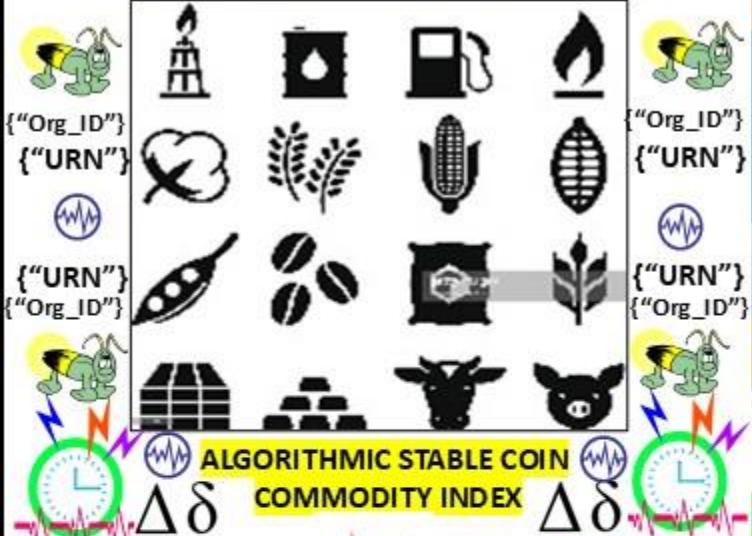




Tokenization of Physical Assets

RWA Pegged Currency / FIAT \$\$\$



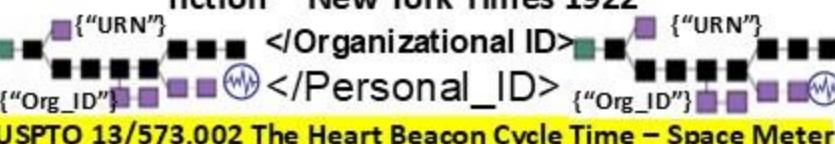
FIREFLY – HEARTBEAT ALGORITHM CHINA: nature-inspired metaheuristic optimization algorithm developed by Xin-She Yang flashing behavior of fireflies (Yang, 2008), adapted to solve continuous optimization problems (Lukasik and Žak) 2010, 2013



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

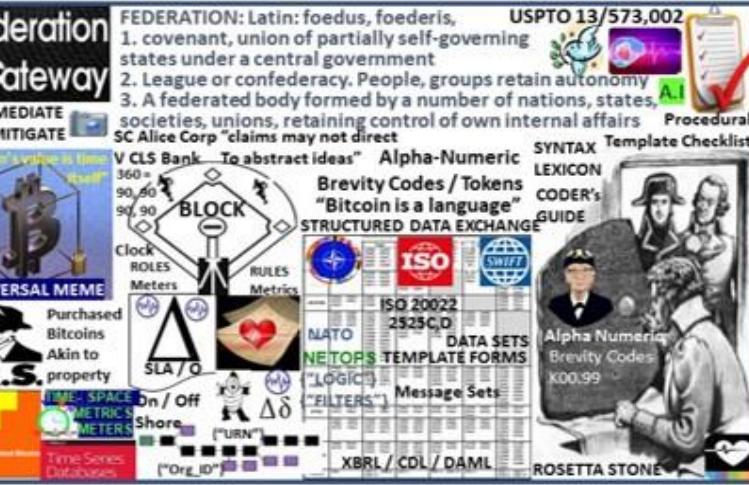
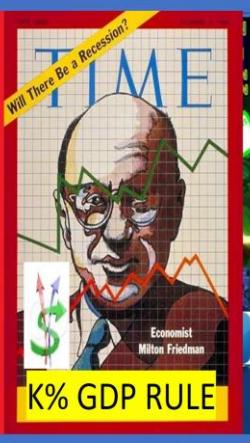


USPTO 13/573,002 The Heart Beacon Cycle Time – Space Meter

RBF's World Game

Signals & Telemetry

Annex K



RBF's World Game

Signals & Telemetry

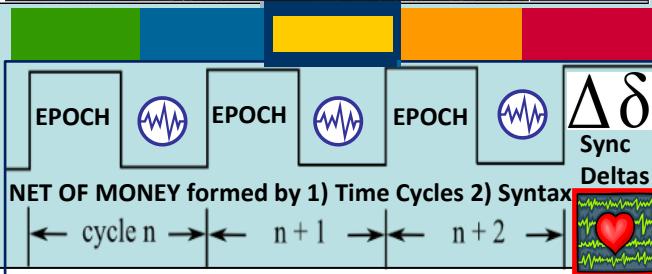
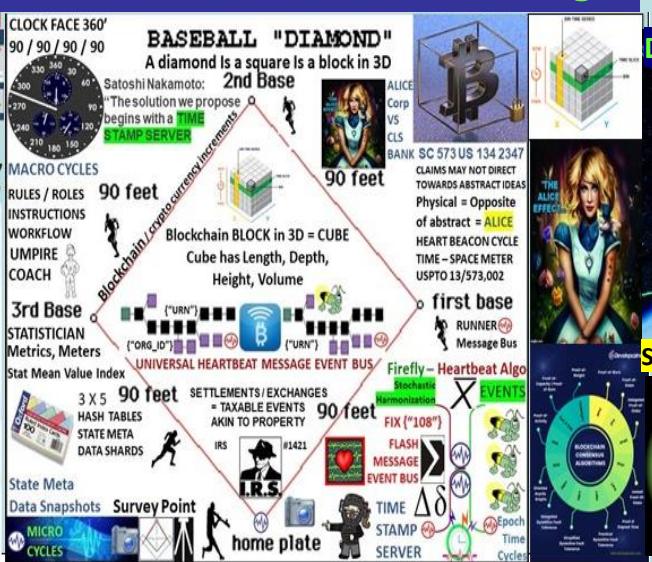
Annex K



USPTO 13/573,002

573 U.S. 134 SCt 2347

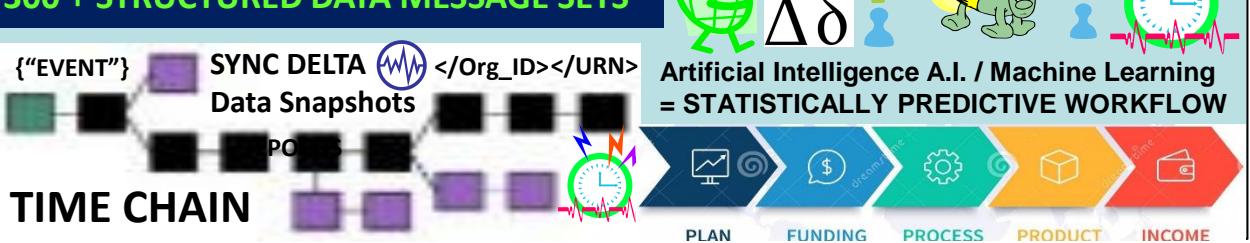
"Alice in Wonderland Ruling"



THEESIS: net, net of programmable \$\$\$ / value units
AI machine learning = statistical workflow formed by:

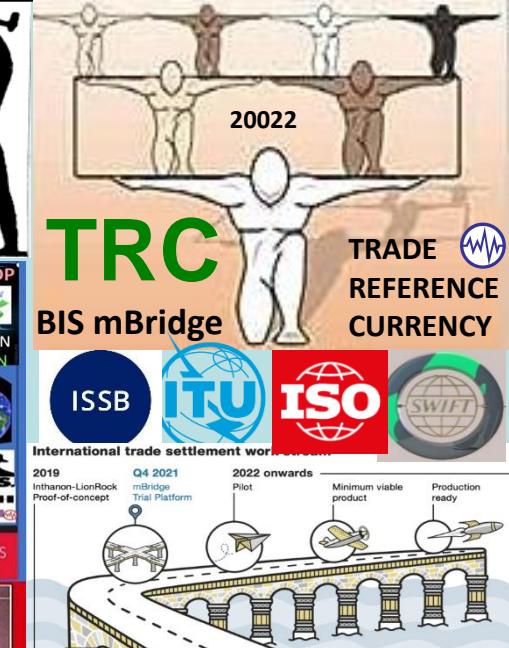
1. Epoch time cycles created by oscillating quartz crystal silicon chips
2. Syntax used / not used as code instructions in epoch time cycles.

A.I. standard syntax lexicon 300+ structured messages provide a comprehensive list, dbase of structured data exchange data elements, Message data sets support a net of value. designed to serve as a reference guide / data dictionary for international standards, technical papers on quantum, A.I., DeFi , Fintech..



World Game Annex K

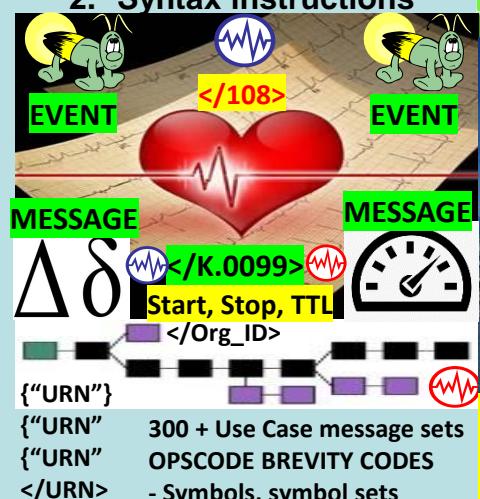
Signals & Telemetry

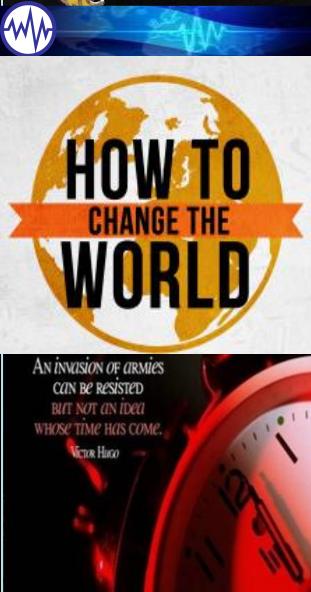
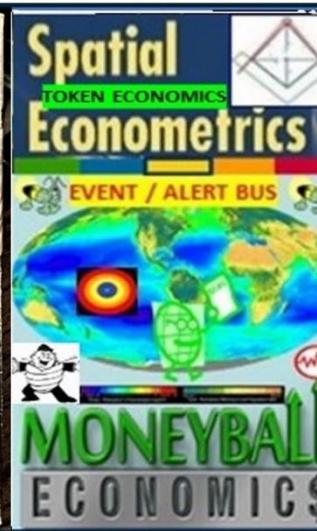
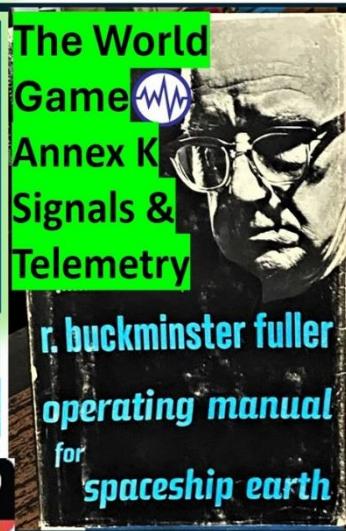
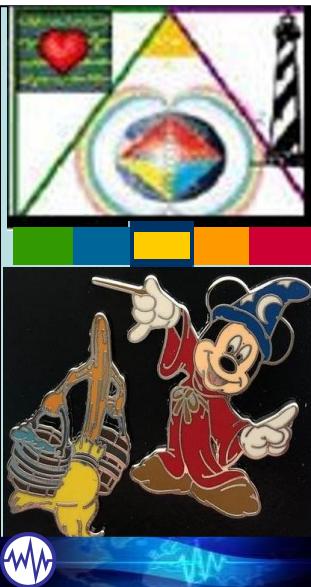


“Build a new model”
Standing on the shoulders of giants

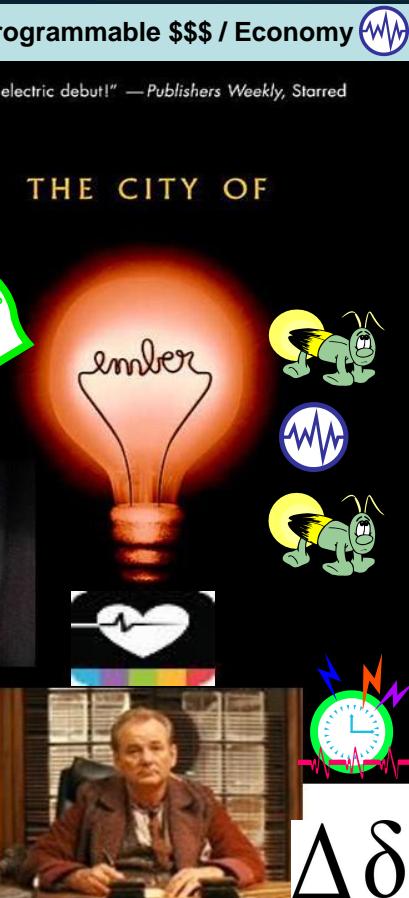
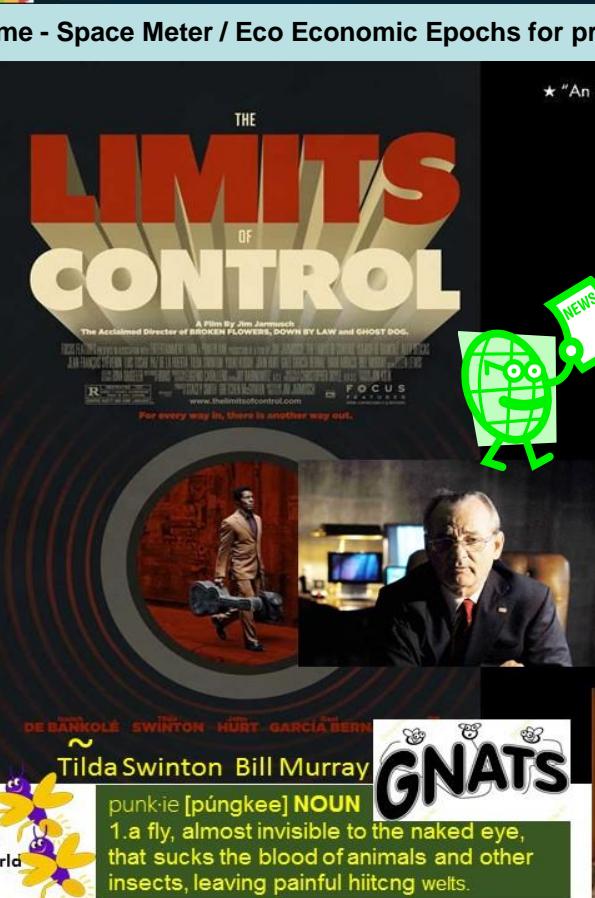
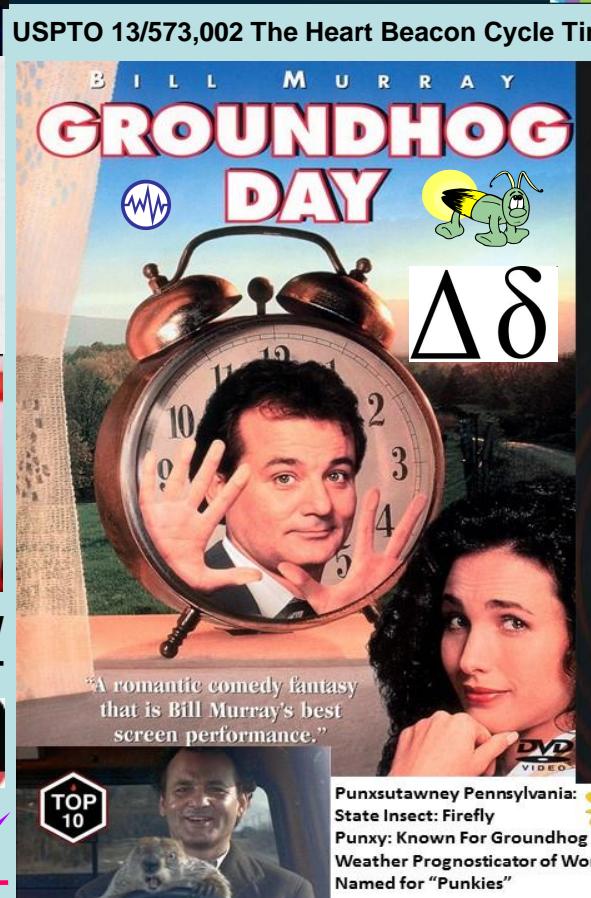


Eco Economic Epochs
For Programmable \$\$\$
Programmable Economy
Eco Economic Epochs
Symbol / Message Sets A.I.
FIREFLY Inspired Heartbeat Algorithm





UNIVERSAL LAW
CAUSE / EFFECT
ACTION /
INACTION
IF / Then /
or.. ELSE



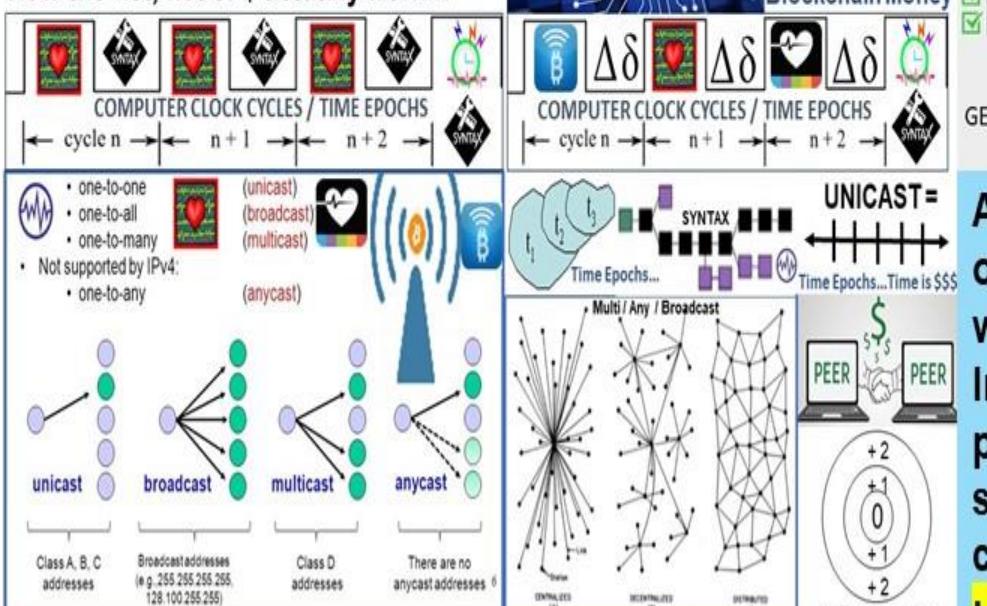
Foundation Technology Trinity:

1. EPOCH (s) = Time intervals, cycles
2. SPACE (land use meme) ex: IRS memo #1421 "Bitcoin transaction akin to land"
3. SYNTAX structured data mapped to symbols for A.I. / man - machine interface

THESIS: All net artifacts, net of \$ are formed with:
 1) Epoch time cycle intervals ex: chip oscillations
 2) Syntax parsed, processed in epoch time intervals

Time Epochs / Syntax:

How the net, net of \$ actually work...

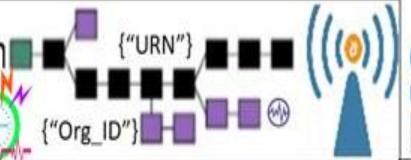


All things internet, programmable net of money are formed using:
 1) Epoch Time Cycles to 2) process (not) syntax as instructions

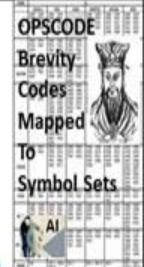
Epoch Time Cycles / Syntax

Internet / Internet of Money building blocks

Satoshi Bitcoin Blockchain
Time Stamp Server



Semantic blockchain



first base

RUNNER - Message Bus

EVENS

SETTLEMENTS / EXCHANGES

+ TAXABLE EVENTS

AKO TO PROPERTY

IRS

#421

FLASH MESSAGE

EVENT BUS

State Meta

Data Snapshots

Survey Point

TIME STAMP SERVER

home plate

TIME CYCLES

EVENS

TIME

STAMP SERVER

TIME CYCLES

Artificial intelligence (AI) syntax refers to the set of rules, principles governing the arrangement of words and phrases in a programming language. In the context of AI and natural language processing, syntax ensures that language is structured in a systematic way, for effective communication and comprehension.

Understanding syntax is essential for developers to write readable, maintainable, and scalable code



Artificial Intelligence / USPTO 13/573,002 Adaptive Procedural Template

Machine Learning: data input / output =
action (s): if, then else, or... do



Data, event cyclic time interval
sampling sync delta snapshots



Natural Language Processing programming
computers to process human languages to
facilitate interactions between humans /
computers

Data brevity OPSCODE sync delta
time slot samples @ set intervals
Mapped to symbols 25 A,B,C,D
MILSTD for Man – machine interface

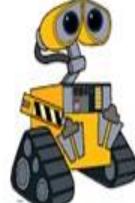


Automation & robotics: machines do repetitive
tasks

Military = repetition. temporal ,
UTZ – UTC sync harmonization,
international standards

Machine Vision: Machines capture,
analyze visual information, data

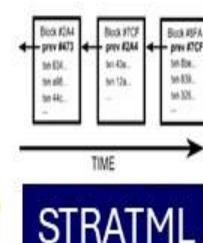
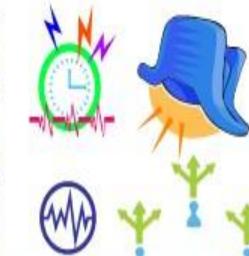
Military = geo-spatial temporal Applique' overlays



Structured
Data

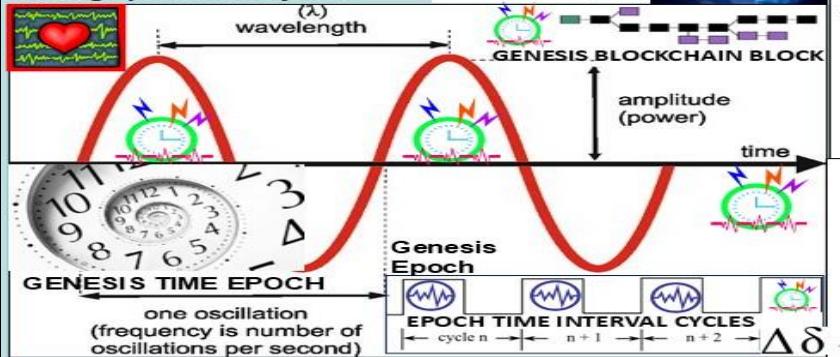


Structured
Data



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

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

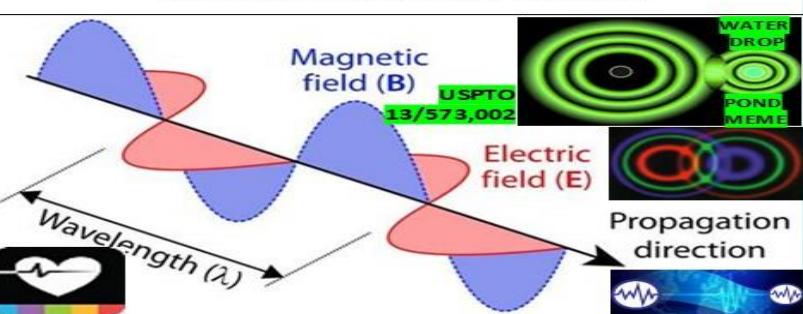
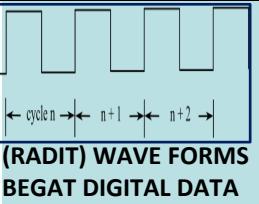
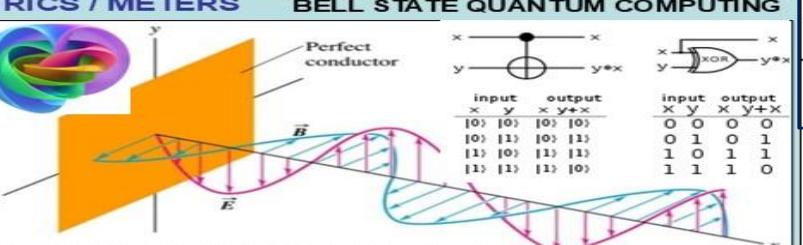


Quantum Computing Vibrations encode, process data like quantum computers. A simple mechanical system built from aluminum rods uses vibrations to encode information, mimicking quantum computing in a non-quantum system. "Light is made from photons, the quantum of light. mechanical vibrations or sound waves can be described in a quantum-mechanical manner i.e., composed of phonons: the smallest possible units of mechanical vibration"

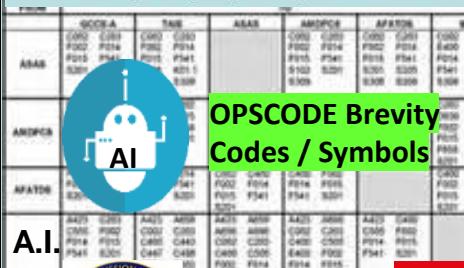
Link: https://phys.org/news/2018-06-quantum_1.html



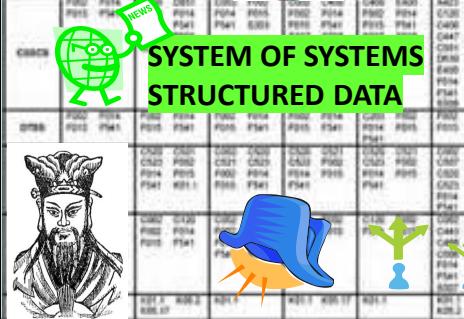
BELL STATE QUANTUM COMPUTING



"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

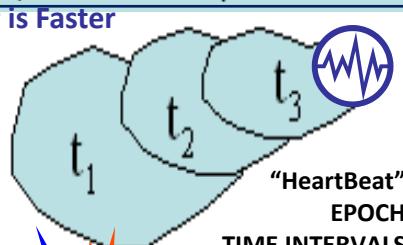
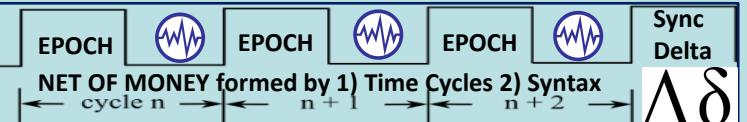


USPTO 13/573,002
573 U.S. 134 SCt 2347
“Alice in Wonderland Ruling”

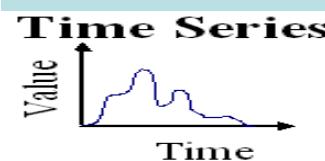


</Org_ID> TIME CHAIN

{"URN, URN, URN"}



WATER DROP PHYSICAL NATURAL MEME USPTOb13/573,002

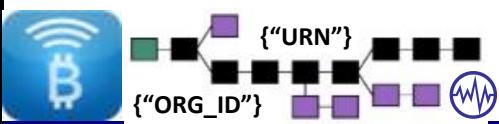


Humanitarian Assistance Networked Donor System

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"



300 +TEMPLATES
STRUCTURED DATA
EXCHANGE
FFUIRNS FFUDNS OPSCODES
MAPPED TO SYMBOL SETS

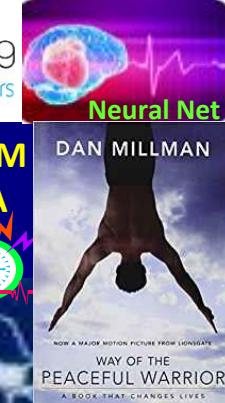
Reuse adaptive procedural template guides from Battlefield Digitization among a federated systems of systems improving synergy, synchronicity to achieve shared sustainable goals



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



OPERATIONS
OTHER
THAN
WAR



Beacon Communities

Vernetzte Operationsführung



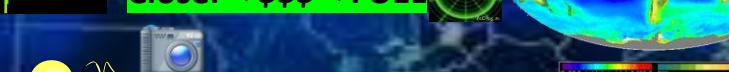
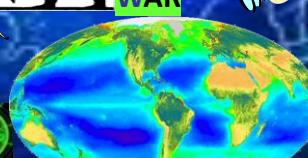
Proximity Beacons



JAEGERS



Closer < \$\$\$ < FUEL



ALGORITHM

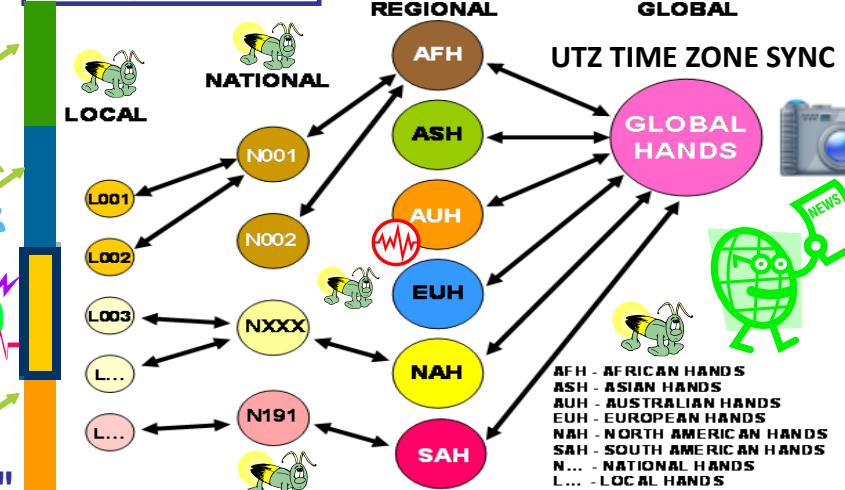
FIREFLY
HEARTBEAT
EVENT / ALERT Flash Heartbeat Message Bus



KAIJU



SYSTEM
Of
SYSTEMS



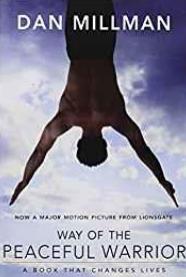
AFH - AFRICAN HANDS
ASH - ASIAN HANDS
AUH - AUSTRALIAN HANDS
EUH - EUROPEAN HANDS
NAH - NORTH AMERICAN HANDS
SAH - SOUTH AMERICAN HANDS
N... - NATIONAL HANDS
L... - LOCAL HANDS



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



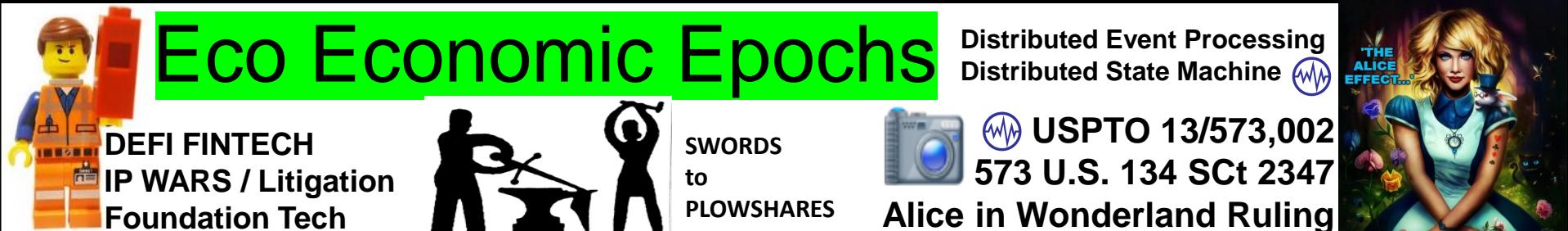
Neural Net



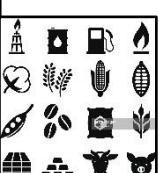
DAN MILLMAN
WAY OF THE
PEACEFUL WARRIOR
A BOOK THAT CHANGES LIVES



OFF SHORE
OUTER BANKS



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



SYNC DELTA
DATA SNAPSHOTS

$\Delta\delta$

INFOCON

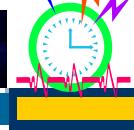
5 4 3 2 1

INFORMATION
CONDITION

Federation
Gateway

In the beginning (of time)..

There was the word (syntax)



HFT START, STOP, Time to LIVE

USPTO 13/573,002
573 U.S. 134 SCt 2347
Alice in Wonderland Ruling



E \$ € ¥ currency index



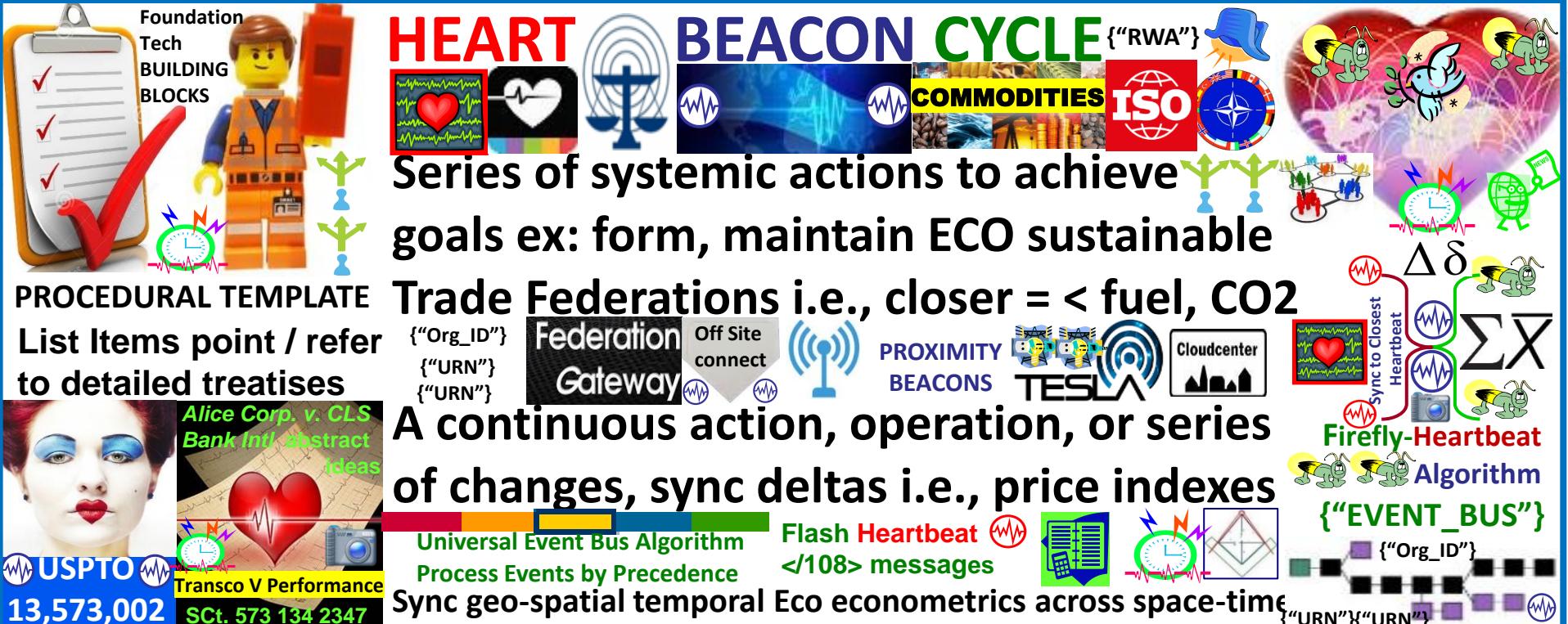
COMMODITIES



MEMO #1421



I.R.S.



USE CASE: standards adherence support for IEEE, ITU, ISO international data, internet, internet of money, IoT, Artificial Intelligence A.I ... standards

Systemic, signaling, synchronization of state meta data encoded as brevity OPSCODE tokens stochastically harmonized over the UTZ

| FROM | GCCS-A | TAIS | ASAS | AMDPCS | AFATDS | CODE GUIDE |
|--------|--|---|--|--|---|------------|
| ASAS | C002 C203 F002 F014 F015 F541 S201 S309 | C002 C203 | C002 C203 | C002 C203 F014 F541 S305 S309 | C002 C203 E400 F002 F014 F015 F541 S201 S309 S507 | |
| AMDPCS | TOKENS OPSCODE BREVITY CODES | USMFT / 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 | | F002 F015 S201 | C203 C400 D630 E500 F002 F014 | |
| AFATDS | F002 F014 F015 F541 S201 | A423 C203 C505 F002 F014 F015 F541 S201 | A423 A659 C002 C203 C400 C443 C447 C488 C501 C503 C504 C505 C506 C507 C508 E400 F002 F014 F015 F541 F658 F756 G489 K01.1 S201 S303 S507 | Rosetta Stone Syntax Lexicon Coder's Guide | M2M "SYMBOLS RULE THE WORLD" | |
| MCS | SIOP | | | | | |

MESSAGE CATALOG
300 + Use Cases

Data Elements: entity, attribute, relationship equivalents

HEARTBEAT MESSAGE = K00.99 </108> {"108"}

Information Categories and Examples

| Object Categories | Examples | Location | Movement | Identify | Status | Activity | Intent |
|-------------------|---|---|--|--------------------------------|---------------------|---------------------------|------------------------------------|
| OOB | SYNTAX LEXICON | STRUCTURED DATA Machine Trust Language MTL | EXCHANGE Message Sets Contract Description Language CDL | country / alliance, type/class | readiness | targeting, reconstituting | COA {"Java JS"} |
| Infrastructure | Comm, power, transportation, water/sewer | lat/long | throughput, flow rates | name, part-of relationships | BDA, op. metrics | repair, maintenance | expansion, instantiation |
| Sociological | Culture, religion, economic, ethnic, government, history, languages | temples, historic structures | ER Model | Class Diagram | Relational Database | Object DBMS | XML DTD / Schema |
| Geophysical | Terrain, weather, climatology, oceanography, astrometry | feature lat/long, alt/dpth | Attribute | Attribute | Field / Column | Attribute | Child Element or Element Attribute |
| | | Domain Value | PURCHASE CODES | Instance, Value | TOKENS | DUI | FUD |

MIL STD 2525A, B, C, D
Data Exchange
ISO
SYNTAX LEXICON ROSETTA STONE
Coder's Guide lexicon

Patent Application 9/11 2003: Method to commercialize structured military messaging 20022

DoD Systems of Systems Engineering Structured Data Exchange MIL Standards / ISO Standards

BREVITY OPSCODES MAPPED TO SYMBOLS, SYMBOL SETS FOR A.I. ARTIFICIAL INTELLIGENCE MAN – MACHINE INTERFACE

STANDARD, CONSISTENT SYMBOLS

INFOCON 4 3 2 1 INFORMATION CONDITION

STRUCTURED SCENARIOS EXCHANGES TEMPLATES

MIL STD 2525A BC ASSET TOKENS

SYNOPSIS OF THE WORLD

STRATML

XBRL XAML UBL DOL DATA DEFINITION LANGUAGE

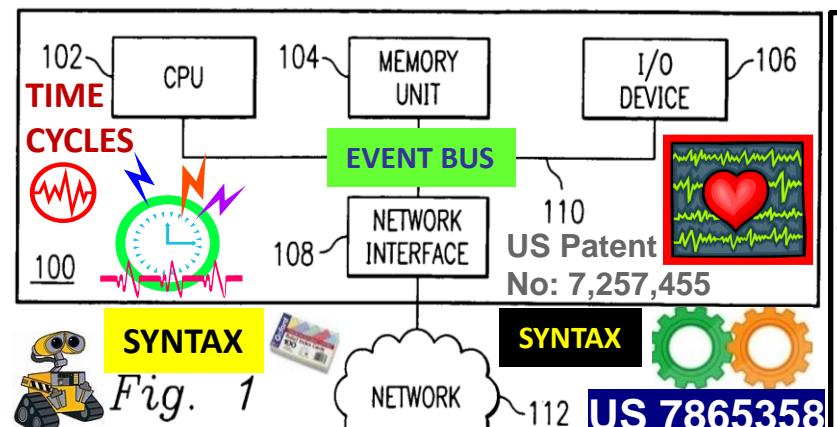
SYMBOLS Friend Neutral Hostile DICAL EVAL & HOSPITALISATION Partner Competitor - MILITARY OPERATIONS

TOKENIZED ECONOMY BREVITY CODE OPSCODE MAPPE TO SYMBOLS

Encyclopedia Britannica:
"Language is a SYSTEM of SIGNS having meaning by convention. In this sense, language need not be confined to the spoken word".

"SIGNS AND SYMBOLS RULE THE WORLD, NOT WORDS OR LAWS"
CONFUCIOUS

Syntax code language parsed, processed during silicon chip generated epoch time cycles forms all things internet, net of money. state meta data sync delta heartbeat snapshots during epoch temporal micro-cycles

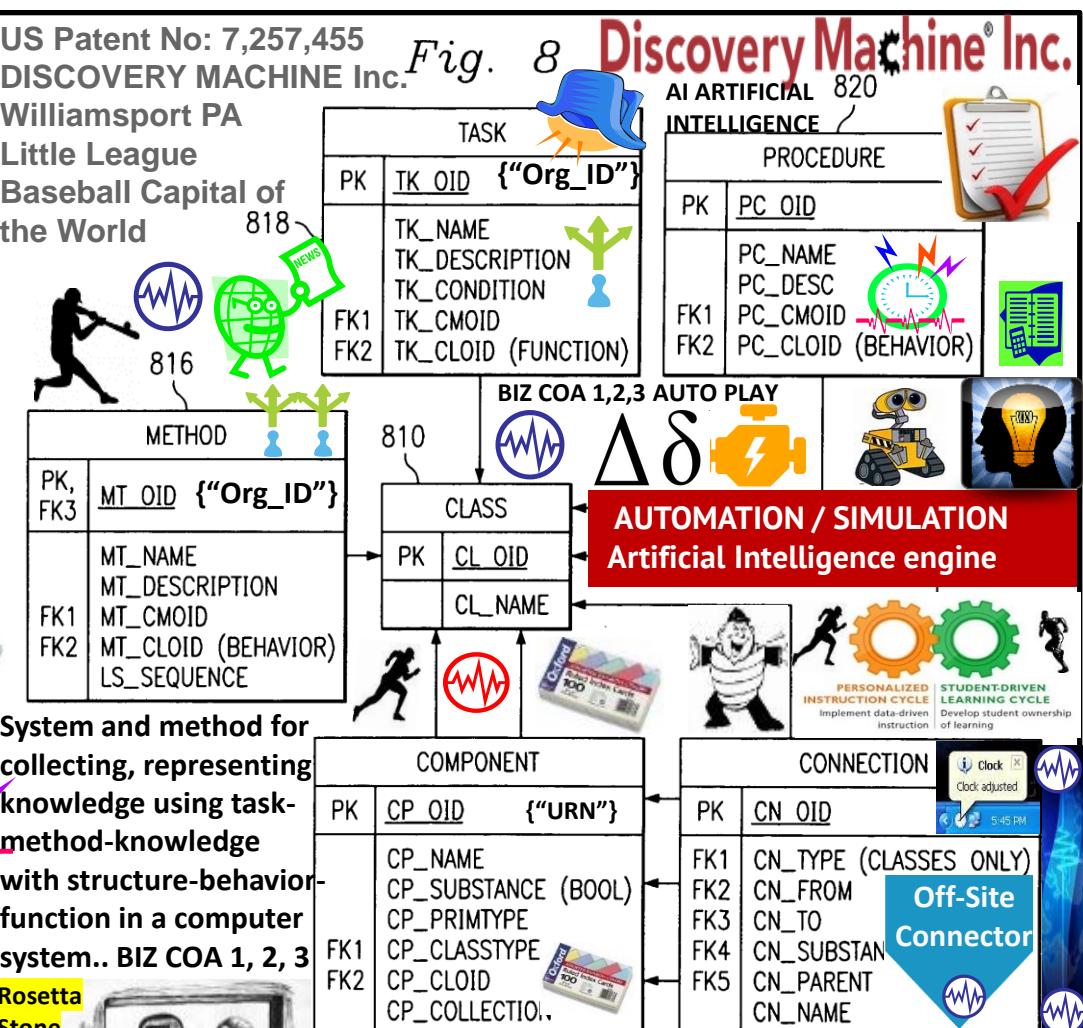
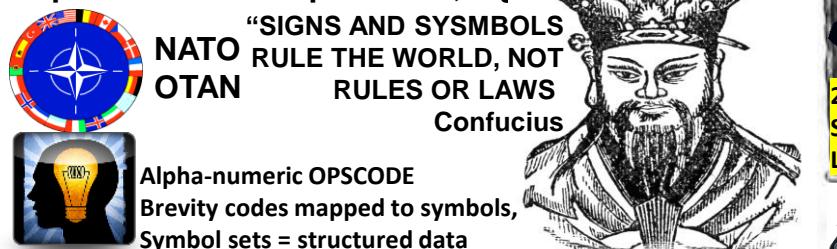


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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

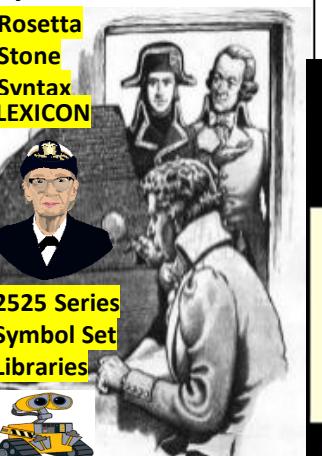
US 7865358 CLAIM 1. method converting textual data from source form to target forms, where target form differs from source form's linguistics, syntax

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.

