



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

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

Reuse of DARPA / NATO's system of systems engineering swords to plowshares: distributed systems engineering signaling, telemetry support syntax lexicon and engineering framework for the Distributed Autonomous Automated Economy DAE / Medium Article [LINK](#)

Universal event flash heartbeat message bus supporting geo-spatial, temporal, semantic – syntactic distributed systems synchronization [LINK](#) <https://bit.ly/2s6Fnav>

Quantum Computing metaphor meme, metrics, meters (Supreme Court Alice compliant)

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

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

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

[OneDrive Document Folder](#)

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

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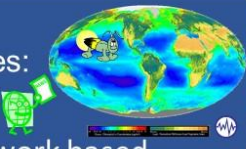
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Defense Contractor for Validity Systems, SAIC International, MITRE, BAE Systems 1996 – 2002


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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


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

- Economic Framework systemic incentives: 
- DARPA / NATO System of Systems framework based
 - 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 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)


“In the beginning (of time), there was the word” (syntax)




BLOCKCHAIN Programmable Money
← cycle n → n+1 → n+2 → $\Delta \delta$




CLIMATE CHANGE



SYNTAX




Semantic blockchain



Timestamp Server

A timestamp server takes a hash of a block of items to be timestamped and widely publishing the hash. The timestamp proves that the data must have existed at the time in order to get into the hash. Each timestamp includes the previous timestamp in its hash, forming a chain, with each additional timestamp reinforcing the ones before it.



Genesis Block

The first block of a blockchain

GENESIS BLOCK 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.

No data on previous block transaction because there were no previous blocks.

XBRL / CDL / DAML	STOCK MIC CODES
STRUCTURED DATA EXCHANGE TEMPLATE FORMS	
300+ USE CASES	
LOGIC / FILTERS	
SYNTAX / SYMBOL	
LEXICON LIBRARY	

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, syntactic - semantic consistency, interoperability among myriad programmable money, economy 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. 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 everyone and everything.

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: <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>)

