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Distributed System of Systems Architect / Consultant / Patent applicant

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Defense Contractor for Validity Systems, SAIC x 2, MITRE, BAE Systems 1996 – 2002

Masters of Science Information Systems Western International University 3.85 GPA 93 - 96

United States Army Signal Corps Officer 11 years 82 – 93 / ROTC Full Scholarship Recipient

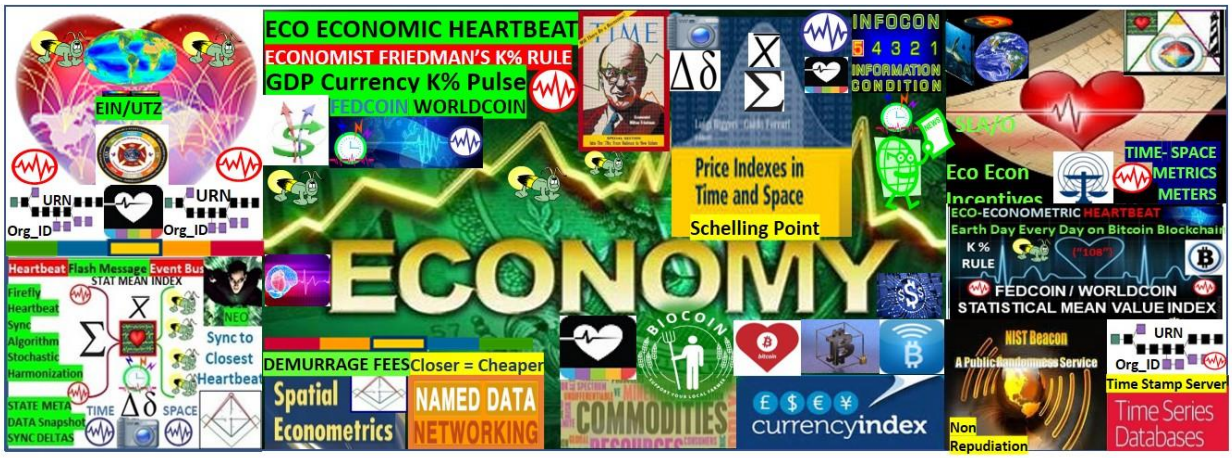
June 2003 – Present: Patent applicant USPTO 13/573,002: The Heart Beacon Cycle Time – Space Meter Adaptive Procedural Template (checklist of tools, processes, platforms, protocols… useful to form Distributed Autonomous Groups DAGS synchronized in time – space

Presented International Conference Complex Systems ICCS New England chapter 2006

Ecologically sustainable Economic Heartbeat for the Programmable Economy - LINK

Use Case: distributed systems engineering signaling, telemetry OPORD Annex X for the programmable economy & syntax lexicon, engineering system of systems framework

Github: http://github.com/Beacon-Heart



Digital Nations need an Eco sustainable Economic Heartbeat with incentives systemically encoded into the programmable economy applying consistent time - space metrics, meters and syntax lexicon library. The German military made this suggestion circa 2003

Figure 1: Eco sustainable Economic Heartbeat / Adaptive Procedural Template (checklist)

- GDP Gross Domestic Product Index / statistical mean value index-based TRC Trade Referency Currency using demurrage fees

- Geo-spatial temporal metrics, and meters i.e. storing increments of value for all things internet, internet of $$$ into the "blockchain cube"

- Ecologically sustainable Economic Epochs applying geospatial temporal methods and means i.e., IDMaps - SonarHops, Ericsson Erlang time algorithms / time equations to base economic incentives, derive TRC Trade Reference Currency demurrage charges i.e., closer is cheaper given closer = less fuel, less time, demurrage fees

- Universal meme for Consensus algorithm interoperability, synchronization

- OPSCODE brevity code syntax / symbol set lexicon of tokenized GDP Gross Domestic Product pacing items described in a syntax lexicon library promoting interoperability Rosetta Stone syntax lexicon library needed for Artificial Intelligence man - machine interface

- Universal heartbeat message event / transaction QRNB Quantum Random Number Beacon non-repudiation bus, Time-space synchronized Universal Time

Zone UTZ stochastic harmonization using a firefly inspired heartbeat algorithm / heartbeat message event - transaction bus

- Quantum computing mediation, mitigation among the quantum haves, have nots i.e., percentage of HFT High Frequency Trade stock, commodities, cryptocurrencies, crypto currency synthetics central bank exchanges / grass root federations

- Big data sync, time – space metrics and meters descriptive framework based on geo-spatial temporal methods to establish time - space Epochs i.e., IDMaps - SonarHops, Ericsson Erlang time equations

GOAL: We have a clear and present opportunity to improve temporal, geo-spatial, syntactic - semantic consistency, interoperability among myriad programmable money memes among an equitable, programmable trade federation economic framework.

