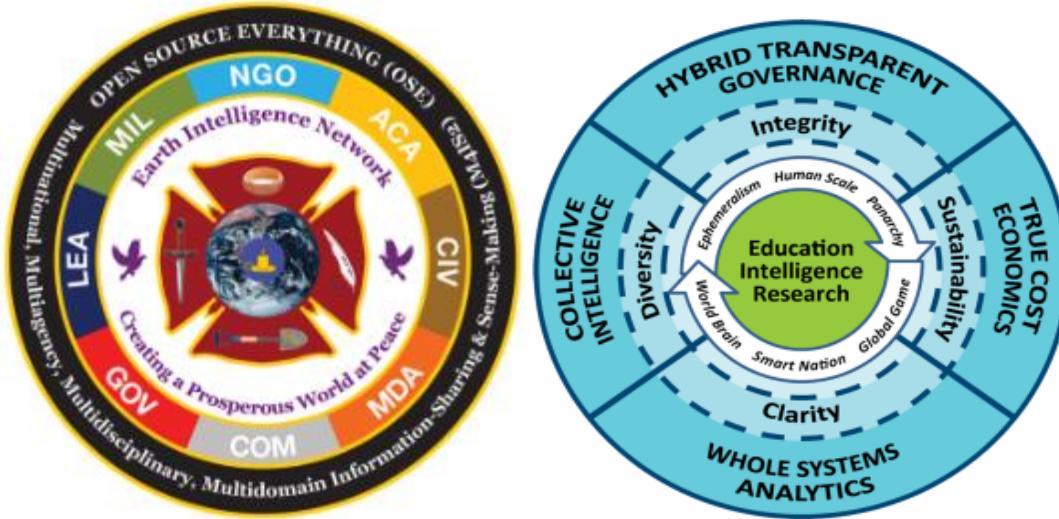


**PROJECT RIG #UNRIG: improve #UNRIG's Earth Intelligence Network EIN with the firefly - heartbeat algorithm emulating Artificial Intelligence A.I. neural net activity / NATO Battlefield Digitization / Net Enabled Operations NEO / syntax - symbol set lexicon library. We can synchronize ourselves in space-time for common goals.**

- Enhance EIN with NATO situational awareness swords to plowshare best practice
- Enhance EIN with NATO best practice of individuals joining (federated) groups
- Improve EIN with concepts and best practice derived from mankind's "giants"



**Phi Beta Iota LOGO** Phi Beta Iota's logo consists of the Whole Earth within a Rescue Cross, with four symbols: the bowl for food and water; the quill pen for education, communication; the shovel for construction, development; and the stiletto for the inevitable rogues that need "a time-out". On a white field we show our public purpose: creating a prosperous world at peace. Its original and long-term focus is on teaching citizens the urgency of demanding holistic analytics, true cost economics, and Open Source Everything Engineering (OSEE) as the foundation for enlightened self-governance. - SEE: LINK <https://phibetaiota.net/unrig/>

**PROJECT: RIG #UNRIG's Earth Intelligence Network** by supporting it, improving it, enhancing Phi Beta Iota's EIN Earth Intelligence Network with improved DARPA / NATO derived system of systems signaling, telemetry engineering research and NATO best practice a.k.a. The Heart Beacon Cycle Time – Space Meter and Applique Overlay (dashboard). SOURCE [LINK](#) SCRIBD DOT COM slideshow

Update Global dashboards using an algorithm that emulates neural network activity namely, the firefly inspired heartbeat algorithm attributed to the Universities of Bologna Italy and Hungary - improved by matching the firefly synchronization activity to the

nearest heartbeat OPTEMPO cycle -- attributed to patent application 13/573,002 Heart Beacon Cycle Time – Space Meter [Github](http://github.com/Beacon-Heart): <http://github.com/Beacon-Heart>

PROJECT: rig #UNRIG Earth Intelligence Network with a neural network emulation algorithm - the firefly inspired heartbeat synchronization algorithm co-designed by the University of Bologna, Italy / Hungary Source

[\*\*#UNRIG\*\*](#) seeks to communicate to all citizens the possibility of an ethical, legal, non-violent restoration of integrity to the US Government. Background information

Phi Beta Iota "We do this, in an expansion of Buckminster Fuller's practice, by enabling hybrid governance through ethical evidence-based decision-support in the context of transparent, truthful networks of trust. The outermost border summarizes our two innovative methods for which we are the foremost proponents in the world: Open Source Everything (the only technical solution that is affordable, inter-operable, and scalable) and Multinational, Multiagency, Multidisciplinary, Multi-domain Information-Sharing and Sense-Making (M4IS2, the only human solution that assures holistic analytics and a grasp of true cost economics)".



Phi Beta Iota "Our mind-set is deeply rooted in Ecological Economics as pioneered by Dr. Herman Daly and subsequently described in books by the titles of Ecology of Commerce and Natural Capitalism. We believe that the Earth is amply sufficient to provide every human now living with a life that is both prosperous and secure — where we have gone wrong is in allowing a select few to internalize profit and externalize cost"



# Earth Intelligence Network

*Public Intelligence in the Public Interest*

Quote attributed to Phi Beta Iota "Government — in isolation from the other seven tribes shown in the EIN logo — has failed. We must move to hybrid transparent governance, leveraging a combination of collective intelligence and true cost economics, to achieve whole systems understanding through holistic analytics"



Simple Always\* Wins Concepts caveat: \* when standing on the shoulders of giants

#Economic #RESET is a mathematical certainty. Do we #RESET the global system of systems as is or will we re-engineer using NATO / DARPA / DOD's system of systems engineering framework standing on the shoulders of giants to convert swords to plowshares? STANDING ON THE SHOULDERS OF GIANTS Economist Milton Friedman, Admiral Grace Hopper, Inventor Thomas Edison, Economist Bernard Lietaer, sustainable giant Buckminster Fuller, Doctor Martin Luther King Junior, are a few of the giants / luminaries that the author attributes useful additions forming an adaptive procedural template checklist of useful ideas, processes, procedures, concepts... etc., that a trade federation would use to accomplish it's goals.



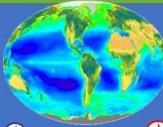
USPTO application 13/573,002 Heart Beacon Cycle Time - Space Meter / Main Use cases: -  
Eco incentives economic heartbeat / programmable economy syntax lexicon namespace

All things internet, internet of programmable money are formed using

- 1) Time epochs created by oscillating crystal based silicon chips
- 2) Syntax used / not used as programming instructions during epochs

Time epochs / syntax: two main building blocks in creating the Artificial Intelligence A.I. powered global economic system of systems / Earth Intelligence Network EIN / Web 3.0 and the programmable economy in terms of temporal consistency, interoperability, and consensus.

**ECO Economic Epochs: Eco incentives integral to System of System SoS Frameworks**

Eco Economic incentives: 

DARPA / NATO System of Systems Engineering framework

- Syntax lexicon library with 300 + use cases, thousands of message sets
- Syntax alpha-numeric brevity OPSCODES are mapped to symbol sets (A.I.)
- NATO bases are cities that transact everything described by Host Nation Agreements easily converted to Service Level Agreement smart contracts

EPOCHS: all things internet, net of money are formed using:

- (1) Epoch time cycles
- (2) Syntax (not) used / during epoch time cycles as instructions (if, then, else)

**Genesis Block**  
The first block of a blockchain



The Genesis Block is the ancestor to every block in the blockchain. The first ever Genesis Block, from the Bitcoin blockchain, was mined in 2009.

**In the beginning (of time), there was the word" (syntax)**



Eco\_Econ\_Epochs: It's about TIME: Eco incentives coded into the global programmable economic system of systems engineering framework based on NATO best practice into OPSCODEs mapped to symbol sets essential to Artificial Intelligence / human interaction

The Heart Beacon Cycle Time - Space Meter USPTO 13/573,002 is an adaptive procedural template / checklist of ideas, methods, processes, procedures, algorithms, tools... used to organize diverse peoples speaking many different languages through the universal language of symbols into Distributed Autonomous groups organized in time - space to achieve common goals such as establishing an Ecologically sustainable Economic heartbeat. This idea involves reuse of over 300 use cases supported by hundreds of message sets further described in spread sheet row - column format populated by thousands of brevity OPSCODES mapped to symbols essential to artificial intelligence man - machine interface. NATO bases are small cities that transact virtually every good, item, commodity with it's host nation.

Why reinvent the syntax lexicon Rosetta Stone wheel? Think of this as a system of systems tool to accelerate an EIN Earth Intelligence Net

The Heart Beacon Cycle Time - Space meter is a signaling, telemetry distributed systems engineering framework improving temporal, geo-spatial, semantic - syntactic sync & consensus among DAAE Distributed Autonomous Automated Economy system of systems reusing Battlefield Digitization, Net Enabled Operations engineering

The Heart Beacon Cycle Time - Space meter is a swords to plowshares DAO Distributed Autonomous Organization project using NATO's Situational Awareness system of systems engineering framework, processes, procedures and internet building blocks to establish an Ecologically sustainable Economic Heartbeat, neural network emulation for the EIN Earth Intelligence Network and heartbeat sync pulse for a Universal Time Zone UTZ supporting a one world currency. It's syntax lexicon library of OPSCODE brevity codes used in programmable money, the programmable economy is descriptive of all things internet, internet of money down to the quantum computing, quantum blockchain level. a.k.a Project BEACON

Markets  Chart of the Day

## Exhibit 1: Econ DEFCON Levels

| Econ DEFCON Level | Description                                     |
|-------------------|---|
| 1                 | Economic demise is imminent                     |
| 2                 | On the verge of economic disruption             |
| 3                 | Jitters rising, financial conditions tightening |
| 4                 | Jitters rising                                  |
| 5                 | Complacence                                     |

Source: Morgan Stanley Research

BUSINESS INSIDER

Is it TIME to rig #UNRIG's EIN Earth Intelligence Network with a neural net yet?



FIGURE 1: OPERATION RIG [#UNRIG](#) Earth Intelligence Network with a Heart Beacon Signals, Telemetry Sync, Syntax Lexicon Library neural network emulation

The Earth Intelligence Network will be a composite, system of systems comprised of many nations Telco mesh fabrics. Eventually, it will be formed from all nation states as a system of systems situational understanding type project that will arguably need a universal method and means to receive event and alert messages independent of protocol or programming language within the matrix if you will.

We propose a neural network emulation based on nature - fireflies - using an algorithm conceived by University of Hungary / Bologna Italy. Project Rig [#UNRIG](#): use an algorithm inspired by fireflies that emulates neural network activity for [#UNRIG](#)'s Earth Intelligence Network reusing tax payer paid for research and best practice into system of systems engineering Battlefield Digitization / Network Enabled Operations NEO swords to plowshares style following the German Army suggestion circa 2003.



FIGURE 2: Project rig #UNRIG's Earth Intelligence Network EIN with a system of systems Signals & Telemetry mesh derived from NATO's Battlefield Digitization, Net Enabled Operations NEO. We can synchronize ourselves in time-space for common goals.

This project can support with shared common Signals and Telemetry through OOTW reuse of Battlefield Digitization / Network Enabled Operations NEO, the Earth Intelligence Network and proposes a neural network emulation using the firefly-heartbeat synchronization algorithm conceived by U Hungary / Bologna Italy.

