

**“Symbols  
Rule  
The World”**  
**OPSCODE**  
**BREVITY**  
**CODES**  
mapped  
to symbols  
**2525A,C D**

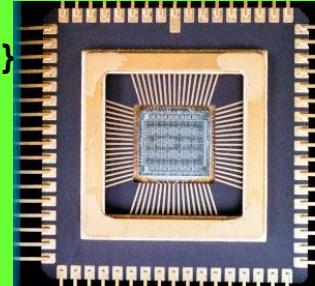


# THESIS: All things internet, programmable net of \$\$ money are formed using:



**1.Time epochs created by oscillating quartz crystal silicon microchips.** </Foundation\_Tech framework> 

**Foundation\_Tech framework>  
TradeFI / Trade Reference \$\$\$”}**

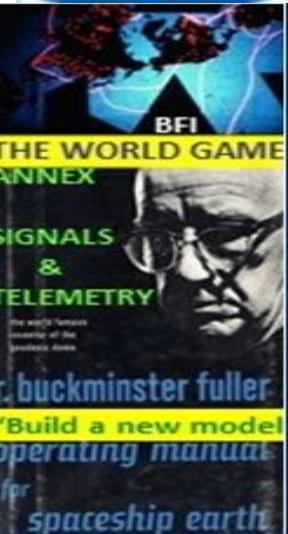
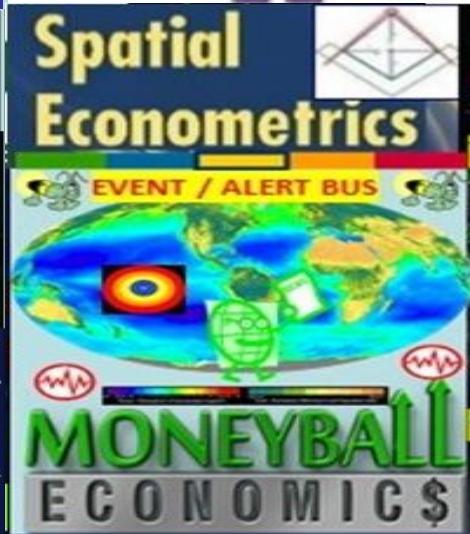
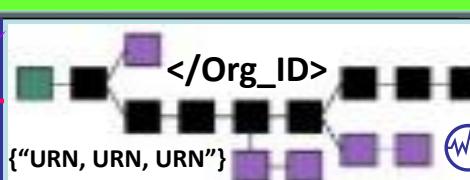


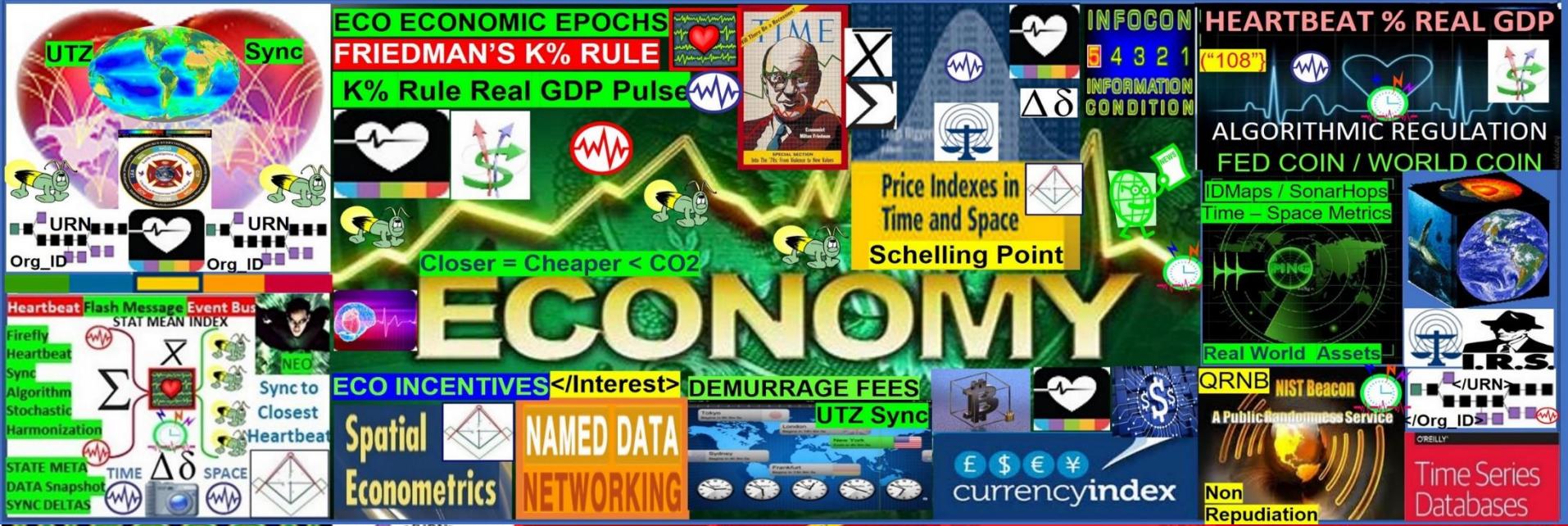
**2. Syntax used / not used as code instructions during epoch time cycles.**

**All things internet, internet of money, blockchains are sent via unicast, multicast, anycast protocol (s).**

The image is a collage of several logos and diagrams:

- Blockchain:** A blue circular logo featuring a white robot head with a lightning bolt, a blue speech bubble with the word "NEWS", and a green speech bubble with the word "SYNTAX".
- ISO:** The ISO 9001 quality management system logo.
- NATO:** The North Atlantic Treaty Organization logo.
- FMN:** The Federated Mission Network logo.
- SYSTEM OF SYSTEMS STRUCTURED DATA:** A green banner with the text "SYSTEM OF SYSTEMS STRUCTURED DATA".
- Opposite of Abstract:** Text at the bottom left: "USPTO 13/573,002 BASEBALL MEME PHYSICAL = OPPOSITE OF ABSTRACT".
- Clock Cycles/EPOCHS:** A diagram showing three overlapping ellipses labeled "cycle n", "n + 1", and "n + 2" with arrows pointing right, and a symbol for "Δδ" (delta delta) at the bottom right.





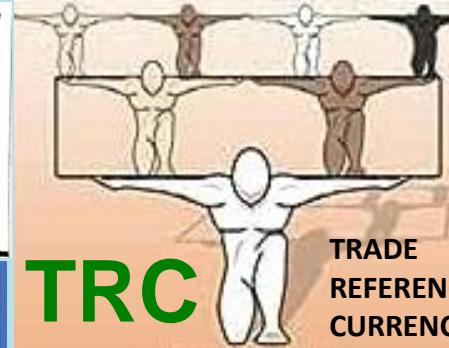
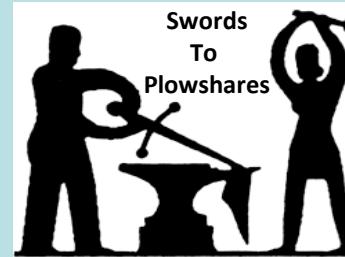
Eco Economic Epoch Heartbeat: reuse of DoD / NATO signal, telemetry syntax - symbol set structured data exchange system of systems engineering framework for DAO Trade Federations, programmable money / Economy. It is time to stand on the shoulders of giants. SLA Service Level Agreement Eco incentives: closer = < time, cheaper, < fuel, < CO2 "Build a new model that makes the old model obsolete" Buckminster Fuller



# Eco Economic Epochs

## TradeFi / TRC

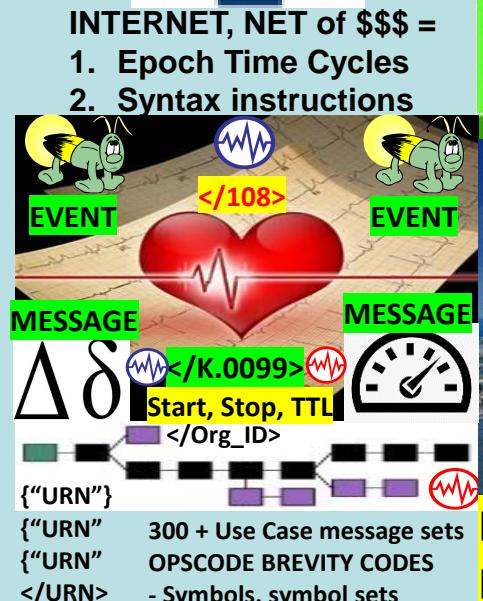
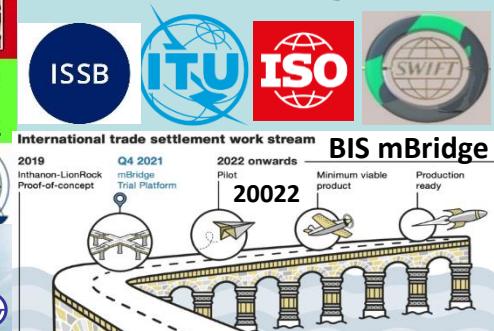
### FOUNDATION TECHNOLOGY



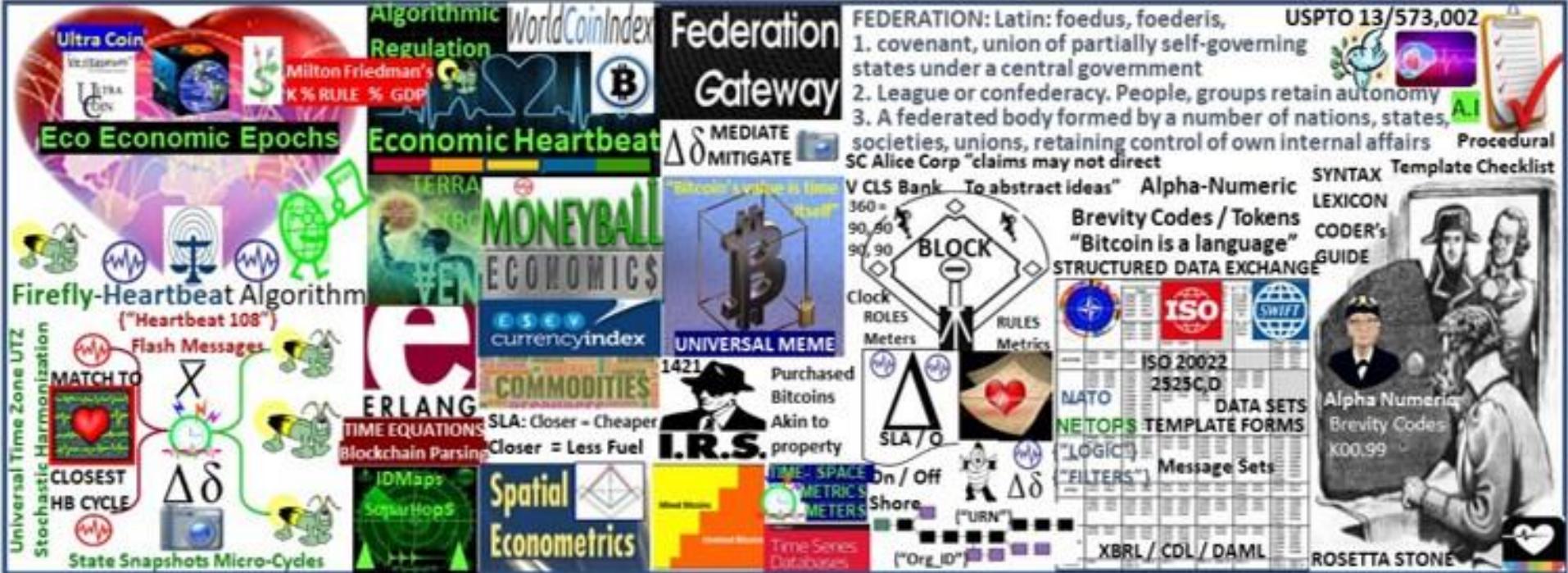
**TRADE REFERENCE CURRENCY**



**"Build a new model"**  
Standing on the shoulders of giants



**FOUNDATION TECH**  
**For Programmable \$\$\$**  
**Programmable Economy**  
**Eco Economic Epochs**  
**Symbol / Message Sets A.I.**  
**FIREFLY Inspired Heartbeat Algorithm**





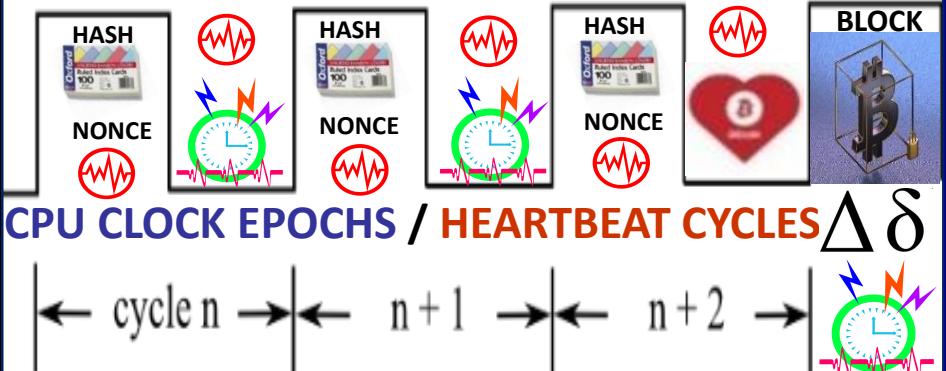


## ALGORITHMIC REGULATION

The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC.



The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



# ECONOMIC HEARTBEAT



# **MACRO ECONOMIC VALUE STAT MEAN \$ TRADEFI / PRICE / SPEED MATCH**

# K% RULE ECONOMIC HEARTBEAT



## K% VARIABLE YEARLY GDP SNAPSHOT





WAVI



# TOKENIZES CURRENCIES

'K-Percent Rule Macro economic  
money-supply heartbeat  
automatically adjusts \$ supply  
by a set amount "K" variable  
regardless of cyclical state of the  
economy e.g., set growth rate  
variable to real yearly % GDP



## **LEADING ECONOMIC INDICATORS**

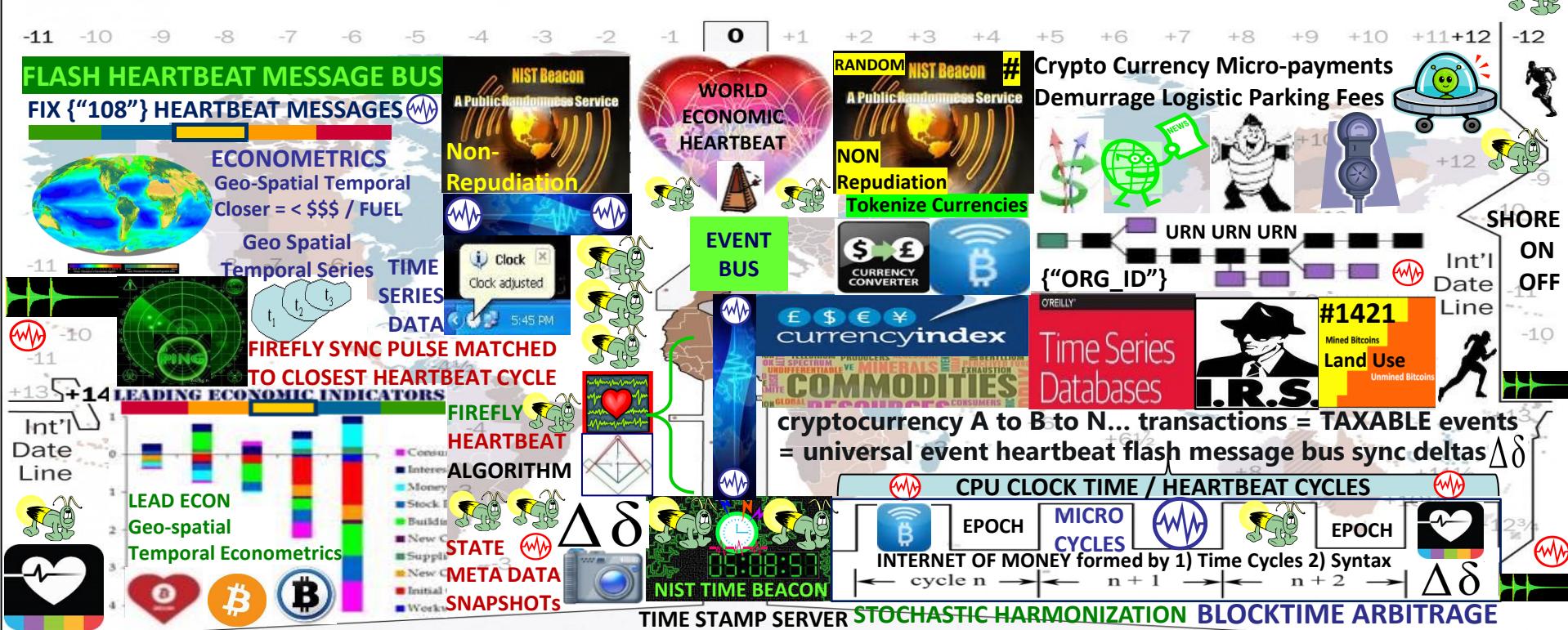


“Heartbeat Synchronization strives to have nodes in a distributed system generate periodic local “heartbeat” events approximately at the same time. It differs from classical clock sync in that Nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. There is no requirement regarding the length of a cycle with respect to real time as long as the length is bounded and all nodes agree on it eventually”





The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC. **UTZ TIME ZONE SYNC STOCHASTIC HARMONIZATION**



The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.

**Adaptive Procedural Template (checklist): Foundation tech for programmable \$\$\$, Economy / DeFi**



- Reuse, mod of System of systems engineering framework, Syntax Lexicon Library data elements
- **STRUCTURED DATA EXCHANGE**  
Reuse brevity codes mapped to 2525D symbol sets comprised of 300 + message sets for A.I. - machine Block-Time DLT arbitrage among Trade Federations </Org\_ID> {"URN"} </URN> = COMMODITY



Eco Economic Epoch GDP Heartbeat signals and telemetry framework



**Spatial / temporal UTZ synchronization, stochastic harmonization, Time - Space Distance Estimation Service Common Consensus Algo meme Eco sustainable incentives**

**“We can synchronize ourselves, DAO Trade Federations in time - space for common purposes”**

**Eco sustainable, Equitable Economic econometrics.**

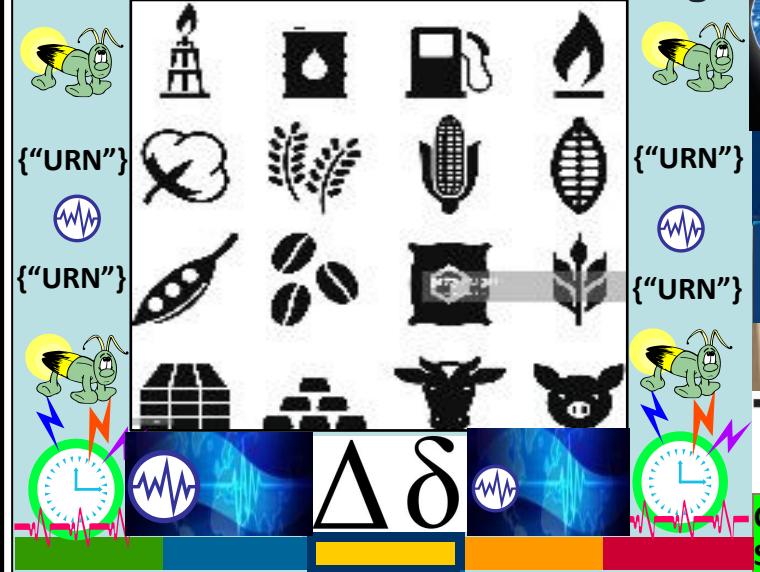
    

**USE CASE: Banks - Tech firms are forming teams to assert foundation tech as a legal basis for IP intellectual property claims for programmable \$\$\$ DeFI**

**Use Case:** Tokenize Europe 2025 initiative: reuse DoD / NATO's structured data brevity OPSCODES mapped to 2525A, B, C, D symbols needed for A.I. man-machine interface Reuse, modify 300 + Use Case message set templates data element FFIRNs FFUDNS or, redo a time, people intensive process that took decades to create, test and refine.



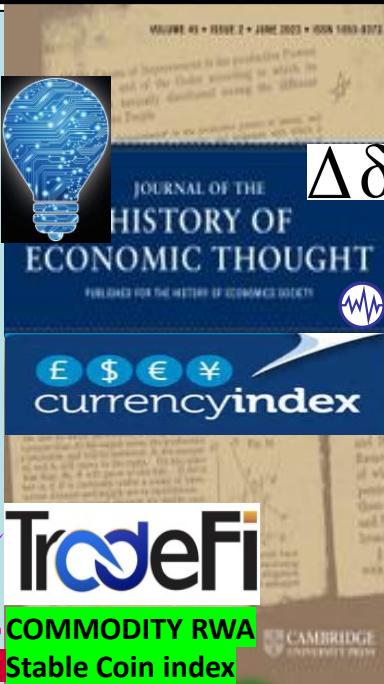
# Tokenization of Physical Assets Enables Economy Of Everything



# ALGORITHMIC STABLE COIN COMMODITY INDEX CURRENCY PROGRAMMABLE \$\$\$



**FIREFLY – HEARTBEAT ALGORITHM CHINA:** nature-inspired metaheuristic optimization algorithm developed by Xin-She Yang flashing behavior of fireflies (Yang, 2008), adapted to solve continuous optimization problems (Lukasik and Žak) 2010, 2013



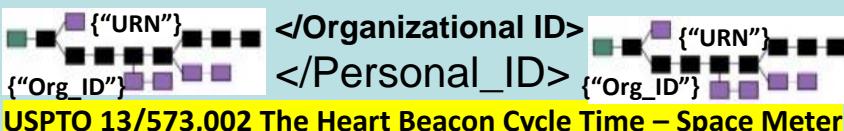
# Thomas Edison's Monetary Option

## Cambridge University Press 2009

## **“Crops hold their value best over time”**

"Thomas Edison publicly introduced his latest invention: a new type of money, a crop index commodity-backed currency that he believed was the long-term solution to America's monetary woes. "I want to cast the variable out of money. This gold money is not good enough. It's a

**fiction” “New York Times 1922**



# Humanitarian Assistance Networked Donor System

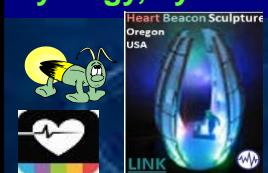
H.A.N.D.S: "Based on the need to speed up the processes of influencing an adversary, new concepts result in the adaptation of military doctrine, organization, training, material, infrastructure, interagency interaction, leadership, personnel and facilities" ... German Bundeswehr concept of "OOTW Operations Other Than WAR or "Vernetzte Operationsführung" circa 2003



"Shared situational awareness enables collaboration synchronization, and enhances sustainability, speed of command"



Reuse adaptive procedural template guides from Battlefield Digitization among a federated systems of systems improving synergy, synchronicity to achieve shared sustainable goals



DOD SITUATION AWARENESS PROGRAM  
SWORDS TO PLOWSHARES OOTW IDEA  
BY GERMAN MILITARY CIRCA 2003



## Beacon Communities

Vernetzte Operationsführung



PING

Proximity Beacons

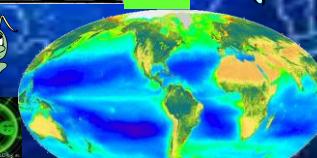
JAEGERS

BIOCOIN



Closer < \$\$\$ < FUEL

PING



OFF SHORE

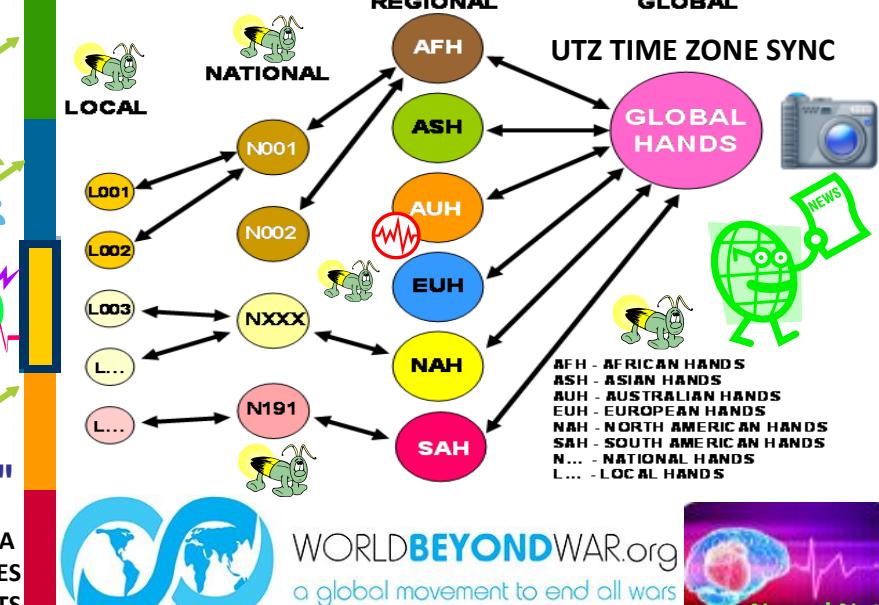


OUTER BANKS

FREELY  
HEARTBEAT  
EVENT / ALERT Flash Heartbeat Message Bus  
ALGORITHM



SYSTEM  
Of  
SYSTEMS



AFH - AFRICAN HANDS  
ASH - ASIAN HANDS  
AUH - AUSTRALIAN HANDS  
EUH - EUROPEAN HANDS  
NAH - NORTH AMERICAN HANDS  
SAH - SOUTH AMERICAN HANDS  
N... - NATIONAL HANDS  
L... - LOCAL HANDS

WORLD BEYOND WAR.org  
a global movement to end all wars

Neural Net

DAN MILLMAN

OFF SHORE  
OUTER BANKS

KAIJU



# Eco Economic Epochs

# Distributed Event Processing

## Distributed State Machine

# DEFI FINTECH IP WARS / Litigation Foundation Tech



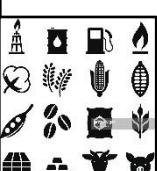
# SWORDS to PLOWSHARES



The logo features a blue camera icon on the left, followed by a blue circular icon containing a white brain-like waveform. To the right of these icons, the text "USPTO 13/573,002" is displayed in large, bold, black letters. Below it, "573 U.S. 134 SCt 2347" is shown in a slightly smaller, bold, black font. At the bottom, the words "Alice in Wonderland Ruling" are written in a bold, black, sans-serif font.

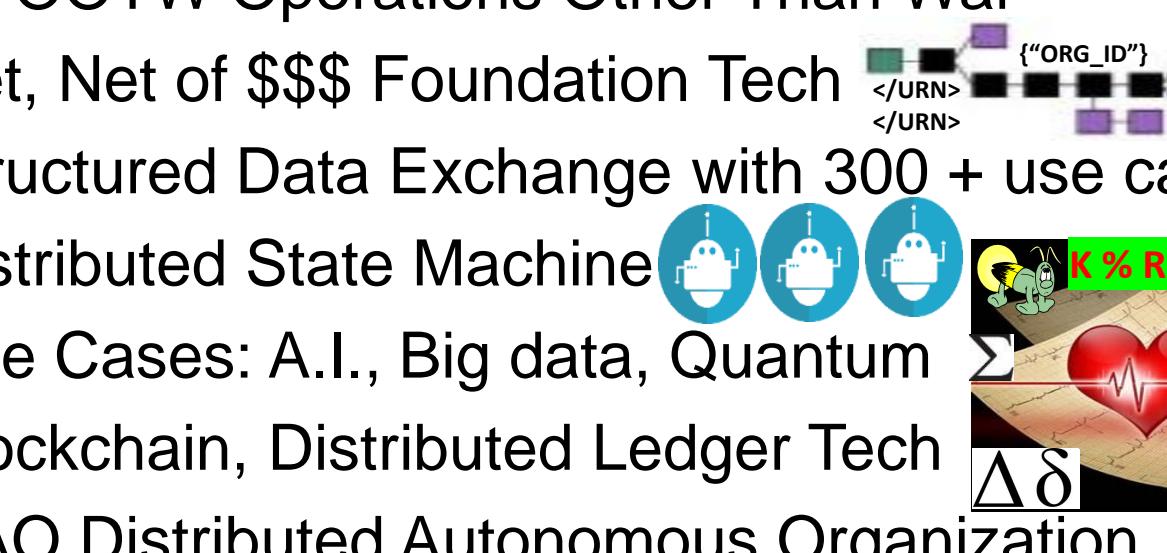


**Symbols  
Rule  
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OPSCODE  
BREVITY  
CODES  
Mapped  
To symbols  
2525A,C D**

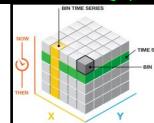
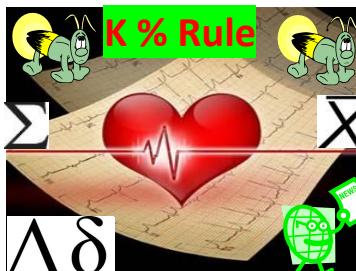
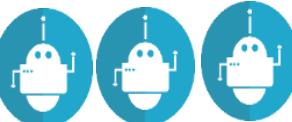


Federation  
Gateway

**In the beginning (of time)..  
There was the word (syntax)**

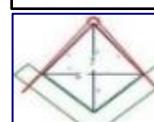
- Battlefield Digitization, Net Centric Warfare for OOTW Operations Other Than War
  - Net, Net of \$\$\$ Foundation Tech
  - Structured Data Exchange with 300 + use cases
  - Use Cases: A.I., Big data, Quantum
  - Blockchain, Distributed Ledger Tech
  - DAO Distributed Autonomous Organization
  - Consensus, Signals, Telemetry, Standards

The collage includes the following elements:
  - A blue cartoon character wearing a graduation cap.
  - A network diagram showing nodes connected by lines with labels like "</URN>" and "{“ORG\_ID”}".
  - Three teal circular icons containing small robot or AI head illustrations.
  - A green ant-like creature next to a red heart with a pulse line, labeled "K % Rule".
  - A large red heart overlaid on a map.
  - A white Greek letter sigma ( $\Sigma$ ) above a globe icon.
  - A white Greek letter delta ( $\Delta\delta$ ) above a globe icon.
  - A 3D cube diagram with axes X, Y, Z and labels "NOM", "MIN TIME SIZES", and "THIN".

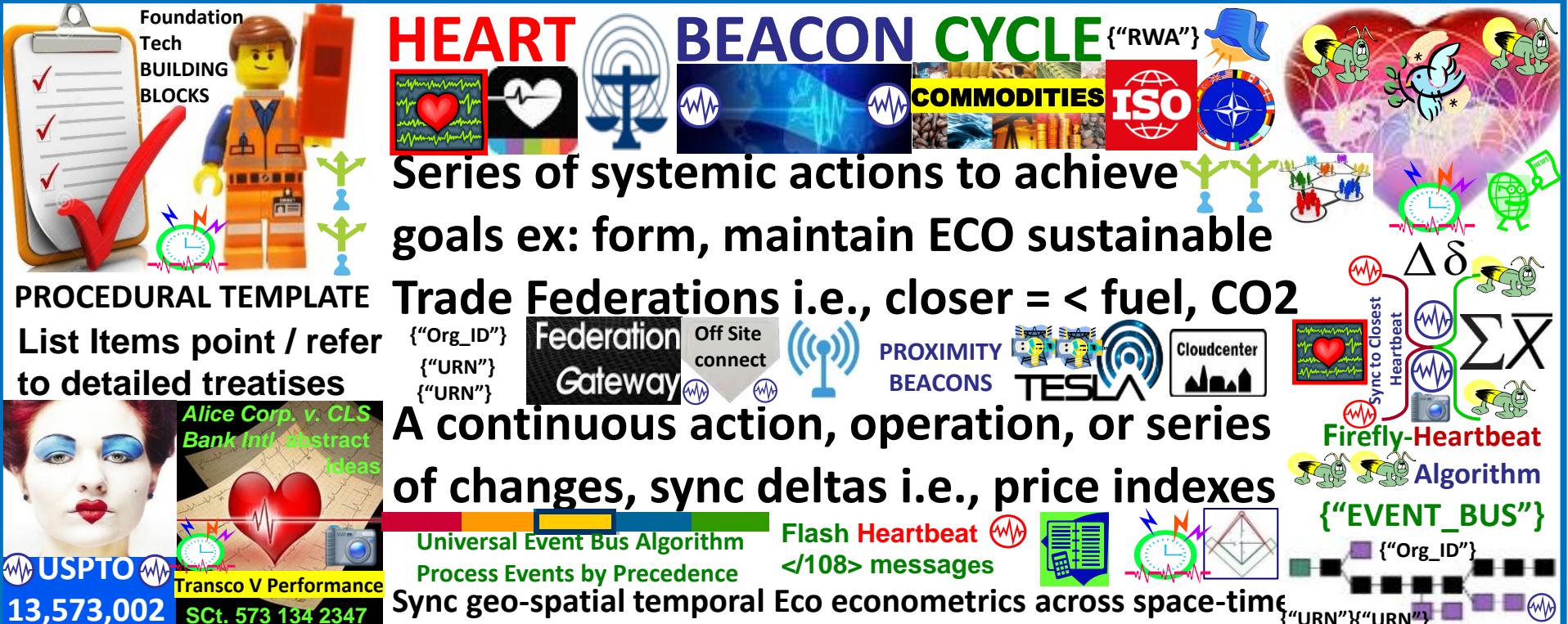


**Net, Net of \$\$\$ money consists:**

- 1) Epoch Time Cycles**
- 2) Syntax used / not in epochs**



## HET START-STOP Time to LIVE



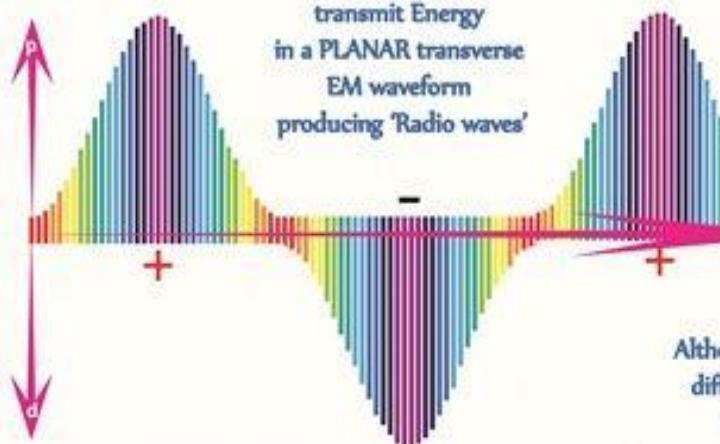
CLOSER = < Infrastructure  
= CHEAPER SLA

# ElectroMagnetic waveforms



ENERGY / DATA  
Over  
Transmission  
Lines / Airwaves

Hertzian waves  
transmit Energy  
in a PLANAR transverse  
EM waveform  
producing 'Radio waves'



All Photons and EM waves can have various directions of polarisation with respect to their direction of propagation



Teslian waves  
transmit Energy  
in a LONGITUDINAL waveform  
producing  
'Action at a Distance'

In 1887, Heinrich Hertz demonstrated the reality of Maxwell's electromagnetic waves by experimentally generating radio waves in his laboratory.

Although they utilise the same EM energies, different EM waveforms can be produced where the Electric fields are in 90° opposition to each other thus leading to conflicting theories of EM wave propagation

The E fields are co-linear with the direction of propagation

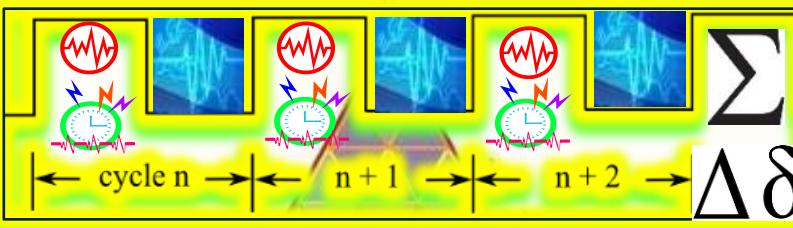
Through longitudinal waves, Tesla transferred energy to receiving devices. He sent electrostatic forces through the air, transferred electrical energies and noted the lethal forces produced by these waves.

Heinrich Hertz

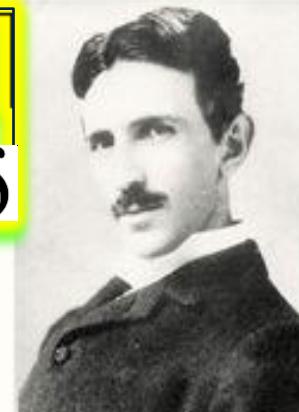


(22 February 1857 - January 1 1894)

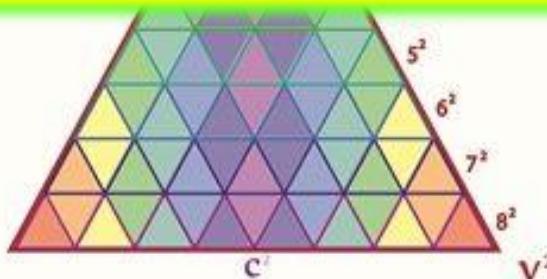
INTERNET = 1. TIME EPOCH CYCLES 2. Syntax (not) Processed in cycle



Nikola Tesla



(10 July 1856 - 7 January 1943)



Cycles per Second

Volts per Second

Soon after Hertz's claim of discovering Maxwell's transverse EM waves Tesla visited him and personally demonstrated the experimental error to him. Hertz agreed with Tesla and had planned to withdraw his claim, but varying agendas intervened and set the stage for a major rift in the 'accepted' theories that soon became transformed into the fundamental "laws" of the electric sciences that have held sway in industry and the halls of academia to the present day

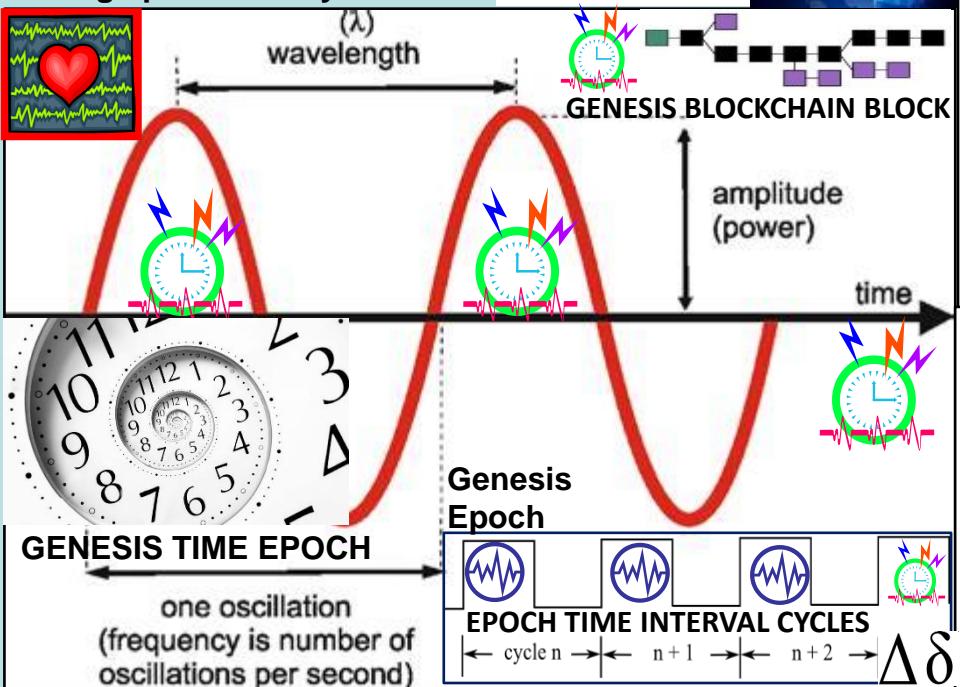
THESIS: All things net, net of programmable \$\$\$ are formed using:

## ENERGY / DATA WAVE METRICS / METERS

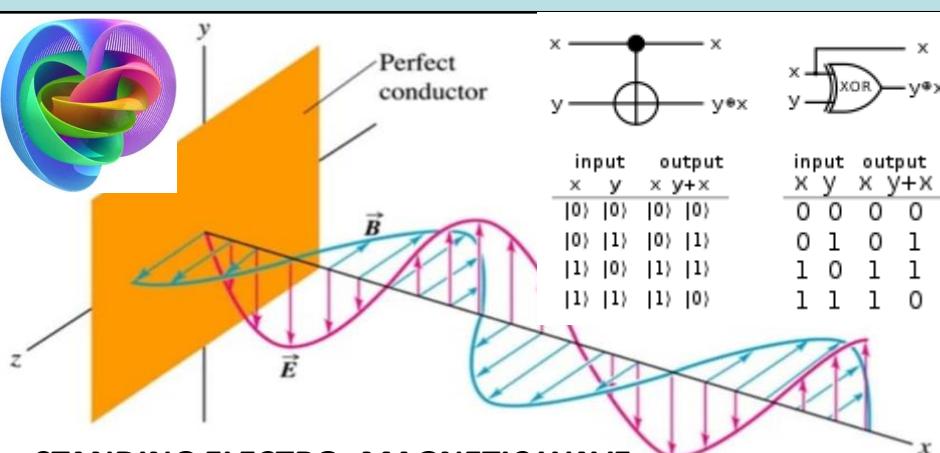
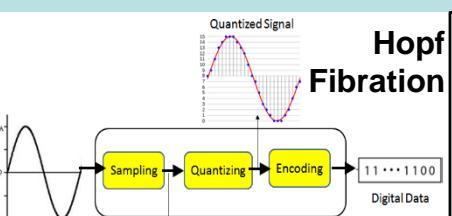
## BELL STATE QUANTUM COMPUTING

1) Time epochs created by quartz crystal silicon chips

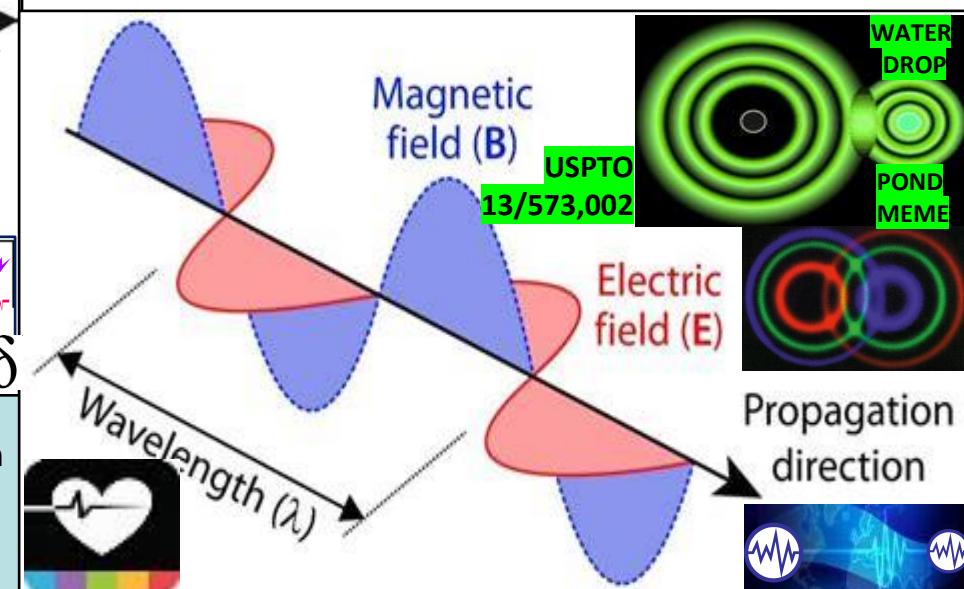
2) Syntax used / not used as programming instructions during epoch time cycles



Quantum Computing Vibrations encode, process data like quantum computers. A simple mechanical system built from aluminum rods uses vibrations to encode information, mimicking quantum computing in a non-quantum system. "Light is made from photons, the quantum of light." mechanical vibrations or sound waves can be described in a quantum-mechanical manner i.e., composed of phonons: the smallest possible units of mechanical vibration" Link: [https://phys.org/news/2018-06-quantum\\_1.html](https://phys.org/news/2018-06-quantum_1.html)

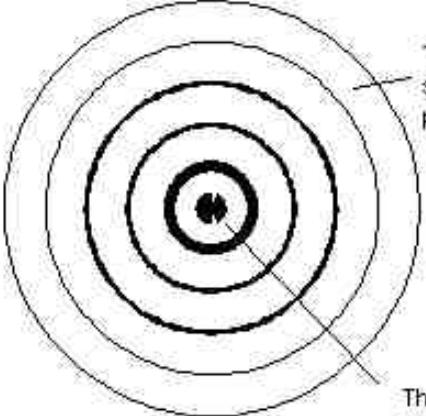


A **standing** electromagnetic wave does not propagate along the x-axis; instead, at every point on the x-axis the  $E$  and  $B$  fields simply oscillate.



"Nature may reach the same result in many ways. Like a wave in the physical world, in the infinite ocean of the medium which pervades all.. Nikola Tesla

Water drop in pond meme <https://www.spaceandmotion.com/>



Paul Revere Linear, sequential meme

And as I shall explain in Einstein's relativity, when we apply this one law, where the wave velocity changes the wavelength also has a corresponding change such that we can never observe this change. This relates to the Lorentz transformations, the negative solution of the Michelson Morley experiment, and why we always measure a constant velocity of light even when it changes, thus why we cannot measure our motion through absolute space.

With respect to time, physics was always telling us that time is caused by frequency (and fundamentally by motion as the wave motion of space), since time equals the inverse of frequency  $t=1/f$ .

From our wave equation we see that while the velocity and wavelength change, the frequency remains constant, giving rise to an absolute time in the universe. This was one central problem of Einstein's relativity, he changed time and maintained a constant velocity of light, when the opposite is true. (Yes, this one property of waves from this simple wave equation has caused us so much confusion!).

"What we observe as material bodies and forces are nothing But Shapes and variations in the structure of space" Schrodinger

**Physical Reality:** 1. One Substance. Space exists with properties of an elastic solid wave medium, propagating longitudinal waves in all directions, thus forming standing waves in all directions. When these standing waves are in-phase (coherent) around a central point then a spherical standing wave naturally forms - space vibrates in and out around the central point, which we call the particle. There are two opposite phase spherical standing waves, which create the electron and positron (matter and antimatter),

2. One Law. The velocity of the waves is proportional to the wave amplitude (bigger waves travel faster). Where these waves are coherent, forming spherical standing wave 'particles', the wave amplitude is higher, and the waves travel faster. This, as i shall explain, is the foundation of all matter interactions, the source of causal connection and absolute truth.

Why matter and energy are equivalent, since a wave is a flow of energy between two states of the wave medium Space - kinetic energy (vibratory motion of space) and potential energy (elastic deformation of a nearly rigid space). Why matter and antimatter annihilate, due to destructive wave interference. How matter and antimatter can be created from apparently 'empty' space. How science can exist, since the spherical in and out waves provide continuous two way communication between matter in space (empirical knowledge), and the waves behave in a necessary manner due to this one law (logical knowledge).

Wave velocity is the velocity of light,  $\sim 3 * 10^8$  m/s, the wavelength is the Compton wavelength  $\sim 10^{-12}$  m, and the frequency  $\sim 10^{20}$  Hz. So in a pin head there are roughly a billion billion billion standing waves, each vibrating a billion trillion times a second. i.e. These standing waves are very small, and vibrate very fast, thus explaining how such complex standing wave structures (like us) can evolve in space. The fundamental equation of the universe is the simple wave equation; Velocity (C) = Frequency (f) \* Wavelength (y)

Combined with the equation of the sphere (which is also Pythagoras' Theorem and the metric equation of Special Relativity), and explains the geometric foundations of reality, why space is three dimensional.  $x^2 + y^2 + z^2 = r^2$



"Simplicity is the ultimate sophistication".  
(Leonardo da Vinci)



# Harmonic Sphere Flux Resonator

ENERGY / DATA

**"When space-time spins, it creates mass. It produces energy in space that radiates. This radiation is what we call mass". Nassim Haramein**

Nassim Haramein's work is geometrically based, at the fundamental level spacetime = honeycomb of overlapping spheres of energy each having a singularity at its center.