The Heart Beacon Cycle Time — Space Meter USPTO 13/573,002 Adaptive Procedural Template: Use Case: Eco Economic Epoch Heartbeats for the programmable economy / money.

FIGURE 2: The Great and Greater Reset (s)… standing on the shoulders of giants

Solution framework based on existing systems, code, best practice. Use case: GDP Index based Economy: Eco Economic Epochs Time-Space Meter Eco incentives, consensus, interoperability for the programmable economy, Earth Intelligence Network EIN / System of systems

engineering framework from NATO Battlefield Digitization based on a German military idea to reuse Battlefield Digitization for OOTW Operations Other Than War circa 1993

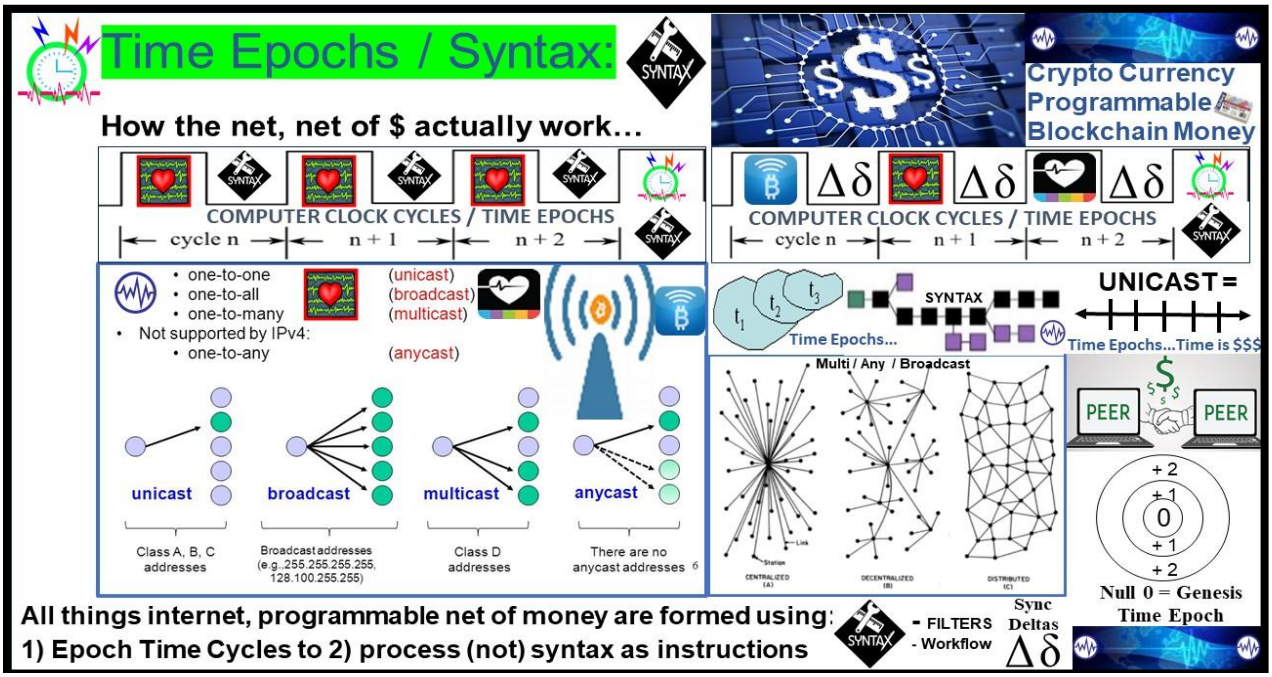


Figure 3: How the programmable internet and internet of money work

FUNDAMENTAL TRUTH: All things internet, net of money blockchains are formed by unicast, multicast, anycast. Programmable money's improvements are in cryptography.