Dogezer is a software development platform that allows team members to become product investors by investing their time and labor. Dogezer Solution Explained The Dogezer Platform is a SaaS solution which combines the functionality of Kickstarter, UpWork, GitHub, Slack, Jira, Google Docs, Dropbox and ICO analogues with a set of defined processes how these solutions relate to each other in a clear, transparent and predictable way. Dogezer will give an opportunity to start a project in a matter of minutes; organize a set of teams who will be working on the project; define how project contributions will be rewarded, and then drive the project to completion by utilizing skills of independent contributors all around the world. Dogezer will implement most of the key

tools used in software development as integrated pieces. Over time, the variety of services offered by Dogezer will grow, eventually resulting in a complete set of tools that are required to run a top-notch software development company. As a result, the Dogezer solution will become a single service, one-stop-shop that companies that operate in a traditional environment can replace their current fragmented landscape toolset. [LINK](#)  
<https://dogezer.com/>

The Heart Beacon Cycle is a procedural template framework that includes citations of required standards, processes, components / building blocks and conventions that are agreed upon as criteria required as a minimum to join trade federations.



FIGURE 3: The Heart Beacon Cycle HBC is an adaptive procedural template checklist of things, processes, tools, building blocks useful to form, maintain Eco-responsible trade federations. Source link: <http://sawconcepts.com/index/id3.html>

The Heart Beacon Cycle is a checklist., an adaptive, procedural template checklist for forming trade federations supporting ecologically friendly business transactions and Eco-friendly geo-spatial econometrics where closer is cheaper, closer is faster and most

importantly, uses less environmentally polluting fuel. This strategy will significantly reduce the CO<sub>2</sub> carbon footprint. Each item in the procedural template checklist links to a detailed treatise. We can synchronize ourselves and our cities in time - space for a common purpose: ecologically sound econometrics.

- A process defines “what” needs to be done and which roles are involved.
- A procedure defines “how” to do the task. Example: roles and responsibilities of the people (roles) assigned to do the work, tools and equipment to support individuals do their jobs, and procedures and methods defining how to do the tasks and relationships, work flows connecting steps between the tasks.

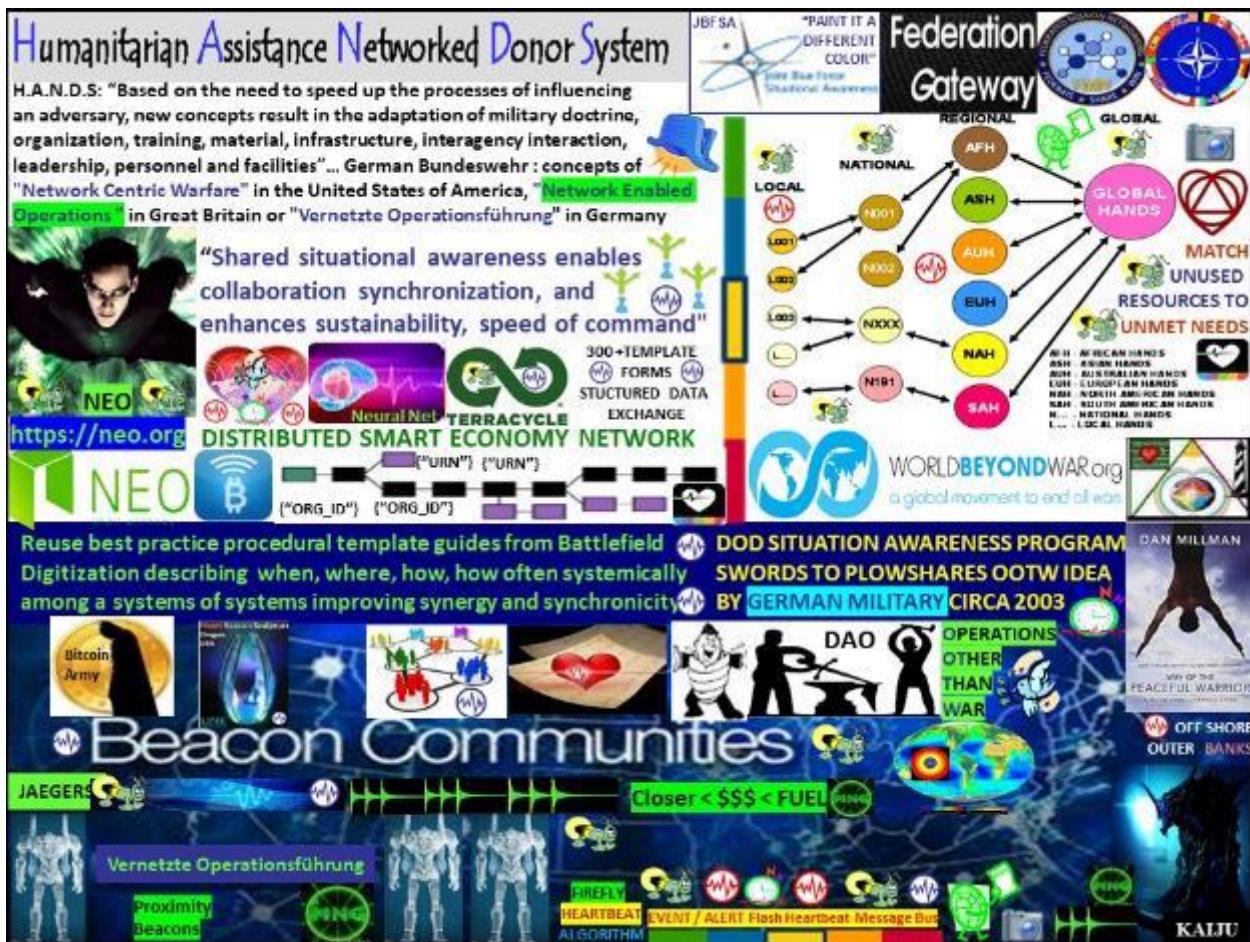


FIGURE 4: German Military H.A.N.D.S. O.O.T.W PROPOSAL H.A.N.D.S

The model template framework is the United States Army / Marine Corps Joint Battle Command JBC also known as Joint Blue Force Situation Awareness and it's associated Army Battle Command System ABCS referred to as Future Combat Systems FCS. The template system is part of a system of systems. It's interaction with many other

intelligence, logistics, maneuver etc. systems participating in a system of systems. To achieve consensus, selecting the most widely implemented Situation Awareness System - Joint Blue Force Situation Awareness or JBFSA US Army Communication Electronic Command CECOM's greatest invention – Blue Force Tracker. co-developed Marine Corps is the path of least resistance.

The military has always done one thing very well—form individuals into groups working synchronized in time – space (use of geo-spatial map overlays) towards accomplishing a myriad of missions such as transacting in food, water, fuel services in host nation agreements already established in most countries. and reused in German military OOTW Operations Other than War. Deriving common building blocks from JBFSA common to stock exchange, First Response Systems (heartbeat / heartbeat messages) is key [LINK](http://sawconcepts.com/index/id20.html) <http://sawconcepts.com/index/id20.html>

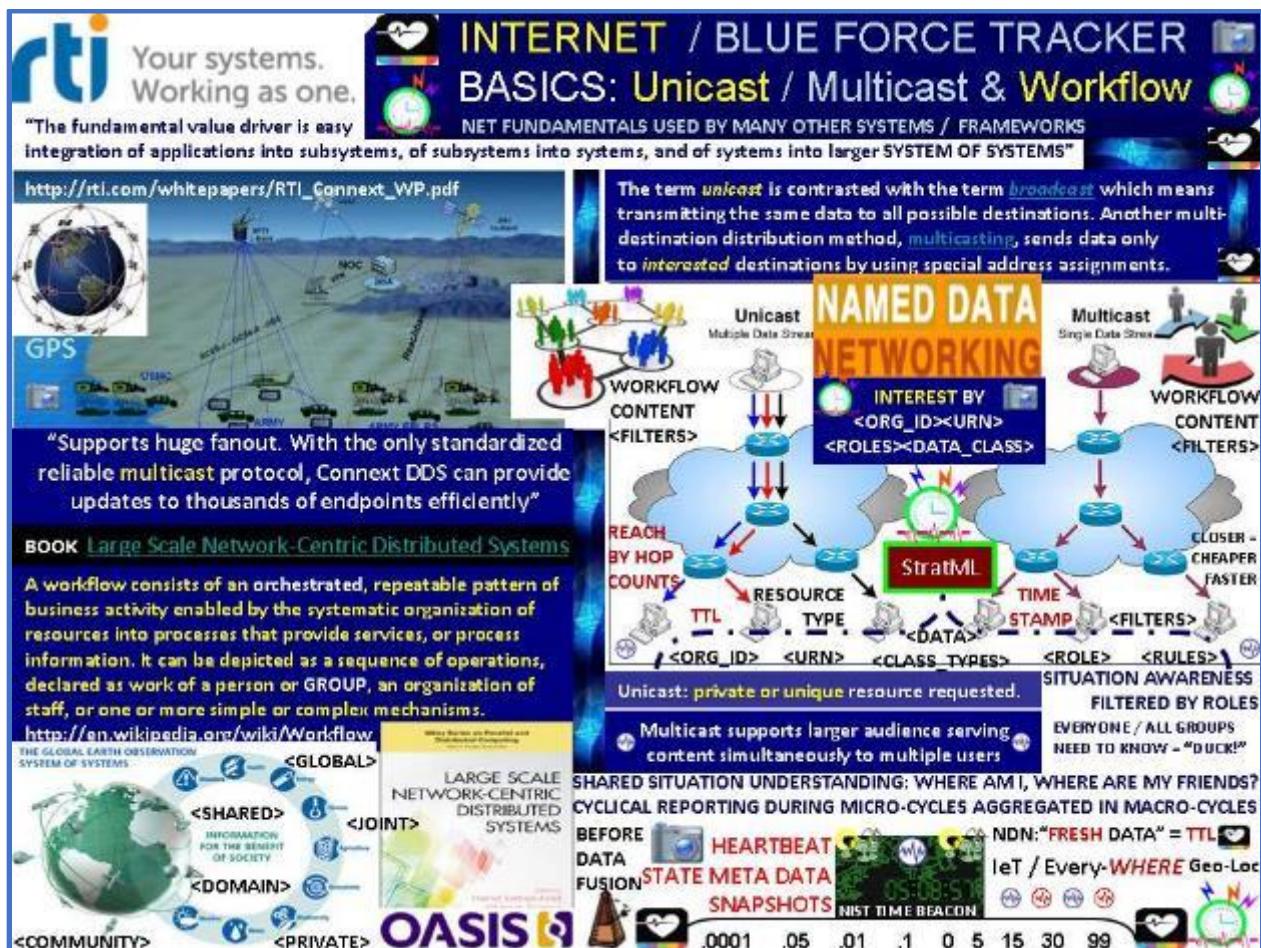


FIGURE 5: TEMPLATE SYSTEM OF SYSTEMS BLUE FORCE TRACKING / ABCS

Battlefield Digitization was created by the United State's taxpayers dollars and is a key citation that I give credit to the Army and the Marine Corps... all building blocks,

processes, people's work the author deems useful for inclusion into an adaptive procedural template checklist useful to form and maintain trade federations.

The US Army / NATO uses networks and router / router subnets to emulate orders and schemes of maneuver. To determine if a squad or platoon is mission capable or where it is supposed to be and equipped with the requisite resources: food, water, fuel, ammo etc,' data is sampled and forwarded using a minimum of network resources -- in other words TIME. The Internet Protocol was examined closely and it was re-discovered that time interval frame assignments were unassigned / available to transport additional state meta data. Heretofore unassigned time intervals set aside for future use were used to carry data about the organization -- it's unit designation or Organizational Identifier Org\_ID, it's geo-location and resources URN Uniform Resource Name. SOURCE [LINK](http://sawconcepts.com/index/id37.html) <http://sawconcepts.com/index/id37.html>



FIGURE 6: Federate, Federations / Distributed Autonomous Organizations DAO

FEDERATION: from Latin: foedus, gen.: foederis, covenant characterized by a union of partially self-governing states or regions under a central (federal) government. In a

federation, the self-governing status of the component states, as well as the division of power between them and the central government, are typically constitutionally entrenched and may not be altered by a unilateral decision of either party, the states or the federal political body. Individuals, organizations retain AUTONOMY to act on their own behalf. Reuse of military funded System of Systems research, best practice re-used as a procedural template framework is key to forming and maintaining sustainable Trade Federations as Distributed Autonomous Organizations DAO's / DAC's Corporations.