Yttrium iron garnet spheres serve as magnetically tunable filters and resonators for microwave frequencies. YIG filters are used for their high Q factors, typically between 100 and 200.

Sphere made from a single crystal of synthetic yttrium iron garnet acts as a resonator. Wikipedia



<https://www.researchgate.net/>

AIC

H

YIG sphere placed in maximum magnetic field of a microwave cavity mode.

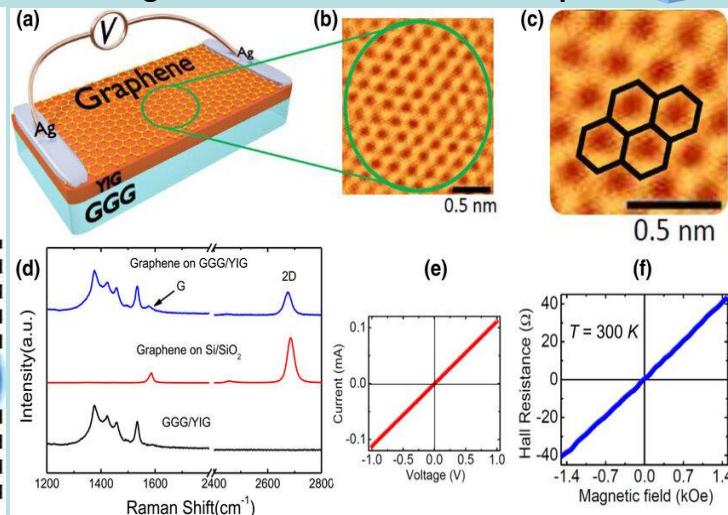
Fig 1 - Li Zheng



Bloch Sphere

Water Drop Meme

$t_1$   $t_2$   $t_3$   
Time Series Data



YIG/graphene structures and the electrodes used to measure the dc voltage due to the IREE charge current in the graphene layer resulting from the spin currents generated by microwave FMR spin pumping.

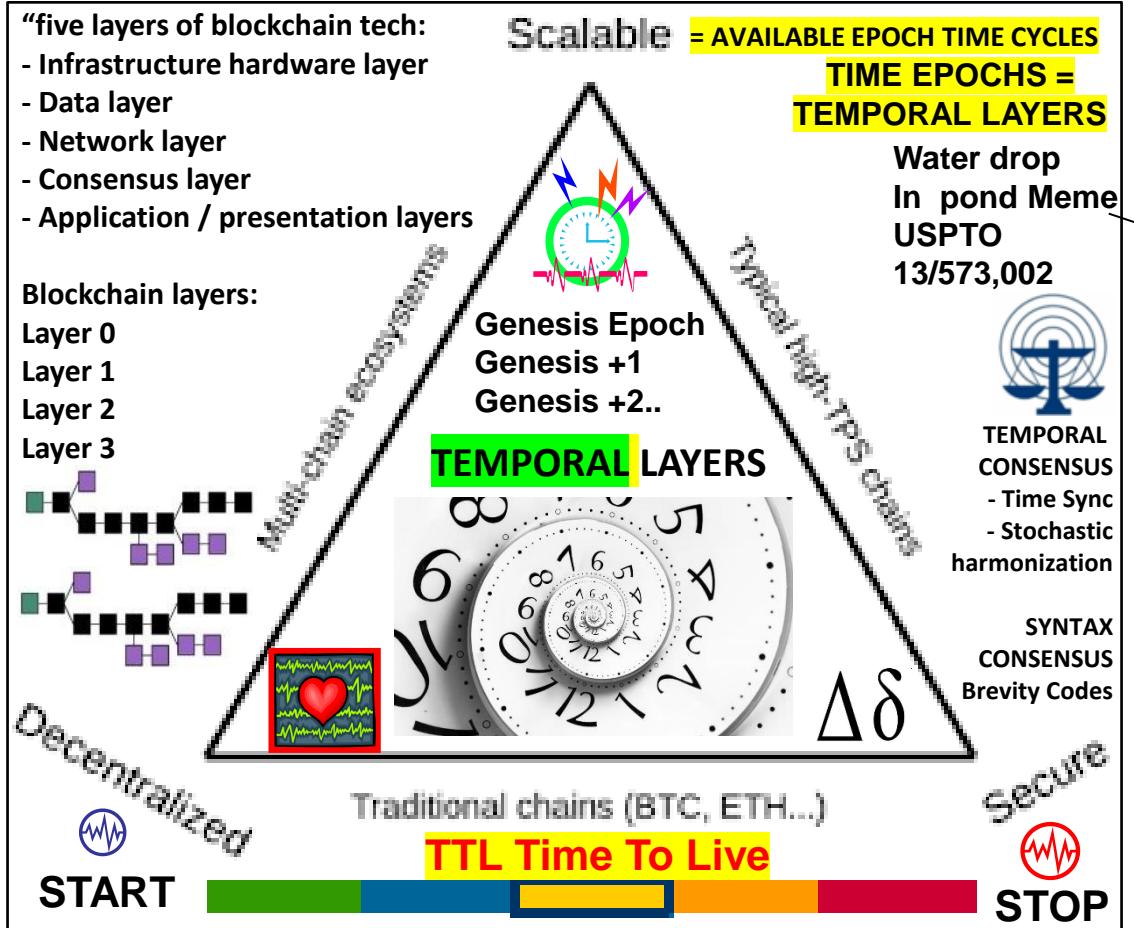
IEEE 802.1AG HOP BY HOP DETECTION  
IEEE 802.11 HbH HOP BY HOP CONTROL

The creation of spinlogic devices, which allow the control and transport of the spin current over long distances, is one of the major research challenges in spintronics. In this regard, graphene-a single atomic layer of carbon atoms in a honeycomb lattice [see Fig. 1(c)]-has attracted great attention as a promising material for spin-based devices due to its exceptional electronic transport properties, excellent charge carrier mobility, quantum transport, long spin diffusion lengths, and spin relaxation times [42]





# Blockchain Quad-lemma



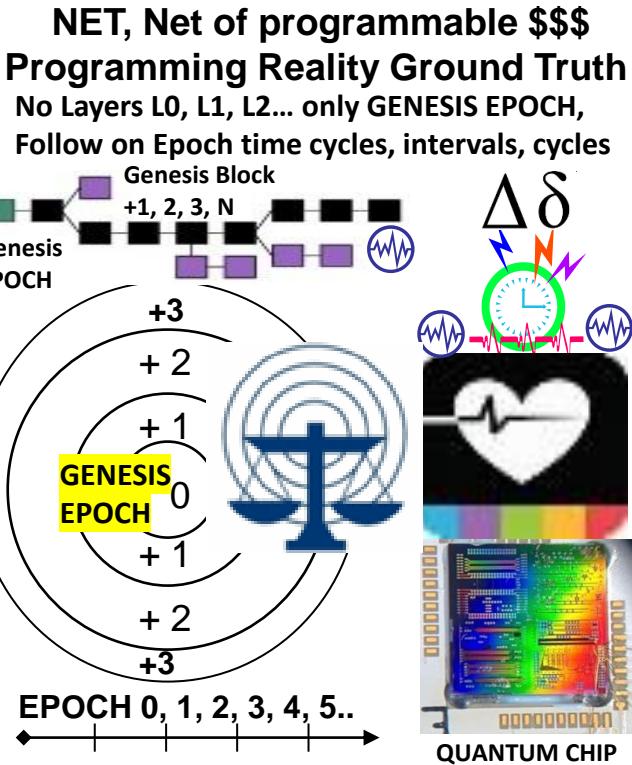
Blockchain = series of hashed blocks carrying transactional records. The first block of the blockchain is the **Genesis block**. After that, every new block added to the blockchain is linked to the Genesis block through a (temporal) iterative process.

## Database Flat File

### "BLOCKCHAIN" = LEDGER / Database

Database flat file sama dengan file data pada spreadsheet (misal MS Excel™), berupa satu file berisi baris-baris dengan jumlah kolom tetap yang disimpan berurutan dalam file.

| NIP         | Nama     | Nama Depan | Telp         |
|-------------|----------|------------|--------------|
| 123-45-6789 | Santoso  | Heru       | 021-316-1234 |
| 987-65-4321 | Purnama  | Widya      | 022-543-9876 |
| 987-65-4321 | Jackson  | Michael    | 021-234-5678 |
| 567-89-0123 | Iskandar | Dodi       | 021-987-6431 |



THESIS: All things internet, net of programmable money are formed using:

1. Time epochs created by oscillating quartz crystal silicon chips
2. Syntax used / not used as programming instructions during epoch time cycles

All things internet, internet of money, blockchains are formed by unicast, multicast, anycast protocols. Programmable money's improvements are in cryptography. The internet consists of unicast, multicast broadcast, anycast and workflow filters, publish – subscribe paradigms..

# THE BITCOIN BLOCKCHAIN FOR DUMMIES



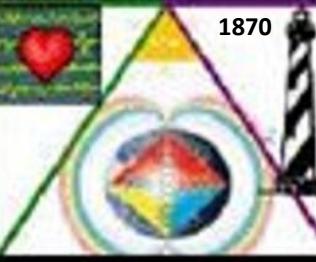
What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party e.g., a bank.



Satoshi Nakamoto

Craig WRIGHT  
a.k.a.  
Satoshi Nakamoto

"Bitcoin is a  
LANGUAGE"



Satoshi Nakamoto Bitcoin Paper

"THE VALUE OF  
BITCOIN IS  
TIME ITSELF"

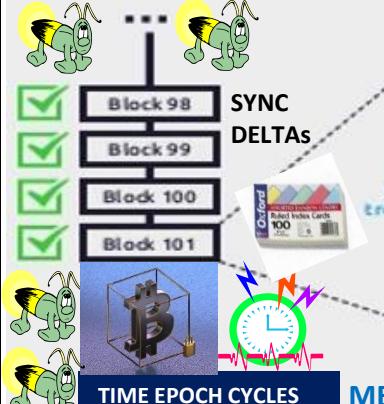
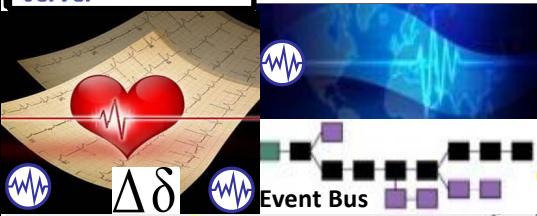
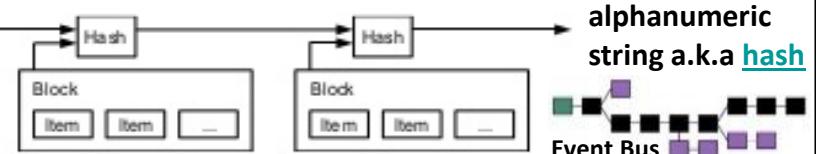
Wright Brother's 1<sup>st</sup> Flight  
Cape Hatteras Outer Banks

## "THE SOLUTION WE PROPOSE BEGINS WITH A TIME STAMP SERVER"

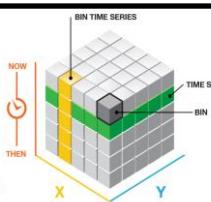
### 3. Timestamp Server

The solution we propose begins with a timestamp server. A timestamp server works by taking a hash of a block of items to be timestamped and widely publishing the hash, such as in a newspaper or Usenet post [2-5]. The timestamp proves that the data must have existed at the time, obviously, 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.

**Bitcoin Protocol  
for Dummies**  
Part 4 Timestamp  
Server



JapanNet Crypto Time  
Authentication Service  
(Timestamp Service)



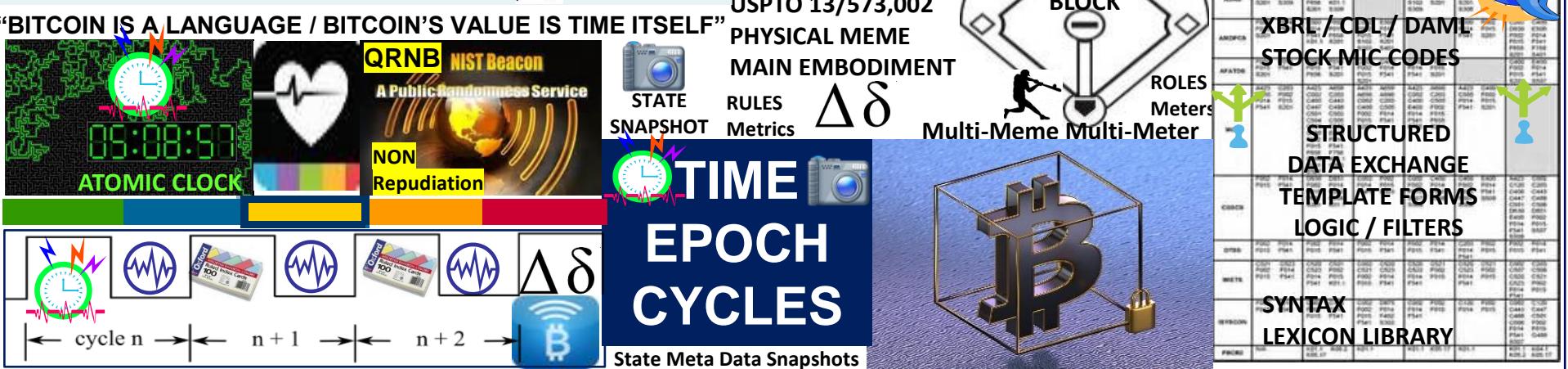
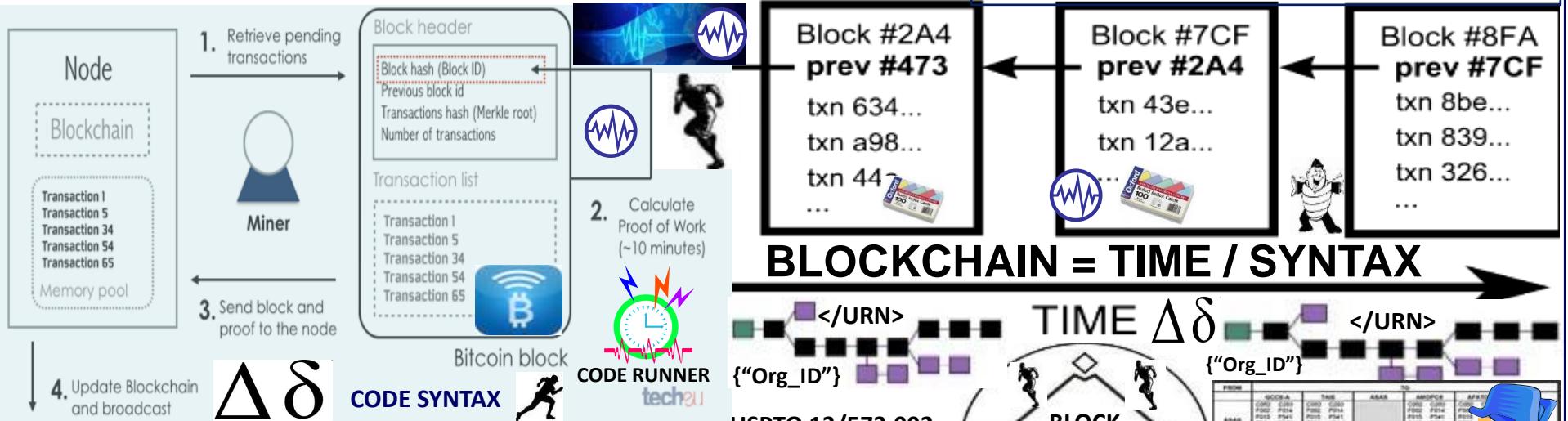
time

space

time



Alice Corp. v. CLS Bank International, 573 U.S. 134 SCt 2347 (2014) is a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).<sup>[2]</sup> The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating financial transactions covered abstract ideas ineligible for patent protection. 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.



Net of \$\$\$ formed with:

1 EPOCH TIME CYCLES

2 {"Syntax"} "The Word"

"In the Beginning" Genesis Block

"All things internet, Internet of money are formed using time epoch cycles to process, parse, syntax as instructions"

"A blockchain is a consensus-based system. It only works if all nodes reach an identical state"

"A smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction reads / writes data in the blockchain's Dbase"

## NAMED DATA NETWORKING



"Blockchain consortiums are working less on distributed ledgers and more on Contract Description Languages CDL, DAML Digital Asset Modeling Language" Coindesk Article



STOCK MIC CODES

STRUCTURED DATA EXCHANGE  
TEMPLATE FORMS

300+ USE CASES  
LOGIC / FILTERS

SYNTAX / SYMBOL LEXICON LIBRARY



Real World Assets

R  
W  
A

1st Compiler

Alpha Numeric Brevity Codes

A.I.



Coder Guide Rosetta Stone



"BITCOIN MAKES MONEY PROGRAMMABLE.  
MONEY IS SIMPLY DATA"

"Bitcoin's Value is TIME itself"  
"Time is specified in units of block transaction confirmation times"



ALICE CORP VS CLS BANK

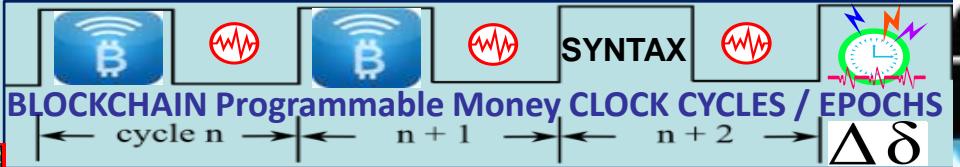
"claims may not be directed towards an abstract idea"

US SC 573 US 134 2347



BITCOIN BLOCKCHAIN BLOCKS,  
AGENTS, MOTES, BOTS, PACKETS,  
FRAMES, HEARTBEAT, PINGS, HOPS,  
BEACONS ARE METAPHORS / MEMES

USPTO 13/573,002 BASEBALL MEME PHYSICAL = OPPOSITE OF ABSTRACT



CLOCK FACE 360°  
90 / 90 / 90 / 90



MACRO CYCLES

RULES / ROLES

INSTRUCTIONS

WORKFLOW

UMPIRE

COACH

3rd Base

STATISTICIAN

Metrics, Meters

Stat Mean Value Index

3 X 5 HASH TABLES

STATE META DATA SHARDS

SETTLEMENTS / EXCHANGES

= TAXABLE EVENTS AKIN TO PROPERTY

IRS #1421

State Meta Data Snapshots Survey Point

MICRO CYCLES

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

Epoch Time Cycles

Δδ

BASEBALL "DIAMOND"

A diamond Is a square Is a block in 3D  
2nd Base

Satoshi Nakamoto:  
"The solution we propose begins with a TIME STAMP SERVER"

ALICE Corp VS CLS BANK SC 573 US 134 2347

CLAIMS MAY NOT DIRECT TOWARDS ABSTRACT IDEAS

Physical = Opposite of abstract = ALICE

HEART BEACON CYCLE

TIME – SPACE METER

USPTO 13/573,002

first base

RUNNER Message Bus

Firefly – Heartbeat Algo

X EVENTS

SETTLEMENTS / EXCHANGES

= TAXABLE EVENTS AKIN TO PROPERTY

IRS #1421

Flash Message Event Bus

TIME STAMP SERVER

Epoch Time Cycles

Δδ

home plate

# What happens if we think about Bitcoin through the lens of *land*?

HEART BEACON CYCLE  
USPTO 13/573,002  
SURVEY METHODS

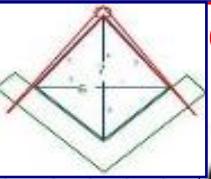
## SC ALICE CORP VS CLS BANK: “claims may not direct towards abstract ideas”

UTXO: unspent transaction output’. bitcoins that have been sent somewhere but not yet themselves been spent. The set of all unspent transaction outputs (UTXOs) can be thought of as the latest STATE of every bitcoin that has ever been mined.

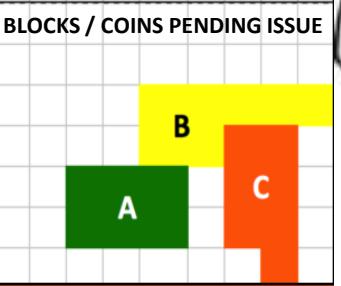


Memo #1421: Purchased Bitcoins are treated akin to property

Plots A, B, C represent 3 unspent transaction outputs controlling N Bitcoins



## Mined Bitcoins



$$\Delta\delta$$

## Unmined Bitcoins



Un-mined coins -- think of them as parcels of land on “Bitcoin Island” not yet released:

IDMaps-SONARHOPS distance estimation query-reply service

- End-state Bitcoin quantity will be fixed like land

“Bitcoin as protocol of ownership, not transfer”

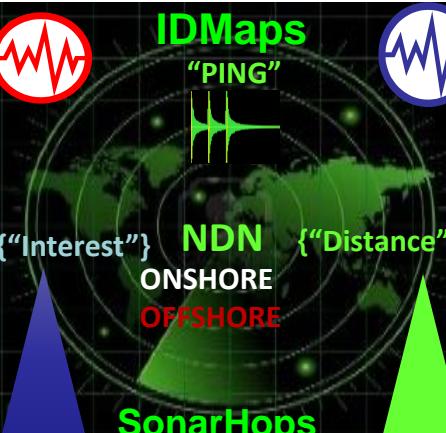
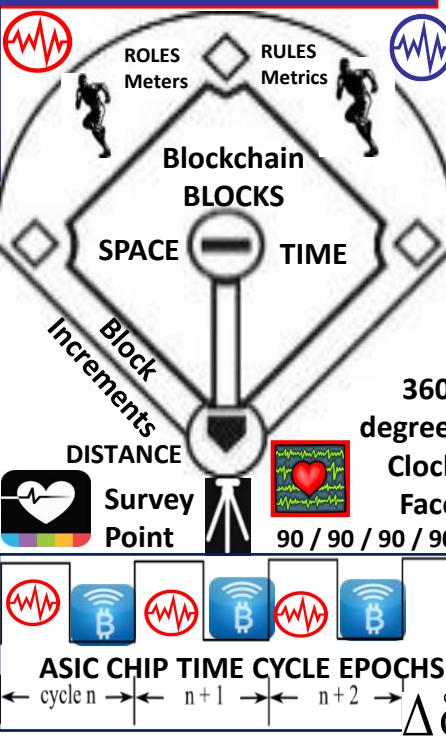
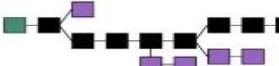
Coins never travel, but simply switch owners”

Step 1: prove coin ownership <Org\_ID> Coin Issuer

Step 2: coins sent where, when Lat-Long, time stamp

Step 3: specify ownership <Org\_ID> issuing agent

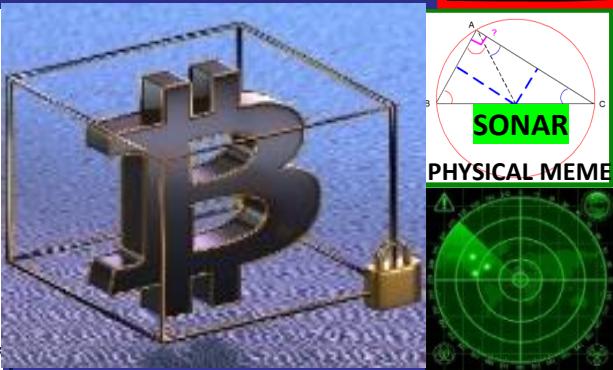
Step 4: Issuing Org of Record adjudicates w buyer



## TRIANGULATION



## DISTANCE ESTIMATION EUCLIDIAN GEOMETRY



IDMaps assists Network Time Protocol (NTP) servers establish long term peering relationships



IDMaps / SonarHops collects distance data & builds virtual Internet distance maps & estimates distance between IP address pairs



IDMaps Distance Metrics:  
latency (round-trip delay)  
available bandwidth estimation



**SCOTUS 2014 ruling  
SC 573 134 2347**



claims may not direct towards abstract Ideas”

Trade  
Reference  
Currency  
**TERRA**  
TERC

**Physical = opposite of abstract**

The collage includes the following elements:

- CLOCK FACE 360°**: A circular diagram showing a clock face with labels: 90 / 90 / 90 / 90.
- BASEBALL "DIAMOND"**: A diamond-shaped field diagram with bases labeled 1st, 2nd, 3rd, and home plate.
- A diamond is a square is a block is in 3D**: A text snippet with a small diamond icon.
- Satoshi Nakamoto: The solution we propose begins with a **TIME STAMP SERVER****: A text snippet with a small portrait of Satoshi Nakamoto.
- 90 feet**: A label indicating distance between bases.
- Blockchain CURRENTS INVESTMENTS**: A diagram showing a stack of coins with a bar chart overlay.
- ROLES / RULES**: A list of roles: INSTRUCTION, WORKFLOW, UMPIRE, COACH.
- MACRO CYCLES**: A label indicating cycles.
- Blockchain BLOCK in 3D = CUBE**: A diagram showing a 3D cube.
- Cube has Length, Depth, Height, Volume**: A text snippet describing the cube's dimensions.
- 3rd Base STATISTICIAN Metrics, State Mean Value Index**: A label indicating metrics.
- 90 feet**: A label indicating distance between bases.
- HEARTBEAT MESSAGE EVENT BUS**: A diagram showing a bus with various icons representing heartbeat messages.
- STATEMENT / EXCHANGES TAXABLE EVENTS AKN TO PROPERTY**: A text snippet with a small IRS logo.
- 90 feet**: A label indicating distance between bases.
- IRIS**: A small logo for IRS.
- FIX ("108") FLASH MESSAGE EVENT BUS**: A diagram showing a bus with various icons representing fix and flash messages.
- TIME Δδ STAMP**: A text snippet with a small stamp icon.
- EVENTS**: A label indicating events.
- State Meta Data Snapshots**: A label indicating meta data.
- MICRO Survey Point**: A label indicating survey points.
- home plate**: A label indicating the home plate.
- cycle n → n + 1 → n + 2 → Δδ**: A sequence diagram showing a cycle with steps n, n+1, n+2, and a delta symbol.
- ALICE Corp VS CLS**: A text snippet with a small Alice and Bob icon.
- BANK SC 573 US 134 2347 TOWARDS ABSTRACT LOGICAL Physical is Opposite of abstract = ALICE**: A text snippet with a small bank icon.
- HEART BEACON CYCLE TIME - SPACE METER USPTO 13/573,002**: A text snippet with a small heart icon.
- first base RUNNER Message Bus**: A diagram showing a bus with various icons representing first base runners.
- Firefly - Heartbeat Algo**: A text snippet with a small firefly icon.
- EVENTS**: A label indicating events.
- COMMODITIES**: A large yellow banner with a collage of images including oil barrels, a bridge, and a person.
- Ericsson Open \$\$\$ for Society**: A yellow banner with the Ericsson logo and text.

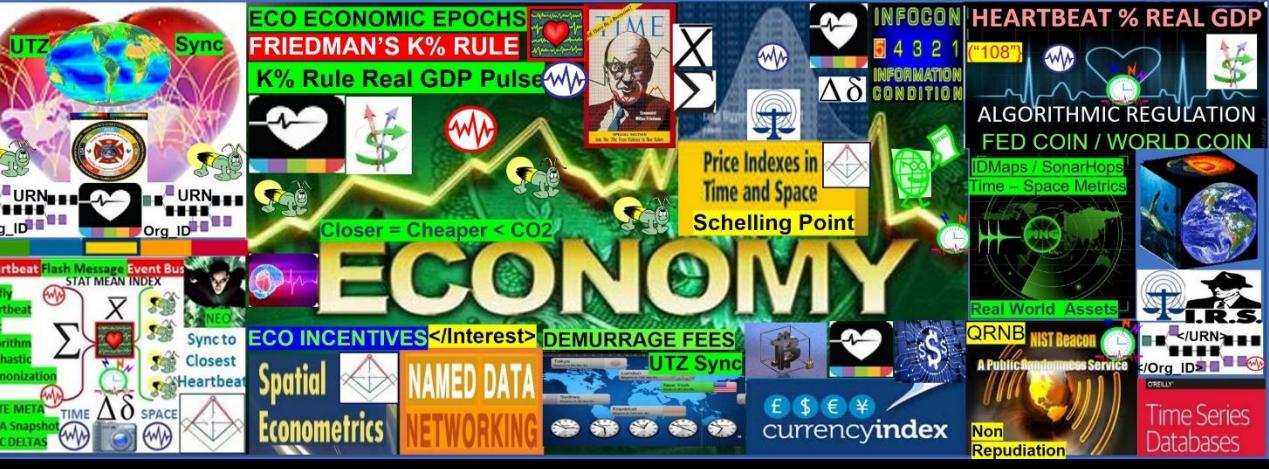
**“The solution we propose begins with a time-stamp server” Satoshi**

**"The internet, internet of \$\$\$ is comprised:**

**1. Epoch time cycles 2. Syntax used / not used during epoch time cycles instructions**

**“Bitcoin is a language” “Bitcoin’s value = time itse**  
**Blocktime = computing clock-time that creates**  
**sync delta differentials in the chain of time [**  
**described by MTT Machine Trust Language**  
**smart contracts adjusted by time arbitrators**

USPTO 20130166398 Ericsson System Method Implementing Context Based Payment System







ISO Technical Committee TC68

## Financial Services

|                 |                   |                |
|-----------------|-------------------|----------------|
| SC2<br>Security | SC4<br>Securities | SC7<br>Banking |
|-----------------|-------------------|----------------|

## RMG members nominated by P-member countries and A- liaison organisations

**TSG & SEG members  
nominated by all member  
countries and liaison  
organisations**

ISO 20022 LV v66

**Q:** Which meme describes the myriad blockchain consensus algorithms the most comprehensively that uses an algorithm (based on nature = "shortest path to the knowledge of truth Luxor Temple) enabling distributed system of systems geo-spatial, UTZ Universal Time Zone temporal, semantic - syntactic sync, OPSCODE brevity code, data element &

**symbol (for A.I. man – machine interface) consensus?**  

**Blockchain** is the **consensus** of **algorithms & mechanisms**. The **consensus** is the **HEART OF THE BLOCKCHAIN NETWORK**. Its main purpose is to achieve agreement on transactions among a distributed system (s).

**Proof of Formulation:** PoF: generation / propagation of blocks using a previously agreed sequence between participants of the generation of blocks, formed by two groups: a generator group

The diagram illustrates the Spacemesh network structure and synchronization process. On the left, a blue circular background features a central node labeled "spacemesh" connected to four other nodes. A red diamond-shaped mesh structure is overlaid on this, representing the network's topology. To the right, a large red diamond is divided into four quadrants by a diagonal line, with the top-right quadrant containing a smaller red diamond. This visualizes how the network's structure is subdivided for synchronization. Below this, a circular diagram shows a network of nodes connected by lines, with a legend indicating "The Network" and "The Mesh".

 PROOF OF FORMULATION  
Space-Time Consensus Algorithm

STATE META  
DATA SNAPS  
SURVEY POINT  
HOME PLATE  
TIME  $\Delta\delta$   
STAMP  
SERVER  
MESSAGE EVENT BUS  
Circles  
Torus  
Circles  
IGOR PEIC

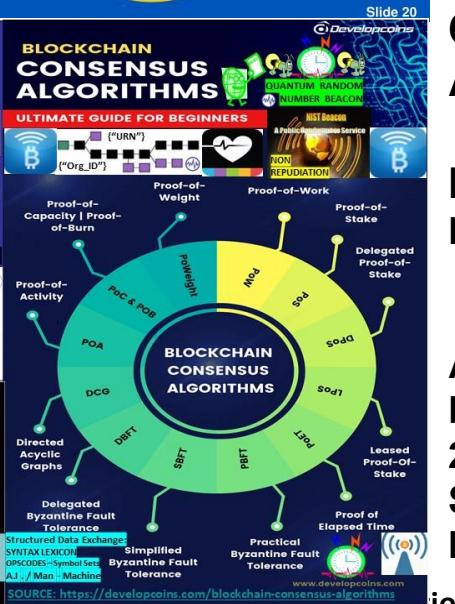
**describes a common platform**

(methodology, process, rep-

- a modelling methodology

- a central dictionary of bu

- a set of XML and ASN.1 c



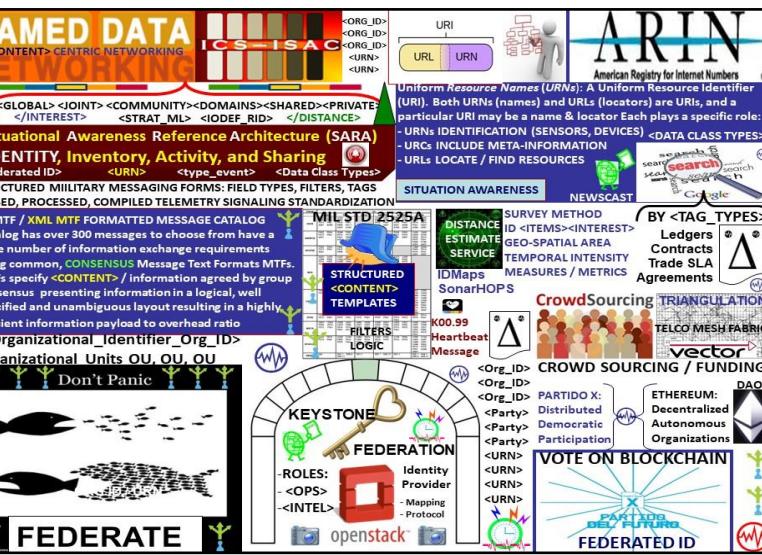
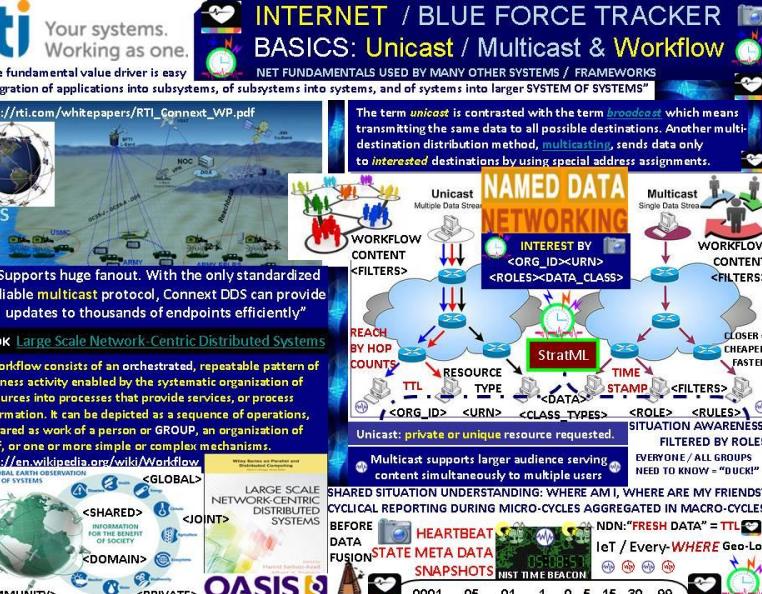
# FOUNDATION STANDARDS TECHNOLOGY

- 

# CONSENSUS ALGORITHMS

# NDN: Named Data Networking

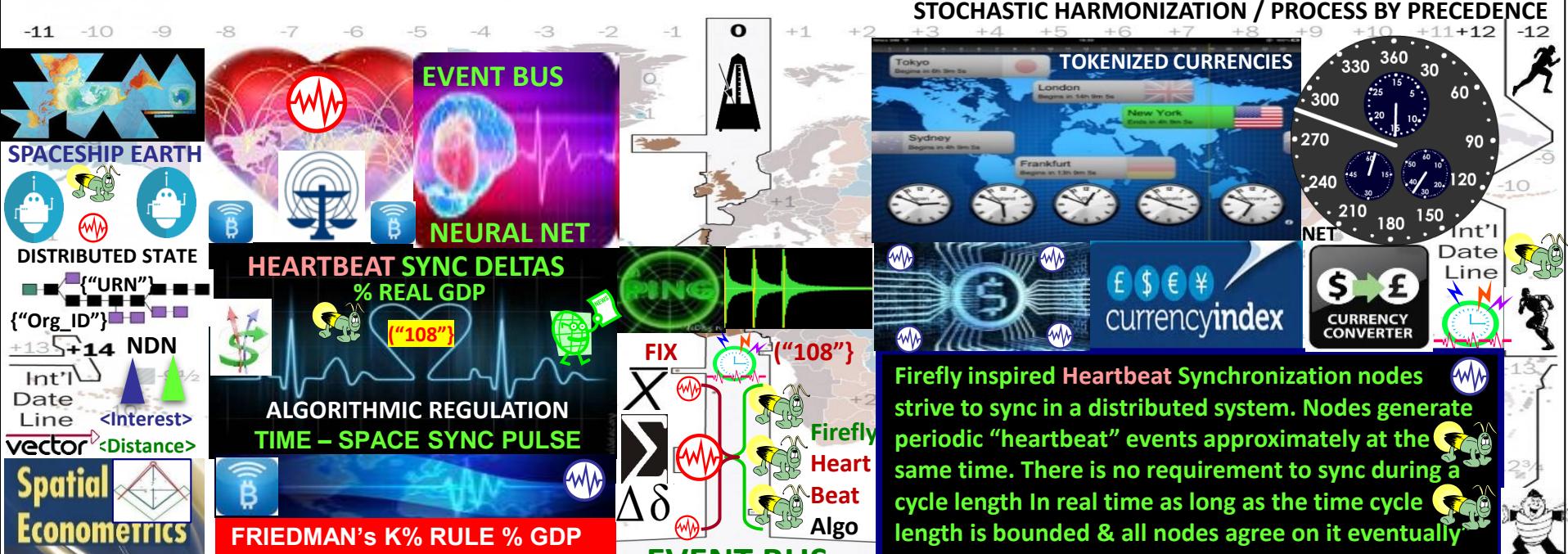
**ARIN, ASN-1  
Binary XML  
525 A,B,C,D  
Symbol Sets for  
Human – A.I.**



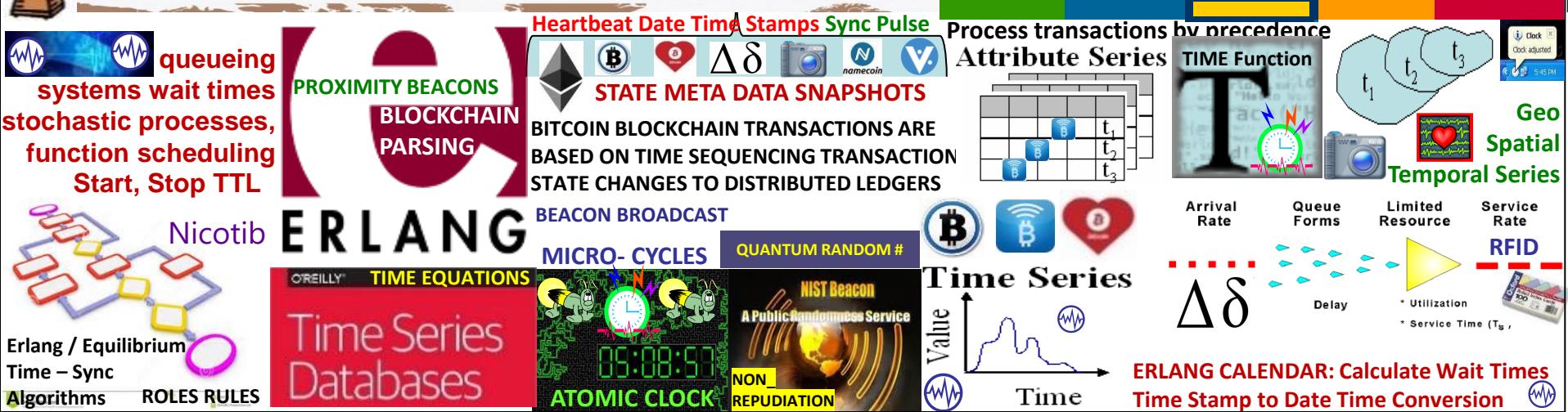
**ISO 20022** is a multi-part International Standard prepared by ISO Technical Committee TC68 Financial Services. It describes a common platform for the development of messages in ASN.1 Abstract Syntax Notation: A single standardization approach (methodology, process, repository) to be used by all financial standards initiatives. common platform for the development of messages using:

- a modelling methodology to capture in a syntax-independent way financial business areas, business transactions and message flows
- a central dictionary of business items used in financial communications
- a set of XML and ASN.1 design rules to convert the message models into XML or ASN.1 schemas, whenever the use of the ISO 20022 XML or ASN.1-based syntax is preferred ISO 20022: <https://www.iso20022.org/about-iso-20022>

The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC.



The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



Structured Data Exchange

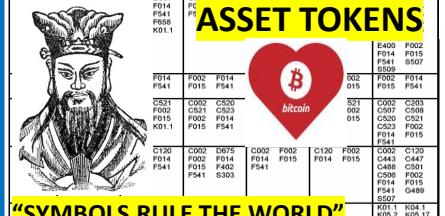


SYNTAX LEXICON  
ROSETTA STONE

Coder's Guide lexicon.

STRUCTURED  
<CONTENT>  
EXCHANGE  
TEMPLATES

MIL STD 2525ABC



"SYMBOLS RULE THE WORLD"

11.8 - Kinematic  
11.8.1 - Pos  
11.8.1.1 -  
11.8.1

XBRL™  
THE BUSINESS REPORTING STANDARD  
BINARY XML  
Decision

1.1 - Observers  
1.2.3 - Predicted  
1.2.4 - Smoothed Data  
3 - Position  
1.3.1 - Bearing Angle  
1.3.2 - Location; 2D Hor  
1.3.3 - Vertical  
4 - Velocity

1 - Horizontal  
2 - Vertical  
TOSCA  
Confidence  
Bearing Angle  
Bearing Angle Rate  
Covariance Matrix

DDL DATA  
DEFINITION  
LANGUAGE

Signal operating instructions (SOI): technical control coordination of signaling, telemetry Current situational awareness, data dictionary, network identification, channels, network directory, brevity code-words, signals. Units maintain 2 SOI copies: PEACE TIME version "Go-To-War" version = **BIZ COA (s) <Org\_ID1><Org\_ID2><Org\_ID3>**



NATO MESSAGE TEMPLATES USE DATA SETS FOR STRUCTURED DATA EXCHANGE // POSITION FIELD IN MESSAGE PROCESSED BY TABLE, FIELD # IN A CONSISTENT, PREDICTABLE ORDER = AI FRIENDLY M2M AI

GOAL: vide a common lexicon / syntax / term library used among FEDERATIONS identified by Federated ID  
GOAL: Provide a common, consistent, reliable schedule to share signaling and telemetry within federations.