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. The internet works the same way for all & everything.

INTERNET BUILDING BLOCKS: Time epochs / syntax are the two main internet, internet of money building blocks in coding the Artificial Intelligence A.I. powered economic system of systems / Earth Intelligence Network EIN / Web 3.0 and the programmable economy in terms of temporal consistency, interoperability, and consensus.

Figure 4: NIST's Quantum Random Number / Time Beacons for programmable $$

Programmable #money / #economy… gold, #Bitcoin as "digital gold" — fool's #gold? How will programmable money for the programmable economy be coded? A one world #currency needs a stochastically harmonized, synchronized Universal Time Zone UTZ / event bus

In quantum computing, a **qubit** or **quantum bit** (sometimes **qbit**) is a unit of quantum information—the quantum analogue of the classical binary bit. A qubit is a two-state quantum-mechanical system, such as the polarization of a single photon: here the two states are vertical polarization and horizontal polarization. In a classical system, a bit would have to be in one state or the other. However, quantum mechanics allows the qubit to be in a superposition of both states at the same time, a property that is fundamental to quantum computing. QUBIT: https://en.wikipedia.org/wiki/Qubit

Fig 5: NIST Quantum Random Number Beacon / USPTO 13/573,002

The programmable #economy will be anchored by quantum computing NIST's Quantum Random Number Beacon combined with the Heart Beacon Cycle Time – Space Meter Adaptive Procedural Template checklist. Non-repudiation of events / transactions at any time, space, place in the future will be expected and required by end users and governments.

FUNDAMENTAL TRUTH: All things internet, net of money blockchains are formed by unicast, multicast, anycast. Programmable money's improvements are in cryptography.

The NIST Randomness Beacon Broadcasts a randomness pulse every 60 seconds Each pulse commits to a fresh 512-bit random string Each pulse is time-stamped and signed. Beacon periodically outputs a pulse containing 512 fresh random bits, time-stamped, signed and hash-chained. For example, each pulse also pre-commits to the randomness to be released in the next pulse. The latter enables users to securely combine randomness from different beacons. The Beacon protocol also specifies the interface for users to interact with the Beacon to obtain information about past pulses. A randomness beacon produces timed outputs randomness.