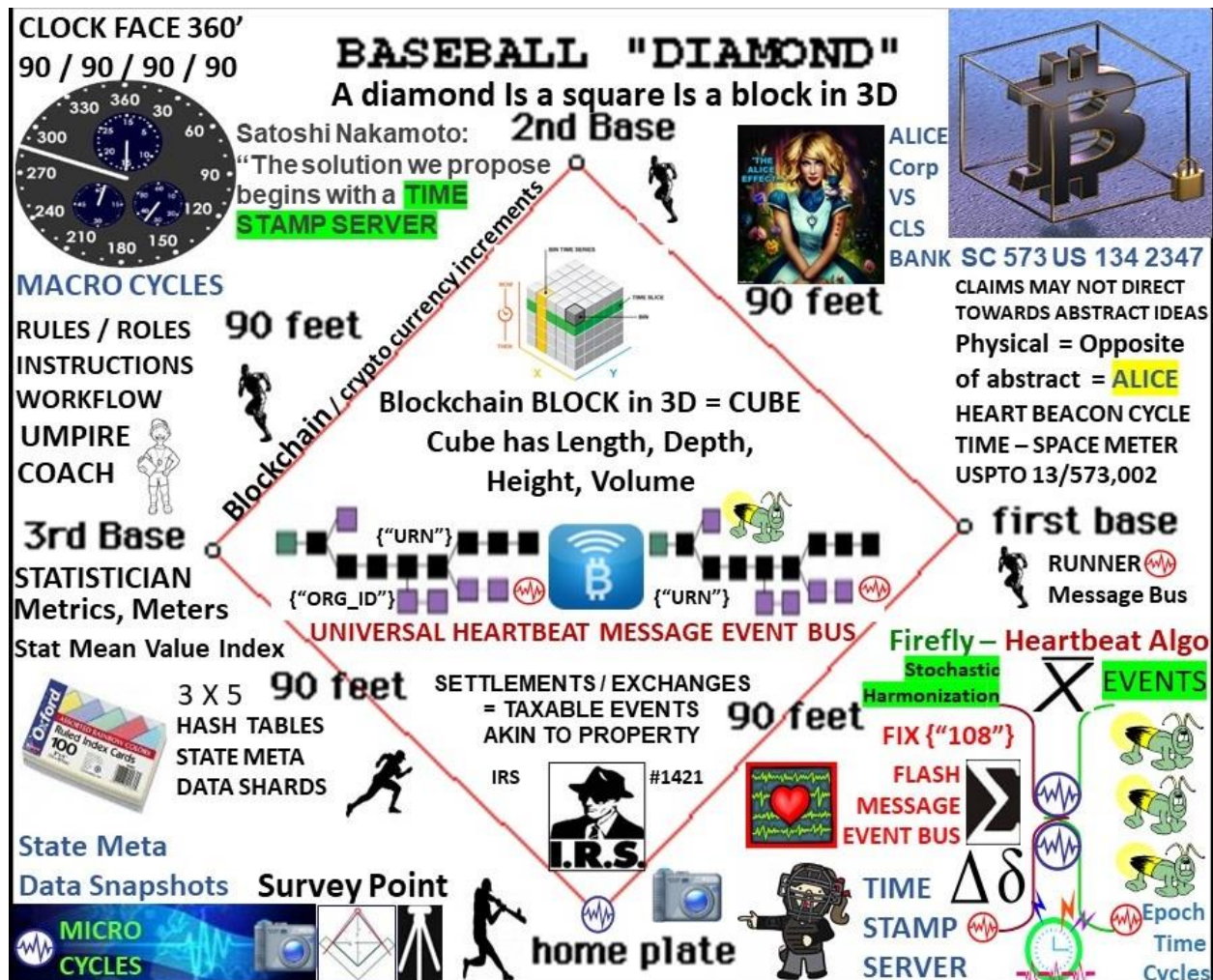


Figure 2: Epoch time cycles and syntax: the two main building blocks of the internet, net of money

The **Internet**, net of programmable **money** is formed using 1) Time Cycle epochs used to parse (not) syntax as instructions for workflow and (routing) filters. This is key to cross meme interoperability and consensus among myriad cryptocurrency, blockchain memes and artificial intelligence systems.

In the beginning (of time), there was the word.... it's how the internet and the internet of money / programmable economy work... silicon chips create time epochs that are used / not used to process syntax (terms, instructions etc). Bitcoin is a made up meme / metaphor as is the blockchain which don't actually exist any more more than Vint Cerf's packets frames, pings . Bots, motes etc.

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 cryptocurrency blockchain memes establishing a consistent, equitable one world

economic system of systems is to focus on two building blocks -- time epoch cycles and syntax. USPTO 13/573,002 conforms to these facts in my opinion.

