone may be dynamically restricted to flows in which prevailing risk reduction factors are most likely?

If all significant servo sequence, not controlled by automatic or locally mediated factors, must transit through mutable projective metaview condensates, before conditioning default inhibited downstream hierarchies, translating condensates into detailed sequences, then might not such an inferred flow congestion in the worst case imply a prevalent minimum scalability factor for core condensate pathways?

From the perspective of metaview condensates systematically handling a multitude of incoming flows, though of prevailing risk reduction significance, might not also other factors be inferred, whereby variation of internal flows, not directly associated with incoming flow patterns, may also prevail?

However from where could such an internal effect arise, if not from some form of metaview protocol network, whereby persistent interval flow inner loop factors are manipulated?

Yet how might a conditioning incoming flow, of such an internal flow network, arise other than by a feedback loop through internal and external sense flow, of which though possibly not initially a factor of internal flow might form the only channel by which metaview condensate conditioning may occur?

Notably if external servo sequence is attenuated in an outgoing hierarchy, such that although some degree of metaview feedback is available, minimal external action occurs, whereby prevailing minimization of risk is inferred, thus implying use of part of an efferent hierarchy as a form of simulation system.

Thus if one posits a partial external servo sequence feedback loop, in combination with projective motion and cascade simulation fabric, driven by a metaview protocol network, an internal loop system is inferred, whereby given relatively quiescent external loop flow, both systems could operate concurrently, though liable to mutual disruption.

If what one might term an awareness factor of metaview condensates manifests, in the form of concurrent simulation mode internal sense flow with a quiescent external sense flow, such that a dynamic division of resources is inferred, then what overall factors might prevalently arise?

Consider metaview protocols for the most part based on correlation of factors of a virtual context in relation to a general context, through the auspices of sense flow, where predictive risk reduction implies possible selection of a variation of metaview protocols, in regard to enhanced predictive simulation.

Moreover might not such predictive simulation variation, in order to model more virtual context possibilities of risk reduction value, infer an increase in simulation activity and some form of prevailing selection factor in regard to the results of simulations?

Thus if variation by which more simulation occurs, thereby inferring covariant expansion of a metaview protocol network, where result flows of simulation are variation factors of which protocols may correlate,
then might not such a process scale so as to prevalently cover off factors which virtual context selectivity dominates, though potentially with diminishing returns?

Still, even so, how might inferred metaview protocols plastically mutate from predominately near real time projective virtual context sense flow based operation, to what could be described as covariant off-line persistence based simulation?

If an equivalent simulation to that of a projective virtual context, then what source flow other than persistence based similar to that which is available in an intermediate hierarchy during near real time operation?

But how could such an equivalent projective simulation flow system be reconstructed at a later quiescent interval, if not by usurping simulation fabric not only with source flow factors, but an entire simulation schema?

Thus, it seems we are inferring a drop of simulation schema during or after a near real time session, followed by reinstatement later, of a roughly equivalent system of flows.

Notably such an arrangement implies the existence of a secondary shadow persistence system fabric, capable of storing and resurrecting entire simulation flow sets, complete with phase factors.

Assuming such a shadow arrangement, might not scalability issues infer preferential allocation of persistence on such a basis, given variation by which risk reduction selection factors may prevail?

However, if the bulk of such persistence is in general composed of sets of simulation schema, how might a particular set be selected, and invoked, if not by an upstream flow factor?

Yet how could such a flow factor be emitted in a quiescent interval, other than by factors of metaview operation?

Clearly if simulation fabric resources become available, to some degree, might not such factor initiate a flow sequence by which internal sense flow is conditioned, thereby potentially conditioning a metaview protocol, which may selectively invoke a simulation schema?

Even assuming so, how might a given simulation schema be differentiated from any other, so as to be preferentially invoked, if not by a prevailing mechanism by which risk factor may be minimized overall?

Thus if a metaview selective protocol of which overall risk reduction is a prevailing factor, how might such factor arise in an eccentric platform?

Consider how flow systems of an eccentric platform might condition and characterize risk factors.

Might not, for example, given an eccentric context of an eccentric platform, a range of risk factors be inferred, whereby such may be qualified by risk level emission flows of internal sense, possibly related to modality?

But how might such risk level flows be a factor of internal sense, if not by an emission of simulation fabric, by which risk factor levels may be formed?

Thus would not simulations themselves be self differentiating in terms of their emission of risk level?
However, how could a metaview protocol differentiate simulations on the basis of relative risk level flows, if such flows are not present, unless a simulation is operational?

Even so, assuming an operational simulation conditions such risk flows, how might relative risk be correlated without concurrent flows of other possibilities, unless they are also concurrently operational to some degree?

Alternately if simulations were to be successively polled, by a brief simulation session, might not a short term flow signature, by which relative risk could be correlated by metaview protocol, ensue?

Assuming a metaview fabric polling operation, possibly on a queue basis, for example, most recent simulation first, then how could a metaview protocol relinquish control, so as to facilitate simulation restoration temporarily, without losing the ability to proceed with subsequent polling operations?

Might not then a hierarchy of metaview protocols be inferred, in such a case, whereby a protocol operating at some higher level operation, such as simulation fabric resource allocation, may defer to simulation metaview protocols of another level, so as to accumulate an interim internal sense result flow?

However, does not such a hierarchy of levels within metaview fabric infer associated paths of which flows thereof may transit, where could not a top level flow imply either a continuous flow, a series of handler flows or a hybrid combination thereof?

Assuming, for the moment, a potential hybrid top level metaview system, whereby a continuous flow is augmented by handlers, how might such a system facilitate successive polling of risk flow level of a series of simulations?

Consider a simulation, where risk levels are emitted, once invoked by a schema, where internal sense flow of simulation factors are correlated in a top level hybrid metaview system.

From the perspective of incoming internal sense flow, part of which is of risk levels, how might such be correlated other than by a metaview protocol, where if the same metaview protocol as associated initially with the simulation schema, would not a follow on emission to a top level handler metaview protocol follow?

Thus assuming follow on emissions are persistent, might not the next step be to invoke another simulation schema from the top level system, whereby a series of emissions are accumulated?

However, even assuming so, how might such an accumulation of persistent emissions be sorted by most relevant risk factor, other than by a metaview protocol adapted to the task?

Therefore, if a top level polling system of which handlers are associated with simulation schemas, of which are associated with metaview protocols, and in turn forward conditioning emissions to a persistence based metaview protocol adapted to sorting, how might such a system scale?
In terms of metaview condensates handling increasing simulation flows, of rising complexity, would not a system which depends on factors by which such flows are sorted to allocate resources, infer a scaling bottleneck?

Would not as the number of simulations increases, so too the time to accumulate associated relative risk level, inferring decay of related persistence, thereby undermining ongoing processes, such that only more recent factors are accurate?

However, if a virtual context is prevalently of risk simulation factors within the scope of temporal envelope decay, such an arrangement may suffice, but if not, then one might consider the possibility of other systems.

Yet what other systems could be possible, other than augmenting persistence so as to offset decay?

Consider if internal persistence systems could be refreshed so as to extend the scope of a metaview temporal envelope, such that an enhanced hybrid metaview based simulation system is possible.

From the perspective of persistence refresh would not in effect selective sense flow of a context, of which a simulation may be associated, form a hybrid system with a decay envelope of an increasing number of concurrent simulations?

However, assuming such of a hybrid system, would not this infer ongoing metaview activity, whereby decaying simulations are searched on a related basis.

But how might metaview fabric accommodate such a directed refresh search, given flows where levels of uncertainty as to persistence of simulations are represented?

Clearly a decay refresh process might require navigating a virtual context to a locale of factors, possibly to facilitate a factor by which a partially decayed simulation is associated, thereby providing an opportunity to reinforce simulation schemas.

Thus selective sense flow factors of a context in a servo sequence loop, whereby simulations may be conditioned, infers the use of a virtual context as a form of persistence augmentation source, implying efficient use could significantly reduce the covariant requirement for persistence scalability, in intermediate fabric.

Might not such an augmented arrangement also infer potentially diminishing returns, whereby increasing persistence factors implied by directed refresh searches in metaview fabric, partially offset any benefit of metaview modulated schema refresh?

Yet, though possibly a prevalent compromise variation which could compensate for lack of persistence scalability, might not such a directed refresh operation across metaview fabric imply the potential for other similar processes?

Consider what could be characterized as preliminary housekeeping operations of metaview fabric,
including systemic allocation of simulation resources on the basis of sorted risk level and directed persistence scalability compensation on the basis of sorted schema decay factors, where both processes are ongoing concurrent flow systems.

Clearly if such housekeeping processes exist, would not underlying flow systems infer iterative depth capability of metaview fabric, over a hierarchy of persistence factors?

But if such processes are ongoing, so as to be automatic features, does not also such a capability infer a widespread network of metaview fabric protocols, deferring to other flow factors on a priority basis of some form, implying a pervasive background metaview system?

If such a pervasive background metaview fabric exists, would not variation infer the possibility of prevailing housekeeping operations other than risk reduction allocation and schema refresh?

Moreover what aspect of an eccentric platform interface to a context might benefit in terms of competitive advantage, from similar iterative processes over persistence hierarchy factors?

If a refreshed persistence hierarchy exists, does not such an arrangement infer a persistence model of which levels of detail are differentiated, whereby a degree of condensation may be achieved at higher levels, thus contributing to scalability of potential housekeeping operation flow systems?

If scalability factors are of paramount significance, might not housekeeping operations that could reduce persistence hierarchy scale prevail?

However, does not such a capability also infer the complex process of reorganizing a persistence hierarchy so as to take advantage of possible savings?

Consider if a persistence hierarchy is prevalently organized so as to facilitate simulation schema, where as the number and complexity of schema increase, so too underlying fabric scaling factors.

Thus if a schema represents a subset of associated persistence factors, whereby an activation flow may invoke a subset as a simulation, complete with conditioning factors for source flow, transforms, cascades and configuration, then might not increasing overlap occur between schemas at differing levels as the number of schemas increase?

However, even so, how might such an overlap be condensed from a metaview housekeeping perspective, without potentially disrupting schema integrity, unless schemas themselves are intrinsically susceptible to hierarchical arrangement?

Yet even assuming a multitude of schemas of an intrinsic hierarchy, how might such be arranged so as to realize improved condensation, especially considering if initially formed in a hierarchical manner?

Clearly, for example, if new simulation schemas are formed as relatively unrelated to other schemas, at the fabric flow level, then gradually reorganized by metaview housekeeping, so as to leverage commonalities, one might posit both a saving of persistence fabric.

Even assuming such an arrangement, how might a pervasive metaview based housekeeping fabric flow system identify and rearrange persistence factors of a schema, into a common hierarchical format, while preserving schema integrity?

If a schema is invoked such that simulation fabric flow systems emit internal sense flow, of which
metaview fabric protocol correlates, might not a level of like to like correlation, with another simulations internal sense flow, indicate the possibility of commonality upstream?

Consider a multitude of simulations, where internal sense flow correlations infer flow patterns by which simulations could be sorted, where given a subrange of sorted simulations the probability of upstream commonality is enhanced.

However how might differing schema flows, though possibly somewhat similar, be fragmented into common layered subflows, so as to construct a schema hierarchy, other than if some form of underlying common primitive operations are prevalent?

Notably if the operations performed by simulation fabric are of limited extent, and have a degree of commonality, might not the same be inferred of flows which condition such fabric, despite the possibility of a wide range of eccentric particularities of simulation?

If the commonalities of simulation fabric are considered the tools of which underlying schema flows condition, might not schema flows be considered as a stream of primitive operators by which such tools are conditioned?

Thus, if the case, could not part of a schema be considered an eccentric arrangement of primitive operators, by which a particular simulation is conditioned and thereby susceptible to pattern correlation of such primitives across schemas, in a subrange?