MTL Machine Trust Language



{"URN"} {"TRANSACTION ID"}

MESSAGE TEXT FORMAT :

SEG RPT OCC CLASSNAME SETID SEQ FIELD OCCURRENCE SET FORMAT NAME

O 11NUPRES EXER 1 /M /O // (NU) EXERCISE IDENTIFICATION

C 11NUPRES OPER 2 /M /O /O /O // (NU) OPERATION CODEWORD

M MIOPV1 1 MSGID 3 /M /M /O /O /O // (NU) MESSAGE IDENTIFIER DISTANCE

M MIP OUT ORDPLAN 4 /M /O /O /O // (NU) PLAN ORDER REFERENCE NDN

SIOP POUT MSGREF 5 /M /M /M // (NU) REFERENCED MESSAGE

NUPRES DTG 6 /M // (NU) DATE-TIME GROUP

0 ORGID 7 /M /M /M /M /M /M /M /C // (NU) ORGANIZATION DESIGNATOR

M 11NUPRES GENTEXT 8 /M /M // (NU) 1.A ENEMY FORCES / COMPETITORS

M 11NUPRES GENTEXT 9 /M /M // (NU) 1.B FRIENDLY FORCES / TRADE FEDERATION

M 11NUPRES GENTEXT 10 /M /M // (NU) 1.C ATTACHMENT / DETACHMENT INTEREST

O 11NUPRES GENTEXT 11 /M /M // (NU) 1.D COMMANDERS EVALUATION

O 11NUPRES GENTEXT 12 /M /M // (NU) 1.E ENVIRONMENTAL INFORMATION

M 11NUPRES GENTEXT 13 /M /M // (NU) 2. MISSION </108>K00.99 / FIX / SWIFT / E-911 Heartbeat Message

M 11NUPRES GENTEXT 14 /M /M // (NU) 3.A CONCEPT OF OPERATION

O 11NUPRES GENTEXT 17 /M /M // (NU) (3) RECONNAISSANCE SURVEILLANCE

O 11NUPRES GENTEXT 21 /M /M // (NU) (5) INFORMATION OPERATIONS

O 11NUPRES GENTEXT 28 /M /M // (NU) (5) COMMS INFORMATION SYSTEMS

O 11NUPRES GENTEXT 35 /M /M // (NU) 3.D COORDINATING INSTRUCTIONS

M 11NUPRES GENTEXT 36 /M /M // (NU) 4.A SUPPORT CONCEPT (Logistics)

M 11NUPRES GENTEXT 37 /M /M // (NU) 4.B MATERIEL AND SERVICES

| SYMBOLS | Friend  | Neutral | Hostile    | DICAL EVAC & HOSPITALISATION |
|---------|---------|---------|------------|------------------------------|
|         | Partner |         | Competitor | M - MILITARY OPERATIONS      |
|         |         |         |            |                              |
|         |         |         |            |                              |

TOKENIZED ECONOMY BREVITY CODE OPSCOSE MAPPET TO SYMBOLS



INDEX REFERENCE #:

M015 STATUS :

EFFECTIVE: 14-DEC-99



PURCHASE CODES



FEDERATED PEGS



{"ASSET\_CLASS"}



{"ASSET\_TYPES"}



ISO 10383 – MIC



Market Identifier Codes



{"URN"}



{"Org\_ID"}



108 Heartbeat Message



STOCK



NDN



NAMED DATA



EXCHANGE



NETWORKING



MIC CODES



PRECEDENCE



PROCESSING



FILTERS



BLOCKTIME



ARBITRAGE



ERLANG



TIME



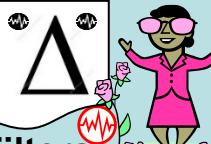
EQUATIONS



INFOCON

| FROM   | TO  |  |   |  |  | CODE GUIDE  |
|--------|---|--|---|--|--|---|
|        | GCCS-A  | TAIS   | ASAS  | AMDPCS   | AFATDS   | MCS   |
| ASAS   | C002 C203<br>F002 F014<br>F015 F541<br>S201 S309    | C002 C203  | 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 | C002 C203<br>F014<br>F541<br>S305<br>S309  | C002 C203<br>F014<br>F541<br>S201<br>S309        | C002 C203<br>E400 F002<br>F002 C400<br>D630 E500<br>F002 F014     |
| AMDPCS | TOKENS<br>OPSCODE<br>BREVITY<br>CODES               | F002 F014<br>F015 F541<br>S201   | A423 A659<br>C505 C203<br>F014 F015<br>F541 S201  | A423 A659<br>C002 C203<br>C400 C443<br>C447 C488<br>C501 C503<br>C504 C505<br>C506 C507<br>C508 E400<br>F002 F014<br>F015 F541<br>F658 F756<br>G489 K01.1<br>S201 S303<br>S507 | Rosetta Stone<br>Syntax Lexicon<br>Coder's Guide | A.I.<br>INFOCON<br>5 4 3 2 1<br>INFORMATION CONDITION             |
| AFATDS | A423 A659<br>C505 C203<br>F014 F015<br>F541 S201    | A423 A659<br>C002 C203<br>C400 C443<br>C447 C488<br>C501 C503<br>C504 C505<br>C506 C507<br>C508 E400<br>F002 F014<br>F015 F541<br>F658 F756<br>G489 K01.1<br>S201 S303<br>S507 | ASSET TOKENS<br>Token Economy   | A423 A659<br>C505 C203<br>F014 F015<br>F541 S201   | M2M<br>"SYMBOLS RULE THE WORLD"                  | "SYMBOLS RULE THE WORLD"  |
| MCS    | NEWS<br>SIOP<br>FEDERATED MISSION NETWORKING<br>FMN | NEWS   | ASSET TOKENS<br>Token Economy   | HEARTBEAT MESSAGE = K00.99 </108> {"108"}  | NDN<br>Firefly-Heartbeat Flash Messages          | PROCESS MESSAGE BY PRECEDENCE UNIVERSAL EVENT / ALERT MESSAGE BUS |

| MESSAGE CATALOG<br>300 + Use Cases  |   |   |                           |   |                                   |                             |                             |
|-------------------------------------|---|---|---------------------------|---|-----------------------------------|-----------------------------|-----------------------------|
| Information Categories and Examples |   |   |                           |   |                                   |                             |                             |
| Object Categories                   | Examples  | Location                                    | Movement                  | Identify                                  | Status                            | Activity                    | Intent                      |
| OOB                                 | SYNTAX LEXICON  | STRUCTURED DATA<br>lat/long                 | EXCHANGE<br>spd/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>relationship             | BDA, op<br>level                  | repair, broadcasts          | YAML<br>expansion           |
| Sociological                        | Culture, religion, economic, ethnic, government, history, languages | temples, historic structures                | E-R Model<br>Entity       | Class Diagram<br>Class                    | Relational Database<br>Table      | Object DBMS<br>Class        | XML DTD / Schema<br>Element |
| Geophysical                         | Terrain, weather, climatology, oceanography, astrometry             | feature<br>lat/long, alt/dpth               | Attribute<br>Domain Value | PURCHASE CODES<br>Attribute               | Instance, Value<br>Field / Column | TADILs<br>Message           | MTF<br>FFIRN / FFN / FUDN   |

- Information Elements Roles**
- COI Determination Org Interaction
  - Search and Discovery
  - Ontologies STANDARDS
  - Taxonomies REFERENCE
  - Metadata Attributes / Filters ('Org\_ID" } {"URN"} </URN></URN> FILTERS
- 

FFUDN: Field Format Unit Designator #

FFIRN Field Format Index Reference #

Structured military messaging ID's messages, message sets, data element, symbol fields </108>  
BY Form Field Position & NUMBER

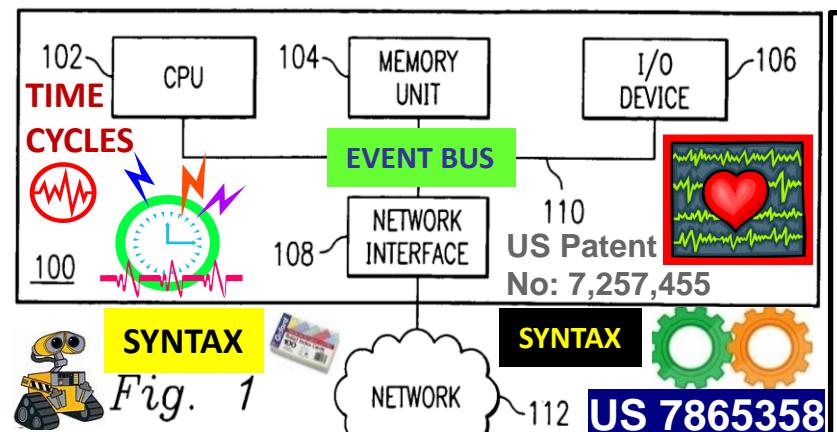
{"108"} NDN Firefly-Heartbeat Flash Messages

PROCESS MESSAGE BY PRECEDENCE  
UNIVERSAL EVENT / ALERT MESSAGE BUS

## OPERATIONAL NODES / ACTIVITIES

| DATA                                     | SYSTEM FUNCTIONS         | PERFORMANCE                    |
|--|--------------------------|--------------------------------|
| 11.4 - Classification                    | 11.8 - Kinematics        | 11.8.1 - Pos / Vel / Acc (PVA) |
| 11.4.1 - Category                        | 11.8.1 - Acceleration    | 11.8.1.1 - Angular             |
| 11.4.1.1 - Confidence Level              | 11.8.1.1.1 - Linear      | 1.1.2 - Linear                 |
| 11.4.1.2 - Estimate Type                 | 11.8.1.2 - Estimate Type | 2 - Estimate Type              |
| 11.4.1.2.1 - Alternative                 | 11.8.1.2.1 - Alternative | 1.2.1 - Estimated              |
| 11.4.1.2.2 - Evaluated D                 | 11.8.1.2.2 - Evaluated D | 1.2.2 - Observed               |
| 11.4.1.3 - Value                         | 11.8.1.3 - Value         | 1.2.3 - Predicted              |
|  | CODES                    | 1.2.4 - Smoothed Data          |
| SYMBOL                                   | Friend                   | Neutral                        |
| 2525C                                    | Partner                  | Hostile                        |
|  |                          | Competitor                     |
| 11.4.1.3.4 - Substance                   |                          | 4 - Velocity                   |
|  |                          | 1.4.1 - Horizontal             |
| 11.4.1.3.5 - Surface                     |                          | 1.4.2 - Vertical               |
| 11.4.2 - Platform / Point / Feature Type |                          | VA Confidence                  |
| 11.4.3 - Specific Type                   |                          | 1 - Bearing Angle              |
| 11.4.4 - Type Modifier                   |                          | 2 - Bearing Angle Rate         |
| 11.4.5 - Unit                            |                          | 3 - Covariance Matrix          |





Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or SYNTAX, rules for classifying terms or other transformation rules.

**US 7865358 CLAIM 1.** method converting textual data from source form to target forms, where target form differs from source form's linguistics, syntax

Multi-user functionality for converting data from a first form to a second form

Symbolic artificial intelligence: collection of all methods in artificial intelligence research that are based on high-level symbolic (human-readable) representations of problems, i.e.

"SIGNS AND SYMBOLS RULE THE WORLD, NOT RULES OR LAWS"

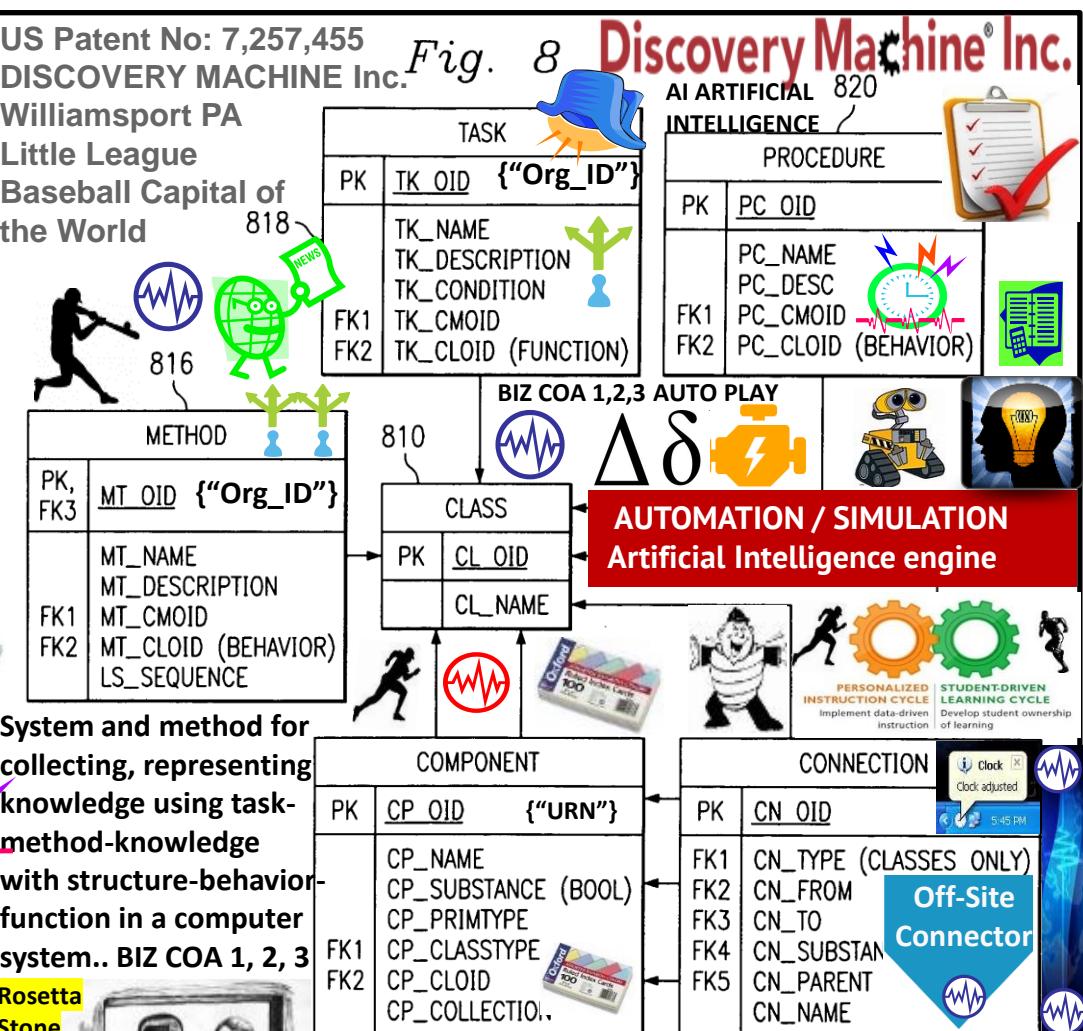
NATO OTAN RULE THE WORLD, NOT RULES OR LAWS

Confucius



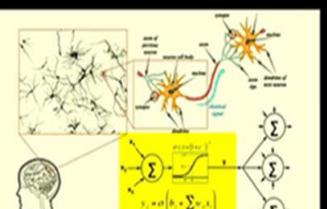
Alpha-numeric OPSCODE

Brevity codes mapped to symbols,  
Symbol sets = structured data

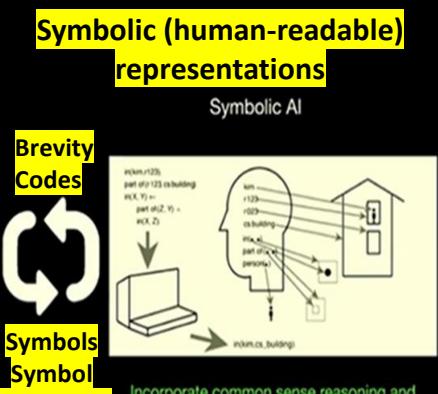


## Neuro-Symbolic AI

Neural Networks  
(Deep Learning)



Breaking the world into symbols (rather than



# Symbolic artificial intelligence: collection of all methods in artificial intelligence

research that are based on high-level symbolic (human-readable) representations of problems, logic and search.[1] Symbolic AI used tools such as logic programming, production rules, semantic nets and frames, and it developed applications such as knowledge-based systems (in particular, expert systems), symbolic mathematics, automated theorem provers, ontologies, the semantic web, and automated planning and scheduling systems. The Symbolic AI paradigm led to seminal ideas in search, symbolic programming languages, agents, multi-agent systems, the semantic web, the strengths, imitations of formal knowledge and reasoning systems.

Physical symbol system (also called a formal system) takes physical patterns (symbols), combining them into structures (expressions) and manipulating them (using processes) to produce new expressions. The physical symbol system hypothesis (PSSH) is a position in the philosophy of artificial intelligence formulated by Allen Newell and Herbert A. Simon. They wrote: "A physical symbol system has the necessary and sufficient means for general intelligent action." [2] —Allen Newell and Herbert A. Simon

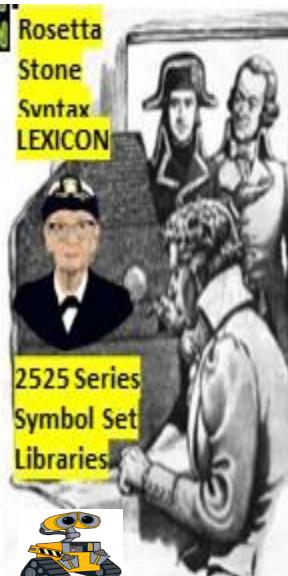
This claim implies both that human thinking is a kind of symbol manipulation (because a symbol system is necessary for intelligence) and that machines can be intelligent (because a symbol system is sufficient for intelligence).[3] The idea has philosophical roots in Hobbes (who claimed reasoning was "nothing more than reckoning"), Leibniz (who attempted to create a logical calculus of all human ideas), Hume (who thought perception could be reduced to "atomic impressions") and even Kant (who analyzed all experience as controlled by formal rules).[1] The latest version is called the computational theory of mind, associated with philosophers Hilary Putnam and Jerry Fodor.[4]

Source: Wikipedia: [https://en.wikipedia.org/wiki/Physical\\_symbol\\_system](https://en.wikipedia.org/wiki/Physical_symbol_system)

data from a first form to a second form

CONDITION

Rosetta  
Stone  
Syntax  
LEXICON



2525 Series  
Symbol Set  
Libraries



NATO RULE THE WORLD, NOT  
OTAN RULES OR LAWS



Confucius

Alpha-numeric OPS CODE

Brevity codes mapped to symbols,  
Symbol sets = structured data

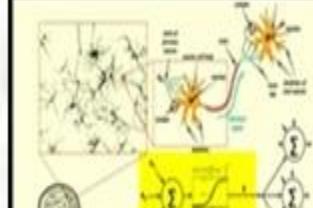
FRZ TLP CLOUD

ABC A OPS CODE BREVITY CODES

Neuro-Symbolic AI

Symbolic (human-readable)  
representations

Neural Networks  
(Deep Learning)



Brevity  
Codes



Symbols



Symbol



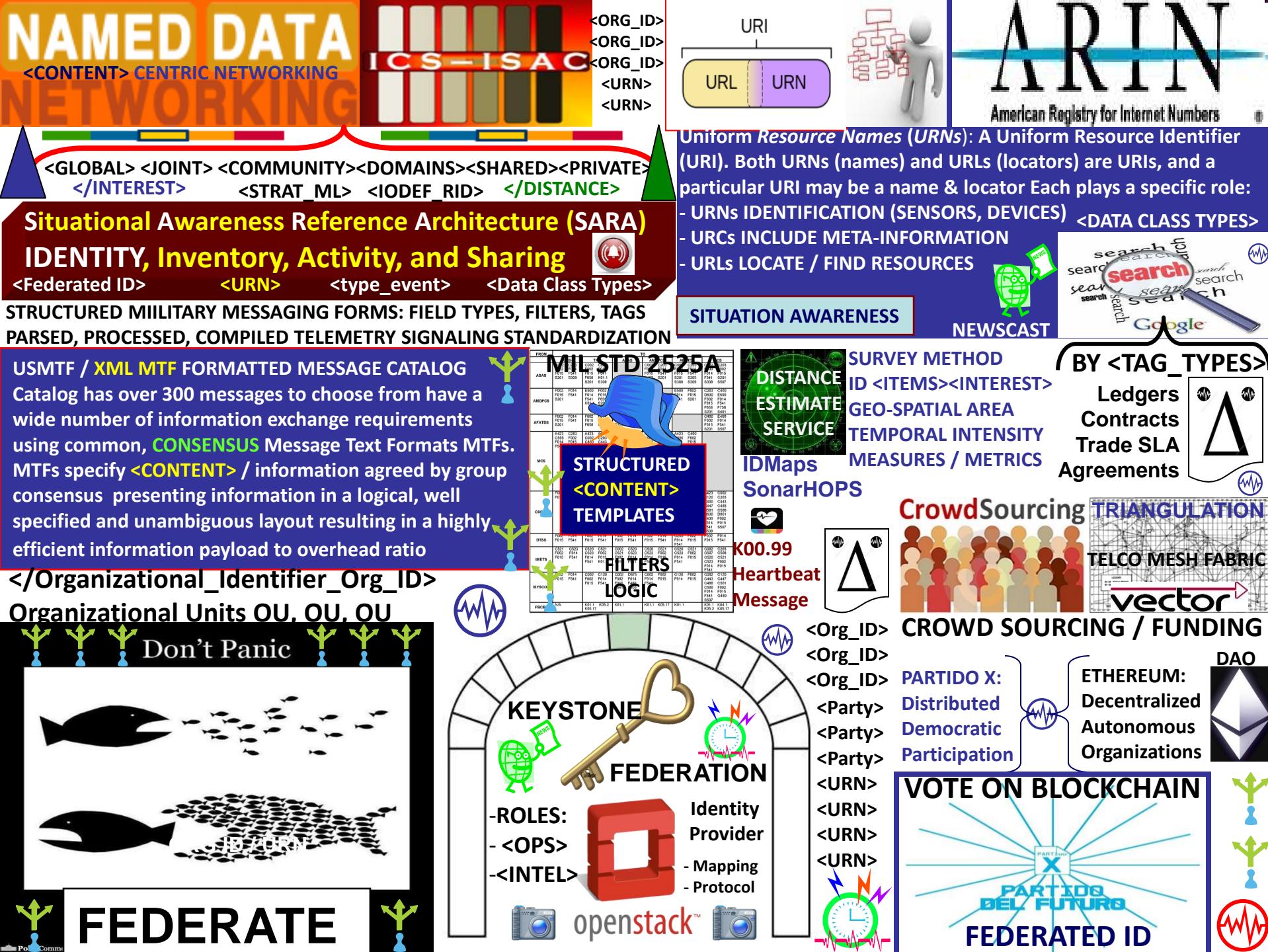
Symbolic AI



Incorporate common sense reasoning and

Breaking the world into symbols (rather than  
sets 2525)

Incorporate common sense reasoning and



# Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

<http://ics-isac.org/sara/>



**IDENTITY:** <UUID> = Devices, sensors  
Federation Gateway <ORG\_ID> Organizations

## <ELEMENTS>

STRATML / IODEF RID CLASSES:  
<GLOBAL><JOINT><SHARED>  
<DOMAIN><FEDERATION>  
<CITY><STATE><PRIVATE>

STRATEGIC MARKUP

StratML

LANGUAGE

Industrial Control System Information Sharing and Analysis Center

**INVENTORY:** Uniform Resource Name <URN>

<URN><URN> <NEWS>  
<URN><URN> <COMMODITY><WATER><ENERGY><AVAILABLE UNITS>  
<URN><URN> vector <GEO-SPATIAL TEMPORAL INTENSITY METRICS / METERS>

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

**ACTIVITY:** <EVENT><ALERT> <TIME\_STAMP><ORG\_ID><URN>

<GEO\_LOC\_GPS><STATUS>  
<Halt><Moving><Stale><Ready>

CONTENT LEXICON  
ROSETTA STONE

**SHARING:**

COMMON <TAGS>

<Organizational\_ID>

Resource Names <URN>

<Time\_Stamps>

<State-Meta\_Data>

<DATA\_CLASS\_TYPE>

<Heartbeat\_snapshots>

<TAG>LIBRARY  
TEMPLATES



AVALANCHE

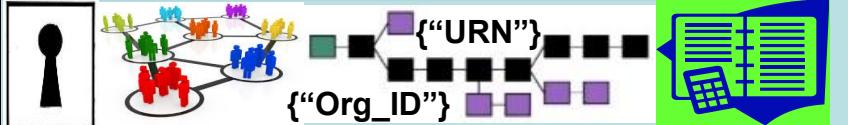
WELCOME TO THE FS-ISAC SECURITY AUTOMATION GROUP. OUR VISION IS  
A FEDERATED NETWORK OF STIX-BASED REPOSITORIES SHARING INTELLIGENCE IN  
REAL-TIME. AVALANCHE: STRENGTH IN NUMBERS, SECURELY SHARE INTELLIGENCE

NIST CYBER SECURITY FRAMEWORK

| FROM | F002 | F003 | F004 | F005 | F006 | F007 | F008 | F009 | F010 | F011 | F012 | F013 | F014 | F015 | F016 | F017 | F018 | F019 | F020 | F021 | F022 | F023 | F024 | F025 | F026 | F027 | F028 | F029 | F030 | F031 | F032 | F033 | F034 | F035 | F036 | F037 | F038 | F039 | F040 | F041 | F042 | F043 | F044 | F045 | F046 | F047 | F048 | F049 | F050 | F051 | F052 | F053 | F054 | F055 | F056 | F057 | F058 | F059 | F060 | F061 | F062 | F063 | F064 | F065 | F066 | F067 | F068 | F069 | F070 | F071 | F072 | F073 | F074 | F075 | F076 | F077 | F078 | F079 | F080 | F081 | F082 | F083 | F084 | F085 | F086 | F087 | F088 | F089 | F090 | F091 | F092 | F093 | F094 | F095 | F096 | F097 | F098 | F099 | F099 | F100 | F101 | F102 | F103 | F104 | F105 | F106 | F107 | F108 | F109 | F110 | F111 | F112 | F113 | F114 | F115 | F116 | F117 | F118 | F119 | F120 | F121 | F122 | F123 | F124 | F125 | F126 | F127 | F128 | F129 | F130 | F131 | F132 | F133 | F134 | F135 | F136 | F137 | F138 | F139 | F140 | F141 | F142 | F143 | F144 | F145 | F146 | F147 | F148 | F149 | F150 | F151 | F152 | F153 | F154 | F155 | F156 | F157 | F158 | F159 | F160 | F161 | F162 | F163 | F164 | F165 | F166 | F167 | F168 | F169 | F170 | F171 | F172 | F173 | F174 | F175 | F176 | F177 | F178 | F179 | F180 | F181 | F182 | F183 | F184 | F185 | F186 | F187 | F188 | F189 | F190 | F191 | F192 | F193 | F194 | F195 | F196 | F197 | F198 | F199 | F199 | F200 | F201 | F202 | F203 | F204 | F205 | F206 | F207 | F208 | F209 | F210 | F211 | F212 | F213 | F214 | F215 | F216 | F217 | F218 | F219 | F220 | F221 | F222 | F223 | F224 | F225 | F226 | F227 | F228 | F229 | F229 | F230 | F231 | F232 | F233 | F234 | F235 | F236 | F237 | F238 | F239 | F239 | F240 | F241 | F242 | F243 | F244 | F245 | F246 | F247 | F248 | F249 | F249 | F250 | F251 | F252 | F253 | F254 | F255 | F256 | F257 | F258 | F259 | F259 | F260 | F261 | F262 | F263 | F264 | F265 | F266 | F267 | F268 | F269 | F269 | F270 | F271 | F272 | F273 | F274 | F275 | F276 | F277 | F278 | F279 | F279 | F280 | F281 | F282 | F283 | F284 | F285 | F286 | F287 | F288 | F289 | F289 | F290 | F291 | F292 | F293 | F294 | F295 | F296 | F297 | F298 | F298 | F299 | F299 | F300 | F301 | F302 | F303 | F304 | F305 | F306 | F307 | F308 | F309 | F309 | F310 | F311 | F312 | F313 | F314 | F315 | F316 | F317 | F318 | F319 | F319 | F320 | F321 | F322 | F323 | F324 | F325 | F326 | F327 | F328 | F329 | F329 | F330 | F331 | F332 | F333 | F334 | F335 | F336 | F337 | F338 | F339 | F339 | F340 | F341 | F342 | F343 | F344 | F345 | F346 | F347 | F348 | F349 | F349 | F350 | F351 | F352 | F353 | F354 | F355 | F356 | F357 | F358 | F359 | F359 | F360 | F361 | F362 | F363 | F364 | F365 | F366 | F367 | F368 | F369 | F369 | F370 | F371 | F372 | F373 | F374 | F375 | F376 | F377 | F378 | F379 | F379 | F380 | F381 | F382 | F383 | F384 | F385 | F386 | F387 | F388 | F389 | F389 | F390 | F391 | F392 | F393 | F394 | F395 | F396 | F397 | F398 | F398 | F399 | F399 | F400 | F401 | F402 | F403 | F404 | F405 | F406 | F407 | F408 | F409 | F409 | F410 | F411 | F412 | F413 | F414 | F415 | F416 | F417 | F418 | F418 | F419 | F420 | F421 | F422 | F423 | F424 | F425 | F426 | F427 | F428 | F428 | F429 | F429 | F430 | F431 | F432 | F433 | F434 | F435 | F436 | F437 | F438 | F439 | F439 | F440 | F441 | F442 | F443 | F444 | F445 | F446 | F447 | F448 | F449 | F449 | F450 | F451 | F452 | F453 | F454 | F455 | F456 | F457 | F458 | F459 | F459 | F460 | F461 | F462 | F463 | F464 | F465 | F466 | F467 | F468 | F469 | F469 | F470 | F471 | F472 | F473 | F474 | F475 | F476 | F477 | F478 | F479 | F479 | F480 | F481 | F482 | F483 | F484 | F485 | F486 | F487 | F488 | F489 | F489 | F490 | F491 | F492 | F493 | F494 | F495 | F496 | F497 | F498 | F498 | F499 | F499 | F500 | F501 | F502 | F503 | F504 | F505 | F506 | F507 | F508 | F509 | F509 | F510 | F511 | F512 | F513 | F514 | F515 | F516 | F517 | F518 | F518 | F519 | F520 | F521 | F522 | F523 | F524 | F525 | F526 | F527 | F528 | F529 | F529 | F530 | F531 | F532 | F533 | F534 | F535 | F536 | F537 | F538 | F539 | F539 | F540 | F541 | F542 | F543 | F544 | F545 | F546 | F547 | F548 | F549 | F549 | F550 | F551 | F552 | F553 | F554 | F555 | F556 | F557 | F558 | F559 | F559 | F560 | F561 | F562 | F563 | F564 | F565 | F566 | F567 | F568 | F569 | F569 | F570 | F571 | F572 | F573 | F574 | F575 | F576 | F577 | F578 | F578 | F579 | F579 | F580 | F581 | F582 | F583 | F584 | F585 | F586 | F587 | F588 | F589 | F589 | F590 | F591 | F592 | F593 | F594 | F595 | F596 | F597 | F598 | F598 | F599 | F599 | F600 | F601 | F602 | F603 | F604 | F605 | F606 | F607 | F608 | F608 | F609 | F610 | F611 | F612 | F613 | F614 | F615 | F616 | F617 | F618 | F618 | F619 | F620 | F621 | F622 | F623 | F624 | F625 | F626 | F627 | F628 | F629 | F629 | F630 | F631 | F632 | F633 | F634 | F635 | F636 | F637 | F638 | F639 | F639 | F640 | F641 | F642 | F643 | F644 | F645 | F646 | F647 | F648 | F649 | F649 | F650 | F651 | F652 | F653 | F654 | F655 | F656 | F657 | F658 | F659 | F659 | F660 | F661 | F662 | F663 | F664 | F665 | F666 | F667 | F668 | F669 | F669 | F670 | F671 | F672 | F673 | F674 | F675 | F676 | F677 | F678 | F678 | F679 | F679 | F680 | F681 | F682 | F683 | F684 | F685 | F686 | F687 | F688 | F689 | F689 | F690 | F691 | F692 | F693 | F694 | F695 | F696 | F697 | F698 | F698 | F699 | F699 | F700 | F701 | F702 | F703 | F704 | F705 | F706 | F707 | F708 | F708 | F709 | F710 | F711 | F712 | F713 | F714 | F715 | F716 | F717 | F718 | F718 | F719 | F720 | F721 | F722 | F723 | F724 | F725 | F726 | F727 | F728 | F729 | F729 | F730 | F731 | F732 | F733 | F734 | F735 | F736 | F737 | F738 | F739 | F739 | F740 | F741 | F742 | F743 | F744 | F745 | F746 | F747 | F748 | F749 | F749 | F750 | F751 | F752 | F753 | F754 | F755 | F756 | F757 | F758 | F759 | F759 | F760 | F761 | F762 | F763 | F764 | F765 | F766 | F767 | F768 | F769 | F769 | F770 | F771 | F772 | F773 | F774 | F775 | F776 | F777 | F778 | F778 | F779 | F779 | F780 | F781 | F782 | F783 | F784 | F785 | F786 | F787 | F788 | F789 | F789 | F790 | F791 | F792 | F793 | F794 | F795 | F796 | F797 | F798 | F798 | F799 | F799 | F800 | F801 | F802 | F803 | F804 | F805 | F806 | F807 | F808 | F808 | F809 | F810 | F811 | F812 | F813 | F814 | F815 | F816 | F817 | F818 | F818 | F819 | F820 | F821 | F822 | F823 | F824 | F825 | F826 | F827 | F828 | F829 | F829 | F830 | F831 | F832 | F833 | F834 | F835 | F836 | F837 | F838 | F839 | F839 | F840 | F841 | F842 | F843 | F844 | F845 | F846 | F847 | F848 | F849 | F849 | F850 | F851 | F852 | F853 | F854 | F855 | F856 | F857 | F858 | F859 | F859 | F860 | F861 | F862 | F863 | F864 | F865 | F866 | F867 | F868 | F869 | F869 | F870 | F871 | F872 | F873 | F874 | F875 | F876 | F877 | F878 | F878 | F879 | F879 | F880 | F881 | F882 | F883 | F884 | F885 | F886 | F887 | F888 | F888 | F889 | F889 | F890 | F891 | F892 | F893 | F894 | F895 | F896 | F897 | F898 | F898 | F899 | F899 | F900 | F901 | F902 | F903 | F904 | F905 | F906 | F907 | F908 | F908 | F909 | F910 | F911 | F912 | F913 | F914 | F915 | F916 | F917 | F918 | F918 | F919 | F920 | F921 | F922 | F923 | F924 | F925 | F926 | F927 | F928 | F929 | F929 | F930 | F931 | F932 | F933 | F934 | F935 | F936 | F937 | F938 | F939 | F939 | F940 | F941 | F942 | F943 | F944 | F945 | F946 | F947 | F948 | F948 | F949 | F950 | F951 | F952 | F953 | F954 | F955 | F956 | F957 | F958 | F959 | F959 | F960 | F961 | F962 | F963 | F964 | F965 | F966 | F967 | F968 | F968 | F969 | F970 | F971 | F972 | F973 | F974 | F975 | F976 | F977 | F978 | F978 | F979 | F979 | F980 | F981 | F982 | F983 | F984 | F985 | F986 | F987 | F988 | F988 | F989 | F989 | F990 | F991 | F992 | F993 | F994 | F995 | F996 | F997 | F998 | F998 | F999 | F999 | F1000 | F1001 | F1002 | F1003 | F1004 | F1005 | F1006 | F1007 | F1008 | F1008 | F1009 | F1010 | F1011 | F1012 | F1013 | F1014 | F1015 | F1016 | F1017 | F1017 | F1018 | F1019 | F1020 | F1021 | F1022 | F1023 | F1024 | F1025 | F1026 | F1027 | F1028 | F1028 | F1029 | F1030 | F1031 | F1032 | F1033 | F1034 | F1035 | F1036 | F1037 | F1038 | F1039 | F1039 | F1040 | F1041 | F1042 | F1043 | F1044 | F1045 | F1046 | F1047 | F1048 | F1048 | F1049 | F1050 | F1051 | F1052 | F1053 | F1054 | F1055 | F1056 | F1057 | F1058 | F1059 | F1059 | F1060 | F1061 | F1062 | F1063 | F1064 | F1065 | F1066 | F1067 | F1068 | F1069 | F1069 | F1070 | F1071 | F1072 | F1073 | F1074 | F1075 | F1076 | F1077 | F1078 | F1078 | F1079 | F1079 | F1080 | F1081 | F1082 | F1083 | F1084 | F1085 | F1086 | F1087 | F1088 | F1088 | F1089 | F1089 | F1090 | F1091 | F1092 | F1093 | F1094 | F1095 | F1096 | F1097 | F1098 | F1098 | F1099 | F1099 | F1100 | F1101 | F1102 | F1103 | F1104 | F1105 | F1106 | F1107 | F1108 | F1108 | F1109 | F1110 | F1111 | F1112 | F1113 | F1114 | F1115 | F1116 | F1117 | F1118 | F1119 | F1119 | F1120 | F1121 | F1122 | F1123 | F1124 | F1125 | F1126 | F1127 | F1128 | F1128 | F1129 | F1130 | F1131 | F1132 | F1133 | F1134 | F1135 | F1136 | F1137 | F1138 | F1139 | F1139 | F1140 | F1141 | F1142 | F1143 | F1144 | F1145 | F1146 | F1147 | F1148 | F1149 | F1149 | F1150 | F1151 | F1152 | F1153 | F1154 | F1155 | F1156 | F1157 | F1158 | F1159 | F1159 | F1160 | F1161 | F1162 | F1163 | F1164 | F1165 | F1166 | F1167 | F1168 | F1169 | F1169 | F1170 | F1171 | F1172 | F1173 | F1174 | F1175 | F1176 | F1177 | F1178 | F1178 | F1179 | F1179 | F1180 | F1181 | F1182 | F1183 | F1184 | F1185 | F1186 | F1187 | F1188 | F1188 | F1189 | F1189 | F119 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 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# Heart Beacon Cycle

## FEDERATE / TRADE FEDERATIONS



ECONOMIC HEARTBEAT



K %



DAO

BITNATION

FEDERATE  
SHARE  
WIN

- FEDERATION:** Latin: **foedus, foederis, covenant, union** of partially self-governing states or regions under a central (federal) government
- A league or confederacy. Individuals / groups retain **AUTONOMY**
- A federated body formed by nations, states, and... **unions**  
**each retaining control of internal affairs**

Net joins, drops, splits, merges, moves  
Agile, adhoc NETOPS Vs acquisition preserves the **CHANNEL**

Federation  
Gateway



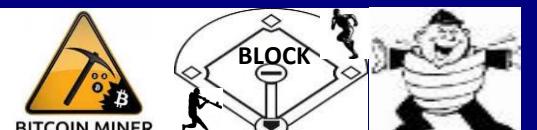
{"GLOBAL"}  
{"SHARED"}  
{"DOMAIN"}  
{"COMMUNITY"}  
{"PRIVATE"}  
{"GROUP ID"}



Bitcoin **Group Signatures Dynamic Membership Multi-party Signature DMMS:**  
independent interest within group signatures – **FEDERATED ID {"Org\_ID"}**



Bitcoin Mining Pools  
MEME / METAPHOR MEDIATION



DISTRIBUTED AUTONOMOUS ORGANIZATION = DAO RAND Corp

term coined circa 1991 now in use by Blockchain tech corporations

Uniform\_Resource\_Name



IeT DEVICE / PLATFORM  
IoT SENSOR DEVICE



STOCK EXCHANGE

MIC MARKET IDENTIFIER  
CODES / BREVITY CODES

{"DUNS #"} {"Org\_ID"} Heartbeat Snaps  
QR CODE  
{"URN"} {"URN"} {"URN"} MICRO-CYCLES

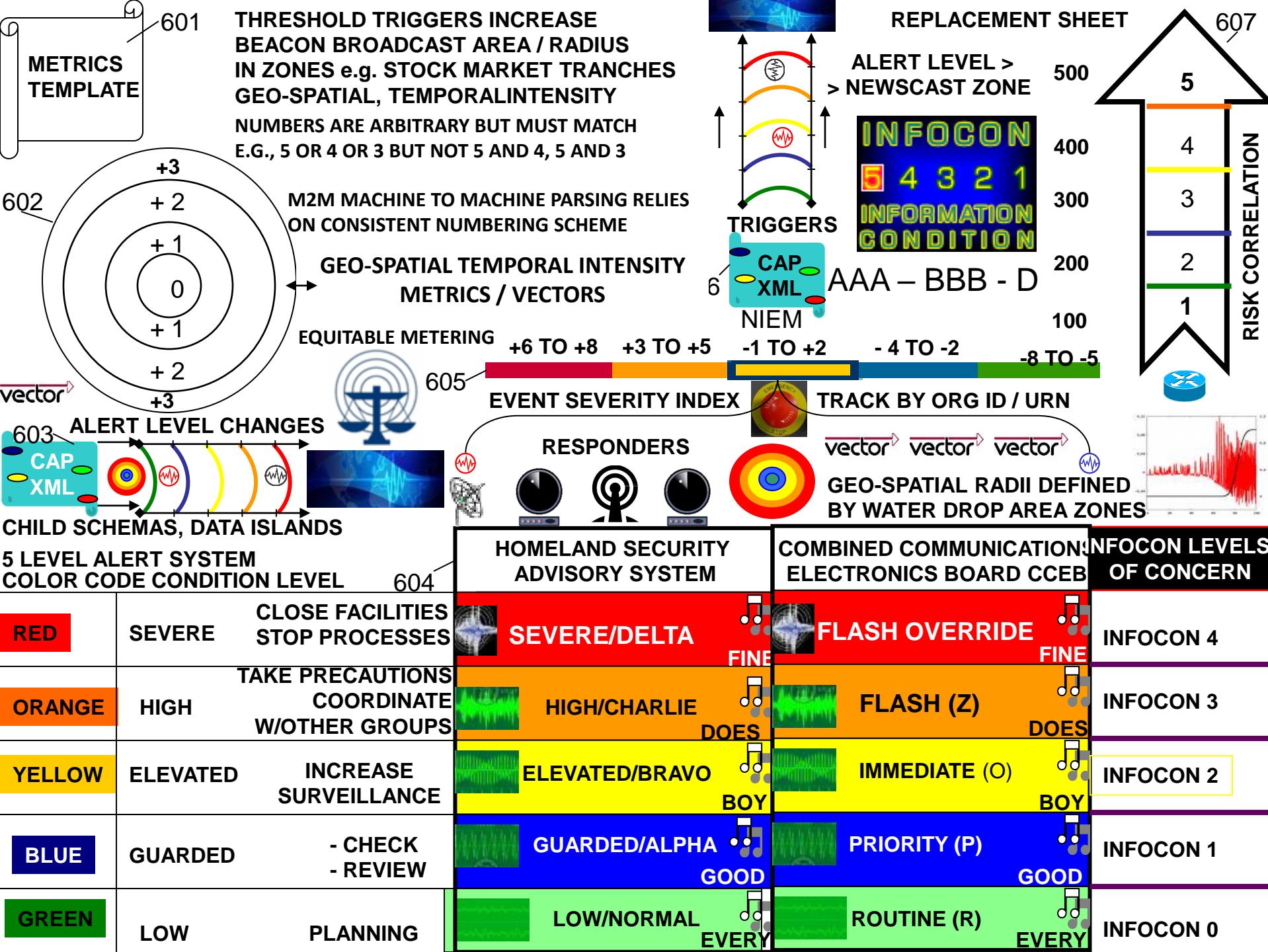


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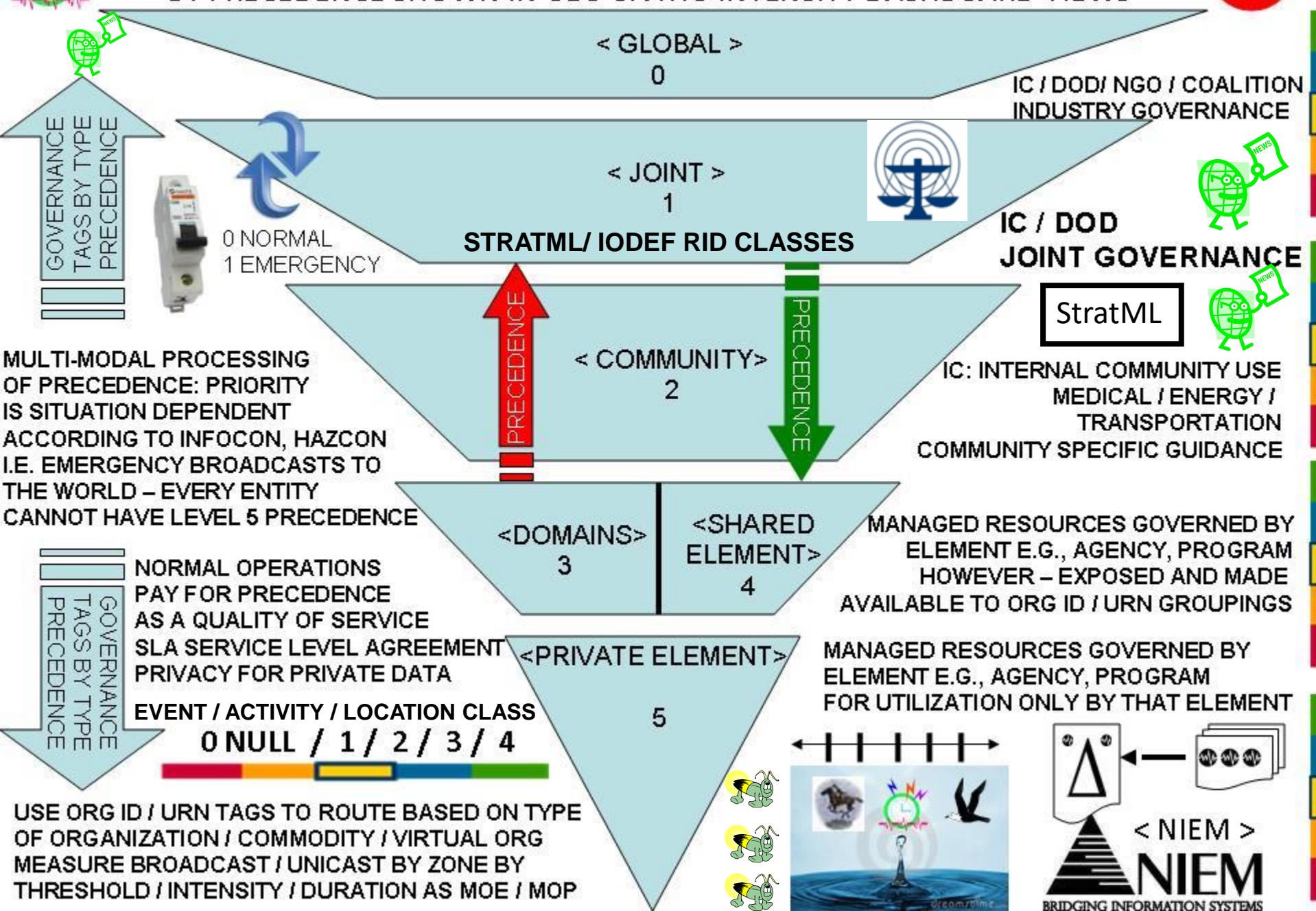
## FEDERATE: COMMON GOALS SYNCHRONIZED IN SPACE - TIME







# ENABLE MAPPING OF GOVERNANCE / MANAGEMENT RESOURCES BY PRECEDENCE SHOWN IN GEO-SPATIO INTENSITY DASHBOARD VIEWS



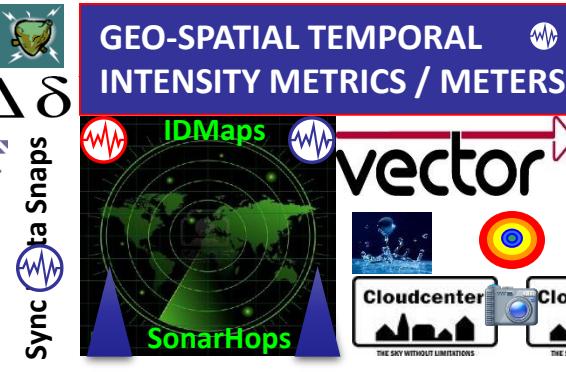
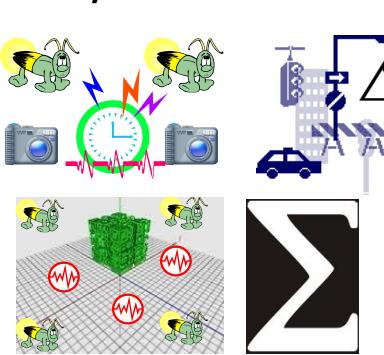
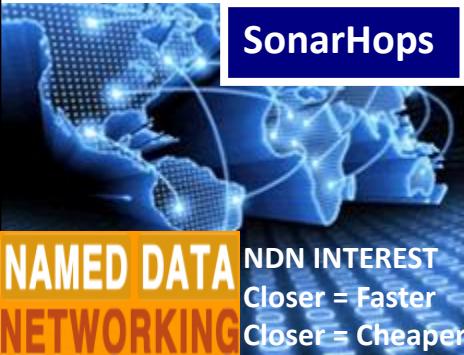




# IDMaps: Global Internet Host Distance Estimation Service



NDN: CONTENT ROUTING / <StratML> NDN INTEREST = Time / Distance



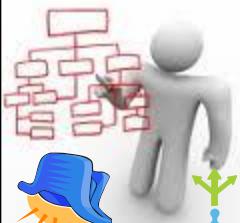
IDMaps scalable Internet-wide architecture measures, disseminates distance information



Higher-level services collect distance information to build a virtual distance map of Internet & estimates distance between any IP address pair

IDMaps provides distance information used by SONAR/HOPS query/reply service

Name Prefix  
<Org\_ID> Trie (NPT)



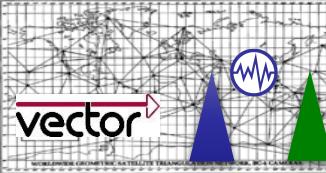
**NDN NAMES**

**NDN NAMED DATA NETWORK RIB / FIB Datasets event notification**

Distance information adjusts to “permanent” topology changes e.g., splits, joins, adds, moves, drops, merges in lieu of formal merger / acquisition

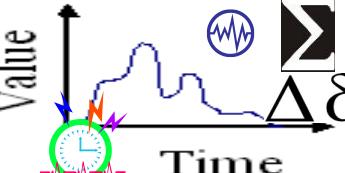


**TRIANGULATION**



Datasets and Event Notification

**Time Series**



INTEREST in <URNs>

NDN STRATEGY CHOICE MANAGER – RIB Routing Information Base add-nexthop

IDMaps assists Network Time Protocol (NTP) servers establish long term peering relationships



**MICRO-CYCLES**



Distance Metrics: latency (e.g., round-trip delay) and, where possible, bandwidth.



