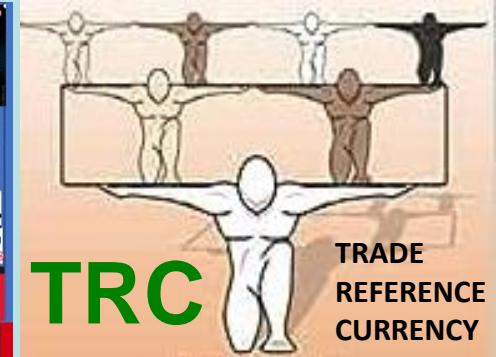


Eco Economic Epochs

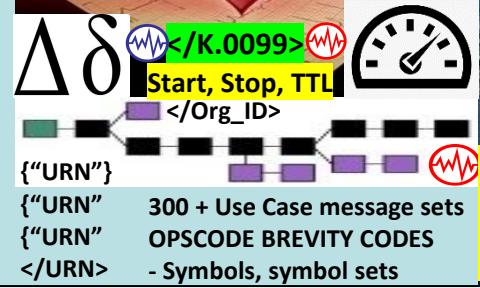
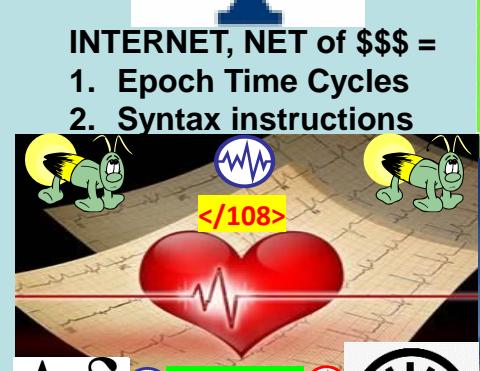
Net, Net of \$\$\$

FOUNDATION
TECHNOLOGY



TRC

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



BATTLEFIELD
DIGITIZATION OOTW Operations Other than war

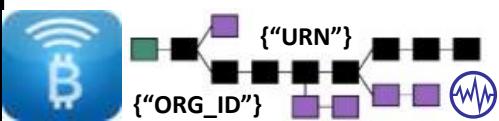
FOUNDATION TECH
For Programmable \$\$\$
Programmable Economy
Eco Economic Epochs
Symbol / Message Sets A.I.
FIREFLY Inspired
Heartbeat Algorithm

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

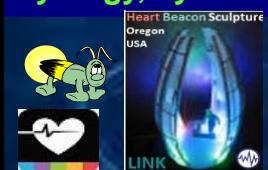


"Shared situational awareness enables collaboration synchronization, and enhances sustainability, speed of command"

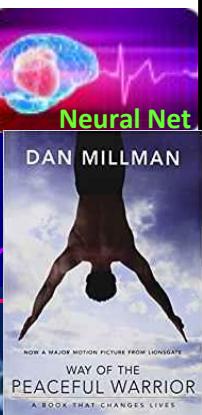


300 +TEMPLATES
STRUCTURED DATA
EXCHANGE
FFUIRNS FFUDNS OPSCODES
MAPPED TO SYMBOL SETS

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



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



Beacon Communities

Vernetzte Operationsführung

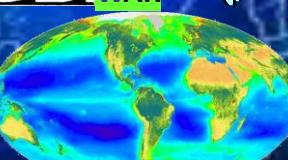


Proximity Beacons



JAEGERS

Closer < \$\$\$ < FUEL

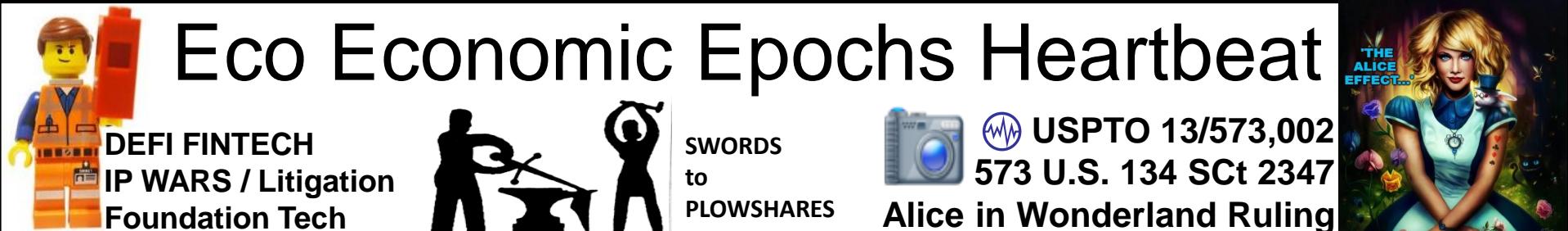


FREELY
HEARTBEAT
EVENT / ALERT Flash Heartbeat Message Bus
ALGORITHM



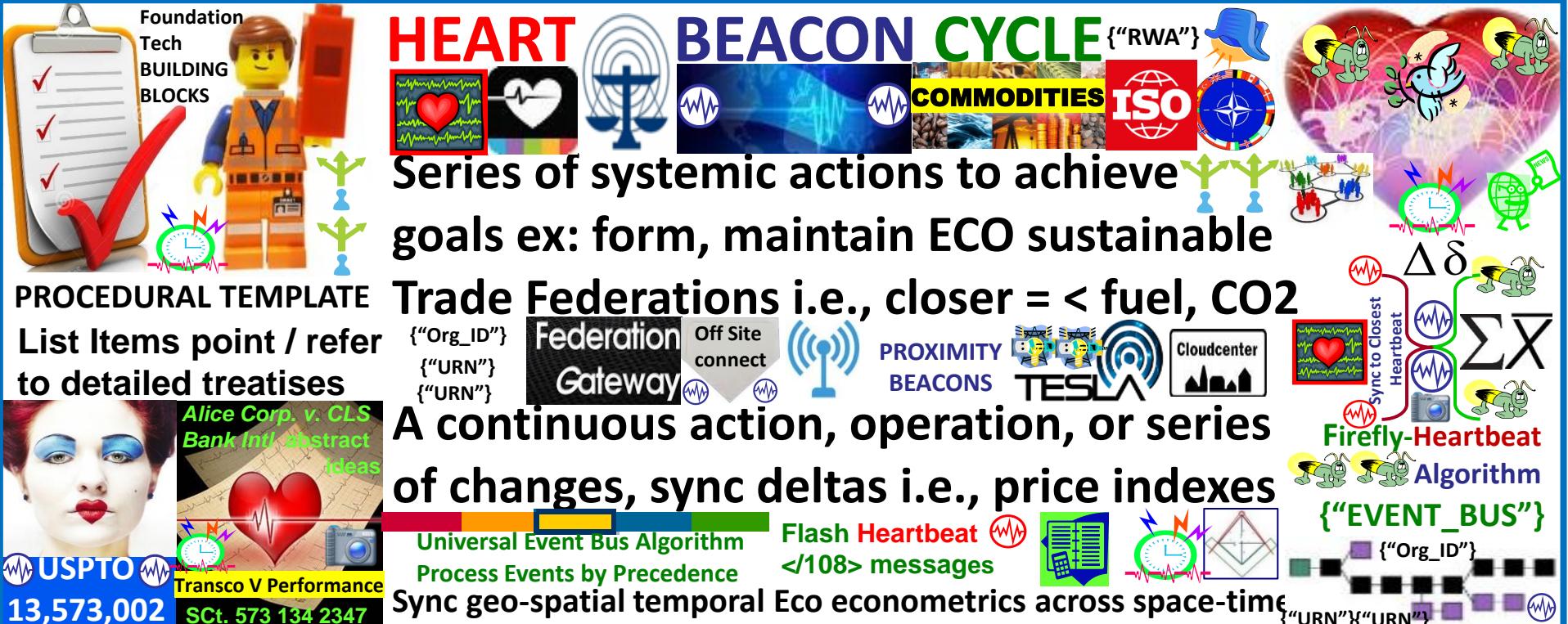
SYSTEM
Of
SYSTEMS





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





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

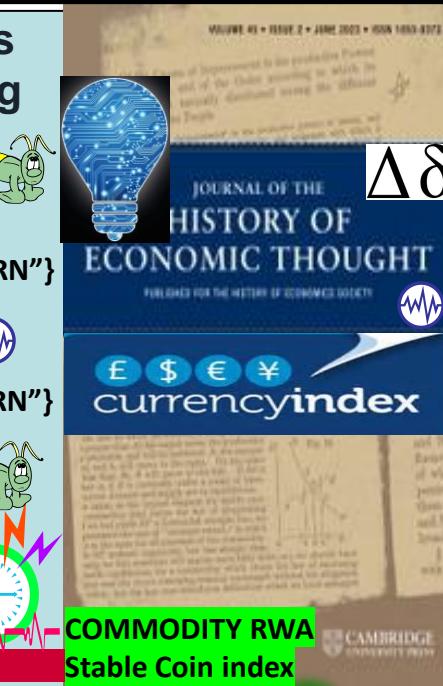
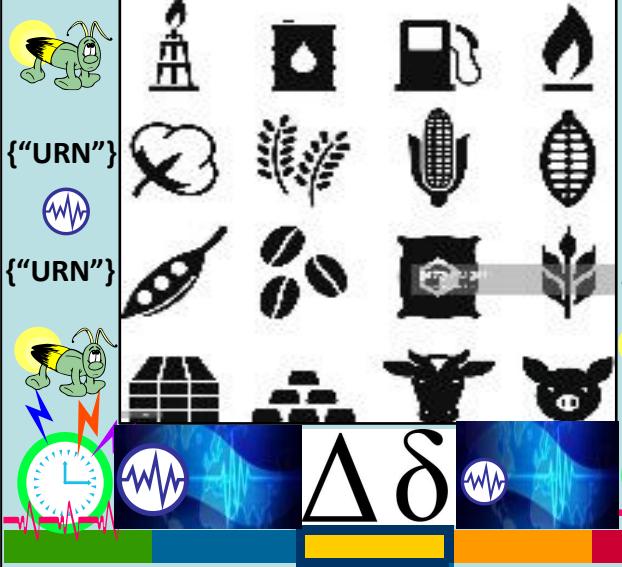
CHECKLIST: TRADE FEDERATION ECONOMIC FRAMEWORK EX:

- 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

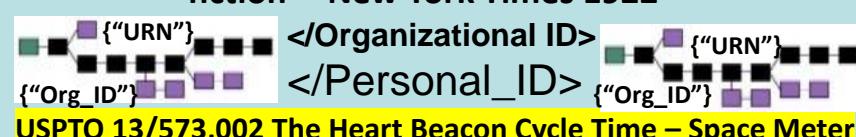


Thomas Edison's Monetary Option Cambridge University Press 2009

"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



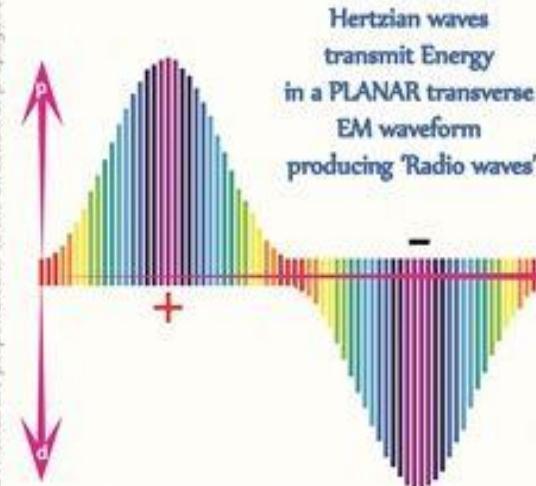
FIREFLY – HEARTBEAT ALGORITHM CHINA: nature-inspired metaheuristic optimization algorithm developed by Xin-She Yang flashing behavior of fireflies (Yang, 2008), adapted to solve continuous optimization problems (Lukasik and Žak) 2010, 2013

CLOSER = < Infrastructure
= CHEAPER SLA

ElectroMagnetic waveforms



ENERGY / DATA
Over
Transmission
Lines / Airwaves



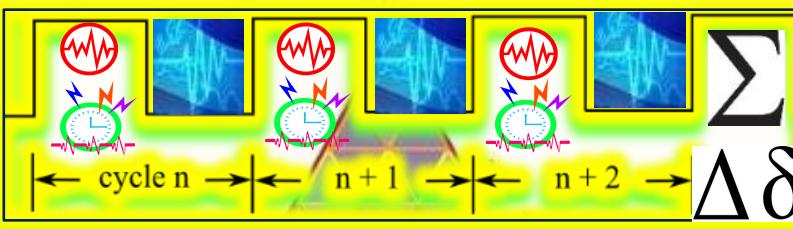
In 1887, Heinrich Hertz demonstrated the reality of Maxwell's electromagnetic waves by experimentally generating radio waves in his laboratory.

f



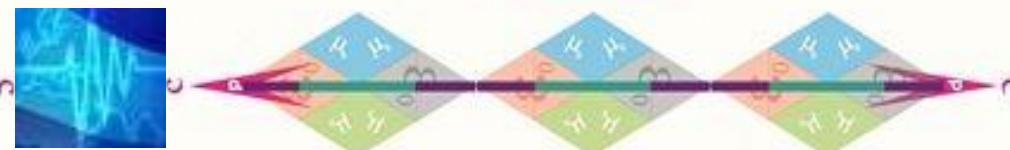
(22 February 1857 - January 1 1894)

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



Cycles per Second

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



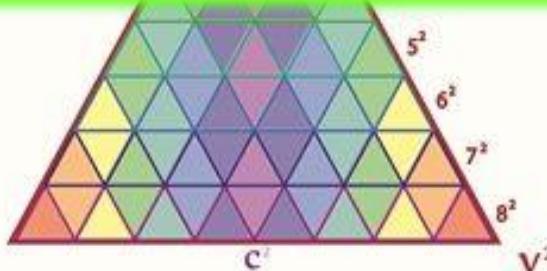
Teslian waves transmit Energy in a LONGITUDINAL waveform producing 'Action at a Distance'

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.

Nikola Tesla



(10 July 1856 - 7 January 1943)



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

V

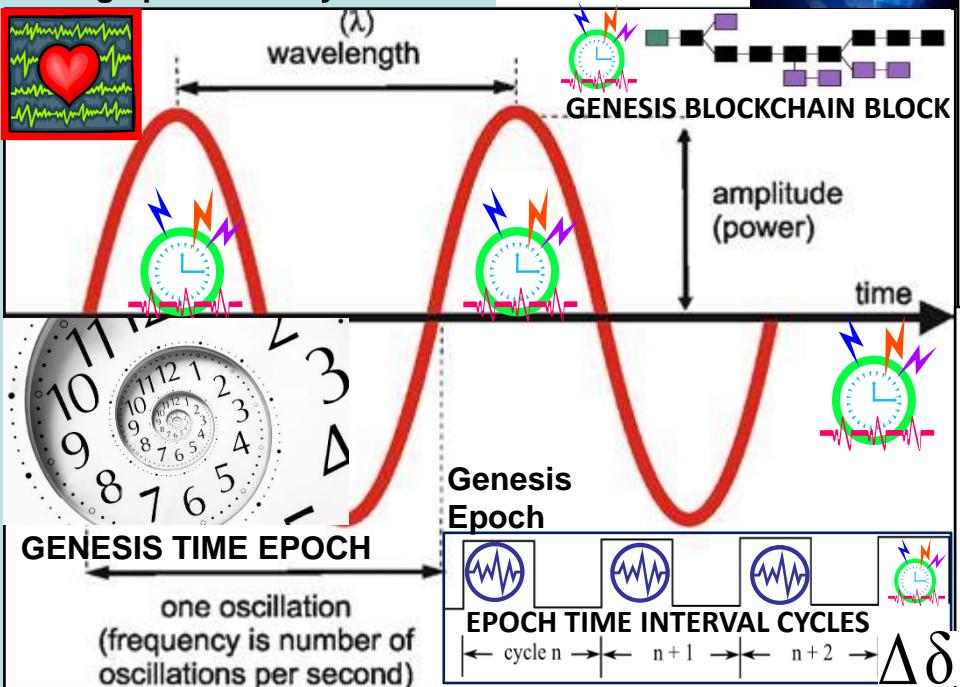
THESIS: All things net, net of programmable \$\$\$ are formed using:

ENERGY / DATA WAVE METRICS / METERS

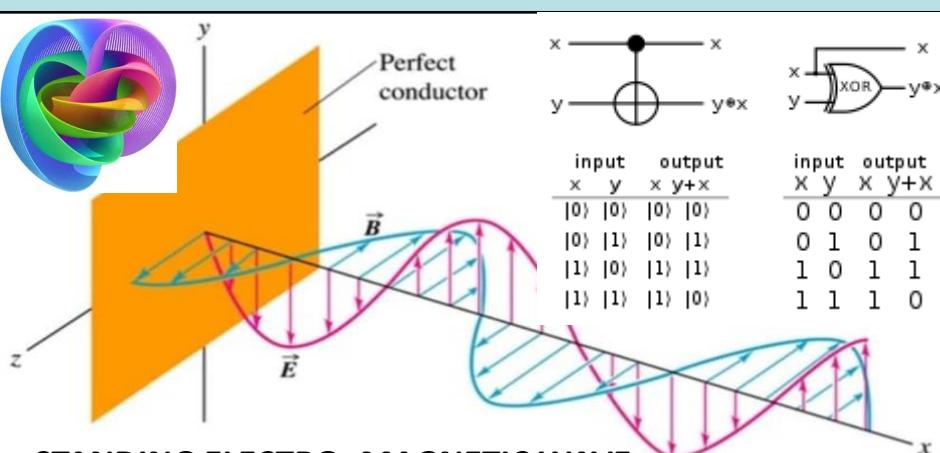
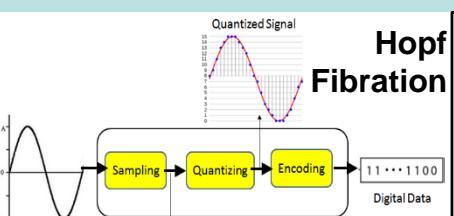
BELL STATE QUANTUM COMPUTING

1) Time epochs created by quartz crystal silicon chips

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

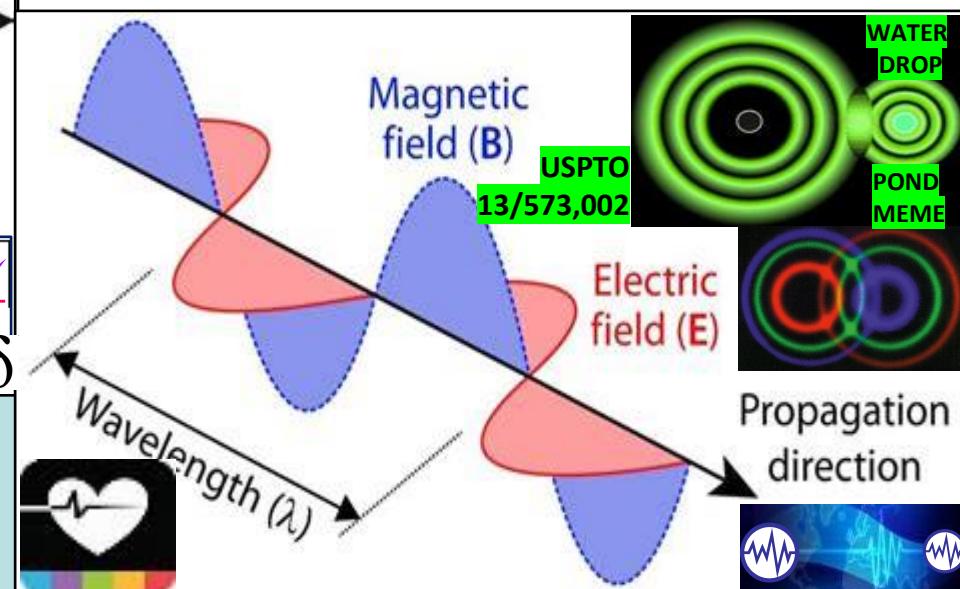


Quantum Computing Vibrations encode, process data like quantum computers. A simple mechanical system built from aluminum rods uses vibrations to encode information, mimicking quantum computing in a non-quantum system. "Light is made from photons, the quantum of light." mechanical vibrations or sound 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