If at least part of a schema is composed of an eccentric pattern of common primitives, would not the possibility exist whereby variation and selection could favour representation of such a pattern in a referential flow system, by which eccentricities are formed by phase and degree of primitive selection?

Thus if metaview housekeeping operations were to affect such an arrangement, in a favourable manner, new simulations could be reorganized into patterns of primitives, and commonalities of primitive patterns between simulations might be formed into hierarchical patterns, inferring a covariant schema hierarchy by which such patterns are invoked, in eccentric simulations.

Clearly, if primitives are themselves organized into hierarchies, then less redundancy is inferred on the part of a multitude of schemas, which may share common elements of such a primitive hierarchy, thereby potentially minimizing persistence overall.

If we also consider a common primitive hierarchy as embedded in the servo sequences controlling simulation fabric, then the task of a schema seems reduced somewhat to that of applying a reduced selectively phased pattern of flows, to condition servo sequence, while simultaneously conditioning eccentric source flows, on which simulation fabric is to operate, and metaview factors on which modulated simulation dynamics may depend.

In consideration of potential commonalities of a context, would not similar simulation factors, other than the eccentricities of source flow, potentially apply to a wide range of possibilities, where if the case, might not a schema be considered as divided into two distinct parts?

If one part of a schema is a patterned flow system whereby simulation fabric is conditioned or configured to operate on a varied array of eccentric source flows, and the other part the conditioning whereby such source flows are appropriately supplied, could not the former schema be considered as an operator schema and the latter a substrate schema?
In such an arrangement, might not also another high level schema be considered by which an operator and substrate schema are brought together as a unified metaschema, where a family of metashemas could vary in regard to common subschema factors, where all of the other types of schemas are considered subschemas?

56 Primitive Hierarchy Convergence

It seems just as multiple spatial temporal transducer emissions, via an intermediate hierarchy could be condensed, similarly so might a hierarchical metaschema system.

However, consider hierarchical bidirectionally within metaview fabric, including efferent downstream flows from a condensate, and afferent upstream flows to the metaview level, thus forming a loop facilitating manipulation.

Of what form could such a loop take, if loss of incoming scope infers dropping flow, which might well not have been emitted in the first place?

If the transforms of a hierarchy are to prevalently use all of the available information, and yet form a highly condensed representation thereof, amenable to manipulation, is not such an arrangement only possible by transforming multiple signal flows into fewer with an inferred shift of format?

But what shifts of format could be invoked through multiple layers bidirectionally, so as to maintain a consistent representation, even at the most condensed level?

Consider if the flows of metaview condensate are mainly composed of primitives, representing multiple flows of a preceding level.

If a set of primitives are mapped to another through intermediating operators, which take incoming flows into account, and emit fewer outgoing flows on a probabilistic basis, might not such a transform differ in outgoing versus incoming flow system primitive particularities?

Yet if a common flow system at the critical break over in metaview fabric by which both systems converge, combined with an assumed prevalence of accurate representation, may not such differences converge on the eccentricities imposed by local directionality of flow, more so than divergence of representation?

Thus if, for example, a wide range of incoming flows represent a top level condensate metaview composed of primitives, might not the emissions from break over, of which a subset of such representations may mainly contribute, be converted to a less condensed form by outgoing operators differing from incoming operators, where outgoing transforms are conditioned by a convoluted subset of condensate flows?

If one assumes that outgoing transform flows are looped back into preceding metaview condensates,
would not such flows be such that a shift of density and format would make them meaningless?

However, if allowed to go further through the entire loop back to preceding fabric would not the correct format be achieved?

Thus, it seems divergence, in the absence of feedback through intervening layers, could occur though the entire incoming and outgoing hierarchies, despite commonality in terms of transformation.

Notably though, if feedback exists across the hierarchies, other than at the ends, then one might conjecture a degree of equivalence of format, at that level, for a loop to work.

Might not some forms of simulation be considered as shortened loops, whereby an outgoing hierarchy may be tested in a manner whereby risk is reduced?

Thus if such shortened inner loops are invoked under the auspices of a schema, itself composed of a hierarchy, may not some equivalence of format be inferred?

If simulation fabric is accepting the equivalent of efferent flows from some level of the outgoing hierarchy, then transforming them under the auspices of a schema into afferent flows injected into a level of the incoming hierarchy, to what degree would equivalence of format prevail?

While the outgoing signals which condition simulation fabric may not be of the full rendition necessary for servo sequence conditioning, would not such simulation be of little use if efferent signals are not used directly once convergent?

Thus though simulation may occur higher up in the hierarchy, such that some detailed aspects of servo control are not present, the level of primitive involved it seems may at least condition simulation fabric in an equivalent manner.

Similarly with afferent signals from simulation fabric, where might not a lack of equivalence to the full rendition merely lessen simulation value for risk reduction?

Assuming such equivalence within a shortened inner loop, might not simulation fabric be considered as a transformation system between primitives of the two hierarchies?

If so, could not the cost in terms of simulator translation between primitives decrease in proportion to the proximity of primitive representation in the two hierarchies, thus inferring the possibility of a prevalently convergent minimum?

As such, if we assume a high degree of equivalence of primitive information density at the hierarchy levels where simulation loop-back occurs, so as to minimize fabric scale while maximizing simulation value, how might an associated schema hierarchy prevalently supply missing factors?

If a metaschema is composed of an operator schema and substrate schema, where the latter corresponds to eccentric flows of which a simulator transforms, might not such flows in part correspond to primitives of an outgoing hierarchy?

Thus if simulator fabric is susceptible to the influence of an operator schema, whereby transforms are conditioned, the result of which in part are emissions corresponding to primitives of an incoming hierarchy level, does not such an arrangement infer at least a combination of operator schema and conditioned simulation fabric transform, thus completing the loop?
However, what if a simulation is merely of, for example, platform actuator movement within sensor scope, might not such a transform infer the minimum operator schema of which a cross hierarchy equivalence may require, where if the case, could not a default simulation fabric transform complete the loop?

But what might a default transform infer on the part of a preemptive loop?

If we assume such a servo sequence emission completes the full loop, concurrently with a simulation loop, whereby both the short loop default transform and also full loop with associated sensory flow transit the incoming hierarchy, though possibly out of phase, what incoming flow arrangement might prevail?

Consider a default projective simulation leading actuator movement, where incoming flow from simulation emission is closely followed by sense flow of actuator motion.

If simulation flow continues for long enough to be overwritten by sense flow, does not a contradiction ensue?

Thus, while the input to simulation fabric might be the same flow as that of an actuator, clearly the output of a simulator may be a separate path so as to covariantly supply a leading indicator of actuator motion, while allowing both incoming flows concurrently.

If both flows concurrently traverse an incoming hierarchy, such that while out of phase and of eccentric representation of equivalent motion, and the part of the hierarchy from simulation emission downstream is of equivalent primitives, would not the simulation representation be similar to hidden object motion, though with an object in sensor scope?

Notably a projective simulation of a disappearing object may not have primitives of an outgoing hierarchy to condition simulation fabric, as with actuator projection, however if sense flow primitives are assumed selected by a substrate schema as an alternative, would not such primitives likely prevalently correspond to those of an outgoing hierarchy, so as to be substituted for substrate flow?

For simulator fabric associated with a virtual context, complete with representation of both platform and other motion, might not variation by which other motion is modeled extend that of platform motion, whereby similar primitives are used, so as to preserve the common generality of simulator transforms?

However, even if the case, how might incoming flow of eccentric objects of a context be represented by primitives convergent on the eccentricities of an efferent flow hierarchy?

Possibly not the least factor in such an arrangement may be divergence on the basis of factors of a simulation, in terms of degree and manner influenced through higher level primitives.

Thus might not in a covariant projective simulation of actuator and object in motion a three part flow be implied, where incoming primitives for both are combined with outgoing primitives of actuator control, so that if no sense flow is present, as a basis for incoming primitives, a substrate schema supplies them?

Sourcing a stream of equivalent primitives to replicate incoming flow is not unlike the process of sourcing servo control sequence through an efferent hierarchy, where might not variation towards a similar arrangement, though of primitives of simulation level only, be more likely to prevail than other arrangements?
Thus assuming simulator fabric under metaschema control invokes a series of transforms on similar primitive streams sourced from outgoing and incoming hierarchy persistence, how might a mixed transform of all factors proceed effectively unless similar primitives are transformed equivalently, thereby inferring though some aspects of such primitives may vary in an eccentric manner, at least spatial temporal factors will transform in the same way?

If we now consider incoming and outgoing flow hierarchies, where simulation fabric facilitates a short loop of equivalent though possibly eccentric spatial temporal primitives, to what extent might variation favour the relative position of simulation fabric taps and emitters in the flow hierarchies?

Clearly taps by which spatial temporal equivalence is inferred on the part of primitives might find a convergent compromise, whereby enough preceding hierarchical processing is present in both directions to support an equivalent primitive format, despite preceding eccentricities in the flow path.

However, would not such eccentricities be of greater extent for sense flow than that of servo sequence, given a widely varied character of transducer flows?

In contrast consider an array of clusters whereby persistence based servo sequence may be topographically mapped to actuators, where although downstream emissions from such clusters to detailed actuator factors may be highly eccentric, some degree of similarity is inferred on the part of flow coming into the clusters from an upstream hierarchy.

If simulator fabric taps flow before such clusters, and yet downstream of metaview condensate, how might outgoing primitives of spatial temporal factors come to be the equivalent of those coming in from sensory flow?

Clearly if at some level of an incoming hierarchy both actuators and objects are represented in the same virtual context, and are of similar spatial temporal factors, the potential for correlation with primitives of the outgoing hierarchy exists, whereby some form of equivalence is established.

Could not simulation fabric itself be such a convergent locale, of both hierarchies, whereby part of simulation operation may be the adjustment of such spatial temporal factors, at the primitive level, so as to achieve equivalence and hence alignment in a virtual context mediated outer loop?
Chapter 13

CONSDENSATE COMPONENT HIERARCHIES

57  *Metaschema Coalescence*

If a metaschema is coalesced from a multitude of possibilities, each a hierarchical system, composed of a plurality of operator and substrate sub-hierarchies, might not such imply variations by which a mosaic of operator and substrate factors are enhanced or inhibited, to invoke convergent eccentricities, where a *synthetic metaschema signature* arises?

Even assuming so, given an implied variational potential for metaschema orchestration of simulation fabric, might not such an unstable mosaic be prevalently dynamically configured, on an adaptive basis in response to flow factors by which such convolution may be conditioned?
Yet of what flow factors might be likely to affect such a process, other than those by which metaview condensate is conditioned, and in turn could influence contributing metaschema flow system factors? Assuming particular metaschema flows are selected by upstream metaview flows thus conditioning an eccentric flow system within simulation fabric, of which hence partially condition internal sense flows, traversing hierarchies to metaview condensates, might not a minimum loop time, by which metaschema factors may be altered, thus correspond to a total of loop time plus an additional interval, whereby an altered coalescent hierarchy is formed?

If such a composite temporal cyclical factor, might not an average information throughput be inferred per unit time, where metaview influenced shifts in metaschema hierarchy could represent a form of contingent manipulation of intermediate simulation result flows, so as to converge?

Yet how might such a convergence be guided by metaschema shifts, without another factor of which result flows are correlated by metaview fabric?

If such a factor is to be correlated, might not only like to like flow parameters prevail, so as to enable a consistent result?

But what of internal sense flow may be so correlated as a basis for metaschema alteration, other than factors that are key to variations of which simulation fabric is capable of, thereby modifying potentially convergent emission flow?

Factors of which may be of like to like character, with emissions via internal sense from simulation fabric, could either be of persistence based flow, of previous simulation cycles, or some other flows.

