

# Battlefield Digitization

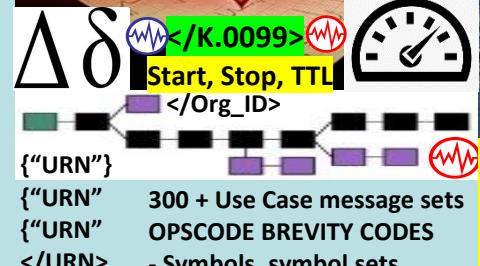
## OOTW Operations Other Than War



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



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



Structured  
Data Standards / Quantum computing, A.I.



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



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

# Humanitarian Assistance Networked Donor System

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



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



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



## Beacon Communities

Vernetzte Operationsführung



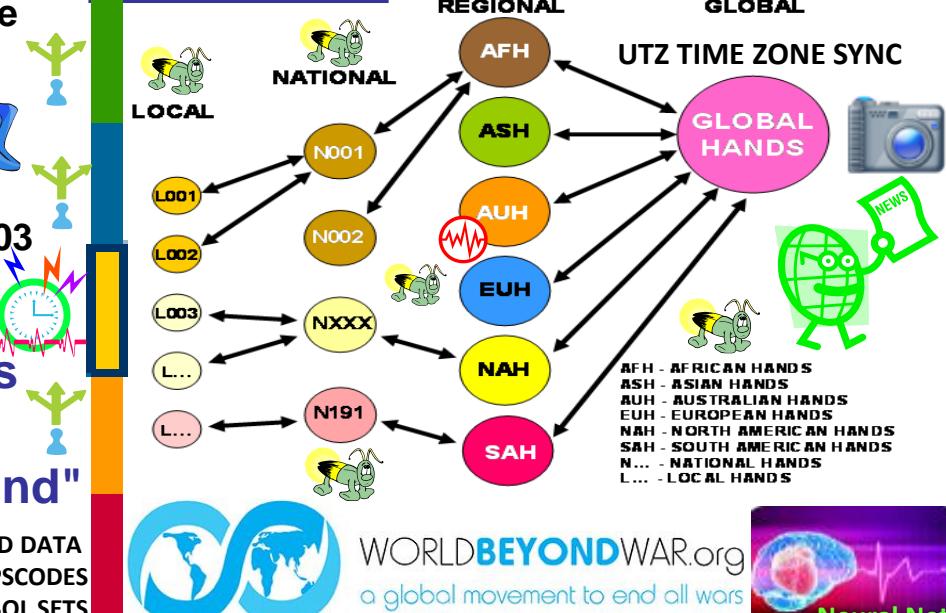
Proximity Beacons



JAEGERS



SYSTEM  
Of  
SYSTEMS



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



DAN MILLMAN

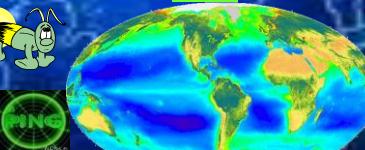
DOD SITUATION AWARENESS PROGRAM  
SWORDS TO PLOWSHARES OOTW IDEA  
BY GERMAN MILITARY CIRCA 2003



OFF SHORE  
OUTER BANKS



Closer < \$\$\$ < FUEL



FREELY  
HEARTBEAT  
EVENT / ALERT Flash Heartbeat Message Bus  
ALGORITHM



KAIJU



# Eco Economic Epochs Heartbeat

# DEFI FINTECH IP WARS / Litigation Foundation Tech



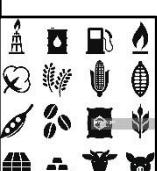
# **SWORDS to PLOWSHARES**



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



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

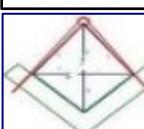
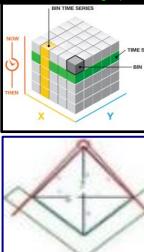


## YNC DELTA $\Delta\delta$ ATA SNAPSHOT

INFOCON  
1 4 3 2 1  
INFORMATION  
CONDITION



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

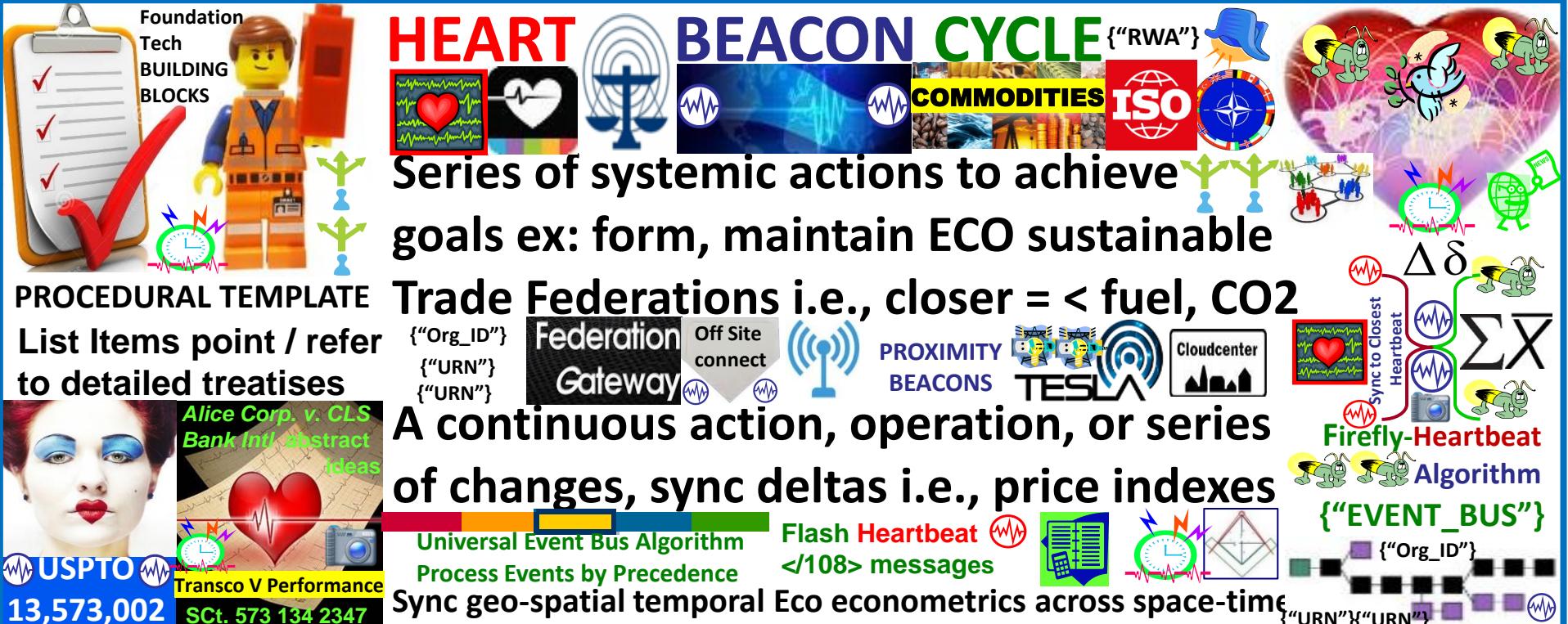


Net, Net of \$\$\$ money consists:

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



MEMO #1421



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

DAO's in FEDERATIONS AGREE TO USE COMMON COMPONENTS, SHARED PROCESSES, METHODS, SIGNALING - TELEMETRY SCHEDULE & METRICS IN SMART CONTRACTS, SERVICE LEVEL AGREEMENTS

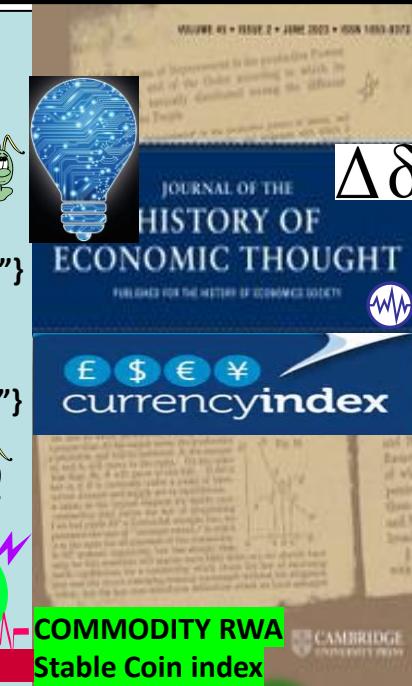
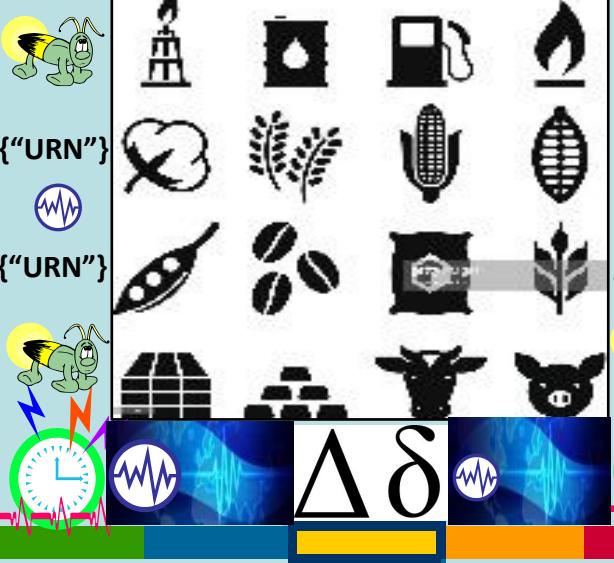
CHECKLIST: TRADE FEDERATION ECONOMIC FRAMEWORK EX:

- 1) Organize with Organization Identifiers {"Org\_ID"}
- 2) Track RWA Real World Assets / Commodities by </URN>
- 3) Take State Meta Data heartbeat snapshots @ 15 / N min
- 4) Honor Satoshi's intent for Crypto to be paired w markets
- 5) Use NIST Quantum Random Number Beacon QRNB

USPTO 13/573,002 = Spaceship Earth's Signals & Telemetry Annex



# Tokenization of Physical Assets Enables Economy Of Everything



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



NETWORK  
CENTRIC  
OPERATIONS  
**INFOCON**  
5 4 3 2 1  
INFORMATION  
CONDITION



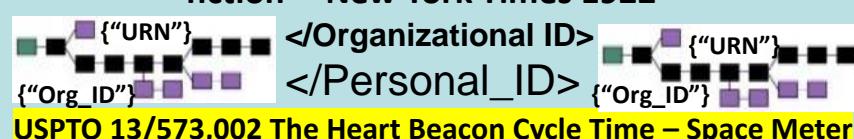
**FIREFLY – HEARTBEAT ALGORITHM CHINA:** nature-inspired metaheuristic optimization algorithm developed by Xin-She Yang flashing behavior of fireflies (Yang, 2008), adapted to solve continuous optimization problems (Lukasik and Žak) 2010, 2013

# Thomas Edison's Monetary Option Cambridge University Press 2009

"Crops hold their value best over time"



"Thomas Edison publicly introduced his latest invention: a new type of money, a crop index commodity-backed currency that he believed was the long-term solution to America's monetary woes. "I want to cast the variable out of money. This gold money is not good enough. It's a fiction" "New York Times 1922

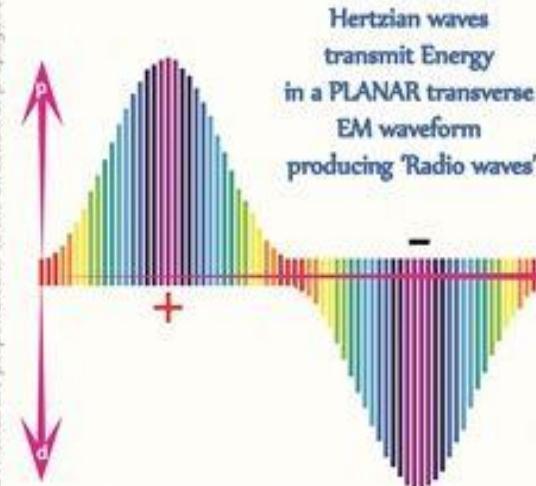


CLOSER = < Infrastructure  
= CHEAPER SLA

# ElectroMagnetic waveforms

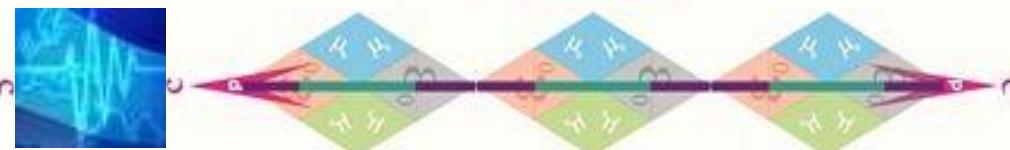


ENERGY / DATA  
Over  
Transmission  
Lines / Airwaves



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

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



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

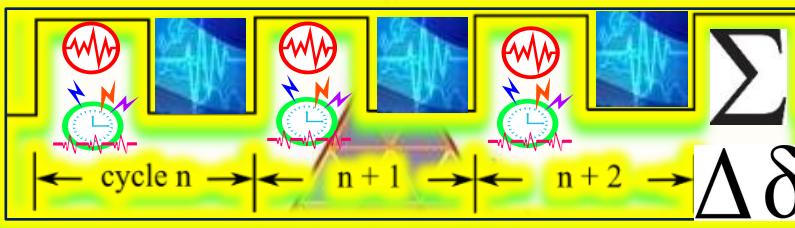
Through longitudinal waves, Tesla transferred energy to receiving devices. He sent electrostatic forces through the air, transferred electrical energies and noted the lethal forces produced by these waves.

Heinrich Hertz

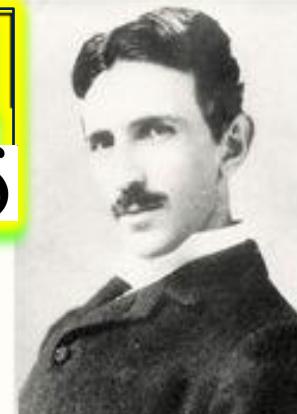


(22 February 1857 - January 1 1894)

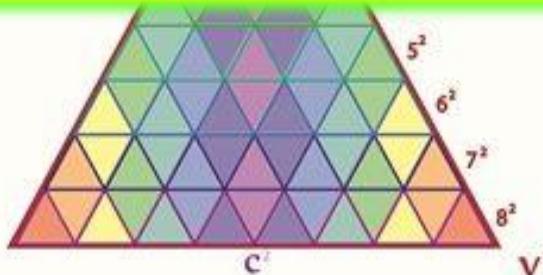
INTERNET = 1. TIME EPOCH CYCLES 2. Syntax (not) Processed in cycle



Nikola Tesla



(10 July 1856 - 7 January 1943)



Cycles per Second

Volts per Second

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

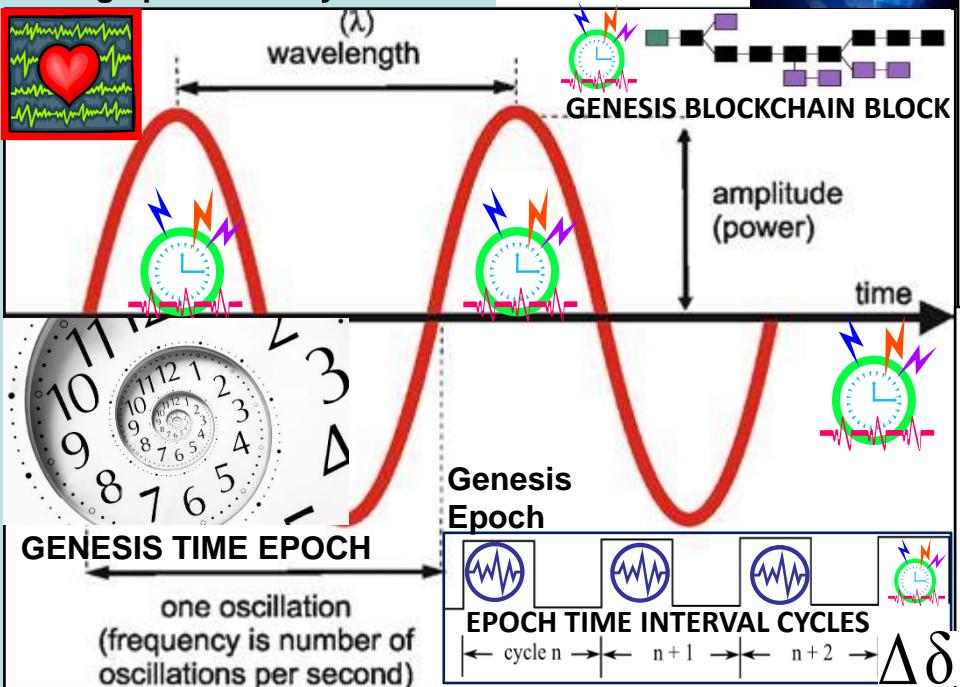
THESIS: All things net, net of programmable \$\$\$ are formed using:

## ENERGY / DATA WAVE METRICS / METERS

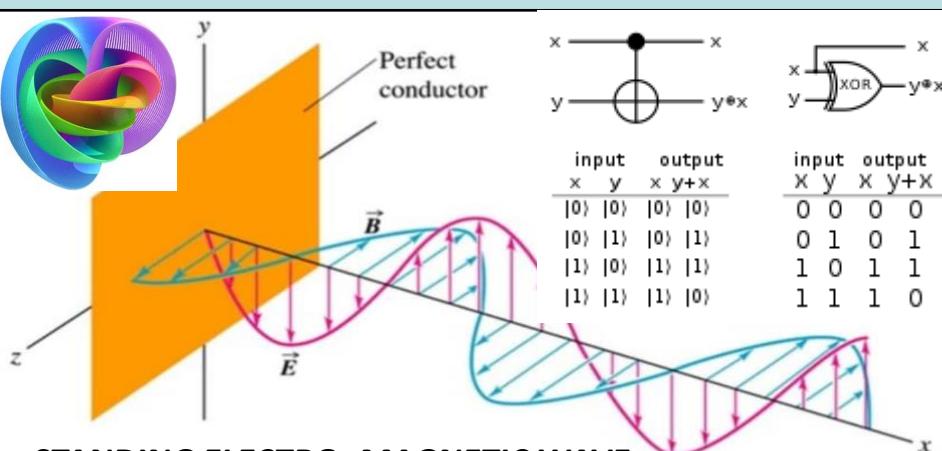
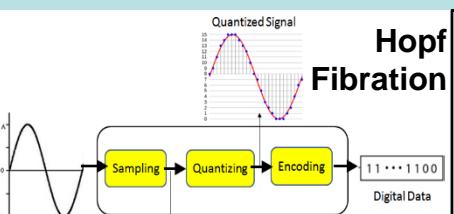
## BELL STATE QUANTUM COMPUTING

1) Time epochs created by quartz crystal silicon chips

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

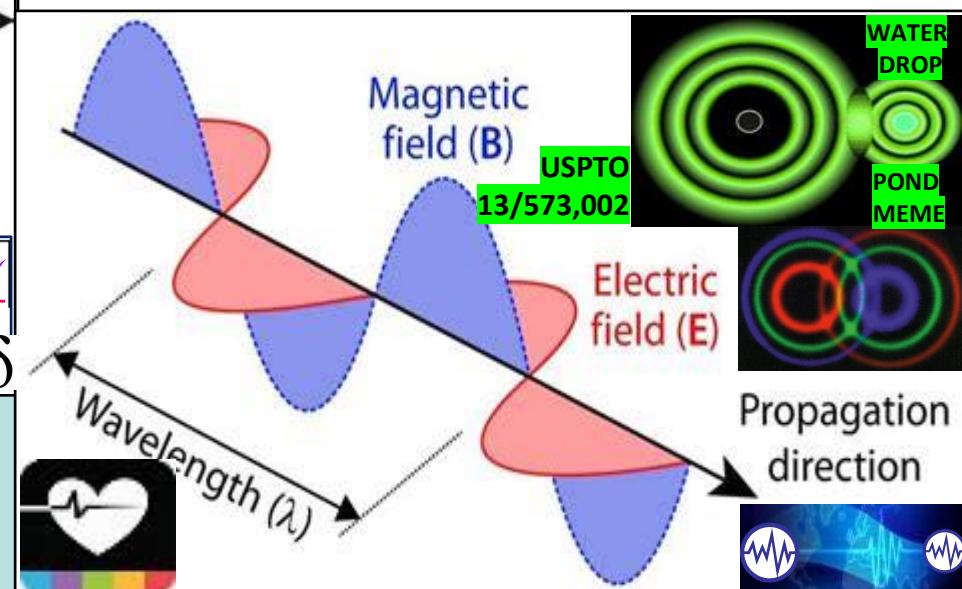


Quantum Computing Vibrations encode, process data like quantum computers. A simple mechanical system built from aluminum rods uses vibrations to encode information, mimicking quantum computing in a non-quantum system. "Light is made from photons, the quantum of light." mechanical vibrations or sound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



### 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.



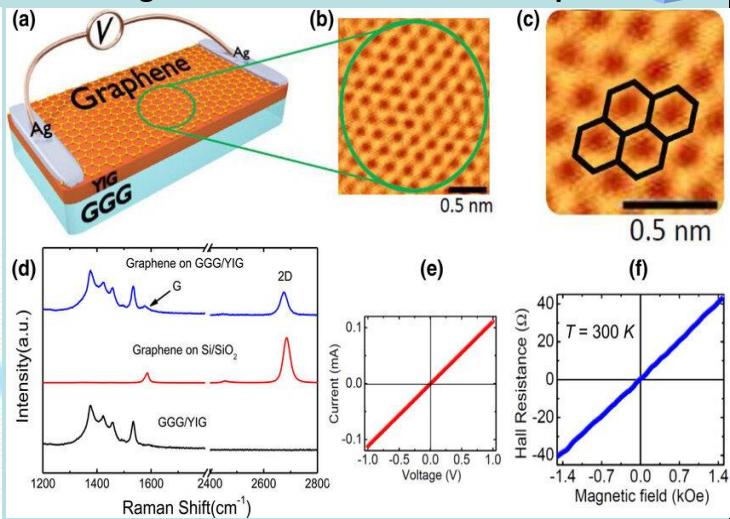
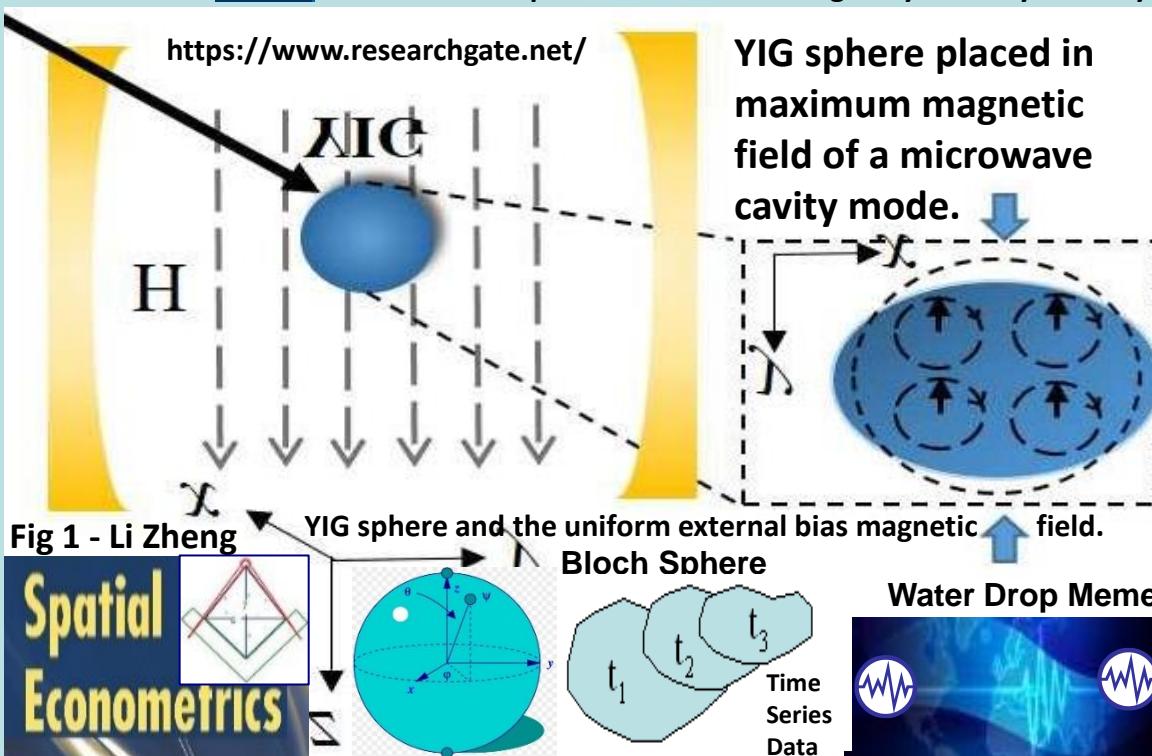
"Nature may reach the same result in many ways. Like a wave in the physical world, in the infinite ocean of the medium which pervades all.. Nikola Tesla



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

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

Yttrium iron garnet spheres serve as magnetically tunable filters and resonators for microwave frequencies. YIG filters are used for their high Q factors, typically between 100 and 200. Sphere made from a single crystal of synthetic yttrium iron garnet acts as a resonator. Wikipedia



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

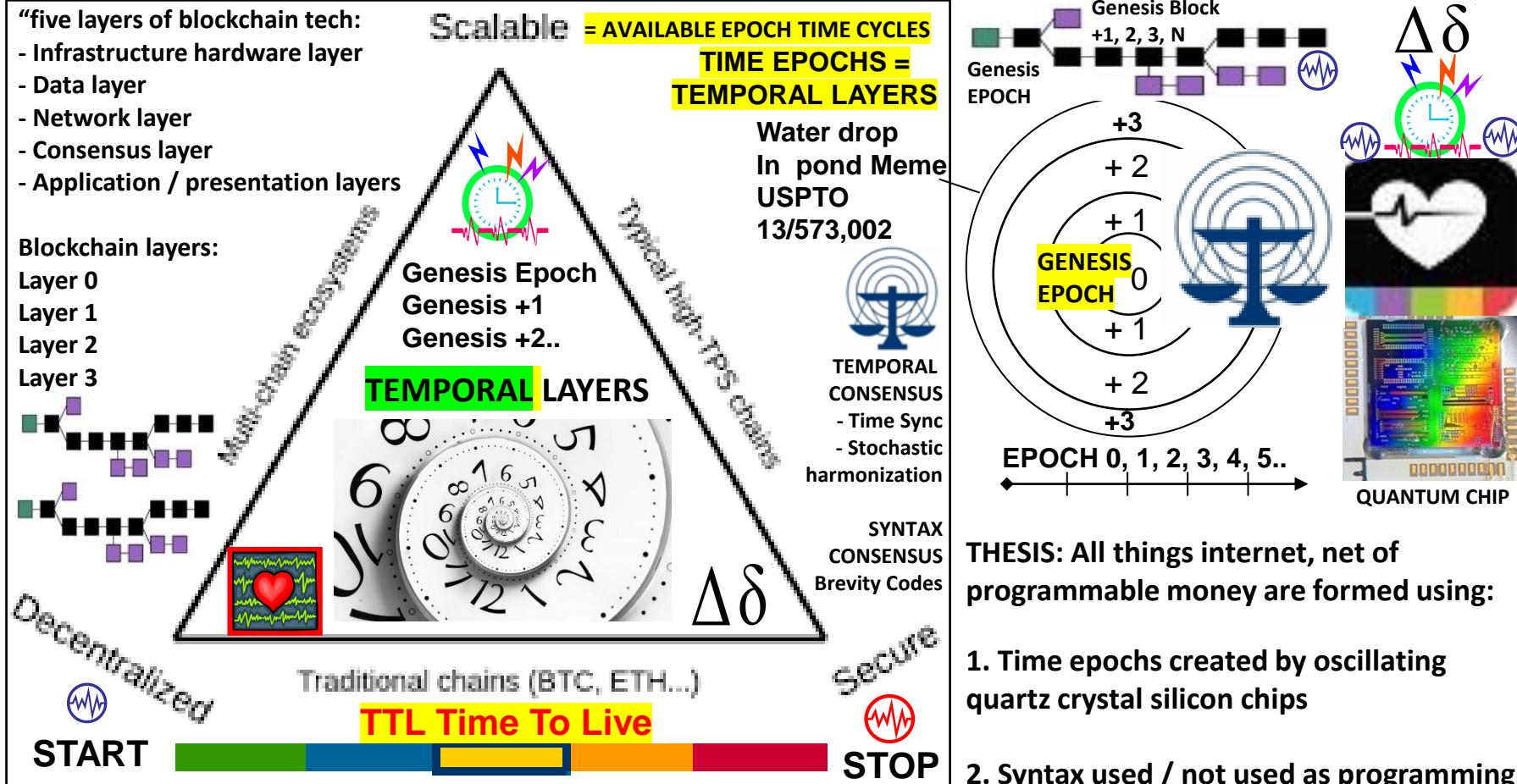
IEEE 802.1AG HOP BY HOP DETECTION  
IEEE 802.11 HbH HOP BY HOP CONTROL

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





# Blockchain Quad-lemma



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

## Database Flat File

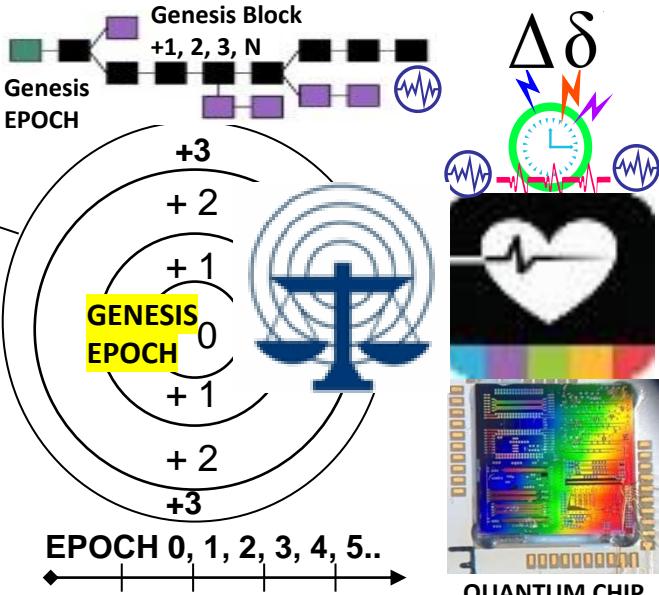
### "BLOCKCHAIN" = LEDGER / Database

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

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

NET, Net of programmable \$\$\$ Programming Reality Ground Truth

No Layers L0, L1, L2... only GENESIS EPOCH, Follow on Epoch time cycles, intervals, cycles



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



# THE BITCOIN BLOCKCHAIN FOR DUMMIES



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

Satoshi Nakamoto Bitcoin Paper



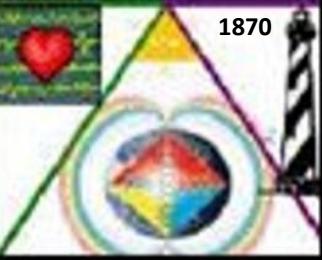
Satoshi Nakamoto



Craig WRIGHT  
a.k.a.  
Satoshi Nakamoto



"Bitcoin is a  
LANGUAGE"



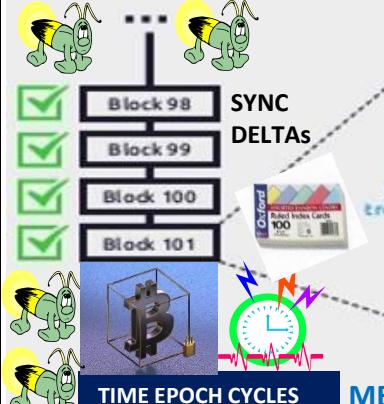
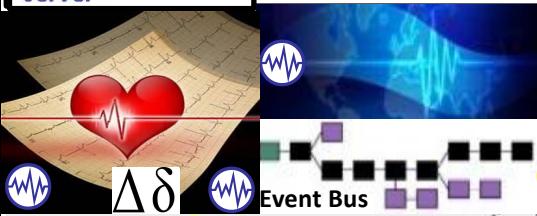
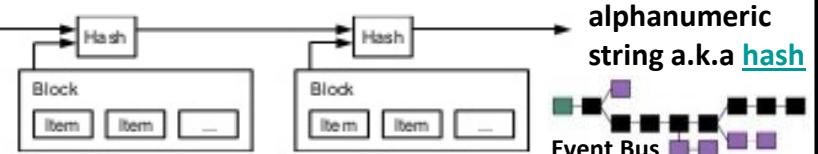
Wright Brother's 1<sup>st</sup> Flight  
Cape Hatteras Outer Banks

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

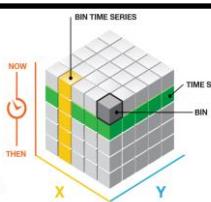
### 3. Timestamp Server

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)



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

peer-to-peer time  
stamp distributed  
server generates  
computational proof  
of the chronological  
order of transactions

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

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

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

"THE VALUE OF BITCOIN IS TIME ITSELF"



CLOCK FACE 360'  
90 / 90 / 90 / 90

MACRO CYCLES  
RULES / ROLES  
INSTRUCTIONS  
WORKFLOW  
UMPIRE  
COACH

3rd Base  
STATISTICIAN  
Metrics, Meters  
Stat Mean Value Index

90 feet  
Blockchain / cryptocurrency increments

90 feet  
Blockchain BLOCK in 3D = CUBE

90 feet  
Cube has Length, Depth,  
Height, Volume

90 feet  
SETTLEMENTS / EXCHANGES  
= TAXABLE EVENTS  
AKIN TO PROPERTY

90 feet  
IRS  
#1421

90 feet  
State Meta  
Data Snapshots  
Survey Point

90 feet  
MICRO CYCLES  
FLASH MESSAGE  
EVENT BUS

90 feet  
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 / cryptocurrency increments

90 feet  
Blockchain BLOCK in 3D = CUBE

90 feet  
Cube has Length, Depth,  
Height, Volume

90 feet  
SETTLEMENTS / EXCHANGES  
= TAXABLE EVENTS  
AKIN TO PROPERTY

90 feet  
IRS  
#1421

90 feet  
State Meta  
Data Snapshots  
Survey Point

90 feet  
MICRO CYCLES  
FLASH MESSAGE  
EVENT BUS

90 feet  
TIME STAMP SERVER



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

first base  
RUNNER Message Bus

firefly – Heartbeat Algo

fix {"108"}  
FLASH MESSAGE  
EVENT BUS

TIME Δδ  
Epoch  
Time Cycles

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

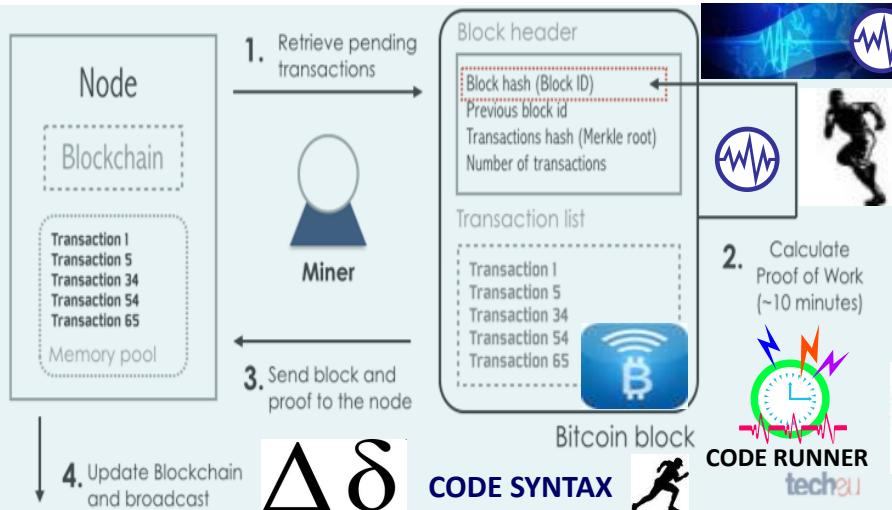


# “Bitcoin is a Language”

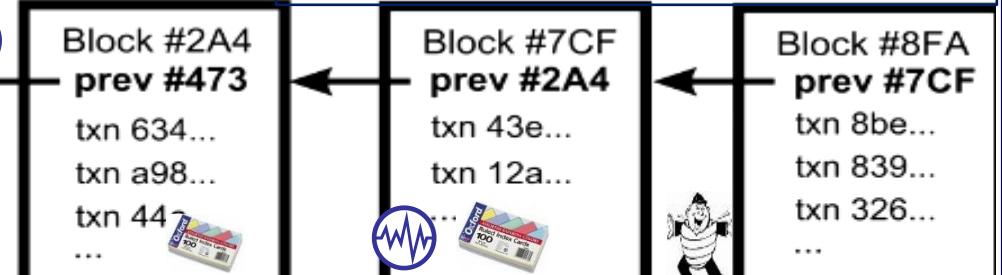
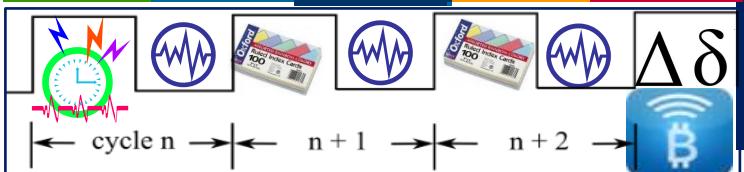
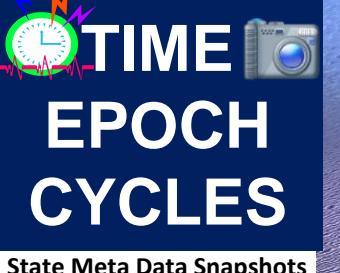
**WIRED**

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

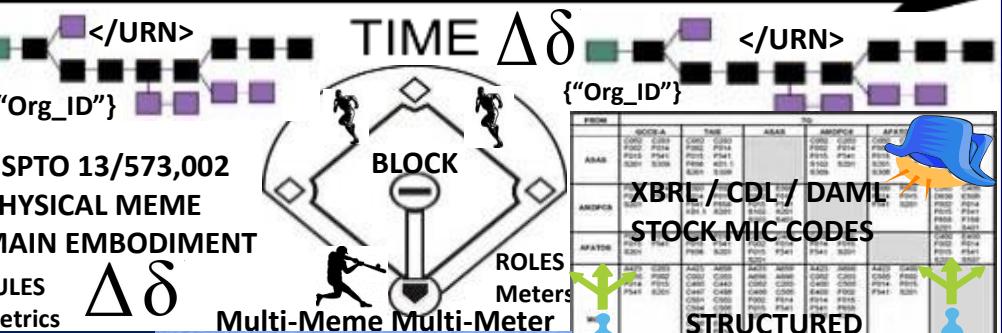
Alice Corp. v. CLS Bank International, 573 U.S. 134 SCt 2347 (2014) is a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).[2] The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating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



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



# **BLOCKCHAIN = TIME / SYNTAX**



Net of \$\$\$ formed with:

1 EPOCH TIME CYCLES

2 {"Syntax"} "The Word"

"In the Beginning" Genesis Block

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

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

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

## NAMED DATA NETWORKING



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



STOCK MIC CODES

STRUCTURED  
DATA EXCHANGE  
TEMPLATE FORMS

300+ USE CASES  
LOGIC / FILTERS

SYNTAX / SYMBOL  
LEXICON LIBRARY

SYNTAX  
LEXICON

Library  
1<sup>st</sup> Compiler

R  
W  
A

Real  
World  
Assets

A.I.