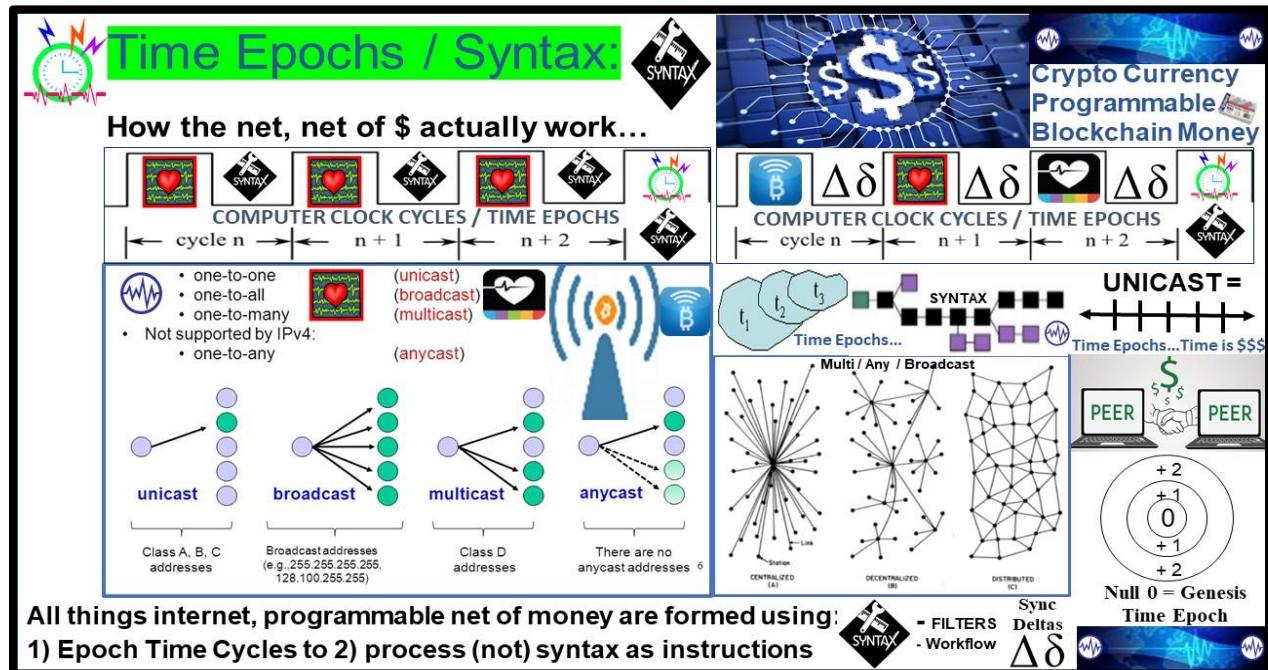


Figure 3: How the programmable internet and internet of money really work

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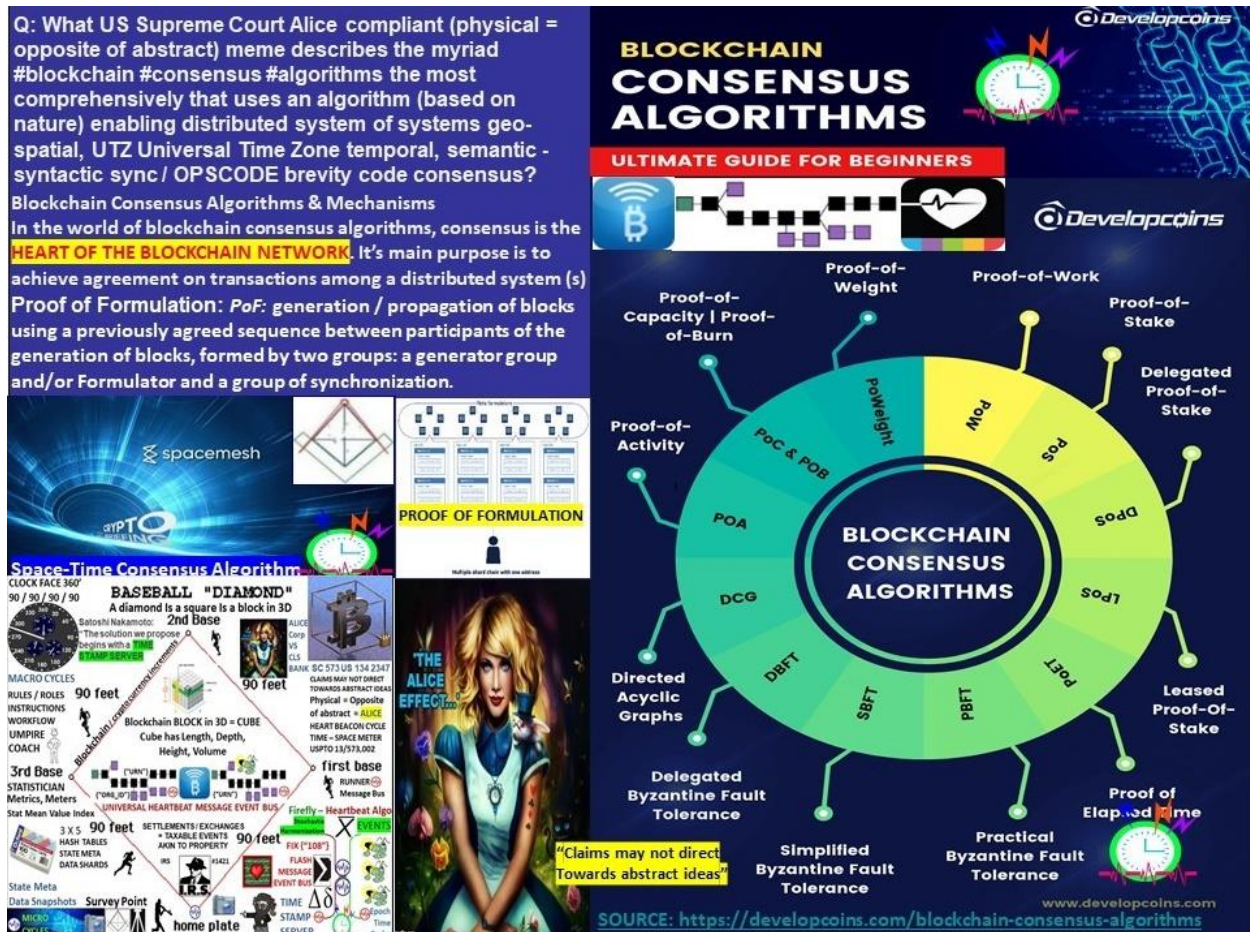