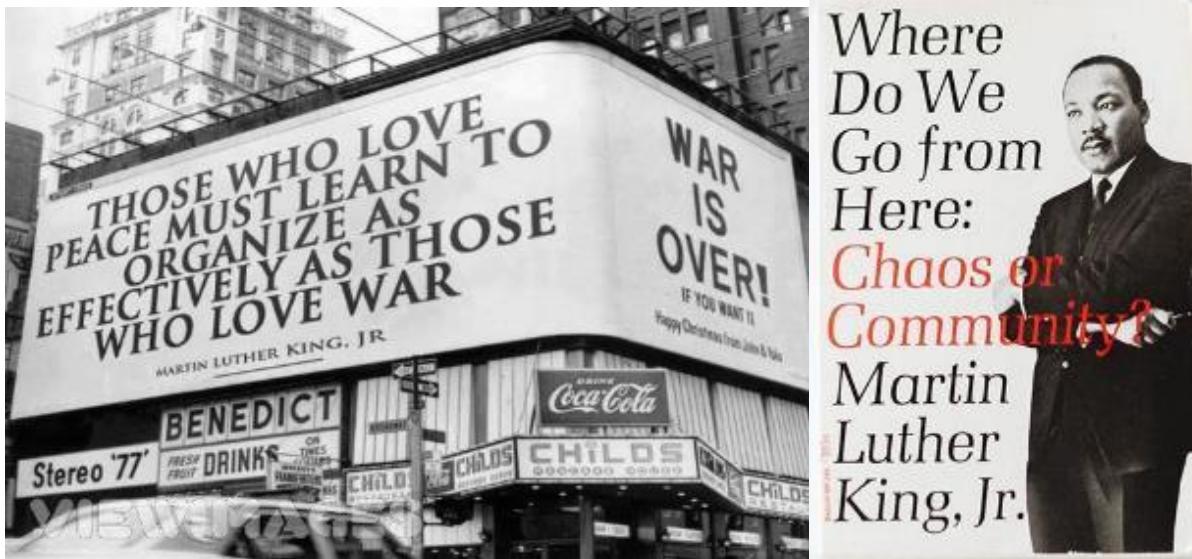
Figure 7: Beacon Communities as Distributed Autonomous Organizations DAO's

Shown above are a few of the many military net centric operations / blockchain distributed networking both of which use the term DAO Distributed Autonomous Organization. DAO term first used by RAND military think tank in 2001 - now in use by Bitcoin community. Military's do one thing well -- organize individuals into organizations <Org\_ID> and Organizational Units <OU><OU><OU>as dispersed autonomous groups working towards collective, synchronized goals following cyclical, iterative procedures.

The Heart Beacon Cycle Time - Space Meter main use case: synchronizing geo-spatial temporal Eco - Econometrics among Trade Federations / DAO Distributed Autonomous Organizations. Members of trade federations agree to use standards, processes, shared components / building blocks and conventions.

The trade federation's adaptive procedural template checklist is agreed upon as items as minimum requirements to join a trade federation (cloud computing term). Entries to the procedural template checklist -- a clipboard of things needed to accomplish a goal (establish a trade federation) refer to detailed treatises.

Project: form trade federations of autonomous communities, states / sovereign nations following a procedural template checklist promoting synchronization among geo-spatially dispersed groups. Federated groups follow a procedural template guiding group activities across time - space to achieve synergy, synchronicity and inter community cooperation where activities are orchestrated from grassroots to capitals, from micro to macro-economic cycles. SOURCE [URL http://sawconcepts.com/index/id5.html](http://sawconcepts.com/index/id5.html)



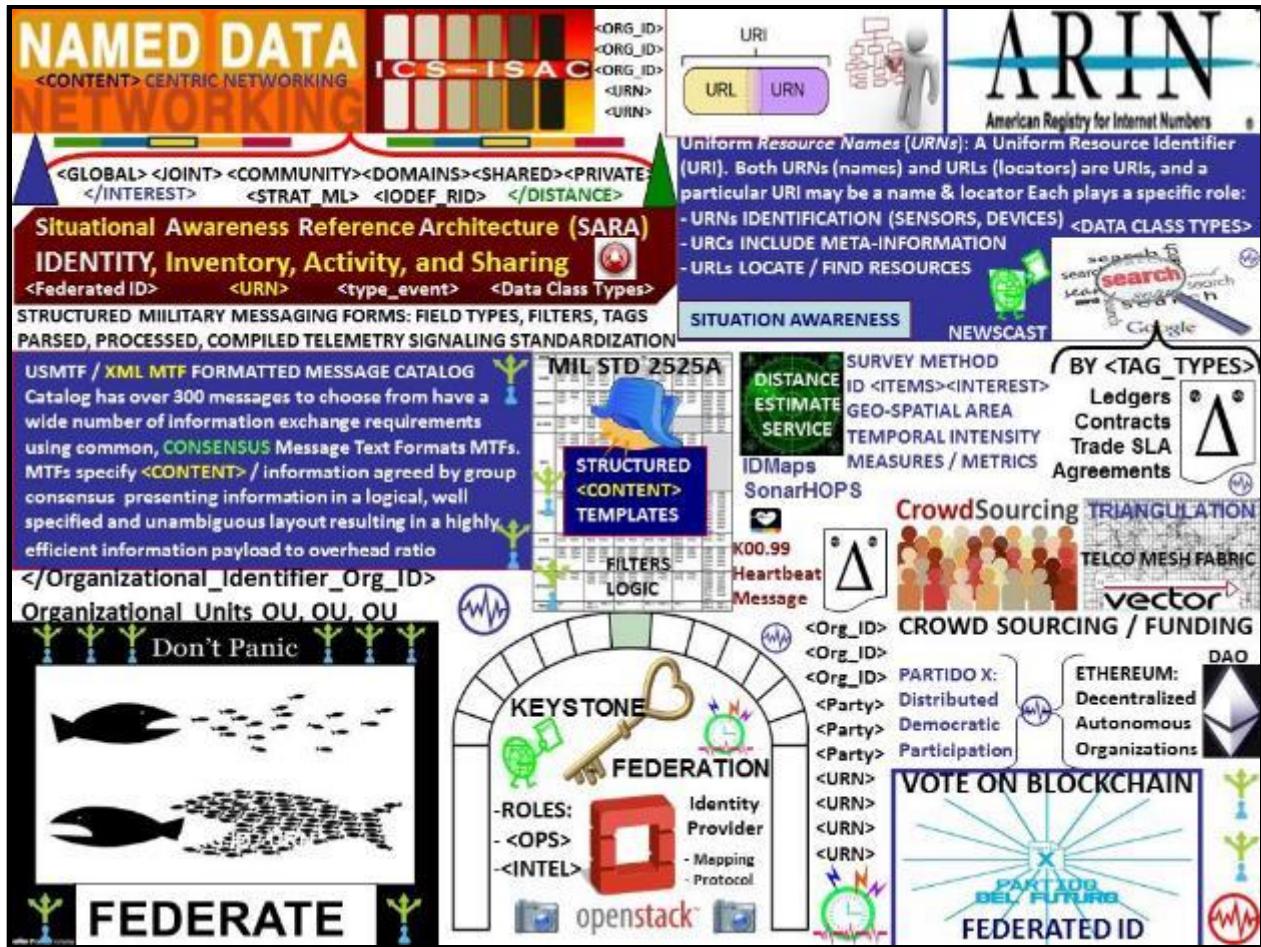


FIGURE 8: FEDERATE AND GRADUATE / FEDERATION SYNTAX LEXICON

Project: form trade federations of autonomous communities, states / sovereign nations following a procedural template checklist promoting synchronization among geo-spatially dispersed groups. Federated groups follow a procedural template guiding group activities across time - space to achieve synergy, synchronicity and inter community cooperation where activities are orchestrated from grassroots to capitals, from micro to macro economic cycles. Distributed Autonomous Organization / Corporations DAO - DAC federated trade organizations. The term DAO Distributed Autonomous Organization was coined by military funded think tank RAND Corporation circa 2001. The German military proposed using battlefield digitization / Net Enable Operations NEO for operations other than war circa 2004. A clear and present opportunity is to form trade federations.

