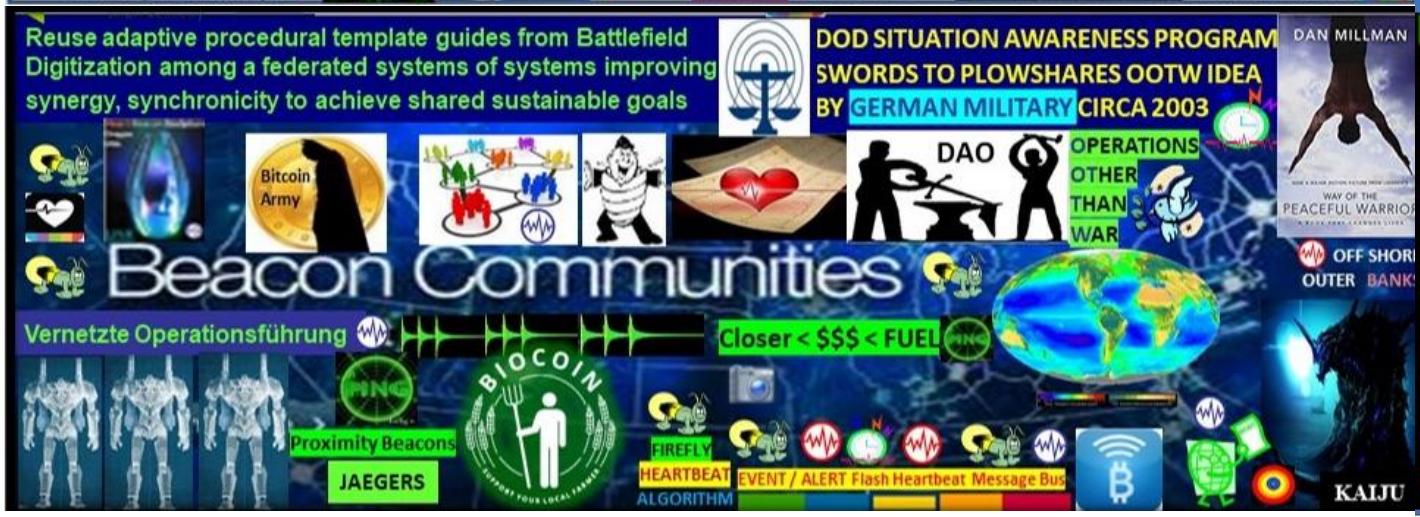


- Reuse, mod of System of systems engineering framework, Syntax Lexicon Library data elements
- STRUCTURED DATA EXCHANGE
Reuse brevity codes mapped to 2525D symbol sets comprised of 300 + message sets for A.I. - machine Block-Time DLT arbitrage among Trade Federations </Org_ID> {“URN”} </URN> = COMMODITY



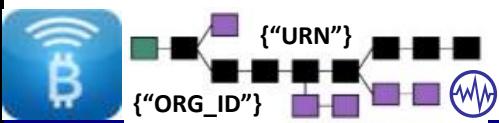
Spatial / temporal UTZ synchronization, stochastic harmonization, Time - Space Distance Estimation Service Common Consensus Algo meme Eco sustainable incentives “We can synchronize ourselves, DAO Trade Federations in time - space for common purposes” Eco sustainable, Equitable Economic econometrics.

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



LINK

PING

Proximity Beacons

JAEGERS



Closer < \$\$\$ < FUEL

PING

BIOCOIN

LINK

PING

BIOCOIN

LINK

PING

BIOCOIN

LINK

PING

BIOCOIN

LINK

FREELY

HEARTBEAT

ALGORITHM

FLASH

MESSAGE

BUS

FLASH

MESSAGE

BUS

FLASH

MESSAGE

BUS

FLASH

MESSAGE

BUS

EVENT / ALERT

FLASH

HEARTBEAT

MESSAGE

FLASH

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.



Net of \$\$\$ formed with:

1 EPOCH TIME CYCLES

2 {"Syntax"} "The Word"

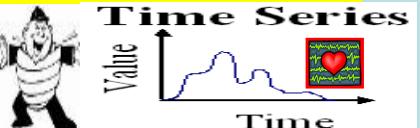
"In the Beginning" Genesis Block

"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



Alpha Numeric Brevity Codes



SYNTAX / SYMBOL LEXICON LIBRARY



"BITCOIN MAKES MONEY PROGRAMMABLE.
MONEY IS SIMPLY DATA"

"BITCOIN'S VALUE = 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

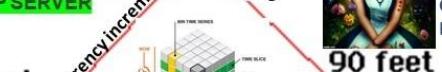
State Meta Data Snapshots

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 AKA TO PROPERTY

IRS #1421

FLASH MESSAGE EVENT BUS

FIX {"108"}

TIME STAMP SERVER

Epoch Time Cycles

home plate

Δδ

Time Stamp Server



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

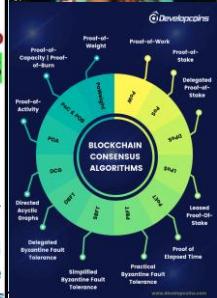
Stochastic Harmonization

X EVENTS

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

Epoch Time Cycles





Eco Economic Epochs

Distributed Event Processing

Distributed State Machine

DEFI FINTECH IP WARS / Litigation Foundation Tech



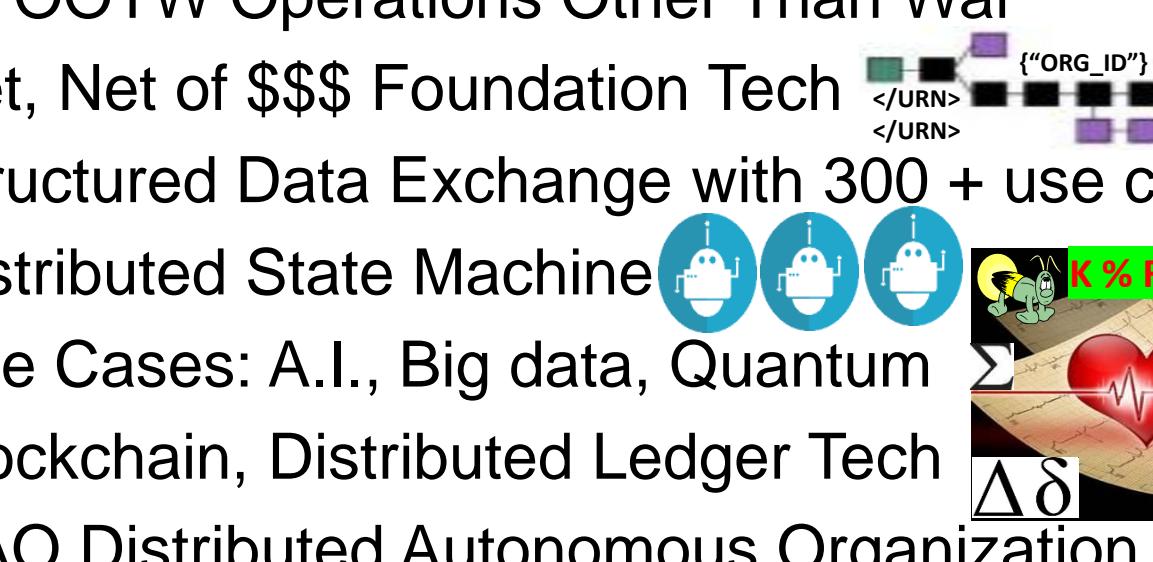
SWORDS to PLOWSHARES

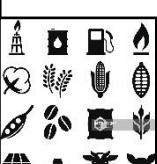
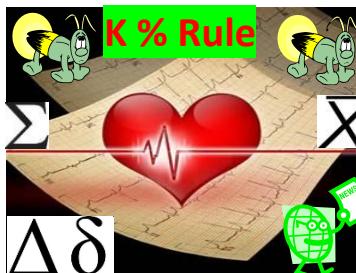


The logo features a blue digital camera icon on the left, followed by the text "USPTO 13/573,002" in large blue letters, and "573 U.S. 134 SCt 2347" in smaller blue letters below it.



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

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



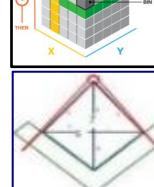
Federation
Gateway

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

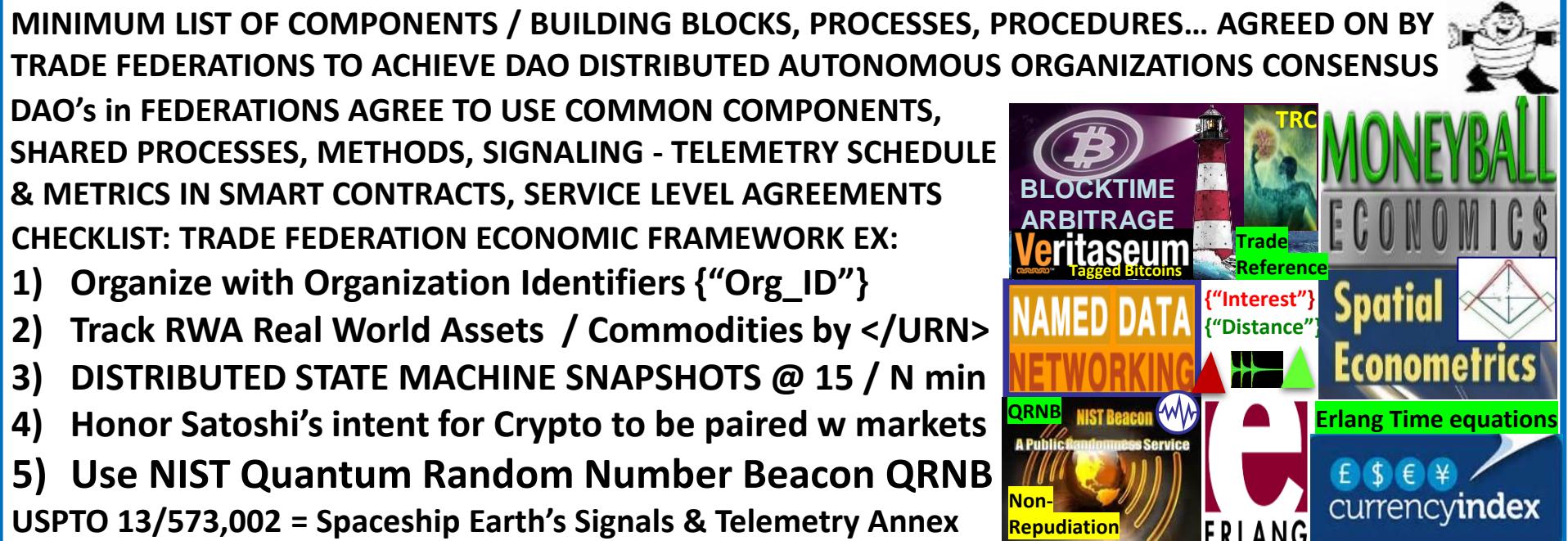
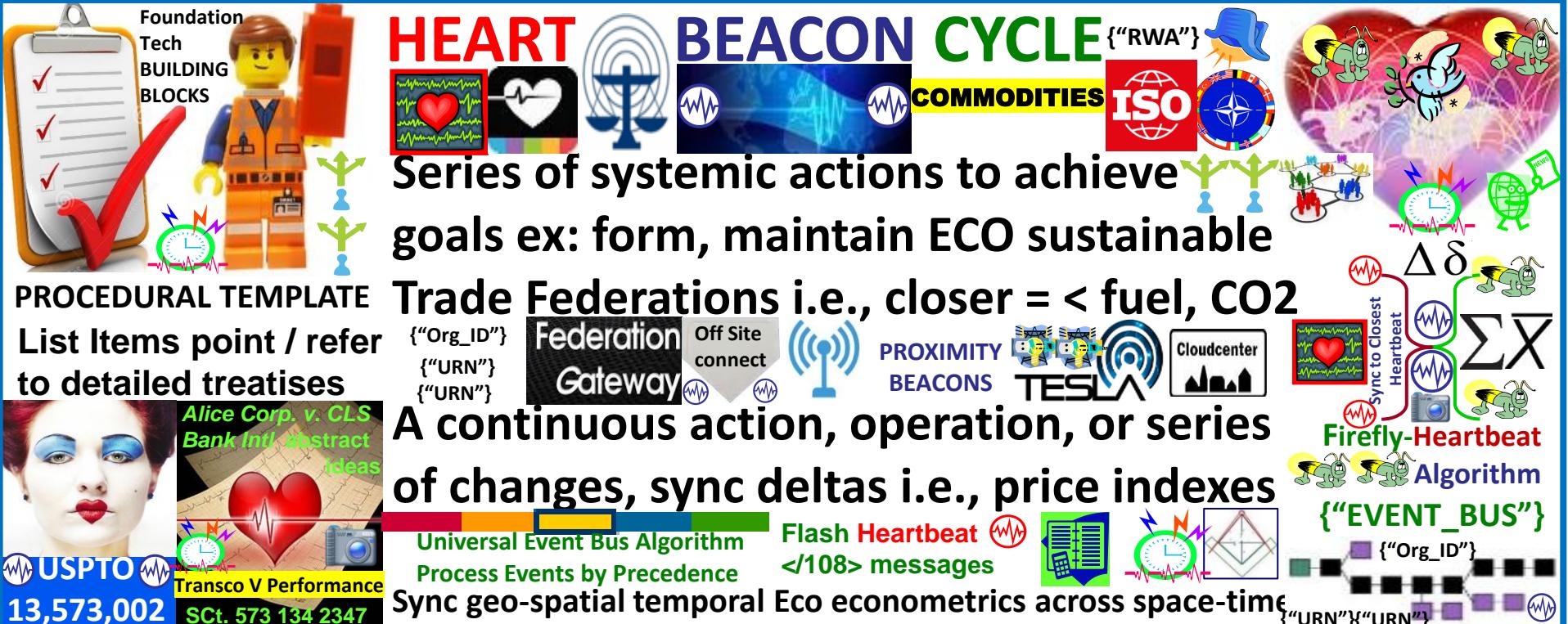


Net, Net of \$\$\$ money consists:

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



MEMO #1421



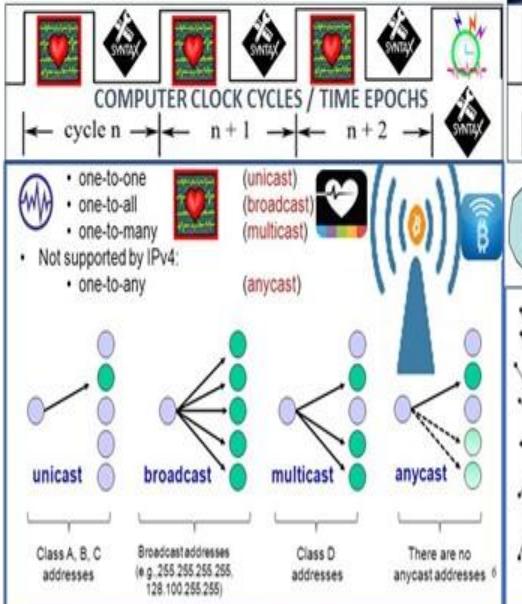
Foundation Technology Trinity:

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

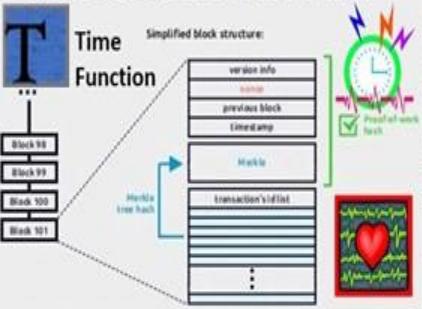
Time Epochs / Syntax:

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



TIME Block chain TIME

What does a block look like?



GENESIS TIME STAMP / Genesis Block

Header (Contains service information (version info, nonce, previous block id and timestamp), Merkle - A summary hash from the block's transaction tree, Transaction's id list - A list of transaction's identification hashes, that was included into the block's merkle tree)

Semantic blockchain

BASEBALL "DIAMOND"

A diamond is a square is a block in 3D
2nd Base
The solution we propose begins with a STAMP SERVER

90 feet

MACRO CYCLES
RULES / ROLES
INSTRUCTIONS
WORKFLOW
UMPIRE
COACH

3rd Base
STATISTICIAN
Metrics, Meters
Stat Mean Value Index

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

first base
RUNNER Message Ball

90 feet
SETTLEMENTS / EXCHANGES
+ TAXABLE EVENTS
AKO TO PROPERTY

IRS
State Meta
Data Snapshots Survey Point

90 feet
FLASH MESSAGE EVENT BUS

TIME Δδ
STAMP SERVER

TIME Δδ
Sync

FILTERS
- Workflow

Deltas

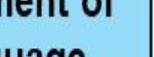
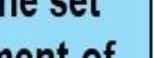
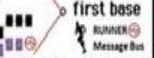
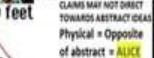
Null 0 = Genesis Time Epoch

Sync

Δδ

Sync

OPSCODE
Brevity
Codes
Mapped
To
Symbol Sets
AI



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

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

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

ADAPTIVE PROCEDURAL TEMPLATE: LIST OF TOOLS, PROCESSES, PROCEDURES I.E., STORED PROCEDURE CALLS COMPRISED OF STRUCTURED DATA EXCHANGES USING 300 + MESSAGES / MESSAGE SETS COMPRISED OF OPSCODE BREVITY COMPUTER CODES MAPPED TO SYMBOLS FACILITATING STAMDARD MAN – MACHINE INTERFACE

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	AMDPSCS	AFATDS	CODE GUIDE
ASAS	C002 C203 F014 F541 S201 S309	C002 C203		C002 C203 F014 F541 S201 S309	C002 C203 F014 F541 S201 S309	MIL STD 2525A, B, C, D ["URN"] {"Org_ID"}
AMDPSCS						ISO Patent Application 9/11 2003: Method to commercialize structured military messaging
AFATDS	F002 F014 F541 S201			F002 F014 F541 S201	F002 F014 F541 S201	DoD Systems of Systems Engineering Structured Data Exchange MIL Standards / ISO Standards
MCS	C002 C203 C505 F002 F014 F541 S201			C002 C203 C400 C443 C501 C505 C506 C507 F002 F014 F541 S201	C002 C203 F014 F541 S201 S309	BREVITY OPSCODES MAPPED TO SYMBOLS, SYMBOL SETS FOR A.I. ARTIFICIAL INTELLIGENCE MAN – MACHINE INTERFACE
TOKENS						STANDARD, CONSISTENT SYMBOLS
SIOP						

MESSAGE CATALOG 300 + Use Cases

Object Categories	Examples	Information Categories and Examples				
OOB	SYNTAX LEXICON	Location	Movement	Identify	Status	Activity Intent
Infrastructure	Comm, power, transportation, water/sewer	lat/long	spd/hdg	STRUCTURED DATA EXCHANGE / alliance, type/class	Message Sets	Eagerizing, reconsidering COA ("Java JS")
Sociological	culture, religion, economic, ethnic, government, history, languages	network, grid	throughput, flow rates,	name, part-of relationships	BDA, op. terms	repair, preventive auto's YAMA expansion instance
Geophysical	Terrain, weather, climatology, oceanography, astrometry	feature	lat/long, alt/dpth	ER Model	Class Diagram Database	Object DBMS XML DTD / Schema
				Attribute	Field / Column	Attribute Child Element or Element Attribute
				Domain Value	PURCHASE CODES Instance, Value	TOKENS DUI FUD

Data Elements: entity, attribute, relationship equivalents

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



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

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



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"

CONFUCIUS





USPTO 13/573,002



573 U.S. 134 SCt 2347

“Alice in Wonderland Ruling”

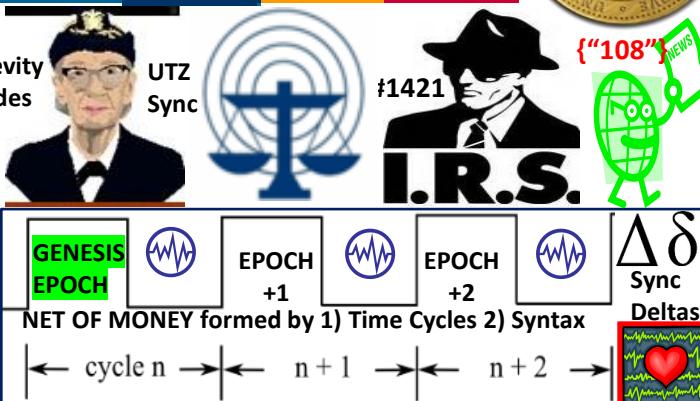
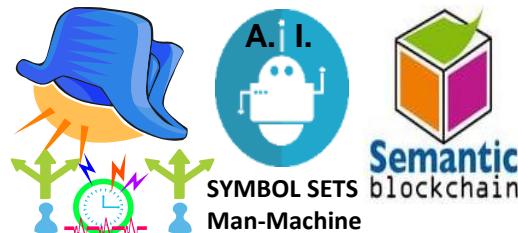
World Game Great Reset

Signals Telemetry Annex K



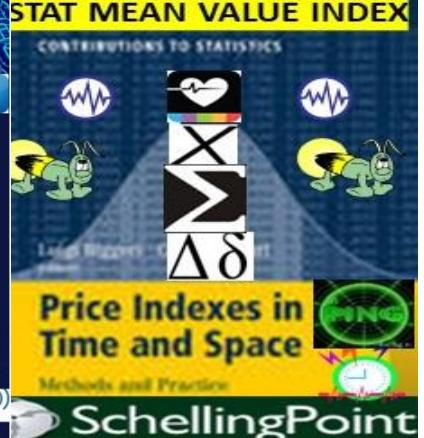
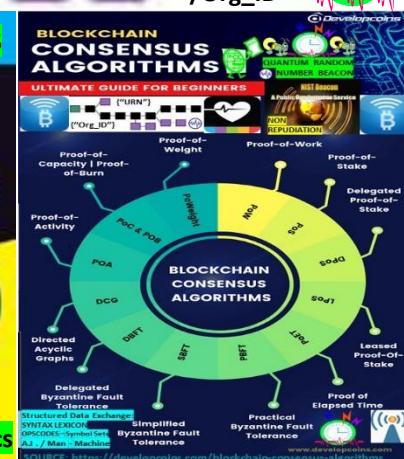
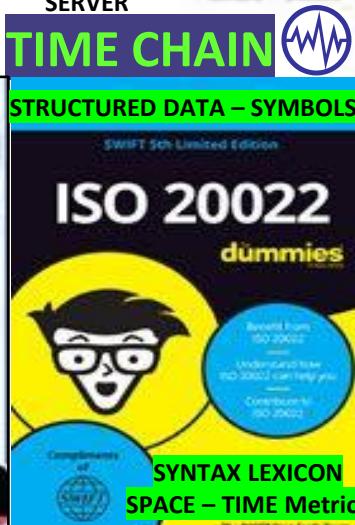
Net, net of money \$\$\$ formed w:

1. Epoch time cycles created by silicon chips
 2. Syntax code instructions in epoch time cycles
 3. Time Stamp Server w/event message bus



Syntax lexicon comprised of 300 + Structured data messages, message sets = Comprehensive list of use cases, data elements supporting Internet of Everything IoE net of value. Reference guide, data dictionary standards support

Data elements mapped to SYMBOL SETS



World Game Annex K

Signals & Telemetry



INTERNET, NET of \$\$\$ =
1. Epoch Time Cycles
2. Syntax instructions



300 + Use Case message sets
OPSCODE BREVITY CODES
- Symbols, symbol sets



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.



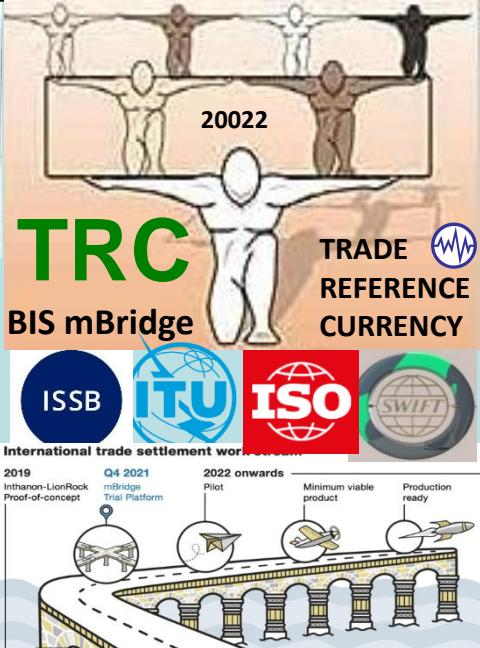
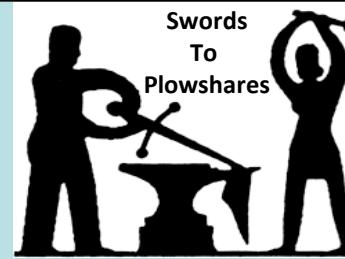
SLA Service Level Agreement Eco incentives: closer = < time, cheaper, < fuel, < CO2
"Build a new model that makes the old model obsolete" Buckminster Fuller



System of Systems common framework
Standards, Sync, Stochastic Harmonization

BATTLEFIELD

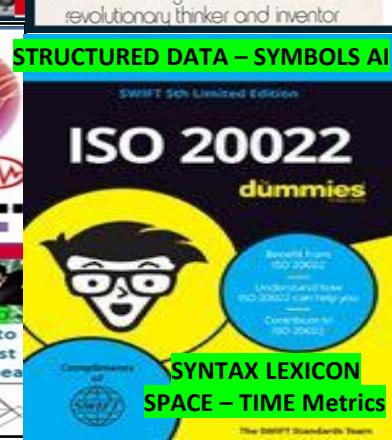
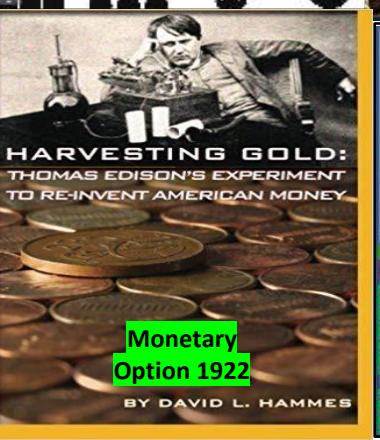
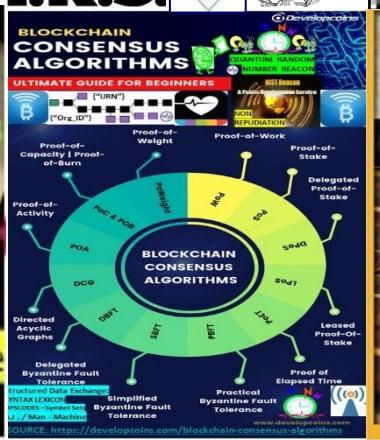
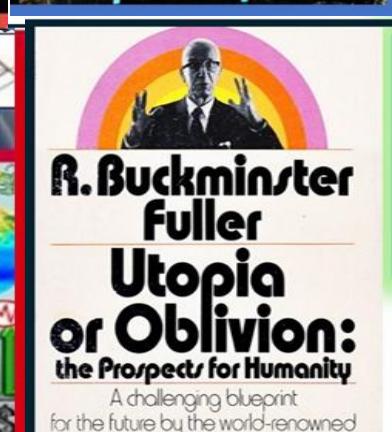
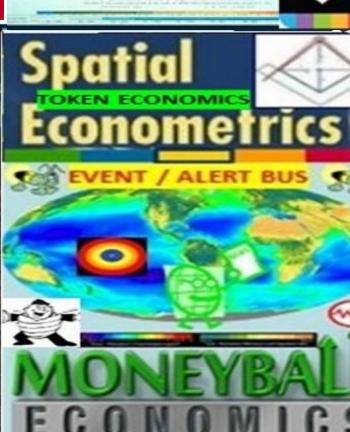
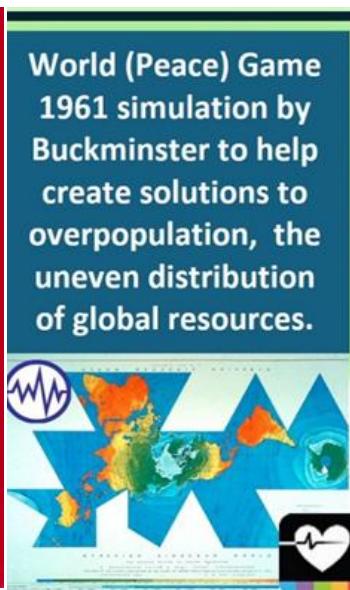
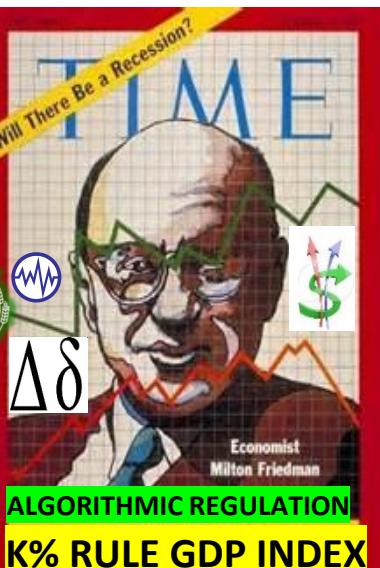
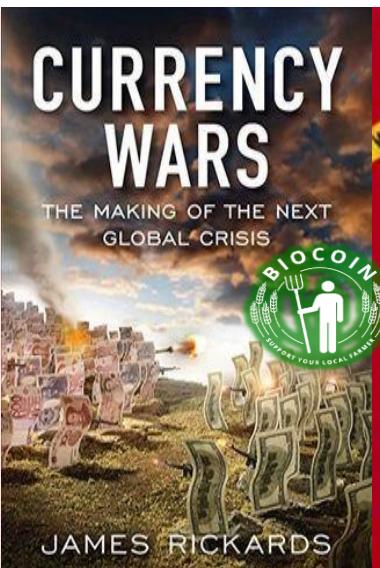
DIGITIZATION OOTW Operations Other than war



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



Eco Economic Epochs
For Programmable \$\$\$
Programmable Economy
Re Monetize (Crypto) Currency
Symbol / Message Sets A.I.
FIREFLY Inspired
Heartbeat Algorithm
Message Event Bus





UTOPIA ? $\Delta\delta$ OBLIVION ?

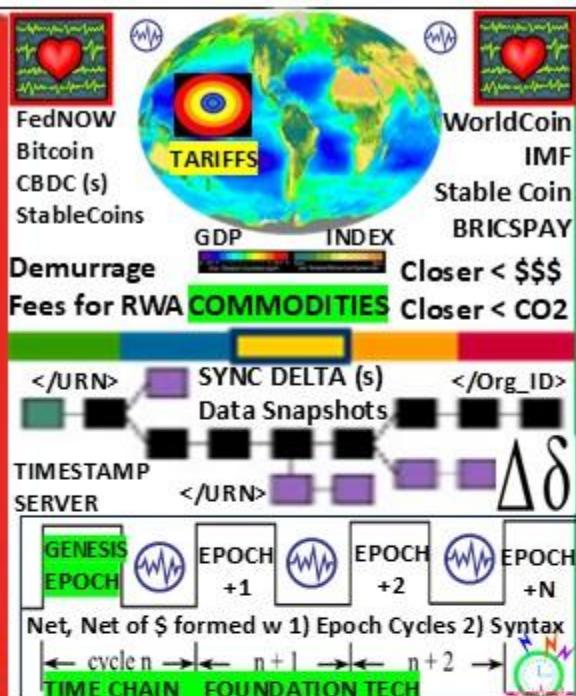
TradeFi TRC Trade Reference Currency

E \$ € ¥ currency index #20022

I.R.S. #1421 ISO CLOSER = CHEAPER < FUEL < CO2

BLOCKCHAIN CONSENSUS ALGORITHMS HARVESTING GOLD: THOMAS EDISON'S EXPERIMENT TO RE-INVENT AMERICAN MONEY.

Monetary Option 1922 BY DAVID L. HAMMES



STAT MEAN VALUE INDEX

CONTRIBUTIONS TO STATISTICS

Price Indexes in Time and Space Methods and Practice SchellingPoint



DeFI DeFi TIME- SPACE METRICS METERS Eco Econ Incentives HEARTBEAT % REAL GDP ("108") ALGORITHMIC REGULATION





Commodities Index Basket / FIAT PRICE Discovery Algo / MEDIATION

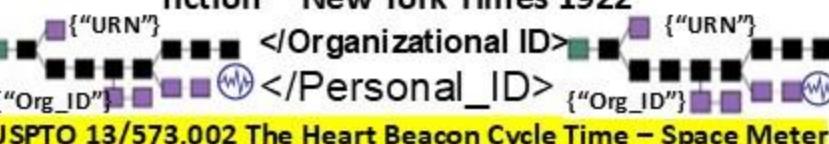


Edison's Monetary Option
Cambridge University Press 2009

“Crops hold their value best over time”

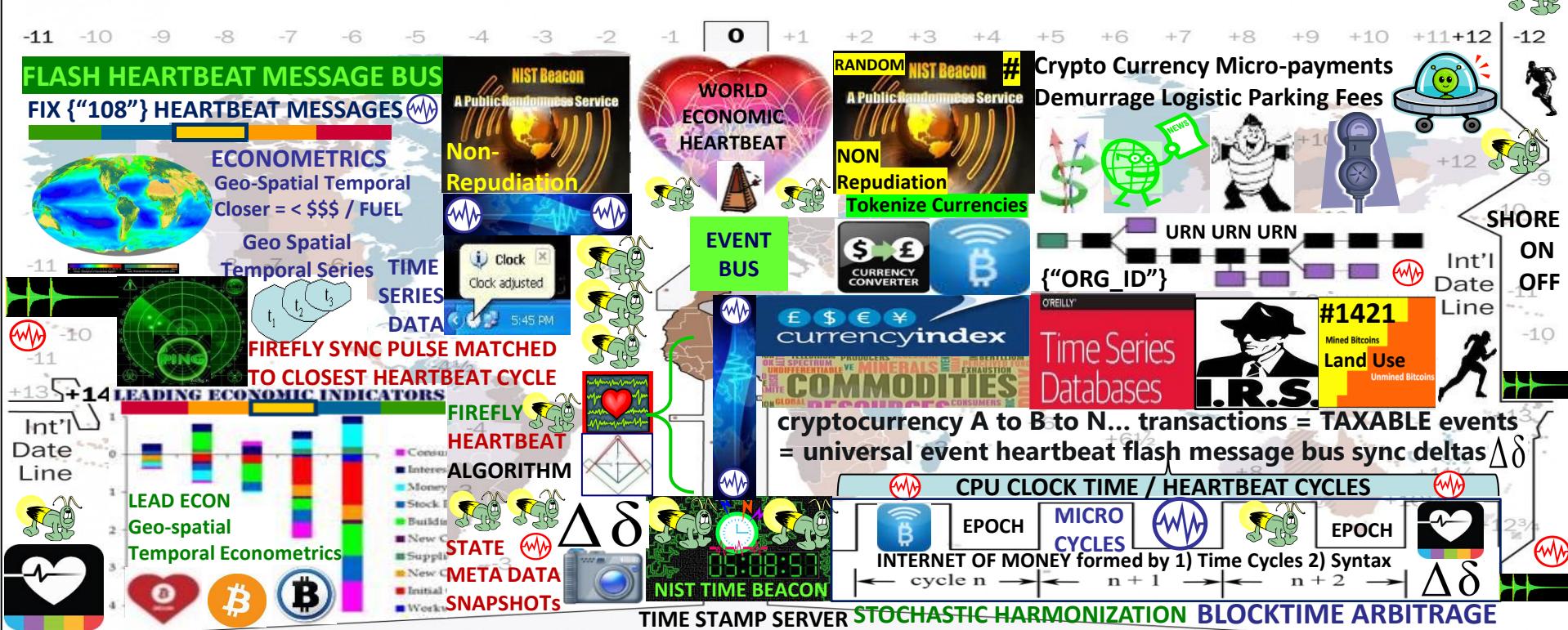
✓ “Thomas Edison publicly introduced his latest invention: a new type of money, a crop index commodity-backed currency that he believed was the long-term solution to America’s monetary woes. “I want to cast the variable out of money. This gold money is not good enough. It’s a

fiction" "New York Times 1922

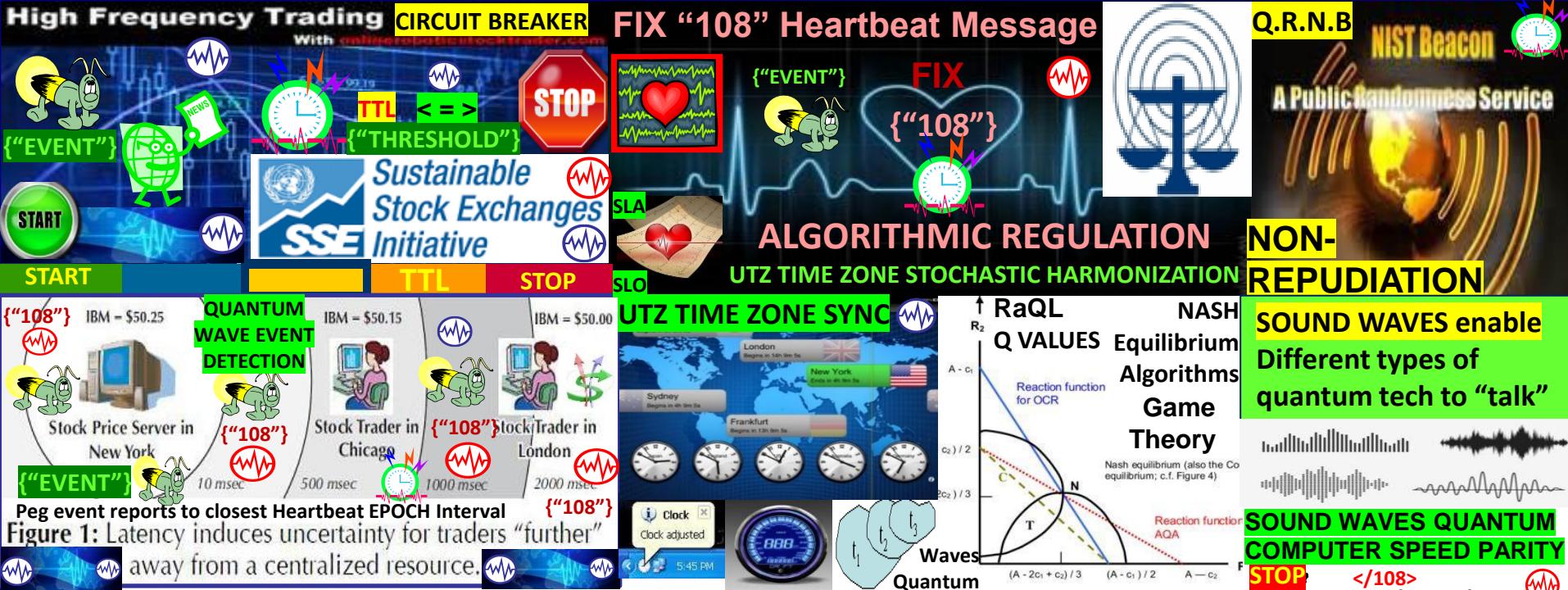




The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



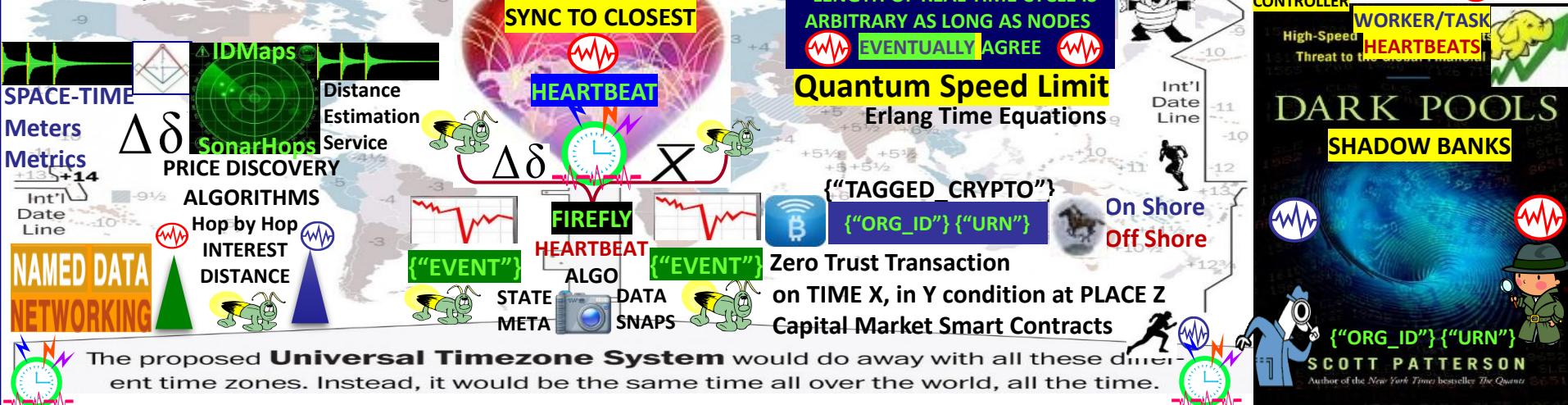
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



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.

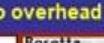
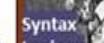
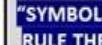
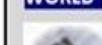


TRANSACTION RATE, SPATIAL – TEMPORAL METRICS SERVER ON / OFF FLOOR ADJUST



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 OPS CODE
tokens stochastically harmonized over the UTZ

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 E400 F002 F541 F015 F541 S201 S309 S507	
TOKENS	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	OPSCODE BREVITY CODES					A.I.	
AFATDS	F002 F014 F015 F541 S201					INFOCON 5 4 3 2 1 INFORMATION CONDITION	
MCS	 	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 A656 A690 C002 C203 C400 C505 F002 F014 F015 F541 S201	  	  	"SYMBOLS RULE THE WORLD"  

MESSAGE CATALOG
300 + Use Cases

Data Elements: entity, attribute, relationship equivalents

PULSE MESSAGE =
0.99 </108> {"108"} 

300+ Use Cases		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	targeting, recentering	COA {"Java JS"}	
Infrastructure	Comm, power, transportation, water/sewer	Machine Trust Language MTL	Machine Trust Language MTL	Machine Trust Language MTL	CDL Contract Description Language	YAML		
Sociological	Culture, religion, economic, ethnic, government, history, languages	network, grid	throughput, flow rates,	name, part-of relationships	BDA, op results	repair, enhancement	expansion	
Geophysical	Terrain, weather, climatology, oceanography, astrometry	temples, historic structures	feature lat/long, alt/dpth	E-R Model Class Diagram	Relational Database Table	Object DBMS Class	XML/JSON Schema Element	TADLs Message
				Attribute	Field / Column	Attribute	Child Element or Element Attribute	DFTI FFRN / FFN / FUN
				Domain Value	PURCHASE CODES Instance, Value		TOKENS	DUI RUD



Information Elements Roles

- ```

graph TD
 A[DOI Determination Org Interaction] --> B[Search and Discovery]
 B --> C[Ontologies]
 B --> D[Standards]
 B --> E[Xonomies]
 B --> F[Reference]
 B --> G[Metadata Attributes / Filters]
 C --> H[Field Format]
 D --> I[Field Format]
 E --> J[Field Format]
 F --> K[Field Format]
 G --> L[Field Format]
 H --> M[UBL]
 I --> M
 J --> M
 K --> M
 L --> M
 M[UBL]
 subgraph UBL [UBL]
 M
 N[DOL DATA DEFINITION LANGUAGE]
 O[Field Format]
 P[Required military metadata]
 end

```



**DN: Field Format Unit Designator #**

N Field Format Index Reference #

ctured military messaging ID's  
ssages, message sets, data  
ent symbol fields </108>

A screenshot of a mobile application titled "Form Field Position & NUMBER". The main screen displays a form with several input fields, including a dropdown menu set to "108", a text field with "NDN", and a checkbox labeled "fly-Heartbeat". Below the form is a section titled "Flash Messages" with a blue background and white text. At the bottom of the screen, there is a navigation bar with icons for "Friend", "Neutral", and "Partner". The status bar at the top shows signal strength, battery level, and the time as 10:11.