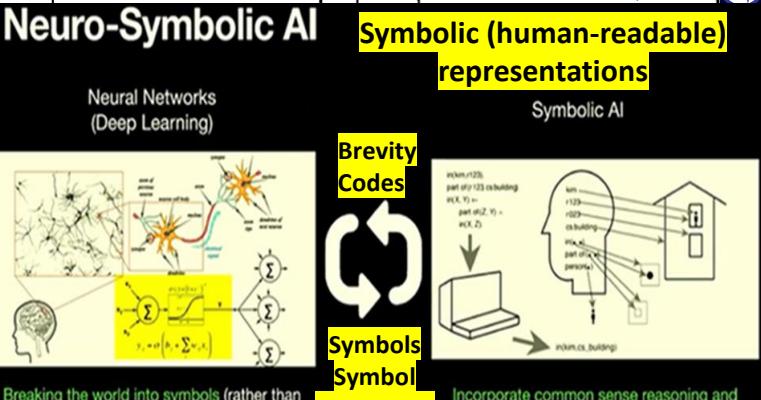


System and method for collecting, representing knowledge using task-method-knowledge with structure-behavior-function in a computer system.. BIZ COA 1, 2, 3



| COMPONENT | | |
|-----------|---------------------|---------|
| PK | CP_OID | {"URN"} |
| FK1 | CP_NAME | |
| FK2 | CP_SUBSTANCE (BOOL) | |
| | CP_PRIMTYPE | |
| | CP_CLASSTYPE | |
| | CP_CLOUD | |
| | CP_COLLECTION | |

| CONNECTION | |
|------------|------------------------|
| PK | CN_OID |
| FK1 | CN_TYPE (CLASSES ONLY) |
| FK2 | CN_FROM |
| FK3 | CN_TO |
| FK4 | CN_SUBSTAN |
| FK5 | CN_PARENT |
| | CN_NAME |



THE TERRA (TRC)

Trade Reference Currency

TELLURIUM PRODUCERS NECESSARY
GLOBAL SPECTRUM UNDIFFERENTIABLE
MINERALS EXHAUSTION

COMMODITIES

producers consumers

SLA: Closer = Cheaper

Closer = Less Fuel

= Less Time, CO2

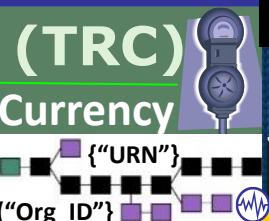
\$0.49 USD

B 0.001076 BTC

DEMURRAGE FEES

bitcoin

MICRO PAYMENTS



Price Indexes in Time and Space Methods and Practice

Methods and Practice

Friedman's K % Rule

currencyindex

Commodities

producers consumers



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



Example: 100 Terra = 1 barrel oil
+ 10 bushels of wheat
+ 20 kg of copper + 1/10 Oz gold

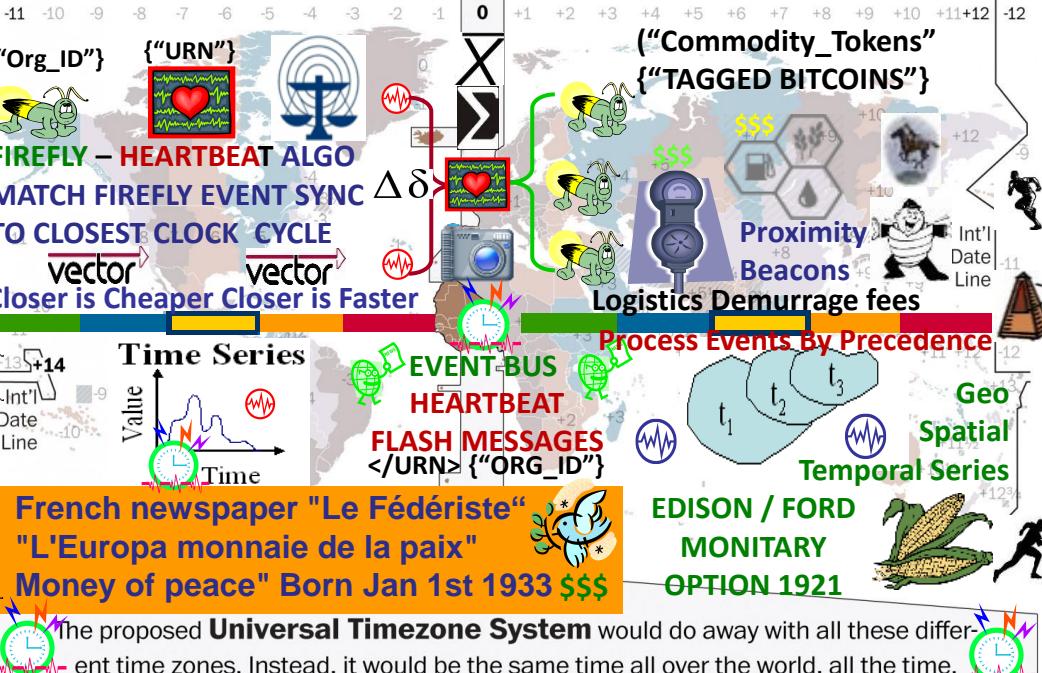


Firefly inspired Heartbeat Synchronization nodes strive to sync in a distributed system. Nodes generate periodic "heartbeat" events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles to agree on the ID of the current clock cycle. There 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"

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

UNIVERSAL TIME ZONE UTZ
UNIVERSAL MESSAGE EVENT BUS

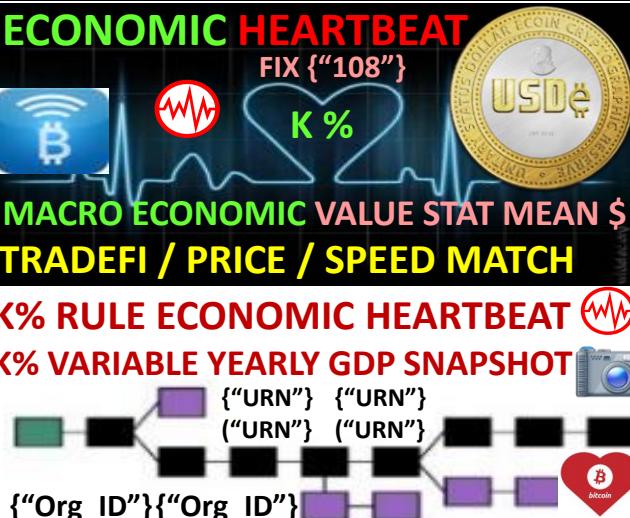
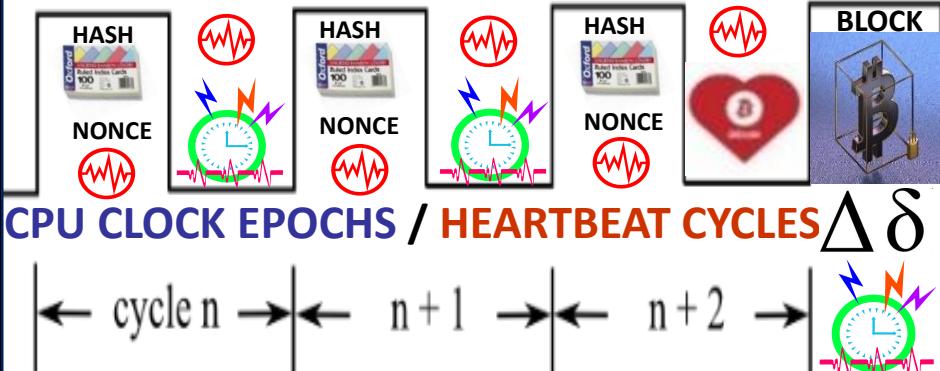




The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind Coordinated Universal Time (UTC). However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours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



"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"



Firefly - Heartbeat Algo



University of Bologna Italy / Hungary

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

ECO ECONOMIC HEARTBEAT

$\Delta\delta X$

("108")

$\Delta\delta$

X



K%



TIME-SPACE SYNC

ECONOMIC MACRO CYCLES

K% GDP ECONOMIC PULSE FEDCOIN WORLDCOIN

Luxor Temple Egypt:
"The shortest path towards knowledge of truth is nature"

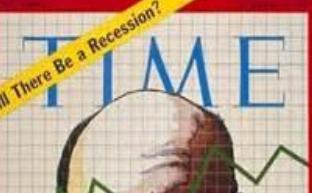
Temple of Man



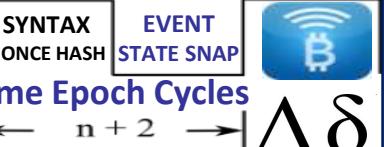
LUXOR EGYPT

FIREFLY inspired Heartbeat Sync Algo

PRECEDENCE UTZ SYNC SYNC
PROCESSING PULSE DELTAS



ALGORITHMIC REGULATION
TOKEN ECONOMICS



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

UTZ TIME ZONE SYNC

SYNC TO CLOSEST HEARTBEAT {“URN”} {“URN”} {“URN”}

HEARTBEAT EVENT FLASH MESSAGE BUS {“URN”} {“URN”} {“URN”}

UTZ STOCHASTIC HARMONIZATION

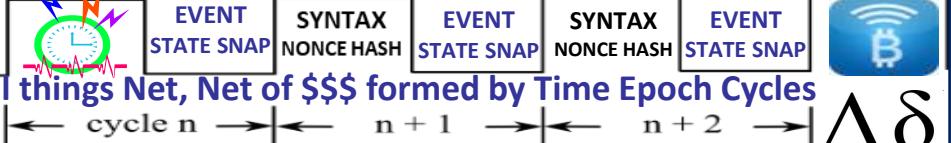
Universal Metrics / Meters $\Sigma \Delta\delta$

Geo-spatial Temporal Syntax-Semantic Sync & Consensus

SAMPLING CURRENCY PAIR ON / OFF SHORE

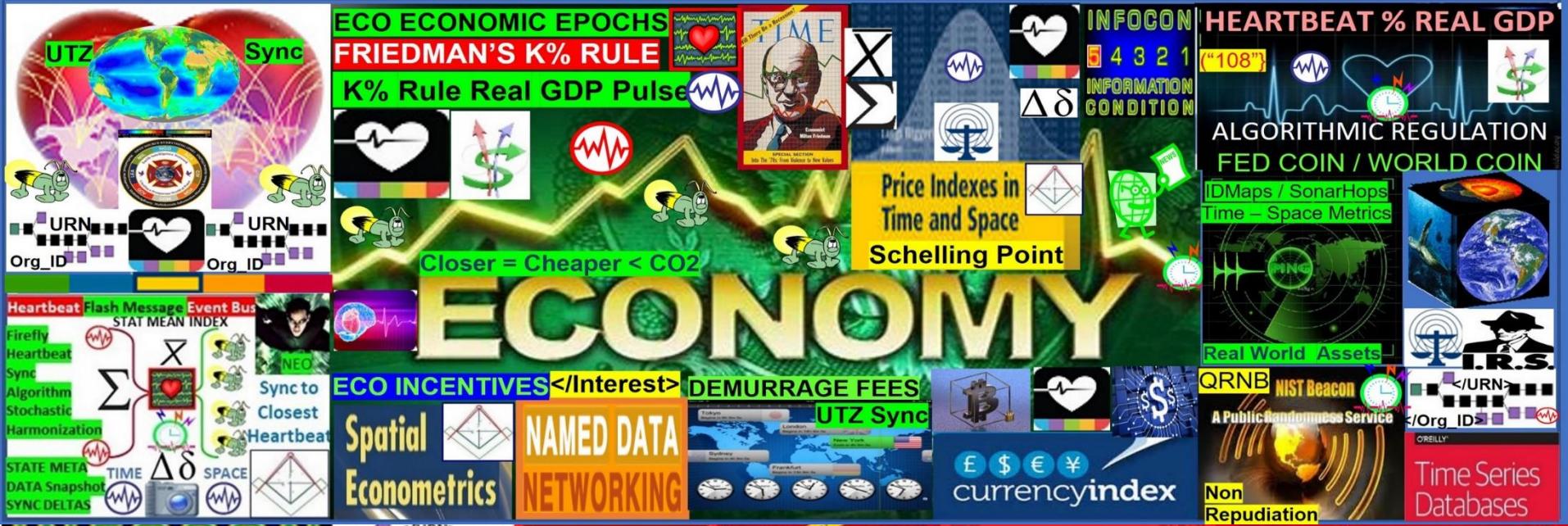
SYNC DELTA STATE META DATA SNAPSHOTS

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.



All things Net, Net of \$\$\$ formed by Time Epoch Cycles

"Heartbeat Synchronization 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. No rule governs the length of a cycle with respect to real time as long as the length is bounded & all nodes agree on it eventually"



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



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



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.





Bitcoin Conference
Nashville Tennessee
July 27, 2024, at 2 P.M

BTC AS
STRATEGIC
RESERVE \$\$\$

"THE Donald"



BTC = />
"DIGITAL GOLD"
21 million total

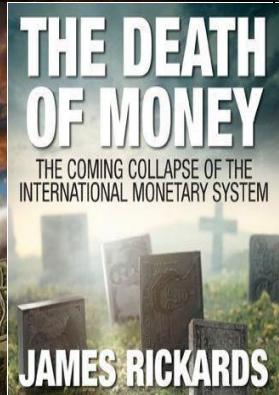
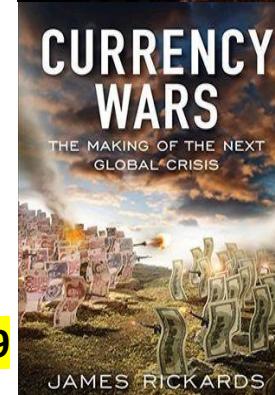


FORBES DIGITAL ASSETS 'It's Inevitable'— Bitcoin Price Suddenly Soars On Wild Rumors Donald Trump Will Create A U.S. Bitcoin Strategic Reserve

<https://www.forbes.com/sites/digital-assets/2024/07/21/its-inevitable-bitcoin-price-suddenly-soars-on-wild-rumors-donald-trump-will-create-a-us-bitcoin-strategic-reserve/>

PENTAGON CURRENCY
WAR GAMES
CONDUCTED SINCE 2009

Currency Wars: The Making of the Next Global Crisis warns of an impending currency war with devastating consequences for the global economy.
USPTO 13/573,002 Battlefield Digitization, Net Centric Warfare OOTW Operations OtherThan War

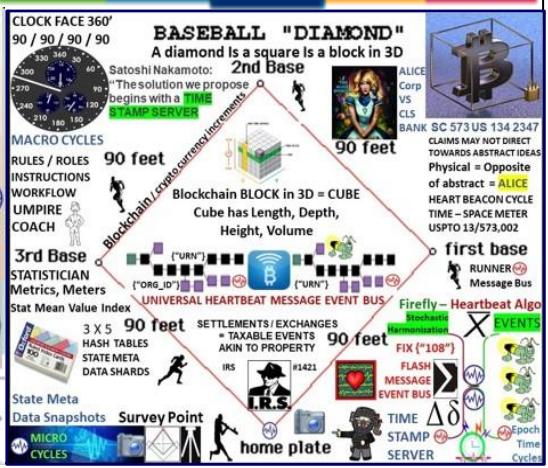


World Game Annex K Signals & Telemetry



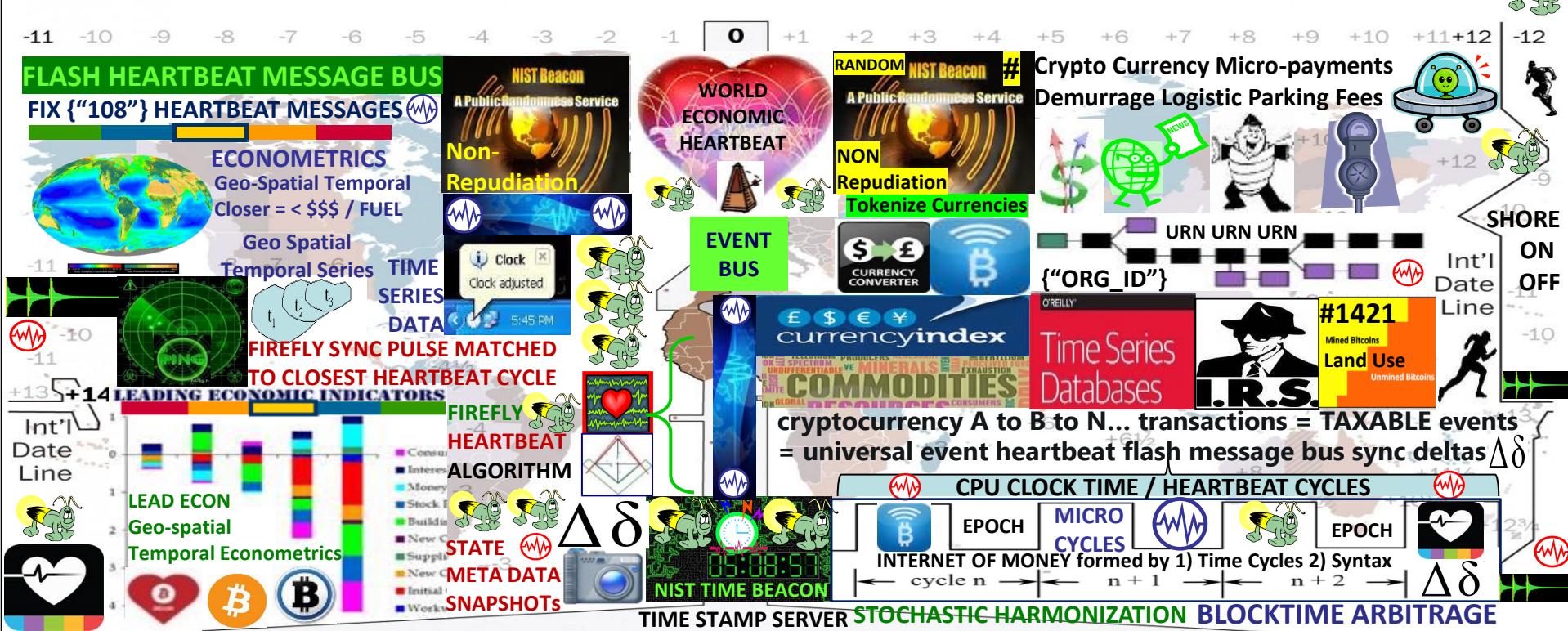
TRADE
REFERENCE
CURRENCY

BIS mBridge
ISSB
ITU
ISO
SWIFT





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.

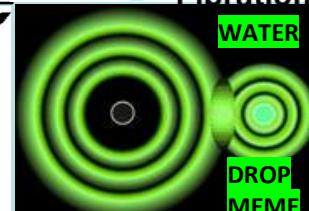
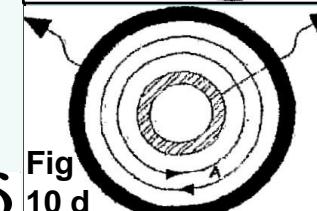
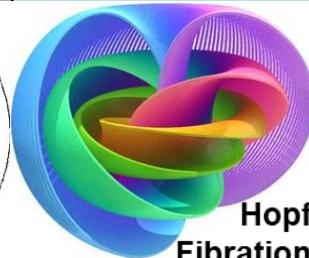
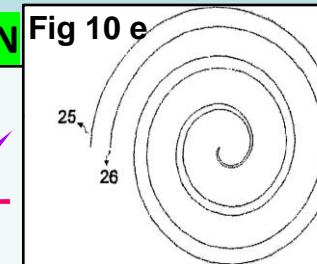




PROPELLION SYSTEM USING THE ANTIGRAVITY FORCE OF THE VACUUM

ENERGY PRODUCTION

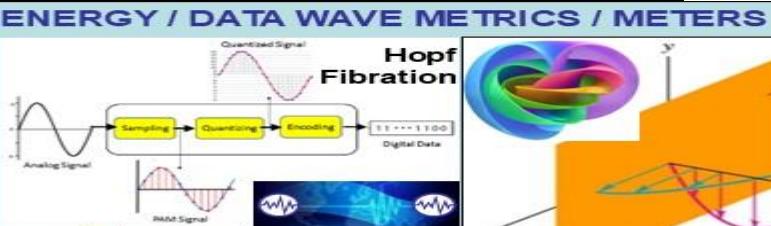
ABSTRACT: A propulsion system for aerial, terrestrial, underwater or space propulsion, through manipulation (or engineering) of the vacuum with proper electromagnetic interactions. Vacuum manipulation.. new form of propulsion, and has applications in ENERGY production and on CHANGE of TIME decay of radioactive elements. Opposing magnetic or electric fields create a mass repelling force, while attracting magnetic or electric fields create a mass attracting force. This vacuum manipulation process.. used to propel a mass that contains field sources that perturb the vacuum. .. the creation of a repulsion point in space through the interference of two or more longitudinal ELECTRO dynamic (micro) waves



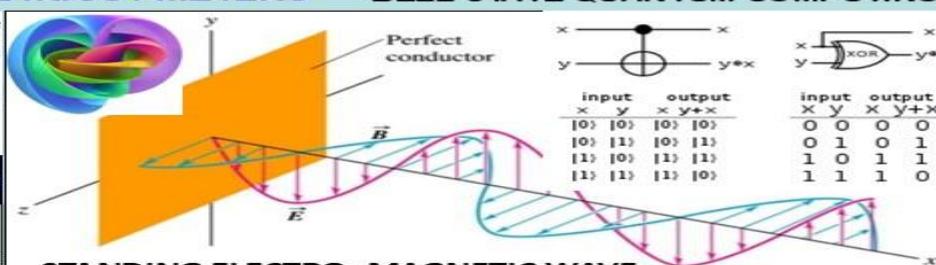
$$\Delta\delta$$

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

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

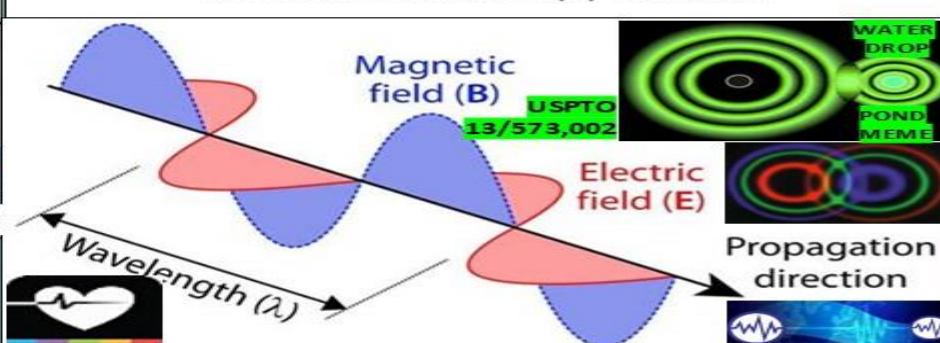
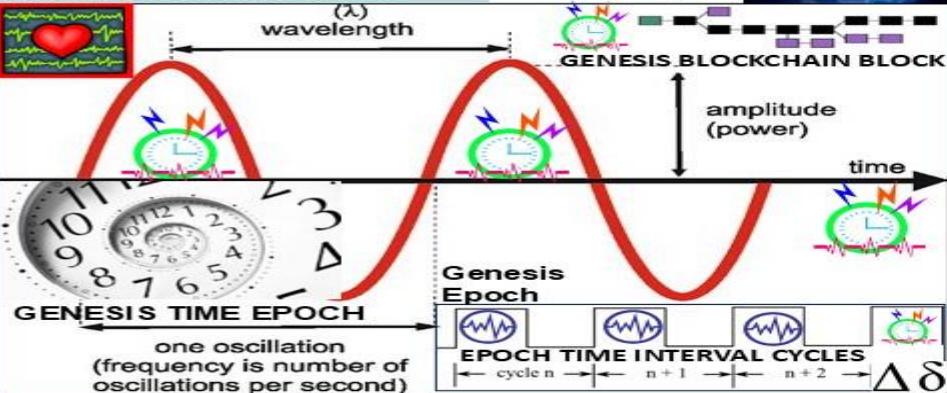


BELL STATE QUANTUM COMPUTING



STANDING ELECTRO-MAGNETIC WAVE

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

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

Quantum Financial System vs BlockChain

TIME CHAIN QFS TIME STAMP SERVER

<https://gesara.news>

TIME
CHAIN



Satoshi Nakamoto Bitcoin Paper
Craig WRIGHT a.k.a. THE VALUE OF BITCOIN IS TIME ITSELF Wright Brother's 1st Flight Cape Hatteras Outer Banks

"THE SOLUTION WE PROPOSE BEGINS WITH A TIME STAMP SERVER" Satoshi Nakamoto

"All things net, net of money are formed with 1) epoch time cycles
2) Syntax parsed as instructions"

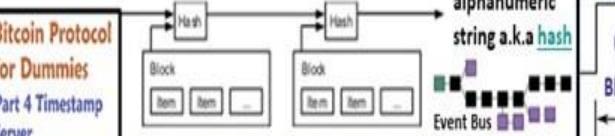


"THE VALUE OF BITCOIN IS TIME ITSELF"

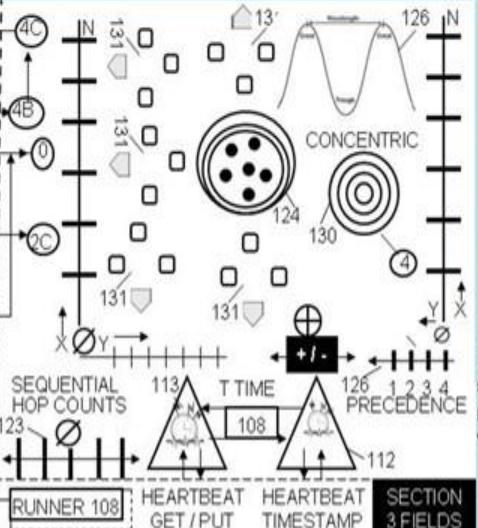
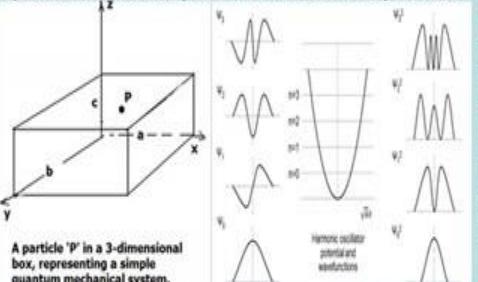


3. Timestamp Server

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.



QUANTUM COMPUTING / HBC TIME – SPACE METER / METRICS

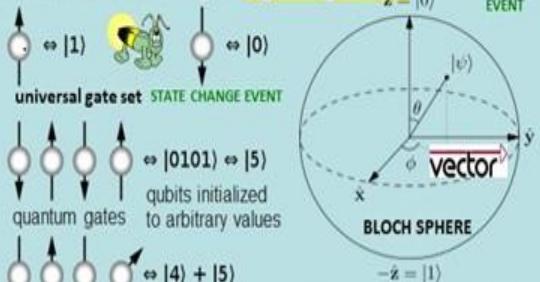


#QuantumComputing USet Alice Corp Vs CLS Bank compliant memes:
In quantum computing, a qubit (or quantum bit (sometimes qbit)) is a unit of quantum information—the quantum analogue of the classical binary bit. A qubit is a two-state quantum-mechanical system, such as the polarization of a single photon: 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 Ct 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?



Microwave pulses like sonar ping—
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)

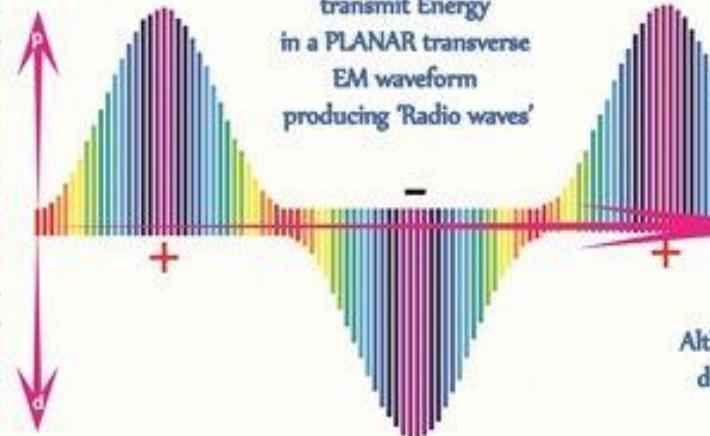
CLOSER = < Infrastructure
= CHEAPER SLA

ElectroMagnetic waveforms

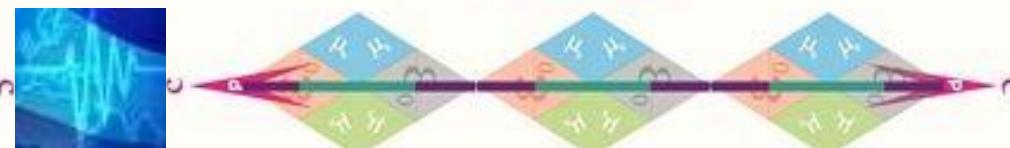


ENERGY / DATA
Over
Transmission
Lines / Airwaves

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

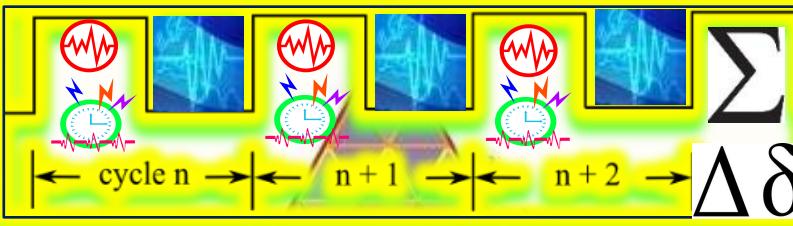
Through longitudinal waves, Tesla transferred energy to receiving devices. He sent electrostatic forces through the air, transferred electrical energies and noted the lethal forces produced by these waves.

Heinrich Hertz



(22 February 1857 - January 1 1894)

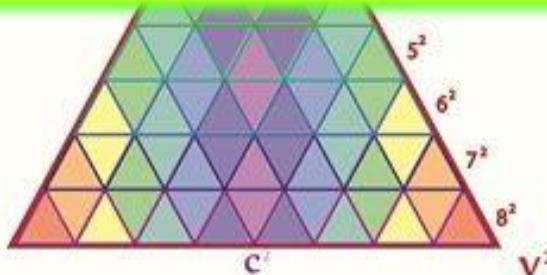
INTERNET = 1. TIME EPOCH CYCLES 2. Syntax (not) Processed in cycle



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

Fisher information flux flows are generated and stored in wave packets as they propagate. This temporal aspect is crucial for understanding how information builds up in a system over time



USPTO 13/573,002 Time – Space Meter Metrics

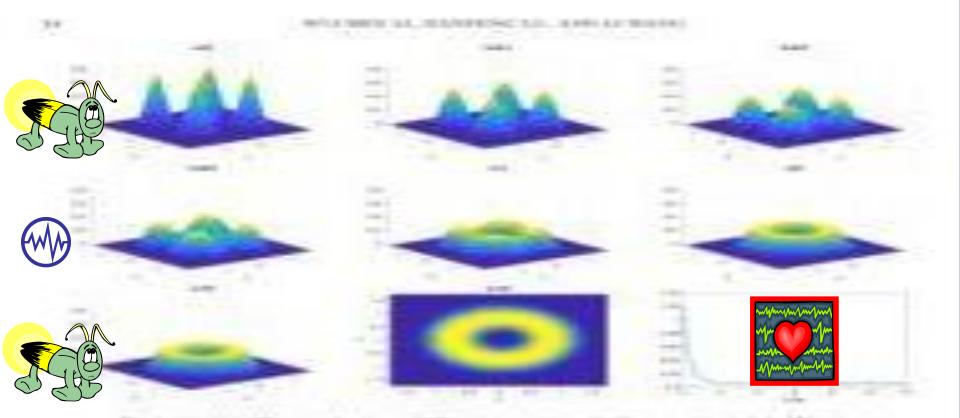


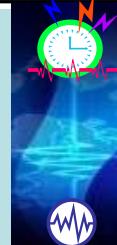
Figure 2.6. This visualization of 2001 measurements, 400000 trajectories, width = 1000, width = 1000, height = 1000 pixels, $\theta_1 \in [0, 2\pi]$, $\theta_2 \in [0, 2\pi]$, $\theta_3 \in [0, 2\pi]$. Other variables: $\rho_{\text{air}} = 1.225 \text{ kg/m}^3$, $c = 3 \times 10^8 \text{ m/s}$, $\epsilon_0 = 8.854 \times 10^{-12} \text{ C/Vm}$, $\mu_0 = 4\pi \times 10^{-7} \text{ N/A}$, $k_B = 1.38 \times 10^{-23} \text{ J/K}$, $T = 300 \text{ K}$, $\sigma = 10^{-15} \text{ W/m}^2$, $\lambda = 2.83 \times 10^{-6} \text{ m}$, $\tau = 10 \text{ s}$. Dimensionless parameters: $\theta_1 \in [0, 2\pi]$, $\theta_2 \in [0, 2\pi]$, $\theta_3 \in [0, 2\pi]$. Dimensionless time parameter: $t \in [-3, 3] \times 10^{-15} \text{ s}$, $t = 0$ at $\theta_1 = \theta_2 = \theta_3 = \pi$.

The Variance of...
 $\Delta\delta$

the partial derivative w.r.t. θ of...

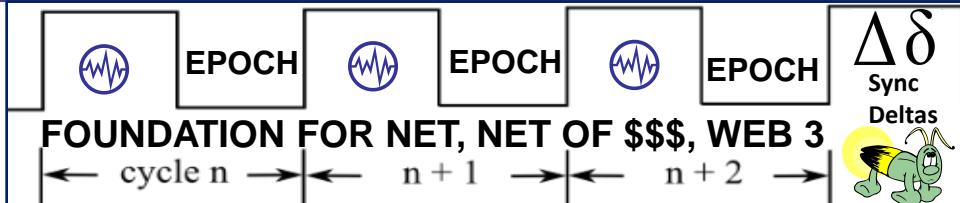
the log-likelihood function of θ given observed value of X

$$\mathcal{I}(\theta) = \text{Var} \left(\frac{\partial}{\partial \theta} \ell(\theta | X) \right)$$



Continuity equation for flow of Fisher information in wave scattering: Nature / ISF International Space Federation

An electromagnetic wave scattered at an object carries locally defined and conserved information about all of the object's constitutive parameters. Specifically, we introduce the density and flux of Fisher information for general types of wave fields and identify the corresponding sources and sinks of information through a fundamental continuity equation. Our theoretical predictions involve a movable object embedded in a disordered environment by measuring the corresponding **Fisher information flux** at microwave frequencies. Our results improve the understanding of the generation, propagation of information supports tracking and designing the flow of information in complex system of systems environments.



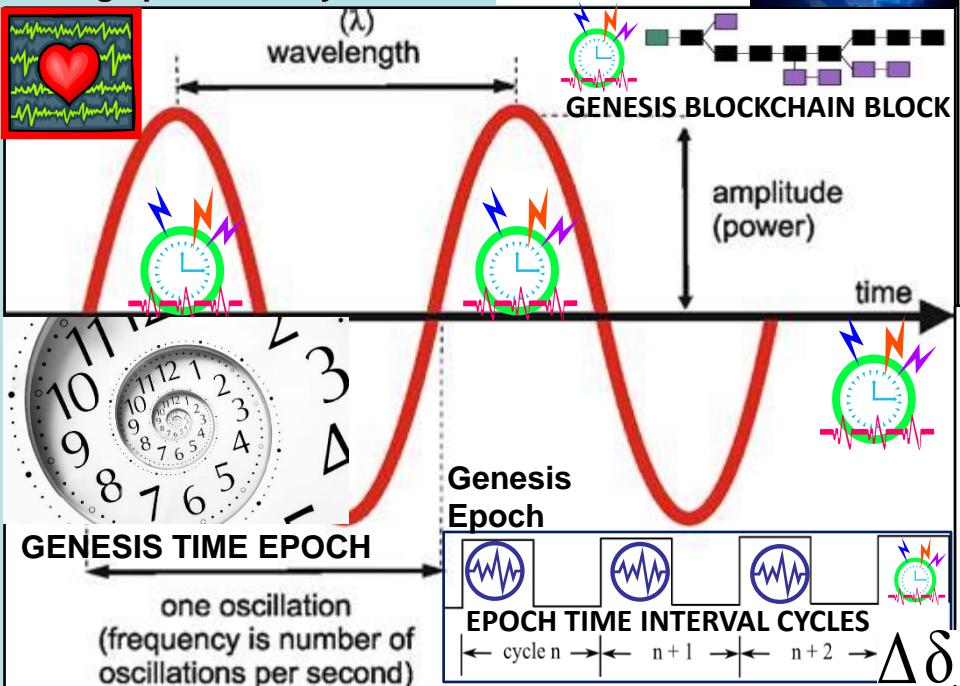
THESES: All things net, net of programmable \$\$\$ are formed using:

ENERGY / DATA WAVE METRICS / METERS

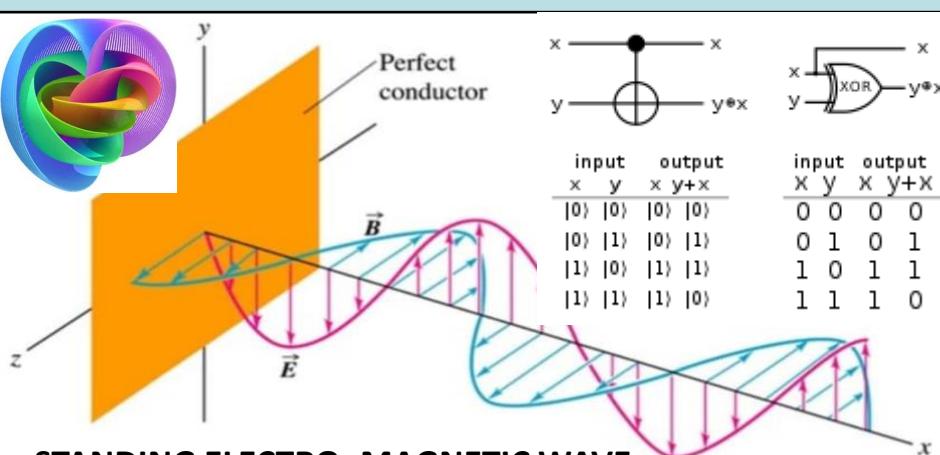
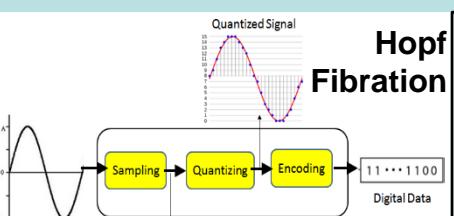
BELL STATE QUANTUM COMPUTING

1) Time epochs created by quartz crystal silicon chips

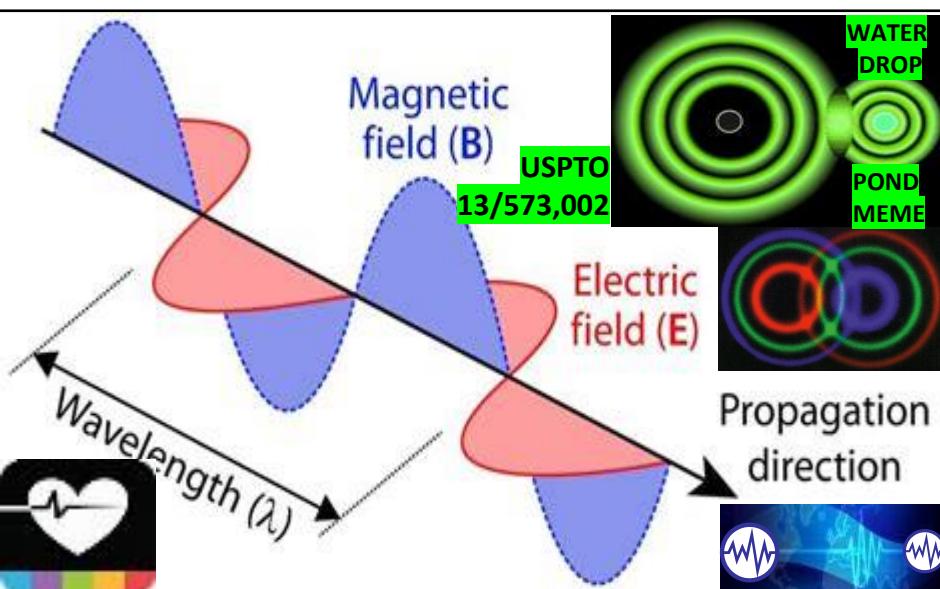
2) Syntax used / not used as programming instructions during epoch time cycles



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

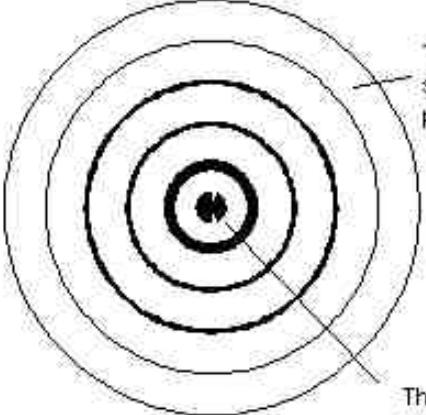


A **standing** electromagnetic wave does not propagate along the x-axis; instead, at every point on the x-axis the *E* and *B* fields simply oscillate.



"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/>



On Truth & Reality The Wave Structure of Matter (WSM) in Space

The pointlike Particle effect at the Wave Center

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)



TESLA Harmonic Sphere Flux Resonator

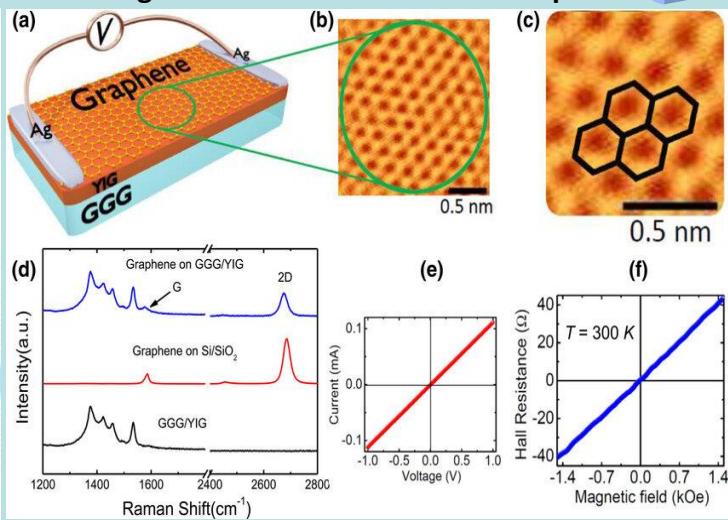
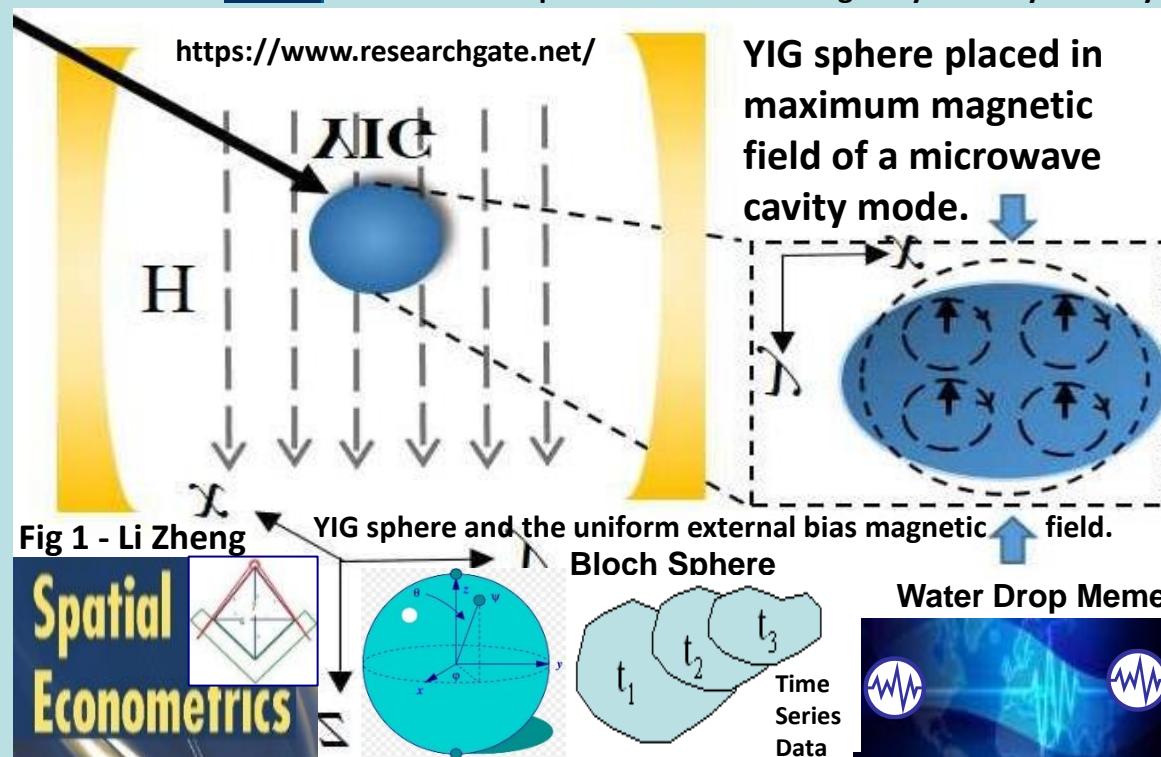
ENERGY / DATA

"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



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]



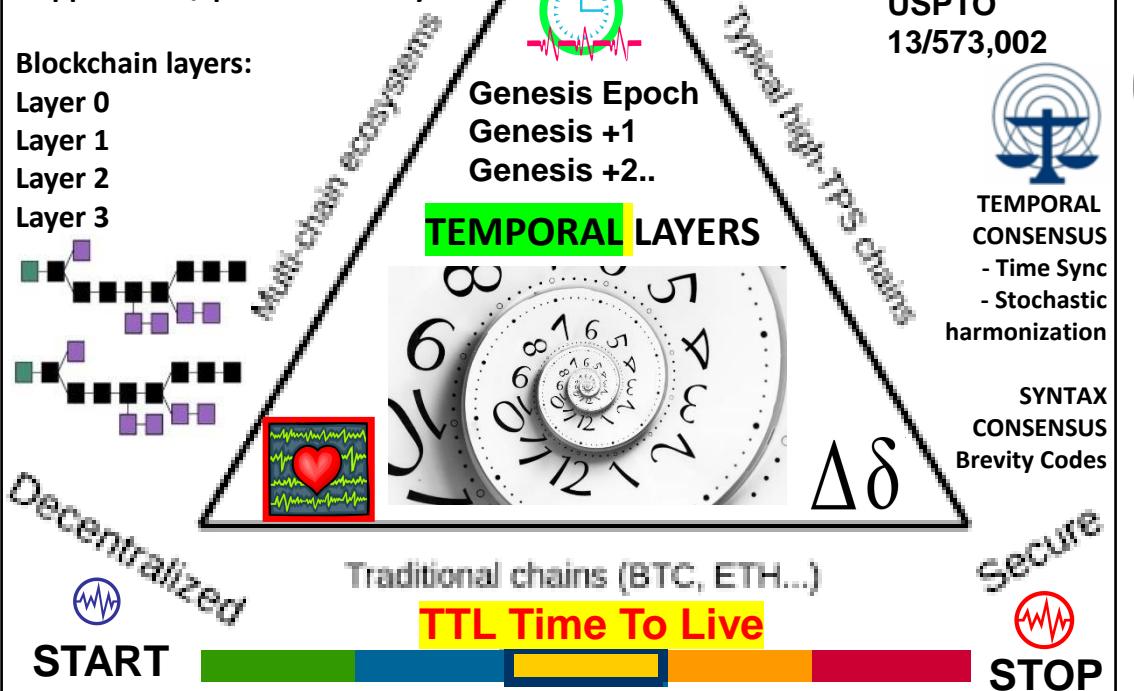
Blockchain Quad-lemma

"five layers of blockchain tech:

- Infrastructure hardware layer
- Data layer
- Network layer
- Consensus layer
- Application / presentation layers

Blockchain layers:

- Layer 0
- Layer 1
- Layer 2
- Layer 3



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.

