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United States Patent and Trademark patent application #13,573,002 2004-17 [LINK](#)

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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](#)

SCRIBD <https://scribd.com/user/11781571/Steven-McGee> [LINK](#)

TWITTER: http://twitter.com/Heart_Beacon Medium: <https://medium.com/@heart.beacon.cycle>

Quantum computing / Heart Beacon Cycle Time – Space Meter Sct Alice V CLS Bank [meme](#)

Economist Milton Friedman's K% Rule Eco-Economic Heartbeat [LINK](#)

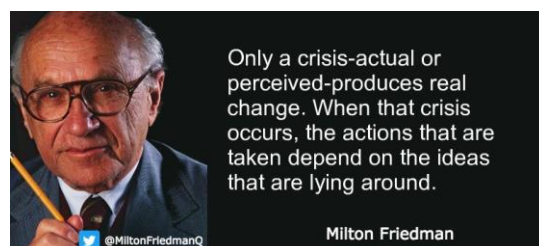




FIGURE 2: FEDCOIN / WORLD COIN ECONOMIC HEARTBEAT

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, less CO2 carbon emissions

- 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., backed)
- WAVES: TOKENIZES NATIONAL CURRENCIES / I.R.S. Bitcoin transactions as taxable events
- ECONOMIST MILTON FRIEDMAN'S K% RULE Lead Economic Indicator economic pulse

SOURCE [LINK: http://www.sawconcepts.com/index/id9.html](http://www.sawconcepts.com/index/id9.html)



FIGURE 4: 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 11: 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)



FIGURE 6: 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)



Figure 8: 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 9: Electronic Government as a Service / Heart Beacon Cycle synergy

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 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 if you will. The firefly inspired heartbeat algorithm includes flash heartbeat messages that act as a universal event / alert message bus.

eGaaS, an international Blockchain platform for organizing the economic, state and social activities of citizens and their communities on the basis of smart law and smart contract system Electronic Government as a Service.

eGaaS implements four basic functions needed for efficient transfer of most types of government, legislative bodies and business activities into Blockchain technology:

- financial system
- registry structure
- smart contract algorithm
- smart law formation and execution mechanism

In eGaaS a mechanism is implemented for formation and execution of smart laws. Smart laws are algorithms describing the rules and conditions regulating the execution of state laws.