If of a previous simulation cycle, might not a pattern of such like to like flows be preserved over one or more loop cycles, for correlative comparison, whereby differing convergences may ensue?

But how could a metaview flow system form a modified metaschema emission, on the basis of correlated successive simulation internal sense flow patterns, if not by metaview protocols, which correlate such result flow patterns?

Thus if successive simulation emission flow patterns are, for example, differing in aspects by which related factors of a metaschema may be modified so as to converge, whereby minimal additional change occurs in follow on cycles, might not one consider an associated simulation complete with metaschema to be a convergent solution?

Consider a situation where a series of simulations do not converge, however result flow patterns thereof persist to some degree, implying the opportunity for a metaview flow based process, to correlate related patterns with each other.

If some of the subrange patterns of result flows are of like to like factors, might not one consider the possibility of partial pattern cross correlation, where result flows of such correlations may themselves form pattern cascades?

However of what facility might such correlations be formed, other than a metaview protocol associated with a simulation result flow pattern correlating another?

But does not such an arrangement infer a contradiction, where if one result flow pattern is embedded in a metaview protocol, might not all?
Thus if all result flow patterns are embedded, how might a correlative flow occur, other than by invoking a redundant simulation of an incoming result flow pattern?

Even so, if a redundant simulation sourcing internal sense flow, where downstream result flow factors of a hierarchy are correlated with persistent result flow of another dormant simulation via a metaview protocol, of what prevalent use might such cross correlation be?

If the simulation emissions on which cross correlations are conducted converge to a degree, might not, if result flows of key factors thereof are of like to like character, a spurious cross correlation level be emitted?

Consider if such cross correlation is repeated systemically over a multitude of simulations, whereby each simulation result flow may be compared to a multitude of others, forming a series of cross correlation levels.

Could not such an iterative process be considered a form of search?

But what prevailing benefit could ensue from such activities, other than a form of relational metaview protocol network, by which common factors indicate incomplete convergence?

In contrast let us assume a similar relational network of more convergent simulations, where although more likely to converge, underlying simulations share metaschema hierarchy.

Thus might not one consider the possibility of cross correlation of convergence factors, with those of metaschema hierarchies?

If metaschema hierarchies are of operator and substrate could not, for example, simulations of similar operator but differing substrate, or differing operator and similar substrate exhibit eccentric convergences?

Yet, even so, what prevalent use might such a cross correlation infer, other than a projective convergence level for novel simulations?

Consider an eccentric pattern of operator and substrate based simulations, where might not, given a lack of exhaustive combinations over all the possibilities, new combinations are implied, on the basis of projective convergence, thereby potentially reducing the degree of simulation required to achieve extended utility?

However, even so, how might metaview condensates facilitate such an operation, other than by sorting untried simulation combinations, by projective convergence level?

If shared hierarchical schema components of a set of tested simulations exist, how might an unknown projective convergence of untested component arrangements be formed, other than by using inferences available on the basis of possible convergence levels of shared components.

Yet, for example, if operator and substrate combinations of eccentric convergence are rearranged, how might covariant projective convergence be formed, if not by extrapolation of existing convergence levels?

Thus if decreasing, though high convergence levels of a numerically lesser set of ranked components, on the basis of composite conglomerate convergence levels, might not new arrangements be roughly
projected by combining ranked levels through condensate manipulations, thereby emitting new expected convergence levels?

Though even assuming such an optimistic arrangement, how might metaview fabric select and arrange flows of which are associated with part of a metaschema, if not initially a factor thereof?

For a metaschema to be formed from a hierarchy of components, which could then be manipulated on a reconstructive basis, using associated convergence levels, potentially of several simulations, one might consider a metaschema as a collection of somewhat independent subfactors.

However for a given subfactor to be ensconced in an active flow system, and yet be of an independently manipulative character, infers separate component fabric paths of selectable form, though with a common emission factor, of which simulation fabric is affected or a composite convergence level is polled.

Thus, one might consider a prevailing granularity of metaschema factors, on the basis of simulation factors, whereby recombinant components invoke functional, though untested, simulations.

If operator and substrate schema granularities exist, might not also subfactors thereof, where both factors are divided into separate components?

In consideration of potential granularity of substrate flows, could not the factors which may serve to condition simulation fabric suffice?

Although such substrate flow systems may be of an eccentric heterogeneous character, might not some degree of shared commonality infer a possible hierarchy of substrate schema, by which such flows may be categorized and organized into a component based flow system?

But what commonalities would likely prevail for substrate flows other than eccentric spatial temporal factors, leading to an object hierarchy of some form?

Might not even intrinsic flows, not of explicit spatial temporal character, be considered as possible candidates for such a hierarchy?

Even assuming so, how could such a hierarchy be prevalently organized so as to be of recombinant utility, in a post process recombinant projective convergence system?

If a general though eccentric recombinant substrate is the flow system by which simulation fabric conditioned by an operator schema is affected, thus producing a result flow of internal sense, might not factors which contribute to possible operator recombination be related to availability of simulation transforms for substrate factors?

Similarly in consideration of eccentric operator factors, might not limitations on recombinant substrate flows be inferred?

But of what form might such limitations prevalently take, other than merely simulation result flows which may be of little use from a risk reduction perspective?

Clearly if competing eccentric platforms, metaschema recombination variations at the fabric level leading to more efficient risk reduction, for a given eccentric context, may well prevail.
If an eccentric context is as much a factor of interaction of similar eccentric platforms, as other context factors, might not also simulation of other covariant eccentric simulation systems, form a basis of which risk reduction may depend?

Yet how could a metaview loop of similar form model the processes of another platform, other than to emulate eccentricities on the basis of accumulated flows, thereby projecting factors which relate to risk?

58 Recombinant Loop Formations

Contributing to intermediate fabric based simulation of risk factors implies both convergent and nonconvergent recombinant projections, where concurrent and persistent flows, are combined in various forms.

Notably, projective simulation infers the possibility of modelling temporally bidirectional contingent effects.

However, what arrangement of metaview condensate loops might prevalently support modular recombinant risk projection?

If a combination of both motion and relational cascade simulation might not simulation metaschemas be similarly of either motion or cascade sub-hierarchies, where even if simulation fabric is of partly hybrid form, schema operators could be modular?

Assuming schema operator modularity, might not differing motion and cascade hierarchies be then recombined, though not necessarily actually simulated, thus projecting simulation convergence?

If differing motion and cascade schema hierarchies are considered in combination with those of substrate flows, could not possibilities for projective convergence, or lack of it, be ranked in terms of risk and only selective subsets thereof queued for simulation?

But how could an eccentric operator schema be applied to potentially heterogeneous substrate flows, where transforms and covariant object correlations may not equivalently apply without extensive modification?

Notably such potential inconsistencies may not emerge, as internal sense flow, unless actual simulations are tried with ongoing concurrent ranking processes, inferring the possibility of a feedback loop within a ranking system of flows, whereby eccentricities of inconsistency are dropped.

However, how might such inconsistencies become a factor of which treatment is possible, on the basis of untested recombinations, unless irregularities are isolated so as to be applied downstream?

Consider the case of simulation of a disappearing moving object from persistence based flows alone, where one might posit a covariant hybrid object cascade, such that the characteristic of visibility change is propagated, despite an object being visible initially only through simulation, thereby not being visible in the same manner, as with near real time projective animated sense flow.
Let us also assume operator schema flow of motion simulation conditions transforms, by which object motion is projected, both during visible and hidden parts, while a substrate schema flow of an eccentric object conditions motion simulation fabric with a visible, then hidden format.

If a concurrent operator schema conditions a cascade so as to simulate object characteristics, might not also a substrate schema of cascade fabric so as to condition object flow, whereby synchronized flow is inferred, as a hybrid integration of motion and cascade simulation?

Given an assumed substrate schema conditioned flow, traversing both motion and cascade simulation fabric, how might a transition from a visible to hidden object be simulated?

From the perspective of motion simulation could not eccentric transforms conditioned by an operator schema remain unchanged through a transition phase?

Yet how might the timing of such a transition be simulated if not synchronized to motion, where either a temporal or spatial displacement or marker are inferred?

Thus could not a simulated transition of object visibility be considered a form of eccentric motion itself, where such factor is inferred as embedded in an operator schema of motion fabric?

However, if so, is not a substrate of motion simulation after disappearance implied as differing from that before, so as to potentially affect a cascade?

Further if other transitions of an object exist, might not either a covariant cascade or secondary motion simulation be inferred?

If a hybrid arrangement whereby covariant synchronized cascades condition a substrate of motion transforms, so as to alter an object through and beyond a transition, how might the locality of such a transition be formed, if not by schema flow conditioning cascade fabric?

However if a marker of spatial temporal offset, whereby the locale of object disappearance is triggered, how might such a marker come to be of a cascade schema, other than possibly by explicit factors of a metavarview condensate loop?

If the temporal and spatial factors of schema flow are separable, might not a marker be of either spatial or temporal flows, where if a cascade schema possibly of a temporal flow, or if of a motion schema either flow factors?

But how could such flows be synchronized overall whereby a disappearing object changes through a transition?

Clearly one might consider a metavarview modulated loop by which simulation schema factors are conditioned in a more flexible arrangement, where if so might not metavarview loop eccentricities prevalently arise on such basis?

However, if metavarview factors are tightly intertwined with simulation dynamics, so as to influence simulation factors in flow transit, is not such constrained to metavarview loop cycle time, plus some additional decay margin?

While dynamic tight coupling of metavarview operations to simulation dynamics may prevalently offer
more flexibility, would not such an arrangement though asynchronous, infer a level of co-ordination whereby such coupling may be applied appropriately, implying a limitation of factors of which such is possible?

If, for example, a simulation of a moving then disappearing object, where a transition is conditioned by a metaview loop, itself conditioned by internal sense flow, then the locality of a transition may be influenced, though a delay is inferred whereby such may be applied.

Thus, what of recombinant possibilities if factors of simulation dynamics are influenced by a metaview loop, where if metaview operations are in turn influenced by internal sense flow, might not recombinant projective convergence factors then require simulation in a metaview loop?

While such an influence may alter the basis for recombinant component based projection, could not metaview factors be considered another component of which may be factored into recombinant ranking?

But on what basis could metaview influence of simulation dynamics be formed, whereby recombinant projection may prevalently apply?

From the perspective of the posited loop ranking system, might not all possible simulation iterations under the auspices of varied metaview influence be considered a form of closure, implying a range of convergence level of which relative minima, maxima and averages may systemically characterize simulation iterations?

If recombination of components thereof, proceeds across a multitude of simulation iterations, might not component ranking on the basis of relative convergence factor weighting still prevail, where such projection may suffice to rank novel component conglomerates as candidates for simulation, thereby reducing scaling issues?

Yet, even so, how might a metaview loop form influencing emissions whereby a novel recombinant system of components may be modulated, other than by trial and error?

But what may be prevalently inferred in such a metaview loop, whereby even a trial and error process does not randomly consume loop resources?

If a recombinant simulation occurs, would not even convergent factors be unknown, whereby trial and error though inducing change of internal sense flow, may not be identifiable by metaview correlation protocol as of a known convergent factor?

Thus how might convergent factors be determined from internal sense flow, and correlative flow by which metaschema influence is applied emitted, other than by some heretofore unknown factor of metaview fabric operation?

Clearly if in the course of a number of random loop alterations relative change of internal sense flow factors may be associated, though not necessarily causally, with influencing metaschema emission patterns, is not the potential for some form of systemic protocol formative process within metaview fabric inferred?

