



RESUME: Steven J. McGee Distributed Systems Engineer, patent applicant USPTO 13/573,002

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

Masters of Science Information Systems Western International University Phoenix AZ 93 - 96

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

June 2004 – April 2019 Simple Always Wins Concepts LLC [LINK http://sawconcepts.com/index](http://sawconcepts.com/index)

Eco sustainable Economic Heartbeat / Programmable Economy - Namespace [LINK](#)

EIN Earth Intelligence Network Neural Net emulation algorithm – universal event flash heartbeat message bus [LINK](#) <https://bit.ly/2s6Fnav>

USPTO 13/573,002 Heart Beacon Cycle Time – Space Meter <http://sawconcepts.com/index>

Quantum Computing metaphor meme, metrics, meters (Supreme Court compliant) [LINK](#)

Ecologically sustainable Economic Heartbeat = distributed systems engineering signaling, telemetry support framework for the DAE Distributed Autonomous Automated Economy

LINKEDIN: <http://linkedin.com/in/sawconcepts> [LINK](#)

GITHUB: [LINK: https://github.com/Beacon-Heart/Heart_Beacon](https://github.com/Beacon-Heart/Heart_Beacon)

PATREON: [LINK https://patreon.com/beacon_heart](https://patreon.com/beacon_heart) [OneDrive Document Folder](#)

[Paypal: PayPal.Me/EcoEconHeartbeat](#)

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.

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. 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](http://lawoftime.org)

The Heart Beacon Cycle Time - Space meter is a sword 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 / Medium Article LINK <https://bit.ly/2s6Fnav>

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 use case templates.

System of Systems Framework: 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. Is it time to build a new economic system of systems framework yet? Why wait for DEFCON Level 2 to start a system of systems sustainable project? 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>

SOURCE PAGE: <http://sawconcepts.com/index>

"One method fits many.. not one size fits all"



Fig 1: Eco sustainable Economic Heartbeat / Programmable Economy Namespace

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 proposal @ <http://robertdavidsteele.com>)

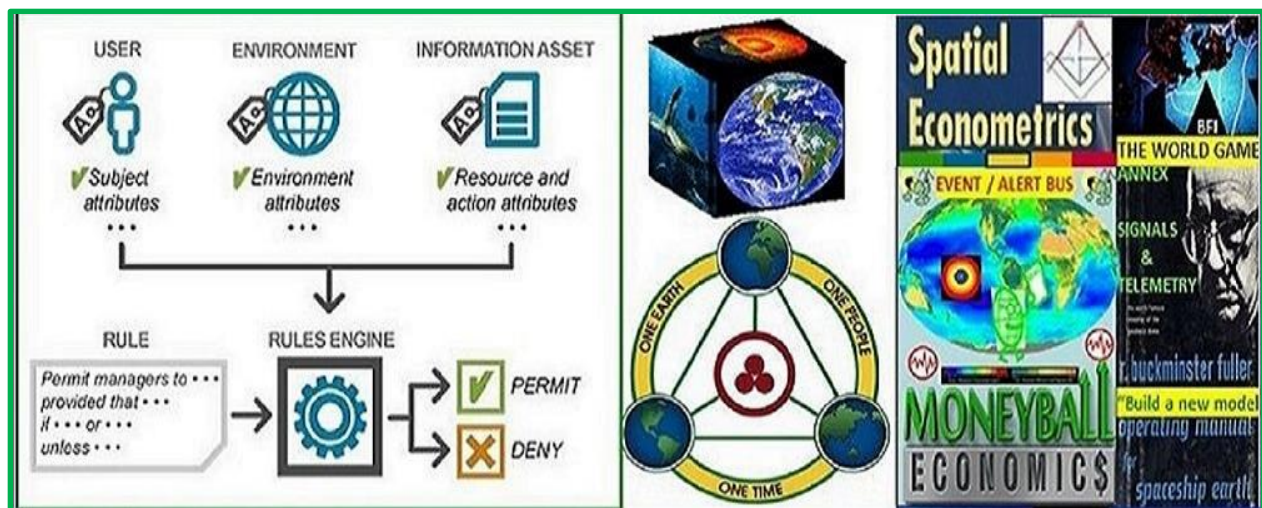


FIGURE 2: Eco sound geospatial temporal econometrics / programmable economy

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.