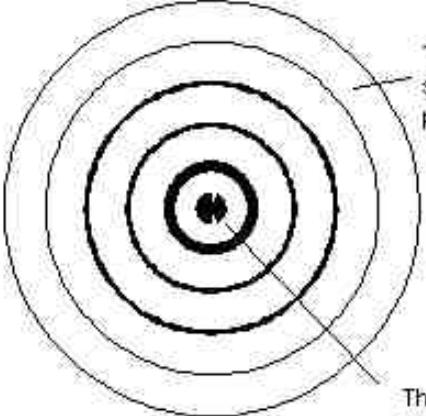
STANDING ELECTRO- MAGNETIC WAVE

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



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

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



The IN and OUT waves form standing waves about the central point

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

The pointlike Particle effect at the Wave Center

Paul Revere Linear, sequential meme

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

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

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

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

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

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

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

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

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



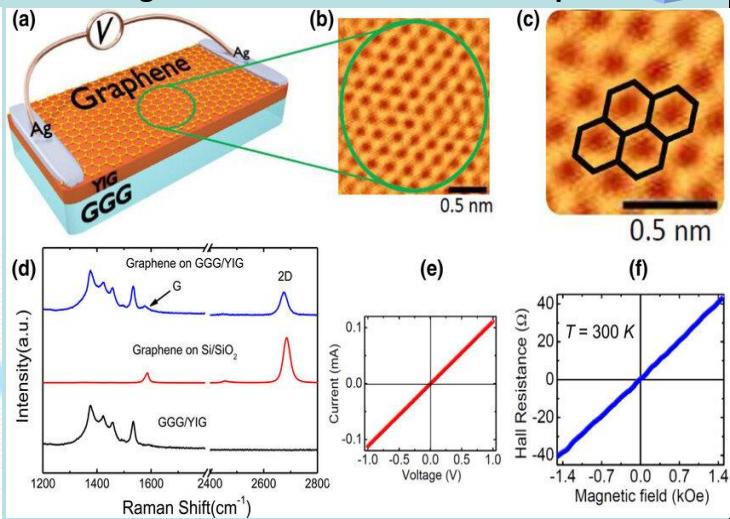
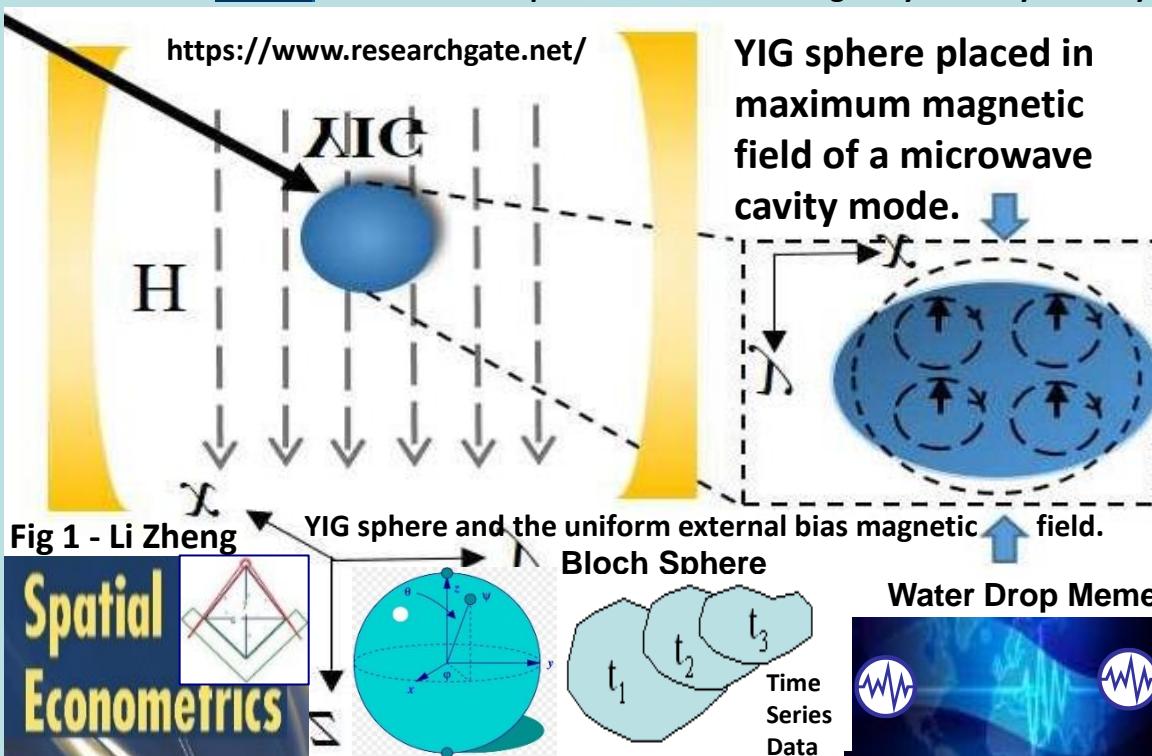
"Simplicity is the ultimate sophistication".
(Leonardo da Vinci)



"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.

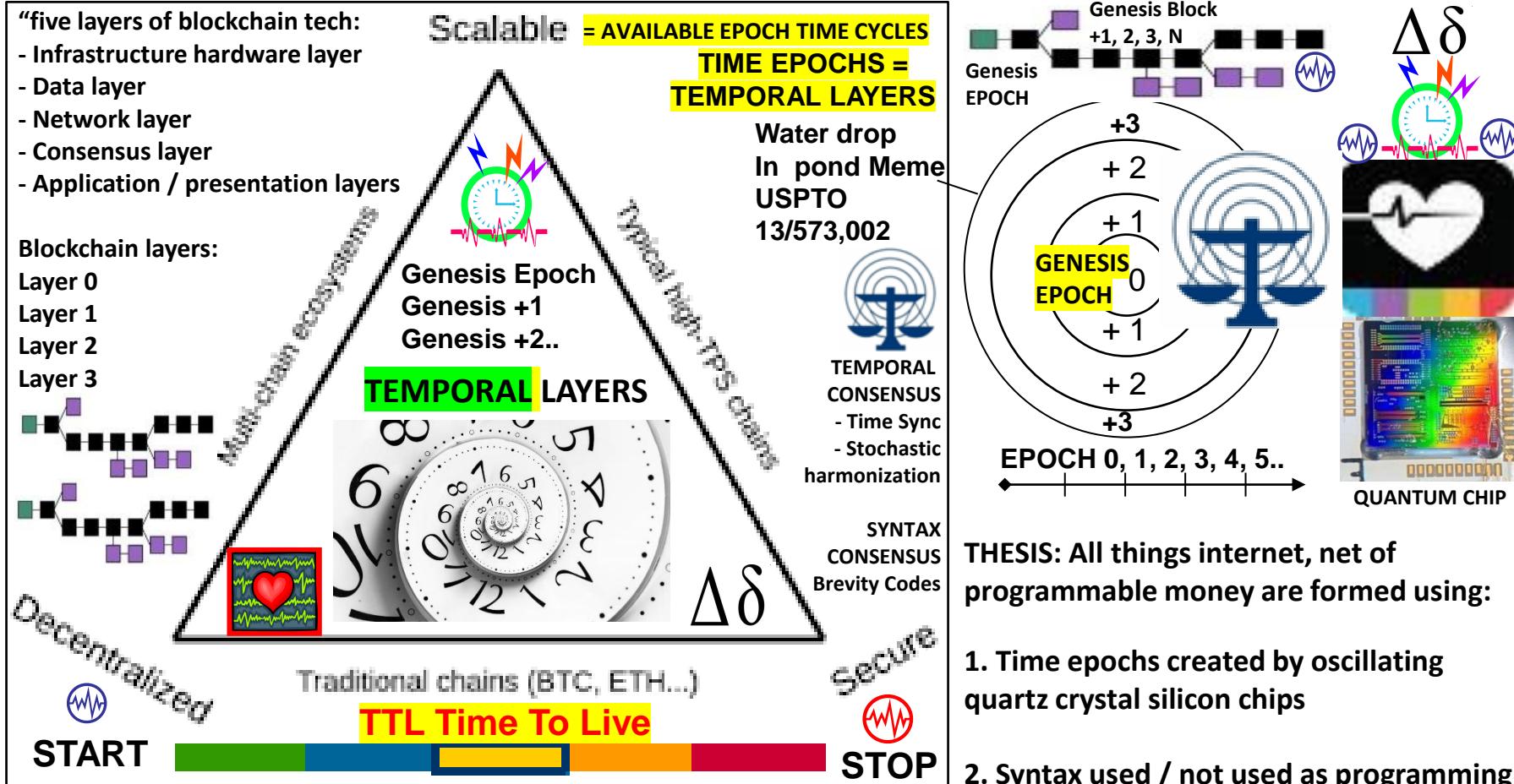
IEEE 802.1AG HOP BY HOP DETECTION
IEEE 802.11 HbH HOP BY HOP CONTROL

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

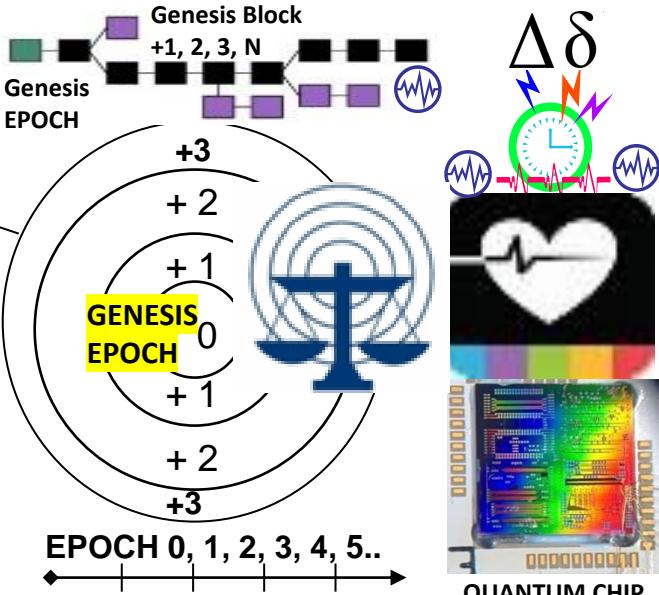
"BLOCKCHAIN" = LEDGER / Database

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



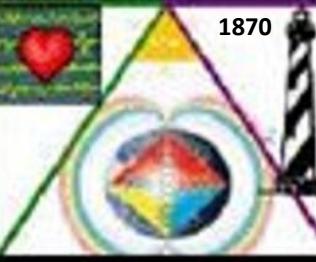
Satoshi Nakamoto



Craig WRIGHT
a.k.a.
Satoshi Nakamoto



"Bitcoin is a
LANGUAGE"