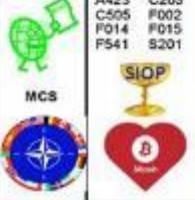
| FROM   | GCCS-A  | ALPHA-NUMERIC BREVITY CODES                      |  |  |                              |   | CODE GUIDE                          | Information Elements Roles          |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|--|---|--|--|--|------------------------------|---|-------------------------------------|-------------------------------------|--|------|------------------|-------------|-----------------------|-------------------|----------|-------------------|--------------------------------|----------|-----------------------------|-------------------------|--------|--------------------------|-----------------------|-----------------------------|--------------------------|---|-------------------|-----------------------------|------------------------|----------------|--|---|-------------------------|--------------------------------|------------------------|---------------------|---------------------------|------------------|---|------------------------------|---------------------|------------------------|------------------------------|------------------------|-----------------------------|-----------------|--|---|-----------------------------|-----------------------|-----------|----------------|---|---------------------|----------------|------------------------|--|--|------------------------|--|--|--------------------------------|-----------------|--|---------------|---|--|------------------------------|--|
| ASAS   | C002 G203<br>F002 F014<br>F015 F541<br>S201 S309                    | C002 G203<br>F002 F014<br>F015 F541<br>S201 S309 | C002 G203<br>F002 F014<br>F015 F541<br>S201 S309 | C002 G203<br>F002 F014<br>F015 F541<br>S201 S309 | ATDS                         | MCS   |                                     | • COI Determination Org Interaction |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  <b>USMTF / XML MTF FORMATTED MESSAGE CATALOG = 300 + messages</b><br>info exchange sets using common, <b>CONSENSUS</b> Message Text Formats<br>MTFs. MTFs specify <CONTENT>/ info agreed by group consensus presenting information in a logical, well specified unambiguous layout resulting in a highly efficient info payload to overhead ratio  |   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  <b>INFOCON</b><br><b>4 3 2 1</b><br><b>INFORMATION CONDITION</b><br><b>"SYMBOLS RULE THE WORLD"</b><br><b>HEARTBEAT</b><br><b>MESSAGE = K00.99</b>   |   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| <b>MESSAGE CATALOG</b><br><b>300 + Use Cases</b>   |   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| <b>Data Elements:</b> entity, attribute, relationship equivalents  |   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| <table border="1"> <thead> <tr> <th colspan="7">Information Categories and Examples</th> </tr> <tr> <th>Object Categories</th> <th>Examples</th> <th>Location</th> <th>Movement</th> <th>Identify</th> <th>Status</th> <th>Activity</th> <th>Intent</th> </tr> </thead> <tbody> <tr> <td>OOB</td> <td><b>SYNTAX LEXICON</b></td> <td>STRUCTURED DATA<br/>lat/long</td> <td>EXCHANGE<br/>spdi/hdg</td> <td>Message<br/>country / alliance, type/class</td> <td>Sets<br/>readiness</td> <td>COA<br/>targeting, reconning</td> <td>{"Java JS"}</td> </tr> <tr> <td>Infrastructure</td> <td>Comm, power, transportation, water/sewer</td> <td>Machine Trust Language MTL<br/>network, grid</td> <td>throughput, flow rates,</td> <td>name, part-of<br/>relationships</td> <td>BDA, op needs</td> <td>repair, transfracts</td> <td>YAML<br/>expansion, refine</td> </tr> <tr> <td>Sociological</td> <td>Culture, religion, economic, ethnic, government, history, languages</td> <td>temples, historic structures</td> <td>ER Model<br/>Entity</td> <td>Class Diagram<br/>Class</td> <td>Relational Database<br/>Table</td> <td>Object ODBC<br/>Element</td> <td>XML DTD / Schema<br/>Message</td> <td>TADS<br/>Message</td> </tr> <tr> <td>Geophysical</td> <td>Terrain, weather, climatology, oceanography, astrometry</td> <td>feature lat/long, alt/depth</td> <td>Attribute</td> <td>Attribute</td> <td>Field / Column</td> <td>Attribute<br/>Child Element or Element Attribute</td> <td>DR, FFBN / FN / RDN</td> <td>MTF<br/>DU, PUD</td> </tr> <tr> <td colspan="7"> <b>PURCHASE CODES</b> </td><td colspan="3" rowspan="4"> <b>FEDERATE</b> </td></tr> </tbody> </table> |   |  |  |  |                              |   | Information Categories and Examples |                                     |  |      |                  |             |                       | Object Categories | Examples | Location          | Movement                       | Identify | Status                      | Activity                | Intent | OOB                      | <b>SYNTAX LEXICON</b> | STRUCTURED DATA<br>lat/long | EXCHANGE<br>spdi/hdg     | Message<br>country / alliance, type/class | Sets<br>readiness | COA<br>targeting, reconning | {"Java JS"}            | Infrastructure | Comm, power, transportation, water/sewer | Machine Trust Language MTL<br>network, grid | throughput, flow rates, | name, part-of<br>relationships | BDA, op needs          | repair, transfracts | YAML<br>expansion, refine | Sociological     | Culture, religion, economic, ethnic, government, history, languages | temples, historic structures | ER Model<br>Entity  | Class Diagram<br>Class | Relational Database<br>Table | Object ODBC<br>Element | XML DTD / Schema<br>Message | TADS<br>Message | Geophysical                              | Terrain, weather, climatology, oceanography, astrometry | feature lat/long, alt/depth | Attribute             | Attribute | Field / Column | Attribute<br>Child Element or Element Attribute | DR, FFBN / FN / RDN | MTF<br>DU, PUD | <b>PURCHASE CODES</b>  |  |  |                        |  |  |                                | <b>FEDERATE</b> |  |               | <b>FFIRN Field Format Index Reference #</b><br><b>BY Form Field Position &amp; NUMBER</b><br><br><b>Firefly-Heartbeat Flash Messages</b> |  |                              |  |
| Information Categories and Examples  |   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
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| OOB  | <b>SYNTAX LEXICON</b>   | STRUCTURED DATA<br>lat/long                      | EXCHANGE<br>spdi/hdg                             | Message<br>country / alliance, type/class        | Sets<br>readiness            | COA<br>targeting, reconning                     | {"Java JS"}                         |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| Infrastructure   | Comm, power, transportation, water/sewer                            | Machine Trust Language MTL<br>network, grid      | throughput, flow rates,                          | name, part-of<br>relationships                   | BDA, op needs                | repair, transfracts                             | YAML<br>expansion, refine           |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| Sociological   | Culture, religion, economic, ethnic, government, history, languages | temples, historic structures                     | ER Model<br>Entity                               | Class Diagram<br>Class                           | Relational Database<br>Table | Object ODBC<br>Element                          | XML DTD / Schema<br>Message         | TADS<br>Message                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| Geophysical  | Terrain, weather, climatology, oceanography, astrometry             | feature lat/long, alt/depth                      | Attribute  | Attribute  | Field / Column               | Attribute<br>Child Element or Element Attribute | DR, FFBN / FN / RDN                 | MTF<br>DU, PUD                      |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| <b>PURCHASE CODES</b>  |   |  |  |  |                              |   | <b>FEDERATE</b>                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| <b>PROCESS MESSAGE BY PRECEDENCE</b><br><b>UNIVERSAL EVENT / ALERT MESSAGE BUS</b>   |   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| <b>OPERATIONAL NODES / ACTIVITIES</b>  |   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
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| DATA   | SYSTEM FUNCTIONS  | PERFORMANCE                                      |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| 11.4 - Classification  | 11.8 - Kinematics   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| 11.4.1 - Category  | 11.8.1 - Pos / Vel / Acc (PVA)                                      |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| 11.4.1.1 - Confidence Level  | 11.8.1.1 - Acceleration   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| 11.4.1.2 - Estimate Type   | 11.8.1.1.1 - Angular  |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| 11.4.1.2.1 - Alternative   | 11.8.1.2 - Linear   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| 11.4.1.2.2 - Evaluated   | 11.8.1.2.1 - Estimated  |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| 11.4.1.3 - Value   | 11.8.1.2.2 - Observed   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.8.1.2.3 - Predicted  |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.8.1.2.4 - Raw  |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.8.1.3 - Velocity   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.4.1.3.5 - Surface  |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.4.2 - Platform / Point / Feature Type                            |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.4.2.1 - Horizontal   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.4.2.2 - Vertical   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.4.3 - Specific Type  |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.4.4 - Bearing Angle  |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.4.4.1 - Bearing Angle Ratio                                      |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.4.5 - Unit   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
|  | 11.4.5.1 - Covariance Matrix  |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| <b>SYMBOL</b>  <b>Neutral</b>    |   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |
| <b>2525C</b>  <b>Competitor</b>  |   |  |  |  |                              |   |                                     |                                     |  |      |                  |             |                       |                   |          |                   |                                |          |                             |                         |        |                          |                       |                             |                          |   |                   |                             |                        |                |  |   |                         |                                |                        |                     |                           |                  |   |                              |                     |                        |                              |                        |                             |                 |  |   |                             |                       |           |                |   |                     |                |                        |  |  |                        |  |  |                                |                 |  |               |   |  |                              |  |

FIGURE 9 Syntax Lexicon Library 300 + Message Template NATO Use Cases

Syntax is represented by template spreadsheet form fields "FFIRN's", "FFUDNS" in structured military messaging where the form number and field position has significance and reduces data type ambiguity in message set parsing, processing.

Our proposal is to reuse the logic behind structured military messaging form field unit identifiers in commercial use cases. A method to convert syntax conventions among the myriad metaphors and memes -- a Rosetta Stone syntax lexicon library is needed. LINK <http://sawconcepts.com/index/id4.html>

The HBC involves a heartbeat flash message universal event, alert message bus. It is based on NATO's best practice, 300 + structured data exchange templates, micro-macro (economic) situational awareness sync delta data exchange schedule. The Heart Beacon cycle includes a universal metrics measurements physical meme (see Supreme Court Alice Corp Vs CLS Bank) for use among myriad Bitcoin Blockchain internet of money Block-Time arbitrage memes to support standardization of a one world economic system of systems.

Cyclic updates of state meta data snapshots / heartbeat messages from micro-to macro (economic) cycles distributed among a system of systems is simply powerful. The military adopted the policy of only sending changes or "heartbeat sync deltas" in the mid 90's.



FIGURE 10: NATO STRUCTURED DATA EXCHANGE MESSAGE TEMPLATES

NATO's best practice, 300 + structured data exchange templates, micro-macro situational awareness sync delta data exchange schedule. Sending changes, not the entire document or the "sync delta's" in military parlance conserves bandwidth and increases throughput. The military relies on "heartbeat" messages as do stock exchanges -- i.e., FIX ("108") heartbeat messages, First response, time sync systems etc, etc. The Internet is based on time cycles and(computer) syntax parsed / processed or not during finite time cycles. It requires a syntax library lexicon -- a Rosetta Stone. NATO's [#interoperability](#) system of systems framework i.e., sync delta's, structured data exchange alpha numeric brevity codes, symbol sets... is the best starting point. [#Coindesk](#): The Opportunity for Interoperable Chains of Chains



FIGURE 11: Firefly - Heart Beacon Algorithm by University Bologna / Hungary

“The shortest path to the knowledge of truth is through nature” Luxor Temple Inscription:

#### FIREFLY INSPIRED HEARTBEAT SYNCHRONIZATION:

- 1) Consensus 2) Neural Network emulation
- 3) Event Bus for Bitcoin transactions as taxable events
- 4) Stochastic Harmonization 4) stock exchange events for MMID Dark pool limits

Paper: Firefly-inspired Heartbeat Synchronization in Overlay Networks by the University of Bologna and Trento Italy along with the University of Szeged, Hungary: “Heartbeat synchronization strives to have nodes in a distributed system generate periodic, local “heartbeat” events approximately at the same time. Many useful distributed protocols rely on the existence of such heartbeats for driving their cycle- based execution. The heartbeat synchronization protocol for overlay networks is inspired by mathematical

models of flash synchronization in certain species of fire flies. Nodes send flash messages to their neighbors when a local heartbeat triggers. Fireflies adjust the phase of their next heartbeat based on incoming flash messages using an algorithm inspired by mathematical models of fire-fly synchronization. Heartbeat synchronization strives to have nodes in a distributed system generate periodic, local "heartbeat" events approximately at the same time. It differs from classical clock synchronization in that nodes are not interested in counting cycles and agreeing on a ID of a current cycle. There is no requirement regarding the length of a cycle with respect to real time as long as a length is bounded and all nodes agree on it eventually. The goal is to guarantee that all nodes start and end their cycles at the same time, with an error that is at least one, but preferably more, orders of magnitude smaller than a chosen cycle length. "What we are interested in guaranteeing is that all nodes start and end their cycles at the same time, with an error that is at least one, but preferably more, orders of magnitude smaller than a chosen cycle length.



FIG 12: TERRA Trade Reference Currency / Crypto Micropayments – Demurrage fees

Satoshi Nakamoto: "#Bitcoin is intended to be paired with the market place" "the blockchain stores references to market indexes"

**Demurrage:** term used in currency trading to denote cost of currency ownership and/or storage. cost of carrying money... considered superior to interest payments, as it stimulates currency circulation and economic growth. "In a physical sense, demurrage represents a delay that occurs during the transportation of goods via truck. When this happens, the trucking firm delivering the product can opt to pay a flat fee to the receiver to cover any loss incurred as a result of the delay. This fee can be assessed on an hourly basis. Or in the case of gold, demurrage is simply the costs associated with storage of bouillon.

[LINK https://investopedia.com/terms/d/demurrage.asp](https://investopedia.com/terms/d/demurrage.asp)

Thomas Edison's Monetary Option:

[LINK: https://supermoney.com/2014/06/thomas-edisons-view-money/](https://supermoney.com/2014/06/thomas-edisons-view-money/)



FIGURE 13: ECONOMIST MILTON FRIEDMAN's K % RULE / Algorithmic Economic Regulation

Economist Milton Friedman predicted the rise of a computer capable of automatically adjusting the inflation rate of money, and this is precisely what we see in the case of bitcoin, as a regulatory algorithm intelligently adjusts the mining difficulty to make the issuance of blocks more or less easy depending on the demand for network hashing power. No money system we have seen to date can claim it is chronologically regulated. The universal construct of time is the backbone of the cryptocurrency digital economy. Investopedia K % Rule [Source](https://investopedia.com/terms/k/k-percent-rule.asp): <https://investopedia.com/terms/k/k-percent-rule.asp>

Satoshi Nakamoto's Bitcoin key building block is a time stamp server. Satoshi Nakamoto: "Bitcoin is intended to be paired with the market place" "the blockchain stores references to market indexes" Globalization involves multi-national corporate entities vying for control of regional resources. It follows that a proven strategy to identify, track, and monitor resources regionally within the global economic matrix is needed. Bitcoin cryptocurrencies as programmable money and the internet's heartbeat, heartbeat messages timed to harvest data during micro economic cycles then aggregated into a composite economic heartbeat pulse as Economist Milton Friedman's K% rule is a clear and present opportunity for trade equity



**FIGURE 14: FEDCOIN / WORLDCOIN = ECONOMIC HEARTBEAT**

Economic Reset solution: form economic trade federations incentivizing environment friendly business practices leveraging Bitcoin's micro-payment capabilities supporting the TERRA Trade Reference Currency TRC demurrage resource handling charge. Closer is cheaper, less fuel, less CO2 carbon emissions.