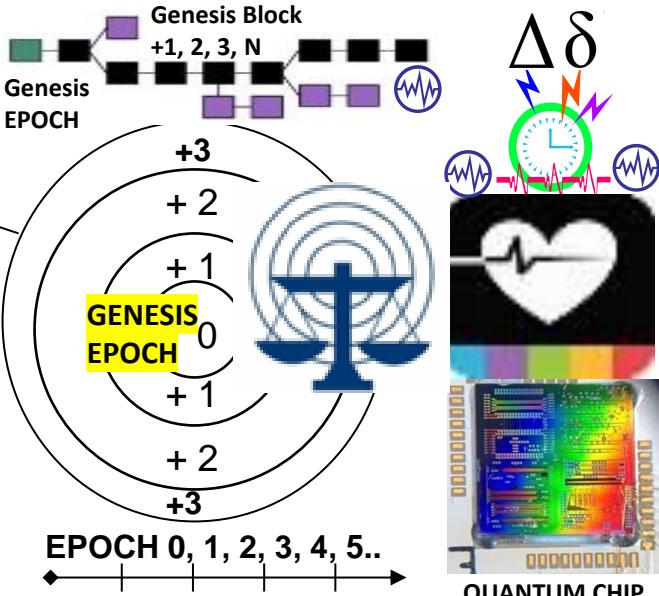
Database Flat File

"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 |

NET, Net of programmable \$\$\$ Programming Reality Ground Truth
No Layers L0, L1, L2... only GENESIS EPOCH,
Follow on Epoch time cycles, intervals, cycles



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 Bitcoin Paper



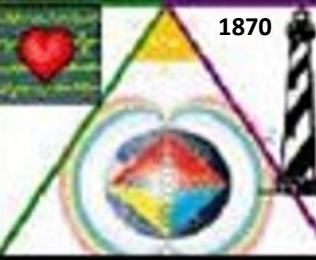
Satoshi Nakamoto



Craig WRIGHT
a.k.a.
Satoshi Nakamoto



"Bitcoin is a LANGUAGE"



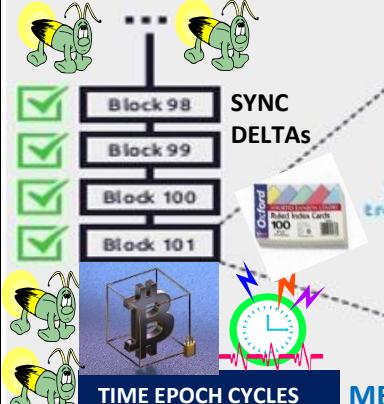
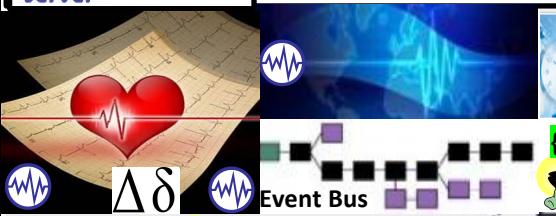
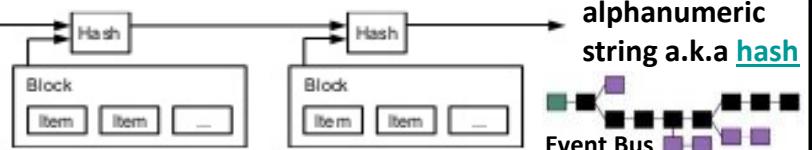
Wright Brother's 1st Flight
Cape Hatteras Outer Banks

"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



MERKLE: Summary built from block's transaction ID's

Header - Contains service information (version info, nonce, previous block id and timestamp). {"Org_ID"}
Merkle - A summary built from the block's transaction identifiers.

Transaction's id list - list of transaction's identification hashes that was included into the block's merkle tree.

"All things net, net of money are formed with 1) epoch time cycles
2) Syntax parsed as instructions

"THE VALUE OF BITCOIN IS TIME ITSELF"



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

State Meta

Data Snapshots

Survey Point

MICRO CYCLES

FLASH MESSAGE
EVENT BUS

TIME STAMP SERVER

Epoch Time Cycles

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"

90 feet

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

Blockchain / crypto currency increments

90 feet

first base

RUNNER Message Bus

90 feet

Fix {"108"}

FLASH MESSAGE
EVENT BUS

TIME STAMP SERVER

Epoch Time Cycles



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

90 feet

Fix {"108"}

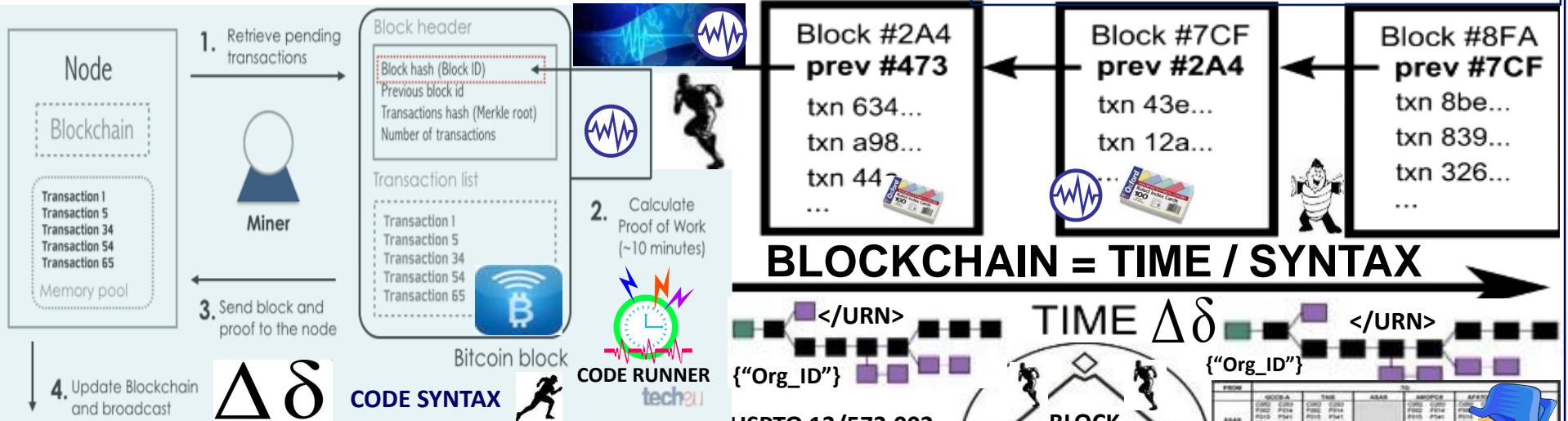
FLASH MESSAGE
EVENT BUS

TIME STAMP SERVER

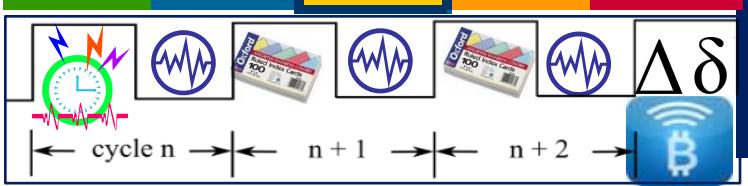
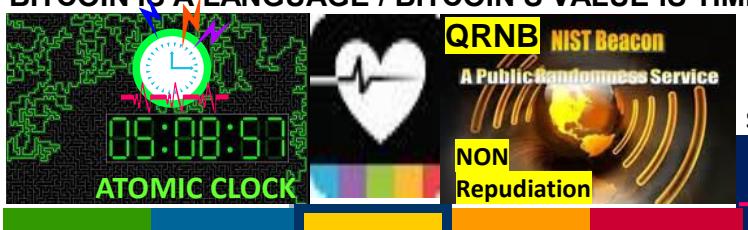
Epoch Time Cycles



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).^[2] 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.



"BITCOIN IS A LANGUAGE / BITCOIN'S VALUE IS TIME ITSELF"



TIME EPOCH CYCLES

State Meta Data Snapshots



"BITCOIN MAKES MONEY HEART BEACON CYCLE PROGRAMMABLE. TIME – SPACE METER MONEY IS STRUCTURED DATA EXCHANGE SIMPLY DATA"

Net of \$\$\$ formed with:

1 EPOCH TIME CYCLES

2 {"Syntax"} "The Word"

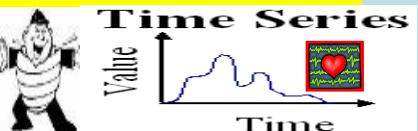
"In the Beginning" Genesis Block

"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



SYNTAX LEXICON Library

1st Compiler



STRUCTURED DATA EXCHANGE TEMPLATE FORMS
300+ USE CASES

LOGIC / FILTERS

A.I.



SYNTAX / SYMBOL LEXICON LIBRARY



"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

State Meta Data Snapshots

Survey Point

MICRO CYCLES

BASEBALL "DIAMOND"

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



Blockchain BLOCK in 3D = CUBE

Cube has Length, Depth, Height, Volume

SETTLEMENTS / EXCHANGES

= TAXABLE EVENTS AKIN TO PROPERTY

IRS #1421

FLASH MESSAGE EVENT BUS

FIX {"108"}

TIME STAMP SERVER

EPOCH Time Cycles

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



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

Stochastic Harmonization

SETTLEMENTS / EXCHANGES

= TAXABLE EVENTS AKIN TO PROPERTY

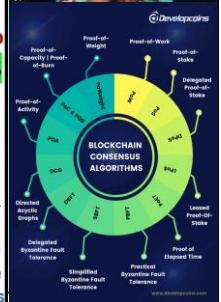
IRS #1421

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

EPOCH Time Cycles

ALICE CORP VS CLS BANK SC 573 US 134 2347



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

HEART BEACON CYCLE
USPTO 13/573,002
SURVEY METHODS

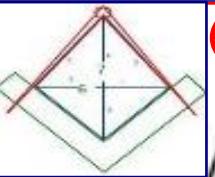
SC ALICE CORP VS CLS BANK: “claims may not direct towards abstract ideas”

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

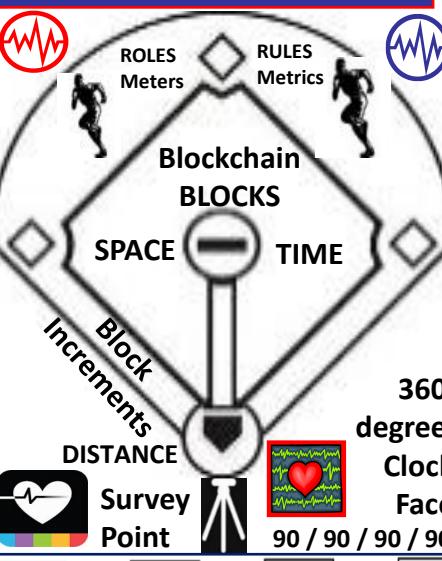


BLOCKS / COINS PENDING ISSUE

B

A

C



$\Delta\delta$

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

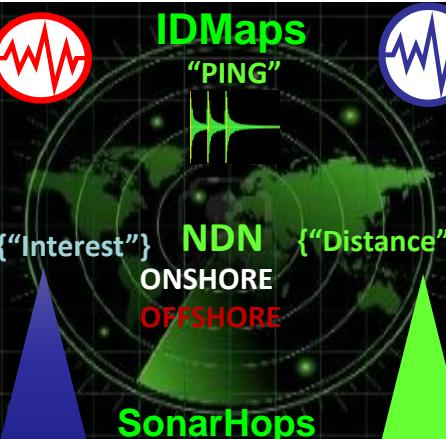
Step 2: coins sent where, when Lat-Long, time stamp

Step 3: specify ownership <Org_ID> issuing agent

Step 4: Issuing Org of Record adjudicates w buyer



$\Delta\delta$



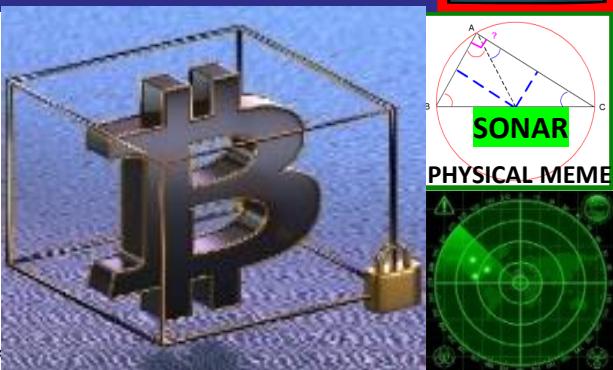
TRIANGULATION



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







ISO Technical Committee TC68

Financial Services

| | | |
|-----------------|-------------------|----------------|
| SC2 Security | SC4 Securities | SC7 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 66

Q: Which memo 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, OSCODE 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.

Proof of Capacity: PoC: Proof-of-Burn

Proof-of-Weight

Proof-of-Work

Proof-of-Stake

Delegated Proof-of-Stake

Proof-of-Activity

PoA & PoB

POA

DCG

DBFT

SBFT

PBFT

Leased Proof-of-Stake

Proof-of-Elapsed Time

Proof of Elapsed Time

Practical Byzantine Fault Tolerance

Simplified Byzantine Fault Tolerance

Delegated Byzantine Fault Tolerance

Structured Data Exchange

SYNTAX EXCHANGE

CODECS-Symbol Sets

A.I. / Man - Machine

World Financial Standard 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>

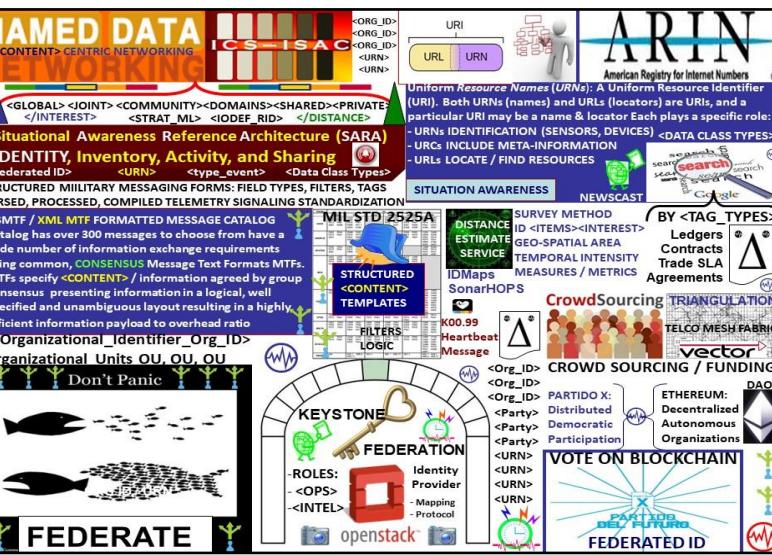
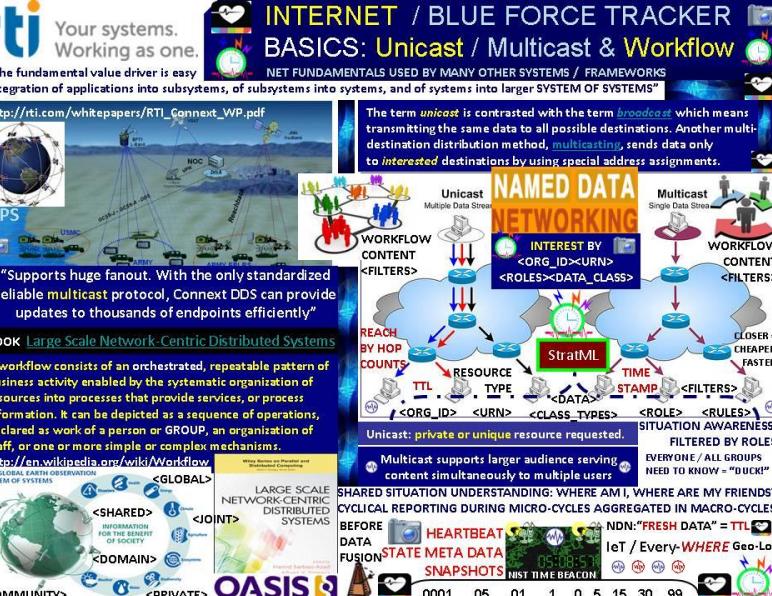
FOUNDATION STANDARDS TECHNOLOGY

- ISO 20022
- MIL STD Structured Data Exchange
- DoD System of Systems Engineering

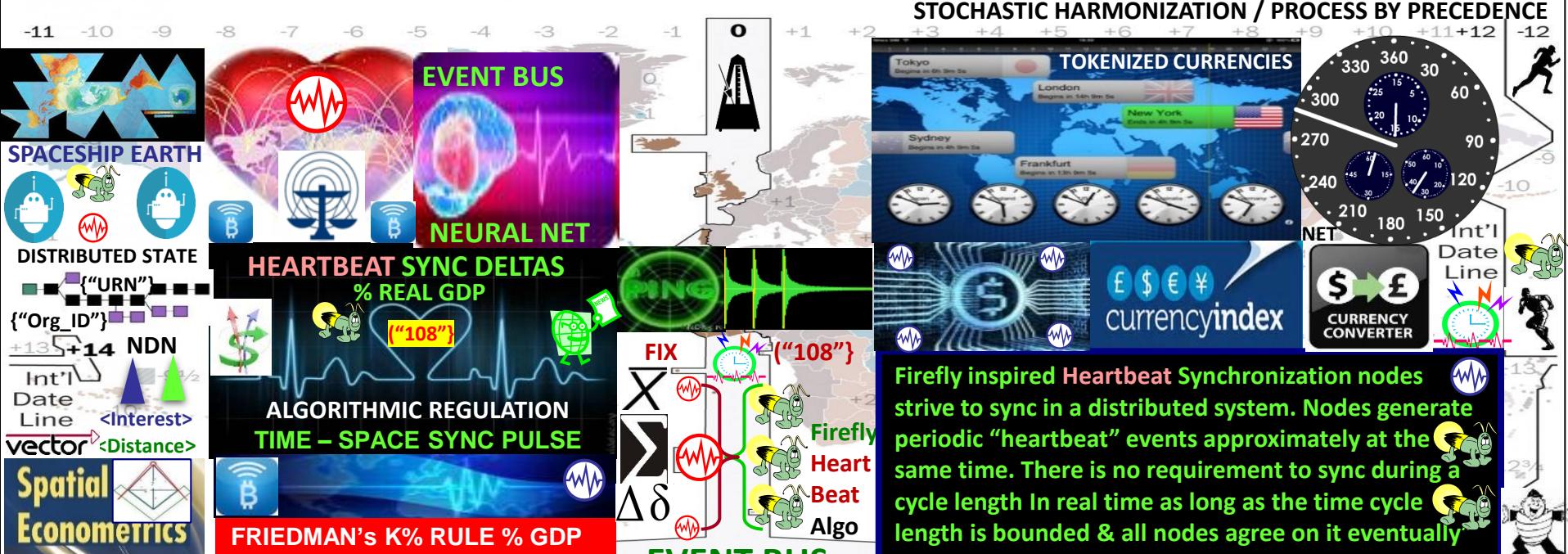
CONSENSUS ALGORITHMS

NDN: Named Data Networking

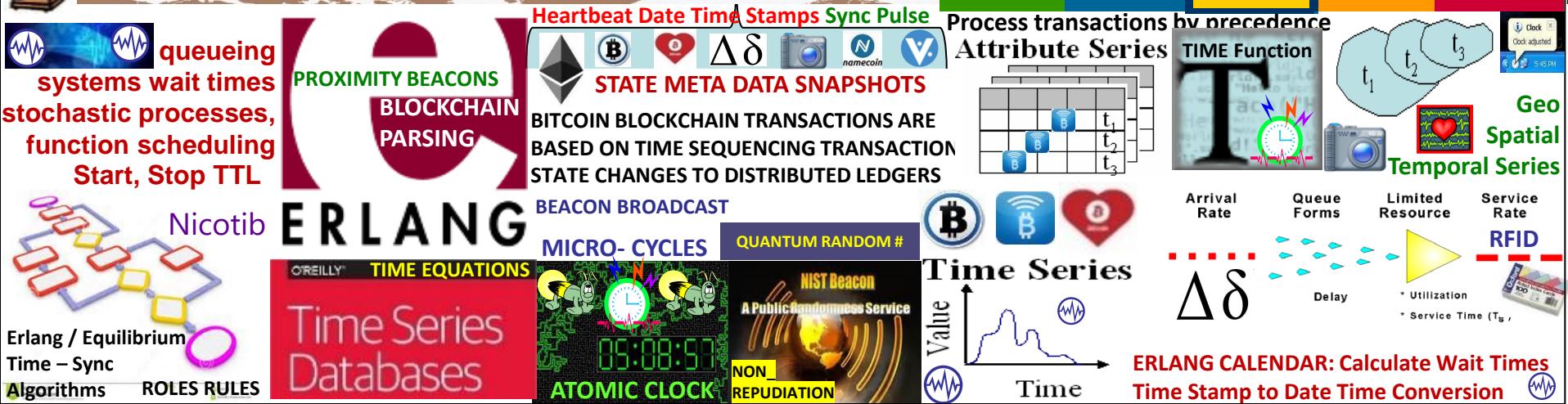
ARIN, ASN-1 Binary XML 2525 A,B,C,D Symbol Sets for Human – A.I.



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

ASSET TOKENS

"SYMBOLS RULE THE WORLD"

11.8 - Kinematic
11.8.1 - Pos
11.8.1.1 -
11.8.1 -

STRATML XAML

XBRL
THE BUSINESS REPORTING STANDARD
BINARY XML
Decision

UBL
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



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



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 /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 L - 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



{"Org_ID"}



108 Heartbeat Message



STOCK NDN NAMED DATA



EXCHANGE NETWORKING



MIC CODES PRECEDENCE



FILTERS PROCESSING



BLOCKTIME



ARBITRAGE



ERLANG



TIME

EQUATIONS



UBL



TOSCA



YAML



Covariance Matrix

| FROM | TO | | | | CODE GUIDE | | |
|---------------------------------------|---|--|--|--|--|---|---------------------------------|
| | GCCS-A | TAIS | ASAS | AMDPCS | AFATDS | MCS | |
| ASAS | C002 C203 F002 F014 F015 F541 S201 S309 | C002 C203 | C002 C203 | C002 C203 F014 F541 S305 S309 | C002 C203 F014 F541 S305 S309 | C002 C203 E400 F002 F014 F015 F541 S201 S309 S507 | |
| TOKENS OPSCODE BREVITY CODES | USMTF / XML MTF FORMATTED MESSAGE CATALOG = 300 + messages info exchange sets using common, CONSENSUS Message Text Formats MTFs. MTFs specify </CONTENT> / info agreed by group consensus presenting information in a logical, well specified unambiguous layout resulting in a highly efficient info payload to overhead ratio | | | | F002 F015 S201 | C203 C400 D630 E500 F002 F014 | |
| AMDPCS | F002 F014 F015 F541 S201 | A423 C203 C505 F002 F014 F015 F541 S201 | A423 A659 C002 C203 C400 C443 C447 C488 C501 C503 C504 C505 C506 C507 C508 E400 F002 F014 F015 F541 F658 F756 G489 K01.1 S201 S303 S507 | A423 A659 C002 C203 C400 C443 C447 C488 C501 C503 C504 C505 C506 C507 C508 E400 F002 F014 F015 F541 F658 F756 G489 K01.1 S201 S303 S507 | Rosetta Stone Syntax Lexicon Coder's Guide | A.I. INFOCON 5 4 3 2 1 INFORMATION CONDITION | M2M "SYMBOLS RULE THE WORLD" |
| MCS | | A423 C203 C505 F002 F014 F015 F541 S201 | ASSET TOKENS Token Economy | | | | |

MESSAGE CATALOG 300 + Use Cases

Data Elements: entity, attribute, relationship equivalents

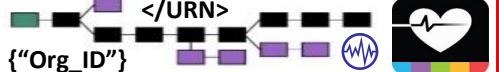
HEARTBEAT MESSAGE =
K00.99 </108> {"108"}

| Information Categories and Examples | | | | | | | |
|-------------------------------------|---|---|---------------------------|--|-----------------------------------|-----------------------------|-----------------------------|
| Object Categories | Examples | Location | Movement | Identify | Status | Activity | Intent |
| OOB | SYNTAX LEXICON | STRUCTURED DATA lat/long | EXCHANGE spd/hdg | Message country / alliance, type/class | Sets readiness | COA targeting, reconning | {"Java JS"} |
| Infrastructure | Comm, power, transportation, water/sewer | Machine Trust Language MTL network, grid | throughput, flow rates, | CDL Contract Description Language name, part-of relationnship | BDA, op level | repair, broadcasts | YAML expansion |
| Sociological | Culture, religion, economic, ethnic, government, history, languages | temples, historic structures | E-R Model Entity | Class Diagram Class | Relational Database Table | Object DBMS Class | XML DTD / Schema Element |
| Geophysical | Terrain, weather, climatology, oceanography, astrometry | feature lat/long, alt/dpth | Attribute Domain Value | PURCHASE CODES Attribute | Instance, Value Field / Column | TADILs Message | MTF FFIRN / FFN / FUDN |
| | | | | | | | TOKENS |

| 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 | | | | | | | | | | |
| 11.4.1 - Category | 11.8.1 - Pos / Vel / Acc (PVA) | | | | | | | | | | |
| 11.4.1.1 - Confidence Level | 11.8.1.1 - Acceleration | | | | | | | | | | |
| 11.4.1.2 - Estimate Type | 11.8.1.1.1 - Angular | | | | | | | | | | |
| 11.4.1.2.1 - Alternative | 11.2 - Linear | | | | | | | | | | |
| 11.4.1.2.2 - Evaluated D | 2 - Estimate Type | | | | | | | | | | |
| 11.4.1.3 - Value | 1.2.1 - Estimated | | | | | | | | | | |
| PURCHASE CODES | | | | 1.2.2 - Observed | | | | | | | |
| SYMBOL | | | | 1.2.3 - Predicted | | | | | | | |
| Friend | | | | 1.2.4 - Smooth / R | | | | | | | |
| Neutral | | | | 4 - Velocity | | | | | | | |
| Hostile | | | | 1.4.1 - Horizontal | | | | | | | |
| Competitor | | | | 1.4.2 - Vertical | | | | | | | |
| 11.4.1.3.4 - Substance | | | | VA Confidence | | | | | | | |
| 11.4.1.3.5 - Surface | | | | 1 - Bearing Angle | | | | | | | |
| 11.4.2 - Platform / Point / Feature Type | | | | 2 - Bearing Angle Rate | | | | | | | |
| 11.4.3 - Specific Type | | | | 3 - Covariance Matrix | | | | | | | |
| 11.4.4 - Type Modifier | | | | | | | | | | | |
| 11.4.5 - Unit | | | | | | | | | | | |



MIL STD 2525A, B, C, D



20022



SYNTAX LEXICON
ROSETTA STONE

Coder's Guide lexicon

| STRUCTURED <CONTENT> EXCHANGE TEMPLATES | |
|---|------------------------|
| MIL | STD 2525ABC |
| MIL | ASSET TOKENS |
| MIL | SYMBOLS RULE THE WORLD |
| 11.8 - Kinematics | 11.8.1 - Pos. |
| 11.8.1 - Pos. | 11.8.1.1 |
| 11.8.1.1 | 11.8.1.1.1 |

STRATML

xBRL XAML

Inform BINARY XML

• COI D
• Search
• Ontology
• Taxonomy
• Metadata

UBL DDL DATA
TOSCA
YAML

INFOCON 4 3 2 1 INFORMATION CONDITION FFUDN: F

A.I. SYMBOLS RULE THE WORLD

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
11.4.1 - Category

11.4.1.1 - Confidence Level
11.4.1.2 - Estimate Type

11.4.1.2.1 - Alternative
11.4.1.2.2 - Evaluated
11.4.1.3 - Value

PURCHASE CODES

SYMBOL Friend Neutral Hostile Competitor

2525C Partner

TOKENS DUI FUD

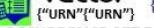
Signal operating instructions (SOI): technical control coordination of signaling, telemetry Current situational awareness, data dictionary, network identification, channels, network directory, brevity code-words, signals. Units maintain 2 SOI copies: PEACE TIME version "Go-To-War" version = BIZ COA (s) <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"} {"URN"} {"TRANSACTIONID"} {"INDEXREFERENCE#"} M015 STATUS

EFFECTIVE: 14-DEC-95 PURCHASE CODES FEDERATED PEGS

{"ASSET_CLASS"} {"ASSET_TYPES"} ISO 10383 - MIC Market Identifier Code

STOCK NDN NAMED DATA EXCHANGE NETWORKING

MIC CODES PRECEDENCE PROCESSING

FILTERS BLOCKTIME ARBITRAGE ERLANG TIME EQUATIONS

1951 Encyclopedia Britannica: "Language is a SYSTEM of SIGNS having meaning by convention. In this sense, language need not be confined to the spoken word".

THE DAY THE EARTH STOOD STILL

"Signs and symbols rule the world, not words nor laws" - Confucius

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

CONFUCIOUS

DoD Systems of Systems Engineering Structured Data Exchange MIL Standards / ISO Standards

BREVITY OPSCODES MAPPED TO SYMBOLS,
SYMBOL SETS FOR A.I. ARTIFICIAL
INTELLIGENCE MAN – MACHINE INTERFACE

STANDARD, CONSISTENT SYMBOLS

| FROM | TO | | | | | CODE GUIDE |
|--------|--|---|-----------|---|---|------------|
| | GCCS-A | TAIS | ASAS | AMDPCS | AFATDS | MCS |
| ASAS | C002 C203 F002 F014 F015 F541 S201 S309 | C002 C203 | C002 C203 | C002 C203 F002 F014 F541 S305 S309 | C002 C203 F002 F014 F541 S201 S307 | |
| AMDPCS | OPSCODE BREVITY CODES | USMTF / XML MTF FORMATTED MESSAGE CATALOG = 300 + messages info exchange sets using common, CONSENSUS Message Text Formats MTFs. MTFs specify </CONTENT> / info agreed by group consensus presenting information in a logical, well specified unambiguous layout resulting in a highly efficient info payload to overhead ratio | | | F002 F015 F541 S201 | |
| AFATDS | F002 F014 F015 F541 S201 | | | | | |

MESSAGE CATALOG 300 + Use Cases

| Object Categories | Examples | Location | Movement | Identify | Status | Activity | Intent |
|-------------------|---|------------------------------|------------------------|-----------------------------|----------------|------------------------|----------------------|
| OOB | SYNTAX LEXICON | STRUCTURED DATA | EXCHANGE | Message Sets | readiness | targeting, reconning | COA {"Java JS"} |
| Infrastructure | Common power, transportation, water/sewer | lat/long, network, grid | throughput, flow rates | name, part-of relationships | BDA, op levels | repair, thermodynamics | YAML expansion plans |
| Sociological | Culture, religion, economic, ethnic, government, history, languages | temples, historic structures | | | | | |
| Geophysical | Terrain, weather, climatology, oceanography, astrometry | feature lat/long, alt/dpth | | | | | |

Information Categories and Examples



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

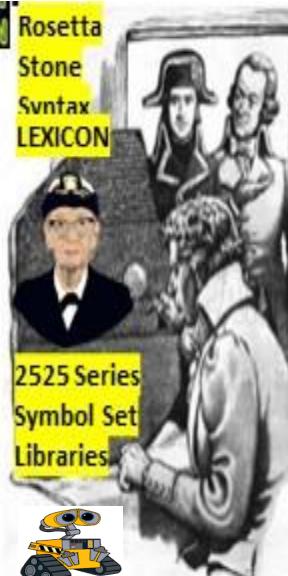
This claim implies both that human thinking is a kind of symbol manipulation (because a symbol system is necessary for intelligence) and that machines can be intelligent (because a symbol system is sufficient for intelligence).[3] The idea has philosophical roots in Hobbes (who claimed reasoning was "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

data from a first form to a second form

CONDITION

Rosetta
Stone
Syntax
LEXICON



2525 Series
Symbol Set
Libraries



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



Alpha-numeric OPS CODE
Brevity codes mapped to symbols,
Symbol sets = structured data

FRZ T CP CLOUD FRS T LN PAREN

ABCA OPS CODE BREVITY CODES

Neuro-Symbolic AI

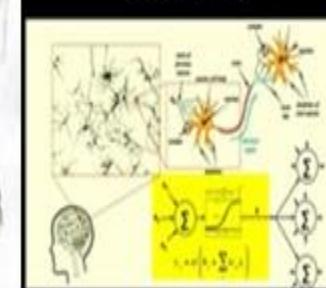
Symbolic (human-readable)
representations

Symbolic AI

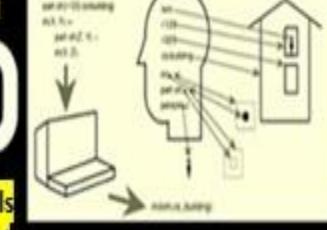
Symbolic AI

Symbolic AI

Brevity
Codes



Symbol
Symbol



Symbol
Symbol



Incorporate common sense reasoning and

Breaking the world into symbols (rather than

Sets 2525C

NAMED DATA NETWORKING

<CONTENT> CENTRIC NETWORKING



<ORG_ID>
<ORG_ID>
<ORG_ID>
<URN>
<URN>

<GLOBAL> <JOINT> <COMMUNITY> <DOMAINS> <SHARED> <PRIVATE>
</INTEREST> <STRAT_ML> <IODEF RID> </DISTANCE>

Situational Awareness Reference Architecture (SARA) IDENTITY, Inventory, Activity, and Sharing



<Federated ID> <URN> <type_event> <Data Class Types>

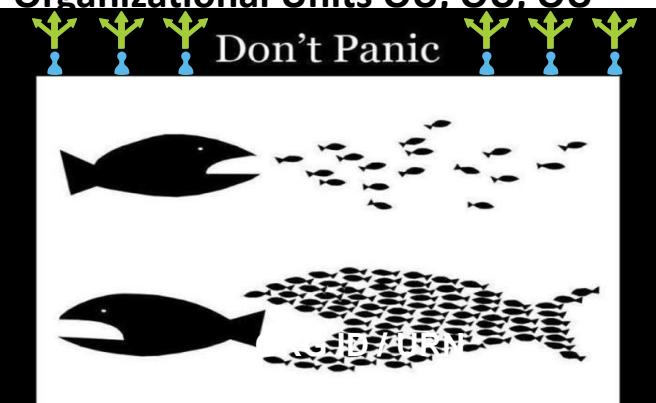
STRUCTURED MILITARY MESSAGING FORMS: FIELD TYPES, FILTERS, TAGS
PARSED, PROCESSED, COMPILED TELEMETRY SIGNALING STANDARDIZATION

USMTF / XML MTF FORMATTED MESSAGE CATALOG

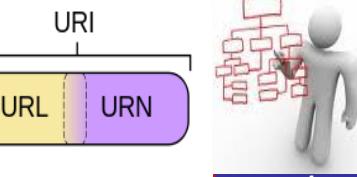
Catalog has over 300 messages to choose from have a wide number of information exchange requirements using common, CONSENSUS Message Text Formats MTFs. MTFs specify <CONTENT> / information agreed by group consensus presenting information in a logical, well specified and unambiguous layout resulting in a highly efficient information payload to overhead ratio

</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU



FEDERATE



Uniform Resource Names (URNs): A Uniform Resource Identifier (URI). Both URNs (names) and URLs (locators) are URIs, and a particular URI may be a name & locator. Each plays a specific role:

- URNs IDENTIFICATION (SENSORS, DEVICES)
- URCs INCLUDE META-INFO
- URLs LOCATE / FIND RESOURCES

SITUATION AWARENESS



SURVEY METHOD
ID <ITEMS><INTEREST>
GEO-SPATIAL AREA
TEMPORAL INTENSITY
MEASURES / METRICS

IDMaps
SonarHOPS



K0.99
Heartbeat
Message



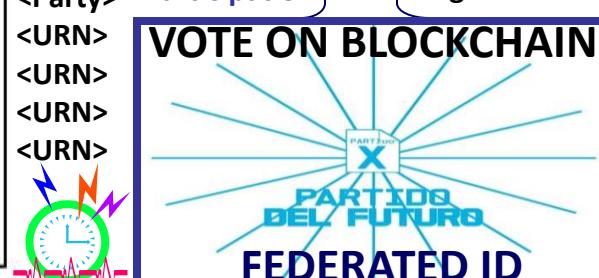
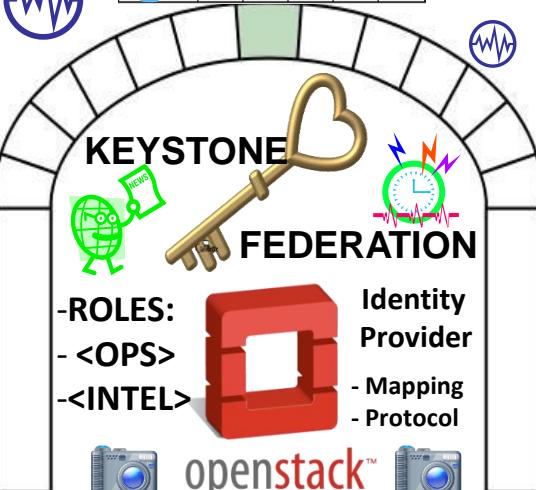
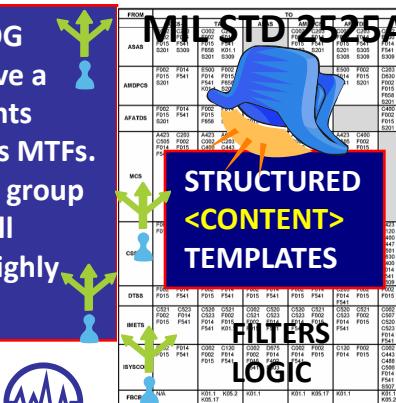
<Org_ID>
<Org_ID>
<Org_ID>
<Party>
<Party>
<Party>

<URN>
<URN>
<URN>
<URN>



CROWD SOURCING / FUNDING

DAO
ETHEREUM:
Decentralized
Autonomous
Organizations



Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

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



ICS-ISAC

Industrial Control System
Information Sharing and
Analysis Center

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

INVENTORY: Uniform Resource Name <URN>

<URN><URN>
<URN><URN>
<URN><URN>

<COMMODITY><WATER><ENERGY><AVAILABLE UNITS>



GEO-SPATIAL TEMPORAL INTENSITY METRICS
UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

ACTIVITY: <EVENT><ALERT> <TIME_STAMP><ORG_ID><URN>

CONTENT LEXICON
ROSETTA STONE

NDN



NDN

<GEO_LOC_GPS><STATUS>
<Halt><Moving><Stale><Ready>

AVALANCHE

SHARING:

COMMON <TAGS>

<Organizational_ID>

Resource Names <URN>

<Time_Stamps>

<State-Meta_Data>

<DATA_CLASS_TYPE>

<Heartbeat_snapshots>

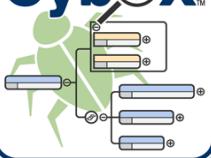
<TAG> LIBRARY
TEMPLATES

NDN

<INTEREST>



<INTEREST>



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

MIL-STD-2525A

| FROM | TO | AMPCPS | AFATPS | MCS |
|--------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| ABAD | F002 F014 F016 F018 F020 F022 F024 |
| AMOPCS | F001 F003 F005 F007 F009 F011 F013 |
| AFATPS | F002 F014 F016 F018 F020 F022 F024 |
| CBICS | F002 F014 F016 F018 F020 F022 F024 |
| DTBS | F002 F014 F016 F018 F020 F022 F024 |
| IMETS | F001 F003 F005 F007 F009 F011 F013 |
| ISYCON | F002 F014 F016 F018 F020 F022 F024 |
| FBCE | F002 F014 F016 F018 F020 F022 F024 |

STRUCTURED
<CONTENT>
TEMPLATES

NAMED DATA
NETWORKING
<Content> Centric

USMTF / XML MTF FORMATTED MESSAGE CATALOG

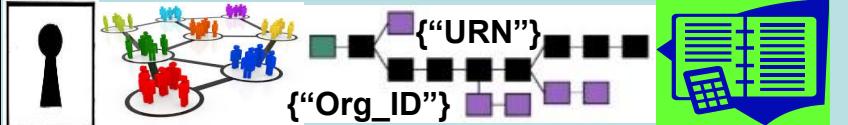
Catalog has over 300 messages to choose from have a wide number of information exchange requirements using common, CONSENSUS Message Text Formats MTFs specify <CONTENT> / information agreed by group consensus presenting information in a logical well specified and unambiguous layout i.e., templates

<TAG>
LIBRARY



Heart Beacon Cycle

FEDERATE / TRADE FEDERATIONS



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

Federation
Gateway

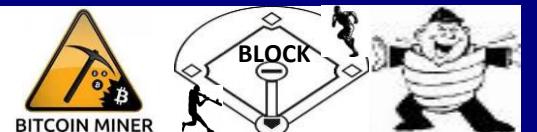


"GROUP ID"



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



UUID 123e4567-e89b-12d3-a456-426655440000
UUID 123e4567-e89b-12d3-a456-426655440001
UUID 123e4567-e89b-12d3-a456-426655440002