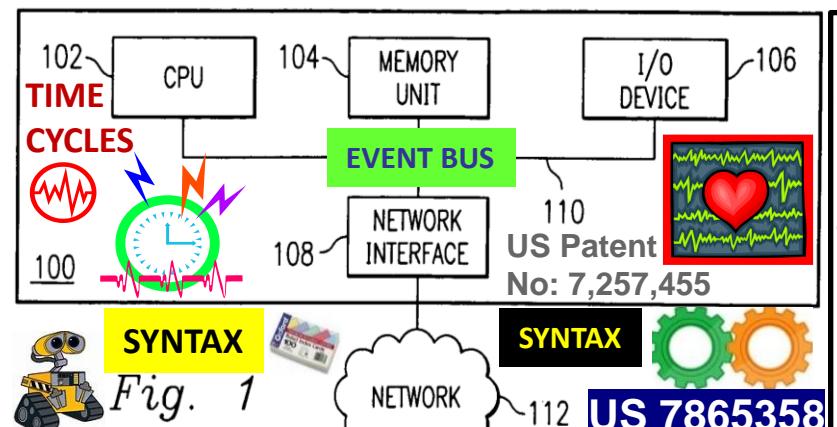
**PROCESS MESSAGE BY PRECEDENCE**  
**UNIVERSAL EVENT / ALERT MESSAGE BUS**

#### OPERATIONAL NODES / ACTIVITIES

| SYSTEM FUNCTIONS                |         | PERFORMANCE                    |         |
|---------------------------------|---------|--------------------------------|---------|
| Classification                  |         | 11.6 - Kinematics              |         |
| 1 - Category                    |         | 11.6.1 - Pos / Vel / Acc (PVA) |         |
| 11.4.1.1 - Confidence Level     |         | 11.6.1.1 - Acceleration        |         |
| 11.4.1.2 - Estimate Type        |         | 11.6.1.1.1 - Angular           |         |
| 11.4.1.2.1 - Alternative        |         | 1.1.2 - Linear                 |         |
| 11.4.1.2.2 - Evaluated PURCHASE |         | 1 - Estimate Type              |         |
| 11.4.1.3 - Value CODES          |         | 1.2 - Estimated                |         |
| BOL                             | Friend  | Neutral                        | Hostile |
| 25C                             | Partner |                                |         |
| 11.4.1.3.5 - Surface            |         | Competitor                     |         |
| 2 - Platform / Point / Feature  | Type    | - Velocity                     |         |
| 3 - Specific Type               |         | 1.4.1 - Horizontal             |         |
| 4 - Type Modifier               |         | 1.4.2 - Vertical               |         |
| 5 - Unit                        |         | VA Confidence                  |         |
|                                 |         | - Bearing Angle                |         |
|                                 |         | - Bearing Angle Rate           |         |
|                                 |         | - Covariance Matrix            |         |



x code language parsed,  
ssed during silicon chip  
ated epoch time cycles  
all things internet, net of  
y. state meta data sync delta  
beat snapshots during  
n temporal micro-cycles

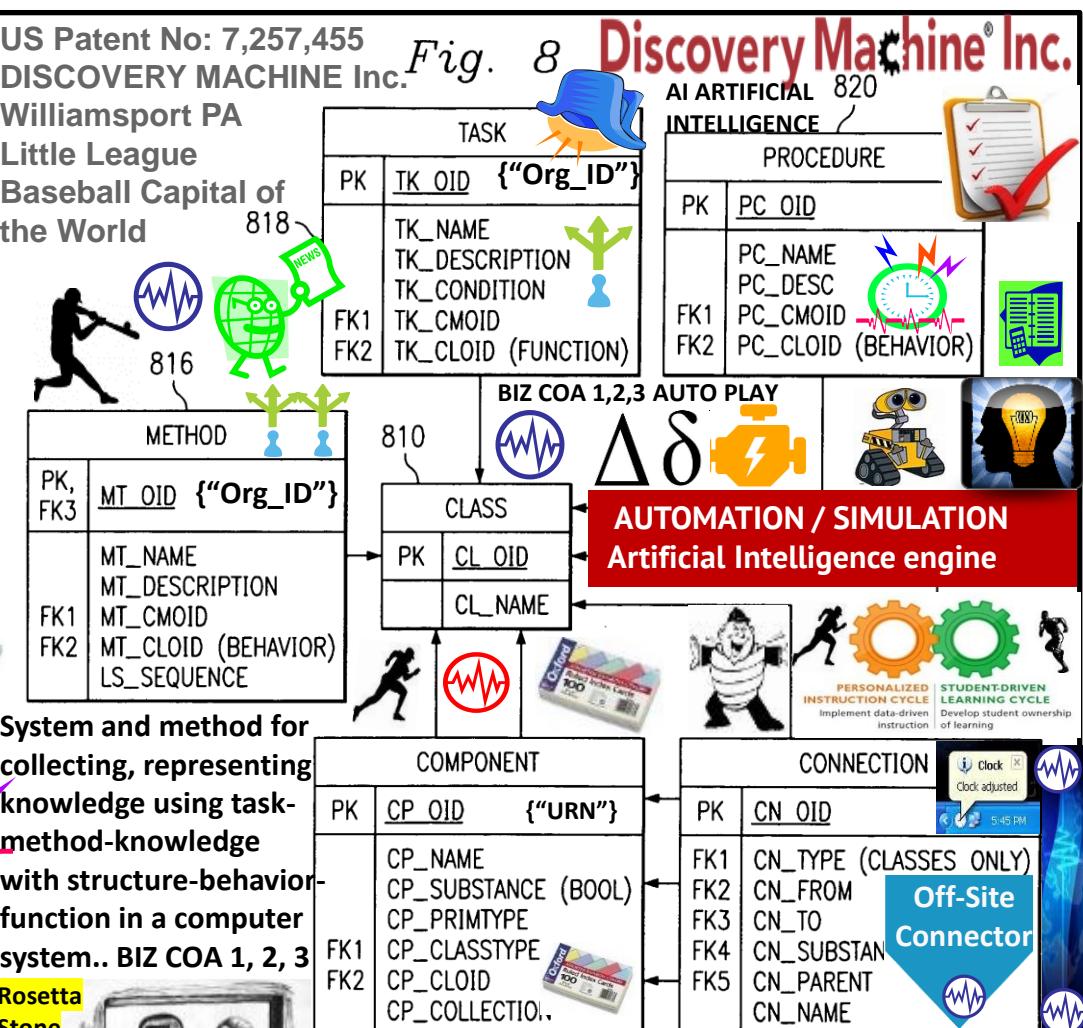
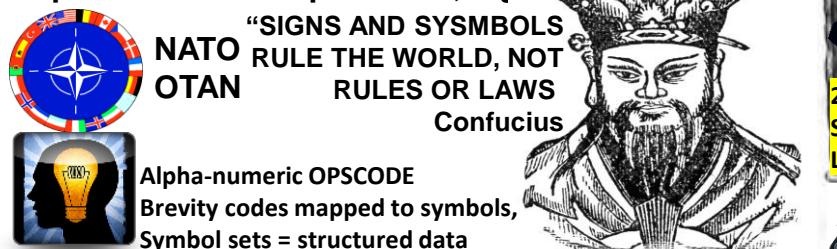


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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

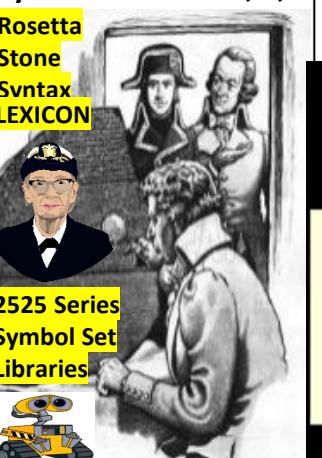
**US 7865358 CLAIM 1.** method converting textual data from source form to target forms, where target form differs from source form's linguistics, syntax

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.

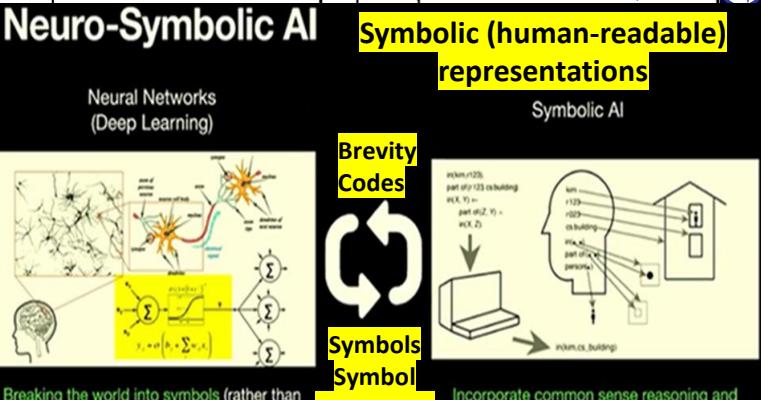


System and method for collecting, representing knowledge using task-method-knowledge with structure-behavior-function in a computer system.. BIZ COA 1, 2, 3



| 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                |  |

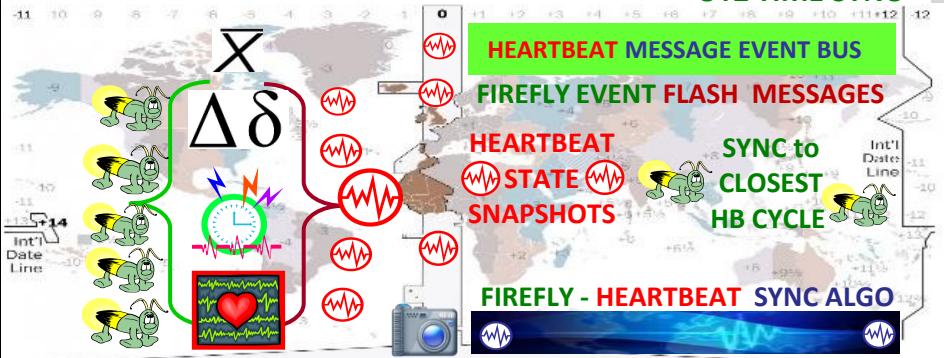




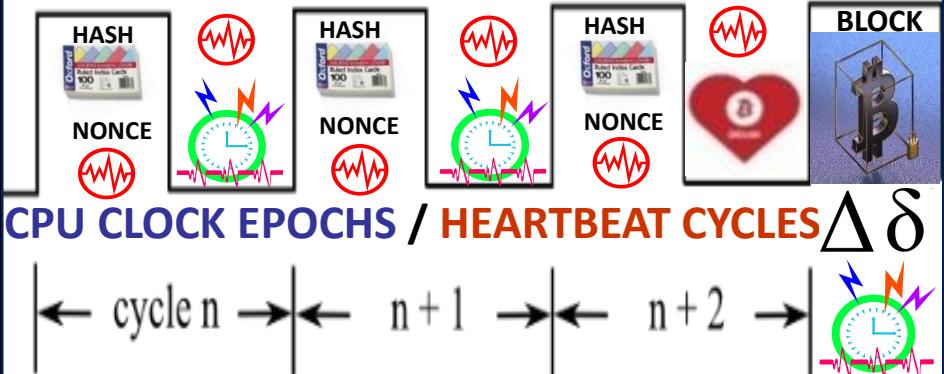


## ALGORITHMIC REGULATION

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



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



**UTZ TIME SYNC**



"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



("108")



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"

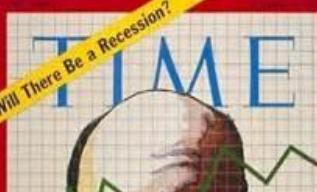
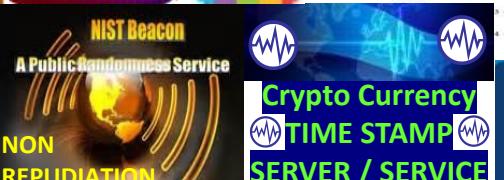
Temple of Man



**LUXOR**  
EGYPT

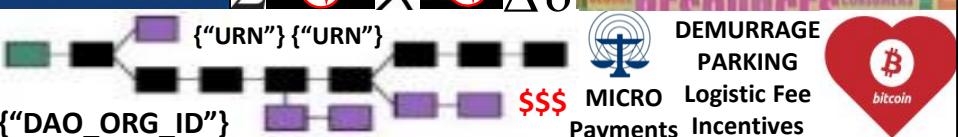
FIREFLY inspired Heartbeat Sync Algo

PRECEDENCE    UTZ SYNC    SYNC  
PROCESSING    PULSE    DELTAS



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



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"

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.

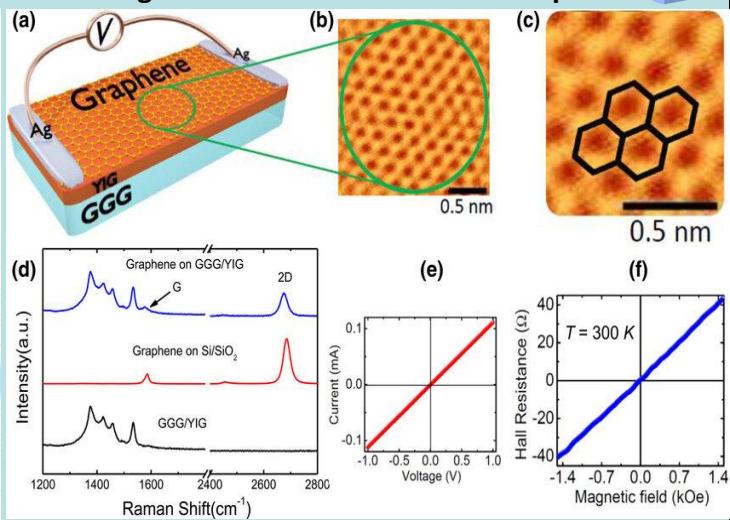
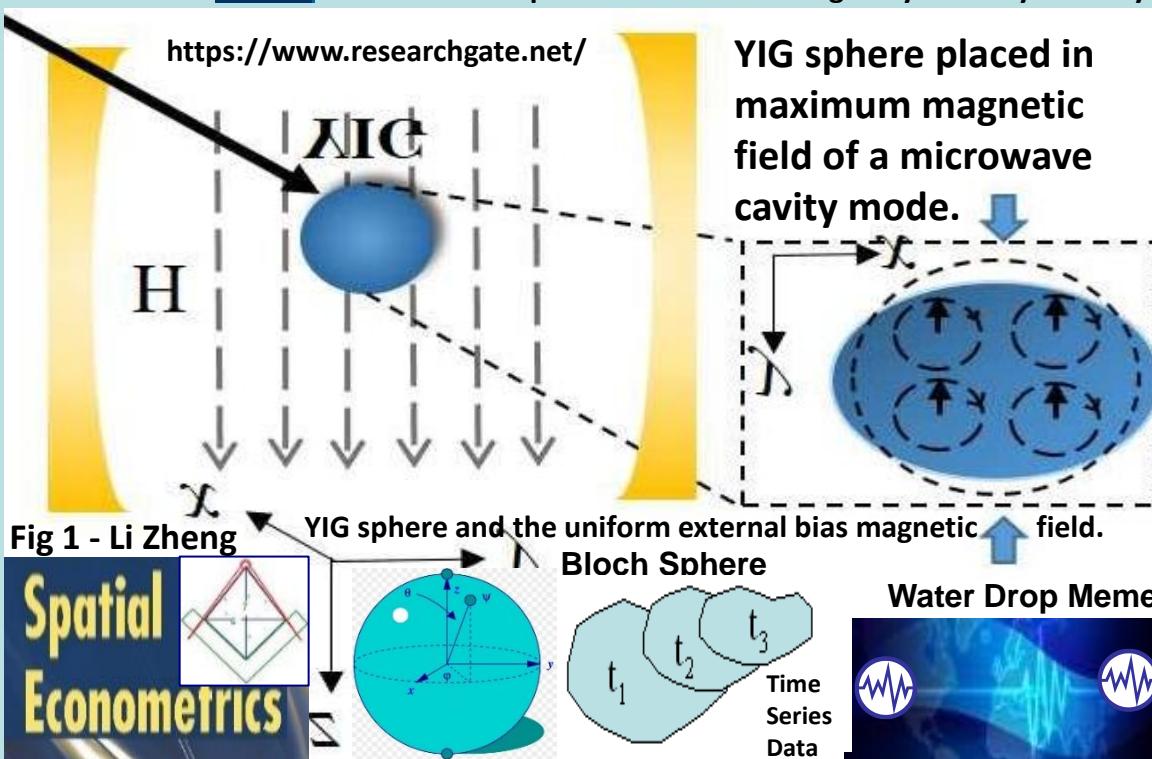




**"When space-time spins, it creates mass. It produces energy in space that radiates. This radiation is what we call mass". Nassim Haramein**

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]



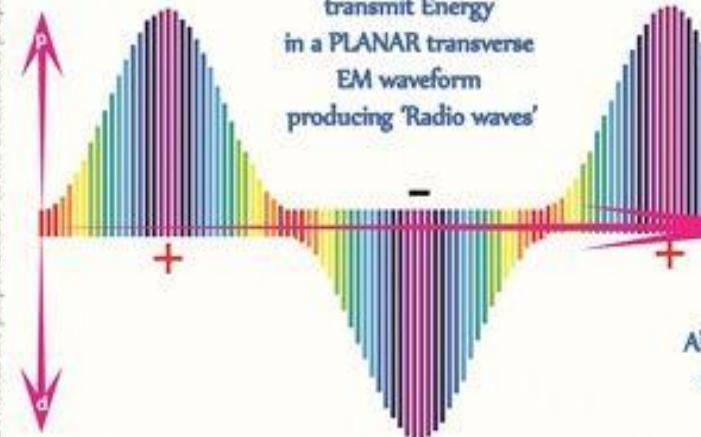
CLOSER = < Infrastructure  
= CHEAPER SLA

# 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'

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

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

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.

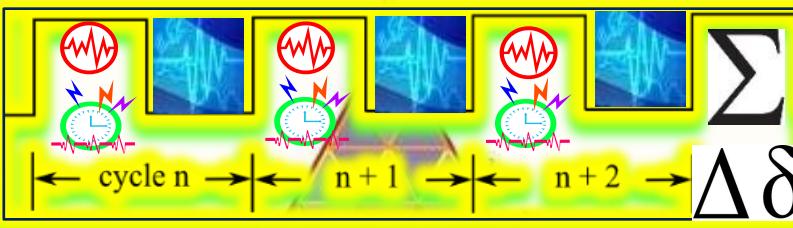
In 1887, Heinrich Hertz demonstrated the reality of  
Maxwell's electromagnetic waves by experimentally  
generating radio waves in his laboratory.

Heinrich Hertz



(22 February 1857 - January 1 1894)

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



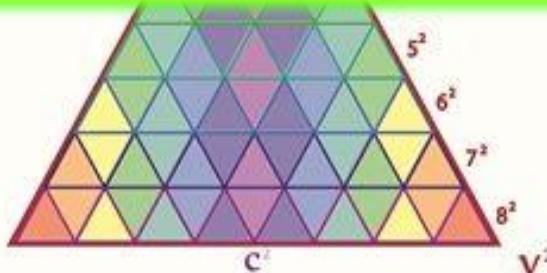
Nikola Tesla



(10 July 1856 – 7 January 1943)

Cycles per Second

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



Volts per Second

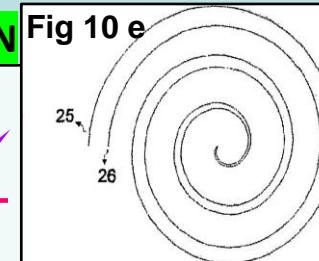
V



# PROPELLION SYSTEM USING THE ANTIGRAVITY FORCE OF THE VACUUM

## ENERGY PRODUCTION

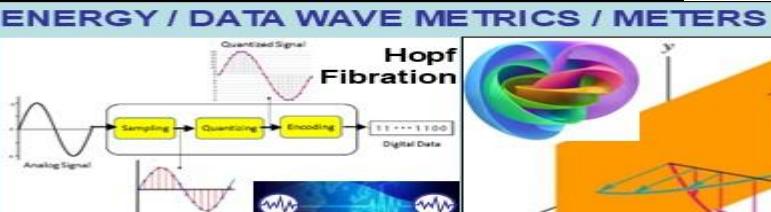
**ABSTRACT:** A propulsion system for aerial, terrestrial, underwater or space propulsion, through manipulation (or engineering) of the vacuum with proper electromagnetic interactions. Vacuum manipulation.. new form of propulsion, and has applications in ENERGY production and on CHANGE of TIME decay 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



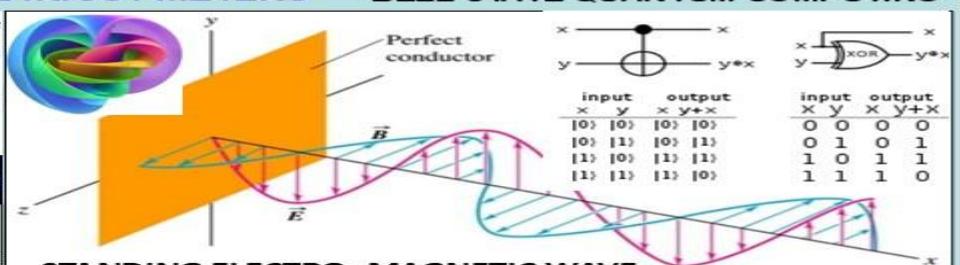
WATER DROP MEME

**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

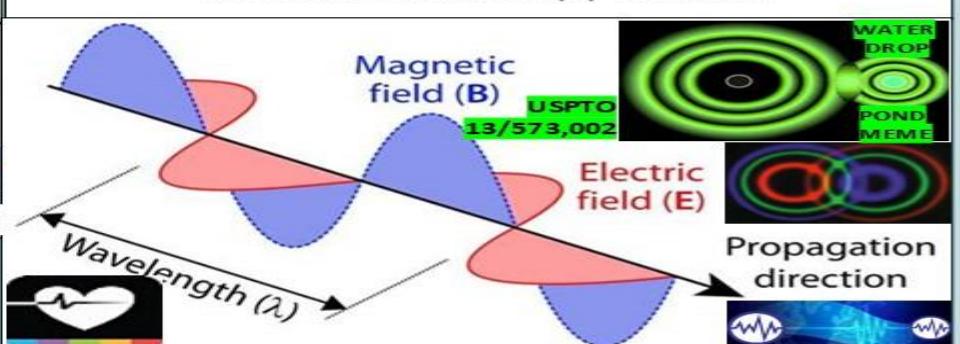
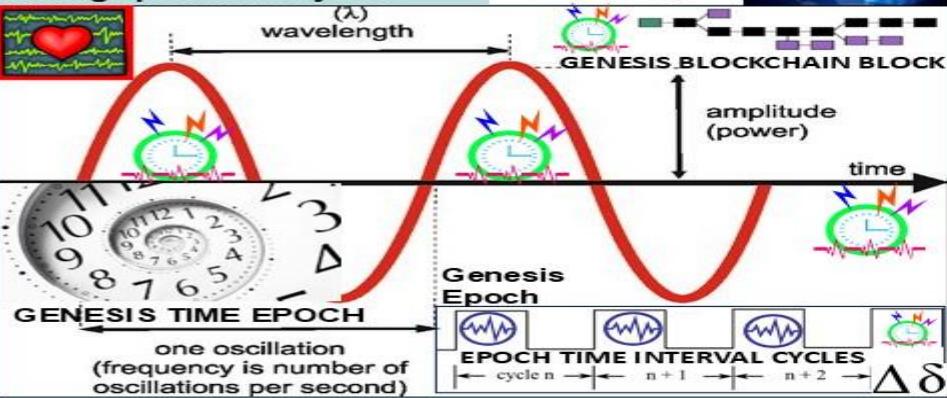


## BELL STATE QUANTUM COMPUTING



### 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.



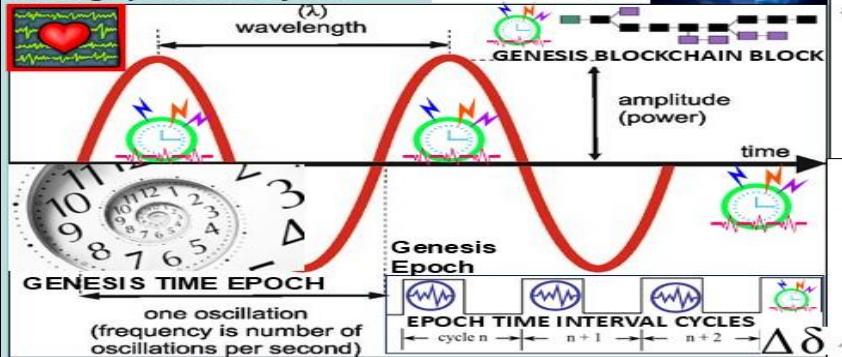
"Nature may reach the same result in many ways. Like a wave in the physical world, in the infinite ocean of the medium which pervades all.. Nikola Tesla

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](https://phys.org/news/2018-06-quantum_1.html)

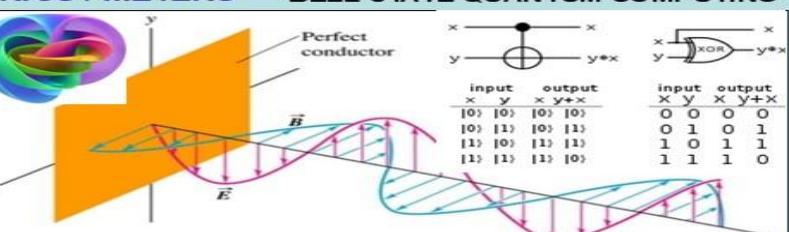
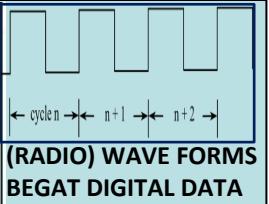
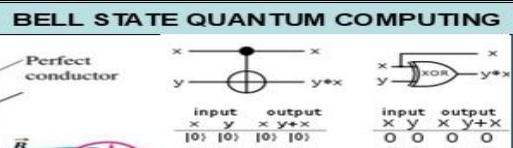
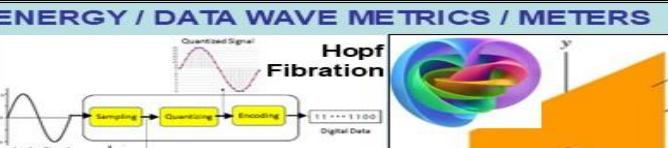
**THESIS:** All things net, net of programmable \$\$\$ are formed using:

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

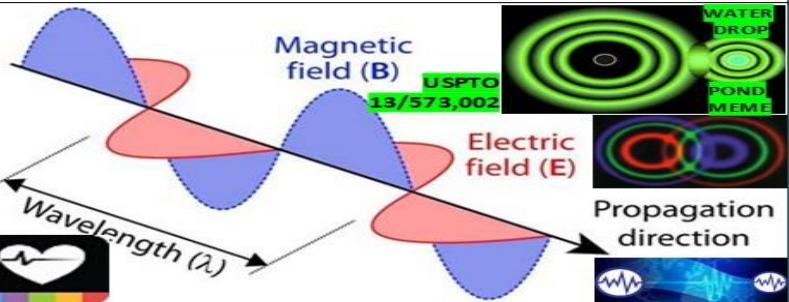


Quantum Computing Vibrations encode, process data like quantum computers. A simple mechanical system built from aluminum rods uses vibrations to encode information, mimicking quantum computing in a non-quantum system. "Light is made from photons, the quantum of light. mechanical vibrations or sound waves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

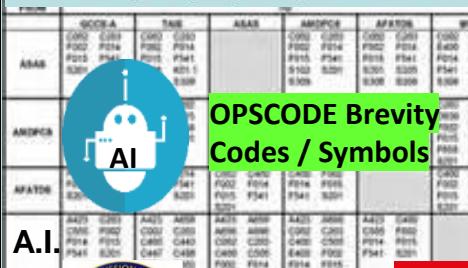
Link: [https://phys.org/news/2018-06-quantum\\_1.html](https://phys.org/news/2018-06-quantum_1.html)



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

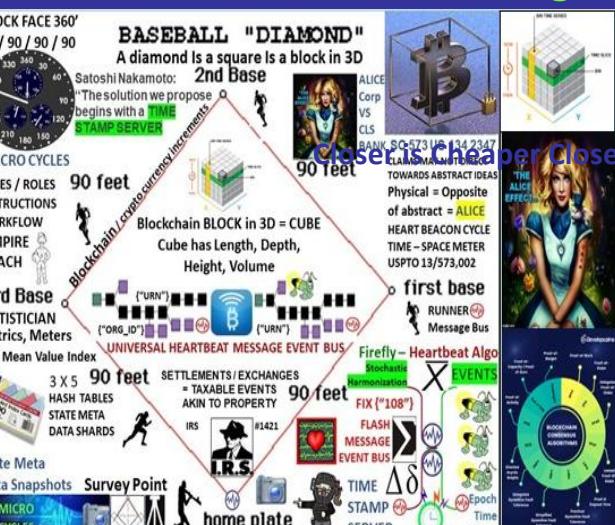


USPTO 13/573,002

573 U.S. 134 SCt 2347

"Alice in Wonderland Ruling"

A.I.



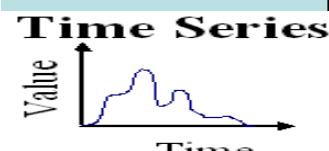
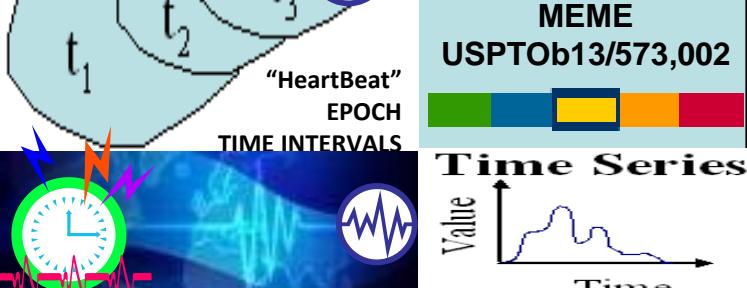
</Org\_ID> TIME CHAIN

{"URN, URN, URN"}



NET OF MONEY formed by 1) Time Cycles 2) Syntax  
← cycle n → n + 1 → n + 2 → Δδ

EPOCH EPOCH EPOCH Sync Delta



# Quantum Financial System vs BlockChain

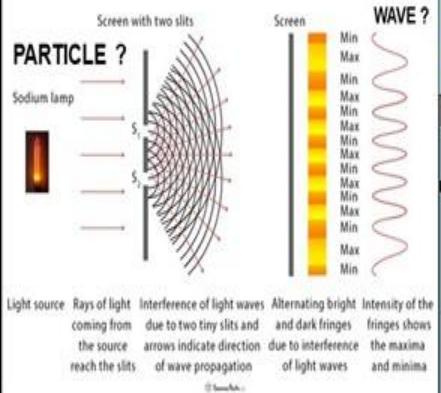
TIME  
CHAIN

QFS

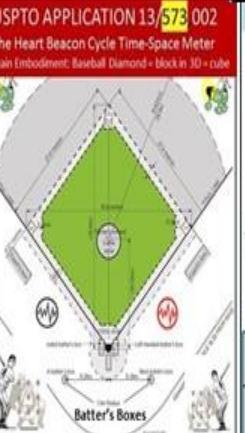
TIME  
STAMP  
SERVER

<https://gesara.news>

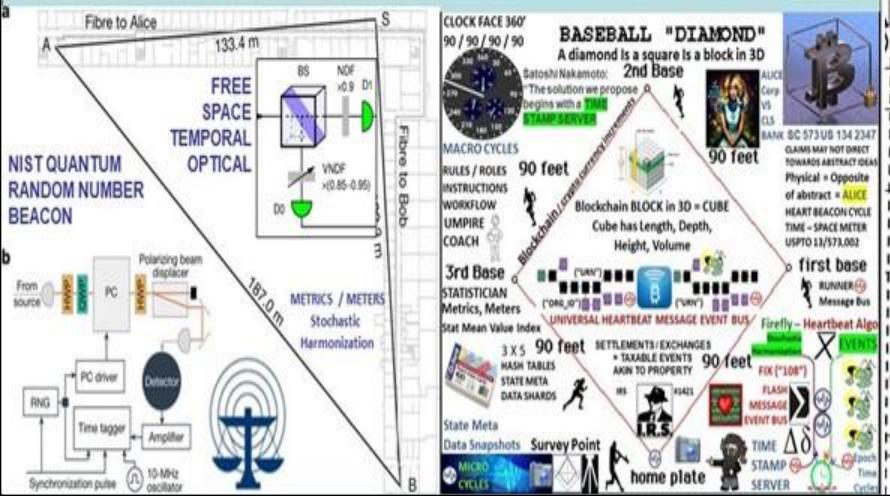
## Double-Slit Experiment



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



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



Satoshi Nakamoto Bitcoin Paper

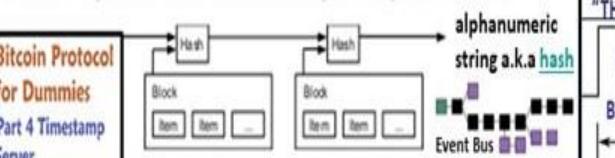
Craig WRIGHT a.k.a. THE VALUE OF BITCOIN IS TIME ITSELF

Wright Brother's 1st Flight Cape Hatteras Outer Banks

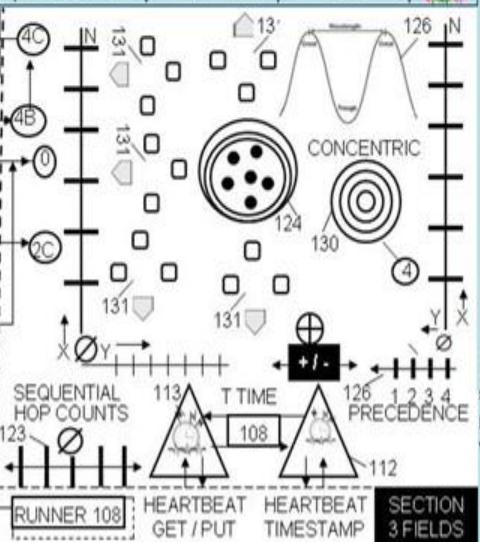
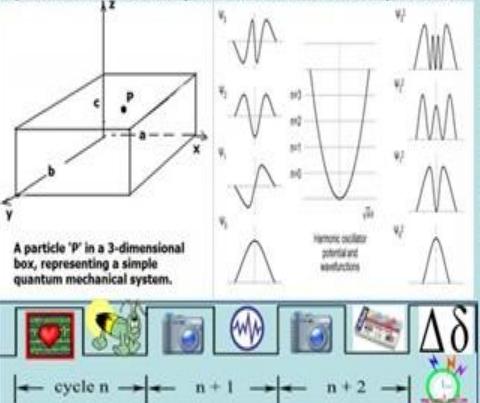
"THE SOLUTION WE PROPOSE BEGINS WITH A TIME STAMP SERVER" Satoshi Nakamoto

## 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



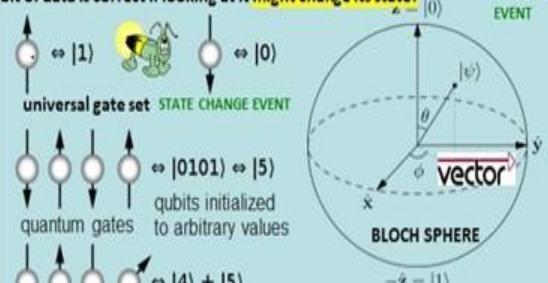
"All things net, net of money are formed with 1) epoch time cycles  
2) Syntax parsed as instructions



#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 Set 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?



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)

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

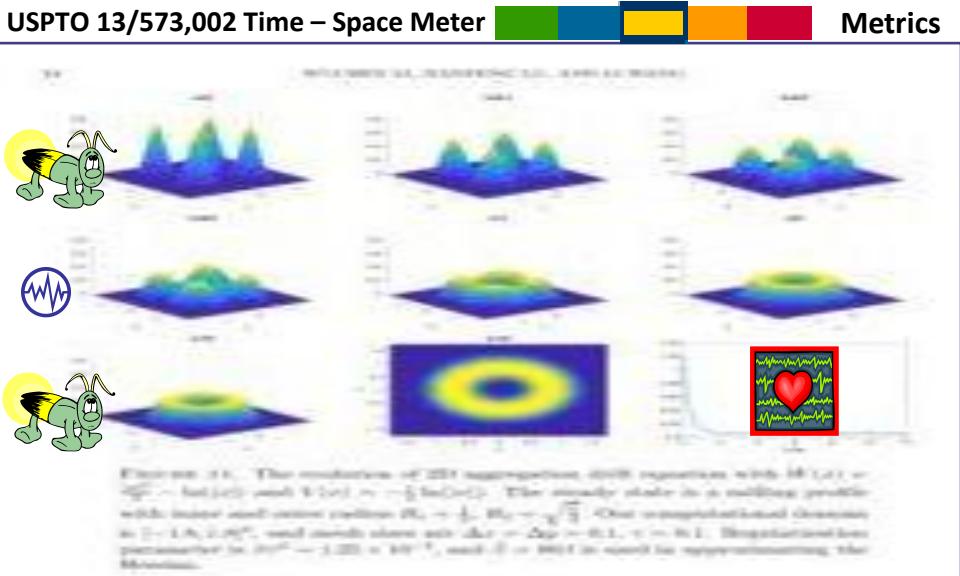


## The Variance of...

the partial derivative w.r.t.  $\vartheta$  of...

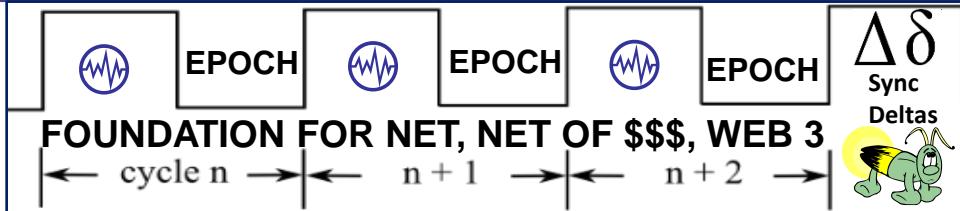
the log-likelihood  
function of  $\theta$   
given observed  
value of  $X$

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



# 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.



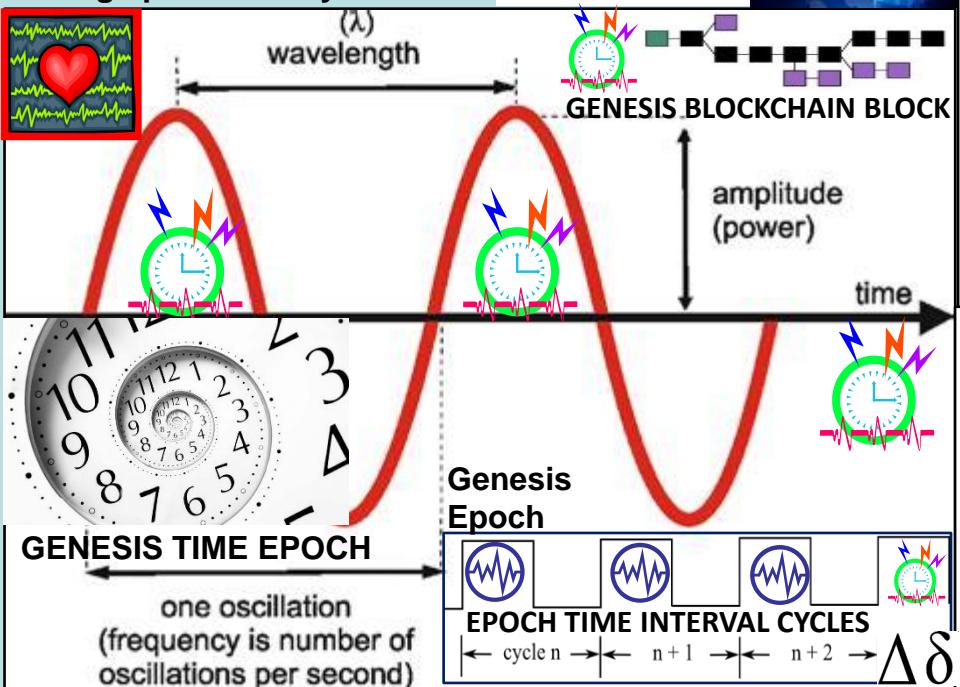
THESES: All things net, net of programmable \$\$\$ are formed using:

## ENERGY / DATA WAVE METRICS / METERS

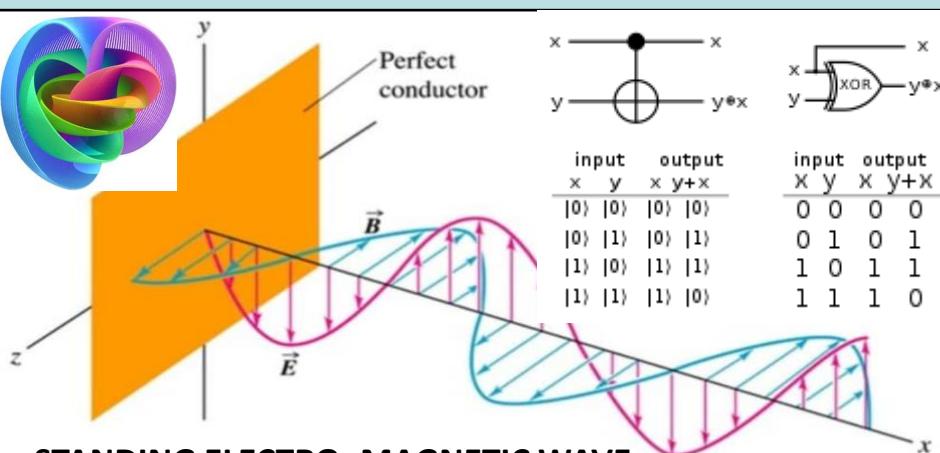
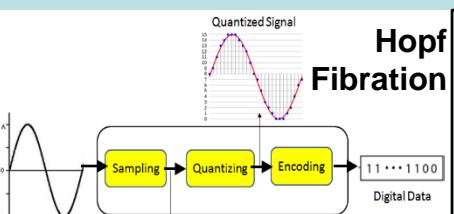
## BELL STATE QUANTUM COMPUTING

1) Time epochs created by quartz crystal silicon chips

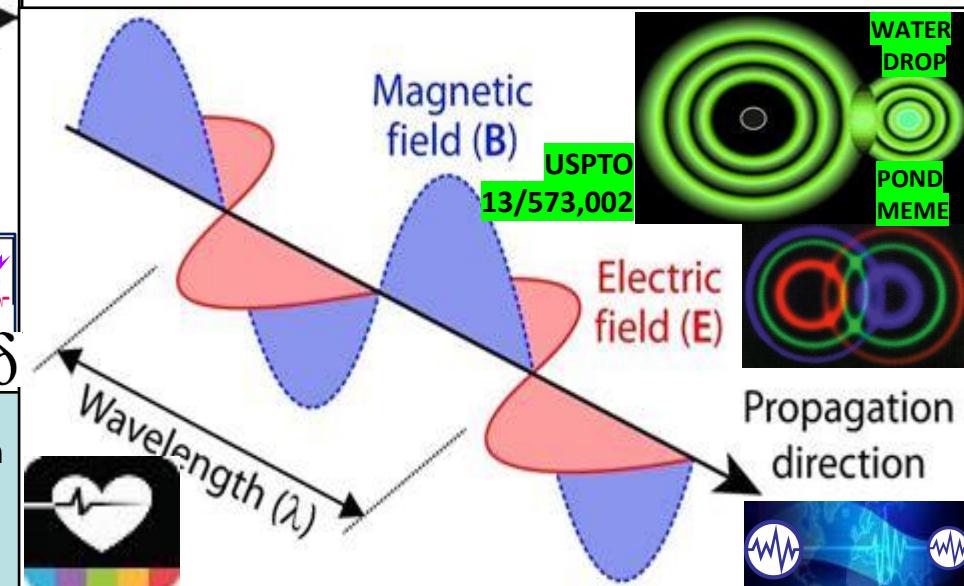
2) Syntax used / not used as programming instructions during epoch time cycles



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](https://phys.org/news/2018-06-quantum_1.html)

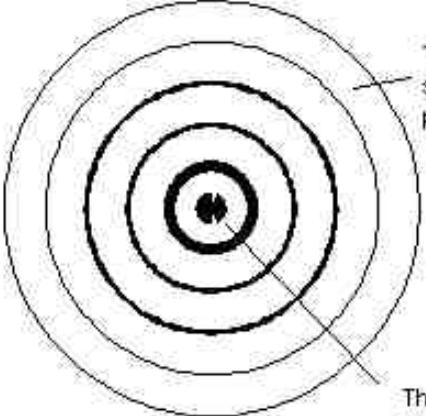


**STANDING ELECTRO- MAGNETIC WAVE**  
A **standing** electromagnetic wave does not propagate along the x-axis; instead, at every point on the x-axis the  $E$  and  $B$  fields simply oscillate.