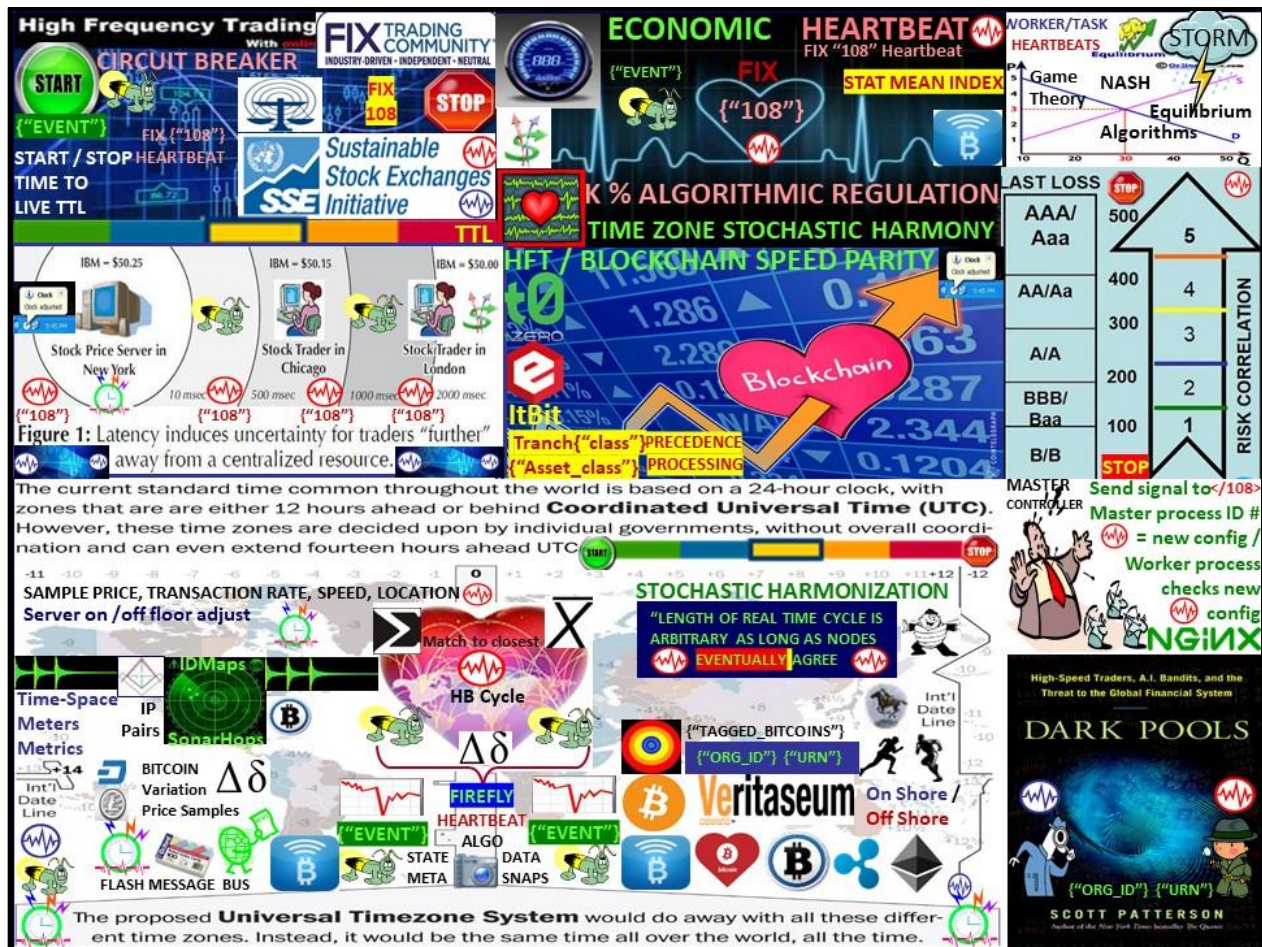


FIGURE 10: HFT CIRCUIT BREAKER / Blockchain transaction speed algorithmic regulation [LINK](#)

Algorithms drive markets but do not regulate them = Napoleon @ Waterloo Groundhog's Day