Alpha  
Numeric  
Brevity  
Codes

Coder Guide

Rosetta Stone

State Meta  
Data Snapshots

Survey Point

MICRO  
CYCLES



"BITCOIN MAKES MONEY PROGRAMMABLE.  
MONEY IS SIMPLY DATA"

"Bitcoin's Value is TIME itself"

"Time is specified in units of block transaction confirmation times"



ALICE CORP VS CLS BANK

"claims may not be directed towards an abstract idea"

US SC 573 US 134 2347



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

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



CLOCK FACE 360°  
90 / 90 / 90 / 90

MACRO CYCLES

RULES / ROLES  
INSTRUCTIONS  
WORKFLOW

UMPIRE  
COACH

3rd Base  
STATISTICIAN  
Metrics, Meters

Stat Mean Value Index

SETTLEMENTS / EXCHANGES  
= TAXABLE EVENTS  
AKIN TO PROPERTY

IRS #1421

STATE META  
DATA SHARDS

FLASH  
MESSAGE  
EVENT BUS

TIME  
STAMP  
SERVER

Epoch Time  
Cycles

Blockchain CONSENSUS ALGORITHMS

BASEBALL "DIAMOND"

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

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

ALICE Corp VS CLS BANK SC 573 US 134 2347

CLAIMS MAY NOT DIRECT TOWARDS ABSTRACT IDEAS

Physical = Opposite of abstract = ALICE

HEART BEACON CYCLE

TIME – SPACE METER

USPTO 13/573,002

first base  
RUNNER  
Message Bus

Firefly – Heartbeat Algo

X EVENTS

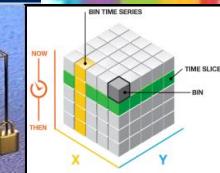
SETTLEMENTS / EXCHANGES  
= TAXABLE EVENTS  
AKIN TO PROPERTY

IRS #1421

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

Blockchain CONSENSUS ALGORITHMS



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

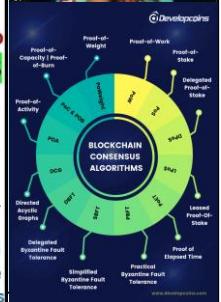
SETTLEMENTS / EXCHANGES  
= TAXABLE EVENTS  
AKIN TO PROPERTY

IRS #1421

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

Blockchain CONSENSUS ALGORITHMS



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

HEART BEACON CYCLE  
USPTO 13/573,002  
SURVEY METHODS

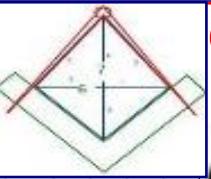
## SC ALICE CORP VS CLS BANK: “claims may not direct towards abstract ideas”

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

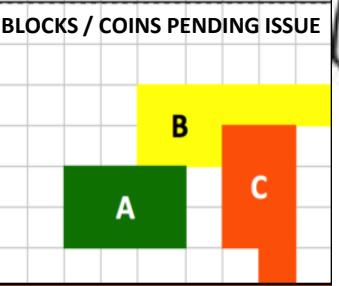


Memo #1421: Purchased Bitcoins are treated akin to property

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



## Mined Bitcoins



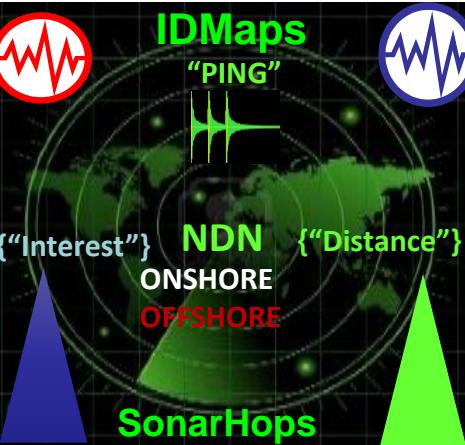
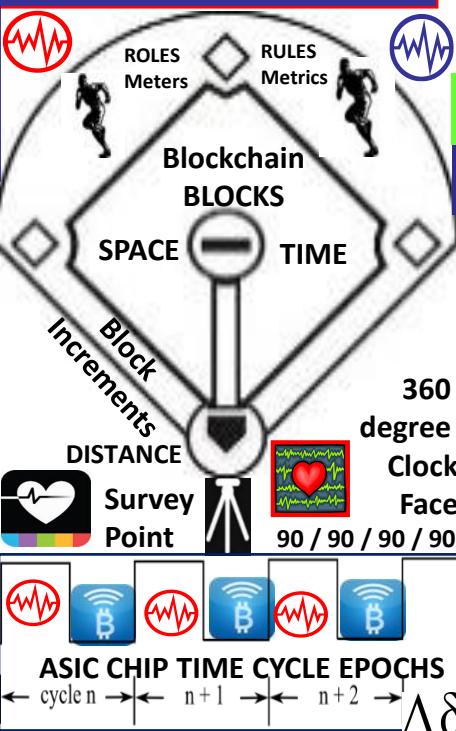
$$\Delta\delta$$

## Unmined Bitcoins



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

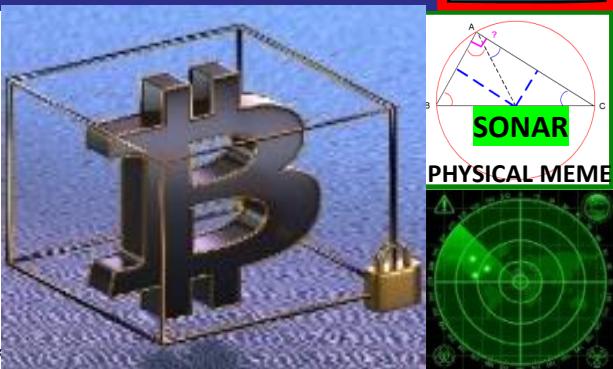
IDMaps-SONARHOPS distance estimation query-reply service



## TRIANGULATION



## DISTANCE ESTIMATION EUCLIDIAN GEOMETRY



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



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



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



- End-state Bitcoin quantity will be fixed like land

“Bitcoin as protocol of ownership, not transfer”

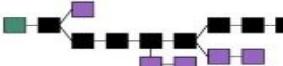
Coin never travel, but simply switch owners”

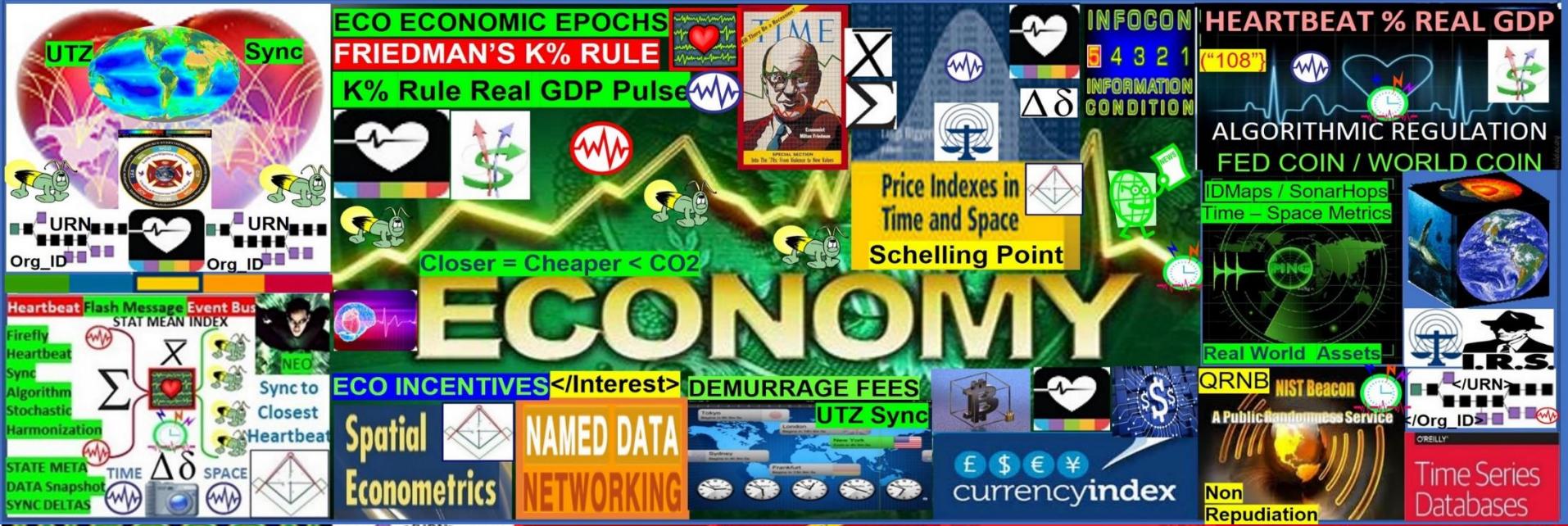
Step 1: prove coin ownership <Org\_ID> Coin Issuer

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

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

Step 4: Issuing Org of Record adjudicates w buyer





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



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



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

## Eco Economic Epoch GDP Heartbeat signals and telemetry framework



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

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



Attribute Series

**SCOTUS 2014 ruling  
SC 573 134 2347**



claims may not direct towards abstract Ideas”

Trade  
Reference  
Currency  
**TERRA**  
TERC

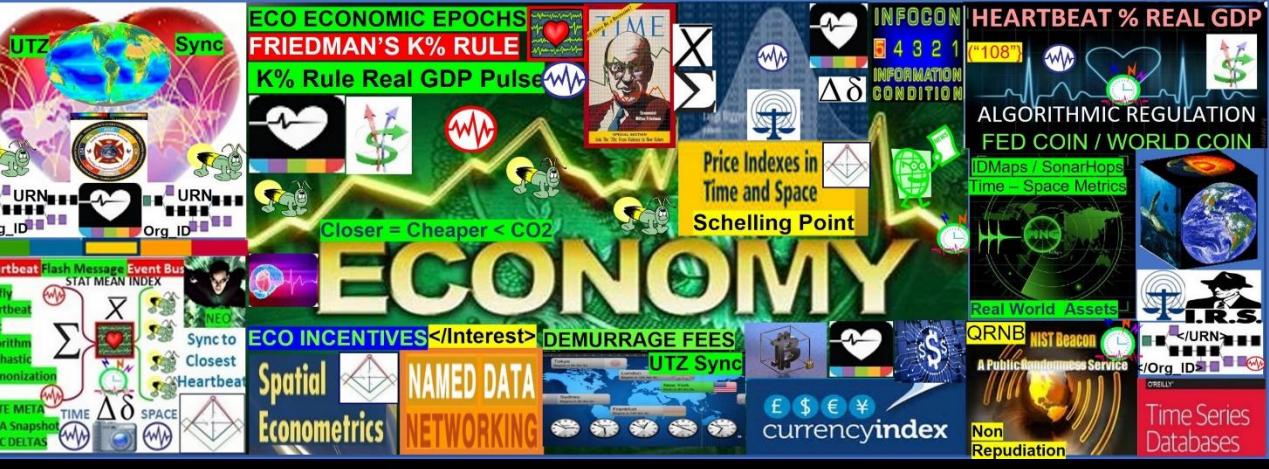
**Physical = opposite of abstract**

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

**"The internet, internet of \$\$\$ is comprised:  
1. Epoch time cycles 2. Syntax used / not  
used during epoch time cycles instructions**

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

# USPTO 20130166398 Ericsson System Method Implementing Context Based Payment System







## ISO Technical Committee TC68

Financial Services

SC2 Security	SC4 Securities	SC7 Banking
-----------------	-------------------	----------------

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

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

ISO 20022 LV 66

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

Proof of Capacity / Proof-of-Burn

Proof-of-Capacity / Proof-of-Burn

Proof-of-Weight

Proof-of-Work

Proof-of-Stake

Delegated Proof-of-Stake

Proof-of-Activity

POC & POB

Nod

Soda

SodT

Leased Proof-of-Stake

Directed Acyclic Graphs

UBFT

SBFT

PBFT

Proof of Elapsed Time

Practical Byzantine Fault Tolerance

Simplified Byzantine Fault Tolerance

Delegated Byzantine Fault Tolerance

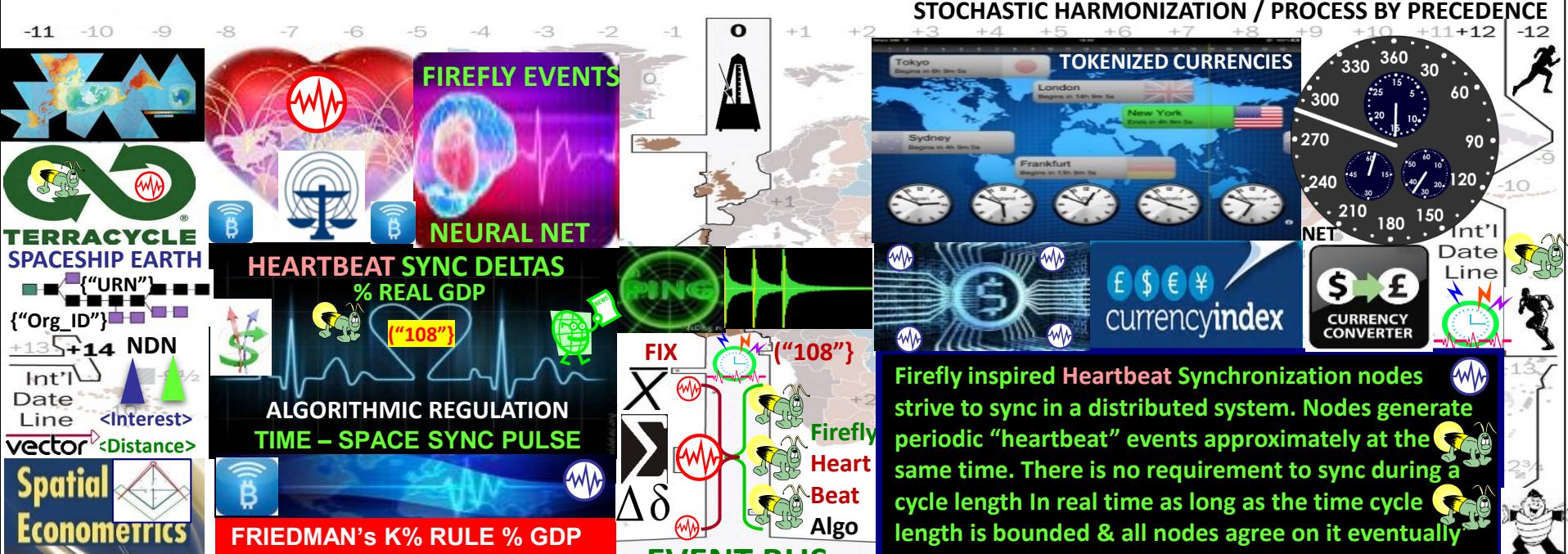
Structured Data Exchange SYNTAX LEXICON

OPCODES-Symbol Sets AJ / Man - Machine

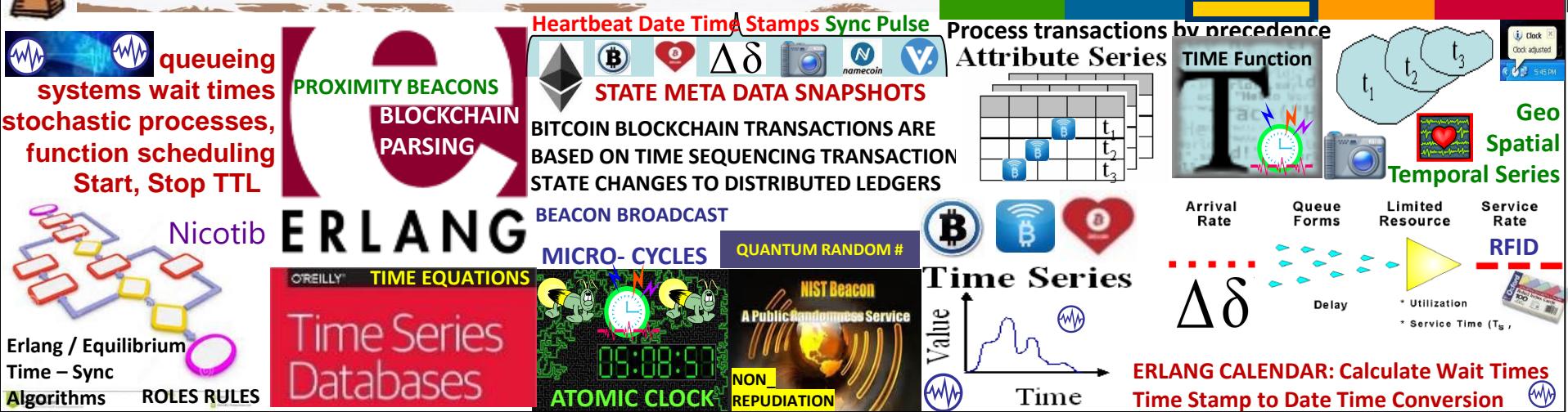
ISO/IEC 20022

ISO/IEC 20022</p

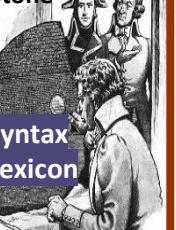
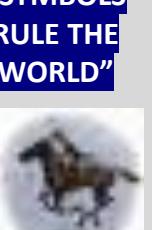
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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





FROM	TO				CODE GUIDE	
	GCCS-A	TAIS	ASAS	AMDPCS	AFATDS	MCS
ASAS	C002 C203 F002 F014 F015 F541 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>			
AMDPCS	<b>TOKENS</b> <b>OPSCODE</b> <b>BREVITY</b> <b>CODES</b>					
AFATDS	F002 F014 F015 F541 S201					  <b>INFOCON</b> <b>A.I.</b> <b>5 4 3 2 1</b> <b>INFORMATION CONDITION</b>
MCS	 <b>SIOP</b> 	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	 <b>Rosetta Stone</b>  <b>Syntax Lexicon</b>  <b>Coder's Guide</b>	 <b>M2M</b>  <b>"SYMBOLS RULE THE WORLD"</b> 

# MESSAGE CATALOG

## 300 + Use Cases

Data Elements: entity, attribute, relationship equivalents	<b>HEARTBEAT MESSAGE = K00.99 &lt;/108&gt; {"108"}</b>
--	--

# Information Elements Roles

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



## FFUDN: Field Format Unit Designator

EFIRN Field Format Index Reference #

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



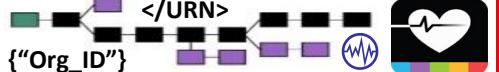
# PROCESS MESSAGE BY PRECEDENCE UNIVERSAL EVENT / ALERT MESSAGE BUS

## **OPERATIONAL NODES / ACTIVITIES**

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



# MIL STD 2525A, B, C, D



20022

STRUCTURED  
DATA  
EXCHANGESYNTAX LEXICON  
ROSETTA STONE

Coder's Guide

lexicon

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

STRATML

XBRL

XAML

UBL

TOSCA

YAML

SYMBOLS  
RULE THE  
WORLD

FFIRN Field Format Index Reference #

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

BY Form Field Position &amp; NUMBER

&lt;108&gt; NDN Firefly-Heartbeat Flash Messages

PROCESS MESSAGE BY PRECEDENCE  
UNIVERSAL EVENT / ALERT MESSAGE BUS

OPERATIONAL NODES / ACTIVITIES

DATA SYSTEM FUNCTIONS PERFORMANCE

11.4 - Classification  
11.4.1 - Category11.4.1.1 - Confidence Level  
11.8.1.1 - 11.8.1.1 - Angular11.4.1.2 - Estimate Type  
11.4.1.2.1 - Alternative11.4.1.2.2 - Evaluated D  
PURCHASE CODES

11.4.1.3 - Value

SYMBOL Friend Neutral Hostile Competitor

2525C Partner

11.4.1.3.5 - Surface

11.4.2 - Platform / Point / Feature Type

11.4.3 - Specific Type

11.4.4 - Type Modifier

11.4.5 - Unit

1 - Velocity

1.4.1 - Horizontal

1.4.2 - Vertical

1/A Confidence

1 - Bearing Angle

2 - Bearing Angle Rate

3 - Covariance Matrix

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>

INFOCON 5 4 3 2 1 INFORMATION CONDITION

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

{"URN"} {"URN"}

{"TRANSACTIONID"} {"TRANSACTIONID"}

MESSAGE TEXT FORMAT:

SEG RPT OCC CLASSNAME SETID SEQ FIELD OCCURRENCE SET FORMAT NAME

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

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

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

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

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

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

O ORIGD 7 /M /M /M /M /M /M /C // (NU) ORGANIZATION DESIGNATOR

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

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

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

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

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

M 11NUPRES GENTEXT 13 /M /M // (NU) 2. MISSION &lt;/108&gt;K00.99 / FIX / SWIFT / E-911 Heartbeat Message

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

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

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

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

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

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

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

SYMBOLS Friend Neutral Hostile MEDICAL EVAC &amp; HOSPITALISATION

Partner Competitor - - MILITARY OPERATIONS

TOKENIZED ECONOMY BREVITY CODE OPSCOSE MAPPE TO SYMBOLS

STOCK NDN NAMED DATA  
EXCHANGE NETWORKING  
MIC CODES PRECEDENCE  
FILTERS PROCESSINGBLOCKTIME ARBITRAGE ERLANG  
TIME EQUATIONS

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 nor laws"  
- Confucius

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

CONFUCIOUS

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

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

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

STANDARD, CONSISTENT SYMBOLS

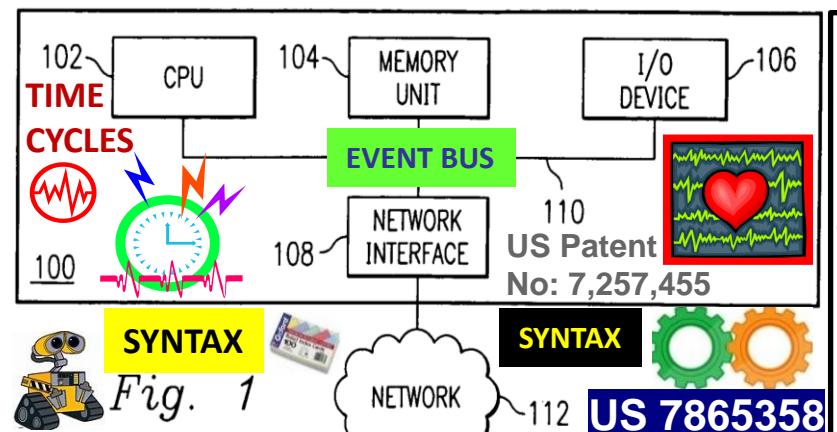
FROM	TO					CODE GUIDE
	GCCS-A	TAIS	ASAS	AMDPCS	AFATDS	MCS
ASAS	C002 C203 F002 F014 F015 F541 S201 S309	C002 C203		C002 C203 F014 F541 S201 S309	C002 C203 F014 F541 S201 S309	
AMDPCS	OPSCODE BREVITY CODES					
AFATDS	F002 F014 F015 F541 S201					

MESSAGE CATALOG  
300 + Use Cases

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

Information Categories and Examples





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

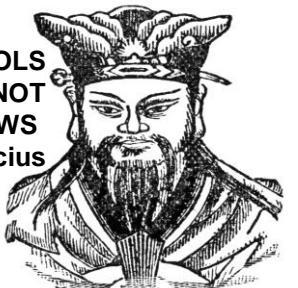
**US 7865358 CLAIM 1.** method converting textual data from source form to target forms, where target form differs from source form's linguistics, syntax

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

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

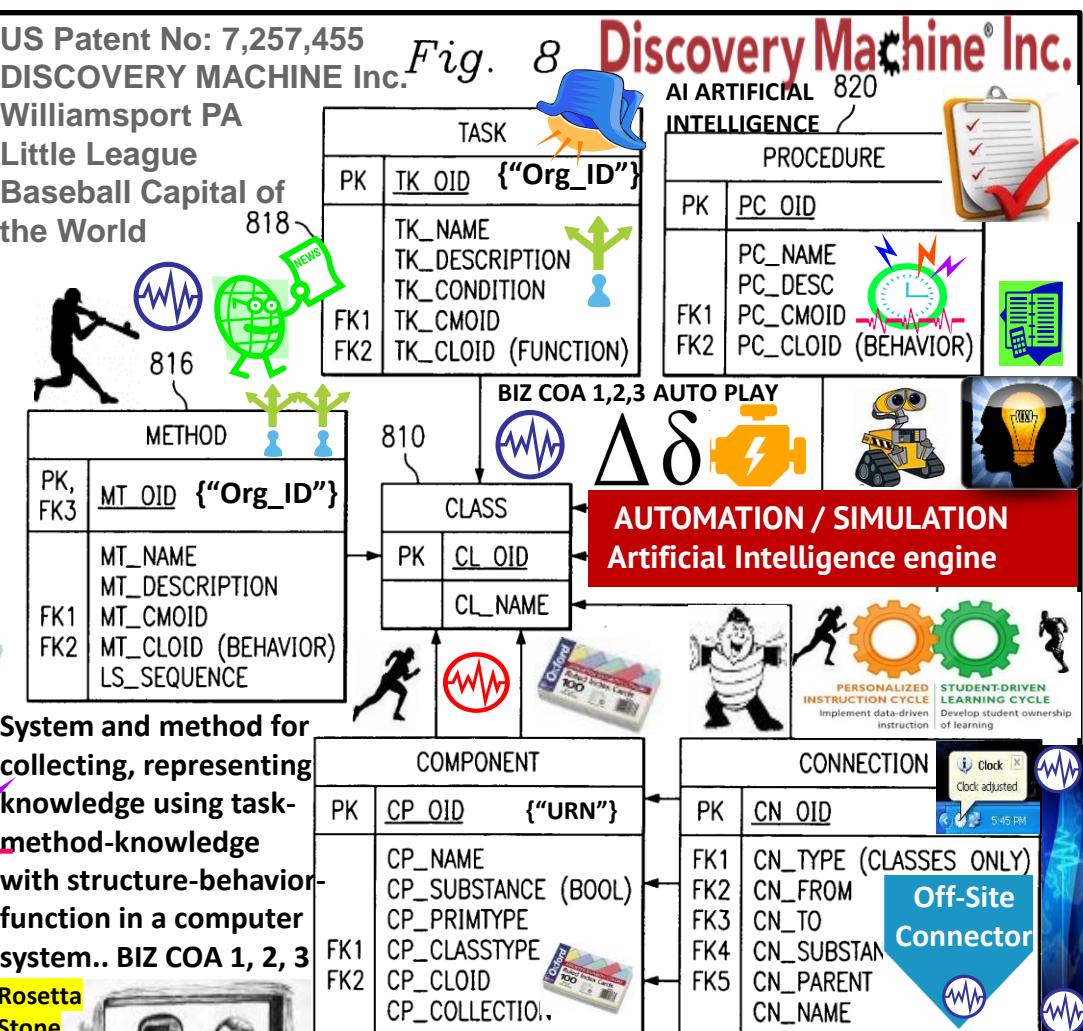
"SIGNS AND SYMBOLS RULE THE WORLD, NOT RULES OR LAWS"

NATO OTAN RULE THE WORLD, NOT RULES OR LAWS



Alpha-numeric OPSCODE

Brevity codes mapped to symbols, Symbol sets = structured data

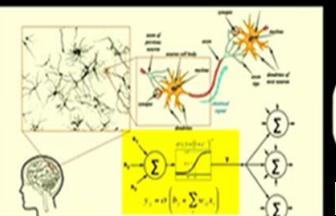


2525 Series  
Symbol Set  
Libraries



**Neuro-Symbolic AI**

Neural Networks  
(Deep Learning)

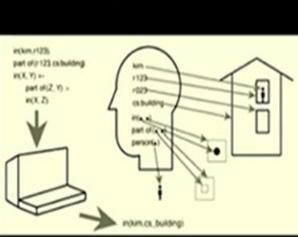


Breaking the world into symbols (rather than neurons)

Brevity  
Codes

Symbols  
Symbol

Sets 2525C



Incorporate common sense reasoning and knowledge about the world into the AI

# 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

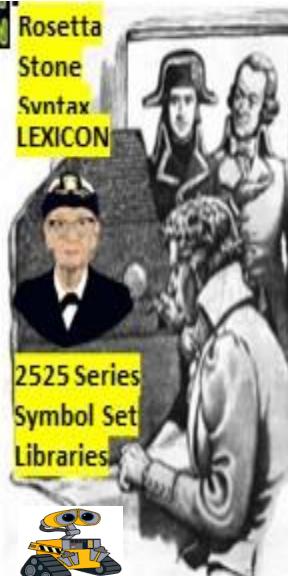
This claim implies both that human thinking is a kind of symbol manipulation (because a symbol system is necessary for intelligence) and that machines can be intelligent (because a symbol system is sufficient for intelligence).[3] The idea has philosophical roots in Hobbes (who claimed reasoning was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

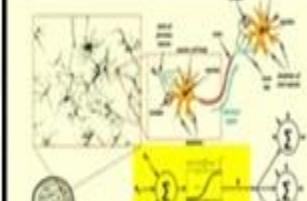
FRZ T CP CLOUD

ABC A OPS CODE BREVITY CODES

Neuro-Symbolic AI

Symbolic (human-readable)  
representations

Neural Networks  
(Deep Learning)



Brevity  
Codes

SYMBOLS

SYMBOLS

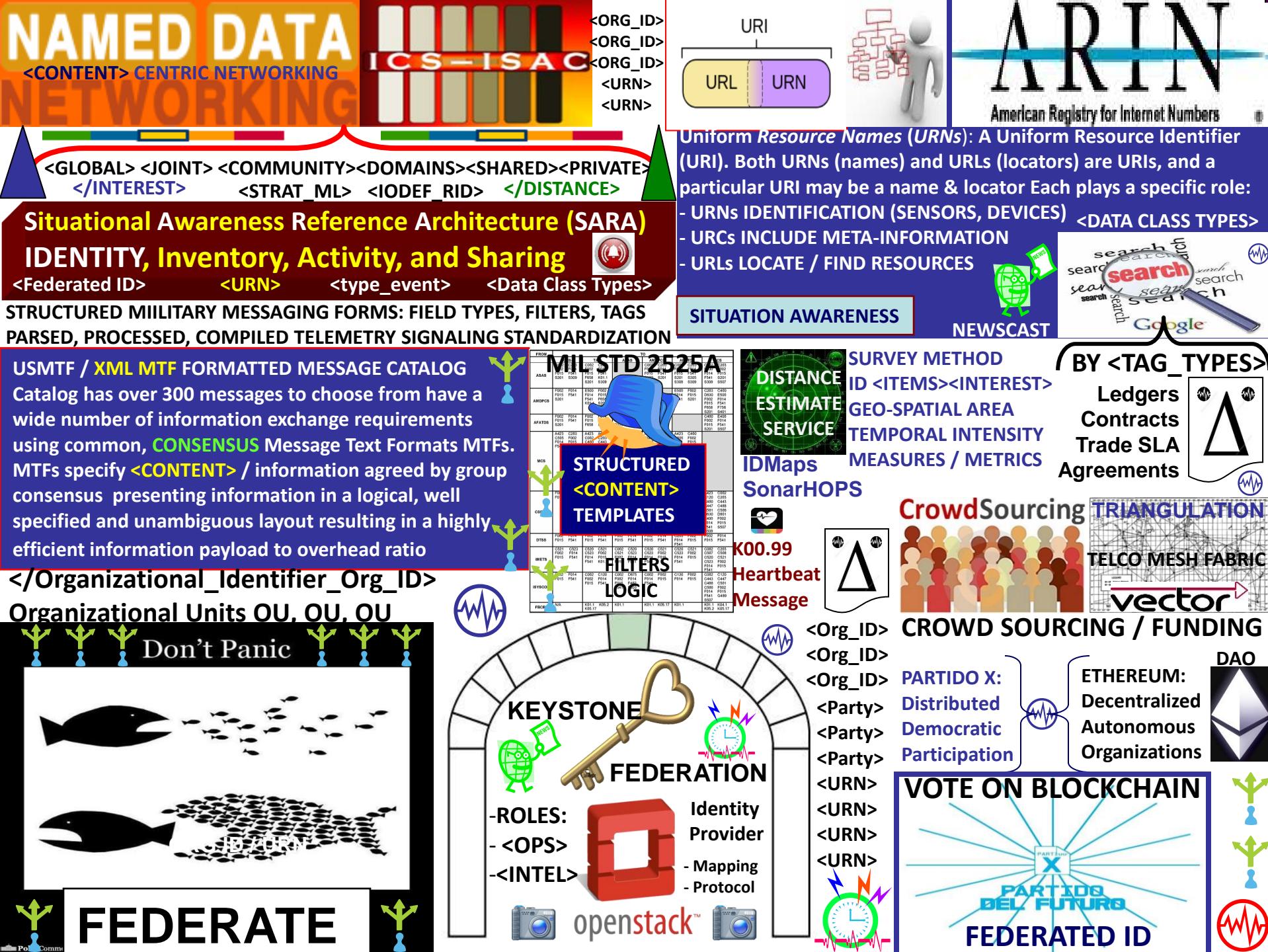
SYMBOLS

SYMBOLS

SYMBOLS

Symbolic AI

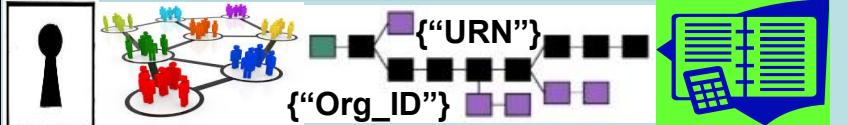
Incorporate common sense reasoning and





# Heart Beacon Cycle

## FEDERATE / TRADE FEDERATIONS



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

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

Federation  
Gateway



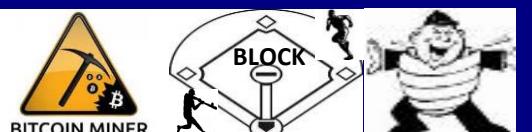
{"GLOBAL"}  
{"SHARED"}  
{"DOMAIN"}  
{"COMMUNITY"}  
{"PRIVATE"}  
{"GROUP ID"}