FIGURE 4: FEDCOIN / WORLD COIN 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, < C02 carbon emission [LINK: http://sawconcepts.com/index/id9.html](http://sawconcepts.com/index/id9.html)

#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 / DARPA / DOD system of systems engineering framework standing on the shoulders of giants to convert swords to plowshares? **#blockchain #econometrics**

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



FIGURE 5: FIREFLY INSPIRED HEARTBEAT SYNCHRONIZATION / World Economic Heartbeat

Firefly Inspired Heartbeat Synchronization Algorithm:

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

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.

[LINK http://sawconcepts.com/index/id22.html](http://sawconcepts.com/index/id22.html)



FIG 6: 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://www.supermoney.com/2014/06/thomas-edisons-view-money/](https://www.supermoney.com/2014/06/thomas-edisons-view-money/)

Simple Wins Concepts LLC [LINK http://sawconcepts.com/index/id39.html](http://sawconcepts.com/index/id39.html)

"A day will come when there will be no battlefields, but markets opening to commerce and minds opening to ideas." — Victor Hugo



FIGURE 7: 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)

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 and economic system of systems stability. [Source: http://sawconcepts.com/index/id43.html](http://sawconcepts.com/index/id43.html)

defined as standardized basket of lead economic indicators / commodities SOURCE

[LINK](http://sawconcepts.com/index/id36.html) <http://sawconcepts.com/index/id36.html>



Figure 9: Federate and Graduate [LINK](http://sawconcepts.com/index/id5.html) <http://sawconcepts.com/index/id5.html>

SWORDS TO PLOWSHARE PROJECT: FEDERATION Net Centric Warfare trade federations
 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 as a procedural template framework is key to forming and maintaining sustainable Trade Federations as Distributed Autonomous Organizations DAO's / DAC's Corporation. Military's do one thing very well -- organize individuals into organizations <OrgID> and Organizational Units <OU><OU><OU>as widely dispersed autonomous groups working towards collective, synchronized goals following cyclical, iterative procedures. Federation involves fusion between #Bitcoin / military net centric operations both use term DAO Distributed Autonomous Organization DAO term first used by RAND military think tank in 2001 - now used by blockchain community [LINK](#)