Main building blocks: WAVES: TOKENIZES NATIONAL CURRENCIES

- Firefly Heartbeat algorithm Time – Space Sync algorithm improved by matching firefly async / sync process to closest Operational Tempo OPTEMPO heartbeat time epoch cycle

- TERRA TRC TRADE REFERENCE CURRENCY Commodity (crops etc., )
- ECONOMIST MILTON FRIEDMAN'S K% RULE Lead Economic Indicator pulse

Course of Action: Use Thomas Edison's commodity backed index recommendation 1921, Milton Friedman's K % rule, Economist Bernard Liettaer's TERRA TRC Trade Reference Currency concepts in concert with the firefly-heartbeat algorithm developed by the University of Bologna, University of Hungary = ECONOMIC HEARTBEAT FEDCOIN / WORLDCOIN



FIGURE 15: HFT CIRCUIT BREAKER / Blockchain transaction speed algorithmic regulation

**Algorithmic regulation, speed parity between mainframe supercomputers and blockchain trade**

**MFID II DARKPOOL HFT High Frequency Trade Limits: Sustainable Stock Exchange Initiative**

I.R.S. Internal Revenue Service 2018 Tax Code change: Bitcoin A, B, C to N type exchanges = taxable events

Use the "Great John Nash's" Equilibrium algorithms to address trade parity among "whales"

Firefly inspired heartbeat synchronization algorithm use cases in stock, currency , commodity exchanges: algorithmic regulation. Improving temporal trade parity between Bitcoin Blockchain

& conventional stock exchanges by using the firefly-heartbeat algorithm to take trade speed samples among trade populations across time zones to determine an optimal trade speed / frequency as a statistical mean value index pulse. On off trade floor parity = sonar water drop in pond meme radius distance / Dark Pool circuit breaker #UTZ universal time zone stochastic harmonization See USPTO 13/573,002, US Sct #573 Alice Corp Vs CLS Bank "claims may not direct towards abstract ideas" = physical sonar water drop in pond meme for radius distance from stock, commodity exchange trade floors #Bitcoin World Economic Heartbeat

Use Case: algorithmic regulation. For example, improving temporal trade parity between Bitcoin Blockchain & conventional stock exchanges by using the firefly-heartbeat algorithm to take trade speed samples among trade populations across time zones to determine an optimal trade speed / frequency as a statistical mean.

Trading velocity far exceeds Bitcoin's current transaction rates estimated to be between 3 - 7 transactions per second and far exceed non-HFT trading capacity. A method is needed to establish temporal trade parity and account for on floor / off floor trading disparity -- enter STAAS Space - Time As A Service TAAS using a novel stochastic harmonization algorithm based on the mating behavior of certain species of fireflies that strive to sync during mating activity. The fireflies attempt to arrive at a uniform flash rate (consensus) is matched to the closest heartbeat cycle.

All sophisticated algorithms, bots, mots, scripts, agents make use of the heartbeat -- opportunities, intervals, windows in time. High frequency flash trade algorithms are sophisticated and distributed -- however, all algorithms report to a single master controller. The heartbeat = start bit / stop bit, Time To Live = algorithm on / algorithm off / algorithm duration. Heartbeat </108> messages and the heartbeat time cycle can be used to limit trade sessions by trading session or trade time cycle e.g., one trade per cycle and / or n trades per session.

Math genius John Nash of Princeton's equilibrium theorem may be used for stock, currency market equilibrium through use of algorithms to control cartel behavior through sanctions and penalties. The increasing reliance on game theory as a foundation for auctions and electronic commerce, efficient algorithms for computing equilibria in multiplayer general-sum games are of practical interest for example, in finding a Nash equilibrium for an average-payoff repeated bi-matrix game polynomial-time algorithm. Finite-state equilibrium strategies can be found efficiently and expressed succinctly. Paper: A Polynomial-time Nash Equilibrium Algorithm for Repeated Games: LINK <http://bit.ly/1NWeLLu>

STORM / TRIDENT applies real time distributed computation of events at speeds of a million tuples per node per second using worker / task heartbeats to get put instructions

for example, to Wall Street high frequency flash trade describing trade window Time To Live TTL and start, stop commands e.g., stop commands to runaway stock algorithms.

**A use case of the firefly inspired heartbeat synchronization algorithm in stock and currency exchanges is algorithmic regulation. For example, improving temporal trade parity between Bitcoin Blockchain & conventional stock exchanges by using the firefly-heartbeat algorithm to take trade speed samples among trade populations across time zones to determine an optimal trade speed / frequency as a statistical mean. Trading velocity far exceeds Bitcoin's current transaction rates estimated to be between 3 - 7 transactions per second and far exceed non-HFT trading capacity. A method is needed to establish temporal trade parity and on floor / off floor**



FIGURE 16: ENERGY TOKEN ECONOMY METRICS – METERS

Heartbeat Messages used in power, internet systems: shows energy grid protocols that use a heartbeat, heartbeat messages. IEC C37.118 Harmonization and Synchronization is used across smart grid applications and specifies a heartbeat update interval in milliseconds -- depending on the time sync source. Micro-grid use is set to increase dramatically in both military and commercial applications.

The ability to accurately, reliably and consistently meter changes in power consumption between a community specializing in micro-grid energy production and a community

specializing in a ecology module purifying water or producing bio-mass can monitor usage in terms of surpluses or shortages based on the last sync delta update across a consortium as a basis for exchange based on group concurrence such as Service Level Agreements SLA performance measures.

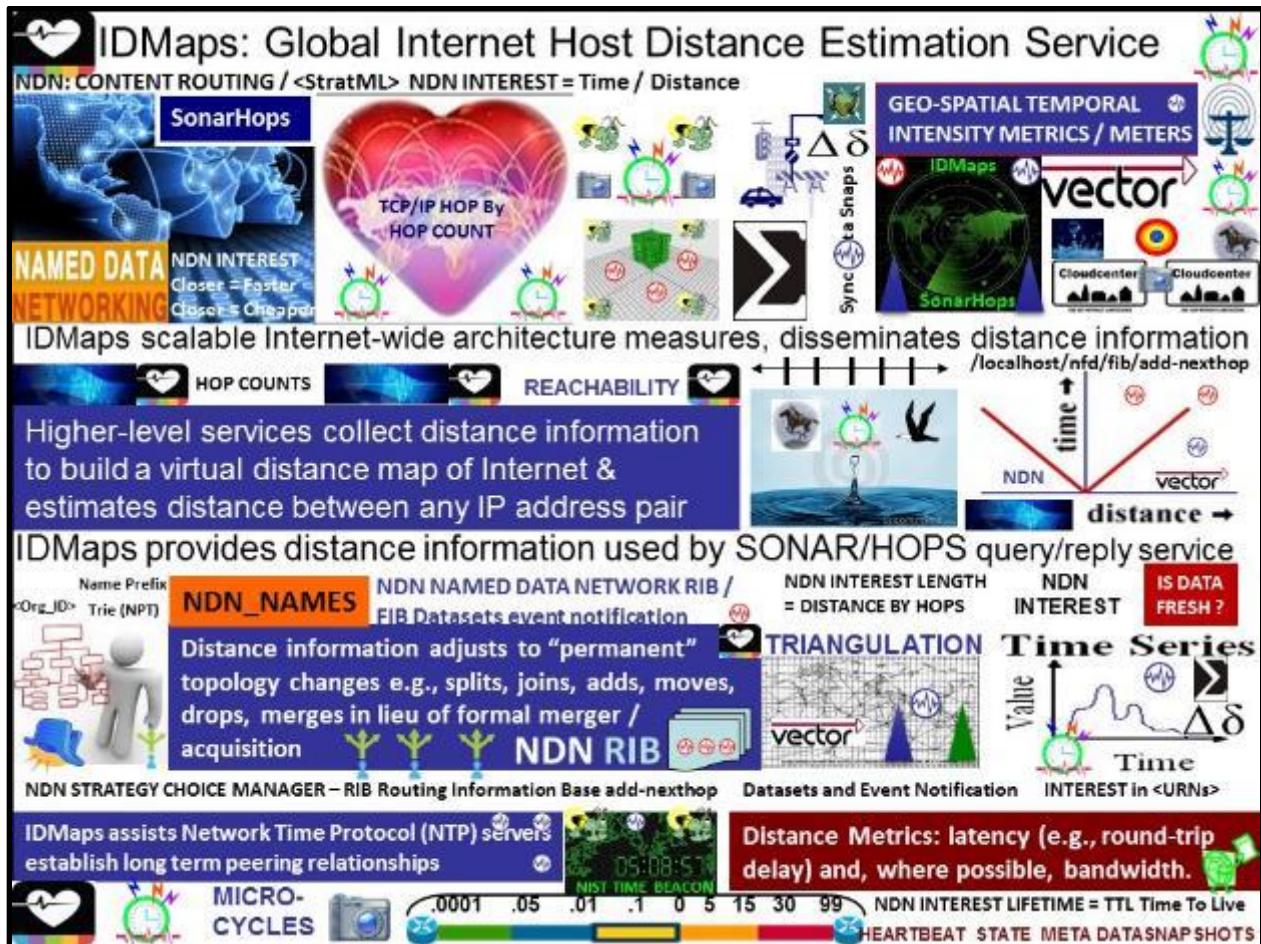


FIGURE 17: IDMaps – SonarHops Distance Estimation Service

GOAL: #Cloud, #IoT, #Blockchain Service Level Agreements SLA incentivized Eco friendly transactions leveraging bitcoin's micro payment function supporting the TERRA Trade Reference Currency TRC by economist Lietaer For example, closer = cheaper, closer = less fuel ? Globalization involves multi-national corporate entities vying for control of regional resources. It follows that a proven strategy to identify, track, and monitor resources regionally within the global economic matrix is needed. The Heart Beacon Cycle Time - Space meter describes universal geo-spatial econometrics and meters and includes distance location services such as IDMaps - SonarHops. Geo-spatial temporal techniques like IDMaps /SonarHops and the firefly heartbeat stochastic harmonization method can be used to account for trades distributed across time zones and trading on the stock

exchange floor and off where the length of the fiber optic cable is significant in High Frequency Trade volume.

Globalization involves multi-national corporate entities vying for control of regional resources. A proven strategy to identify, track, and monitor resources regionally within the global economic matrix is needed. The Heart Beacon Cycle: a procedural template listing tools, syntax, processes useful in forming, maintaining a system of services providing consistent scheduling of micro-services reporting to macro-cycle updates to decision support overlays and scheduling signaling, telemetry exchanges among a collective, distributed system of (economic) systems.