"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

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



Paul Revere Linear, sequential meme

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

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

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

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

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

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

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

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

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

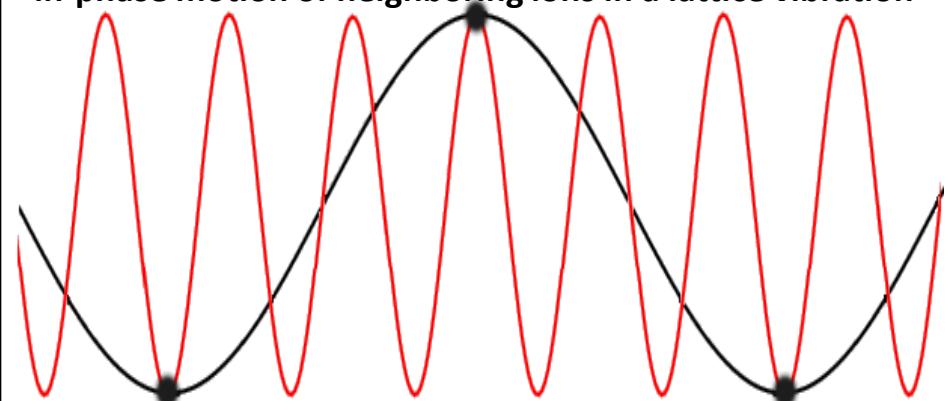


"Simplicity is the ultimate sophistication".  
(Leonardo da Vinci)

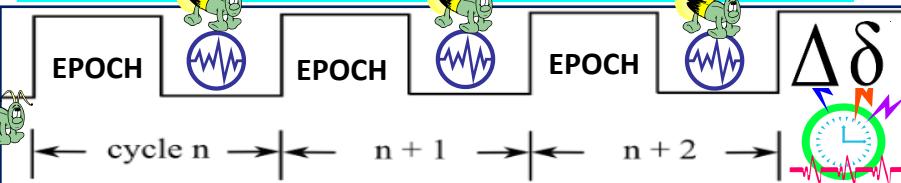
# ACOUSTIC PHONON

USPTO 13/573,002

in-phase motion of neighboring ions in a lattice vibration

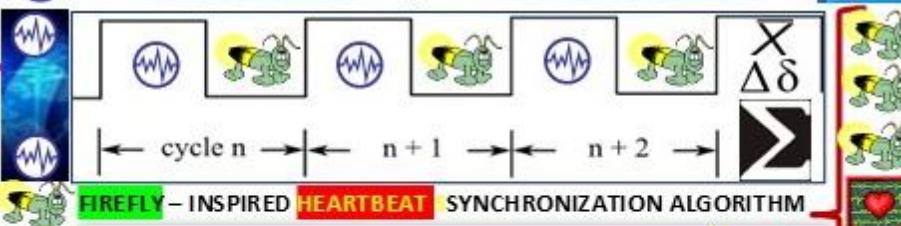
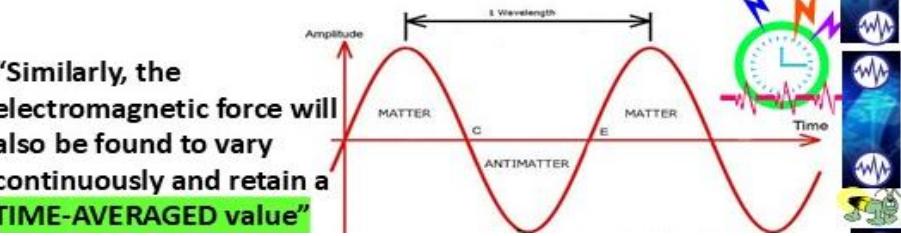


**Phonons:** A phonon is a quantum of the lattice vibration, the collective motion of atoms constituting a crystal. There are two types of phonons: optical and acoustic. The optical phonon has high-frequency oscillation in the THz range and the unit cell center of mass does not move. It undergoes a dipole interaction with light. The acoustic phonon propagates at sound velocity, which is the first derivative of the phonon dispersion curve at the  $\Gamma$ -point (wave vector  $k \approx 0$ ) in the first Brillouin zone. A simple example is a one-dimensional diatomic chain, in which the unit cell contains two atoms. In a crystal of  $N$  unit cells, there are  $2N$  atoms and  $2N$  degrees of freedom of motion. The displacement of an atom from its equilibrium position is expressed using plane waves with reduced wave vectors, defined within the first Brillouin zone. The oscillations are approximated by  $2N$  harmonic oscillators of different wave vectors. The vibrational frequency is related to the wave vector through the phonon dispersion relation. Phonons are created and annihilated in the harmonic oscillators. SOURCE: SCIENCE DIRECT: <https://sciedirect.com/topics/engineering/acoustic-phonon>



"nodes eventually agree" stochastic harmonization temporal sync

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



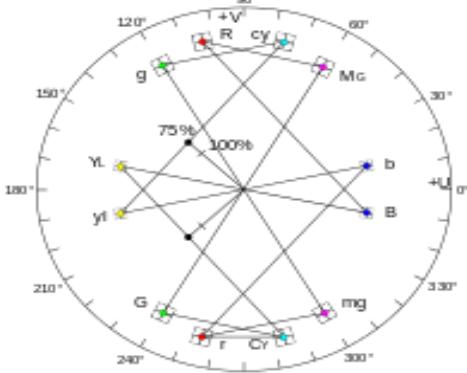
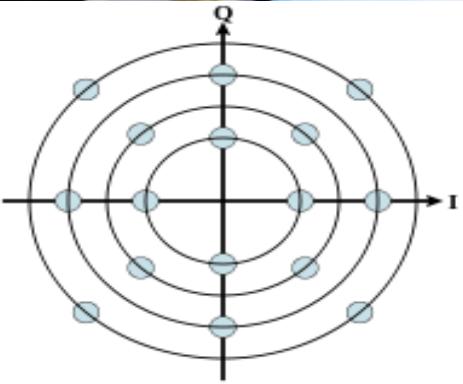
"LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE"

**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 - temporal time cycles





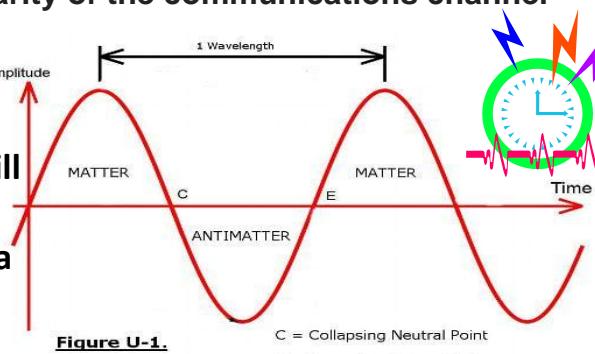
[www.RLighthouse.com](http://www.RLighthouse.com)



### 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**”

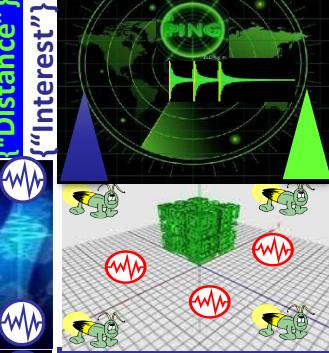


Sine wave of our blinking universe. The 4 fundamental forces will all be found to vary continuously when sampled at 2x the blinking frequency, per Nyquist-Shannon theory

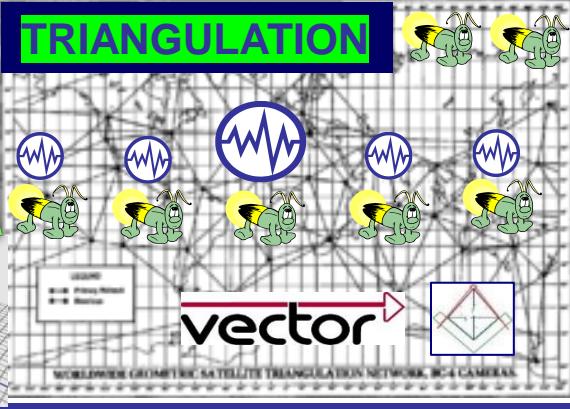


USPTO 13/573,002  
[sawconcepts.com/index](http://sawconcepts.com/index)

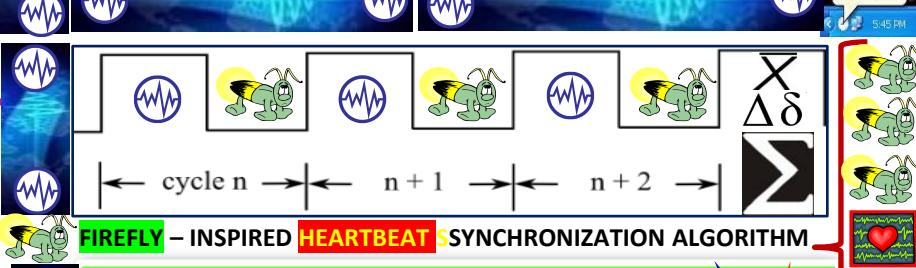
NDN {“Distance”} {“Interest”}  
IDMaps SonarHops



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



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”

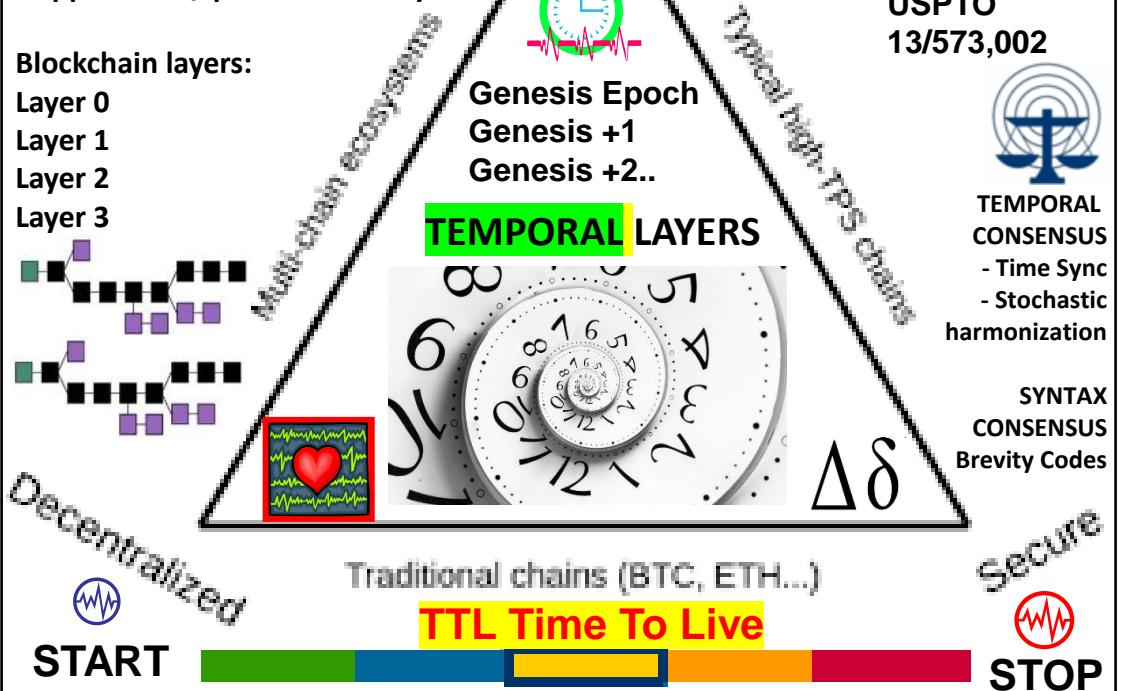
# Blockchain Quad-lemma

"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



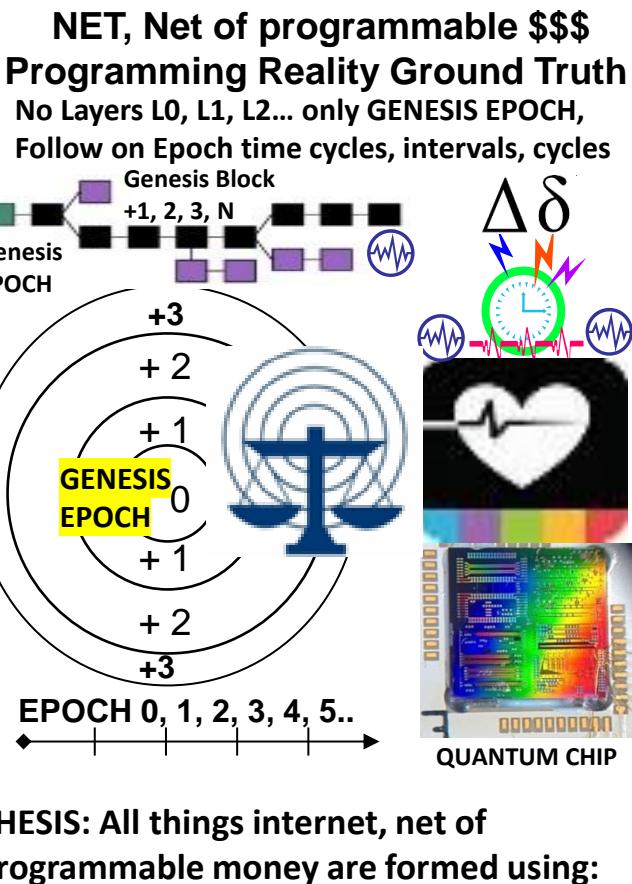
Blockchain = series of hashed blocks carrying transactional records. The first block of the blockchain is the **Genesis block**. After that, every new block added to the blockchain is linked to the Genesis block through a (temporal) iterative process.

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 |



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..

All things internet of money are formed w CPU time cycles used to process instructions / code sym

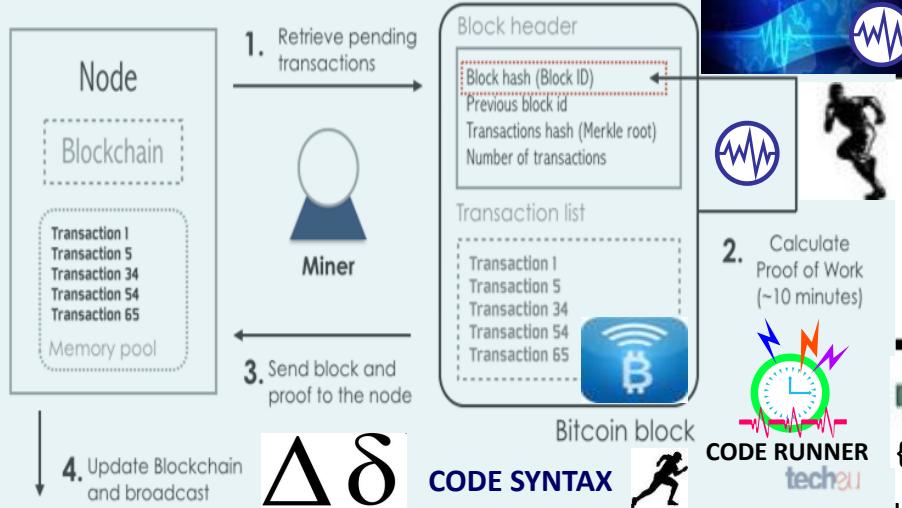


Bitcoin is a language”

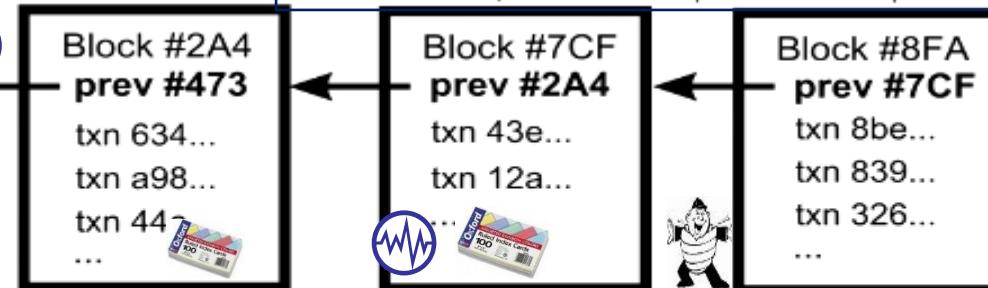
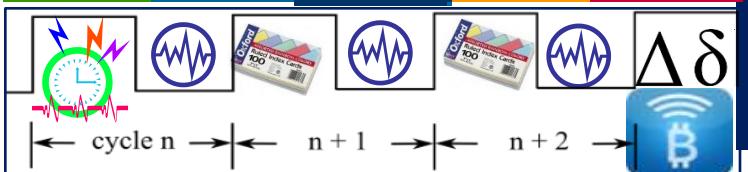
**WIRED**

BITCOIN MAKES USPTO 13/573,002  
MONEY HEART BEACON CYCLE  
PROGRAMMABLE. TIME – SPACE METER  
MONEY IS STRUCTURED DATA  
SIMPLY DATA” EXCHANGE

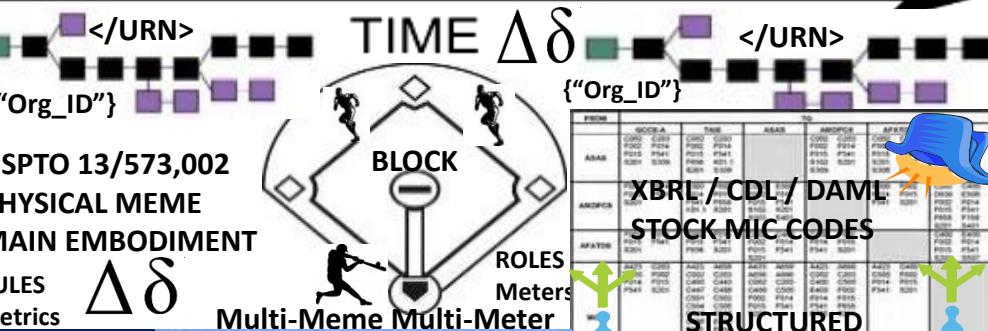
Alice Corp. v. CLS Bank International, 573 U.S. 134 SCt 2347 (2014) is a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).<sup>[2]</sup> The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating financial transactions covered abstract ideas ineligible for patent protection. The patents were held to be invalid because the claims were drawn to an abstract idea, and implementing those claims on a computer was not enough to transform that idea into patentable subject matter.



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



# **BLOCKCHAIN = TIME / SYNTAX**



# 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



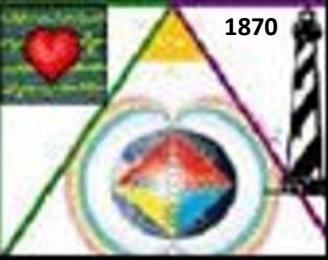
Satoshi Nakamoto



Craig WRIGHT  
a.k.a.  
Satoshi Nakamoto



"Bitcoin is a LANGUAGE"



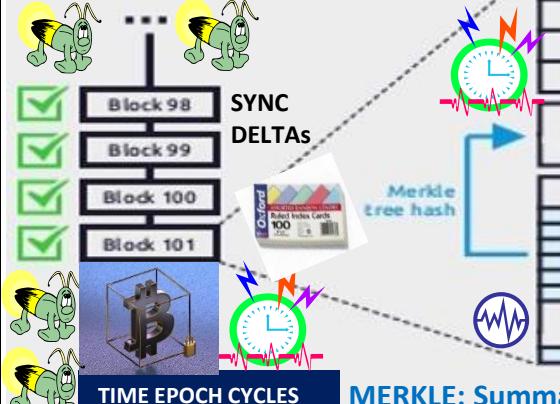
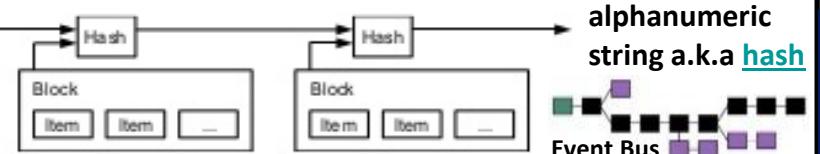
Wright Brother's 1<sup>st</sup> Flight  
Cape Hatteras Outer Banks

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

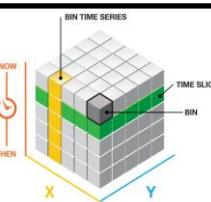
### 3. Timestamp Server

The solution we propose begins with a timestamp server. A timestamp server works by taking a hash of a block of items to be timestamped and widely publishing the hash, such as in a newspaper or Usenet post [2-5]. The timestamp proves that the data must have existed at the time, obviously, in order to get into the hash. Each timestamp includes the previous timestamp in its hash, forming a chain, with each additional timestamp reinforcing the ones before it.

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



JapanNet Crypto Time Authentication Service (Timestamp Service)



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

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



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 Δδ

Epoch  
Time Cycles

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.

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

HEART BEACON CYCLE  
USPTO 13/573,002  
SURVEY METHODS

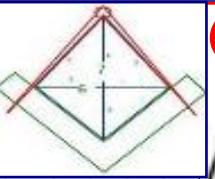
## SC ALICE CORP VS CLS BANK: “claims may not direct towards abstract ideas”

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

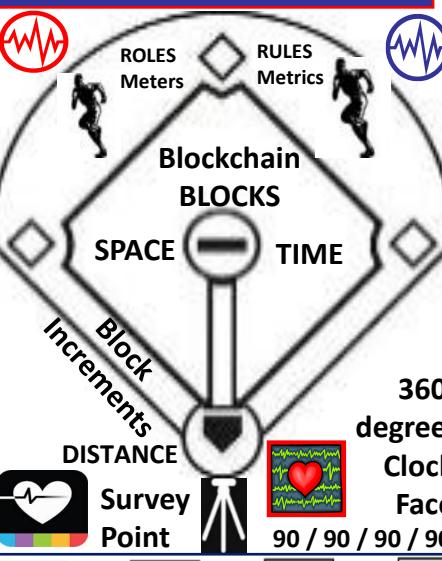


BLOCKS / COINS PENDING ISSUE

B

A

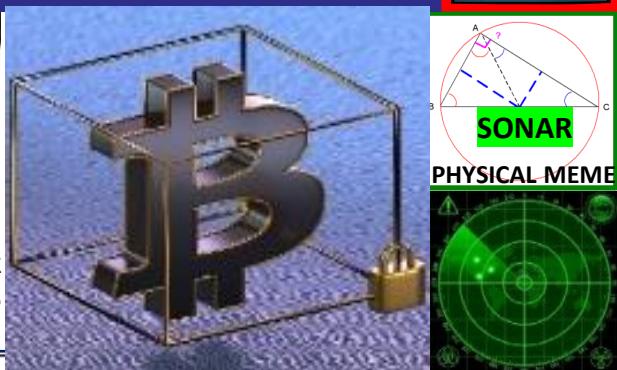
C



## TRIANGULATION



## DISTANCE ESTIMATION EUCLIDIAN GEOMETRY



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

$\Delta\delta$

## Unmined Bitcoins



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



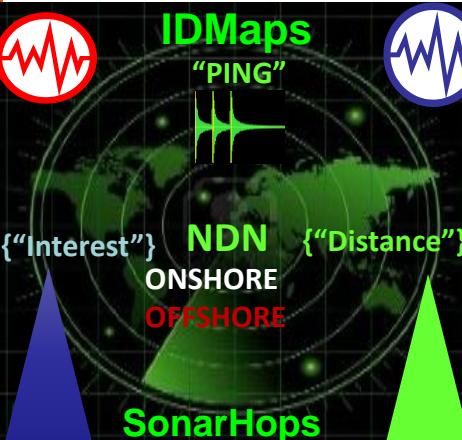
IDMaps-SONARHOPS distance estimation query-reply service



- End-state Bitcoin quantity will be fixed like land

“Bitcoin as protocol of ownership, not transfer”

Coins never travel, but simply switch owners”



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

vector

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



$\Delta\delta$



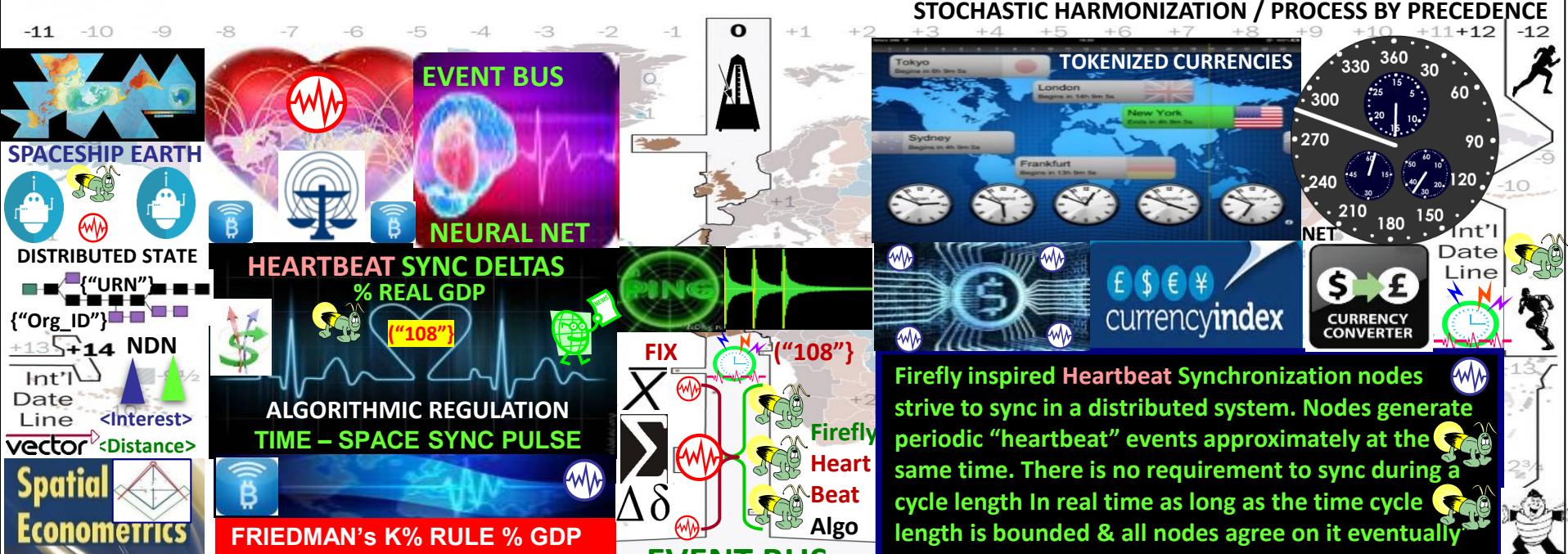
vector

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

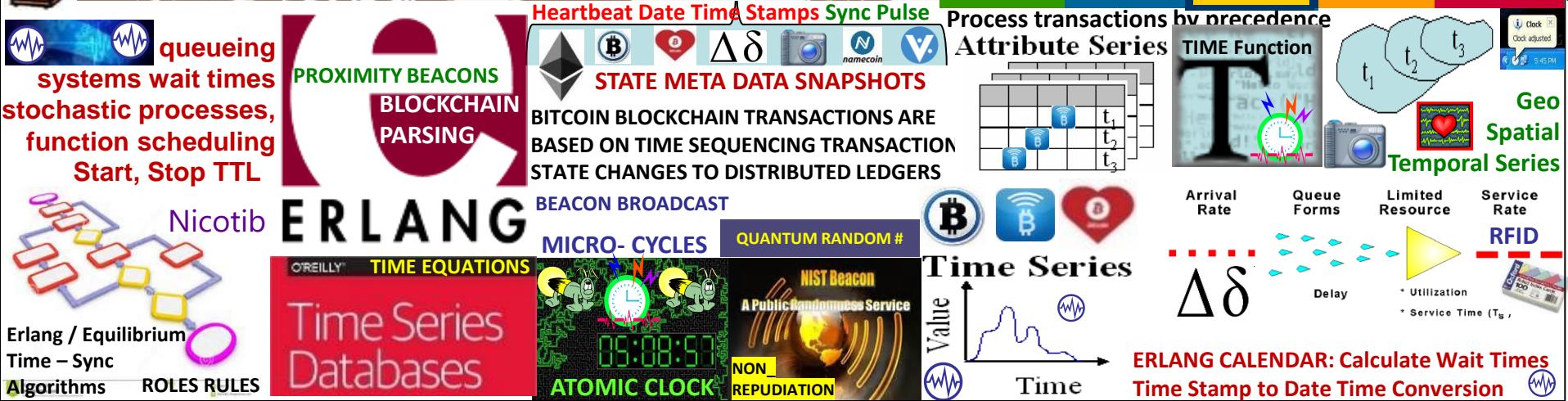
vector



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

ASSETS

ASSET TOKENS

"SYMBOLS RULE THE WORLD"

11.8 - Kinematic  
11.8.1 - Pos  
11.8.1.1 -  
11.8.1 -

STRATML

XAML

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



vector

{"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

NDN

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

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



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

INTEREST

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

DAO

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

Market Identifier Codes

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

INTEREST

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

DAO

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

ISO 10383 – MIC

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

Market Identifier Codes

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

STOCK NDN NAMED DATA

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

EXCHANGE NETWORKING

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

MIC CODES PRECEDENCE

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

PROCESSING

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

FILTERS

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

BLOCKTIME

SYMBOLS Friend Neutral Hostile DICAL EVAC & HOSPITALISATION

ARBITRAGE ERLANG

Partner Competitor MIL - MILITARY OPERATIONS

TIME EQUATIONS

TOKENIZED ECONOMY BREVITY CODE OPSCOSE MAPPET TO SYMBOLS



| FROM                                             | TO                                               |                                                                     |                                                                                                                                                                                                                                                                                                                                              |                                                                                    |                                                                                                  | CODE GUIDE                                       |                                                                  |                                                             |         |                    |
|--------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|---------|--------------------|
|                                                  | GCCS-A                                           | TAIS                                                                | ASAS                                                                                                                                                                                                                                                                                                                                         | AMDPCS                                                                             | AFATDS                                                                                           | MCS                                              |                                                                  |                                                             |         |                    |
| ASAS                                             | C002 C203<br>F002 F014<br>F015 F541<br>S201 S309 | C002 C203                                                           | <b>USMTF / XML MTF FORMATTED MESSAGE CATALOG = 300 + messages info exchange sets using common, CONSENSUS Message Text Formats MTFs. MTFs specify &lt;/CONTENT&gt; / info agreed by group consensus presenting information in a logical, well specified unambiguous layout resulting in a highly efficient info payload to overhead ratio</b> |                                                                                    |                                                                                                  | C002 C203<br>F014 F541<br>S201 S309<br>S305 S507 |                                                                  |                                                             |         |                    |
| AMDPCS                                           | <b>TOKENS</b><br><b>OPSCODE BREVITY CODES</b>    |                                                                     |                                                                                                                                                                                                                                                                                                                                              |                                                                                    |                                                                                                  | F002 F015<br>S201                                |                                                                  |                                                             |         |                    |
| AFATDS                                           | F002 F014<br>F015 F541<br>S201                   |                                                                     |                                                                                                                                                                                                                                                                                                                                              |                                                                                    |                                                                                                  | C203 C400<br>D630 E500<br>F002 F014              |                                                                  |                                                             |         |                    |
|                                                  |                                                  | A423 C203<br>C505 F002<br>F014 F015<br>F541 S201                    | A423 A659<br>C002 C203<br>C400 C443<br>C447 C488<br>C501 C503<br>C504 C505<br>C506 C507<br>C508 E400<br>F002 F014<br>F015 F541<br>F658 F756<br>G489 K01.1<br>S201 S303<br>S507                                                                                                                                                               | A423 A659<br>A656 A690<br>C002 C203<br>C400 C505<br>F002 F014<br>F015 F541<br>S201 | <br><b>ASSET TOKENS</b><br><b>Syntax Lexicon</b><br><b>Token Economy</b><br><b>Coder's Guide</b> | A423 C505<br>F014 F541<br>S201                   | <b>A.I.</b><br>                                                  | <b>INFOCON</b><br>5 4 3 2 1<br><b>INFORMATION CONDITION</b> |         |                    |
|                                                  |                                                  |                                                                     |                                                                                                                                                                                                                                                                                                                                              |                                                                                    |                                                                                                  |                                                  | <b>M2M</b>                                                       | <b>"SYMBOLS RULE THE WORLD"</b><br>                         |         |                    |
| <b>MESSAGE CATALOG</b><br><b>300 + Use Cases</b> |                                                  |                                                                     |                                                                                                                                                                                                                                                                                                                                              | <b>Data Elements:</b> entity, attribute, relationship equivalents                  |                                                                                                  |                                                  | <b>HEARTBEAT MESSAGE =</b><br><b>K00.99 &lt;/108&gt; {"108"}</b> |                                                             |         |                    |
| Object Categories                                |                                                  | Examples                                                            | Location                                                                                                                                                                                                                                                                                                                                     | Movement                                                                           | Identify                                                                                         | Status                                           | Activity                                                         | Intent                                                      |         |                    |
| OOB                                              |                                                  | <b>SYNTAX LEXICON</b>                                               | STRUCTURED DATA<br>lat/long                                                                                                                                                                                                                                                                                                                  | spd/hdg                                                                            | EXCHANGE<br>country / alliance, type/class                                                       | Message<br>readiness                             | Sets<br>targeting, reconitering                                  | COA {"Java JS"}                                             |         |                    |
| Infrastructure                                   |                                                  | Comm, power, transportation, water/sewer                            | network, grid                                                                                                                                                                                                                                                                                                                                | throughput, flow rates,                                                            | name, part-of relationship                                                                       | BDA, op levels                                   | repair, broadcasts                                               | <b>YAML</b><br>expansion plans                              |         |                    |
| Sociological                                     |                                                  | Culture, religion, economic, ethnic, government, history, languages | temples, historic structures                                                                                                                                                                                                                                                                                                                 | E-R Model                                                                          | Class Diagram                                                                                    | Relational Database                              | Object DBMS                                                      | XML DTD / Schema                                            | TADILs  | MTF                |
| Geophysical                                      |                                                  | Terrain, weather, climatology, oceanography, astrometry             | feature lat/long, alt/dpth                                                                                                                                                                                                                                                                                                                   | Entity                                                                             | Class                                                                                            | Table                                            | Class                                                            | Element                                                     | Message | Message            |
|                                                  |                                                  |                                                                     |                                                                                                                                                                                                                                                                                                                                              | Attribute                                                                          | Attribute                                                                                        | Field / Column                                   | Attribute                                                        | Child Element or Element Attribute                          | DFI     | FFIRN / FFN / FUDN |
|                                                  |                                                  |                                                                     |                                                                                                                                                                                                                                                                                                                                              | Domain Value                                                                       | PURCHASE CODES                                                                                   | Instance, Value                                  |                                                                  | <b>TOKENS</b>                                               | DUI     | FUD                |

# Information Elements Roles

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



# FFUDN: Field Format Unit Designator #

# FIRN Field Format Index Reference #

# Structured military messaging ID's messages, message sets, data element, symbol fields <108>

# BY Form Field Position & NUMBER



# PROCESS MESSAGE BY PRECEDENCE

## UNIVERSAL EVENT / ALERT MESSAGE BUS

# OPERATIONAL NODES / ACTIVITIES

DATA SYSTEM FUNCTIONS PERFORMANCE

|                             |                                |
|-----------------------------|--------------------------------|
| 1.4 - 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    | 1.1.2 - Linear                 |
| 11.4.1.2.2 - Evaluated D    | 2 - Estimate Type              |
| 11.4.1.3 - Value            | 1.2.1 - Estimated              |
|                             | 1.2.2 - Observed               |
|                             | 1.2.3 - Predicted              |
|                             | PURCHASE CODES                 |

| SYMBOL     | Friend                     | Neutral | Hostile                |
|------------|----------------------------|---------|------------------------|
| 2525C      | Partner                    |         | Competitor             |
| 11.4.1.3.5 | Surface                    |         | 4 - Velocity           |
| 11.4.2     | Platform / Point / Feature | Type    | 1.4.1 - Horizontal     |
| 11.4.3     | Specific Type              |         | 1.4.2 - Vertical       |
| 11.4.4     | Type Modifier              |         | VA Confidence          |
| 11.4.5     | Unit                       |         | 1 - Bearing Angle      |
|            |                            |         | 2 - Bearing Angle Rate |
|            |                            |         | 3 - Covariance Matrix  |



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

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

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

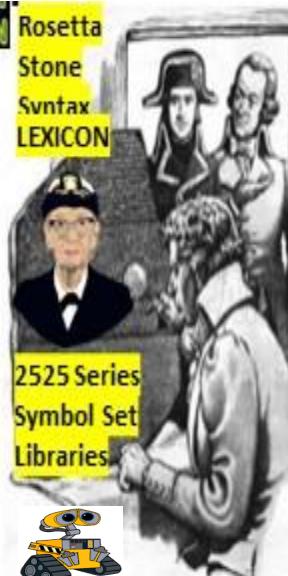
This claim implies both that human thinking is a kind of symbol manipulation (because a symbol system is necessary for intelligence) and that machines can be intelligent (because a symbol system is sufficient for intelligence).[3] The idea has philosophical roots in Hobbes (who claimed reasoning was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

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

data from a first form to a second form

CONDITION

Rosetta  
Stone  
Syntax  
LEXICON



2525 Series  
Symbol Set  
Libraries



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



Confucius

Alpha-numeric OPS CODE

Brevity codes mapped to symbols,  
Symbol sets = structured data

FRT CP CLOUD

ABC A OPS CODE

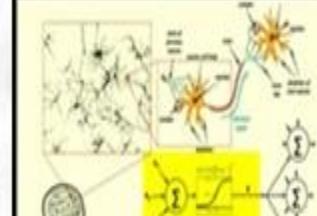
Neuro-Symbolic AI

Symbolic (human-readable)

representations

Symbolic AI

Neural Networks  
(Deep Learning)



Brevity  
Codes



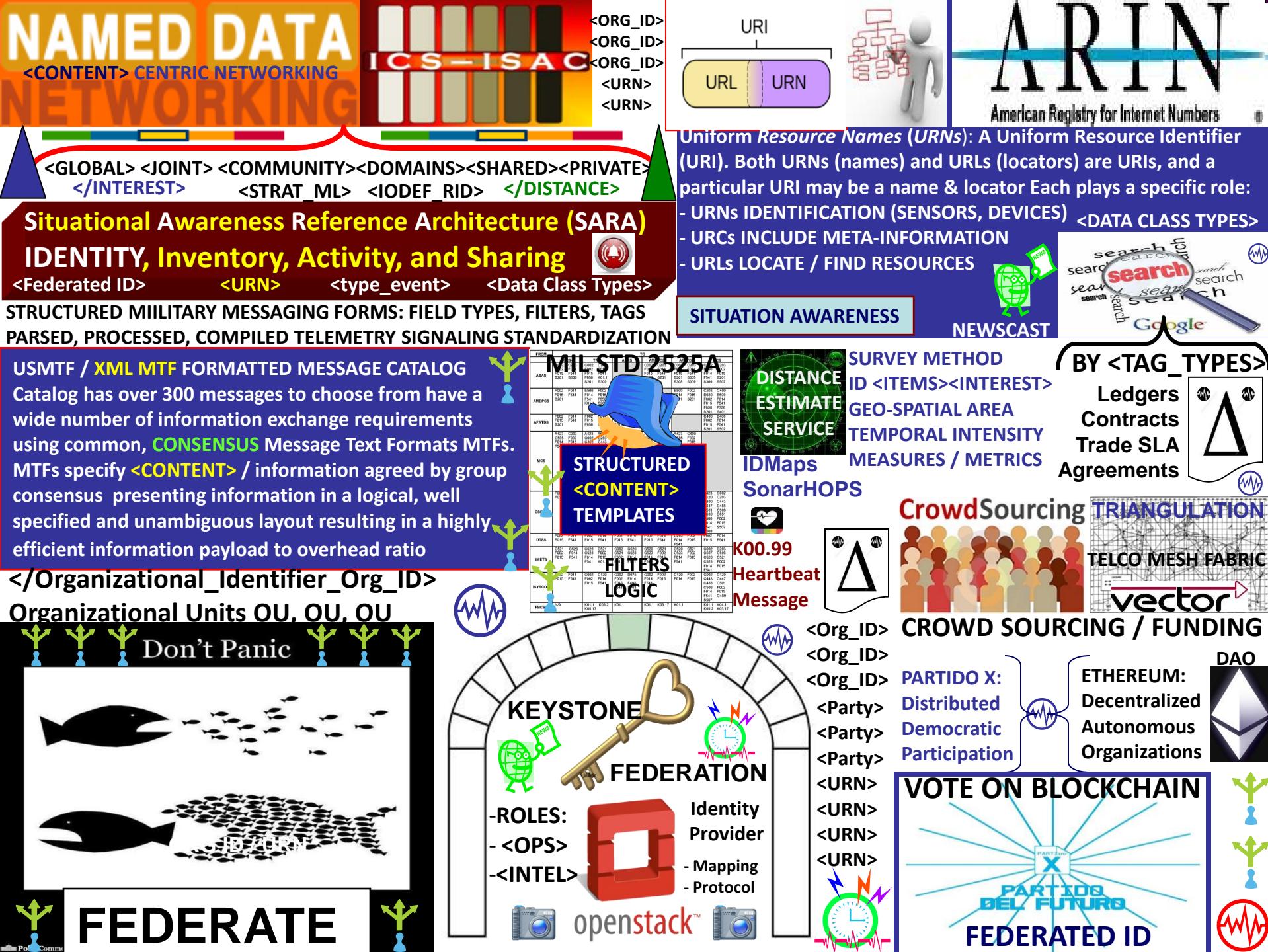
Symbols

Symbol

Sets 2525

Breaking the world into symbols (rather than  
atoms, energy, etc.)