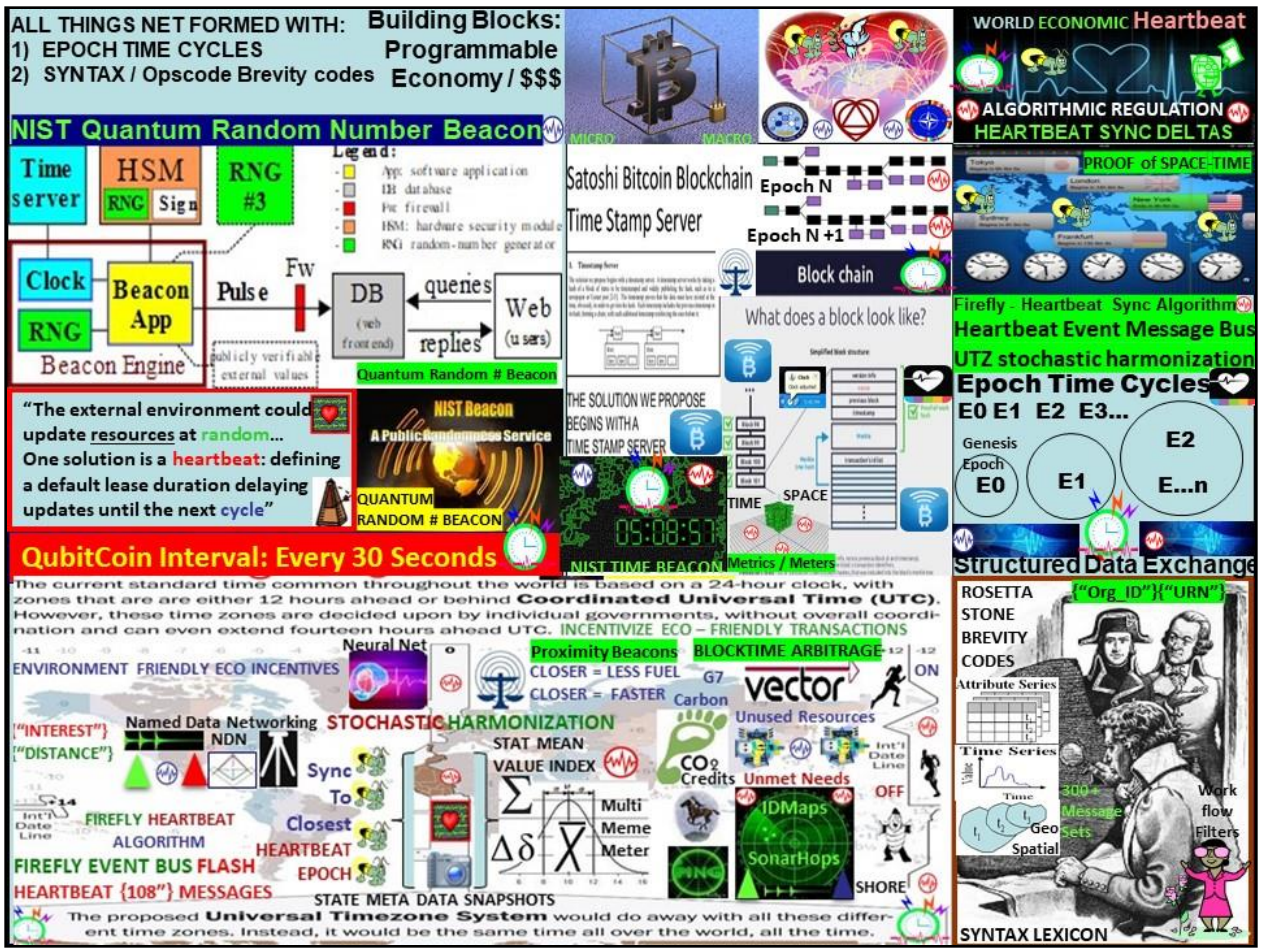


Figure 6: NIST Quantum Random # Beacon / Heart Beacon Time-Space meter

Use cryptocurrencies based on quantum computing (Quantum Random Number Generator) rather than being "quantum computing resistant" or designed in the blind of quantum computing: "Shor's algorithm could be deployed to render Bitcoin insecure with just a few thousand error-corrected logical qubits. " LINK: https://spectrum.ieee.org/tech-talk/computing/hardware/quantum-computer-error-correction-is-getting-practical

The Department of Commerce funding NIST QRNB Quantum Random Number Beacon in Boulder Colorado's purpose: provide a non-repudiation service of events / transactions at any place, time in the future. This is an absolute must have for any digital currency in my opinion. The late Bernard Lietaer of Belgium's TRC Trade Reference Currency featuring tangible commodities (like Thomas Edison's crop commodity based monetary option of 1921) are models that benefit from quantum computing and the QRNB. LINK: https://www.nist.gov/news-events/news/2018/04/nists-new-quantum-method-generates-really-random-numbers