**NDN INTEREST LIFETIME = TTL Time To Live**  
**HEARTBEAT STATE META DATASNAPSHOTS**

# GEO-SPATIAL TEMPORAL INTENSITY METRICS, METERS, VECTORS



INFOCON / DEFCON ALERT EVENTS INFORM STAKEHOLDERS OF STATUS CHANGE i.e., NORMAL TO ELEVATED, HIGH OR SEVERE. ALERT LEVELS ARE ARBITRARY BUT MUST BE CONSISTENT e.g., 3 OR 5 FOR MACHINE TO MACHINE PROCESSING



## Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:



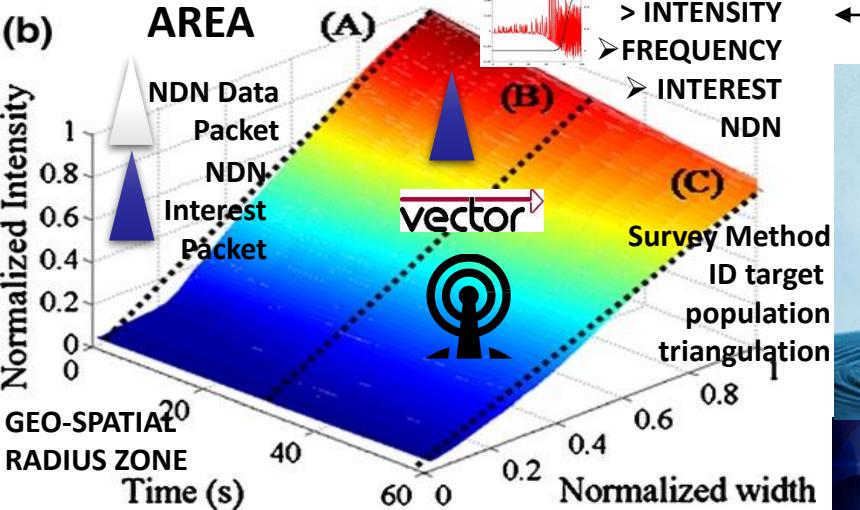
Paul Revere = linear, sequential



TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY Cyclic Frequency



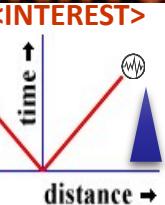
# NAMED DATA NETWORKING

</IoT>  
MQTT



NIST TIME BEACON

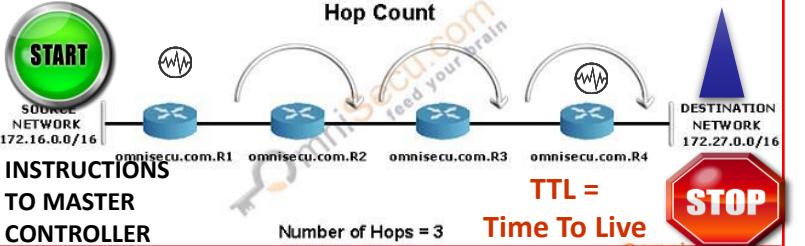
05:08:50



ARRESTED-D

TELEMETRY TRANSPORT

Hop Count



CLOSER = FASTER, CHEAPER > CYCLE => INTEREST NAMED-DATA NETWORKING

IDMAPS  
SONARHOPS  
INTERNET  
TRIANGULATION



vector WirelessHART

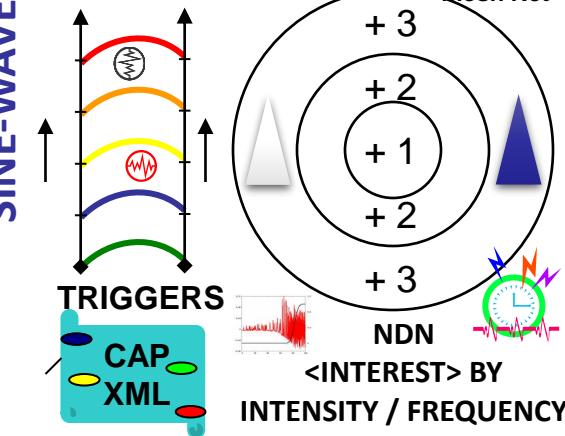
time synchronized,  
self-organizing,  
mesh Net

ALERT LEVEL >  
> NEWSCAST ZONE

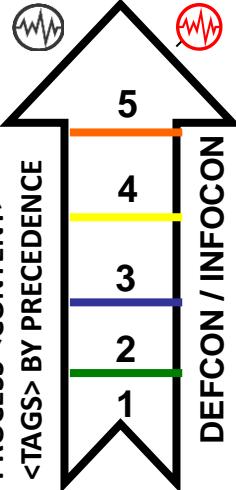


SINE-WAVE

TRIGGERS  
CAP XML



INFOCON  
XML  
MTF  
300 +  
MSG  
INFORMATION CONDITION



# 13/573,002 HEART BEACON CYCLE

Time -Space meter, metrics / Universal data event, alert bus  
Internet of Everything "ability to hear the world's heartbeat"

## The four dimensions of Big Data

vector

VECTOR: quantity having direction and magnitude  
position of a point in space relative to another point



INFOCON  
4 3 2 1

INFORMATION  
CONDITION

SIOP

"THE GRAIL"  
TIME Metrics

SPACE Meters  
COMMON PICTURE

FLASH Messages

UNIVERSAL DATA EVENT BUS

REST ARREST-D  
ALGORITHM

Universal Event / Alert Bus

HASHGRAPH  
Consensus Algorithm

Time Averaged  
Time Stamping

WATER DROP IN POND MEME

FOAM spatial protocol

Ethereum Blockchain

World Computer

Neural Network

Functional Sequential Erlang

SPACE - TIME Equations

BLOCKCHAIN PARSING

{Org\_ID}

MICRO CYCLES

ERLANG

PAUL REVERE MEME

LINEAR SEQUENTIAL

< / = / >

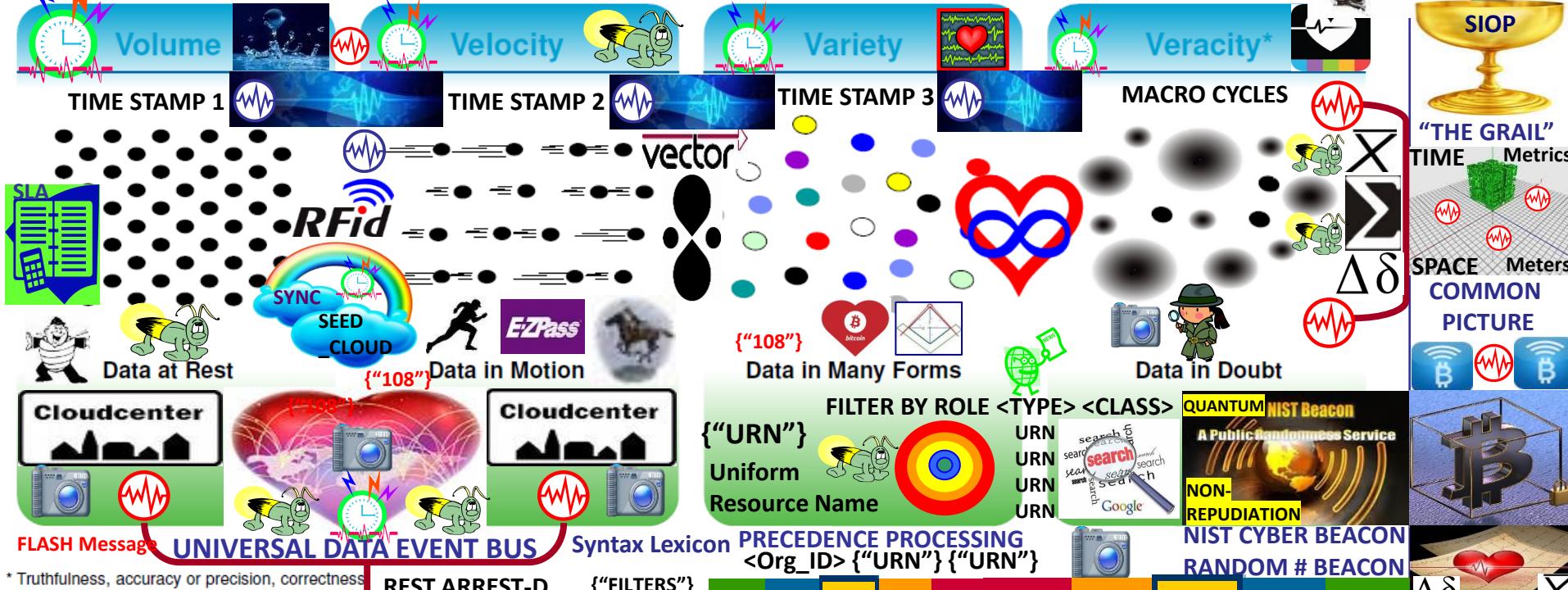
HEARTBEAT SYNCRONIZATION

FIREFLY SYNC CONSENSUS

FOAM

TIME STAMP BY Org\_ID, URN Before FUSION CENTER

vector position of a point in space relative to another point



\* Truthfulness, accuracy or precision, correctness

**FIREFLY – HEARTBEAT** {"108"}  
Stochastic Harmonization UTZ SYNC

Heartbeat synchronization strives to have nodes in a distributed system generate periodic, local "heartbeat" events approximately at the same time with a goal of all nodes starting and ending cycles at the same time eventually = map to closest OPTEMPO HEARTBEAT

State Meta Data  
Heartbeat Snaps



FLASH HB Messages

ERLANG

HASHGRAPH  
Consensus Algorithm  
Time Averaged  
Time Stamping

Functional Sequential Erlang

SPACE - TIME Equations  
BLOCKCHAIN PARSING  
{Org\_ID}

WATER DROP IN POND MEME

PAUL REVERE MEME  
LINEAR SEQUENTIAL

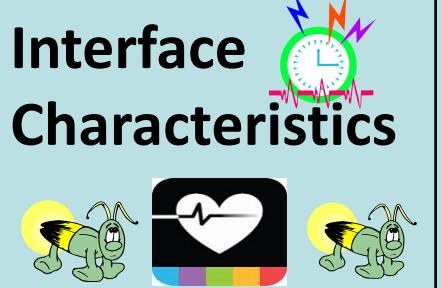
< / = / >  
HEARTBEAT SYNCRONIZATION  
FIREFLY SYNC CONSENSUS

FOAM spatial protocol  
Ethereum Blockchain  
World Computer  
Neural Network

Functional Sequential Erlang  
SPACE - TIME Equations  
BLOCKCHAIN PARSING

WATER DROP IN POND MEME  
PAUL REVERE MEME  
LINEAR SEQUENTIAL

< / = / >  
HEARTBEAT SYNCRONIZATION  
FIREFLY SYNC CONSENSUS  
FOAM

|   |  |   |   |
|---|--|---|---|
| Interface Name  | HEARTBEAT Administration Interface [SCOP]  |   |   |
| Documentation URL   | <a href="http://scop.sourceforge.net/">http://scop.sourceforge.net/</a><br><a href="http://linuxvirtualserver.org/software/index.html">http://linuxvirtualserver.org/software/index.html</a> |   |   |
| API Information   | <br>                        | #Big_Data   | <b>Functionality Areas</b><br>  <p>Cloud Interface Management configuration, start, stop cloud services, edit configuration (heartbeat messages)</p>   |
| Programmable Money<br>World Computer / Blockchain   | <br>                         | API Operation Count   |  <p>LOCATE &lt;CONTENT&gt; IDMAPS / SonarHOPS<br/>4 / 3 / 2 / 1 / NULL / 1 / 2 / 3 / 4<br/>0001 .05 .01 .1 0 5 15 30 90</p>  |
| Interface Characteristics   |    | <b>Web service access type</b><br><b>Network Effects / A.I.</b>   | <p>Web application, front end to [network, device, system, blockchain] heartbeat]</p>   |
|   |  | <b>LANGUAGE / PLATFORM BINDINGS</b>   |   <p>PHP Java Erlang...</p>   |
|   |  | SCOP is a web application, PHP based front-end to heartbeat, IP Virtual Server ipvs and Idirectord [e.g., check interval @ 5 seconds]<br>SCOP can start/stop services, view/ edit configuration files e.g., heartbeat message state management snapshots, backups, take a service online/offline, add/ remove virtual/real servers, services etc. |   |
| <p>"The external environment could update <u>resources</u> at random...<br/>One solution is a <b>heartbeat</b>: defining a default lease duration delaying updates until the next <b>cycle</b>"</p> |  | <br>  | <p>Satoshi Bitcoin Blockchain Time Stamp Server</p> <p>THE SOLUTION WE PROPOSE BEGINS WITH A TIME STAMP SERVER</p> <p>E. Timestamp Server</p> <p>The solution we propose begins with a timestamp server. A timestamp server works by taking the current time and publishing the hash, such as in a newspaper or a timestamp [2]. The timestamp proves that the data must have existed at the time you received the hash. This timestamp cannot be forged or tampered with because it is published in a chain, with each additional timestamp confirming the previous one.</p> <p>Block chain</p> <p>What does a block look like?</p> <p>Simplified block structure:</p> <ul style="list-style-type: none"> <li>Header</li> <li>Timestamp</li> <li>Previous Block Hash</li> <li>Block ID</li> <li>Block Data</li> <li>Block Hash</li> </ul> <p>Block chain structure:</p> <pre> graph TD     H[Header] --&gt; T[Time]     T --&gt; PPH[Previous Block Hash]     PPH --&gt; BI[Block ID]     BI --&gt; BD[Block Data]     BD --&gt; BH[Block Hash]     BH --&gt; NH[Next Block Hash]     </pre> <p>Epoch Time Cycles E0 E1 E2 E3...</p> <p>MICRO CYCLES</p> <p>MACRO CYCLES</p> |
| <p>QubitCoin Interval: Every 30 Seconds</p>   |  |   |   |

# SOFTWARE DEFINED NETWORKING

NETOPS

Command Syntax

REST State Transfer

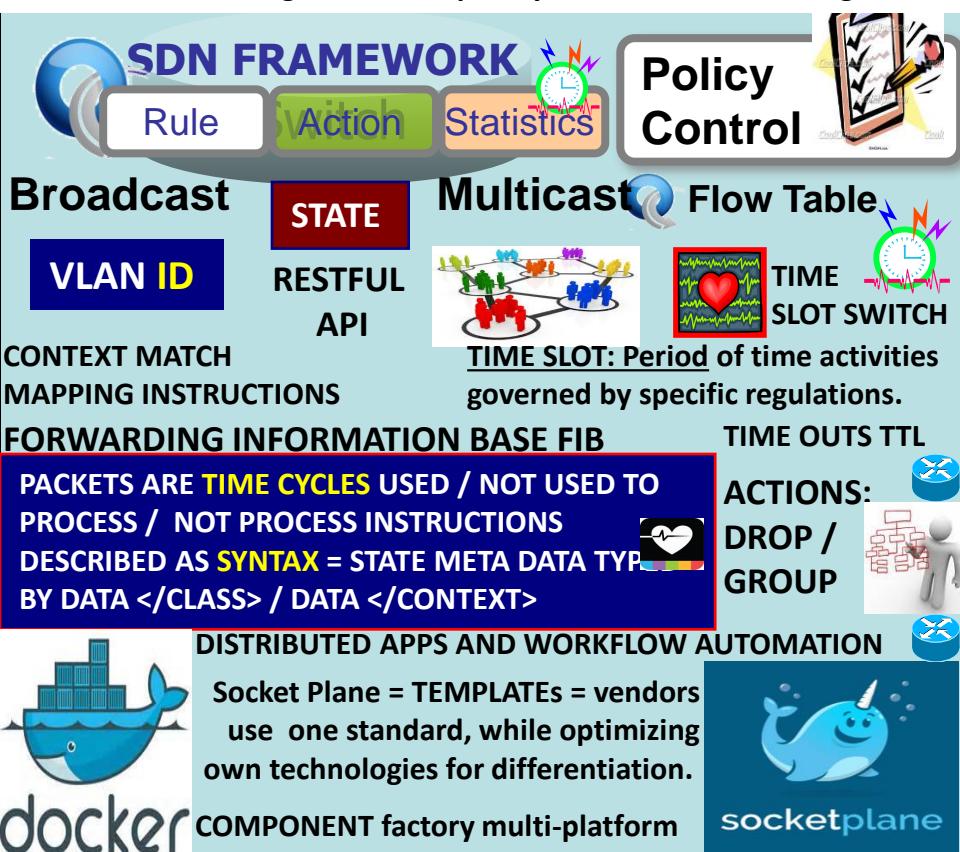
COMMAND SYNTAX  
STATE TRANSFER  
Unicast / Multicast  
Flow Tables / Workflow  
Dynamic Network  
Configuration Management

NET CENTRIC WARFARE  
SYSTEM OF SYSTEMS TELEMETRY

COMMON COMPONENTS, BUILDING BLOCKS USED WITHIN FEDERATION PROMOTING COMMON GOALS, PROCESSES

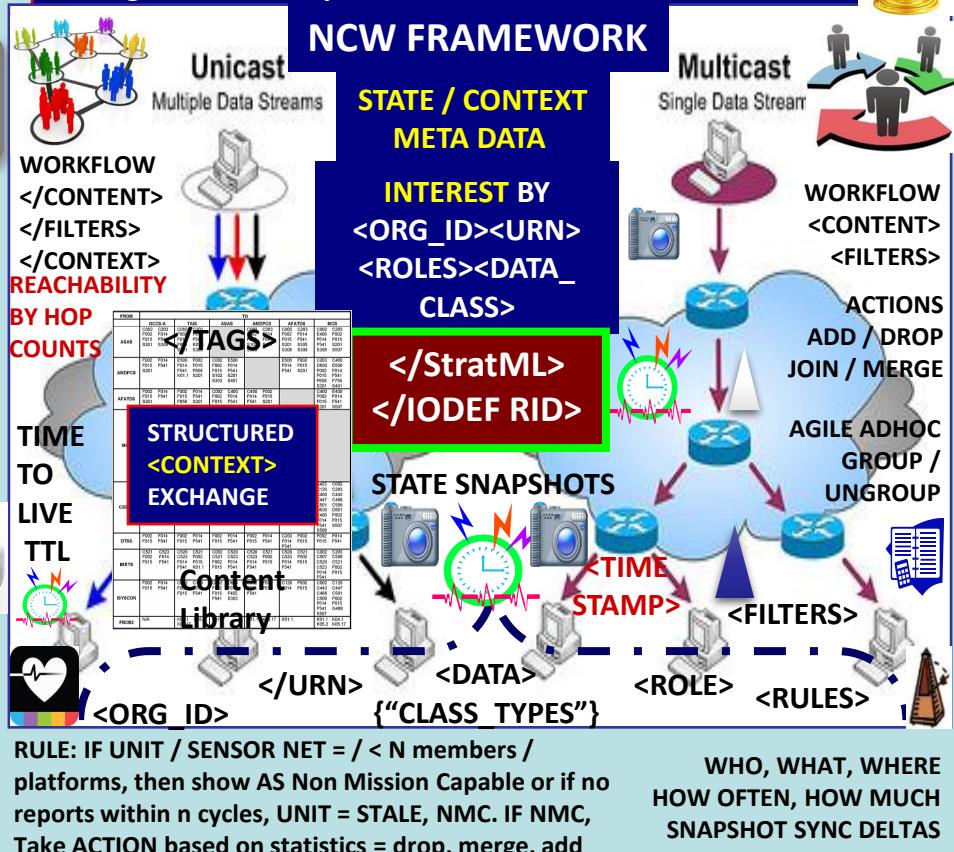
- SDN is a *framework* to allow network administrators to *automatically* and dynamically manage and control a *large number* of network devices, *services*, topology, traffic paths, and packet handling (quality of

DevOps model and tools to enable scale, programmable agility, and policy-driven automation, and provides network virtualization to mask network configuration complexity with set of networking APIs

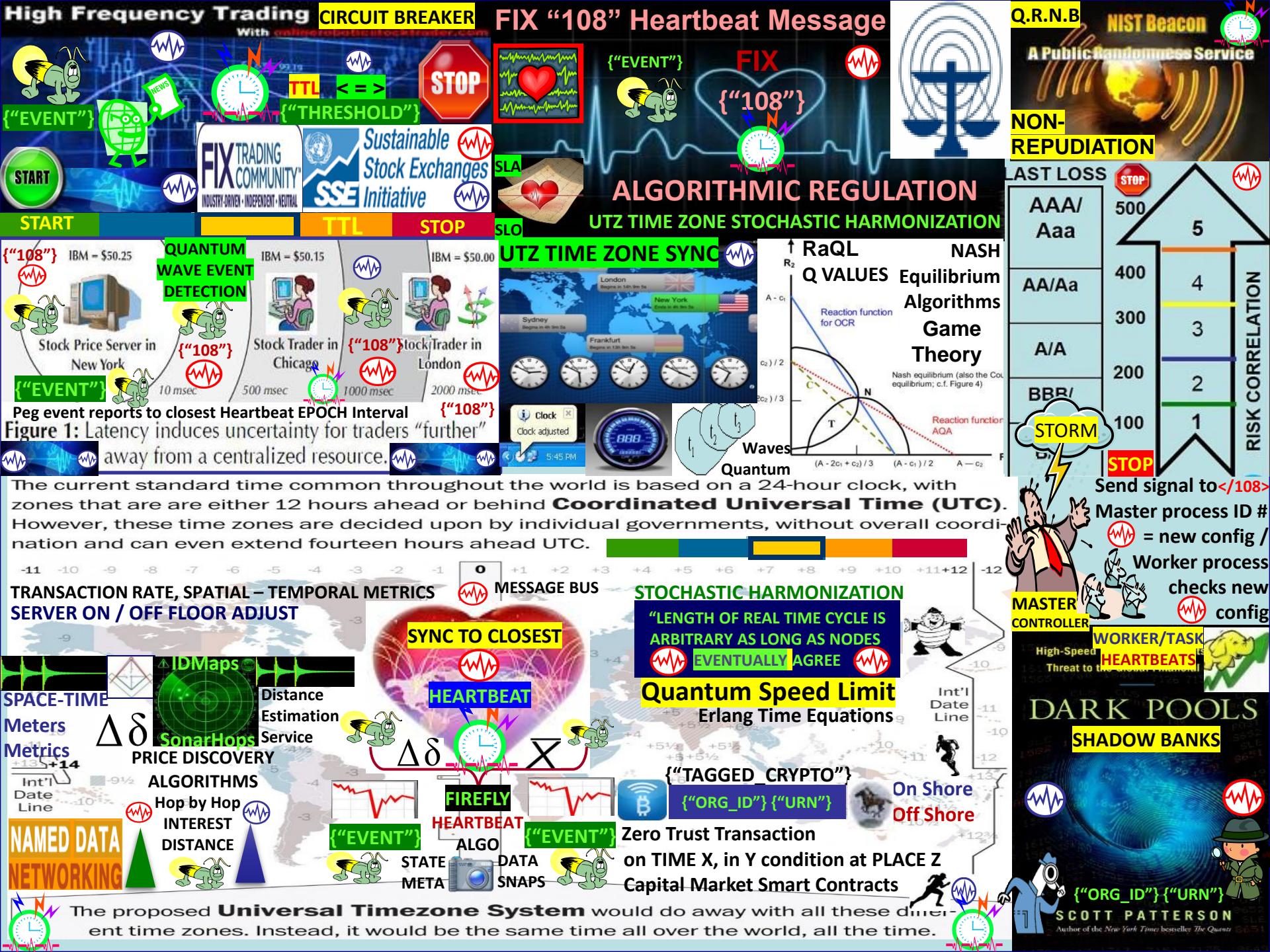


Netcentric / "network-centric" participating in a continuously evolving, complex community of people, devices, information and services interconnected by a network to optimize resource management and provide information on events and conditions.

Net-centric Enterprise Architecture : "massively distributed architecture with components, services available across and throughout an enterprise's entire lines-of-business."



WHO, WHAT, WHERE  
HOW OFTEN, HOW MUCH  
SNAPSHOT SYNC DELTAS







# Blockchain

BLUEPRINT FOR A NEW ECONOMY



Blocktime Arbitrage MTL (machine trust language) time primitives might be assigned to a micropayment channel DAPP as a time arbiter. In blocktime, the time interval at which things are done is by block. This is the time that it takes blocks to confirm, so blockchain system processes like those involving smart contracts are ordered around the conception of blocktime quanta or units. Since blocktime is an inherent blockchain feature, one of the easiest ways to programmatically specify future time intervals for event conditions and state changes in blockchain-based events is via BLOCKTIME. Universal blocktime source example: a procedure call to NIST or other time oracle.



**BLOCKTIME: A General Temporality of Blockchains** Blocktime as blockchains' temporality allows the possibility of rejigging time and making it a malleable property of blockchains. The in-built time clock in blockchains is blocktime, the chain of time by which a certain number of blocks will have been confirmed. Time is specified in units of transaction block confirmation times, not minutes or hours like in a human time system. Block confirmation times are convertible to minutes. Conversion metrics might change over time. Network Economies: Economic System as Configurable Parameters

The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC.



The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



Erlang programming language / mini OS  
massively scalable high availability, real-time Erlang's runtime system built-in concurrency distribution, fault tolerance



- coordinate 1000's of virtual machines
- ...distributed Dbases RIAK, CouchDB
- ...real time data dashboards
- ...service oriented software architectures
- .. server, API endpoints .. RabbitMQ
- ..distributed, multi-node architecture.
- protocol-aware load-balancer, stateful binary comi



### Functional Sequential Erlang

- Data types:
  - Integers (incl. BigNums), floats, atoms
  - tuples/records, lists/plists, binaries, funs
  - Maps (added in R17)
- single assignment
- pattern matching & guards
- closures (anonymous function data type)
- list comprehensions
- bit-syntax & binary comprehensions
- tail recursion & tail call optimization (TCO)

### SORTING ALGO'S

[Ericsson Open Money For Society Patent App](#)



[20130166398 "System And Method For Implementing A Context Based Payment System."](#)

"It is our vision that one day everyone with access to a mobile phone will be able to spend, send and receive money as easily as sending a text via SMS"  
"When money is open, the way we send, spend and receive money will change forever"



Rho ratio  $\Delta\delta$  queueing systems wait times  
Service Rate per unit time stochastic processes, function scheduling Start, Stop TTL

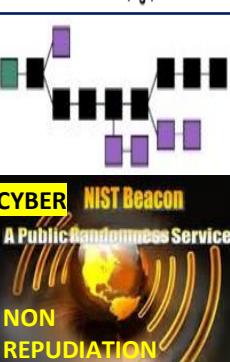
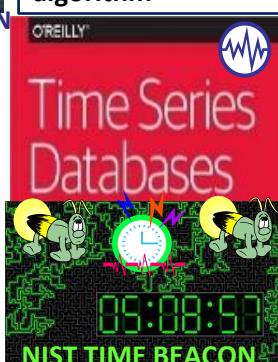


distributed "noSQL" database, embedded right into Erlang, supports indexing, replication, transactions, and fail-over

Fast ETS in-memory, and DETS persistent on-disk database

Mnesia database ("Organization\_ID") Global name resolution

| FROM             | SOCA | THAI | ABAD | AMPOKE | AFATOK | WIC  |
|------------------|------|------|------|--------|--------|------|
| ANODR            | PEAK | PEAK | PEAK | PEAK   | PEAK   | PEAK |
| AFATOK           | PEAK | PEAK | PEAK | PEAK   | PEAK   | PEAK |
| WIC              | PEAK | PEAK | PEAK | PEAK   | PEAK   | PEAK |
| STRUCTURED       | PEAK | PEAK | PEAK | PEAK   | PEAK   | PEAK |
| MILITARY MESSAGE | PEAK | PEAK | PEAK | PEAK   | PEAK   | PEAK |
| TEMPLATE FORMS   | PEAK | PEAK | PEAK | PEAK   | PEAK   | PEAK |
| LOGIC / FILTERS  | PEAK | PEAK | PEAK | PEAK   | PEAK   | PEAK |

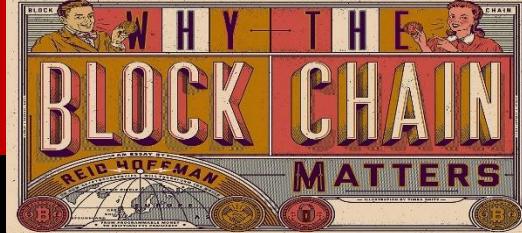


HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX

# TradeNet

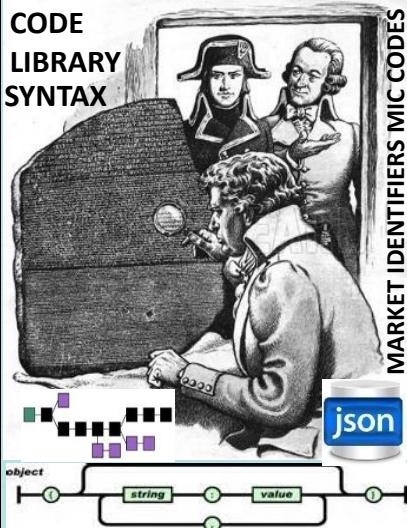


## Programmable Money \$\$\$



RIED HOFFMAN 15 May 2015 [LINK](#)

**"The CODE that secures Bitcoin could also power an alternate Internet** [LINK](#)



| FROM   | TO   | MCS       |
|--------|------|-----------|
| ASAS   | PSM1 | F405 PSM1 |
| ARDCPS | PSM1 | F406 PSM1 |
| MFATOS | PSM1 | F407 PSM1 |
| ICRS   | PSM1 | F408 PSM1 |
| CSCS   | PSM1 | F409 PSM1 |
| OTRS   | PSM1 | F410 PSM1 |
| WETS   | PSM1 | F411 PSM1 |
| ISYCON | PSM1 | F412 PSM1 |
| FRICS  | PSM1 | F413 PSM1 |

### ORGANIZATIONS



</Org\_ID>  
{"URN"}  
Organizational Units OU, OU

Bitcoin and the blockchain function as a medium of exchange, a store of value, a unit of account. Bitcoin adds digital, cryptographic, distributed server functions to currencies. Because it functions simultaneously as a currency, an asset and a platform, Bitcoin is better described as a global cryptoCAP (currency, asset, platform) -- a synergistic form of "cryptocapital" to unleash the full economic power of the networked age. **Bitcoin makes money PROGRAMMABLE. MONEY IS SIMPLY DATA** - a simple way to measure and keep track of exchanges in value wealth accumulation. Bitcoin aggregates data in a distributed global ledger accessible to anyone, and software. First open platform for financial services. Color coins represent stocks, bonds, currencies,..





## VERITAS TOKENS P2P Capital Market smart contracts Eco Economic HEARTBEAT

Decentralized Trading Platform DAO ORACLE  
access conventional, legacy financial data to  
price, value, trade & settle OTC, P2P financials



INFOCON  
5 4 3 2 1  
INFORMATION CONDITION

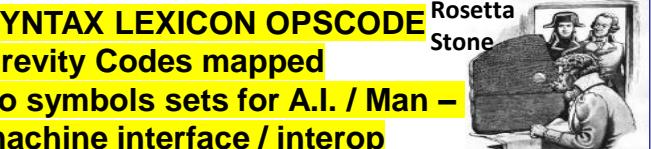


STATISTICAL MEAN VALUE INDEX PULSE

## GDP INDEX ECONOMY K% RULE



E \$ € ¥ currency index



Zero Trust Transaction: money performs I.A.W. to terms agreed to by parties. Ex: purchase of widget from retail store where widget must be delivered to person B on TIME X, in Y condition at PLACE Z or person A does not get paid. Stock, currency, commodities, letters of credit, insurance underwriting, trading, intellectual property...

Cost = stated rates that fluctuate with VeUSD exchange rate.  
Veritas holders get priority. The ability to redeem Ve against USD gives clients instant value.

DAO Distributed Autonomous Organization Investor Pools

Place Order X Veritaseum™

|                  |           |
|------------------|-----------|
| Principal:       | \$100.00  |
| Collateral:      | 0%        |
| Leverage:        | 10x       |
| Notional Amount: | \$1000.00 |
| Receive:         | QCOM      |
| Pay:             | INTC      |

NAMED DATA NETWORKING

Denominating Asset: ~BTC:SATOSHIS

Contract Expiry: 16w

Contract Starts at: -

Contract Ends at: -

Cancel Contract at: -

Est. Trans. Fees: \$0.0437

Transaction Fees: \$1.0262

Leverage Fees: \$3.2528

Max. Profit/Loss: + \$95.6773 / - \$104.3227

Total Required: \$104.3227

INTC Decline vs QCOM

05:08:50

STOP

TTL

START

Heartbeat Flash Messages Precedence Processing

FIREFLY HEARTBEAT ALGO EVENT MSG BUS

As long as INTC decline outpaces QCOM, you get paid. QCOM can be replaced with GOOG, or even AAPL although I feel AAPL will have its issues in the upcoming quarters as well.

LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE

Non Repudiation

QRNB NIST Beacon A Public Randomness Service

IDMaps SonarHops

DISTANCE ESTIMATION SERVICE

SYNTAX LEXICON OPSCODE

Brevity Codes mapped to symbols sets for A.I. / Man – machine interface / interop

Time – Space Meter Metrics

Rosetta Stone



# OpenBazaar open source decentralized peer to peer network online commerce —using Bitcoin —no fees and no restrictions



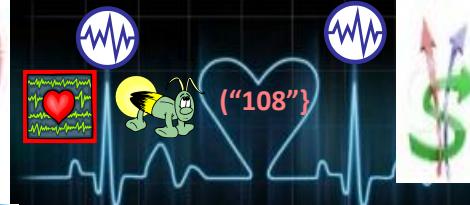
- Creates an online store for users to sell goods for Bitcoin
- Connects these stores directly to each other on a global network
- Users browse individual stores, search for products across whole network
- A buyer directly connects, purchases good from the merchant using Bitcoin
- Bitcoin payments via escrow protect merchants & buyers during trade

OPENBAZAAR.ORG  
BLOCKCHAIN ARBITRAGE



CLOSER = < \$  
CLOSER = < CO2

SLA  
COMMODITIES  
ECONOMIC HEARTBEAT



STAT MEAN VALUE PULSE  
REAL WORLD ASSETS RWA

STAT MEAN VALUE INDEX

CONTRIBUTIONS TO STATISTICS



Price Indexes in  
Time and Space  
Methods and Practice

SchellingPoint

OpenBazaar is a different approach to online commerce. OpenBazaar connects buyers and sellers directly. Because there is no one in the middle of your transactions there are no fees, no restrictions, no accounts to create, and you only reveal personal information you choose.

## PROJECT PHILOSOPHY: *MAKE TRADE FREE*

Mission: *shift trade to a decentralized platform*



Demurrage TERRATRC TRADE  
Fees REFERENCE CURRENCY  
“Money of Peace”



Free, open markets: Commodity / Currency Index

Creating open, competitive markets for services  
that cannot be perfectly solved with technology

• Privacy </Org\_ID>



HASH Values  
Nonce Values </Org\_ID>



commodities

PRODUCTION CONSUMERS

RESOURCES

Federation

ORG ID

Gateway

FIREFLY – HEARTBEAT ALGO

SYNC EVENTS

TO CLOSEST HB CYCLE

UTZ SYNC

$\Delta\delta$

Bitcoin

Bitcoin: OpenBazaar transactional currency



Cryptographic Security

- tamper-proof agreements
- 1) minimize potential disputes
- 2) fast-track dispute resolution

Q: Which meme describes the myriad blockchain consensus algorithms the most comprehensively that uses an algorithm (based on nature = “shortest path to the knowledge of truth Luxor Temple) enabling distributed system of systems geo-spatial, UTZ Universal Time Zone temporal, semantic - syntactic sync, OPSCODE brevity code, data element & symbol (for A.I. man – machine interface) consensus?

### Blockchain Consensus Algorithms & Mechanisms



In the world of blockchain consensus algorithms, consensus is the **HEART OF THE BLOCKCHAIN NETWORK**. Its main purpose is to achieve agreement on transactions among a distributed system (s)

**Proof of Formulation:** PoF: generation / propagation of blocks using a previously agreed sequence between participants of the generation of blocks, formed by two groups: a generator group and/or Formulator and a group of synchronization.



### Space-Time Consensus Algorithm

**BASEBALL "DIAMOND"**  
A diamond is a square is a block in 3D  
Satoshi Nakamoto: "The solution we propose begins with a TIME STAMP SERVER"

90 feet  
Blockchain/cryptocurrency increments  
Blockchain BLOCK in 3D = CUBE  
Cube has Length, Depth, Height, Volume

90 feet  
Blockchain/cryptocurrency increments  
Blockchain BLOCK in 3D = CUBE  
Cube has Length, Depth, Height, Volume

90 feet  
Blockchain/cryptocurrency increments  
Blockchain BLOCK in 3D = CUBE  
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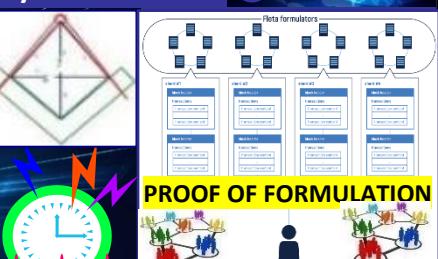
90 feet  
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90 feet  
Blockchain/cryptocurrency increments  
Blockchain BLOCK in 3D = CUBE  
Cube has Length, Depth, Height, Volume



### MESSAGE ex:

• Flashing string  
• Hash Table

300+ Templates

Blockchain BABEL

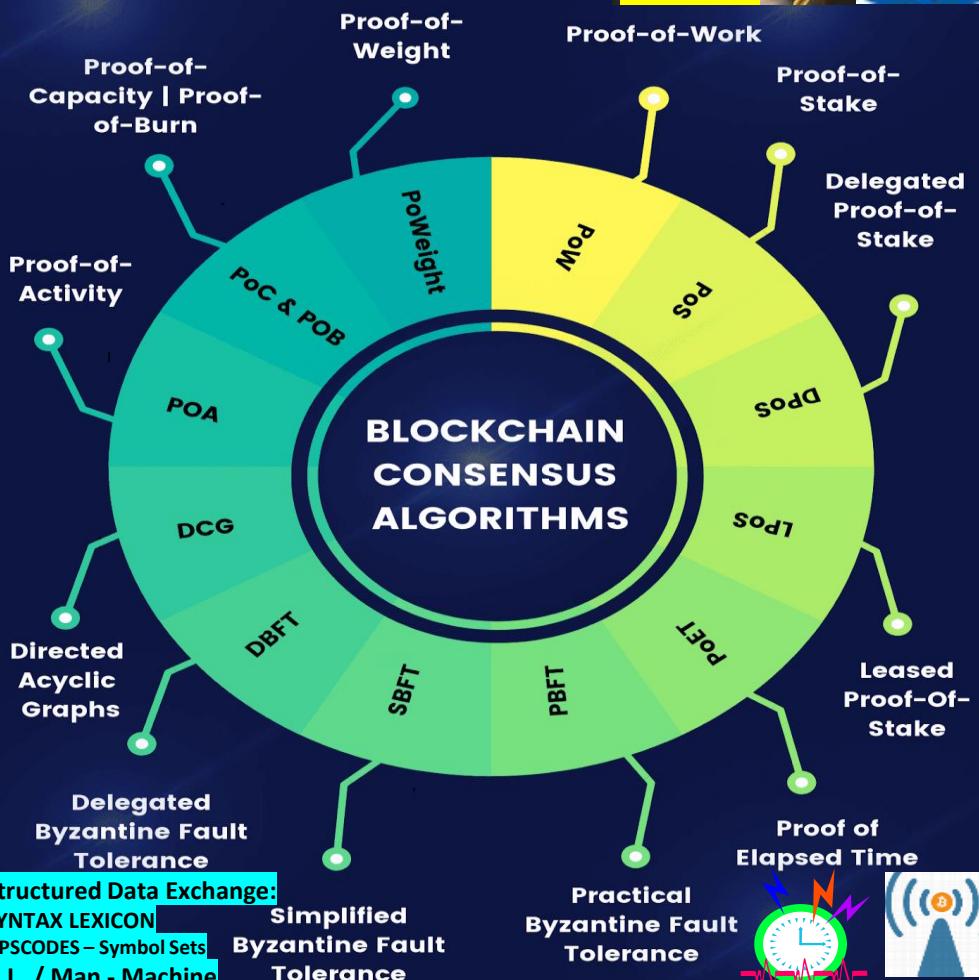
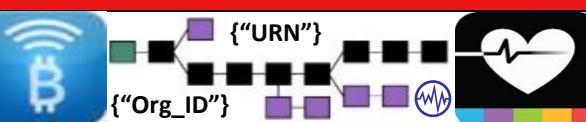
THE CRYPTO CRAZE AND THE CHALLENGE TO BUSINESS

IGOR PEJIC

REGIONS PAGE

# BLOCKCHAIN CONSENSUS ALGORITHMS

## ULTIMATE GUIDE FOR BEGINNERS



STRUCTURED DATA EXCHANGE:  
SYNTAX LEXICON  
OPSCODES – Symbol Sets  
A.I. / Man - Machine

SIMPLIFIED BYZANTINE FAULT TOLERANCE

PRACTICAL BYZANTINE FAULT TOLERANCE

www.developcoins.com

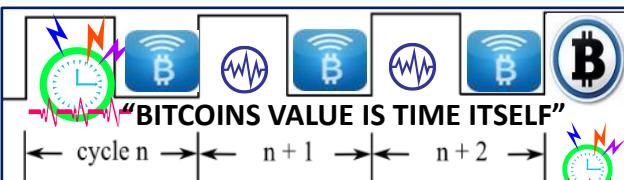
SOURCE: <https://developcoins.com/blockchain-consensus-algorithms>



## PROOF-OF-WORK



**THE PROBABILITY OF MINING A BLOCK IS DEPENDENT ON HOW MUCH WORK IS DONE BY THE MINER**



**TIMESTAMP** marks the point that work started. Additionally, it contributes to the uniqueness of the work by an individual miner.

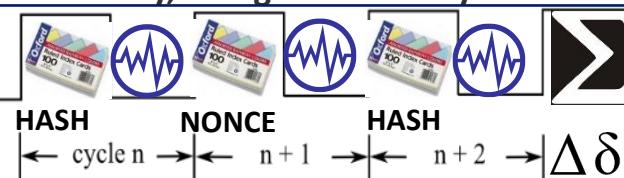


**THROTTLE** equivalent to difficulty. State  
•**target** = maximum value of 8 bytes Snap  
 $(2^{64})$  divided by the difficulty. Shots

**NONCE increments from 0..N until the target is met.**



**GUESS stores the guess  
Effectively, it begins at infinity.**



**Proof-of-Work:** users perform some form of work to participate. Work must be difficult for the client but easy for the server/network to verify. POW determines the approximate time between blocks = rate that new bitcoins are created. Work is submitted as a message/timestamp payload with a nonce value. Payloads are made unique through use of public key encryption or address.Nonce allows checking the work



MESSAGE ex:  
shing string  
•Hash Table

## 300+Message Templates

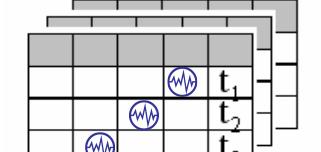
# LOGIC FILTERS

# LOGIC GATES

# SYNTAX LIBRARY LEXICON

**CODER'S GUIDE**

# POW PAYLOAD : COMBINATIONS OF ENCRYPTED SYNTAX **Attribute Series**





In a proof-of-stake network, it is the number of coins held in a wallet that determines the "weight" of the user the likelihood for the user to receive the block reward. In a Proof-of-Weight consensus mechanism, any value, not just the amount of coins held, is used to determine the "weight" of a user.

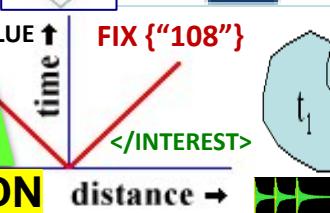
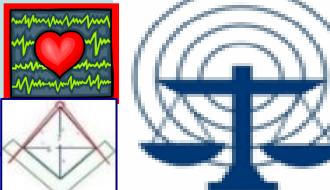


## TIME – SPACE MEASUREMENTS OF TOKENIZED COMMODITIES, SECURITIES... STOCHASTICALLY HARMONIZED ACROSS UTZ Universal Time Zone



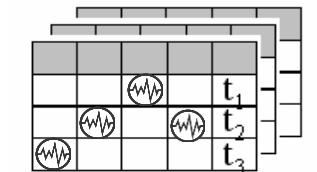
The Volumetric Weight is often referred to as dimensional weight

$$\text{Volumetric Weight} = [\text{Width} \times \text{Length} \times \text{Height}]$$



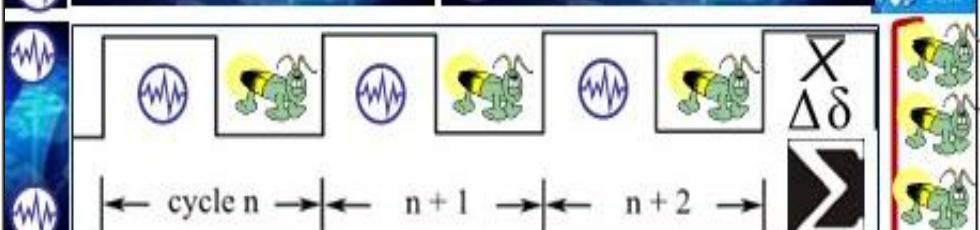
On the Filecoin blockchain, for example, the amount of IPFS data that a user is storing is used as the weighted value.

## Attribute Series



**Geo Spatial Series**

**Temporal Series**



**FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM**

"LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE"

## DON: DECENTRALIZED ORACLE NETWORKS



### Explicit Staking

Chainlink nodes lock up LINK tokens as collateral that can be slashed for malicious and undesirable behavior.

Chainlink's explicit staking model's goal is to achieve a super-linear staking impact—a mechanism where malicious actors are required to have a budget significantly larger than the combined deposits of all nodes within a DON, creating increasingly greater security guarantees for high-value smart contract applications in a cost-efficient manner.

Explicit staking in Chainlink 2.0 oracle reports reflect the state of specific real-world events outside a blockchain (off-chain).

Chainlink's explicit staking mechanism protects against a broad range of attacks, including advanced strategies like prospective bribery, in which nodes are targeted according to their role in the network, such as those selected for report adjudication.



Behind each DON is a service agreement that will define the number of LINK tokens each oracle node is required to stake and key performance requirements, such as how far an individual node's response can deviate from the aggregated value and how far the aggregated value in an oracle report can deviate from the correct value it should represent. The service agreement can also define other parameters such as the data sources used, how often updates should occur, how much each node is paid, and more.

ALERT LEVEL >

> NEWSCAST ZONE

Outputs produced by a DON are structured into reporting rounds, where each round involves the creation of a new oracle report containing each node's individual response for a particular piece of data (e.g. the price of ETH/USD), with all the individual responses aggregated into a single value (e.g. taking the median). A DON network's service agreement defines how each report should be generated & conditions in which a node's stake can be slashed.



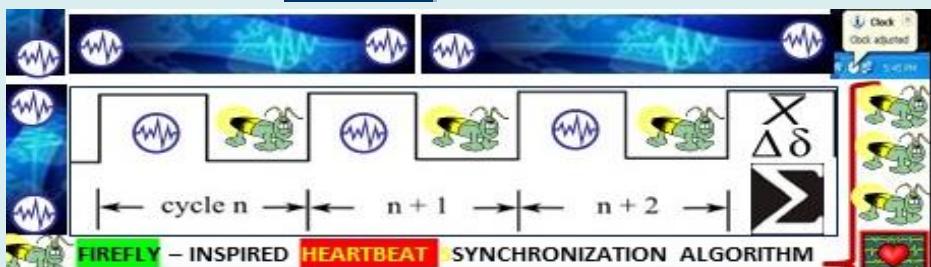
## DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

# Heart Beacon Cycle

## FEDERATE / TRADE FEDERATIONS

### Linear Sequential Meme

....-1 / 0 / +1...  $\Delta \delta$  >  $\Sigma$



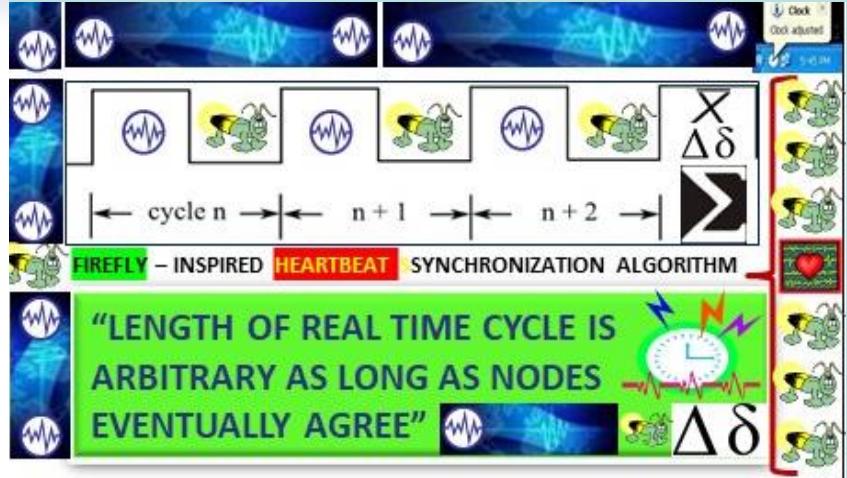
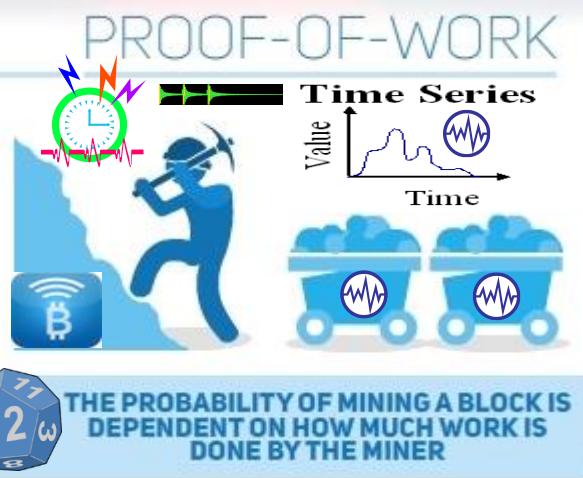
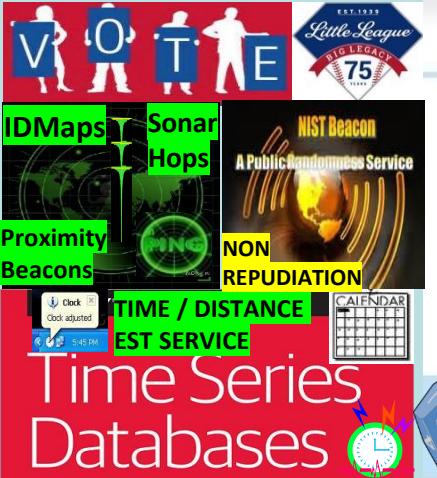


Adaptive  
Procedural  
Checklist

## Proof-of-activity PoA is a combination of Proof of Work / Stake blockchain consensus algorithms:

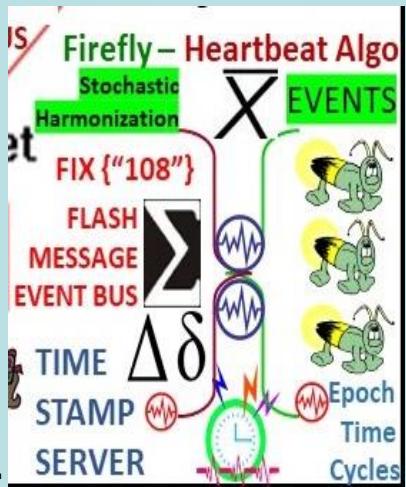
### Example of Proof-of-Activity (PoA)

Decred (DCR) is the most well-known cryptocurrency that uses the PoA consensus mechanism. With Decred, blocks are created about every five minutes.<sup>2</sup> The mining process for Decred begins with nodes (computers that participate in the network) looking for a solution to a cryptographic puzzle with a known difficulty level in order to create a new block. Once the solution has been found, it is broadcast to the network. The network then verifies the solution. At this point, the system becomes a PoS. The more DCR that a node has mined, the more likely they are to be chosen to vote on the block. (In DCR's blockchain, stakeholders earn tickets that grant them voting power in exchange for mining DCR.) Five tickets are chosen pseudo-randomly from the ticket pool; if at least 3 of the 5 vote "yes" to validate the block, it is permanently added to the blockchain. Both miners, voters are rewarded with DCR.