FIG 4: Which meme / metaphor addresses the myriad blockchain algorithm methods, strategies?

Q: What US Supreme Court Alice compliant (physical = opposite of abstract) meme describes the myriad blockchain consensus algorithms the most comprehensively that involves an algorithm (based on nature) that will enable distributed system of systems geo-spatial, UTZ Universal Time Zone temporal, semantic - syntactic sync / OPSCODE brevity code consensus?

Source: <https://www.developcoins.com/blockchain-consensus-algorithms>

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.

#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 6: 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 7: 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/)



FIGURE 8: 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 and economic system of systems stability. [Source: http://sawconcepts.com/index/id43.html](http://sawconcepts.com/index/id43.html)

FROM

GCSS-A	C002 C203
ASAS	F002 F014
	F015 F541
	S201 S309

ALPHA-NUMERIC BREVITY CODES

C002 C203	C002 C203	C002	C203
F002 F014	F015 F541	S201 S309	S305 S309
F002 F015	F015 S201		

CODE GUIDE

ATDS	MCS
C203	C002 C203
F014	E400 F002
F541	F014 F015
S305	F541 S201
S309	S309 S507

USMTF / XML MTF FORMATTED
MESSAGE CATALOG = 300 + messages
info exchange sets using common, **CONSENSUS** Message Text Formats
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**

INFORMATION CONDITION
4 3 2 1

SYMBOLS RULE THE WORLD

Information Elements Roles

- COI Determination Org Interaction
- Search and Discovery
- Ontologies STANDARDS
- Taxonomies REFERENCE
- Metadata Attributes / Filters

FILTERS
{ 'Org_ID' } { 'URN' }

FFUDN: Field Format Unit Designator #
FFIRN: Field Format Index Reference #

Structured military messaging ID's
messages, message sets, data element, symbol fields
BY Form Field Position & NUMBER

Firefly-Heartbeat Flash Messages

MESSAGE CATALOG
300 + Use Cases

Object Categories	Examples	Location	Movement	Identify	Status	Activity	Intent
OOB	SYNTAX LEXICON	lat/long	spd/hdg	country / alliance, type/class	readiness	targeting, reconitering	COA ("Java JS")
Infrastructure	Comm, power, transportation, water/sewer	network, grid	throughput, flow rates	name, part-of relationships	BDA, op levels	repair, broadcasts	expansion plans
Sociological	Culture, religion, economic, ethnic, government, history, languages	temples, historic structures		ER Model	Class Diagram	Relational Database	Object DBMS
Geophysical	Terrain, weather, climatology, oceanography, astrometry	feature lat/long, alt/dpth		Attribute	Attribute	Field / Column	Attribute

OPERATIONAL NODES / ACTIVITIES

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	11.2 - Linear	
11.4.1.2.2 - Evaluated D	2 - Estimate Type	
11.4.1.3 - Value	1.2.1 - Estimated	
	1.2.2 - Observed	
	1.2.3 - Predicted	
	1.2.4 - Smoothed Data	
SYMBOL	Friend	Neutral
2525C	Partner	Competitor
11.4.1.3.5 - Surface	4 - Velocity	
11.4.2 - Platform / Point / Feature Type	1.4.1 - Horizontal	
11.4.3 - Specific Type	1.4.2 - Vertical	
11.4.4 - Type Modifier	1/A Confidence	
11.4.5 - Unit	1 - Bearing Angle	
	2 - Bearing Angle Rate	
	3 - Covariance Matrix	