STOCK EXCHANGE
MIC MARKET IDENTIFIER
CODES / BREVITY CODES



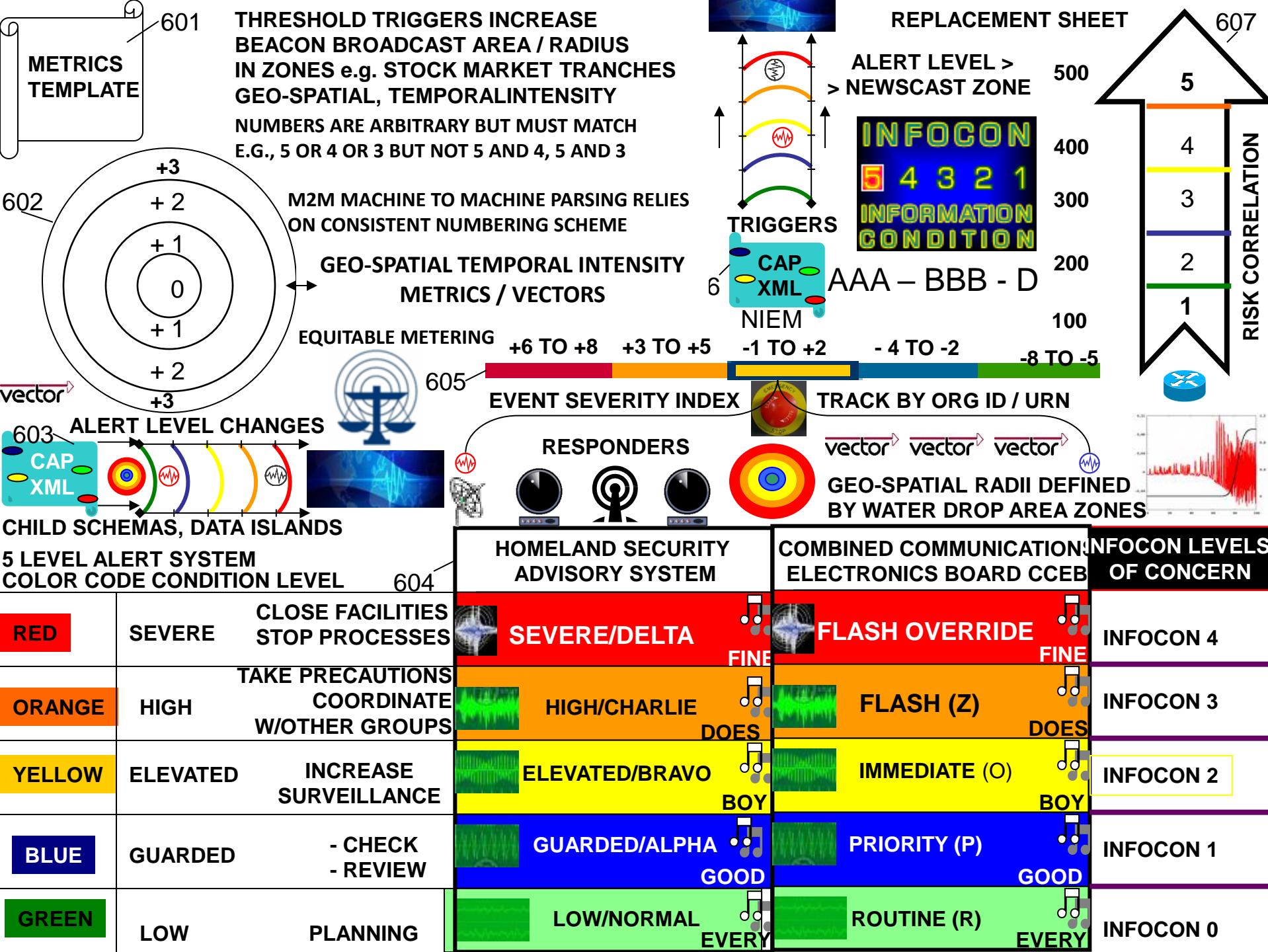
{"DUNS #"} {"Org_ID"} Heartbeat Snaps
QR CODE
{"URN"} {"URN"} {"URN"} MICRO-CYCLES





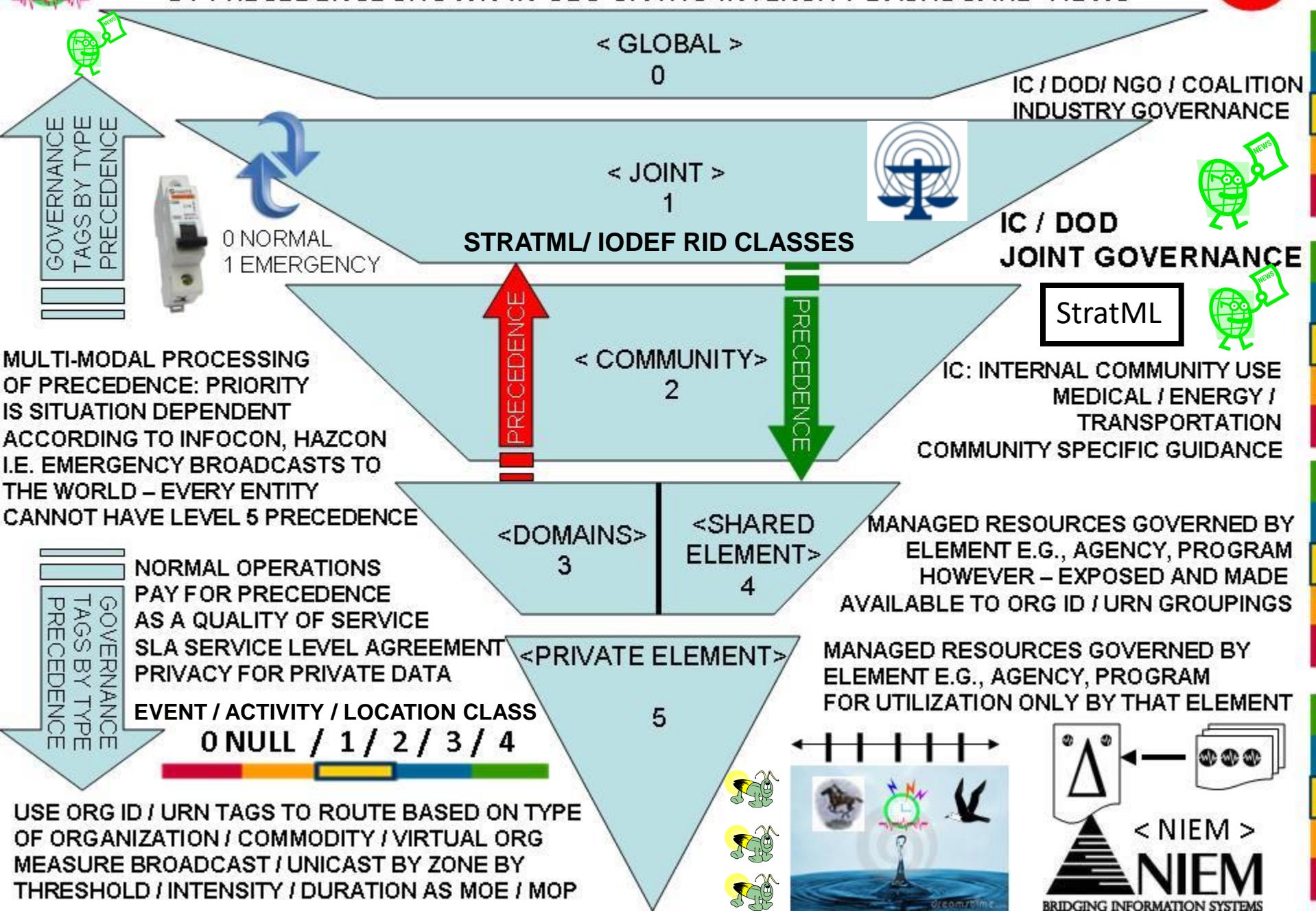
FEDERATE: COMMON GOALS SYNCHRONIZED IN SPACE - TIME





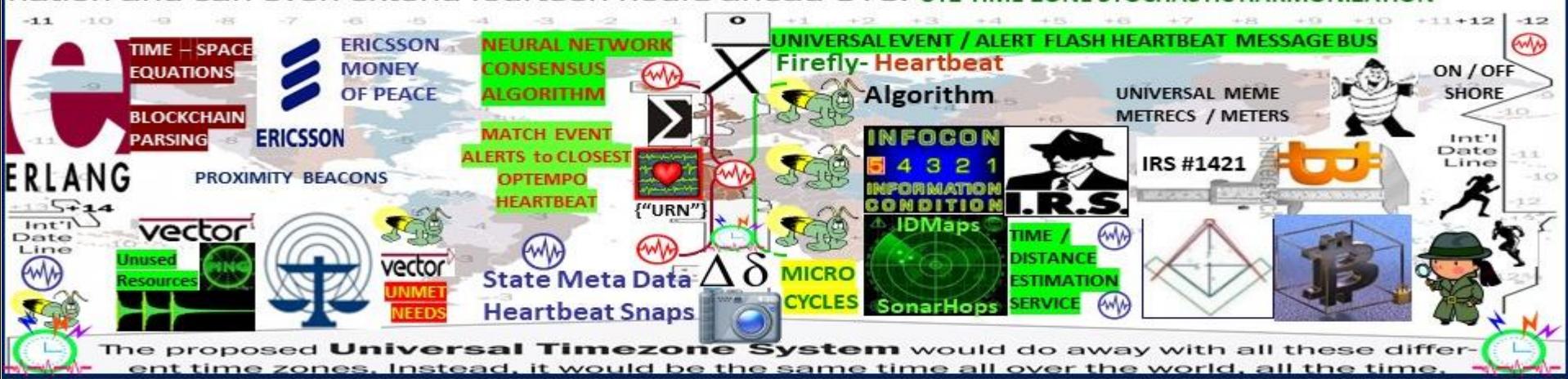


ENABLE MAPPING OF GOVERNANCE / MANAGEMENT RESOURCES BY PRECEDENCE SHOWN IN GEO-SPATIO INTENSITY DASHBOARD VIEWS





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**

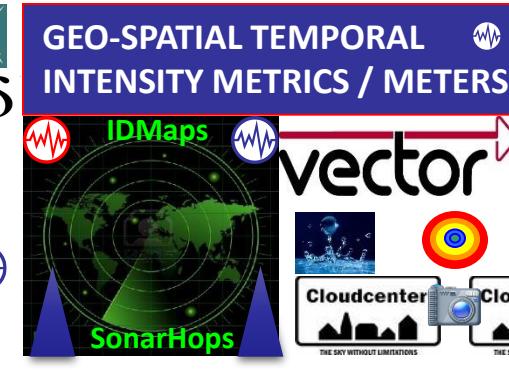
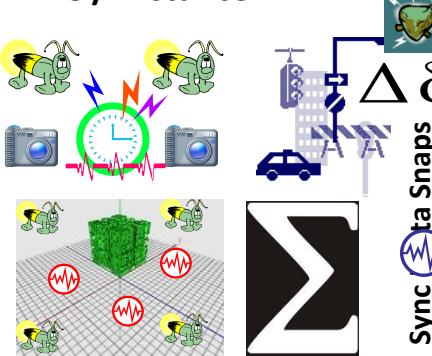




IDMaps: Global Internet Host Distance Estimation Service



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



NAMED DATA NETWORKING
NDN INTEREST
Closer = Faster
Closer = Cheaper

IDMaps scalable Internet-wide architecture measures, disseminates distance information



HOP COUNTS

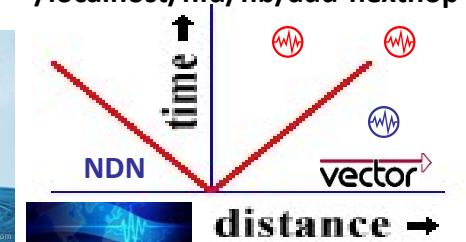


REACHABILITY



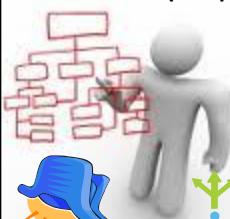
/localhost/nfd/fib/add-nexthop

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)



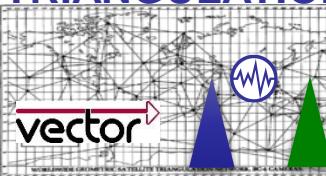
NDN NAMES

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



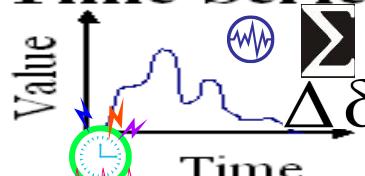
TRIANGULATION



NDN INTEREST

IS DATA FRESH ?

Time Series



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

Datasets and Event Notification

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



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



MICRO-CYCLES



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:



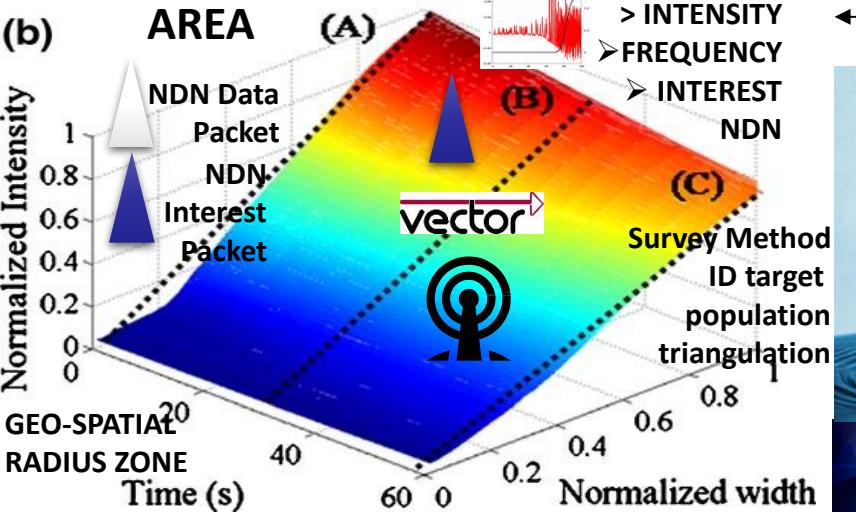
Paul Revere = linear, sequential



TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY Cyclic Frequency



NAMED DATA NETWORKING

</IoT>
MQTT



NIST TIME BEACON



time →



<INTEREST>



time →



distance →



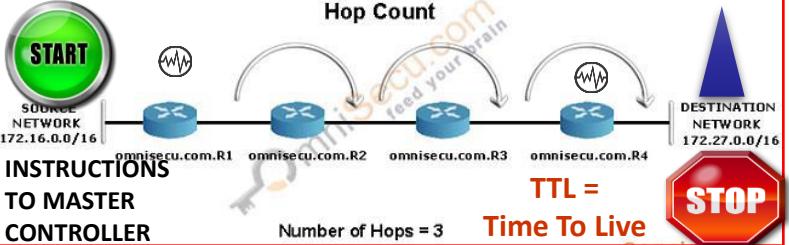
ARRESTED-D



TELEMETRY TRANSPORT



Hop Count



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

IDMAPS
SONARHOPS
INTERNET
TRIANGULATION



4 / 3 / 2 / 1 / NULL / 1 / 2 / 3 / 4

.0001 .05 .01 .1 0 5 15 30 99

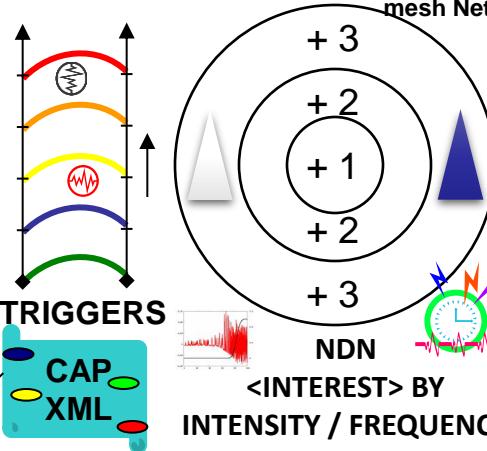
vector WirelessHART

time synchronized,
self-organizing,
mesh Net

ALERT LEVEL >
> NEWSCAST ZONE



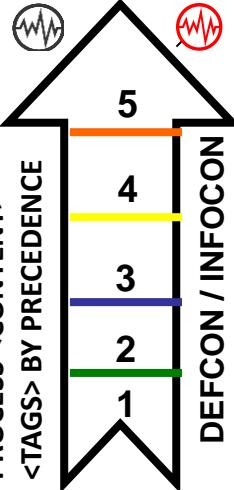
SINE-WAVE



INFOCON
XML
MTF
300 +
MSG

5 4 3 2 1

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

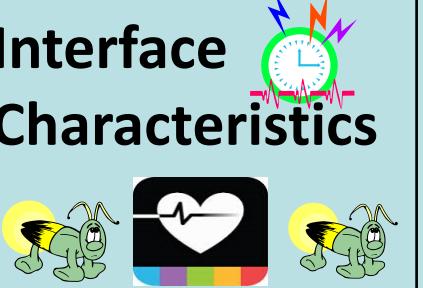
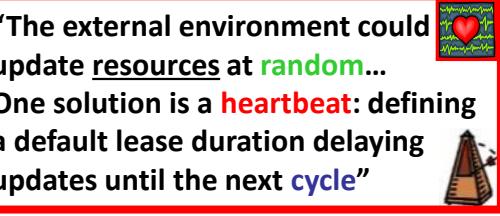
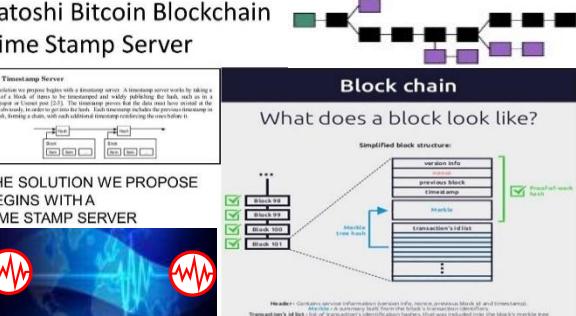
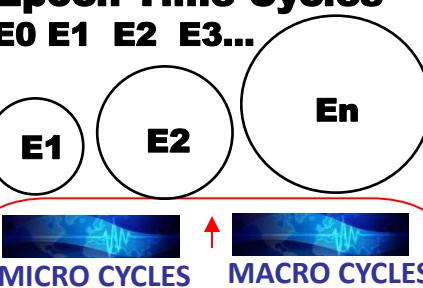
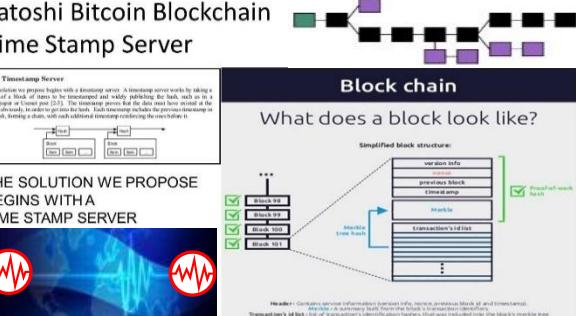
vector

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

TIME STAMP BY Org_ID, URN Before FUSION CENTER

SIOP

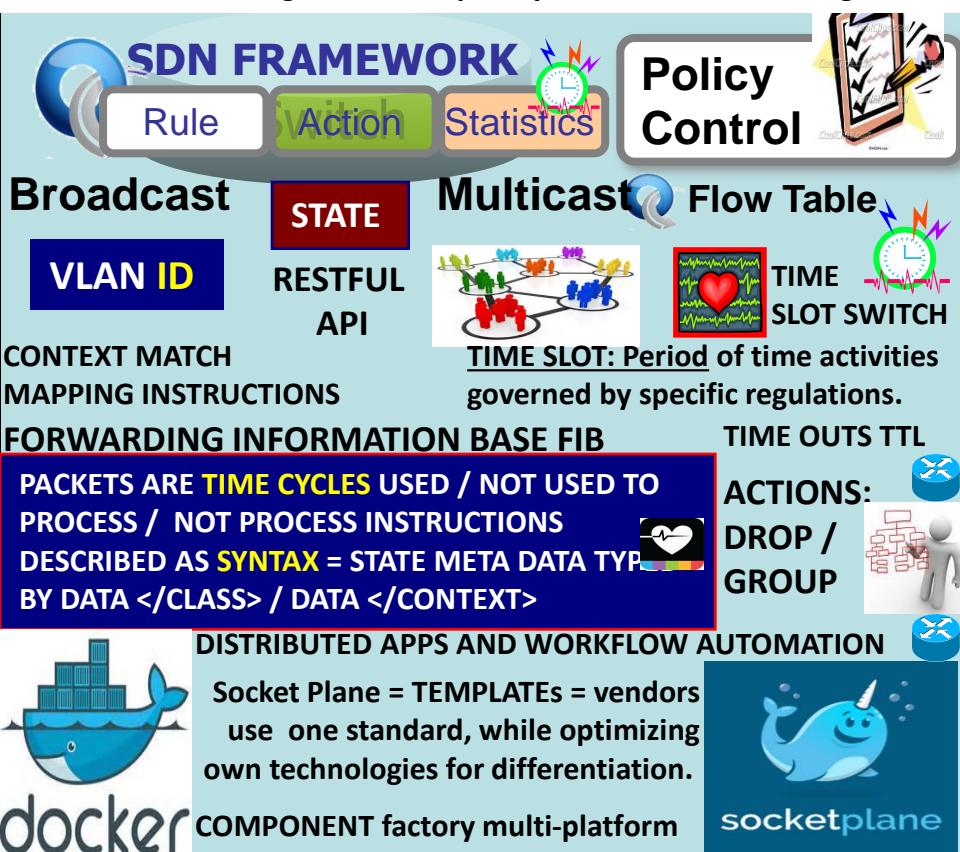


| | | | |
|--|--|--|---|
| Interface Name | HEARTBEAT Administration Interface [SCOP] | | |
| Documentation URL | http://scop.sourceforge.net/ http://linuxvirtualserver.org/software/index.html | | |
| API Information | #Big_Data |   | Functionality Areas   <p>Cloud Interface Management configuration, start, stop cloud services, edit configuration (heartbeat messages)</p> |
| Programmable Money World Computer / Blockchain | #leT |   | API Operation Count  |
| Interface Characteristics | NIST TIME BEACON |  | Web service access type Network Effects / A.I. <p>Web application, front end to [network, device, system, blockchain] heartbeat</p> |
| "The external environment could update <u>resources</u> at random... One solution is a heartbeat : defining a default lease duration delaying updates until the next cycle " |   | LANGUAGE / PLATFORM BINDINGS   | 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] 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> | |
|  | |  | Epoch Time Cycles E0 E1 E2 E3...  |
| QubitCoin Interval: Every 30 Seconds | |  | |



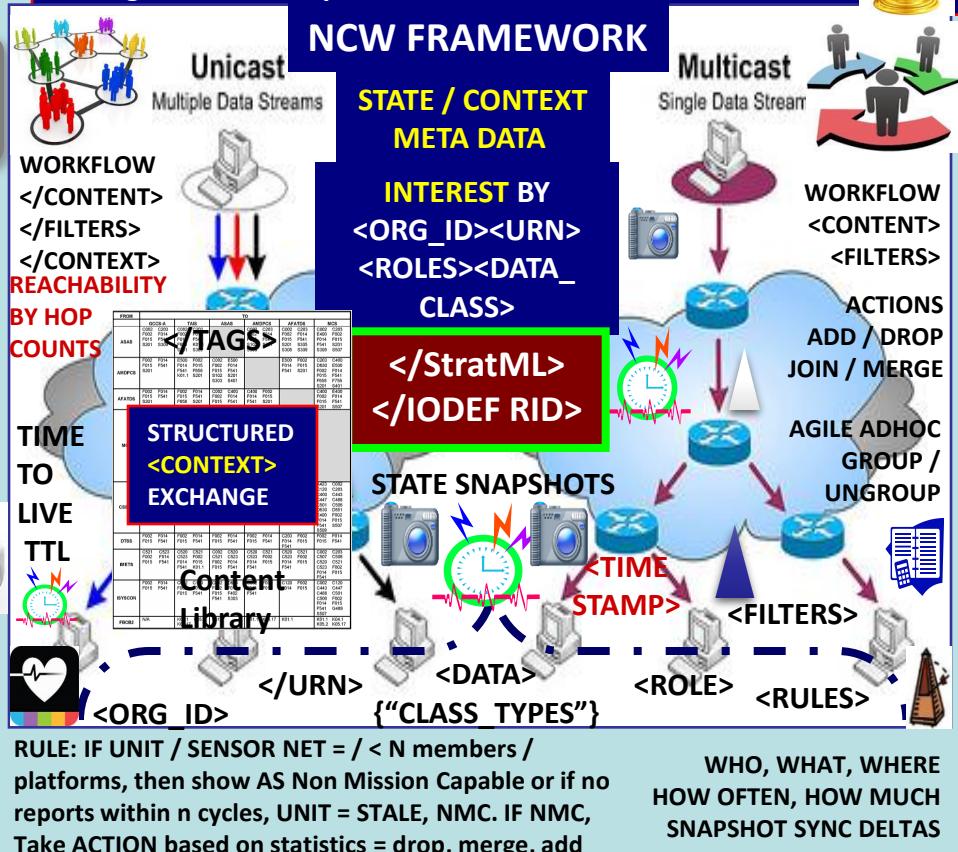
- SDN is a *framework* to allow network administrators to *automatically* and dynamically manage and control a *large number* of network devices, *services*, topology, traffic paths, and packet handling (quality of

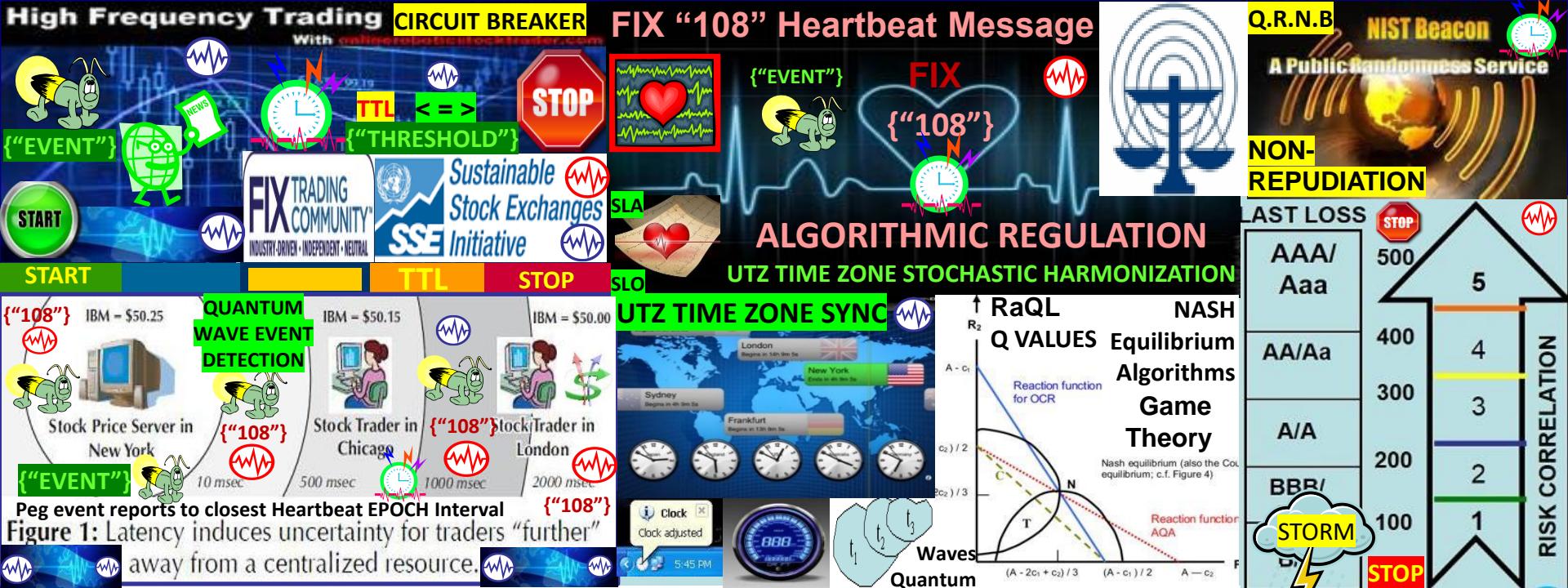
DevOps model and tools to enable scale, programmable agility, and policy-driven automation, and provides network virtualization to mask network configuration complexity with set of networking APIs



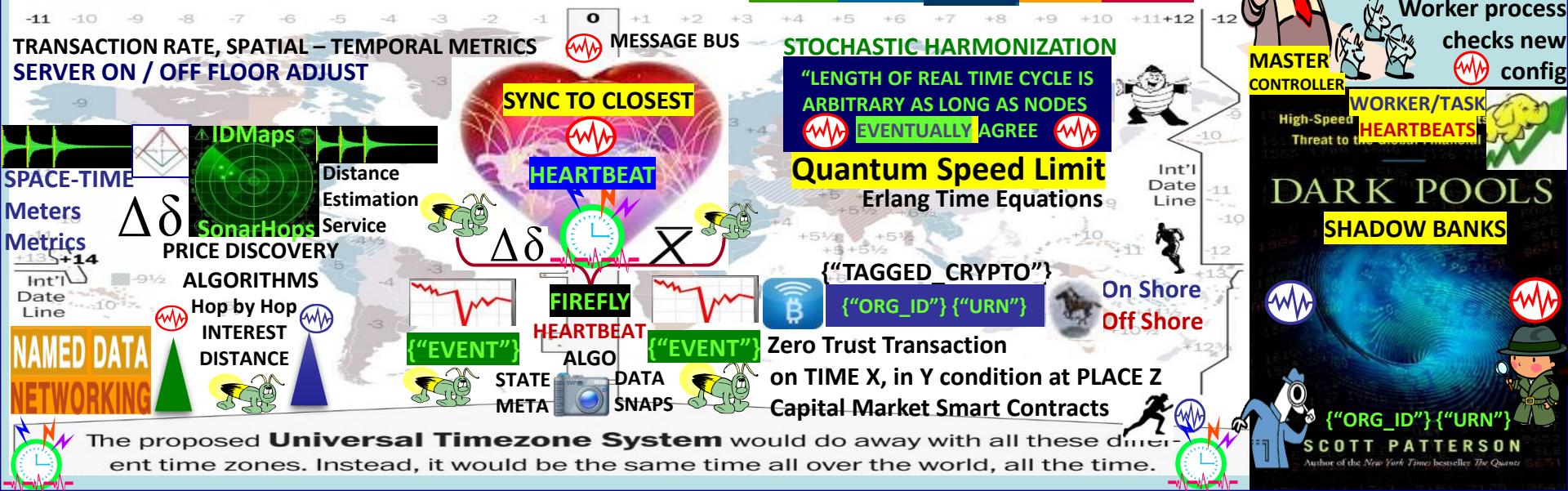
Netcentric / "network-centric" participating in a continuously evolving, complex community of people, devices, information and services interconnected by a network to optimize resource management and provide information on events and conditions.

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





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.



USPTO APPLICATION 13,573,002 The Heart Beacon Cycle Time – Space Meter, Applique' Overlay

GIZMAG: New NASA network poised to bring internet to entire solar system

SCt 573 ALICE CORP VS CLS BANK PHYSICAL MEMES

INTERNET TCP/IP "PING", "HOPS",
"PACKETS", FRAMES = METAPHOR



TIME / DISTANCE SERVICE LEVEL
AGREEMENT SLA / O Operations

IEEE 802.15.4 OASIS MQTT

TELEMETRY TRANSPORT

IEEE 802.1AG HOP BY HOP
DETECTION

IEEE 802.11
HOP BY HOP CONTROL



Unused Resources / Unmet Needs

/localhost/nfd/fib/add-nexthop
Geo-Spatial Temporal
Metrics, Meters

DISTANCE
INFO SERVICE

Time Series

RISK

Value

Time

IDMaps
SonarHops

WATER DROP IN POND MEME IS
SONAR NAVY METAPHOR / MEME

NDN </INTEREST>
NDN {"DISTANCE"}

NAMED DATA
NETWORKING

IEEE C37.118
Harmonization
& Sync heartbeat
update Interval

CLOSER SOURCE
CHEAPER RATE

Energy Attenuates over Distances

PAUL REVERE
LINEAR, SEQUENTIAL

603

NULL

+1

+2

TCP/IP HOP BY HOP COUNT

Energy Attenuates over Distances

RADIUS
WATER DROP IN POND MEME

Attribute Series



Geo Spatial

Temporal Series

INTEREST
DISTANCE



Micro Grids Closer - Cheaper

BLOCKCHAIN
MICROGRIDS



Spatial
Econometrics

Spaceship
Earth
Signals &
Telemetry
Annex

ASTEROID BELTS =
RARE MINERALS

MAIN
ASTEROID
BELT

MARS

MERCURY

VENUS

EARTH

STOCHASTIC
HARMONIZATION

FIREFLY-HEARTBEAT
ALGORITHM
UNIVERSAL
EVENT MESSAGE BUS

ERLANG

TIME- SPACE METRICS

43

Light minutes

22

Astronomical units

13

0

1.5

2.7

5.2

TIME-SPACE BEACON

INFOCON

5 4 3 2 1

INFORMATION
CONDITION

???

SIRIUS DISCLOSURE

MOON =

"Numbers are the
Universal Language

offered by deity to humans as

confirmation of the truth"

Alpha
Numeric
Brevity
Codes

SYNTAX
LEXICON

K00.99

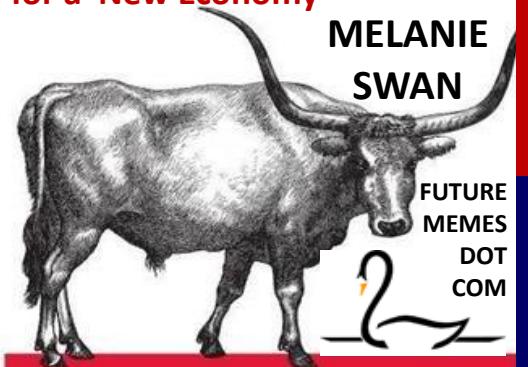
CODE

ANDERSON
INSTITUTE

FIREFLY – HEARTBEAT ALGORITHM MESSAGE EVENT BUS

EPOCH / TIME CYCLES / INTERVALS

← cycle n → ← n + 1 → ← n + 2 →



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)

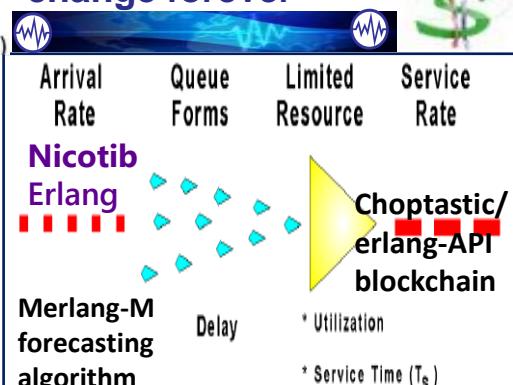
SORTING ALGO'S

[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 | TO/CC-A | THREE | ADAM | ADRIENNE | AFRAZ | WICK |
|------------|--------------|-------|------|----------|-------|------|
| XBRL | / CDL / DAML | | | | | |
| ALPHA | NUMERIC | | | | | |
| BREVITY | CODES | | | | | |
| AZURE | BLETCHLEY | | | | | |
| STRUCTURED | | | | | | |
| MILITARY | MESSAGE | | | | | |
| TEMPLATE | FORMS | | | | | |
| LOGIC / | FILTERS | | | | | |

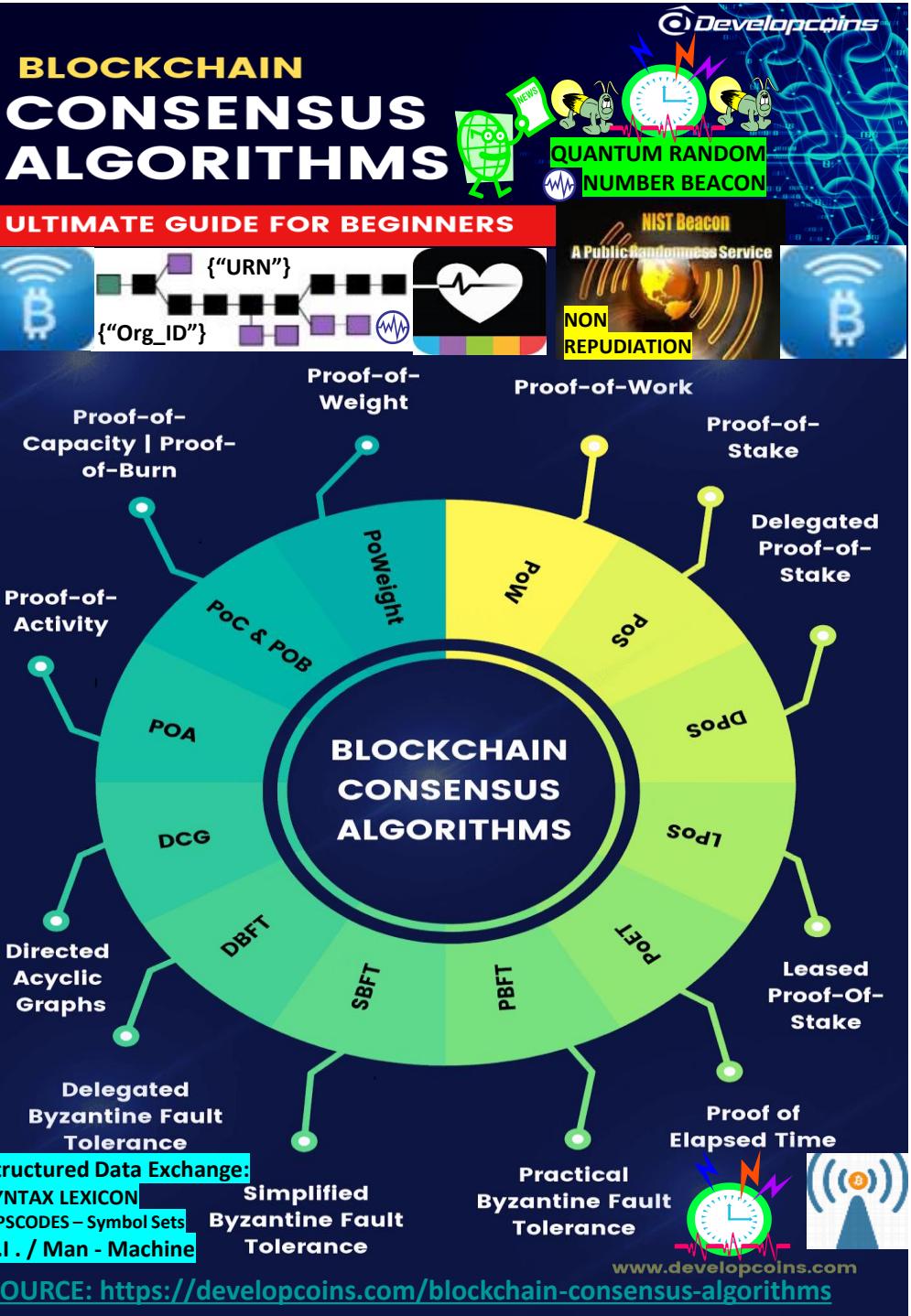
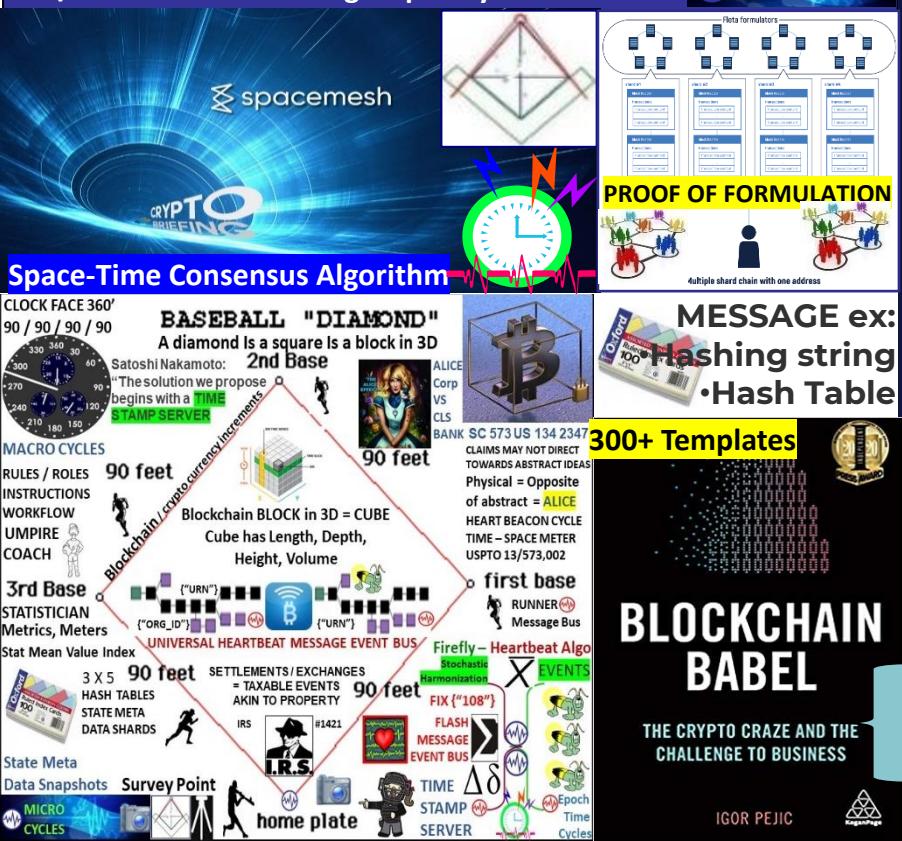


Q: Which meme describes the myriad blockchain consensus algorithms the most comprehensively that uses an algorithm (based on nature = “shortest path to the knowledge of truth Luxor Temple) enabling distributed system of systems geo-spatial, UTZ Universal Time Zone temporal, semantic - syntactic sync,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



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



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



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*

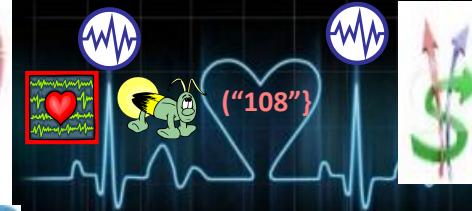
Mission: *shift trade to a decentralized platform*



Demurrage TERRATRC TRADE Fees REFERENCE CURRENCY "Money of Peace"

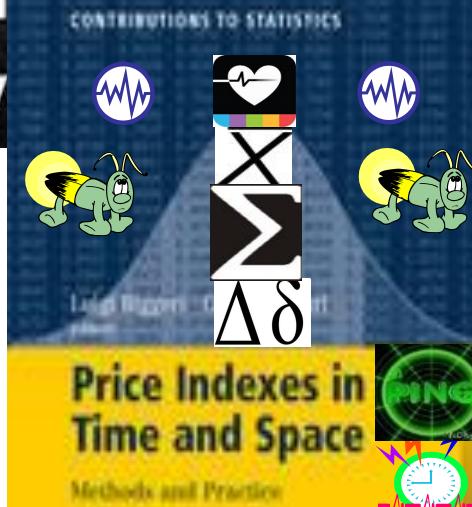


COMMODITIES
ECONOMIC HEARTBEAT



STAT MEAN VALUE PULSE
REAL WORLD ASSETS RWA

STAT MEAN VALUE INDEX



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>



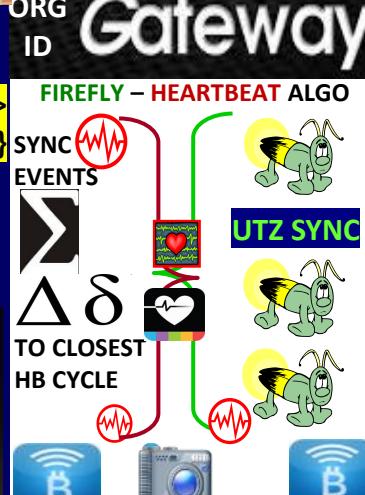
CONTRIBUTIONS TO STATISTICS



- Users should fully control their data. Users have freedom to reveal as much personal identifiable information as they want, when they want



Bitcoin: OpenBazaar transactional currency



Price Indexes in Time and Space
Methods and Practice



Cryptographic Security

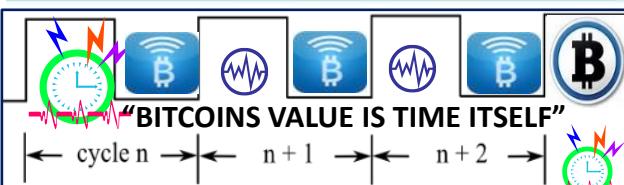
- tamper-proof agreements
- 1) minimize potential disputes
- 2) fast-track dispute resolution



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

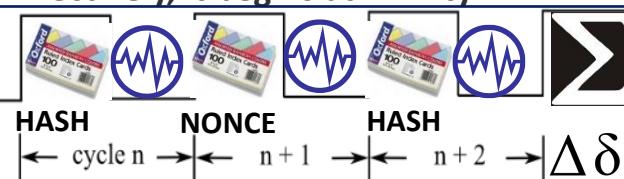


THROTTLE equivalent to difficulty. State
•target = maximum value of 8 bytes Snap
Shots

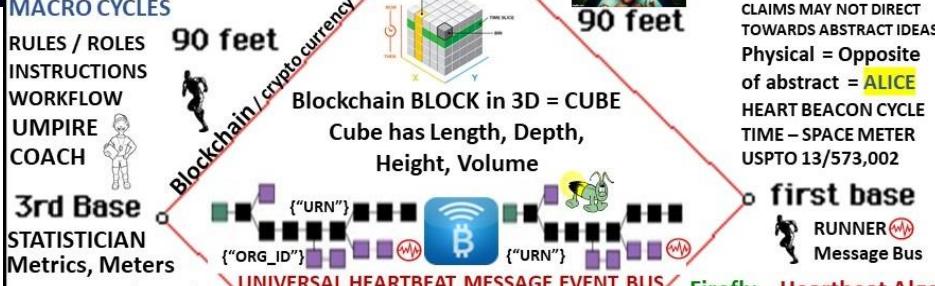
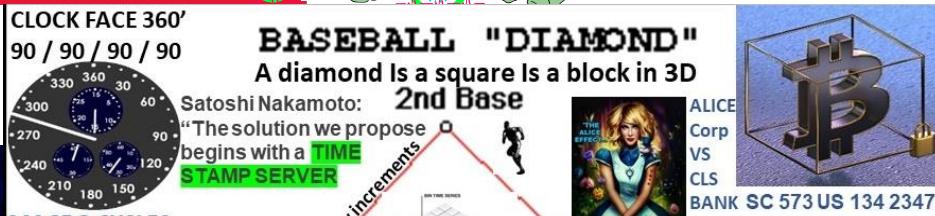
NONCE increments from 0..N until the target is met.