Incorporate common sense reasoning and



# Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

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



Industrial Control System  
Information Sharing and  
Analysis Center

**IDENTITY:** <UUID> = Devices, sensors

<ORG\_ID> Organizations

Federation  
Gateway

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

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



vector

<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



**SHARING:**

COMMON <TAGS>

<Organizational\_ID>

Resource Names <URN>

<Time\_Stamps>

<State-Meta\_Data>

<DATA\_CLASS\_TYPE>

<Heartbeat\_snapshots>

<TAG>LIBRARY  
TEMPLATES



NAMED DATA  
NETWORKING  
<Content> Centric

**<ELEMENTS>**

STRATML/ IODEF RID CLASSES:

<GLOBAL><JOINT><SHARED>

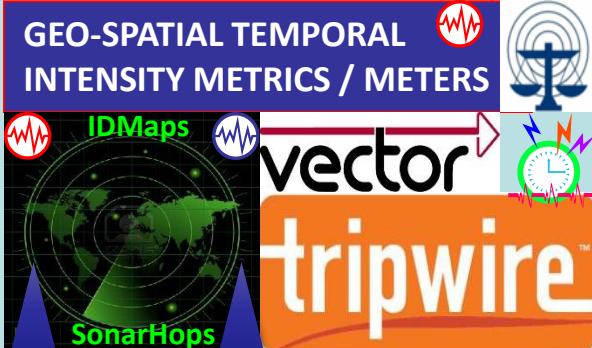
<DOMAIN><FEDERATION>

<CITY><STATE><PRIVATE>

STRATEGIC  
MARKUP

StratML

LANGUAGE



AVALANCHE

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

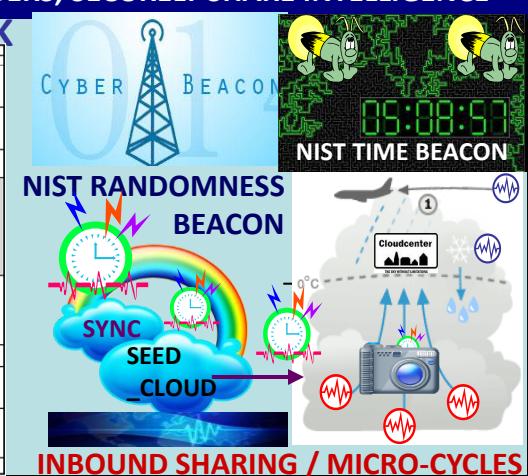
NIST CYBER SECURITY FRAMEWORK

| FROM   | TAB       | ABM       | AMOPCS    | AFATOS    | MCS       |
|--------|-----------|-----------|-----------|-----------|-----------|
| ABAD   | F002 F014 |
| CBOCS  | F001 F013 |
| AMOPCS | F001 F013 |
| AFATOS | F002 F014 |

CYBER SECURITY CONTENT  
LEXICON ROSETTA STONE

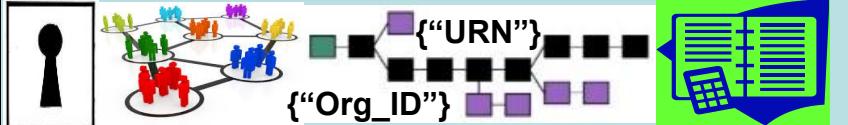
STRUCTURED  
<CONTENT>  
TEMPLATES

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 MTF  
MTFs specify <CONTENT> / information agreed  
by group consensus presenting information in a logical  
well specified and unambiguous layout i.e., templates



# Heart Beacon Cycle

## FEDERATE / TRADE FEDERATIONS



ECONOMIC HEARTBEAT

K %



DAO



BITNATION

FEDERATE  
SHARE  
WIN

GOVERNANCE 2.0



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



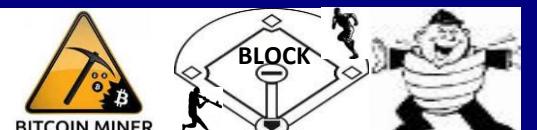
{“GLOBAL”}  
{“SHARED”}  
{“DOMAIN”}  
{“COMMUNITY”}  
{“PRIVATE”}

{“GROUP ID”}



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

Bitcoin Mining Pools  
MEME / METAPHOR MEDIATION



DISTRIBUTED AUTONOMOUS ORGANIZATION = DAO RAND Corp

term coined circa 1991 now in use by Blockchain tech corporations

Uniform\_Resource\_Name



IeT DEVICE / PLATFORM  
IoT SENSOR DEVICE



FIREFLY FLASH

HEARTBEAT MESSAGES

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

</RESOURCE> {“URN”}  
{“Asset\_Class”} </URN>

STOCK EXCHANGE

MIC MARKET IDENTIFIER  
CODES / BREVITY CODES



Office 365 Groups

Microsoft Teams



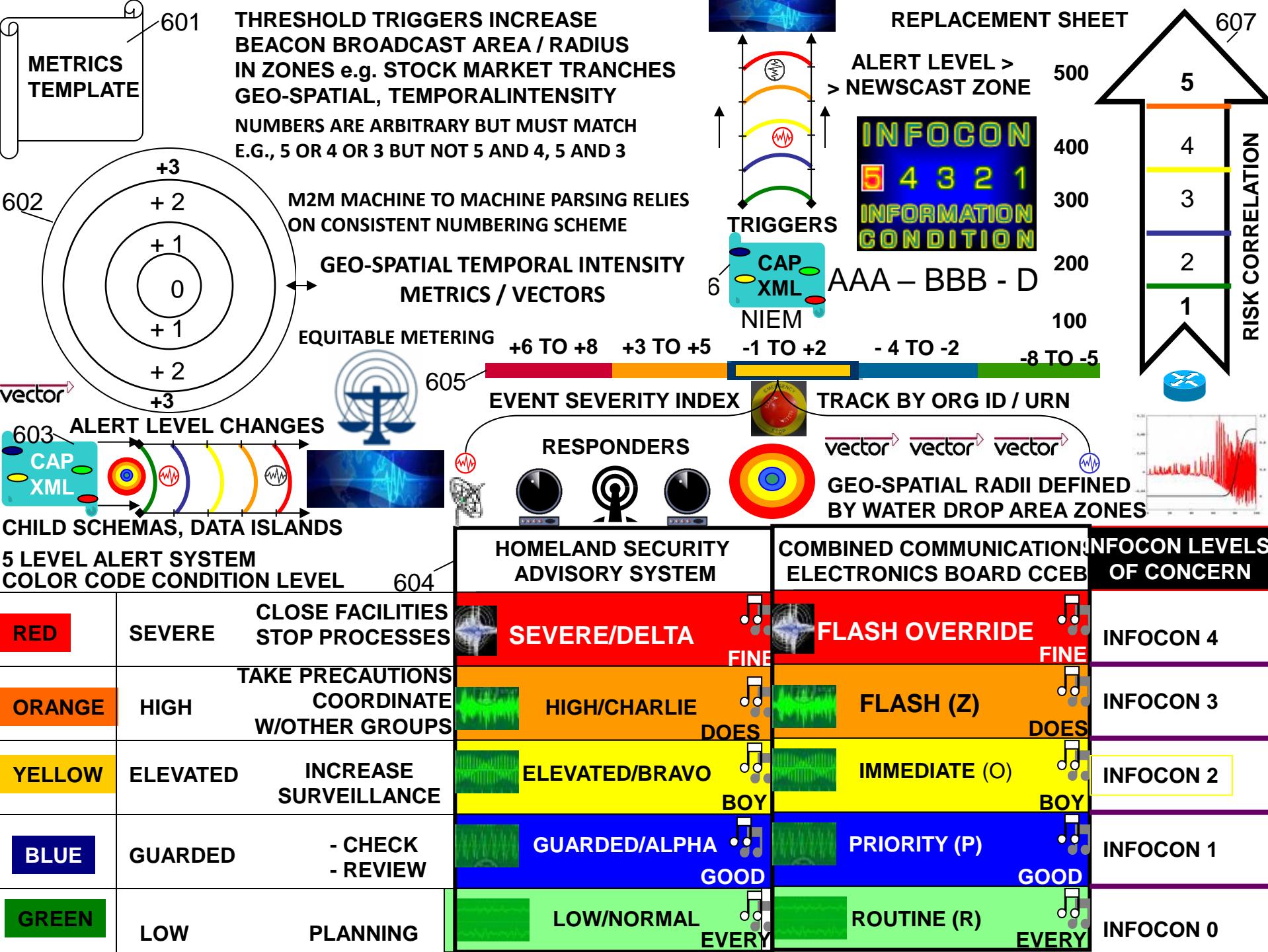
{"DUNS #"}{“Org\_ID”} Heartbeat Snaps  
QR CODE  
{“URN”}{“URN”}{“URN”} MICRO-CYCLES





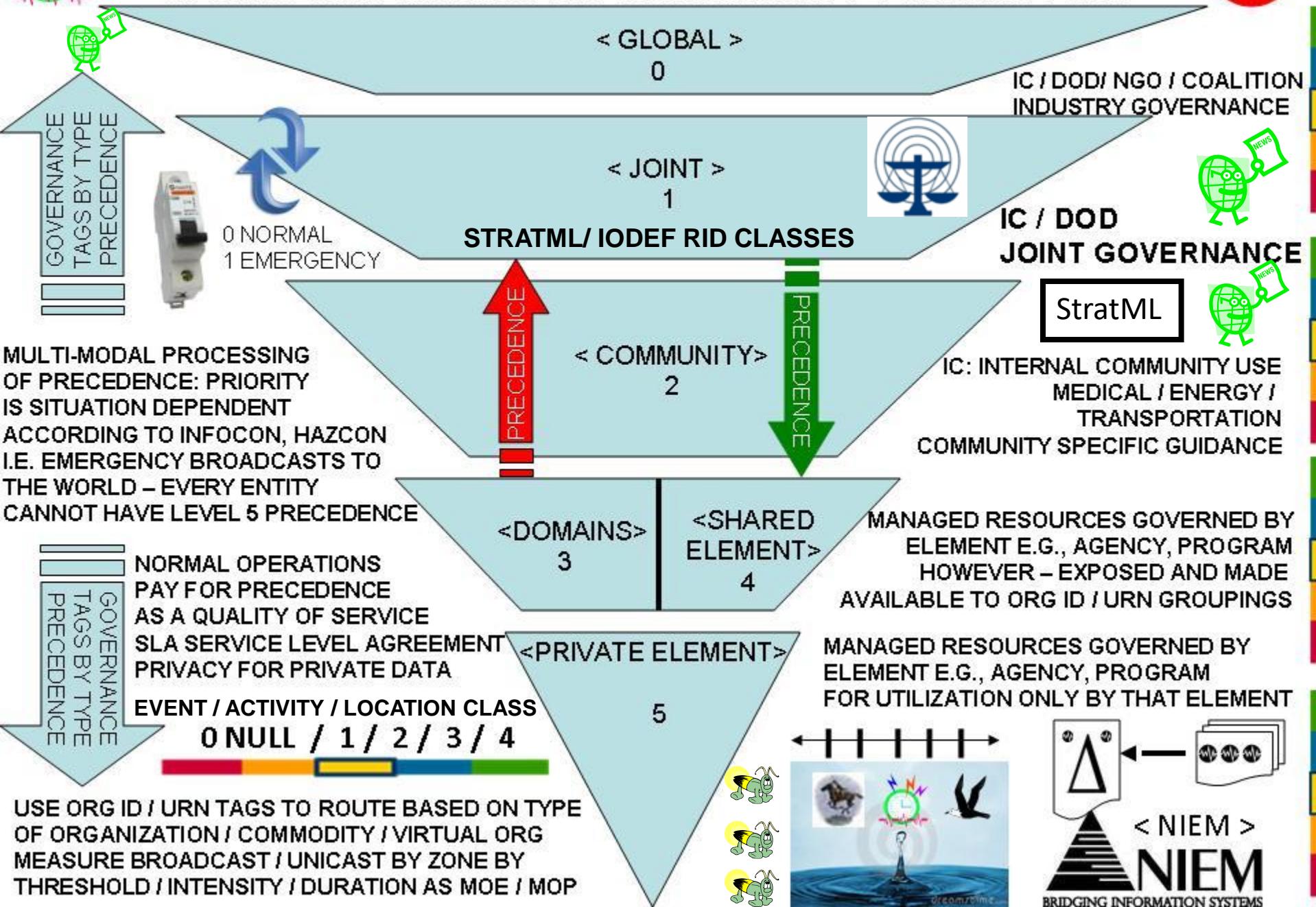
## FEDERATE: COMMON GOALS SYNCHRONIZED IN SPACE - TIME







# 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**



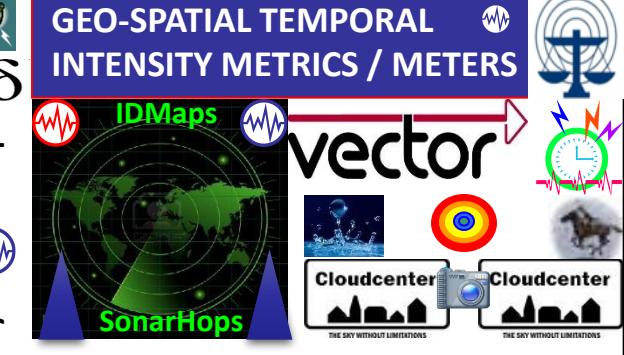
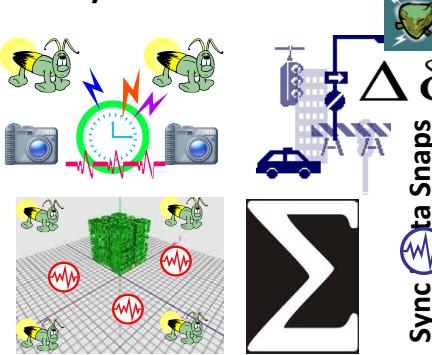
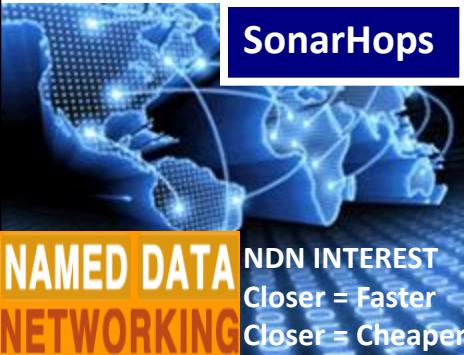
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



# IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



HOP COUNTS

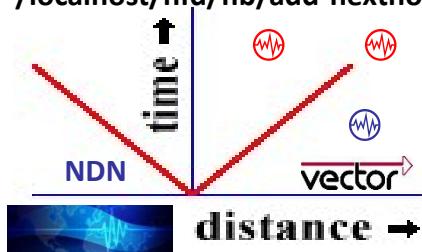


REACHABILITY



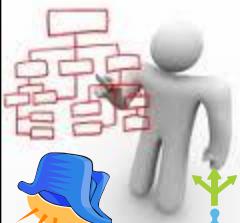
/localhost/nfd/fib/add-nexthop

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)



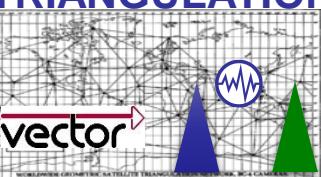
**NDN NAMES**

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

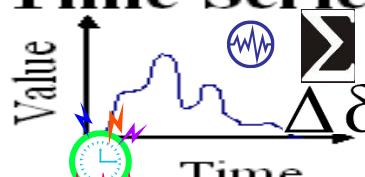
Distance information adjusts to “permanent” topology changes e.g., splits, joins, adds, moves, drops, merges in lieu of formal merger / acquisition



**TRIANGULATION**



**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**



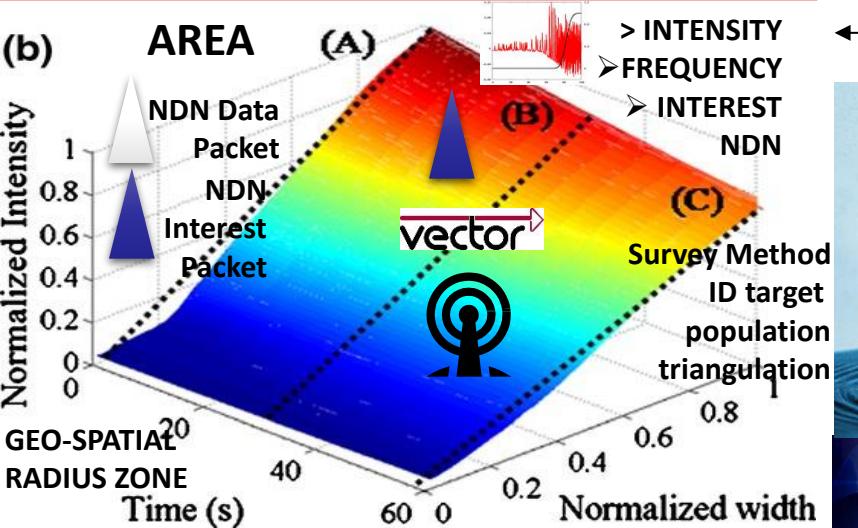
## **Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:**



## **Paul Revere = linear, sequential**

## TCP/IP hop by hop counts, by hop controls

**Water Drop = AREA / INTENSITY**



# **NAMED DATA NETWORKING**

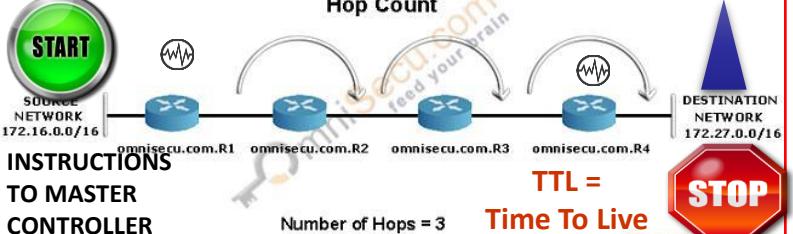


A graph illustrating the concept of interest. The vertical axis is labeled "time ↑" and the horizontal axis is labeled "distance →". A red line starts at the origin, dips into the negative time region, crosses the time axis, and then rises sharply towards the top right. A blue triangle points upwards from the origin. In the top right corner, there is a small circle containing a wavy line.

# ARRESTED-D OASIS MQTT ELEMETRY TRANSPORT

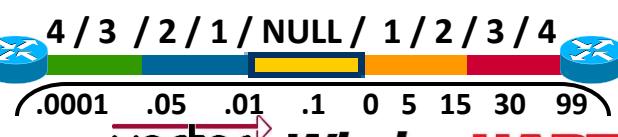
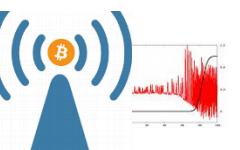


NIST TIME BEACON



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

**DMAPS  
SONARHOPS  
INTERNET  
TRIANGULATION**



**vector**  **WirelessHART**

**ALERT LEVEL > ** time synchronized,

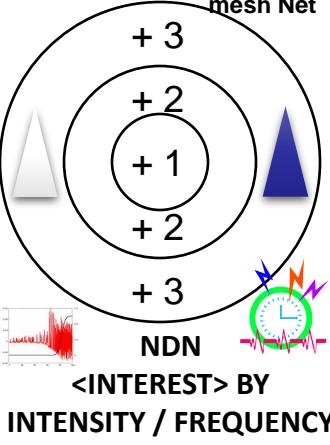
time synchronized,  
self-organizing,  
mesh Net



SINE-WAVE

# TRIGGERS

CAP  
XML



# **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”

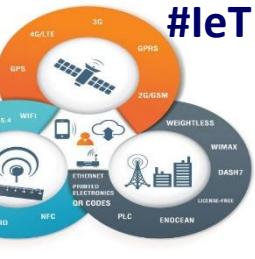
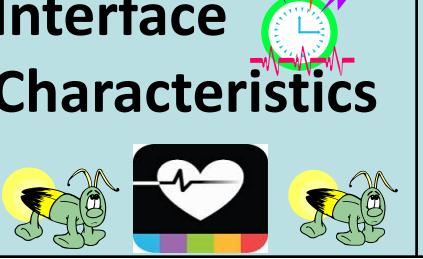
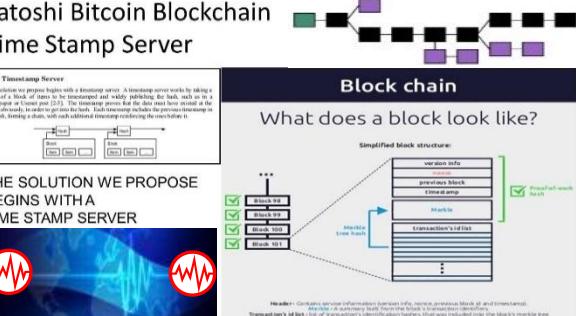
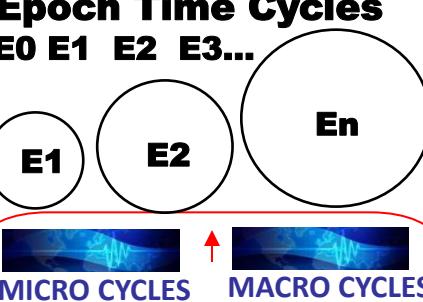
## The four dimensions of Big Data

**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

**Position of a point in space relative to another point**

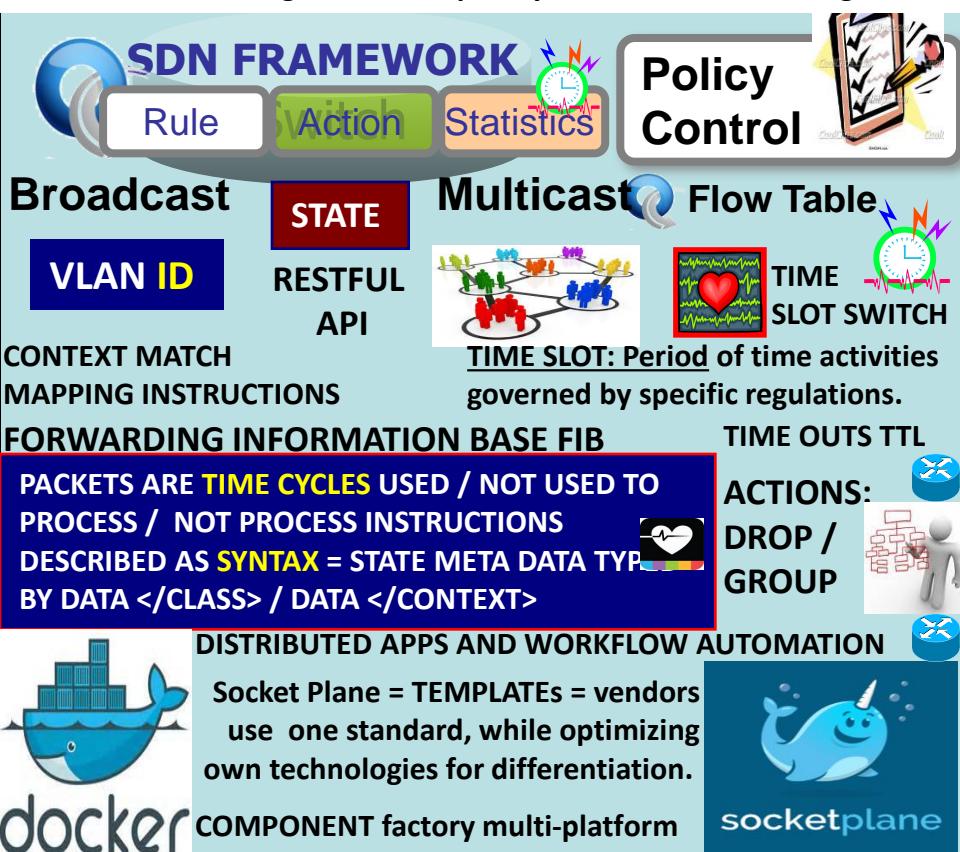


|                                                                                                                                                                                            |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |                                                                                                               |                                                                                     |                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Interface Name                                                                                                                                                                             | HEARTBEAT Administration Interface [SCOP]                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |                                                                                                               |                                                                                     |                                                                                       |
| Documentation URL                                                                                                                                                                          | <a href="http://scop.sourceforge.net/">http://scop.sourceforge.net/</a><br><a href="http://linuxvirtualserver.org/software/index.html">http://linuxvirtualserver.org/software/index.html</a> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |                                                                                                               |                                                                                     |                                                                                       |
| API Information                                                                                                                                                                            | <br><b>#leT</b>                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |                                                                                                               |                                                                                     |                                                                                       |
| Programmable Money<br>World Computer / Blockchain                                                                                                                                          | #Big_Data                                                                                                                                                                                    | Functionality Areas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   | Cloud Interface Management configuration, start, stop cloud services, edit configuration (heartbeat messages) | Cloudcenter                                                                         | Cloudcenter                                                                           |
| NIST TIME BEACON                                                                                                                                                                           |                                                                                                             | API Operation Count                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Web service access type Network Effects / A.I.                                                                | Web application, front end to [network, device, system, blockchain] heartbeat       | Cloudcenter                                                                           |
| Interface Characteristics                                                                                                                                                                  |                                                                                                             | LANGUAGE / PLATFORM BINDINGS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | PHP Java Erlang...                                                                  | Cloudcenter                                                                                                   |  | Cloudcenter                                                                           |
| "The external environment could update <u>resources</u> at random... One solution is a <b>heartbeat</b> : defining a default lease duration delaying updates until the next <b>cycle</b> " |                                                                                                           | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Satoshi Bitcoin Blockchain Time Stamp Server                                        |                           | Epoch Time Cycles E0 E1 E2 E3...                                                    |  |
| QubitCoin Interval: Every 30 Seconds                                                                                                                                                       |                                                                                                                                                                                              | <p>The solution we propose begins with a timestamp server. A timestamp server works by taking the current time and publishing the hash, such as in a timestamp or a time stamp [2]. The timestamp process that the data must have existed at the time it was timestamped. This is done by publishing the timestamp on a public ledger, forming a chain, with each additional timestamp recording the previous one.</p> <p>THE SOLUTION WE PROPOSE BEGINS WITH A TIME STAMP SERVER</p> <p>Block chain</p> <p>What does a block look like?</p> <p>Simplified block structure:</p> <ul style="list-style-type: none"> <li>Block info</li> <li>Previous Hash</li> <li>Timestamp</li> <li>Merkle</li> <li>Transactions id list</li> </ul> <p>Headers: Contains version information (version info), previous block of and timestamp). Transactions of this block are included in the Merkle tree. The Merkle tree is used to verify the integrity of the block.</p> |                                                                                     |                                                                                                               |                                                                                     |                                                                                       |



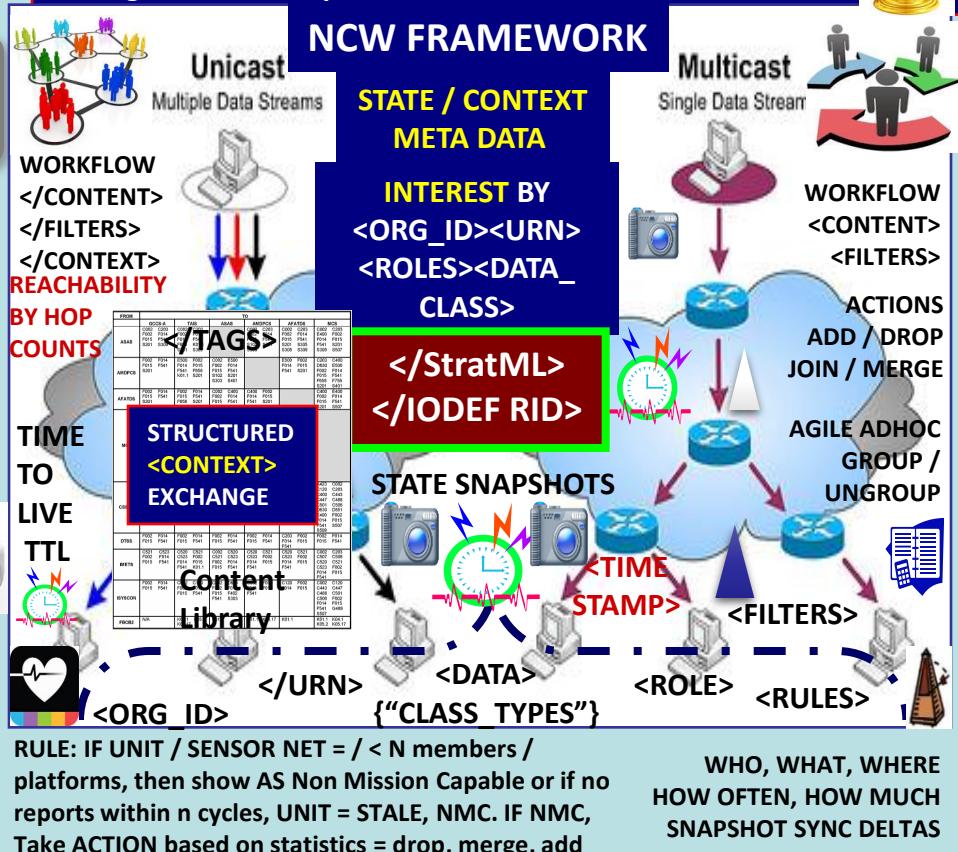
- SDN is a *framework* to allow network administrators to *automatically* and dynamically manage and control a *large number* of network devices, *services*, topology, traffic paths, and packet handling (quality of

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."



# 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

RADIUS

WATER DROP IN POND MEME

Attribute Series

602

INTENSITY

WATER DROP IN POND MEME

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

TCP/IP HOP BY HOP COUNT

Energy Attenuates over Distances

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

DISTANCE

Temporal Series

Geo

Spatial

Attribute Series

602

INTEREST

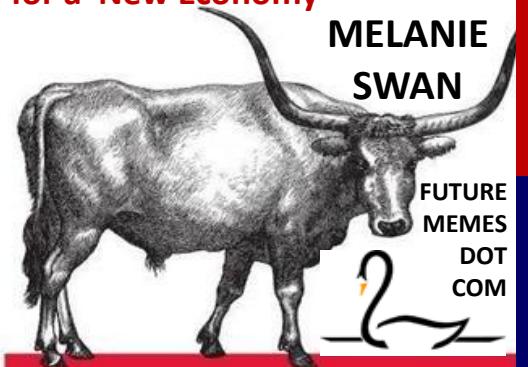
DISTANCE

Temporal Series

Geo

Spatial

Attribute Series



# 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)

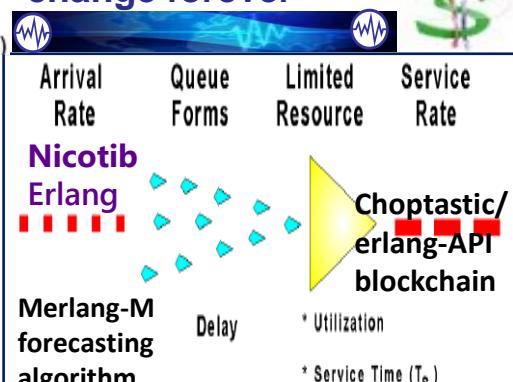
### SORTING ALGO'S

[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

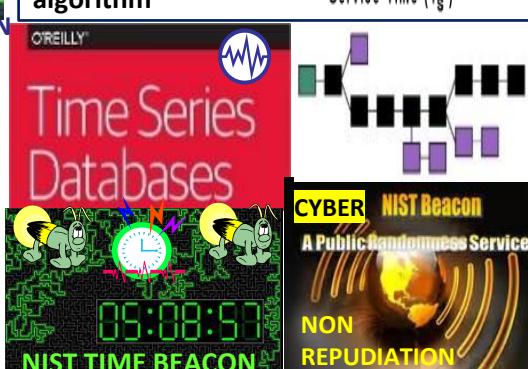


distributed "noSQL" database, embedded right into Erlang, supports indexing, replication, transactions, and fail-over

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

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

| FROM       | TO/CC-A      | THREE | AMAZON | AMAZON | WIKI |
|------------|--------------|-------|--------|--------|------|
| XBRL       | / CDL / DAML |       |        |        |      |
| ALPHA      | NUMERIC      |       |        |        |      |
| BREVITY    | CODES        |       |        |        |      |
| AZURE      | BLETCHLEY    |       |        |        |      |
| STRUCTURED |              |       |        |        |      |
| MILITARY   | MESSAGE      |       |        |        |      |
| TEMPLATE   | FORMS        |       |        |        |      |
| LOGIC /    | FILTERS      |       |        |        |      |



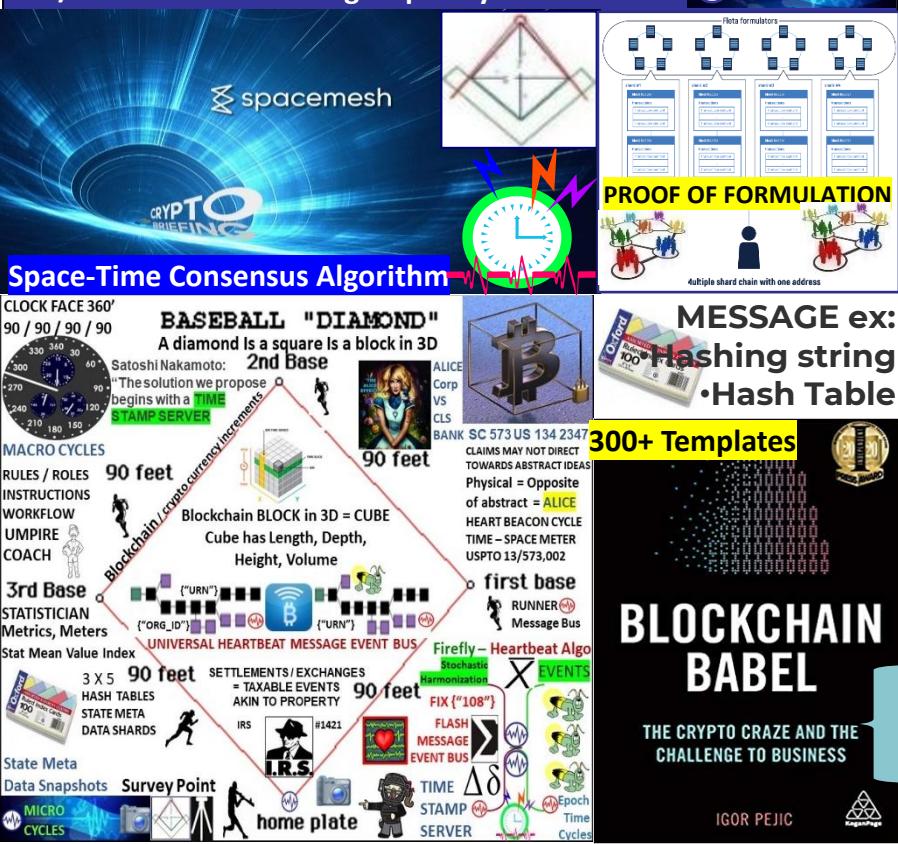
**Q: Which meme describes the myriad blockchain consensus algorithms the most comprehensively that uses an algorithm (based on nature = “shortest path to the knowledge of truth Luxor Temple) enabling distributed system of systems geo-spatial, UTZ Universal Time Zone temporal, semantic - syntactic sync,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

Blockchain Consensus Algorithms & Mechanisms



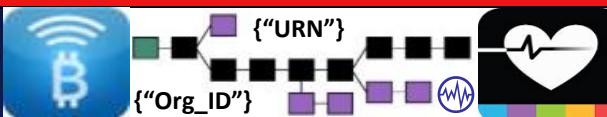
In the world of blockchain consensus algorithms, consensus is the **HEART OF THE BLOCKCHAIN NETWORK**. Its main purpose is to achieve agreement on transactions among a distributed system (s)

**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.

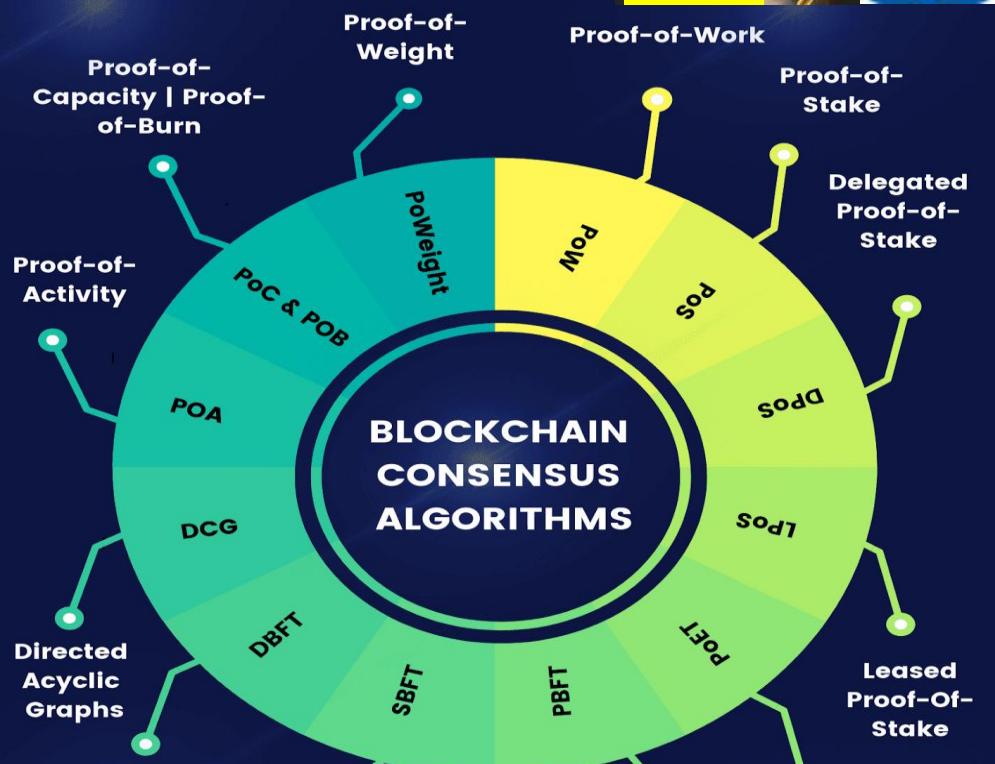


# **BLOCKCHAIN CONSENSUS ALGORITHMS**

# ULTIMATE GUIDE FOR BEGINNERS



The collage features several distinct elements: 1) A central green circle containing a white clock face with a red second hand, set against a background of blue brain-like patterns and two cartoon insects. 2) Below the clock, the text "QUANTUM RANDOM NUMBER BEACON" is displayed in large, bold, white letters. 3) To the left of the main text, there is a smaller image of a globe with yellow continents, overlaid with several curved, glowing orange lines representing signal transmission. 4) At the bottom left, the words "NON REPUDIATION" are written in large, bold, white capital letters. 5) In the bottom right corner, there is a blue circular icon featuring a white "B" symbol with three concentric arcs above it, likely representing a logo for a service or organization.



## Tolerance structured Data Exchange

## SYNTAX LEXICON

# SYNTAX LEXICON

## CHARCODES, SymbolSets

e. Simplified

Simplified  
Byzantine Fault

## **Byzantine Fair Tolerance**

Page 18

Practical

## Byzantine Fault

www.ijerpi.org

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



# STABLE PROTOCOL THREE MAIN TYPES:

DeFi-Native: Cap Labs, Elixir, Level

Collateralized Debt Positions: Ducat, Felix

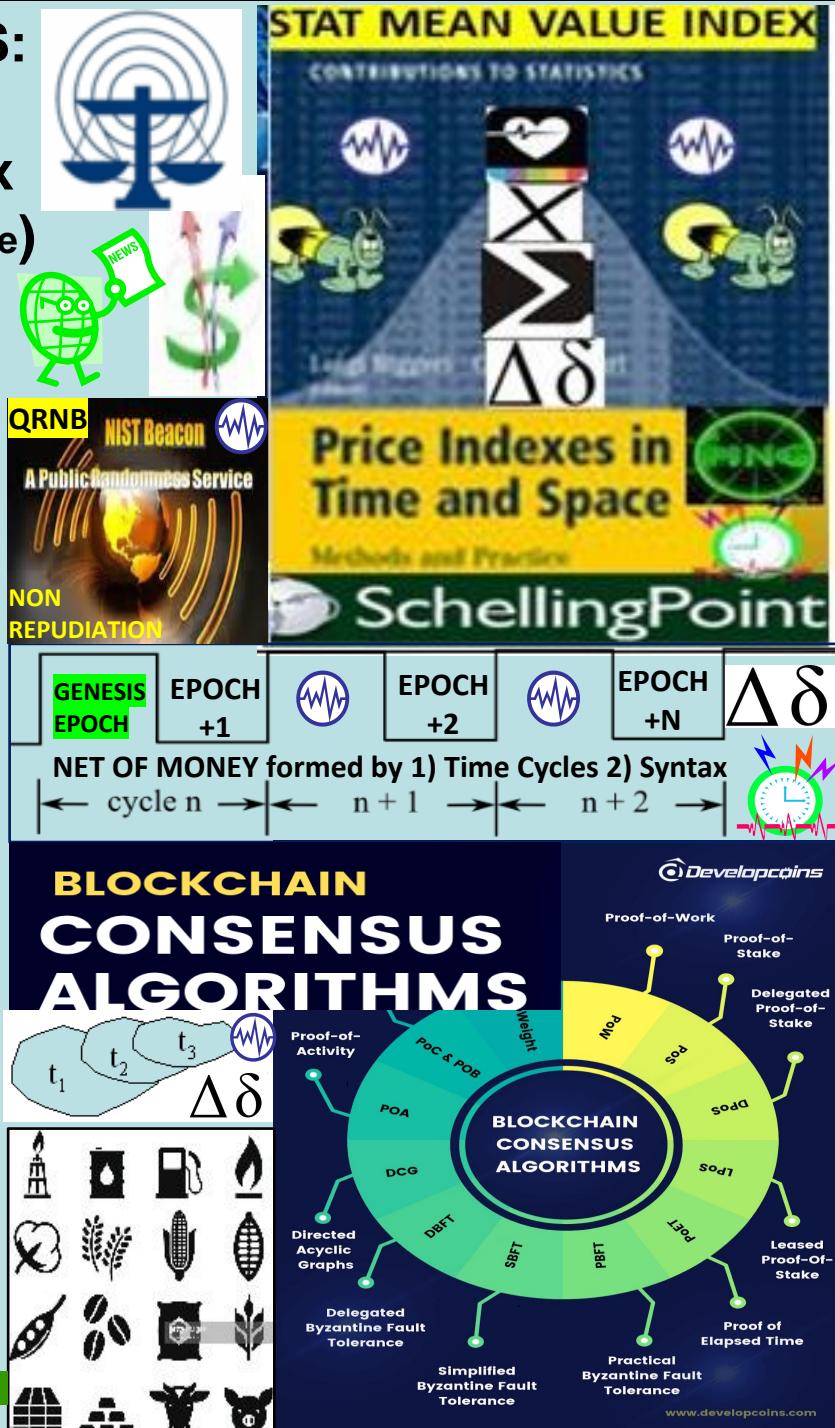
RWA-Backed:, EAnzen, Superstatethena (UStb update)

**1) DeFi-Native collateral backing:** stablecoin engine produces redeemable tokens of various denominations (USD, BTC, ETH, etc) system of external agents, such as market makers, MEV actors and RWA protocols, to access collateral and generate independent yield on behalf of holders. These actors keep profits over a predetermined threshold, incentivized to earn as much as possible. behavior is kept in check by security delegations from restaking protocols, support good actors, penalize bad ones

## 2) Collateralized Debt Positions (CDPs)

CDP protocols allow users to borrow assets by locking up collateral. When a user creates a CDP, they deposit a certain amount of ETH, BTC, USDC, or other assets into the protocol to borrow a proportionate amount of another asset, in this case a stablecoin. If the value of the deposited collateral falls below a specified threshold (loan-to-value level or collateral ratio), the CDP becomes under-collateralized and is recalled, or liquidated, with the protocol automatically selling off the underlying assets to repay the debt and maintain the stability of the system. After the underlying collateral is liquidated, the user usually gets to keep the asset they've borrowed, minus some kind of liquidation penalty.

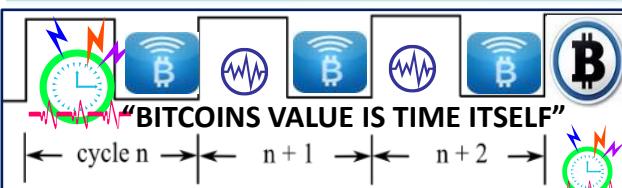
## 3) RWA-Backed by off-chain real-world assets



# PROOF-OF-WORK



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



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

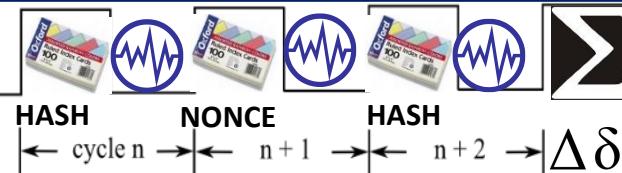


THROTTLE equivalent to difficulty. State  
•target = maximum value of 8 bytes Snap  
( $2^{64}$ ) divided by the difficulty.

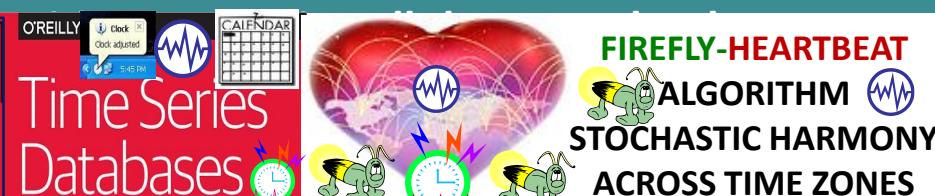
NONCE increments from 0..N until the target is met.



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



300+Message Templates

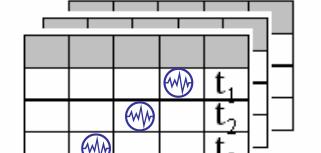
| FORM   | FORMAT  | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| OCTOB  | OCB01   | OCB10   | OCB20   | OCB30   | OCB40   | OCB50   | OCB60   | OCB70   | OCB80   |
| ABAB   | PAB01   | PAB10   | PAB20   | PAB30   | PAB40   | PAB50   | PAB60   | PAB70   | PAB80   |
| ANAN   | PAN01   | PAN10   | PAN20   | PAN30   | PAN40   | PAN50   | PAN60   | PAN70   | PAN80   |
| COSC   | PCOS01  | PCOS10  | PCOS20  | PCOS30  | PCOS40  | PCOS50  | PCOS60  | PCOS70  | PCOS80  |
| DPSB   | PDPS01  | PDPS10  | PDPS20  | PDPS30  | PDPS40  | PDPS50  | PDPS60  | PDPS70  | PDPS80  |
| METH   | PMET01  | PMET10  | PMET20  | PMET30  | PMET40  | PMET50  | PMET60  | PMET70  | PMET80  |
| PERSON | PPER01  | PPER10  | PPER20  | PPER30  | PPER40  | PPER50  | PPER60  | PPER70  | PPER80  |
| PRIMO  | PPRIM01 | PPRIM10 | PPRIM20 | PPRIM30 | PPRIM40 | PPRIM50 | PPRIM60 | PPRIM70 | PPRIM80 |

LOGIC FILTERS  
LOGIC GATES

SYNTAX LIBRARY LEXICON

CODER'S GUIDE

POW PAYLOAD : COMBINATIONS OF ENCRYPTED SYNTAX Attribute Series





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

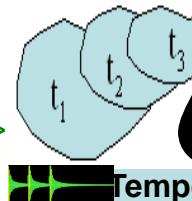
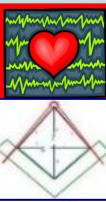


## TIME – SPACE MEASUREMENTS OF TOKENIZED COMMODITIES, SECURITIES... STOCHASTICALLY HARMONIZED ACROSS UTZ Universal Time Zone



The Volumetric Weight is often referred to as dimensional weight

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



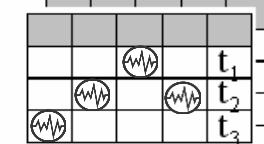
TIME BLOCK



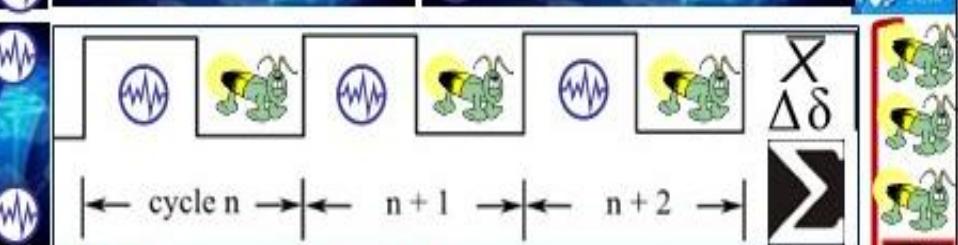
IPFS

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

Attribute Series



Geo Spatial Series



FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

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





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



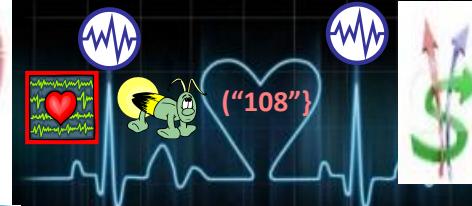
- Creates an online store for users to sell goods for Bitcoin
- Connects these stores directly to each other on a global network
- Users browse individual stores, search for products across whole network
- A buyer directly connects, purchases good from the merchant using Bitcoin
- Bitcoin payments via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

OPENBAZAAR.ORG  
BLOCKCHAIN ARBITRAGE



SLA CLOSER = < \$ CLOSER = < CO2

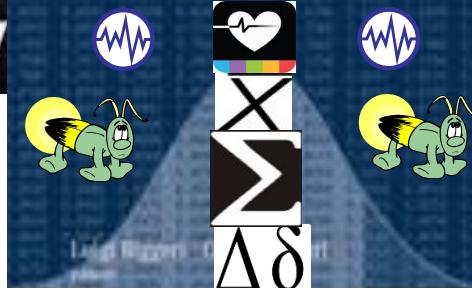
COMMODITIES  
ECONOMIC HEARTBEAT



STAT MEAN VALUE PULSE  
REAL WORLD ASSETS RWA

STAT MEAN VALUE INDEX

CONTRIBUTIONS TO STATISTICS



Price Indexes in  
Time and Space  
Methods and Practice

SchellingPoint

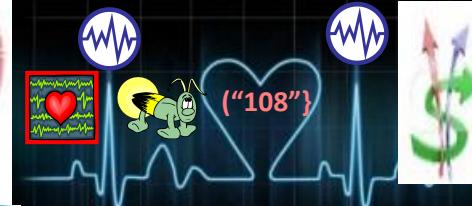
OpenBazaar is a different approach to online commerce. OpenBazaar connects buyers and sellers directly. Because there is no one in the middle of your transactions there are no fees, no restrictions, no accounts to create, and you only reveal personal information you choose.