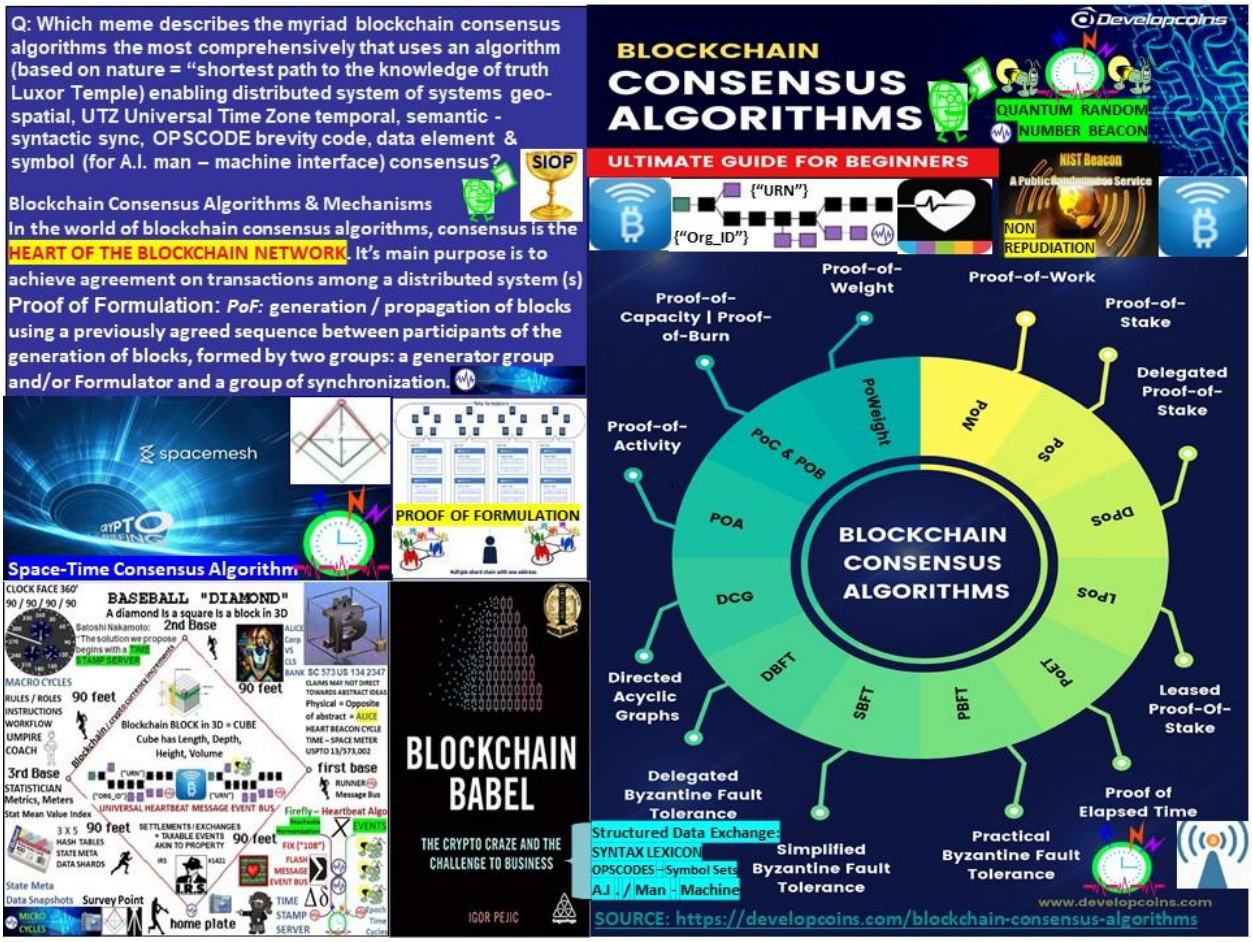


FIG 7: universal meme / metaphor for myriad blockchain algorithm memes / metaphors

Bitcoin blockchain blocks, agents, motes, bots, heartbeat, beacon are metaphors for intervals, time cycles available to process / not process SYNTAX. The internet is coded, programmed using time cycles to process instructions, commands etc. It follows that the key to achieving consistency, interoperability among myriad memes and establishing a consistent, systemic one world economic system of systems is to focus on two main common building blocks—time cycles and syntax parsed as instructions.

Given crypto blockchain myriad memes, metaphors "hashgraph" "Ether gas", we are creating new data elements in new syntax lexicons. DoD / NATO's structured data exchange (mapped to symbol sets for A.I - man - machine interface) took decades to achieve consensus -why reinvent the wheel?
http://en.wikipedia.org/wiki/SIMPLE_(military_communications_protocol)