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





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.

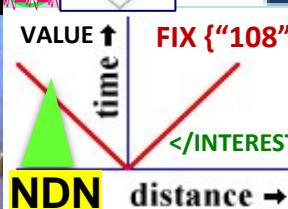
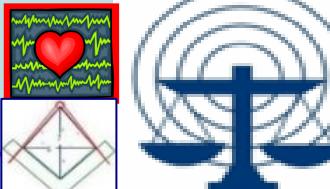


TIME – SPACE MEASUREMENTS OF TOKENIZED COMMODITIES, SECURITIES... STOCHASTICALLY HARMONIZED ACROSS UTZ Universal Time Zone

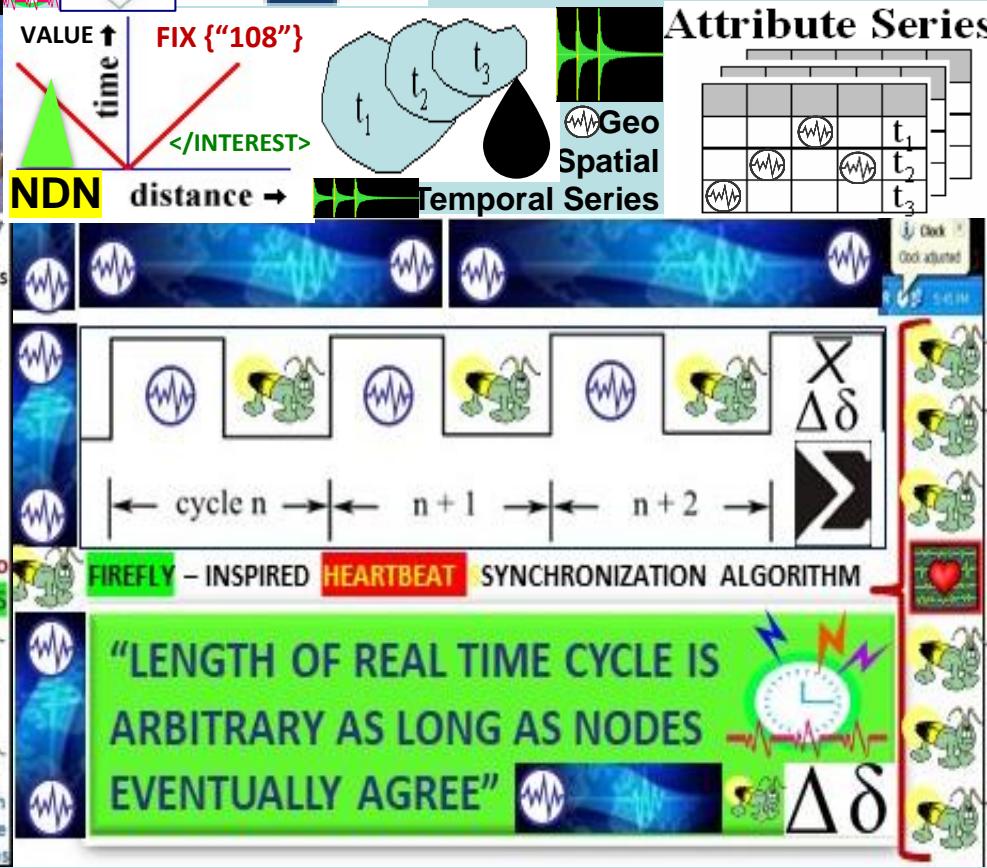


The Volumetric Weight is often referred to as dimensional weight

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



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



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.



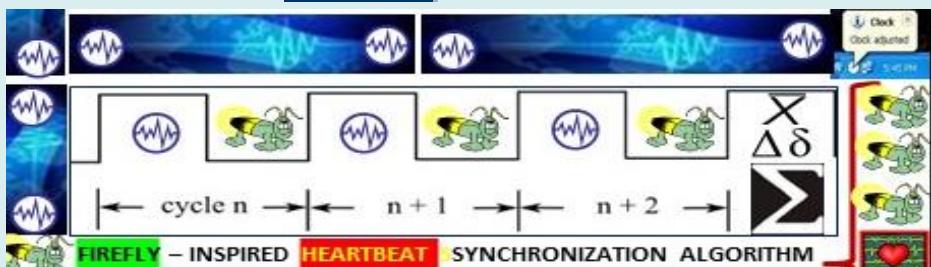
DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

Heart Beacon Cycle

FEDERATE / TRADE FEDERATIONS

Linear Sequential Meme

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





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

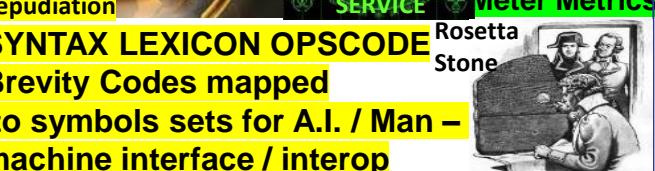


INFOCON
5 4 3 2 1
INFORMATION
CONDITION



STATISTICAL MEAN VALUE INDEX PULSE

GDP INDEX ECONOMY K% RULE

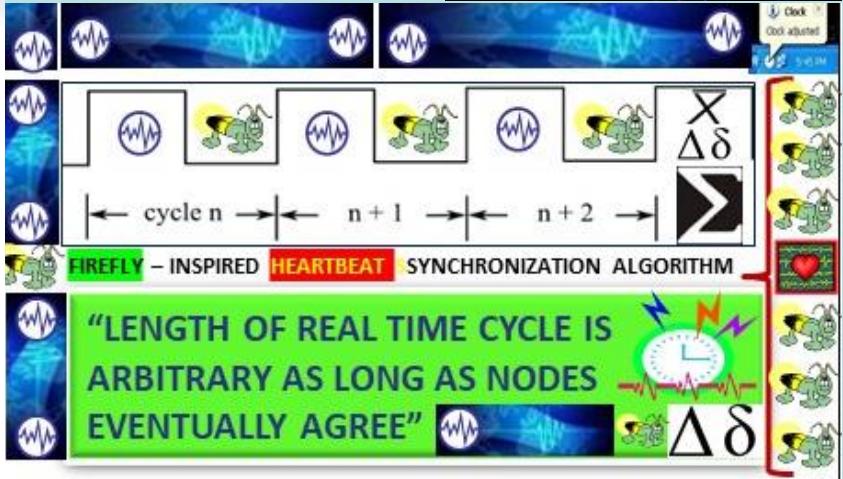
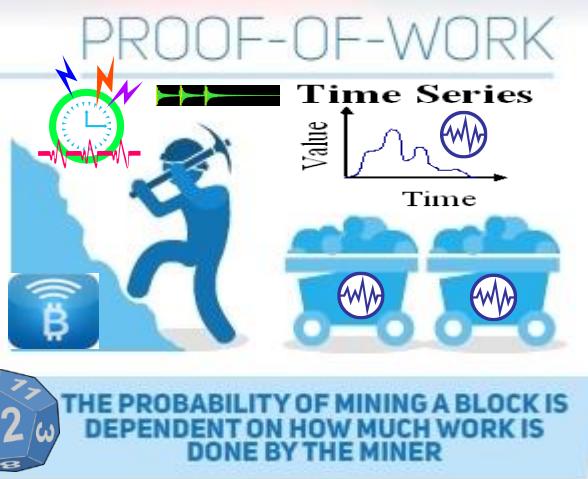




Proof-of-activity PoA is a combination of Proof of Work / Stake blockchain consensus algorithms:

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.² 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.

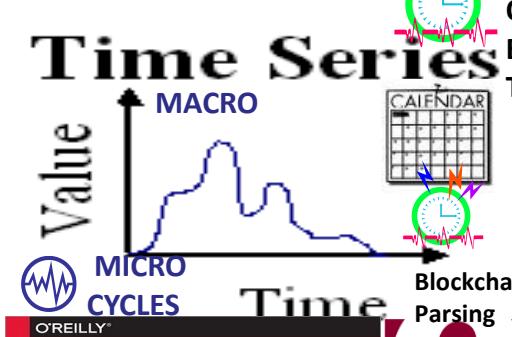


SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

"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



Time Series Databases



QUORUM VOTING PROTOCOL

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

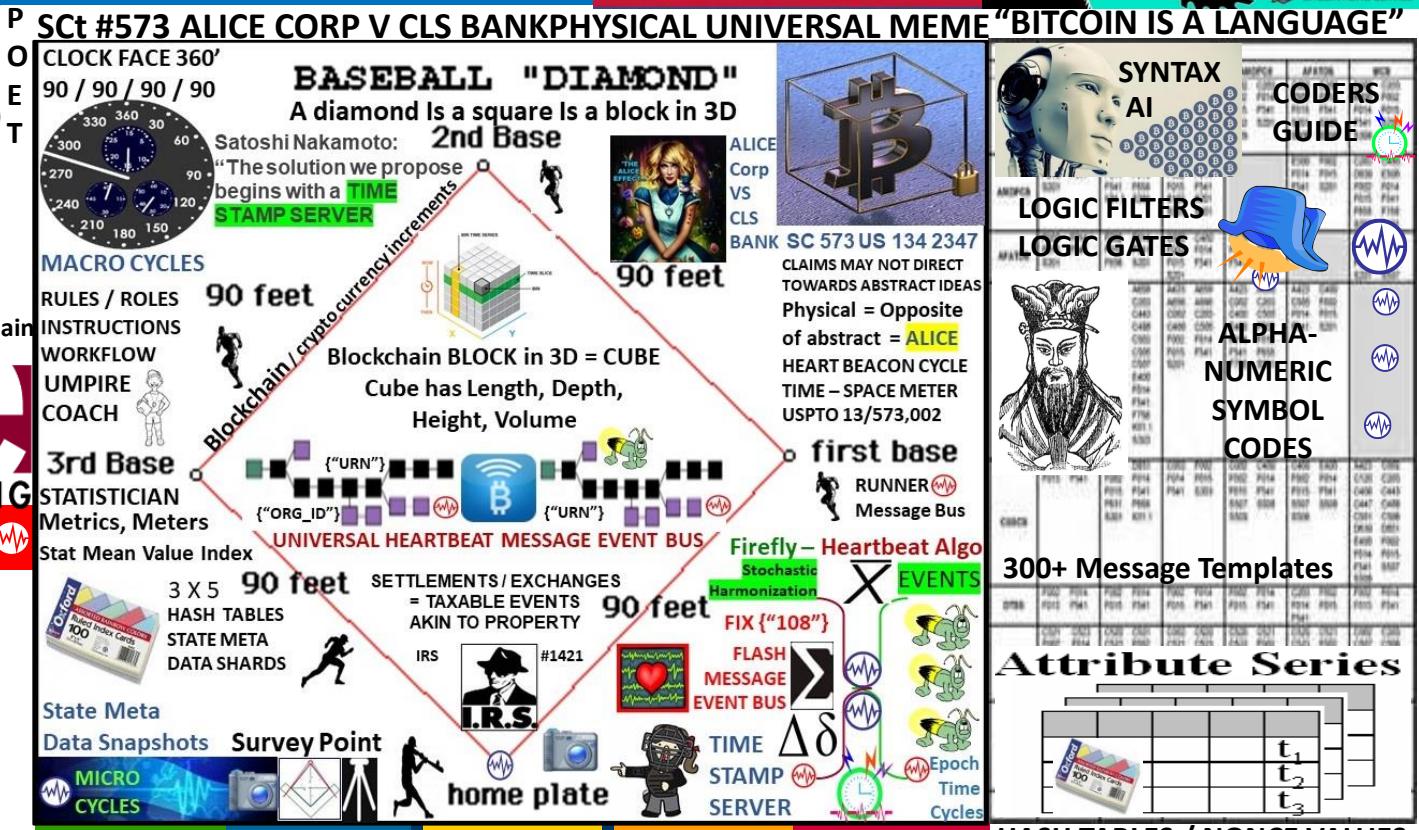
Voting based selection Instead of only using the stake size, the block generators can be selected by votes
ex: League MVP

MVP



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

TOURNAMENT LEAGUE BOARD



FIREFLY-HEARTBEAT FLASH MESSAGES UNIVERSAL EVENT BUS

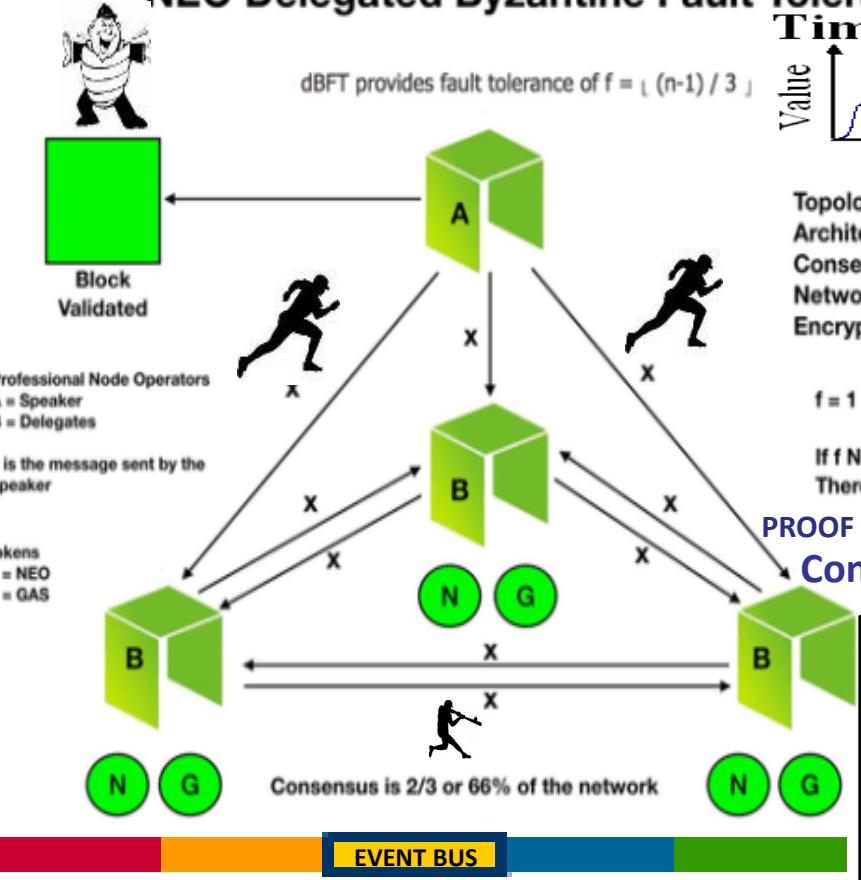


HASH TABLES / NONCE VALUES

Capture ledger's state $\Delta \delta$
Transaction language changes ledger state
Consensus, transaction acceptance protocol



NEO Delegated Byzantine Fault Tolerance (dBFT)



Time Series

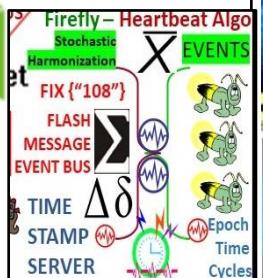


Topology: Hierarchical Star
Architecture: Distributed
Consensus: dBFT
Network: TCP/IP
Encryption: ECDH

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

If $f \text{ NOT } 1 \text{ OR } < 0.66$
There is no consensus

PROOF OF ELAPSED TIME Consensus Order



USPTO 13/573,002
sawconcepts.com/index

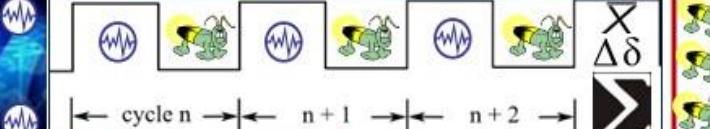
Heart Beacon Cycle Time – Space Meter

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
{ "108" } HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOTS



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. ✓





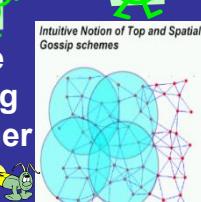
HASHGRAPH
Directed Acyclic
Graph DAG

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"



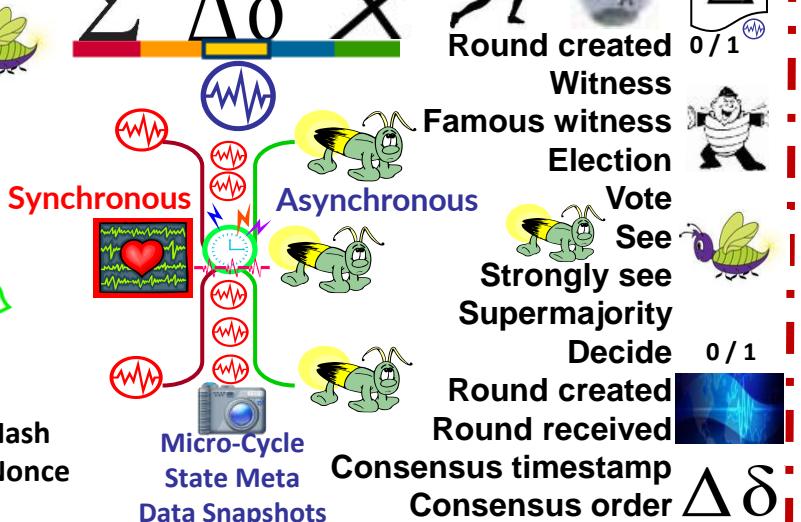
DAG "Directed Acyclic Graph" large number of blocks arrive at the same time. DAG system reaches consensus leveraging "Gossip"... information spread by a computer calling up other computers at random, sharing everything it knows

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

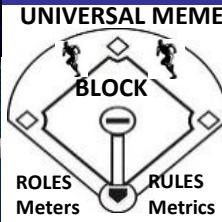
DAG finite directed graph
= no directed cycles



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

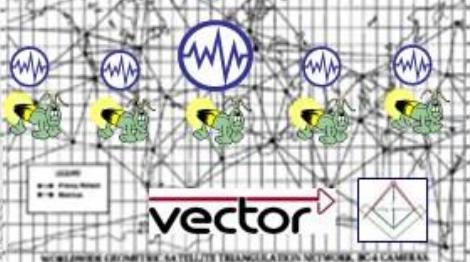


The Heart Beacon Cycle Time – Space Meter
Adaptive Procedural Template Checklist
Heartbeat Sync Delta state meta data
structured data exchange snapshots
300 + Use Case message template sets
Rosetta Stone Syntax lexicon Coder's guide



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

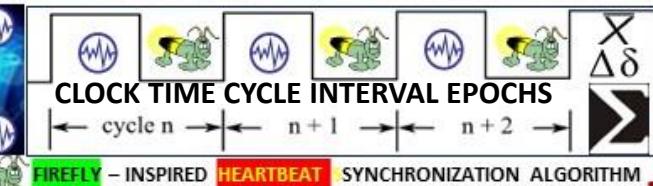
TRIANGULATION



vector
WORLDWIDE LOW-EARTH SATELLITE TRIANGULATION NETWORK, 364 CAMERAS

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

FIREFLY HEARTBEAT Synchronization Algorithm



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



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.

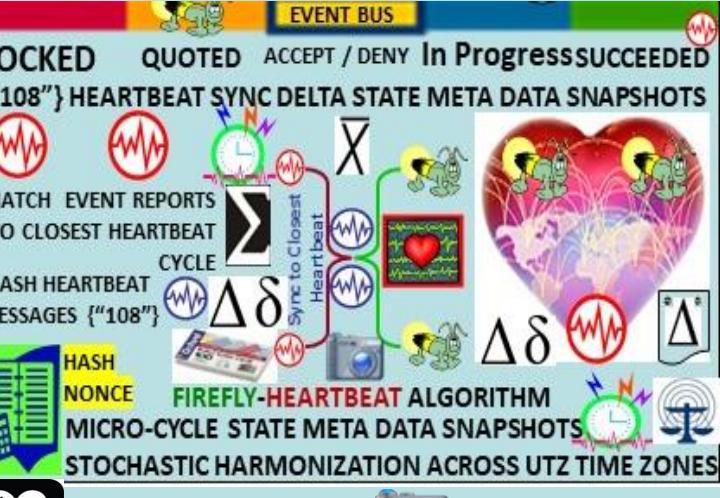
Iain Stewart, the inventor of the POB algorithm, uses an analogy to describe the algorithm: burnt coins are like mining rigs. In this analogy, a miner burns their coins to buy a virtual mining rig that gives them the power to mine blocks. The more coins burned by the miner, the bigger their virtual mining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

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.



Heartbeat Event {"burn"}

SLA = increase mining rig volume

IEEE C37.118 Time Synchronization
Harmonization Heartbeat update Interval
PMU data time-stamp measure C37.118

Phase 2: Shared file stores data for 5 tags:

(1) Active ID

(2) Heartbeat 1.

(3) Heartbeat 2.

(4) Device Status 1.

(5) Device Status 2.

SLA/O

TAG

Token Award

{"Org_ID"} ActiveID

[UFO2_ACTIVEID]

</EVENT>

IF1_Heartbeat (IF-Node1)

[UFO2_HEARTBEAT:#]

</EVENT>

IF2_Heartbeat (IF-Node2)

[UFO2_HEARTBEAT:#]

</EVENT>

{"UUID"} IF1_DeviceStatus (IF-Node1)

[UFO2_DEVICESTAT:#]

</EVENT>

{"UUID"} IF2_DeviceStatus (IF-Node2)

[UFO2_DEVICESTAT:#]

</EVENT>

IF1_State (IF-Node1) $\Delta\delta$

[UFO2_STATE:#]

$\Delta\delta$ IF_State

IF2_State (IF-Node2) $\Delta\delta$

[UFO2_STATE:#]

$\Delta\delta$ IF_State

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](#).



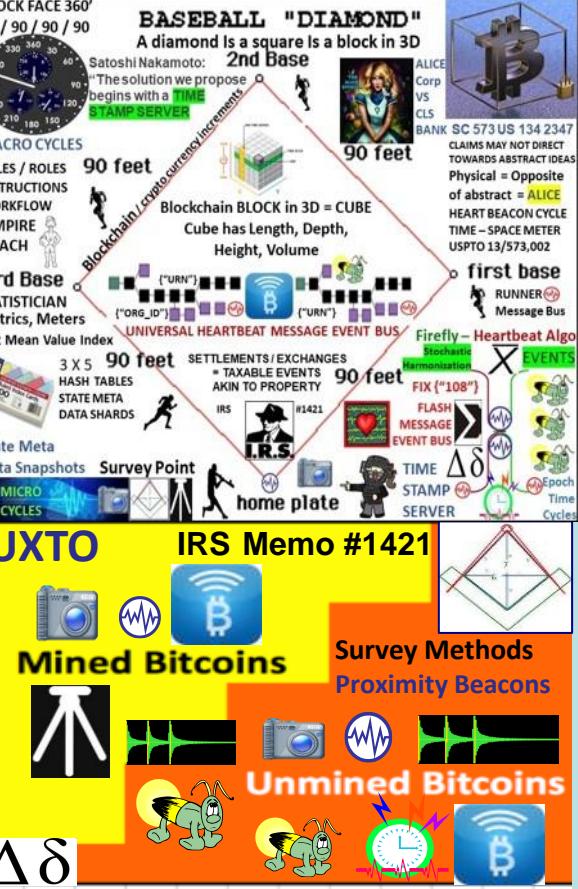
Instead of repeatedly altering the numbers in the block header & repeated hashing for the solution value as in a PoW system, PoC works by storing a list of possible solutions on the mining device's hard drive before mining activity starts



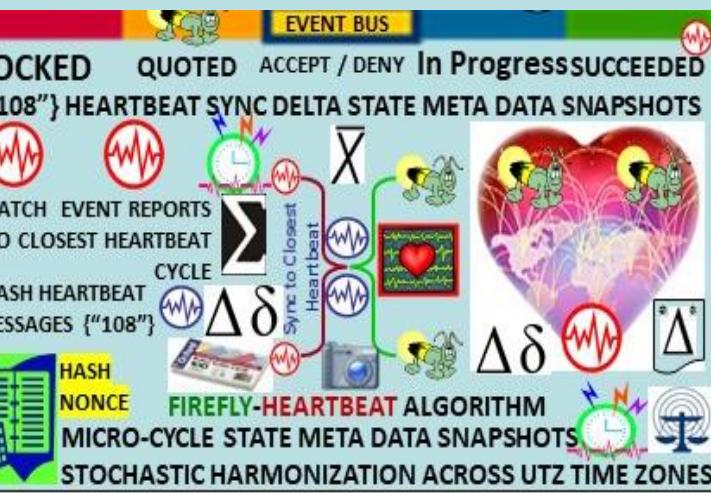
The larger the hard drive, the > possible solution values one can store on the hard drive, the more chances a miner has to match required hash value from his list, resulting in more chances to win the mining reward.



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.

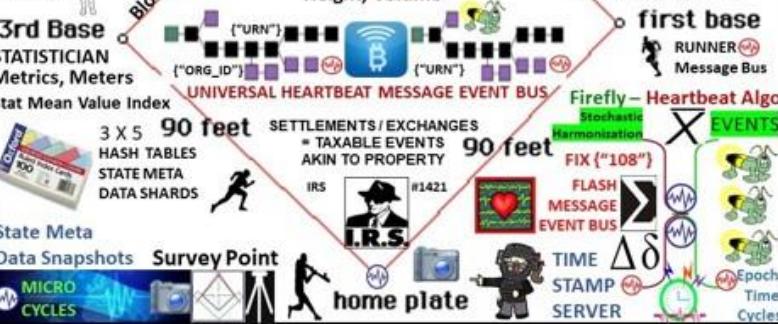
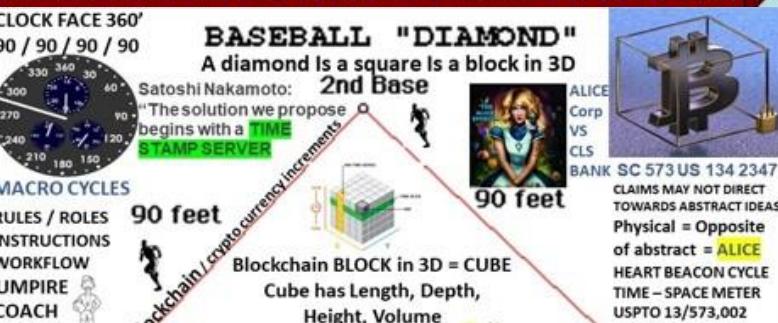


PoST users / nodes must prove that they are spending a certain amount of space for storage.



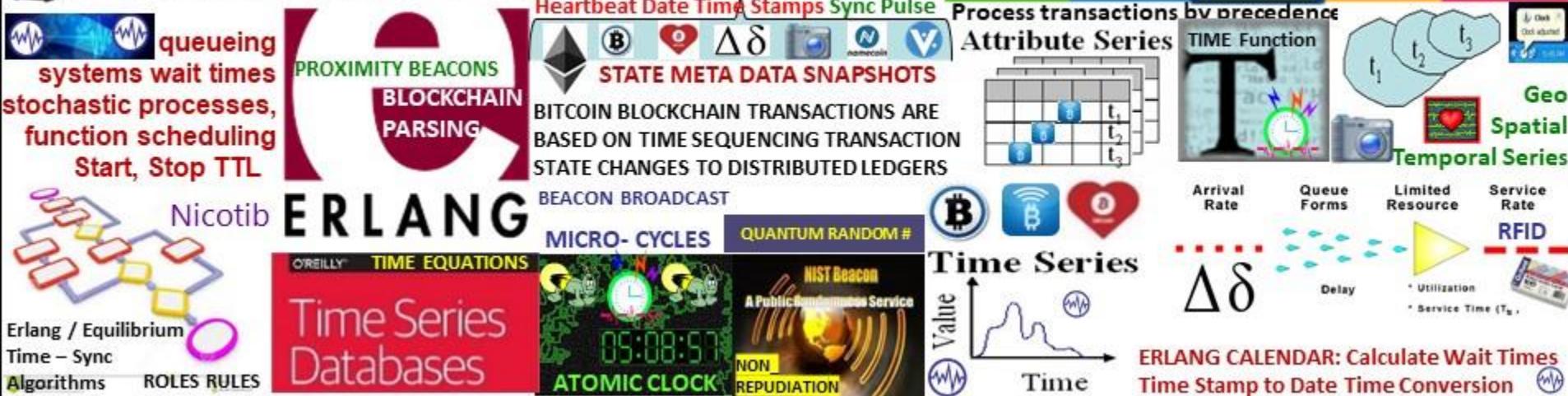
DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

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.

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 identiy 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



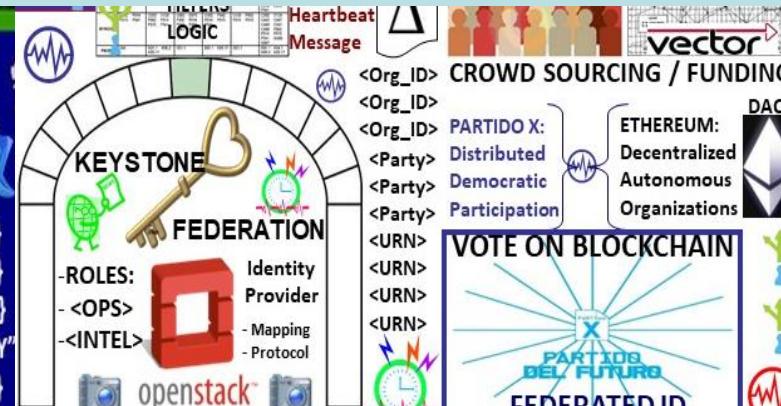
Net joins, drops, splits, merges, moves

Agile, adhoc NETOPS Vs acquisition preserves the

DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

Heart Beacon Cycle

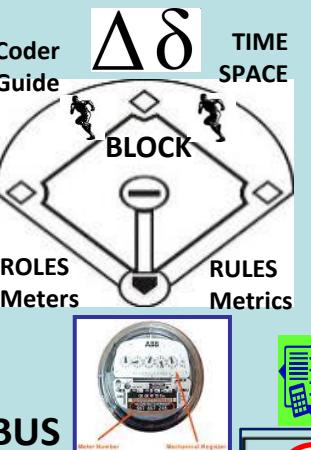
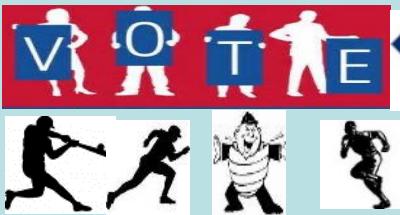
FEDERATE / TRADE FEDERATIONS



BTC NG NEX GEN / Heart Beacon Cycle 13/573,002

KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



MVP

EVENT BUS

MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



NDN

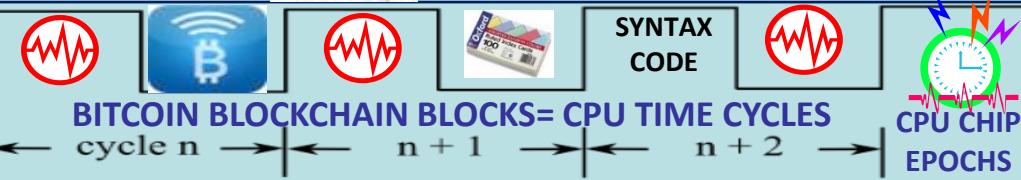
XBRIL / CDL / DAML
STOCK MIC CODES

STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS

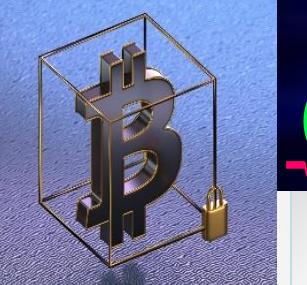


SYNTAX
LEXICON LIBRARY

CPU CHIP
EPOCHS

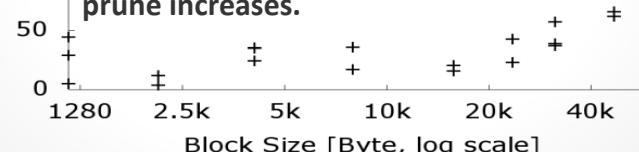


long exponential
intervals (10 min)



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.



COMMAND SYNTAX
RESTFUL State Transfer

MACRO – CYCLES



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



Bitcoin Address Shortener

Bitcoin Address Shortener is an Android app that you can use to shorten those lengthy bitcoin addresses! Simply enter a long Bitcoin address to have it transformed into a short one, and VICE-VERSA! You can get it for free [here!](#)

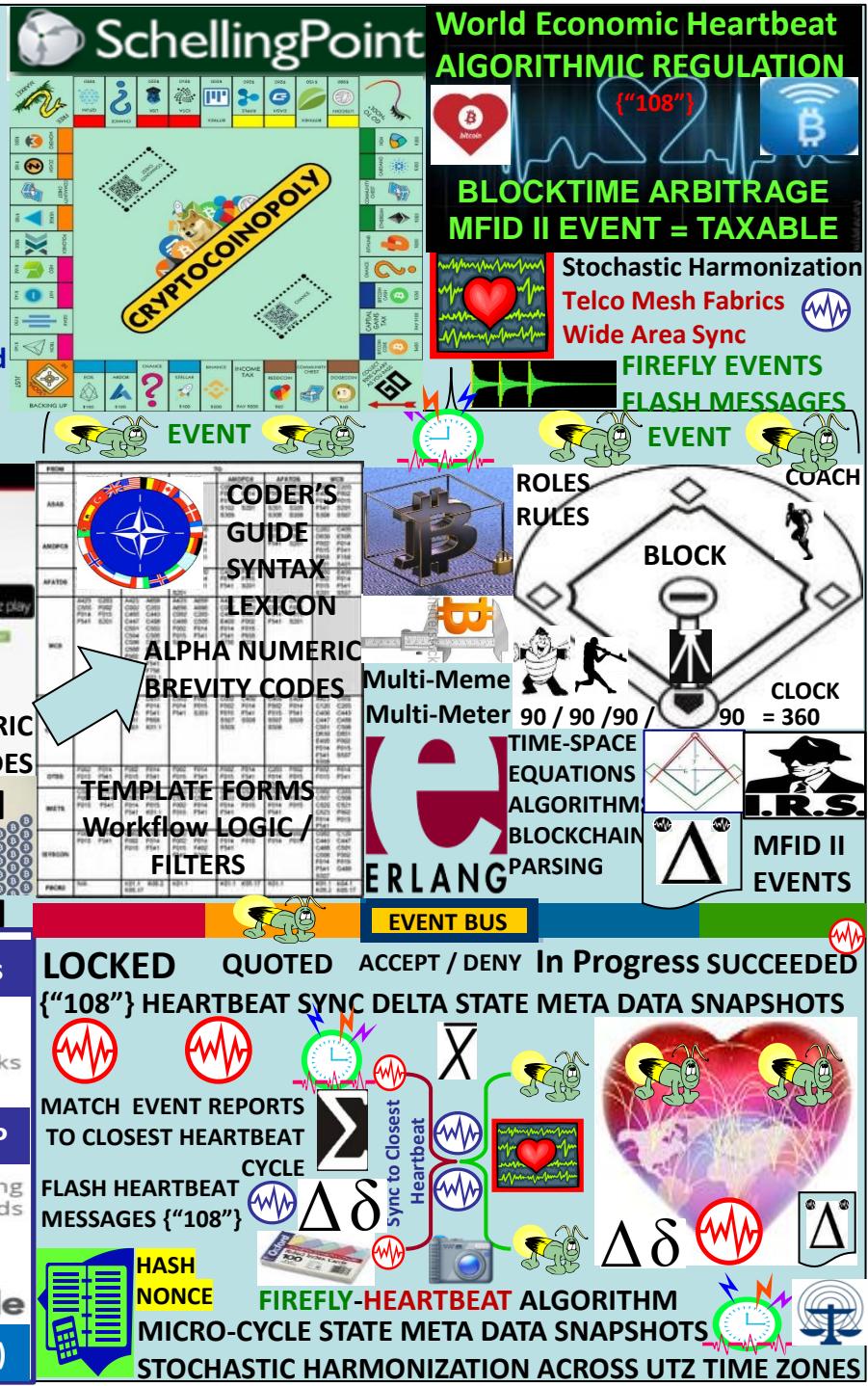
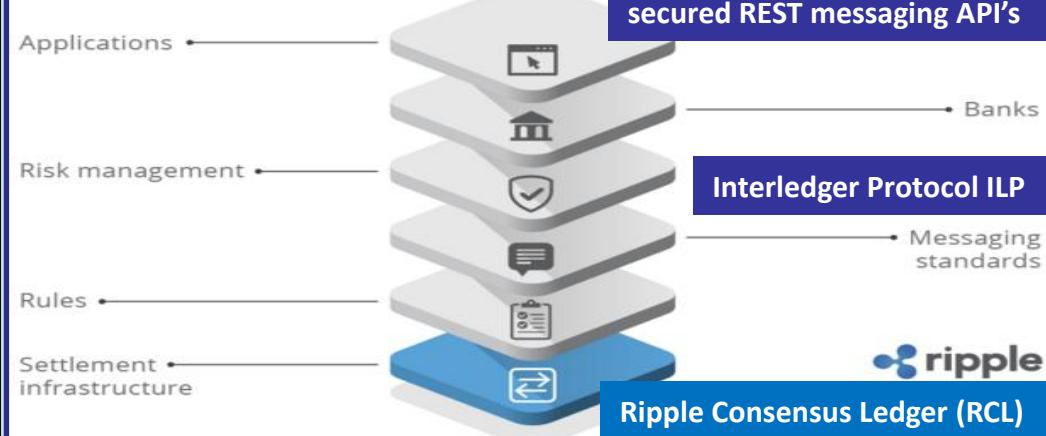
ALPHA NUMERIC BREVITY CODES A.I.

To retrieve addresses us computer, use [bit.co](#)

Clock Clock adjusted 5:45 PM

Blockchain.info

Neutral transaction protocol



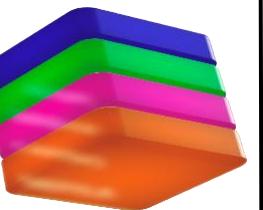


PROTON A CHAIN Virtual Machine

CONTRACT C CHAIN Smart contract

PLATFORM P CHAIN Meta Data

EXCHANGE X CHAIN Cross blockchain



Universal @names Identity / Governance / Resources / Staking

Snowball Consensus

Algorithm

preference := pizza

consecutiveSuccesses := 0

while not decided:

ask k random people preference

if >= α give the same response:

 preference := response with >=

α

 if preference == old preference:

 consecutiveSuccesses++

 else:

 consecutiveSuccesses = 1

 else:

 consecutiveSuccesses = 0

 if consecutiveSuccesses > β:
 decide(preference)

EOSIO computer function emulation
NET, CPU bandwidth, RAM data
Publishing, Voting based not mining

Delegated Proof
of Stake {"Org_ID"}



coordinates validators, keeps track
of active subnets, SNOWMAN
consensus Token representation of
real-world resources (e.g., equity,
bonds) smart contract rules </URN>



DAG Acyclic Graph Parameters:

n: number of participants

k (sample size): between 1 and n

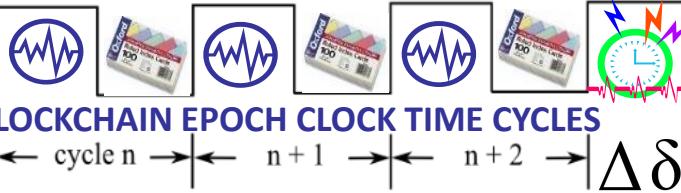
α (quorum size): between 1 and k

β (decision threshold): >= 1

ALL THINGS NET, NET OF \$\$\$

1) EPOCH TIME INTERVALS

2) SYNTAX (not) used in epochs

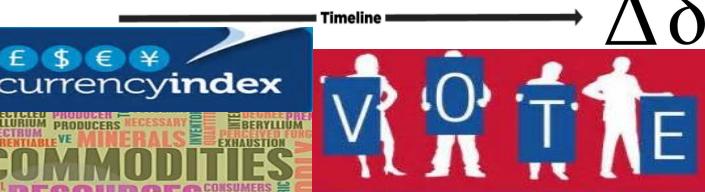
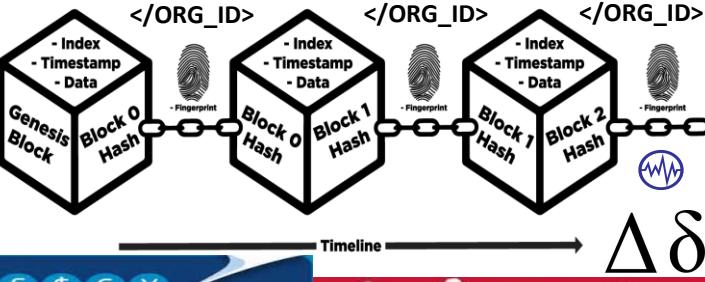


GENESIS BLOCK: "Layers" = follow on epoch time intervals

Block 0

Block 1

Block 2



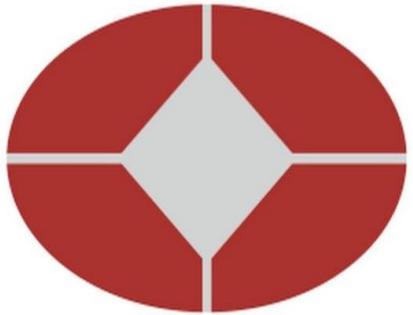
SECURITY TOKEN: A DIGITAL
ASSET THAT'S BACKED UP
BY TANGIBLE ASSETS IN THE
REAL WORLD </URN>
</URN>
</URN>



"all digital currency networks, the base layer of people
generating the blockchain — "miners," "stakers,"
"witnesses," "validators," or "forgers" get paid"



BIS



International trade settlement work stream

2019

Inthanon-LionRock
Proof-of-concept

Q4 2021

mBridge
Trial Platform

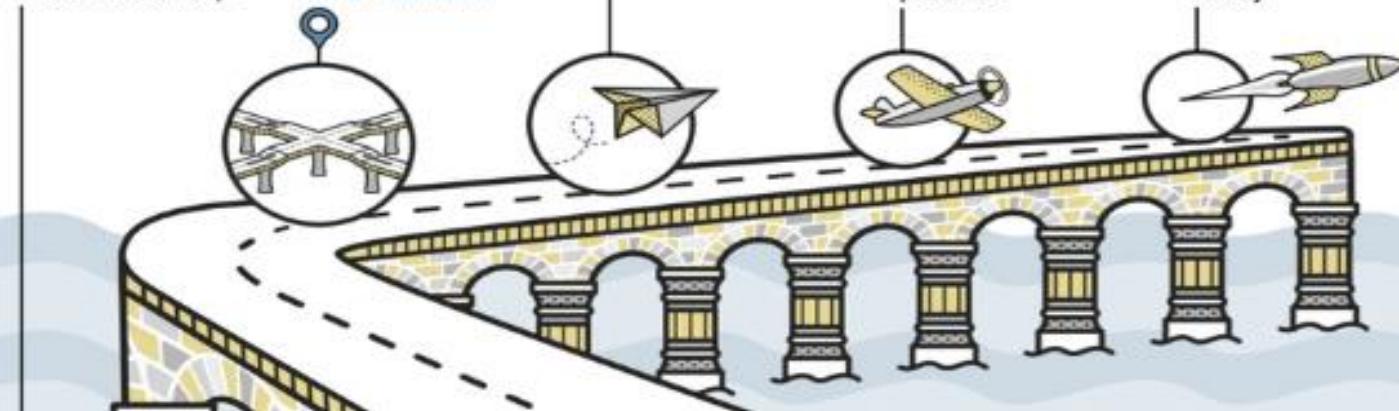
2022 onwards

Pilot

ISO 20022 messaging standard

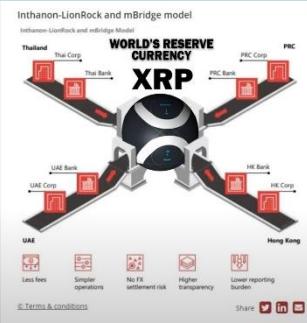
Minimum viable
product

Production
ready



mBridge mBL is an Ethereum EVM-compatible solution, referring to the ability of a blockchain to process transactions based on smart-contract codes that can run on many blockchain platforms. CBDC issuance, redemption, payments are implemented through smart contracts in the Solidity programming language. mBridge code is open sourced.

mBL uses the **Dashing consensus algorithm**, a Byzantine Fault Tolerance (BFT) consensus protocol that uses proofs of partial confirmation of a block validation to reduce time needed to achieve consensus and to improve the overall protocol performance. Pseudonymous addresses and encrypted payment meta-data payloads are used to support privacy and confidentiality in transactions. mBL APIs are based on the global ISO 20022 messaging standard for financial information Legal Entity identifiers (LEIs) facilitate identification of entities facilitating AML/ CFT checks.