## PROJECT PHILOSOPHY: *MAKE TRADE FREE*

Mission: *shift trade to a decentralized platform*



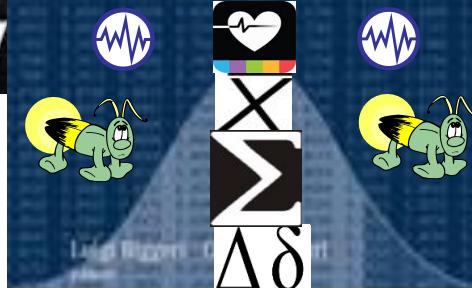
Demurrage TERRATRC TRADE  
Fees REFERENCE CURRENCY  
“Money of Peace”



STAT MEAN VALUE PULSE  
REAL WORLD ASSETS RWA

STAT MEAN VALUE INDEX

CONTRIBUTIONS TO STATISTICS



Price Indexes in  
Time and Space  
Methods and Practice

SchellingPoint

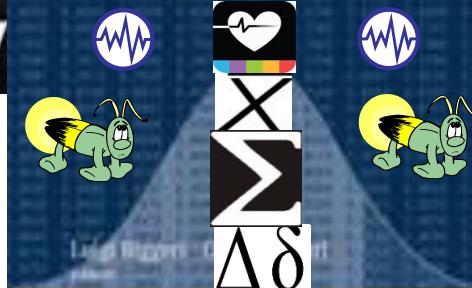
Free, open markets: Commodity / Currency Index

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

• VALUES: Privacy </Org\_ID>



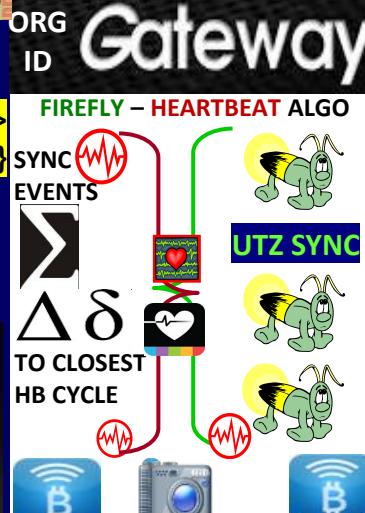
HASH Values  
Nonce Values </Org\_ID>



Price Indexes in  
Time and Space  
Methods and Practice

SchellingPoint

Bitcoin: OpenBazaar transactional currency



Cryptographic Security

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



SchellingPoint

## 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.

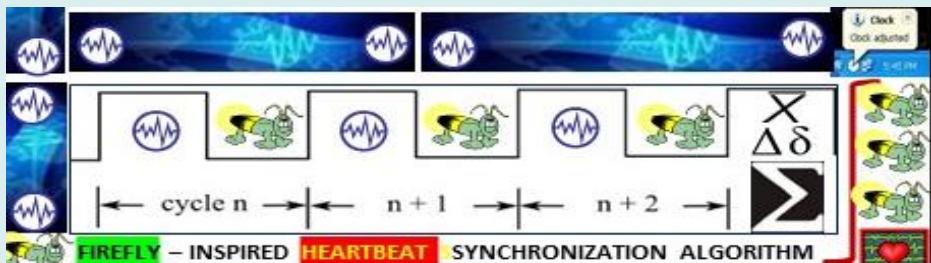


## DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

# Heart Beacon Cycle

### FEDERATE / TRADE FEDERATIONS

#### Linear Sequential Meme





## 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



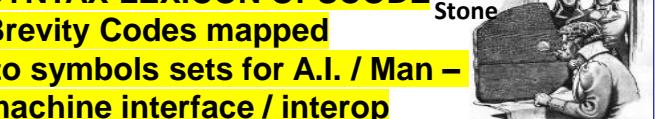
INFOCON  
5 4 3 2 1  
INFORMATION  
CONDITION



{"108"}

STATISTICAL MEAN VALUE INDEX PULSE

GDP INDEX ECONOMY K% RULE



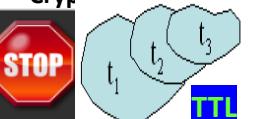
Zero Trust Transaction: money performs I.A.W. to terms agreed to by parties. Ex: purchase of widget from retail store where widget must be delivered to person B on TIME X, in Y condition at PLACE Z or person A does not get paid. Stock, currency, commodities, letters of credit, insurance underwriting,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

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

DAO Distributed Autonomous Organization Investor Pools



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



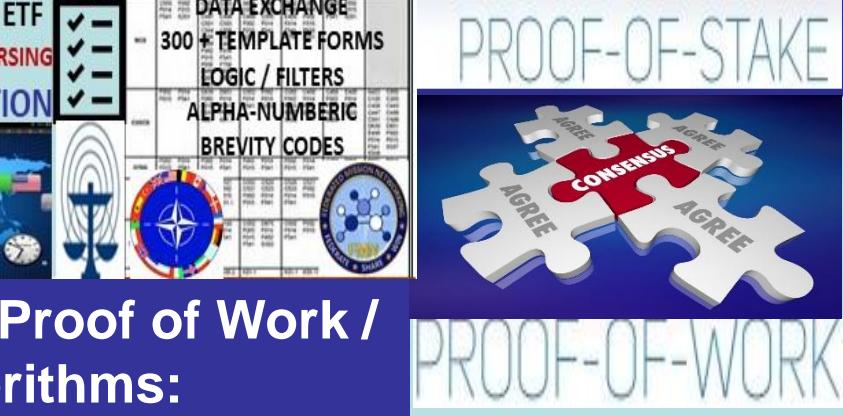
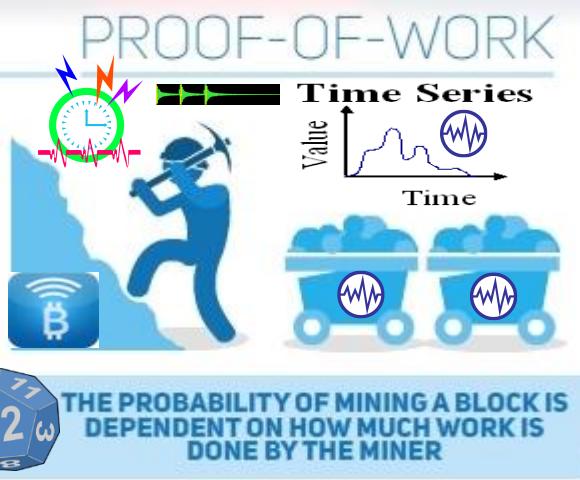
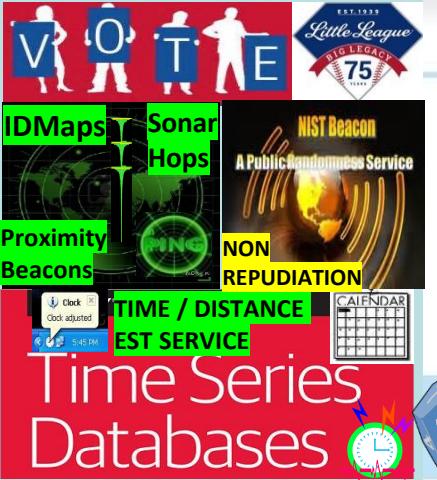
SYNTAX LEXICON OPSCODE  
Brevity Codes mapped to symbols sets for A.I. / Man – machine interface / interop



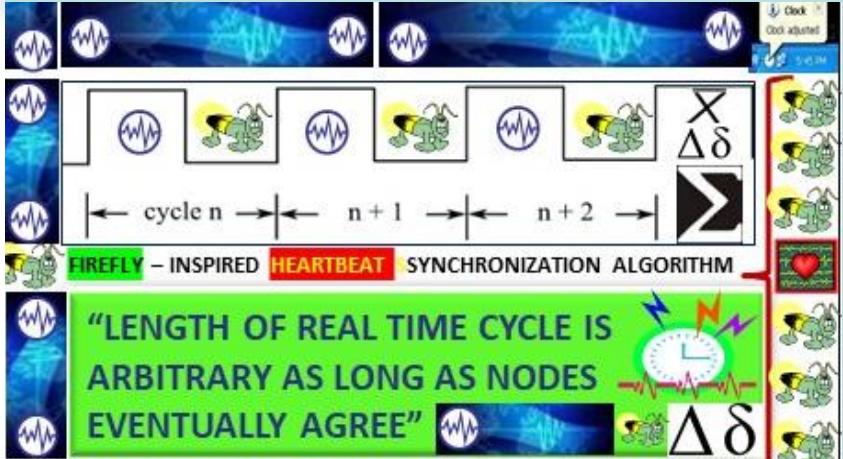
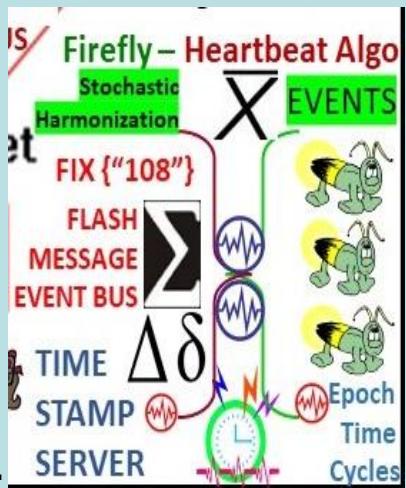
## Proof-of-activity PoA is a combination of Proof of Work / Stake blockchain consensus algorithms:

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

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



HEART BEACON CYCLE 13/573,002

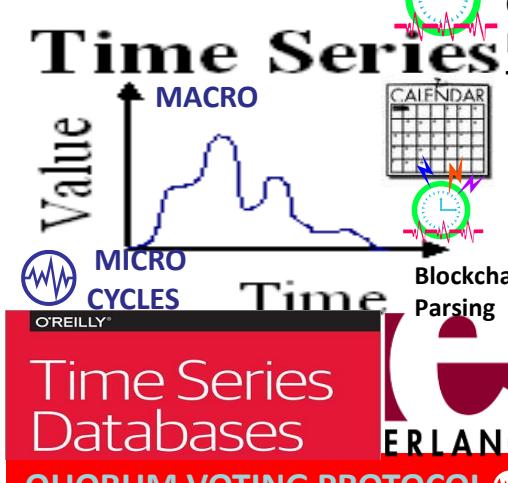


# SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

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



## PROOF OF ELAPSED TIME



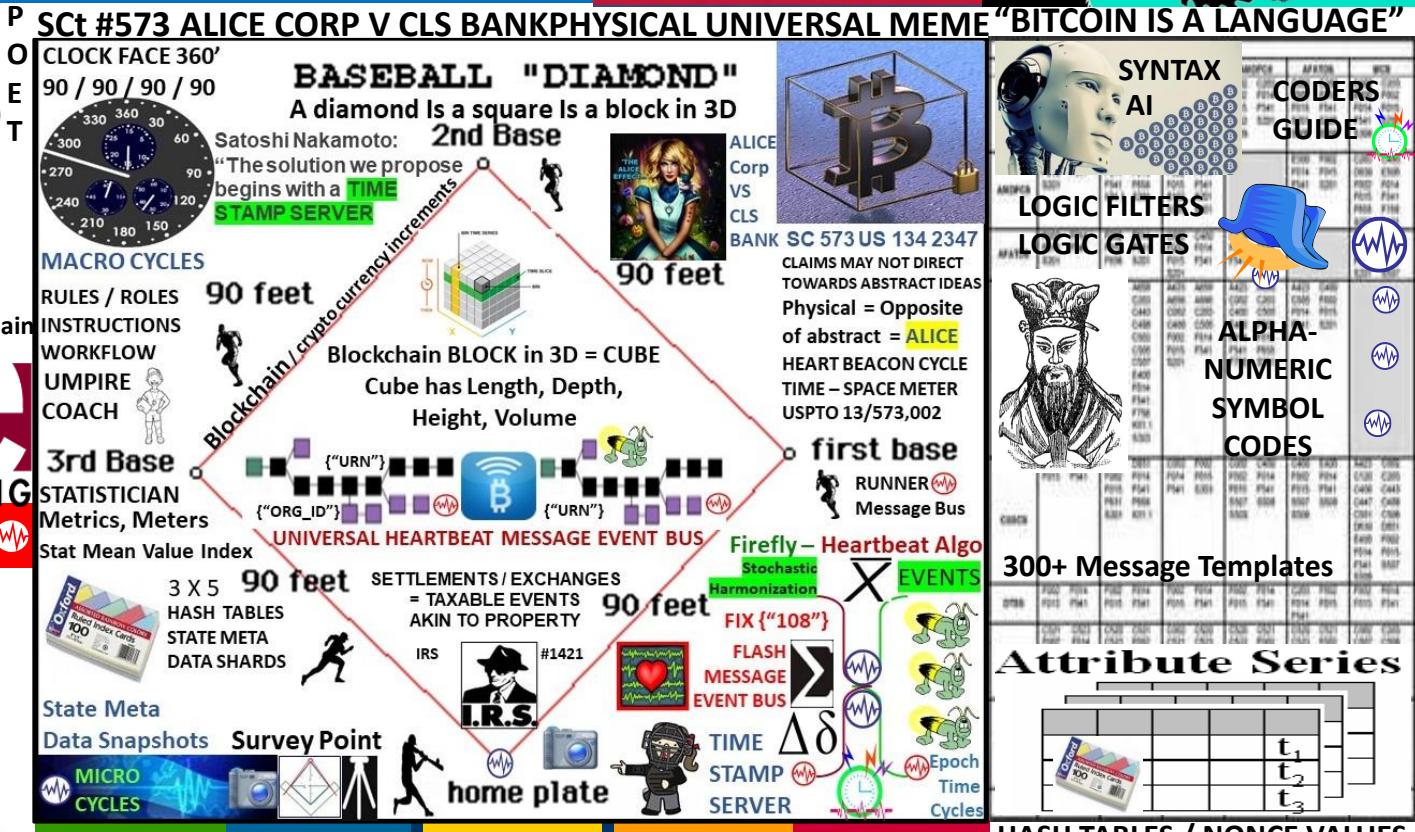
Voting Based Selection: stake size & block generators selected by votes

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

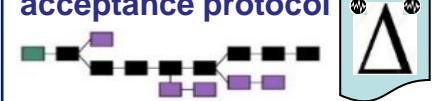


Robert's Rules quorum = minimum # of voting members who must be present at meetings to conduct business of the group

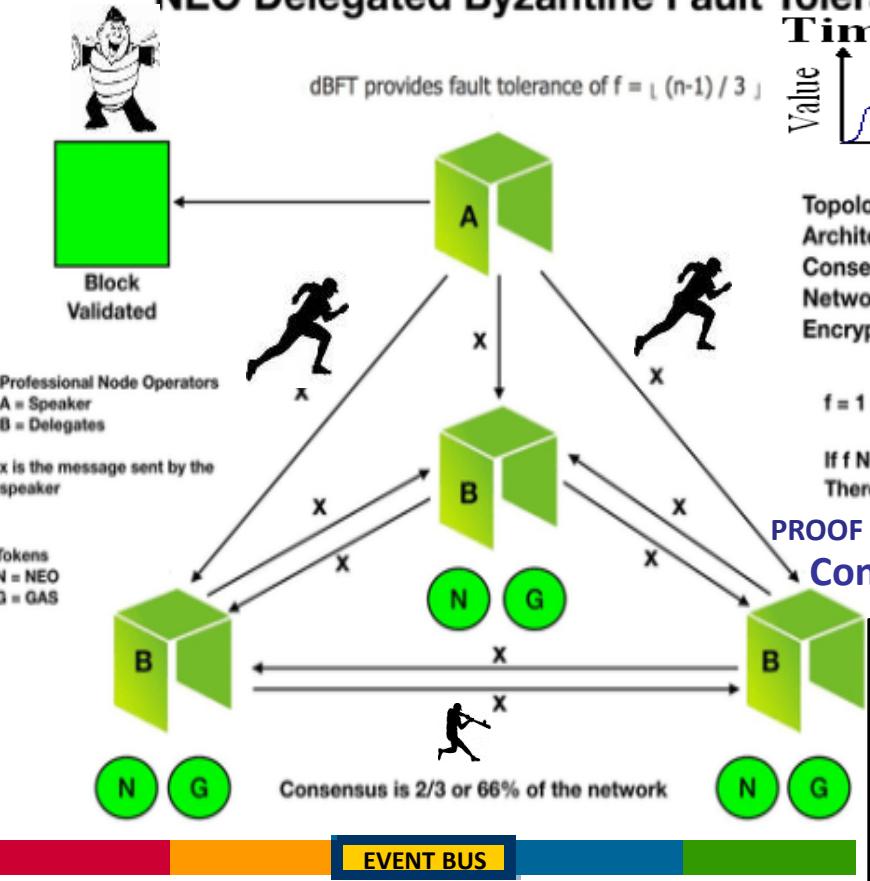
## TOURNAMENT LEAGUE BOARD



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

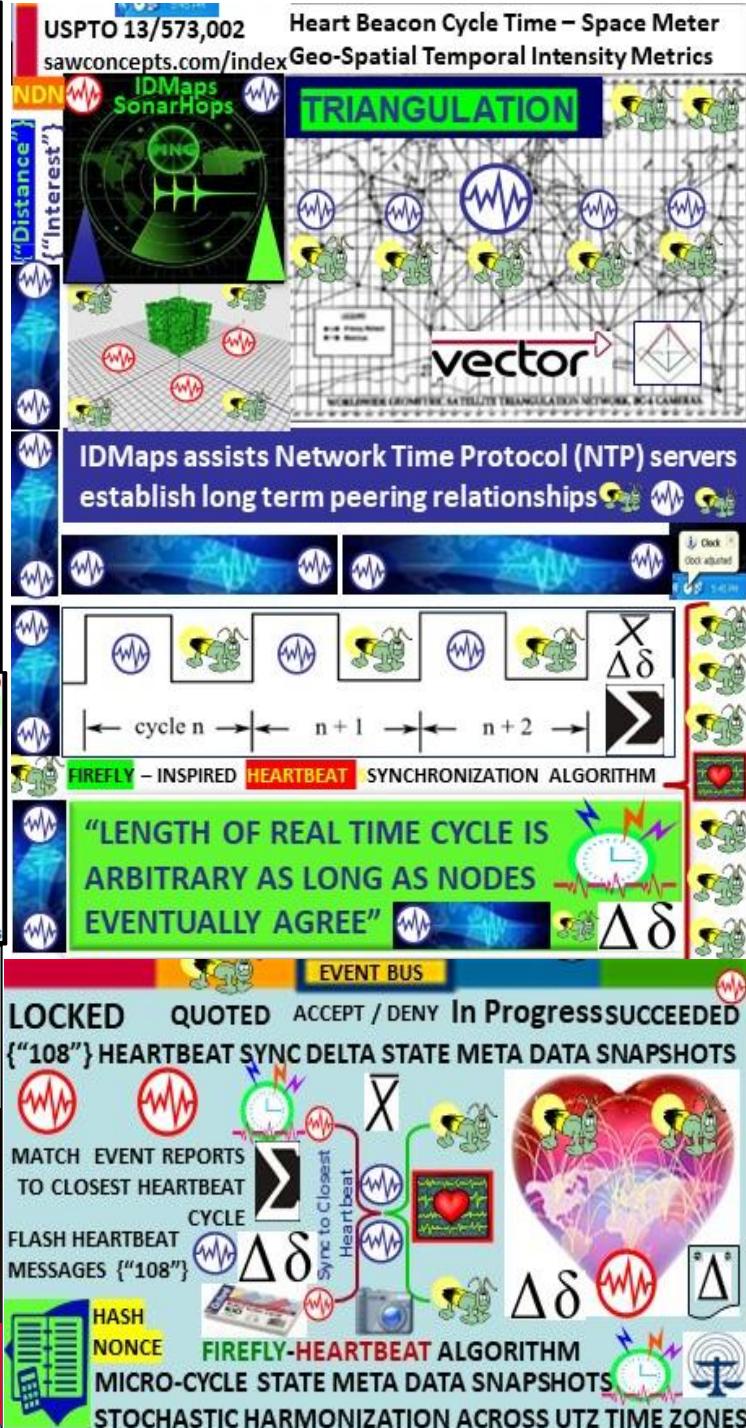


# NEO Delegated Byzantine Fault Tolerance (dBFT)



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 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

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



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



Round created  
Witness



Famous witness  
Election



Vote  
See



Strongly see  
Supermajority



Decide



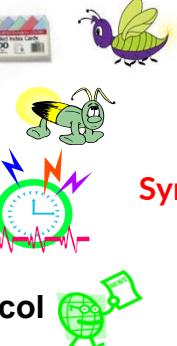
Round created  
Round received



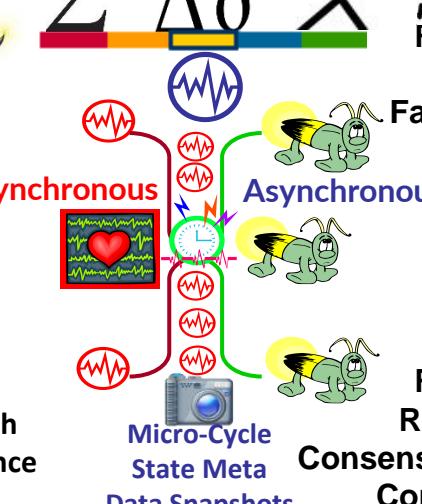
Consensus timestamp  
Consensus order



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



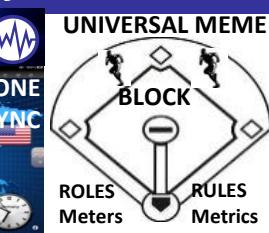
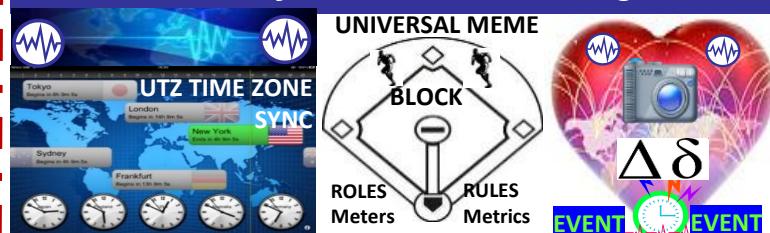
Hash  
Nonce



Micro-Cycle  
State Meta  
Data Snapshots

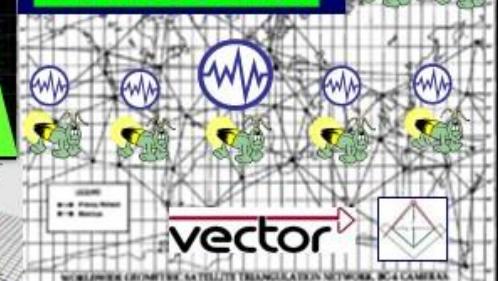


Consensus timestamp  
Consensus order



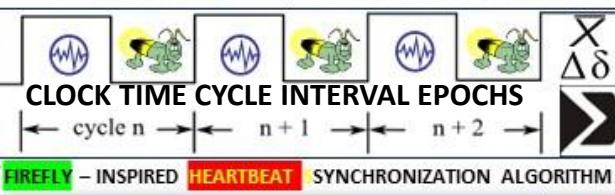
Heart Beacon Cycle Time – Space Meter  
Geo-Spatial Temporal Intensity Metrics

TRIANGULATION



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

FIREFLY HEARTBEAT Synchronization Algorithm



FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

"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.

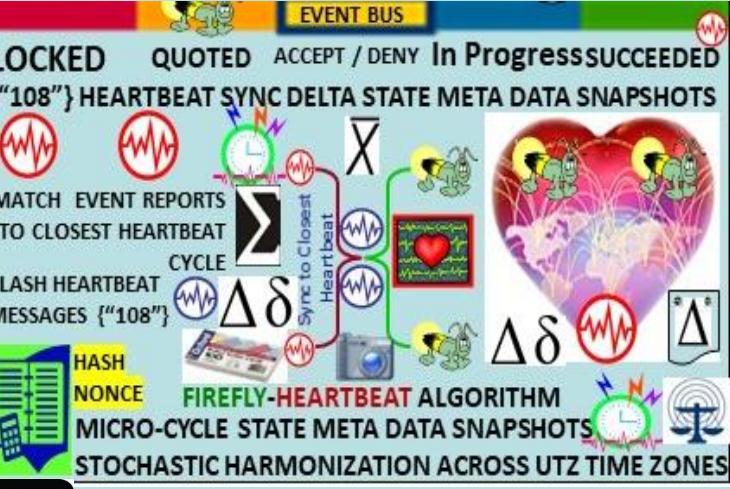
Iain Stewart, the inventor of the POB algorithm, uses an analogy to describe the algorithm: burnt coins are like mining rigs. In this analogy, a miner burns their coins to buy a virtual mining rig that gives them the power to mine blocks. The more coins burned by the miner, the bigger their virtual mining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

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



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

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



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.

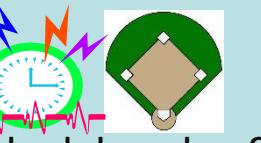
| TAG                                        | Volume / Size + / - Of rig | Token Award |
|--------------------------------------------|----------------------------|-------------|
| {"Org_ID"}<br>ActiveID                     | [UFO2_ACTIVEID]            | </EVENT>    |
| IF1_Heartbeat<br>(IF-Node1)                | [UFO2_HEARTBEAT:#]         | </EVENT>    |
| IF2_Heartbeat<br>(IF-Node2)                | [UFO2_HEARTBEAT:#]         | </EVENT>    |
| {"UUID"}<br>IF1_DeviceStatus<br>(IF-Node1) | [UFO2_DEVICESTAT:#]        | </EVENT>    |
| {"UUID"}<br>IF2_DeviceStatus<br>(IF-Node2) | [UFO2_DEVICESTAT:#]        | </EVENT>    |
| IF1_State<br>(IF-Node1)                    | Δδ [UFO2_STATE:#]          | Δδ IF_State |
| IF2_State<br>(IF-Node2)                    | Δδ [UFO2_STATE:#]          | Δδ IF_State |

# Proof of Capacity PoC



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

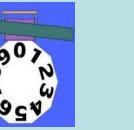
Proof of capacity for mining devices, also known as blockchain nodes, to use empty space on their hard drive to mine the available [cryptocurrencies](#).



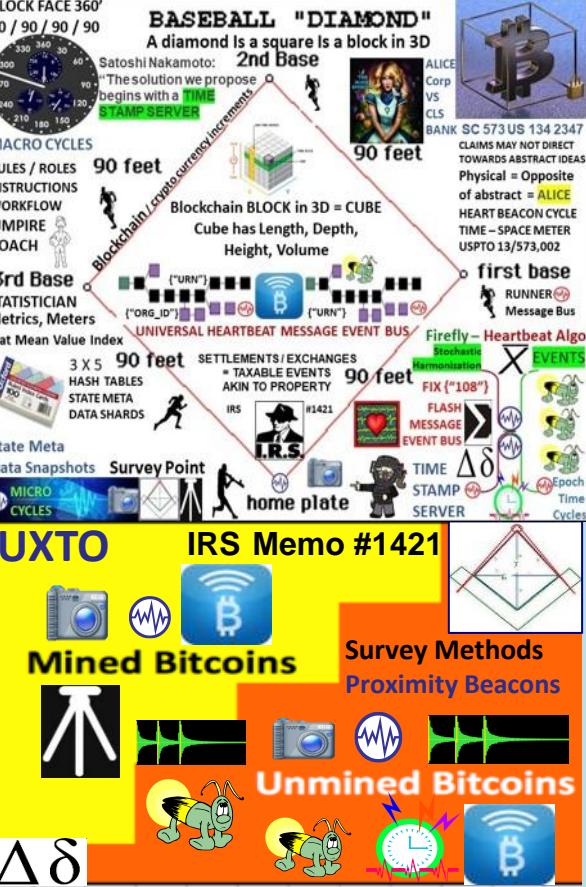
Instead of repeatedly altering the numbers in the block header & repeated hashing for the solution value as in a PoW system, PoC works by storing a list of possible solutions on the mining device's hard drive before mining activity starts



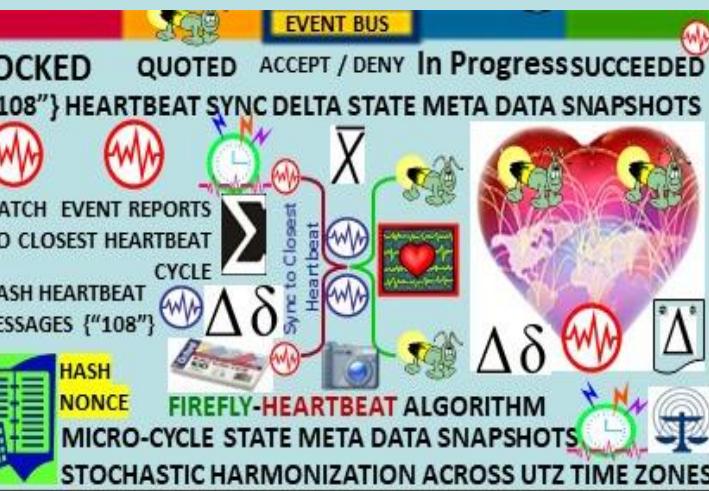
The larger the hard drive, the > possible solution values one can store on the hard drive, the more chances a miner has to match required hash value from his list, resulting in more chances to win the mining reward.



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

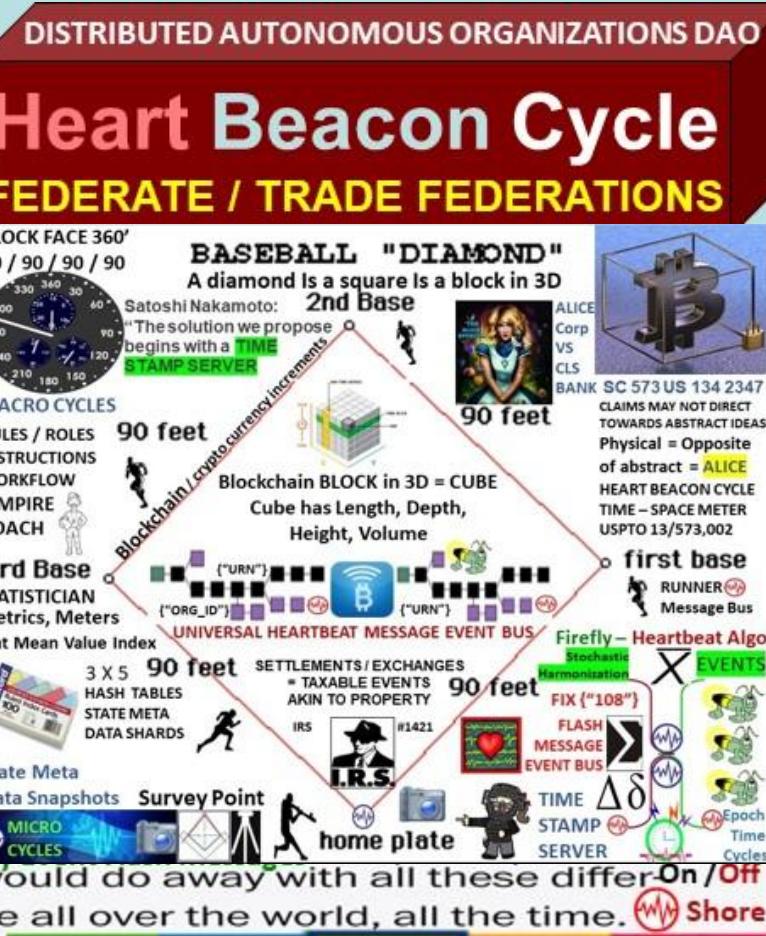


# PoST Proof-of-Spacetime (PoST)

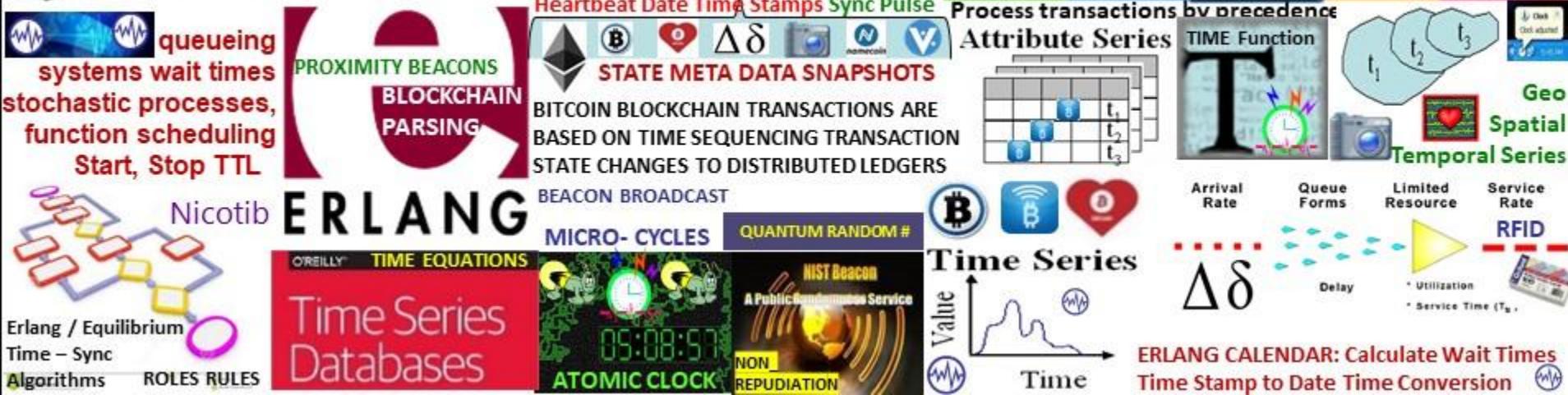
PoST shows that physically storing data (spent "spacetime" resource/allocated storage capacity to the network) over a certain period of time.



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



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



# Proof of Authority



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

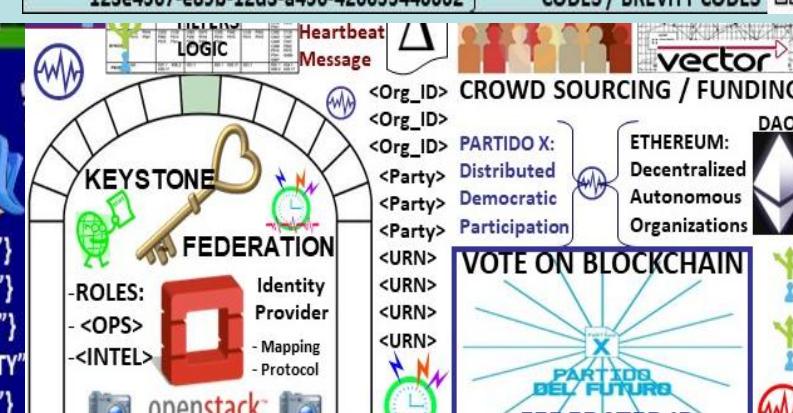
Not pay to play, Node identity is kept as stake

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



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

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



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

Federation Gateway



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

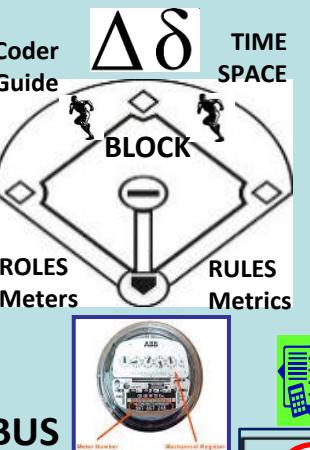
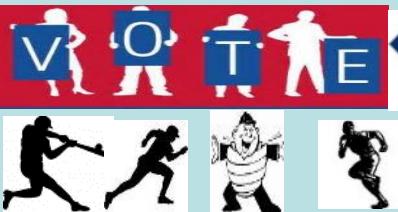
Net joins, drops, splits, merges, moves

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

# 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

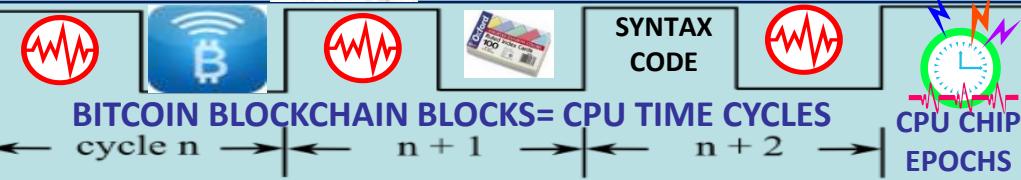
XBRIL / CDL / DAML  
STOCK MIC CODES

STRUCTURED  
MILITARY MESSAGE  
TEMPLATE FORMS  
LOGIC / FILTERS



SYNTAX  
LEXICON LIBRARY

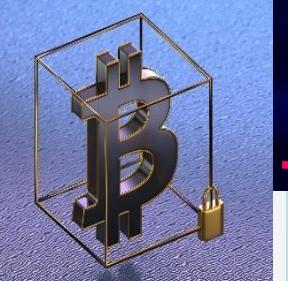
CPU CHIP  
EPOCHS



long exponential  
intervals (10 min)

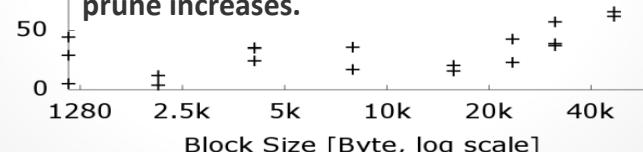


COMMAND SYNTAX  
RESTFUL State Transfer



Subjective Time to Prune

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



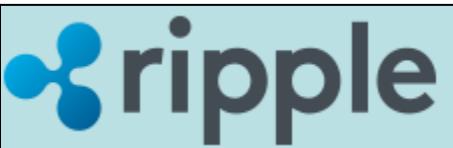
short deterministic  
intervals (10 sec)

MACRO – CYCLES



ATOMIC CLOCK

MICRO-CYCLES



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

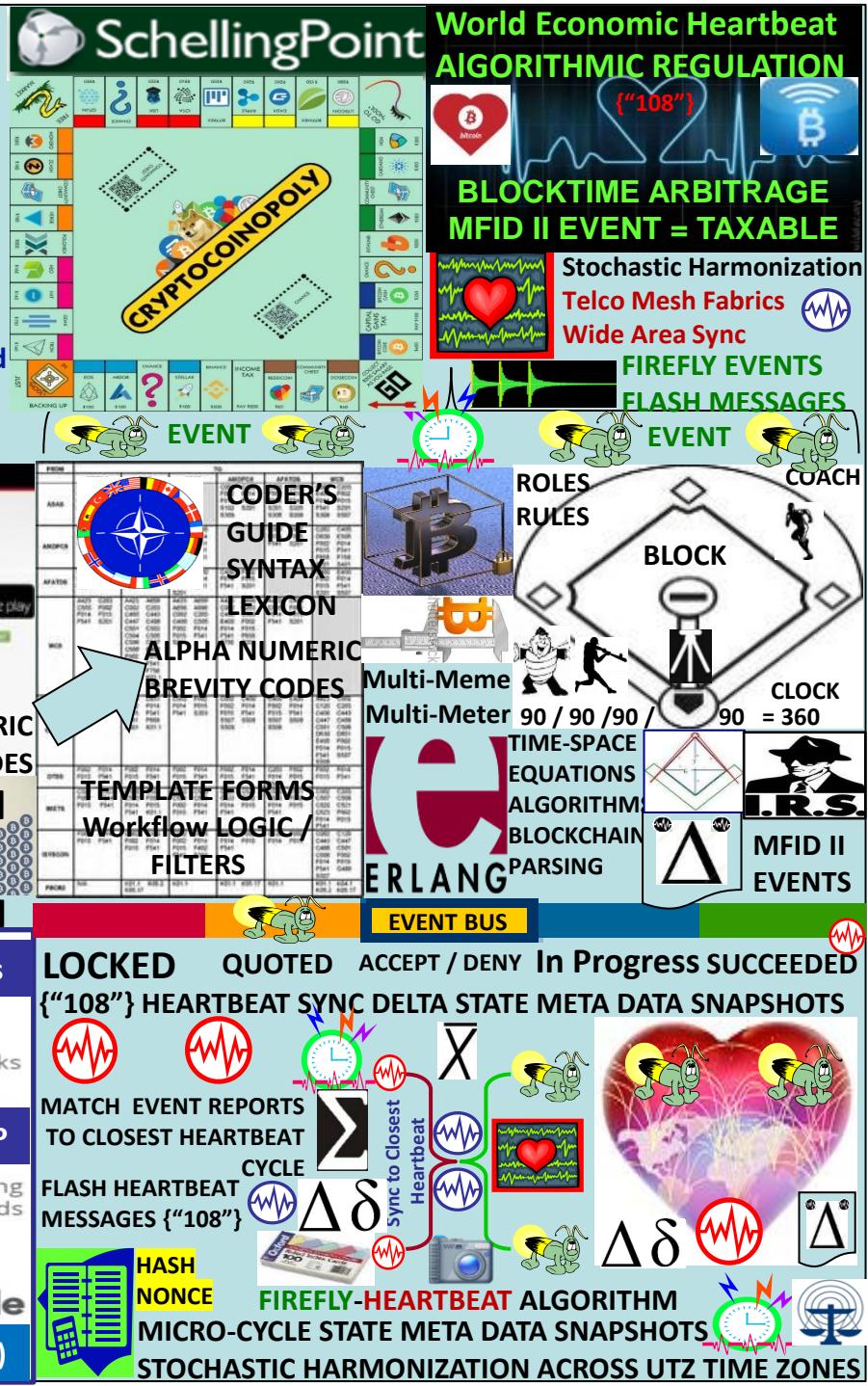
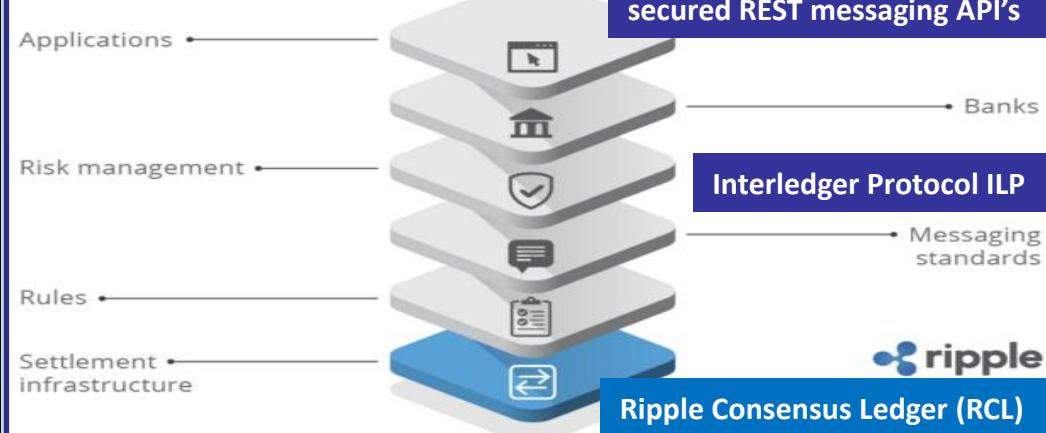
A.K.A Ripple Transaction Protocol or Ripple protocol, built on a distributed open source Internet protocol, consensus ledger and native currency called XRP. Ripple enables "secure, instant and nearly free global financial transactions of any size with no chargebacks." Ripple supports tokens representing 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**