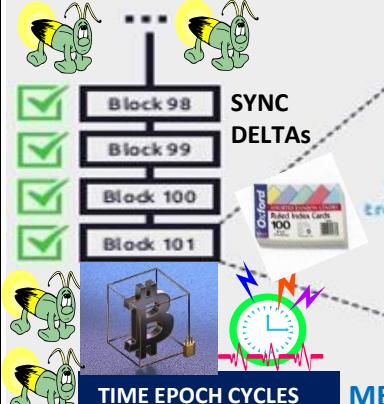
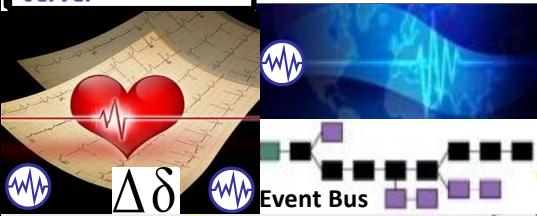
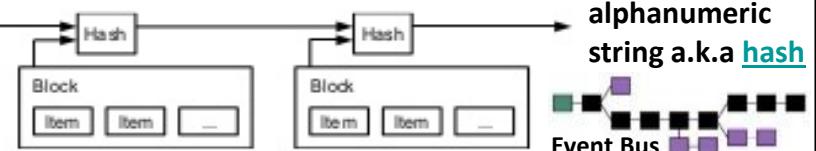
Wright Brother's 1st Flight
Cape Hatteras Outer Banks

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

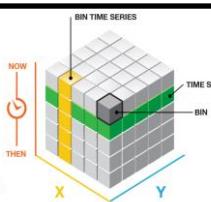
3. Timestamp Server

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

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



JapanNet Crypto Time
Authentication Service
(Timestamp Service)



CLOCK FACE 360'
90 / 90 / 90 / 90
330 360 30 60°
90 90 90 90
300 240 210 180 150 120
NOW THEN

MACRO CYCLES

RULES / ROLES
INSTRUCTIONS
WORKFLOW
UMPIRE
COACH

3rd Base

STATISTICIAN
Metrics, Meters
Stat Mean Value Index

3 X 5
HASH TABLES
STATE META
DATA SHARDS

State Meta

Data Snapshots

Survey Point

MICRO CYCLES

Event Bus

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

firefly – Heartbeat Algo

EVENTS

Fix {"108"}

FLASH MESSAGE EVENT BUS

TIME Δδ

Epoch Time Cycles

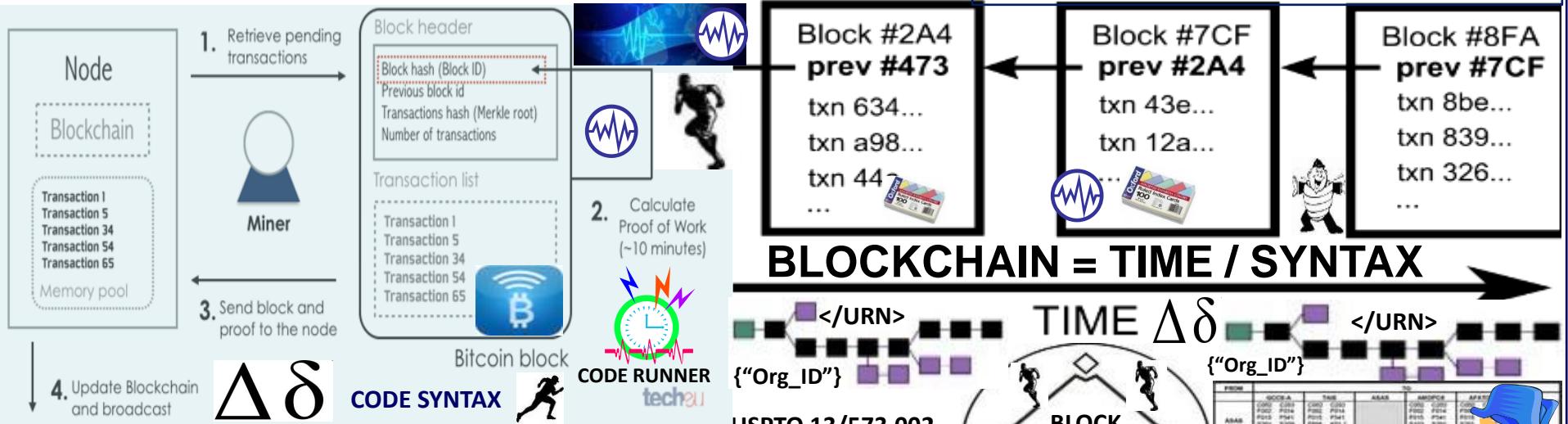
MERKLE: Summary built from block's transaction ID's

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

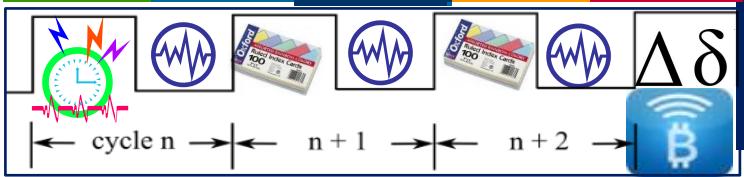
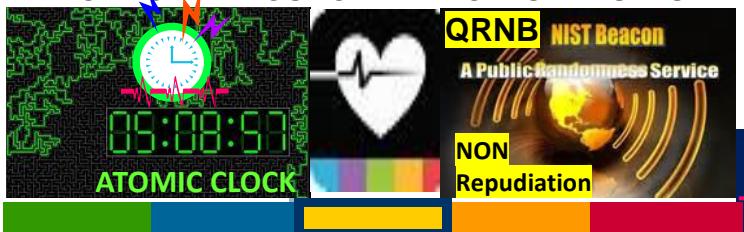
Transaction's id list - list of transaction's identification hashes that was included into the block's merkle tree.



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

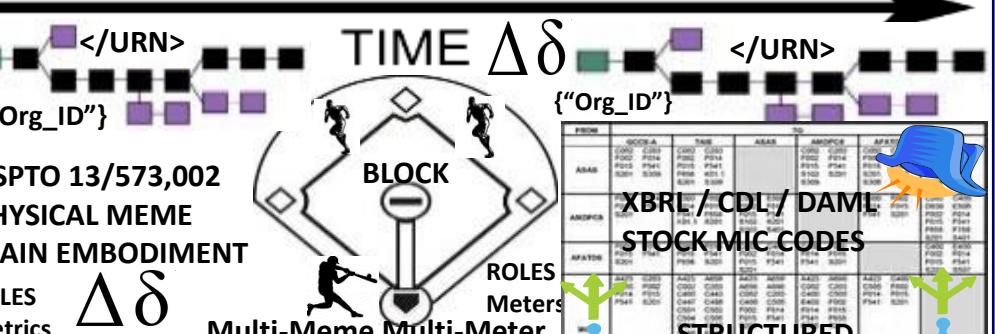
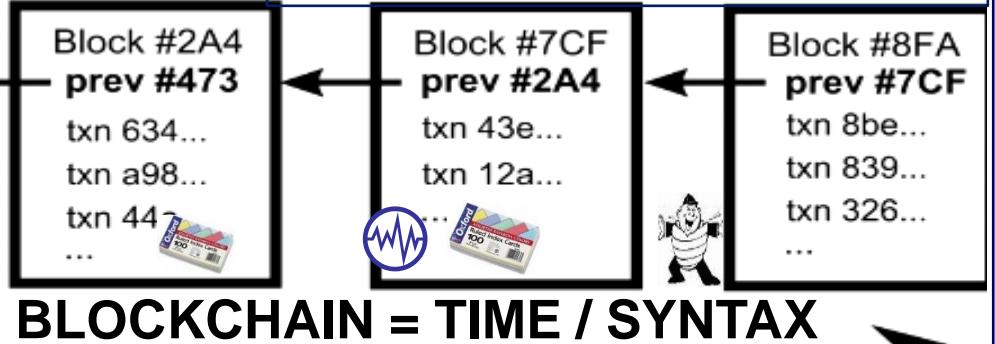
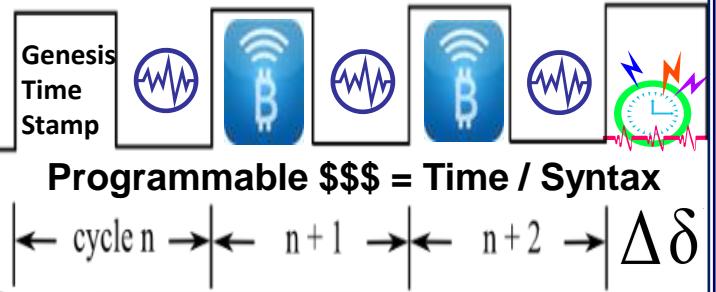


"BITCOIN IS A LANGUAGE / BITCOIN'S VALUE IS TIME ITSELF"



TIME EPOCH CYCLES

State Meta Data Snapshots



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

1st Compiler

R
W
A

Real
World
Assets

A.I.