However of what form might such a process take, where relative change of a number of incoming and outgoing flows are cross correlated, so as to coalesce on a best fit, from whence a novel correlative protocol may be firmed up?
From the perspective of metaview fabric, might not a broad incoming flow pattern be associated with a similarly scaled emission pattern, whereby the relative meaning of subfactors thereof is of little consequence, as long as relative change exhibits convergence?

Thus, possibly somewhat ironically, might not such a metaview based process prevalently scale so as to form a systemic pattern of relational convergent flows, whereby representative condensates are formed?

However if such an empirical fit of a multitude of factors how might, for example, the locality of a spatial temporal transition of object disappearance become a metaview modulated parameter of motion simulation?

Given a systemic condensate by which a simulation may be modulated in a loop, thereby affecting relative convergence factors, could not a relative gradient of change within such a system potentially differentiate some flow signals from others?

59 Distributed Condensation

Notionally if we consider metaview loops as separate subsystems, where a multitude of asynchronous incoming and outgoing signals are modulated, then how might such proceed concurrently on all loops, if contributing factors for modulation are of limited scalability?

Further, if an increasing multitude of loops with ranked recombinations exist, whereby risk is minimized, would not the possibility of relationships between such imply variations, by which a navigable metaview protocol network arises?

Moreover, does not an increase in navigable metaview networks infer additional scalability issues, if covariant with near real time projective simulations and recombinant ranking?

Yet, even so, just as baseline fabric could relieve metaview condensation of ongoing processing, by funnelling factors associated with threshold excursions up through hierarchical flows, might not similarly condensates be forwarded reducing metaview scalability issues overall?

Notably if a degree of commonality exists, at the condensate level, between factors of differing subsystems, of what variational factors might be considered possible candidates, for convergence?

If a metaview loop is prevalently rooted on baseline fabric, and near real time projection simulation processes, subsequently diversifying to upper band persistence based simulation, combined with post process recombinant and metaview protocol networks, might not condensate formats of a preceding hierarchy more likely favour features of the underlying baseline system?

However, what features of baseline and projective simulation hierarchical condensation are inferred, where if both emit a range of flow patterns, which are progressively reduced in scale, while preserving aspects of relevance for metaview condensates?

Conversely, of what flow factors might be of common prevalent utility in a metaview condensate, where minimization of relative risk is paramount?
If risk is of a projective format, inferring factors by which self intervention relates, so as to form a basis for selective servo sequence emission, might not a relative risk representation format prevail?

Flow systems in which heterogeneous signals are condensed to common formats in metaview condensates might preserve eccentricities of representation, while possibly converting common factors to a shared interface.

While such a process could be distributed over an expanse of metaview loops, common manipulation of shared factors infers concentration.

But what possible common manipulations between various source flows other than correlations, and how might relative risk factors be extracted from such a preliminary process, so as to construct a navigable risk relation system?

If compounded or reduced risk emission levels on the basis of such a relation system, how could such be of prevalent use if not as a bias factor for simulations preceding servo sequence conditioning?

Yet how might such a bias factor be applied if not as a flow, by which metaschemas control loops with metaview condensates, where if not directly by a shared metaschema interface then of configurable loop modulation factors?

Consider disappearing object motion near real time simulations, where sense flow has conditioned the movement of an unknown object towards an eccentric platform, and metaschema simulation then conditions transforms by which hidden motion is projected, in conjunction with metaview loops.

If shared metaschema transforms by which convergence of a hidden object with a platform are of the same temporal spatial factors as previous motion, might not unnecessary risks arise?

Yet how could such transforms be modified, other than by a metaview loop of internal sense, where possibly either another operator schema or a modified set of transforms of the same schema are invoked in simulation fabric with the same substrate schema?

Assuming a modified set of transforms of the same operator schema, might not, for example, differing transforms between simulation frames trend to a general common condensate of metaview flow, whereby such an emission conditions shared operator schemas to modify transforms?

If such an emission of metaview fabric occurs, could not a downstream servo sequence be invoked, as part of operator schemas, whereby an alteration of transforms is applied, similar to those of hierarchically adaptive mechanical actuators composed of multiple layers of subactuators?

Though if commonalities within condensates exist at the metaview level, of what factor could such more likely depend, for prevalent optimization, thereby minimizing false positives, than an ongoing virtual context in which risk factors are embedded in a systemic manner?

But, even assuming such intrinsic embedding, how might this come to be interfaced to motion simulation and modification via an internal loop of metaview condensate, if not also an integral factor thereof?

Notably might not one consider excursion histories, by which trends are base lined, as a form of embedded risk?
However, even given such within virtual contexts, how might simulations be modified in a loop without a system by which a multitude of possibilities are reduced to a subset and applied as biases?

If a simulation is in near real time format, where spatial temporal factors are held in temporal alignment with an ongoing baseline system, of a virtual context, such that a corresponding subset of baseline excursion histories overlap, might not then integrated relative bias factors be formed as relative risks?

Somewhat ironically, could not a race condition be implied.

Assuming a near real time simulation of hidden motion is concurrent with baseline factors of a virtual context locale, which although is not triggered might nonetheless supply an integrated risk bias level by which metaview modulated simulation may trigger a similar response, though on the basis of virtual projection alone?

Clearly one might thus consider, in this regard, simulation as an extension of baseline threshold triggering, whereby a preemptive projective flow enhances risk minimization.

However, notably while an adaptive baseline threshold system covers off ongoing virtual contexts with minimal cost, in terms of fabric flow path disposition, might not one then infer projective simulation fabric is of greater extent, given a subset of flow parameters, and thus only prevalently likely on a temporal multiplexing basis thereby implying the necessity of an arbitration system by which such is managed.

Thus might not metaview condensation be the consequence of such a multiplexing requirement, partly optimized in such regard, due to cumulative variation and selection factors?

Assuming, for the moment, that metaview condensation is mainly of simulation arbitration and modulation, how might such be conditioned, whereby ongoing temporal multiplexing conforms to risks?

If near real time virtual context factors usurp persistence flows, then how could ranking of multiplexed condensate occur, other than by relative decay?

Yet might not diminishing returns be inferred if loop modulated simulation does nothing other than extrapolate virtual contexts?

While replication of ranked persistent factors, derived from those of a covariant virtual context may be somewhat advantageous, might not extension thereof, under less constrained conditions, imply a greater range of downstream flow factors will systemically ensue?

Thus, assuming simulation factors favour multiplexing selection on the basis of variations of simulations beyond extrapolation, what intermediate fabric modifications might enable such a process?

Could not simulation of recombinant factors of a multitude of already operational simulations infer a basis for extension beyond replication?

However, does not such a feature also imply covariant extension of schema, simulation and metaview condensate formats so as to accommodate such versatility?

Moreover if recombination also implies prevalent scope creep of simulation loops, whereby variational complexity rises to cover off expanding recombinant simulation relationships, is not expanded metaview condensation which of itself forms a relative risk context implied?
However, given an assumed arrangement prevalently accommodating afferent and efferent topology, in combination with incremental expansion of associated intermediate functionality, will not such an increase in scope expand overall scaling pressure, whereby median overall loop delay increases?

Thus, if expansion of metaview condensation scope, could not such be of a distributed form, whereby median delay is minimized, so as to preserve concurrent phase?

Consider a distributed increase in metaview condensation, where additional flows simulate embedded systemic risks within virtual contexts.

Clearly if a heterogeneous range of risks are to be associated with virtual context features over a wide range of accumulated spatial temporal overlay scenes, conglomerates, objects and servo sequences, some form of consistent underlying flow system is implied, where condensate is formed.

But what might be required to successfully condensate risks from an eccentric array of hierarchical flows, other than by operators or transforms?

Yet, even so, on what basis might such modifications be made other than of concurrent flows of risk and condensate, whereby relative alignment ensues, providing a basis for downstream loops?

Thus does not scaling of metaview condensate in such regard infer a novel flow system by which risk factors are processed embedded in virtual contexts, and are represented dynamically as part of systemically modified distributed condensate loops?

### 60 Risk Learning Dynamics

In consideration of risk as more of unknown factors, than those of projectively determinate sensory temporal spatial signatures, would not a mapping of ranked risk factors to condensates, of a risk context likely prevail?

But how could variable unknowns be represented in distributed condensates for temporal displacement?

For ongoing risk projection in a virtual context, assuming covariant projective subsystems thereof are by flow systems of an extent proportional to spatial temporal factors, and sensor scene views are contained within virtual views, as preceding temporal flow envelopes, of which a sequence of projective virtual frames are constructed, might not unknown relative risk levels be considered as associated with all aspects of such projection?

Yet if most risk is of uncertainty, or a lack of information flow, more so than of a definite though possibly somewhat uncertain flow, how might such lack of flow be detected and servo sequence countermeasures be influenced, other than by related correlation?

If one considers ongoing virtual context projection as condensate patterns, might not such be correlated with previous patterns, similarly to sensory baseline but as a condensate risk baseline with covariant buffered threshold trend compensation?
However, given a range of condensate patterns, would not those previous of greatest composite correlation be of most value, whereby missing factors are by contrast threshold and correlation detected downstream?

Thus might not one consider the possibility of missing factors of condensates usurping others in terms of ranking for characterizing unknown risks?

Notably, even if missing or uncertain factors are detected of what use are they to downstream flows unless interim measures tune risk levels in proportion and countermeasures are formed?

However what countermeasures could prevail, given patterns of known and missing factors in condensate loops, whereby risk levels are relatively apportioned?

Might not potentially systemic relationships between and within such patterns prevail, in so far as they are of consistent utility in improving the relative disposition of risk levels and hence downstream factors, where competitive selection is favoured?

Thus might not one consider the potential extent to which lack of adequate risk characterization affects the probability of survival, and what underlying relationships can contribute?

If, for example, a potential risk is of a characteristic whereby the scale or type of an eccentric relationship is inaccurate, might not failure to adequately represent such in associated risk level, reduce the probability of survival?

Yet what convergence, if any, is inferred on the part of scale and type of eccentric relationship for an eccentric platform in an eccentric context?

In particular might not one consider to what degree such relationships are formed from fabric operator and transform factors in combination with an analog of metaschemas for simulation, in the form of metaschemas for risk modulated metaview loops?

If risk is as much of lack of relationship, might not even disparate risk factors of a virtual context be characterized, if only by a null operator or transform?

Yet could not risk factors themselves not be directly related, but only through underlying arrangements of virtual context, complete with temporal accumulations, and projective simulations, combined with detected voids and uncertainties?

Consider if a risk factor is of selective projective eccentricities of virtual context in contrast to others, whereby differing levels of risk are minimized by a combination of servo sequence and virtual context modification in metaview loops, implying convergence by trial and error.

Yet even so, how could risk levels be formed and related so as to account for compounded factors across a series of projections, other than to represent approximations to context relationships in a virtual context, and how even this other than to process a risk context into a virtual context of representative commonalities?

Thus might not convergent approximations of risk depend on preceding flows characterizing eccentric context factors by systemic commonality, whereby risk related patterns are reliably learned and represented?
Assuming an underlying relationship model of an eccentric context is required to facilitate consistent risk projection, what factors could be most prevalently critical in such a model?

Clearly, given an eccentric platform in which some forms of risk factor may be more critical than others, might not underlying virtual context loops prevalently represent eccentric relationship factors in supportive proportion if augmented by metaview condensate based risks?

In regard to type of risk, how might any eccentric risk level flow be formed, other than by projection based on persistent factors, whereby previous patterns of a projective virtual context are associated with patterns of risk, thus inferring a relationship network between such patterns, as a basis?

Yet, might not new eccentric risk levels be formed in part by association of gradients of internal sense flow, by which eccentric platform metaview status pattern flows are projected, in association with virtual context patterns, thereby establishing pattern to pattern correlations, from which novel risk flows could ensue?

However if such risk flows are of a wide scope of projective factors, how could such be formed by operators and transforms and emit relevant flows unless of like to like risk related factors coming in, inferring alignment in such regard?