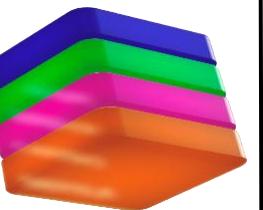


## PROTON A CHAIN Virtual Machine

## 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)



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

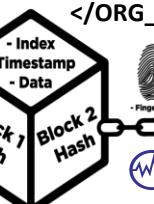
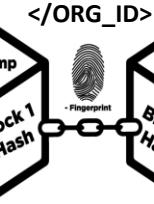
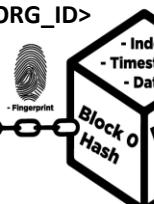
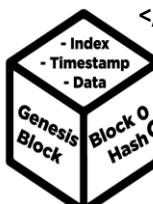


BLOCKCHAIN EPOCH CLOCK TIME CYCLES

← cycle n → ← n + 1 → ← n + 2 → Δδ

GENESIS BLOCK:

Block 0



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"



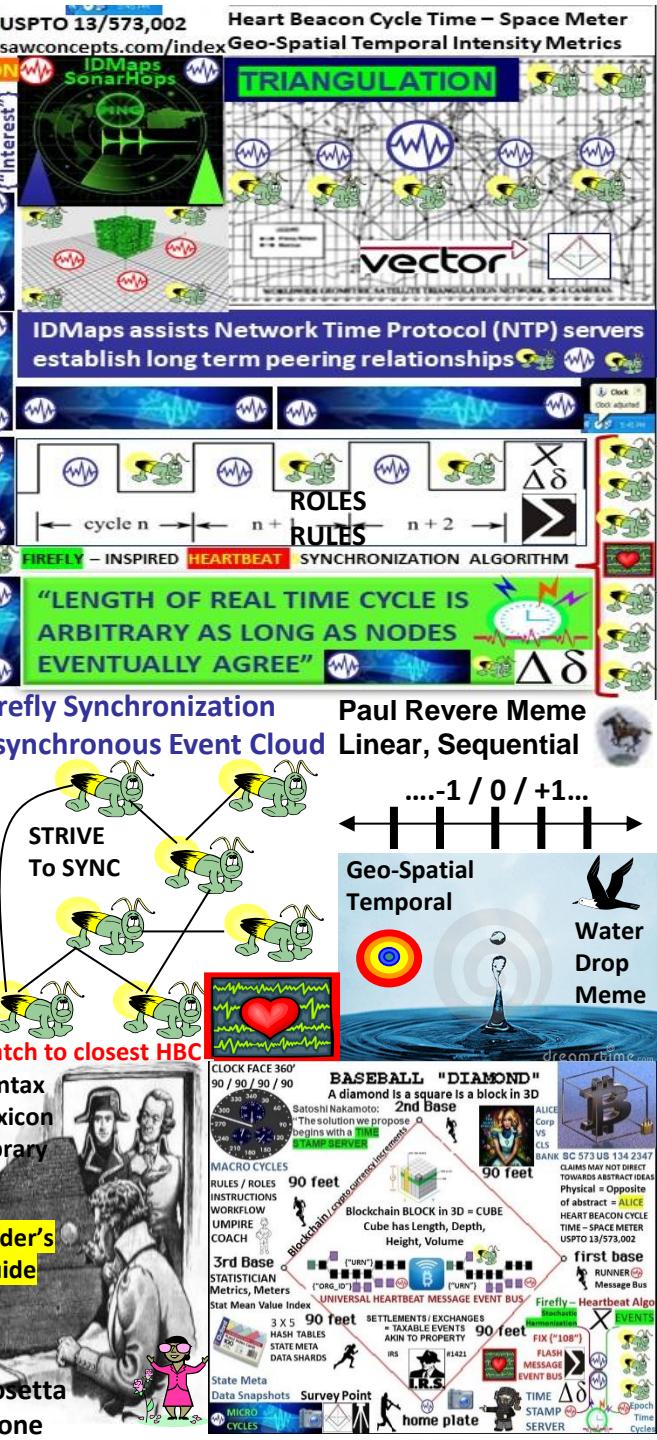
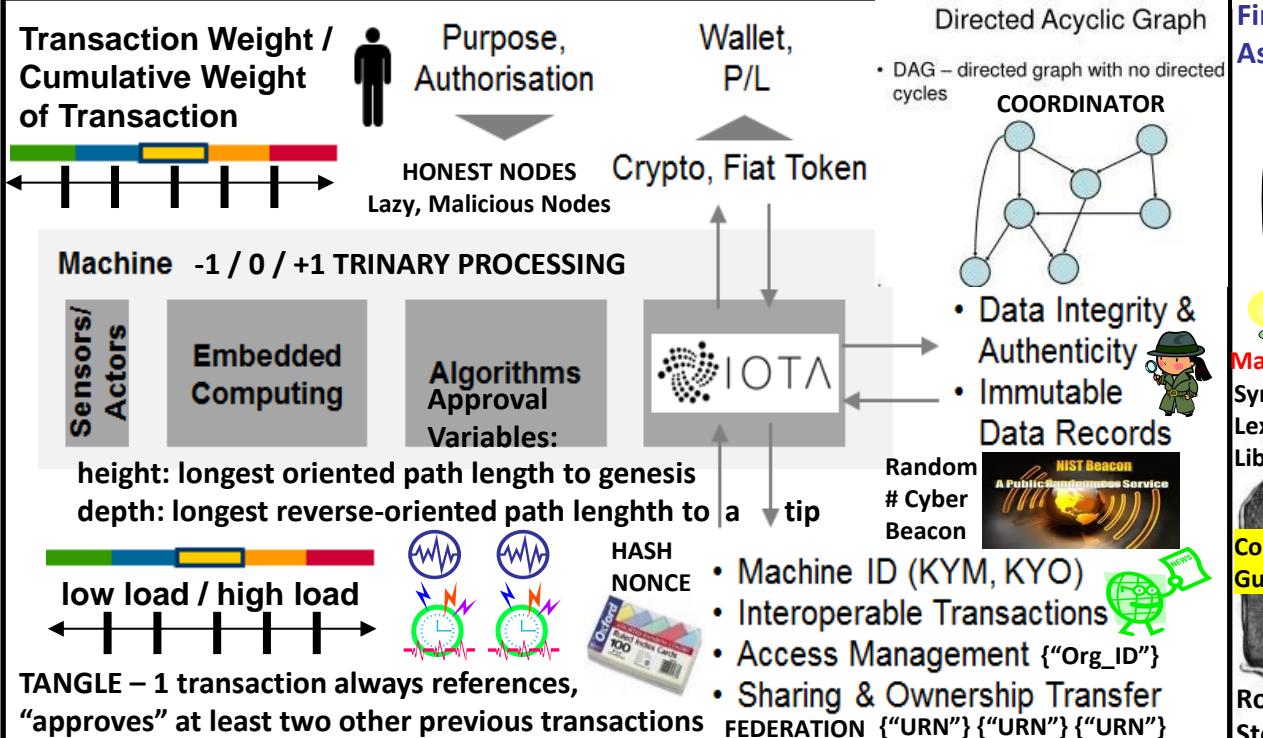


OTA: Internet Of Things IOT distributed ledger  
with microtransactions without fees

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

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

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





# ZEPPELIN

ZEPPELIN OPEN, GLOBAL ECONOMY

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

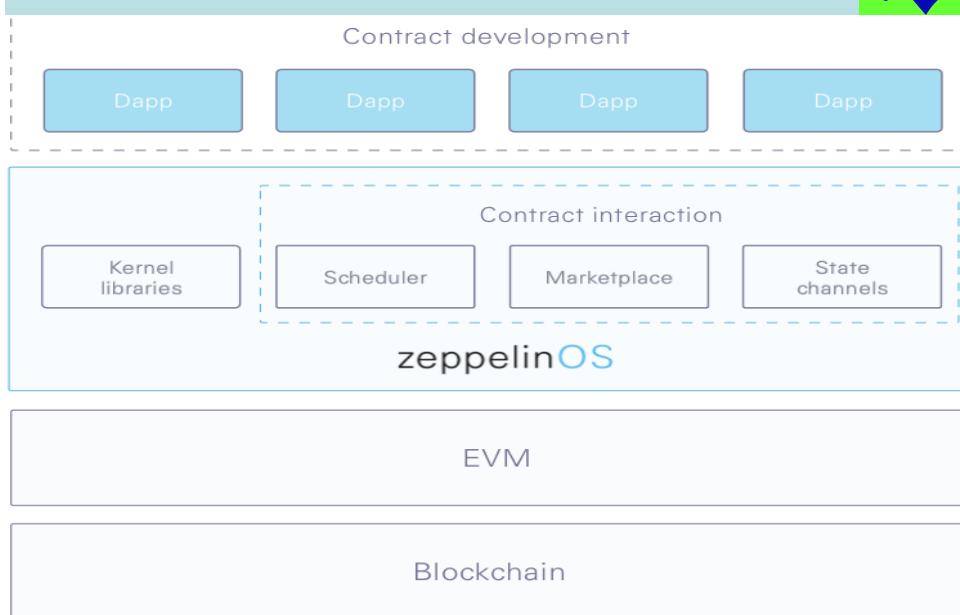
**zeppelinOS**, operating system for smart contracts  
*“the rate of innovation in building decentralized applications is limited by the manual and duplicative efforts developers must make to ensure basic usability and security.”*

## 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, nspired by [OpenZeppelin](#) Libraries

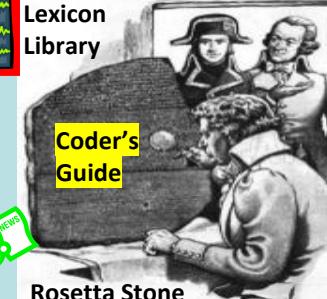
# Create and customize your own ERC20 Token.

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



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

Syntax 300 + Templates



# STRUCTURED DATA EXCHANGE

# **LOGIC / FILTERS**

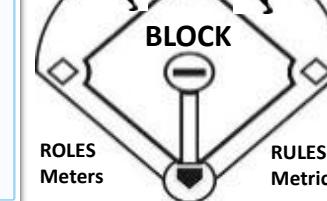
## **ALPHA-NUMERIC**

### **BREVITY CODES**

## STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



**SAVABLE**



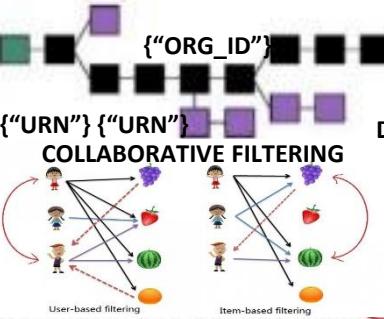


# EGAAS

ELECTRONIC GOVERNMENT AS A SERVICE

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

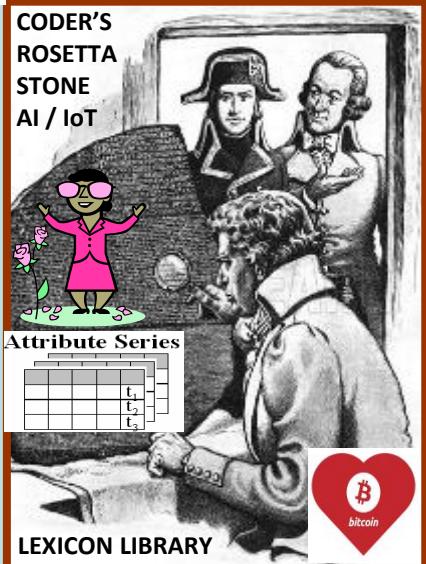
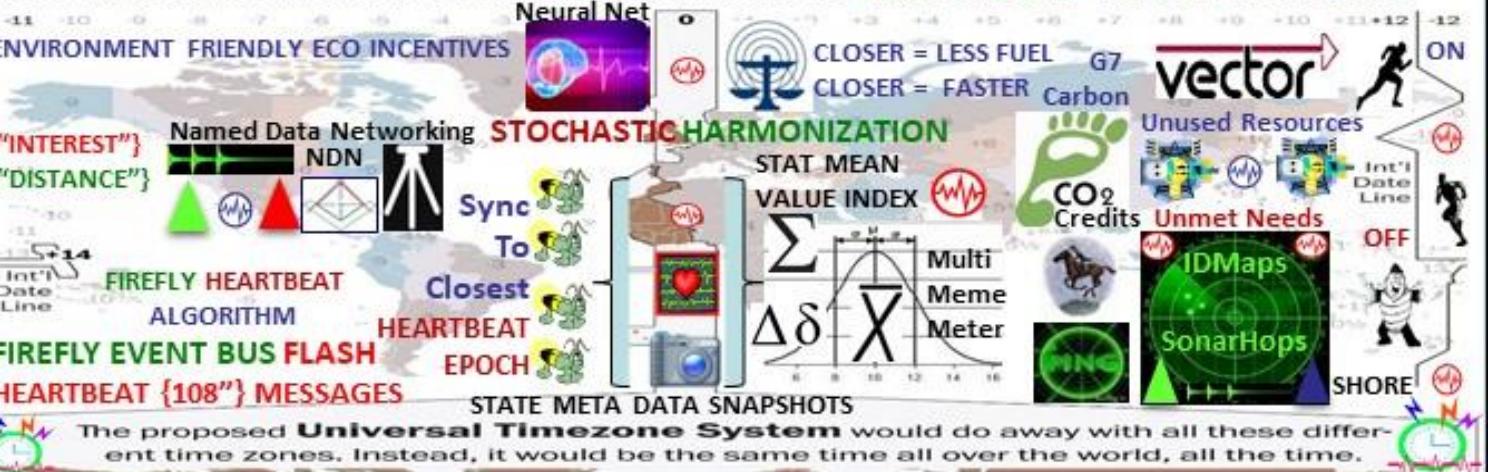
**The Heart Beacon Cycle HBC: an adaptive procedural checklist of form templates, procedures, SOP building blocks useful to form Eco-responsible trade federations Procedural template checklist items links to detailed technical, process... treatises**

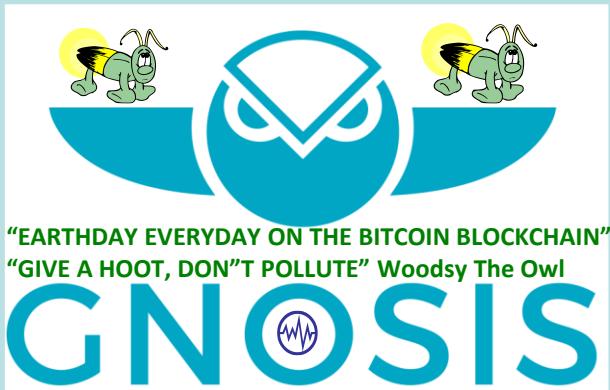


**TEMPLATE ENGINE LANGUAGE** **ETF**  
**NAMED DATA** **BLOCKCHAIN PARSING**  
**NETWORKING** **Databases** **SYNCHRONIZATION**  
**, corrections**



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**





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

# GNOSIS

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.

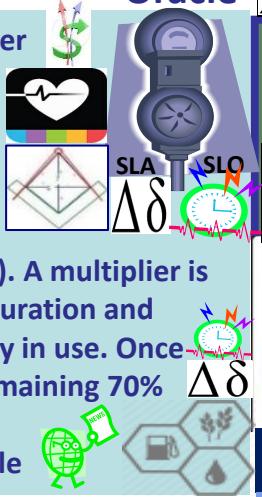


"Our mission is to build an accessible prediction market platform enabling free flow of useful information / the "Google" of Customized Information Searching"

Futarchy PREDICTION MARKETS  
GnosisAMA

Gnosis trading interface alpha  
WIZ token fee payment  
INFORMATION ARBITRAGE ECONOMICS

TERRACYCLE Price Oracle



## THE TERRA (TRC)

Trade Reference Currency

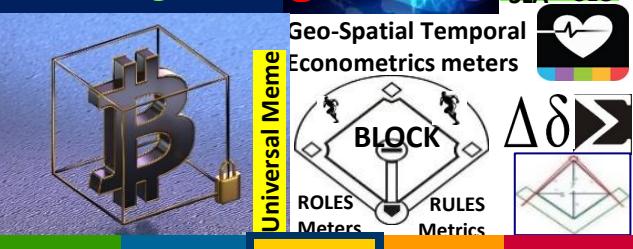


\$0.49 USD  
0.001076 BTC

MICRO PAYMENTS  
Need Bitcoin?



## Demurrage Fees



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

currencyindex  
COMMODITIES  
RECORDERS



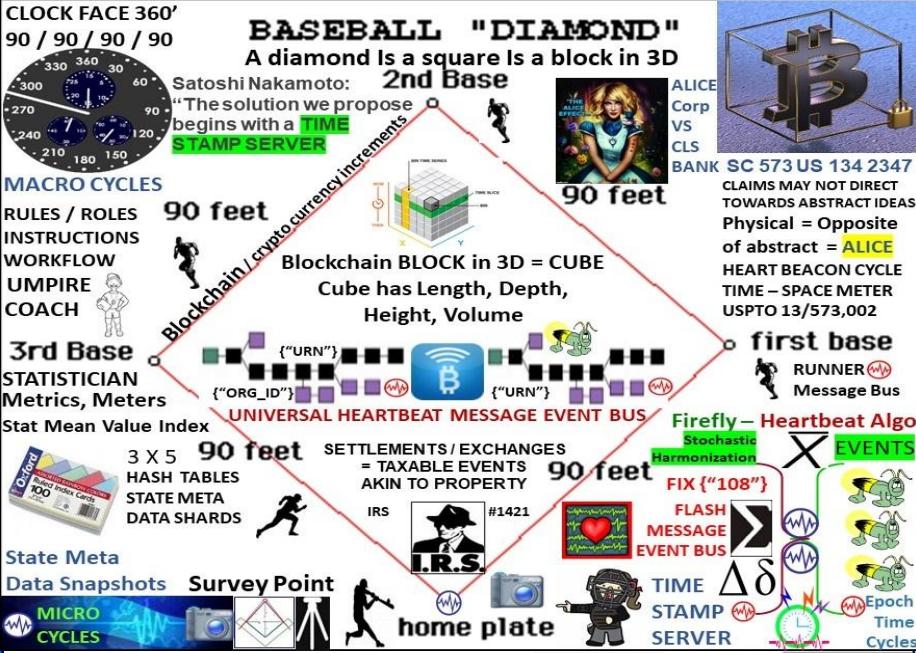
TOKENIZED CURRENCIES



SLA SLO



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.



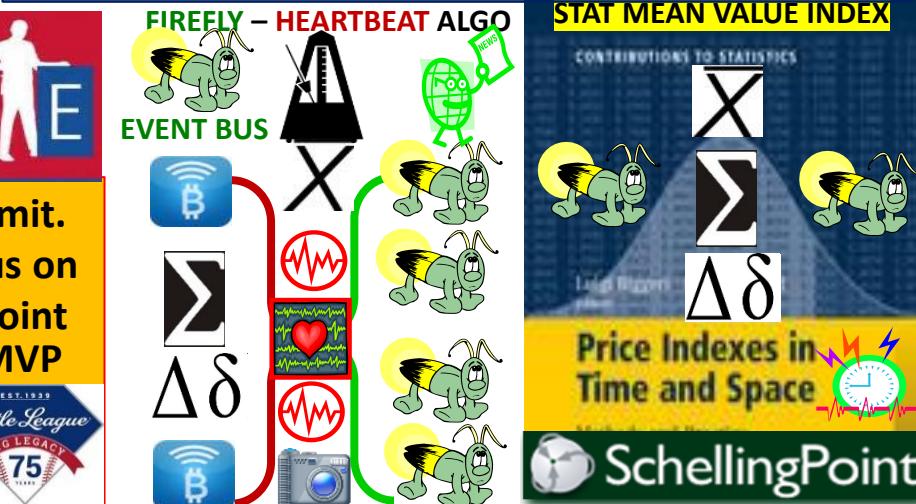
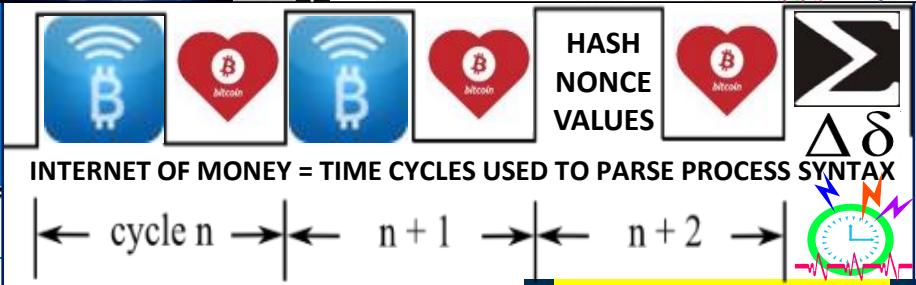
## ALL THINGS INTERNET FORMED W 1) TIME EPOCHS 2) SYNTAX



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.  $\Delta\delta$



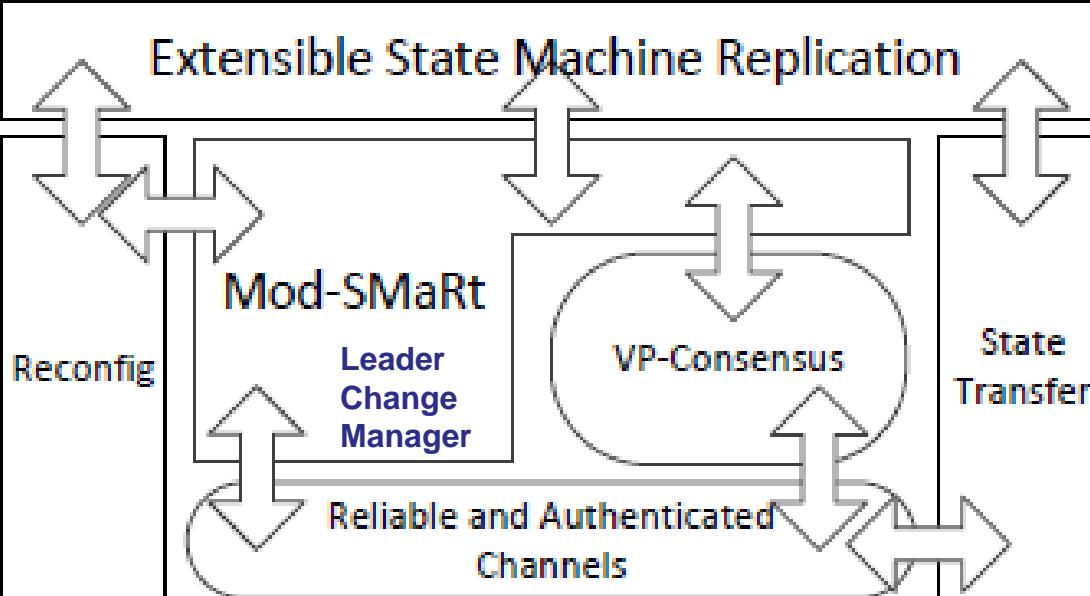
Bitcoin Unlimited: absence of a hard-coded block-size limit. Users manually set limits on their own nodes; Consensus on a limit expected to emerge naturally at Schelling focal point. Unlimited introduces a level of democracy into development, management of the implementation, . the community votes on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





## 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

US Ct ALICE CORP V CLS BANK

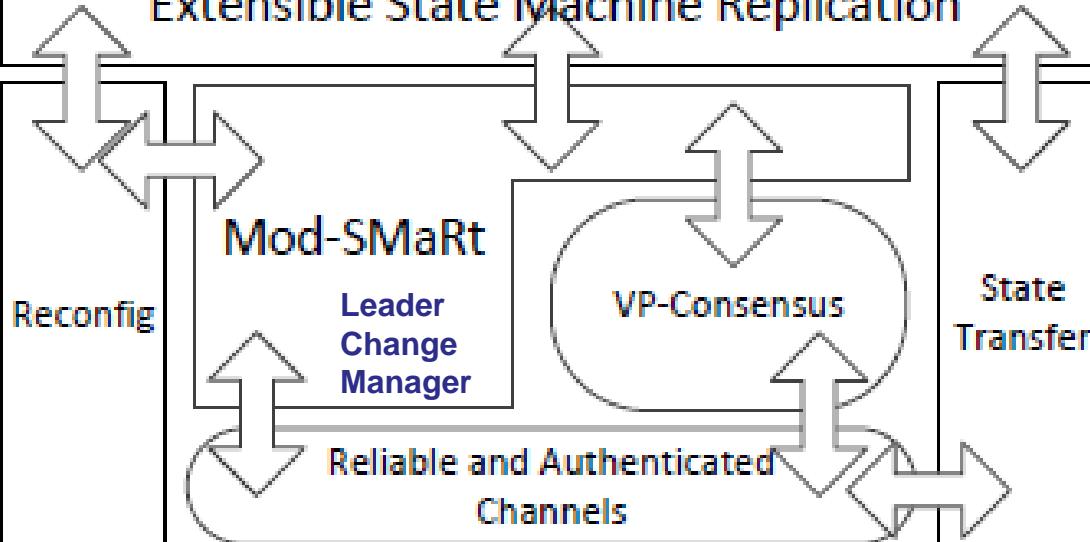
## **PHYSICAL = OPPOSITE OF ABSTRACT**



# 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**

# Extensible State Machine Replication

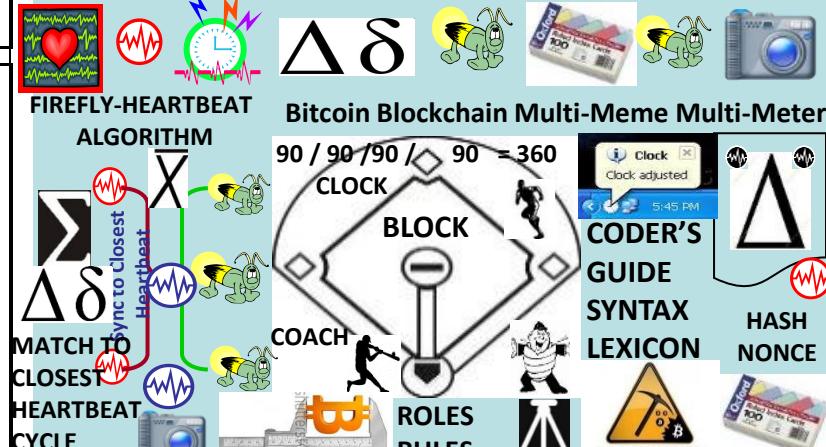


**Modularity** is achieved using a set of building blocks (or modules) containing the core functionality of BFTSMART. Blocks are divided in three groups: communication system, state machine replication and state management.

**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.**

KOO.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOT



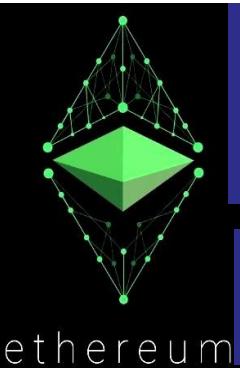
## MICRO-CYCLE STATE META DATA SNAPSHOT AGGREGATED INTO MACRO OPERATION CYCLE RECONFIG MESSAGE

## BUILDING BLOCKS:

- TIME CYCLE EPOCHS
  - SYNTAX INSTRUCTIONS

- LINEAR, SEQUENTIAL
- GEO SPATIAL, TEMPORAL

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 AGRFF ON IT EVENTUALLY”

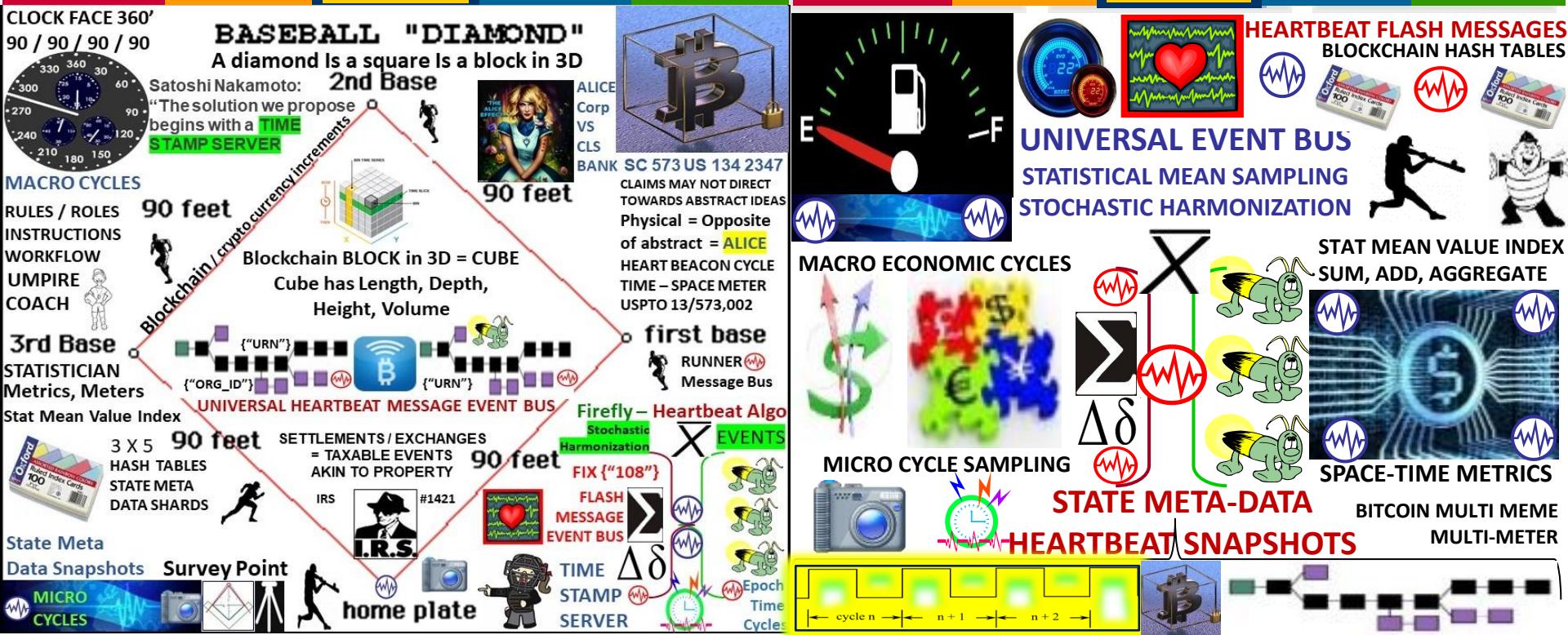


## ETHER: Compensate Resource Contribution

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







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.

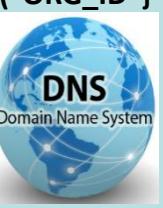
**ACCOUNTS & IDENTITY:** æternity's accounts are permission-less, but allow customization via schema.org's semantic web scheme. Create & own (**federated group**) / individual identities on the æternity network



("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

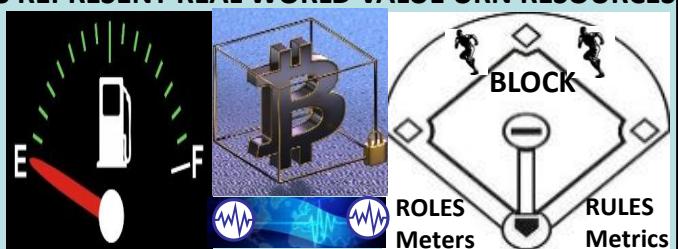
**AETERNITY CROSS-CHAIN ATOMIC SWAPS CORRESPOND TO HEART BEACON CYCLE'S USE OF BATTLEFIELD DIGITIZATION DERIVED HEARTBEAT SYNC DELTAS**



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

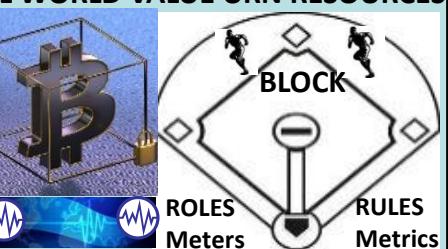
**TOKENS REPRESENT REAL WORLD VALUE URN RESOURCES**

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")

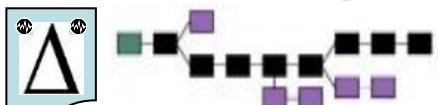


**ARIN**  
American Registry for Internet Numbers

# **HYPER LEDGER OPEN SOURCE BLOCKCHAIN**

## Core APIs, & SDKs

# $\Delta\delta$ Shared Ledger



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

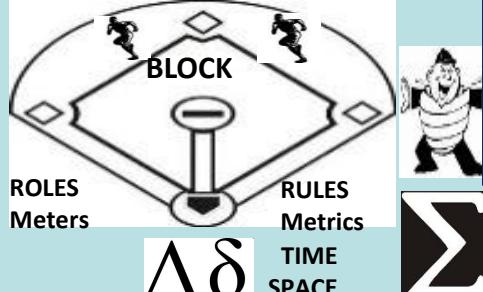


## METRICS (“Organization ID”) METERS

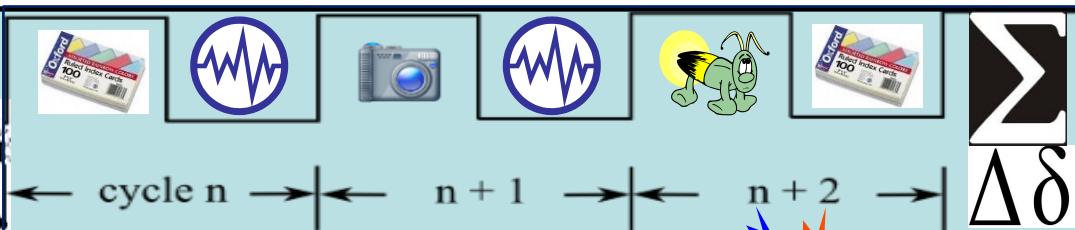
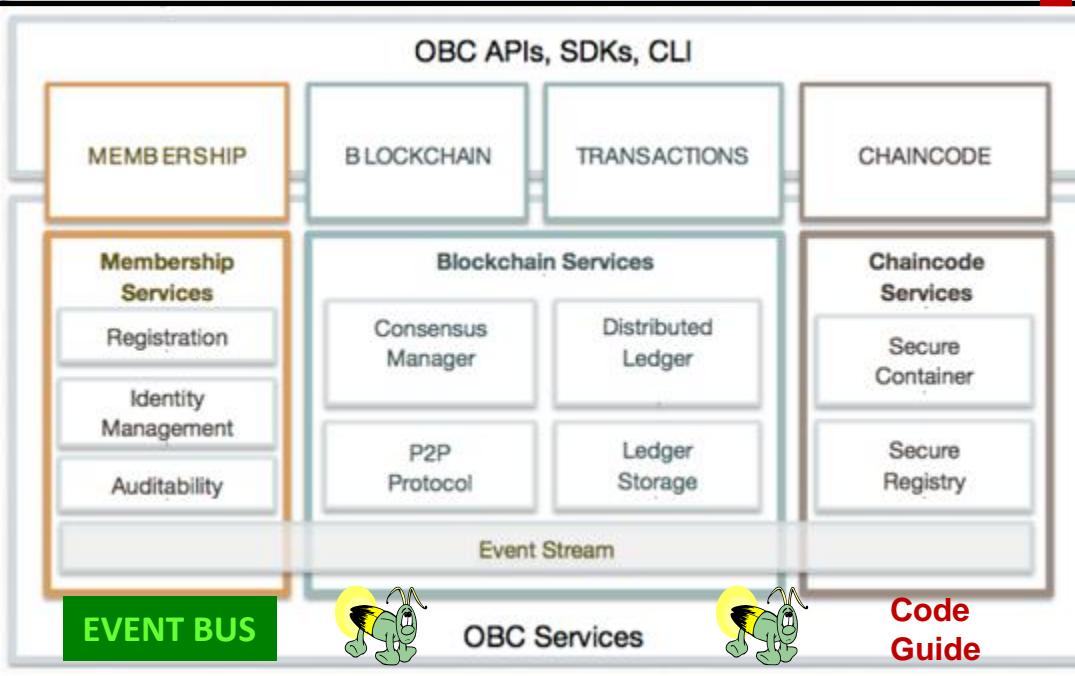
# RESTFUL SYNC DELTA CHANGE MANAGEMENT MICRO-MACRO CYCLE



## BLOCKTIME ARBITRAGE



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

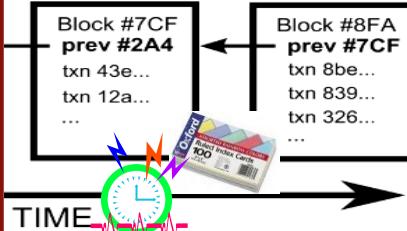


## **MICRO-MACRO CYCLE SCHEDULE**



FFIRNS  
FFUDNS

# Alpha-Numerics



# ROSETTA STONE

**XBRL / 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-NUMERIC**



**"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”**

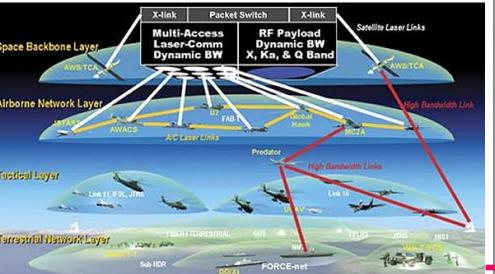
[LINK](http://bitcoinist.net/how-dash-dao-work/) <http://bitcoinist.net/how-dash-dao-work/>

**"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** receive payments for their service to the network

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



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

**STATE CHANNELS:** blockchain interactions

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



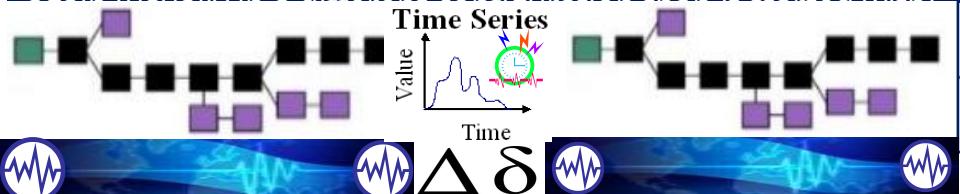
1. Part of the blockchain state is locked via multisignature or smart contract convention, so that a specific set of participants must completely agree with each other to update it.



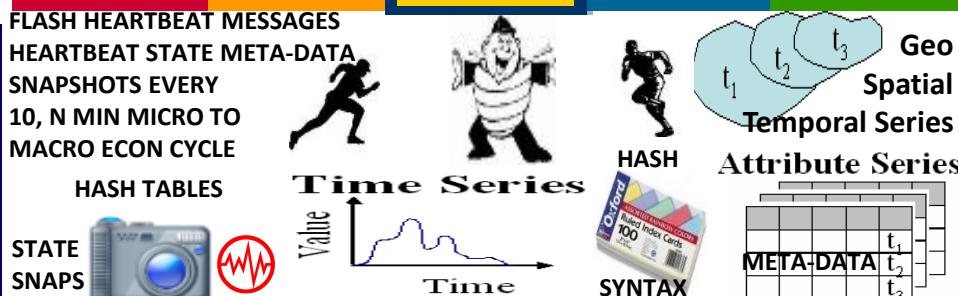
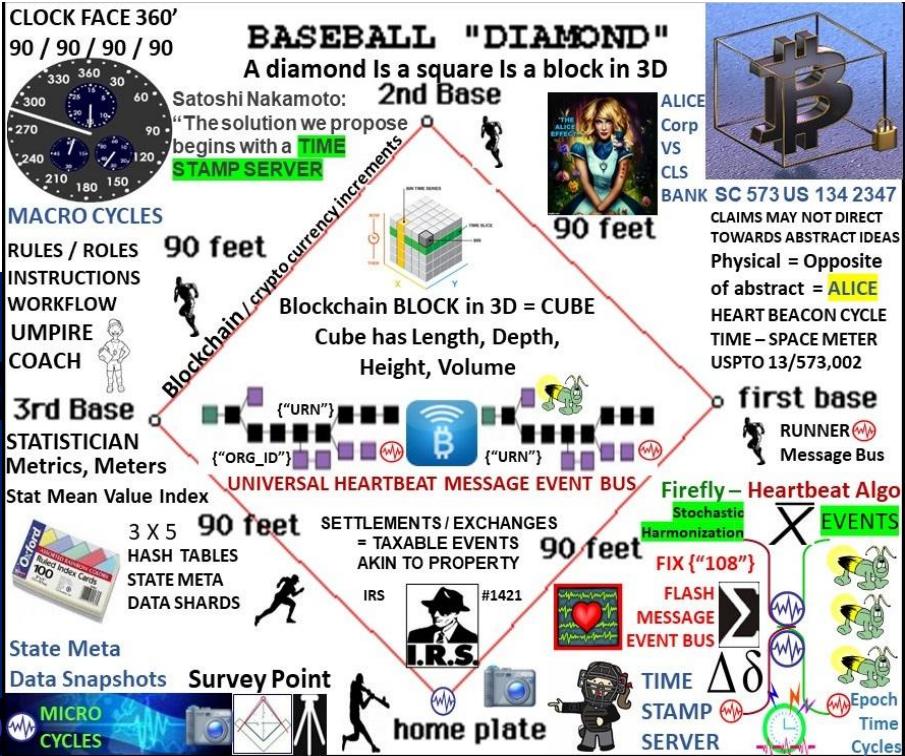
2. Participants update the state amongst themselves by constructing and signing transactions that could be submitted to the blockchain, but instead are made available for a new update "trumps" previous update.