PROOF-OF-WORK

HEART BEACON CYCLE 13/573,002

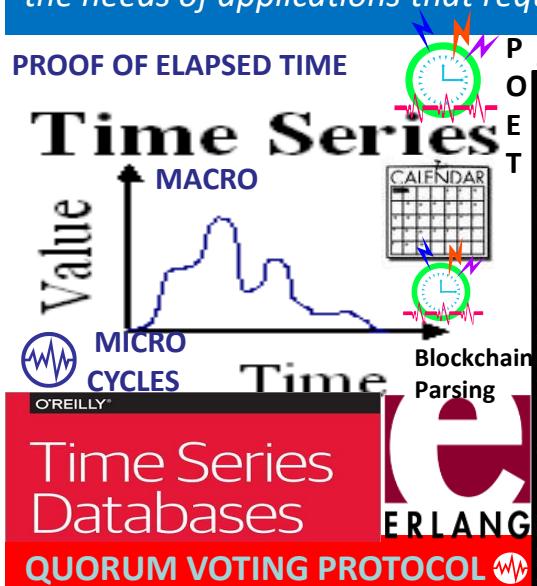


## **SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET**

*“PoET for ‘Proof of Elapsed Time’, is a **lottery protocol** that builds on trusted execution environments (TEEs) provided by Intel’s [Secure Guard Extensions] to address the needs of large populations of participants. The second, **Quorum Voting**, is an adaptation of the Ripple and Stellar consensus protocols and serves to address the needs of applications that require immediate transaction finality.”*



## **PROOF OF ELAPSED TIME**



## Voting Based Selection: stake size & block generators selected by votes

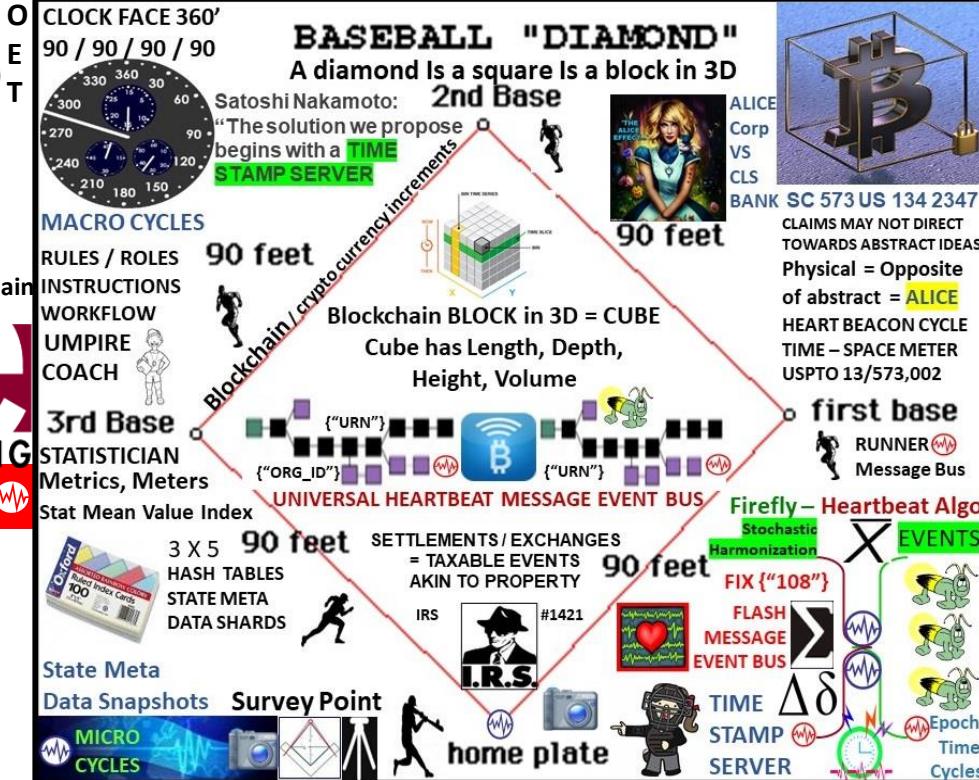
**Voting based selection** Instead of only using the stake size, the block generators can be selected by votes  
ex: League MVP MVP



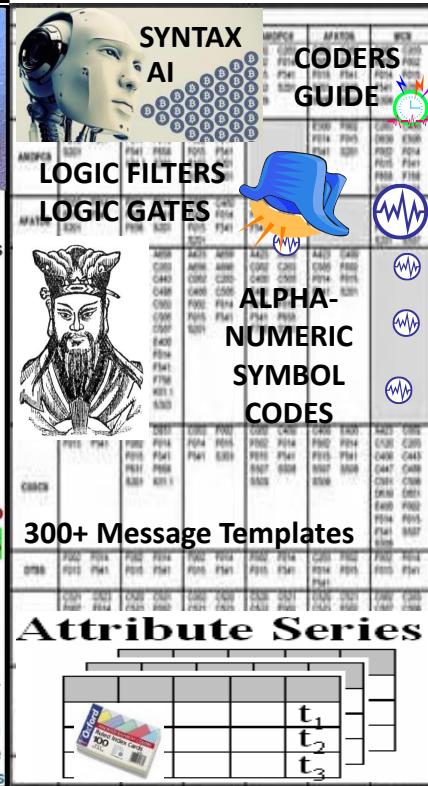
**Robert's Rules quorum = minimum # of voting members who must be present at meetings to conduct business of the group**

## TOURNAMENT LEAGUE BOARD

P SCt #573 ALICE CORP V CLS BANKPHYSICAL UNIVERSAL MEME "BITCOIN IS A LANGUAGE"

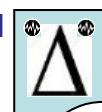


## **FIREFLY-HEARTBEAT FLASH MESSAGES UNIVERSAL EVENT BUS**

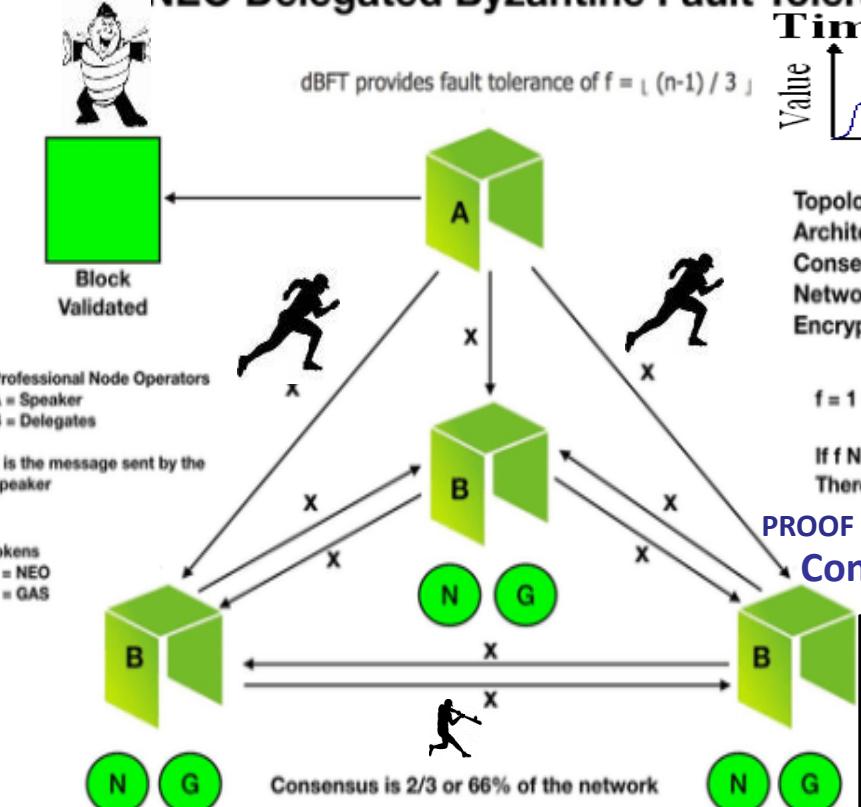


## HASH TABLES / NONCE VALUES

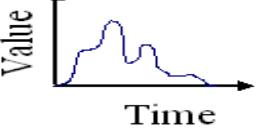
Capture ledger's state  
Transaction language  
changes ledger state  
Consensus, transaction  
acceptance protocol



# NEO Delegated Byzantine Fault Tolerance (dBFT)



## Time Series



dBFT provides fault tolerance of  $f = \lfloor (n-1) / 3 \rfloor$

Topology: Hierarchical Star  
Architecture: Distributed  
Consensus: dBFT  
Network: TCP/IP  
Encryption: ECDH

$$f = 1 \text{ OR } 0.66$$

If  $f$  NOT 1 OR  $< 0.66$   
There is no consensus

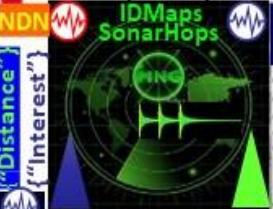
## PROOF OF ELAPSED TIME Consensus Order



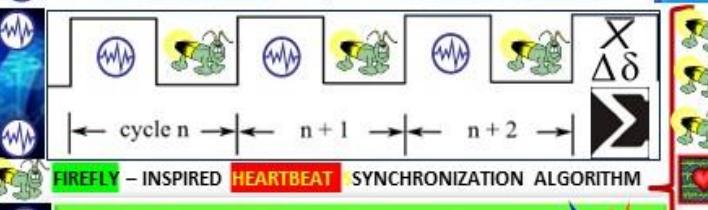
USPTO 13/573,002  
[sawconcepts.com/index](http://sawconcepts.com/index)

Heart Beacon Cycle Time – Space Meter  
Geo-Spatial Temporal Intensity Metrics

## TRIANGULATION



IDMaps assists Network Time Protocol (NTP) servers establish long term peering relationships



"LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE"



EVENT BUS

LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED



MATCH EVENT REPORTS TO CLOSEST HEARTBEAT CYCLE

FLASH HEARTBEAT MESSAGES {"108"}

HASH NONCE

FIREFLY-HEARTBEAT ALGORITHM MICRO-CYCLE STATE META DATA SNAPSHOTS STOCHASTIC HARMONIZATION ACROSS UTZ TIME ZONES

No collusion between individuals or entities is possible. Participants in the network validate transactions adding to the ledger have no affiliation or relationship (political, adversarial, etc.) with the transaction or its participants. Only a permissionless platform can meet this set of criteria.

Specifically, a random selection algorithm called RS is developed to cooperate with the voting mechanism, which can effectively reduce the number of nodes participating in the consensus process. Our proposed scheme is characterized by the unpredictability, randomness, and impartiality, which accelerate the system to reach consensus on the premise of ensuring system activity. ✓





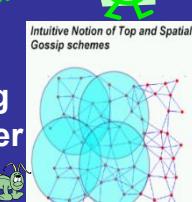
**HASHGRAPH**  
Directed Acyclic  
Graph DAG

Hashgraph consensus algorithm  
for replicated state machines

- Consensus Event Time Stamps
- State Meta data consensus order
- **Virtual voting:** each member has a Hashgraph copy
- Famous witnesses

data structure that records who gossiped to whom in what order  $\Delta\delta$

Gossip In Bitcoin: transactions and mined blocks are gossiped.  
Consensus is enhanced via "gossip about gossip"



DAG "Directed Acyclic Graph" large number of blocks arrive at the same time. DAG system reaches consensus leveraging "Gossip"... information spread by a computer calling up other computers at random, sharing everything it knows

Community members reach consensus agreement on events / transactions order inside events, and agree on a timestamp for each event /transaction

DAG finite directed graph  
= no directed cycles

Consensus Order  
 $\sum \Delta\delta \times$



Round created

Witness



Famous witness

Election



Vote

See



Strongly see

Supermajority



Decide



Round created

Round received

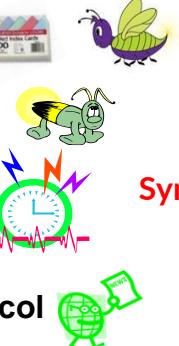


Consensus timestamp

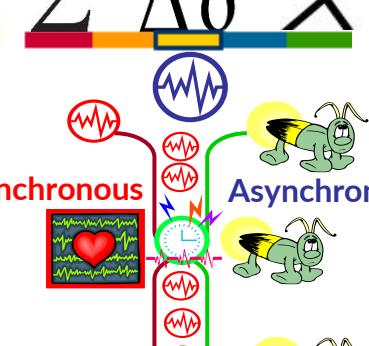
Consensus order



Hashgraph Member Event Transaction Consensus Order Timestamp Gossip protocol Self-parent Other-parent Graph Hash Hashgraph



Hash Nonce



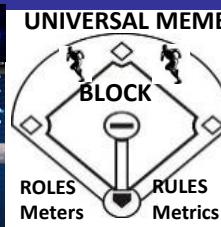
Micro-Cycle State Meta Data Snapshots

Consensus timestamp

Consensus order

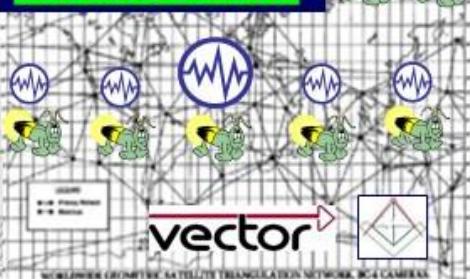


The Heart Beacon Cycle Time – Space Meter  
Adaptive Procedural Template Checklist  
Heartbeat Sync Delta state meta data  
structured data exchange snapshots  
300 + Use Case message template sets  
Rosetta Stone Syntax lexicon Coder's guide



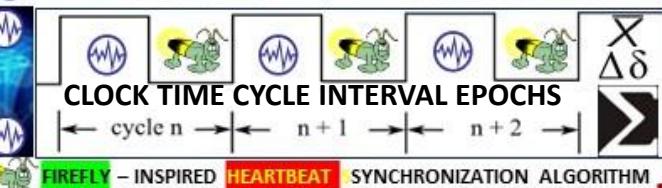
Heart Beacon Cycle Time – Space Meter  
Geo-Spatial Temporal Intensity Metrics

TRIANGULATION



IDMaps assists Network Time Protocol (NTP) servers establish long term peering relationships

FIREFLY HEARTBEAT Synchronization Algorithm



FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

CLOCK TIME CYCLE INTERVAL EPOCHS

← cycle n → ← n + 1 → ← n + 2 →

$\Delta\delta$

"LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE"

$\Delta\delta$

# Proof of Burn



Proof of burn (POB) operates on the principle of allowing miners to “burn” virtual currency tokens. They are then granted the right to write blocks in proportion to the coins burnt.

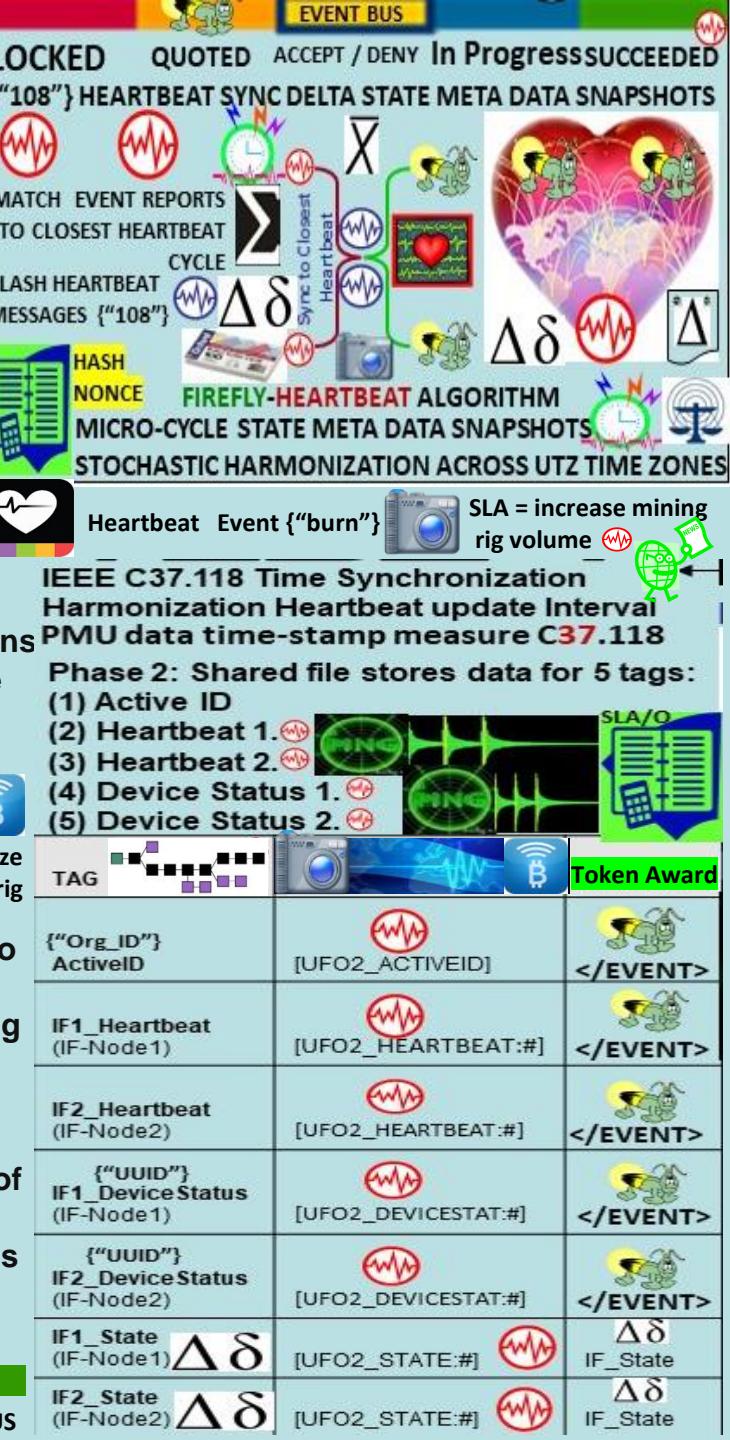
Iain Stewart, the inventor of the POB algorithm, uses an analogy to describe the algorithm: burnt coins are like mining rigs. In this analogy, a miner burns their coins to buy a virtual mining rig that gives them the power to mine blocks. The more coins burned by the miner, the bigger their virtual mining "rig" will be.<sup>2</sup>

To burn the coins, miners send them to a verifiably un-spendable address. This process does not consume many resources (other than the burned coins) and ensures that the network remains active and agile. Depending upon the implementation, miners are allowed to burn the native currency or the currency of an alternate chain, such as Bitcoin. In exchange, they receive a reward in the native currency token of the blockchain.



You can send out transactions to the network that will burn your own cryptocurrency coins. Other participants can mine/burn on top of your block, and you can also take the transactions of other participants to add them to your block. Essentially, all of this burning activity keeps the network agile, and participants are rewarded for their activities (both burning their own coins and burning other people's coins).

To prevent the possibility of unfair advantages for early adopters, the POB system has implemented a mechanism that promotes the periodic burning of cryptocurrency coins to maintain mining power. The power of burnt coins “decays” or reduces partially each time a new block is mined. This promotes regular activity by the miners, instead of a one-time, early investment. To maintain a competitive edge, miners may also need to periodically invest in better equipment as technology advances.

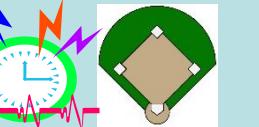


# Proof of Capacity PoC



**consensus mechanism algorithm for mining devices to use hard drive space to decide mining rights, validate transactions**

Proof of capacity for mining devices, also known as blockchain nodes, to use empty space on their hard drive to mine the available [cryptocurrencies](#).



Instead of repeatedly altering the numbers in the block header & repeated hashing for the solution value as in a PoW system, PoC works by storing a list of possible solutions on the mining device's hard drive before mining activity starts



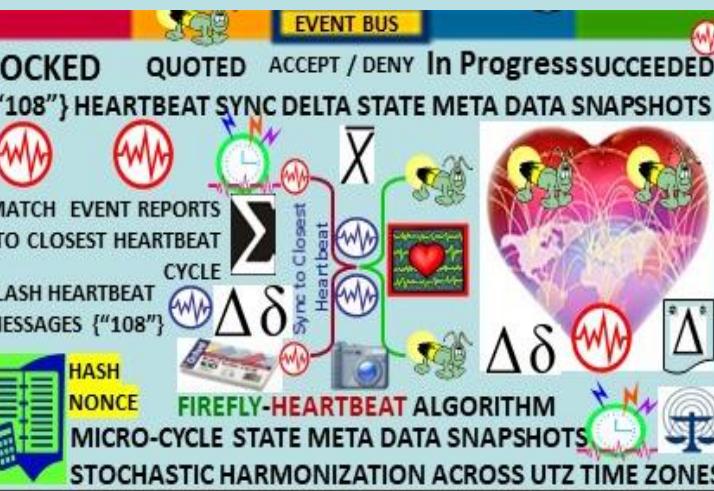
The larger the hard drive, the > possible solution values one can store on the hard drive, the more chances a miner has to match required hash value from his list, resulting in more chances to win the mining reward.



Analogy: if lottery rewards are based on matching the most numbers on the winning ticket, then a player with a longer list of possible solutions will have better chances of winning. Additionally, the player is allowed to keep using the lottery ticket block numbers again and again repeatedly.



Bitcoin purchase akin to property

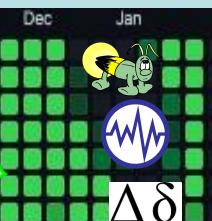


# PoST Proof-of-Spacetime (PoST)

PoST shows that physically storing data (spent "spacetime" resource/allocated storage capacity to the network) over a certain period of time.

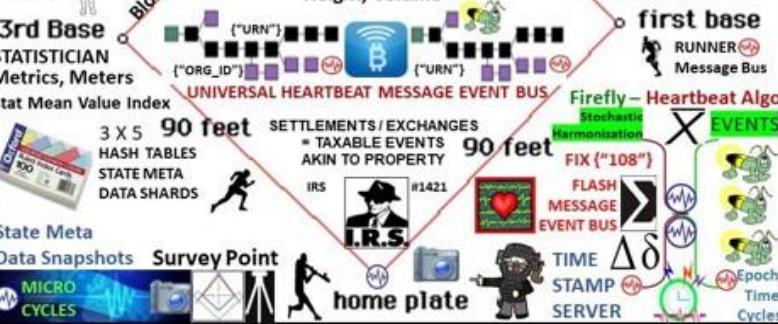
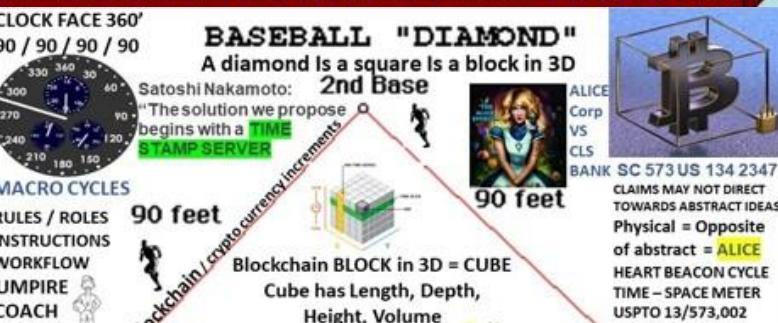


PoST users / nodes must prove that they are spending a certain amount of space for storage.



DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

## Heart Beacon Cycle FEDERATE / TRADE FEDERATIONS



The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



# Proof of Authority



{"GROUP ID"}  
{"Org\_ID"}

Not pay to play, Node identity is kept as stake

A PoA network are secured by validators, that are selected democratically by existing validators. The nodes on the PoA network are rewarded for validating the transactions on the network. The identity of the validator is kept anonymous by encryption and secured cryptographically. It is revealed only as a negative reinforcement when the validator processes a fraudulent or a malicious transaction.



A notary license verifies the identity of the person formally, a notary license is released by the Federation / Government after extensive verification. The identity of the validator is kept for cross-referencing with the notary data and blockchain data

Parity supports a Proof-of-Authority consensus engine. Proof-of-Authority is a replacement for Proof-of-Work, and can be used for private or centralized chains. PoA as tested by a Kovan test network improves outdated economic models.

1. **FEDERATION:** Latin: *foedus, foederis, covenant, union* of partially self-governing states or regions under a central (federal) government
2. A league or confederacy. Individuals / groups retain **AUTONOMY**
3. A federated body formed by nations, states, and... **unions**  
**each retaining control of internal affairs**



Net joins, drops, splits, merges, moves

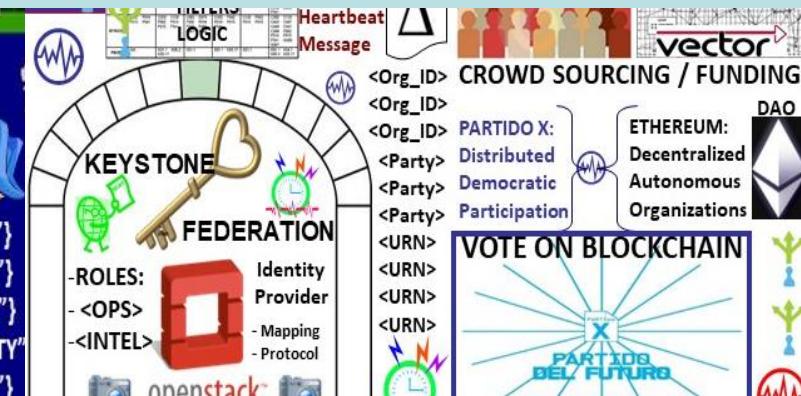
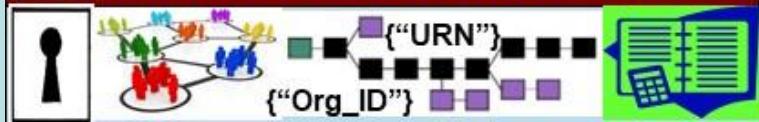
Gateway

Agile, adhoc NETOPS Vs acquisition preserves the **CHANNEL**

DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

## Heart Beacon Cycle

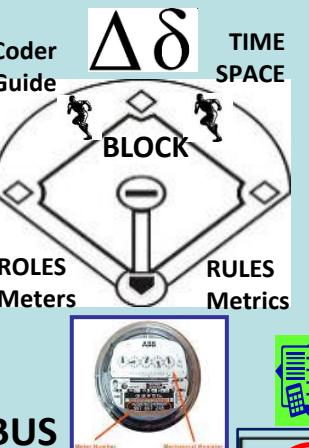
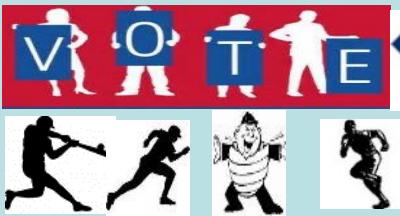
### FEDERATE / TRADE FEDERATIONS



**BITCOIN NG NEX GEN / Heart Beacon Cycle 13/573,002**

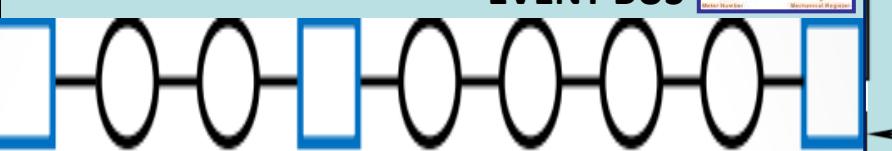
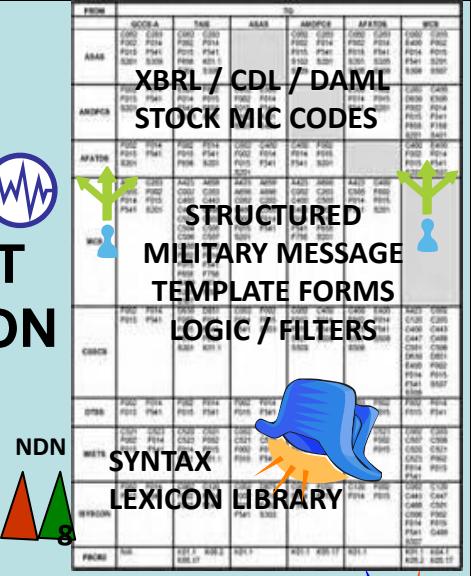
## **KEY BLOCKS:**

- NO CONTENT = NULL
  - LEADER ELECTION

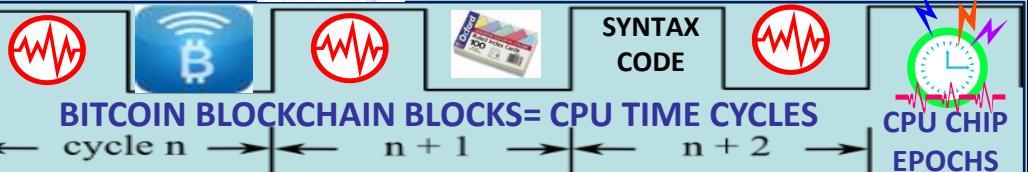


# MICRO BLOCKS:

- ONLY CONTENT
  - NO CONTENTION

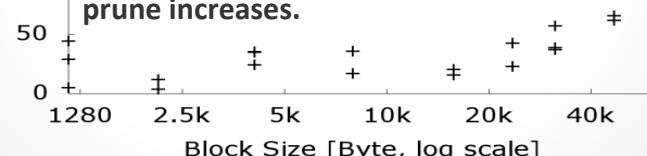


## long exponential intervals (10 min)



## Subjective Time to Prune

Additional metrics used by researchers included "time to prune", or the time it takes for miners whether they are on the correct "branch" or version of the blockchain they are processing transactions. As block sizes increase, suggested time to prune increases.



## short deterministic intervals (10 sec)



MICRO-CYCLES



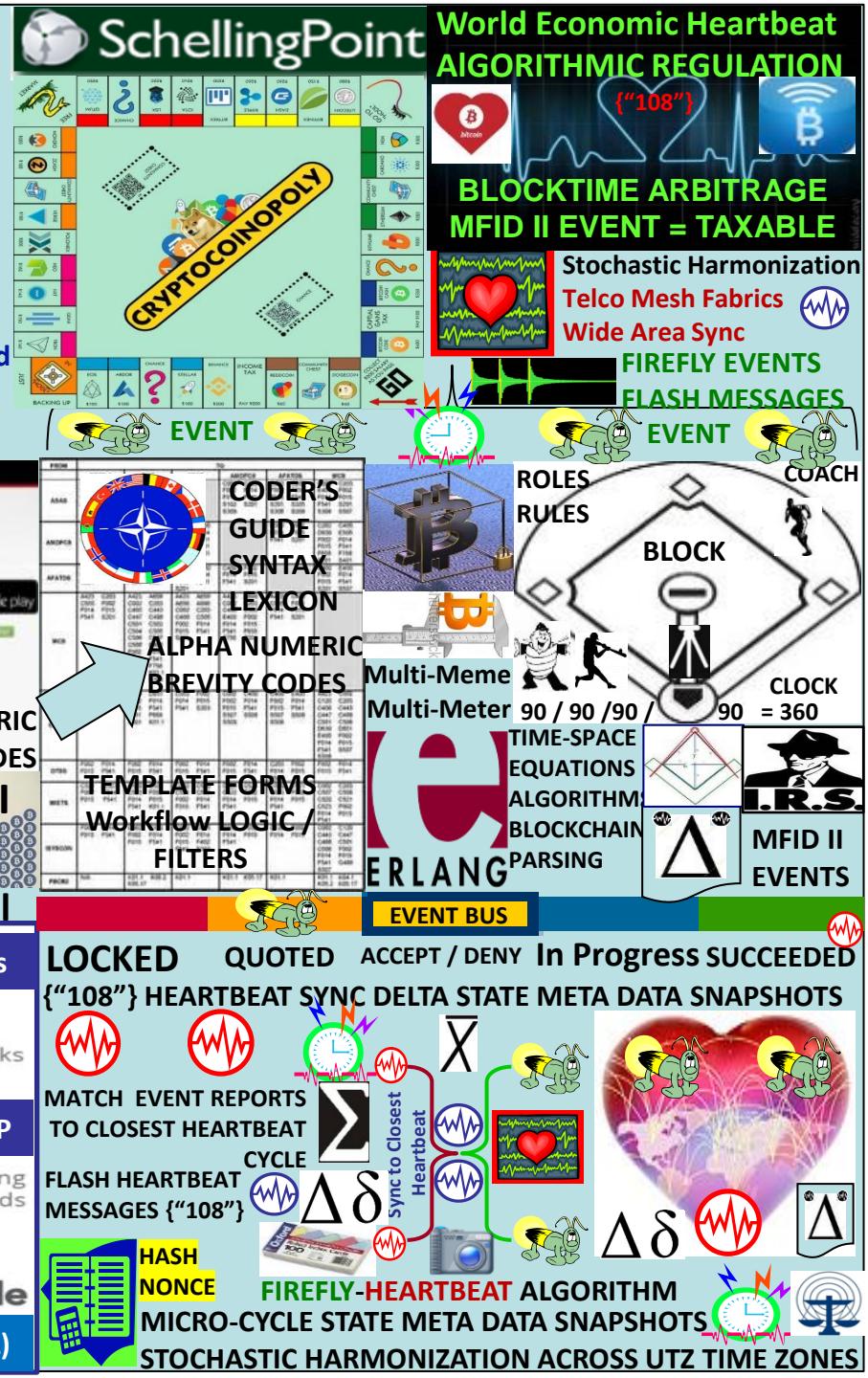
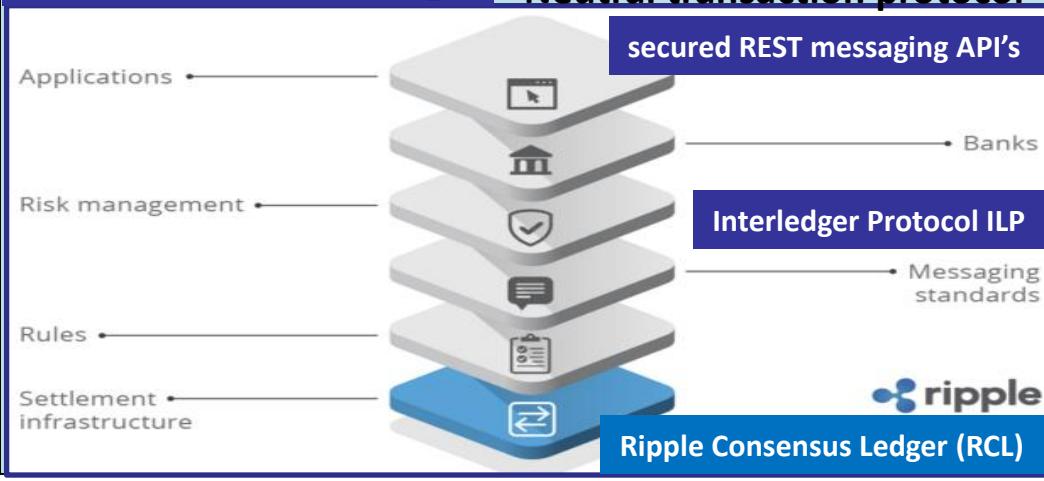
**real-time gross settlement system,  
currency exchange, remittance network**

**A.K.A Ripple Transaction Protocol or Ripple protocol, built on a distributed open source Internet protocol, consensus ledger and native currency called XRP.** Ripple enables "secure, instant and nearly free global financial transactions of any size with no chargebacks." Ripple supports tokens representing fiat currency, cryptocurrency, commodity or any other unit of value such as frequent flier miles or mobile minutes. Ripple is based around a shared, public database or ledger, which uses a consensus process that allows for payments, exchanges and remittance in a distributed process.

**Connects to receiving bank's Ripple Connect to exchange KYC, risk info, fees, payment details, expected time of funds delivery**

**Provides information about total costs of the transaction.**

**Workflows are serially executed**  
**Except first two work flow are**  
**workflows are based on event**  
**pull model**







# UNICOIN

## Digital Capital Exchange

### Unicorn: IMF CBDC legal tender settlement coin

Universal Monetary Unit (UMU), a.k.a Unicorn: store of value cryptography, artificial intelligence (A.I.) Goals: continuous purchasing demand, minimal price volatility, and annual asset pricing targets.

**The primary value of any commodity is its utility value.**

**Utility = pay for goods, services, and debts, preserve value over a long period of time.** Employs machine learning trading bots. UMPC will establish yield payout rates for wallet holders to stake Unicorn in the Staked Proof of Trust (SPOT) consensus protocol. PoT consensus selects

validators I.A.W contribution to the DeFI network

### The DCMA – Digital Public Monetary System

|                   |                |                          |                       |
|-------------------|----------------|--------------------------|-----------------------|
| KYC Entity        | Ledgers        | FX Rates                 | SPOT Protocol         |
| Create            | Create         | Activity                 | Stake                 |
| Modify            | Modify         | Deposit                  | Cashout               |
| Suspend           | Suspend        | Withdraw                 | Reject                |
| <b>KYC People</b> | <b>CBDC</b>    | <b>Money Services</b>    | <b>Authorizations</b> |
| Create            | Create         | Transfer                 | Grant Authorization   |
| Modify            | Modify         |                          | Revoke Authorization  |
| Suspend           | Suspend        |                          |                       |
| <b>Issuers</b>    | <b>Pause</b>   | <b>Escrow</b>            | <b>Rates</b>          |
| Create            | Unpause        | Create Escrow            | Create Rate           |
| Modify            | Mint           | Accept Escrow            | Modify Rate           |
| Suspend           | Burn           | Cancel Escrow            | Suspend Rate          |
| Post Rates        | Redeem         | Release Escrow           |                       |
| <b>Branches</b>   | <b>Swap</b>    | <b>Milestones</b>        | <b>Limits</b>         |
| Create            | Supply         | Create Milestone         | Create Limit          |
| Modify            | Price          | Modify Milestone         | Modify Limit          |
| Suspend           |                | Cancel Milestone         | Suspend Limit         |
| <b>Agents</b>     | <b>Wallets</b> | <b>Release Milestone</b> | <b>Sanctions</b>      |
| Create            | Create         |                          | Create Sanction       |
| Modify            | Modify         |                          | Modify Sanction       |
| Suspend           | Suspend        |                          | Suspend Sanction      |
|                   | <b>Pause</b>   |                          |                       |
|                   | <b>Unpause</b> |                          |                       |
|                   | <b>Attach</b>  |                          |                       |

Figure 9: Unicorn Global Localization of a CBDC Public Monetary System





# UNICOIN

Digital Capital Exchange

## **CBDC legal tender settlement coin**

**Universal Monetary Unit (UMU), a.k.a Unicoin: store of value**  
**cryptography, artificial intelligence (A.I.) Goals: continuous purchasing**  
**demand, minimal price volatility, and annual asset pricing targets.**  
**The primary value of any commodity is its utility value.**  
**Utility = pay for goods, services, and debts, preserve value**  
**over a long period of time. Employs machine learning**  
**trading bots. UMPC will establish yield payout rates for**  
**wallet holders to stake Unicoin in the Staked Proof of Trust**  
**(SPOT) consensus protocol. PoT consensus selects**  
**validators I.A.W contribution to the DeFI network**

The DCMA – Digital Public Monetary System

| KYC Entity | Ledgers | FX Rates          | SPOT Protocol        |
|------------|---------|-------------------|----------------------|
| Create     | Create  | Balances          | Stake                |
| Modify     | Modify  | Activity          | Cashout              |
| Suspend    | Suspend | Deposit           | Reject               |
| KYC People | Balance | Withdraw          |                      |
|            | CBDC    |                   | Authorizations       |
|            | Create  | Money Services    | Grant Authorization  |
|            | Modify  | Transfer          | Revoke Authorization |
| Issuers    | Suspend |                   |                      |
|            | Pause   | Escrow            | Rates                |
|            | Unpause | Create Escrow     | Create Rate          |
|            | Mint    | Accept Escrow     | Modify Rate          |
| Post Rates | Burn    | Cancel Escrow     | Suspend Rate         |
|            | Redeem  | Release Escrow    |                      |
|            | Swap    |                   | Limits               |
|            |         |                   | Create Limit         |
| Branches   | Supply  | Milestones        | Modify Limit         |
|            | Price   | Create Milestone  | Suspend Limit        |
|            |         | Modify Milestone  |                      |
|            |         | Cancel Milestone  |                      |
| Agents     |         | Release Milestone | Sanctions            |
|            | Wallets |                   | Create Sanction      |
|            | Create  |                   | Modify Sanction      |
|            | Modify  |                   | Suspend Sanction     |
| Suspend    | Suspend |                   |                      |
|            | Pause   |                   |                      |
|            | Unpause |                   |                      |
|            | Attach  |                   |                      |

**Figure 9: Unicorn Global Localization of a CBDC Public Monetary System**





# UNICOIN

## Digital Capital Exchange

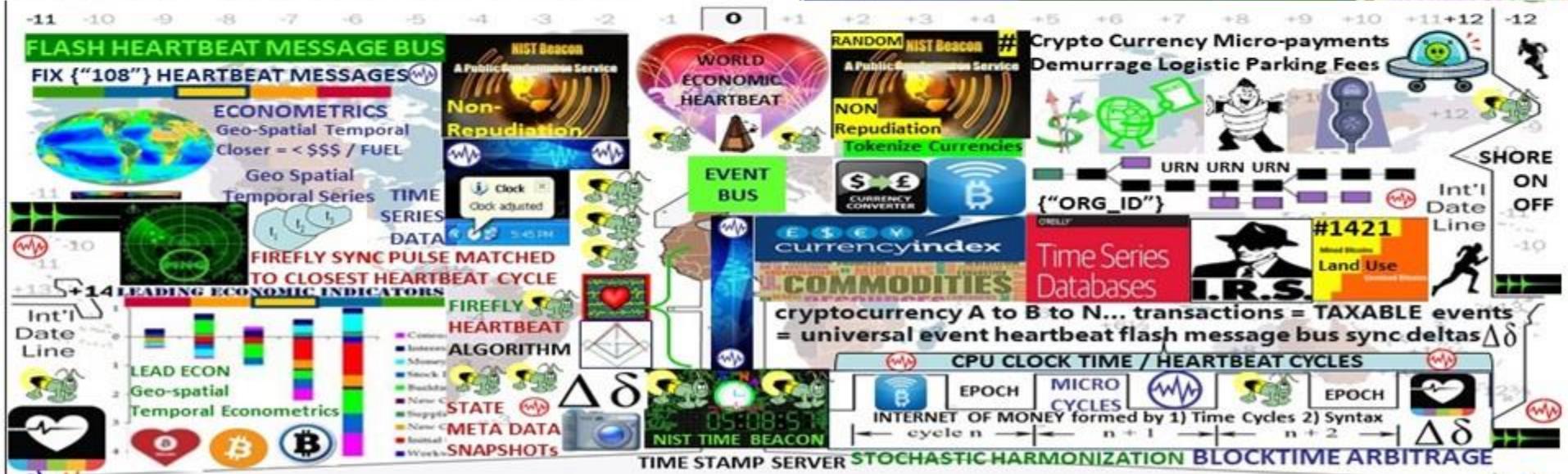
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The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



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INFORMATION  
CONDITION

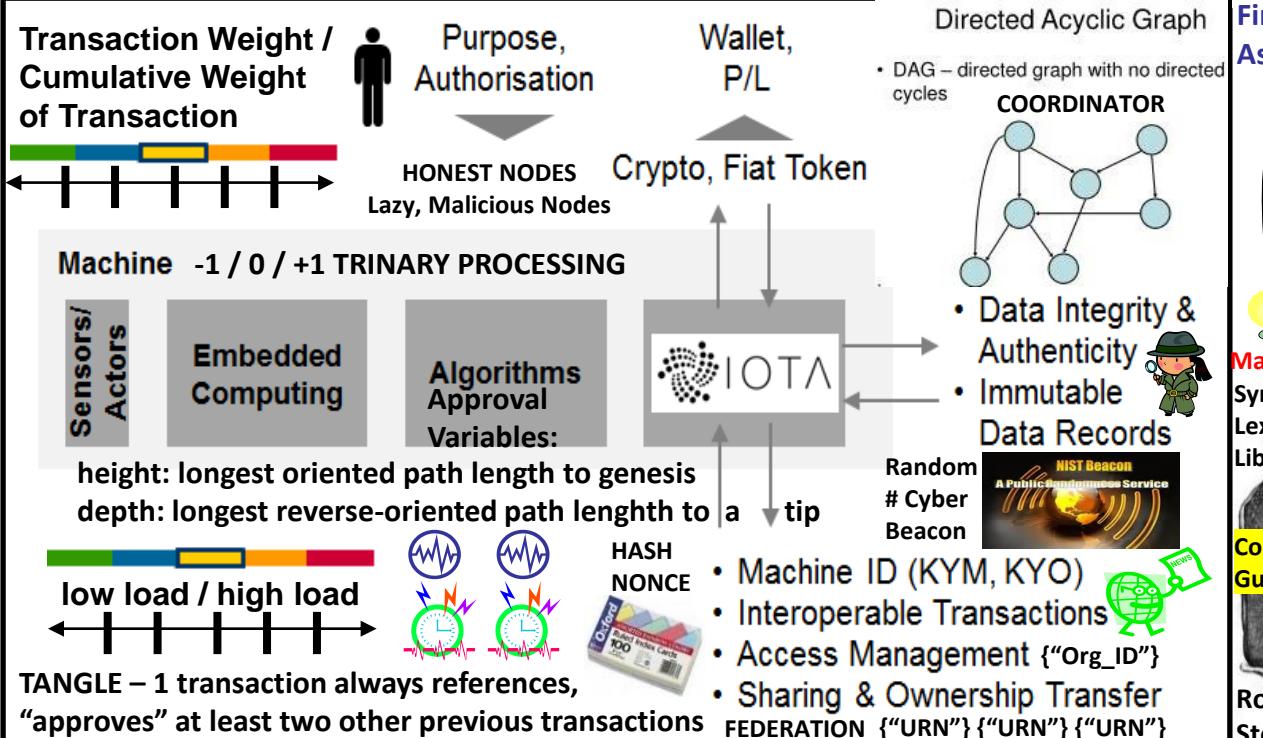


OTA: Internet Of Things IOT distributed ledger  
with microtransactions without fees

# Tangle, a directed, ASYNCHRONOUS acyclic graph (DAG) for storing transactions

**Contrary to Blockchains, consensus is no longer decoupled, It is an intrinsic part of the system for decentralized, self-regulating peer-to-peer network. Transfer value without fees**

The iota network is ASYNCHRONOUS. In general, nodes do not necessarily see the same set of transactions. The tangle may contain conflicting transactions. The nodes do not have to achieve consensus on which valid transactions have the right to be in the ledger, meaning all of them can be in the tangle. However, in the case where there are conflicting transactions, the nodes need to decide which transactions will become orphaned. Nodes use the tip (unapproved transaction) selection algorithm to decide between two conflicting transactions. GHOST protocol main ledger = tree



# ZEPPELIN



## ZEPPELIN OPEN, GLOBAL ECONOMY

OpenZeppelin open framework of reusable, secure smart contracts in the Solidity language

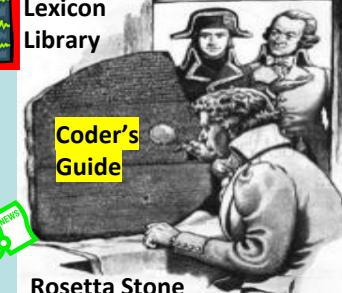
zeppelinOS, operating system for smart contracts  
*"the rate of innovation in building decentralized applications is limited by the manual and duplicative efforts developers must make to ensure basic usability and security."*

## WORLD ECONOMIC HEARTBEAT



### HEART BEACON CYCLE TIME – SPACE METER ECO-ECONOMETRICS ON THE BITCOIN BLOCKCHAIN

Syntax Lexicon Library  
300 + Templates



### STRUCTURED DATA EXCHANGE

| STRUCTURE | DATA   | FORMAT | TYPE   | VERSION |
|-----------|--------|--------|--------|---------|
| ASAS      | ASAS   | ASAS   | ASAS   | ASAS    |
| ANOPIC    | ANOPIC | ANOPIC | ANOPIC | ANOPIC  |
| APAFOR    | APAFOR | APAFOR | APAFOR | APAFOR  |
| MIC       | MIC    | MIC    | MIC    | MIC     |
| COCOM     | COCOM  | COCOM  | COCOM  | COCOM   |

LOGIC / FILTERS  
ALPHA-NUMERIC  
BREVITY CODES

### STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics

HASH / NONCE

STATE  
META  
DATA  
SNAPSHOT

Off chain tools

FLASH MESSAGE BUS  
TIME CYCLES  
SYNTAX

Erlang

Time Equations  
Function calls

Blockchain Parsing

FLASH

MESSAGE BUS

ERLANG

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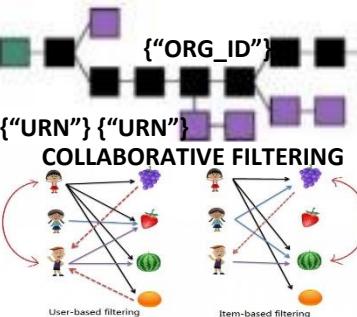
**EGAAS**  
ELECTRONIC GOVERNMENT AS A SERVICE

Distributed digital asset registries were the first projects that used blockchain systems such as databases designed for secure storage of records on real estate property, stocks, copyright and so on. It is assumed hosting any document on the blockchain is equivalent to notarization of its content at a fixed time point.