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



</RESOURCE> {"URN"}  
{"Asset\_Class"} </URN>

STOCK EXCHANGE  
MIC MARKET IDENTIFIER  
CODES / BREVITY CODES



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



Signalling, Telemetry



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

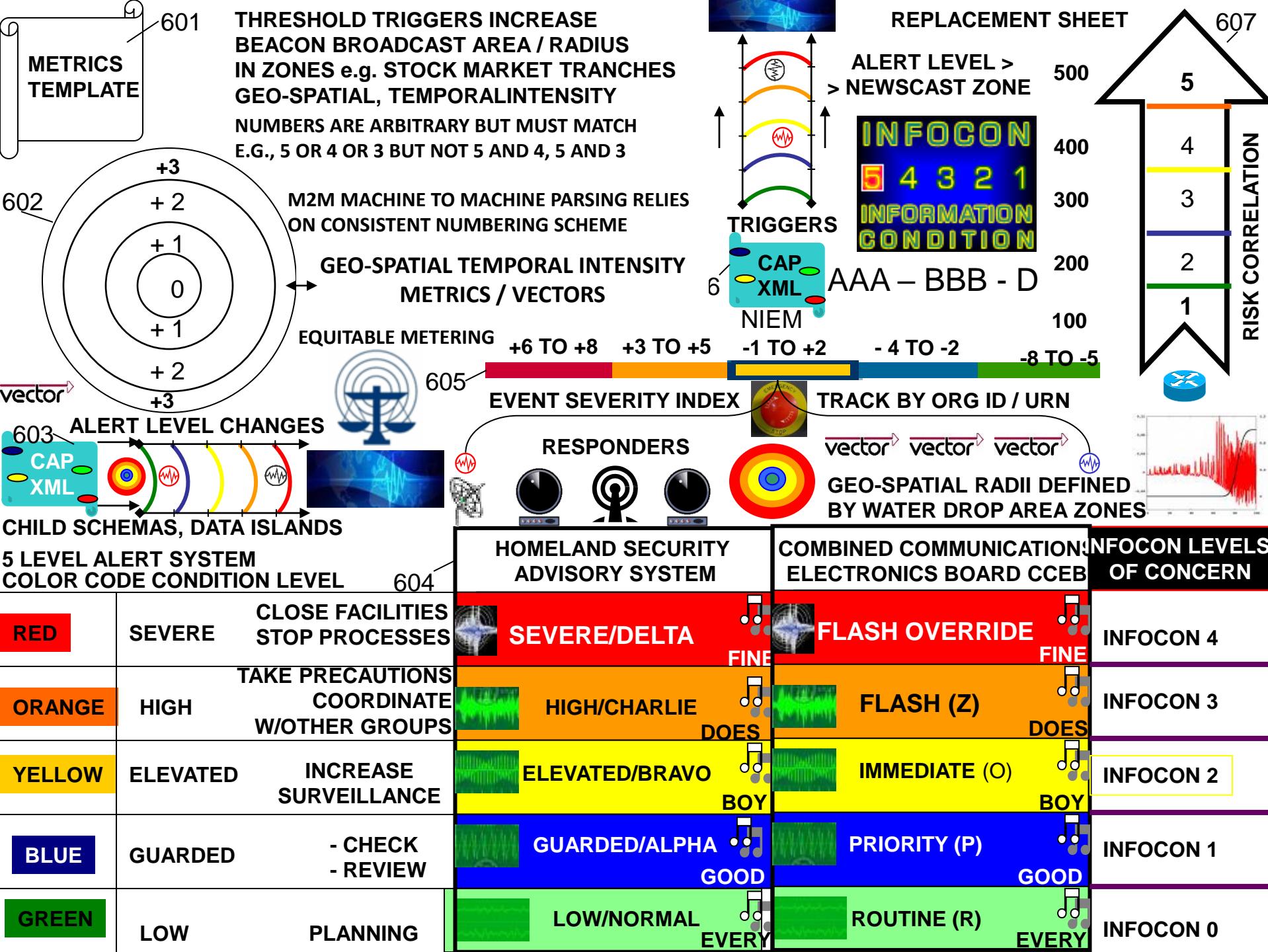


Heartbeat Snaps  
QR CODE  
MICRO-CYCLES



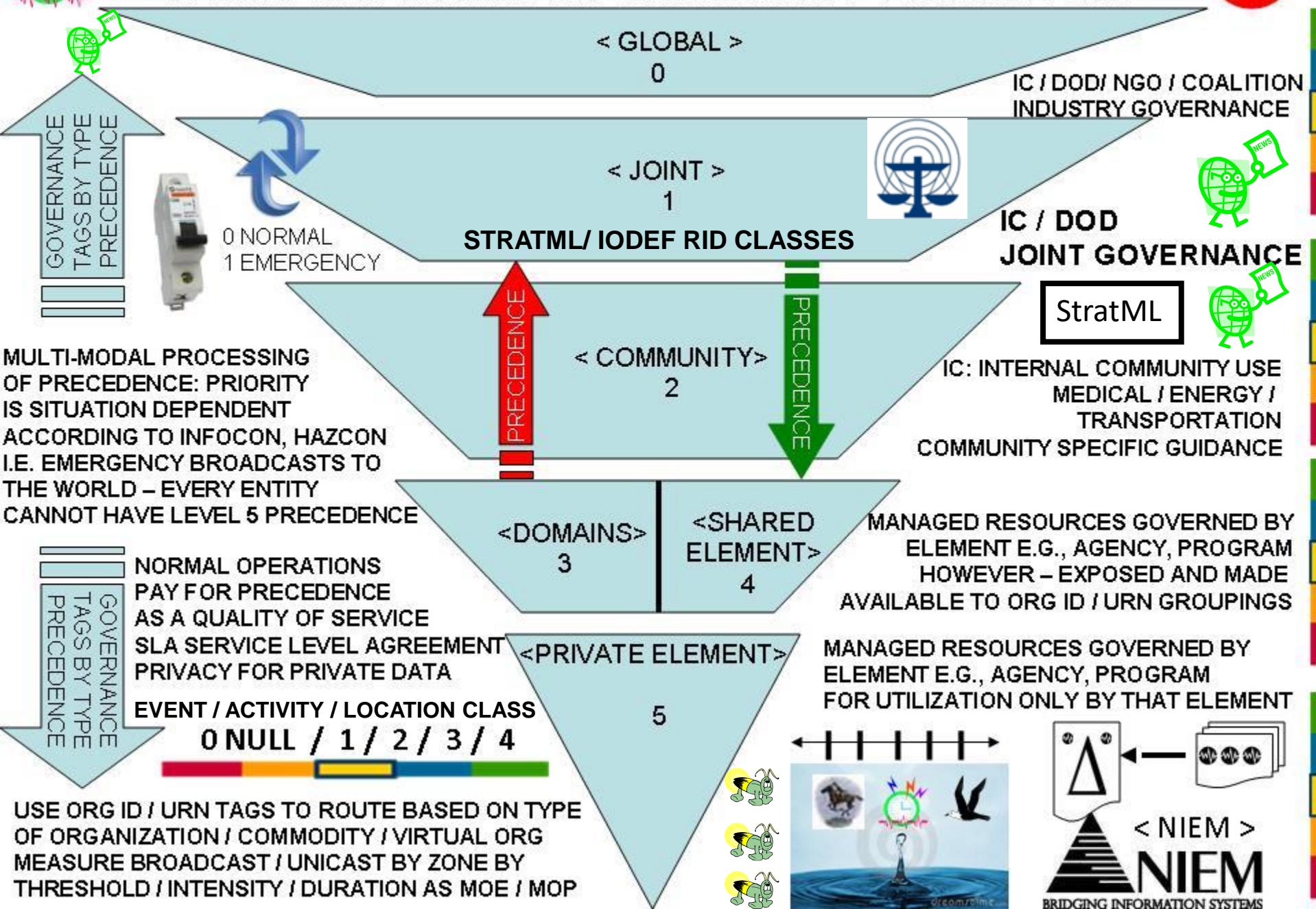
## FEDERATE: COMMON GOALS SYNCHRONIZED IN SPACE - TIME







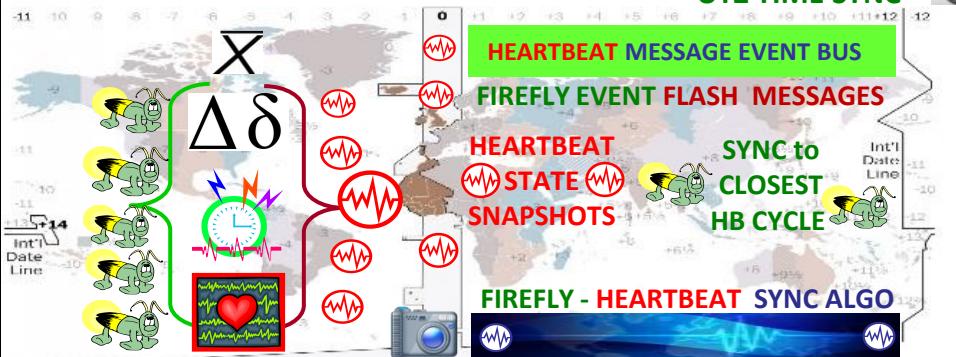
# ENABLE MAPPING OF GOVERNANCE / MANAGEMENT RESOURCES BY PRECEDENCE SHOWN IN GEO-SPATIO INTENSITY DASHBOARD VIEWS



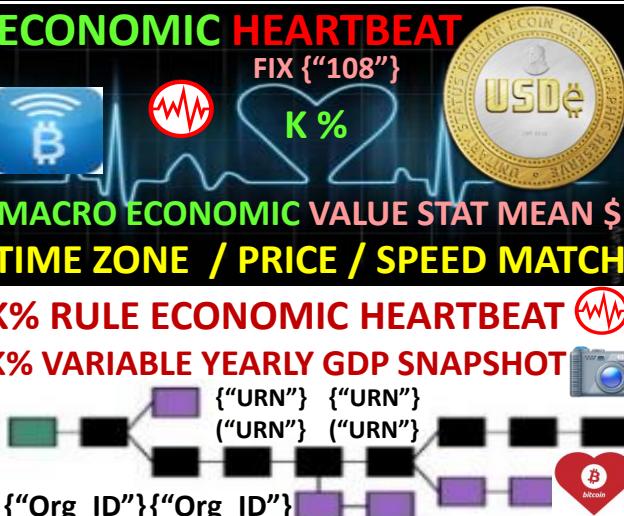
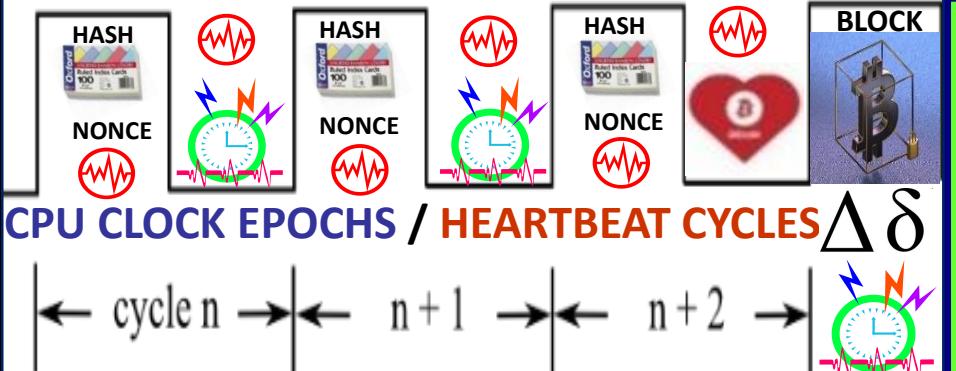




The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



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

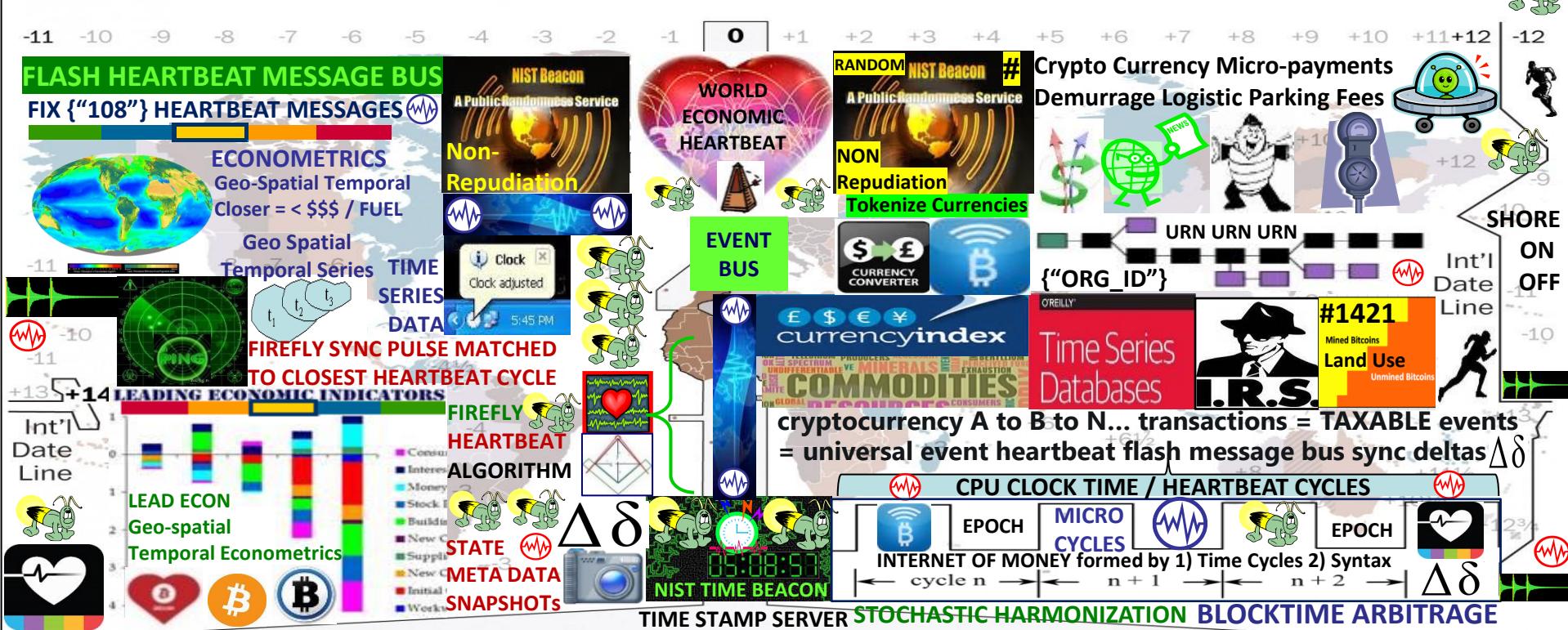


"Heartbeat Synchronization strives to have nodes in a distributed system generate periodic local "heartbeat" events approximately at the same time. It differs from classical clock sync in that Nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. There is no requirement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





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.

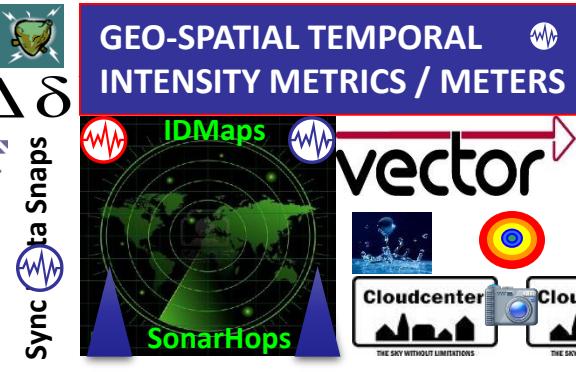
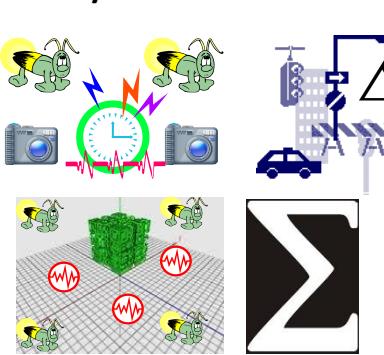
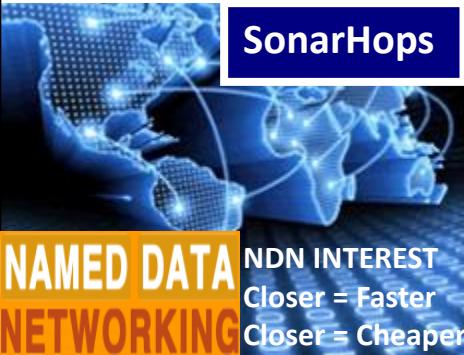




# IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information  
/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

NDN RIB

NDN INTEREST LENGTH  
= DISTANCE BY HOPS

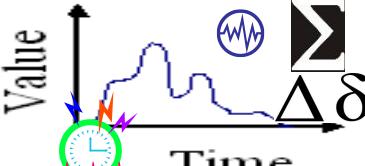
**TRIANGULATION**



NDN  
INTEREST

IS DATA  
FRESH ?

**Time Series**



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



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



**MICRO-CYCLES**



NDN INTEREST LIFETIME = TTL Time To Live



HEARTBEAT STATE META DATASNAPSHOTS

# GEO-SPATIAL TEMPORAL INTENSITY METRICS, METERS, VECTORS



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



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



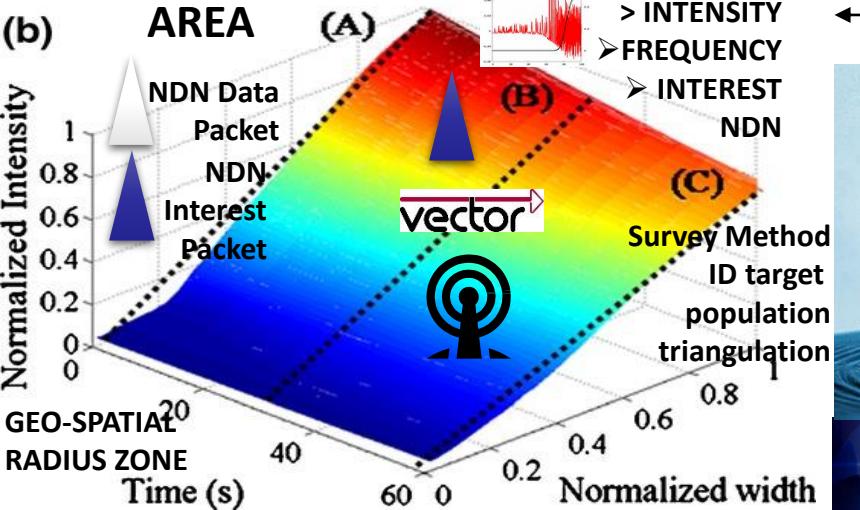
Paul Revere = linear, sequential



TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY Cyclic Frequency



# NAMED DATA NETWORKING

<INTEREST>  
MQTT



NIST TIME BEACON

Hop Count

INSTRUCTIONS TO MASTER CONTROLLER

Number of Hops = 3

START

SOURCE NETWORK 172.16.0.0/16

omnisecu.com.R1

omnisecu.com.R2

omnisecu.com.R3

omnisecu.com.R4

DESTINATION NETWORK 172.27.0.0/16

Time To Live

STOP

TTL =

Time To Live

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

IDMAPS

SONARHOPS

INTERNET

TRIANGULATION

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

mesh Net

ALERT LEVEL >

NEWSCAST ZONE

vector

WirelessHART

time synchronized,

self-organizing,

# 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”

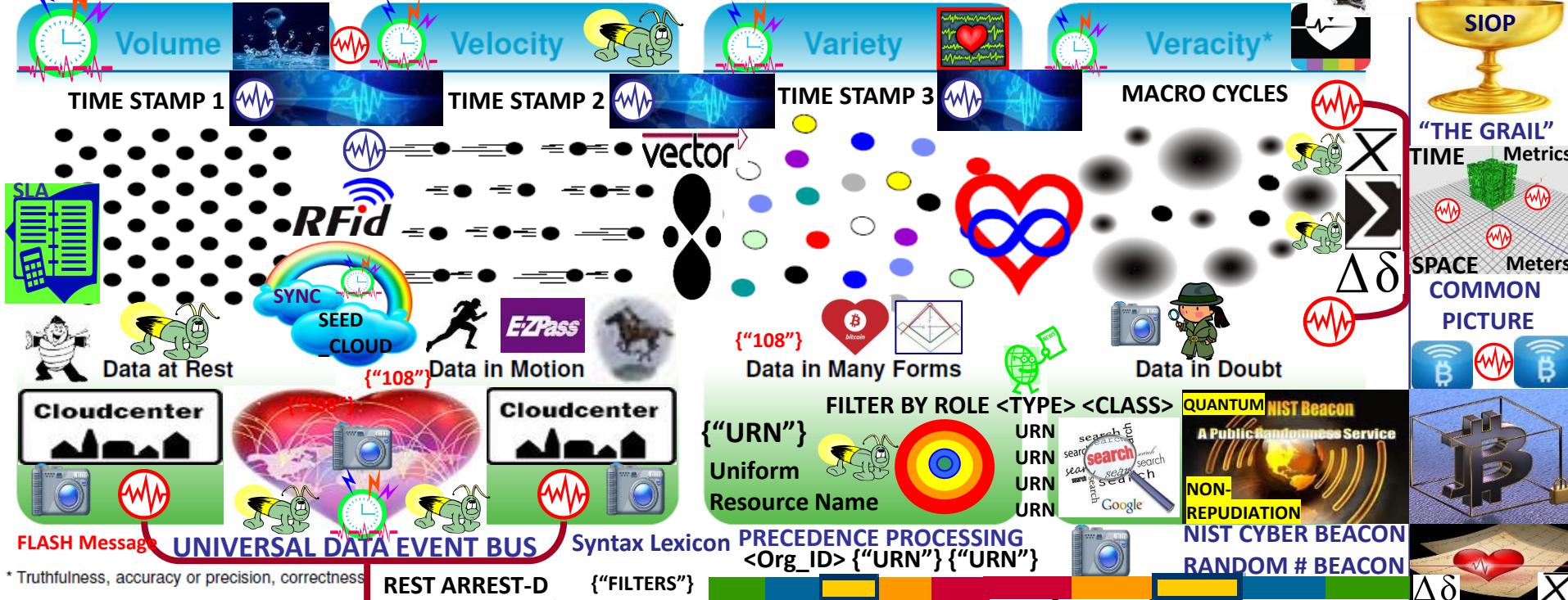
## The four dimensions of Big Data

vector

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



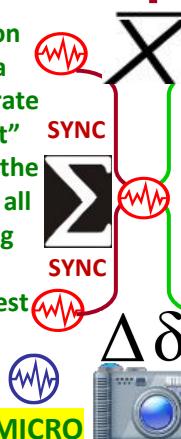
TIME STAMP BY Org\_ID, URN Before FUSION CENTER



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

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

State Meta Data  
Heartbeat Snaps



ALGORITHM Universal Event / Alert Bus

HASHGRAPH  
Consensus Algorithm  
Time Averaged  
Time Stamping



PAUL REVERE MEME  
LINEAR SEQUENTIAL

< / = / >  
HEARTBEAT SYNCRONIZATION

FOAM spatial protocol  
Ethereum Blockchain

World Computer  
Neural Network



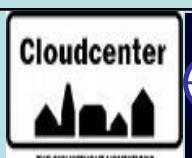
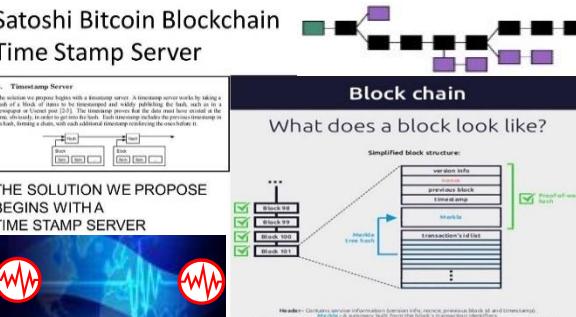
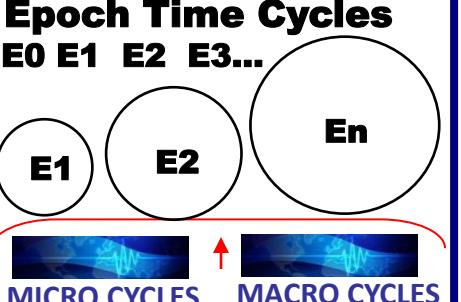
Geo-spatial  
Distance Est  
Service  
IDMaps  
SonarHops

SPACE Meters  
COMMON PICTURE



“THE GRAIL”  
TIME Metrics



Interface Name	HEARTBEAT Administration Interface [SCOP]		
Documentation URL	<a href="http://scop.sourceforge.net/">http://scop.sourceforge.net/</a> <a href="http://linuxvirtualserver.org/software/index.html">http://linuxvirtualserver.org/software/index.html</a>		
API Information	#Big_Data	 <p>Cloud Interface Management configuration, start, stop cloud services, edit configuration (heartbeat messages)</p>	 <p>Cloudcenter THE SKY WITHOUT LIMITATIONS</p>
 	Functionality Areas	 <p>Cloudcenter THE SKY WITHOUT LIMITATIONS</p>	Cloudcenter THE SKY WITHOUT LIMITATIONS
Programmable Money World Computer / Blockchain	#Big_Data	 <p>Cloudcenter LOCATE &lt;CONTENT&gt; IDMAPS / SonarHOPS</p>	 <p>Cloudcenter LOCATE &lt;CONTENT&gt; IDMAPS / SonarHOPS</p>
 	API Operation Count	Web service access type Network Effects / A.I.	Web application, front end to [network, device, system, blockchain] heartbeat
 	LANGUAGE / PLATFORM BINDINGS	 <p>Cloudcenter PHP Java Erlang...</p>	 <p>Cloudcenter THE SKY WITHOUT LIMITATIONS</p>
Interface Characteristics		<p>SCOP is a web application, PHP based front-end to heartbeat, IP Virtual Server ipvs and Idirectord [e.g., check interval @ 5 seconds]</p> <p>SCOP can start/stop services, view/ edit configuration files e.g., heartbeat message state management snapshots, backups, take a service online/offline, add/ remove virtual/real servers, services etc.</p>	
<p>"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>"</p>		 <p>Satoshi Bitcoin Blockchain Time Stamp Server</p> <p>A. Timestamp Server: The solution we propose begins with a timestamp server. A timestamp server works by taking the current time and publishing the hash, such as in a newspaper or a timestamp [2]. The timestamp proves that the data must have existed at the time you received it, and cannot be forged – it cannot be rolled back, tampered with, or altered in any way.</p> <p>THE SOLUTION WE PROPOSE BEGINS WITH A TIME STAMP SERVER</p>	<p><b>Epoch Time Cycles E0 E1 E2 E3...</b></p>  <p><b>MICRO CYCLES</b></p> <p><b>MACRO CYCLES</b></p>
<p>QubitCoin Interval: Every 30 Seconds</p>			

# SOFTWARE DEFINED NETWORKING

NETOPS

Command Syntax

REST State Transfer

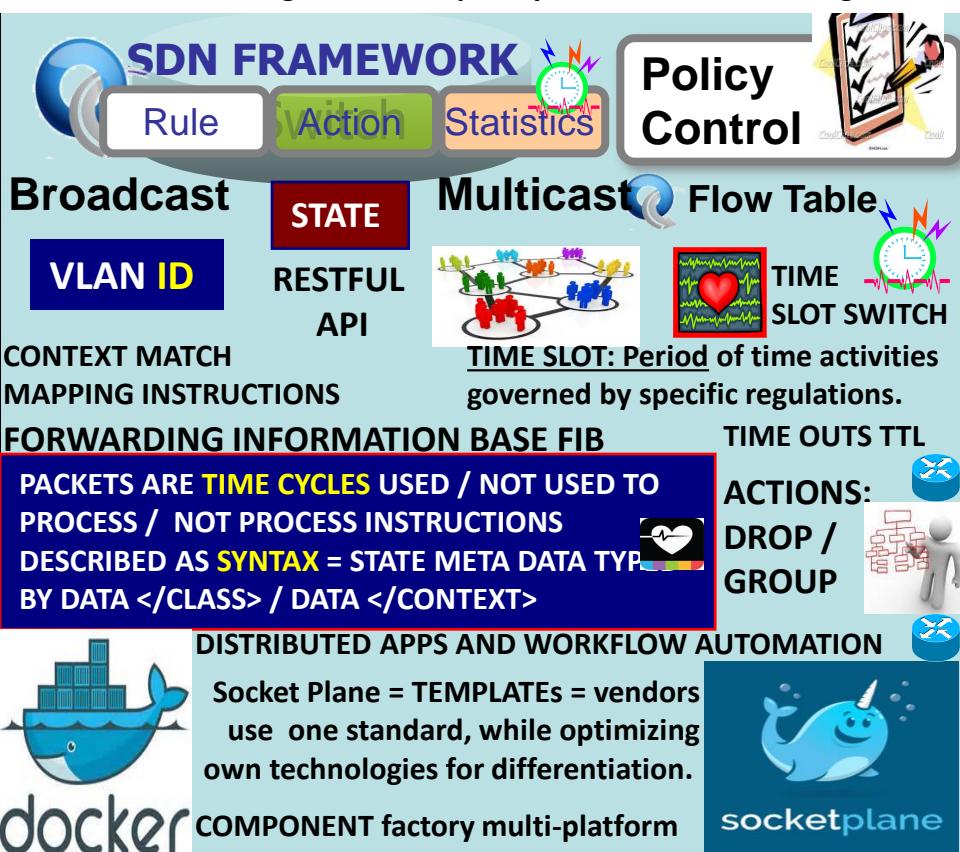
COMMAND SYNTAX  
STATE TRANSFER  
Unicast / Multicast  
Flow Tables / Workflow  
Dynamic Network  
Configuration Management

NET CENTRIC WARFARE  
SYSTEM OF SYSTEMS TELEMETRY

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

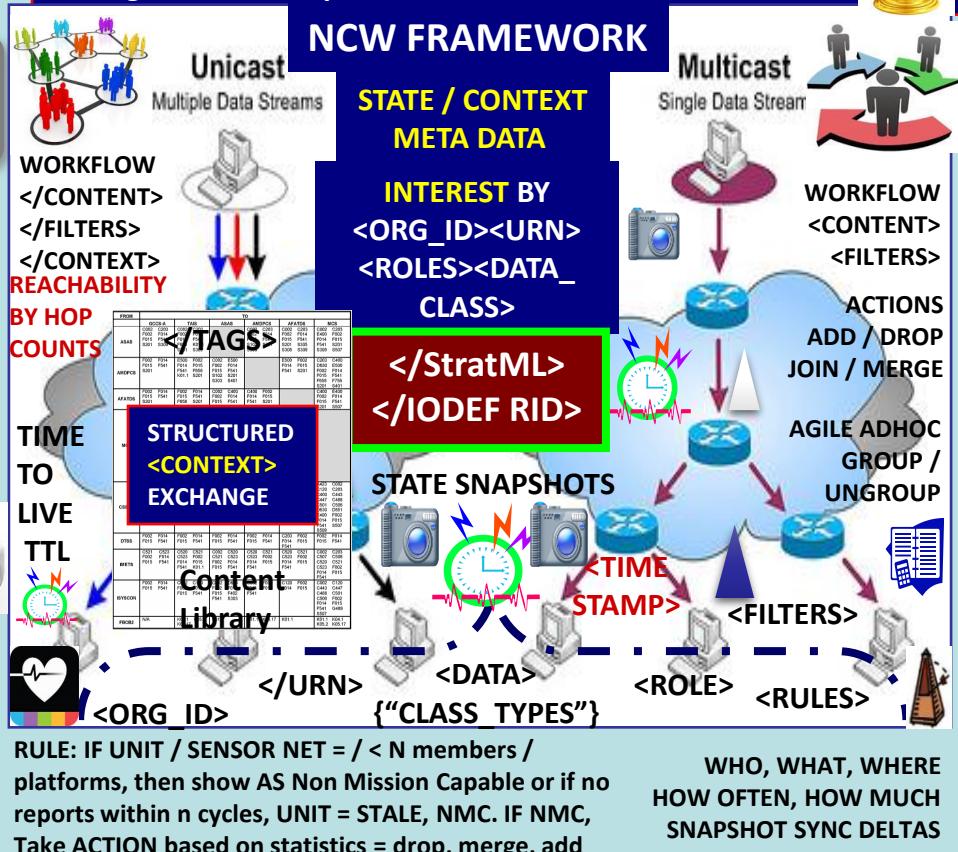
- SDN is a *framework* to allow network administrators to *automatically* and dynamically manage and control a *large number* of network devices, *services*, topology, traffic paths, and packet handling (quality of

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

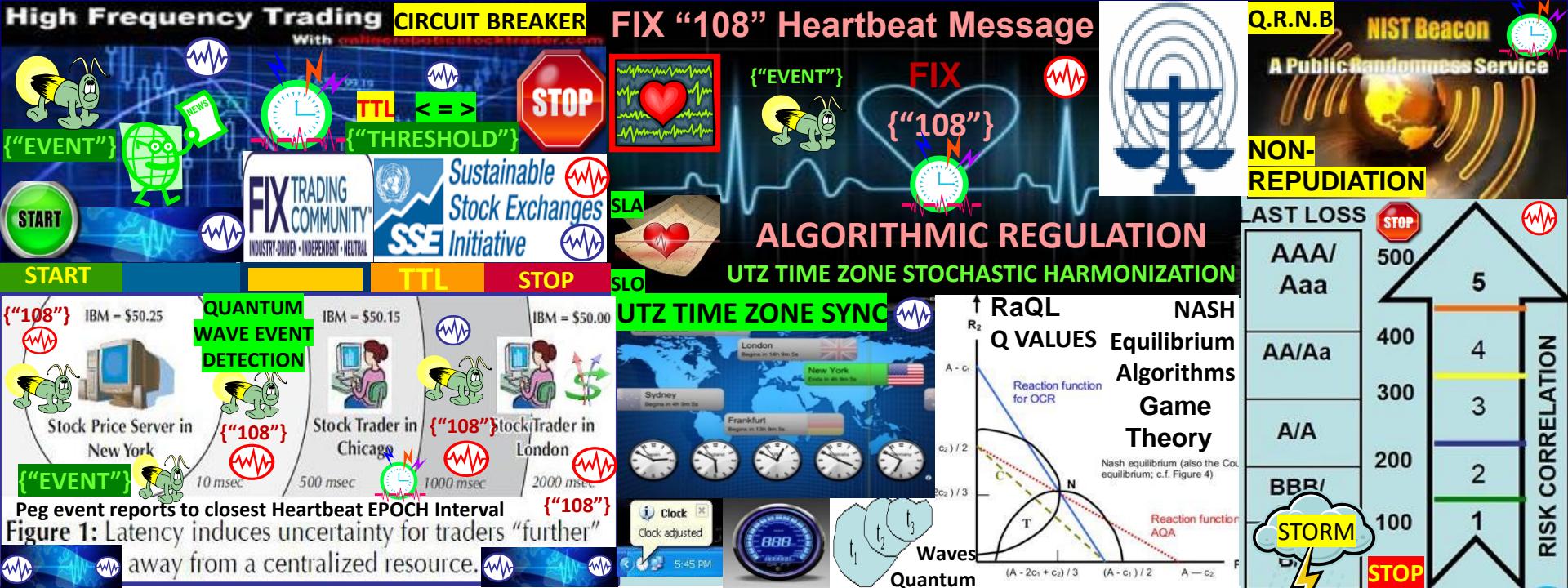


Netcentric / "network-centric" participating in a continuously evolving, complex community of people, devices, information and services interconnected by a network to optimize resource management and provide information on events and conditions.

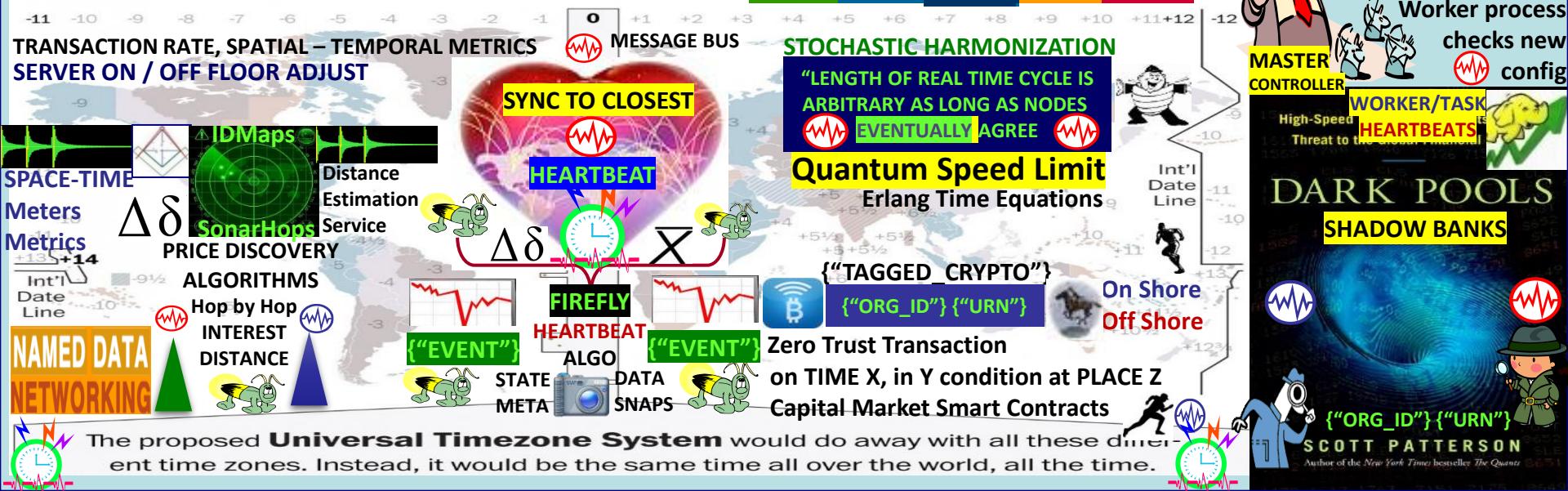
Net-centric Enterprise Architecture : "massively distributed architecture with components, services available across and throughout an enterprise's entire lines-of-business."



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



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



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

GIZMAG: New NASA network poised to bring internet to entire solar system SCt 573 ALICE CORP VS CLS BANK PHYSICAL MEMES

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



TIME / DISTANCE SERVICE LEVEL  
AGREEMENT SLA / O Operations

IEEE 802.15.4 OASIS MQTT

TELEMETRY TRANSPORT

IEEE 802.1AG HOP BY HOP  
DETECTION

IEEE 802.11



HOP BY HOP CONTROL

Unused Resources / Unmet Needs

/localhost/nfd/fib/add-nexthop

Geo-Spatial Temporal  
Metrics, Meters

Time Series

DISTANCE  
INFO SERVICE

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

Micro Grids Closer - Cheaper

BLOCKCHAIN  
MICROGRIDS



TIME / DISTANCE SERVICE LEVEL  
AGREEMENT SLA / O Operations

HOP BY HOP CONTROL

Unused Resources / Unmet Needs

vector



UNUSED RESOURCES

UNMET NEEDS

Spatial  
Econometrics

TIME-SPACE BEACON  
INFOCON  
METRICS / METERS  
TRADE WITH EARTH

INFORMATION  
CONDITION

Spaceship

Earth

Signals &

Telemetry

Annex

???  
SIRIUS DISCLOSURE

buckminster fuller  
operating manual  
for spaceship earth

???