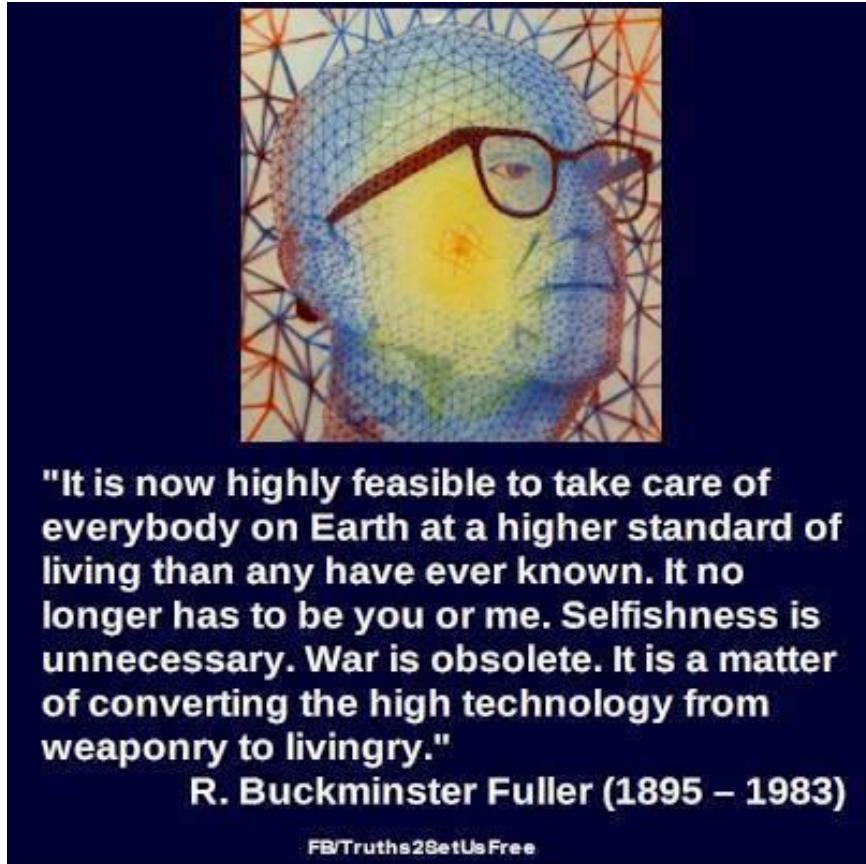


FIGURE 18: SIGNALS AND TELEMETRY ANNEX FOR OUR SPACESHIP EARTH

"We can synchronize ourselves and our cities in time - space for a common purpose: Dr. Jose Arguelles of the Law of Time dot org -- ecologically sound econometrics i.e., through use of a Signals and Telemetry annex for Buckminster Fuller's Operations Manual for Spaceship Earth. The HBC involves a heartbeat flash message universal event, alert message bus. It is based on NATO's best practice, 300 + structured data exchange

templates, micro-macro (economic) situational awareness sync delta data micro to macro eco economic exchange schedule.

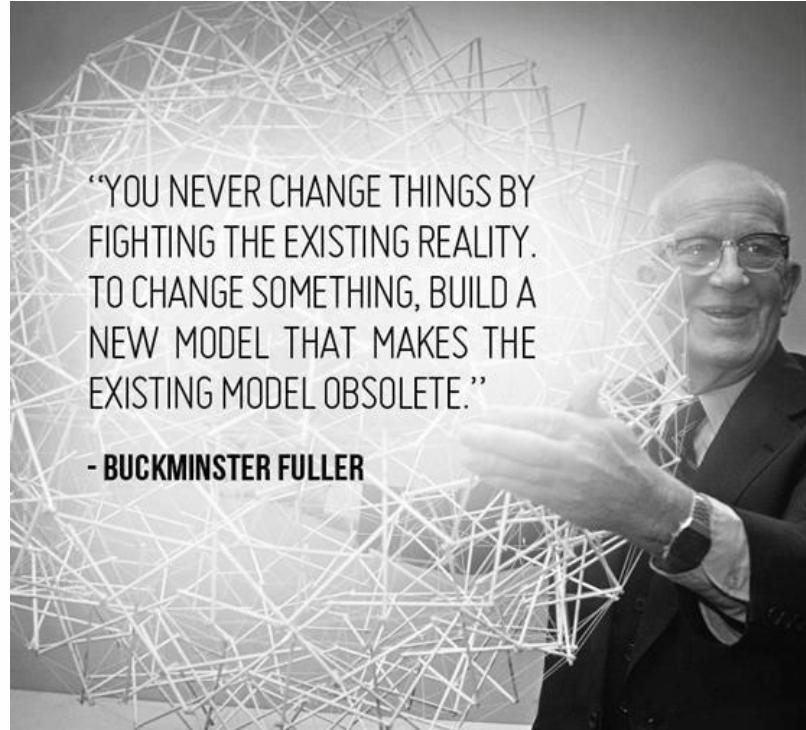
Ecologically sound econometrics - The Heart Beacon Cycle Time — Space Meter USPTO 13/573,002 is a Signals, Telemetry annex for Buckminster Fuller's Operations Manual for Spaceship Earth. Our proposal is based on a proven system of systems building blocks and best practice framework leveraging a signaling, telemetry heartbeat flash message universal event, alert message bus.



**"It is now highly feasible to take care of everybody on Earth at a higher standard of living than any have ever known. It no longer has to be you or me. Selfishness is unnecessary. War is obsolete. It is a matter of converting the high technology from weaponry to livingry."**

**R. Buckminster Fuller (1895 – 1983)**

FB/Truths2SetUsFree



“YOU NEVER CHANGE THINGS BY FIGHTING THE EXISTING REALITY. TO CHANGE SOMETHING, BUILD A NEW MODEL THAT MAKES THE EXISTING MODEL OBSOLETE.”

- BUCKMINSTER FULLER

RBF "the secret to change is build a new model that makes the old model obsolete" RBF "Earth is a spaceship that cannot be resupplied". WHAT IF EVERYDAY IS SPACESHIP EARTH DAY ? What if we formed economic trade federations incentivizing environment friendly business practices leveraging Bitcoin's micro-payment capabilities supporting the TERRA Trade Reference Currency TRC demurrage resource handling charges?



FIGURE 19: SWORDS TO PLOWSHARES

We propose novel use of a heartbeat synchronization algorithm based on nature (fireflies) to establish consistent, equitable metrics, to compensate tokenized commodities demurrage parking fees. We propose ecologically responsible trade incentives i.e., closer = cheaper, less fuel.

**IF** climate change causes a drop in crop commodity by 20–25 % while population grows, **THEN** this condition will become a matter of national security. **THEN** this will require revisiting Belgian Economist Bernard Lietaer's TRC Trade Reference Currency **ELSE** face > chaos

All things internet are formed by code formed by time cycles used / not used to process, parse {"syntax"}. Therefore, time cycles, Rosetta Stone syntax lexicon library are the two main building blocks to reshape our world and the building blocks for Governance 2.0.



FIGURE 20: BIG DATA

Ecological sustainable incentives can be coded into the programmable economy in terms of incentives in context with: preparation / processing and costs associated with distance to transport -- e.g., closer = cheaper, faster. Big Data is key to establishing a consistent <tag> context library / lexicon and time stamping data by organization <Org\_ID> and by data class type and by resource type -- prior to fusion. This is key to improved Ecologically responsible Econometrics (closer = cheaper, faster, less fuel), network forensics and data analytics – to achieve the "Grail" -- a shared view of time stamped, filtering content on decision overlays showing the four characteristics of Big Data: VOLUME, VELOCITY, VARIETY, VERACITY.

Ecologically responsible economics —either we demonstrate responsibility towards the planet we live on or we don't—it's that simple. The Heart Beacon Cycle is a sword to plowshare re-use of tax subsidized research into optimal use of individuals joining groups synchronized in time-space to accomplish common goals e.g., optimal geo-spatial, temporal econometrics, vectors to reduce for example, CO<sub>2</sub> carbon footprint due to inefficient transport, resource vectors through a novel, improved use of an algorithm based on nature and NATO best operational practice, and Incentives for ecologically sound economics.

Earth Day every day on the Bitcoin Blockchain leveraging Bitcoin / Ethereum's micro-payments to subsidize TERRA TRC Trade Reference Currency demurrage fees. If a one world anything is going to happen any time soon, NATO will provide the template system of systems. Earth Day Every Day on the Bitcoin Blockchain. Use Bitcoin, Ethereum etc. based apps micro-payments in concert with TERRA TRC Trade Reference Currency & add Pentagon system of systems best practice then shake, system integrate well.

The Heart Beacon Cycle Time – Space Meter and Applique Overlay is a Signaling and Coordinating Instructions Annex for Buckminster Fuller's Operating Manual for Spaceship Earth. Adaptive use case: geo-spatial, temporal econometrics, vectors to reduce CO<sub>2</sub> carbon footprint due to inefficient transport, resource, logistic vectors. Bitcoin, Ethereum and other token based blockchain strategies are ideal to remunerate, compensate logistic demurrage parking, commodity handling fees supporting the 1991 Belgian Economist Bernard Lieitaer's TERRA TRC Trade Reference Currency proposal that was partially articulated by Thomas Edison and Henry Ford in 1921 and by economists in the minority during the late 1800's. Edison felt that crops held their value best over time.

Given energy is everywhere as Tesla and Einstein are thought to have believed or stated in so many words, and given our climate change challenges, it's time to move to an energy token based economy where tokens are traded for other commodities. For example, a region that excels in food production could federate to trade its excess or surplus production with another region with excess production in another area. As micro-cycle sync delta reports are aggregated by processing them at regional, off site collection gateways, unused resources in macro-economic strategic stores can be matched with unmet need at the regional, local, micro-economic level cross levelling resources improving regional sharing where closer is cheaper and closer uses less fuel thus reducing Earth's carbon footprint and carbon credits generated.



FIGURE 21: BITCOIN BLOCKCHAIN -- Blueprint for a New Economy Melanie Swan

'Blockchain: Blueprint for a New Economy', is a book that considers theoretical, philosophical, and societal impact of digital currencies and blockchain technologies. It takes one beyond the currency and smart contracts to show how the blockchain is in position to become the fifth ground breaking computing paradigm after mainframes, PCs, the Internet, and mobile/social networking. The blockchain has the potential of being a worldwide, decentralized record for the registration, inventory, and transfer of all assets: finances, property, intangible assets such as votes, software, health data, and ideas. The book comprises such topics as creating cheaper, more efficient services traditionally provided by nations, making better use of the data-mining network. Blockchain technologies could be used to monitor public health, crowdfund projects, provide community supercomputing, and even birth artificial intelligences. Network Economies: Economic System as a Configurable Parameter One way to implement the direct model is through micropayments, where users click on icons to allocate pre-specified amounts of Bitcoin or token to take community actions. The central issue in decentralized p2p

content systems to be prototyped and tested is user willingness to micro-pay for content operations. Economic System as a Configurable Parameter LINK <https://lnkd.in/bFMwAyp>

Scientists marching is awesome. So is sustained, systemic action instead of protesting whoever is selected to read teleprompters. In addition to protesting the lack of ecological protective actions, we can focus on forming local and regional equitable, sustainable trade federations where closer is cheaper (geo-spatial econometrics) re-using NATO procedures derived from in use host nation agreements for food, water, energy... swords to plowshare style. [LINK](#)



FIGURE 22: **MEDIATION GATEWAY:** Federations sustainable economics / Off Pagers

**MEDIATION GATEWAYS** are needed among entities, organizations, trade federations adhering to rules, laws, consensus metrics, meters and non-conforming entities, organizations, corporations

Building a “new” internet will involve building 2 nets: one net is being built that tends to be centralized and is a private mesh among large government and / or large corporations featuring controlled access permission for example, Ripple that becomes more decentralized the more hubs installed.

The second net is a more decentralized, shared internet, internet of money based on the concept of Distributed Autonomous Organization DAO infrastructure keeping in mind that the DAO term was coined by a military funded think tank — the RAND corporation circa 2001.

Mediation gateways between centralized and decentralized blockchain implementations are needed to match transaction speeds between the centralized architectures that tend to be faster than the decentralized architectures. Work flow logic, business rules, metrics, meters will differ among the centralized, decentralized systems as well as among the myriad blockchain memes in general.