Figure 9: Syntax Lexicon Library Rosetta Stone adapted swords to plowshare from [NATO](http://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

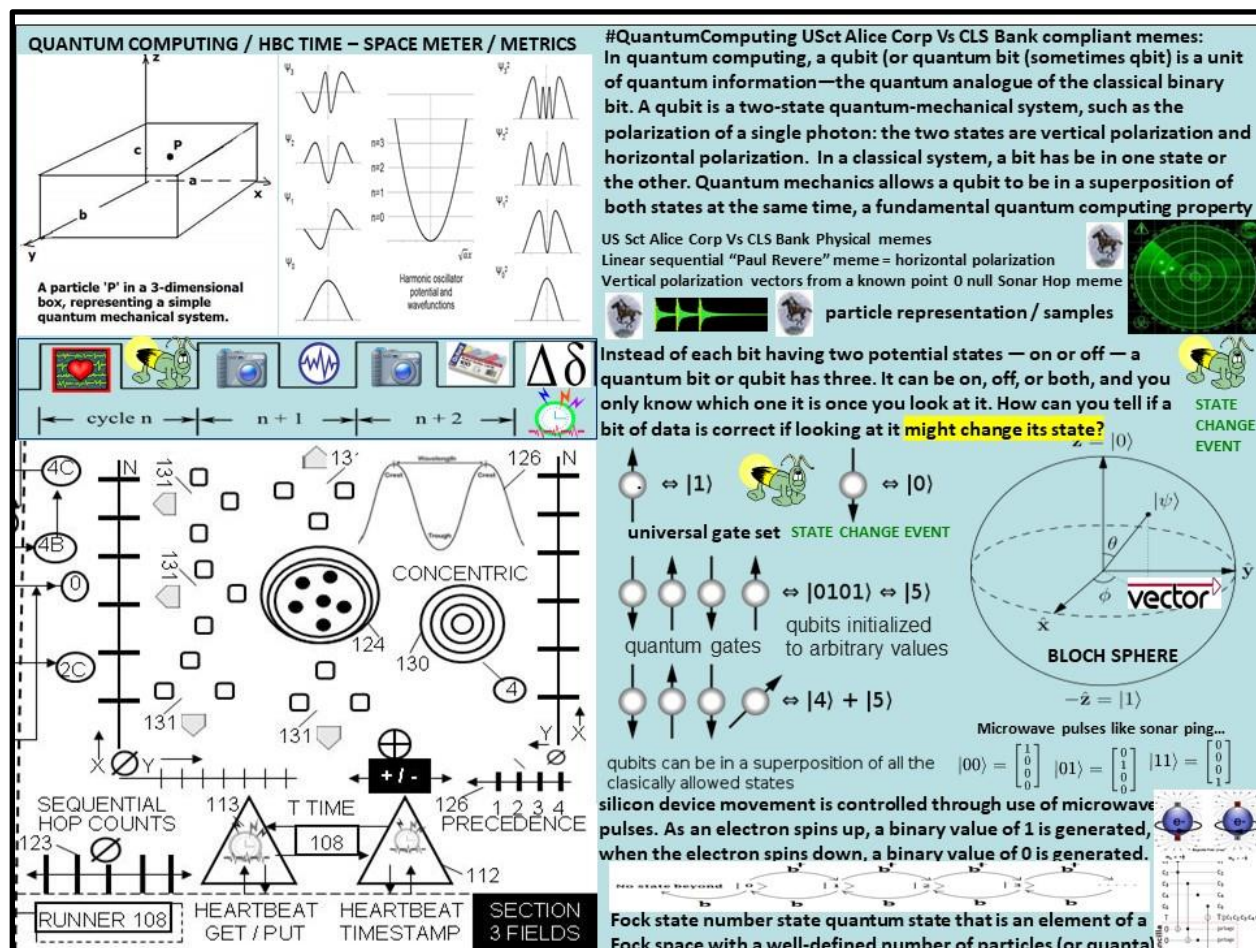


FIGURE 10: QUANTUM COMPUTING / Heart Beacon Cycle Time – Space Meter US Sct Alice V CLS Bank meme

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>