Even if such alignment is assumed, for the moment, of what factors of projected internal status could be correlated with like to like factors of a projected virtual context?

Consider, for example, projected factors of internal status whereby a diminishing or increasing gradient of flow indicates some form of future temporal threshold, whereby such flow is of higher or lesser ranking than other similar flow factors, inferring a feedback loop in conjunction with associated projected virtual context factors, by which such flows may be constrained.

Yet how might such associated factors become of like to like correlative flows, whereby risk levels may be emitted, other than by converting such?

Thus if a factor of projected virtual context is to be converted to a covariant flow of equivalent format for correlation with a gradient of internal status, might not such conversion infer not only type of flow but also of relative level, so as to enable formation of risk factor flow?

However what flow conversion system could alter the characteristics of an assortment of virtual context factors to align with projected flows of eccentric internal status, other than one which embeds such factors as subrange initially?

Thus might not some coalescent eccentric factors of a projected virtual context support embedded equivalent subrange signals, corresponding to a range of eccentric internal status gradients, whereby a process of related projective risk flows may reliably ensue?

If eccentric internal status equivalents are assumed embedded in coalescent representations of a virtual context, through a preceding hierarchy, how might risk levels then be derived?

Clearly if objects with subrange flows corresponding to eccentric internal status equivalents of risk are present in projective virtual contexts, one might consider whether such flow factors if processed from objects and correlated with internal status gradients may form a result flow corresponding to an attractive or repulsive factor, from which projective self risk may in turn be derived.
However, even given projective spatial temporal virtual context objects of which subrange flows may be correlated by metaview protocols, thereby emitting corresponding attractive or repulsive levels, how might relative risk flows be there from formed, other than post process projective combinatorial comparison of such levels?

Consider weighted combinations of attractive and repulsive levels by spatial temporal modification factor, where, for example, eccentric transforms of motion and locality of object dispositions, relative to platform motion factors, may combine with subranges thereof, thus contributing to conditioning of self risk levels.

Even assuming assorted eccentric platform related subrange levels are emitted, how might such flows affect downstream metaview fabric?

Clearly just as one might consider potential metaview fabric flow system processes optimizing risk factors in regard to possible projective virtual context convergence, though as projective temporal scale increases, so too may covariant process time and cumulative uncertainty increase.

Therefore increasing complexity and scope of risk, implies diminishing returns, potentially limiting prevailing average risk minimization process scope and supporting fabric scale in direct proportion.

Thus one might consider if a changing eccentric context presents a varying degree of risk characterization, in terms of parallel scope in combination with serial complexity.

Might not prevalent factors underlying risk characterization conform so as to select for an eccentric risk characterization flow system of intermediate fabric?

From consideration of the type of complexity in risk characterization of a more parallel versus serial system, could not parallel flow systems be more of rapid spatial temporal projection and serial flow systems more of concatenated projective simulation segment interface?

Yet what type of operation is inferred whereby internal sense flow of simulations may configure the schema of others, in a series, such that a system of branching risk characterization is formed, and subsequently navigated as a contingent network, under the auspices of metaview loops?

Clearly if the risk factors of a given simulation are to influence the initial conditions of a series of follow on simulations, some degree of commonality factor is inferred, whereby a follow on simulation can pick up selective aspects of one or more preceding flows.

However, if schema factors are not directly accessible at the condensate level, how might such transference of commonality occur in such regard, unless learned by factors of condensate influence on the conditioning of metaschema flow systems?
Chapter 14

RISK PROJECTION

61 Metametaview Condensates

If the main role of metaview condensates is the variation of loops, whereby risk related convergence is modulated, then what basis therein exists for commonality, leading to combination of simulations with others?

If such metaview influence is considered for a multitude of simulations, might not component source flows of related condensates posses factors by which ranking infers patterns of commonality?

Moreover, are not such, at least in part, likely derived from emission of internal sense flow from simulation fabric, whereby factors potentially influencing convergence may be correlated, via protocols?
Thus could not potential commonalities, whereby simulations may be combined, be mainly of intermediating protocols of simulation convergence loops?

Yet, even so, if such metaview protocols are not so much accessible as a flow surrogate of metaview condensate, but the handles by which such flows are manipulated, how might commonalities therein be a factor of a flow system, other than by a higher level of condensate?

Thus, could not a capability of combination of simulations, by commonality of metaview protocol, imply a flow system by which intrinsic factors of such protocols may be explored for commonalities, potentially increasing projective range and thereby reducing risk?

If a protocol is considered as a form of flow converter, where incoming like to like flows are correlated and a differing type of flow is emitted, could not such emitted flows prevalently vary in a manner whereby another level of protocol may correlate like to like flows, for example, of a multitude of protocols?

However, even assuming such an arrangement, where what might be termed a metametaview protocol network, correlates factors of protocols, of what use the downstream emission of such a correlation, other than an indication of similarity or difference?

Even if, for example, two metaview protocols of which modulate convergence of simulations are similar, from a metametaview protocol perspective, how could combination of such simulations occur on that basis, where simulations source influencing flows for others?

Notably if simulations influence others in a continuous manner, might not one consider the arrangement a metametaview modulated unified simulation network, inferring another level of loops and contingent branches?

However if such metametaview modulated simulation networks prevalently evolve for enhanced risk level characterization, of what prevailing benefit other than risk reduction, where, if so, might not combined flow systems be more likely to reflect such, than other factors?

If the main feature of risk simulation overall is some form of convergence, thereby limiting scope, would not such convergence, at the condensate level, more likely represent projective risks, of which combinations may ensue?

Yet if projective simulation convergence is mainly of loop modulation by metaview protocol, might not such modulating protocols be associated at the metametaview level, whereby risk factors overall may be more thoroughly characterized?

But of what flow factors could such a metametaview association be based, if underlying metaview modulation protocols are not active concurrently?

In consideration of residual patterns of loops from modulated simulations, which could remain available as a condensate flow in persistent form, for metametaview fabric taps, of what factors might be prevalently preserved, so as to make associative combination leading to enhanced risk characterization possible?

Assuming a multitude of residual simulation related condensate flow patterns, might not metaview condensate thereof be necessarily sufficiently differentiated, yet also of minimal scope, whereby common factors could be of referential form, so as to reduce redundancy?
Even so, how might such an arrangement be flexible enough to cover off the possibilities of risk characterization inferred in a complex context, without inferring yet another loop, of which common factors may serve as operators or transforms, on substrate flows?

But of what form might such operators and transforms take, other than that of common variability between condensate substrate flows, so as to cast a basis for metametaview protocols?

Thus if condensate flows of simulations, which could cover a range of risk characterization factors of a context, are correlated through operators and transforms, of which metametaview protocols depend for combined projection, of what form might such operators and transforms prevalently converge?

Clearly if two simulation condensate flows are correlated at the metametaview level, differentiation may depend on metaview modulation factors, in combination with underlying internal sense and metaschema flows, including operator and substrate metaschema subsystems, whereby eccentric convergence may be tested.

Following this posited arrangement, it seems the inferred operators and transforms of residual condensate may thereby correlate like to like factors of respective simulation loop flows, assuming some representation thereof persists, in condensate form.

However if we consider such a metaview condensate, of a flow system pattern, though possibly complex, is nonetheless correlated with other such patterns, might not each like to like factor thereof be considered related by an operator or transform, of which it is the substrate?

Notably, if simulation condensate flows are thereby correlated as multiflow patterns, though of like to like factors, could not a range of emission levels, at the metametaview level, characterize such condensate representations in yet another flow pattern, of which may be correlated downstream?

Thus if, what one might term metametaview correlation patterns of condensate of simulations, represent commonality features of a context, how might such patterns be of prevalent value from a risk projection perspective?

Consider two simulation condensate flow systems, whereby like to like factors are correlated, such that flows of which are not of like to like factors are suppressed, where, for example, if two condensates are similar a high level of correlation on sub-flows is expected, corresponding to a metametaview protocol pattern, which could be termed as roughly equivalent, though differing in some aspects.

Moreover if such correlation is continued, whereby simulation condensates have a set of metametaview correlation patterns with other condensates, might not one consider of what projective value such an arrangement potentially implies?

In order to determine the value of such an arrangement, would not the basis of which subsequent multiflow patterns could prevalently converge provide a start?

Yet, if two simulations of like to like subfactors are correlated, what could be of significance other than a relatively greater or lesser emission level, unless the interpretation of such level downstream with respect to source factor is considered?

But how could a source factor be considered if merely a signal flow, as to eccentric variation of such factor, more so than of commonality, inferring the possibility of a covariant referential flow system, of
which may serve to unify commonalities across simulation multifold patterns.

Thus if two subfactors of simulation condensate are correlated, would not the downstream interpretation of such comparative levels only have significance in regard to another commonality flow system, of which it is a source flow factor?

However, if source flow factors themselves are eccentric, so as to make such a transform to a referential commonality flow system problematic, how might such an arrangement prevail?

Consider if upstream intermediate flow system factors, of which form a condensate thereof, do so via a transform conversion process, thereby establishing a degree of intrinsic commonality.

If such process occurs universally across all incoming flows, might not condensate of simulations develop built-in flow factors, of which may enable correlation?

Yet, even so, of what use such commonality, without reference to associated eccentric factors of source flows?

Thus while two simulation condensate flows of similar eccentricities may be correlated, on the basis of intrinsic commonality, how might such emission level be of use without a downstream post process, in regard to the eccentricity of which it is associated initially?

As such might not one infer that a multistage process, of metametaview fabric by which correlative emission of intrinsic commonality, followed by reapplication to source eccentricities may prevail, whereby relative relatedness of a multitude of simulations, would be organized in regard to simulation combination?

Given such a correlative process combined with post process association, how could a multitude of simulations be thereby explored for combination, other than by trial and error?

If resource allocation ranking is prevalently biased towards more convergent simulations, might not source flows, whereby convergence is more likely be of greater probability also in a metametaview based follow on process?

But what potential relation could exist, in a succession of more convergent simulation source flow factors converted to condensates, whereby a reduction of risks prevail?

Consider if a succession of convergent simulation condensate factors, though possibly unrelated in a context, are combined so as to modulate downstream processes, thereby influencing servo control sequence conditioning, and hence the context itself, inferring metametaview based outer loops in addition to metaview and near real time loops.

Might not such a metametaview outer loop, of itself, become a sustained factor by which such a combination is reinforced or suppressed, hence prevalently modulating risks?
Consider if temporal clustering of metametaview condensates could exhibit some advantage, where those combinations minimizing risk are reinforced and others suppressed.

However if so do not such variations imply commonality?

Thus might not combination convergence from which intrinsic commonalities, and hence interface primitives, gradually emerge then prevail?

Yet even if such a process exists, what basis could ensue for commonalities, amidst heterogeneous accommodations of eccentric virtual characterization, insofar as loop factors themselves may admit no distinction thereof?

Put another way, why might eccentric flow pathways conducting eccentric signals, converge on an intrinsic commonality based signalling paradigm?

Clearly if eccentric signal factors acquire accommodating fabric in multiple locales, throughout a common fabric, would not pervasive commonality reduce fabric scope?

Consider if metametaview condensates accommodate such a feature, whereby despite eccentric flow factors, commonalities prevail so as to represent a consistent relationship within and between virtualized eccentricities.

If an interface between combined condensates is based on like to like factors as with correlation, might not such an arrangement only be possible given commonality?

Notably, if such a relation is only of conditioning factors, might not the scope of possible combinations be thereby intrinsically ordered and limited, where if a convergent set of prevailing commonalities are present in a pattern, from preceding loops, only following combinations with some degree of admissibility, of such patterns, may then prevail?