#Economic #RESET is a mathematical certainty. Do we #RESET the global system of systems as is or will we re-engineer using NATO / DARPA / DOD's system of systems engineering framework standing on the shoulders of giants to convert swords to plowshares? #blockchain #econometrics



Eco Economic Epochs / Heart Beacon Cycle Time—Space Metrics and Meters for the programmable economy. Digital Nations need an (Eco sustainable) Economic Heartbeat 😊

Ecologically sustainable Economic Heartbeat = system of systems engineering signaling, telemetry support framework for the DAAE Distributed Autonomous Automated Economy

The Heart Beacon Cycle Time - Space meter is a distributed system of systems engineering signaling - telemetry temporal, geo-spatial, semantic - syntactic sync & consensus foundation framework supporting the DAAE Distributed Autonomous Automated Economy Eco - Economic Heartbeat. It is time to establish an ecologically sustainable economic heartbeat... PROJECT BEACON: Reuse NATO's system of systems syntax lexicon OPSCODE brevity code structured data exchange, heartbeat micro to macro cycle Universal Time Zone UTZ sync to support the EIN Earth Intelligence Network neural net emulation & improve temporal, geo-spatial, and syntactic-semantic consistency, interoperability among myriad programmable money memes and metaphors.

The Heart Beacon Cycle is an adaptive procedural template checklist of things, processes, tools, building blocks useful to form, maintain Eco-responsible trade federations. Each item in the procedural template checklist links to a detailed treatise. We can synchronize ourselves, our cities, towns, cyber-communities in time — space for a common purpose: shared, common, ecologically sound, responsible econometrics.

The Heart Beacon Cycle Time - Space meter is a swords to plowshares DAO Distributed Autonomous Organization project using NATO's Situational Awareness system of systems engineering framework, processes, procedures and internet building blocks to establish an Ecologically sustainable Economic Heartbeat, neural network emulation for the EIN Earth Intelligence Network and heartbeat sync pulse for a Universal Time Zone UTZ supporting a one world currency. It's syntax lexicon library of OPSCODE brevity codes used in programmable money, the programmable economy is descriptive of all things internet, internet of money down to the quantum computing, quantum blockchain level.

Crypto economics needs a universal syntax lexicon digital base Artificial Intelligence A.I., quantum blockchain heartbeat beacon to synchronize, sample tokenized commodities across a stochastically harmonized UTZ Universal Time Zone supporting an Earth Intelligence Network EIN see Robert David Steele's #UNRIG proposal @ <http://robertdavidsteele.com>

Economic #RESET is a mathematical certainty. Do we RESET the global system of systems as is or will we re-engineer using NATO system of systems engineering framework standing on the shoulders of giants to convert swords to plowshares?

Eco Economic Heartbeat: It's TIME: IF Climate Change causes a drop in crop commodity food production by 20–25 % while population continues to grow, THEN it follows that this condition will become a matter of national security. It's TIME to implement an Ecologically Sustainable Economic Heartbeat ELSE face > greater chaos by not leveraging proven system of system structured data exchange tactics.

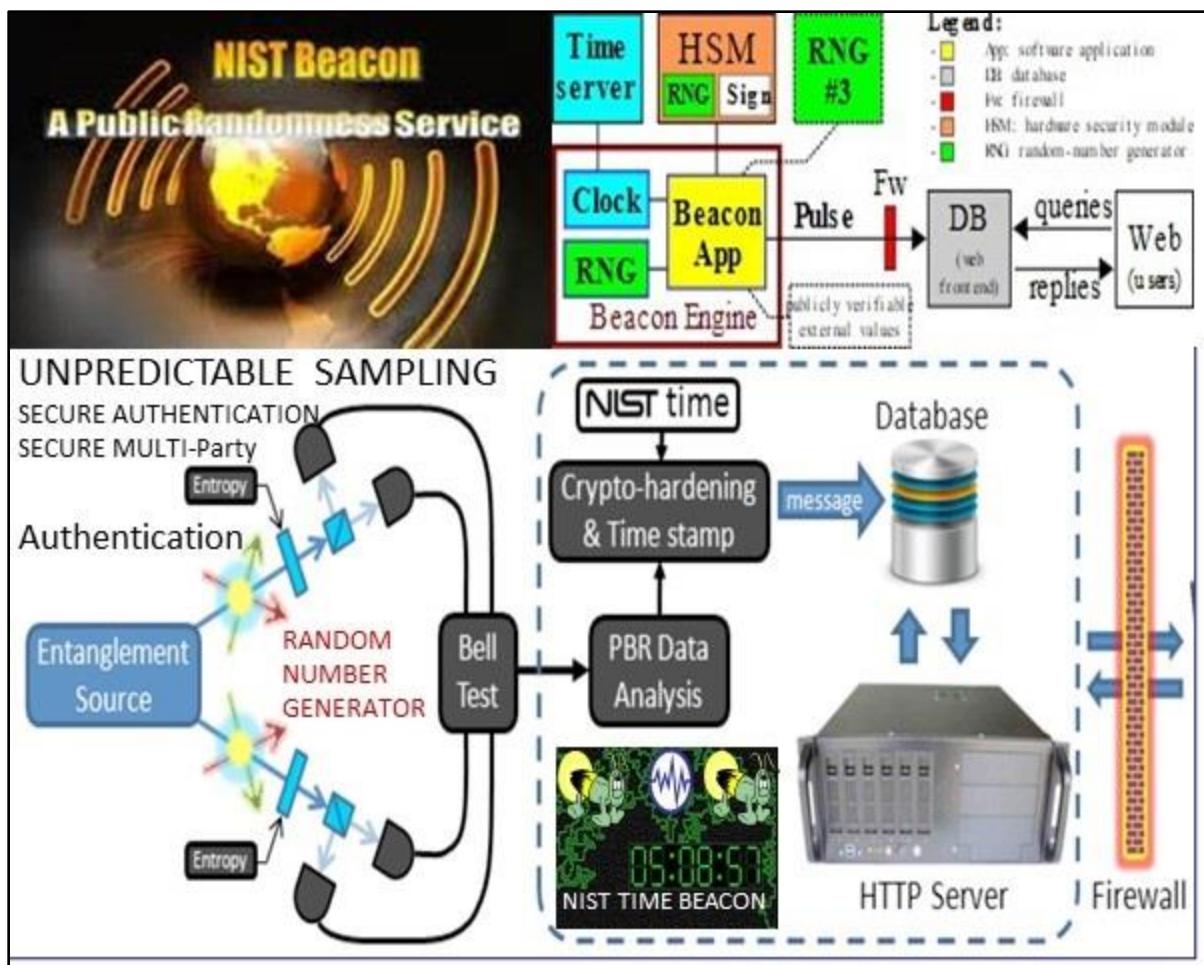
IF climate change causes a drop in crop commodity by 20–25 % while population grows, THEN this condition will become a matter of national security. THEN this will require revisiting Belgian Economist Bernard Lietaer's TRC Trade Reference Currency ELSE face chaos LINK <http://lietaer.com/2010/01/terra/>

If, when climate change reduces crop commodity production while population continues to rise, it follows that this could become a National Security issue — then, an ecologically sustainable economic heartbeat would be obviously needed. Why wait until crisis, DEFCON 2 stage?

Ecologically sustainable economic transactions need to be incentivized among the world's Ecological and Economic system of systems. The world's systems need to be time-space synchronized, stochastically harmonized across the UTZ Universal Time Zone via heartbeat messages composed with OPSCODE brevity codes drawn from a universal structured data exchange syntax lexicon with over 300 templates.

All things #internet, net of #money #blockchain #cryptocurrencies rely on unicast, multicast — like DoD / NATO's #DAO Distributed Autonomous Organization system of systems — a term coined by the RAND Corporation circa 2000. Programmable money's improvements are in cryptography

Nobel Prize winning Economist Milton Friedman's K% rule is what I call an "economic heartbeat" K-Percent Rule. DEFINITION of 'K-Percent Rule'. The K-Percent Rule was a proposal by economist Milton Friedman that the central bank should increase the money supply by a constant percentage every year. The K-Percent Rule proposes to set the money supply growth at a rate equal to the growth of real GDP each year. K-Percent Rule — Investopedia <http://www.investopedia.com/terms/k/k-percent-rule.asp>

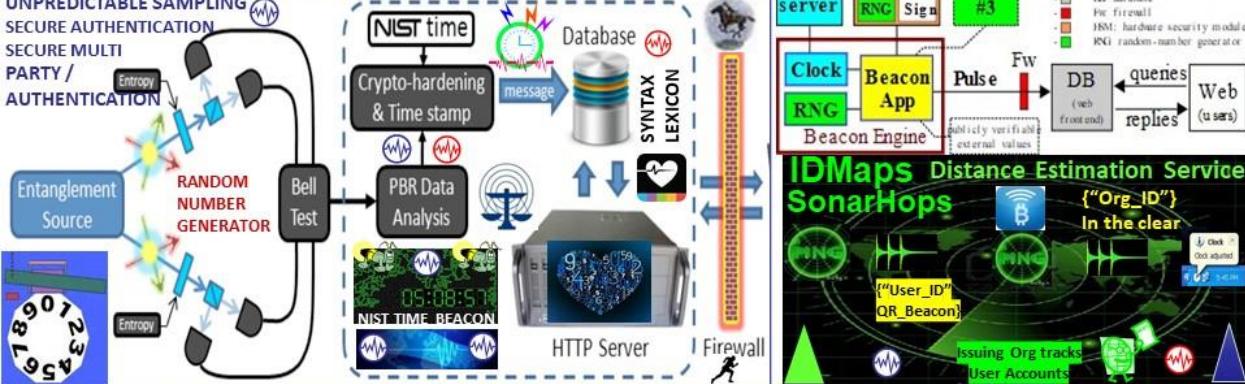


**Quantum Computing:** **Quantum computing** is the use of **quantum**-mechanical phenomena such as superposition and entanglement to perform computation. **Quantum** computers are believed to be able to solve certain computational problems, such as integer factorization. In a **quantum** Turing machine, the difference is that the tape exists in a quantum state, as does the read-write head. This means that the symbols on the tape can be either 0 or 1 or a **superposition** of 0 and 1; in other words the symbols are both 0 and 1 (and all points in between) at the same time. While a normal Turing machine can only perform one calculation at a time, a quantum Turing machine can perform many calculations at once.