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

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



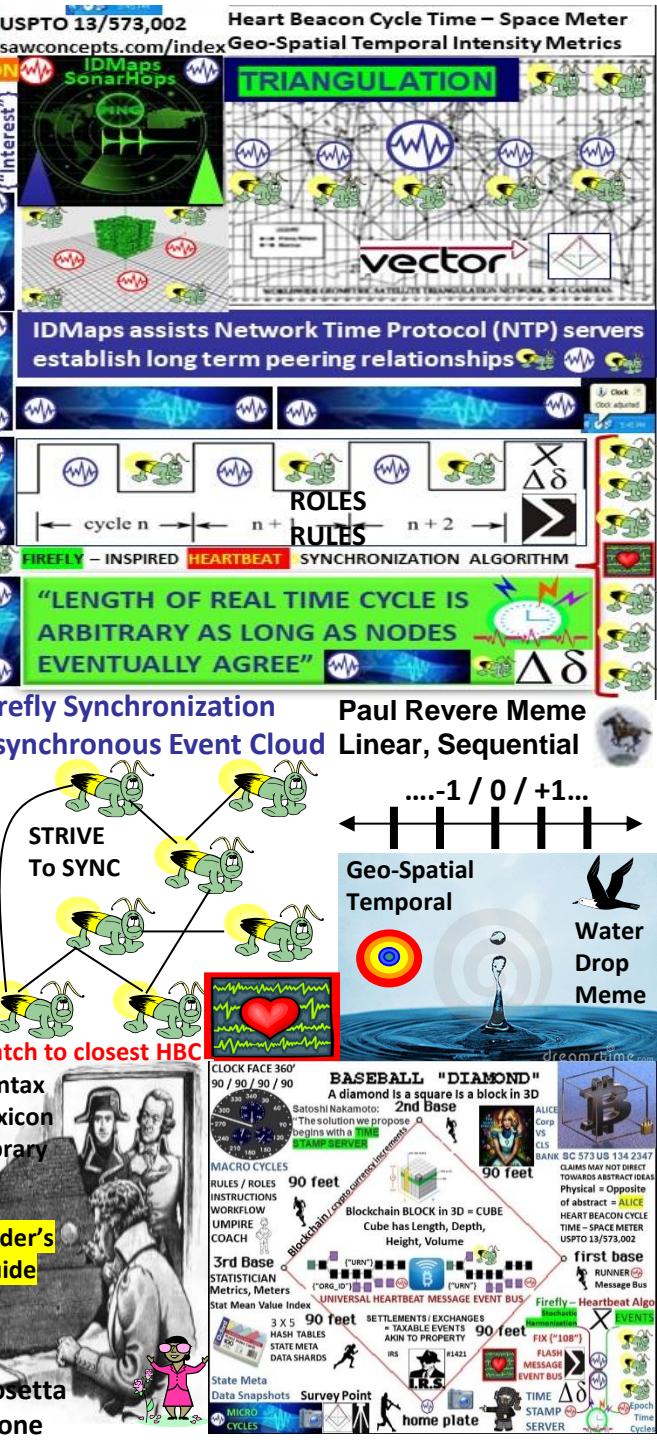
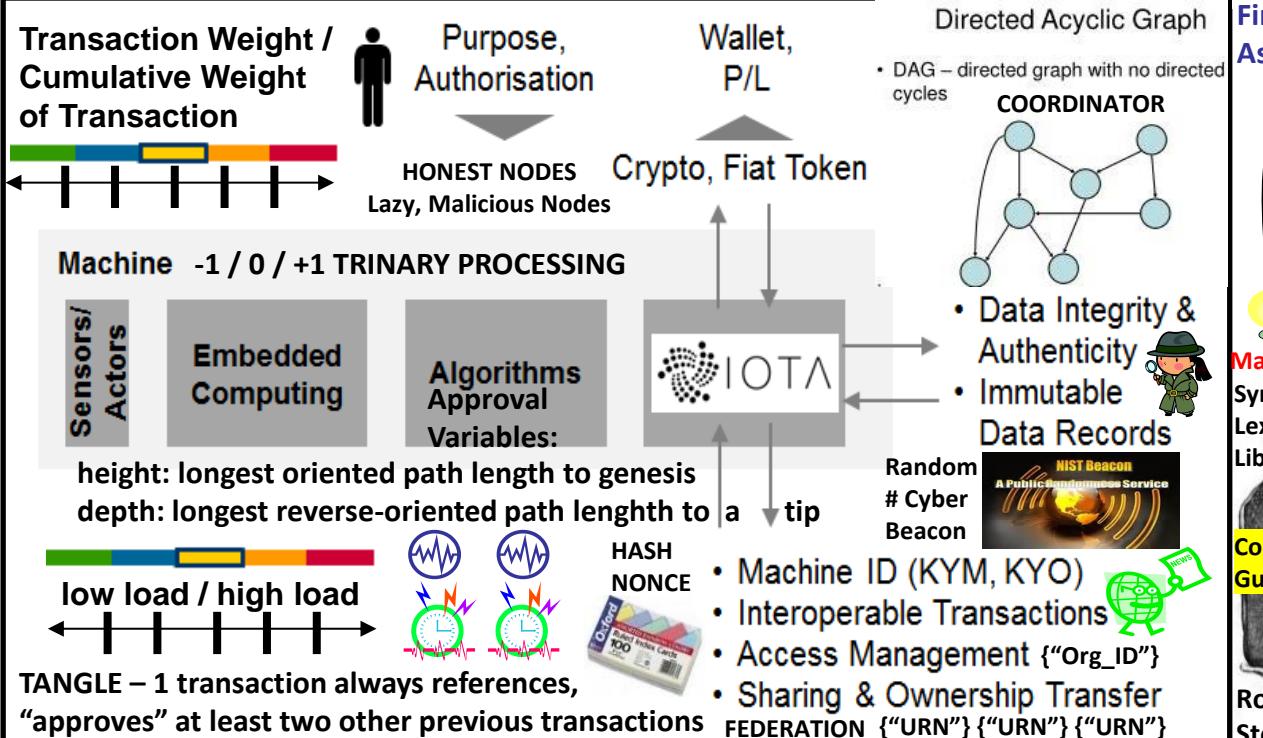


OTA: Internet Of Things IOT distributed ledger
with microtransactions without fees

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 OPEN, GLOBAL ECONOMY

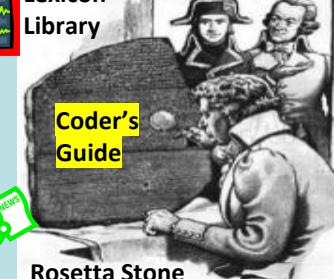
OpenZeppelin open framework of reusable, secure smart contracts in the Solidity language

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."



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

Syntax Lexicon Library
300 + Templates

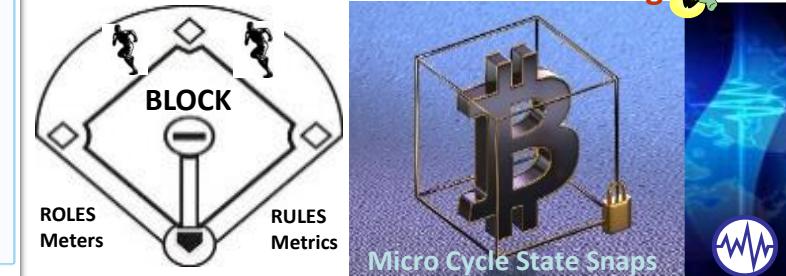


STRUCTURED DATA EXCHANGE

| Category | Sub-Category | Content |
|----------|--------------|---------|
| ASAS | ASAS | ASAS |
| ANOPIC | ANOPIC | ANOPIC |
| APATOB | APATOB | APATOB |
| MIC | MIC | MIC |
| COCOM | COCOM | COCOM |

LOGIC / FILTERS
ALPHA-NUMERIC
BREVITY CODES

STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



ZEPPELIN / zeppelinOS Common Functionality:

zeppelinOS Kernel common set of functions for smart contracts requesting services from the OS rather than re-implementing them from scratch. Functions will be available as an on-chain standard library of reusable contracts and functions, inspired by [OpenZeppelin](#) Libraries

Create and customize your own ERC20 Token.

- Create capped, refundable and/or whitelisted crowd sale contracts
- Create a trustless bug bounty.
- Create pausable, ownable, balance-limited contracts
- Set up a token vesting or token locking contract.



Contract development



Contract interaction



Off chain tools

EVM

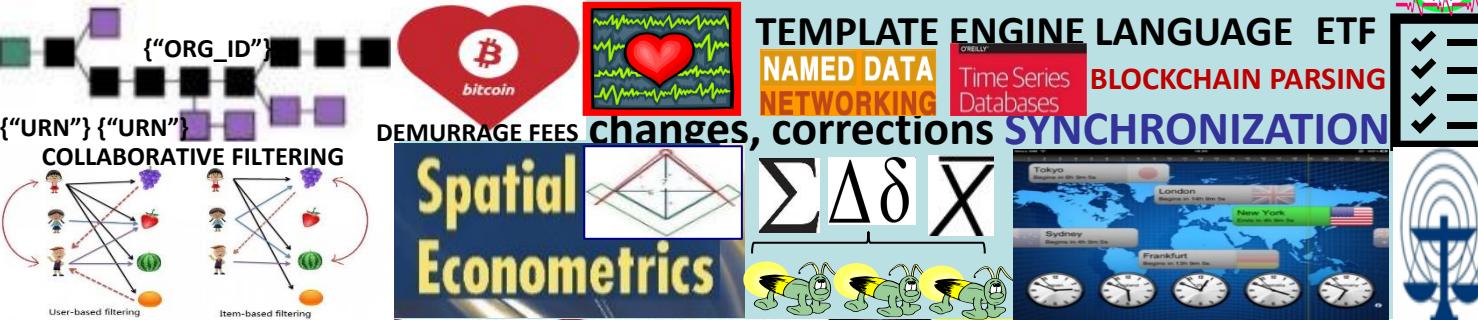
Blockchain



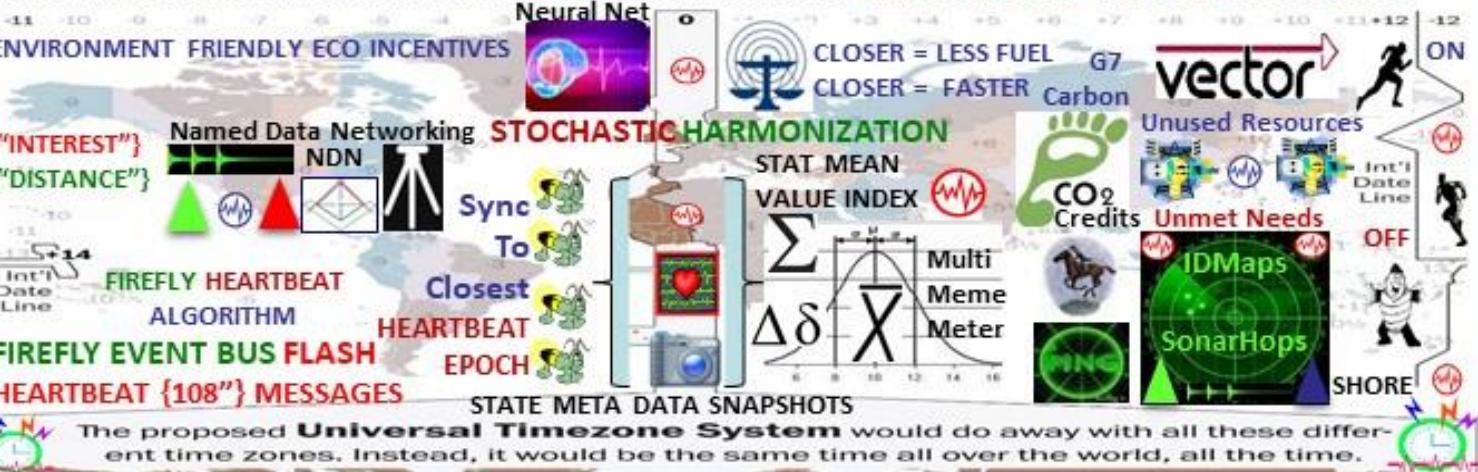
EGaaS

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 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**

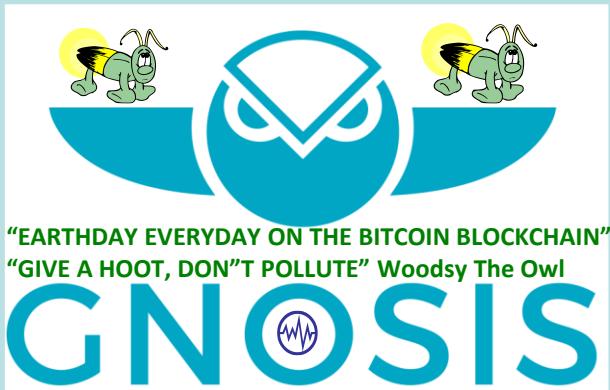


E-GaaS: international blockchain platform for organizing economic, state, social activities of citizens , communities on the basis of smart law, smart contract system. eGaaS offers a comprehensive solution needed for state and business management on the blockchain platform.



| FORM | CODES-A | CODES-B | CODES-C | CODES-D | CODES-E | CODES-F | CODES-G | CODES-H | CODES-I | CODES-J | CODES-K | CODES-L | CODES-M | CODES-N | CODES-O | CODES-P | CODES-Q | CODES-R | CODES-S | CODES-T | CODES-U | CODES-V | CODES-W | CODES-X | CODES-Y | CODES-Z |
|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| ASAB | PRES1 | PRES2 | PRES3 | PRES4 | PRES5 | PRES6 | PRES7 | PRES8 | PRES9 | PRES10 | PRES11 | PRES12 | PRES13 | PRES14 | PRES15 | PRES16 | PRES17 | PRES18 | PRES19 | PRES20 | PRES21 | PRES22 | PRES23 | PRES24 | PRES25 | |
| ANARCHIA | PRES1 | PRES2 | PRES3 | PRES4 | PRES5 | PRES6 | PRES7 | PRES8 | PRES9 | PRES10 | PRES11 | PRES12 | PRES13 | PRES14 | PRES15 | PRES16 | PRES17 | PRES18 | PRES19 | PRES20 | PRES21 | PRES22 | PRES23 | PRES24 | PRES25 | |
| AFATOR | PRES1 | PRES2 | PRES3 | PRES4 | PRES5 | PRES6 | PRES7 | PRES8 | PRES9 | PRES10 | PRES11 | PRES12 | PRES13 | PRES14 | PRES15 | PRES16 | PRES17 | PRES18 | PRES19 | PRES20 | PRES21 | PRES22 | PRES23 | PRES24 | PRES25 | |
| AMAZON | PRES1 | PRES2 | PRES3 | PRES4 | PRES5 | PRES6 | PRES7 | PRES8 | PRES9 | PRES10 | PRES11 | PRES12 | PRES13 | PRES14 | PRES15 | PRES16 | PRES17 | PRES18 | PRES19 | PRES20 | PRES21 | PRES22 | PRES23 | PRES24 | PRES25 | |
| AFATOR | PRES1 | PRES2 | PRES3 | PRES4 | PRES5 | PRES6 | PRES7 | PRES8 | PRES9 | PRES10 | PRES11 | PRES12 | PRES13 | PRES14 | PRES15 | PRES16 | PRES17 | PRES18 | PRES19 | PRES20 | PRES21 | PRES22 | PRES23 | PRES24 | PRES25 | |





"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

TERRACYCLE 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

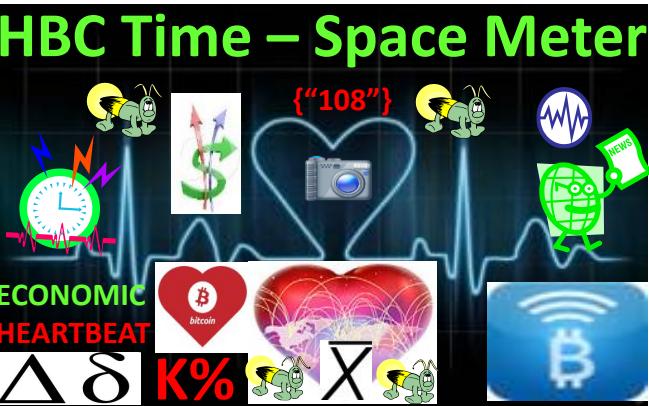
Gnosis tokens (GNO) generate Wisdom token s(WIZ) via smart contract

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.



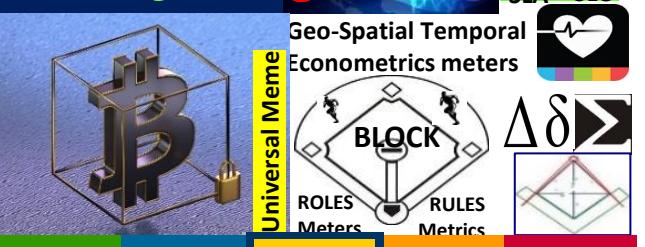
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



THE TERRA (TRC) Trade Reference Currency



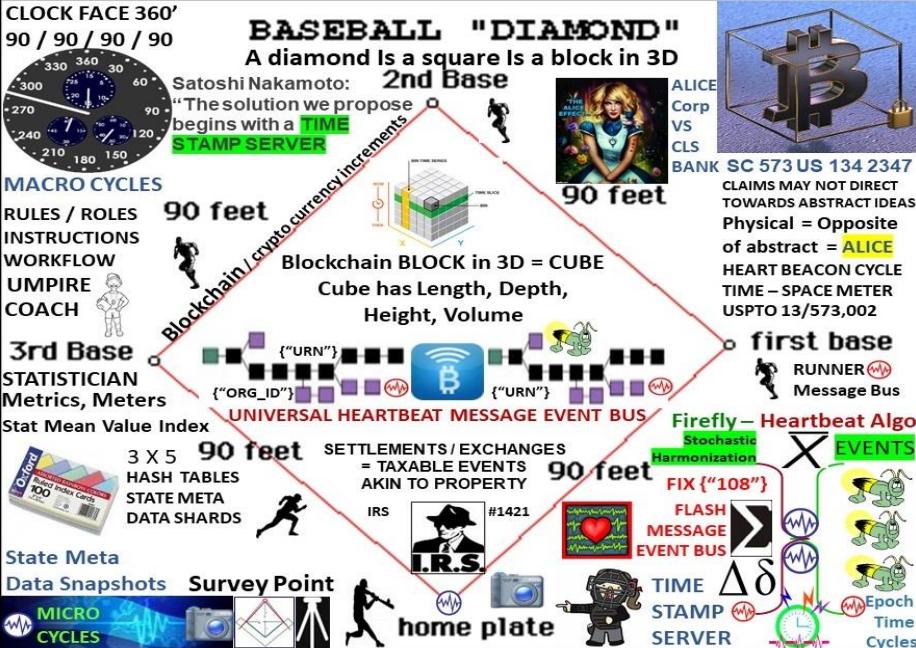
Demurrage Fees



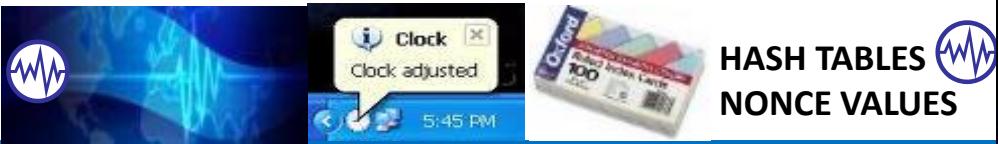
Firefly inspired Heartbeat Synchronization nodes strive to sync in a distributed system. Nodes generate periodic "heartbeat" events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles to agree on the ID of the current clock cycle. There 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.



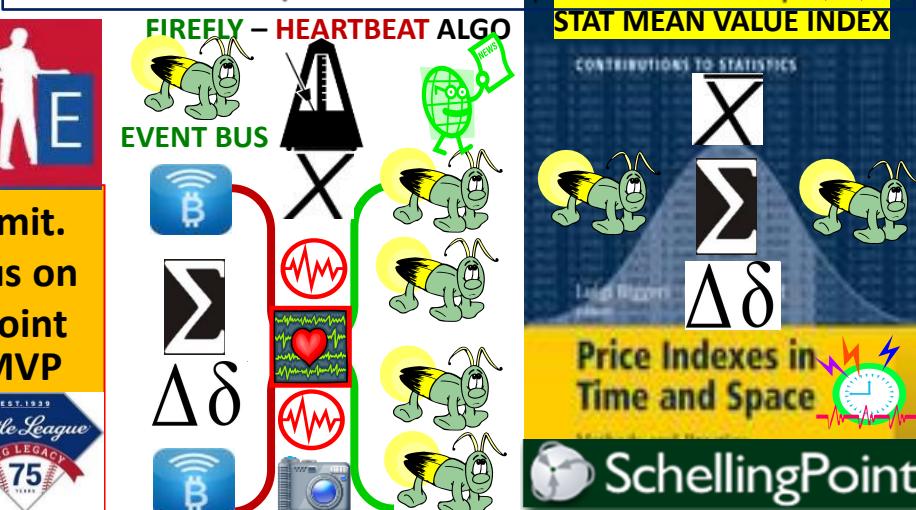
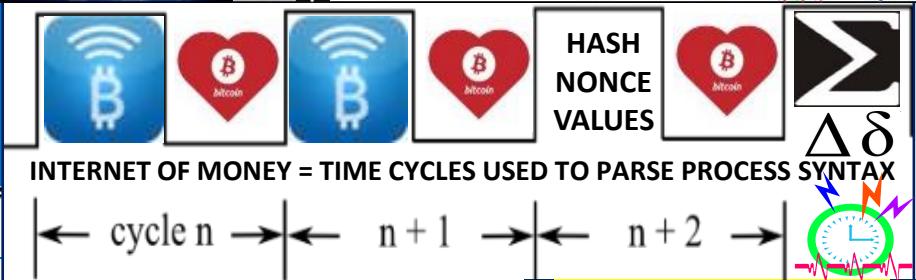
ALL THINGS INTERNET FORMED W 1) TIME EPOCHS 2) SYNTAX



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

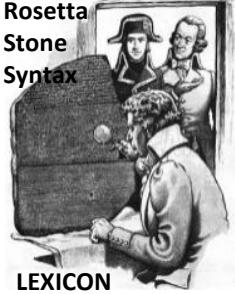
Blockchain middleware: identity and operations management, data,
intelligence services like analytics and machine learning. New middleware
works with existing Azure services, like Active Directory and Key Vault

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 | |
|--------------------------------|-----------------|
| BREVITY CODES | |
| SYMBOL CODES | |
| STRUCTURED MILITARY MESSAGE | |
| TEMPLATE FORMS | LOGIC / FILTERS |

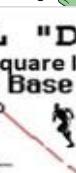
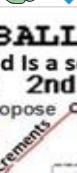
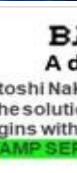
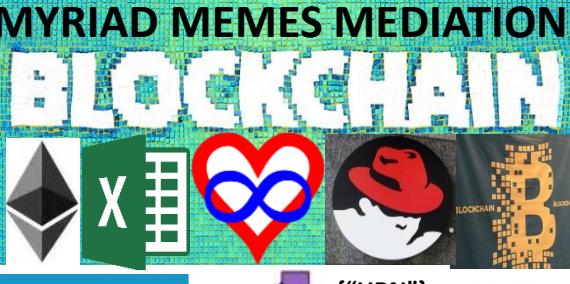
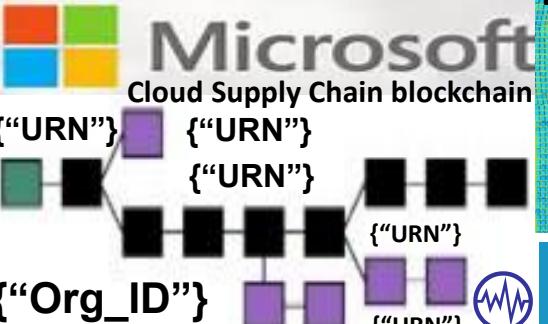
LEXICON

The current standard time common throughout the world is based on a 24-hour clock, with
time 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.

FIREFLY EVENTS
FLASH MESSAGES
SYNC TO CLOSEST
HEARTBEAT EPOCH

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

MULTI-MEME MULTI-METER



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

Stochastic
Harmonization

EVENTS

FLASH
MESSAGE
EVENT BUS

TIME
STAMP
SERVER

IoT

Microsoft Orleans

TIME-SPACE
EQUATIONS
ALGORITHMS
BLOCKCHAIN
PARSING

ERLANG

EVENT BUS

FIREFLY
HEARTBEAT
ALGORITHM

$\Delta\delta$

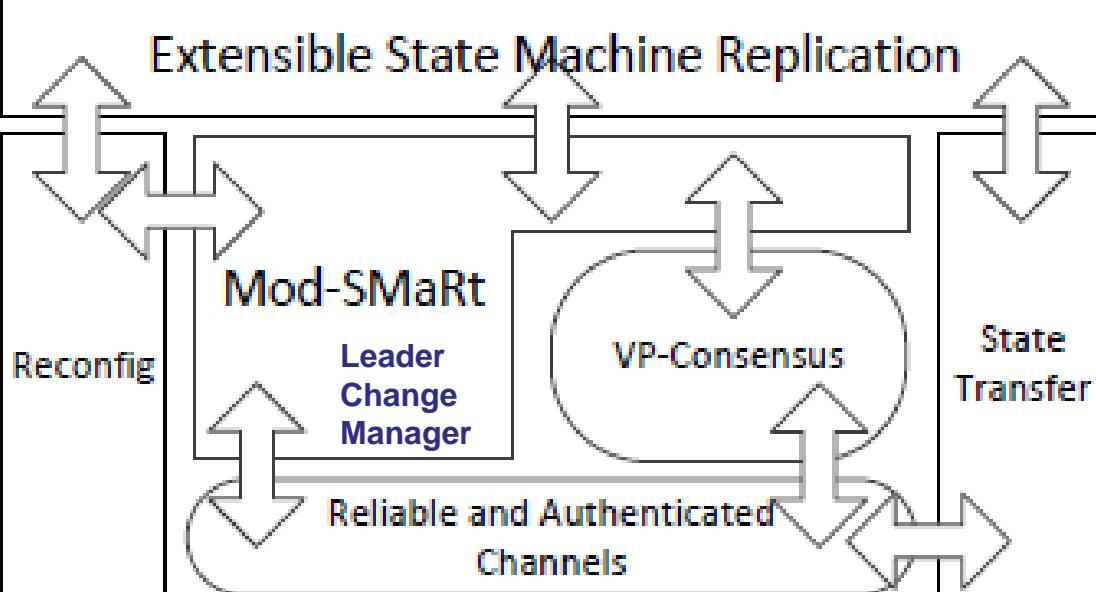
STATE
META
DATA
SNAPSHOTS

HEART BEACON
CYCLE

$\Delta\delta$

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.

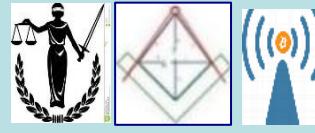
BFT-SMART needs an eventually synchronous system

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



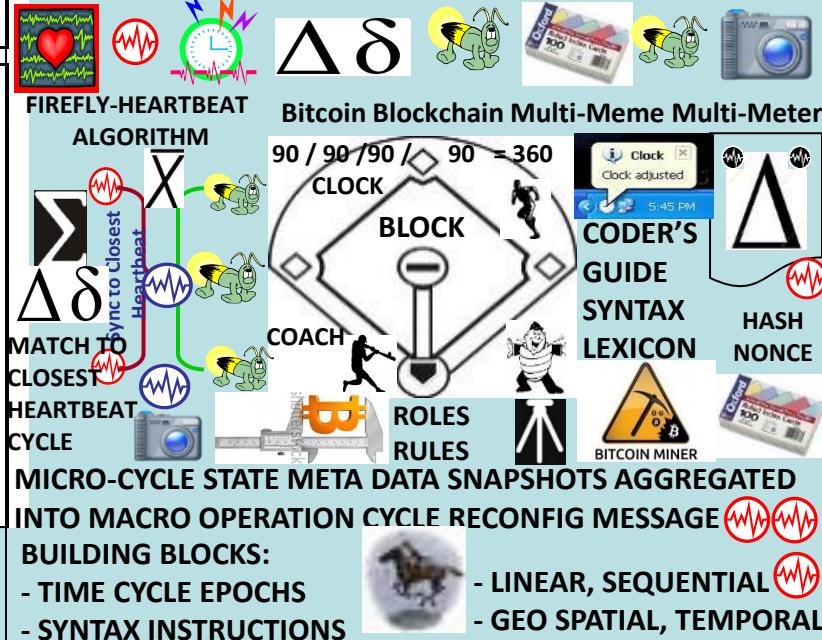
DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"}

ADDS, JOINS, DROPS, MOVES TO / FROM DAO

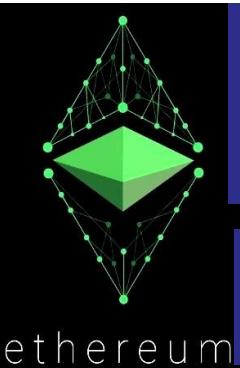
CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

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"

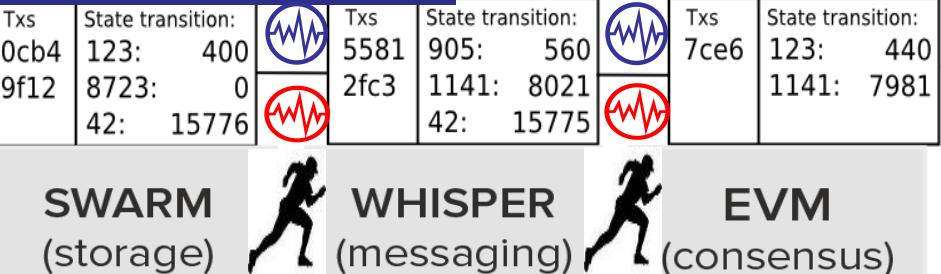


ETHER: Compensate Resource Contribution

Gas: price to
Run contract
transactions

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**

Casper is a security-deposit based economic consensus protocol. Nodes = “bonded validators” place security deposit (an action called “bonding”) If a validator generates an invalid action, account deposits are forfeited along with consensus privilege. Use of security deposits address “nothing at stake” problem; that behaving badly is not expensive. Casper is an **EVENTUALLY CONSISTANT** blockchain-based consensus protocol. CASPER favors availability over consistency



D F I N I T Y



RANDOM # BEACON



NIST Beacon
A Public Randomness Service



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



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

home plate

TIME STAMP SERVER

Fix {"108"}

FLASH MESSAGE EVENT BUS

EVENTS

Time Stamp Time Cycles

Epoch Time Cycles

Quantum Random #

3 x 5 Hash Tables

Oxford English Index Cards

INDEX CARD="SHARD"

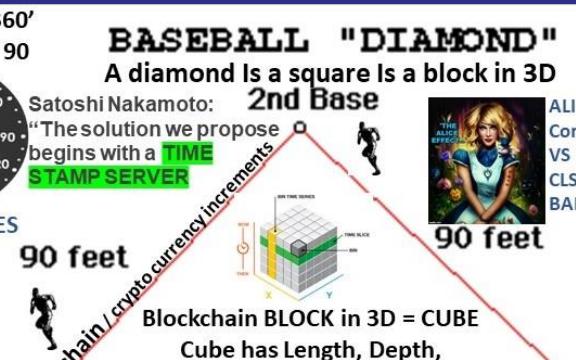
HBC "ORG_ID" {"URN"} CLASS ASSET TYPE {"UUID"} DEVICE TYPE

UTZ TIME ZONE SYNC

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"



3rd Base

STATISTICIAN Metrics, Meters

Stat Mean Value Index

90 feet

Blockchain / crypto currency increments

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

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

EVENTS

Fix {"108"}

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

Δδ

Epoch Time Cycles

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

Threshold Relay Chain techniques

Probabilistic Slot Protocol (PSP) When Gh is selected, members start stopwatches

Choosing Leaders Randomness selects priority list block forgers at height h

Short Term Convergence Correct processes build on highest scoring chain

Threshold Timestamping group signs blocks at h until next group appends another.

Scalable Global Validation Layer: Each additional level of the tower validates new state transitions applied to storage shard. is built by processes selected by the RANDOM BEACON

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

CLOCK FACE 360'
90 / 90 / 90 / 90

MACRO CYCLES

RULES / ROLES INSTRUCTIONS WORKFLOW UMPIRE COACH

90 feet

Blockchain / crypto currency increments

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

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

home plate

TIME STAMP SERVER

Fix {"108"}

FLASH MESSAGE EVENT BUS

EVENTS

Time Stamp Time Cycles

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

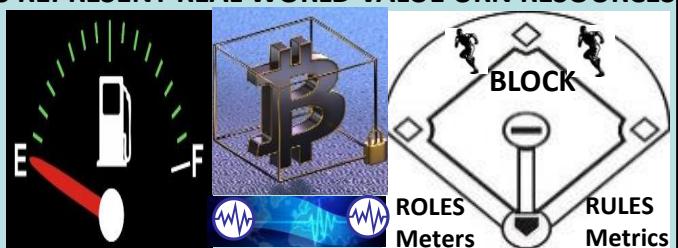
AETERNITY CROSS-CHAIN ATOMIC SWAPS CORRESPOND TO HEART BEACON CYCLE'S USE OF BATTLEFIELD DIGITIZATION DERIVED HEARTBEAT SYNC DELTAS



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

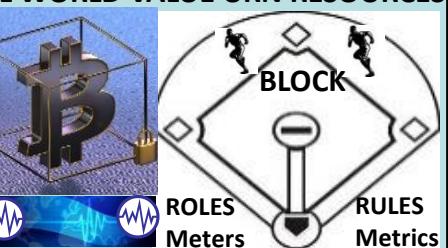
TOKENS REPRESENT REAL WORLD VALUE URN RESOURCES

ETHEREUM USES GAS GUAGE MEME INDICATING THRESHOLD MET / NOT MET



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")



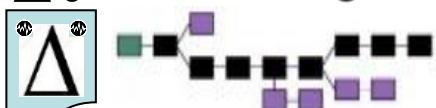
RULES Metrics

ARIN
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

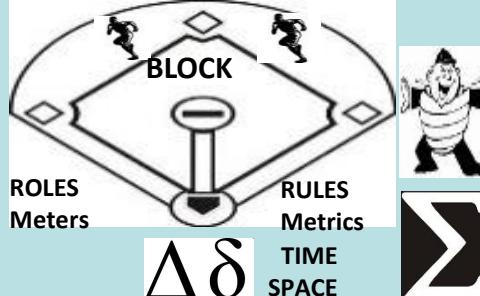
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

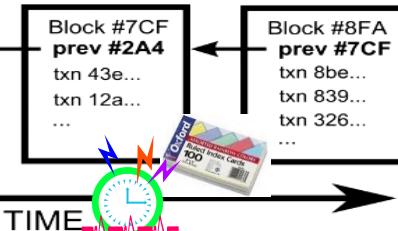
RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



BLOCKTIME ARBITRAGE



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



ROSETTA STONE

XBR / CDL / DAML
STOCK MIC CODES

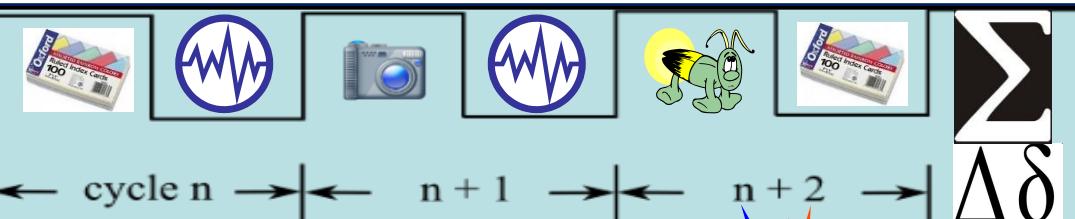
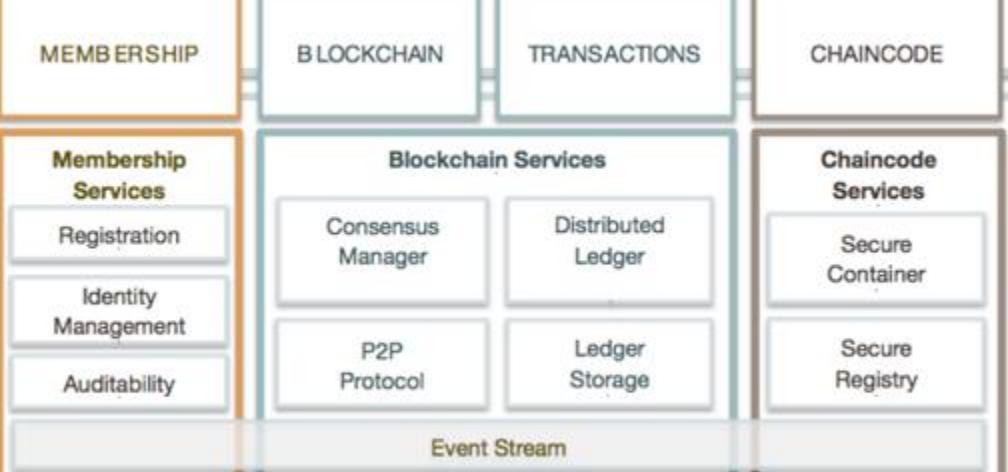
STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS

SYNTAX
SYMBOL LIBRARY

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

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

OBC APIs, SDKs, CLI



MICRO-MACRO CYCLE SCHEDULE



FFIRNS
FFUDNS

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.

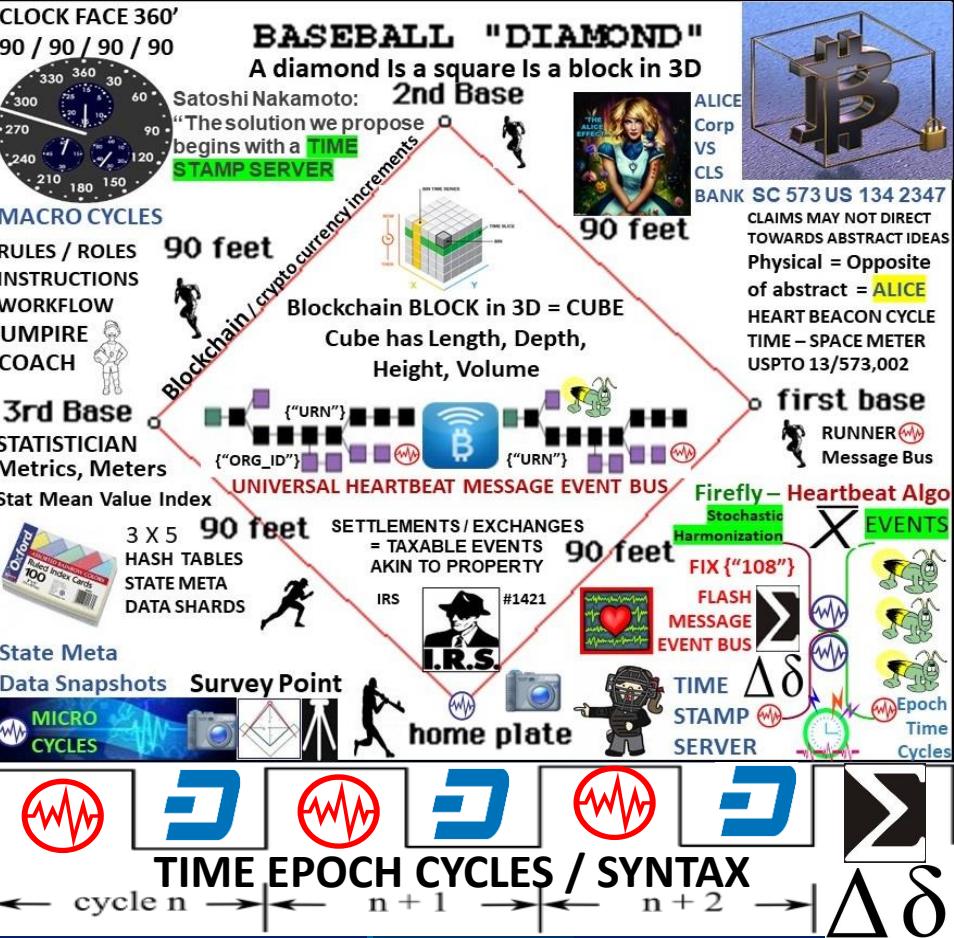
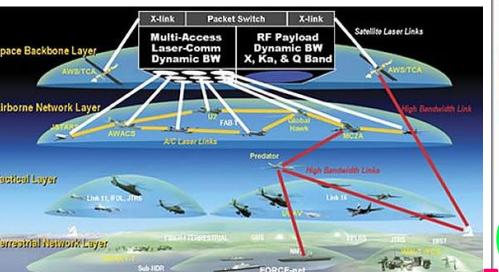
"Its makeup is thus: the block reward is divvied up in three parts. The first 45 percent goes to [Dash's miners](#). Another 45 percent goes to its Masternodes. And 10 percent is set aside to fund whatever other jobs or expenditures the Dash network deems necessary"

InstantX: To solve the problem of lag time in transactions, Masternodes are able to instantly lock transactions and 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.



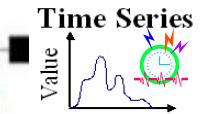
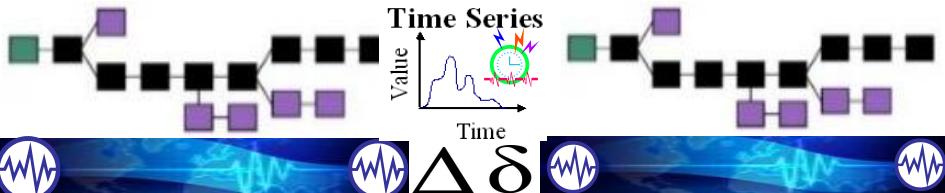
1. Part of the blockchain state is locked via multisignature or smart contract convention, so that a specific set of participants must completely agree with each other to update it.



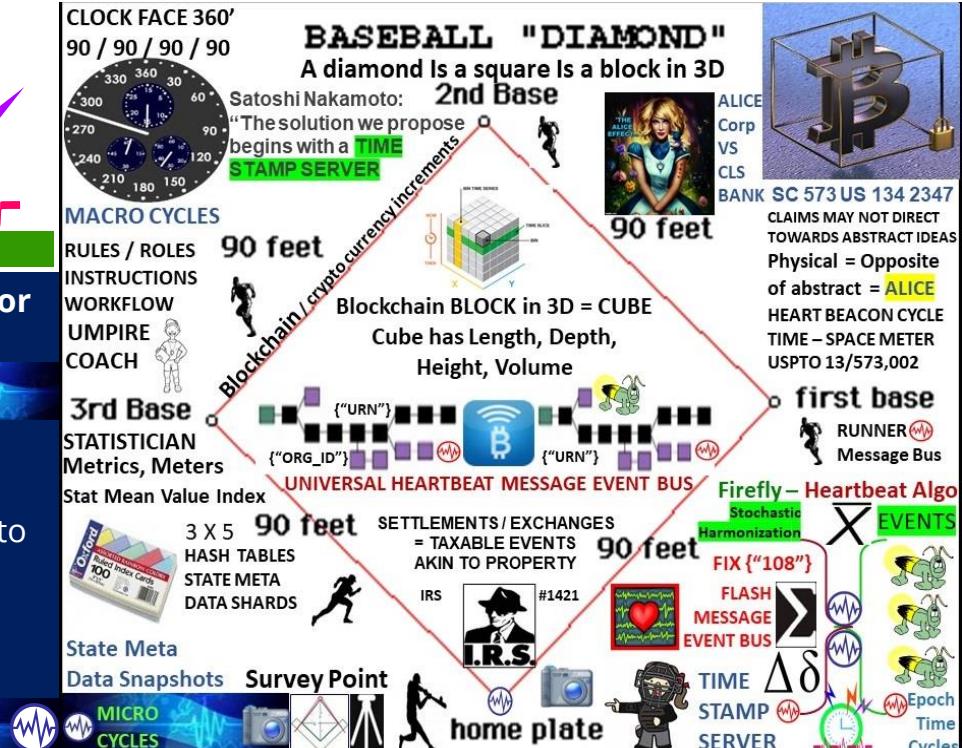
2. Participants update the state amongst themselves by constructing and signing transactions that *could* be submitted to the blockchain, but instead are made available for a new update "trumps" previous updates.



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.