MOON =  
HELIUM 3

"Numbers are the  
Universal Language

offered by deity to humans as  
confirmation of the truth"

ASTEROID BELTS =

RARE MINERALS

MAIN ASTEROID BELT

MARS

MERCURY

VENUS

EARTH

STOCHASTIC

HARMONIZATION

Farther = More Cost

➤ Fuel, Resources

Service Level Agreements

43

22

13

0

1.5

2.7

5.2

Light minutes

Astronomical units

FIREFLY-HEARTBEAT  
ALGORITHM

UNIVERSAL

EVENT MESSAGE BUS

ERLANG

TIME- SPACE METRICS

TROJAN ASTEROIDS

JUPITER

ANDERSON  
INSTITUTE

43

22

13

0

1.5

2.7

5.2

Light minutes

Astronomical units

FIREFLY- HEARTBEAT ALGORITHM MESSAGE EVENT BUS

EPOCH / TIME CYCLES / INTERVALS

cycle n

n + 1

n + 2

→

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

←

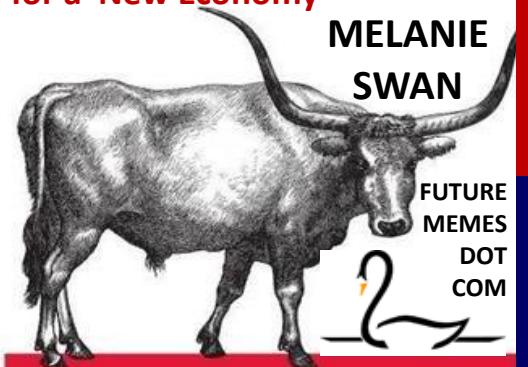
←

←

←

←

←



# Blockchain

BLUEPRINT FOR A NEW ECONOMY



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



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

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



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



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



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



### Functional Sequential Erlang

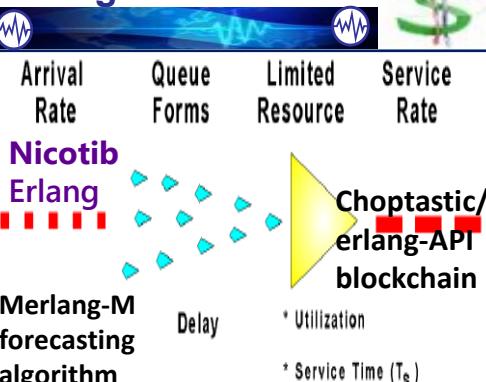
- Data types:
  - Integers (incl. BigNums), floats, atoms
  - tuples/records, lists/plists, binaries, funs
  - Maps (added in R17)
- single assignment
- pattern matching & guards
- closures (anonymous function data type)
- list comprehensions
- bit-syntax & binary comprehensions
- tail recursion & tail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

### SORTING ALGO'S

"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"



20130166398 "System And Method For Implementing A Context Based Payment System."



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

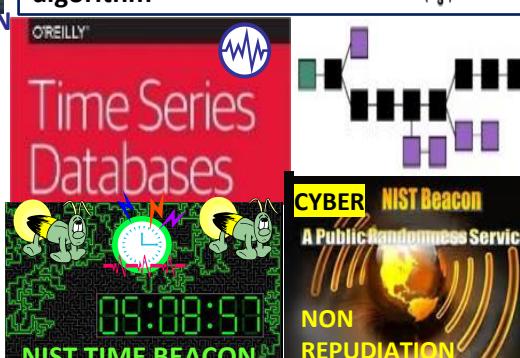


distributed "noSQL" database, embedded right into Erlang, supports indexing, replication, transactions, and fail-over

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

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

	ASIAN	AMERICAN	EUROPEAN	AFRICAN	INDIAN	OTHERS
XBRL / CDL / DAML						
ALPHA NUMERIC BREVITY CODES						
AZURE BLETCHLEY						
STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS						

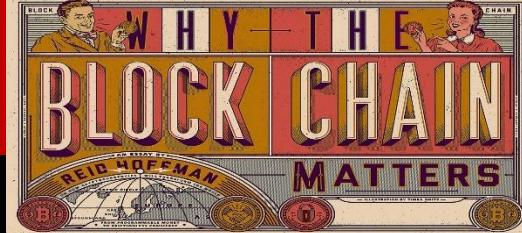


HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX

# TradeNet

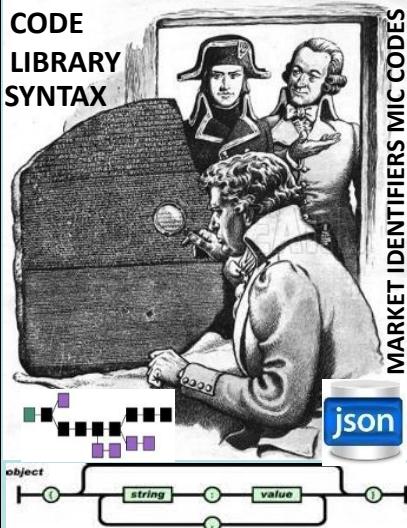


## Programmable Money \$\$\$



RIED HOFFMAN 15 May 2015 [LINK](#)

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

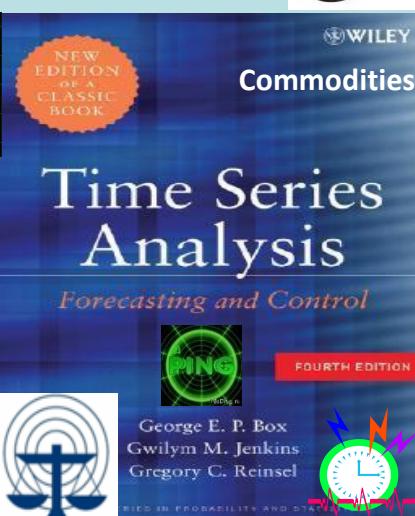
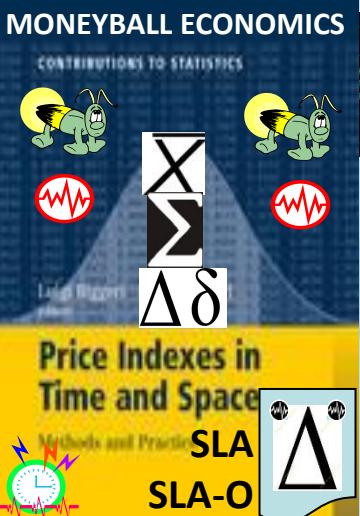


### ORGANIZATIONS



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

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







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



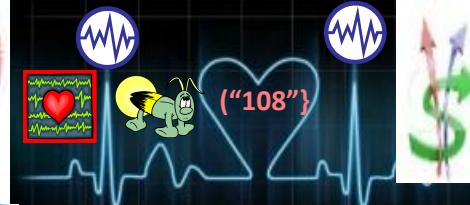
- Creates an online store for users to sell goods for Bitcoin
- Connects these stores directly to each other on a global network
- Users browse individual stores, search for products across whole network
- A buyer directly connects, purchases good from the merchant using Bitcoin
- Bitcoin payments via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

OPENBAZAAR.ORG  
BLOCKCHAIN ARBITRAGE



CLOSER = < \$  
CLOSER = < CO2

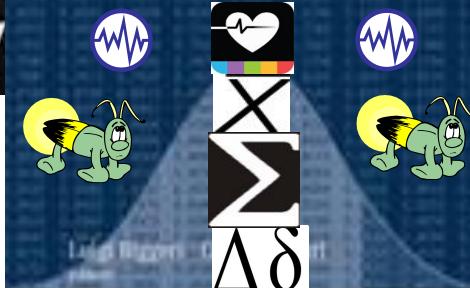
SLA  
COMMODITIES  
ECONOMIC HEARTBEAT



STAT MEAN VALUE PULSE  
REAL WORLD ASSETS RWA

STAT MEAN VALUE INDEX

CONTRIBUTIONS TO STATISTICS



Price Indexes in  
Time and Space  
Methods and Practice

SchellingPoint

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

PROJECT PHILOSOPHY: **MAKE TRADE FREE**

Mission: *shift trade to a decentralized platform*



Demurrage TERRATRC TRADE  
Fees REFERENCE CURRENCY  
“Money of Peace”



Free, open markets: Commodity / Currency Index

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

• Privacy </Org\_ID>



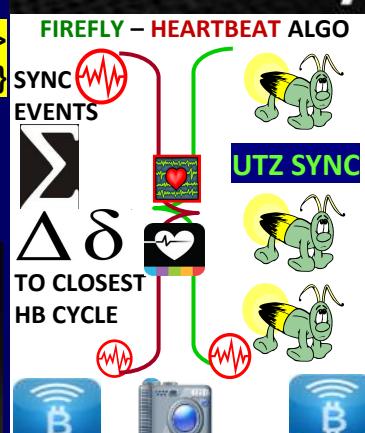
HASH Values  
Nonce Values </Org\_ID>



Federation

ORG ID  
Gateway

Bitcoin: OpenBazaar transactional currency



Cryptographic Security

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



SchellingPoint

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

### Blockchain Consensus Algorithms & Mechanisms



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

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



### Space-Time Consensus Algorithm

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

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

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

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

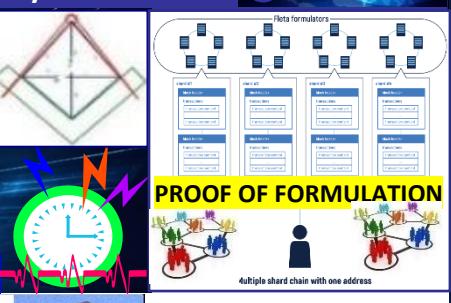
90 feet  
Blockchain/cryptocurrency increments  
Blockchain BLOCK in 3D = CUBE  
Cube has Length, Depth, Height, Volume

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

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

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

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



**MESSAGE ex:**  
• Flashing string  
• Hash Table

300+ Templates

Blockchain BABEL

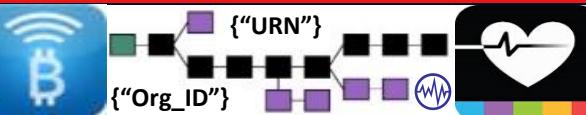
THE CRYPTO CRAZE AND THE CHALLENGE TO BUSINESS

IGOR PEJIC

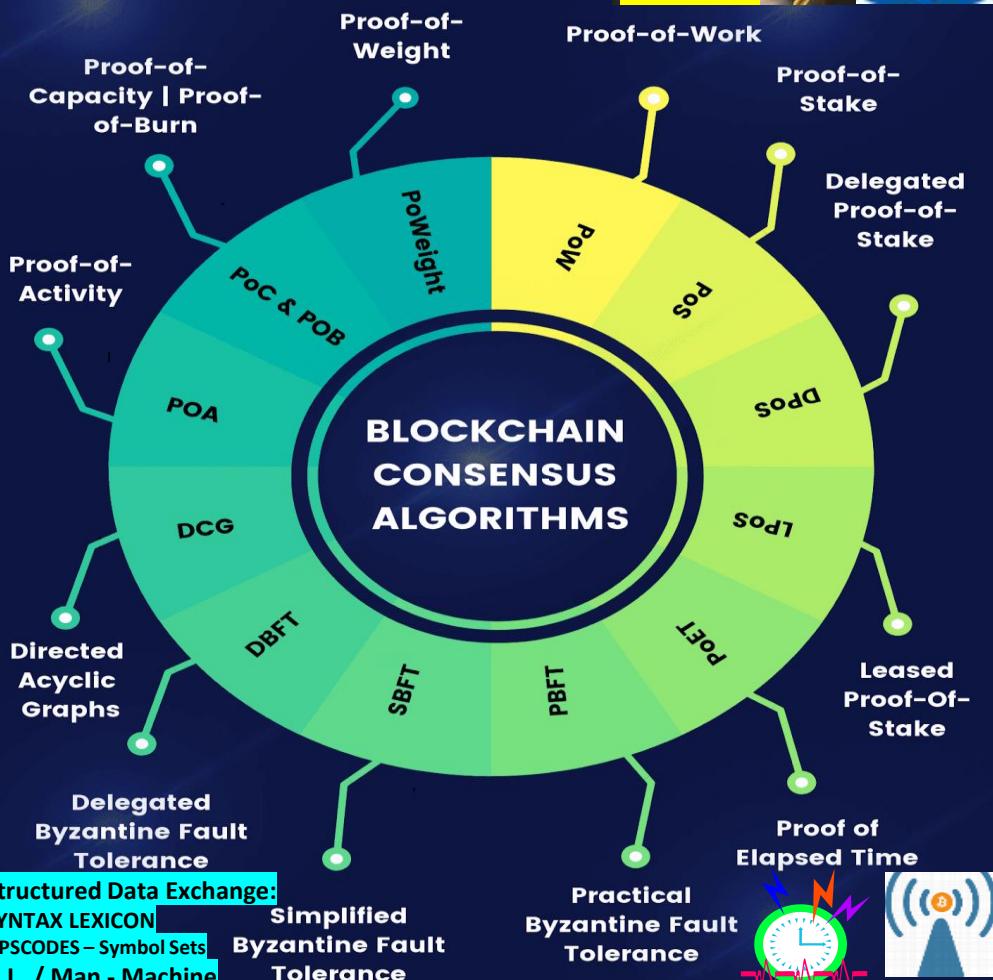
RegainPage

# BLOCKCHAIN CONSENSUS ALGORITHMS

## ULTIMATE GUIDE FOR BEGINNERS



NON REPUDIATION

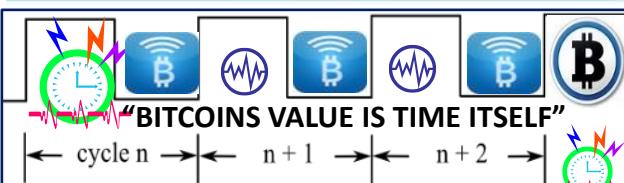


SOURCE: <https://developcoins.com/blockchain-consensus-algorithms>

# PROOF-OF-WORK



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



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

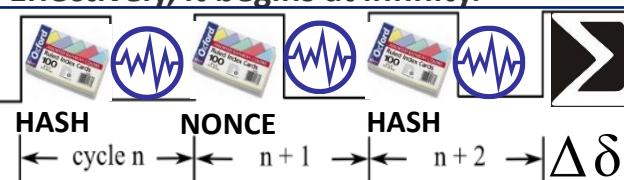


THROTTLE equivalent to difficulty. State  
•target = maximum value of 8 bytes Snap  
Shots



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

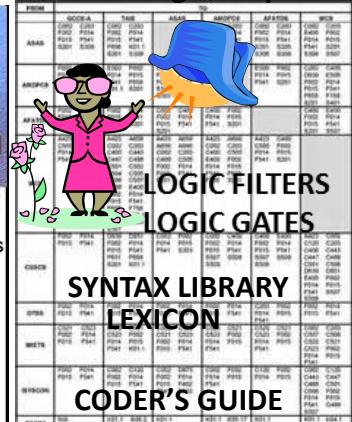
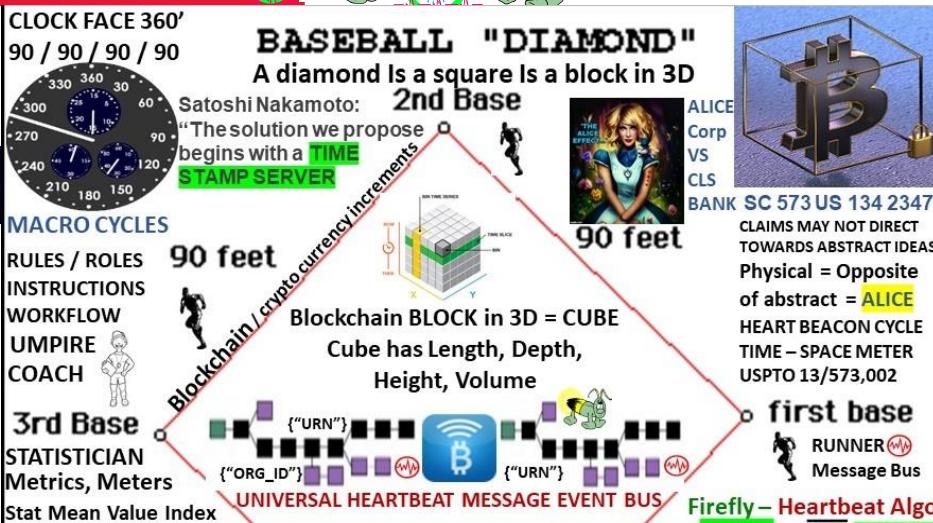
GUESS stores the guess  
Effectively, it begins at infinity.



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



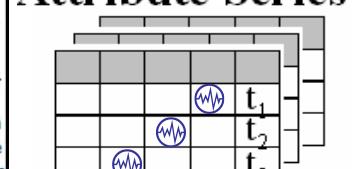
MESSAGE example:  
• Hash string  
• Hash Table



SYNTAX LIBRARY LEXICON

CODER'S GUIDE

POW PAYLOAD : COMBINATIONS OF ENCRYPTED SYNTAX Attribute Series





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

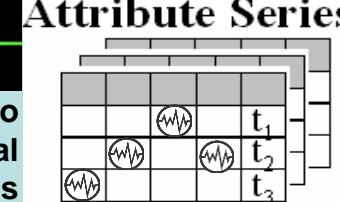
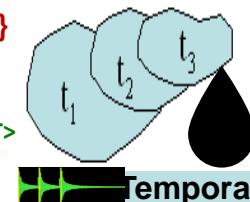
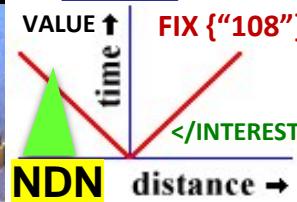


## TIME – SPACE MEASUREMENTS OF TOKENIZED COMMODITIES, SECURITIES... STOCHASTICALLY HARMONIZED ACROSS UTZ Universal Time Zone

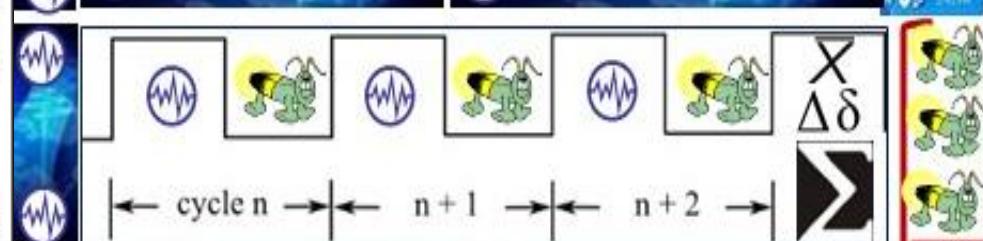


The Volumetric Weight is often referred to as dimensional weight

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



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



FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

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

## DON: DECENTRALIZED ORACLE NETWORKS



### Explicit Staking

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

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



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



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



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



ALERT LEVEL >

> NEWSCAST ZONE

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



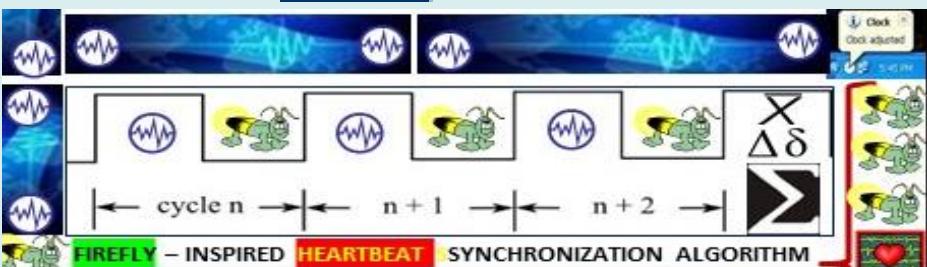
## DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

# Heart Beacon Cycle

## FEDERATE / TRADE FEDERATIONS

### Linear Sequential Meme

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



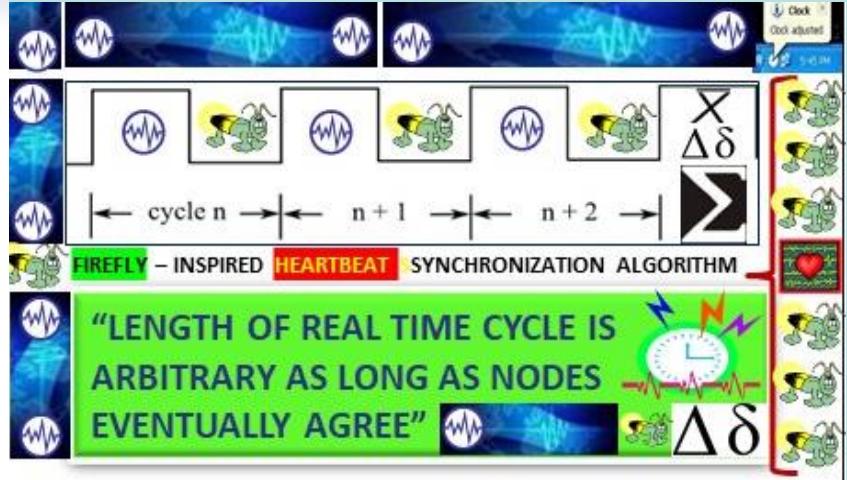
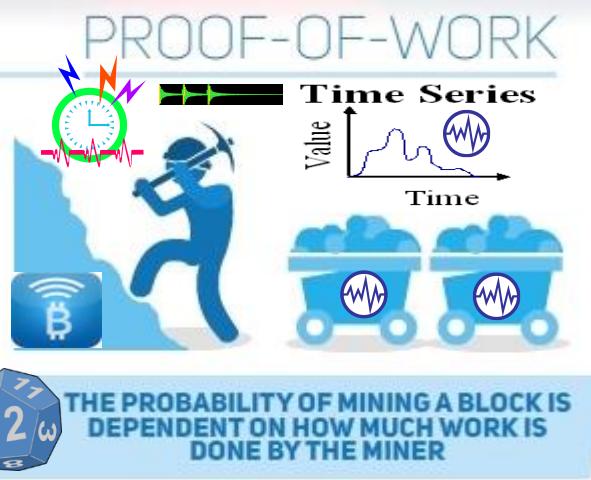
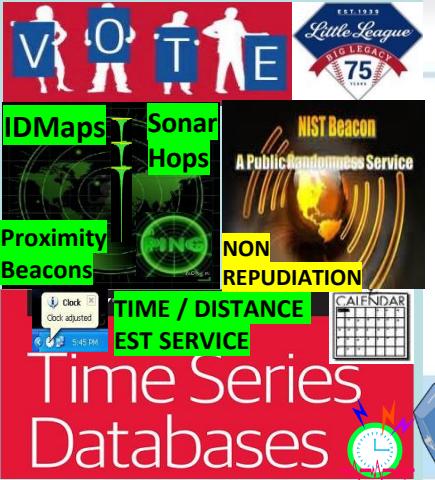


Adaptive  
Procedural  
Checklist

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

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

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



PROOF-OF-WORK

HEART BEACON CYCLE 13/573,002

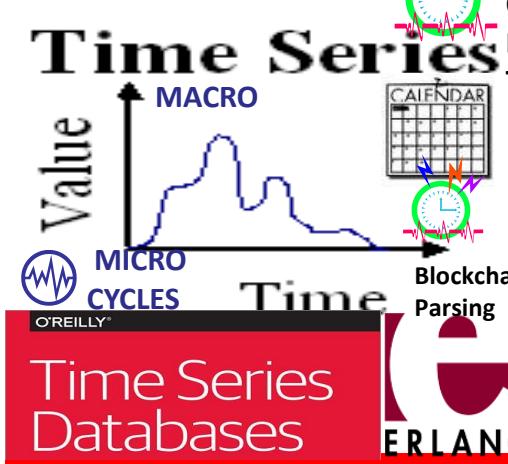


# SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

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



## PROOF OF ELAPSED TIME



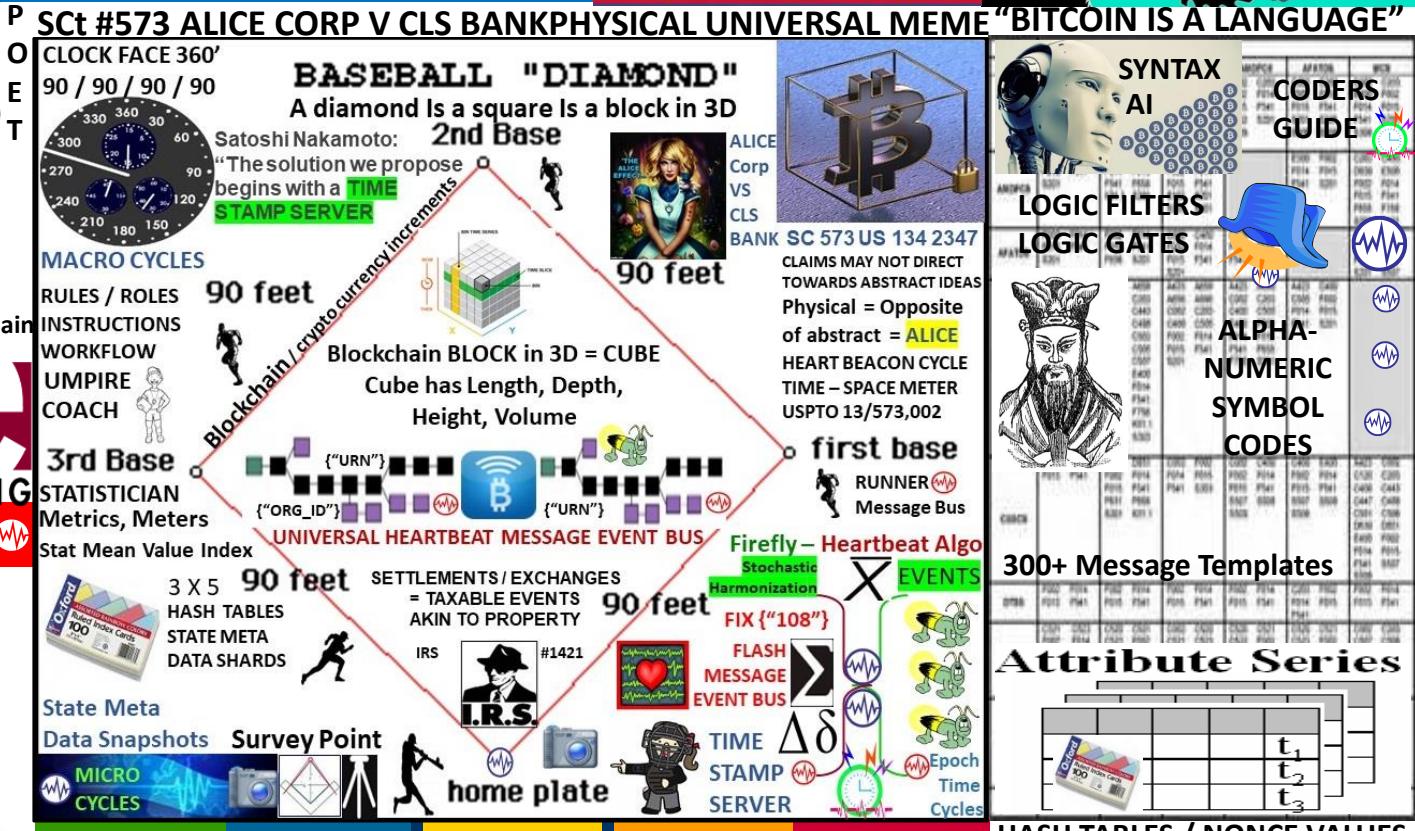
Voting Based Selection: stake size & block generators selected by votes

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

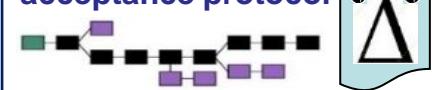


Robert's Rules quorum = minimum # of voting members who must be present at meetings to conduct business of the group

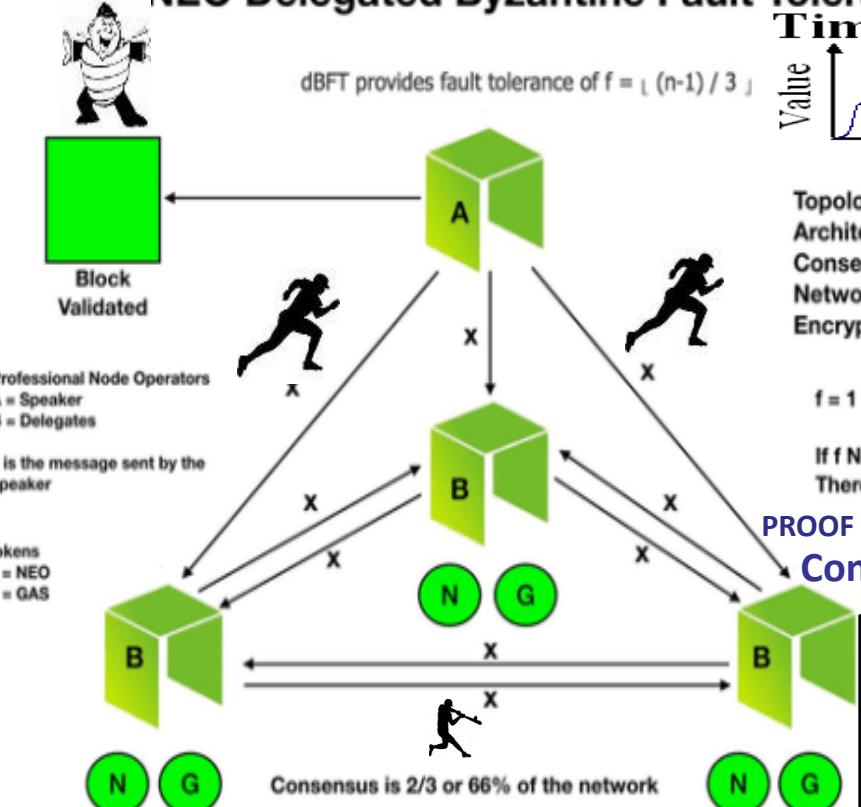
## TOURNAMENT LEAGUE BOARD



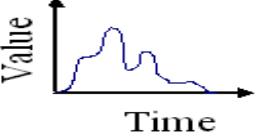
Capture ledger's state  $\Delta \delta$   
Transaction language changes ledger state  
Consensus, transaction acceptance protocol



# NEO Delegated Byzantine Fault Tolerance (dBFT)



## Time Series



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

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

$f = 1 \text{ OR } 0.66$

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

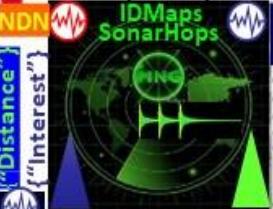
## PROOF OF ELAPSED TIME Consensus Order



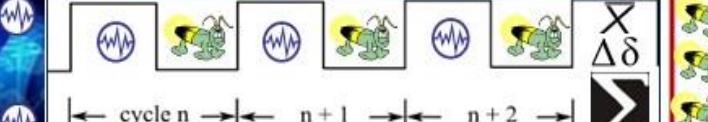
USPTO 13/573,002  
[sawconcepts.com/index](http://sawconcepts.com/index)

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

## TRIANGULATION



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



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



LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED  
{"108"} HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOTS



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

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





**Hashgraph 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

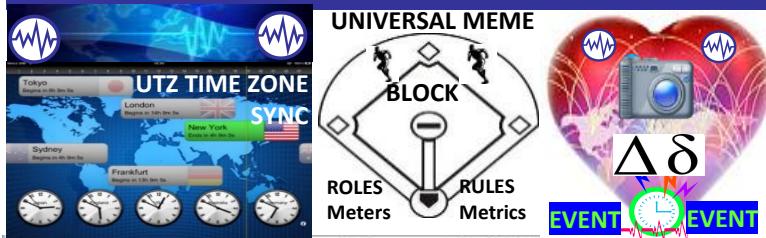
data structure that records who gossiped to whom in what order  $\Delta\delta$

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

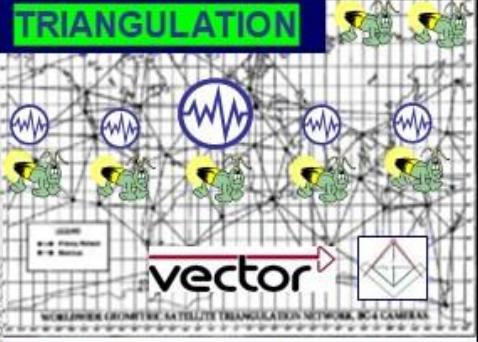


DAG "Directed Acyclic Graph" large number of blocks arrive at the same time. DAG system reaches consensus leveraging "Gossip"... information spread by a computer calling up other computers at random, sharing everything it knows

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

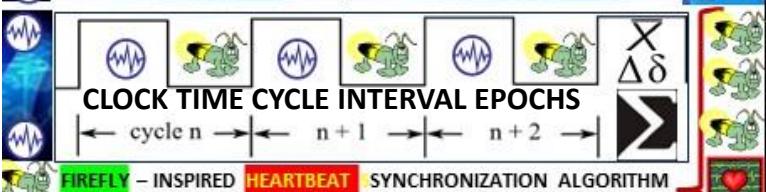


UTZ TIME ZONE SYNC  
Heart Beacon Cycle Time – Space Meter  
Geo-Spatial Temporal Intensity Metrics



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

FIREFLY HEARTBEAT Synchronization Algorithm

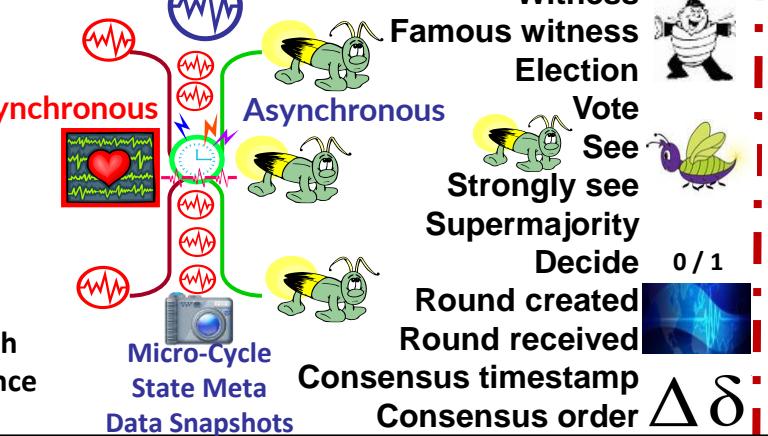


"LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE"

DAG finite directed graph  
= no directed cycles

$$\Sigma \Delta\delta X$$

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



# 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.

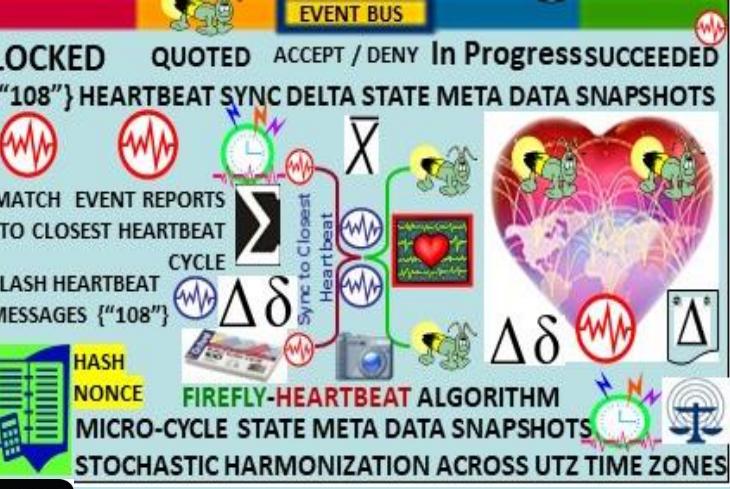
Iain Stewart, the inventor of the POB algorithm, uses an analogy to describe the algorithm: burnt coins are like mining rigs. In this analogy, a miner burns their coins to buy a virtual mining rig that gives them the power to mine blocks. The more coins burned by the miner, the bigger their virtual mining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



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

Phase 2: Shared file stores data for 5 tags:  
(1) Active ID  
(2) Heartbeat 1.  
(3) Heartbeat 2.  
(4) Device Status 1.  
(5) Device Status 2.

SLA/O

Token Award

TAG

IF1\_Heartbeat (IF-Node1)

IF2\_Heartbeat (IF-Node2)

{“Org\_ID”} ActivID

IF1\_DeviceStatus (IF-Node1)

IF2\_DeviceStatus (IF-Node2)

IF1\_State (IF-Node1)  $\Delta\delta$

IF2\_State (IF-Node2)  $\Delta\delta$

Volume / Size + / - Of rig

[UFO2\_ACTIVEID]

[UFO2\_HEARTBEAT:#]

[UFO2\_HEARTBEAT:#]

[UFO2\_DEVICESTAT:#]

[UFO2\_DEVICESTAT:#]

[UFO2\_STATE:#]

[UFO2\_STATE:#]

IEEE C37.118 Time Synchronization

Harmonization Heartbeat update Interval

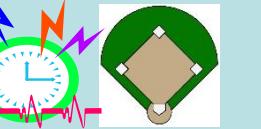
PMU data time-stamp measure C37.118

# Proof of Capacity PoC



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

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



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



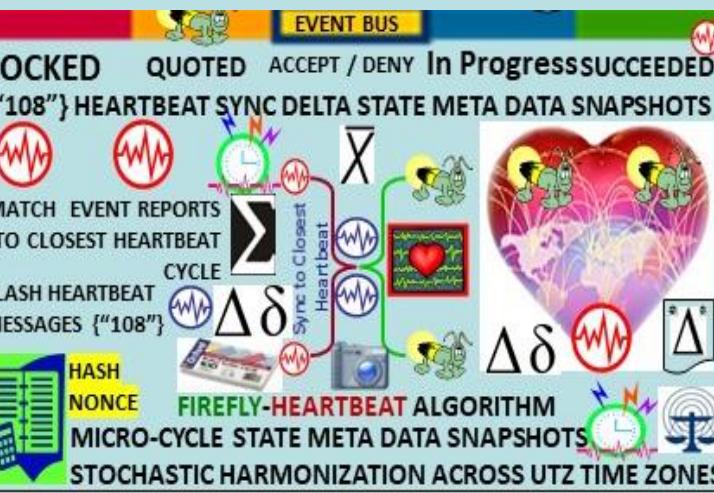
The larger the hard drive, the > possible solution values one can store on the hard drive, the more chances a miner has to match required hash value from his list, resulting in more chances to win the mining reward.