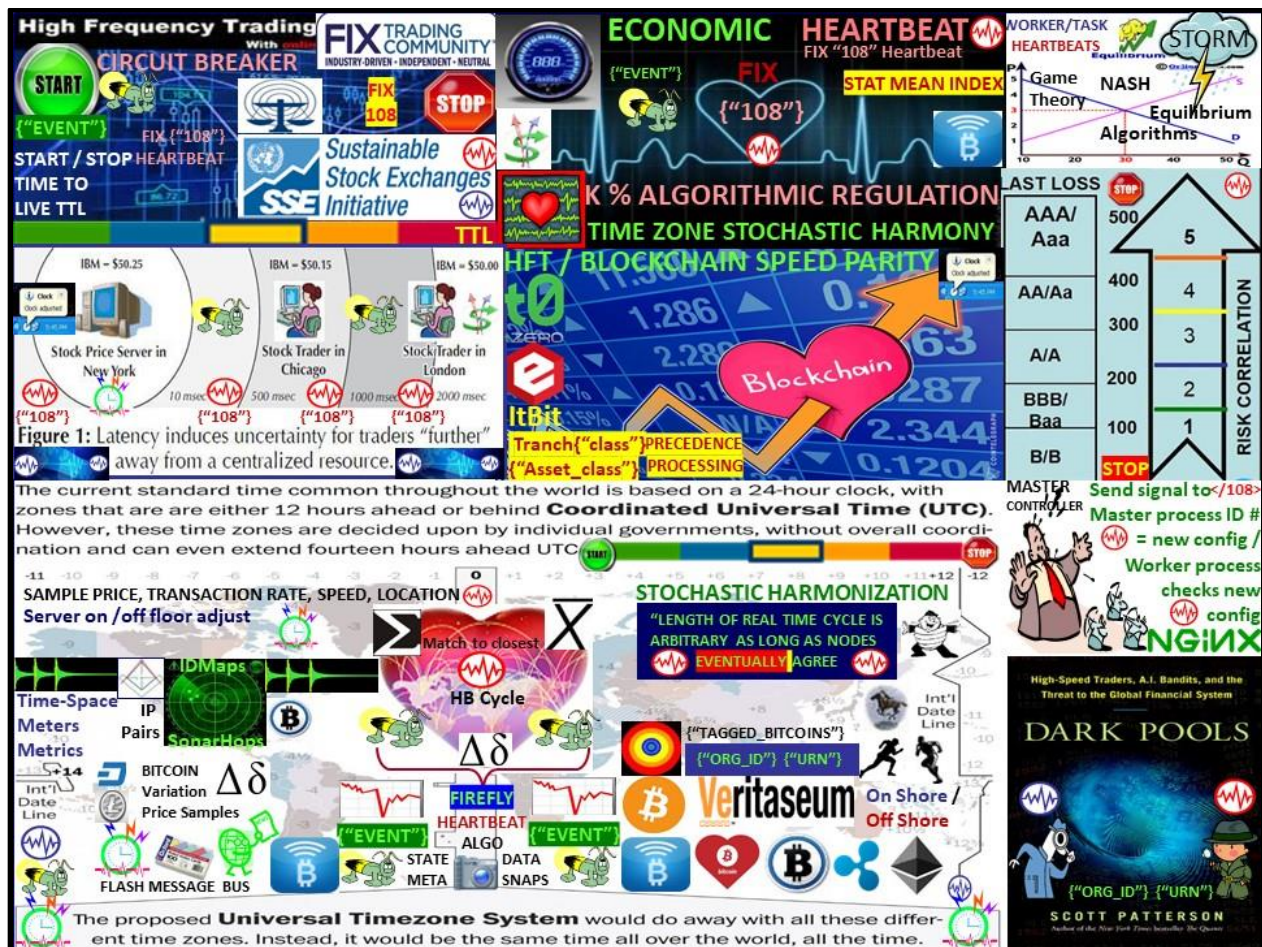


FIGURE 10: HFT CIRCUIT BREAKER / Blockchain transaction speed algorithmic regulation [LINK](#)

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

Use the "Great John Nash's" Equilibrium algorithms for trade parity among stock market "whales"

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

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 #Bitcoin World #Economic #Heartbeat <http://sawconcepts.com/index/id18.html> [LINK](#) See USPTO 13/573,002