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

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

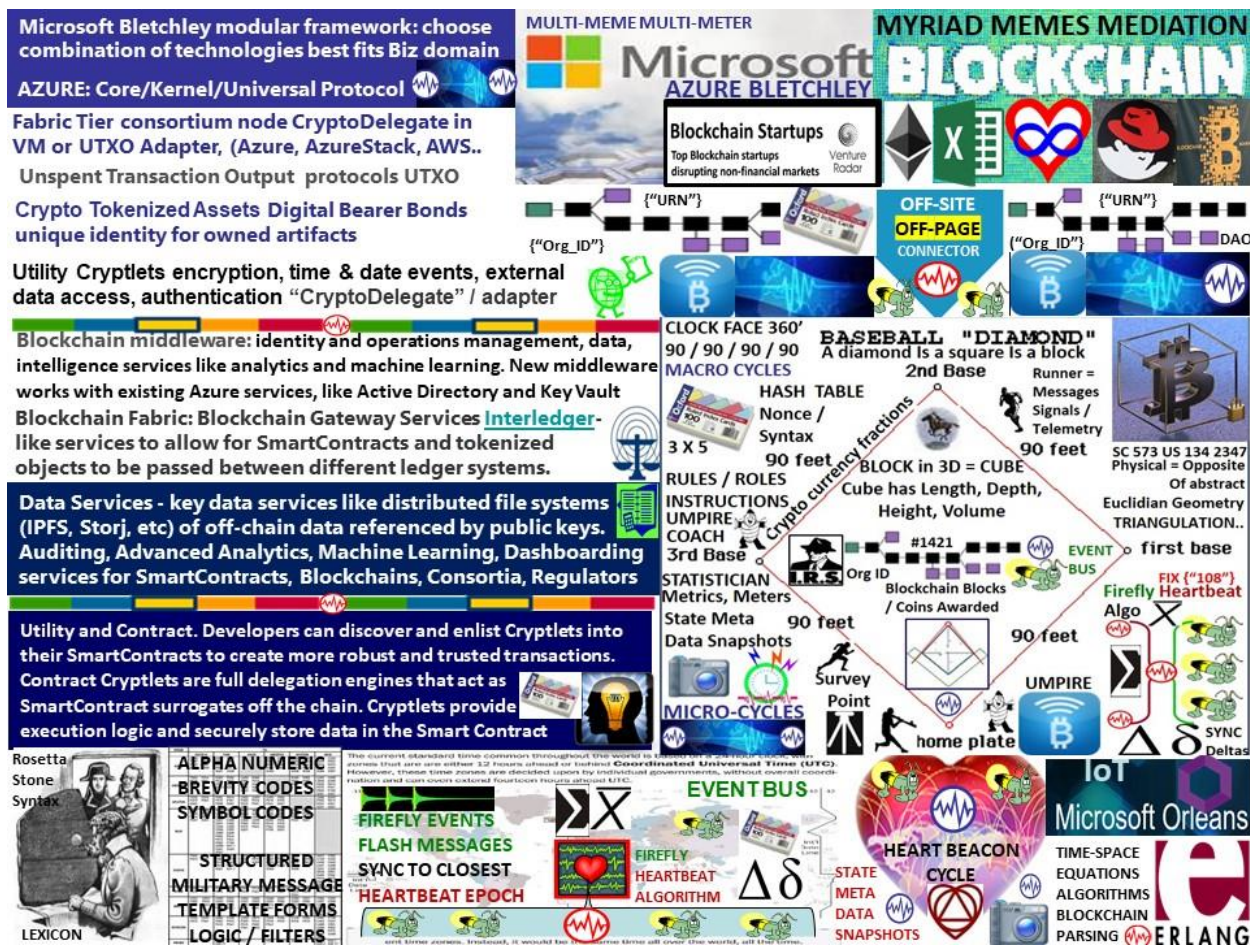


FIG 11: MICROSOFT BLETCHLEY BLOCKCHAIN AS A SERVICE BAAS / HEART BEACON CYCLE [LINK](#)

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](#)

FROM

GCCS-A

C002 C203
F002 F014
F015 F541
S201 S309

ASAS

FEDERATED MISSION NETWORKING

NATO FMN

FEDERATE SHARE

ALPHA-NUMERIC BREVITY CODES

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**

CODE GUIDE

ATDS

C203
F014
F541
S305
S309

MCS

C002 C203
E400 F002
F014 F015
F541 S201
S309 S507

INFOCON

4 3 2 1

INFORMATION CONDITION

"SYMBOLS RULE THE WORLD"

Information Elements Roles

- COI Determination Org Interaction
- Search and Discovery
- Ontologies STANDARDS
- Taxonomies REFERENCE
- Metadata Attributes / Filters ('Org_ID') {'URN'}

FILTERS

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

PROCESS MESSAGE BY PRECEDENCE

UNIVERSAL EVENT / ALERT MESSAGE BUS

MESSAGE CATALOG

300 + Use Cases

Object Categories	Examples
OOB	SYNTAX LEXICON
Infrastructure	Comm, power, transportation, water/sewer
Sociological	Culture, religion, economic, ethnic, government, history, languages
Geophysical	Terrain, weather, climatology, oceanography, astrometry

Data Elements: entity, attribute, relationship equivalents

HEARTBEAT MESSAGE = K00.99

Information Categories and Examples

Location	Movement	Identify	Status	Activity	Intent
lat/long	spd/hdg	country / alliance, type/class	readiness	targeting, reconitering	COA {"Java JS"}
Machine Trust Language MTL					

STRUCTURED DATA EXCHANGE Message Sets

CDL Contract Description Language

YAML

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	
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	1A - Confidence	
11.4.5 - Unit	1 - Bearing Angle	
	2 - Bearing Angle Rate	
	3 - Covariance Matrix	