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



Bitcoin purchase akin to property



# PoST Proof-of-Spacetime (PoST)

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

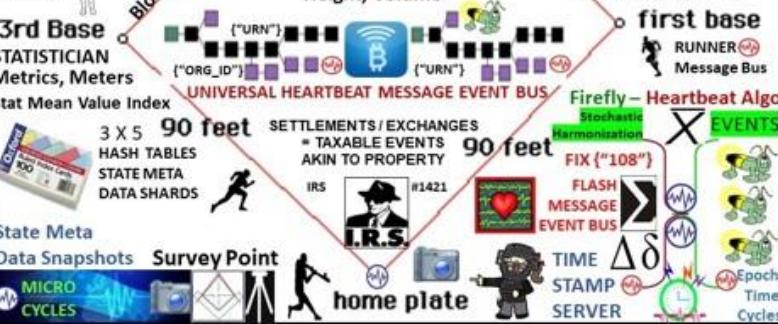
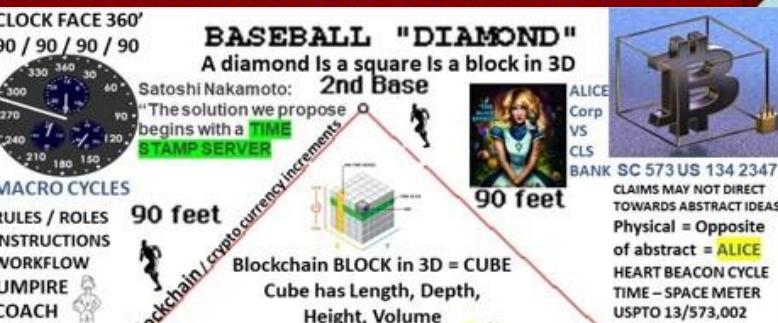


PoST users / nodes must prove that they are spending a certain amount of space for storage.



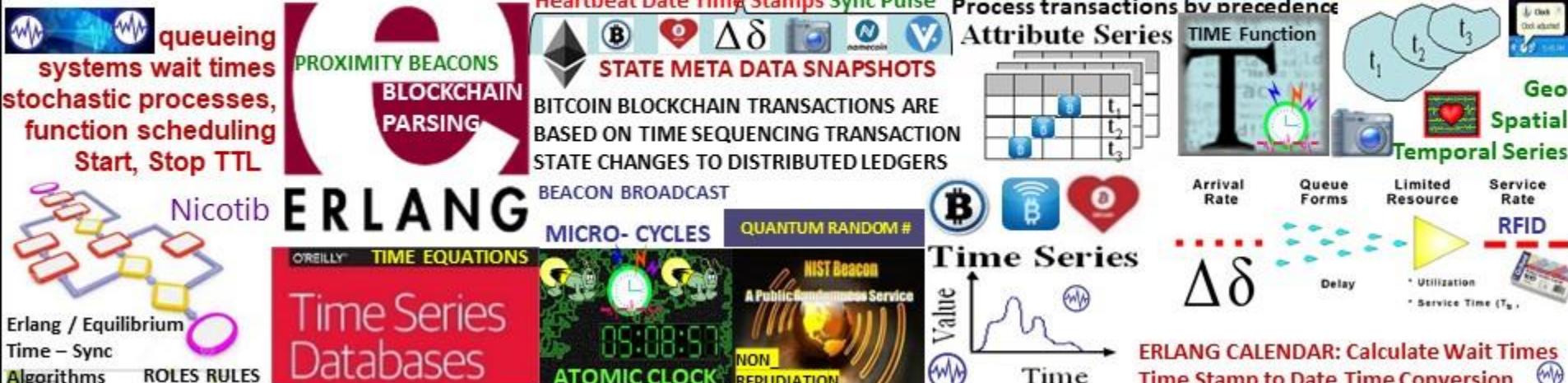
DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

## Heart Beacon Cycle FEDERATE / TRADE FEDERATIONS



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

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

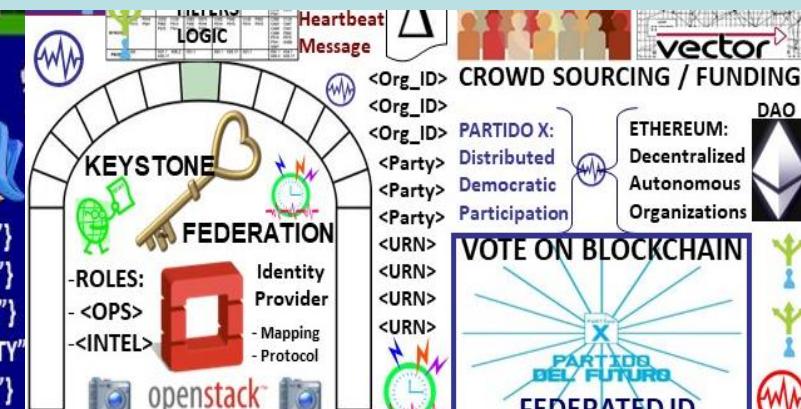
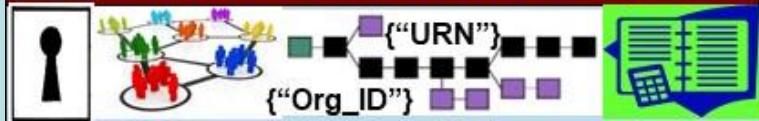
**Federation**  
**Gateway**  
Net joins, drops, splits, merges, moves  
Agile, adhoc NETOPS Vs acquisition preserves the **CHANNEL**



DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

## Heart Beacon Cycle

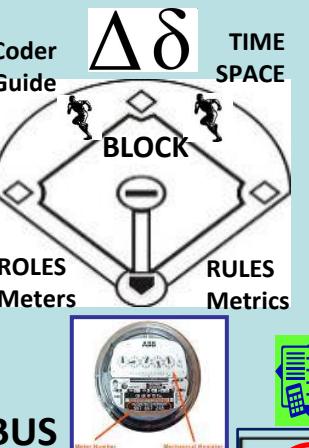
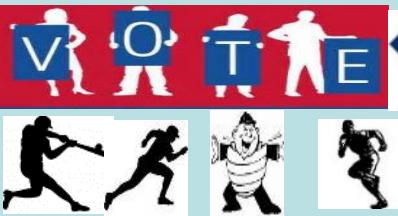
### FEDERATE / TRADE FEDERATIONS



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

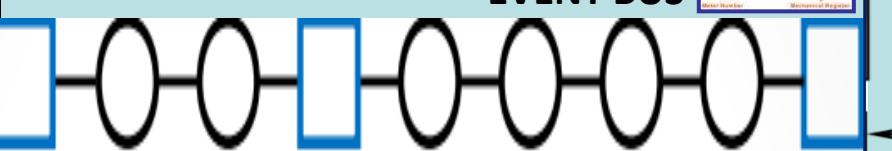
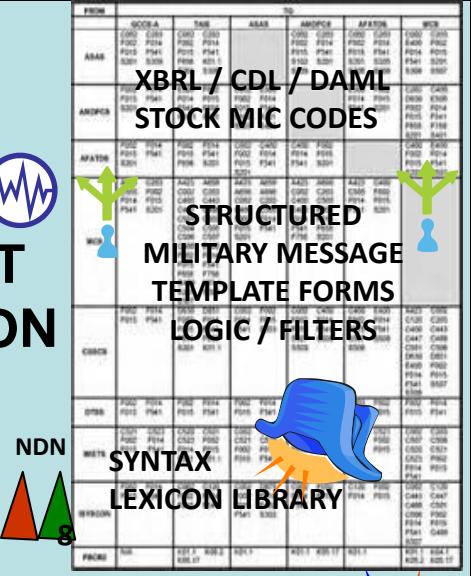
## **KEY BLOCKS:**

- NO CONTENT = NULL
  - LEADER ELECTION

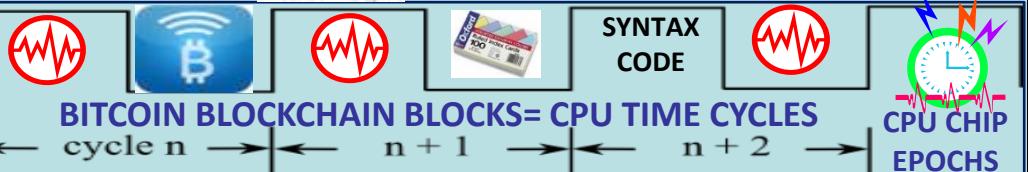


# MICRO BLOCKS:

- ONLY CONTENT
  - NO CONTENTION

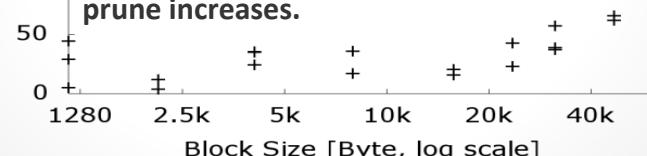


## long exponential intervals (10 min)



## Subjective Time to Prune

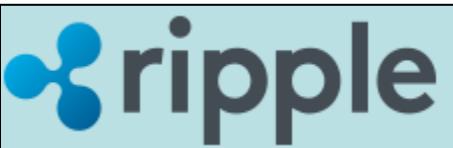
Additional metrics used by researchers included "time to prune", or the time it takes for miners whether they are on the correct "branch" or version of the blockchain they are processing transactions. As block sizes increase, suggested time to prune increases.



## short deterministic intervals (10 sec)



MICRO-CYCLES



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

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

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

Provides information about total  
costs of the transaction



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



**Bitcoin Address Shortener**

Bitcoin Address Shortener is an Android app that you can use to shorten those lengthy bitcoin addresses!

Simply enter a long Bitcoin address to have it transformed into a short one, and VICE-VERSA!

You can get it for free [here!](#)

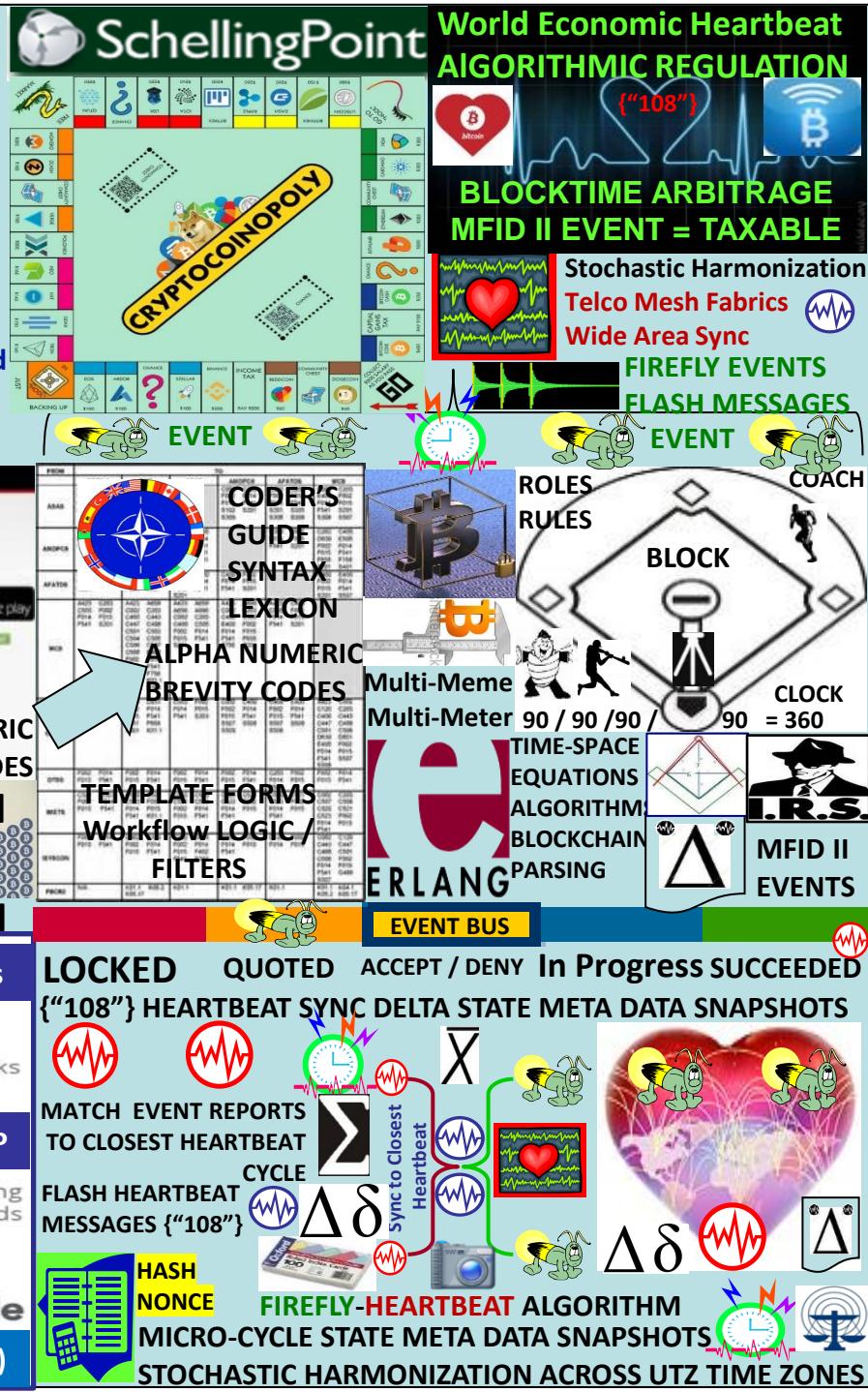
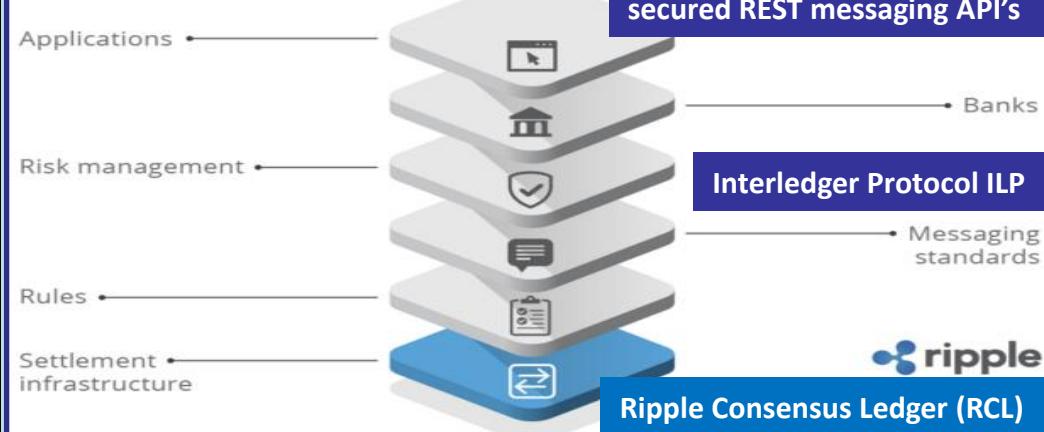
GET IT ON Google play

To retrieve addresses us computer, use [bitco.info](#)

Clock Clock adjusted 5:45 PM

**ALPHA NUMERIC BREVITY CODES A.I**

Neutral transaction protocol



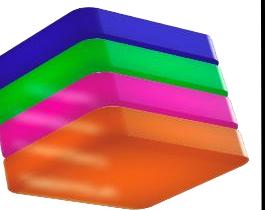


## PROTON A CHAIN Virtual Machine

## CONTRACT C CHAIN Smart contract

## PLATFORM P CHAIN Meta Data

## EXCHANGE X CHAIN Cross blockchain



Universal @names Identity / Governance / Resources / Staking

Snowball Consensus

Algorithm

preference := pizza

consecutiveSuccesses := 0

while not decided:

ask k random people preference

if >= α give the same response:

preference := response with >=

α

if preference == old preference:

consecutiveSuccesses++

else:

consecutiveSuccesses = 1

else:

consecutiveSuccesses = 0

if consecutiveSuccesses > β:  
decide(preference)

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



DAG Acyclic Graph Parameters:

n: number of participants

k (sample size): between 1 and n

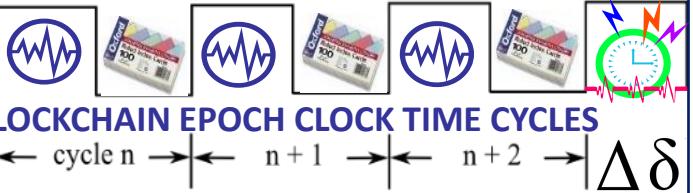
α (quorum size): between 1 and k

β (decision threshold): >= 1

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

1) EPOCH TIME INTERVALS

2) SYNTAX (not) used in epochs

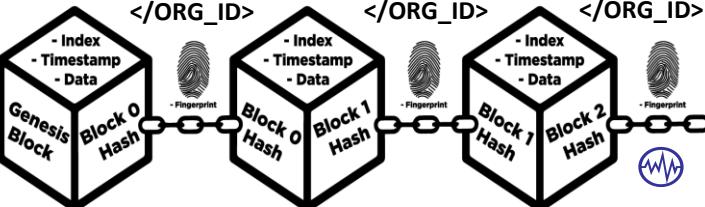


GENESIS BLOCK: "Layers" = follow on epoch time intervals

Block 0

Block 1

Block 2



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

</URN>  
</URN>  
</URN>



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





# UNICOIN

## Digital Capital Exchange

### Unicorn: IMF CBDC legal tender settlement coin

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

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

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

validators I.A.W contribution to the DeFI network

### The DCMA – Digital Public Monetary System

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

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





# UNICOIN

Digital Capital Exchange

## **CBDC legal tender settlement coin**

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

The DCMA – Digital Public Monetary System

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

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





# UNICORN

Digital Capital Exchange

Unicoin: IMF CBDC legal tender settlement coin

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

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

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

Ü



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.

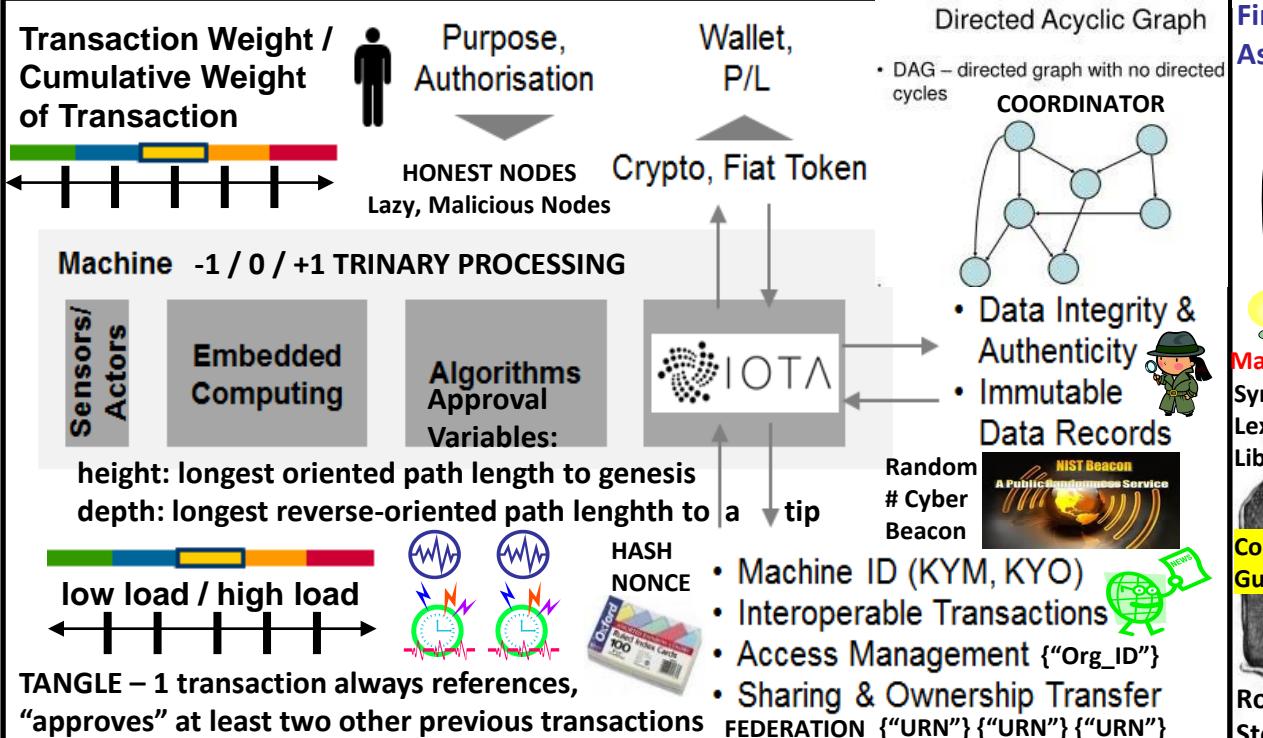


OTA: Internet Of Things IOT distributed ledger  
with microtransactions without fees

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

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

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





## ZEPPELIN OPEN, GLOBAL ECONOMY

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

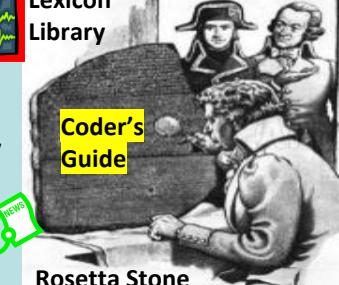
zeppelinOS, operating system for smart contracts  
*"the rate of innovation in building decentralized applications is limited by the manual and duplicative efforts developers must make to ensure basic usability and security."*



## WORLD ECONOMIC HEARTBEAT

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

Syntax Lexicon Library 300 + Templates



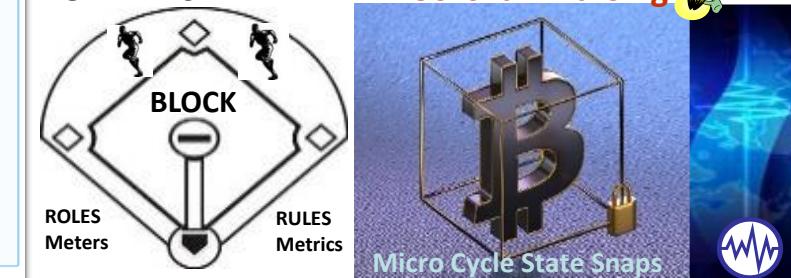
### STRUCTURED DATA EXCHANGE

STRUCTURE	DATA	FORMAT	TYPE	VERSION
ASAS	PSS1 PSS2 PSS3 PSS4 PSS5	PS1 PS2 PS3 PS4 PS5	PS1 PS2 PS3 PS4 PS5	V1.0
ANOPIC	PSS1 PSS2 PSS3 PSS4 PSS5	PS1 PS2 PS3 PS4 PS5	PS1 PS2 PS3 PS4 PS5	V1.0
APAFOR	PSS1 PSS2 PSS3 PSS4 PSS5	PS1 PS2 PS3 PS4 PS5	PS1 PS2 PS3 PS4 PS5	V1.0
MIC	PSS1 PSS2 PSS3 PSS4 PSS5	PS1 PS2 PS3 PS4 PS5	PS1 PS2 PS3 PS4 PS5	V1.0
COCOM	PSS1 PSS2 PSS3 PSS4 PSS5	PS1 PS2 PS3 PS4 PS5	PS1 PS2 PS3 PS4 PS5	V1.0

LOGIC / FILTERS  
ALPHA-NUMERIC  
BREVITY CODES

Coder's Guide Rosetta Stone

### STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



## ZEPPELIN / zeppelinOS Common Functionality:

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

Create and customize your own ERC20 Token.

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



Contract development



Contract interaction



Off chain tools

EVM

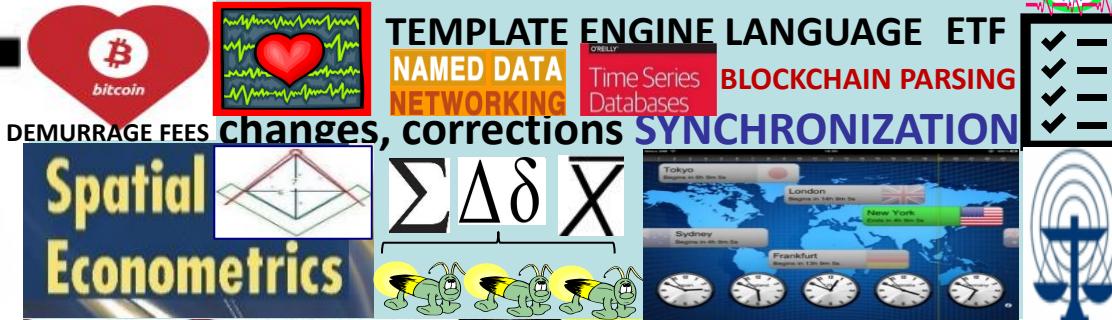
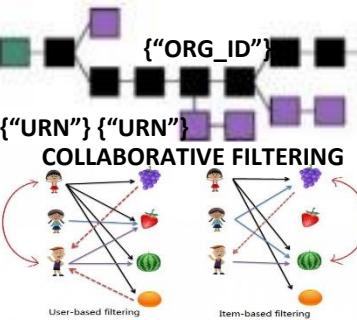
Blockchain



# EGaaS

ELECTRONIC GOVERNMENT AS A SERVICE

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



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



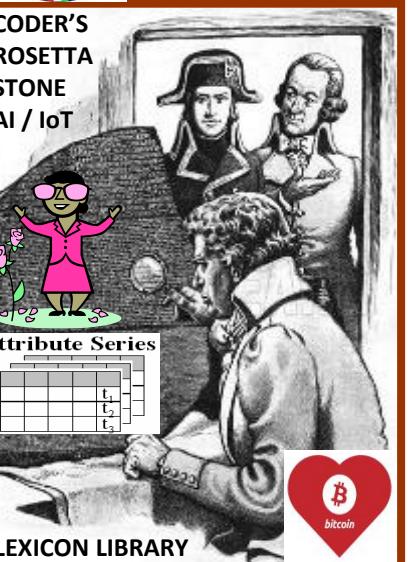
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.

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



FORM	CODES	DATA	ASAS	AMPCP	API2RS	MECH
ASAB	P0001 P0002 P0003 P0004 P0005 P0006 P0007					
ANOMHCA	P0008 P0009 P0010 P0011 P0012 P0013 P0014					
AFATOR	P0015 P0016 P0017 P0018 P0019 P0020 P0021					

SYNTAX / SYMBOL LEXICON LIBRARY STRUCTURED  
DATA EXCHANGE 300 + TEMPLATE FORMS LOGIC / FILTERS  
ALPHA-NUMERIC BREVITY CODES





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

**Futarchy** PREDICTION MARKETS  
**GnosisAMA**

Gnosis trading interface alpha  
WIZ token fee payment  
INFORMATION ARBITRAGE ECONOMICS

TERRACYCLE Price Oracle

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

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

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

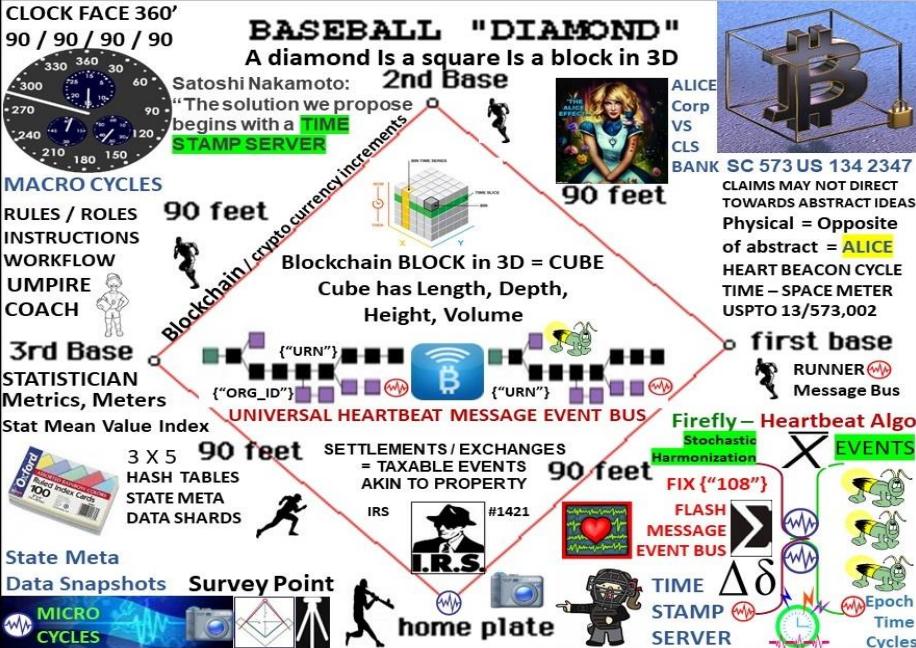
GNO token holders agree to "lock" tokens in a smart contract (30-365 days). A multiplier is added for longer lock durations. Smart contract determines selected lock duration and applies that duration to a formula regulating supply of WIZ tokens currently in use. Once users execute the contract, 30% of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

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

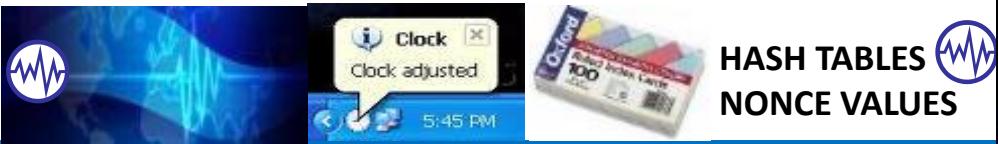




Bitcoin Classic seeks to mitigate the problem of more transactions, which are causing transaction backlogs and increased transaction costs, by increasing the block size - the number of kilobytes in a block of transactions - from 1MB to 2MB.



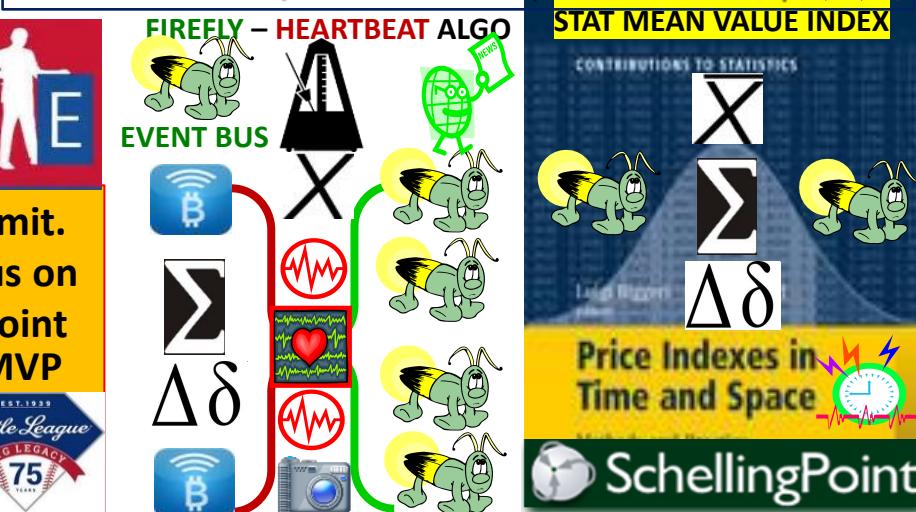
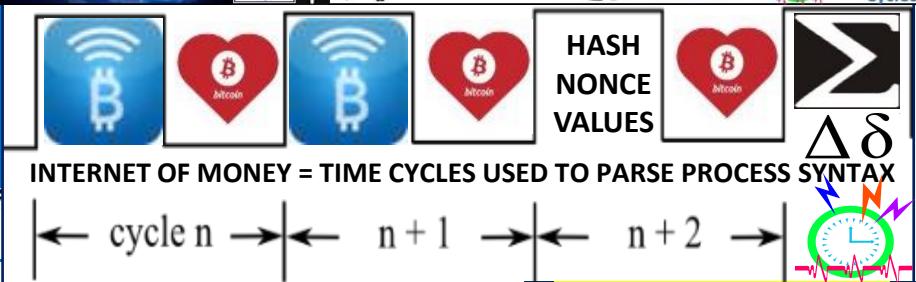
### ALL THINGS INTERNET FORMED W 1) TIME EPOCHS 2) SYNTAX



**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.  $\Delta\delta$



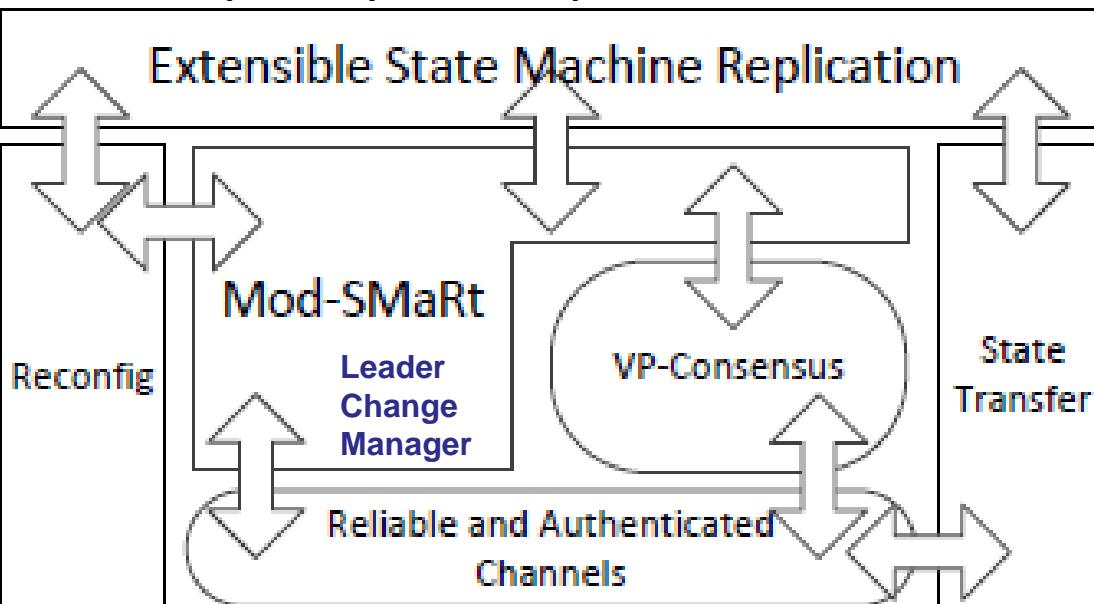
**Bitcoin Unlimited:** absence of a hard-coded block-size limit. Users manually set limits on their own nodes; Consensus on a limit expected to emerge naturally at Schelling focal point. Unlimited introduces a level of democracy into development, management of the implementation, . the community votes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

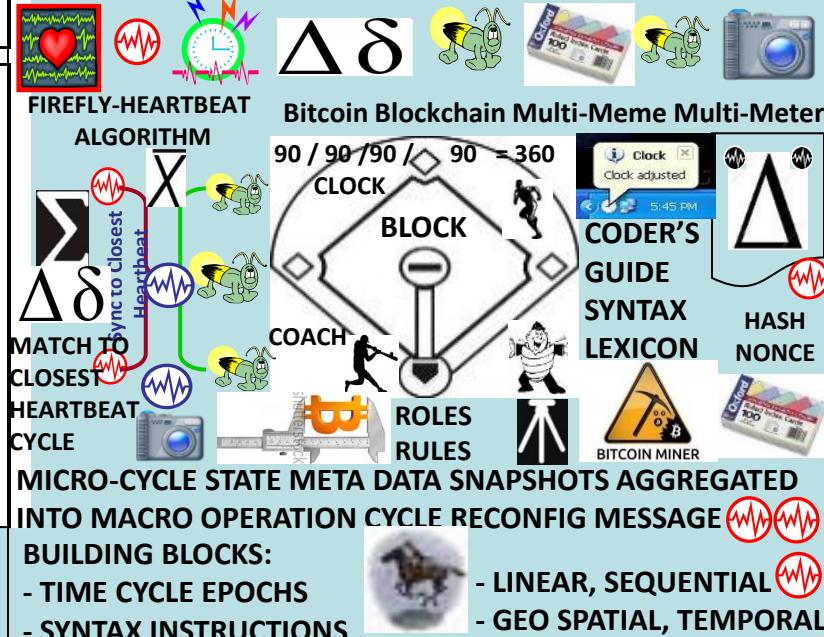
## **PHYSICAL = OPPOSITE OF ABSTRACT**



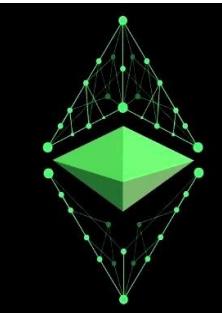
# DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

**FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG\_ID"}  
ADDS, JOINS, DROPS, MOVES TO / FROM DAO  
CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS**