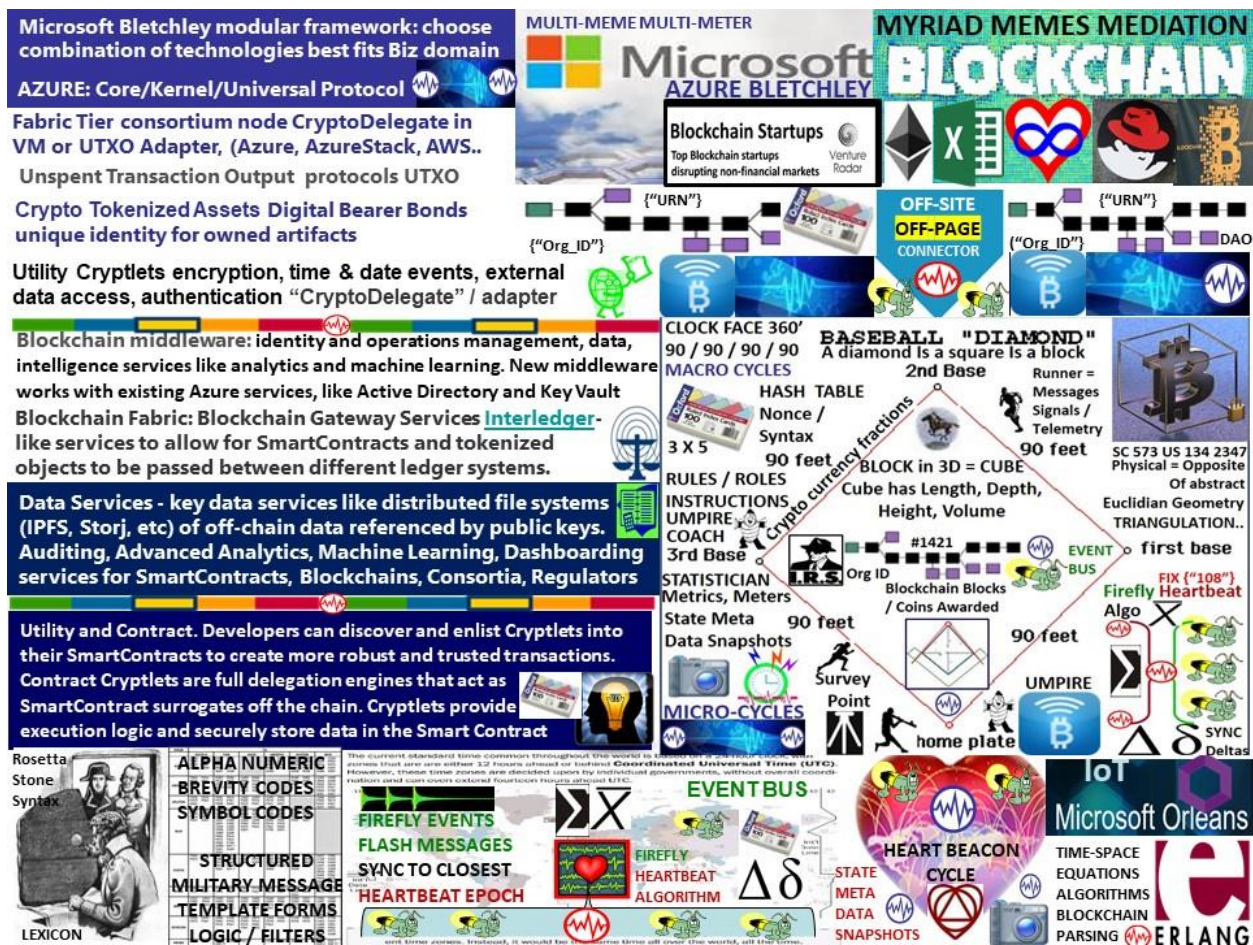


FIG 11: MICROSOFT BLETCHLEY BLOCKCHAIN AS A SERVICE BAAS / HEART BEACON CYCLE [LINK](#)

Quote from @DCCCertified @InsideBitcoins "Build mental models that help people wrap their heads around Bitcoin w/o having to understand it". A baseball diamond is a square, is a block. A baseball tournament is played on baseball diamonds are physical and tangible -- in every town in America. The opposite of abstract is physical.