Yet of what use such transitional commonality patterns, if not of at least some relevance to an outer metametaview loop, of which an eccentric context *exerts feedback influence*?

In consideration of commonality pattern possibilities, might not the most consistent be more likely to prevail?

Yet what is more likely to be consistently pervasive, other than basic operators and transforms which are implicit in representing an eccentric context, using relational patterns?

But that which is a virtual construct of a context, is not the same as the context insofar as the construct is merely transiently representational, and often requires the addition of hidden factors.

Therefore, could not such additional factors form the basis of convergent commonality, where hidden attributes of a context plastically form basic operators and transforms, which when applied to virtual representations provide a more accurate approximation to a context, subsequently coming to form prevailing common interface factors, in combined metametacondensates?

However, if such relational patterns differ for each eccentric platform, might not variations thereof
influence accumulated persistence modifying factors and underlying fabric configuration, before subsequent metametacondensate composites are formed?

If such relational patterns are similar between eccentric platforms due to common context features, despite differing platform factors, might not one consider a convergent process, whereby the scope of such patterns may be constrained?

Clearly, if so, such convergence may be partially based on what is missing from a pure virtual simulation, without additional enhancing factors of which allow a closer approximation of a context.

If, for example, context objects are of varying degree of impenetrability, despite common representational format, might not convergent relational patterns prevail across differing eccentric platforms, whereby such an additional factor might be imparted?

Thus how could virtual context enhancement of such a form prevail in a flow system, whereby a range of additional factors is imparted?

If such factors are not only of particular eccentric representations, but also of possible subsets across spatial temporal and persistence based flows, could not an accommodating fabric be posited, where like temporal spatial motion simulation, additional enhancing transforms and operators dynamically affect flow systems, so as to impart a range of enhancement effects?

Consider the potential convergent universality of common spatial temporal transforms of motion simulation, whereby arbitrary heterogeneous substrate factors may be transformed in an eccentric, though predictive, manner.

Given such an assumed prevalent adaptation, might not similarly consistent pattern transforms prevail, whereby virtual context simulations approach a context, using specific accumulated persistence factors as a basis for generalized transform operation?

However, if such eccentric transforms, whereby persistent factors of sense flow enhance virtual context simulations, similar to motion simulation, by temporal flow clusters, might not underlying fabric factors thereof be more likely as prevailing variational factors of motion transforms?

But would such clustered frame based transforms cover off the full range of factors, of which an eccentric context infers, other than motion?

If a transform is variant with time then clearly a frame based system might prevail, however if not, then even if such factor might be represented by successive frames and intermediating transforms, could not some other more scalable flow system prevail, where a less complex and resource consuming flow system modulation could be achieved?

If such enhancing modulations are to be covariant with motion simulation in successive frames, whereby each frame has an independent, though related, representation of context enhancement modulations, might not one consider a frame to be a flow system of a virtual context?

However if one then considers transformation to another such frame, might not some flow system factors remain constant, while others change?

Clearly if some flows are constant and others are transformed, then might not only the difference
dynamics be considered of a new frame and the quasi-static frame, whereby a merge operation is inferred?

Yet, if compound motion is present where multiple motion factors are superimposed, potentially including a virtual context view, does not such infer a succession of covariant transforms, each with embedded enhancements, whereby a merge operation may dynamically compose a compound metaflow system, from transform subsystems?

Even so, how might such an arrangement be synchronized, so as to maintain relative temporal spatial alignment, other than if representational flows themselves are phase adjusted?

If internal sense flow of simulation fabric reaching a metview condensate level are of merged flows, where preceding hierarchies have phase adjusted component flows therein, how might a schema modulated loop therein facilitate convergence, despite temporal misalignment?

Notably convergence in a modulated flow system, where not only motion but other factors might vary, apparently implies schema influence from upstream metaview condensate of a more detailed form, than motion alone.

Hence, if a metaview based condensate loop is to facilitate convergence thereof, might not a representation of enhanced virtual context factors, other than motion, in mutable format be inferred?

Yet, does not such imply enhancement factors, though possibly initially formed from correlated protocol based composites, present in general operator susceptible format, in metview fabric?

Thus, if convergence on such basis is to be tested across a multitude of enhanced simulations, would not a systemic enhancement alteration thereby be implied as a prevalent possibility?

However if such enhancements are not merely of degree, whereby a level is modulated, but also of, for example, assignment or not, of an enhancing flow factor, could not additional metaview branching be inferred, whereby such difference may be optionally applied in a convergent loop?

If such an arrangement, might not a metaschema be thereby inferred as at least partially embedded in metview protocol networks, whereby modulated enhancements are treated differentially?

Given a simulation arrangement, whereby convergence is explored by unified metaview based modulation of multiple enhancement flows, would not prevalence of risk factors therein infer systemic ranking of variations, under the auspices of metaview protocol networks?

But how could the relative risk level of one enhancement factor modulation usurp another, if not in regard to the particularities of a simulation loop?

Thus, even given merged internal sense flow of simulation results, could not relative patterns therein require like to like correlative comparison at the metaview protocol level, to minimize risk?

However, if differing enhancement flows are also to be compared, like to like, at the metametaview level, across a multitude of simulation condensates, does not such infer a corresponding metametaview flow system in which such comparison might be made?

Hence, though enhancement flows may favourably alter virtual approximation of an eccentric context, and enable more accurate risk projection, clearly downstream flow systems could scale up significantly, in
proportion to increased complexity.

Assuming an increase of enhancement flow system scale, downstream from sensory flow, in proportion to related accumulated persistence factors, whereby virtual enhancements may augment an outer loop, through metametaview fabric, covariantly with motion factors, in terms of risk projection, could not such an arrangement prevalently lead to similar though upstream variations, embedded in near real time paths?

Thus if floating baseline trend thresholds and near real time projective virtual contexts, with dynamic overlays, are also of intrinsic enhancement flows, might not intermediating downstream flows up to the metametaview level be of prevalently consistent operators and transforms throughout?

However, if such an enhanced virtual representational flow system is pervasive, throughout intermediate fabric, might not scaling factors indicate the possibility of prevailing near real time and simulation coalescence, inferring enhancement overlays similar to spatial temporal scene overlays, whereby both lower and upper band factors interact, though of differing temporal scale?

63 Simulation Enhancement

As virtual context enhancements may be of an altered flow system transform pattern, though similar to temporal spatial projection, and pervasive throughout intermediating fabric, might not metametaview operations, where posited ranked condensate combination is facilitated, depend on the optional presence of enhancing factors?

Yet what enhancing factors could assist at a combination interface?

Consider, for the moment, if simulations not only treat flow patterns of relative motion but also covariantly enhancement patterns, where is not then the possibility of simulations of enhancement factors alone also inferred?

If then one considers combined simulations of pure enhancement factors, devoid of motion, on what variational possibilities could interface flows prevalently converge?

However, given such an arrangement, if not motion, of what possible simulation, other than motionless enhancement pattern change?

If a spatial temporal overlay or scene of a virtual context is refreshed by ongoing sensor flow samples, could not also similarly overlays of enhancements, potentially thereby supplying an enhancement augmented or filtered view?

Yet, if so, would not such enhancement overlays be for the most part coexistent with factors of a virtual context, in general, though possibly not of a spatial temporal cluster in particular, inferring potential for servo sequence modulation influence, on such basis?

Thus given this arrangement, might not long term systemic influence, on the basis of persistent factors embedded in enhancement overlays, be inferred, where although such factors could have a temporal
spatial profile, once established influence is exerted in an ongoing manner?

However, even assuming such, how might influence be exerted, if not of like to like correlation, implying the possibility of enhancement overlay interaction with ongoing enhancement flows, of a similar format.

Thus on the basis of such correlation, would not influence be inferred which, although possibly derived initially from spatial temporal factors, subsequently could come to be independent of them?

From the perspective of prevailing risk characterization might not a system of pure enhancement overlays infer the possibility of a general tuning system, whereby concurrent factors of a similar format may be interpreted downstream of like to like correlation, so as to provide a form of ongoing enhancement conditioned meta-overlay, on that basis?

However, even given such a meta-overlay system, how could pure enhancement based simulation proceed, if not by projecting flows derived there from?

Thus, if similar to motion simulation, enhancement flows are assumed transformed over projective frames, of what might such transforms be other than of a dimensionality of enhancement factors, similar to temporal spatial dimensionality factors of motion?

Yet, though spatial dimensionality may be of diminished importance, in such an enhancement simulation, clearly temporal dimensionality is inferred as integral, where if one considers more than a single degree of freedom, in regard to enhancement simulation, just as with motion, does not such imply the possibility of pure multidimensional enhancement simulations?

Considering the possibility of multidimensional enhancement simulation, of what possible dimensions if not again similar to motion, those inferred in a general context, whereby a virtual context may approach a more accurate representation, and thereby represent projective risk factors consistently?

Yet what enhancement dimensionality could be similarly inferred in a context, if not factors of which motion alone does not sufficiently account, in the projection of risks?

Thus, assuming so, might not such dimensionality range from a single aspect to a multitude, as prevalently convergent, given an eccentric arrangement of enhancement possibilities?

However, if similarly to motion simulation, convergence may be modulated via metaview loops under the auspices of a metaschema, by which the eccentric particularities of projective simulation are influenced, might not such simulations necessarily be implied as containing at least the possibility of convergence, insofar as enhancement dimensionality is concerned?

In the case of enhancements, potentially unlike motion, of what form might convergence take, other than the coalescence of factors with respect to dimensionality, where, if motion for example, a metaview modulated intersection is implied?

In the case of an enhancement intersection, of what value for risk projection if not of more than a single entity, where if a simulation of multiple enhancement factors, may not such infer a degree of nodality, whereby more than a single node is concurrently simulated?

Yet what could constitute a node in a purely enhancement based representation, other than possibly
similar to an object of motion, a cluster of factors of related dimensionality?

Thus just as a spatial temporal object may infer a minimal simulation dimensionality, dependent on context, might not so too a multidimensional enhancement node similarly derived of a context?

In such case what modulation is inferred for a convergence of enhancement nodes, in a projective multidimensional simulation transform, augmented by a metaschema, other than, possibly again similarly to motion, that which improves the probability of coalescence?

For example, in projective motion simulation one might consider a metaview modulated reduction of intervening distance, as a factor leading to an improved probability of coalescence, inferring a platform influencable simulation factor in such regard, whereas for a projective enhancement simulation the equivalent of distance may not exist.

Even assuming such a projective enhancement simulation, where a plurality of nodes are represented, and some form of metaview modulatable factor exists, whereby the probability of coalescence may be affected, of what use from an overall risk perspective might such an intersection prove?

If context risk heretofore unavailable on the basis of motion alone is projected, on the basis of enhancements, would not such a factor prevail?

However, if so, what of the scalability of such an arrangement, where if not only motion related factors of a context but also deep persistence enhancements are concurrently simulated on an ongoing basis, potentially in a hybrid manner, where does such not infer proportionate expansion of intermediate fabric?

Yet if such expansion is pervasive, similar to that of motion, of what downstream sensory flow factors might then condition enhancement derived intermediate flows, other than possibly that of associated subranges?

Hence if a subrange flow is associated with an enhancement flow, how so, if not by correlation, where if such enhancing factor is of distributed flows, a preceding condensation hierarchy is inferred?

Notably if such an enhancement hierarchy, whereby while more general downstream intermediate flow factors may initially form the bulk of enhancement, a prevailing migration is implied whereby such flow factors are pushed forward, closer to raw incoming sensor flow.

Clearly if such a migration is a combination of prevailing adaptive eccentricity and feed forward persistence conditioning, might not one posit the development of a somewhat adaptive, though eccentrically biased, system of pervasive enhancement operators throughout intermediate fabric?