KOO.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOT



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



## ETHER: Compensate Resource Contribution

Gas: price to  
Run contract  
transactions

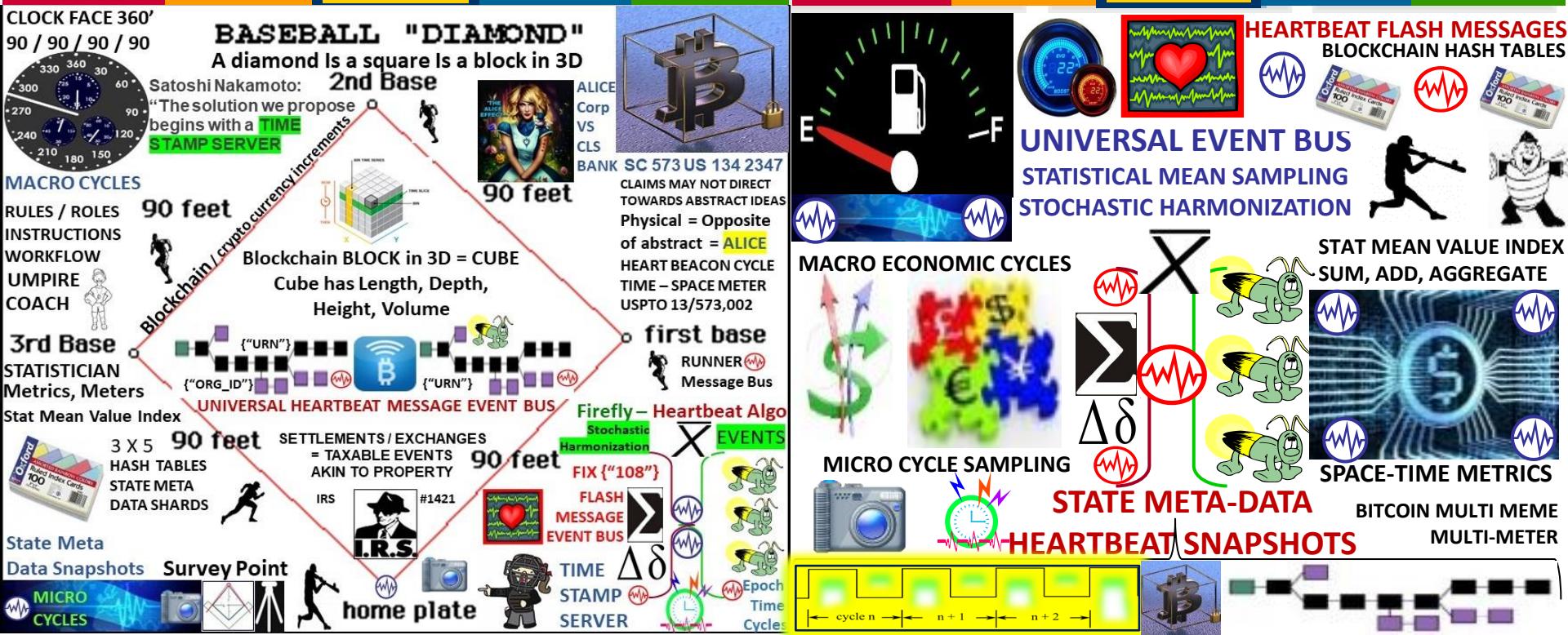
ethereum

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



Ether hedged against  
other crypto / FIAT  
currencies price chan $\Delta\delta$

**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**







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”)

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

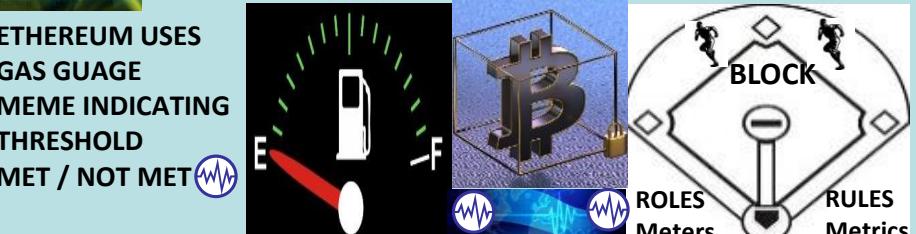
**AETERNITY CROSS-CHAIN ATOMIC SWAPS CORRESPOND TO HEART BEACON CYCLE'S USE OF BATTLEFIELD DIGITIZATION DERIVED HEARTBEAT SYNC DELTAS**



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



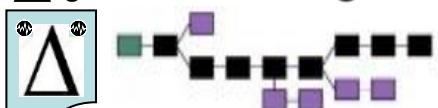
HBC's PRIMARY USE CASE IS TO ORGANIZE INDIVIDUALS IN TRADE FEDERATION GROUPS RE-USING BATTLEFIELD DIGITIZATION / ARIN Organizational Identifier Org\_ID for Ecosphere friendly trade



# HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$  Shared Ledger



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

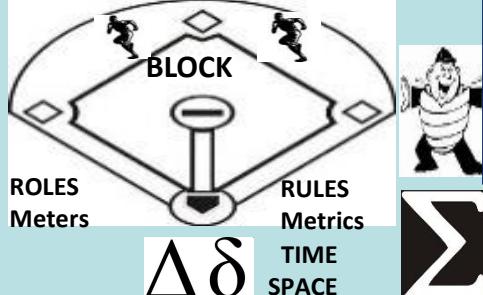
FEDERATION  
**Federation Gateway**

METRICS ("Organization ID")  
METERS

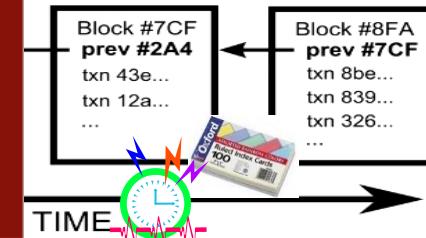
RESTFUL SYNC DELTA  
CHANGE MANAGEMENT  
MICRO-MACRO CYCLE



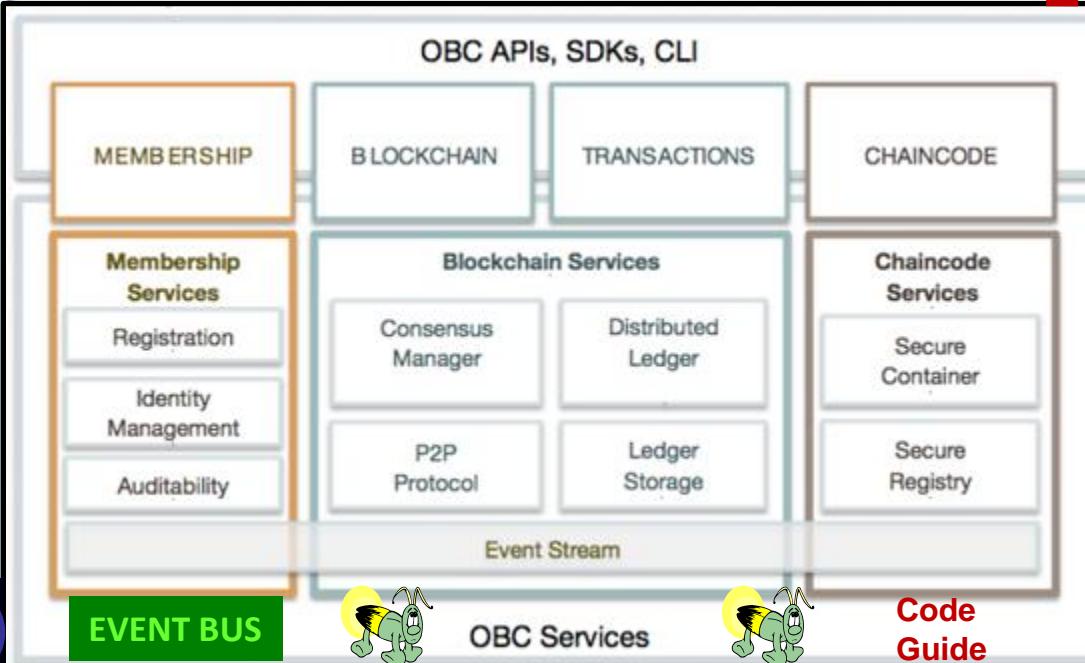
BLOCKTIME ARBITRAGE



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



Alpha-Numerics



ROSETTA STONE

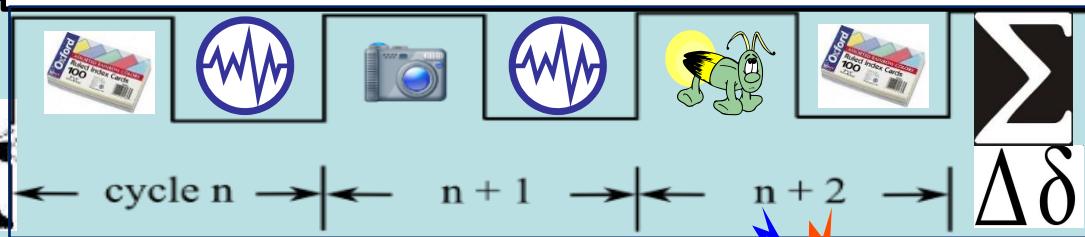
FORM	SOCA	SOCB	SOCM	SOCN	SOCO	SOCP	SOCQ	SOCR	SOCU	SOCV	SOCW	SOCX	SOCY	SOCZ
ABAB	FS01	FS02	FS03	FS04	FS05	FS06	FS07	FS08	FS09	FS10	FS11	FS12	FS13	FS14
AMPER	FS01	FS02	FS03	FS04	FS05	FS06	FS07	FS08	FS09	FS10	FS11	FS12	FS13	FS14
AFATD	FS01	FS02	FS03	FS04	FS05	FS06	FS07	FS08	FS09	FS10	FS11	FS12	FS13	FS14
CISCH	FS01	FS02	FS03	FS04	FS05	FS06	FS07	FS08	FS09	FS10	FS11	FS12	FS13	FS14
OPRA	FS01	FS02	FS03	FS04	FS05	FS06	FS07	FS08	FS09	FS10	FS11	FS12	FS13	FS14
MEITS	FS01	FS02	FS03	FS04	FS05	FS06	FS07	FS08	FS09	FS10	FS11	FS12	FS13	FS14
WEYCON	FS01	FS02	FS03	FS04	FS05	FS06	FS07	FS08	FS09	FS10	FS11	FS12	FS13	FS14
PROMI	FS01	FS02	FS03	FS04	FS05	FS06	FS07	FS08	FS09	FS10	FS11	FS12	FS13	FS14

XBR / CDL / DAML  
STOCK MIC CODES

STRUCTURED  
MILITARY MESSAGE  
TEMPLATE FORMS  
LOGIC / FILTERS

SYNTAX  
SYMBOL LIBRARY

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



MICRO-MACRO CYCLE SCHEDULE

FFIRNS  
FFUDNS

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



**"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/>

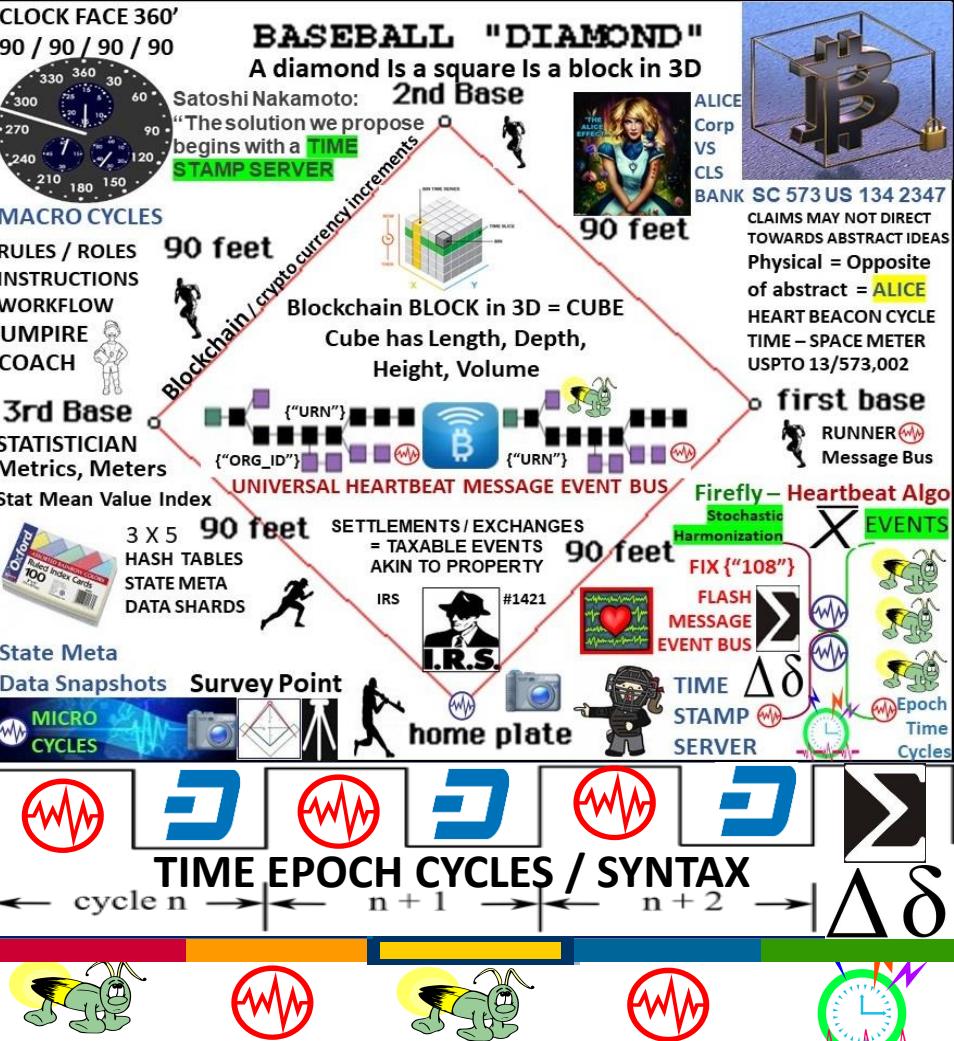
"all digital currency networks, the base layer of people generating the blockchain — "miners," "stakers," "witnesses," "validators," or "forgers" — all get paid to do so" "consensus," or an agreement upon what the rules should be; and second, the execution of said rules.

**“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**

Masternodes 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.



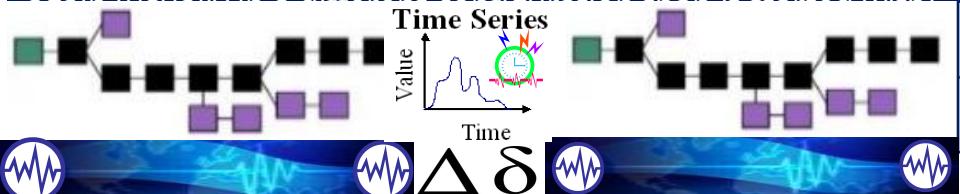
1. Part of the blockchain state is locked via multisignature or smart contract convention, so that a specific set of participants must completely agree with each other to update it.



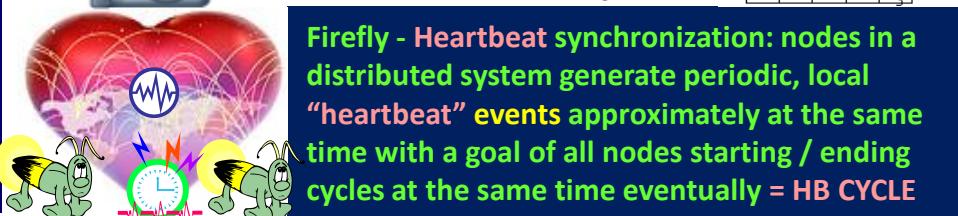
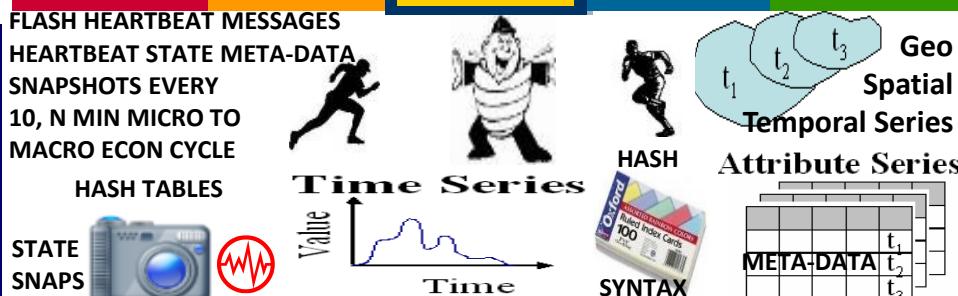
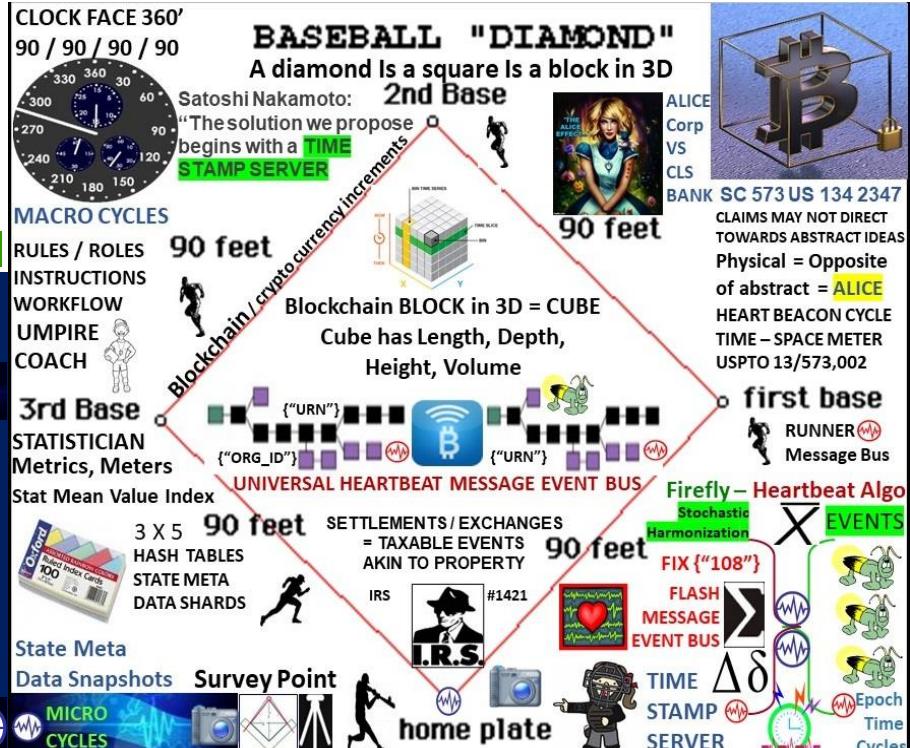
2. Participants update the state amongst themselves by constructing and signing transactions that *could* be submitted to the blockchain, but instead are made available for a new update "trumps" previous update.



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



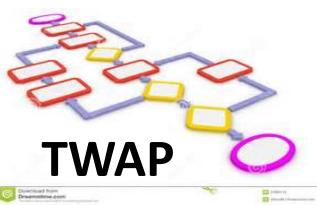
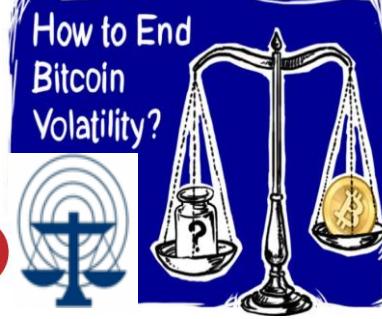
**NEW UPDATES OVERWRITE THE PREVIOUS:** simplest way is to have any unlocking attempt start a timer, during which any *newer* update can replace the old update (restarting the timer). When the timer completes, the channel is closed and the state adjusted to reflect the last update received. The length 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

**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

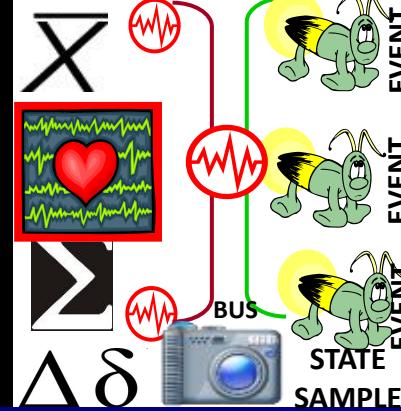


VWAP is price multiplied by number of bitcoins traded, then divided by the total number of bitcoins traded during a time period. The time-weighted average price algorithm is matched to closest HB



EPOCH TIMES

STATE META  
DATA SNAPSHOTS



STATE SAMPLE

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.

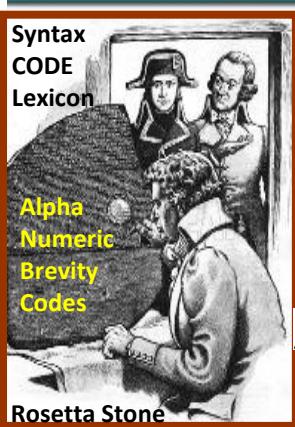
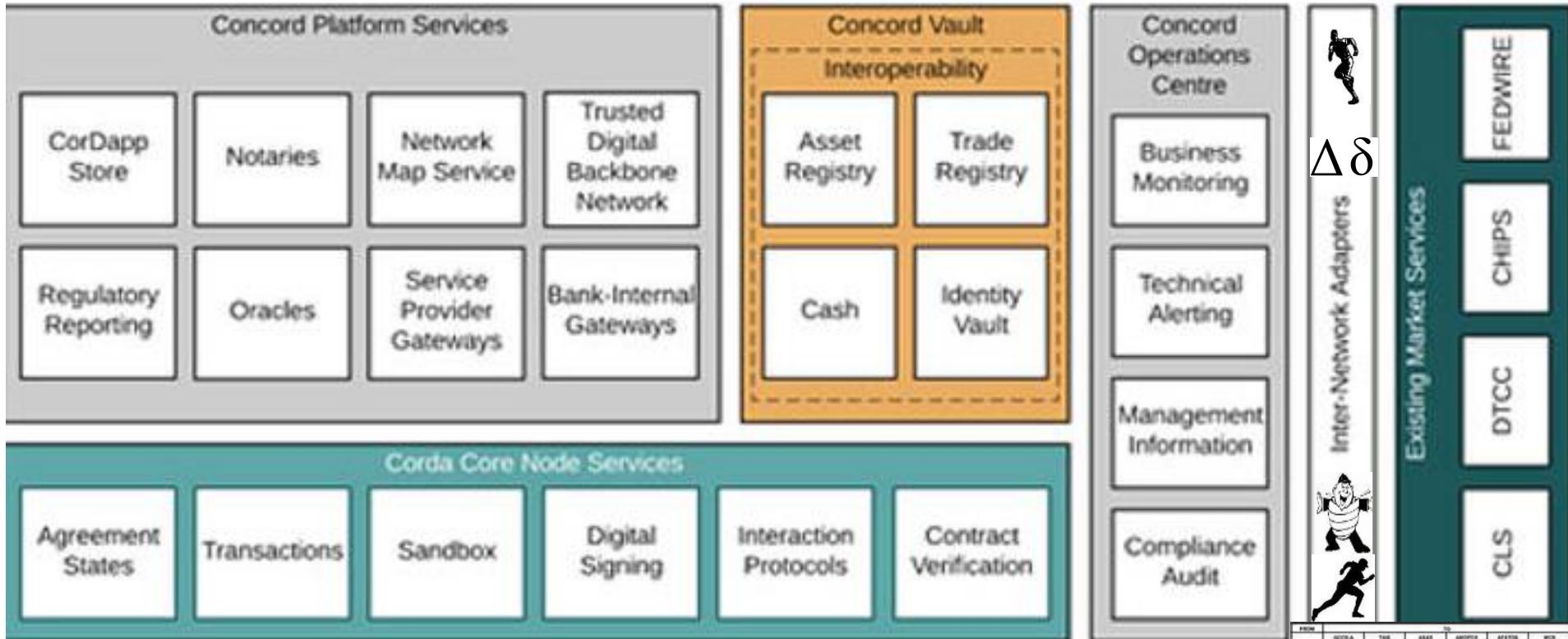
"Blocks are a measure of time":

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



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

	Q1Q2	T4T1	A2A3	M2M3	A3A4	W2W3
ABAB	F002	F003	F004	F005	F006	F007
AMDFDS	F008	F009	F010	F011	F012	F013
AFATFDS	F014	F015	F016	F017	F018	F019
AFATFDS	F020	F021	F022	F023	F024	F025
AFATFDS	F026	F027	F028	F029	F030	F031
AFATFDS	F032	F033	F034	F035	F036	F037
AFATFDS	F038	F039	F040	F041	F042	F043
AFATFDS	F044	F045	F046	F047	F048	F049
AFATFDS	F050	F051	F052	F053	F054	F055
AFATFDS	F056	F057	F058	F059	F060	F061
AFATFDS	F062	F063	F064	F065	F066	F067
AFATFDS	F068	F069	F070	F071	F072	F073
AFATFDS	F074	F075	F076	F077	F078	F079
AFATFDS	F080	F081	F082	F083	F084	F085
AFATFDS	F086	F087	F088	F089	F090	F091
AFATFDS	F092	F093	F094	F095	F096	F097
AFATFDS	F098	F099	F100	F101	F102	F103
AFATFDS	F104	F105	F106	F107	F108	F109
AFATFDS	F110	F111	F112	F113	F114	F115
AFATFDS	F116	F117	F118	F119	F120	F121
AFATFDS	F122	F123	F124	F125	F126	F127
AFATFDS	F128	F129	F130	F131	F132	F133
AFATFDS	F134	F135	F136	F137	F138	F139
AFATFDS	F140	F141	F142	F143	F144	F145
AFATFDS	F146	F147	F148	F149	F150	F151
AFATFDS	F152	F153	F154	F155	F156	F157
AFATFDS	F158	F159	F160	F161	F162	F163
AFATFDS	F164	F165	F166	F167	F168	F169
AFATFDS	F170	F171	F172	F173	F174	F175
AFATFDS	F176	F177	F178	F179	F180	F181
AFATFDS	F182	F183	F184	F185	F186	F187
AFATFDS	F188	F189	F190	F191	F192	F193
AFATFDS	F194	F195	F196	F197	F198	F199
AFATFDS	F199	F200	F201	F202	F203	F204
AFATFDS	F205	F206	F207	F208	F209	F210
AFATFDS	F211	F212	F213	F214	F215	F216
AFATFDS	F217	F218	F219	F220	F221	F222
AFATFDS	F223	F224	F225	F226	F227	F228
AFATFDS	F229	F230	F231	F232	F233	F234
AFATFDS	F235	F236	F237	F238	F239	F240
AFATFDS	F241	F242	F243	F244	F245	F246
AFATFDS	F247	F248	F249	F250	F251	F252
AFATFDS	F253	F254	F255	F256	F257	F258
AFATFDS	F259	F260	F261	F262	F263	F264
AFATFDS	F265	F266	F267	F268	F269	F270
AFATFDS	F271	F272	F273	F274	F275	F276
AFATFDS	F277	F278	F279	F280	F281	F282
AFATFDS	F283	F284	F285	F286	F287	F288
AFATFDS	F289	F290	F291	F292	F293	F294
AFATFDS	F295	F296	F297	F298	F299	F300
AFATFDS	F301	F302	F303	F304	F305	F306
AFATFDS	F307	F308	F309	F310	F311	F312
AFATFDS	F313	F314	F315	F316	F317	F318
AFATFDS	F319	F320	F321	F322	F323	F324
AFATFDS	F325	F326	F327	F328	F329	F330
AFATFDS	F331	F332	F333	F334	F335	F336
AFATFDS	F337	F338	F339	F340	F341	F342
AFATFDS	F343	F344	F345	F346	F347	F348
AFATFDS	F349	F350	F351	F352	F353	F354
AFATFDS	F355	F356	F357	F358	F359	F360
AFATFDS	F361	F362	F363	F364	F365	F366
AFATFDS	F367	F368	F369	F370	F371	F372
AFATFDS	F373	F374	F375	F376	F377	F378
AFATFDS	F379	F380	F381	F382	F383	F384
AFATFDS	F385	F386	F387	F388	F389	F390
AFATFDS	F391	F392	F393	F394	F395	F396
AFATFDS	F397	F398	F399	F400	F401	F402
AFATFDS	F403	F404	F405	F406	F407	F408
AFATFDS	F409	F410	F411	F412	F413	F414
AFATFDS	F415	F416	F417	F418	F419	F420
AFATFDS	F421	F422	F423	F424	F425	F426
AFATFDS	F427	F428	F429	F430	F431	F432
AFATFDS	F433	F434	F435	F436	F437	F438
AFATFDS	F439	F440	F441	F442	F443	F444
AFATFDS	F445	F446	F447	F448	F449	F450
AFATFDS	F451	F452	F453	F454	F455	F456
AFATFDS	F457	F458	F459	F460	F461	F462
AFATFDS	F463	F464	F465	F466	F467	F468
AFATFDS	F469	F470	F471	F472	F473	F474
AFATFDS	F475	F476	F477	F478	F479	F480
AFATFDS	F481	F482	F483	F484	F485	F486
AFATFDS	F487	F488	F489	F490	F491	F492
AFATFDS	F493	F494	F495	F496	F497	F498
AFATFDS	F499	F500	F501	F502	F503	F504
AFATFDS	F505	F506	F507	F508	F509	F510
AFATFDS	F511	F512	F513	F514	F515	F516
AFATFDS	F517	F518	F519	F520	F521	F522
AFATFDS	F523	F524	F525	F526	F527	F528
AFATFDS	F529	F530	F531	F532	F533	F534
AFATFDS	F535	F536	F537	F538	F539	F540
AFATFDS	F541	F542	F543	F544	F545	F546
AFATFDS	F547	F548	F549	F550	F551	F552
AFATFDS	F553	F554	F555	F556	F557	F558
AFATFDS	F559	F560	F561	F562	F563	F564
AFATFDS	F565	F566	F567	F568	F569	F570
AFATFDS	F571	F572	F573	F574	F575	F576
AFATFDS	F577	F578	F579	F580	F581	F582
AFATFDS	F583	F584	F585	F586	F587	F588
AFATFDS	F589	F590	F591	F592	F593	F594
AFATFDS	F595	F596	F597	F598	F599	F600
AFATFDS	F601	F602	F603	F604	F605	F606
AFATFDS	F607	F608	F609	F610	F611	F612
AFATFDS	F613	F614	F615	F616	F617	F618
AFATFDS	F619	F620	F621	F622	F623	F624
AFATFDS	F625	F626	F627	F628	F629	F630
AFATFDS	F631	F632	F633	F634	F635	F636
AFATFDS	F637	F638	F639	F640	F641	F642
AFATFDS	F643	F644	F645	F646	F647	F648
AFATFDS	F649	F650	F651	F652	F653	F654
AFATFDS	F655	F656	F657	F658	F659	F660
AFATFDS	F661	F662	F663	F664	F665	F666
AFATFDS	F667	F668	F669	F670	F671	F672
AFATFDS	F673	F674	F675	F676	F677	F678
AFATFDS	F679	F680	F681	F682	F683	F684
AFATFDS	F685	F686	F687	F688	F689	F690
AFATFDS	F691	F692	F693	F694	F695	F696
AFATFDS	F697	F698	F699	F700	F701	F702
AFATFDS	F703	F704	F705	F706	F707	F708
AFATFDS	F709	F710	F711	F712	F713	F714
AFATFDS	F715	F716	F717	F718	F719	F720
AFATFDS	F721	F722	F723	F724	F725	F726
AFATFDS	F727	F728	F729	F730	F731	F732
AFATFDS	F733	F734	F735	F736	F737	F738
AFATFDS	F739	F740	F741	F742	F743	F744
AFATFDS	F745	F746	F747	F748	F749	F750
AFATFDS	F751	F752	F753	F754	F755	F756
AFATFDS	F757	F758	F759	F760	F761	F762
AFATFDS	F763	F764	F765	F766	F767	F768
AFATFDS	F769	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	F774
AFATFDS	F775	F776	F777	F778	F779	F770
AFATFDS	F771	F772	F773	F774	F775	F776
AFATFDS	F777	F778	F779	F770	F771	F772
AFATFDS	F773	F774	F775	F776	F777	F778
AFATFDS	F779	F770	F771	F772	F773	

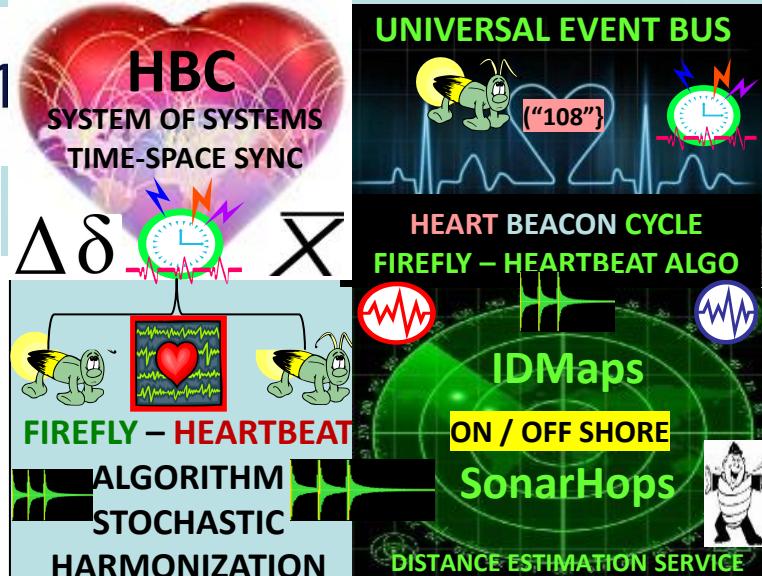
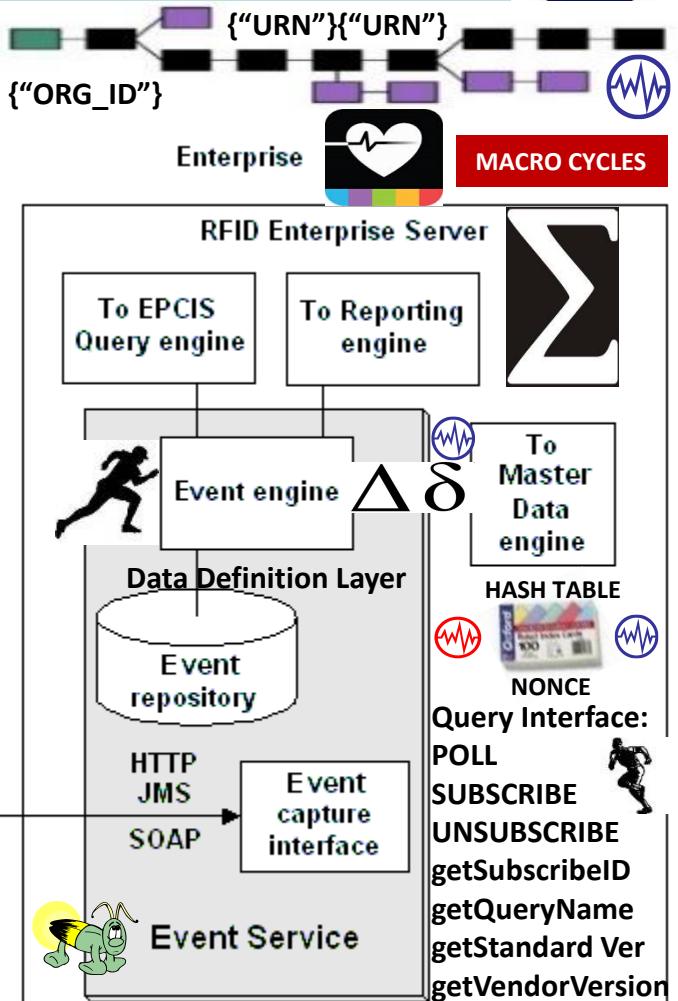


**Electronic Product Code Information Services (EPCIS)**

## GS1 Standard for creating, sharing visibility event data



# HBC SYSTEM OF SYSTEMS TIME-SPACE SYNC



**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**

## 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

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

ROSSETTA STONE





TERRA  
TRC

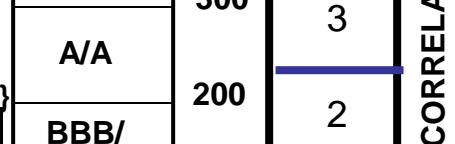
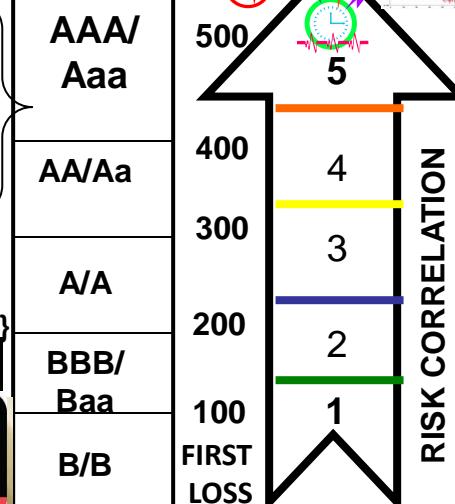
ECONOMIC HEARTBEAT



HB MSG </108>  
PROTOCOL



LAST LOSS



IEEE 802.15.4 OASIS MQTT  
TELEMETRY TRANSPORT

IEEE C37.118 Harmonization & Sync heartbeat update Interval

IEEE 802.11  
HOP BY HOP CONTROL  
Paul Revere Linear, Sequential

Price Indexes in Time and Space  
Methods and Practice

PROCESS BY </PRECEDENCE>  
SonarMaps ID\_Hops

IEEE 802.1AG HOP BY HOP  
DETECTION

IEEE 802.11  
HOP BY HOP CONTROL  
Paul Revere Linear, Sequential

Price Indexes in Time and Space  
Methods and Practice

ON / OFF SHORE  
PROXIMITY BEACONS

Bitcoin = Property  
IRS Memo #1421

% Block Mined  
% Block owned  
Mined Bitcoins  
Unmined Bitcoin:  
 $\Delta\delta$  Land Use Meme