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



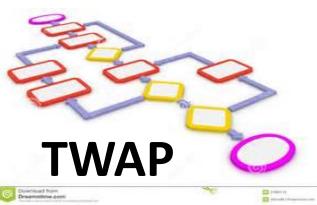
**NEW UPDATES OVERWRITE THE PREVIOUS:** simplest way is to have any unlocking attempt start a timer, during which any *newer* update can replace the old update (restarting the timer). When the timer completes, the channel is closed and the state adjusted to reflect the last update received. The length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



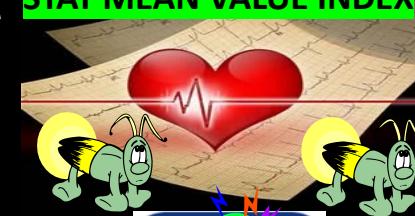
**Firefly - Heartbeat synchronization:** nodes in a distributed system generate periodic, local "heartbeat" events approximately at the same time with a goal of all nodes starting / ending cycles at the same time eventually = HB CYCLE

# TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

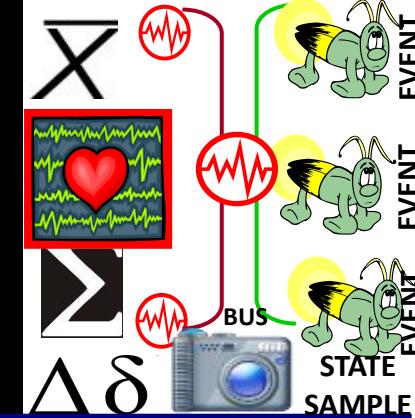
## TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO  
STAT MEAN VALUE INDEX



STATE META  
DATA SNAPSHOTS



**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..



**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

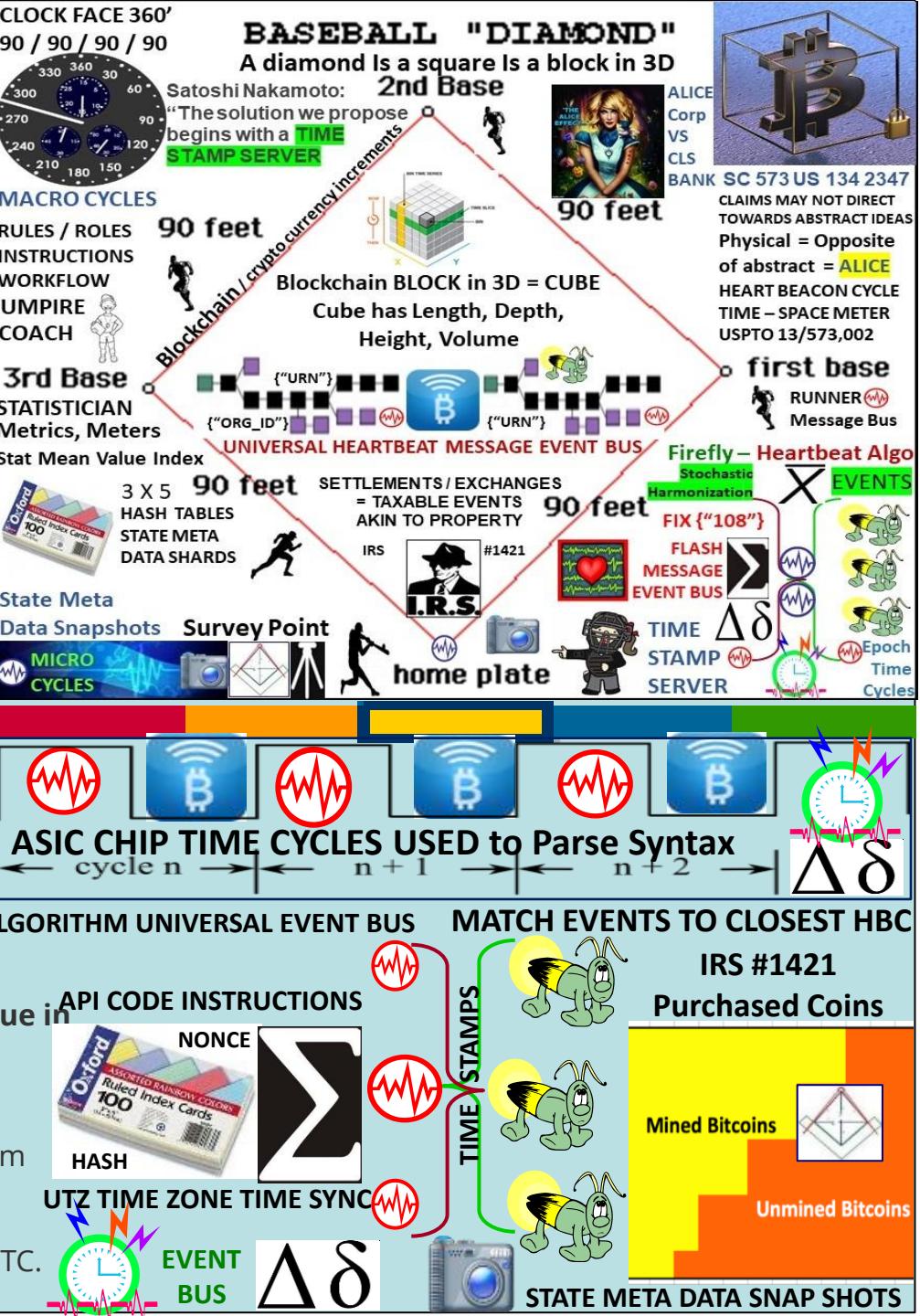
Transaction ID, Block ID, time-stamp, BWAP per block, Value in USD. BTC per transaction, bitcoin transaction fees per transaction.

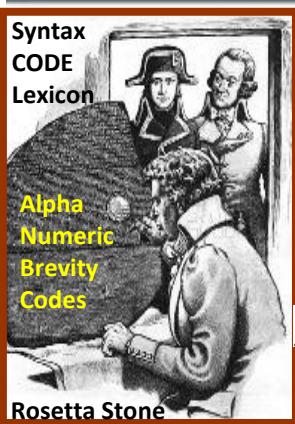
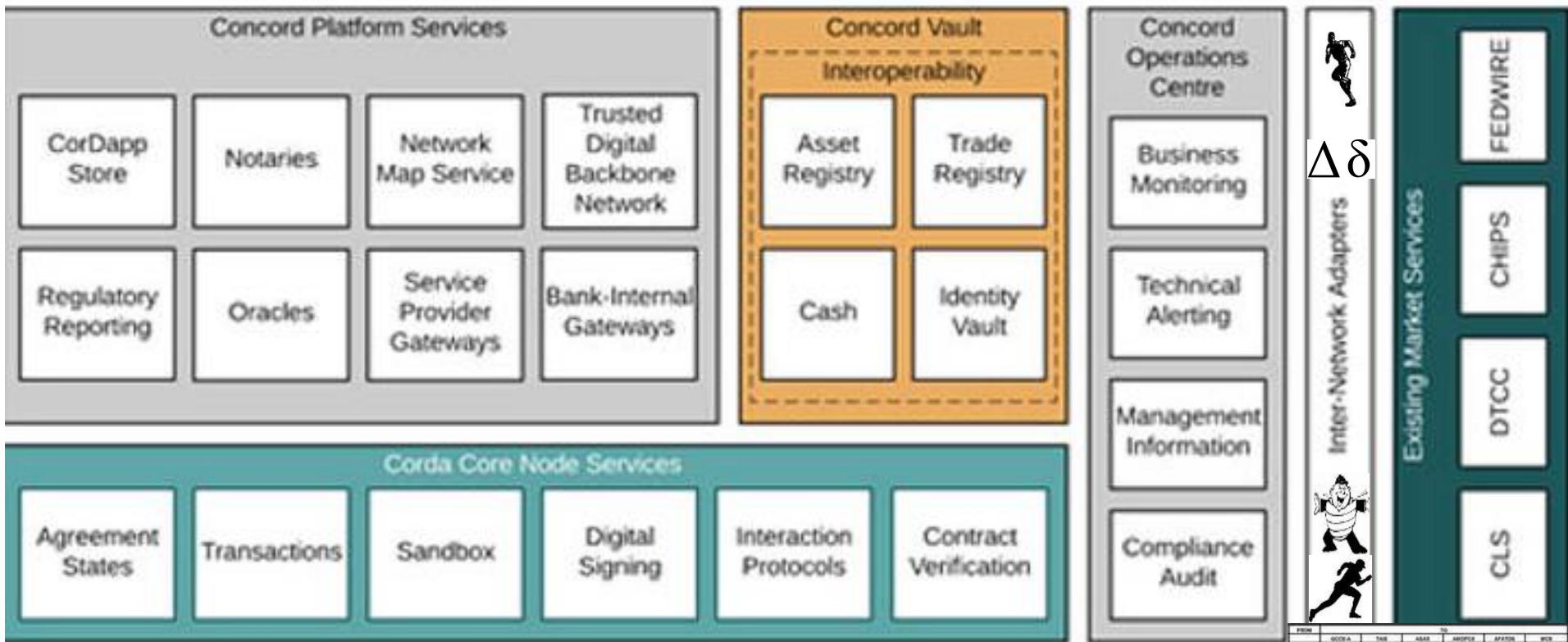
"Blocks are a measure of time":

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



Federation  
Gateway

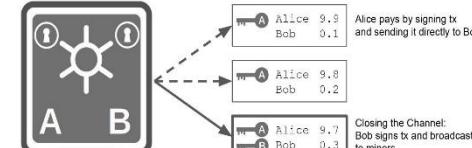




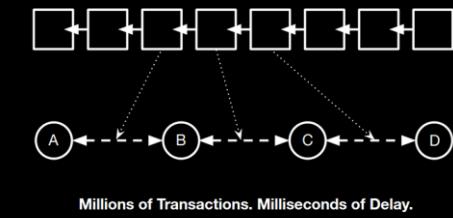
**transactions sent over / off chain  
micropayment channels**

Micropayment Channels

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

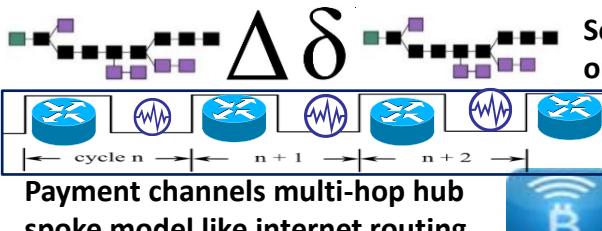


## LIGHTNING



Hashed TIME LOCK contracts component for global consensus

OP\_CHECKLOCKTIMEVERIFY During Macro Cycle w/Random # BEACON



## FIREFLY – HEARTBEAT ALGORITHM



**FIREFLY – HEARTBEAT**

CLOCK FACE 360°  
90 / 90 / 90 / 90



RULES / ROLES

INSTRUCTIONS

WORKFLOW

UMPIRE

COACH

**3rd Base**

STATISTICIAN  
Metrics, Meters

Stat Mean Value Index



State Meta

Data Snapshots

**Survey Point**

MICRO CYCLES

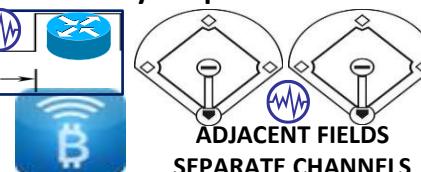


home plate

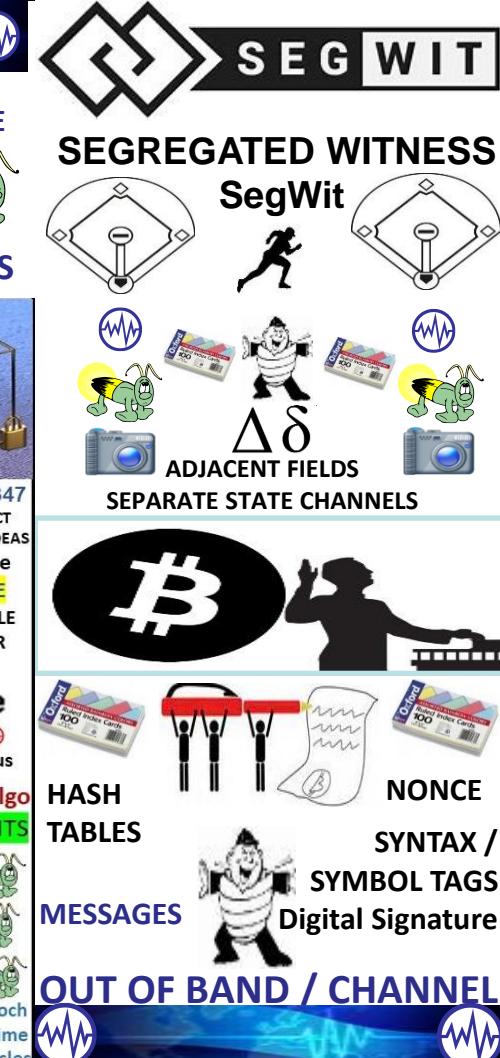


Survey Point

Server nodes, miners only keep recent blocks



**MESSAGE EVENT BUS**

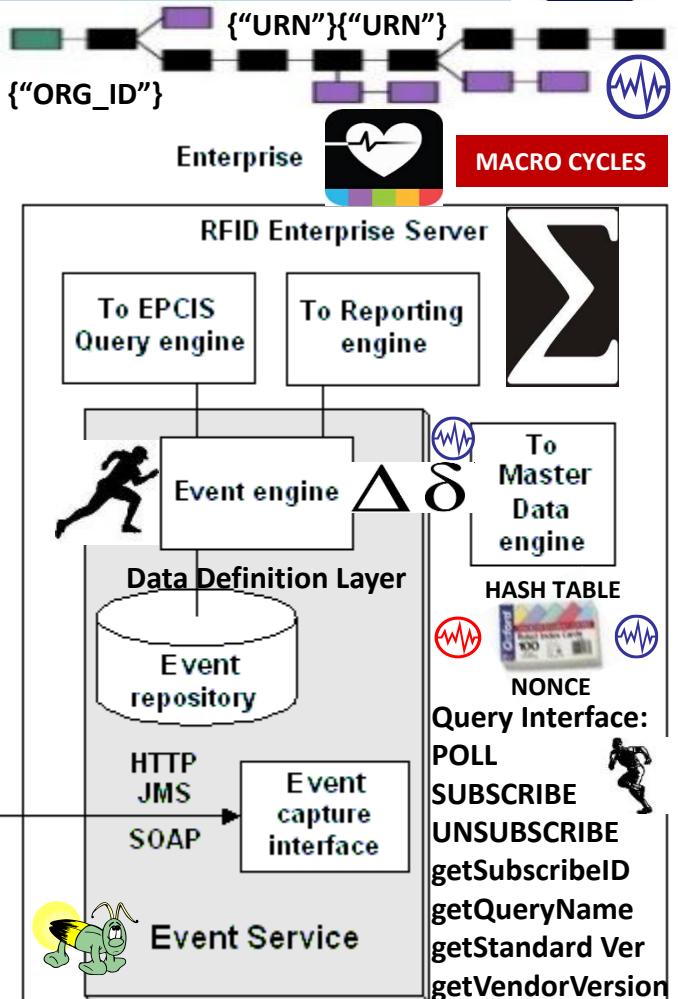


**Segregated witness = Separated signatures**

- 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



## 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**

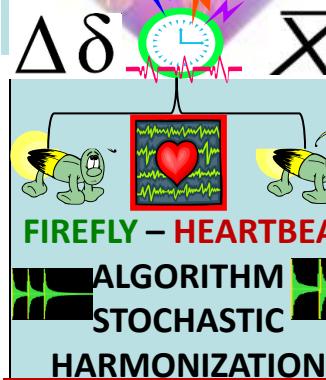
**Why** Information about the business context, including:  
**a Identifier that indicates the business step taking place**



**CLOSER IS CHEAPER**



MICRO CYCLES



## Proximity Wireless Sensor Networks in Combination With RFID .. on reading tag in RF-field the router sends heartbeat message

## RFID Configuration TCP/IP heartbeat message

## **STRUCTURED DATA EXCHANGE / STRUCTURED MILITARY MESSAGES**

| FROM    | TO                                       |  | CASES<br>SYNTAX<br>LEXICON<br>CODE<br>GUIDE |  |  |  |  |  |  |  |  |  | BREVITY CODES                                    |
|---------|------------------------------------------|--|---------------------------------------------|--|--|--|--|--|--|--|--|--|--------------------------------------------------|
| ASAS    | <b>COMBAT<br/>FIELD<br/>DIGITIZATION</b> |  | <b>NETCENTRIC<br/>WARFARE</b>               |  |  |  |  |  |  |  |  |  | NC8                                              |
| AMDPICS | <b>SYSTEM OF SYSTEMS</b>                 |  | <b>BEST PRACTICE</b>                        |  |  |  |  |  |  |  |  |  | C835 C460<br>D530 E500<br>F541 G510<br>F541 S201 |
| AFATDS  | <b>MESSAGE<br/>DATA SETS</b>             |  | <b>“ORG_ID”<br/>“URN”<br/>“UUID”</b>        |  |  |  |  |  |  |  |  |  | C400 F002<br>C401 F014<br>F541 S201              |
| CCSCS   | <b>TEMPLATES / FORMS</b>                 |  | <b>“FILTERS”</b>                            |  |  |  |  |  |  |  |  |  | A423 C203<br>C505 C203<br>F501 C203<br>F541 S201 |
| IMETS   | <b>ROLES / PERMISSIONS</b>               |  | <b>“ROLES” / “FILTERS”</b>                  |  |  |  |  |  |  |  |  |  | D501 F001<br>F002 F014<br>F015 F541              |
| ISYICON | <b>NETOPS SOP</b>                        |  | <b>“ROSETTA STONE”</b>                      |  |  |  |  |  |  |  |  |  | F002 F014<br>F015 F541                           |
| FBCB2   | <b>NIA</b>                               |  | <b>“ROSETTA STONE”</b>                      |  |  |  |  |  |  |  |  |  | K01.1 K05.17<br>K01.1 K05.17<br>K01.1 K05.17     |

# !st Compiler DESIGN Still the **BEST**





TERRA TRC

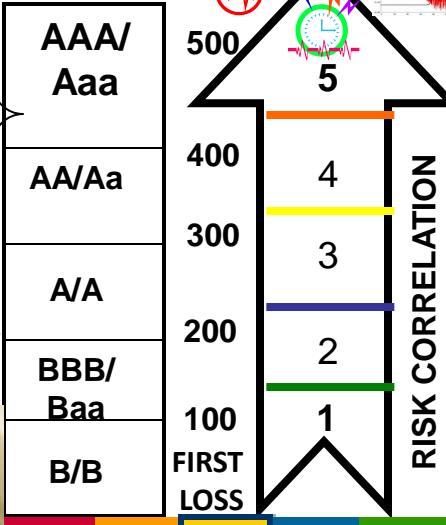


ECONOMIC HEARTBEAT



HB MSG </108>  
FIX PROTOCOL  
INDUSTRY-DRIVEN MESSAGING STANDARD

LAST LOSS



Time Series Database  
CONTRIBUTIONS TO STATISTICS



{“TAGGED BITCOINS”}



HEARTBEAT STATE META DATA SNAPSHOTS



IEEE 802.15.4 OASIS MQTT

TELEMETRY TRANSPORT

IEEE 802.1AG HOP BY HOP

DETECTION

Paul Revere Linear, Sequential

HOP BY HOP CONTROL

IRS Memo #1421

% Block Mined  
% Block owned  
Mined Bitcoins

Unmined Bitcoin:  
 $\Delta\delta$  Land Use Meme

Triangulation

Euclidian Geo

GPS GEO LOC

DATE TIME STAMP

NDN </INTEREST>

NDN {“DISTANCE”}

Demurrage Charges

vector

$\Delta\delta$

Heartbeat Snapshots

BLOCKTIME ARBITRAGE

Blockchain Timestamps

NDN

ON / OFF SHORE

PROXIMITY BEACONS

NDN

WATER DROP IN POND MEME

AREA RADIUS

</FILTERS>

BY ORG ID / URN

NDN </INTEREST>

</DISTANCE>

Closer = Cheaper

Closer = < Fuel

ALGORITHM

ERLANG

MICRO CYCLES

Heartbeat

CYCLES

Heartbeat

## Autonomous Device Coordination Framework



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

FEDERATION  
AGREEMENTS  
PROCEDURAL  
TEMPLATE

## FEDERATION

&lt;UUID&gt; &lt;ORG\_ID&gt; &lt;URN&gt;

## LDAP DIRECTORY

Physical proximity

Social proximity

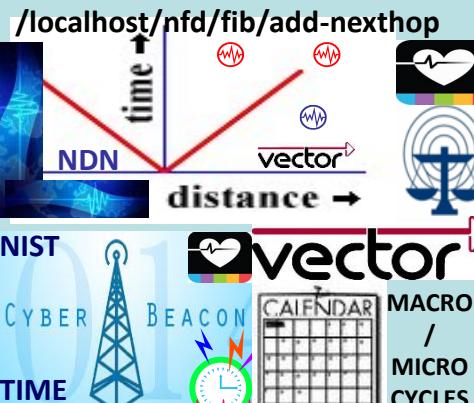
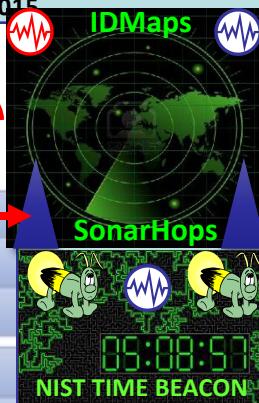
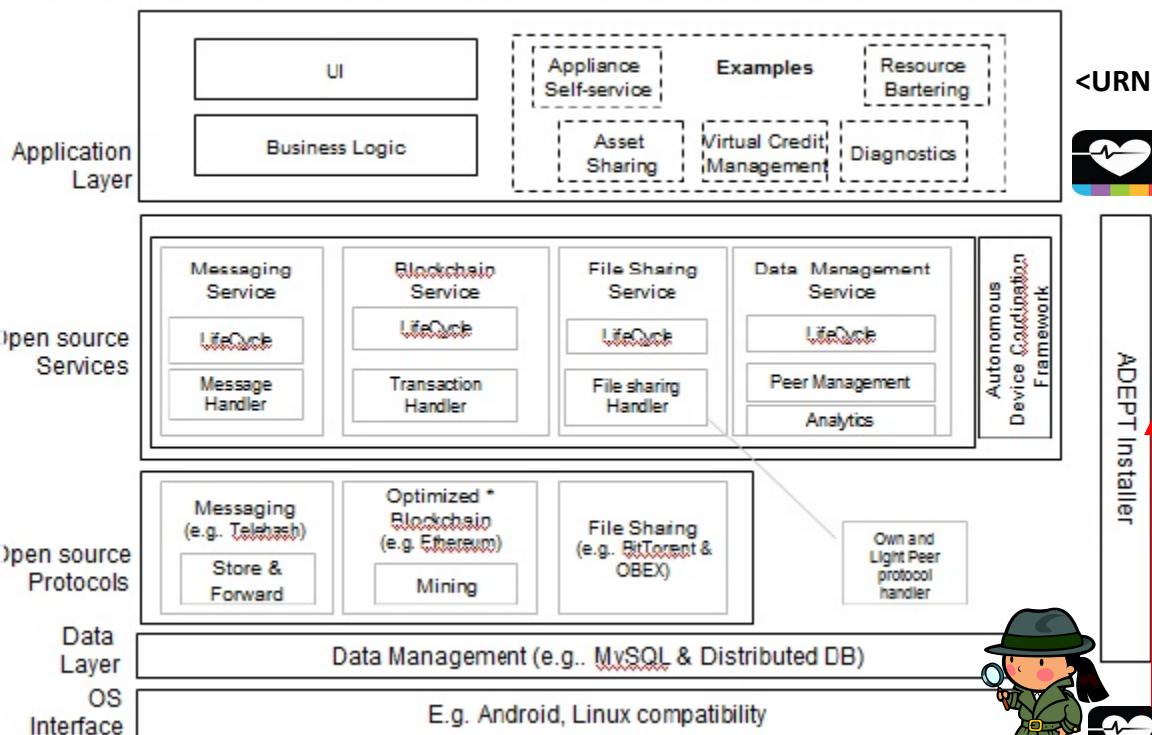
Temporal proximity

Agreements

Payments

Barter

## ADEPT Standard Peer Architecture – Logical View



ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML\_Wf>

FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH



OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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



## Three ideas combined

HOW TRUTHCOIN WORKS:

### 1) Tradable Reputation

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

### 2) SVD Cross-Validation

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



### 3) Strategic Use of TIME

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

## 2. A kind of ‘Future Wikipedia’

|  | Wikipedia | Truthcoin |
|--|-----------|-----------|
|--|-----------|-----------|

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

## 3. A software protocol

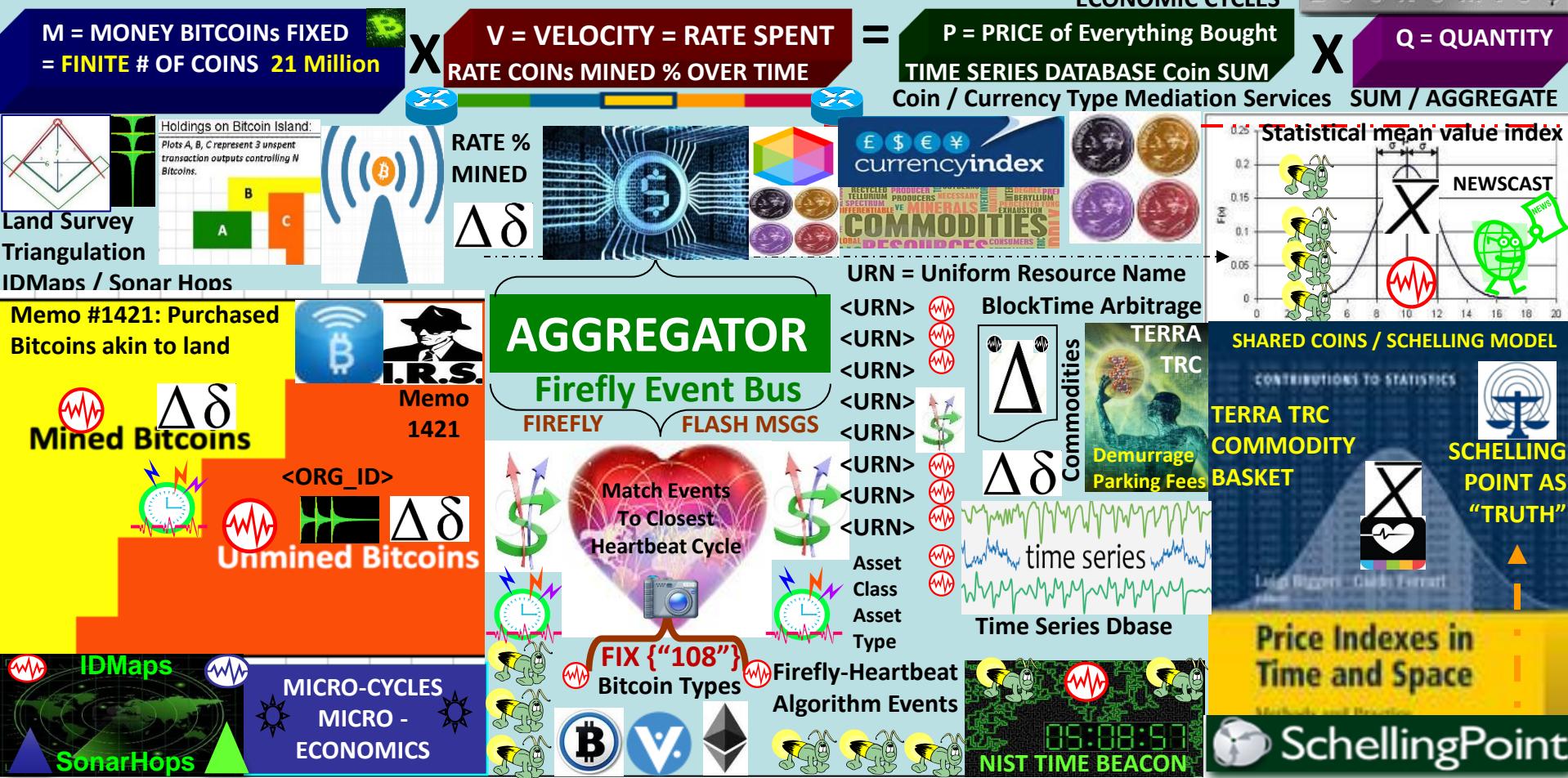
A protocol is a set of rules that determine how something is performed or accomplished



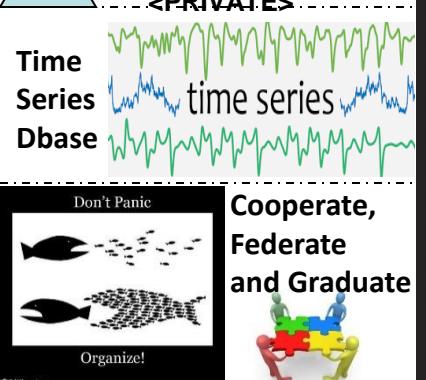
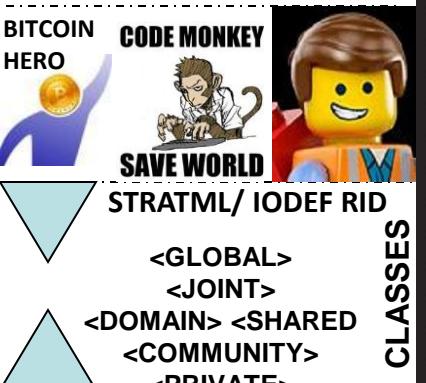
# How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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

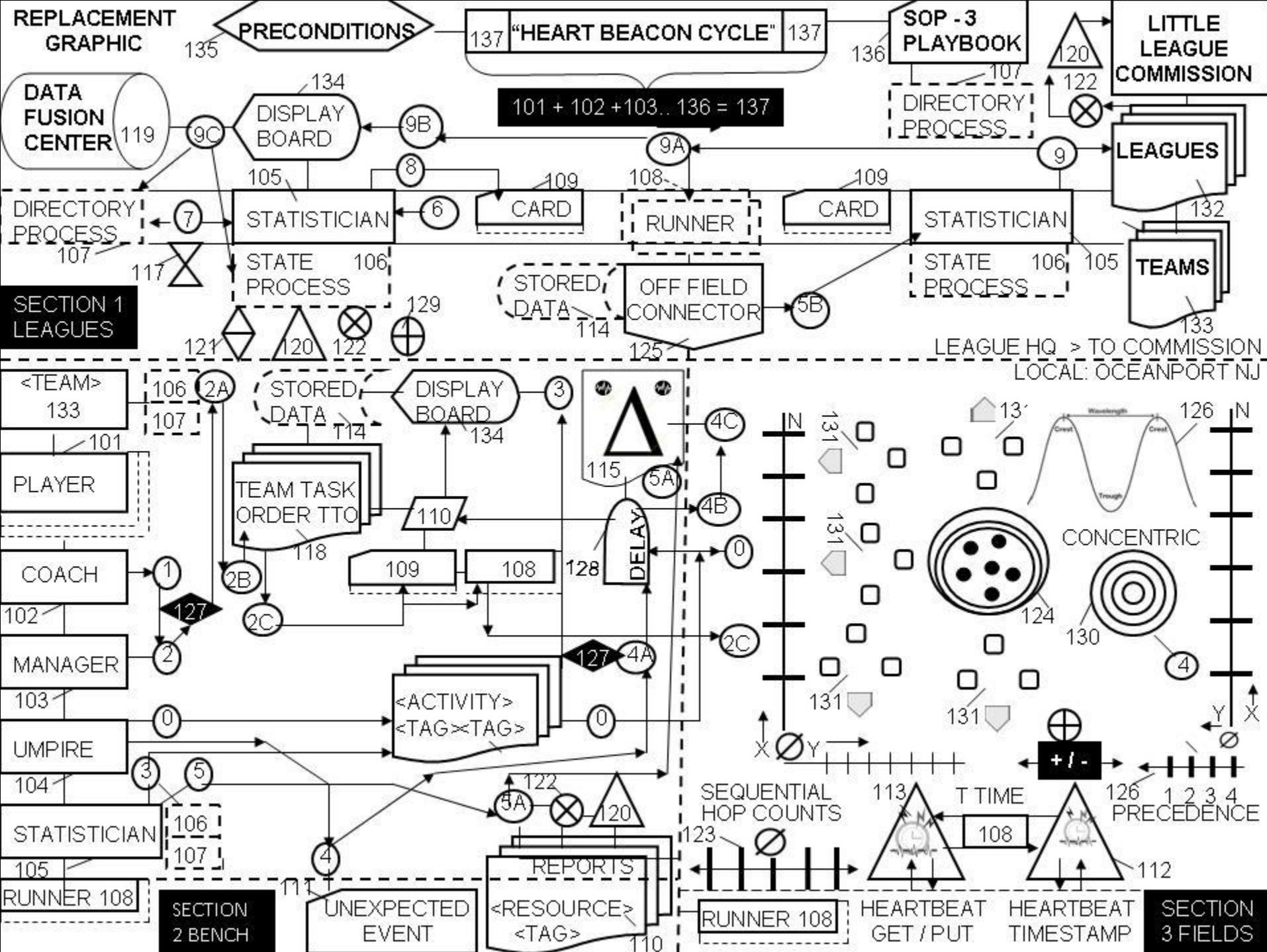
#### CLEAR GOALS AND RULES OF PLAY

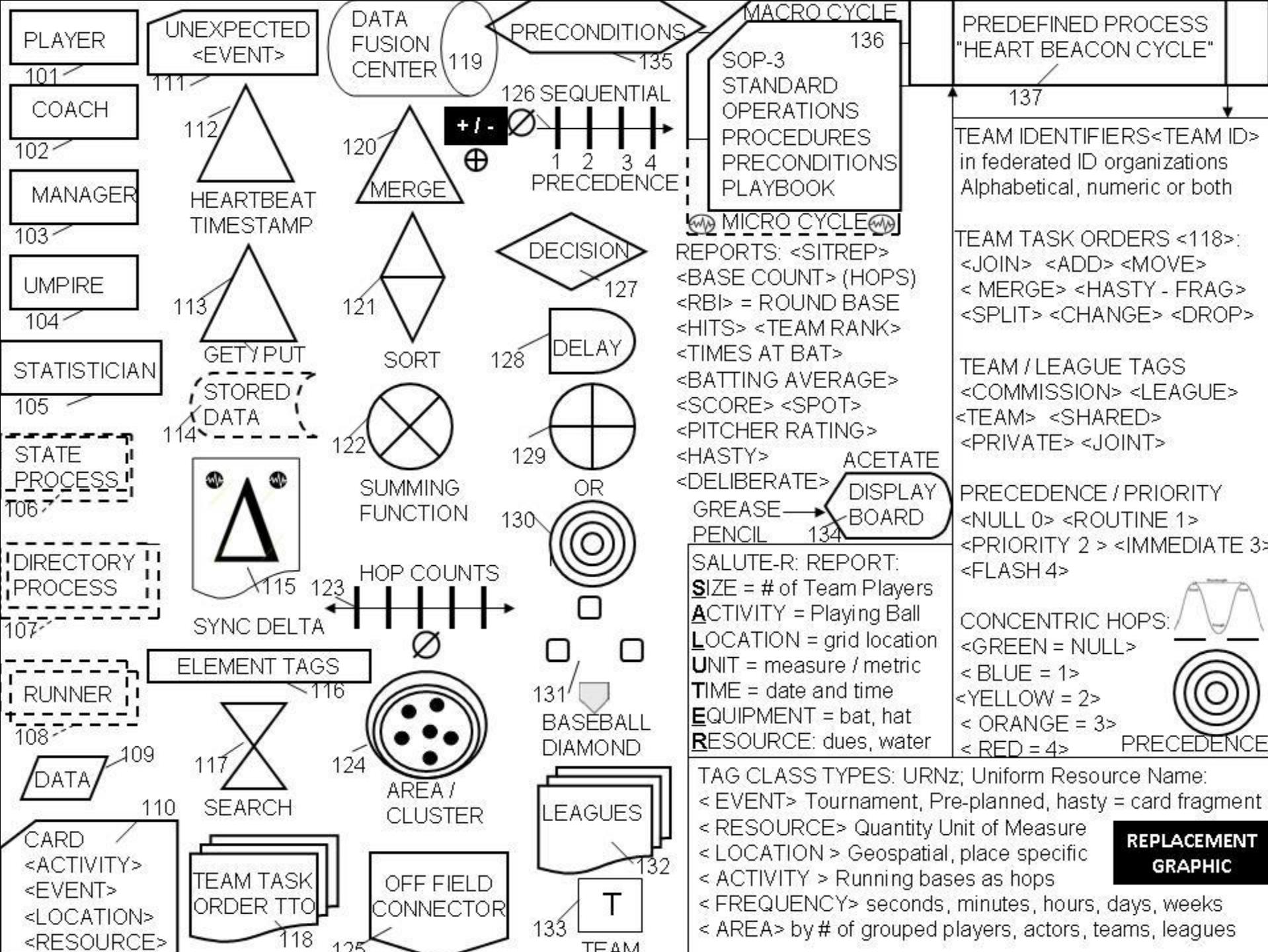
#### A COMPELLING NARRATIVE

#### 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**



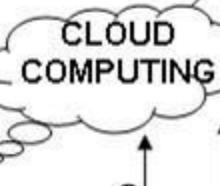
MACRO CYCLES



.0001

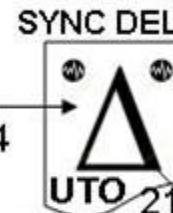
MICRO CYCLES

216



**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**

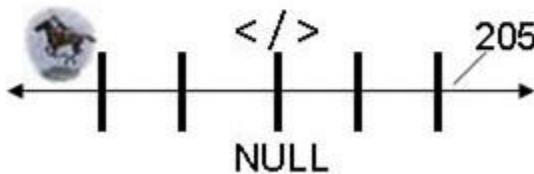


ADHOC / AGILE  
FEDERATED <ID>  
GROUPS SYNC'D  
IN TIME / SPACE

215 LEADER'S  
INTENT  
DECISIONS



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



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

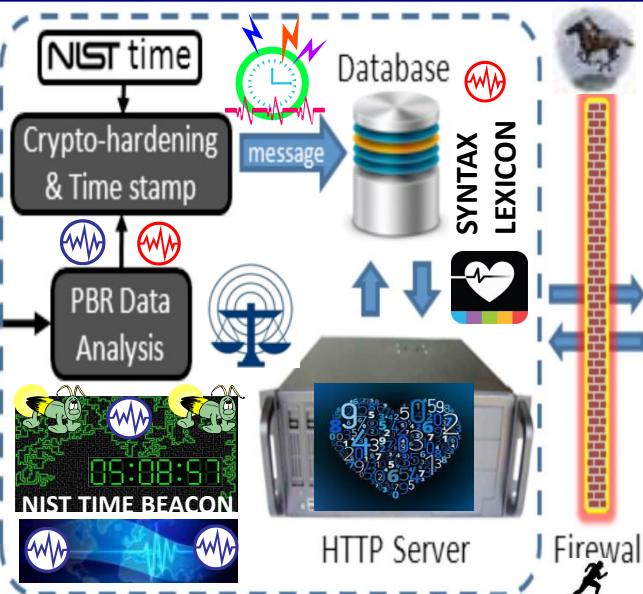
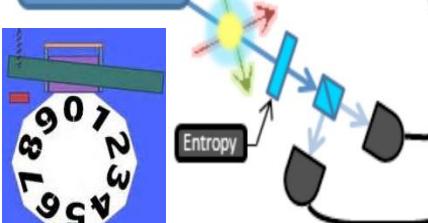
SECURE AUTHENTICATION

SECURE MULTI

PARTY /  
AUTHENTICATION

Entanglement  
Source

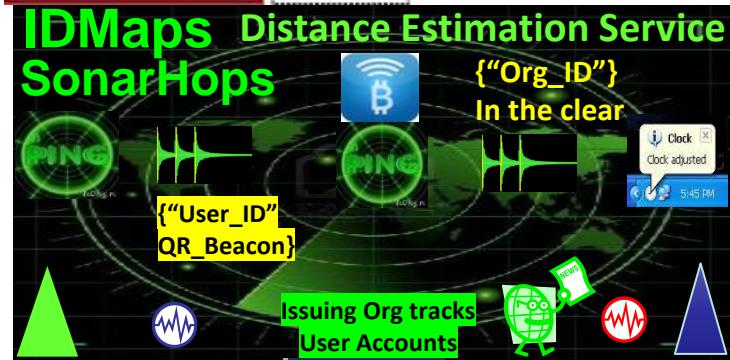
RANDOM  
NUMBER  
GENERATOR



**NIST**

**NON  
REPUDIATION**

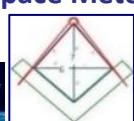
Legend:  
■ App: software application  
■ DB: database  
■ Fw: firewall  
■ HSM: hardware security module  
■ RNG: random-number generator



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors

**NAMED DATA  
NETWORKING**



NDN  
</Interest>  
</Distance>

**SURVEY METHODS**  
+ TRIANGULATION  
Euclidian Geometry

**Geodesic System** Routing Info Base RIB

ACCOUNT BELONGS TO </Org\_ID>

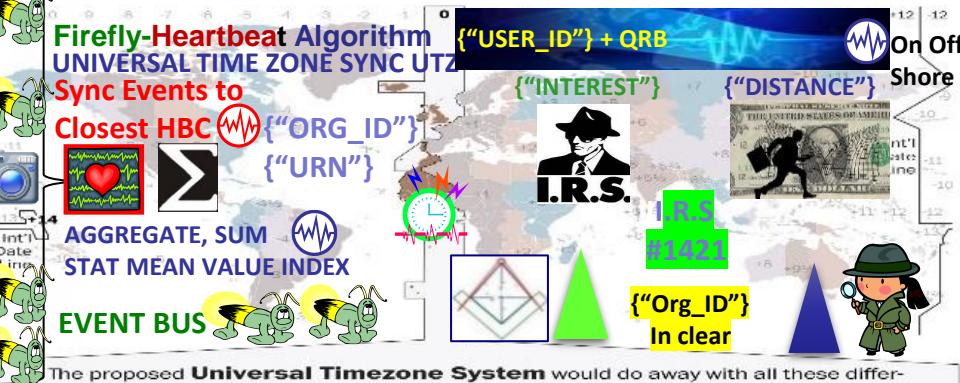
RESOURCE TYPE: <URN><URN><URN>

DEVICE / SENSORS <UUID><UUID>

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

Time / Distance Metrics  
PROXIMITY  
OFFSHORE BEACONS ONSHORE  
NDN  
</interest></distance>

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



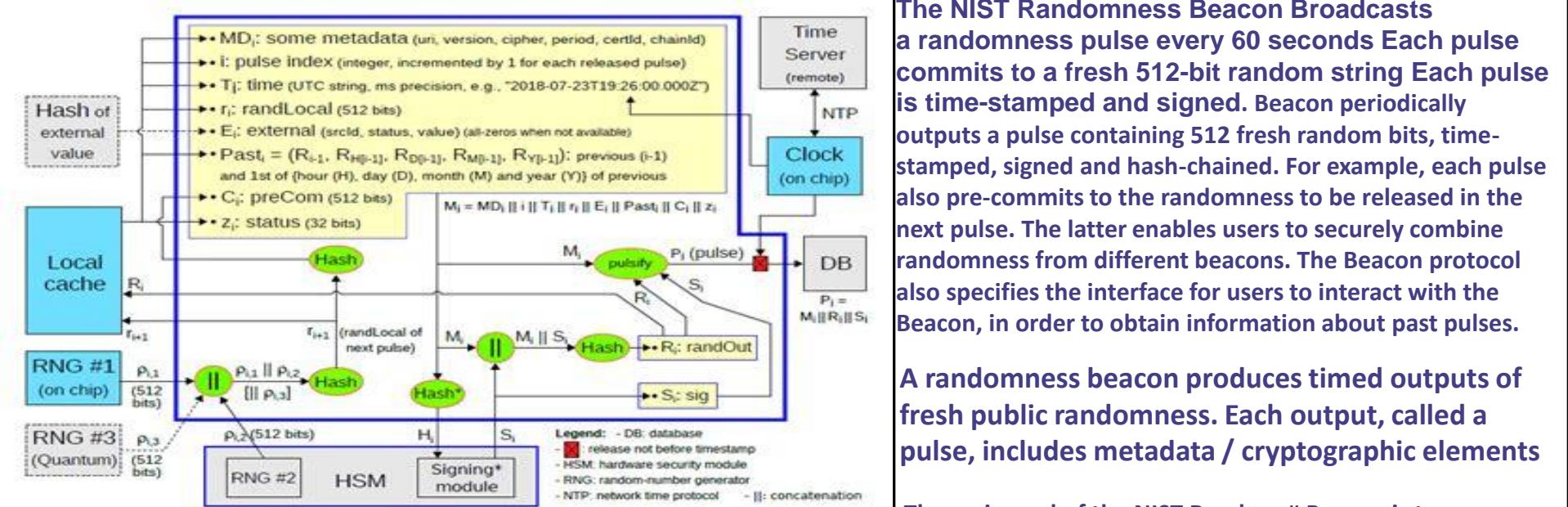
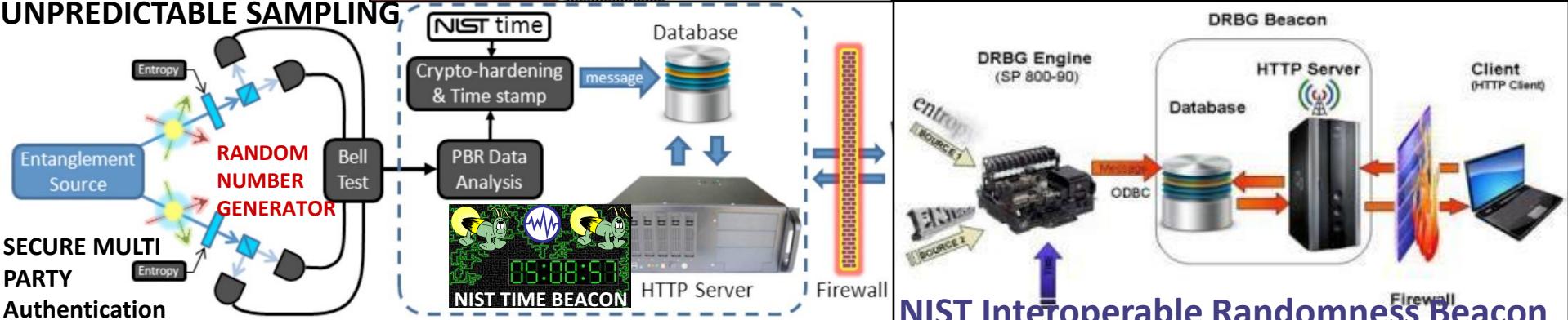
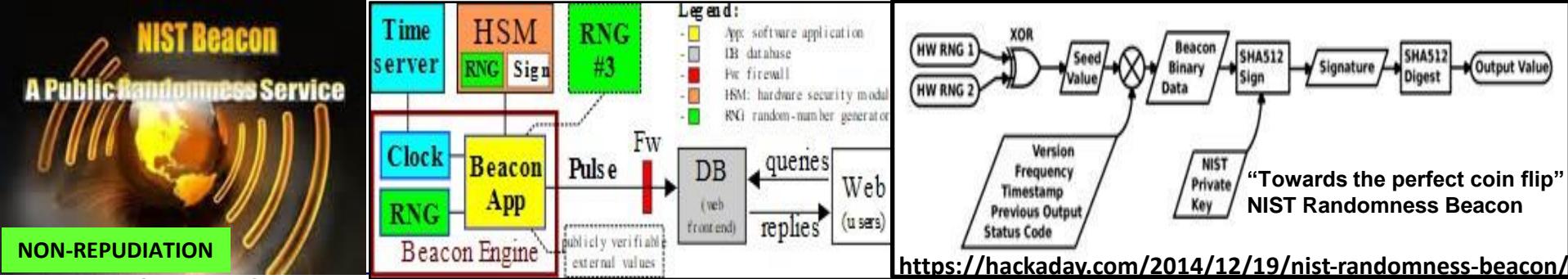


Figure 2. Illustration of the generation of the  $i^{\text{th}}$  pulse by a Beacon App (2.0)

## NIST Interoperable Randomness Beacon

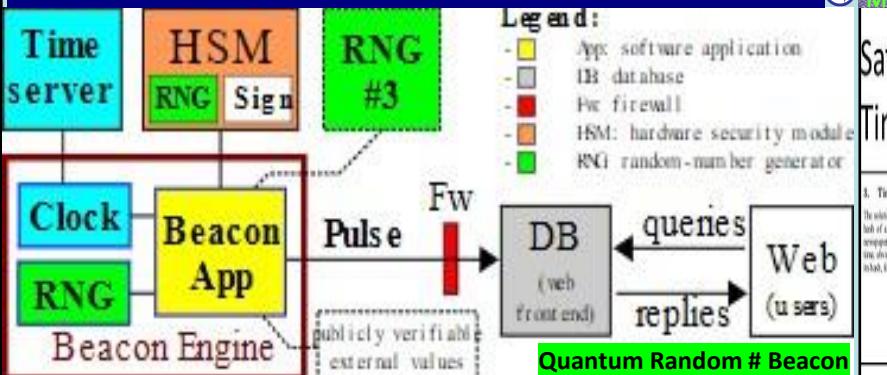
The NIST Randomness Beacon Broadcasts a randomness pulse every 60 seconds. Each pulse commits to a fresh 512-bit random string. Each pulse is time-stamped and signed. Beacon periodically outputs a pulse containing 512 fresh random bits, time-stamped, signed and hash-chained. For example, each pulse also 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

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"

Building Blocks:  
 Programmable Economy / \$\$\$



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 batch of items to be timestamped and widely publishing the hash, such as in a newspaper or online post [3]. The timestamp proves for 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 confirming the previous one.