US Supreme Court Alice Corp V CLS Bank: "claims ineligible for patent protection under 35 U. S. C. §101 "directed to an abstract idea" ALICE CORP v CLS BANK <http://1.usa.gov/1V91pQe> [LINK](#)
 Patent application 13,573,002 is described using a baseball league tournament. [LINK](#)
<http://slideshare.net/StevenMcGee2/13573002-the-heart-beacon-cycle-patent-application>

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 - in my opinion. **#Coindesk**: The Opportunity for Interoperable Chains of Chains [LINK](#)



Figure 12: Hashgraph” / Heart Beacon Cycle Time – Space Meter Synergy

Web [Page](http://www.sawconcepts.com/index/id91.html): <http://www.sawconcepts.com/index/id91.html>

Hashgraph: Abstract. A new system, the Swirls hashgraph consensus algorithm, is proposed for replicated state machines with guaranteed Byzantine fault tolerance. It achieves fairness, in the sense that it is difficult for an attacker to manipulate which of two transactions will be chosen to be first in the consensus order. It has complete asynchrony, no leaders, no round robin, no proof-ofwork, eventual consensus with probability one, and high speed in the absence of faults. It is based on a gossip protocol, in which the participants don't just gossip about transactions. They gossip about gossip. They jointly build a hashgraph reflecting all of the gossip events. This allows Byzantine agreement to be achieved through virtual voting. Alice does not send Bob a vote over the Internet. Instead, Bob calculates what vote Alice would have sent, based on his knowledge of what Alice knows. This yields fair Byzantine agreement on a total order for all transactions, with very little communication overhead beyond the transactions themselves. Hashgraph is event based and involves calculating consensus based on activity snapshots in a given moment in time (HBC)

SOURCE: THE SWIRLDS HASHGRAPH CONSENSUS ALGORITHM: FAIR, FAST, BYZANTINE
FAULT TOLERANCE AUTHOR: LEEMON BAIRD BAIRD@SWIRLDS.COM
MAY 31, 2016 SWIRLDS TECH REPORT SWIRLDS-TR-2016-01



FIGURE 13: IOTA TANGLE / DAG Directed Acyclic Graph / Heart Beacon Cycle Time – Space Meter synergy

The Tangle is based on the concept of a Directed acyclic graph DAG. A directed acyclic graph (DAG!) is a directed graph that contains no cycles. A rooted tree is a special kind of DAG and a DAG is a special kind of directed graph. The DAG consists of finitely many vertices and edges, with each edge directed from one vertex to another, such that there is no way to start at any vertex V and follow a consistently-directed sequence of edges that eventually loops back to V again. Equivalently, a DAG is a directed graph that has a topological ordering, a sequence of the vertices such that every edge is directed from earlier to later in the sequence. IOTA TANGLE SOURCE: [IOTA - Next Generation Blockchain](https://iota.org) <https://iota.org>

The Heart Beacon Cycle Time - Space meter describes an improvement to an acyclic algorithm based on firefly synchronization that uses the median / mean of the firefly heartbeat synchronization algorithm to strive to sync to the closest OPTEMPO Heart Beacon Cycle.

Firefly inspired heartbeat synchronization theory / algorithm See slide #22 [LINK](#)



Figure 14: Syntax Lexicon Library Rosetta Stone adapted swords to plowshare from [NATO](https://www.nato.int)

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 the 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, Security Identifiers

LINK: <http://sawconcepts.com/index/id44.html> Syntax Lexicon Library Rosetta Stone