BLOCK

BLOCKTIME ARBITRAGE  
Blockchain Timestamps

NDN  
NDN

ON OFF SHORE  
GEO LOC LAT / LONG  
PING

Triangulation  
Euclidian Geo  
GPS GEO LOC  
DATE TIME STAMP

Multi-Meme Metrics

Blockchain Timestamps

ON / OFF SHORE  
PROXIMITY BEACONS

Demurrage Charges  
vector

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

Event Bus  
Match to Closest  
Heartbeat Cycle

Blockchain Timestamps

ON / OFF SHORE  
PROXIMITY BEACONS

Geolocation  
Lat Long  
Ping

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

Event Bus  
Match to Closest  
Heartbeat Cycle

Blockchain Timestamps

ON / OFF SHORE  
PROXIMITY BEACONS

Geolocation  
Lat Long  
Ping

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

Event Bus  
Match to Closest  
Heartbeat Cycle

Blockchain Timestamps

ON / OFF SHORE  
PROXIMITY BEACONS

Geolocation  
Lat Long  
Ping

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

Event Bus  
Match to Closest  
Heartbeat Cycle

Blockchain Timestamps

ON / OFF SHORE  
PROXIMITY BEACONS

Geolocation  
Lat Long  
Ping

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

Event Bus  
Match to Closest  
Heartbeat Cycle

Blockchain Timestamps

ON / OFF SHORE  
PROXIMITY BEACONS

Geolocation  
Lat Long  
Ping

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

Event Bus  
Match to Closest  
Heartbeat Cycle

Blockchain Timestamps

ON / OFF SHORE  
PROXIMITY BEACONS

Geolocation  
Lat Long  
Ping

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

Event Bus  
Match to Closest  
Heartbeat Cycle

Blockchain Timestamps

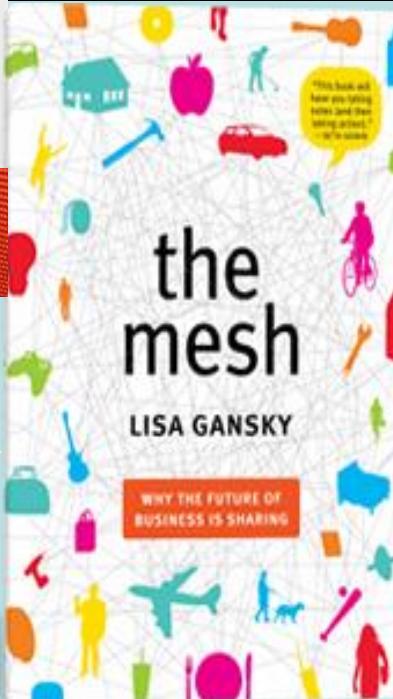
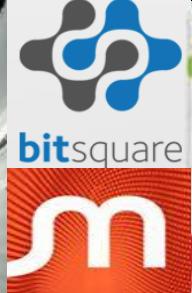
ON / OFF SHORE  
PROXIMITY BEACONS



COINTELEGRAPH  
live cryptocurrency community opinion



## Decentralized Exchange Meets Decentralized Crowdfunding



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

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



## Autonomous Device Coordination Framework



Rules of engagement

FEDERATION AGREEMENTS

PROCEDURAL TEMPLATE

Registration

Authentication

Proximity based rules

Consensus based rules

Contracts

Checklists

## FEDERATION

<UUID> <ORG\_ID> <URN>

LDAP DIRECTORY

Physical proximity

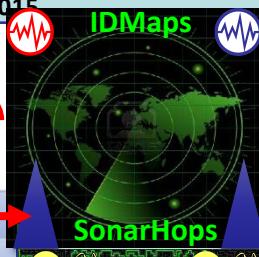
Social proximity

Temporal proximity

Agreements

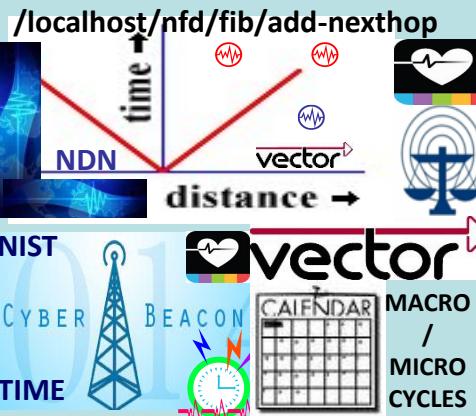
Payments

Barter



NIST TIME BEACON

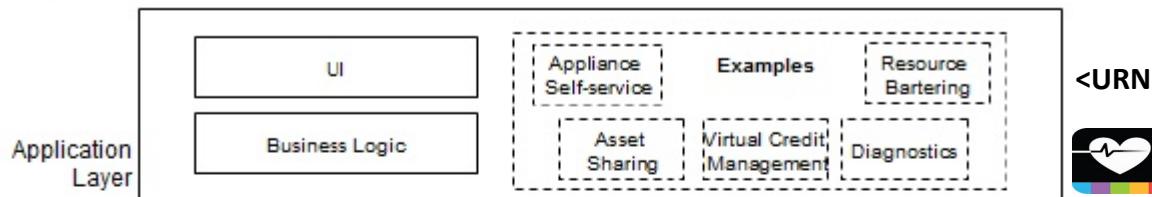
TIME



PAYMENTS BASED ON GEO-SPATIAL TEMPORAL METRICS / METERS

<URN> DESCRIBES COMMODITIES ETC BY UNIFORM RESOURCE NAME BY </INTEREST>>

## ADEPT Standard Peer Architecture – Logical View



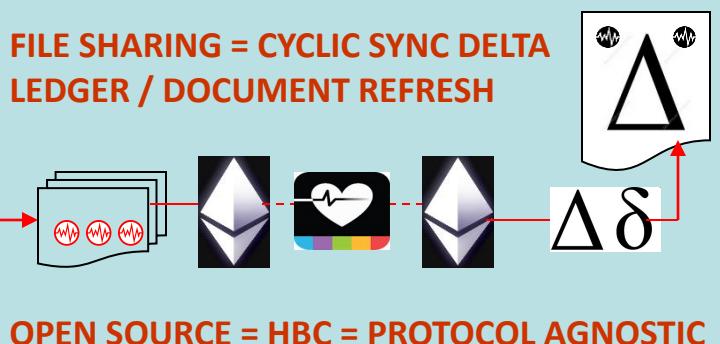
<URN>



ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML\_Wf>

FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH

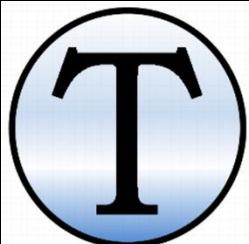


OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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

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





## Three ideas combined

HOW TRUTHCOIN WORKS:

### 1) Tradable Reputation

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

### 2) SVD Cross-Validation

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



### 3) Strategic Use of TIME

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

## 2. A kind of ‘Future Wikipedia’

	Wikipedia	Truthcoin
Focus	Outcomes of <i>past</i> events. Consensus on known facts.	Outcomes of <i>future</i> events. <i>Future</i> consensus on <i>knowable</i> facts.

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

## 3. A software protocol

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



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

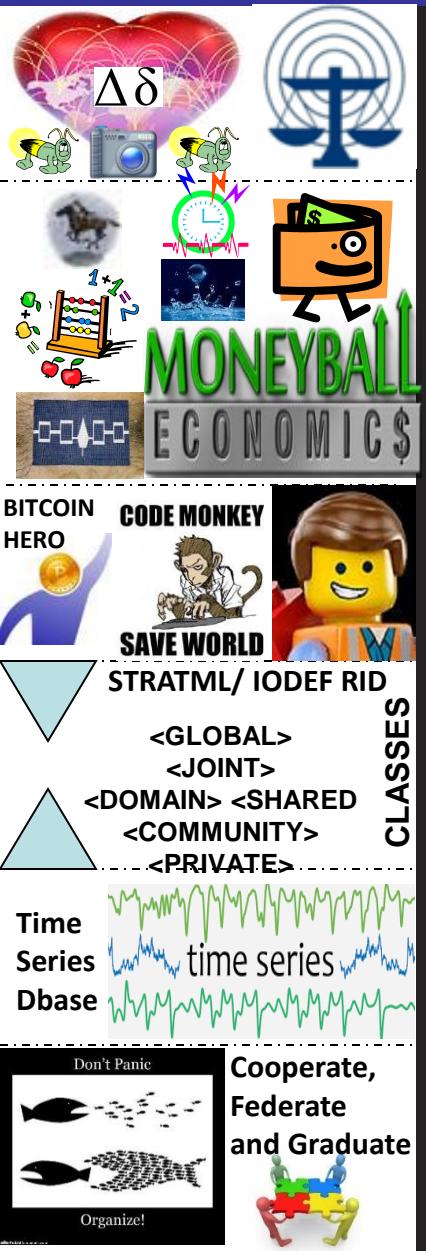
# How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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



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



## HOW GAMIFICATION WORKS:

### 5 COMMON MECHANICS

#### POINTS

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

#### BADGES

Reward achievements visually

#### LEVELS

Encourage users to progress and unlock new rewards

#### LEADERBOARDS

Organise players by rank

#### CHALLENGES

Encourage engagement by offering specific tasks to complete

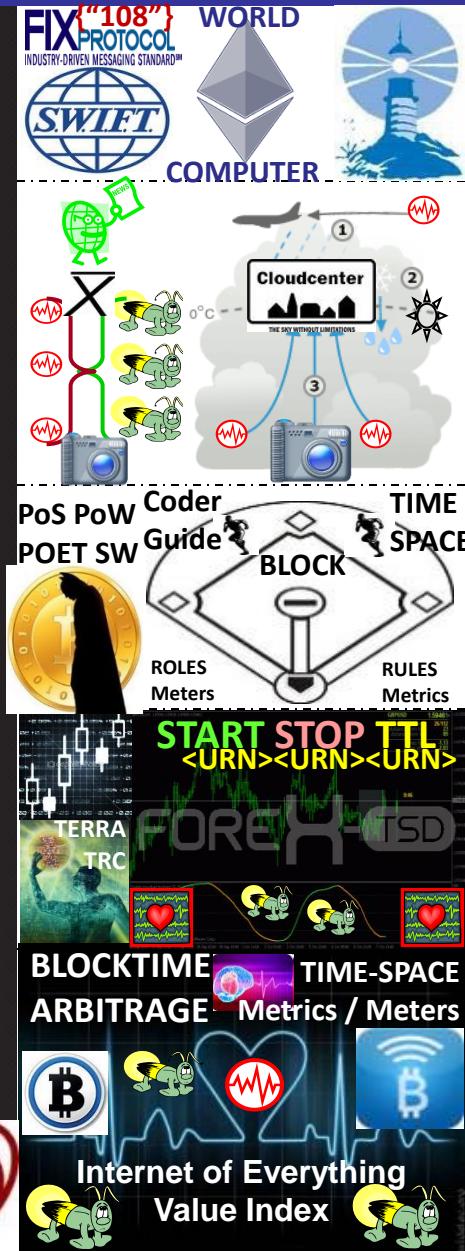
### 4 MAIN WAYS TO DRIVE ENGAGEMENT

#### ACCELERATED FEEDBACK CYCLES

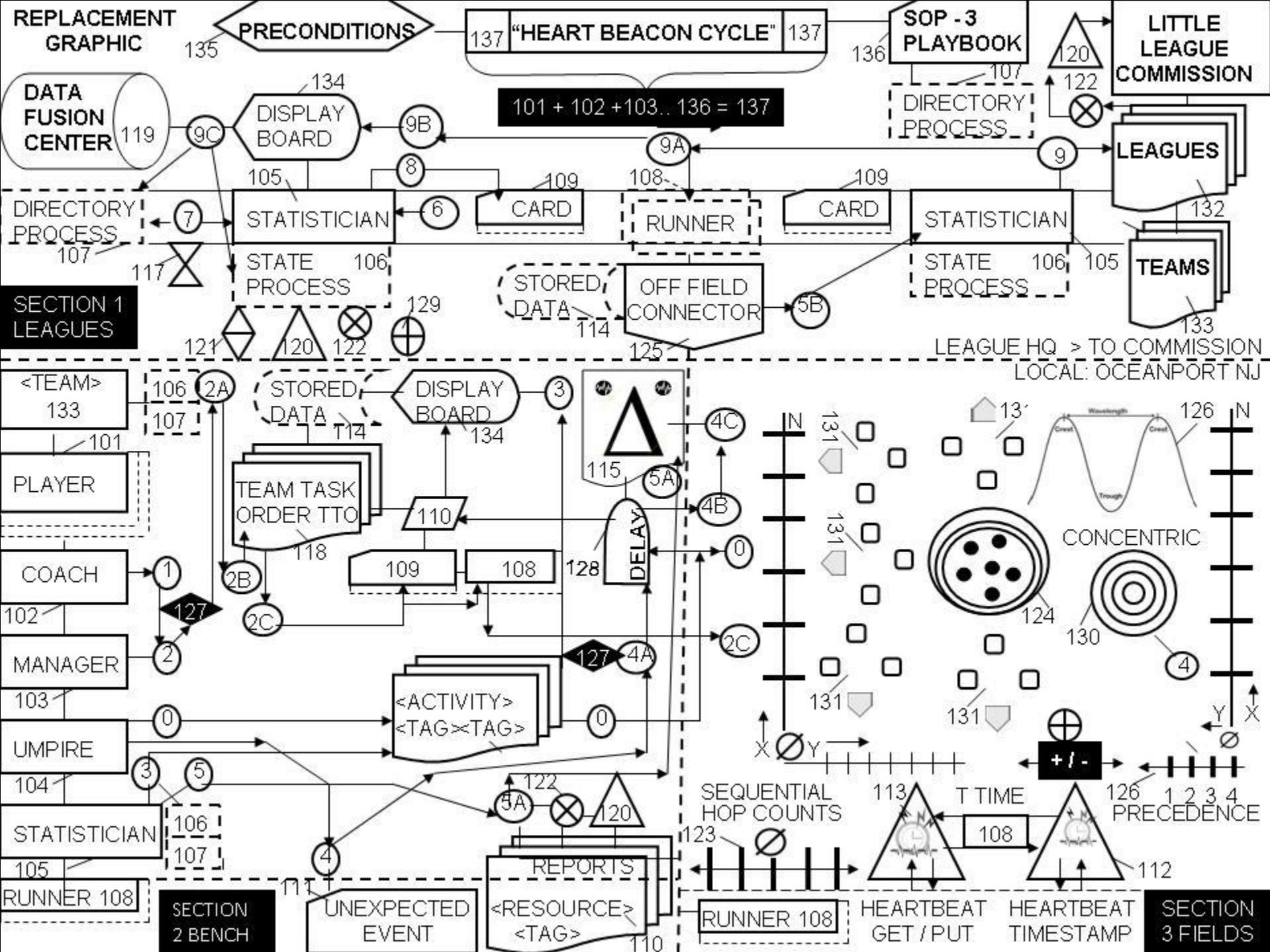
#### CLEAR GOALS AND RULES OF PLAY

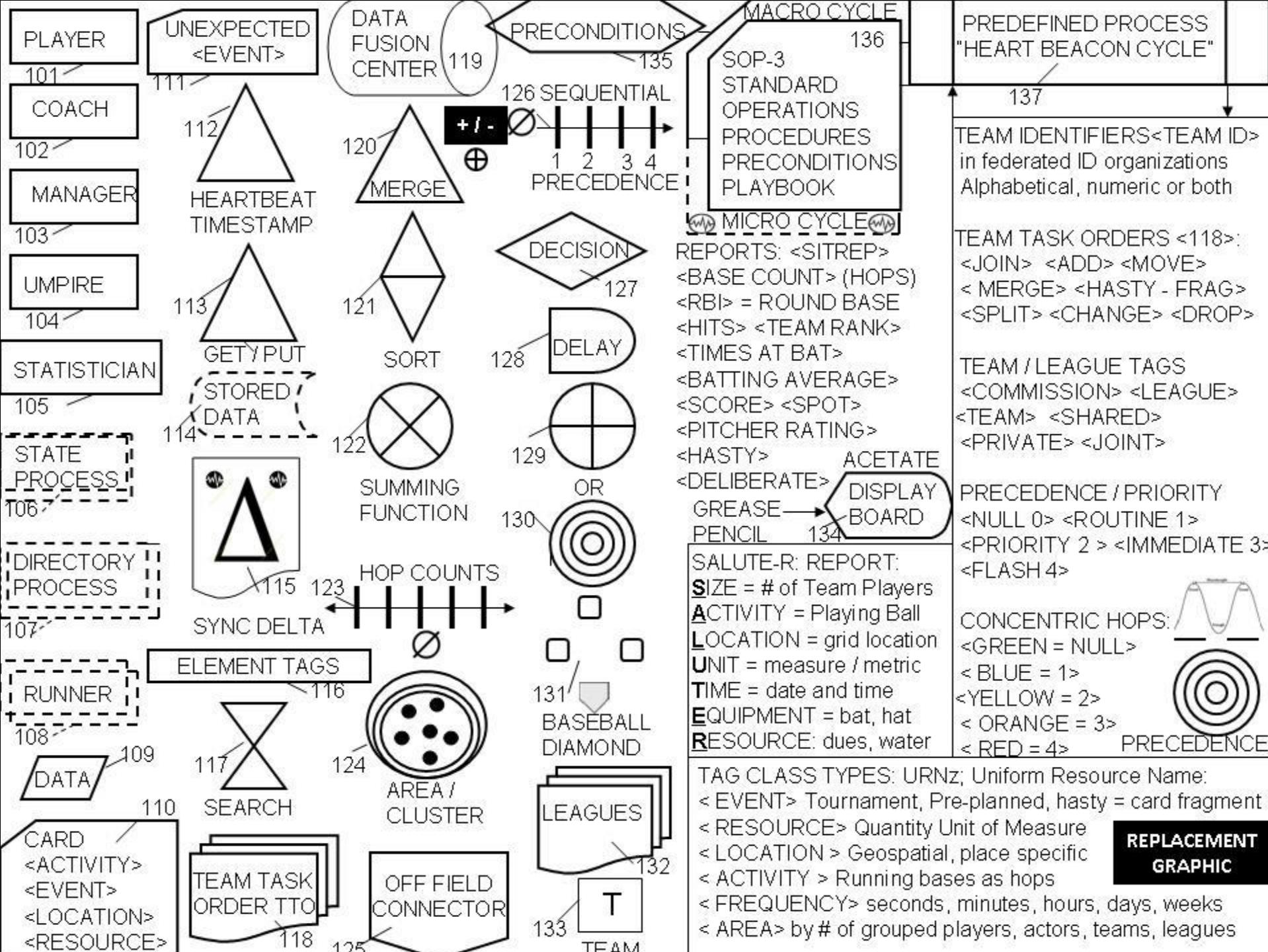
#### A COMPELLING NARRATIVE

#### CHALLENGING BUT ACHIEVABLE TASKS









# BUILDING BLOCKS



TASK ON / OFF

201

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



MACRO CYCLES



.0001

MICRO CYCLES  
216

219

CLOUD COMPUTING



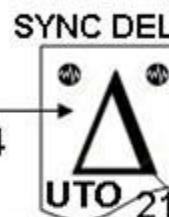
218

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

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



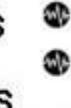
214



UTO 213



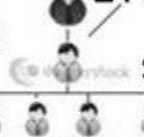
215 LEADER'S INTENT DECISIONS



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



212



210 SNAPSHOTS

210

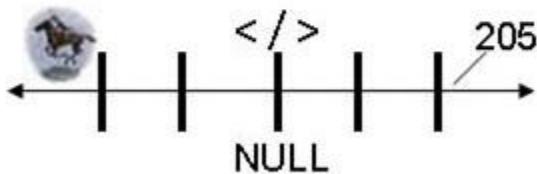


203

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



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



LENGTH, THRESHOLD, INTENSITY, DURATION



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

208



APPLIQUE' OVERLAYS



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

209



**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



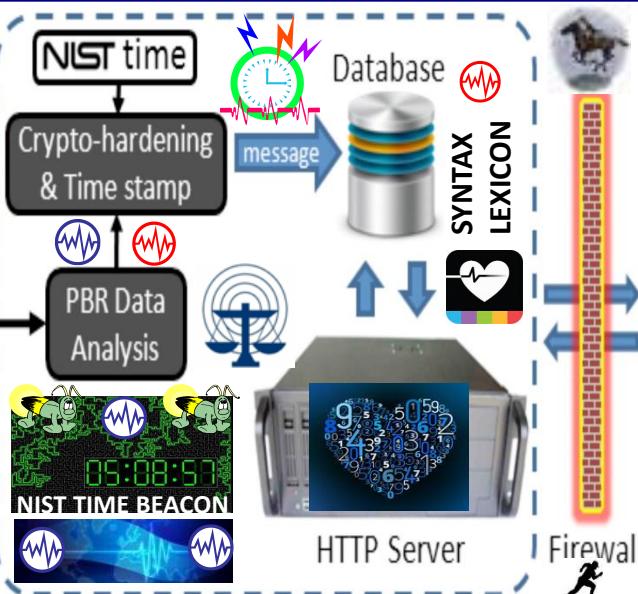
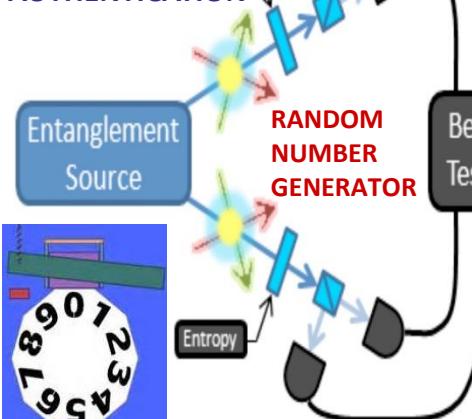
## NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

UNPREDICTABLE SAMPLING

SECURE AUTHENTICATION

SECURE MULTI

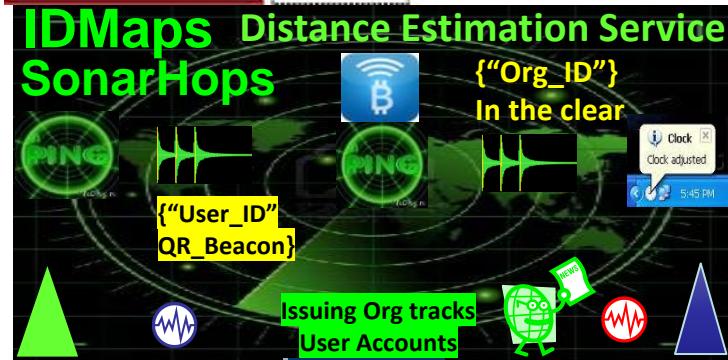
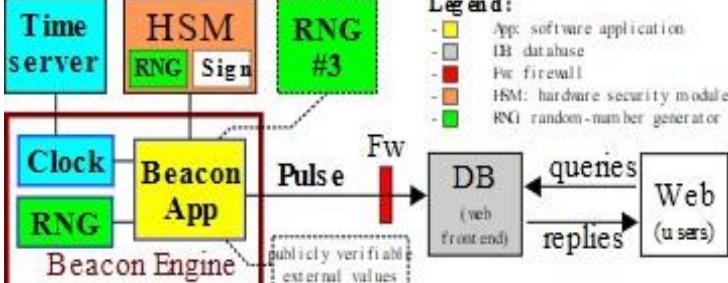
PARTY /  
AUTHENTICATION



**NIST**

**NON  
REPUDIATION**

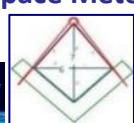
Legend:  
■ App: software application  
■ DB: database  
■ Fw: firewall  
■ HSM: hardware security module  
■ RNG: random-number generator



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors

**NAMED DATA NETWORKING**



NDN  
 </Interest>  
 </Distance>

**SURVEY METHODS + TRIANGULATION**  
 Euclidian Geometry

**Geodesic System Routing Info Base RIB**

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

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

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

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

Time / Distance Metrics



PROXIMITY

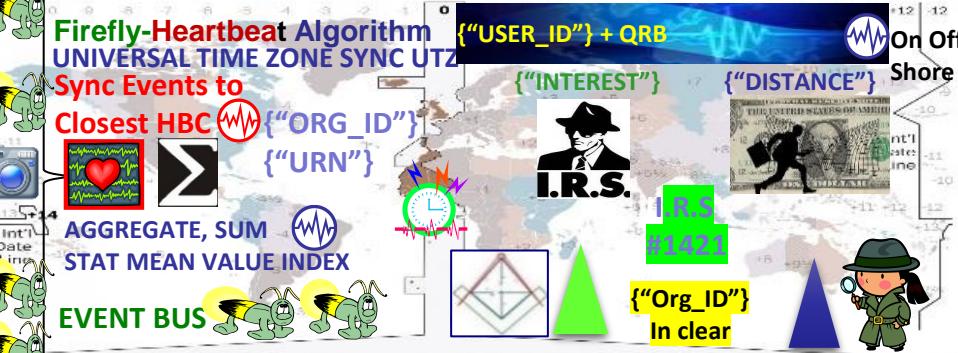
**OFFSHORE BEACONS ONSHORE**



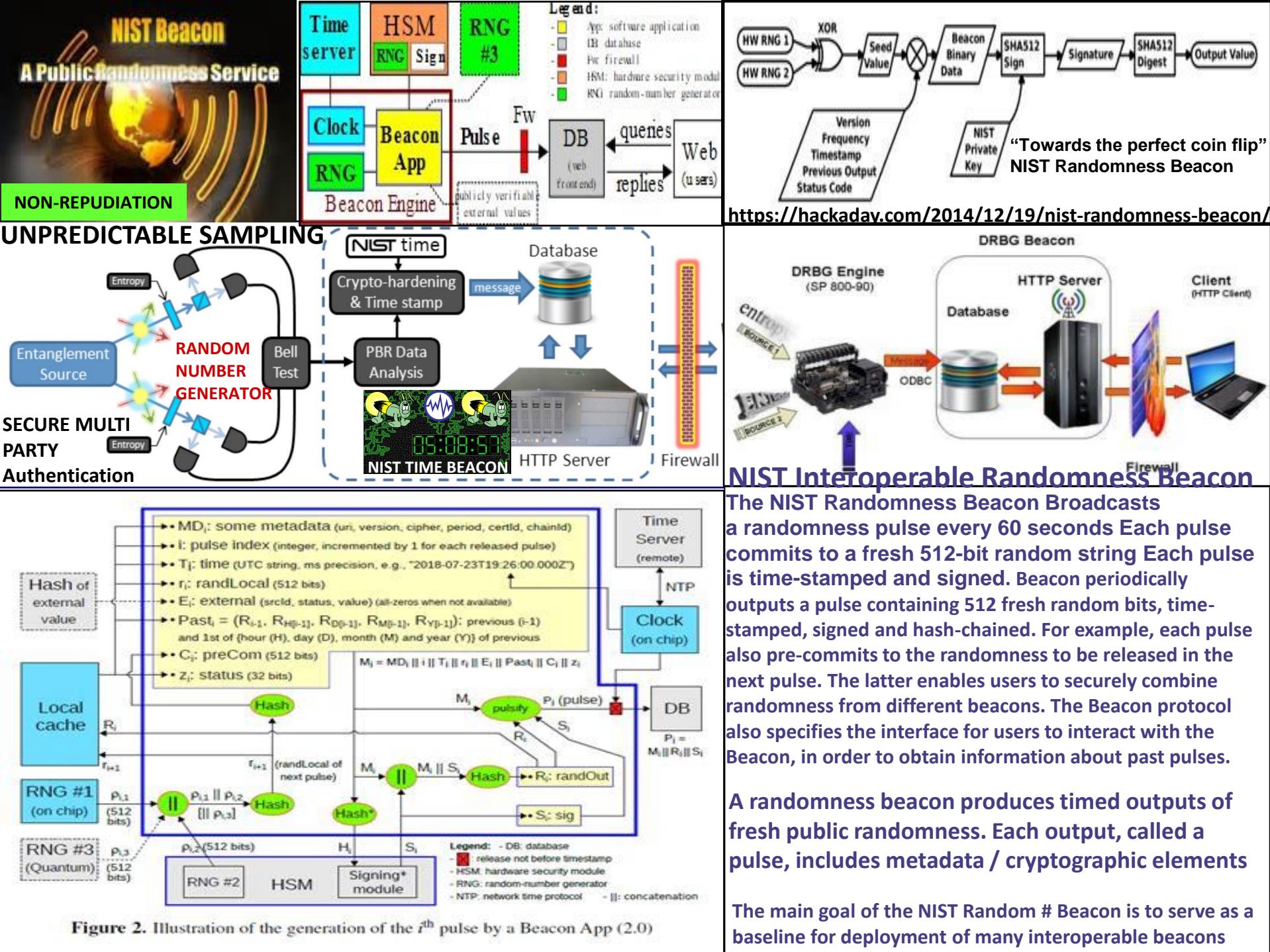
NDN

</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**

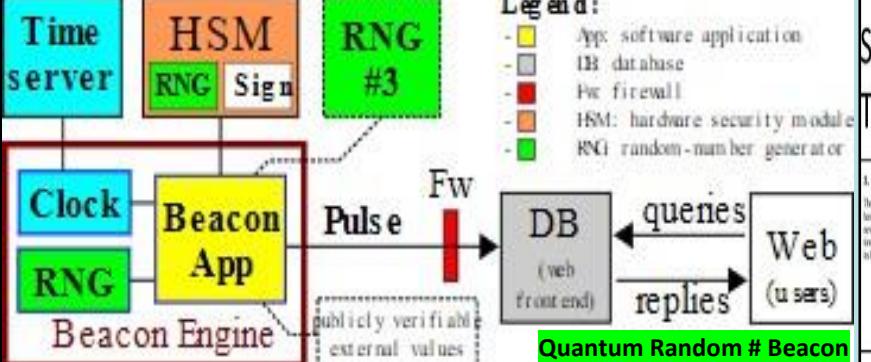


The proposed Universal Timezone System would do away with all these different



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

## NIST Quantum Random Number Beacon



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



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



## QubitCoin Interval: Every 30 Seconds

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

ENVIRONMENT FRIENDLY ECO INCENTIVES

["INTEREST"]  
["DISTANCE"]

NDN  
FIREFLY HEARTBEAT ALGORITHM

HEARTBEAT {108"} MESSAGES



Proximity Beacons

CLOSER = LESS FUEL

CLOSER = FASTER

G7 Carbon

BLOCKTIME ARBITRAGE

ON

OFF

vector

Unused Resources

Int'l Date Line

SHORE

Spatial

300+ Message Sets

Workflow Filters

SYNTAX LEXICON



## Satoshi Bitcoin Blockchain Time Stamp Server

### 1. Timestamp Server

The solution we propose begins with a timestamp server. A timestamp server works by taking a hash of a block of time to be timestamped and widely publishing the hash, such as in a newspaper or online post [3]. The timestamp proves that the data must have existed in the environment at least as long as it took to generate the hash. This timestamp includes the previous timestamp in its hash, forming a chain, with each additional timestamp confirming the previous one.

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)

(A timestamp is a reference to a point in time, which is often timestamped by a clock.)



## Epoch Time Cycles

E0 E1 E2 E3...

Genesis

Epoch

E0

E1

E...n



ROSETTA

STONE

BREVITY

CODES

Attribute Series

Time Series

Value

Time

t<sub>1</sub>

t<sub>2</sub>

t<sub>3</sub>

Geo

Spatial

300+

Message Sets

Work flow

Filters

SYNTAX LEXICON

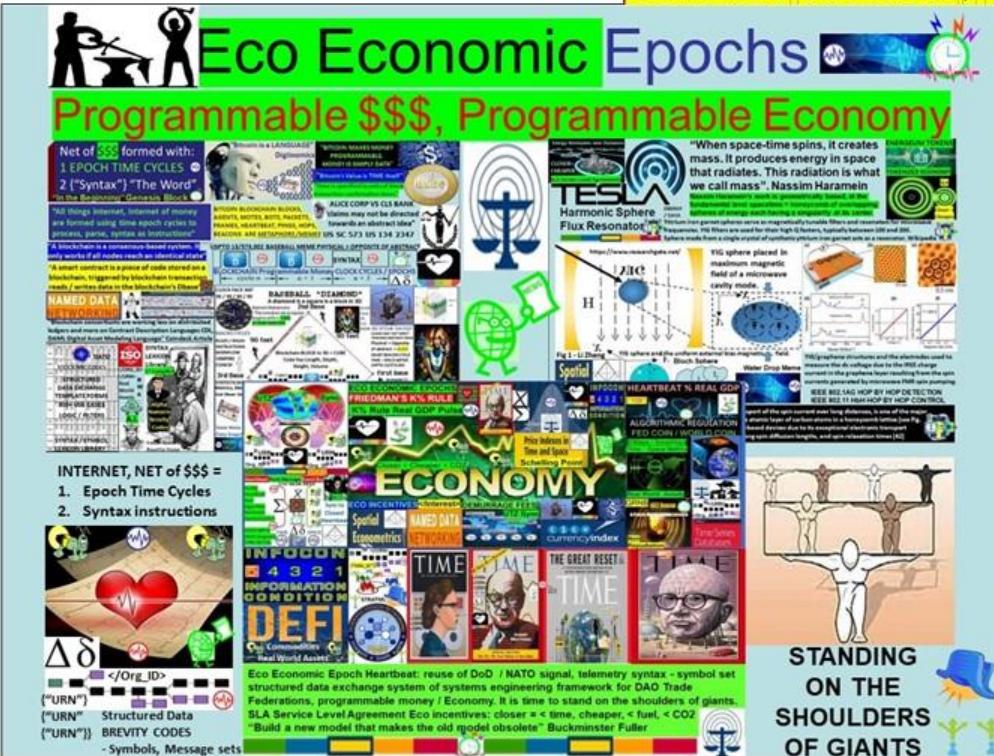
# World monetary unit World energy grid



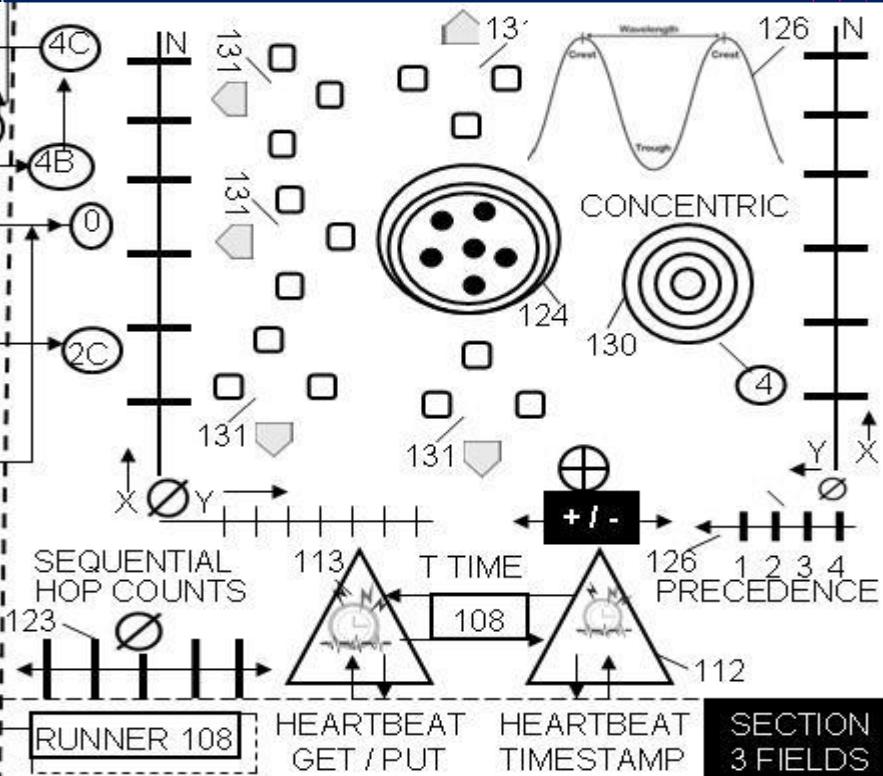
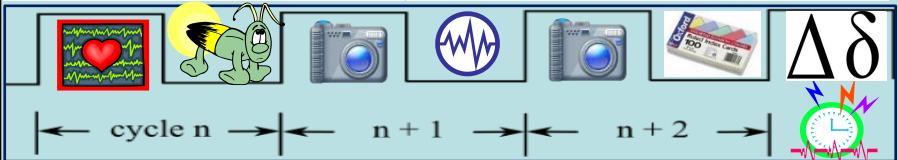
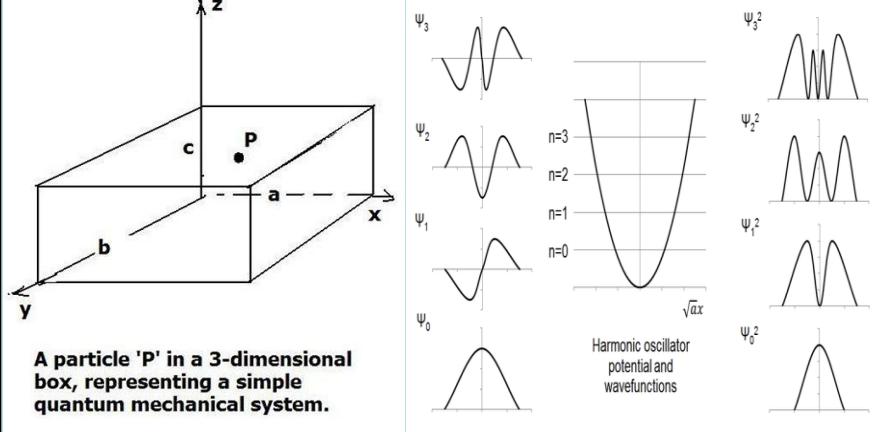
MICRO CHIP BASED CURRENCIES  
CRYPTO CURRENCY  
MINING CHIP FARMS



GEO MAGNETIC POLE SHIFT EVENTS



## 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

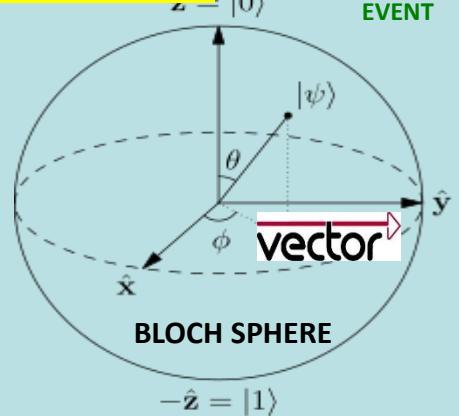
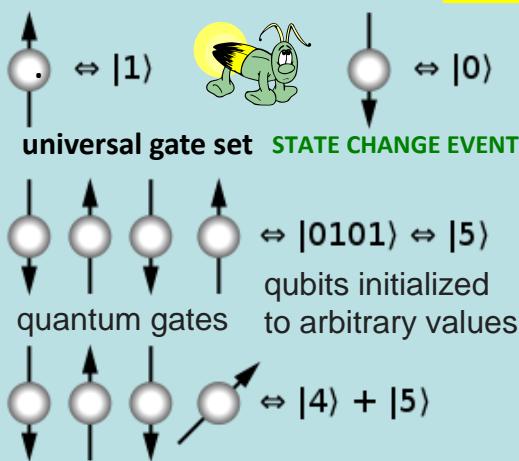
Vertical polarization vectors from a known point 0 null Sonar Hop meme



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?