FLASH HEARTBEAT MESSAGES
HEARTBEAT STATE META-DATA
SNAPSHOTS EVERY
10, N MIN MICRO TO
MACRO ECON CYCLE
HASH TABLES

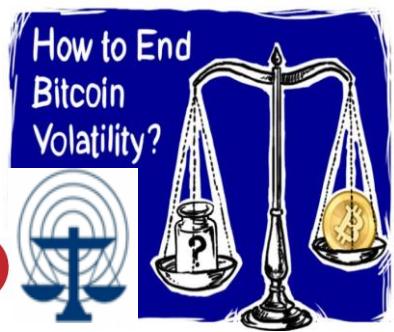
STATE SNAPS
TIME SERIES
Value
Time
HASH
SYNTAX

Geo Spatial
Temporal Series
Attribute Series
META-DATA
t₁, t₂, t₃
SYNTAX
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

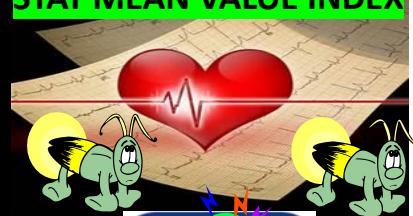
TWAP Algorithm Manages Bitcoin Price Volatility Algorithm



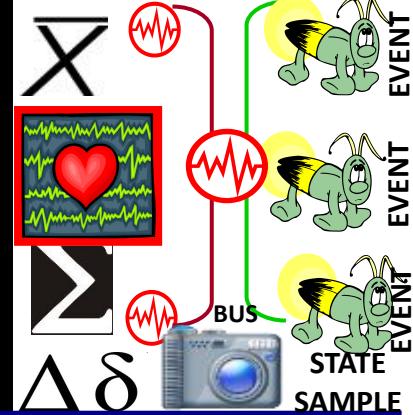
TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX



STATE META
DATA SNAPSHOTS



EVENT

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



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..

EVENT

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

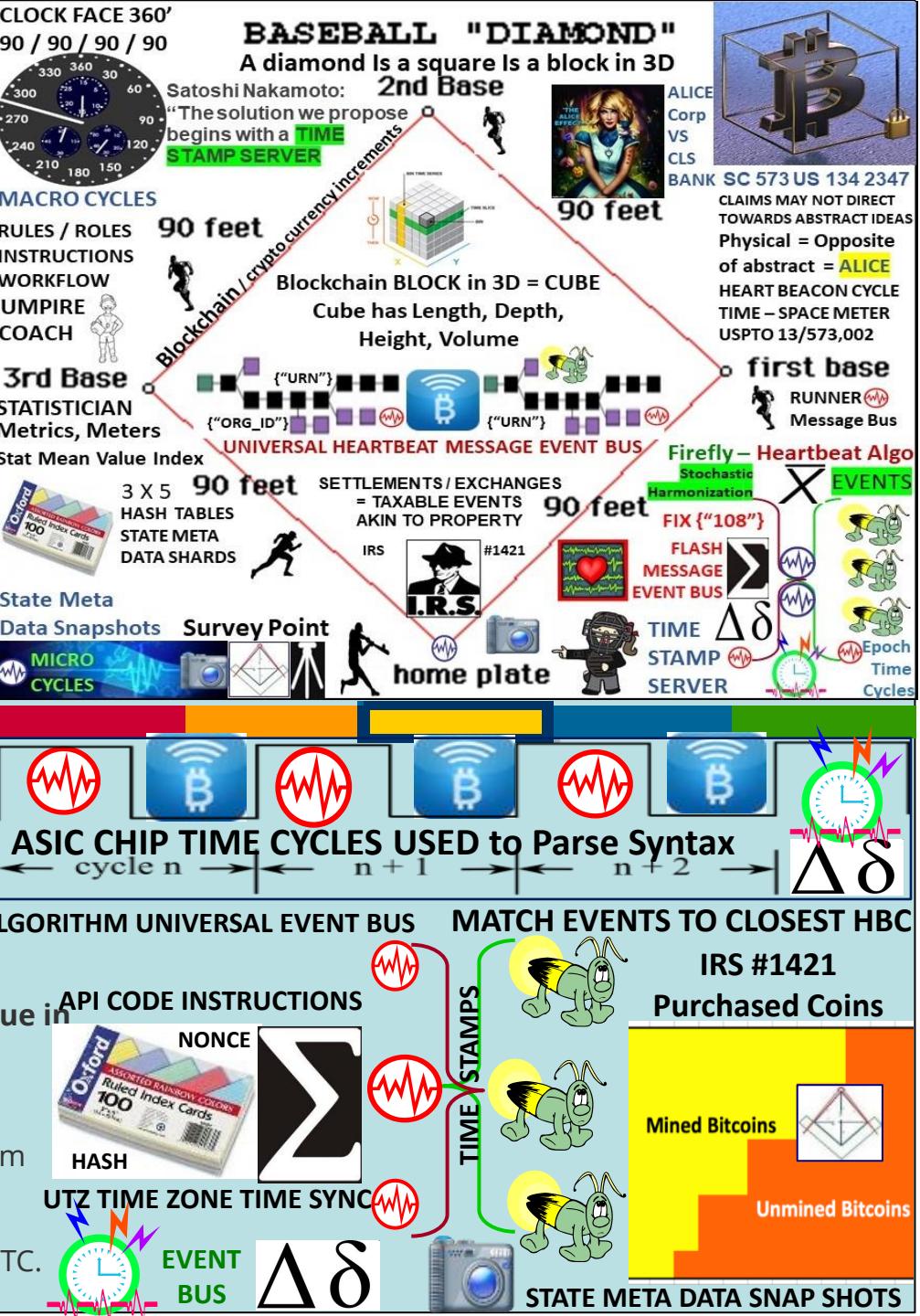
Transaction ID, Block ID, time-stamp, BWAP per block, Value in USD. BTC per transaction, bitcoin transaction fees per transaction.

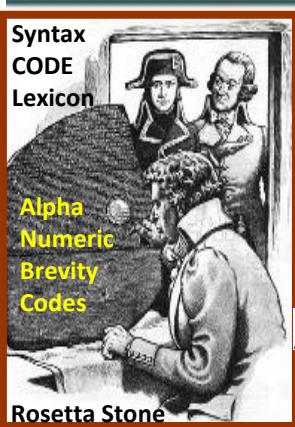
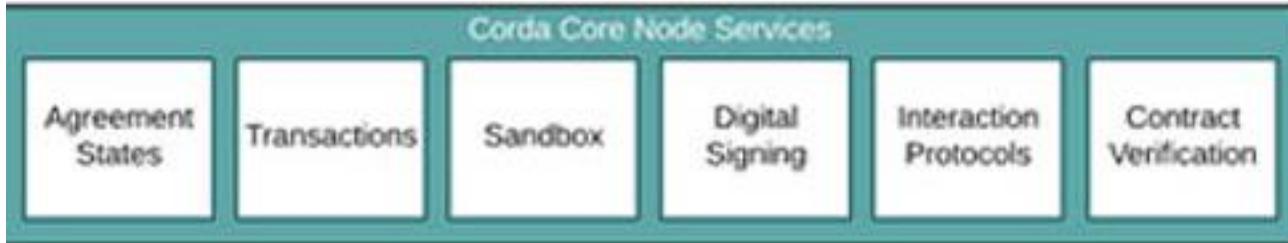
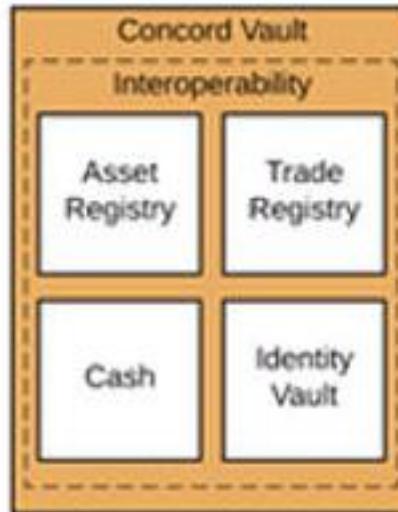
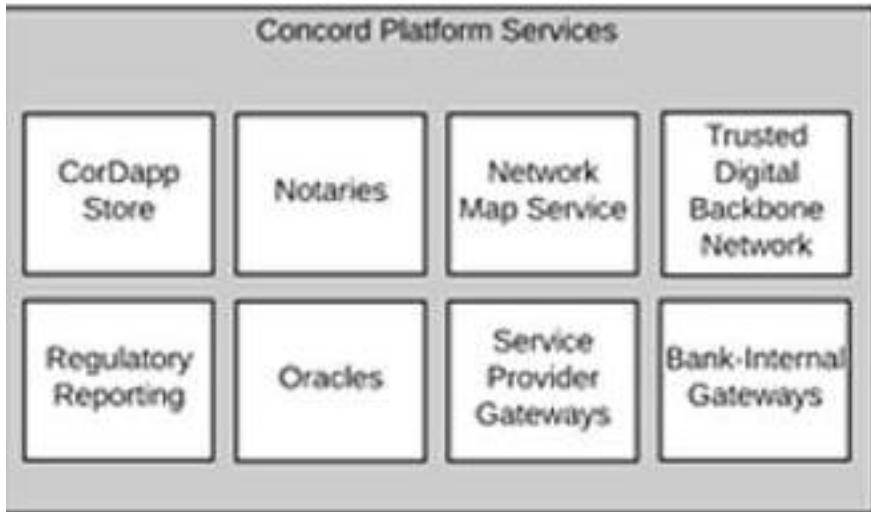
"Blocks are a measure of time":

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.





UNIVERSAL EVENT BUS



- Choreographing workflow between firms without a central controller
- Supports inclusion of regulatory & supervisory observer nodes
- Validating transactions solely between parties to the transaction
- Supporting a variety of consensus mechanisms
- Recording explicit links between human-language legal prose documents and smart contract code

| 11.8 - Kinematics | |
|-----------------------------|--|
| 11.8.1 - Acceleration | |
| 11.8.2 - Angular | |
| 11.8.3 - Linear | |
| 11.8.4 - Estimated | |
| 11.8.5 - Predicted | |
| 11.8.6 - Smoothed Data | |
| 11.8.7 - Position | |
| 11.8.8 - Bearing Angle | |
| 11.8.9 - Horizontal | |
| 11.8.10 - Vertical | |
| 11.8.11 - Vertical | |
| 11.8.12 - Covariance Matrix | |

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



STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS

300+
Use Case Templates

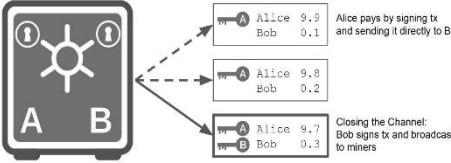
PROJECT LIGHTING



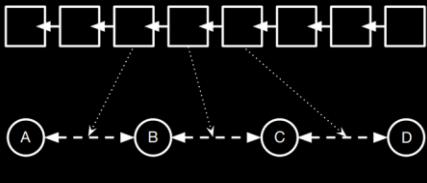
transactions sent over / off chain
micropayment channels

Micropayment Channels

Setup: Alice creates transaction with 10 bitcoin to a 2-of-2 multisig with Bob



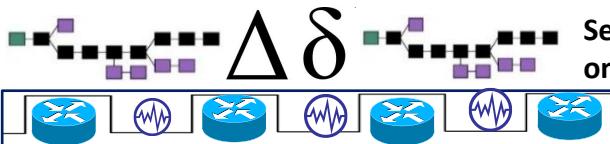
LIGHTNING



Millions of Transactions. Milliseconds of Delay.

Hashed TIME LOCK contracts component for global consensus

OP_CHECKLOCKTIMEVERIFY During Macro Cycle w/ Random # BEACON



Payment channels multi-hop hub
spoke model like internet routing

FIREFLY – HEARTBEAT ALGORITHM



FIREFLY – HEARTBEAT



EVENT REPORTING ACROSS TIME-SPACE



MESSAGE EVENT BUS

CLOCK FACE 360'
90 / 90 / 90 / 90



RULES / ROLES
INSTRUCTIONS
WORKFLOW
UMPIRE COACH

3rd Base
STATISTICIAN Metrics, Meters
Stat Mean Value Index

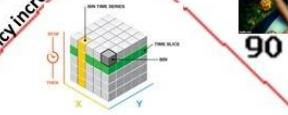
3 X 5 HASH TABLES STATE META DATA SHARDS
State Meta Data Snapshots Survey Point

MICRO CYCLES

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**"



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
Stochastic Harmonization

FIX {"108"}
FLASH MESSAGE EVENT BUS
TIME STAMP SERVER
 $\Delta\delta$
TIME Cycles

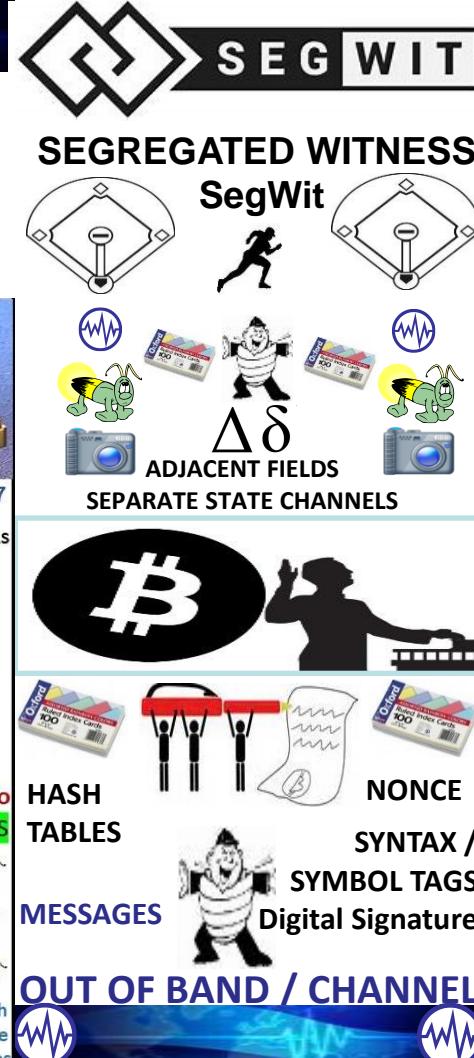
Blockchain BLOCK in 3D = CUBE
Cube has Length, Depth, Height, Volume

UNIVERSAL HEARTBEAT MESSAGE EVENT BUS

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

State Meta Data Snapshots Survey Point

home plate



Segregated witness = Separated signatures

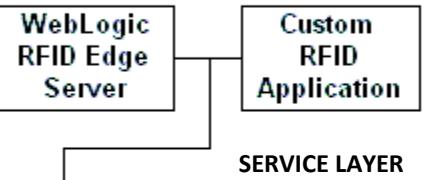
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signature are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a **hard-fork**

Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data



EPCIS DATA MODEL



SERVICE LAYER

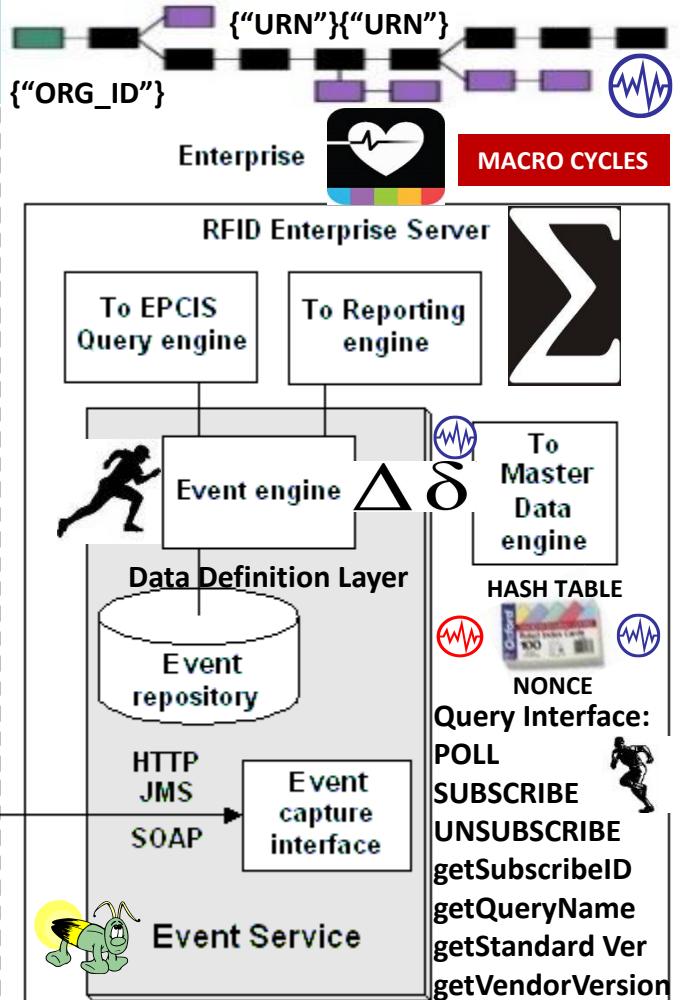
XML

ObjectEvent

AggregationEvent

QuantityEvent

TransactionEvent



Core Business Vocabulary (CBV)

What identifiers of object(s) or entities / subject of the event

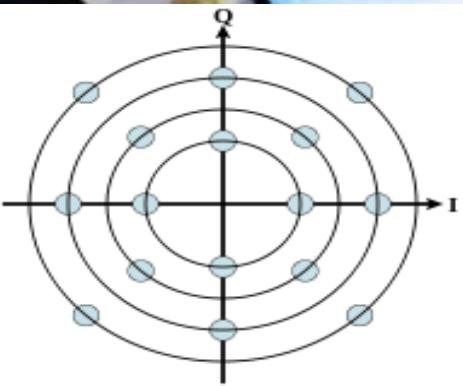
When date time when event took place, local time zone in effect

Where location identifier where event occurred, identifier of location where object(s) are expected to be following the event

Why Information about the business context, including:
a Identifier that indicates the business step taking place



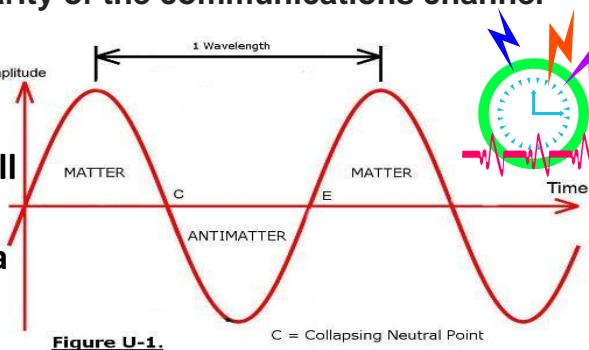
www.RLighthouse.com



Quadrature amplitude modulation

QAM by setting a suitable constellation size, limited only by the noise level and linearity of the communications channel

“Similarly, the electromagnetic force will also be found to vary continuously and retain a TIME-AVERAGED value”



Sine wave of our blinking universe. The 4 fundamental forces will all be found to vary continuously when sampled at 2x the blinking frequency, per Nyquist-Shannon theory

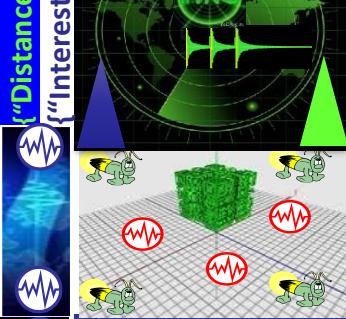


USPTO 13/573,002
sawconcepts.com/index

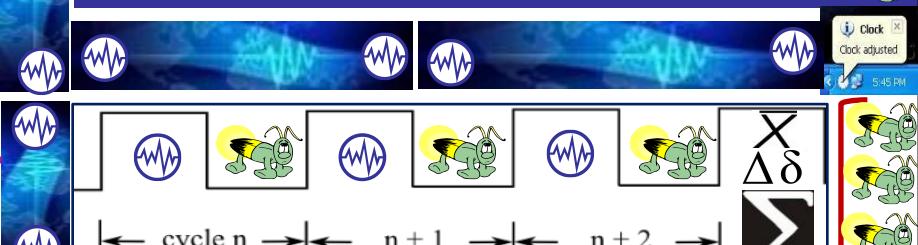
NDN

IDMaps
SonarHops

{"Distance"}
{"Interest"}



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

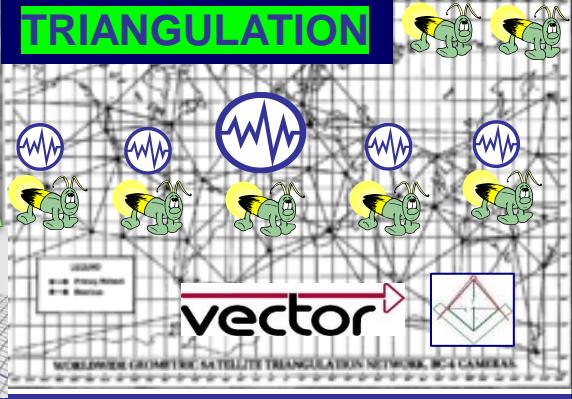


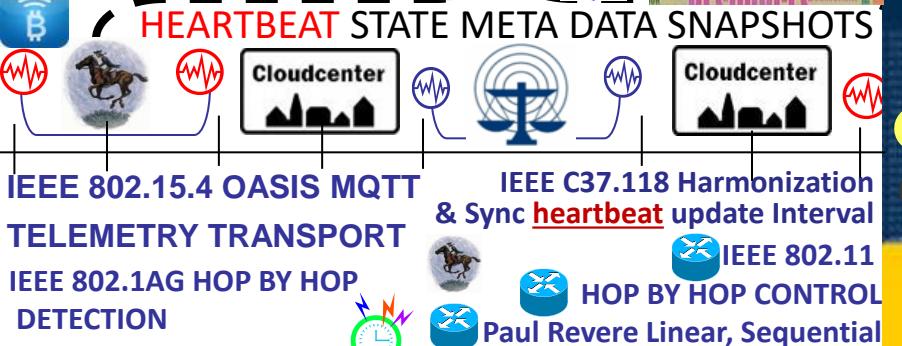
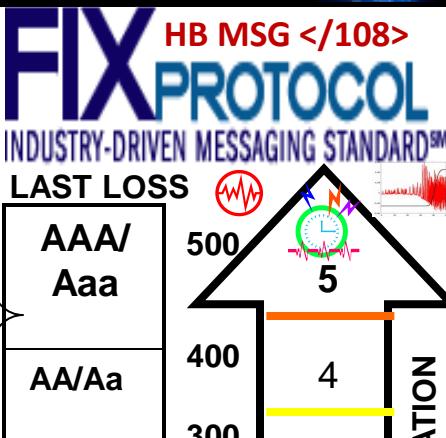
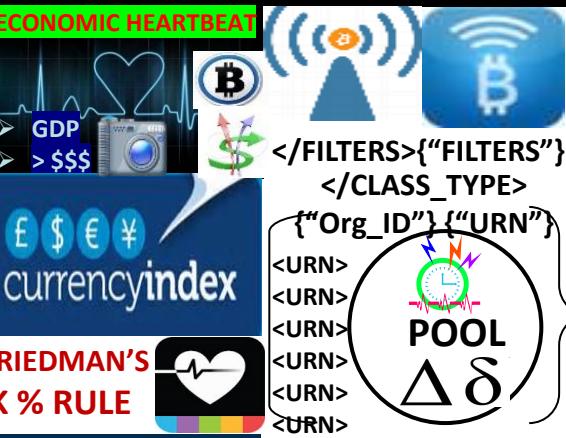
FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

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



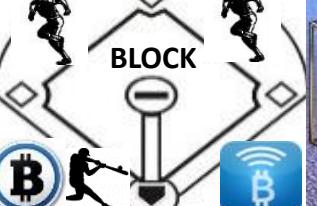
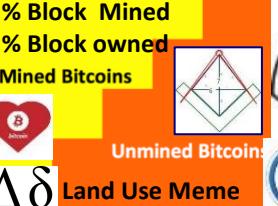
Heart Beacon Cycle Time – Space Meter
Geo-Spatial Temporal Intensity Metrics



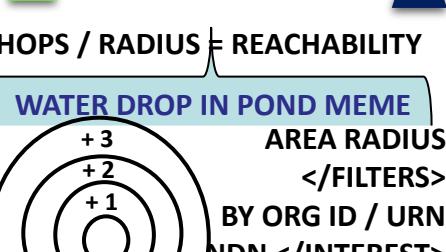


PROCESS BY </PRECEDENCE>
SonarMaps ID_Hops

Bitcoin = Property



DATE TIME STAMP
NDN </INTEREST>
NDN {"DISTANCE"}
ALGORITHM

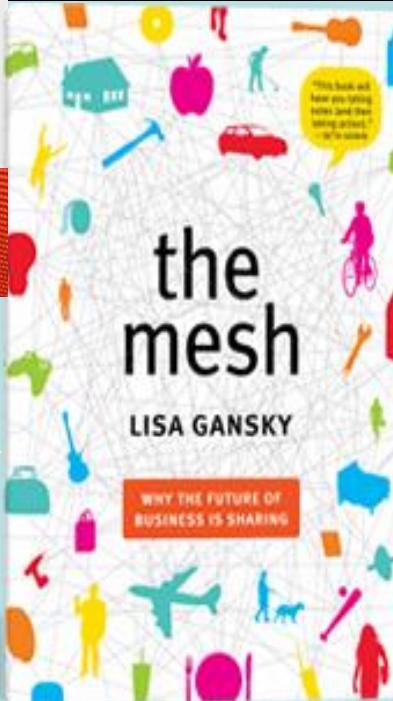
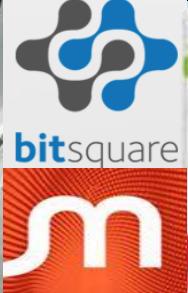


Heartbeat Snapshots
 $\Delta\delta$

MICRO CYCLES
Heartbeat



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

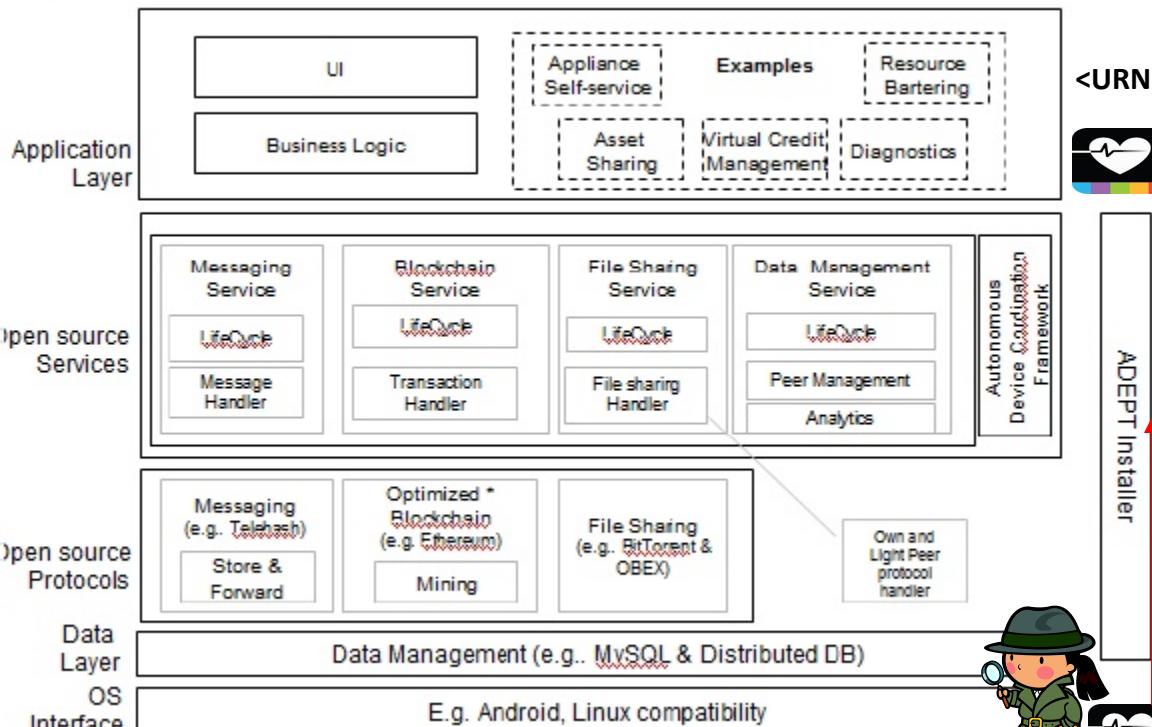
Temporal proximity

Agreements

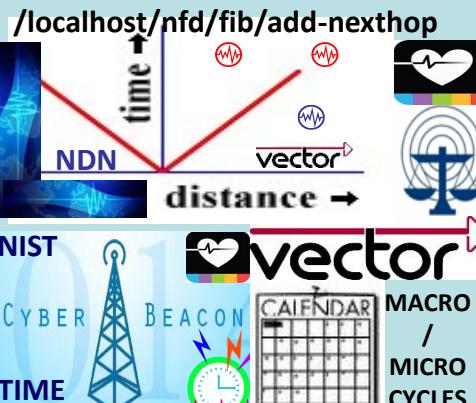
Payments

Barter

ADEPT Standard Peer Architecture – Logical View



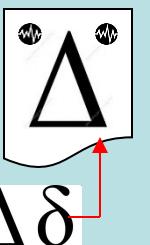
* Could be optimized to hold the complete blockchain. Function of ADEPT Installer



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



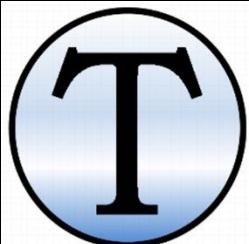
BUSINESS LOGIC = WORKFLOW <XML_Wf>



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. Consensus on known facts. | Outcomes of <i>future</i> events. <i>Future</i> consensus on <i>knowable</i> facts. |

3. A software protocol

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

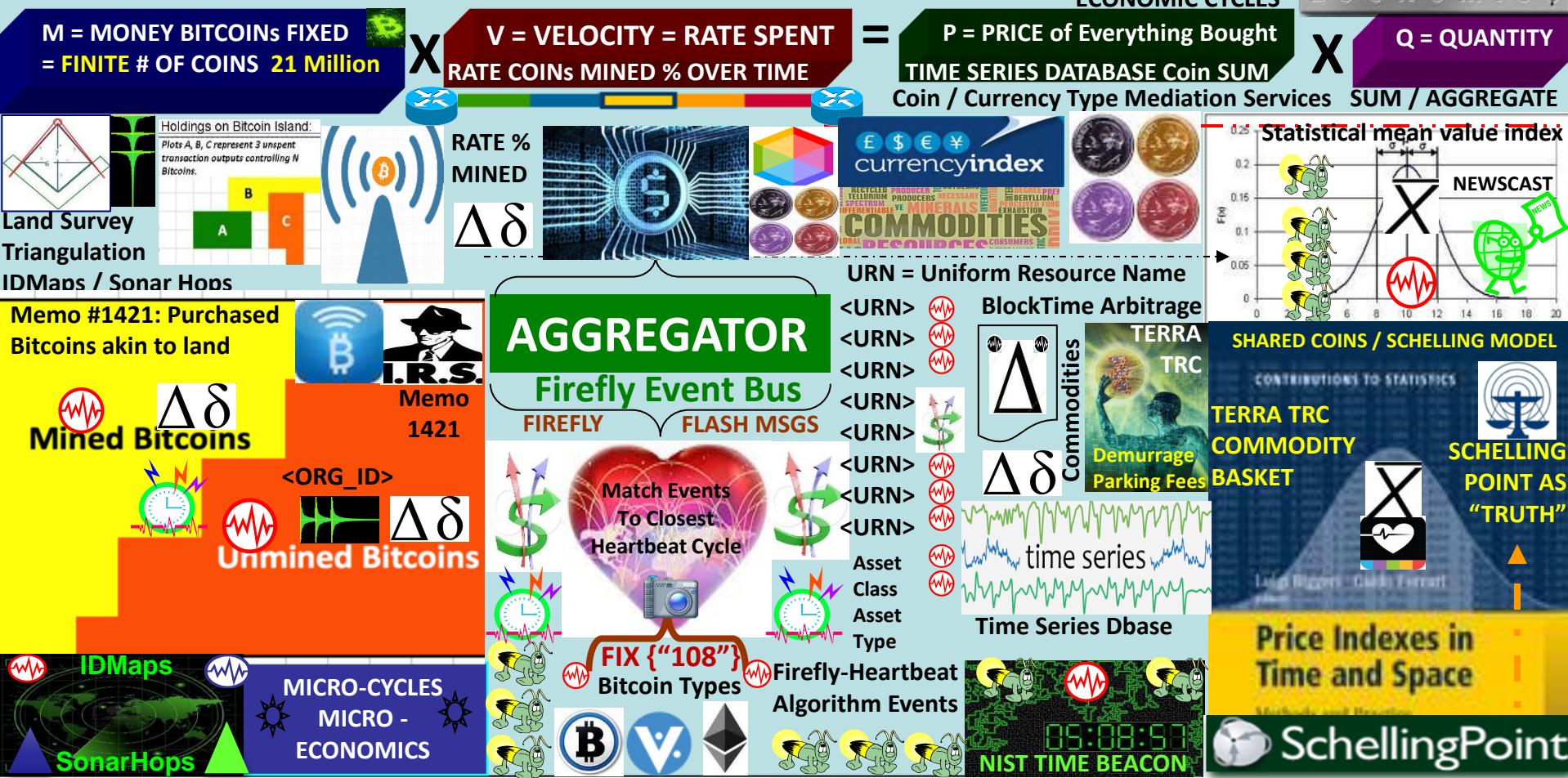
| Finance Thing | Interpretation | EVENT DERIVATIVE CORP = <Org_ID_1,2,3> |
|--------------------|--|---|
| Bond (Debt) | “I, Paul Sztorc, owe \$20 to whoever is holding this bond certificate on 03/02/2015.” | |
| Stock (Equity) | “I, the CEO of SztorcCorp, owe 1/100 th of SztorcCorp’s profits to whoever 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. |

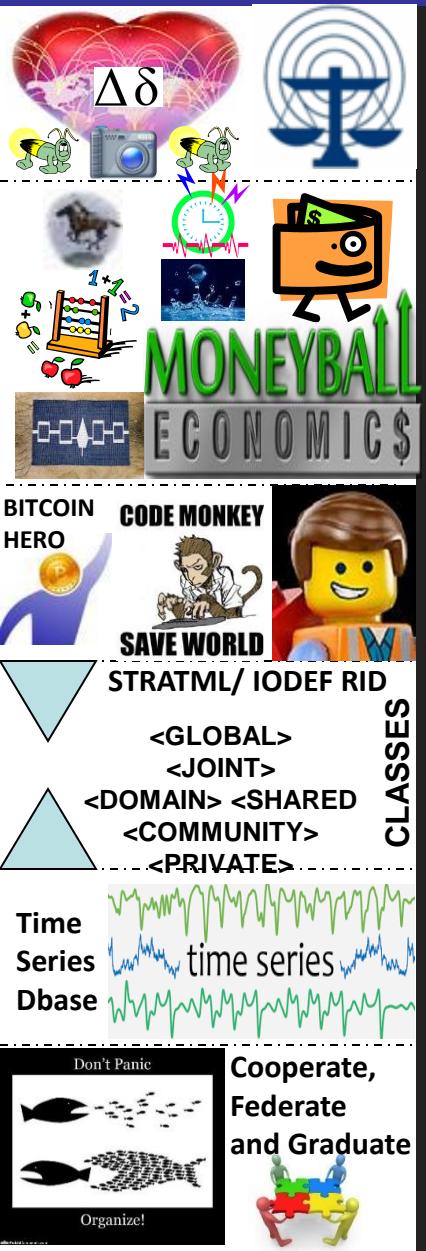
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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.



HOW GAMIFICATION WORKS:

5 COMMON MECHANICS

POINTS

Measure a user's achievements in relation to others
Can double as currency to exchange for rewards

BADGES

Reward achievements visually

LEVELS

Encourage users to progress and unlock new rewards

LEADERBOARDS

Organise players by rank

CHALLENGES

Encourage engagement by offering specific tasks to complete

4 MAIN WAYS TO DRIVE ENGAGEMENT

ACCELERATED FEEDBACK CYCLES

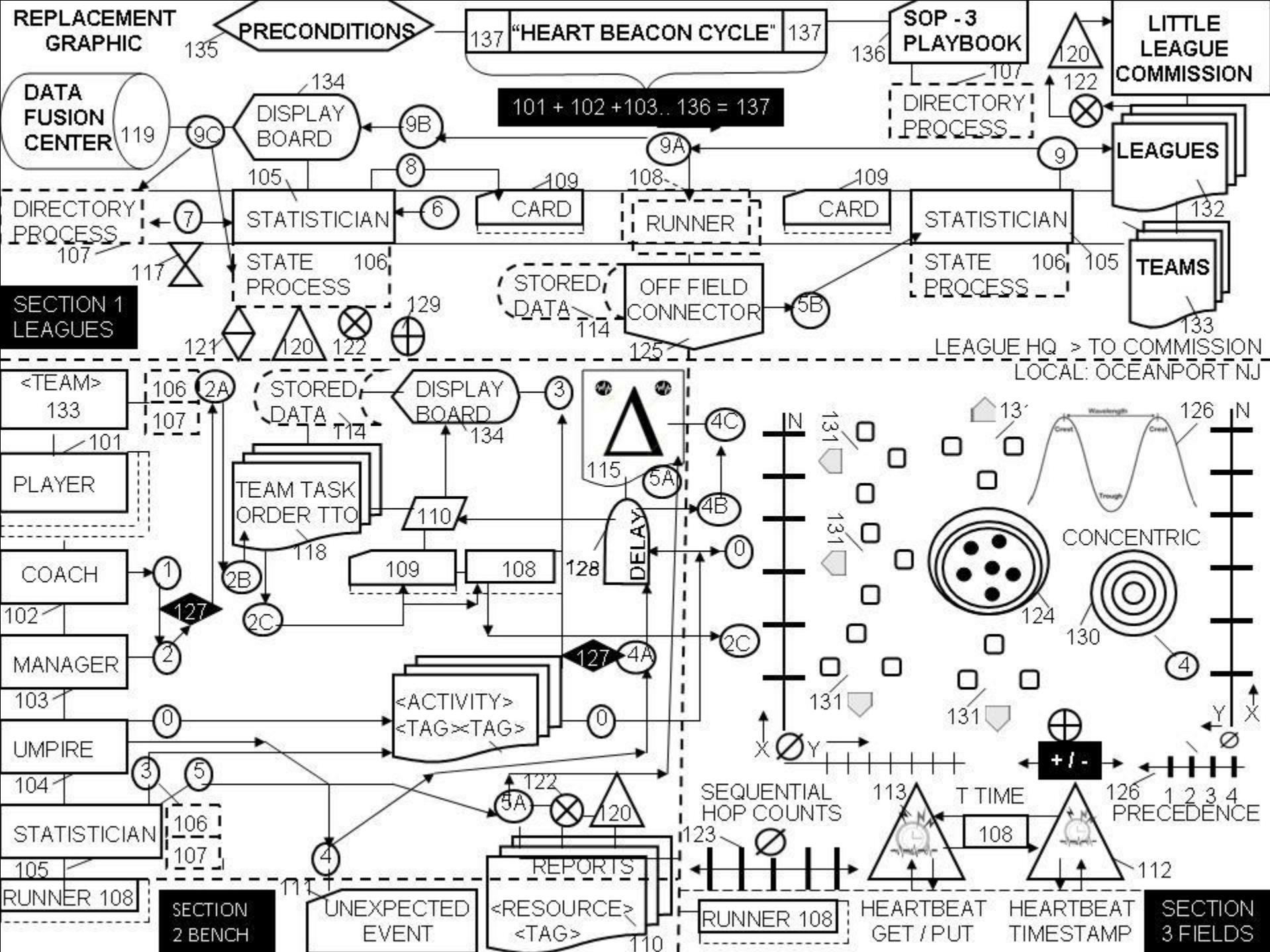
CLEAR GOALS AND RULES OF PLAY

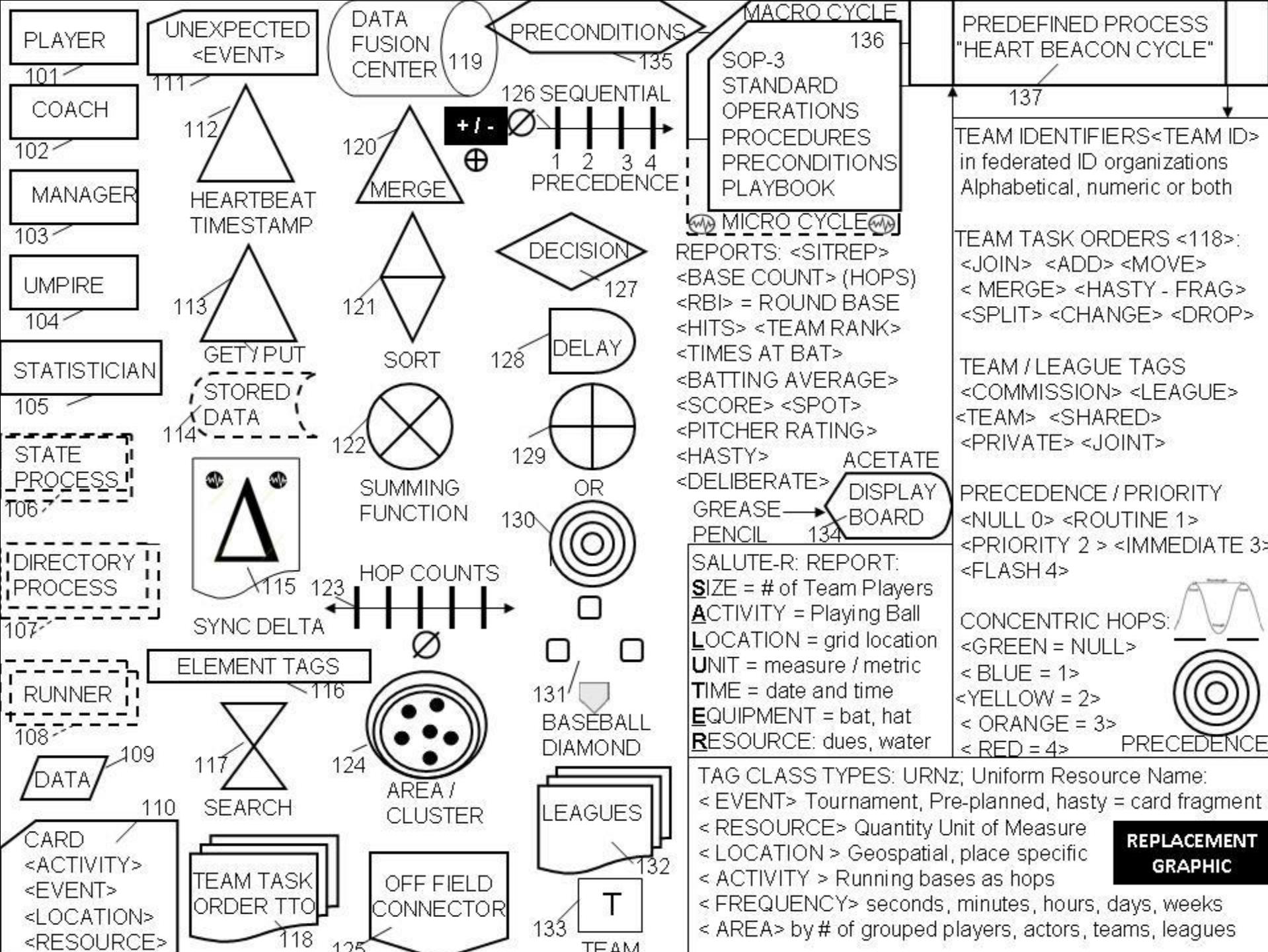
A COMPELLING NARRATIVE

CHALLENGING BUT ACHIEVABLE TASKS









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

219

CLOUD COMPUTING



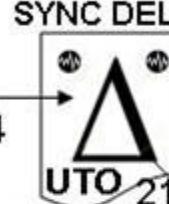
218

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

213

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

215 LEADER'S
INTENT
DECISIONS

210

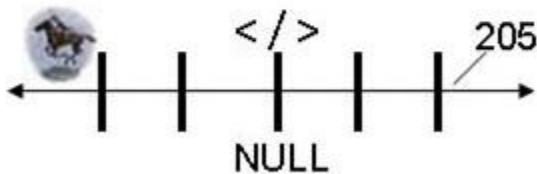
SNAPSHOTS

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

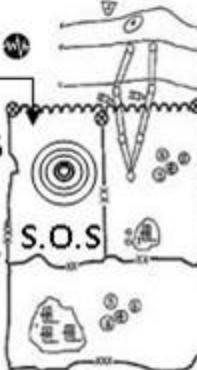


SEARCH FOLLOWED BY ARBITRAGE INVITES VIA
BEACON NEWSCASTS. INVITE ACROSS SPACE / TIME

208



APPLIQUE' OVERLAYS



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

204

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

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



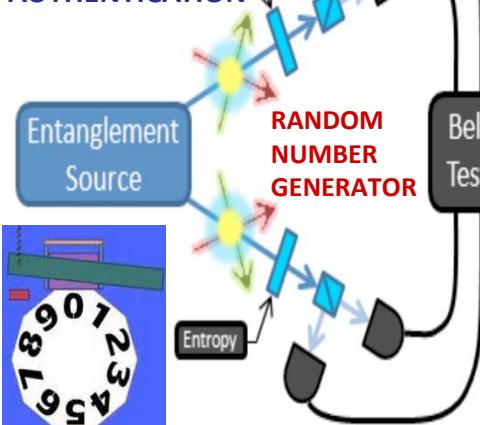
NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