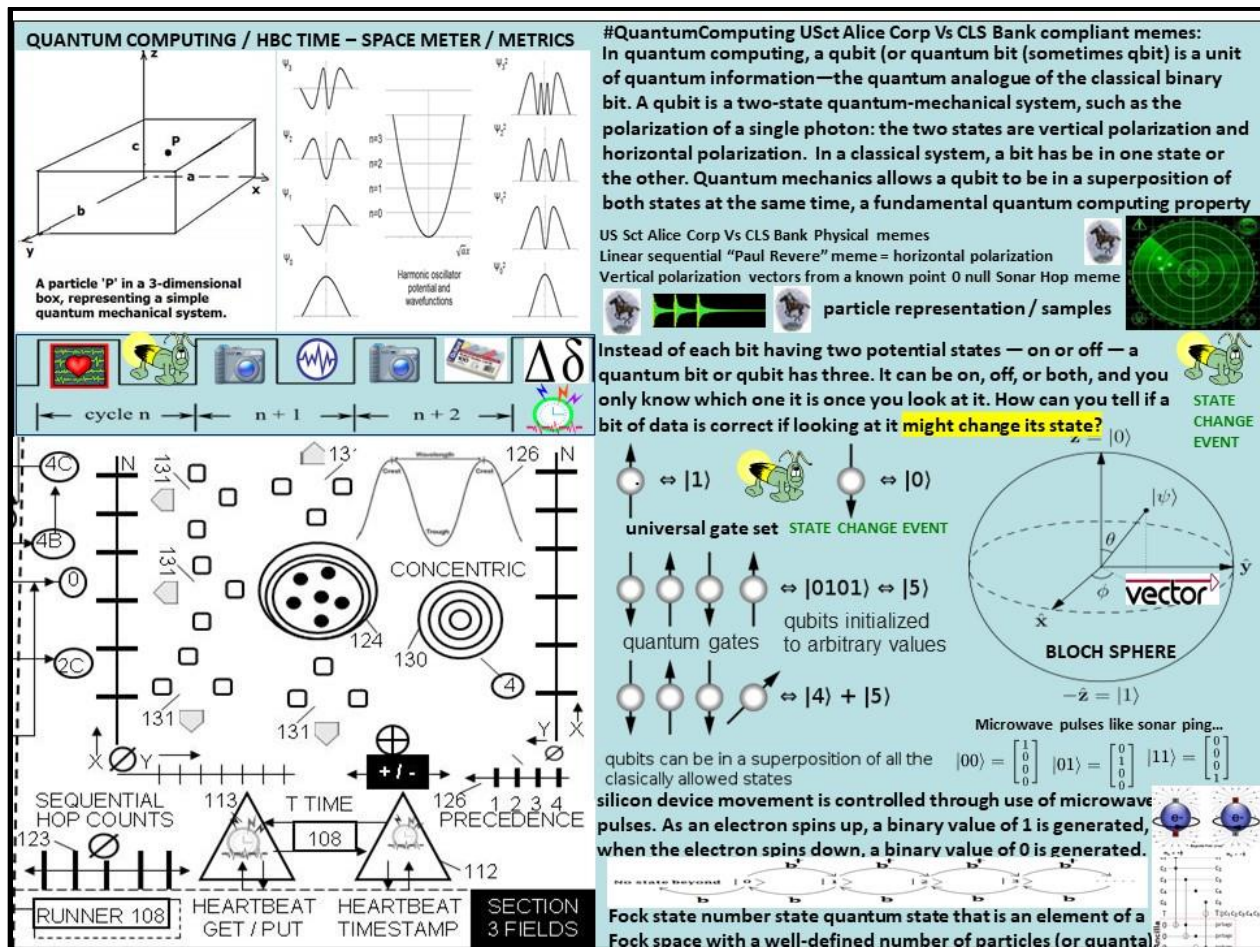


FIGURE 15: QUANTUM COMPUTING / Heart Beacon Cycle Time – Space Meter US Sct Alice V CLS Bank meme

Quantum computing studies theoretical computation systems (quantum computers) that make direct use of quantum-mechanical phenomena, such as superposition and entanglement, to perform operations on data. Quantum computers are different from digital electronic computers based on transistors. Quantum computer: a computer which makes use of the quantum states of subatomic particles to store information.

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>

The Heart Beacon Cycle Time – Space Meter USPTO 13/573,002 is a universal method and means to provide geo-spatial temporal intensity metrics in meters for example with an telecommunications mesh fabric using Euclidian geometry and Japanese paper folding Origami techniques to represent unusual geo-spatial sampling areas. The firefly inspired heartbeat synchronization algorithm provides asynchronous method to report observed events that are reported via a universal heartbeat synchronous time cycle event bus that is both product and protocol neutral.