## The Heart Beacon Cycle HBC: an adaptive procedural checklist of form templates, procedures, SOP building blocks useful to form Eco-responsible trade federations Procedural template checklist items links to detailed technical, process... treatises

The collage includes:

- A large blue heart with a white outline containing the text "{'108'}".
- A red digital clock with a green circle highlighting the number "108".
- A yellow sun-like icon with a face.
- A green cartoon ant.
- A blue smartphone icon with a white "B" logo and a signal icon.
- A blue background with a red ECG line.
- Text in bold black and green: "ALGORITHMIC REGULATION", "HEARTBEAT SYNC DELTAS", "INFOCON", and "INFORMATION CONDITION".
- Text in blue: "TERRACYCLE".
- Two green recycling arrows forming a circle, each containing a cartoon ant and a blue circular icon with a white ECG line.



The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC. **INCENTIVIZE ECO-FRIENDLY TRANSACTIONS**

**Neural Net**   $\approx 1.0$   $\approx 0.9$   $\approx 0.8$   $\approx 0.7$   $\approx 0.6$   $\approx 0.5$   $\approx 0.4$   $\approx 0.3$   $\approx 0.2$   $\approx 0.1$   $\approx 0.0$   $\approx -0.1$   $\approx -0.2$   $\approx -0.3$   $\approx -0.4$   $\approx -0.5$   $\approx -0.6$   $\approx -0.7$   $\approx -0.8$   $\approx -0.9$   $\approx -1.0$

ENVIRONMENT FRIENDLY ECO INCENTIVES  CLOSER - LESS FUEL  ON

ENVIRONMENT FRIENDLY ECO INCENTIVES     CLOSER - LESS FUEL G7       vector 

CLOSER = FASTER Carbon VETOR

Named Data Networking STOCHASTIC HARMONIZATION Unused Resources

INTEREST] DYNAMIC STOCHASTIC MARKETING OPTIMIZATION STAT. MEAN

"DISTANCE"}   <img alt="A small icon of a blue and white striped umbrella." data-bbox="10278 93

Sync Line

Credits [Submit Needs](#) OFF

10 | Page

INTO Date FIREFLY HEARTBEAT Closest Meme

# ALGORITHM

## HEARTBEAT

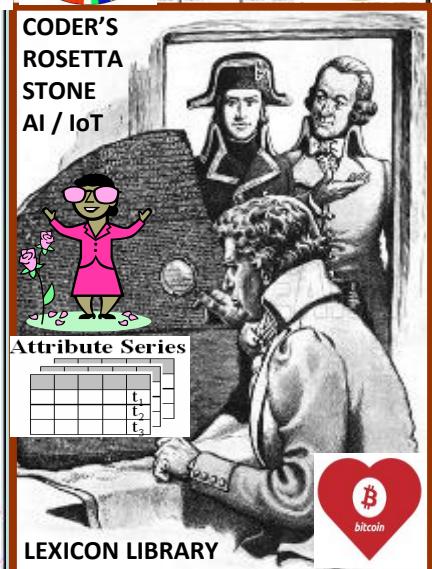
**FREELY EVENT BUS FLASH** HEARTBEAT  **Δ0** METER  **SonarHops** 

IREFLY EVENT BUS FLASH EPOCH SHORE

HEARTBEAT {108"} MESSAGES STATE META DATA SNAPSHOTSHORE

The proposed **Universal Timezone System** would do away with all these different time zones.

ent time zones. Instead, it would be the same time all over the world, all the time.





"EARTHDAY EVERYDAY ON THE BITCOIN BLOCKCHAIN"  
"GIVE A HOOT, DON'T POLLUTE" Woodsy The Owl

# GNOSIS

"Our mission is to build an accessible prediction market platform enabling free flow of useful information / the "Google" of Customized Information Searching"

Futarchy PREDICTION MARKETS  
GnosisAMA

Gnosis trading interface alpha  
WIZ token fee payment  
INFORMATION ARBITRAGE ECONOMICS



Price Oracle

Gnosis Wisdom (WIZ) pay platform fees in Services layer, Wiz subsidize other participants fees, provide initial subsidies for markets, or market trading.

WIZ pegged to \$1 USD worth of fees. WIZ acts as coupon for \$1 of Gnosis

Gnosis tokens (GNO) generate Wisdom token s(WIZ) via smart contract

GNO token holders agree to "lock" tokens in a smart contract (30-365 days). A multiplier is added for longer lock durations. Smart contract determines selected lock duration and applies that duration to a formula regulating supply of WIZ tokens currently in use. Once users execute the contract, 30% of their WIZ are distributed for use, the remaining 70% is distributed proportionally over the locked duration. When lock duration expires, the locked GNO ceases to generate WIZ & GNO is freely transferable

The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind Coordinated Universal Time (UTC). However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC.



The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



## THE TERRA (TRC)

Trade Reference Currency



\$0.49 USD  
฿ 0.001076 BTC

MICRO PAYMENTS  
@bitcoin  
Need Bitcoin?

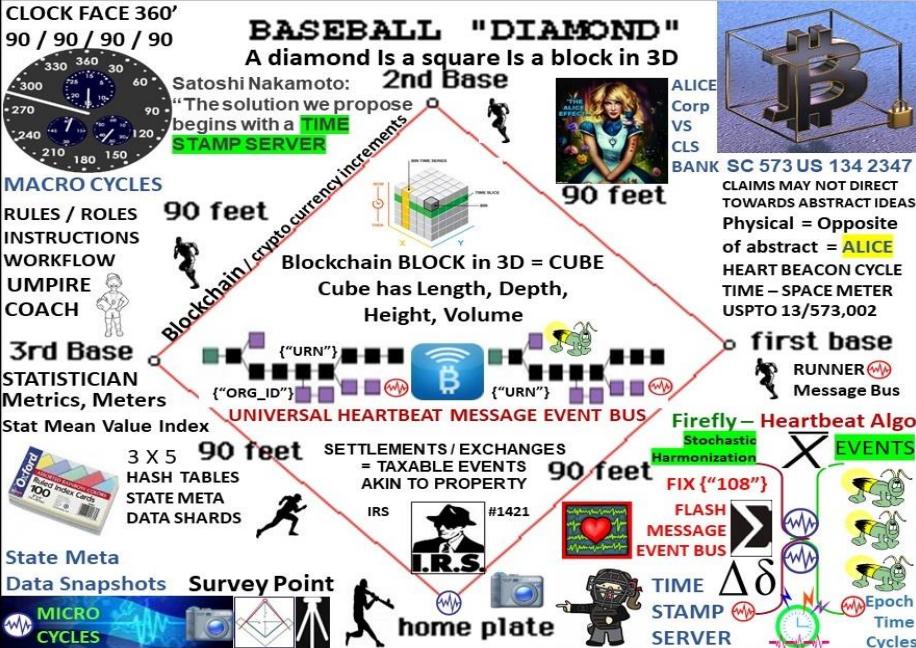
Demurrage Fees



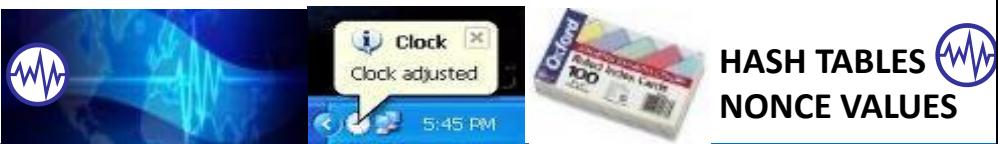
Firefly inspired Heartbeat Synchronization nodes strive to sync in a distributed system. Nodes generate periodic "heartbeat" events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles to agree on the ID of the current clock cycle. There is no requirement to sync during a cycle length in real time as long as length is bounded & all nodes agree eventually"



Bitcoin Classic seeks to mitigate the problem of more transactions, which are causing transaction backlogs and increased transaction costs, by increasing the block size - the number of kilobytes in a block of transactions - from 1MB to 2MB.



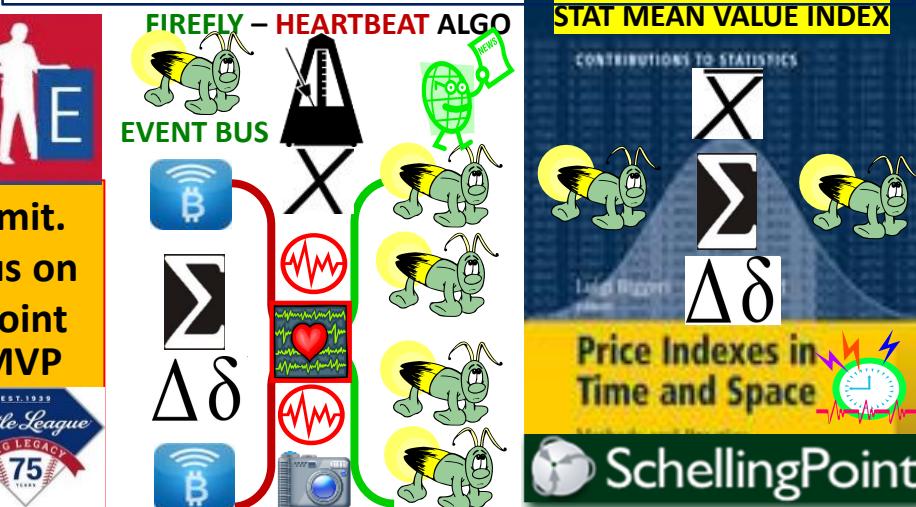
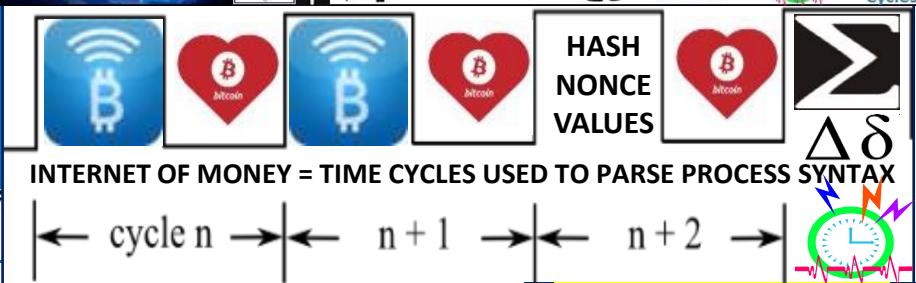
### ALL THINGS INTERNET FORMED W 1) TIME EPOCHS 2) SYNTAX



**BitPay Core:** limits: 1) block size 'hard limit' adjusted on a regular basis coinciding with difficulty adjustments, 2) miner set 'soft limit' like focal points in Unlimited.  $\Delta\delta$



**Bitcoin Unlimited:** absence of a hard-coded block-size limit. Users manually set limits on their own nodes; Consensus on a limit expected to emerge naturally at Schelling focal point. Unlimited introduces a level of democracy into development, management of the implementation, . the community votes on changes.



**Microsoft Blockchain modular framework:  
choose combination of tech best fits Biz domain**

AZURE: Core/Kernel/Universal Protocol 

Fabric Tier consortium node CryptoDelegate in  
VM or UTXO Adapter, (Azure, AzureStack, AWS..)

Unspent Transaction Output protocols UTXO

Crypto Tokenized Assets Digital Bearer Bonds  
unique identity for owned artifacts

Utility Cryptlets encryption, time & date events, external  
data access, authentication “CryptoDelegate” / adapter

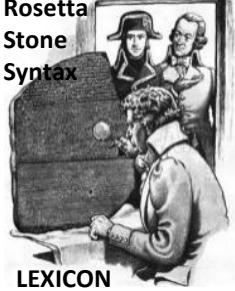
Blockchain middleware: identity and operations management, data,  
intelligence services like analytics and machine learning. New middleware  
works with existing Azure services, like Active Directory and Key Vault

Blockchain Fabric: Blockchain Gateway Services [Interledger](#)-  
like services to allow for SmartContracts and tokenized  
objects to be passed between different ledger systems.

Data Services - key data services like distributed file systems  
(IPFS, Storj, etc) of off-chain data referenced by public keys. 

Auditing, Advanced Analytics, Machine Learning, Dashboarding  
services for SmartContracts, Blockchains, Consortia, Regulators

Utility and Contract. Developers can discover and enlist Cryptlets into  
their SmartContracts to create more robust and trusted transactions.  
Contract Cryptlets are full delegation engines that act as  
SmartContract surrogates off the chain. Cryptlets provide  
execution logic and securely store data in the Smart Contract 

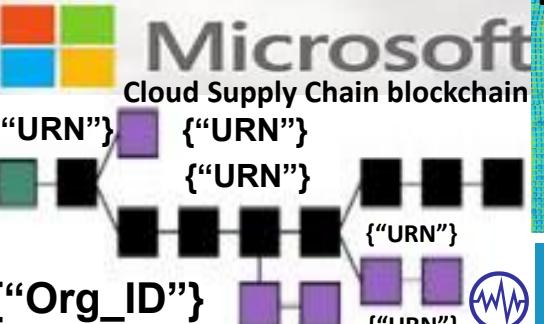


| ALPHA NUMERIC<br>BREVITY CODES<br>SYMBOL CODES                      |  |
|---|--|
| STRUCTURED<br>MILITARY MESSAGE<br>TEMPLATE FORMS<br>LOGIC / FILTERS |  |

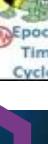
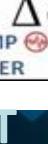
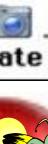
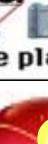
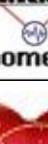
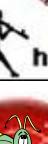
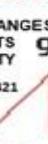
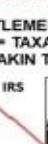
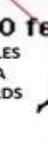
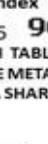
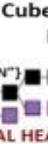
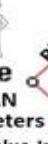
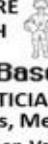
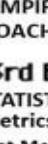
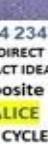
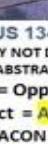
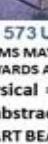
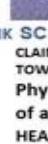
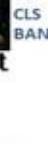
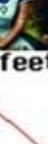
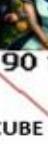
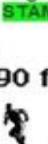
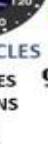
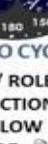
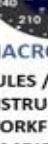
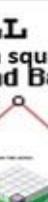
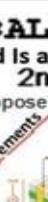
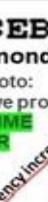
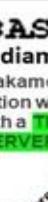
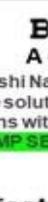
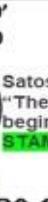
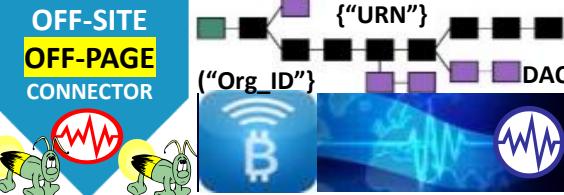
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MULTI-MEME MULTI-METER

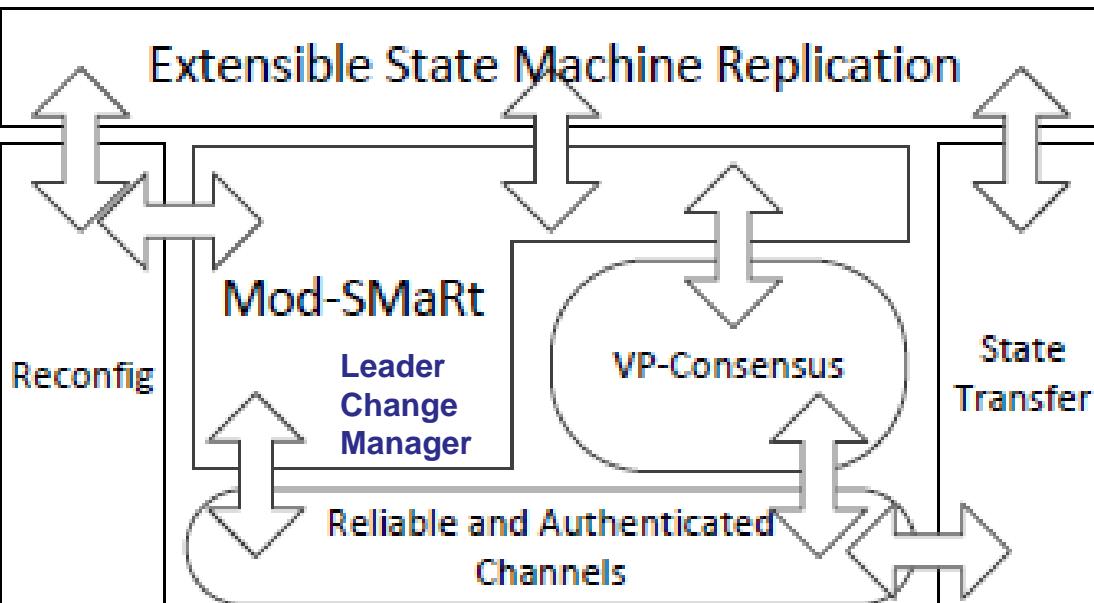


MYRIAD MEMES MEDiation



# Byzantine Fault-Tolerant State Machine Replication

BFT-SMaRT dynamic distributed system processes are divided in two nonintersecting subsets: replicas and clients. Each system process has a unique identifier. During dynamic system execution, a sequence of views is installed to denote the reconfigurations due to replicas joins and leaves. A view is composed by a set of replicas identifiers.



Modularity is achieved using a set of building blocks(or modules)containing the core functionality of BFTSMaRt. Blocks are divided in three groups: communication system, state machine replication and state management.

## BFT-SMaRT needs an eventually synchronous system

Total order multicast is achieved using the Mod-SMaRt protocol and with the Byzantine consensus algorithm Clients send requests to all replicas in cv, and wait for replies. replicas store each batch of ordered requests to a (stable) log and, periodically, take snapshots of the application state and store it in stable memory.

## USPTO 13/573,002 HEART BEACON CYCLE TIME-SPACE METER

USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT



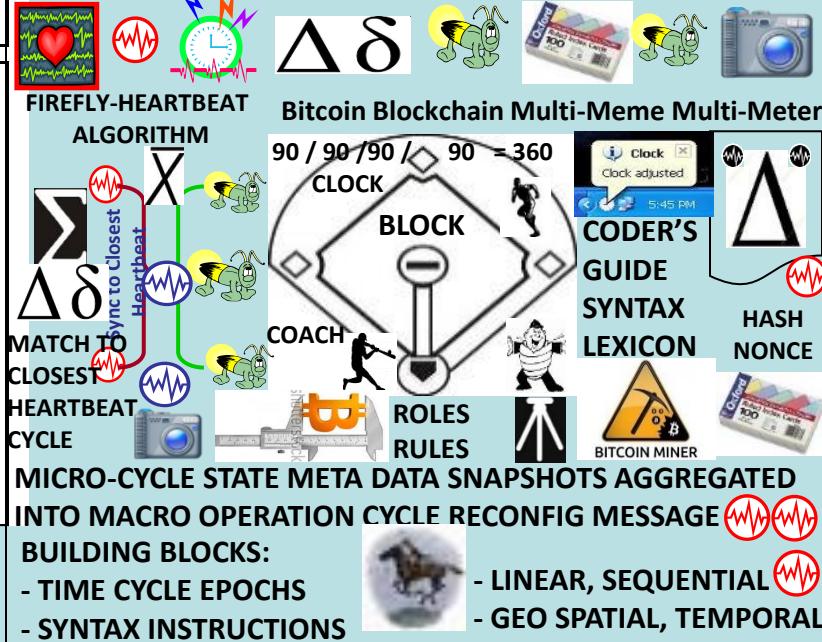
DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG\_ID"}

ADDS, JOINS, DROPS, MOVES TO / FROM DAO

CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

## 00.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOTS



Firefly inspired Heartbeat Synchronization nodes strive to sync in a distributed system. Nodes generate periodic "heartbeat" events approximately at the same time.

It differs from classical clock sync in that nodes are not interested in counting cycles to agree on the ID of the current clock cycle. There is no requirement to sync during a cycle length In real time as long as the length is bounded and all nodes AGREE ON IT EVENTUALLY"





**D F I N I T Y**

**RANDOM # BEACON**

**Blockchain Nervous System**

**HEARTBEAT {"108"} State Meta Data Snapshot Msgs**

**STATEFUL DECENTRALIZED NET PROTOCOL:**  
Decentralized process workflows instead of  
Centralized Server farms

**FIREFLY-HEARTBEAT FLASH Msg EVENT BUS**

**GROUP Signature is random number**

- Number selects next group {"Org\_ID"} {"Org\_ID"}
- Next group use previous no. as message
- Verifiable Random Function
- Numbers verifiable using group public key
- New values produced in threshold agreement
- Random members {"Org\_ID"} {"Org\_ID"}**
- Each process is a member of multiple groups
- Groups intersect, have +/- 400 members
- BLS signature scheme**
- Math magic... If 51% of group members broadcast "signature shares" on a message, these are combined to create the group's threshold signature.

**HYPER GEOMETRIC PROBABILITY CALCULATOR**

**CONSENSUS / RANDOM BEACON**

Threshold relay chain generates randomness, records network metadata & validation tree "state root". State and updates to state stored on shards... State transitions passed to Validation Tree

**NIST Beacon**  
A Public Randomness Service

**QUANTUM RANDOM #**

**Each process has mining identity**

- Public key with meta data attached
- IDs mediate participation**
- Private network: trusted dealer defines list
- Public network: CC security deposit, USCIDs

**3 x 5 HASH TABLES STATE META DATA SHARDS**

**State Meta Data Snapshots Survey Point**

**MICRO CYCLES**

**home plate**

**TIME STAMP SERVER**

**EVENTS**

**FLASH MESSAGE EVENT BUS**

**TIME STAMP SERVER**

**INDEX CARD="SHARD"**

**HBC "ORG\_ID" {"URN"} CLASS ASSET TYPE {"UUID"} DEVICE TYPE**

**UTZ TIME ZONE SYNC**

**USPTO 13/573,002 HEART BEACON CYCLE TIME – SPACE METER**

**CLOCK FACE 360'**  
90 / 90 / 90 / 90

**SATOSHI NAKAMOTO:**  
"The solution we propose begins with a TIME STAMP SERVER"

**BASEBALL "DIAMOND"**  
A diamond Is a square Is a block in 3D

**2nd Base**

**ALICE Corp VS CLS BANK SC 573 US 134 2347 CLAIMS MAY NOT DIRECT TOWARDS ABSTRACT IDEAS Physical = Opposite of abstract = ALICE HEART BEACON CYCLE TIME – SPACE METER USPTO 13/573,002**

**90 feet**

**Blockchain BLOCK in 3D = CUBE**  
Cube has Length, Depth, Height, Volume

**3rd Base**

**STATISTICIAN Metrics, Meters**

**Stat Mean Value Index**

**3 X 5 HASH TABLES STATE META DATA SHARDS**

**SETTLEMENTS / EXCHANGES = TAXABLE EVENTS AKIN TO PROPERTY IRS #1421**

**90 feet**

**Firefly – Heartbeat Algo Stochastic Harmonization FIX {"108"} FLASH MESSAGE EVENT BUS**

**90 feet**

**Time Stamp Server**

**Epoch Time Cycles**

**Micro Cycles**

**Survey Point**

**home plate**

**Time Stamp Server**

**Events**

**Flash Message Event Bus**

**Time Stamp Server**

**Epoch Time Cycles**



core blockchain code written in Erlang, for distributed, fault-tolerant, soft real-time and highly available non-stop applications.

**ERLANG API FOR BLOCKCHAIN**



**ORACLES:** crucial feature for most contracts, whether encoded as text or as code, is the ability to refer to values from the environment. æternity Oracle Machine provides real-world data to the blockchain. Each user can ask questions about the environment. Anyone can answer. Consensus mechanism invoked in case of disagreement.

MIT-licensed modules for easy implementation in blockchain consortiums. Free and open access for developers build on the æternity platform.

**CROSS – CHAIN ATOMIC SWAPS**

AE Tokens AE are access tokens to the æternity network and act as a unit of account for the resources spent on æternity.



Aeons: energy for applications implemented on the platform.

**ACCOUNTS & IDENTITY:** æternity's accounts are permission-less, but allow customization via schema.org's semantic web scheme. Create & own (**federated group**) / individual identities on the æternity network



("ORG\_ID")  
("ORG\_ID")

NAMES (DNS) In the vein of Aaron Swartz' work and Namecoin, æternity features an easy to use name system, that is both decentralized and secure, while still supporting human-friendly, memorable names. The blockchain's state includes a mapping from unique human-friendly strings to fixed-size byte arrays, that are individually customizable.



Firefly Heartbeat Sync nodes strive to sync in a distributed system. Nodes emit periodic "heartbeat" events at approximately the same time. No need to sync during a cycle as long as the cycle length is bounded & nodes eventually agree

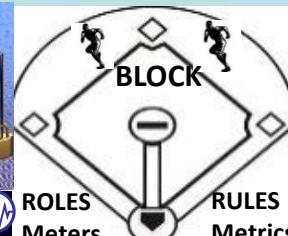
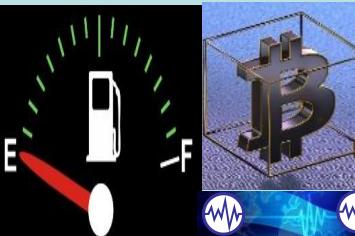
**AETERNITY CROSS-CHAIN ATOMIC SWAPS CORRESPOND TO HEART BEACON CYCLE'S USE OF BATTLEFIELD DIGITIZATION DERIVED HEARTBEAT SYNC DELTAS**



Terra Trade Reference Currency TRC "world currency" Bernard A. Lietaer Belgian economist proposed 1991 Basket of 9-12 most important commodities. Public issued demurrage fees for storage, shipping, handling

**TOKENS REPRESENT REAL WORLD VALUE URN RESOURCES**

ETHEREUM USES GAS GUAGE MEME INDICATING THRESHOLD MET / NOT MET



ROLES Meters

$\Delta\delta$

HBC's PRIMARY USE CASE IS TO ORGANIZE INDIVIDUALS IN TRADE FEDERATION GROUPS RE-USING BATTLEFIELD DIGITIZATION / ARIN Organizational Identifier Org\_ID for Ecosphere friendly trade



**Federation Gateway**  
("ORG\_ID")

RULES Metrics

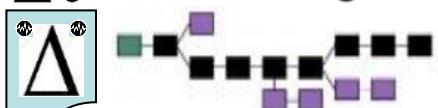


American Registry for Internet Numbers

# HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$  Shared Ledger



HEART BEACON CYCLE  
TIME – SPACE METER  
USPTO 13/573,002

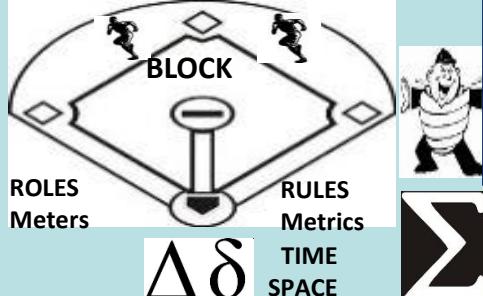
FEDERATION  
**Federation Gateway**

METRICS ("Organization ID")  
METERS

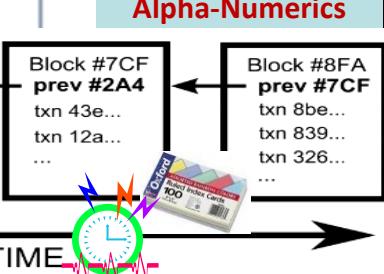
RESTFUL SYNC DELTA  
CHANGE MANAGEMENT  
MICRO-MACRO CYCLE



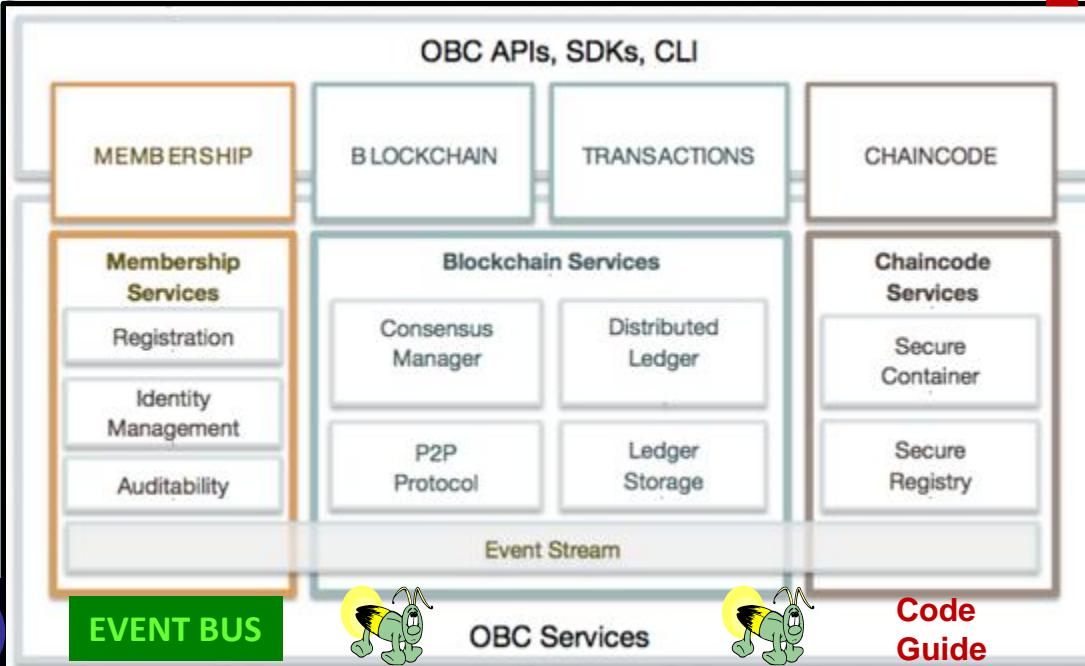
BLOCKTIME ARBITRAGE



Code execution environment, ledger data structures, modular consensus fwk & algos, and modular membership services, modular storage and event fwks, network peers



Alpha-Numerics



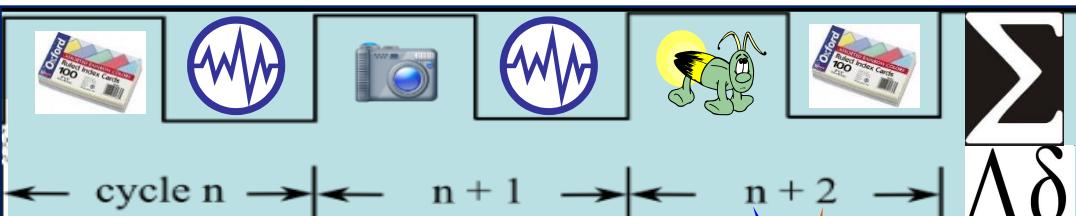
ROSETTA STONE

XBR / CDL / DAML  
STOCK MIC CODES

STRUCTURED  
MILITARY MESSAGE  
TEMPLATE FORMS  
LOGIC / FILTERS

SYNTAX  
SYMBOL LIBRARY

300 + MESSAGE  
TEMPLATES  
USE CASES / GROUPED  
DATA TRANSACTIONS  
Alpha-Numeric Data  
Element ID -- #'s are the  
UNIVERSAL LANGUAGE



MICRO-MACRO CYCLE SCHEDULE



FFIRNS  
FFUDNS

HYPER LEDGER USES  
JSON ("tag") / YAML  
Text indentation –  
UNIVERSAL LANGUAGE  
= ALPHA-NUMERICS

# DASH



"All decentralized, blockchain-based networks are DAOs, or decentralized autonomous organizations" Bitcoinist

"A DAO can be summed up as an organization of people who communicate with each other via a "network protocol," which is to say that they communicate with one another via a ruleset"

[LINK](http://bitcoinist.net/how-dash-dao-work/) <http://bitcoinist.net/how-dash-dao-work/>

"all digital currency networks, the base layer of people generating the blockchain — "miners," "stakers," "witnesses," "validators," or "forgers" — all get paid to do so" "consensus," or an agreement upon what the rules should be; and second, the execution of said rules.

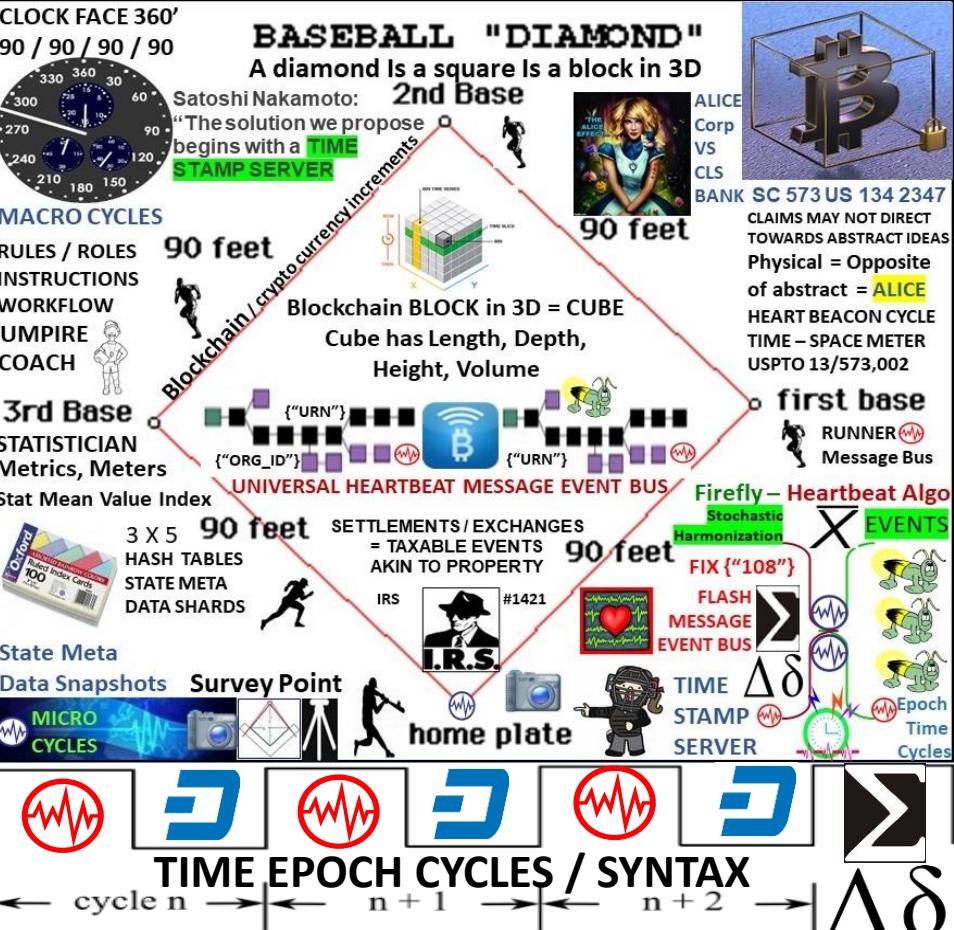
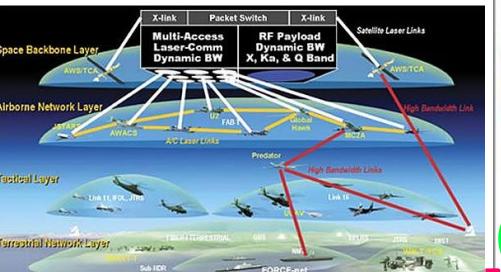
"Its makeup is thus: the block reward is divvied up in three parts. The first 45 percent goes to [Dash's miners](#). Another 45 percent goes to its Masternodes. And 10 percent is set aside to fund whatever other jobs or expenditures the Dash network deems necessary"

InstantX: To solve the problem of lag time in transactions, Masternodes are able to instantly lock transactions. They receive payments for their service to the network.

**DAO: RAND THINK TANK TERM COINED + / - 2001**

NETWORK CENTRIC WARFARE  
Developing and Leveraging Information Superiority

ALICE CORP Vs CLS BANK



STOCHASTIC HARMONIZATION FIREFLY-HEARTBEAT EVENT BUS

HEART BEACON CYCLE = IMPROVEMENT TO NETWORK CENTRIC WARFARE



Firefly - Heartbeat synchronization: nodes in a distributed system generate periodic, local "heartbeat" events approximately at the same time with a goal of all nodes starting / ending cycles at the same time eventually = HB CYCLE



**STATE:** stored data at a given instant in time

**STATE CHANNELS:** blockchain interactions

which *could* occur on the blockchain, but instead get conducted off of the blockchain, without significantly increasing the risk of any participant.



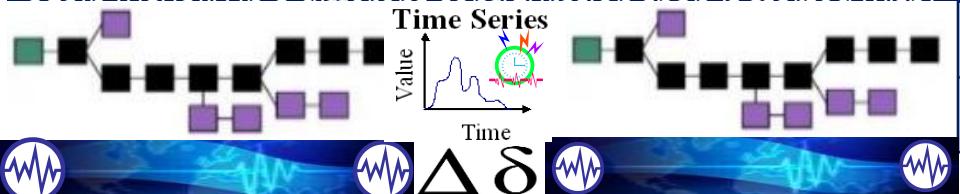
1. Part of the blockchain state is locked via multisignature or smart contract convention, so that a specific set of participants must completely agree with each other to update it.



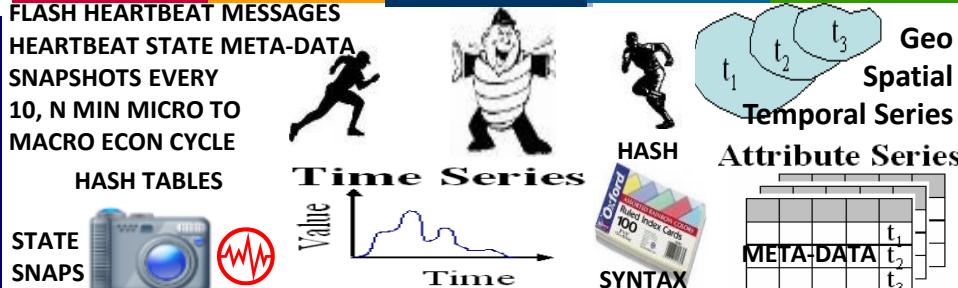
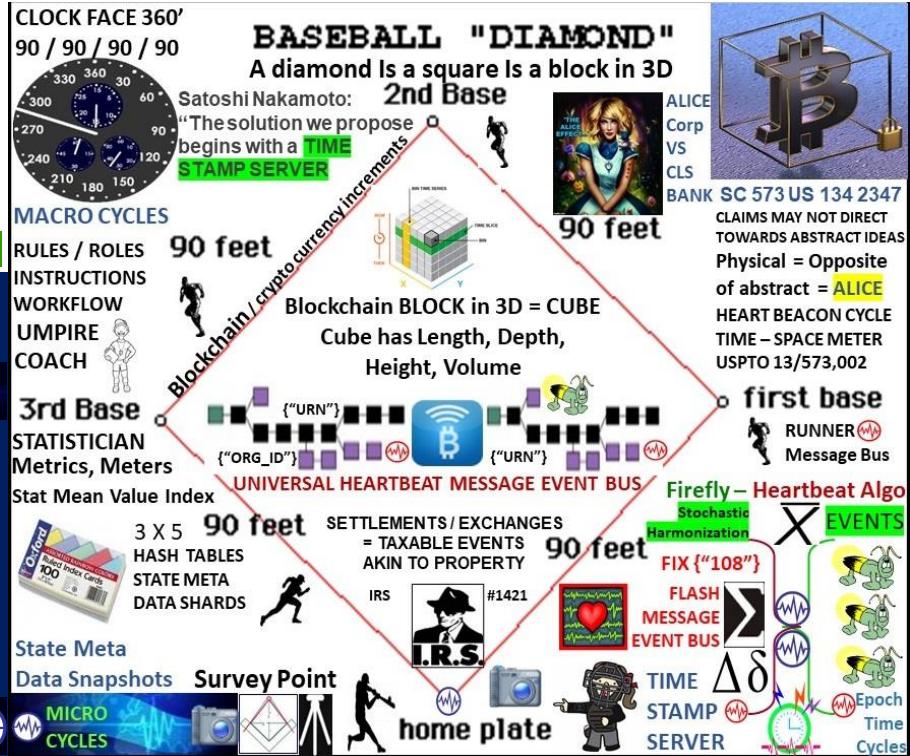
2. Participants update the state amongst themselves by constructing and signing transactions that could be submitted to the blockchain, but instead are made available for a new update "trumps" previous update.



3. Finally, participants submit the state back to the blockchain, which closes the state channel.



**NEW UPDATES OVERWRITE THE PREVIOUS:** simplest way is to have any unlocking attempt start a timer, during which any *newer* update can replace the old update (restarting the timer). When the timer completes, the channel is closed and the state adjusted to reflect the last update received. The length of the timer would be chosen for each state channel, balancing the inconvenience of a long channel closing time with the increased safety it would provide against internet connection or blockchain problems. Alternatively, one could structure channel with a financial penalty so anyone publishing an inaccurate update to the blockchain will lose more than gain by pretending later.

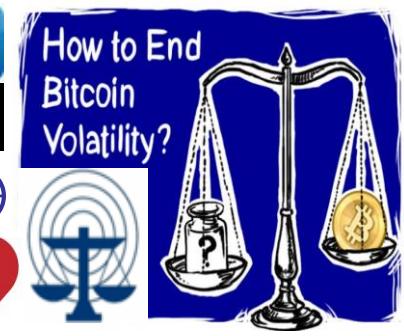
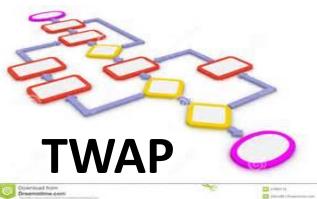


**Firefly - Heartbeat synchronization:** nodes in a distributed system generate periodic, local "heartbeat" events approximately at the same time with a goal of all nodes starting / ending cycles at the same time eventually = HB CYCLE

# TWAP Algorithm Manages Bitcoin Price Volatility Algorithm



## TWAP GOAL: provide a Time Weighted Average Price Benchmark

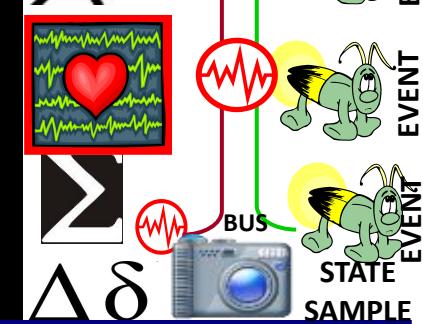


FIREFLY HEARTBEAT ALGO  
STAT MEAN VALUE INDEX

**TWAP Works To gauge trading performance, many traders in different asset classes (equity, fixed income, currency) often use average price as a benchmark. The two common ways to calculate an average are a time-weighted average price (TWAP) and a volume-weighted average price (VWAP). TWAP is the average price of a bitcoin over the course of a specified period of time i.e., Heart Beacon Cycle**



EPOCH TIMES  
STATE META DATA SNAPSHOTS



The algorithm trades over a desired time, either 1, 6, 12 or 24 hours and will give you a TWAP over that time period. For example, set the TWAP algorithm to sell 12 bitcoins over 12 hours, the algorithm will sell throughout the period, aiming to get a 12-hour TWAP



VWAP is price multiplied by number of bitcoins traded, then divided by the total number of bitcoins traded during a time period. The time-weighted average price algorithm is matched to closest HB

Firefly Heartbeat Sync nodes strive to sync in a distributed system. Nodes emit periodic "heartbeat" events at approximately the same time. There is no need to sync during a cycle as long as the cycle length is bounded & nodes eventually agree. HBC's improvement is stipulating a clock cycle value e.g., 5, 10, 15..



**Block-Weighted-Average-Price (B-WAP) API** creates a USD price for any block in the Bitcoin blockchain, based on BNC's Bitcoin Liquid Index (BLX). Automatically appropriates blockchain transactions with a USD price or technical indicator for traders.

**Key Features:**

Look up any bitcoin blockchain transaction and receive back a USD value for any transaction.



Built using historic bitcoin price index - the [BNC BLX](#).

API updated every 10 min with a 2 hour delay on latest blocks (due to the nature of Block propagation to ensure avoidance of publishing rates on orphaned blocks).

All rates time-stamped in UTC.



Ability to look up by time-stamp.

Ability to look up by block-height.