WORLD ECONOMIC Heartbeat  
ALGORITHMIC REGULATION  
HEARTBEAT SYNC DELTAS



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

## Epoch Time Cycles

E0 E1 E2 E3...



## Structured Data Exchange

ROSETTA ("Org\_ID"){"URN"}  
STONE

BREVITY

CODES

Attribute Series



Time Series

Value

Time

300 + Message Sets

Geo Spatial

Work flow Filters

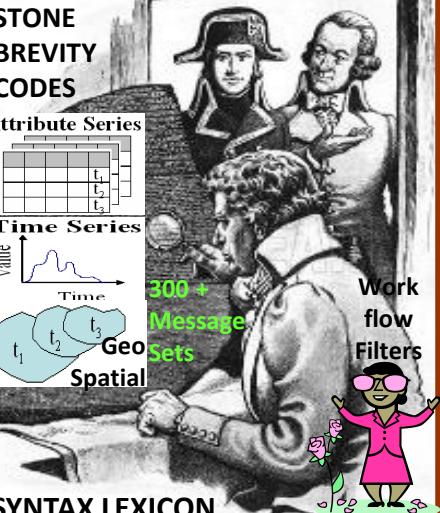
SYNTAX LEXICON

## QubitCoin Interval: Every 30 Seconds

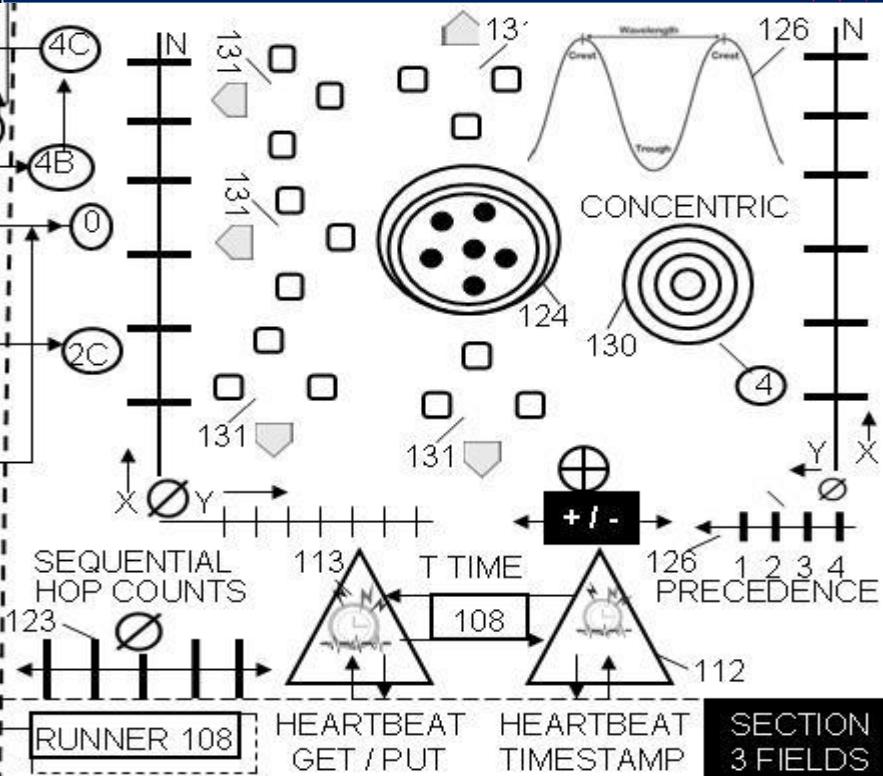
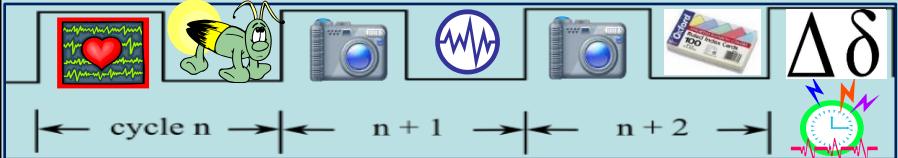
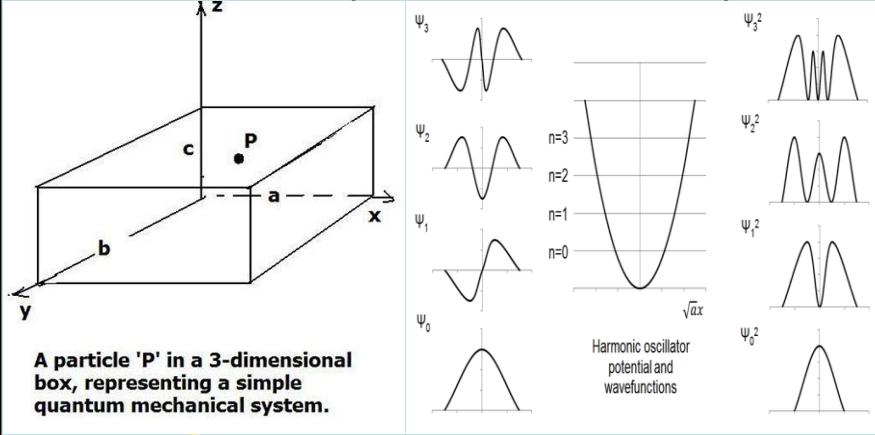
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind Coordinated Universal Time (UTC). However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours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

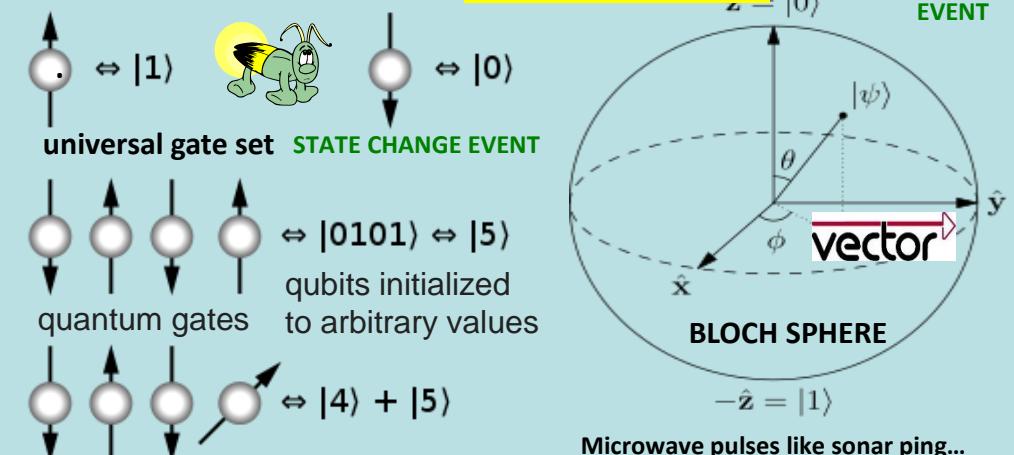
Vertical polarization vectors from a known point 0 null Sonar Hop meme



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?

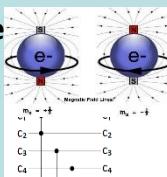


qubits can be in a superposition of all the classically allowed states

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)

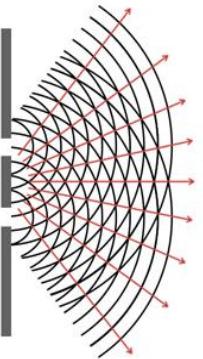


# Double-Slit Experiment

Screen with two slits

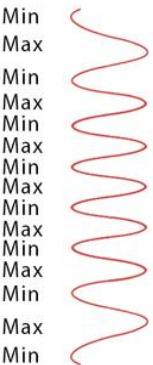
PARTICLE ?

Sodium lamp



Screen

WAVE ?



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

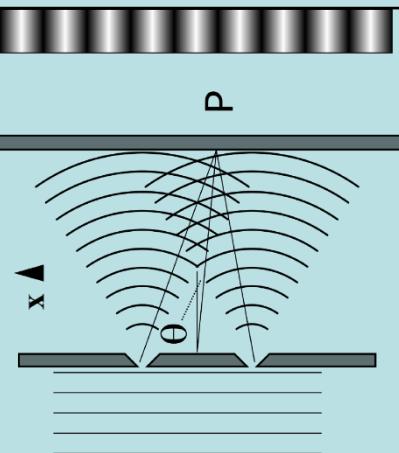
Interference of light waves due to two tiny slits and arrows indicate direction of wave propagation

Alternating bright and dark fringes due to interference of light waves

Intensity of the fringes shows the maxima and minima

Science Facts

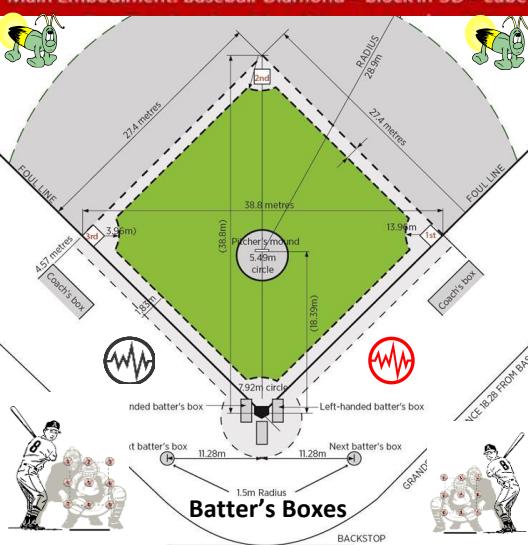
QUANTUM COMPUTING  
- RESISTANT ? - BASED ?  
THROUGH LENS OF SCOTUS  
ALICE LOOKING GLASS RULING



USPTO APPLICATION 13/573 002

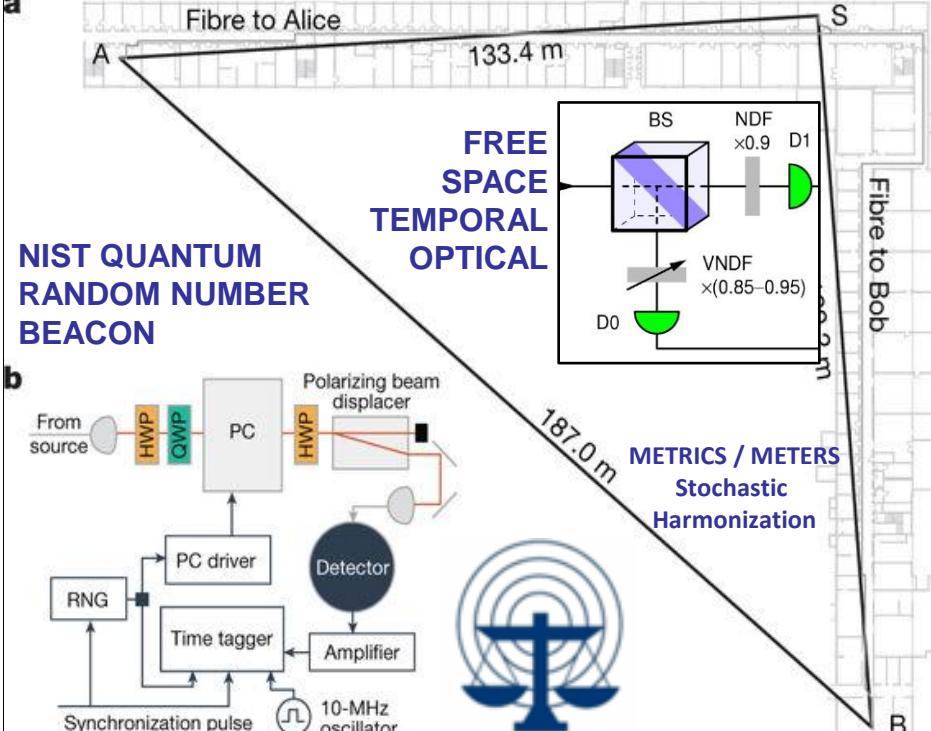
The Heart Beacon Cycle Time-Space Meter

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

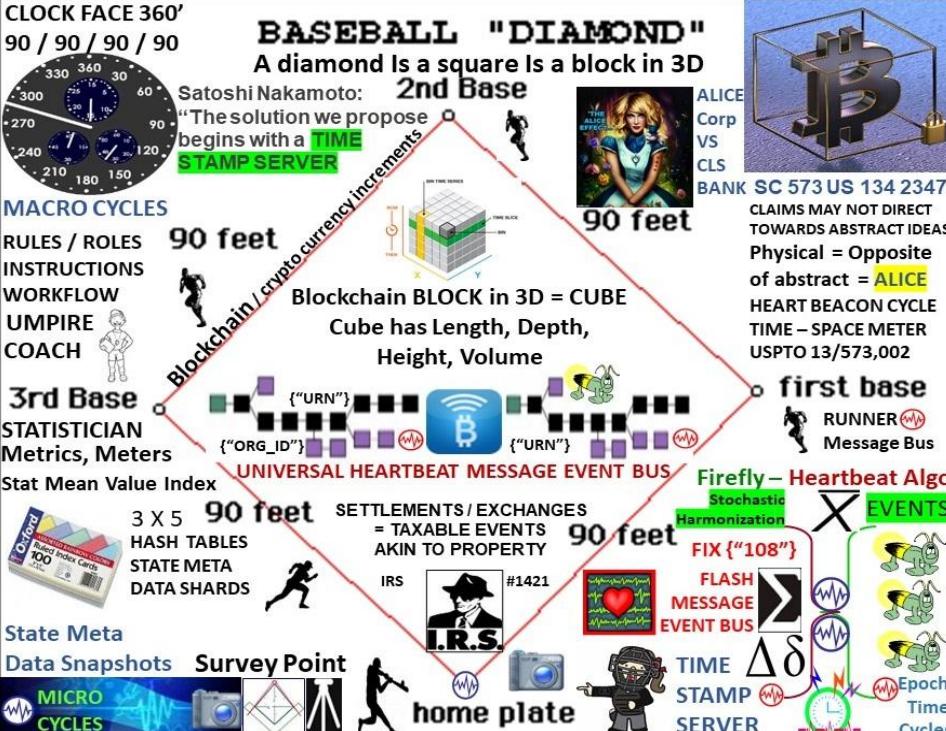


SCOTUS ALICE RULING: "Claims may not direct towards abstract ideas" / Physical = opposite of abstract

a



b



# The Hopf Fibration

Edmund Harriss

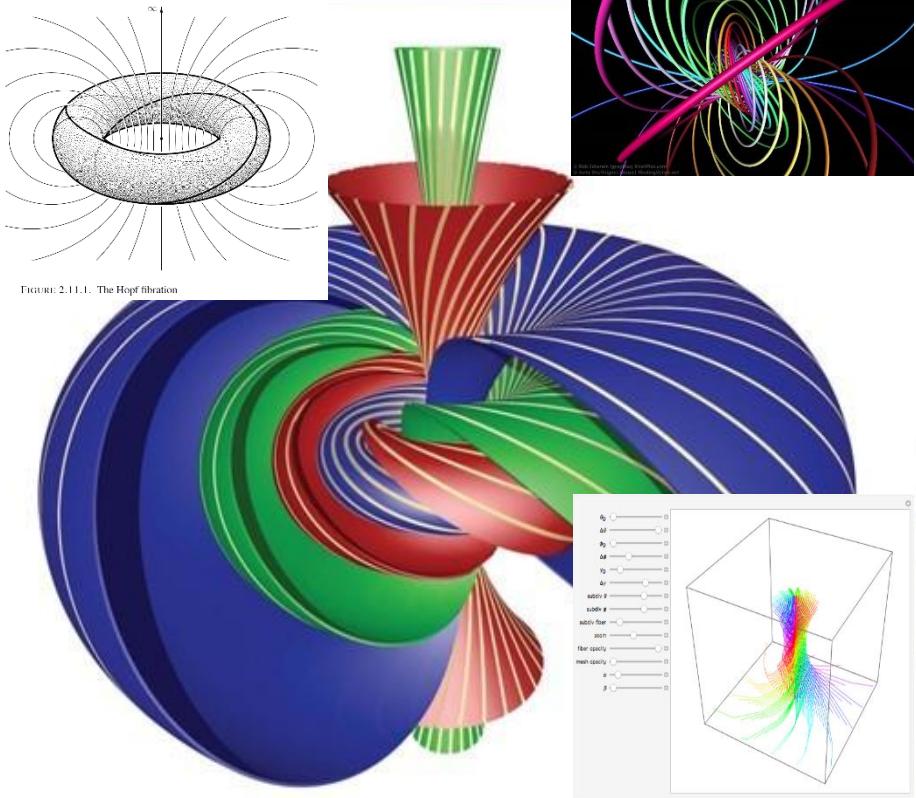
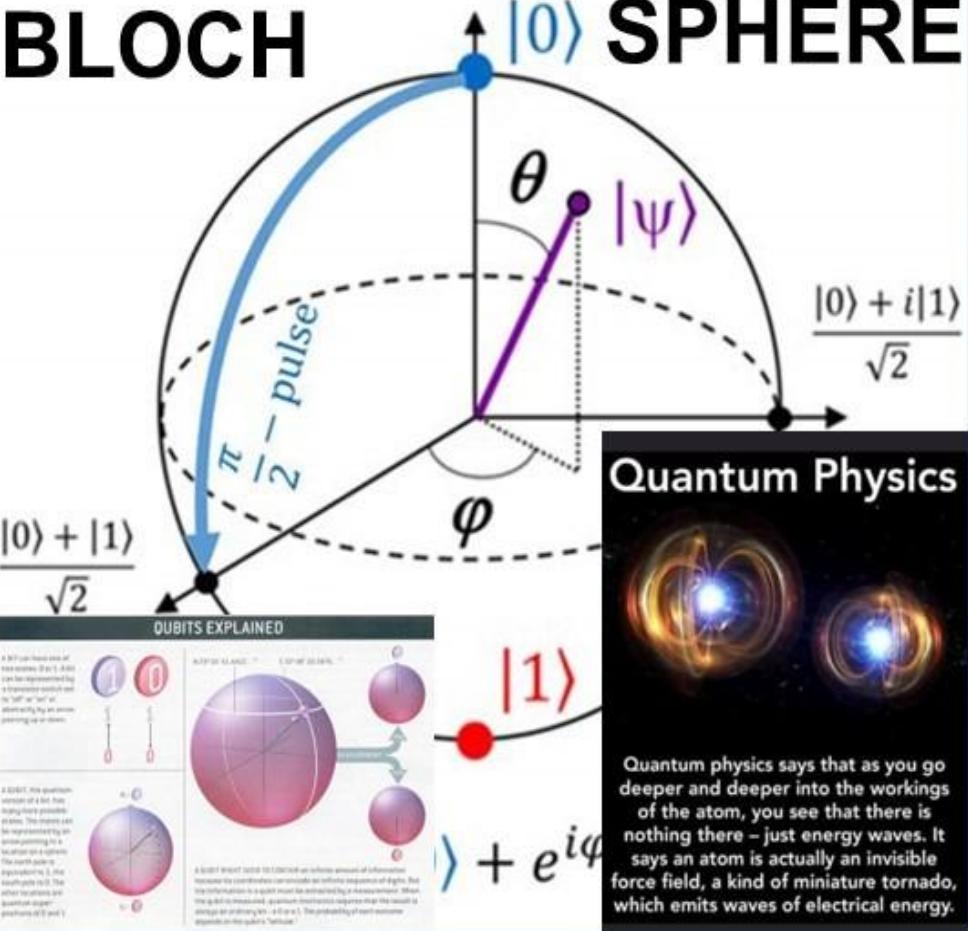


FIGURE 2.11.1. The Hopf fibration

# BLOCH SPHERE



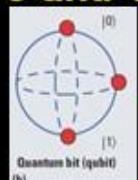
## Hopf Fibration / #Bloch sphere

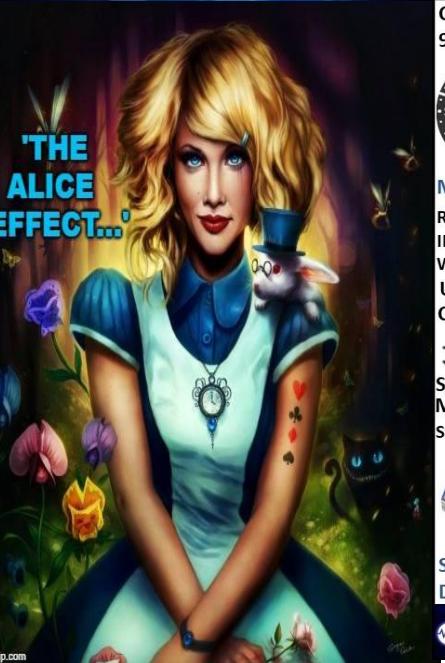
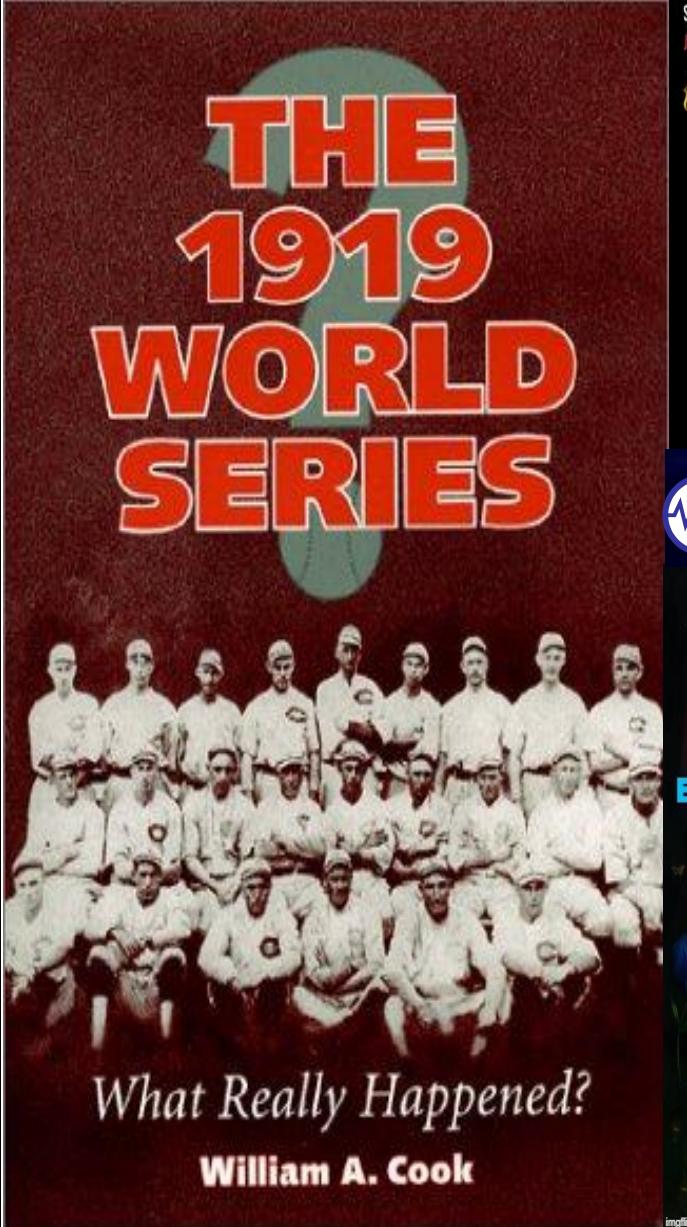
"the most important object in the universe"

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

Paul Revere linear - sequential hop count meme

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





*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 30 90  
210 180 150

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"



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

first base  
RUNNER Message Bus

Firefly – Heartbeat Algo

X EVENTS

SETTLEMENTS / EXCHANGES = TAXABLE EVENTS AKIN TO PROPERTY

IRS #1421

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

Epoch Time Cycles

90 feet  
3 X 5 HASH TABLES STATE META DATA SHARDS

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

90 feet

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

State Meta Data Snapshots Survey Point

TIME STAMP SERVER

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

TIME STAMP SERVER

MICRO CYCLES

TIME STAMP SERVER

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

TIME STAMP SERVER



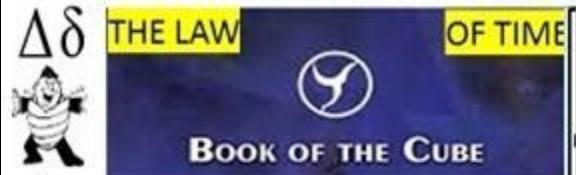
USPTO APPLICATION 13/573 002

## The Heart Beacon Cycle Time-Space Meter

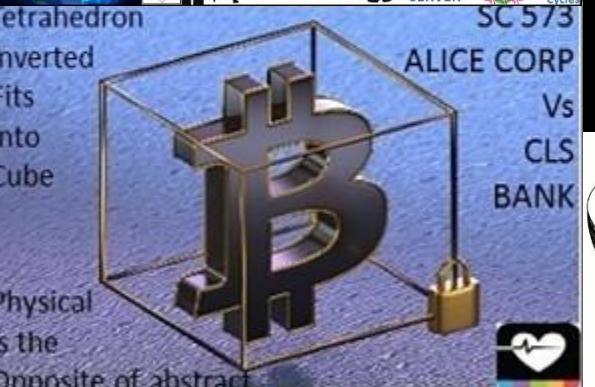
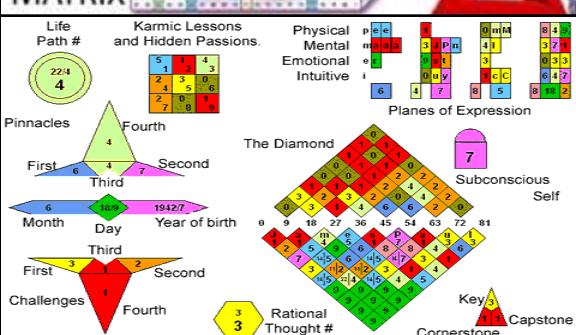
Main Embodiment: Baseball Diamond = block in 3D = cube

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

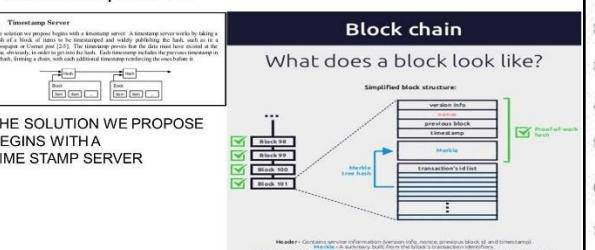
"We can synchronize ourselves in time for a common purpose" Universal Blockchain Meme



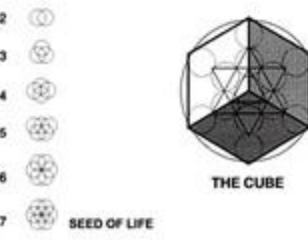
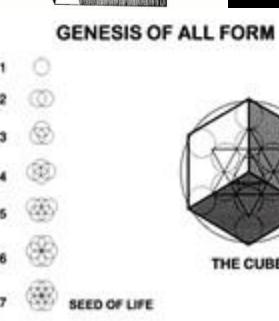
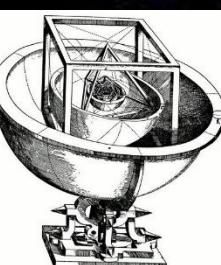
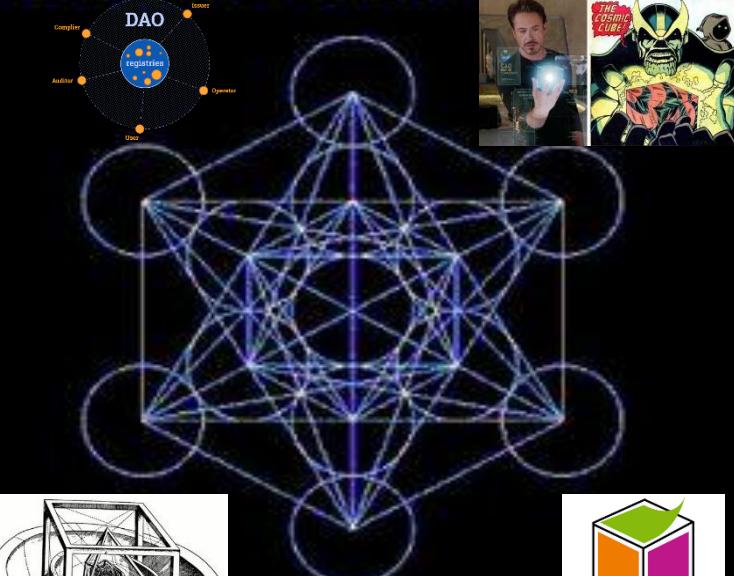
First  
Baseball  
Players  
Union  
Formed  
1870



Satoshi Bitcoin Blockchain  
Time Stamp Server



## Metatron's Cube and the Platonic Solids

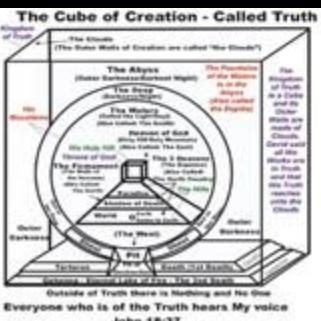


SEED OF LIFE



by: Tom Rimbault

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



Everyone who is of the Truth hears My voice  
John 14:1-37



"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.

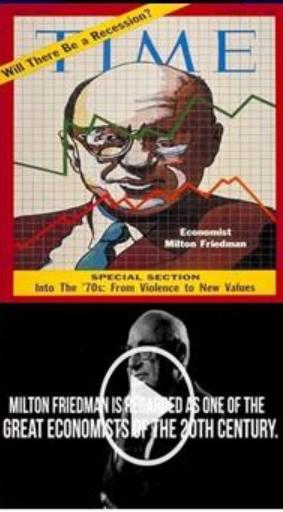
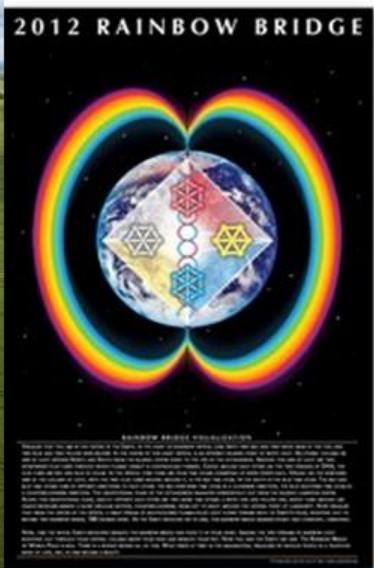
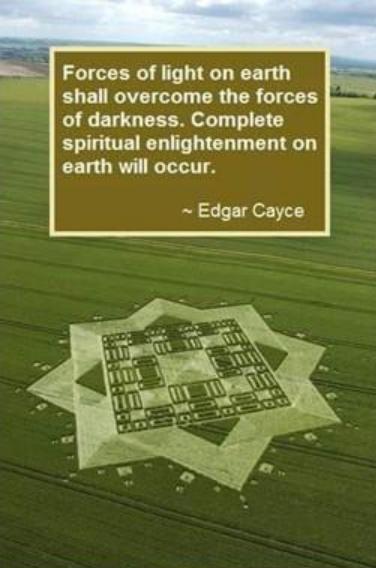
Over the next ten years, we are going to see our world innovate unlike never before, particularly in the fields of AI, technology, science, space travel, UFOs, networks, and the Internet. Major Universal truths will also be revealed as we welcome the New Age of Aquarius. The old world will soon come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

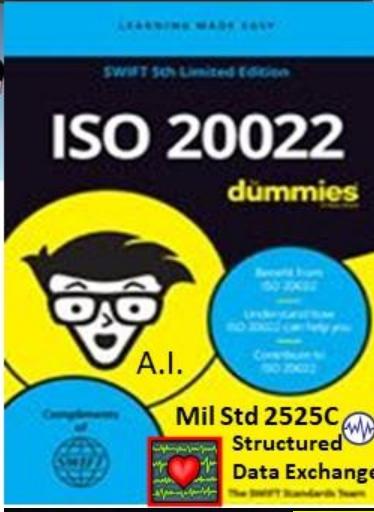


**Milton Friedman**

- 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, Price Theory, etc.
- Nobel Prize in Economics, 1976
- Considered as conservative, in reality liberal economist
- Advisor to President Nixon



**CAPITALISM AND FREEDOM**  
MILTON FRIEDMAN  
WITH THE ASSISTANCE OF RICHARD FRIEDMAN

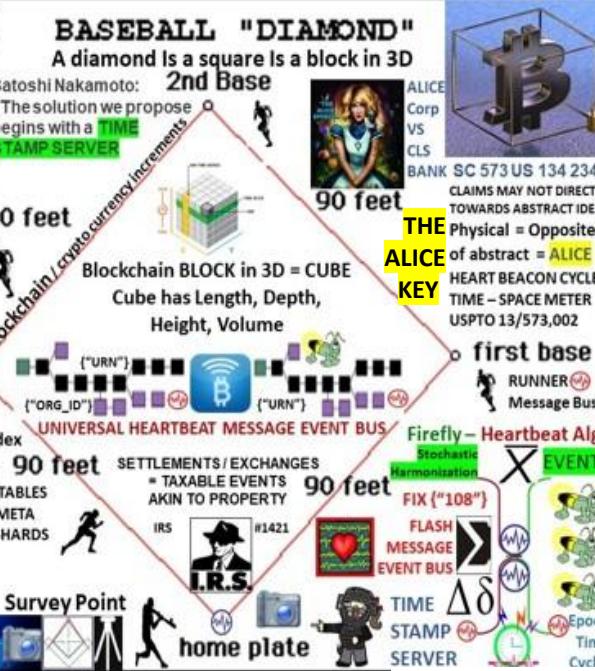


**The Age of Aquarius: Aquarius, Aquarius Rising @ 6:44 A.M. Feb 10<sup>th</sup> 1960**

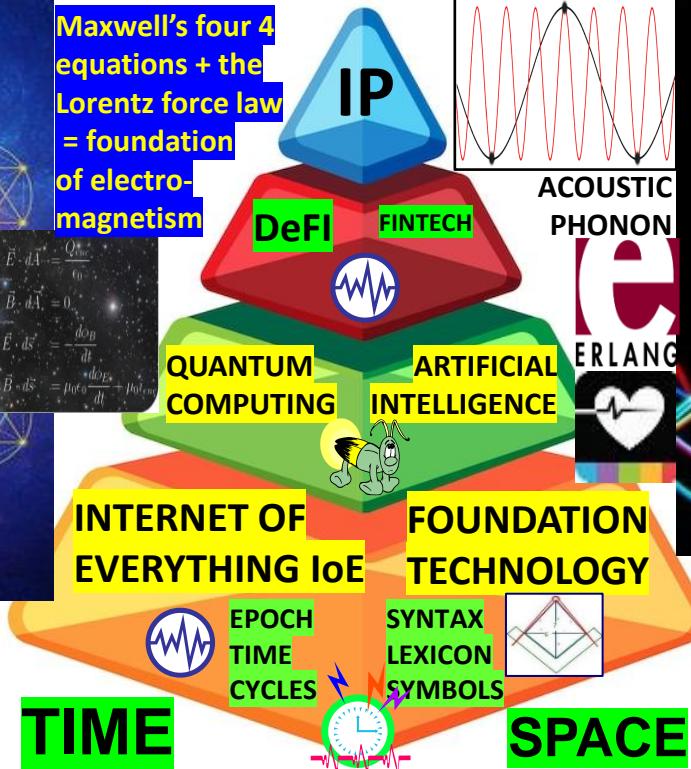
**Buckminster Fuller "build a new model that makes the old model obsolete"**

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

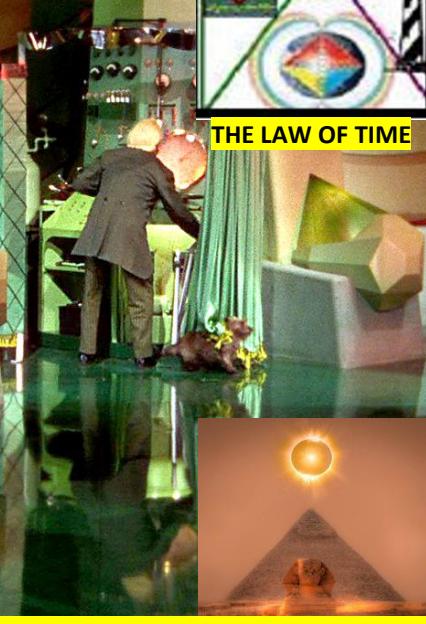
#algorithmic #stablecoin #buckminster #fuller #cryptocurrency #Milton #Friedman



**METATRON'S CUBE**  
GENESIS OF ALL FORM



**THE OZ KEY**

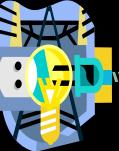


**THE LAW OF TIME**

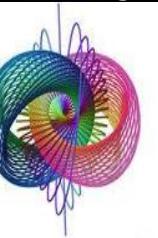


"Time is a created thing" Lao Tzu

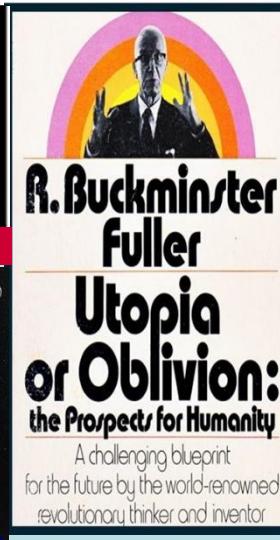
"If you want to find the secrets of the universe, think in terms of energy, frequency and vibration." - Nikola Tesla



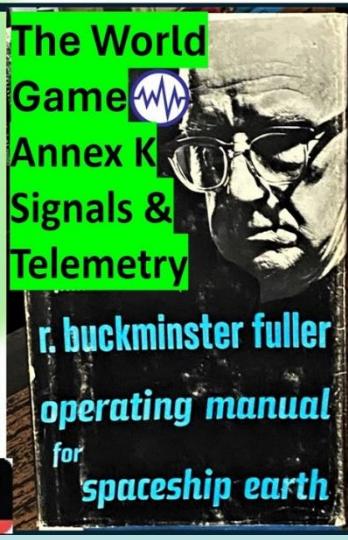
**HOPF FIBRATION**



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

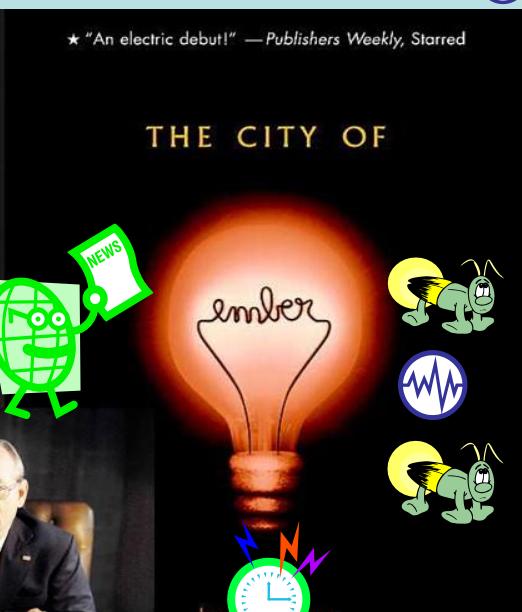
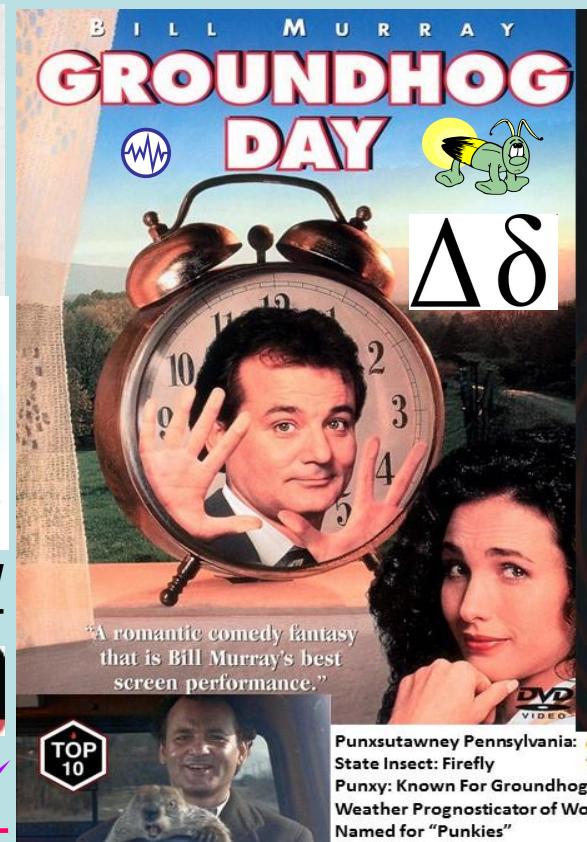
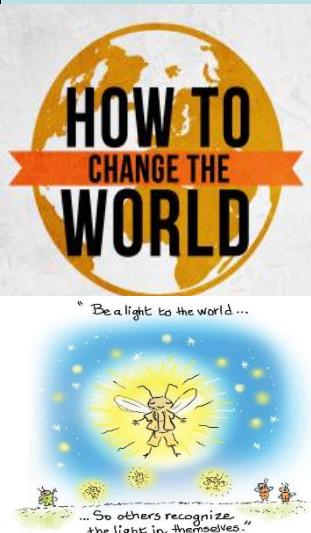


World (Peace) Game  
1961 simulation by  
Buckminster to help  
create solutions to  
overpopulation, the  
uneven distribution  
of global resources.

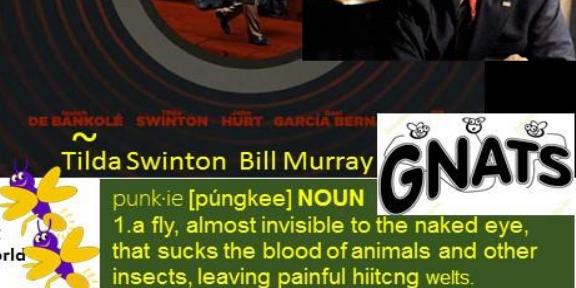


DISNEY'S FANTASIA

USPTO 13/573,002 The Heart Beacon Cycle Time - Space Meter / Eco Economic Epochs for programmable \$\$\$ / Economy



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



Punxsutawney Pennsylvania:  
State Insect: Firefly  
Punxy: Known For Groundhog  
Weather Prognosticator of World  
Named for "Punkies"



punk·ie [púngkee] NOUN  
1. a fly, almost invisible to the naked eye,  
that sucks the blood of animals and other  
insects, leaving painful hictng welts.



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!



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"