Consider possible bias of an eccentric platform, in terms of enhancement operator factors, where just as prevalent context adaptation may covariantly affect the particularities and adaptivity of structure, actuators and sensors, so too might underlying, though less obvious, pervasive enhancement flow systems converge on factors of a context in differing patterns.

However, given such a theoretical analogy and the relative disposition of potential variability in this regard, could not such enhancement convergence favour what might be termed core functionality, of which is likely common across all possible intermediating systems of reasonable scale, in view of potential underlying commonalities in a shared general context?
Assuming an intermediate fabric based outer loop across eccentric platforms, of reasonable scale, in concert with a general context, though of eccentric adaptivity in structure, sensors and actuators, what factors, inclusive of platform, could form a trend funnel by which convergence on a common core of enhancement flows, beyond spatial temporal characterization might occur?

If one assumes only subsets of a collage of patterns are of relevance for prevalent adaptivity, in such regard, is not merely the issue of common convergence mainly one of spatial temporal pattern attribute organization, however if such pattern particularities are themselves of eccentric character, given platform variations, of what factors therein may be inevitably common?

Clearly although equivalent flows though via eccentric factors of a platform infer some degree of similarity of internal flows, might not variations be such that only some derivational features thereof could prevalently converge, just as with objects of spatial temporal dimensional characterization?

Yet, even so, of what consistent and pervasive features of a general context, on a par with spatial temporal factors, might form a basis for such a convergence?

Notably if only enhancement factors on a par with spatial temporal consistency could become candidates for common characterization across eccentric platforms, might not one consider the possibilities of mass-energy phenomena in such regard?

Given mass-energy phenomena of eccentric disposition, though assuming a multitude thereof in a spatial temporal context, could not consistent aspects of quantity and quality be inferred there from, whereby a quantity of a certain quality, for example, is implied?

Yet, even assuming so, would not excursion of quantity and quality be limited in terms of commonality to merely the most consistently pervasive factors, where, for example, quantity may converge on a single or plural dichotomy and quality on common inclusivity or not, whereby downstream pattern subsets are consistently characterized there from?

Further, assuming consistent fine tuning on coarse classifications, might not intrinsic and extrinsic factors of patterns be classified by relationships, where type and degree could converge?

Thus if such is inferred, may not the degrees of freedom thereof form a system of enhancement dimensionality, whereby simulation of enhancement nodality may be considered in a system of transforms?

64 Coalescent Risk Projection

In consideration of convergence of transforms on commonalities of spacial temporal factors, from heterogeneous patterns of sense flow, might not consistent factors therein form a basis overall, where dimensionality, in such regard, is then mimicked pervasively throughout intermediate flow fabric, including modulated motion simulation?

Could not then pervasive mimicry of associated dimensionality, of other factors, come as no great surprise, so as to produce an enhanced representation, of which modulated simulation may in turn prevalently minimize risk?
Moreover could not the pervasive representation of enhancing dimensionality be of somewhat differing form, than that of spatial temporal factors, where patterns thereof are \textit{derivational} from spatial temporal representations, thus dependent on consistent eccentricities therein?

However, even positing this, might not similarly spatial temporal factors be, in turn, reciprocally dependent, to some degree, on enhancing factors, as, for example, with referential markers of a scene overlay, inferring potential reciprocal convergence, in establishing both spatial-temporal and enhancement systems of dimensionality?

Thus, given the possibility of reciprocal convergence of related dimensionality systems, could not their representations be of a \textit{cohesive system}, whereby relative adjustments are possible, inferring in turn a set of \textit{cross dimensionality transforms}, facilitating virtual context overlay tuning to a general context?

In regard to risk projection however, would not such pattern based dimensionality tuning facilitate the relative accuracy through which subsequent simulations can proceed?

Yet, if such a factor is present at all, would it not be of pervasive form throughout intermediating systems, inferring a similar factor embedded in modulated simulations, and in turn potential \textit{metametaview} combinations?

If so, would not then the combination of enhancement and spatial temporal factors of a simulation be candidates for ranked interfaces, where conditional commonalities of a follow on simulation depend on particular eccentricities, thereby limiting the scope of interface factors?

But what of simulation dynamics, where either spatial temporal or enhancement factors dominate?

Might not one consider interface possibilities to be similarly constrained?

Consider a modulated simulation where, for example, quantity and quality dimensionality factors dominate, with minimal spatial temporal emphasis, would not, in such case, a combined metametacondensate be more likely as similarly of quantity and quality, preserving like to like factors?

Yet what risk projection might such an arrangement infer?

If a modulated simulation of quantity and quality, would not convergence occur in a manner whereby, as with projective spatial temporal intersection, for example, with a platform itself, similarly modulated projective risk optimization \textit{intersections of quantity and quality nodality} may prevalently ensue?

Notably, however, if transforms by which such enhancement nodality factors are modulated are of similar form to those of spatial temporal transforms, of what equivalence might a metaschema thereof converge?

In the case of a spatial temporal intersection one might consider modulation of both object and platform factors, so as to improve the probability of intersection, whereas with nodes in a dimensionality of quantity and quality, of what form could a platform itself take in such an arrangement?

In a convergent motion intersection simulation is not the distance between sensor platform and object most likely the main factor, where such distance variation is related to simulated servo sequence emissions?
Given an assumed equivalency in a quantity and quality domain, could not the equivalent of an object be considered a node representing simulated factors of quantity and quality instead, whereas the equivalent of distance from a platform, in quantity and quality dimensions, might similarly be expressed in terms of simulated servo sequence emissions, whereby a node may be approached?

Yet what means of approach of variation of quantity and quality?

In a motion simulation variation of simulated projective platform factors are inferred, whereby distance to intersection with an object is varied.

However if a node in a dimensionality of non-motion factors, where displacement there from is also in terms of node dimensionality, what might be varied whereby projective simulation may proceed?

If equivalently some aspect of quantity and quality nodality is to be associated with a platform, so as to have a basis of like to like displacement, whereby variation may be simulated, what form might such a factor take, if not similarly relative platform locality in an overlay of node dimensionality?

However what factors could be simulated by transform so as to change relative displacement of platform disposition, in such an arrangement?

Consider if platform locality in an overlay is changed by a transform so as to change displacement from a node, whereby a series of such transforms are inferred for convergence.

In such case each projective transform changes the locality of the platform in an overlay of quality and quantity dimensionality, in an increment of time, thereby changing displacement to a node.

If a simulation converges, one might expect the platform representation to assume the locality of a node.

For an analogous motion simulation would not a lack of convergence infer a null result, in terms of platform status, even though a change of locality occurs?

For convergence in a motion situation, is not more than just coincident locality inferred whereby convergent interception occurs?

How is a convergent condition of motion to be correlated downstream, as opposed, for example, to a near miss?

Consider the possibility of a quantity or quality factor, affected on convergence, along with motion locality.

Would not such an arrangement imply a stronger case for convergent interception, for example enhancing differentiation from a near miss case, of motion alone, whereby downstream correlative factors are of multiple reinforcing factors?

Thus could not such a factor be of prevalent value if of an independent system by which motion convergence to intersection is corroborated?

From such a perspective might not covariant quantity and quality projective simulation be considered as a prevailing adjunct of motion simulation, whereby efficacy to eccentricities of a context are improved?
However, even so, why not the inverse whereby motion factors in some cases, prevalently corroborate or enhance projective quantity and quality based simulations?

Thus, for example, given a system of nodality in a quantity and quality overlay, of which a platform (self) may be implicitly represented, could not the possibility of a metaview facilitated process be thereby enabled, where a relative risk factor of projective motion simulation, associated with simulated platform convergence, on such nodes ensues, forming the basis for relative ranking, and consequently metametaview selectivity of servo sequence factors for outer loops?

If so could not such an arrangement form a prevailing underlying basis, whereby concurrent outer loops of metametaview fabric interface through a general context loop, thereby implying projective selectivity in regard to ongoing near real time servo sequence emissions?

Yet assuming thus, would not some factors of a general context, in regard to such outer loops, be prevalently of a form so as not to be amenable to risk ranking on the basis of quantity and quality factors, thereby inferring the possibility of prevailing enhancements beyond such a system, whereby further enhanced projective risk is characterized?

However, where might the limits of ranked covariant projective simulation be more likely encountered than in the possibility of combined, linked parallel, or temporally overlapping cases of metaview loops?

Assuming an eccentric platform develops intermediate fabric variations which enhance the probability of combining rather than merely ranking projective simulations, could not such a factor prevail, given a context in which risk is thereby minimized?

Yet how could a transition from ranking to combination proceed in such manner as to enhance risk projection factors overall?

Clearly ranking infers a degree of scalability in terms of underlying persistence factors, whereby projective simulations are, in condensate form, compared, so as to sort relative risk factors.

One might thereby infer a cost benefit factor whereby, given variational context eccentricities, even greater persistence scalability, in this regard, could prevail as a competitive advantage.

If, in such case a flow system representation of projective simulation condensates also improves, with expanding persistence, and therefore virtual context scope, might not factors other than mere comparative risk ranking increase in probability?

However, even so, of what comparative possibilities might one consider as a variation of risk ranking, dependent on improved flow system scope?

From the perspective of risk ranking, where a set of possible nodes of a virtual context in combination with motion factors are compared, could not relative risk be projected there from, as part of a metametaview flow system, on the basis of both motion and enhancement factors?

If, for example, an attraction or repulsion factor of two nodes is equivalent, though the distance from the platform differs, might not risk ranking projection prevalently converge on the closest?

Notably, if true, might not this imply that not necessarily distance but motion and enhancement complexity, and hence potential successive servo sequence emitted by the platform in such regard, could
be a primary factor inferring increased risk?

If each servo sequence segment emitted has a non-negligible risk associated with it, might not thereby a greater accumulation of such segments infer greater risk?

However, if some servo sequences are of differing risk, irrespective of temporal accumulation, could not these, for example, be avoided, by substitution with less risky, though possibly longer sequences?
Part III: Implementation

1 Risk Aware Networks

1.1 Virtual Synthetic Equivalencies

For an eccentric platform in a general context, where an arbitrary platform is a subset, ongoing internal virtual framework representations infer not only a sampled update of external but also internal factors updating virtual contexts, complete with overlays and risk projections. Notionally the evolution of such an arrangement is inferred as on the basis of variation and selection, where the latter implies suppression of less successful variants, for a general context which itself is changing. If, similarly to biological systems, sensory flows for a platform instance are private with plastic adaptation and servo sequence emission as the basis for avoiding suppression or survival, then how might such an arrangement be implemented as a synthetic system? Further as the complexity of such an arrangement scales with the degree of projection, where if autonomous self modifying systems are assumed combined with sufficient exposure to an underlying basis for adaptation, are not then systemic influencing factors for increasing synthetic risk intelligence inferred?

Notionally the biological equivalents of suppression for autonomous synthetic ecosystems infers equivalent conditions. Such an arrangement implies approaching equivalent conditions within a synthetic framework, whereby the variety and scope of biological equivalents in a synthetic general context are self formed. While direct synthetic equivalence from nothing is clearly problematic might not a virtual approach where synthetic equivalencies and general synthetic contexts are inevitable from a seeded general context at least imply the potential for biological equivalence? However what possible synthetic virtual arrangement even if seeded could approach virtual biological equivalence, other than information based systems scalable to similar levels of self modifying autonomy and complexity in a variable synthetic general context? Moreover even assuming a virtual fabric from which a variety of equivalent eccentric platform populations could be formed, combined with a virtual general context fabric in which platforms are embedded, how could the biological equivalent of sensor to actuator loops complete with virtual motion be self implemented on the basis of variation and selection, whereby evolution is possible and risk is minimized with negligible intervention?