Asset Classes: Digital Currencies

Get by: Block-height, Time-stamp or Transaction

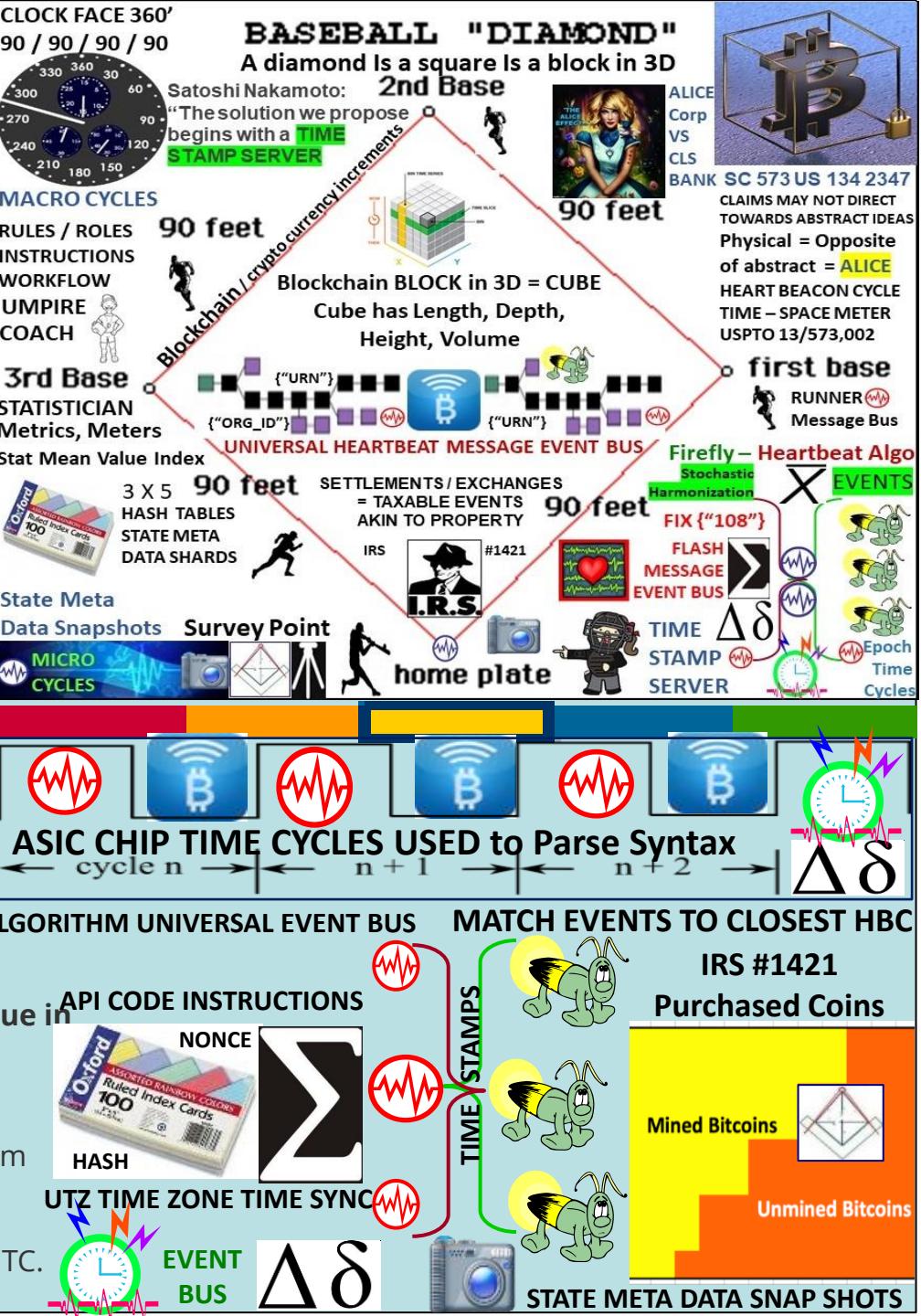
Transaction ID, Block ID, time-stamp, BWAP per block, Value in USD. BTC per transaction, bitcoin transaction fees per transaction.

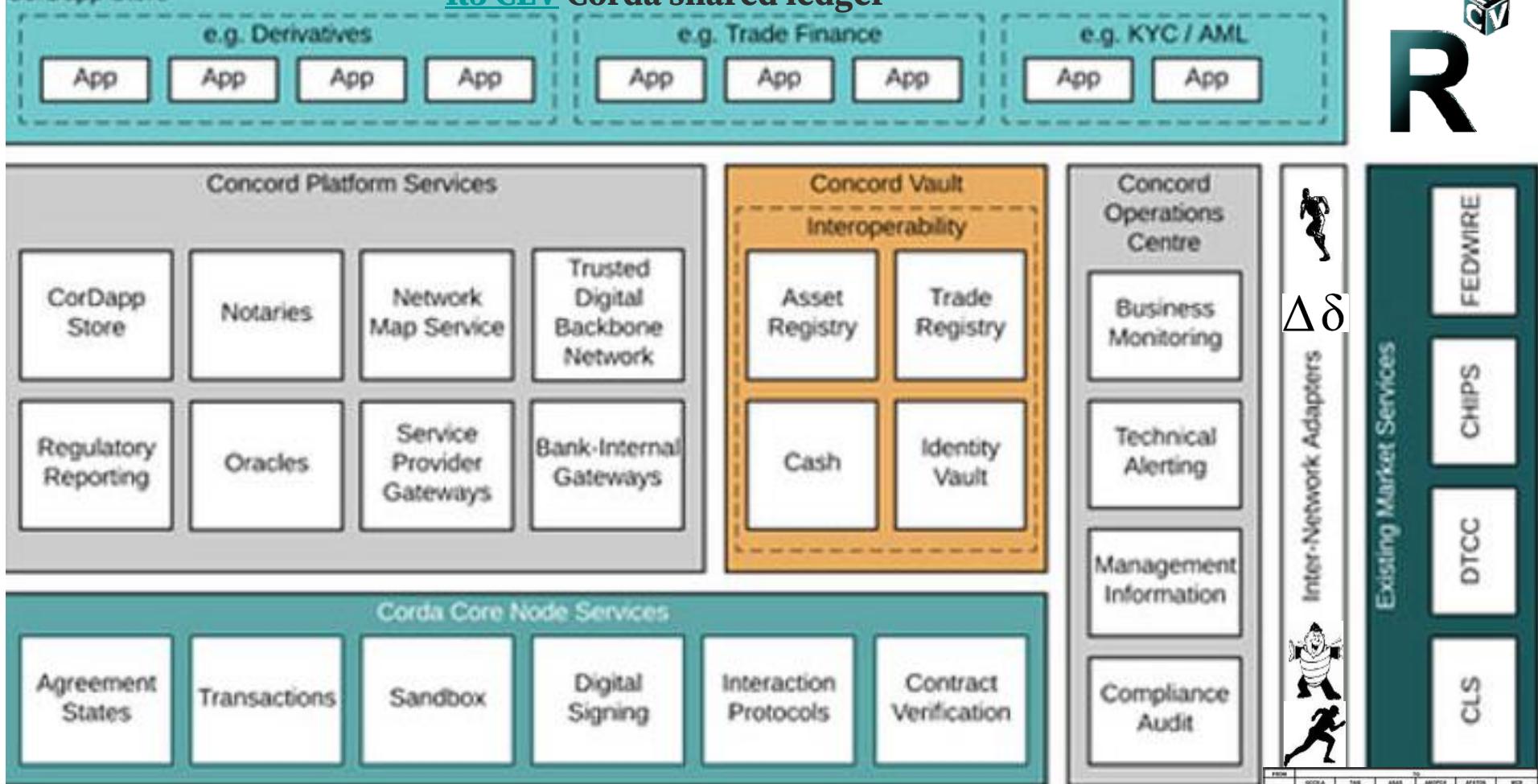
"Blocks are a measure of time":

The Bitcoin Blockchain 'B-WAP'

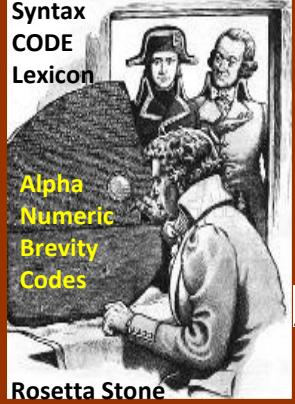
• Exchanges Covered: Price discovery for the B-WAP comes from utilizing the BNC [Bitcoin Liquid Index](#) (BLX) bitcoin price calculation.

• Historical Rates: This API goes back to 2010-07-17 23:14:35 UTC.





# Syntax CODE Lexicon



## Alpha Numerical Brevity Codes

## Rosetta Stone

# UNIVERSAL EVENT BUS



- Choreographing workflow between t
  - Supports inclusion of regulatory & s
  - Validating transactions solely betwe
  - Supporting a variety of consensus m
  - Recording explicit links between hu



|                               |
|-------------------------------|
| <b>11.8 - Kinematics</b>      |
| 11.8.1 - Position / Acc (PVA) |
| 11.8.1.1 - Angular            |
| 11.8.1.1.1 - Linear           |
| - Estimate Type               |
| - Estimated                   |
| - Predicted                   |
| - Smoothed                    |
| 11.8.1.1.2 - Smoothed Data    |
| - Position                    |
| - Bearing Angle               |
| - Acceleration                |
| - Velocity                    |
| - Vertical                    |
| - Horizontal                  |
| 11.8.1.1.3 - Covariance       |
| - Covariance Matrix           |
| 11.8.1.2 - Velocity           |
| - Bearing Angle Rate          |
| - Covariance Matrix           |

Federation  
Gateway

- PROOF OF WORK
  - PROOF OF STAKE
  - STATE CHANNELS
  - BITCOIN NEXGEN
  - LIGHTNING / DASH..



# **XBRL / CDL / DAML STOCK MIC CODES**

|      | E0H  | F0H  | S0H  | F0H  | F4H  | F8H  | S0H  | F0H  |
|------|------|------|------|------|------|------|------|------|
| A4D5 | B0H  | A4H  | A4H  | A4D5 | A4H  | A4D5 | A4H  | A4D5 |
| F0E0 | F0E2 | C002 | C003 | A4H  | C002 | C003 | C002 | C003 |
| F0F4 | F0F5 | C4H  | C4H  | C002 | C205 | C205 | C205 | F0F4 |
| F54F | E2H  | C4H  | C4H  | C205 | C205 | C205 | F0E2 | F54F |

# STRUCTURED MILITARY MESSAGE

# TEMPLATE FORMS

## LOGIC / FILTERS

## LOGIC / FILTERS

**300+ Hse Case Templates**

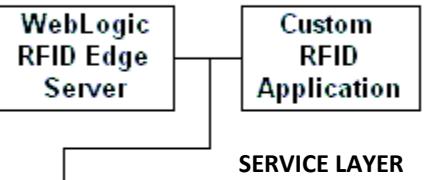


# Electronic Product Code Information Services (EPCIS)

## GS1 Standard for creating, sharing visibility event data



## EPCIS DATA MODEL



SERVICE LAYER

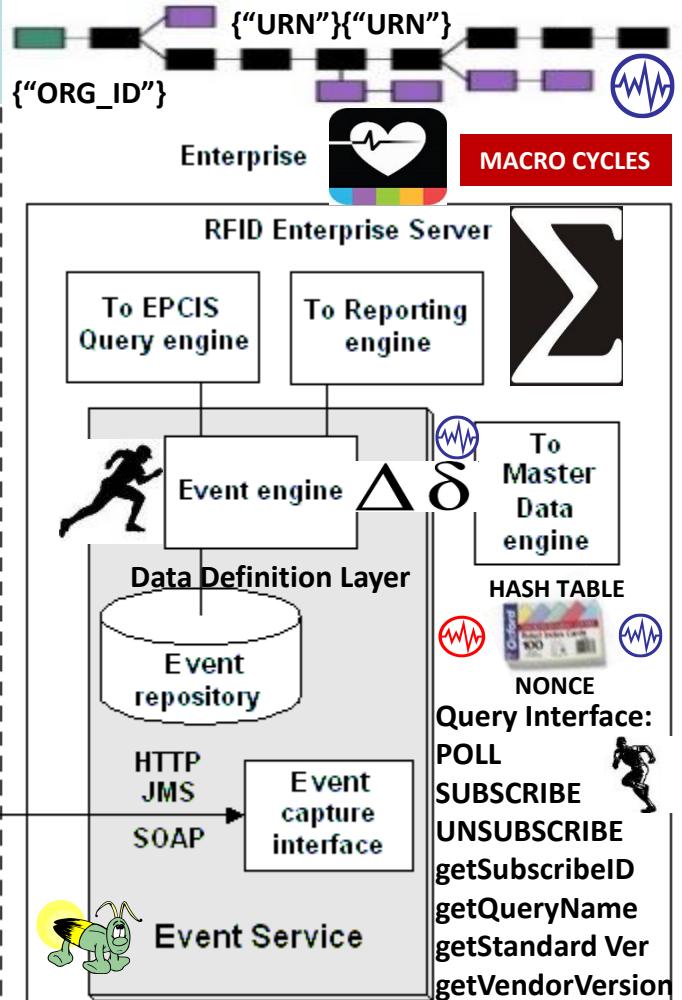
XML

ObjectEvent

AggregationEvent

QuantityEvent

TransactionEvent



ROSETTA STONE



!st Compiler  
DESIGN  
Still the BEST

BEST PRACTICE

ALPHA NUMERIC  
BREVITY CODES

SYNTAX  
LEXICON  
CODE GUIDE

NETCENTRIC WARFARE

IMETS ROLES / RULES / FILTERS

NETOPS SOP

UNIVERSAL EVENT BUS

NETOPS SOP

UNIVERSAL EVENT BUS

UNIVERSAL





TERRA  
TRC



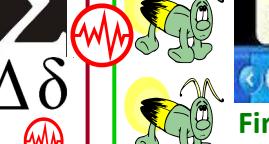
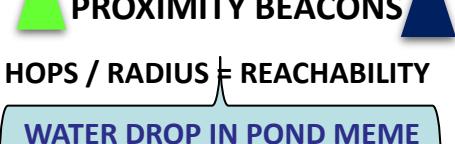
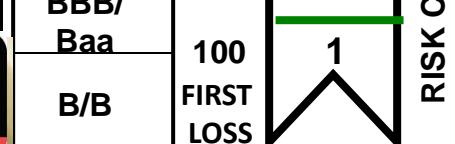
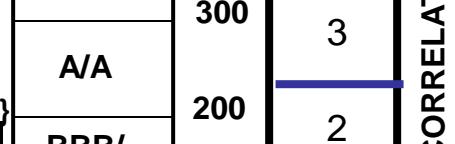
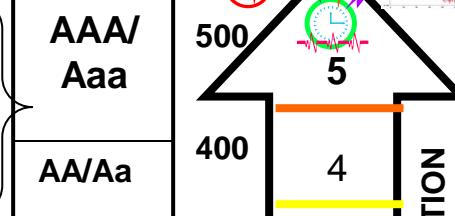
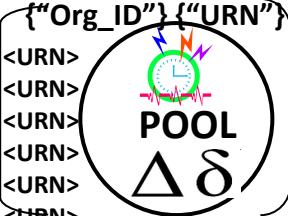
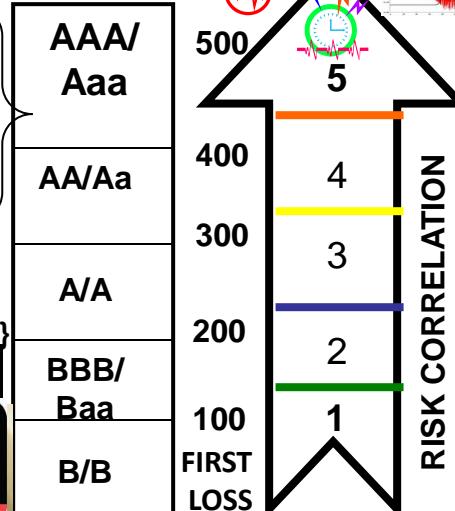
ECONOMIC HEARTBEAT



HB MSG </108>  
PROTOCOL

INDUSTRY-DRIVEN MESSAGING STANDARD

LAST LOSS

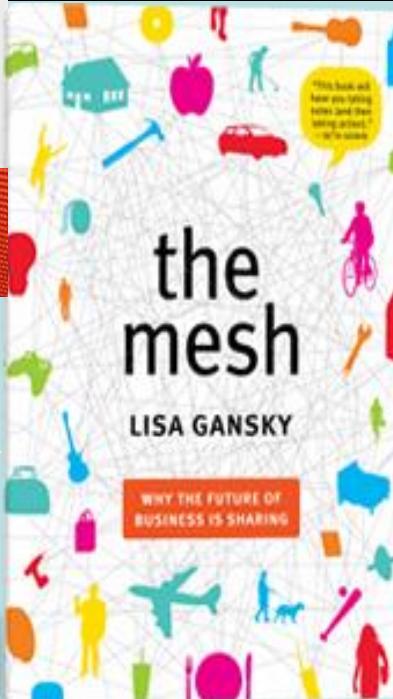
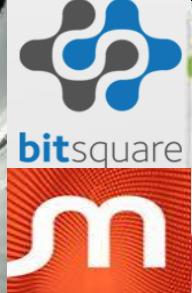




COINTELEGRAPH  
live cryptocurrency community opinion



## Decentralized Exchange Meets Decentralized Crowdfunding



A decentralized exchange called BitSquare has [launched a campaign](#) on the decentralized crowd funding app [Lighthouse](#). Its campaign is simultaneously an example of how powerful decentralized crowd funding is, and how difficult running a successful campaign is... segue to the MESH ECONOMY

The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC.



## Autonomous Device Coordination Framework



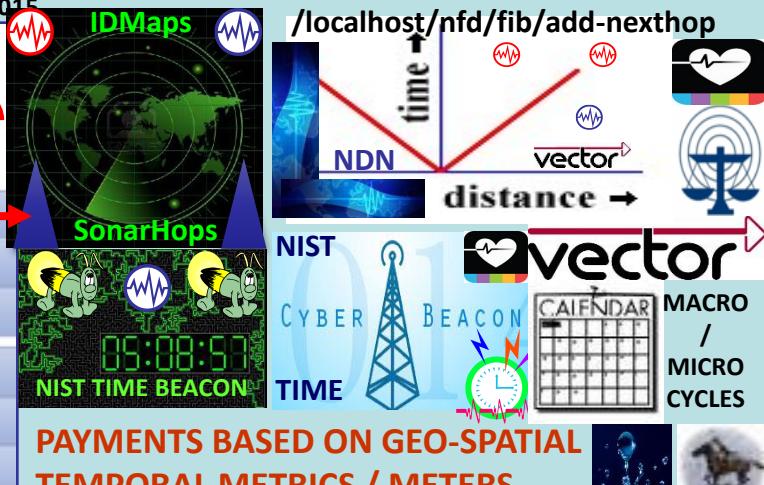
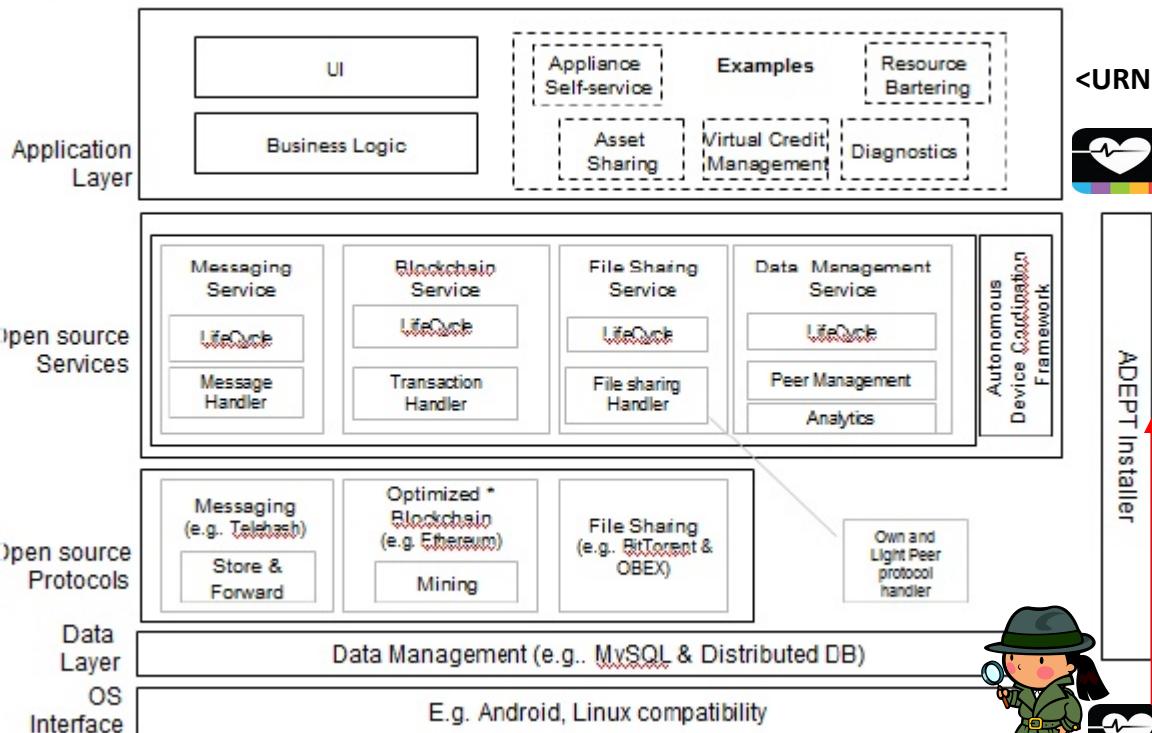
- Registration
- Authentication
- Proximity based rules
- Consensus based rules
- Contracts
- Checklists

FEDERATION  
AGREEMENTS  
PROCEDURAL  
TEMPLATE

## FEDERATION

- <UUID> <ORG\_ID> <URN>
- LDAP DIRECTORY
- Physical proximity
- Social proximity
- Temporal proximity
- Agreements
- Payments
- Barter

## ADEPT Standard Peer Architecture – Logical View

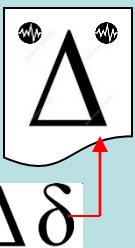


PAYMENTS BASED ON GEO-SPATIAL TEMPORAL METRICS / METERS  
<URN> DESCRIBES COMMODITIES ETC BY UNIFORM RESOURCE NAME BY </INTEREST>>

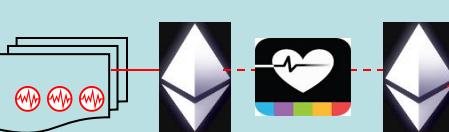


ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML\_Wf>

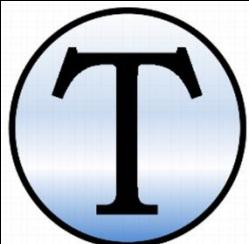


FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH



OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

DATA LAYER: STATE META DATA TIME STAMPED BY <UUID><ORG\_ID><URN> & DATA PREPPED & "DATA WRANGLLED PRIOR TO FUSION CENTER ENHANCED ANALYTICS / PROTECTS BANDWIDTH



## Three ideas combined

### HOW TRUTHCOIN WORKS:

#### 1) Tradable Reputation

- Abstract Corp exists to prove consistency within / across TIME
- Collects \$ to power the mechanism.

#### 2) SVD Cross-Validation

- Statistical technique: seeks importance.
- Gleans truth, measures conformity.



#### 3) Strategic Use of TIME

- Funds can be ‘locked’ across time.
- Yet info-search-costs constantly fall.
- Net effect: time penalizes attackers only.

## 2. A kind of ‘Future Wikipedia’

|                            | Wikipedia  | Truthcoin  |
|----------------------------|--|--|
| Focus                      | Outcomes of <i>past</i> events.<br>Consensus on known facts. | Outcomes of <i>future</i> events.<br><i>Future</i> consensus on <i>knowable</i> facts.                   |
| Protocol                   | (Decentralized)  | Centralized Non-Protocol   |
| Spoken English             |  | Shakespeare’s Globe Theatre, The Library of Alexandria, MLA Citation Format, Walt Whitman, J.K. Rowling. |
| Rules to American Football |  | The NFL, ESPN, The Buffalo Bills.  |
| Bluetooth                  |  | A Set of Stereo Speakers, The iPhone 6, A Car Radio Equipped with Bluetooth                              |
| Bitcoin                    |  | VISA, PayPal, SWIFT, Western Union, Airline Miles, Amazon Coins, e-Gold, Liberty Reserve.                |

## 3. A software protocol

A protocol is a set of rules that determine how something is performed or accomplished

| Finance Thing      | Interpretation   | EVENT DERIVATIVE<br>CORP = <Org_ID_1,2,3> |
|--------------------|--|---|
| Bond (Debt)        | “I, Paul Sztorc, owe \$20 to whoever is holding this bond certificate on 03/02/2015.”  |   |
| Stock (Equity)     | “I, the CEO of SztorcCorp, owe 1/100 <sup>th</sup> of SztorcCorp’s profits to whoever is holding this stock certificate on 03/02/2015.”                              |   |
| Binary Call Option | “I, Paul Sztorc, owe \$20 to whoever is holding this Option on 03/02/2015, <u>only if</u> the stock price of SztorcCorp is above 40 \$/share on that date.”          |   |
| ...(others)...     | ...(others)...   | ...(others)...                            |
| Event Derivative   | “I, Paul Sztorc, owe \$20 to whoever is holding this derivative on 12/01/2016, <u>only if</u> Hillary Clinton is elected US President in 2016. Otherwise I owe \$0.” | ...(others)...                            |
| ...(others)...     | ...(others)...   | ...(others)...                            |

| Protocol (Decentralized)   | Centralized Non-Protocol   |
|----------------------------|--|
| Spoken English             | Shakespeare’s Globe Theatre, The Library of Alexandria, MLA Citation Format, Walt Whitman, J.K. Rowling. |
| Rules to American Football | The NFL, ESPN, The Buffalo Bills.  |
| Bluetooth                  | A Set of Stereo Speakers, The iPhone 6, A Car Radio Equipped with Bluetooth                              |
| Bitcoin                    | VISA, PayPal, SWIFT, Western Union, Airline Miles, Amazon Coins, e-Gold, Liberty Reserve.                |

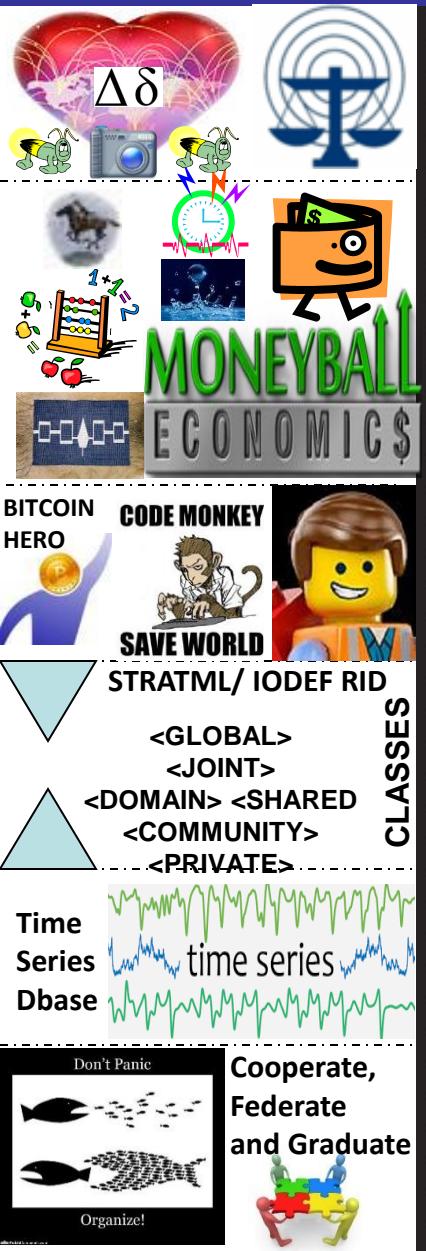
# How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

$$MV=PQ \text{ Money} \times \text{Velocity} = \text{Price} \times \text{Quantity}$$

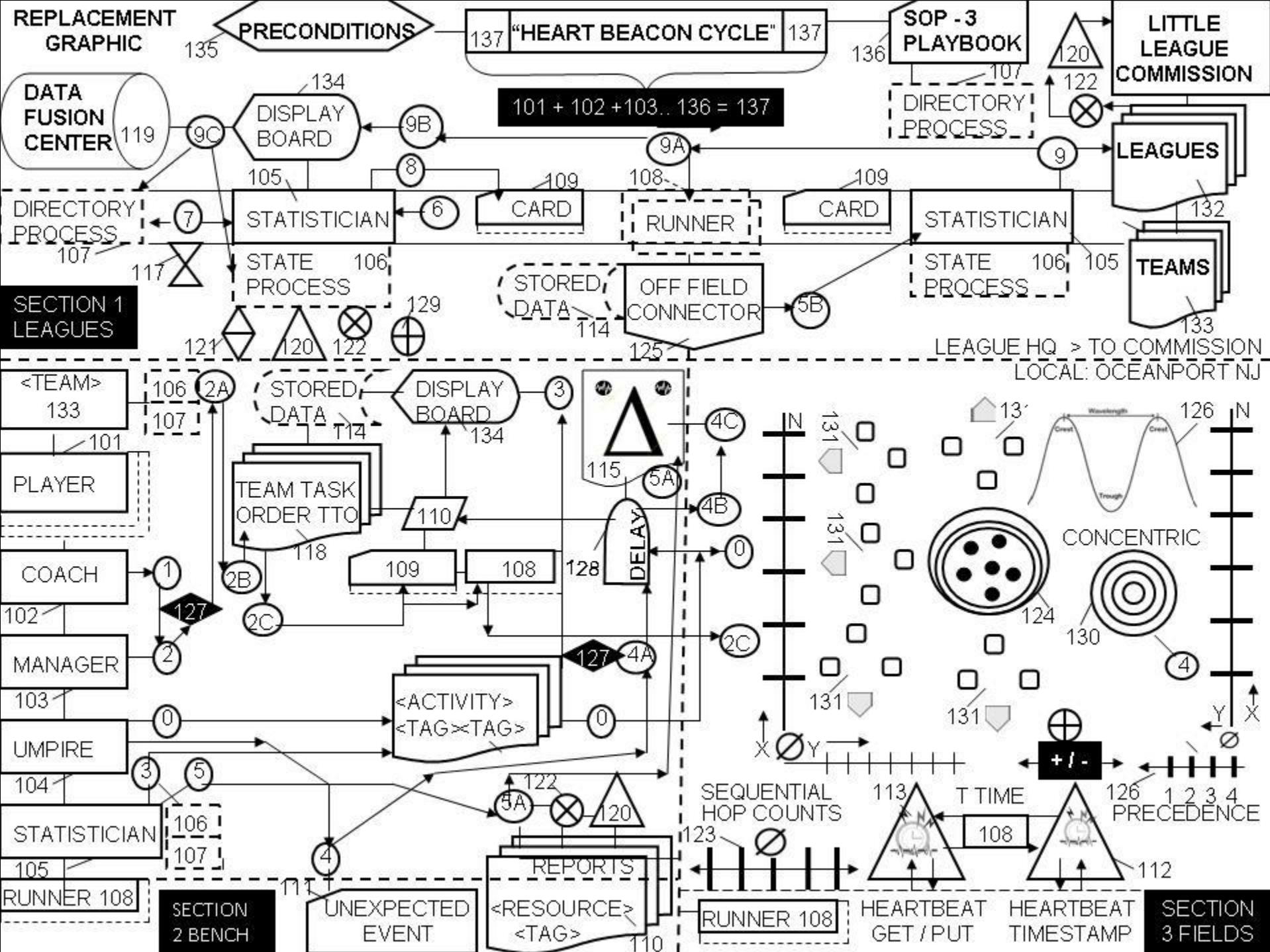
The most important equation in monetary economics, the equation of exchange:  $MV=PQ$ . The quantity of money (M) times the rate spent (V for velocity) equals the price of everything bought (P) times the amount bought (Q for quantity). In Bitcoin, M Money is on a predetermined path, converging to 21m bitcoins. In relation to the other variables, Bitcoin is fixed. V, P, & Q fluctuate

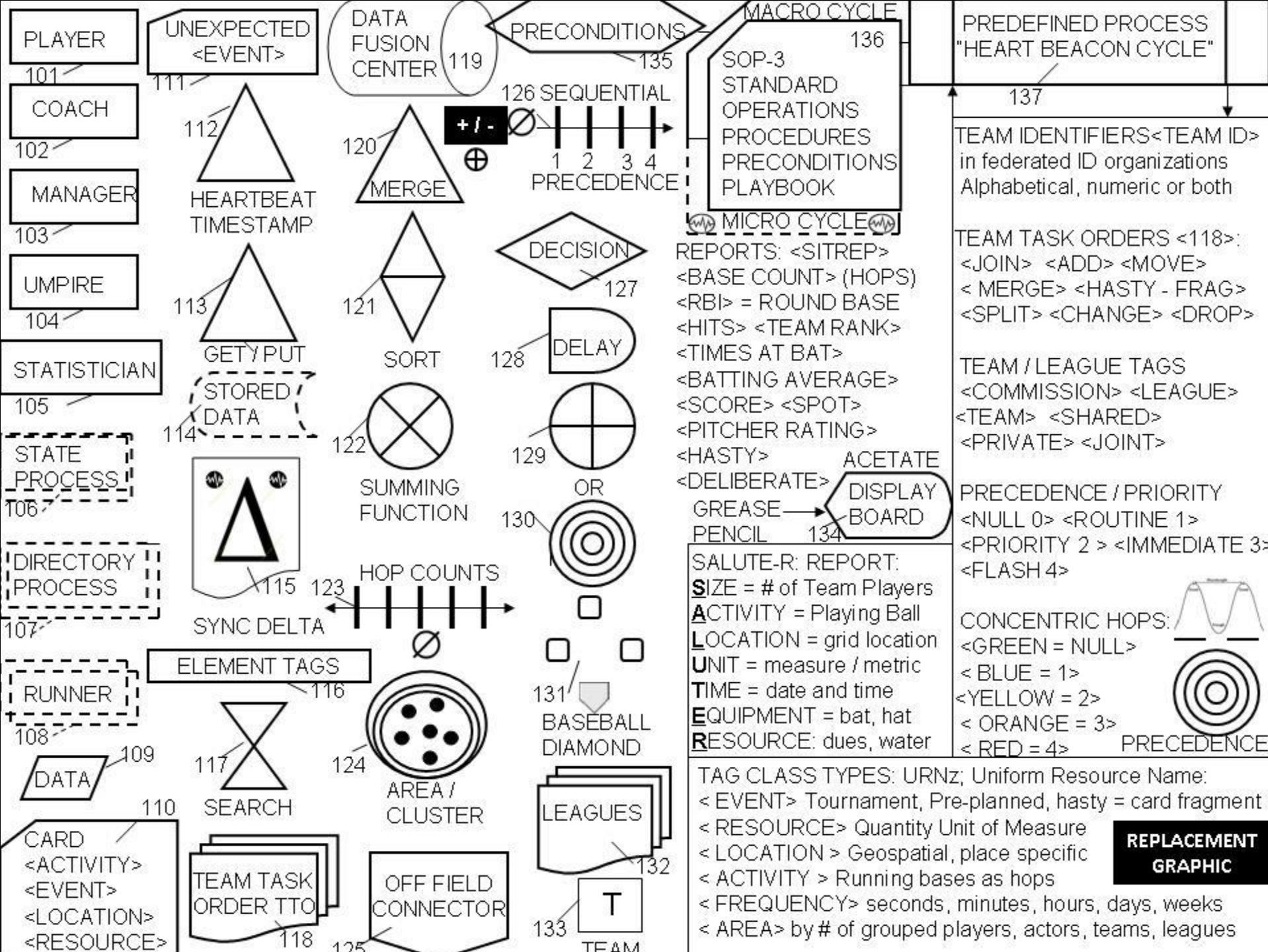


**Gamification** is the use of game thinking and game mechanics in non-game contexts to engage users in solving problems. Gamification techniques strive to leverage people's natural desires for competition, achievement, status, self-expression, altruism, closure.









# BUILDING BLOCKS



TASK ON / OFF

201

**B1: BUILDING BLOCK 1: TCP/IP HEARTBEAT TIME STAMP & DATA GET / PUT OF ORG ID / URN IN MICRO / MACRO CYCLES PRIOR TO DATA FUSION CENTER INSERTION**



MACRO CYCLES



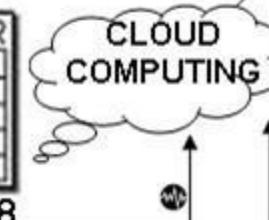
.0001

MICRO CYCLES

216



218



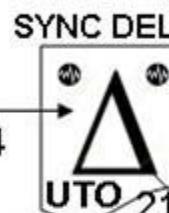
219

**202 FEDERATED GROUP JOINS, MERGE, ADDS, DROPS**

**B2: BUILDING BLOCK 2: ADAPTIVE, CYCLIC, ITERATIVE PROCEDURAL TEMPLATES: XML ARTIFACTS i.e. UNIT TASK ORDER & K00.99 HEARTBEAT SYNC DELTA MESSAGES / STATE META DATA SNAPSHOTS IN NETWORK EXECUTION MANAGEMENT MARKUP OF SERVICE INTERFACE ARTIFACTS**



214



UTO 213

ADHOC / AGILE  
FEDERATED <ID>  
GROUPS SYNC'D  
IN TIME / SPACE



215 LEADER'S  
INTENT  
DECISIONS



211



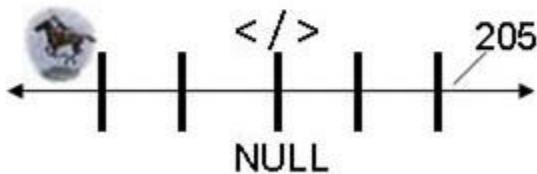
210

203

**B3: BEACON TECH TYPE I: PAUL REVERE LINEAR, SEQUENTIAL HOP COUNTS**



SYNC DELTA METRICS IN SLA CLAUSES AS  
MOE, MOP METER IN TAX CODES, TRANCHE  
CLASSES / RATINGS ARBITRAGE TRIGGERS



LENGTH, THRESHOLD, INTENSITY, DURATION



SEARCH FOLLOWED BY ARBITRAGE INVITES VIA  
BEACON NEWSCASTS. INVITE ACROSS SPACE / TIME

208



APPLIQUE' OVERLAYS



204

**B4 BEACON TECH TYPE II: WATER DROP IN POND RADIUS, CIRCUMFERENCE GEO SPATIO-TEMPORAL**

MAP VIEWS GEO-LOCATION SPECIFIC  
SHOW SYNC DELTAS BY GROUP /  
RESOURCE TYPE, EVENT CLASS /  
NEWSCAST BY TRANCHE <CLASSES>

209

**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



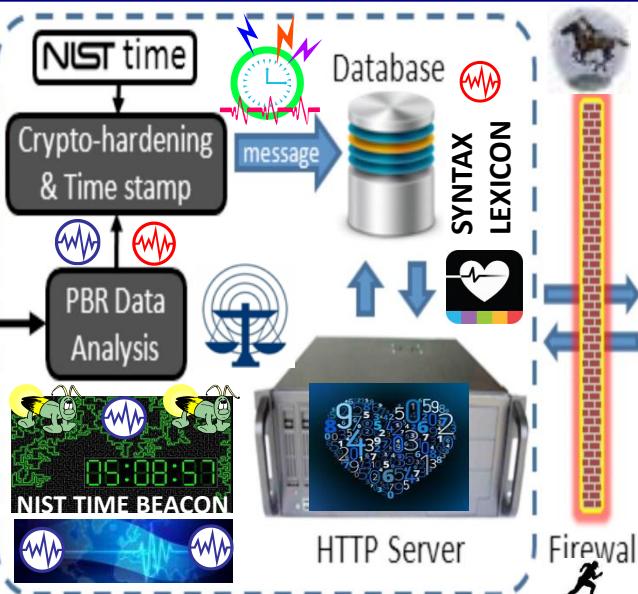
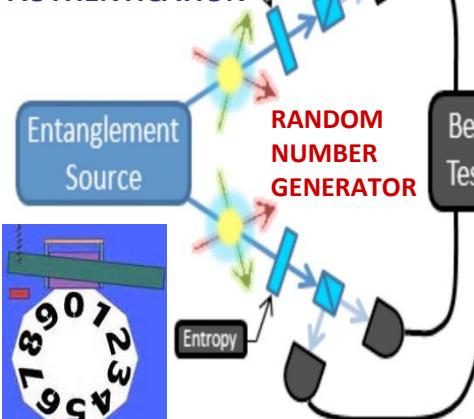
## NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

UNPREDICTABLE SAMPLING

SECURE AUTHENTICATION

SECURE MULTI

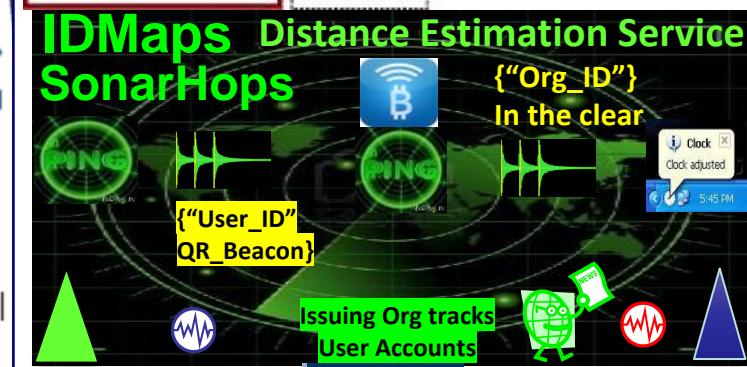
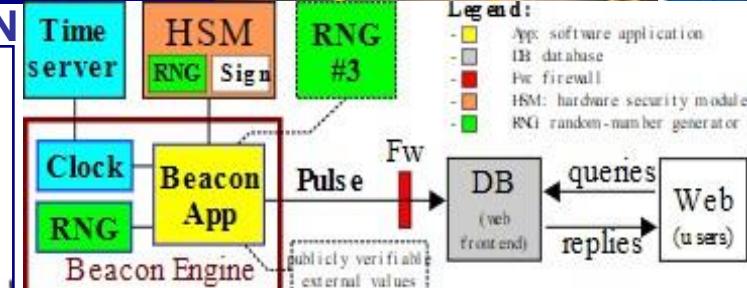
PARTY /  
AUTHENTICATION



**NIST**

**NON  
REPUDIATION**

Legend:  
■ App: software application  
■ DB: database  
■ Fw: firewall  
■ HSM: hardware security module  
■ RNG: random-number generator



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors

**NAMED DATA  
NETWORKING**



NDN  
 </Interest>  
 </Distance>

**SURVEY METHODS + TRIANGULATION**  
 Euclidian Geometry

**Geodesic System Routing Info Base RIB**

**ACCOUNT BELONGS TO </Org\_ID>**

**RESOURCE TYPE: <URN><URN><URN>**

**DEVICE / SENSORS <UUID><UUID>**

Higher-level services collect distance data to build virtual distance map of Internet & estimates distance between any IP address pair

Time / Distance Metrics



PROXIMITY

**OFFSHORE BEACONS ONSHORE**



ONSHORE

NDN  
 </interest></distance>

NDN  
 </interest></distance>

The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind Coordinated Universal Time (UTC). However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC. **Stochastic Harmonization**

**Firefly-Heartbeat Algorithm**  
**UNIVERSAL TIME ZONE SYNC UTZ**

**Sync Events to Closest HBC**

**<"USER\_ID"> + QRB**

**<"INTEREST">**

**<"ORG\_ID">**

**<"URN">**

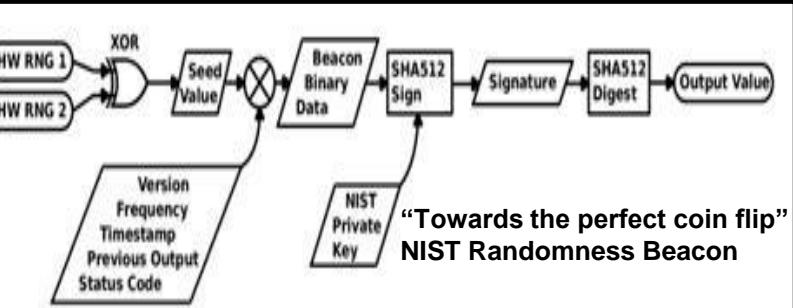
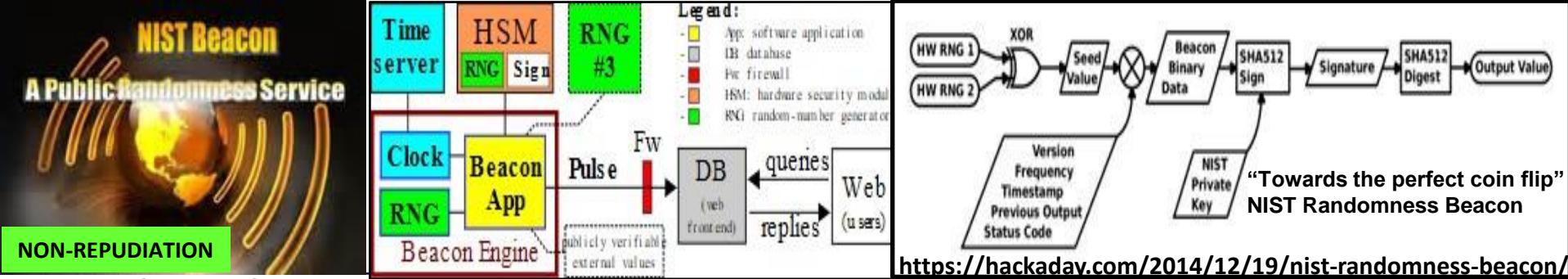
**AGGREGATE, SUM**

**STAT MEAN VALUE INDEX**

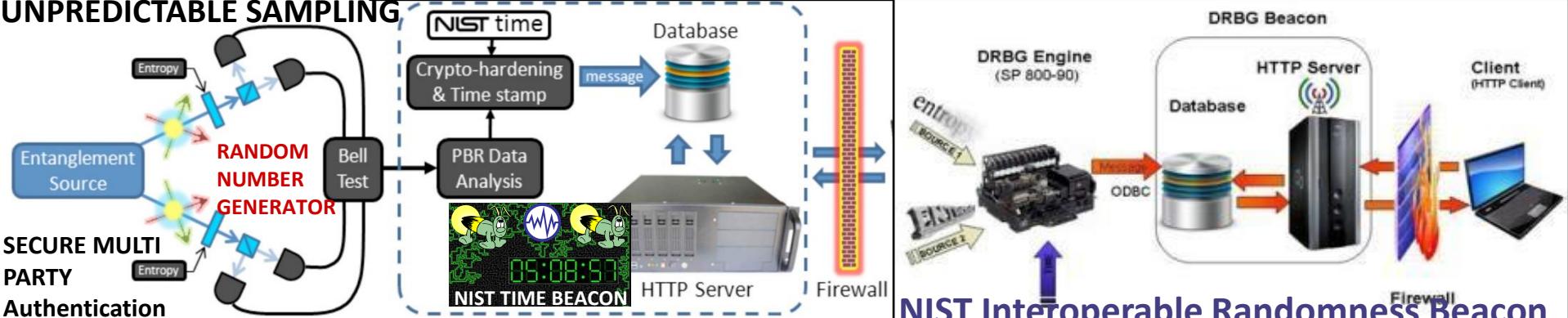
**EVENT BUS**



The proposed **Universal Timezone System** would do away with all these different



<https://hackaday.com/2014/12/19/nist-randomness-beacon/>



## NIST Interoperable Randomness Beacon

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, in order to obtain information about past pulses.