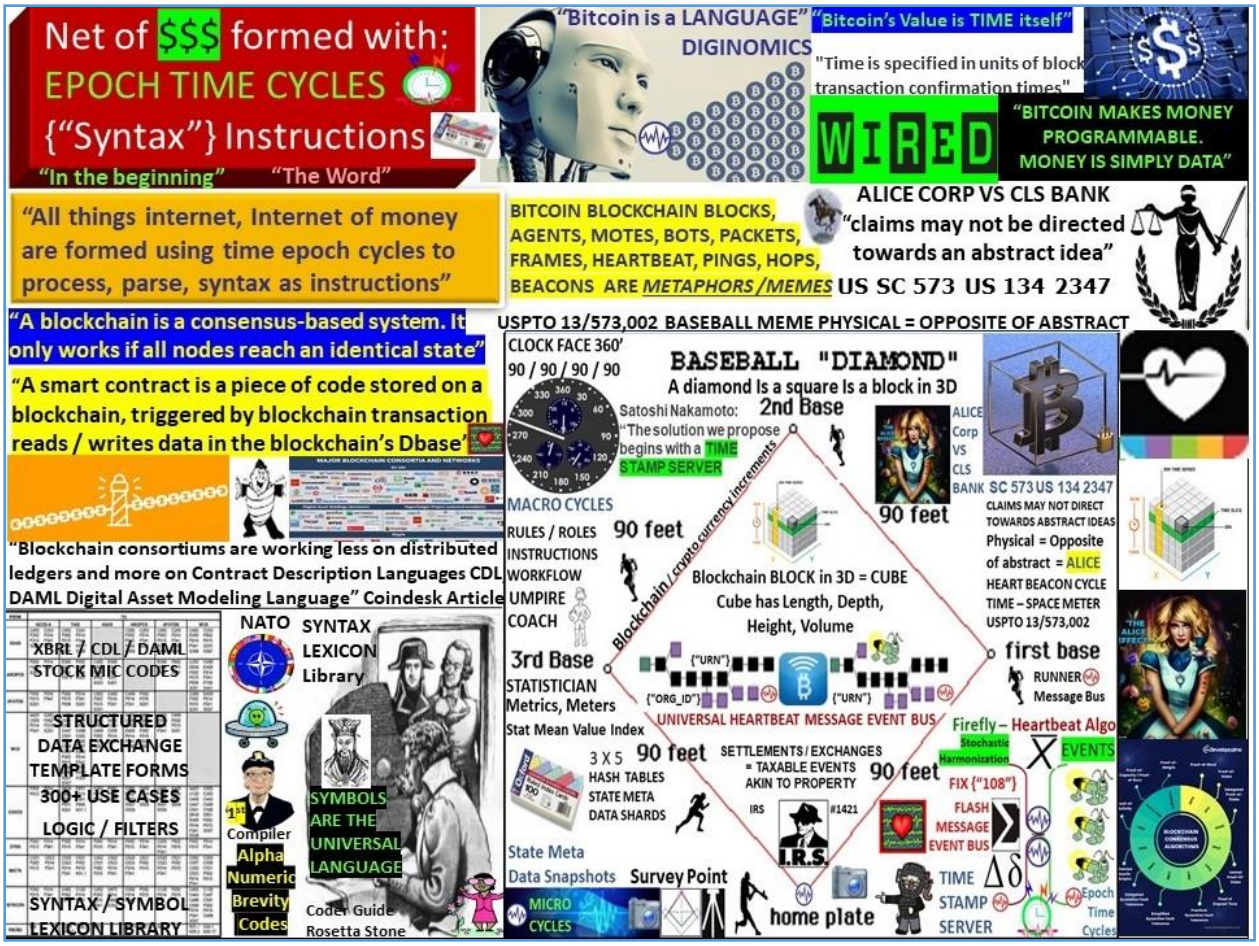


FIGURE 8: SCOTUS Alice Corp Vs CLS Bank "claims may not direct towards abstract ideas"

Bitcoin blockchain blocks, agents, motes, bots, heartbeat, beacon are metaphors for intervals, time cycles available to process / not process SYNTAX. The internet is coded, programmed using time cycles to process instructions, commands etc. It follows that the key to achieving consistency, interoperability among myriad memes and establishing a consistent, systemic one world economic system of systems is to focus on two main common building blocks -- time cycles and syntax. Alice Corp. v. CLS Bank International, 573 U.S. 134 S. Ct. 2347 (2014), United States Supreme Court decision about patentable subject matter (patent eligibility). The patents were held to be invalid because the claims were drawn to an abstract idea, and implementing those claims on a computer was not enough to transform that idea into patentable subject matter. In our opinion, physical is the opposite of abstract.