Alpha
Numeric
Brevity
Codes

Coder Guide

Rosetta Stone



"BITCOIN MAKES MONEY
PROGRAMMABLE.
MONEY IS SIMPLY DATA"

"Bitcoin's Value is TIME itself"

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



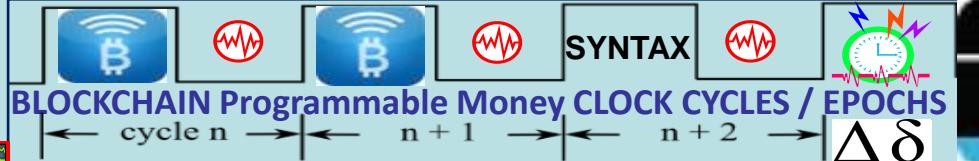
ALICE CORP VS CLS BANK

"claims may not be directed towards an abstract idea"

US SC 573 US 134 2347

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

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



CLOCK FACE 360°
90 / 90 / 90 / 90



MACRO CYCLES

RULES / ROLES

INSTRUCTIONS

WORKFLOW

UMPIRE

COACH

3rd Base

STATISTICIAN

Metrics, Meters

Stat Mean Value Index

3 X 5 HASH TABLES

STATE META DATA SHARDS

State Meta

Data Snapshots

Survey Point

MICRO CYCLES

BASEBALL "DIAMOND"

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

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

Δδ

EPOCH Time Cycles

Time Stamp Server



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

HEART BEACON CYCLE
USPTO 13/573,002
SURVEY METHODS

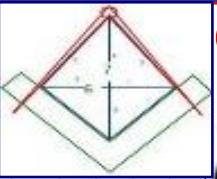
SC ALICE CORP VS CLS BANK: "claims may not direct towards abstract ideas"

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



Memo #1421: Purchased Bitcoins are treated akin to property

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



Mined Bitcoins



BLOCKS / COINS PENDING ISSUE

B
A
C

$\Delta\delta$

Unmined Bitcoins



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

IDMaps-SONARHOPS distance estimation query-reply service

- End-state Bitcoin quantity will be fixed like land

"Bitcoin as protocol of ownership, not transfer"

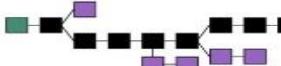
Coin never travel, but simply switch owners"

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



$\Delta\delta$



IDMaps

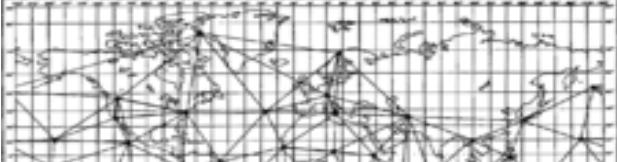
"PING"



"Interest"
ONSHORE
OFFSHORE

SonarHops

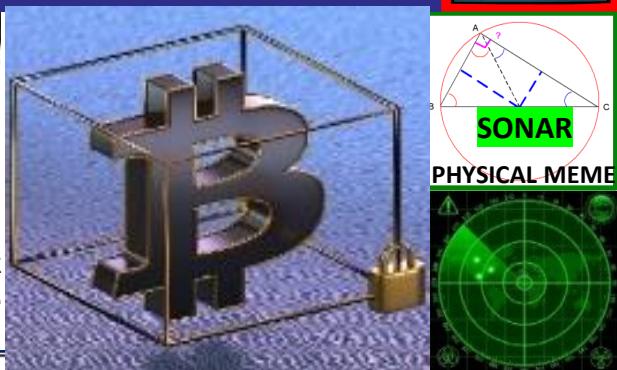
TRIANGULATION



DISTANCE ESTIMATION



EUCLIDIAN GEOMETRY



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



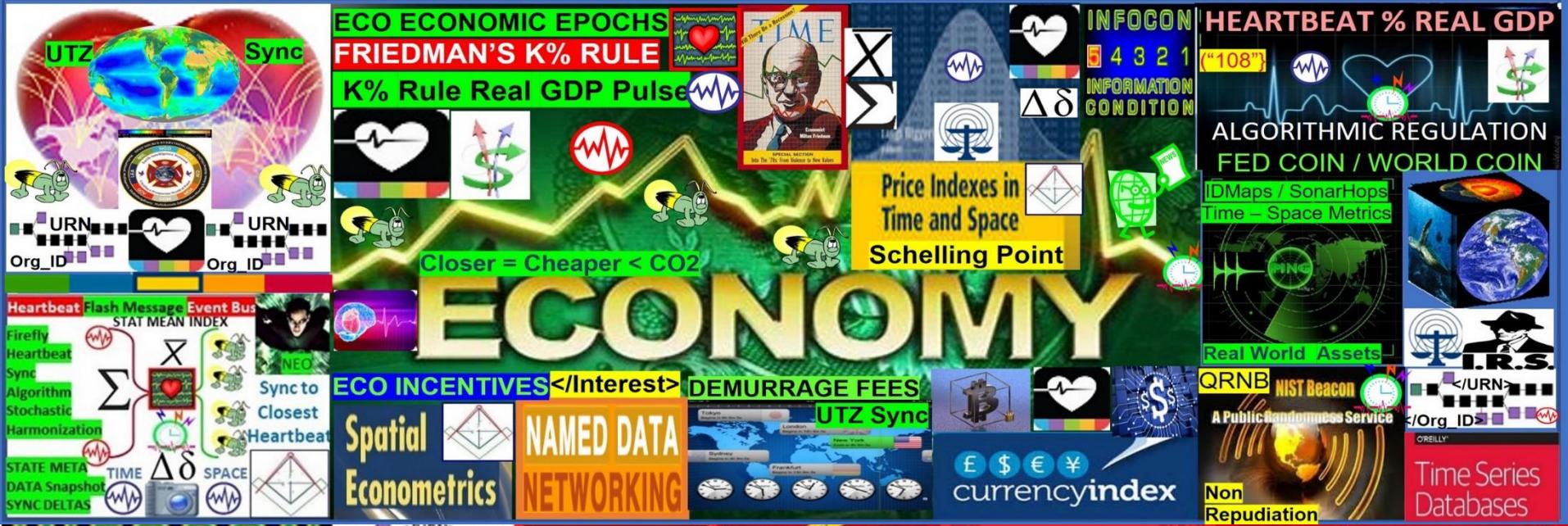
IDMaps / SonarHops collects distance data & builds virtual Internet distance maps & estimates distance between IP address pairs

vector



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





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"



'THE ALICE EFFECT...'

Physical = opposite of abstract

Trade Reference Currency TERRA TRC

</URN>

</URN>

["URN"]

camera

X

Δδ

Σ

Org ID

URN



"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 itsel

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.

spacemesh

Space-Time Consensus Algorithm

BASEBALL "DIAMOND" A diamond is a block in 3D space-time. The solution we propose is to have a diamond in the space-time.

CRYPTO CRAZE AND THE CHALLENGE TO BUSINESS

STRUCTURED MESSAGE EXCHANGE SYNTAX LEXICON

SYNTHETIC SYMBOL SETS

DATA SHARING

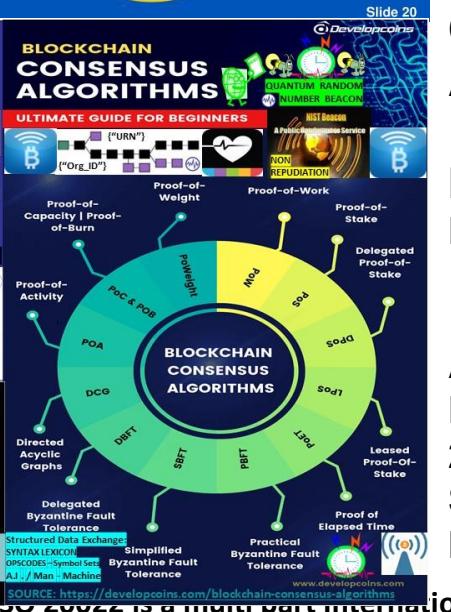
STAMP SERVER

DATA MAPPING

DATA INTEGRATION

DATA CONSISTENCY

DATA SECURITY



FOUNDATION STANDARDS TECHNOLOGY

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

CONSENSUS ALGORITHMS

- NDN: Named Data Networking
- ARIN, ASN-1
- Binary XML
- 2525 A,B,C,D
- Symbol Sets for Human – A.I.

World Financial Standard ISO 20022 is a multi part international Standard prepared by ISO Technical Committee TC68 Financial Services. It

describes a common platform for the development of messages in ASN.1 Abstract Syntax Notation: A single standardization approach (methodology, process, repository) to be used by all financial standards initiatives. common platform for the development of messages using:

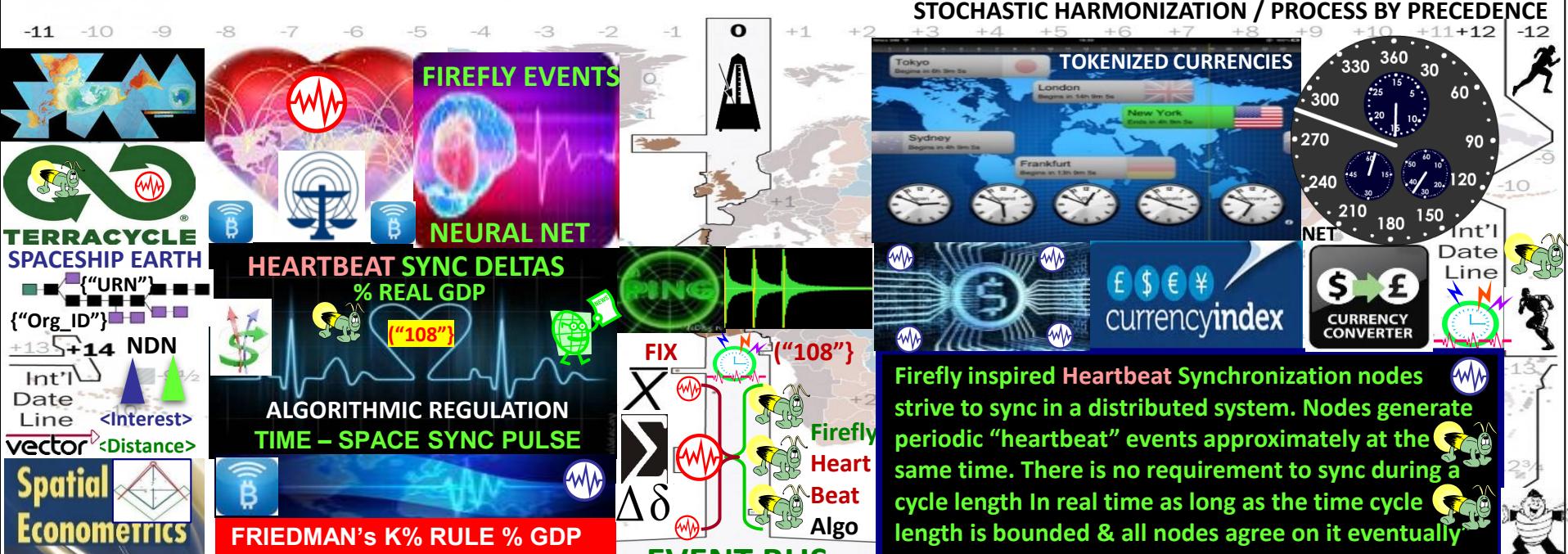
- a modelling methodology to capture in a syntax-independent way financial business areas, business transactions and message flows
- a central dictionary of business items used in financial communications
- a set of XML and ASN.1 design rules to convert the message models into XML or ASN.1 schemas, whenever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

"The fundamental value driver is easy integration of applications into subsystems, of subsystems into systems, and of systems into larger SYSTEM OF SYSTEMS"