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

The Next Web TNW: a 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

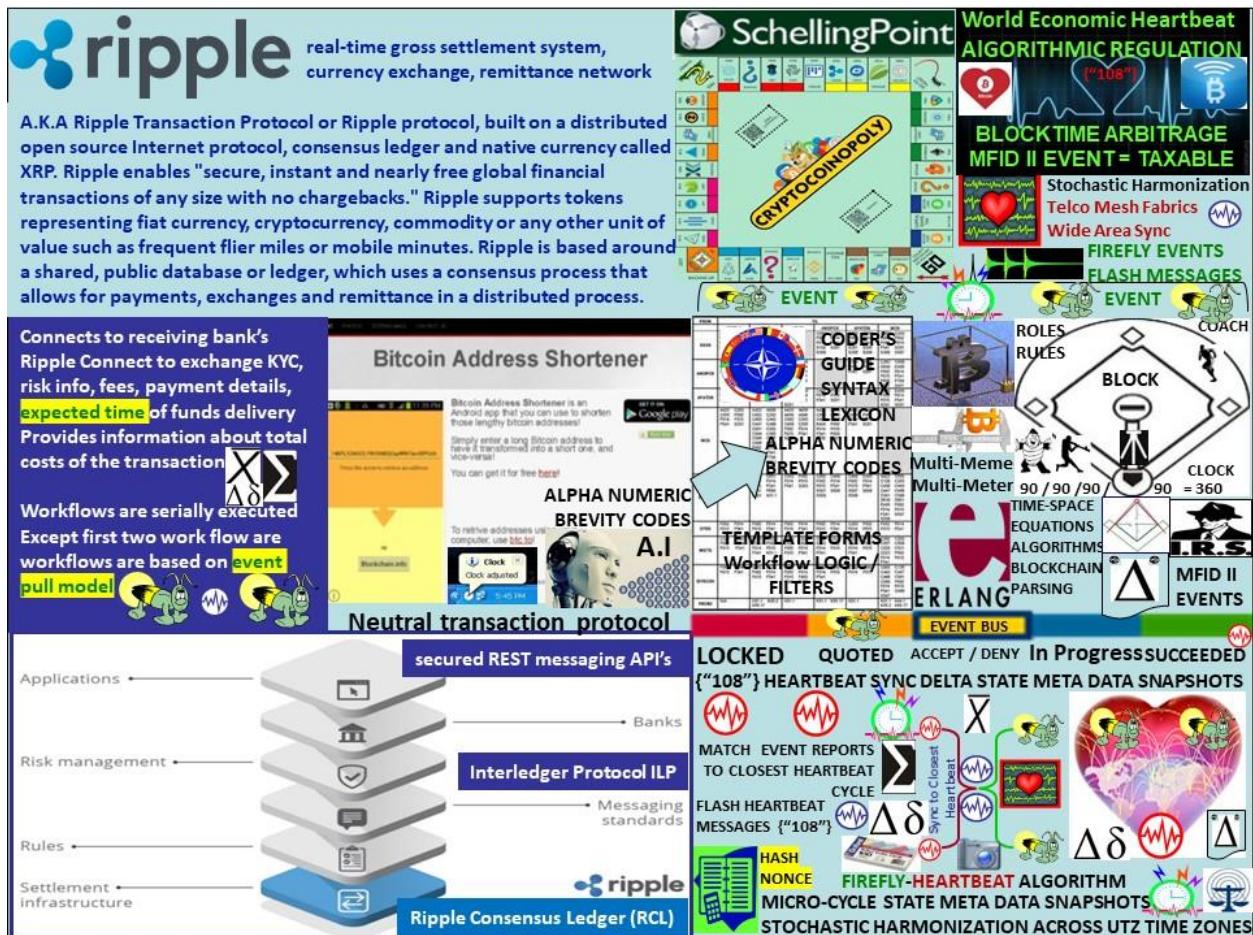


FIGURE 16: RIPPLE RTP / Heart Beacon Cycle Time – Space Meter synergy

Quote from @DCCertified @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 block is awarded using age (time) or vectors (time / direction / velocity) or voting (tournament league board). A baseball tournament is played on baseball diamonds that are as physical and tangible as it gets -- in every town in America.

SEE MFID II TAX CODE RULING: Bitcoin A to B to C to N Bitcoin transactions are taxable events

US Supreme Court Ruling 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

The Heart Beacon Cycle patent application 13,573,002 is described using a baseball league tournament. A land use meme and internet survey techniques to define geo-spatial temporal areas in time – space will be helpful in determining the percentage of a coin bought or sold and who, where, when, how much, of a Bitcoin was transacted in context with I.R.S memo 1421 on Bitcoin that deems it property when purchased by a client.