UNPREDICTABLE SAMPLING

SECURE AUTHENTICATION

SECURE MULTI

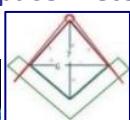
PARTY /
AUTHENTICATION



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

Time / Distance Metrics



PROXIMITY

OFFSHORE BEACONS ONSHORE

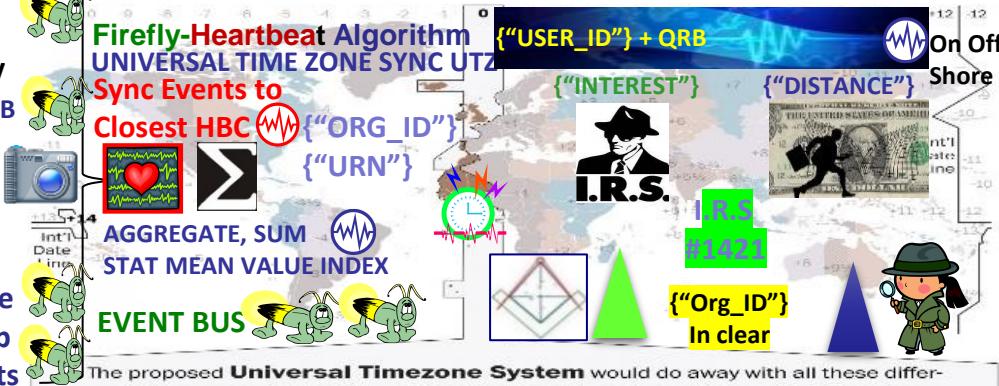
ACCOUNT BELONGS TO </Org_ID>

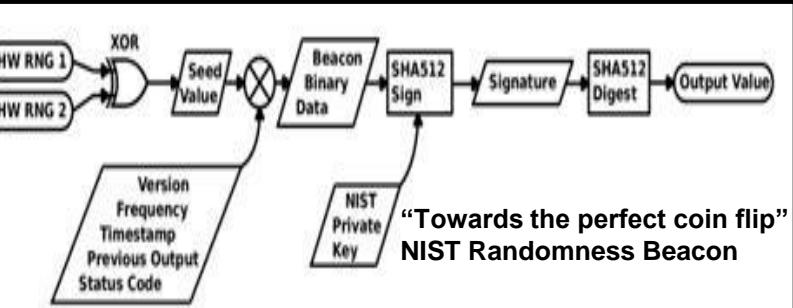
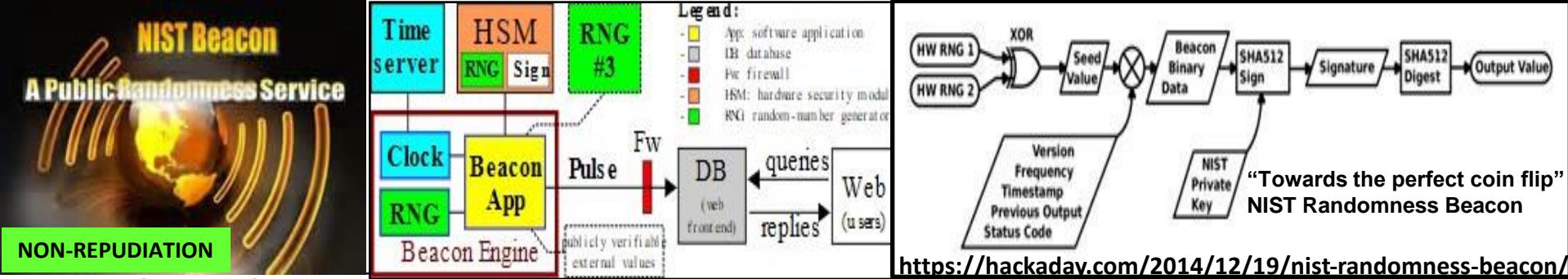
RESOURCE TYPE: <URN><URN><URN>

DEVICE / SENSORS <UUID><UUID>

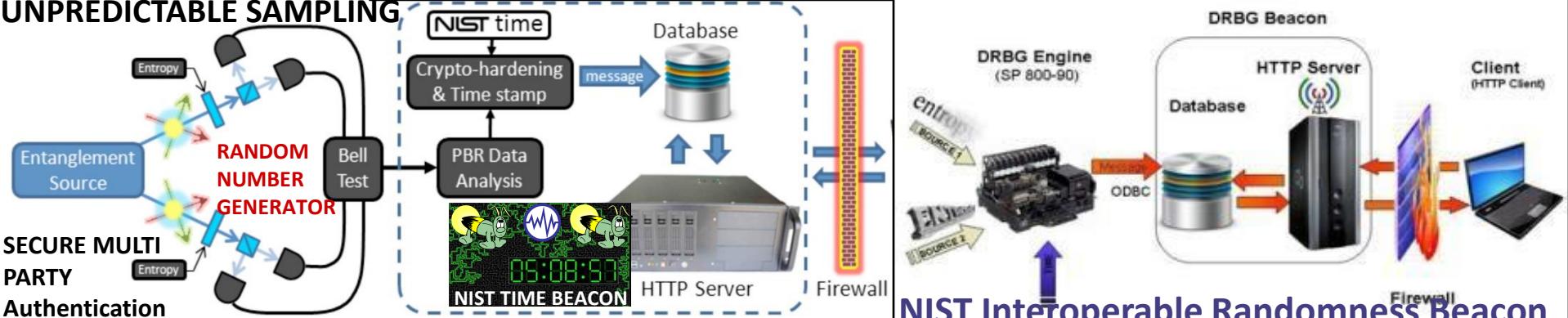
Higher-level services collect distance data to build virtual distance map State Snap Shots

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**





<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

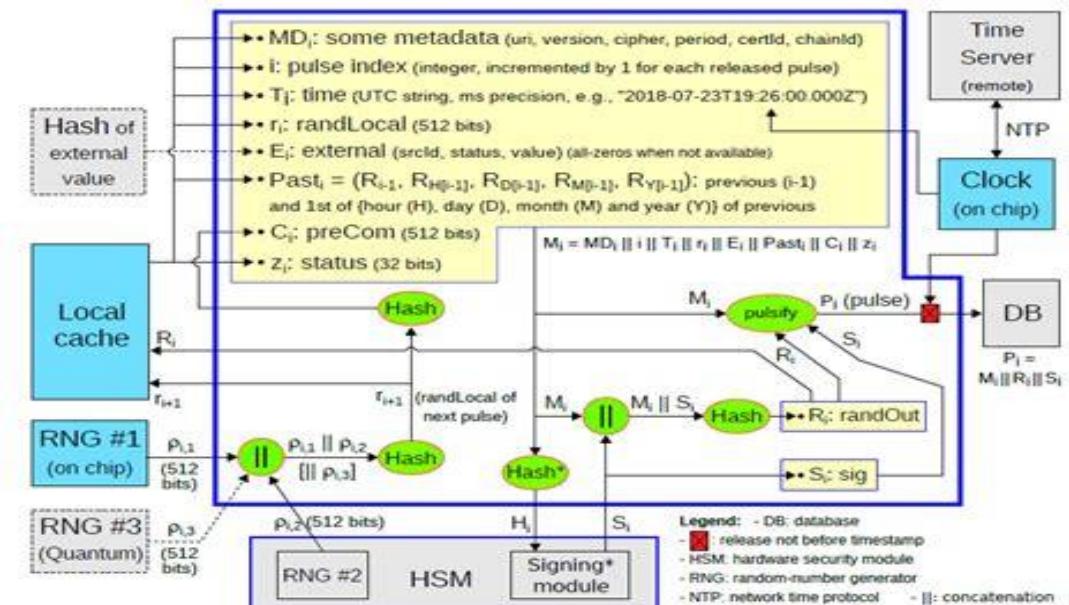
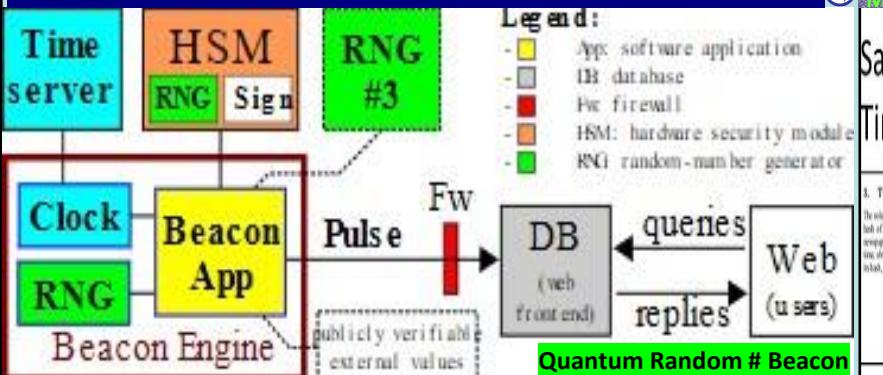


Figure 2. Illustration of the generation of the i^{th} pulse by a Beacon App (2.0)

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

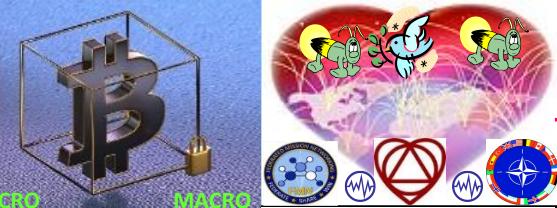
ALL THINGS NET FORMED WITH: Building Blocks:
 1) EPOCH TIME CYCLES
 2) SYNTAX / Opcode Brevity codes Programmable Economy / \$\$\$

NIST Quantum Random Number Beacon



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

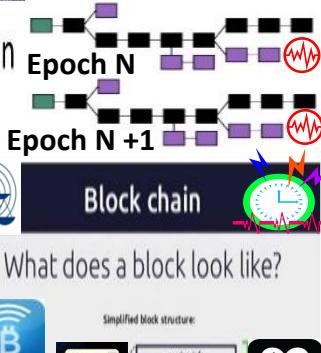
One solution is a **heartbeat**: defining a default lease duration delaying updates until the next cycle"



Satoshi Bitcoin Blockchain 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 [3]. The timestamp proves that the data must have existed in time already, in order to get into the hash. This timestamp includes the previous timestamp in its hash, forming a chain, with each additional timestamp confirming the previous one.



ALGORITHMIC REGULATION HEARTBEAT SYNC DELTAS



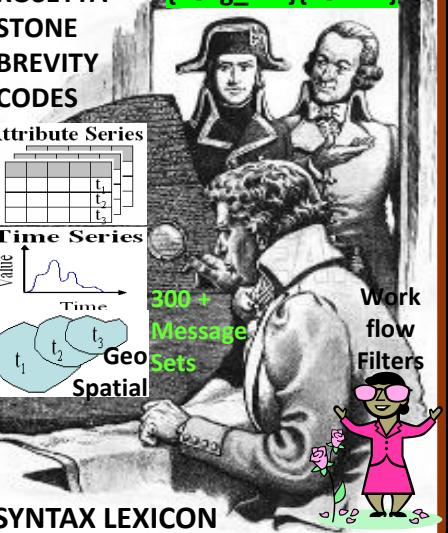
Firefly - Heartbeat Sync Algorithm
 Heartbeat Event Message Bus
 UTZ stochastic harmonization

Epoch Time Cycles

E0 E1 E2 E3...



ROSETTA ("Org_ID"){"URN"}
 STONE
 BREVITY
 CODES



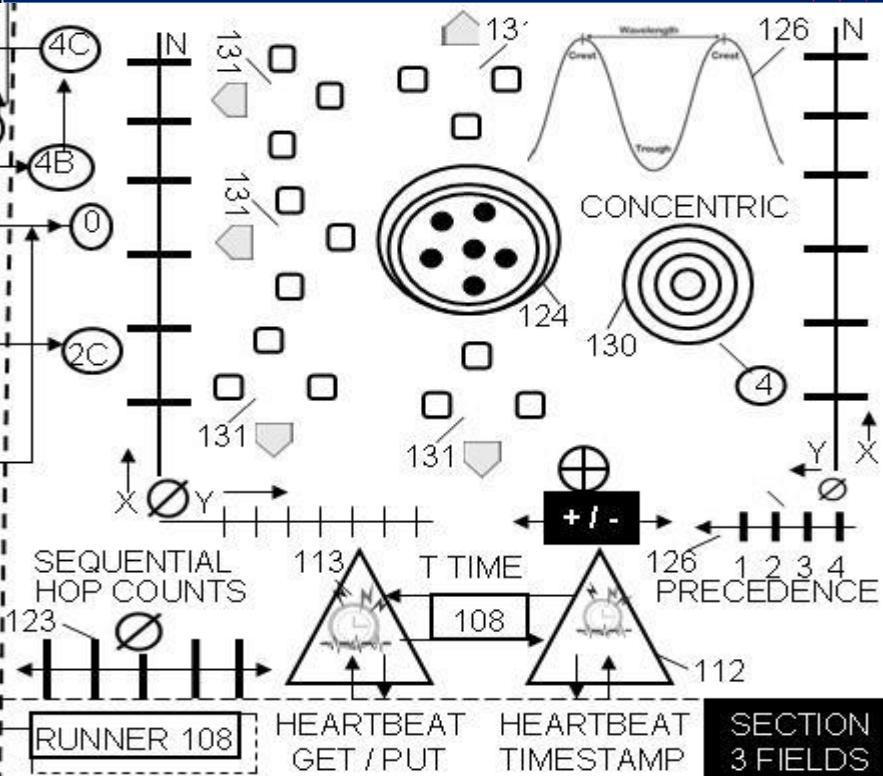
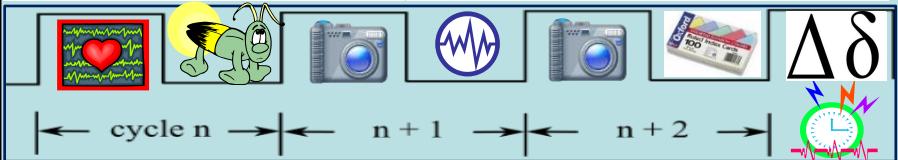
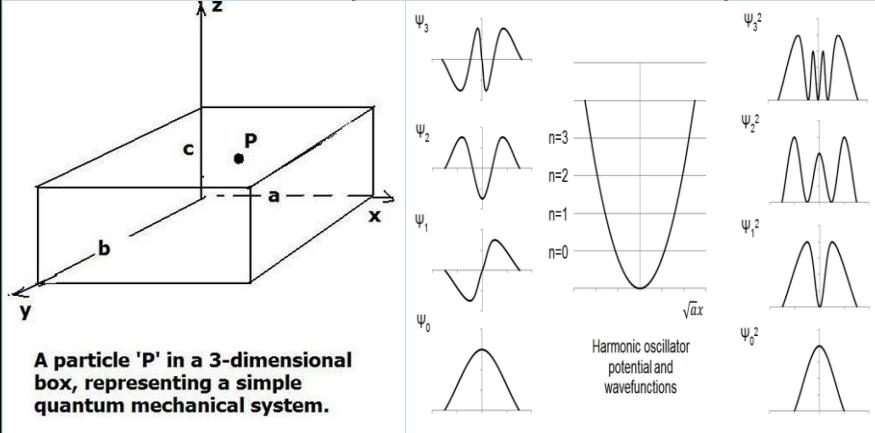
QubitCoin Interval: Every 30 Seconds

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



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.

QUANTUM COMPUTING / HBC TIME – SPACE METER / METRICS

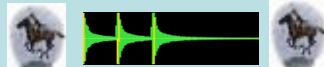


#QuantumComputing USct Alice Corp Vs CLS Bank compliant memes:
In quantum computing, a qubit (or quantum bit (sometimes qbit)) is a unit of quantum information—the quantum analogue of the classical binary bit. A qubit is a two-state quantum-mechanical system, such as the polarization of a single photon: 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

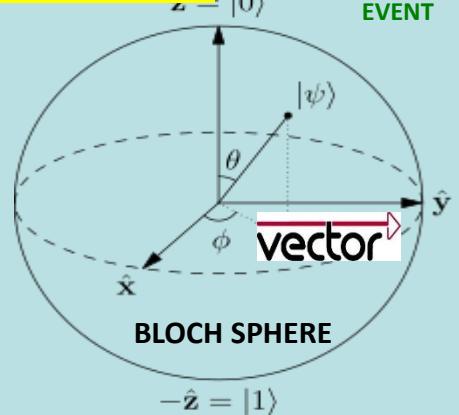
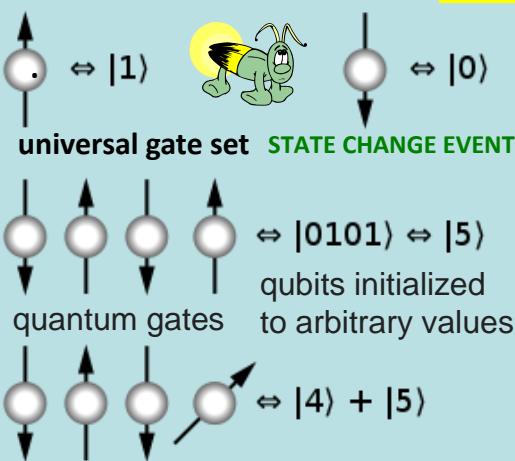
Vertical polarization vectors from a known point 0 null Sonar Hop meme



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?



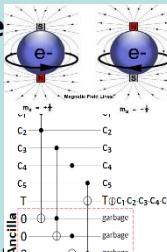
Microwave pulses like sonar ping...

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)

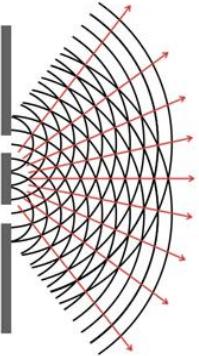


Double-Slit Experiment

Screen with two slits

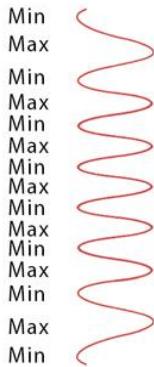
PARTICLE ?

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

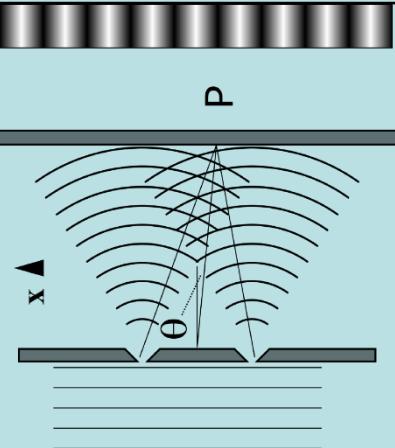
Alternating bright and dark fringes due to interference of light waves

Intensity of the fringes shows

the maxima and minima

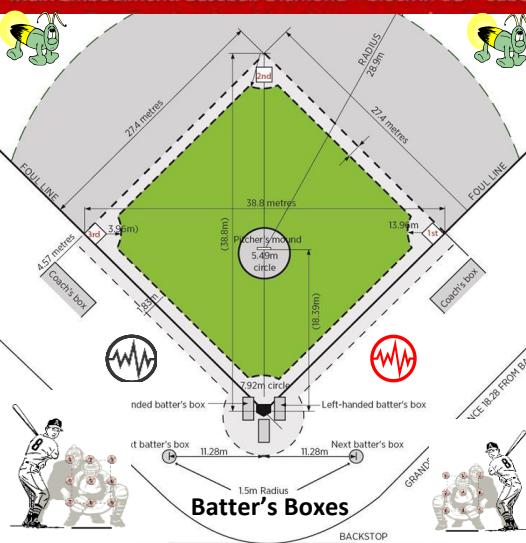
Science Facts

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



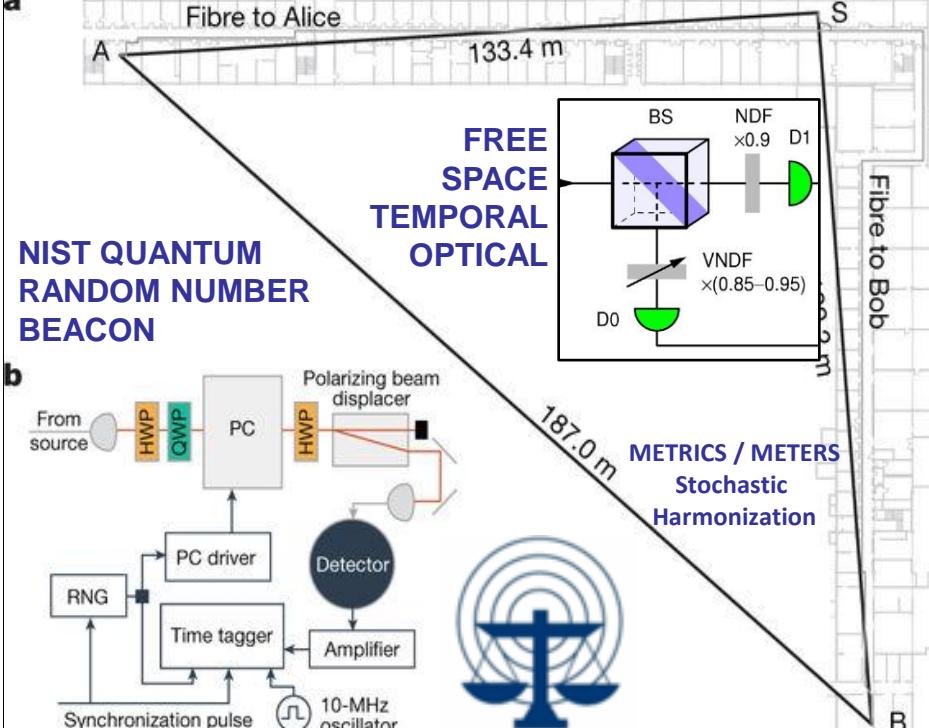
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter
Main Embodiment: Baseball Diamond = block in 3D = cube

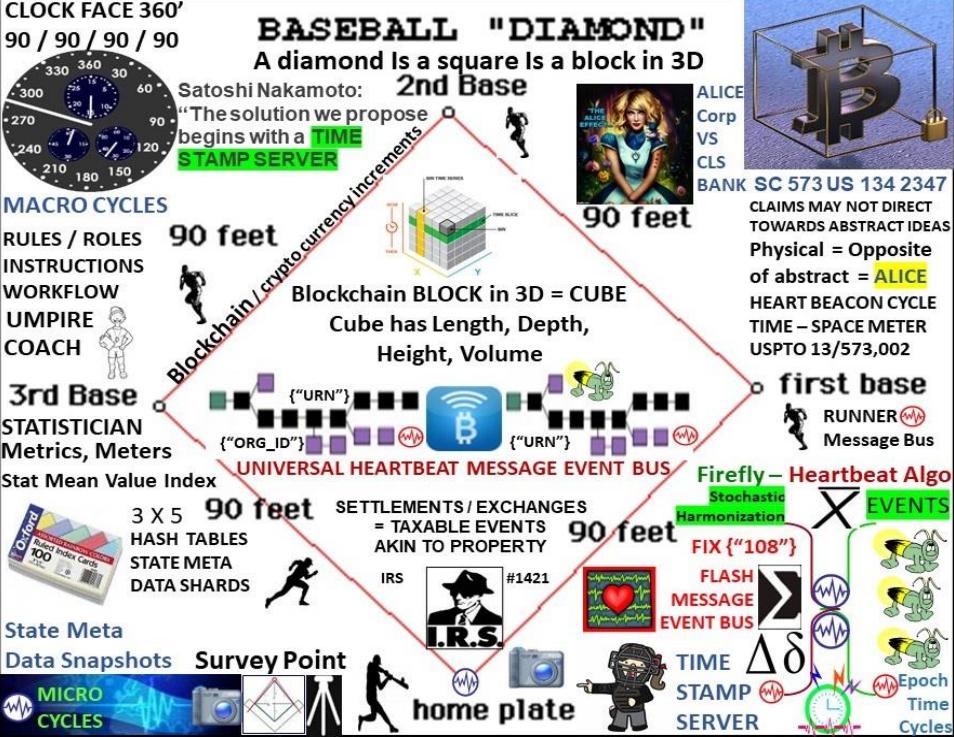


SCOTUS ALICE RULING: "Claims may not direct towards abstract ideas" / Physical = opposite of abstract

a



b



The Hopf Fibration

Edmund Harriss

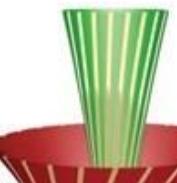
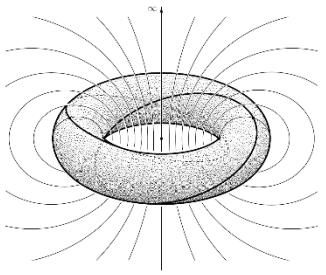
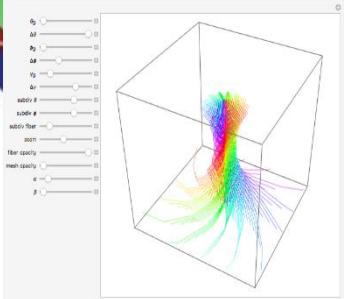
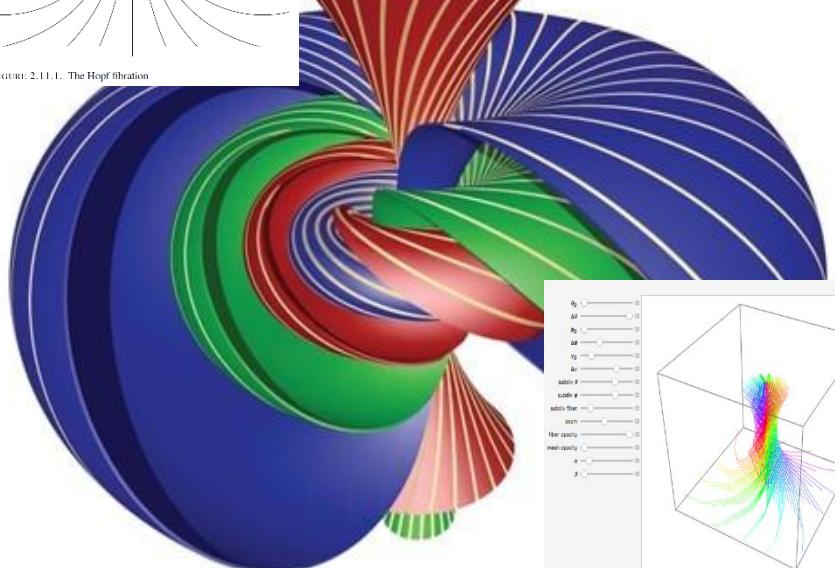


FIGURE 2.11.1. The Hopf fibration



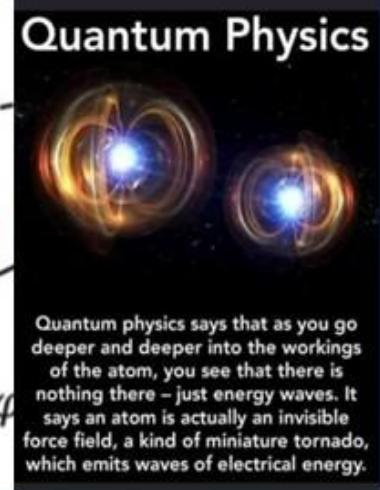
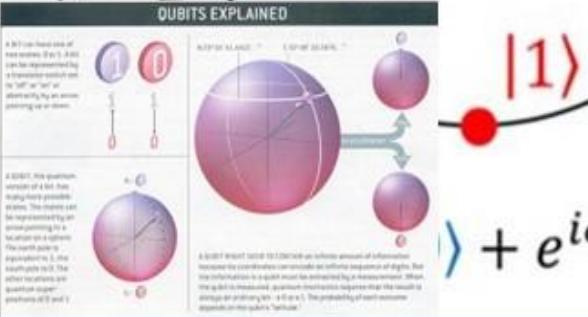
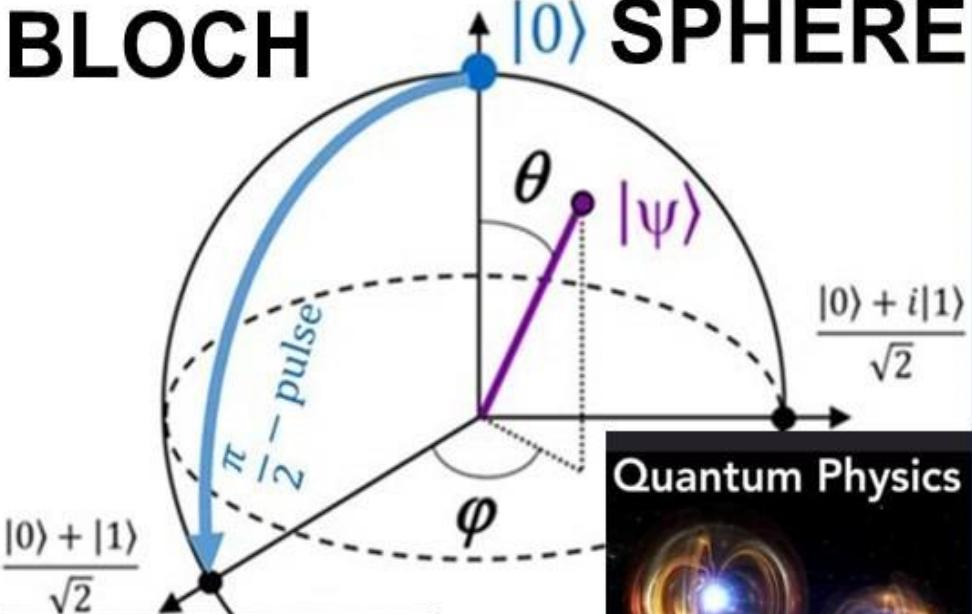
Hopf Fibration / #Bloch sphere

"the most important object in the universe"

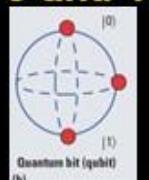
"Hopf fiber bundles pop up in 8 quantum physics situations"... USPTO 13/573,002 water drop in pond meme / scalar wave in 2D - 3D

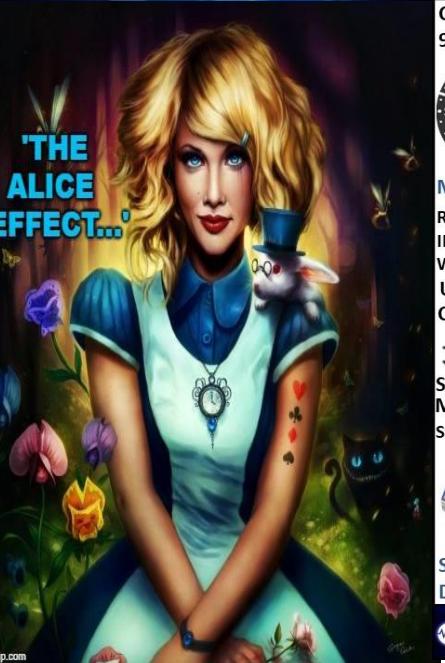
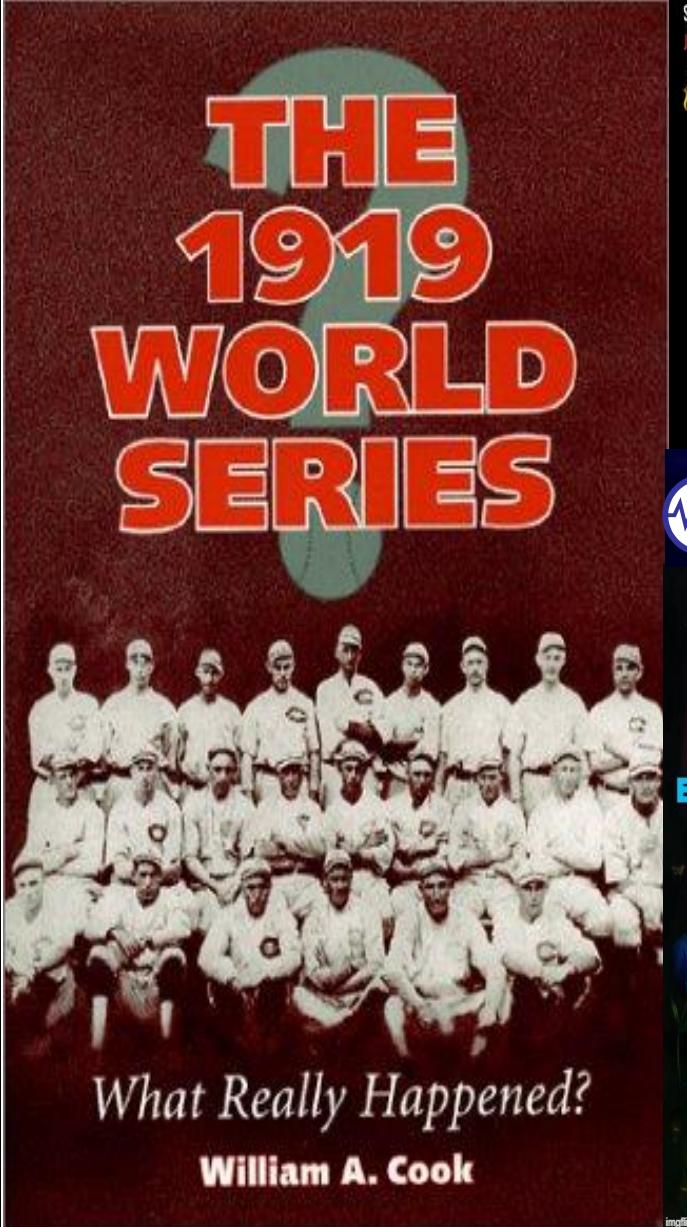
Paul Revere linear - sequential hop count meme

BLOCH SPHERE



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.





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

CLOCK FACE 360'
90 / 90 / 90 / 90
330 340 30 60
270 240 300 90
210 180 150

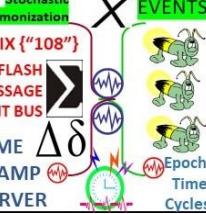
BASEBALL "DIAMOND"
A diamond Is a square Is a block in 3D
2nd Base



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



MACRO CYCLES
RULES / ROLES
INSTRUCTIONS
WORKFLOW
UMPIRE
COACH

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

3rd Base

Blockchain / crypto/currency increments

STATISTICIAN Metrics, Meters

TIME RATES

Stat Mean Value Index

SETTLEMENTS / EXCHANGES = TAXABLE EVENTS AKIN TO PROPERTY

3 X 5 HASH TABLES

IRS #1421

STATE META DATA SHARDS

Fix "108"

State Meta Data Snapshots Survey Point

FLASH MESSAGE EVENT BUS

MICRO CYCLES

TIME STAMP SERVER

TIME STAMP SERVER





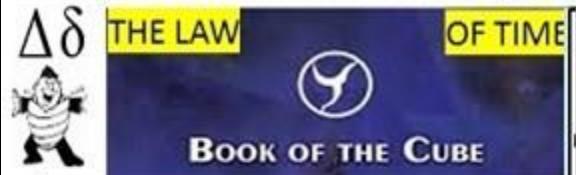
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

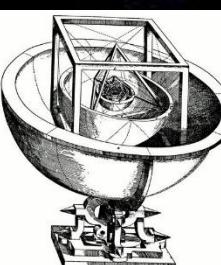
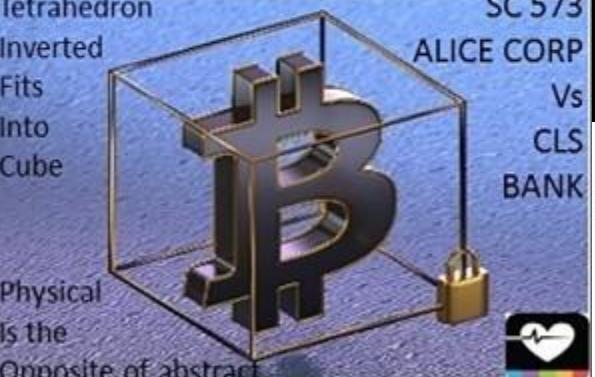
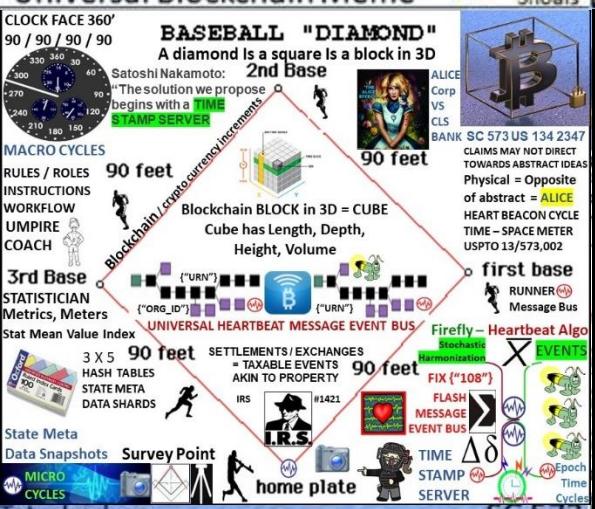
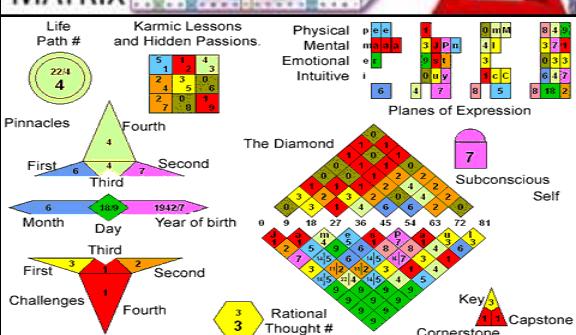
Main Embodiment: Baseball Diamond = block in 3D = cube

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

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

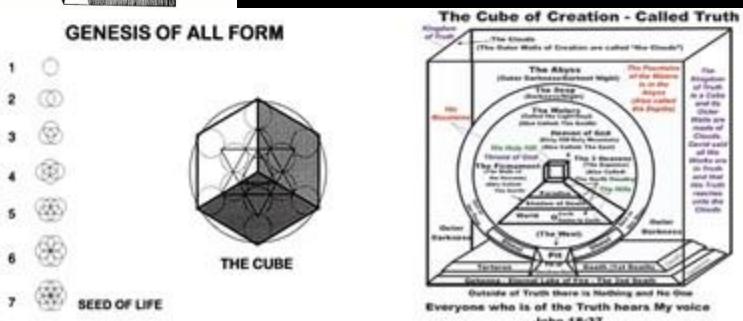
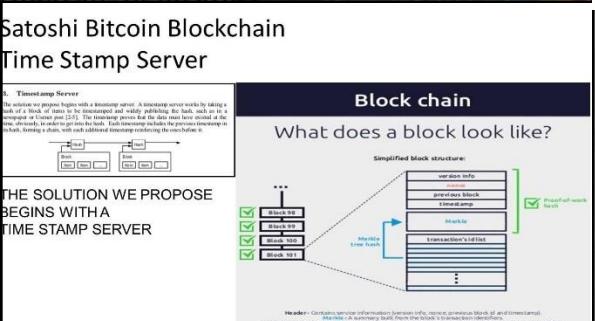


First
Baseball
Players
Union
Formed
1870



by: Tom Rimbault

"In the beginning (of time) there was the word"





"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.

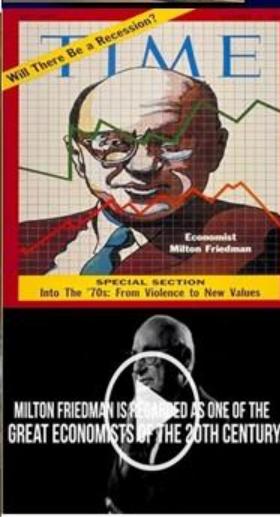
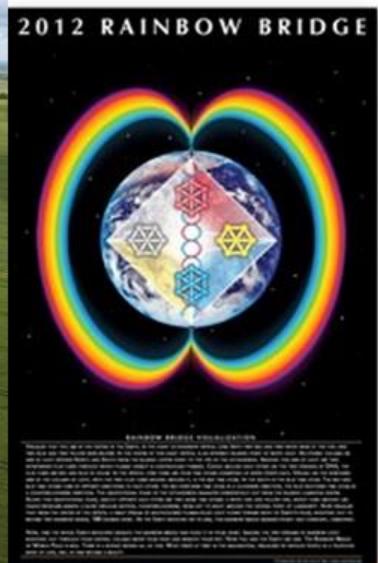
Over the next ten years, we are going to see our world innovate unlike never before, particularly in the fields of AI, technology, science, space travel, UFOs, networks, and the Internet. Major Universal truths will also be revealed as we welcome the New Age of Aquarius. The old world will soon come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

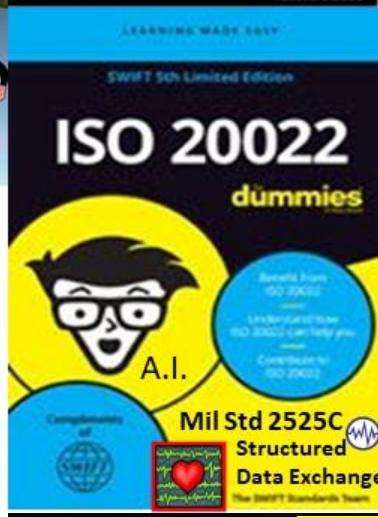
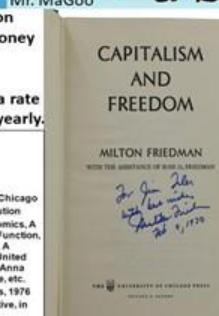
Milton Friedman — Preface to Capitalism & Freedom 1962

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



The Age of Aquarius: Aquarius, Aquarius Rising @ 6:44 A.M. Feb 10th 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

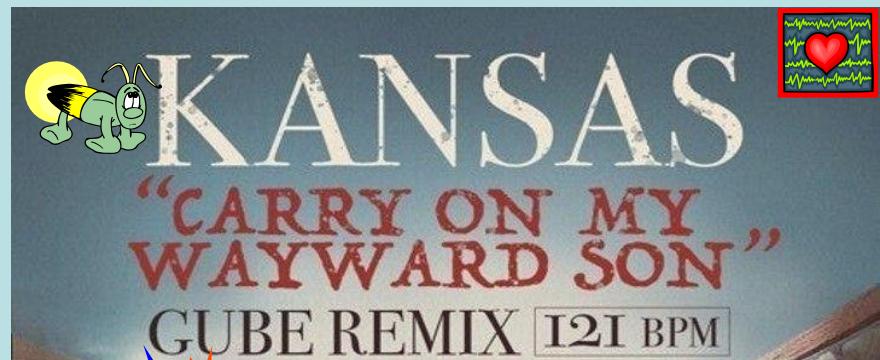
Patent Applicant 13/573,002 Curriculum Vitae

What does your name mean?



Steven + Mcgee
Intellectual Revolutionary

You have a sharp spirit paired with a strong will. You have the power to change the world with your intelligence!



What does your name mean?

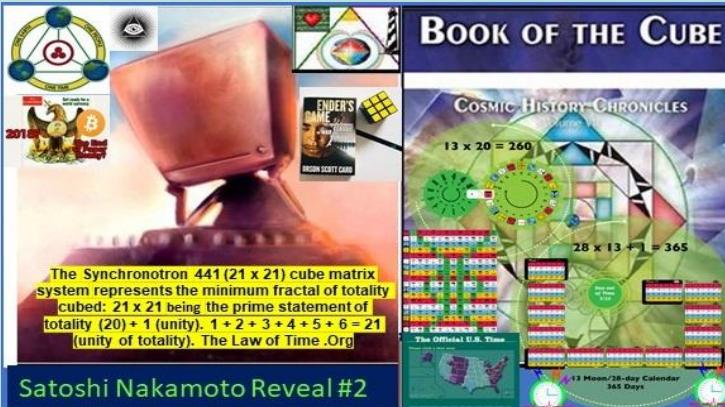
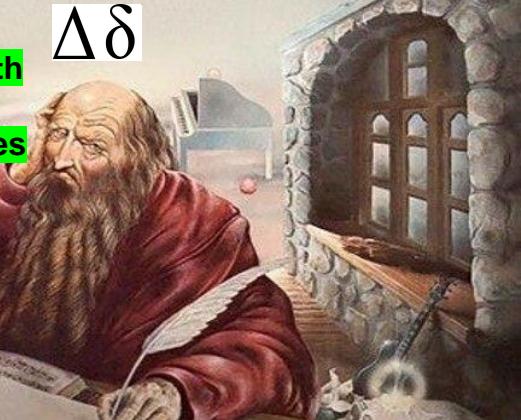


Steven + Mcgee

Endless Luck

You are an inspiration for your friends. Your loving ways, your huge heart and your beauty spread endless joy to the world!

Roll With
The
Changes



The Synchrontron 441 (21 x 21) cube matrix system represents the minimum fractal of totality cubed: 21 x 21 being the prime statement of totality (20) + 1 (unity). 1 + 2 + 3 + 4 + 5 + 6 = 21 (unity of totality). The Law of Time .Org

Satoshi Nakamoto Reveal #2

"As an avid lover of numerology and astrology, I use both in my day-to-day life. I believe God is the ultimate mathematician, as everything around us can be viewed as numbers" Satoshi Nakamoto White Paper 2008 "The solution we propose begins with a time – stamp server"