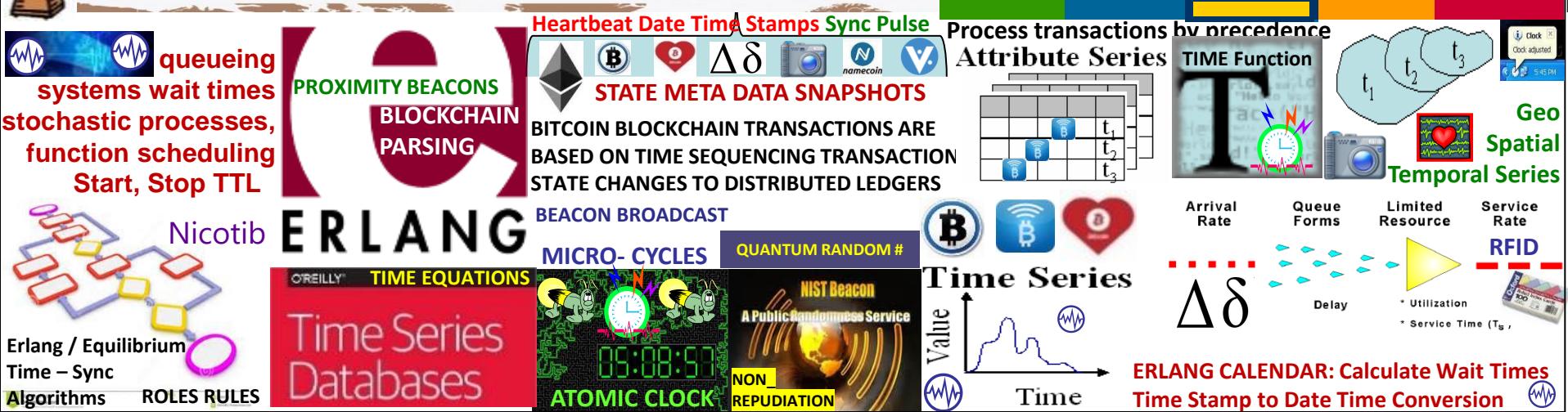
The term **unicast** is contrasted with the term **broadcast** which means transmitting the same data to all possible destinations. Another multi-destination distribution method, **multicasting**, sends data only to **interested** destinations by using special address assignments.



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



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



Structured Data Exchange



SYNTAX LEXICON
ROSETTA STONE

Coder's Guide lexicon.

STRUCTURED
<CONTENT>
EXCHANGE
TEMPLATES

MIL STD 2525ABC

ASSET TOKENS

"SYMBOLS RULE THE WORLD"

11.8 - Kinematic
11.8.1 - Pos
11.8.1.1 -
11.8.1 -

STRATML XAML

XBRL
THE BUSINESS REPORTING STANDARD
BINARY XML
Decision

UBL
DDL DATA
DEFINITION
LANGUAGE

Signal operating instructions (SOI): technical control coordination of signaling, telemetry Current situational awareness, data dictionary, network identification, channels, network directory, brevity code-words, signals. Units maintain 2 SOI copies: PEACE TIME version "Go-To-War" version = BIZ COA (s) <Org_ID1><Org_ID2><Org_ID3>



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

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

MTL Machine Trust Language



{"URN"} {"TRANSACTION ID"}

MESSAGE TEXT FORMAT :

SEG RPT OCC CLASSNAME SETID SEQ FIELD OCCURRENCE SET FORMAT NAME

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

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

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

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

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

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

0 ORGID 7 /M /M /M /M /M /M /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 DAO

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

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

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

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

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

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

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

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

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

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

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

SYMBOLS	Friend	Neutral	Hostile	DICAL EVAC & HOSPITALISATION
	Partner		Competitor	M - MILITARY OPERATIONS
1 - Horizontal				
2 - Vertical				
Confidence				
Bearing Angle				
Bearing Angle Rate				
Covariance Matrix				

TOKENIZED ECONOMY BREVITY CODE OPSCOSE MAPPET TO SYMBOLS



INDEX REFERENCE #:

M015 STATUS :

EFFECTIVE: 14-DEC-99



PURCHASE CODES



FEDERATED PEGS



{"ASSET_CLASS"}

{"ASSET_TYPES"}



ISO 10383 – MIC

Market Identifier Codes



{"URN"}



{"Org_ID"}



108 Heartbeat Message

STOCK
EXCHANGE

NDN
NETWORKING

NAMED DATA
MIC CODES

PRECEDENCE

FILTERS

PROCESSING



BLOCKTIME

ARBITRAGE

ERLANG

TIME

EQUATIONS

FROM	TO					CODE GUIDE	
	GCCS-A	TAIS	ASAS	AMDPCS	AFATDS	MCS	
ASAS	C002 C203 F002 F014 F015 F541 S201 S309	C002 C203	USMTF / XML MTF FORMATTED MESSAGE CATALOG = 300 + messages info exchange sets using common, CONSENSUS Message Text Formats MTFs. MTFs specify </CONTENT> / info agreed by group consensus presenting information in a logical, well specified unambiguous layout resulting in a highly efficient info payload to overhead ratio			C002 C203 F014 E400 F541 F002 S305 D630 S309 E500 S309 F014	
AMDPCS	TOKENS OPSCODE BREVITY CODES	F002 F014 F015 F541 S201				F002 C203 F015 C400 S201 D630 F002 E500 F014 F014	
AFATDS	F002 F014 F015 F541 S201	A423 A659 C505 C203 F014 C203 F541 C443 C400 C488 C447 C503 C501 C505 C504 C506 C505 C507 C508 E400 F002 F014 F015 F541 F658 F756 G489 K01.1 S201 S303 S507	A423 A659 C002 C203 C400 C443 C447 C488 C501 C503 C504 C505 C506 C507 C508 E400 F002 F014 F015 F541 F658 F756 G489 K01.1 S201 S303 S507	A423 A659 C002 A690 C203 C203 C400 C505 C447 F002 C501 F014 C504 F15 C505 F541 C506 S201 C507 S201 E400 S201 F002 S201 F015 S201 F541 S303 K01.1 S307	Rosetta Stone Syntax Lexicon Coder's Guide	A.I. INFOCON 5 4 3 2 1 INFORMATION CONDITION	A423 A659 C505 C203 F014 F014 F541 S201
MCS	  	 	ASSET TOKENS Token Economy			"SYMBOLS RULE THE WORLD"	

MESSAGE CATALOG 300 + Use Cases

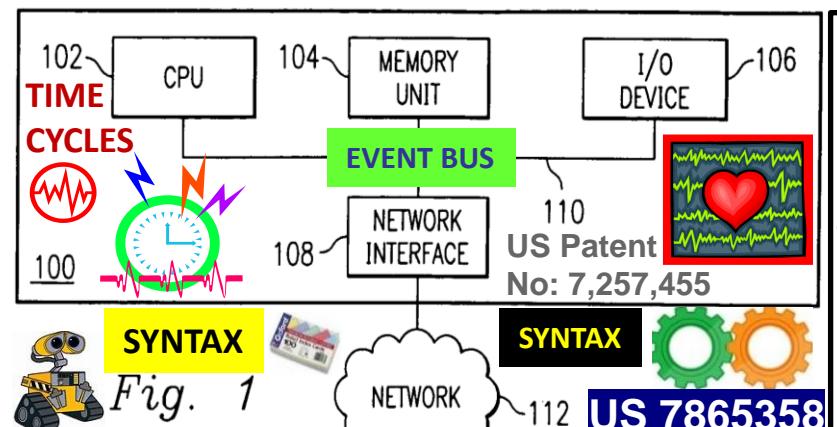
Data Elements: entity, attribute, relationship equivalents

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

Information Categories and Examples

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

Information Elements Roles		11.4 - Classification	11.8 - Kinematics
• COI Determination	Org Interaction	11.4.1 - Category	11.8.1 - Pos / Vel / Acc (PVA)
• Search and Discovery		11.4.1.1 - Confidence Level	11.8.1.1 - Acceleration
• Ontologies	STANDARDS	11.4.1.2 - Estimate Type	11.8.1.1.1 - Angular
• Taxonomies	REFERENCE	11.4.1.2.1 - Alternative	11.2 - Linear
• Metadata Attributes / Filters		11.4.1.2.2 - Evaluated D	2 - Estimate Type
		11.4.1.3 - Value	1.2.1 - Estimated
			1.2.2 - Observed
			1.2.3 - Predicted
			1.2.4 - Smoothed Data
DATA SYSTEM FUNCTIONS	PERFORMANCE	PURCHASE CODES	SYMBOL FRIEND NEUTRAL HOSTILE COMPETITOR
11.4 - Classification	11.8 - Kinematics		
11.4.1 - Category	11.8.1 - Pos / Vel / Acc (PVA)		
11.4.1.1 - Confidence Level	11.8.1.1 - Acceleration		
11.4.1.2 - Estimate Type	11.8.1.1.1 - Angular		
11.4.1.2.1 - Alternative	11.2 - Linear		
11.4.1.2.2 - Evaluated D	2 - Estimate Type		
11.4.1.3 - Value	1.2.1 - Estimated		
	1.2.2 - Observed		
	1.2.3 - Predicted		
	1.2.4 - Smoothed Data		
SYMBOL	FRIEND	NEUTRAL	HOSTILE
2525C	Partner		
			
			
			
			
			
11.4.1.3.4 - Substance	4 - Velocity		
11.4.1.3.5 - Surface	1.4.1 - Horizontal		
11.4.2 - Platform / Point / Feature Type	1.4.2 - Vertical		
11.4.3 - Specific Type	VA Confidence		
11.4.4 - Type Modifier	1 - Bearing Angle		
11.4.5 - Unit	2 - Bearing Angle Rate		
	3 - Covariance Matrix		