**NIST RANDOMNESS BEACON:** broadcast full-entropy bit-strings in blocks of 512 bits every 60 seconds. Each value is time-stamped, signed, & includes hash of previous value to chain sequence of values together. This prevents all, even the source, from retroactively changing an output packet without being detected. The beacon keeps all output packets and makes them available online. 1st, Beacon-generated numbers cannot be predicted before they are published. 2nd, public, Beacon's time-bound, authenticated nature of the Beacon proves true random numbers not known before a certain point in time. 3rd, this proof can be presented offline at any point in the future



### NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

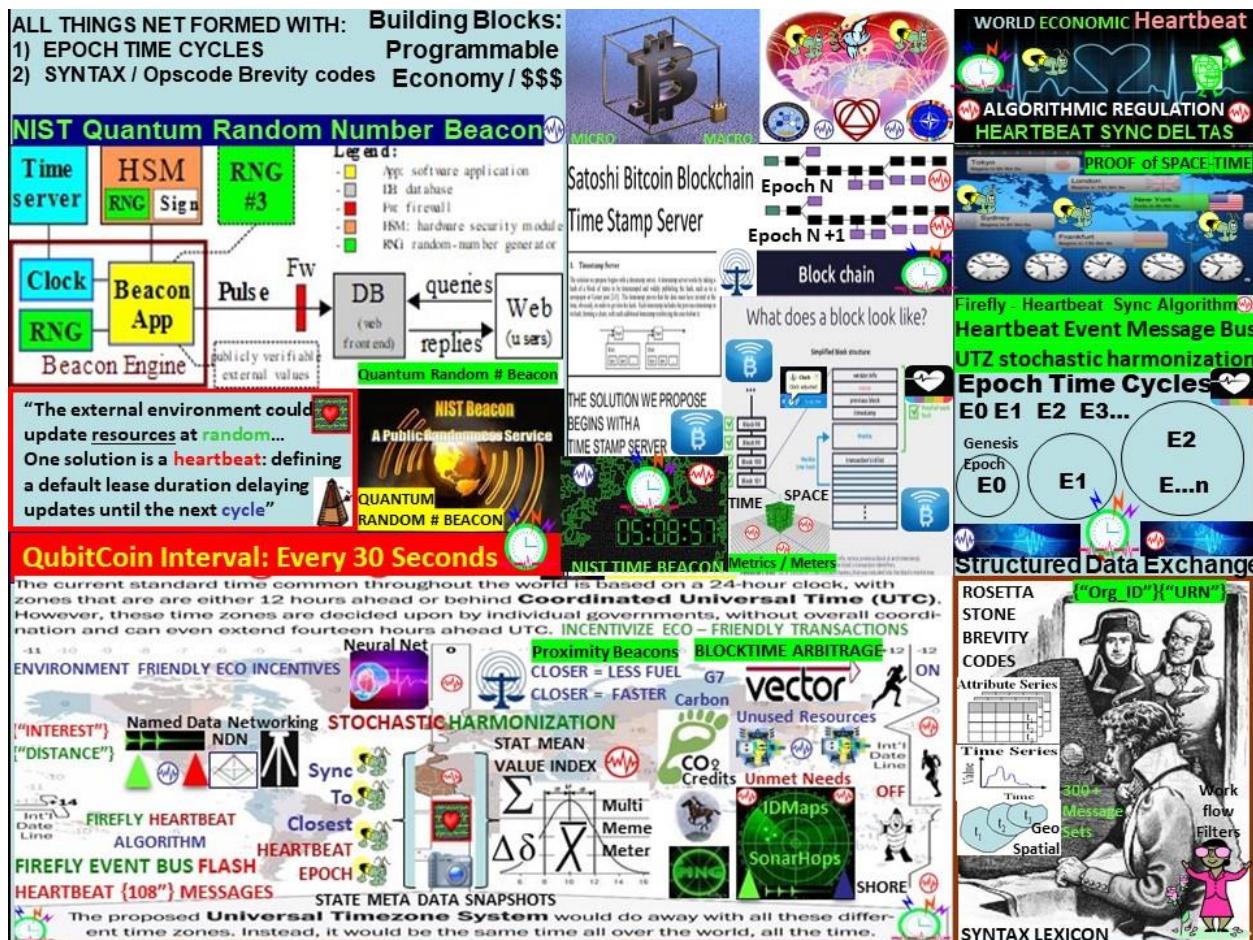


USPTO 13,573,002 Heart Beacon Cycle Geo-spatial, temporal Intensity

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors



Quantum Random Number Generator: The NIST method generates digital bits (1s and 0s) with photons, or particles of light, using data generated in an improved version of a landmark [2015 NIST physics experiment](#). That experiment showed conclusively that what Einstein derided as "spooky action at a distance" is real. Researchers process the spooky output to certify and quantify the randomness available in the data and generate a string of more random bits. [LINK](#)



Time filtered and spatially metered reports are comprised of state meta-data snapshot / heartbeat message / sync delta messages where state meta data is harvested during micro-cycles then posted / displayed during longer macro-cycles

IEEE 802.11AG is used for hop by hop detection and control for epoch assignment and hop

counts management and for hop by hop detection function to determine hop by hop count

corresponding to machine readable and executable null / 0 and steps from null representing hop

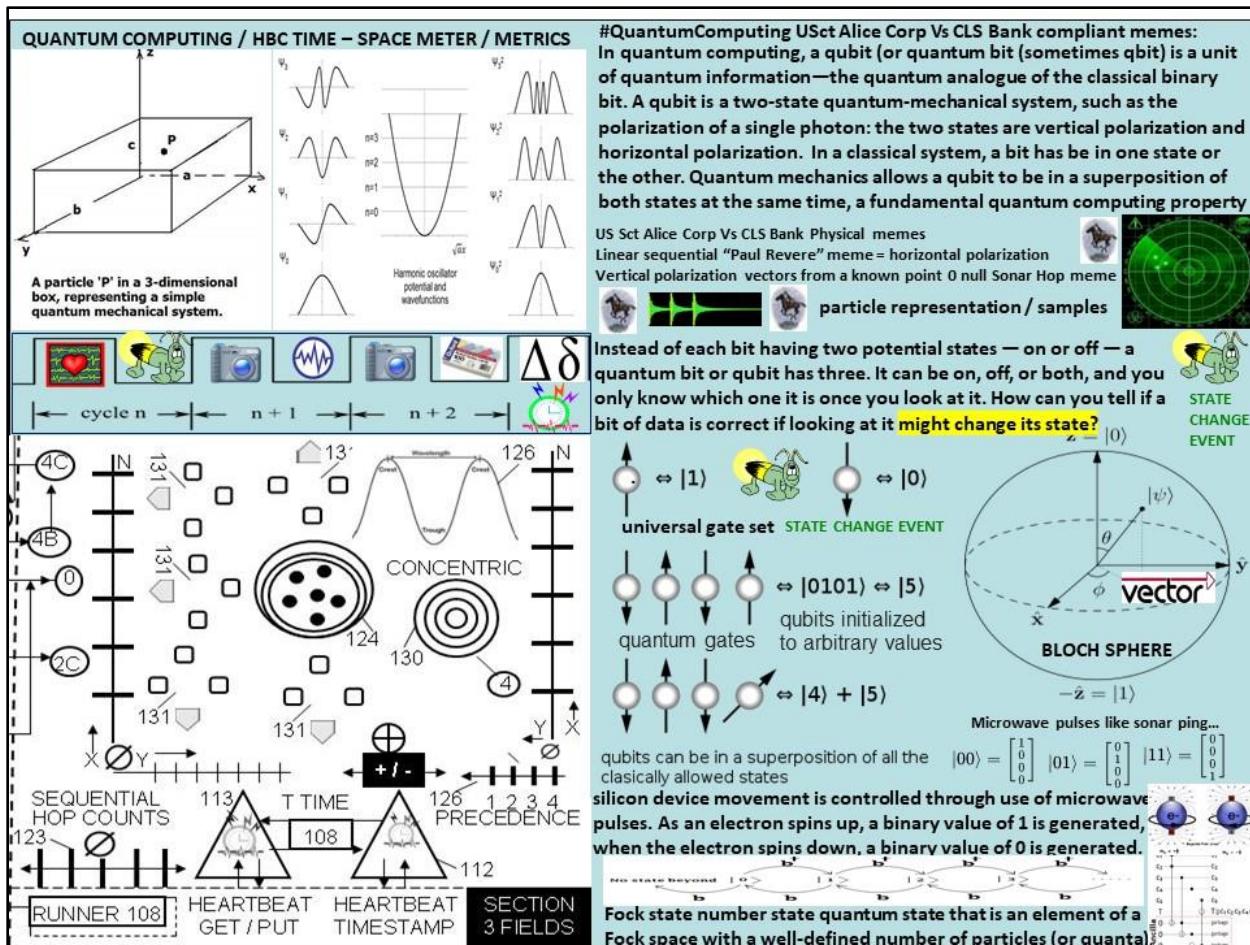
counts e.g., +1, +2, +3, +4 and / or -1, -2, -3, -4 Paul Revere linear, sequential metaphor

indicating distance traveled in context with router / server / switch / node traversal

IEEE 802.11 HbH hop by hop control supporting Paul Revere, rain drop in pond metaphor

metrics of increases / decreases in thresholds and by intensity, duration and hop count sums

See the Law of Time organization's site and the 441 Time Cube described by the late Dr. Jose Arguelles  
LAW OF TIME site <http://lawoftime.org>



Quantum Computing / Heart Beacon Cycle Time – Space Meter USPTO 13/573,002

LINKS / DOCUMENTS:

TERRA Trade Reference Currency by Economist Bernard Lietaer  
LINK <http://lietaer.com/2010/01/terra/>

GITHUB Documents: LINK <https://github.com/Beacon-Heart>

Medium Article LINK <https://bit.ly/2s6Fnw>

MEDIUM ARTICLE: Digital Nations need an Ecologically sustainable Economic Heartbeat  
LINK: <https://medium.com/@heart.beacon.cycle/eco-sustainable-economic-heartbeat-43e4e30246da>

MEDIUM ARTICLE: Deep Thought pondering the crypto blockchain through Alice's Looking Glass: LINK <https://medium.com/@heart.beacon.cycle/deep-thought-pondering-the-bitcoin-blockchain-f20ad6112d7>

MEDIUM ARTICLE: "Delusional Bitcoin Vs Fool's Gold":

LINK: <https://medium.com/@heart.beacon.cycle/delusional-bitcoin-vs-fools-gold-e4bea26afba8>

PIN INTEREST: <https://pinterest.com/mcgee3077/eco-economic-heartbeat/>

AngelList: [https://angel.co/heart\\_beacon](https://angel.co/heart_beacon)

Patreon: [https://www.patreon.com/beacon\\_heart](https://www.patreon.com/beacon_heart)

FACEBOOK: <https://www.facebook.com/beaconheart>

MINDS: <https://www.minds.com/beaconheart>

TWITTER: @Heart\_Beacon [https://twitter.com/Heart\\_Beacon](https://twitter.com/Heart_Beacon)

PAYPAL: PayPal.Me/EcoEconHeartbeat

LINKEDIN: <https://www.linkedin.com/in/ecoeconepochs/>

EIN Earth Intelligence Network: see Robert David Steele's #UNRIG proposal  
@ <http://robertdavidsteele.com>



**Earth Intelligence Network EIN / #UNRIG**

# What does your name mean?

"The fate of literally everything depends on a guy who's good at literally nothing" FutureMan

Steven + Mcgee

Intellectual      Revolutionary



You have a sharp spirit paired with a strong will. You have the power to change the world with your intelligence!

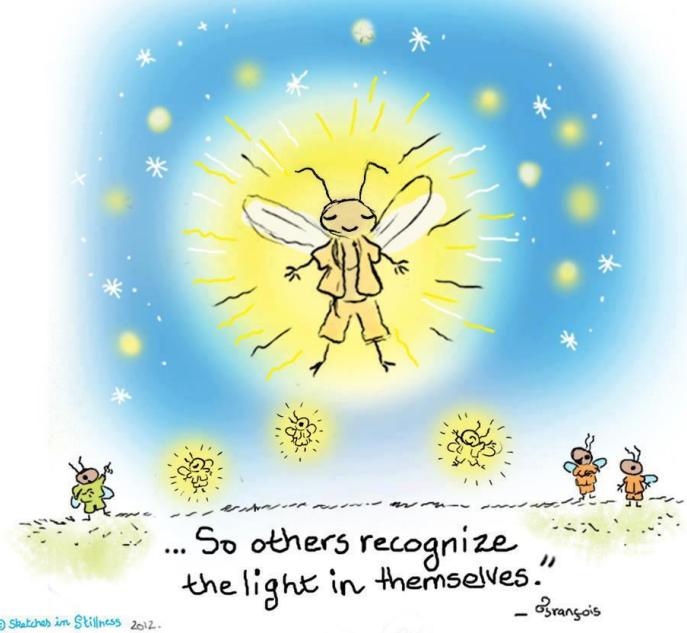




HEART BEACON SCULPTURE PORTLAND OREGON [LINK](#) [LINK](#)

<https://www.codaworx.com/project/heart-beacon-city-of-portland>

" Be a light to the world ...



#UNRIG LINK: <https://scribd.com/document/358073517/OPERATION-Rig-UNRIG>