Reference: Patent application # 13,573,002 Heart Beacon Cycle Time - Space Meter

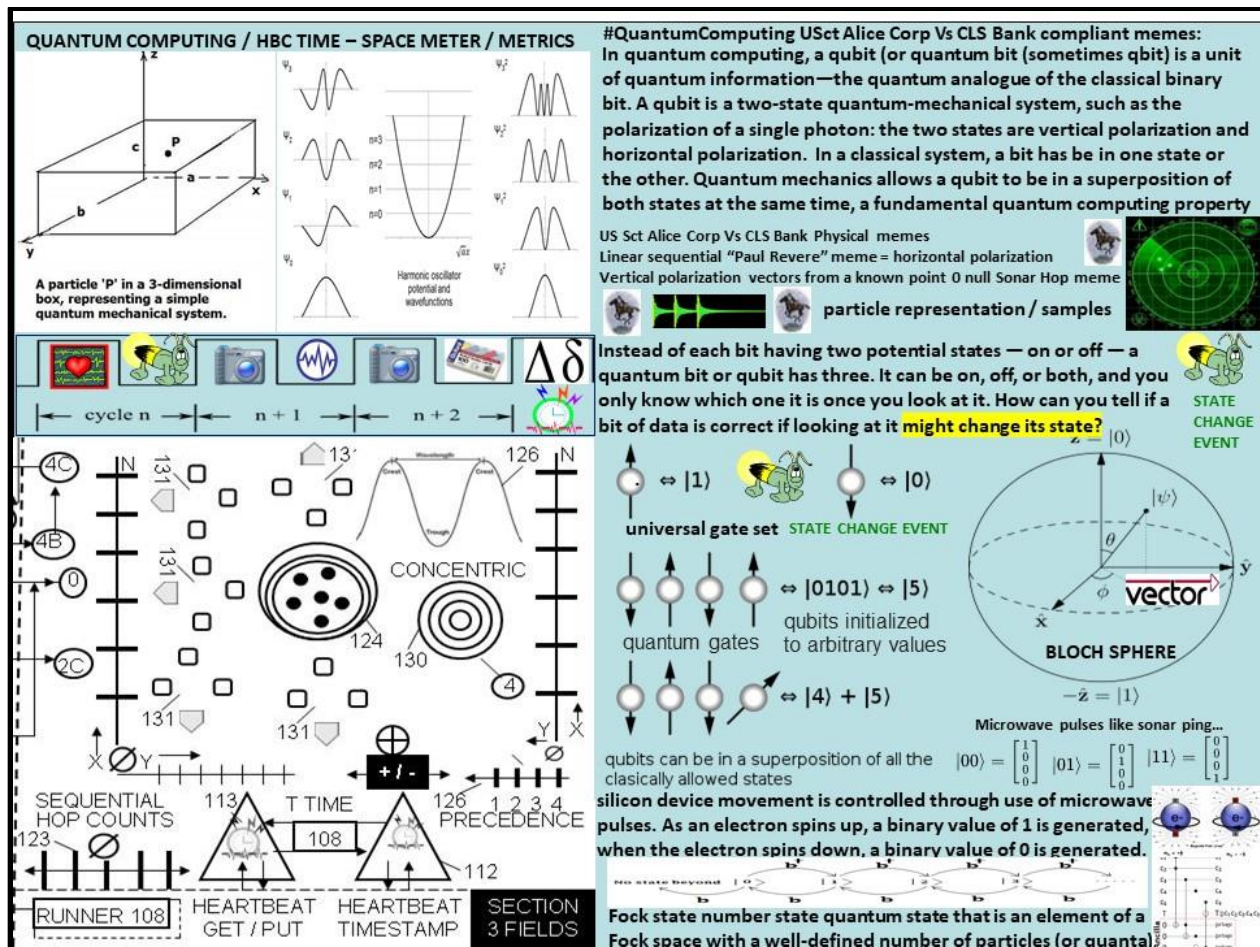


FIGURE 17: QUANTUM COMPUTING / Heart Beacon Cycle Time – Space Meter US Sct Alice V CLS Bank meme

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.