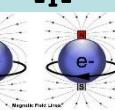
qubits can be in a superposition of all the classically allowed states

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)

STATE  
CHANGE  
EVENT

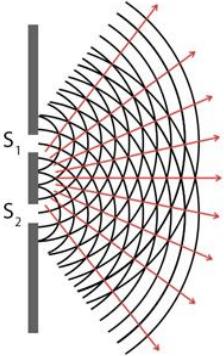


# Double-Slit Experiment

Screen with two slits

PARTICLE ?

Sodium lamp



Screen

WAVE ?

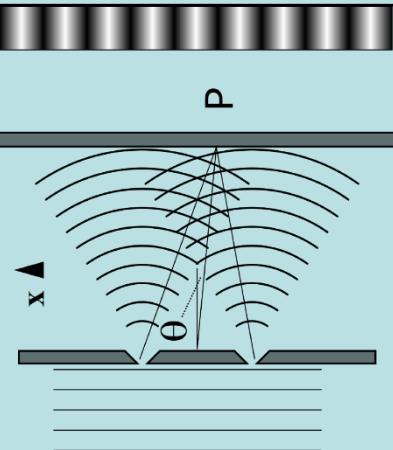


Light source      Rays of light coming from the source reach the slits

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

Alternating bright and dark fringes due to interference of light waves

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



CLOCK FACE 360°  
90 / 90 / 90 / 90



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



ALICE Corp VS CLS BANK SC 573 US 134 2347

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

first base  
RUNNER  
Message Bus

EVENTS

Firefly – Heartbeat Algo

X EVENTS

SETTLEMENTS / EXCHANGES

= TAXABLE EVENTS AKIN TO PROPERTY

IRS #1421

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

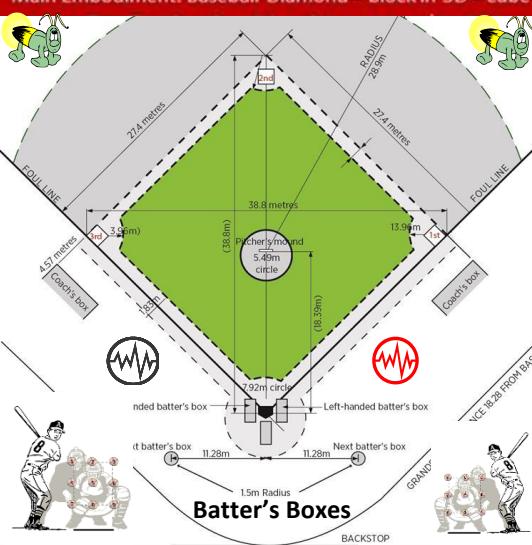
Δδ

Epoch Time Cycles

USPTO APPLICATION 13/573 002

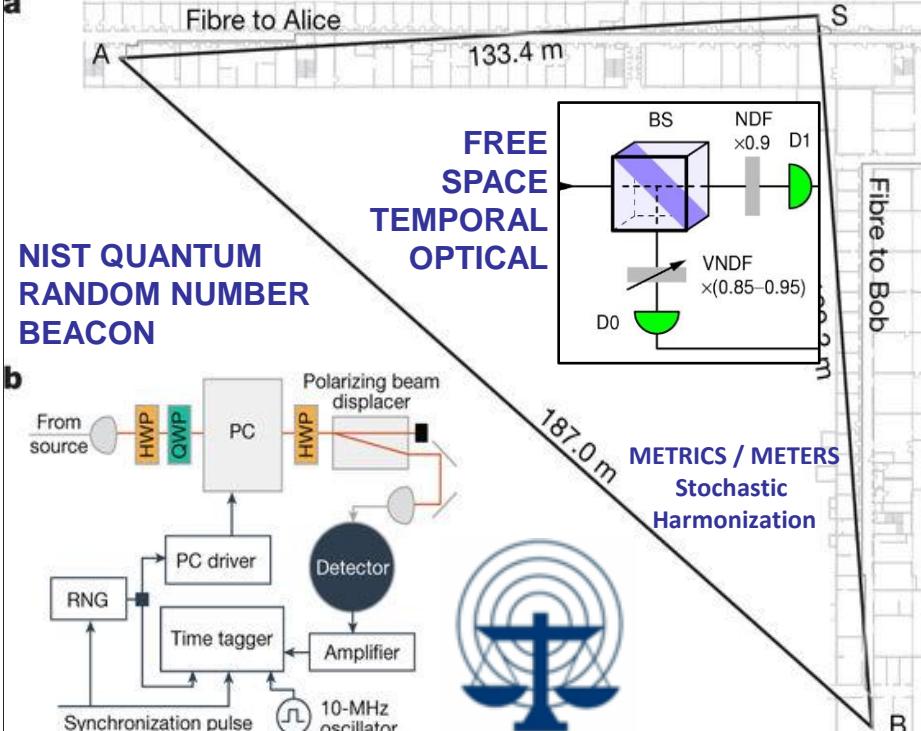
The Heart Beacon Cycle Time-Space Meter

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

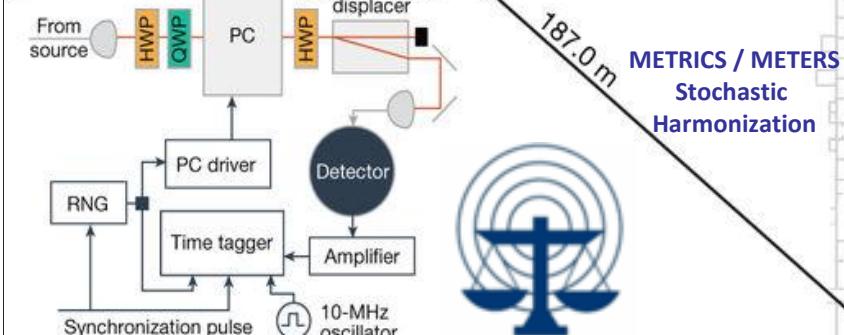


**SCOTUS ALICE RULING:** “Claims may not direct towards abstract ideas” / Physical = opposite of abstract

a



b



# The Hopf Fibration

Edmund Harriss

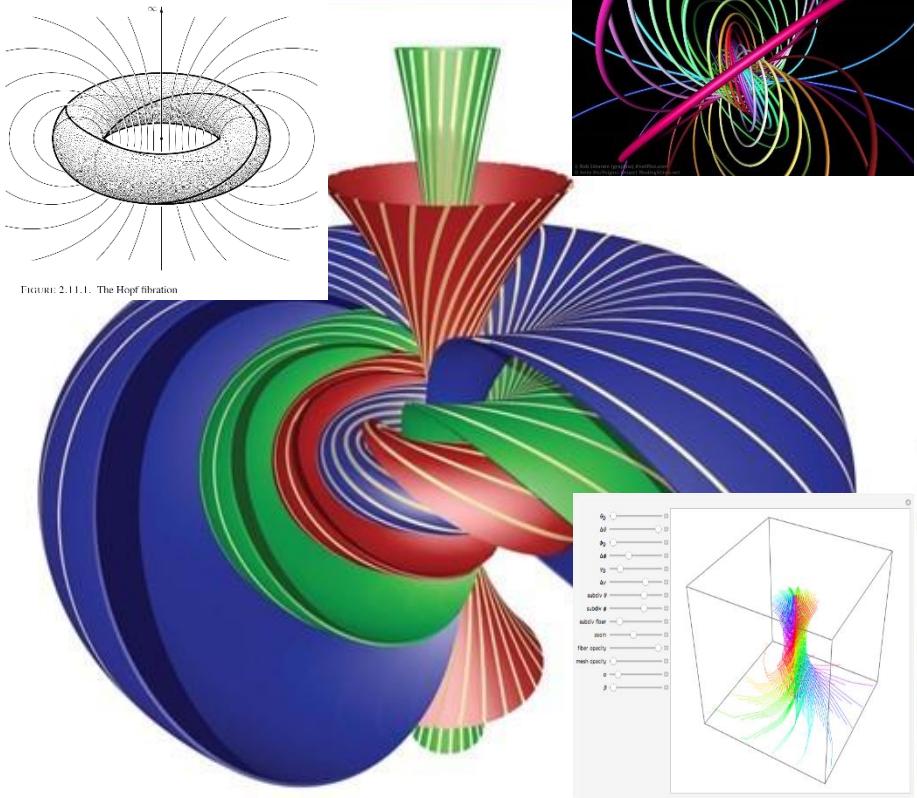
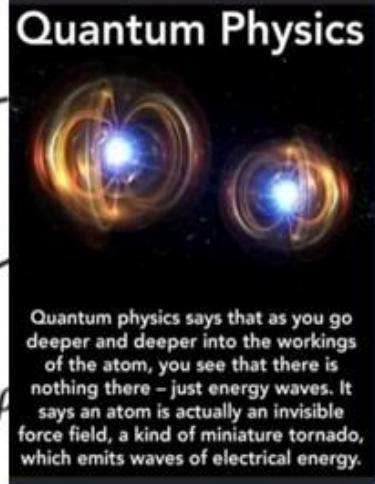
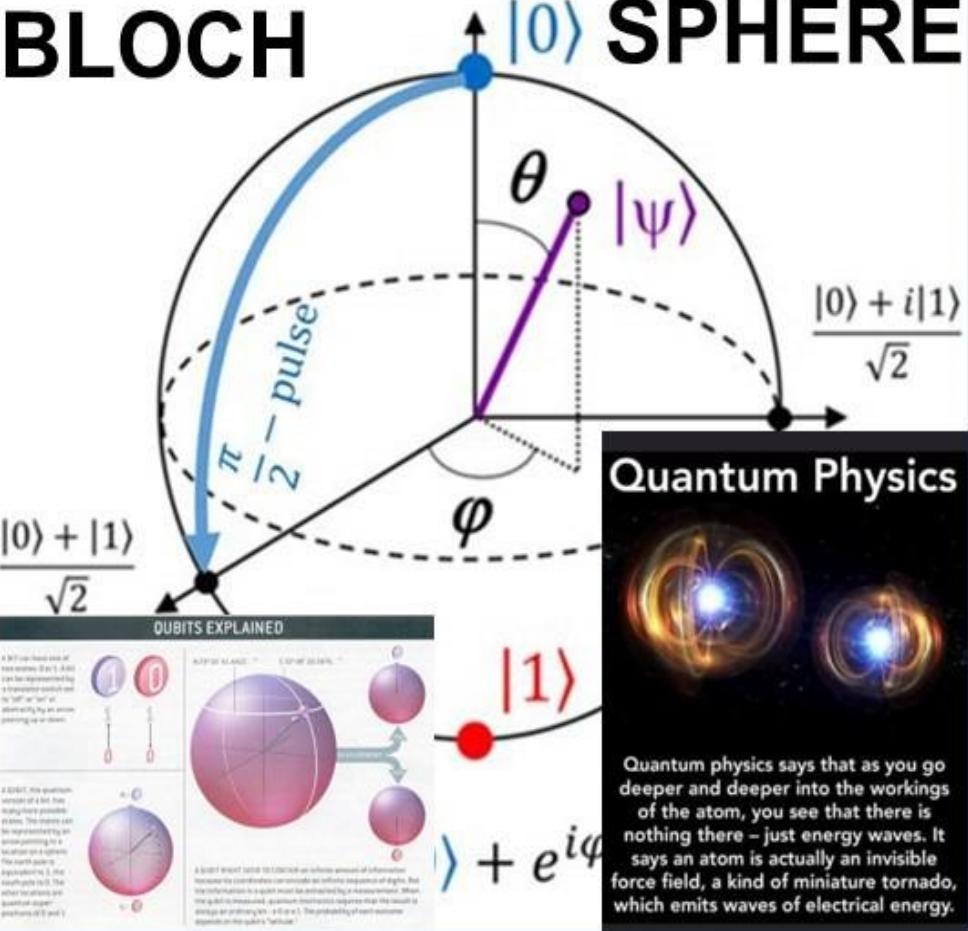


FIGURE 2.11.1. The Hopf fibration

# BLOCH SPHERE



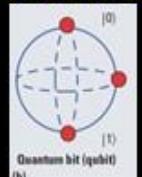
## Hopf Fibration / #Bloch sphere

"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.





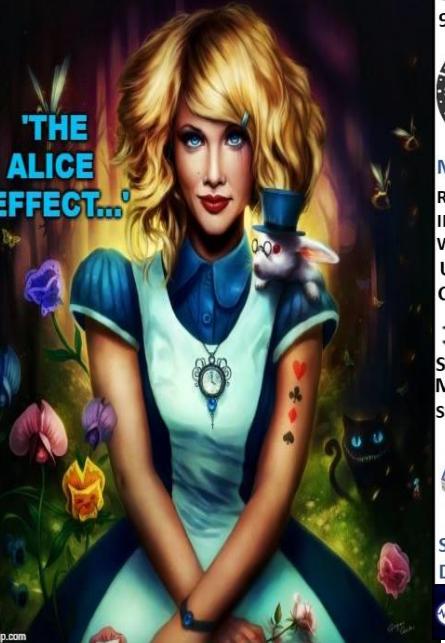
# THE 1919 WORLD SERIES

## *What Really Happened?*

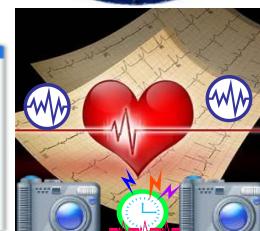
William A. Cook



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

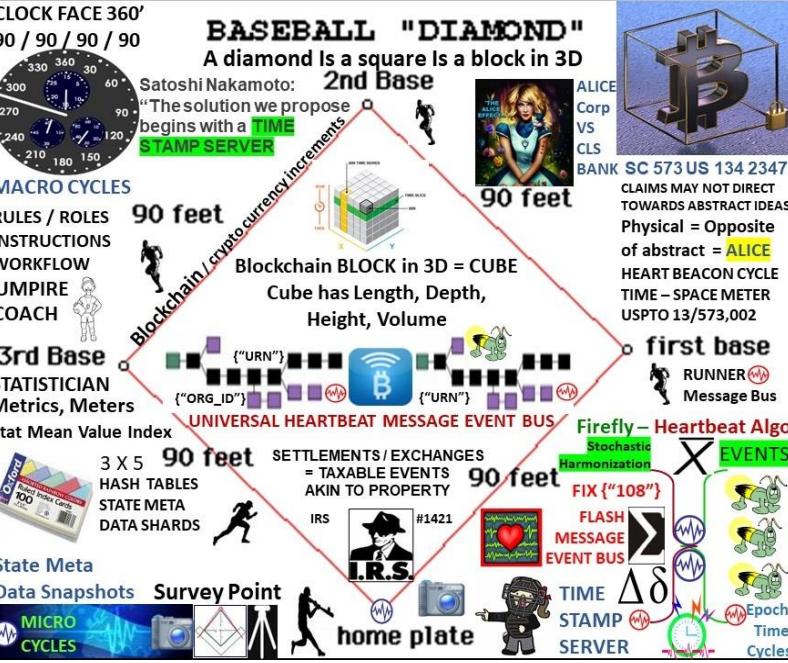


*Alice Corp. v. CLS Bank International*, 573 U.S. 134 S. Ct. 2347 (2014)  
RULING: “claims may not direct towards abstract ideas”



# USPTO SCREEN CAPTURES SUSPENDED PAIR RULES

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

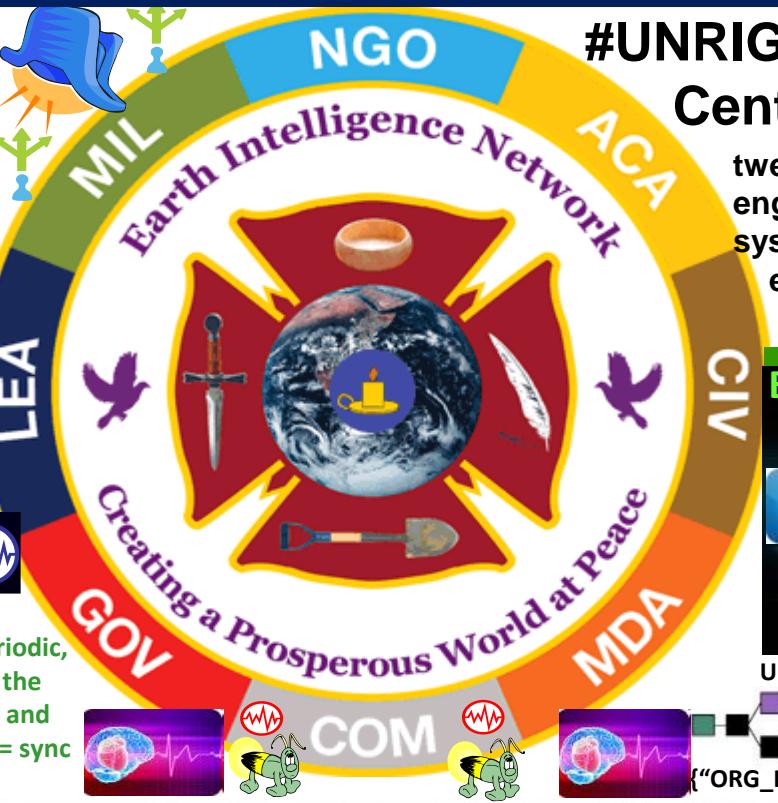
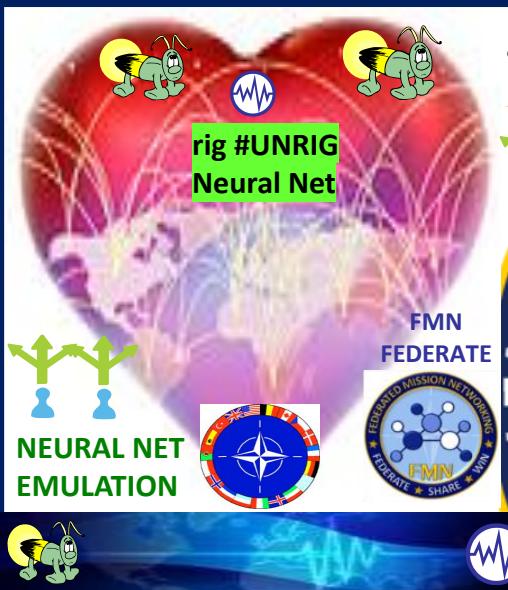






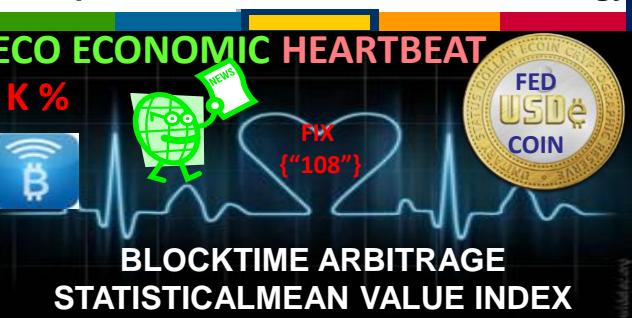
MINIMUM LIST OF COMPONENTS, BUILDING BLOCKS, PROCESSES, PROCEDURES AGREED ON BY TRADE FEDERATIONS TO ACHIEVE DISTRIBUTED AUTONOMOUS ORGANIZATION DAO CONSENSUS





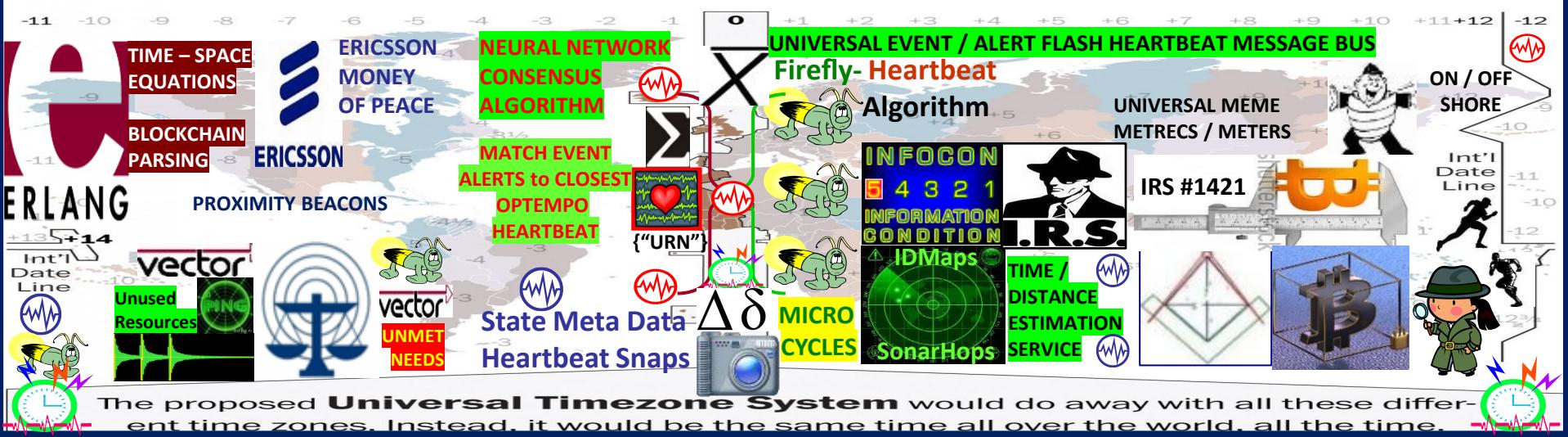
# #UNRIG Marine Corps Data Center Robert Steele RIP

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



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

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



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

# DAO: Distributed Autonomous Organization

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

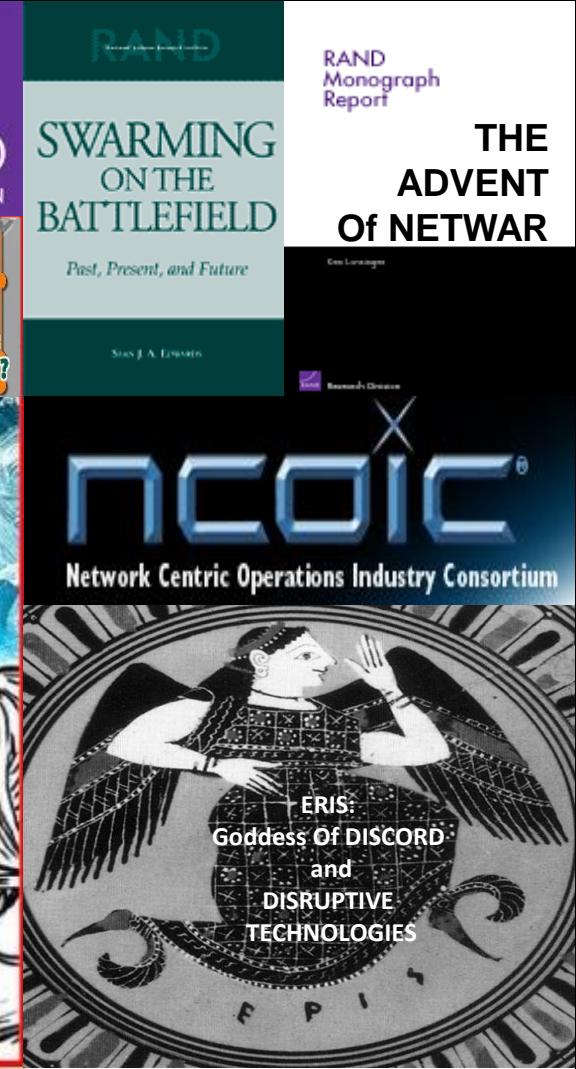
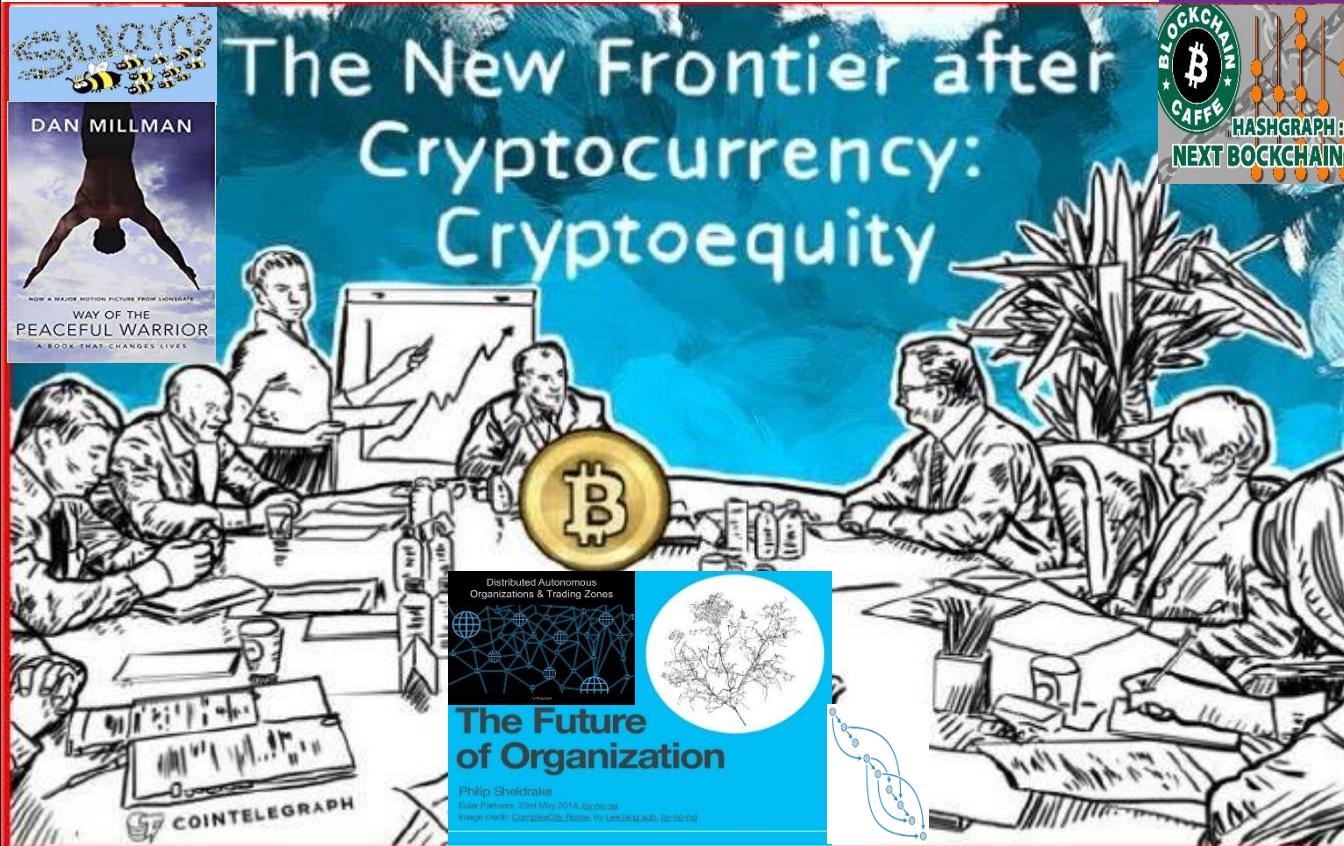
### SWARMING AND THE FUTURE OF CONFLICT



RAND

RAND  
Monograph  
Report

THE  
ADVENT  
Of NETWAR



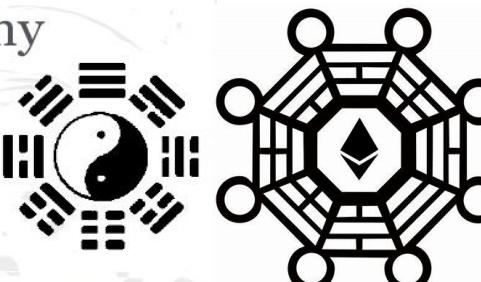
<http://cointelegraph.com/news/112077/the-new-frontier-after-cryptocurrency-cryptoequity>

## Taoism Philosophy

Taoism represents:

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

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



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

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

@TheBitcoinArmy





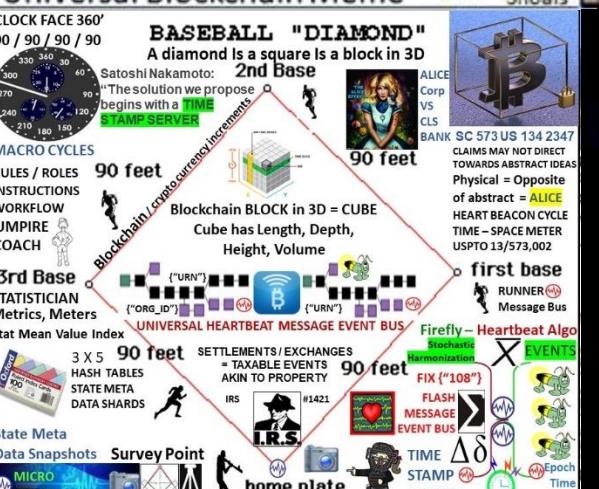
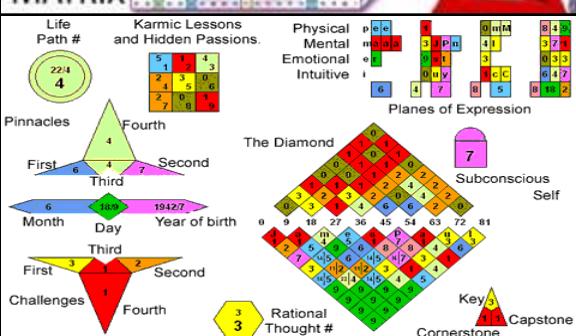
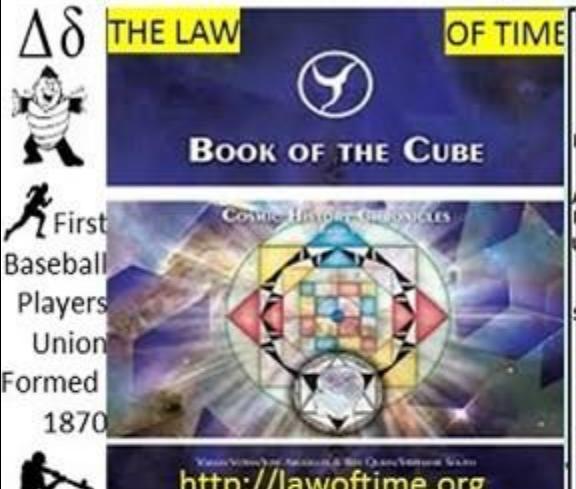
USPTO APPLICATION 13/573 002

## The Heart Beacon Cycle Time-Space Meter

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

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

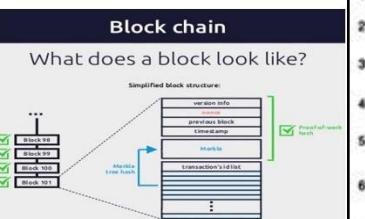
"We can synchronize ourselves in time for a common purpose" Universal Blockchain Meme



atoshi Bitcoin Blockchain  
Time Stamp Server

**TIMESTAMP SERVER**  
 solution we propose begins with a timestamp server. A timestamp server works by taking a block of items to be timestamped and publicly publishing the hash, such as in a public log or database. This timestamp is then used to verify the integrity of the data. Obviously, in order to get to the hash, each timestamp includes the previous timestamp, forming a chain, with each additional timestamp replacing the one before.

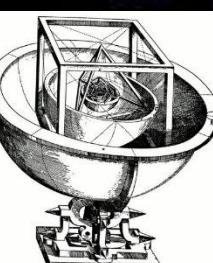




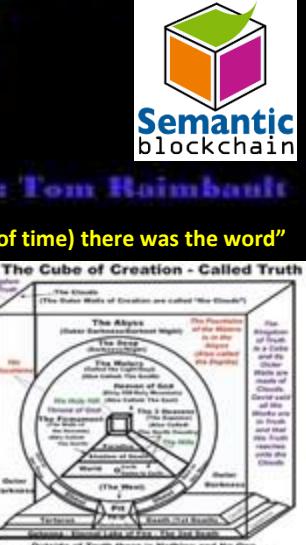
## Metatron's Cube and the Platonic Solids



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



GENESIS OF ALL FORM





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

-Buckminster Fuller



## THE GREAT CONJUNCTION IN AQUARIUS

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

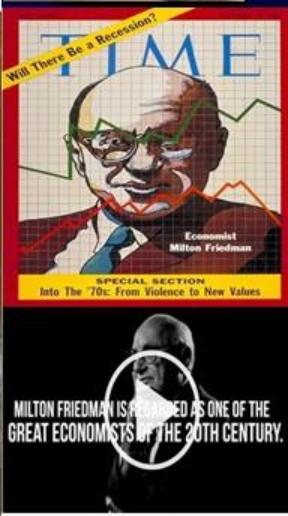
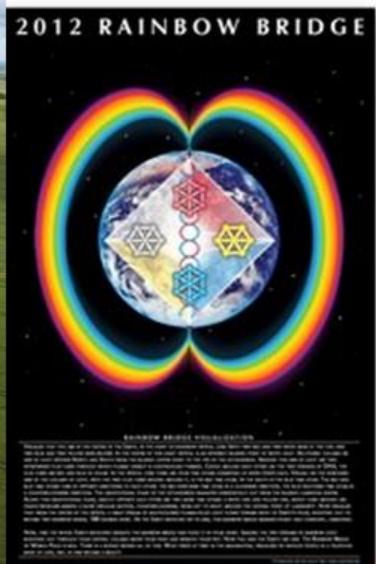
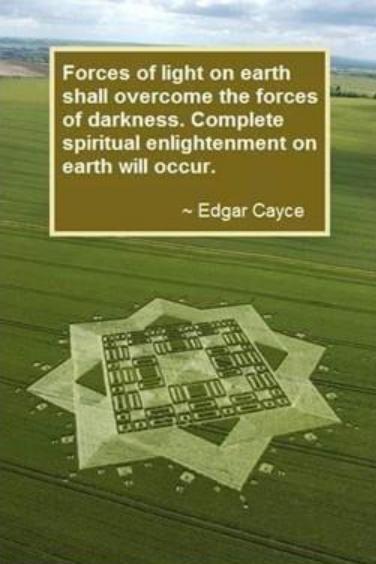
Over the next ten years, we are going to see our world innovate unlike never before, particularly in the fields of AI, technology, science, space travel, UFOs, networks, and the Internet. Major Universal truths will also be revealed as we welcome the New Age of Aquarius. The old world will soon come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

photo by werner du plessis



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

~ Edgar Cayce



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

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

Milton Friedman — Preface to Capitalism & Freedom 1962

The K-Percent Rule was a proposal by economist Milton Friedman that the central bank should increase the money supply by a constant percentage every year.

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

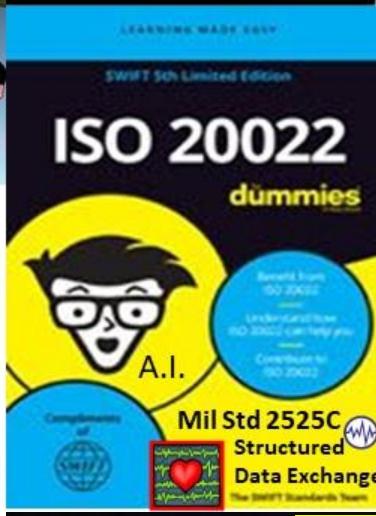
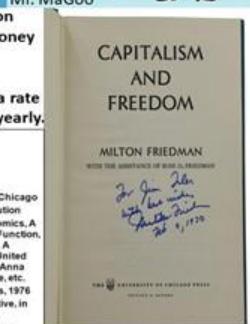


Milton Friedman

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



Reverend K "I see Mr. Magoo"



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

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

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

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



SIMPLE ALWAYS WINS... WHEN STANDING ON THE SHOULDERS OF GIANTS