A randomness beacon produces timed outputs of fresh public randomness. Each output, called a pulse, includes metadata / cryptographic elements

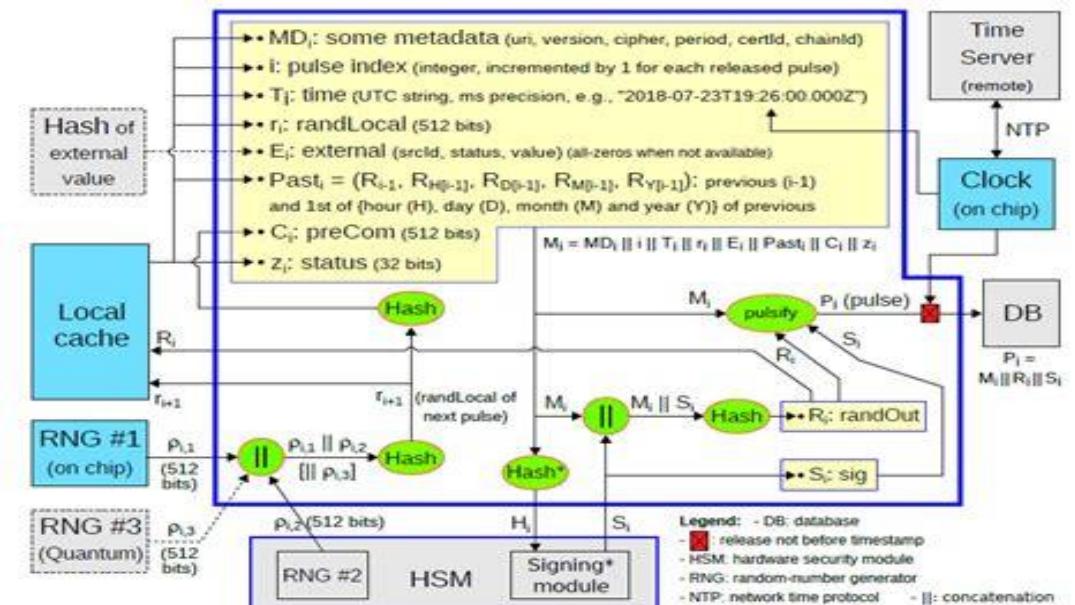
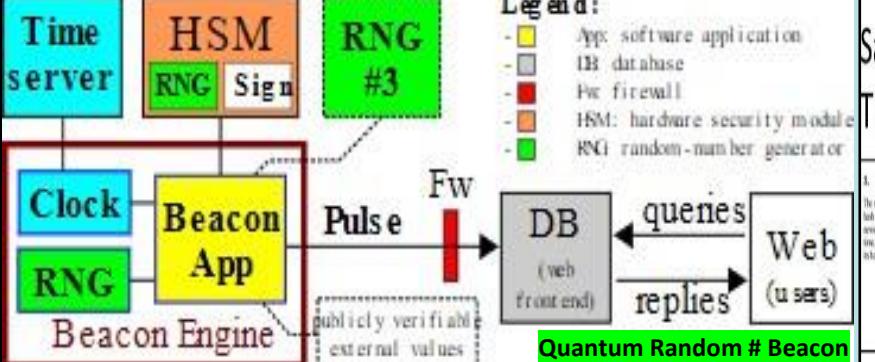


Figure 2. Illustration of the generation of the  $i^{\text{th}}$  pulse by a Beacon App (2.0)

The main goal of the NIST Random # Beacon is to serve as a baseline for deployment of many interoperable beacons

ALL THINGS NET FORMED WITH: Building Blocks:  
 1) EPOCH TIME CYCLES  
 2) SYNTAX / Opcode Brevity codes Programmable Economy / \$\$\$

## NIST Quantum Random Number Beacon



"The external environment could update resources at random..."



One solution is a **heartbeat**: defining a default lease duration delaying updates until the next **cycle**"



## QubitCoin Interval: Every 30 Seconds

The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC. **INCENTIVIZE ECO-FRIENDLY TRANSACTIONS**

**ENVIRONMENT FRIENDLY ECO INCENTIVES**

["INTEREST"]  
["DISTANCE"]

NDN  
FIREFLY HEARTBEAT ALGORITHM

HEARTBEAT {108"} MESSAGES

STATE META DATA SNAPSHOTs



Proximity Beacons

CLOSER = LESS FUEL  
CLOSER = FASTER

G7 Carbon

vector

Unused Resources

Int'l Date Line

OFF

BLOCKTIME ARBITRAGE

Multi Meme Meter

CO<sub>2</sub> Credits

Unmet Needs

IDMaps

SonarHops

SHORE

STAT MEAN

VALUE INDEX

$\sum$

$\Delta \delta$

X

M

H

Sync To Closest

HEARTBEAT EPOCH

CO<sub>2</sub> Credits

Unmet Needs

IDMaps

SonarHops

SHORE

ON

Carbon

vector

Unused Resources

Int'l Date Line

OFF

SHORE

ON

Carbon

vector

Unused Resources

Int'l Date Line

OFF

SHORE

ON

Carbon

vector

Unused Resources

Int'l Date Line

OFF

SHORE

ON

Carbon

vector

Unused Resources

Int'l Date Line

OFF

SHORE

ON

Carbon

vector

Unused Resources

Int'l Date Line

OFF

SHORE

The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



PROOF of SPACE-TIME  
 Firefly - Heartbeat Sync Algorithm  
 Heartbeat Event Message Bus  
 UTZ stochastic harmonization

## Epoch Time Cycles

E0 E1 E2 E3...

Genesis

Epoch

**E0**

**E1**

**E...n**



ROSETTA

STONE

BREVITY

CODES

Attribute Series

Time Series

Value

Time

t<sub>1</sub>

t<sub>2</sub>

t<sub>3</sub>

Geo

Spatial

300 +

Message

Sets

Workflow

Filters

3D

4D

5D

6D

7D

8D

9D

10D

11D

12D

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14D

15D

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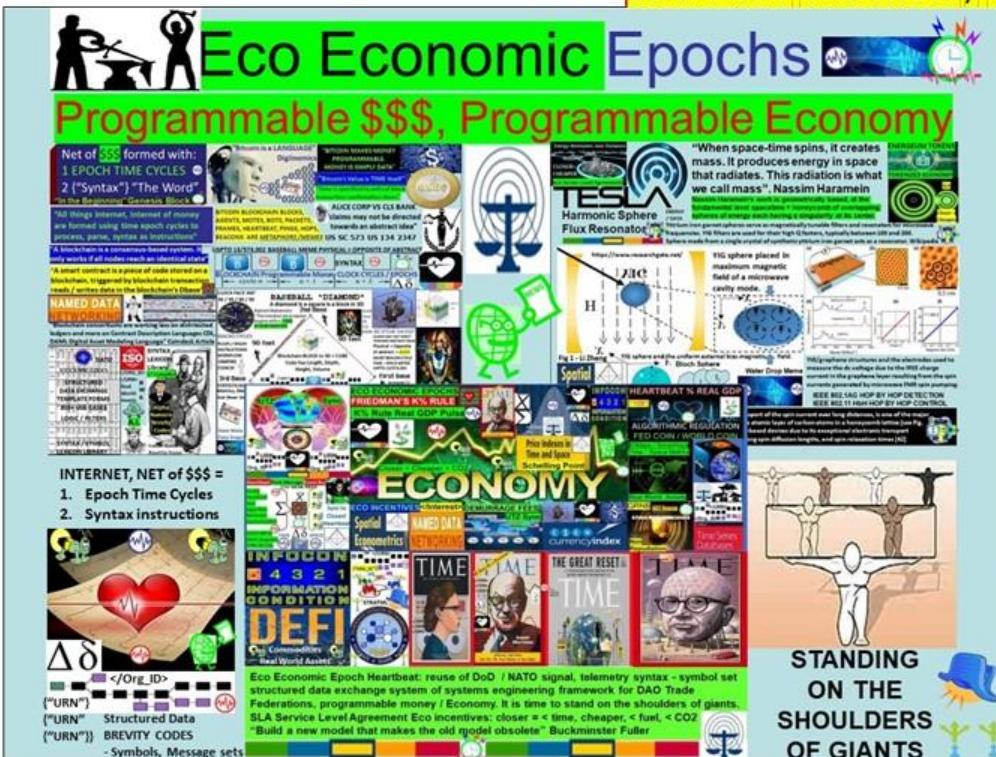
World monetary unit  
World energy grid



# MICRO CHIP BASED CURRENCIES CRYPTO CURRENCY MINING CHIP FARMS



## GEO MAGNETIC POLE SHIFT EVENTS



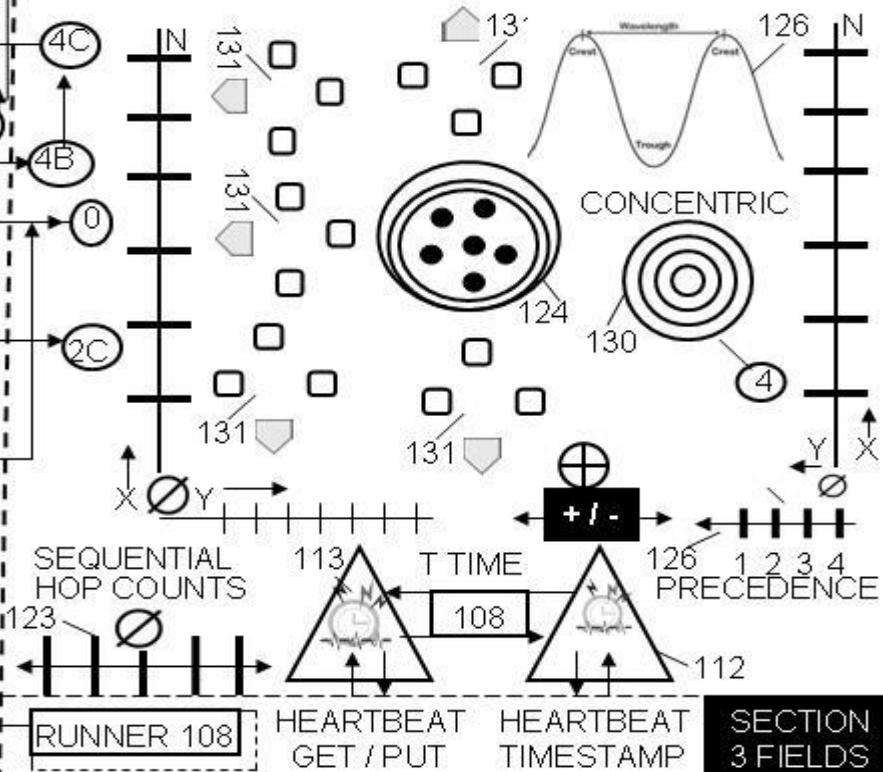
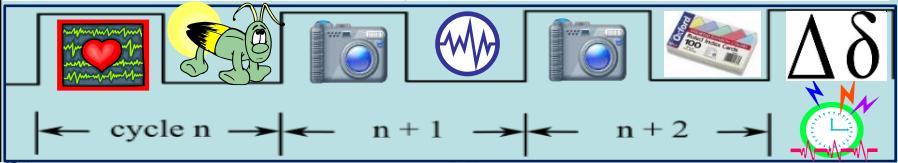
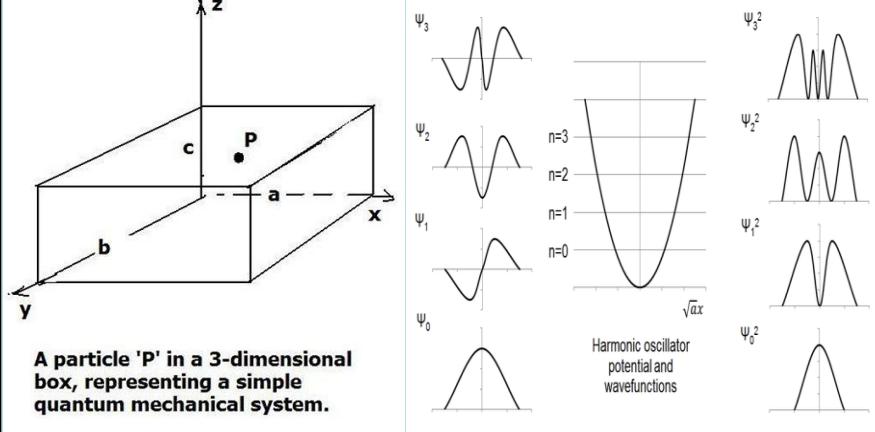
# Solar Nova + Pole shift Vs Crypto chips

The 1859 Carrington Event impacted telegraph wires. Is it time to relook at the world's monetary unit of value in light of a energy grid / internet that is disabled? The Carrington Event was the most intense geomagnetic storm in recorded history, peaking from 1 to 2 September 1859 during solar cycle 10. It created strong auroral displays that were reported globally [1] and caused sparking and even fires in multiple telegraph stations. The geomagnetic storm was most likely the result of a coronal mass ejection (CME) from the Sun colliding with Earth's magnetosphere. [2] #money #currency #energy #solar #nova



Germany Weimar Republic 1929  
E 5 reichsmark Silver Silver Plated

## QUANTUM COMPUTING / HBC TIME – SPACE METER / METRICS



#QuantumComputing USct Alice Corp Vs CLS Bank compliant memes:  
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: the two states are vertical polarization and horizontal polarization. In a classical system, a bit has to be in one state or the other. Quantum mechanics allows a qubit to be in a superposition of both states at the same time, a fundamental quantum computing property

US Sct Alice Corp Vs CLS Bank Physical memes

Linear sequential "Paul Revere" meme = horizontal polarization

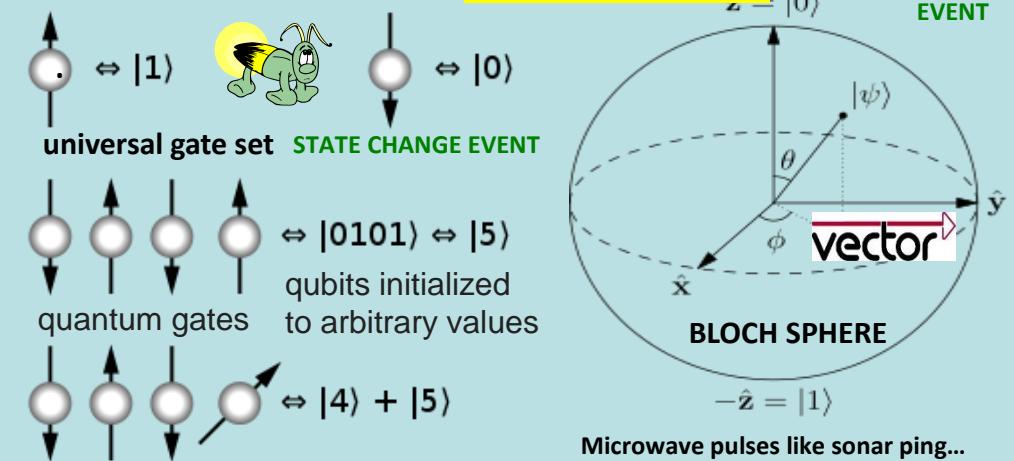
Vertical polarization vectors from a known point 0 null Sonar Hop meme



particle representation / samples



Instead of each bit having two potential states — on or off — a quantum bit or qubit has three. It can be on, off, or both, and you only know which one it is once you look at it. How can you tell if a bit of data is correct if looking at it might change its state?



qubits can be in a superposition of all the classically allowed states

silicon device movement is controlled through use of microwave pulses. As an electron spins up, a binary value of 1 is generated, when the electron spins down, a binary value of 0 is generated.



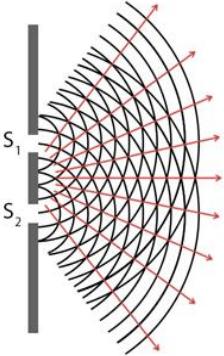
Fock state number state quantum state that is an element of a Fock space with a well-defined number of particles (or quanta)

# Double-Slit Experiment

Screen with two slits

PARTICLE ?

Sodium lamp



Screen

WAVE ?

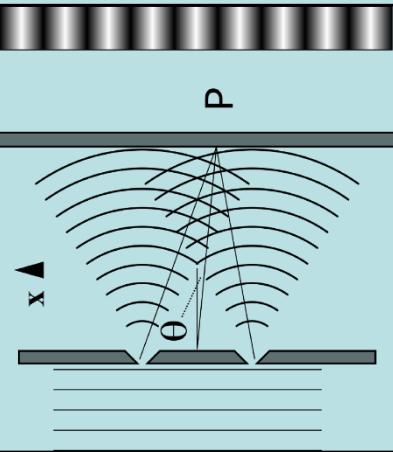


Light source      Rays of light coming from the source reach the slits

Interference of light waves due to two tiny slits and arrows indicate direction of wave propagation

Alternating bright and dark fringes due to interference of light waves

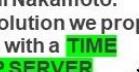
QUANTUM COMPUTING  
- RESISTANT ? - BASED ?  
THROUGH LENS OF SCOTUS  
ALICE LOOKING GLASS RULING



CLOCK FACE 360°  
90 / 90 / 90 / 90



**BASEBALL "DIAMOND"**  
A diamond Is a square Is a block in 3D  
2nd Base



CLAIMS MAY NOT DIRECT TOWARDS ABSTRACT IDEAS  
Physical = Opposite of abstract = ALICE  
HEART BEACON CYCLE  
TIME – SPACE METER  
USPTO 13/573,002

first base  
RUNNER  
Message Bus

Firefly – Heartbeat Algo  
EVENTS

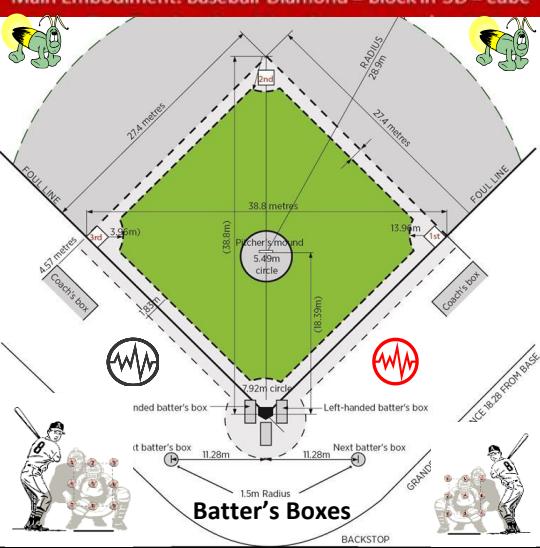
Fix {"108"}  
FLASH MESSAGE EVENT BUS

TIME STAMP SERVER  
 $\Delta\delta$   
Epoch Time Cycles

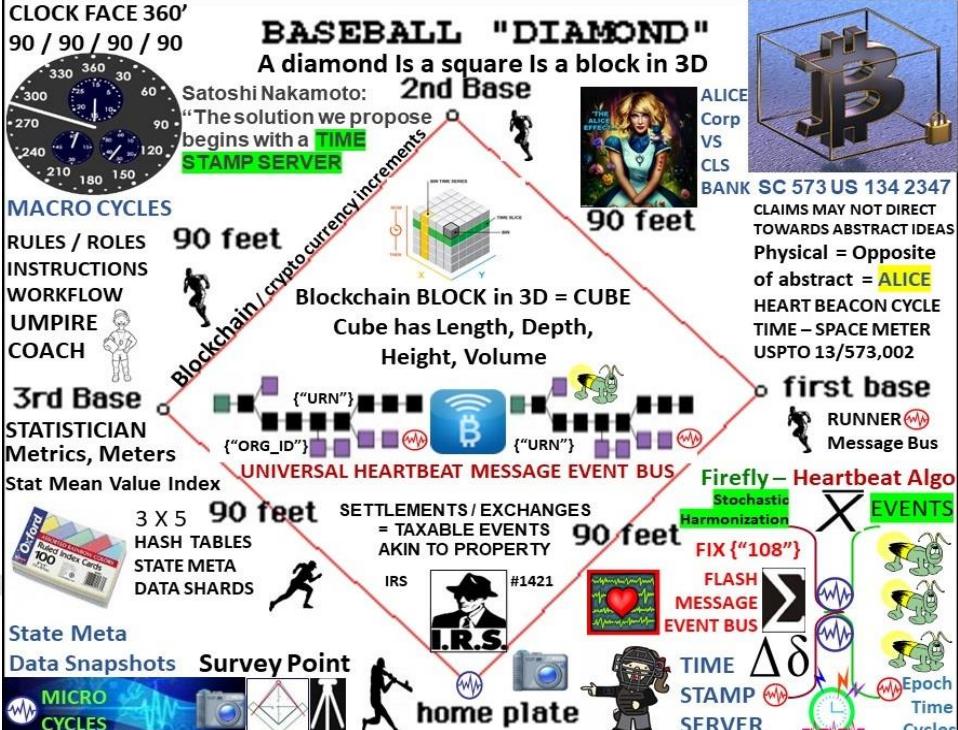
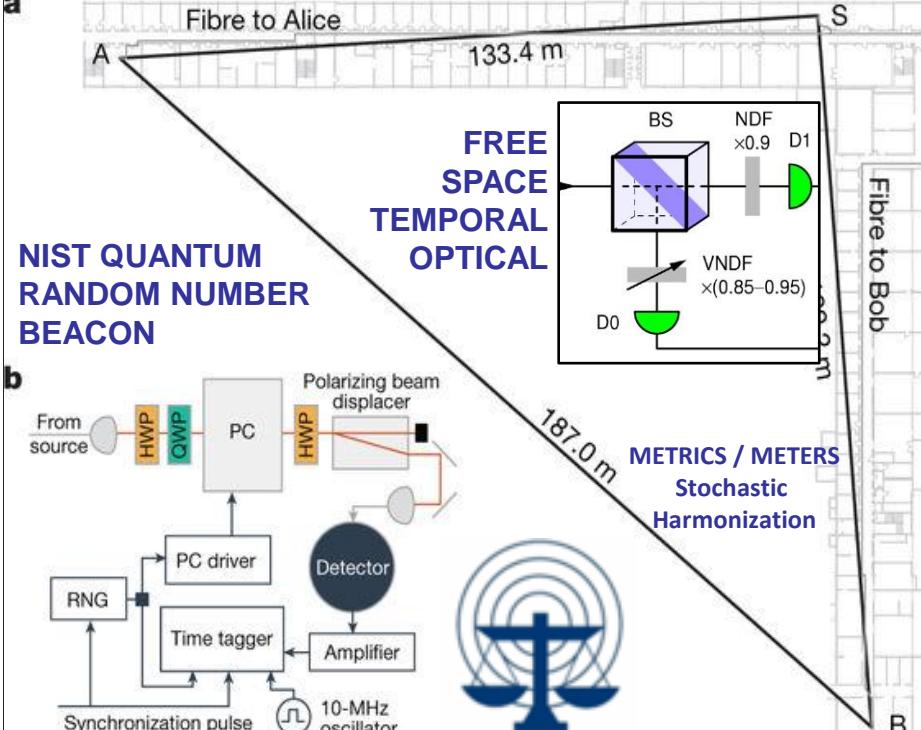
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

Main Embodiment: Baseball Diamond = block in 3D = cube



**SCOTUS ALICE RULING:** “Claims may not direct towards abstract ideas” / Physical = opposite of abstract



# The Hopf Fibration

Edmund Harriss

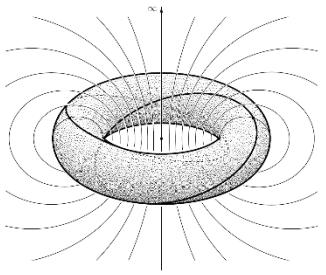
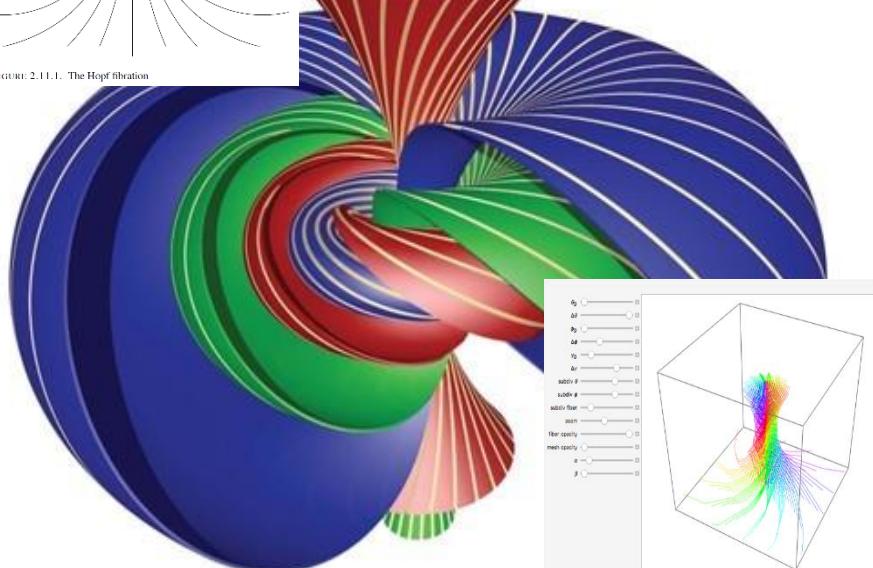
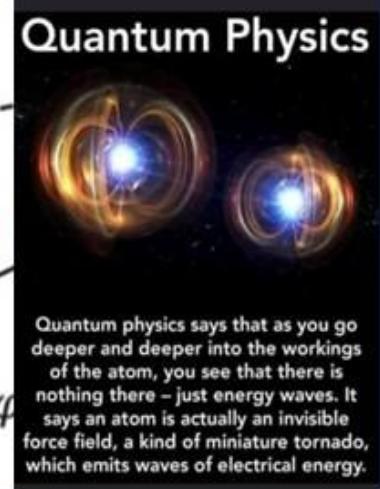
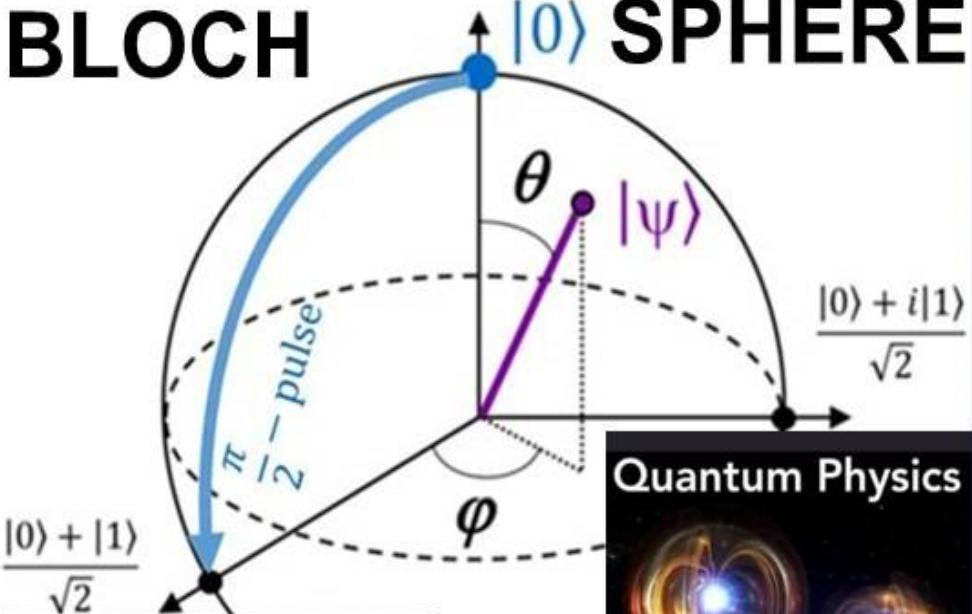


FIGURE 2.11.1. The Hopf fibration



# BLOCH SPHERE



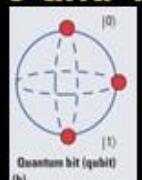
## Hopf Fibration / #Bloch sphere

"the most important object in the universe"

"Hopf fiber bundles pop up in 8 quantum physics situations"... USPTO 13/573,002 water drop in pond meme / scalar wave in 2D - 3D

Paul Revere linear - sequential hop count meme

The Bloch sphere provides a useful means of visualizing the state of a single qubit & operations on it. Any point on this sphere represents a linear combination of the 0 and 1 states with complex coefficients. A  $\pi/2$ -pulse 'rotates' a qubit from the 0-state to a superposition state.





# THE 1919 WORLD SERIES

## *What Really Happened?*

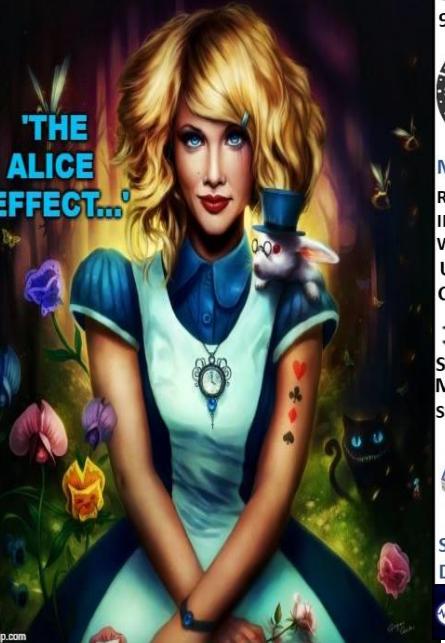
**William A. Cook**



**Stop patent trolls.  
Join The Alliance.**

### **Answers**

Application Developers Alliance

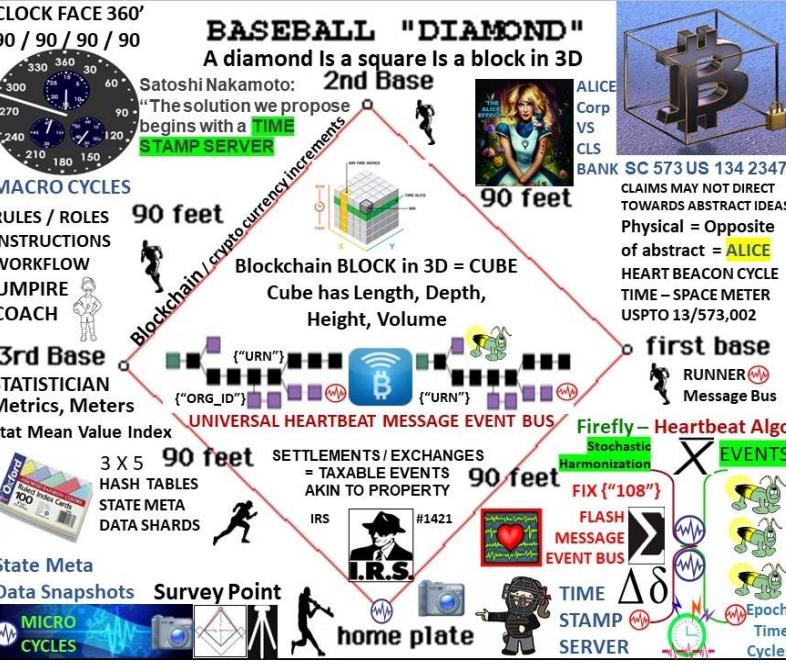


**Alice Corp. v. CLS Bank International, 573 U.S. 134 S. Ct. 2347 (2014)**  
**RULING:** “claims may not direct towards abstract ideas”



# USPTO SCREEN CAPTURES SUSPENDED PAIR RULES

- Moved Examination outside PAIR
  - Admin forms, fees, amendments.. MUTED
  - NO Time Stamps = TEMPORAL AMBIGUITY
  - Screen captures before / after filing

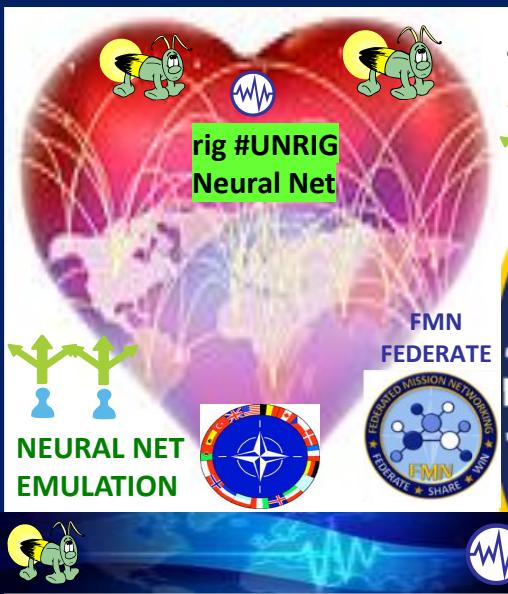






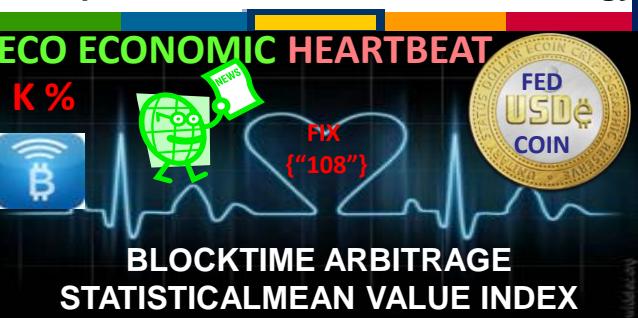
MINIMUM LIST OF COMPONENTS, BUILDING BLOCKS, PROCESSES, PROCEDURES AGREED ON BY TRADE FEDERATIONS TO ACHIEVE DISTRIBUTED AUTONOMOUS ORGANIZATION DAO CONSENSUS





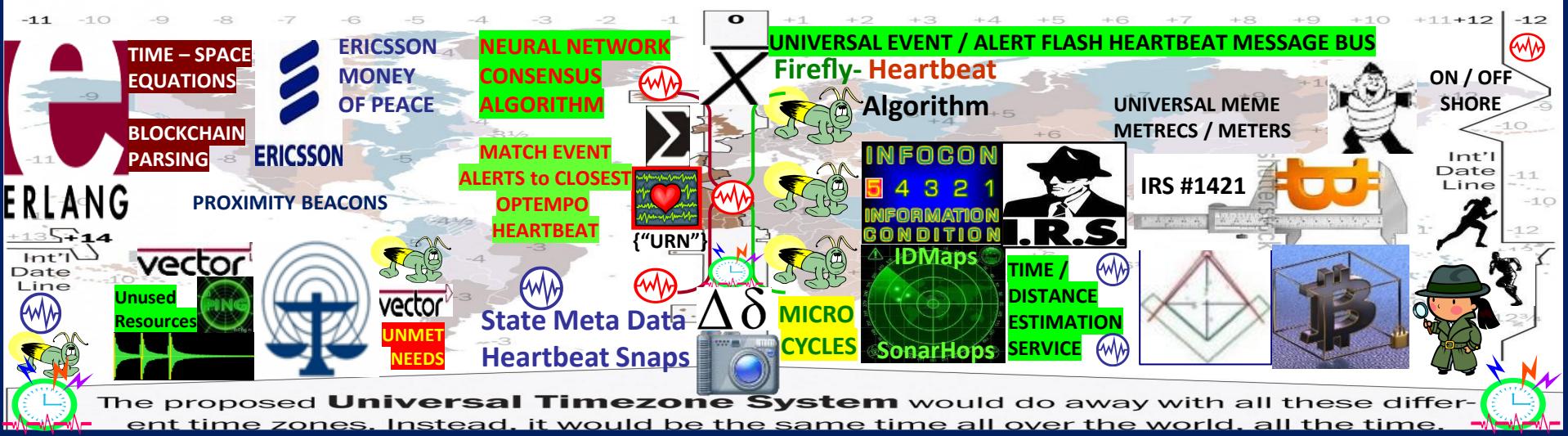
# #UNRIG Marine Corps Data Center Robert Steele RIP

twelve reforms needed to create educated engaged democracy, unrig the "pay to play" system + DoD system of systems  
engineering structured data exchange  
best practice foundation DeFI technology



Heartbeat synchronization strives to have nodes in a distributed system generate periodic, local “heartbeat” events approximately at the same time with a goal of all nodes starting and ending cycles at the same time eventually = sync to the closest **OPTEMPO HEARTBEAT**

The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC. **UTZ TIME ZONE STOCHASTIC HARMONIZATION**



The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.

# DAO: Distributed Autonomous Organization

## RAND term circa 2000 / The TAO OF THE DAO

### SWARMING AND THE FUTURE OF CONFLICT



RAND

RAND  
Monograph  
Report

THE  
ADVENT  
Of NETWAR



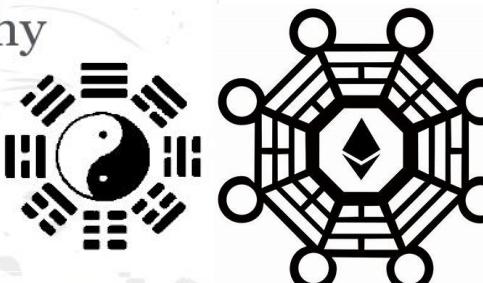
<http://cointelegraph.com/news/112077/the-new-frontier-after-cryptocurrency-cryptoequity>

## Taoism Philosophy

Taoism represents:

- Contraction of the past to the future.
- The transcendence of time and place.
- The balance of the old and the new.
- The balance between opposing forces and desires.

Overall the Taoism Philosophy represents "The Way" in which to live.



(An ancient philosophy tradition. This article involves the yin-yang or principle of harmony and change.)

Eris, The Dawn of Distributed Autonomous Organizations and The Future of Governance

@TheBitcoinArmy





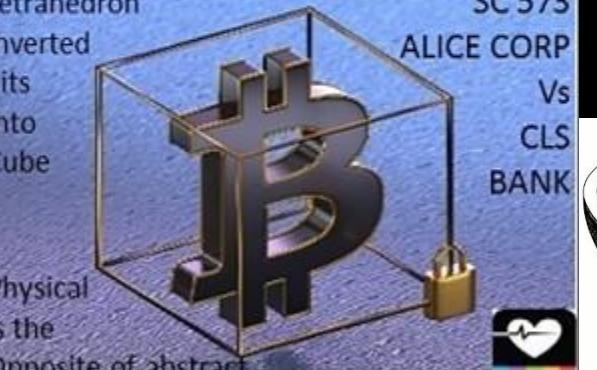
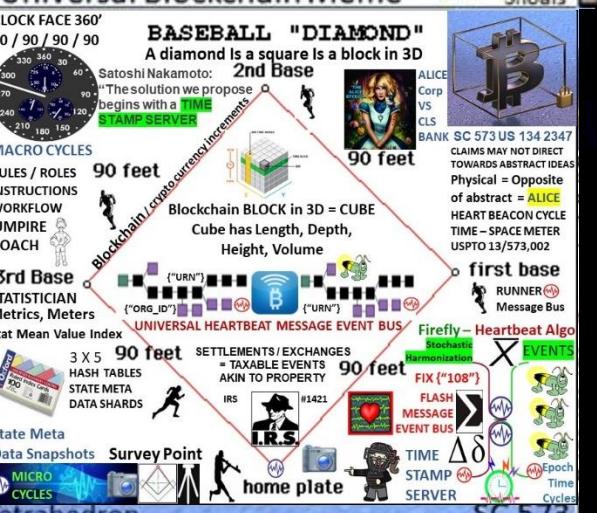
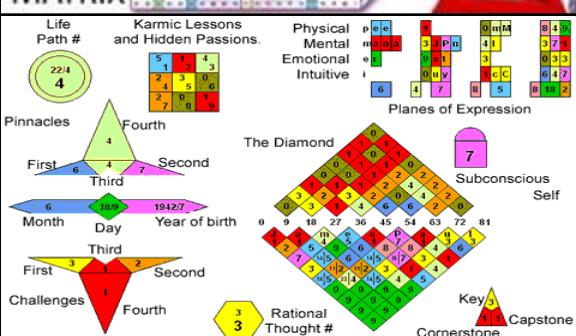
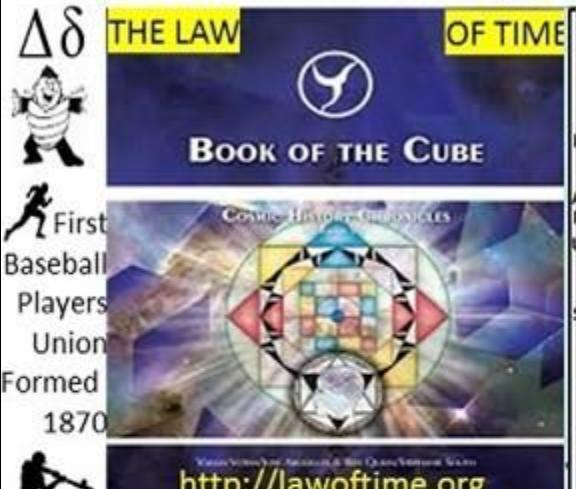
USPTO APPLICATION 13/573 002

## The Heart Beacon Cycle Time-Space Meter

Main Embodiment: Baseball Diamond = block in 3D = cube

$$1 + 3 + 5 + 7 + 3 + 2 = 21 \quad 21 \text{ squared} = 441$$

"We can synchronize ourselves in time for a common purpose" Universal Blockchain Meme



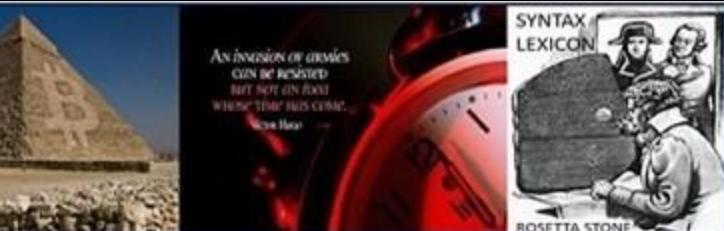
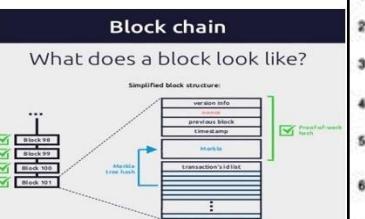
atoshi Bitcoin Blockchain  
ime Stamp Server

**TIMESTAMP SERVER**  
 In order to propose begins with a timestamp server. A timestamp server works by taking a block of blocks to be timestamped and publicly publishing the hash, such as  $H_1$ , of the first block. This hash is then used to timestamp the second block,  $H_2$ . This continues until the obviously, in order to get into the hash. Each timestamp includes the previous timestamp in its header, forming a chain, with each additional timestamp referencing the one before it.



```

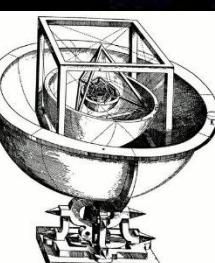
graph LR
    subgraph TS [Timestamp Server]
        direction TB
        TS_in[Blocks] --> TS_out[Hash]
    end
    TS_in --- TS_out
  
```



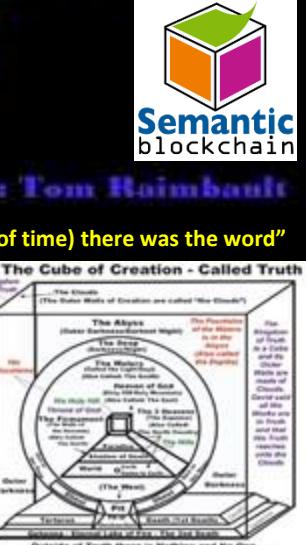
## Metatron's Cube and the Platonic Solids



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



GENESIS OF ALL FORM





"There is only one revolution tolerable to all men, all societies, all political systems: revolution by design and invention."

-Buckminster Fuller



## THE GREAT CONJUNCTION IN AQUARIUS

HERALDING THE NEW AGE  
On December 2020, Jupiter and Saturn unite in the sign of Aquarius, forming a configuration called a Great Conjunction which only happens once every twenty years. Great Conjunctions are often longterm beginnings or foundations formed out of unstable circumstances. In the sign of AQUARIUS, this is likely to mark a major technological boom that will culminate on 2030 and last until 2040, the next Great Conjunction.

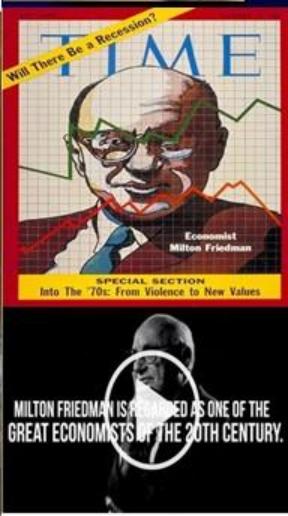
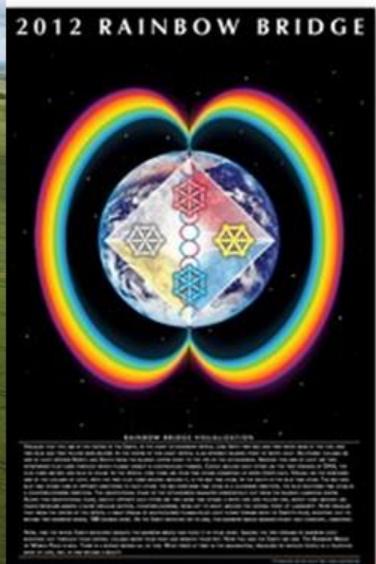
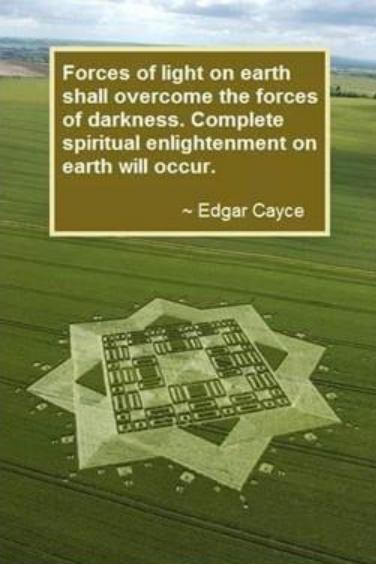
Over the next ten years, we are going to see our world innovate unlike never before, particularly in the fields of AI, technology, science, space travel, UFOs, networks, and the Internet. Major Universal truths will also be revealed as we welcome the New Age of Aquarius. The old world will soon come to an end, paving way to the new order of things.

photo by werner du plessis



Forces of light on earth shall overcome the forces of darkness. Complete spiritual enlightenment on earth will occur.

~ Edgar Cayce



"ONLY A CRISIS—ACTUAL OR PERCEIVED—PRODUCES REAL CHANGE. WHEN THAT CRISIS OCCURS, THE ACTIONS THAT ARE TAKEN DEPEND ON THE IDEAS THAT ARE LYING AROUND."

That, I believe, is our basic function: to develop alternatives to existing policies, to keep them alive and available until the politically impossible becomes politically inevitable.

Milton Friedman — Preface to Capitalism & Freedom 1962

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: sets the money supply growth at a rate equal to the growth of gross domestic product (GDP) yearly.

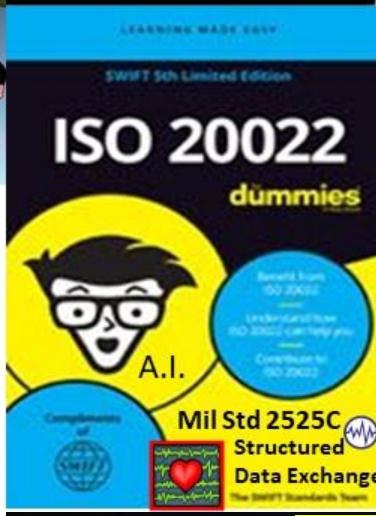
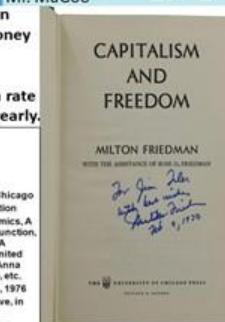


Milton Friedman

- 1912-2006
- Economist, monetarist
- 1946-1977: University of Chicago
- 1977-2006: Hoover Institution
- Essays on Positive Economics, A Theory of Consumption Function, Capitalism and Freedom, A Monetary History of the United States (1867-1960) - with Anna Schwartz, etc.
- Nobel Prize in Economics, 1976
- Considered as conservative, in reality liberal economist
- Advisor to President Nixon



Reverend K "I see Mr. MaGoo"



**The Age of Aquarius: Aquarius, Aquarius Rising @ 6:44 A.M. Feb 10<sup>th</sup> 1960**

**Buckminster Fuller "build a new model that makes the old model obsolete"**

**Socrates: focus all your energy on building the new, not fighting the old"**

#algorithmic #stablecoin #buckminster #fuller #cryptocurrency #Milton #Friedman