Alice Corp. **v**. **CLS Bank** International, 573 U.S. 208 (2014) compliant ruling "claims may not direct towards abstract ideas". Physical (baseball meme) is the opposite of abstract

LINK WIKIPEDIA: https://en.wikipedia.org/wiki/Alice_Corp._v._CLS_Bank_International

FIGURE 9: FIREFLY HEARTBEAT SYNCHRONIZATION / World Economic Heartbeat

Firefly inspired Heartbeat Synchronization: in a paper entitled Firefly-inspired Heartbeat Synchronization in Overlay Networks by the University of Bologna 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. 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. Use Case: 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 handling charge. Closer is cheaper, less fuel, < C02 carbon emission in smart contract Service Level Agreements.

FIGURE 10: TERRA Trade Reference Currency / Crypto micro payment Demurrage fees

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

Economic RESET is a mathematical certainty. Do we RESET the global system of systems as is or do we re-engineer our world using NATO / DOD system of systems engineering framework standing on the shoulders of giants (Edison, Lietaer, Friedman) swords to plowshares?

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 by not leveraging proven system of systems & tactics

FIG 11: ECONOMIST MILTON FRIEDMAN's K % RULE / Algorithmic Regulation

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"**

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

Thomas Edison's Monetary Option:
LINK: https://www.supermoney.com/2014/06/thomas-edisons-view-money/
Economist Milton Friedman predicted the rise of a computer capable of automatically adjusting the inflation rate of money. 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**