The scope of high level synthetic equivalence implies either replication of a general context of the universe, at least to the extent of an adequate local context or the adoption of a synthetic environment as a de facto general context. However, even so, assuming this is possible and succeeds in self formation of virtual fabric biological equivalence to the extent required, there is no guarantee that subsequent analysis will enhance externally based insight any more than has occurred from actual biological samples. If one posits a synthetic general context sufficient to support evolution of an ecosystem of biological equivalents similarly might not eccentric
platform instances, though adapted to synthetic factors, do so in a manner not necessarily transparent to external observers? Yet from the perspective of potentially useful adaptive risk intelligence would not a sufficient synthetic general context infer greater probability? Thus, if so is not the main factor of such an arrangement the relative disposition and criticality of synthetic context equivalents compared to a general context, where for example seeded self-modifying replicators could evolve and adapt? In this regard are not the degrees of freedom and rate of change of the synthetic versions implied as most critical?

Assuming adequate synthetic versions of adaptive replicators and general contexts might not similarly to the general case a prevailing rate of evolution in proportion to the ability of underlying virtual fabric combined with change factors ensue? Notionally in a synthetic context might not passing on more plastic modifications between generations compared to the biological case infer the possibility of rapid evolution? However could some such modifications be conserved if suppression before replication, unless a recovery process integrated them into ongoing variants? Notably such a process contradicts self modifying autonomy, inferring some form of eccentric global resource salvage and redistribution operation on suppression. Moreover how might a synthetic platform maintain the biological equivalent of a self frame of reference in a synthetic context, without which a framework for risk intelligence would be without a substrate, other than plasticity based modifications? However if such are in the biological case prevalently based on sensor cascades, projective simulation and meta level loops emphasizing relative motion and locational factors, what synthetic equivalents might suffice?

If we assume that all possible synthetic context links, asynchronous and synchronous alike, are associated using cascades if any correlatable factor exists including mere temporal clustering, then those less reinforced selectively suppressed, might not a subset of the remainder be considered as of intrinsic platform factors? However could not all association cascades have at minimum some intrinsic factors, whereby all such activity has a relationship of some form to a platform? Thus we are inferring de facto synthetic equivalents will arise in such an arrangement as selective suppression will never completely eliminate "self factors" in any cascade or meta loop system thereof, hence inevitably creating pervasive "self awareness" in all possible intermediate flow system activities downstream of sensor flow.

Taking a subset of intermediate flow activities as biased more toward internal than external factors of what prevalent value could such be in terms of risk minimization? Notionally fractional pervasive self awareness throughout intermediate flow activity infers risk minimization via motion related projection factors through servo sequence modulation which might increase harm sensor flow. Hence might not similarly heavily biased self awareness flow activity in the absence of sensor and motion factors serve to provide a frame of reference for projective risk minimization? But how might such prevalently arise if not by suppression of other than internal sense flow factors? Consider if the commonalities of internal flow factors are correlated whereby a range of downstream result flows condition meta level operations. Might not such be considered a unifying system by which virtual contexts are rooted, thus creating a
running cohesive self awareness?

If pervasive self awareness is mainly based on inevitable residual platform factors of external and internal sense flow, does not such infer at minimum such flows are differentiated from non-platform flows and could fall into categorical subsets.

Clearly differentiation might be based on the relative correlation of platform factors within and downstream from sensor sourced cascades. As such one might consider differing forms of self awareness with eccentric factors of each type of sensory cascade emission. However if such disparate forms of self awareness are to be unified into a cohesive condensate downstream an ongoing self status integration system of some form is inferred.
Reference

1.1 Terminology

Some of the terminology used in this work may be unfamiliar to the reader, in part being derived from the disciplines of networks and biological systems. Often with networks one differentiates information domain localities as nodes, where one or more information paths are involved transferring signal flows between nodes.

As we are treating network factors in general, at a theoretical level, an information flow system is assumed, composed of paths and nodes, where the specific eccentricities of underlying detail, associated with biological or synthetic networks, are considered equivalently encapsulated.

Such a working hypothesis infers a level of similarity of biological and synthetic versions, from a theoretical perspective, where implementation of detailed flow factors, though significantly different, in effect produce equivalent adaptation. If one considers information flow from a general context as part of an outer loop, traversing through a local context via sensors combined with intermediating fabric, servo sequencers and actuators establishing a feedback system then the loop becomes an ongoing adaptation based on plasticity factors.

However, as such an internal flow system pattern forms a path segment of an outer loop such that incoming sensor flow is after the fact of local context emission sources, and preferably outgoing servo sequence concurrent or before them. A temporal projection factor is inferred, whereby a platform flow system contingently translates information forward in time, thus forming a basis for simulation and intervention.

Included in plasticity based adaptive operations correlation is considered a general underlying capability, for creating transformed flows. Such transformed outputs are referred to as derivatives under some circumstances, indicating a common downstream framework for a funnelled scope of incoming upstream variability.

Persistence is a general abstraction indicating information storage, which encapsulates a range of mechanisms inferred as based on eccentric underlying pre-existent factors, whereby subsequent adaptive modulation, including correlation, is achieved.

The term path infers a guiding portion of a network, where routing implies path selectivity on the basis of signal parsing. Both guiding path and transiting signal segments of varying lengths are considered, where the former is of underlying fabric and the latter of active flow. Specific flow segment rate is referred to as a frame rate, in situations where the number of segment types, per
unit time flowing on paths infers a degree of continuity, potentially affecting downstream flow system processes.

The terms upstream and downstream are used to describe the temporal relation of cascading flow factors in fabric composed of nodes and paths. The term common fabric refers to the passing of multiple differing types of signal flow segments on shared paths and nodes, as opposed to dedicated for specific types of flow.

The term servo control sequence refers to an eccentric flow from a subsystem of paths and nodes, where particular information factors are specific to an actuator. This is sometimes contracted to servo sequence, whereas the term sequence alone is used more generally. The term actuator infers a flow controlled subsystem which affects a local context.

A general context is used as an all encapsulating term, which infers a universal system whereby sensor flow within a platform may be conditioned. The term platform infers a demarcation between a general context and a subsystem thereof, encapsulating the subsystem as an information flow domain, that interacts autonomously with a general context.

Notably, despite this demarcation between general context and platform, one should consider a platform as being a subset of a general context, whereby sensors and actuators also act within the platform demarcation zone itself. Thus some sensors might be termed internal or interoceptive, so as to detect factors within a platform information flow domain, while other sensors are termed external or exteroceptive, referring to external factors of a general context.

Flow system supervision implies biologically unrealistic interference, using some form of external influence, for example, a contrived synthetic state machine, rather than a general context, for monitoring and conditioning, by supplying desired outcomes for a learning system.

This type of supervision takes the form of preliminary training sessions, up to ongoing discovery frameworks, where contrived prototypes influence embedded persistence factors in platform intermediate fabric, which is subsequently used after training by outer loop flows. The term temporal envelope within a flow domain refers to a system of related flows transiting fabric with an onset, or leading edge, and a fall off, or trailing edge where the system of flows increase then subside or decay.

Typical supervision in the form of training sets are a long way from biologically plausible self supervision, for example, by ongoing self configuration of a thought process model itself, on the basis of modified plasticity and accumulated persistence from outer loop experience.

The quality of a virtual model mimicking a general context within a platform, fabricated by flow system persistence factors, in combination with inner and outer loops forms the basis for anticipating and directing sensors to targets of interest. Thus one might, for example, infer a
sensor interface to a general context is autonomously self supervised by near real time feedback from a combination of inner and outer loops.

The term in band or lower band refers to loop systems, where delay factors are more critically near real time, whereas the term out of band or upper band refers to loops with less critical delay, allowing for the possibility of greater complexity. For streams of sensor emission, traversing an intermediating flow system fabric which is conditioned to contribute modifying factors a limited form of feedback loop is implied.

Notionally, a flow based system, where functionality, though possibly complex is static does not encompass the full scope of variable context adaptability inferred, where general context complexity is projectively modeled with enhanced temporal scope.

From the perspective of potential equivalence to biological flow systems, the term prevalence infers statistically selective survival across variational factors, inferring adaptation to a context.

Insofar as such adaptation infers factors related to flow systems, such as prevailing loop behavior in response to risk, or other factors, of a loop where risk is projective on the basis of signal flow, in combination with embedded persistence factors, an anticipatory model is implied, whereby the probability of ongoing platform survival is influenced.

The possibilities of risk intelligence in terms of scope and variational adaptivity in response to general context factors, imply potential for the ongoing growth and scalability of intermediating flow system fabric. Notionally the concept of overlays, from embedded markers, is used to infer a versatile virtual context framework of reference factors, in part for spatial temporal context mimicry.

Markers are considered reference features of a virtual context, used for consistent overlay alignment. The term virtual context implies both lower and upper band factors, whereby ongoing prevalent adaptivity to a context may be modeled in proportion to delay and complexity.

In networks a hop is considered as an identifiable transit node factor from flow signals alone, where intervening fabric exhibits arbitrary complexity, though transparent to signal factors other than delay. The term monitor stack indicates learning of network traffic features, whereby related sensor flows are produced for legacy synthetic networks.

Clustering and nodality are terms used for persistence and flow so as to facilitate particular manipulation dynamics for network navigation. Interframe gap, jitter and phase alignment are used for scaling issues affecting flow segment temporal alignment, given particular fabric arrangements. Notably, as contingent possibilities expand with projective scalability corresponding flow system growth is inferred, whereby risk is reduced.
1.2 Scope

In a general context or universe where possibilities for complexity are associated with eccentricities of embedded phenomena in regard to degrees of freedom combined with systemic factors, one might infer the potential for ongoing adaptivity is related to accumulated local eccentricity.

Hence the scope of considerations herein while centred on experience derived in relation to persistent factors accumulated in our eccentric context should be held as only a preliminary view of a general theory applicable throughout all tenable contexts, including virtual contexts.

In such regard, for example, the universe might be considered a general context underlying the scope of biological and synthetic systems and aspects of biological or synthetic internal factors a virtual context underlying the scope of adaptivity to both contexts.

Clearly there is little choice in regard to the de facto universe, however for a synthetic universe one might consider various alternatives including approximations of the de facto case.
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<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AAA</td>
<td>Authentication, Authorization and Accounting</td>
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<tr>
<td>AI</td>
<td>Artificial Intelligence</td>
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<td>BCNet</td>
<td>British Columbia Network</td>
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<td>BGP</td>
<td>Border Gateway Protocol</td>
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<td>CANARIE</td>
<td>Canada’s Advanced Research and Innovation Network</td>
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<td>CPT</td>
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<td>DAG</td>
<td>Directed Acyclic Graph</td>
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<td>DDoS</td>
<td>Distributed Denial of Service</td>
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<td>DNA</td>
<td>Deoxyribonucleic Acid</td>
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<td>DNS</td>
<td>Domain Name Service</td>
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<td>e2e</td>
<td>End to End</td>
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<td>Electroencephalography</td>
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<td>FCS</td>
<td>Frame Check Sum</td>
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<td>FPGA</td>
<td>Field Programmable Gate Array</td>
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<td>HTTP</td>
<td>Hyper Text Transfer Protocol</td>
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<td>Acronym</td>
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<td>IFG</td>
<td>Inter Frame Gap</td>
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<td>IRMACS</td>
<td>Interdisciplinary Research in the Mathematical and Computational Sciences</td>
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<td>LLC</td>
<td>Link Layer Control</td>
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<td>MAC</td>
<td>Media Access Control</td>
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<td>MSS</td>
<td>Maximum Segment Size</td>
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<td>NASA</td>
<td>North American Space Administration</td>
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<td>NIC</td>
<td>Network Interface Controller</td>
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<td>Operating System</td>
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<td>Thymine Adenine Thymine Adenine</td>
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<tr>
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