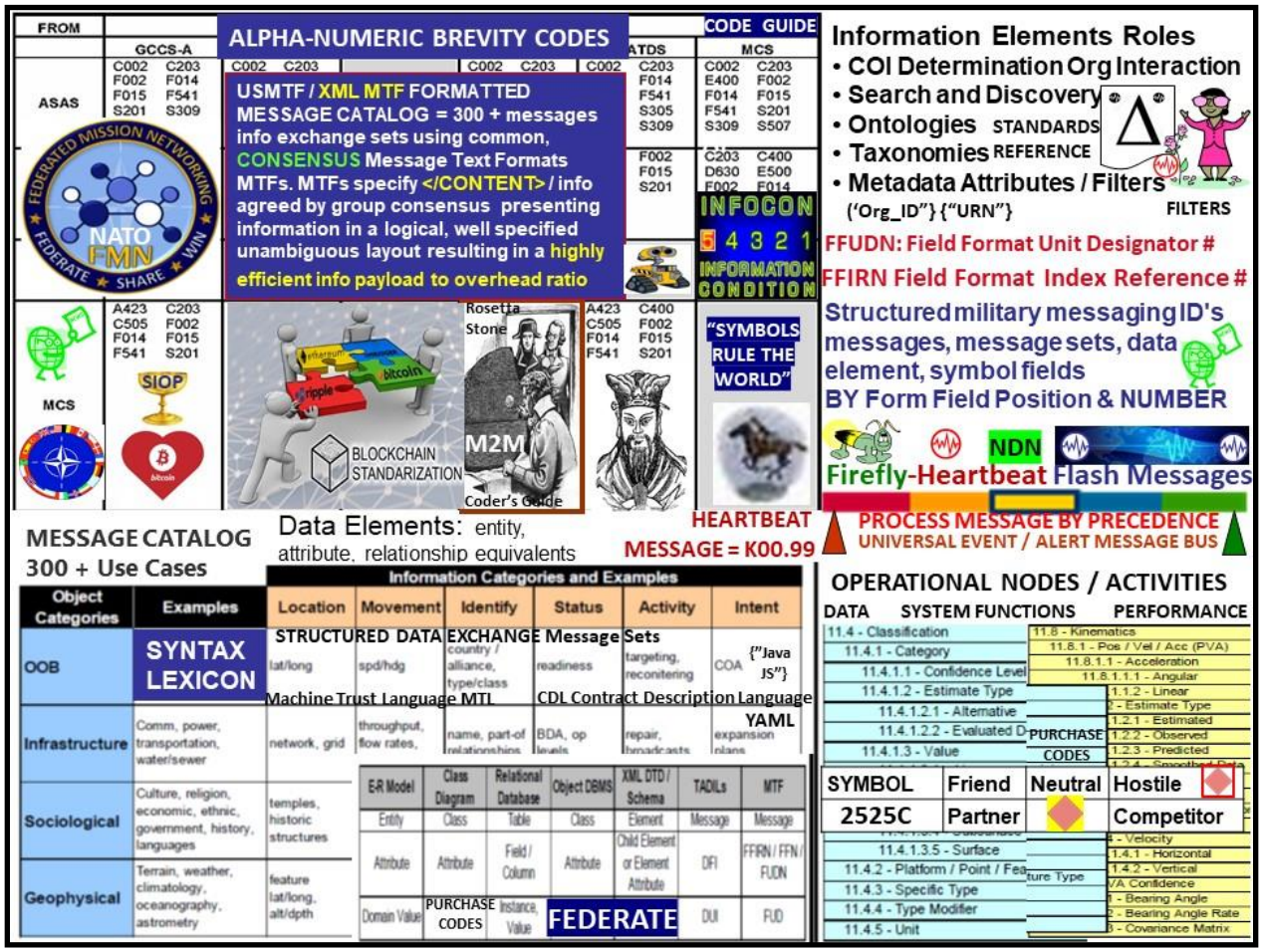


Figure 12: Syntax Lexicon Library Rosetta Stone adapted swords to plowshare from NATO

Common syntax library of various Message Text Formats MTF to enable universal signaling / telemetry among a system of systems is ESSENTIAL. Decades of research at the taxpayer's expense into structured messaging / structured data exchange where the location, type of data identified by table number will help accelerate the process of organizing syntax into categories from disparate systems into data set reference repositories. Many semantic, syntax tags will be reusable. The rules, roles and logic developed by years of research involving of thousands of subject matter experts solving real world issues is the value to be extracted from 300+ message sets. NATO stays synchronized across many languages and cultures so why reinvent the wheel?

MESSAGE CATALOG: The USMTF message library has over 300 messages to choose from to facilitate information exchange requirements. MTFs presenting data in a logical, well specified and unambiguous layout. MTFs are transmission medium neutral. The content of the Message

Catalogue has been developed by military operators over the last 20 years. Messages are regularly maintained to keep pace with the latest tactics and doctrine.

Military brevity codes and stock exchange codes are similar. security Identifier used in financial markets are: SYMBOL, CUSIP, ISIN, SEDOL, RIC Code, Syntax Lexicon Library

Fig 13: Heart Beacon Cycle Time — Space Meter USPTO 13/573,002 is an Adaptive Procedural Template: Use Case: Eco Economic Epoch Heartbeats for the programmable economy.

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 which is a clear and present opportunity to realize the purpose of Economist Milton Friedman's K% rule / Heart Beacon Cycle Ecologically Sustainable Economic Epochs for trade equity, ecologic sustainability, economic stability.

Figure 14: UTZ TIME ZONE STOCHASTIC HARMONIZATION / SYNCHRONIZATION

Universal Time Zone (UTZ) Proposed Clock: At the United Nations on May 20, 2003, President, George W. Bush, announced a proposal to unify all the world's time zones into a single Universal Time Zone (UTZ)
We can synchronize ourselves, our cities, towns, cyber-communities in time — space for a common purpose: shared, common, ecologically sound, equitable… econometrics.

UNIVERSAL TIME - SPACE SYNCHRONIZATION: The Heart Beacon Cycle Time - Space Meter is intended to bridge humanity from our present condition to a higher consciousness described by Extra Terrestrial Groups and organizations like the Law of Time dot org with the Noosphere concept

"One people, one Earth, one Time": "The times we are living in require higher thinking. There has never in the history of the Earth been a time like this. We are now participating in what is called the biosphere-noosphere transition: When life on Earth evolves into an awakened planetary mind (noosphere)". See The Law of Time dot Org

Figure 15: FEDCOIN / WORLD COIN

One world currency for the one world government will require financial events stochastically synchronized, harmonized across the world's time zones and will need to represent a value index of the world's GDP Gross Domestic Product
Course of Action: Use Thomas Edison's commodity backed index recommendation 1921, Milton Friedman's K % rule, Economist Bernard Lietaer'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
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, < fuel, less C02 carbon emissions.

Github: http://github.com/Beacon-Heart
Angel List: https://angel.co/heart_beacon
Maven: http://app.maven.co/profile/SHfEKnA9
LINKEDIN: https://www.linkedin.com/in/ecoeconepochs/
Proton Email (secure) ecoeconomicepochs@protonmail.com