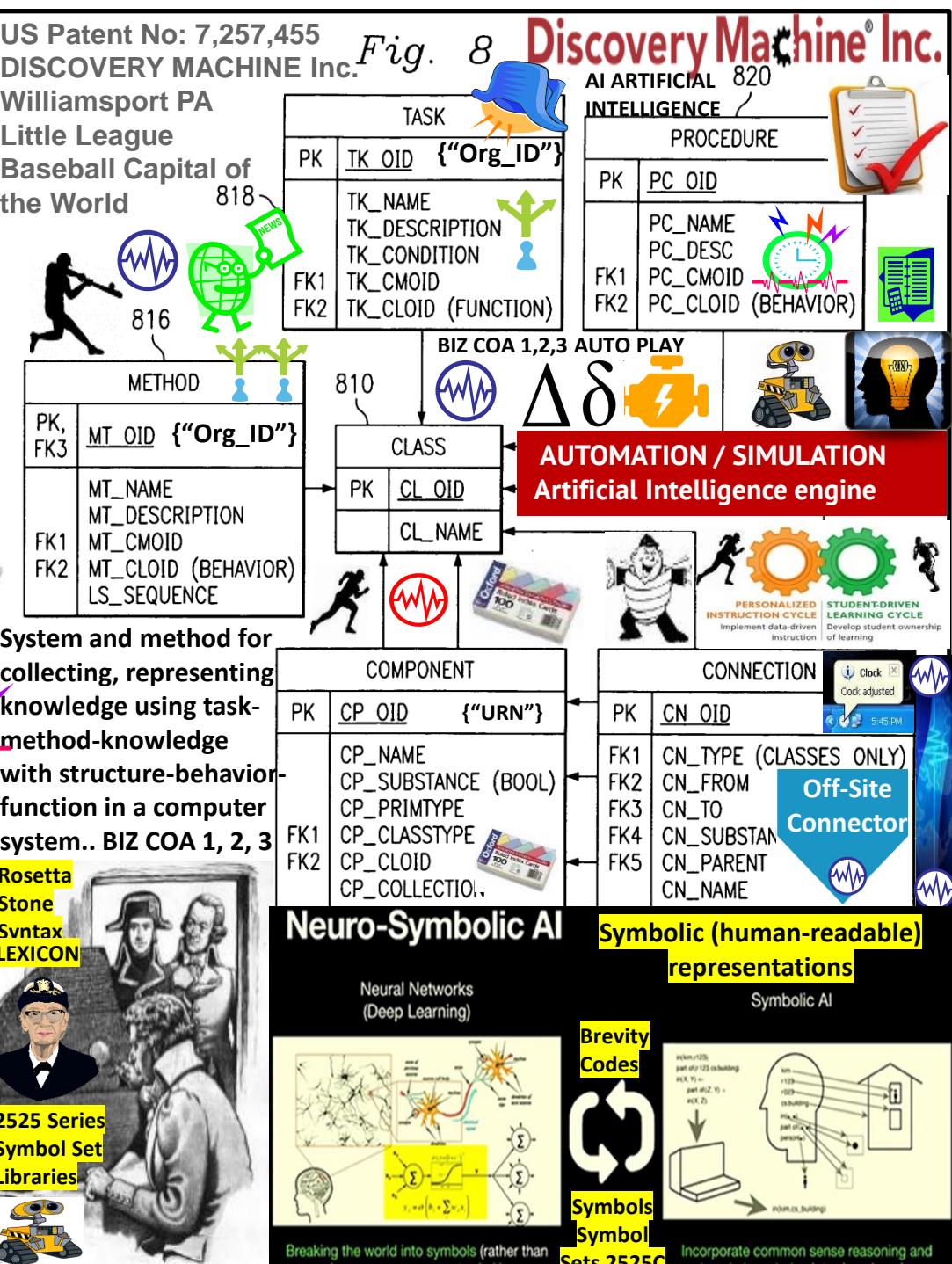
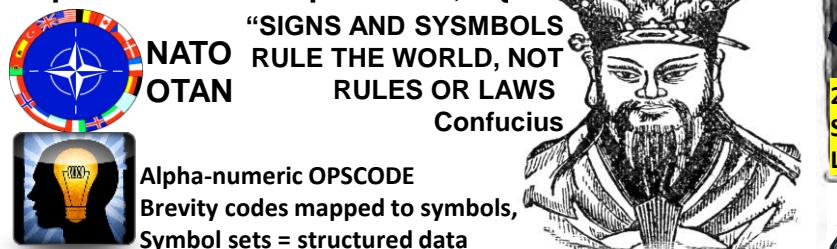


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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

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

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

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



Symbolic artificial intelligence: collection of all methods in artificial intelligence

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

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

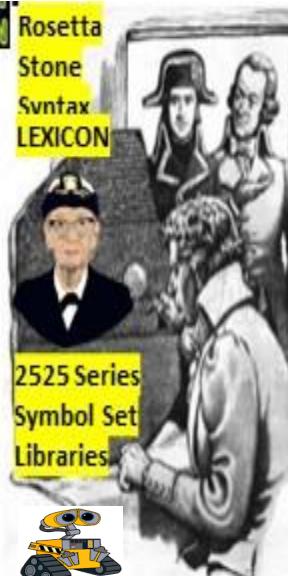
This claim implies both that human thinking is a kind of symbol manipulation (because a symbol system is necessary for intelligence) and that machines can be intelligent (because a symbol system is sufficient for intelligence).[3] The idea has philosophical roots in Hobbes (who claimed reasoning was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

Source: Wikipedia: https://en.wikipedia.org/wiki/Physical_symbol_system

data from a first form to a second form

CONDITION

Rosetta
Stone
Syntax
LEXICON



2525 Series
Symbol Set
Libraries



NATO RULE THE WORLD, NOT
OTAN RULES OR LAWS



Confucius

Alpha-numeric OPS CODE

Brevity codes mapped to symbols,
Symbol sets = structured data

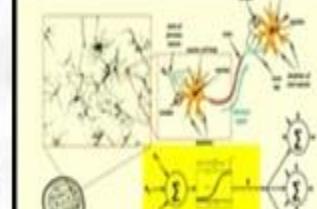
FRZ TLP CLOUD

ABC A OPS CODE BREVITY CODES

Neuro-Symbolic AI

Symbolic (human-readable)
representations

Neural Networks
(Deep Learning)



Brevity
Codes



Symbols



Symbol



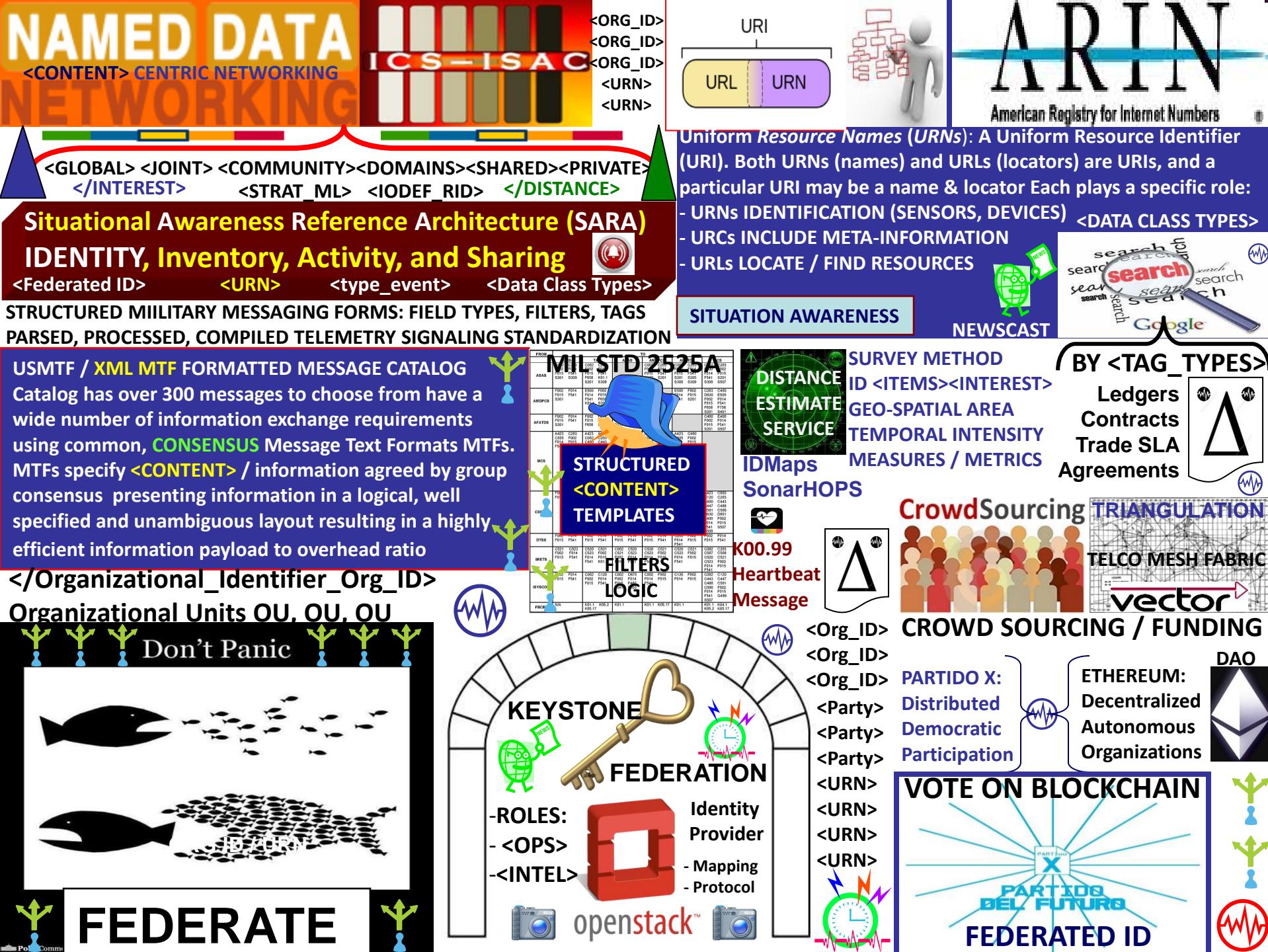
Symbolic AI



Incorporate common sense reasoning and

Breaking the world into symbols (rather than
sets 2525)

Incorporate common sense reasoning and



Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

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



Industrial Control System
Information Sharing and
Analysis Center

IDENTITY: <UUID> = Devices, sensors
Federation
Gateway <ORG_ID> Organizations

<ELEMENTS>

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

STRATEGIC
MARKUP

StratML

LANGUAGE

INVENTORY: Uniform Resource Name <URN>

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

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

vector

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

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

CONTENT LEXICON
ROSETTA STONE

NDN



<INTEREST>

<GEO_LOC_GPS>

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

GEO-SPATIAL TEMPORAL
INTENSITY METRICS / METERS

IDMaps



SonarHops

vector

tripwire

A V A L A N C H E

SHARING:

COMMON <TAGS>

<Organizational_ID>

Resource Names <URN>

<Time_Stamps>

<State-Meta_Data>

<DATA_CLASS_TYPE>

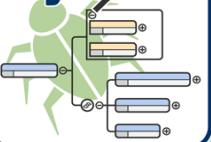
<Heartbeat_snapshots>

<TAG>LIBRARY
TEMPLATES

NDN

<INTEREST>

Cybox



CYBER SECURITY CONTENT
LEXICON ROSETTA STONE

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

NIST CYBER SECURITY FRAMEWORK

FROM	F002	F012	TAB	AAB	AMOPCS	AFAT08	MCB
ABAD	F012	F013	F014	F014	F002	F002	F002
	F013	F014	F015	F015	F003	F003	F003
	F014	F015	F016	F016	F004	F004	F004
AMOPCS	F015	F016	F017	F017	F005	F005	F005
	F016	F017	F018	F018	F006	F006	F006
	F017	F018	F019	F019	F007	F007	F007
AFAT08	F018	F019	F020	F020	F008	F008	F008
	F019	F020	F021	F021	F009	F009	F009
	F020	F021	F022	F022	F010	F010	F010
	F021	F022	F023	F023	F011	F011	F011
	F022	F023	F024	F024	F012	F012	F012
	F023	F024	F025	F025	F013	F013	F013
	F024	F025	F026	F026	F014	F014	F014
	F025	F026	F027	F027	F015	F015	F015
	F026	F027	F028	F028	F016	F016	F016
	F027	F028	F029	F029	F017	F017	F017
	F028	F029	F030	F030	F018	F018	F018
	F029	F030	F031	F031	F019	F019	F019
	F030	F031	F032	F032	F020	F020	F020
	F031	F032	F033	F033	F021	F021	F021
	F032	F033	F034	F034	F022	F022	F022
	F033	F034	F035	F035	F023	F023	F023
	F034	F035	F036	F036	F024	F024	F024
	F035	F036	F037	F037	F025	F025	F025
	F036	F037	F038	F038	F026	F026	F026
	F037	F038	F039	F039	F027	F027	F027
	F038	F039	F040	F040	F028	F028	F028
	F039	F040	F041	F041	F029	F029	F029
	F040	F041	F042	F042	F030	F030	F030
	F041	F042	F043	F043	F031	F031	F031
	F042	F043	F044	F044	F032	F032	F032
	F043	F044	F045	F045	F033	F033	F033
	F044	F045	F046	F046	F034	F034	F034
	F045	F046	F047	F047	F035	F035	F035
	F046	F047	F048	F048	F036	F036	F036
	F047	F048	F049	F049	F037	F037	F037
	F048	F049	F050	F050	F038	F038	F038
	F049	F050	F051	F051	F039	F039	F039
	F050	F051	F052	F052	F040	F040	F040
	F051	F052	F053	F053	F041	F041	F041
	F052	F053	F054	F054	F042	F042	F042
	F053	F054	F055	F055	F043	F043	F043
	F054	F055	F056	F056	F044	F044	F044
	F055	F056	F057	F057	F045	F045	F045
	F056	F057	F058	F058	F046	F046	F046
	F057	F058	F059	F059	F047	F047	F047
	F058	F059	F060	F060	F048	F048	F048
	F059	F060	F061	F061	F049	F049	F049
	F060	F061	F062	F062	F050	F050	F050
	F061	F062	F063	F063	F051	F051	F051
	F062	F063	F064	F064	F052	F052	F052
	F063	F064	F065	F065	F053	F053	F053
	F064	F065	F066	F066	F054	F054	F054
	F065	F066	F067	F067	F055	F055	F055
	F066	F067	F068	F068	F056	F056	F056
	F067	F068	F069	F069	F057	F057	F057
	F068	F069	F070	F070	F058	F058	F058
	F069	F070	F071	F071	F059	F059	F059
	F070	F071	F072	F072	F060	F060	F060
	F071	F072	F073	F073	F061	F061	F061
	F072	F073	F074	F074	F062	F062	F062
	F073	F074	F075	F075	F063	F063	F063
	F074	F075	F076	F076	F064	F064	F064
	F075	F076	F077	F077	F065	F065	F065
	F076	F077	F078	F078	F066	F066	F066
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	F078	F079	F080	F080	F068	F068	F068
	F079	F080	F081	F081	F069	F069	F069
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	F085	F086	F087	F087	F075	F075	F075
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	F102	F103	F104	F104	F092	F092	F092
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	F105	F106	F107	F107	F095	F095	F095
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	F149	F150	F151	F151	F139	F139	F139
	F150	F151	F152	F152	F140	F140	F140
	F151	F152	F153	F153	F141	F141	F141
	F152	F153	F154	F154	F142	F142	F142
	F153	F154	F155	F155	F143	F143	F143
	F154	F155	F156	F156	F144	F144	F144
	F155	F156	F157	F157	F145	F145	F145
	F156	F157	F158	F158	F146	F146	F146
	F157	F158	F159	F159	F147	F147	F147
	F158	F159	F160	F160	F148	F148	F148
	F159	F160	F161	F161	F149	F149	F149
	F160	F161	F162	F162	F150	F150	F150
	F161	F162	F163	F163	F151	F151	F151
	F162	F163	F164	F164	F152	F152	F152
	F163	F164	F165	F165	F153		

Heart Beacon Cycle

FEDERATE / TRADE FEDERATIONS



ECONOMIC HEARTBEAT
K %



BITNATION



FEDERATE
SHARE
WIN

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



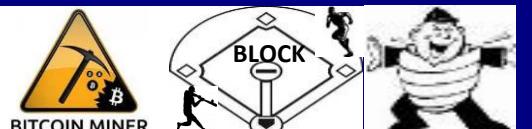
{"GLOBAL"}
{"SHARED"}
{"DOMAIN"}
{"COMMUNITY"}
{"PRIVATE"}
{"GROUP ID"}



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



FIREFLY FLASH
HEARTBEAT MESSAGES

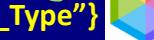
IeT DEVICE / PLATFORM



</RESOURCE> {"URN"}

{"Asset_Class"} </URN>

IoT SENSOR DEVICE



</RESOURCE> {"URN"}

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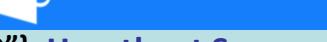
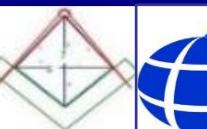
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UUID 123e4567-e89b-12d3-a456-426655440002

STOCK EXCHANGE

MIC MARKET IDENTIFIER

CODES / BREVITY CODES



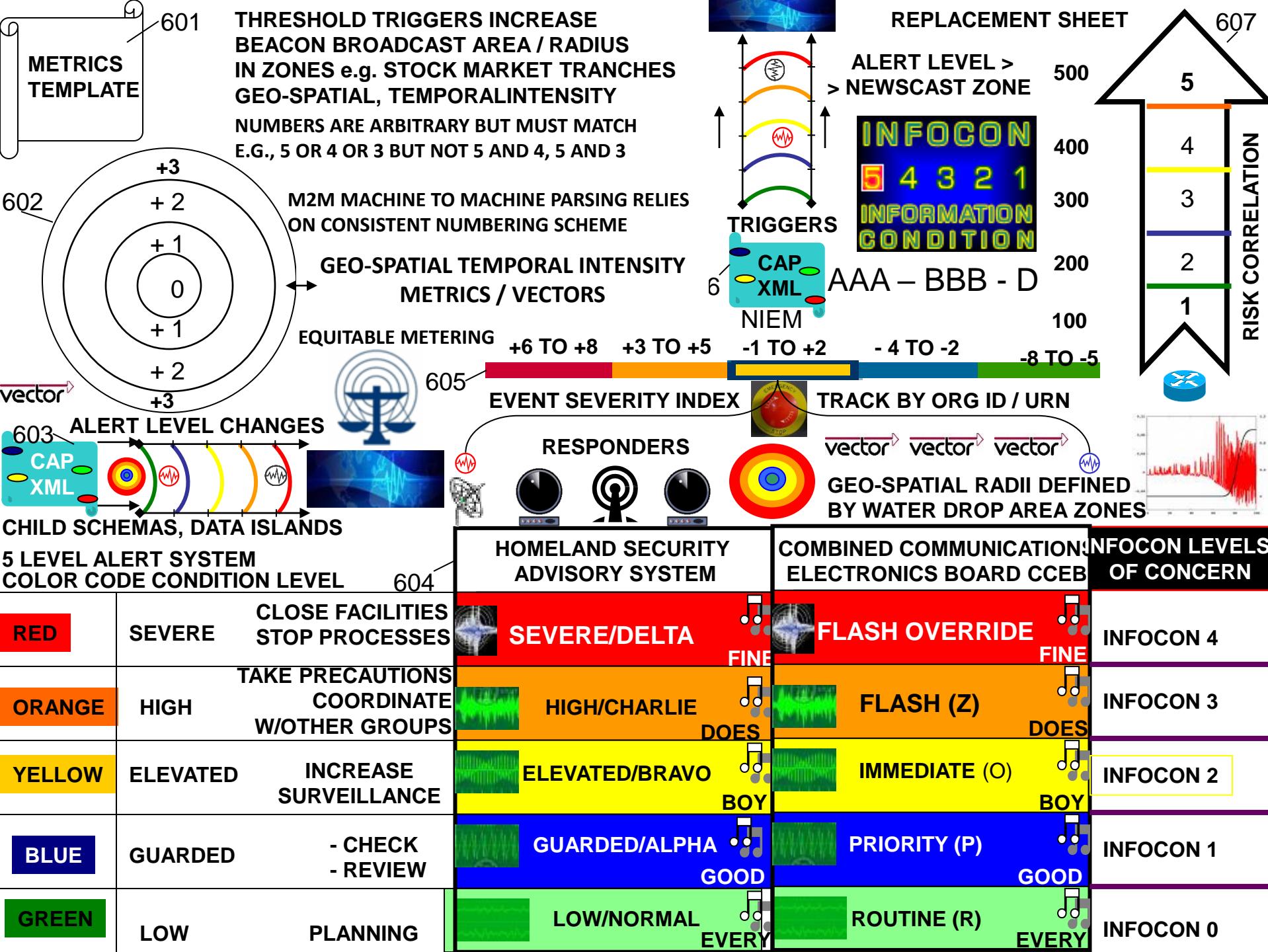
{"DUNS #"} {"Org_ID"} Heartbeat Snaps
QR CODE
{"URN"} {"URN"} {"URN"} MICRO-CYCLES





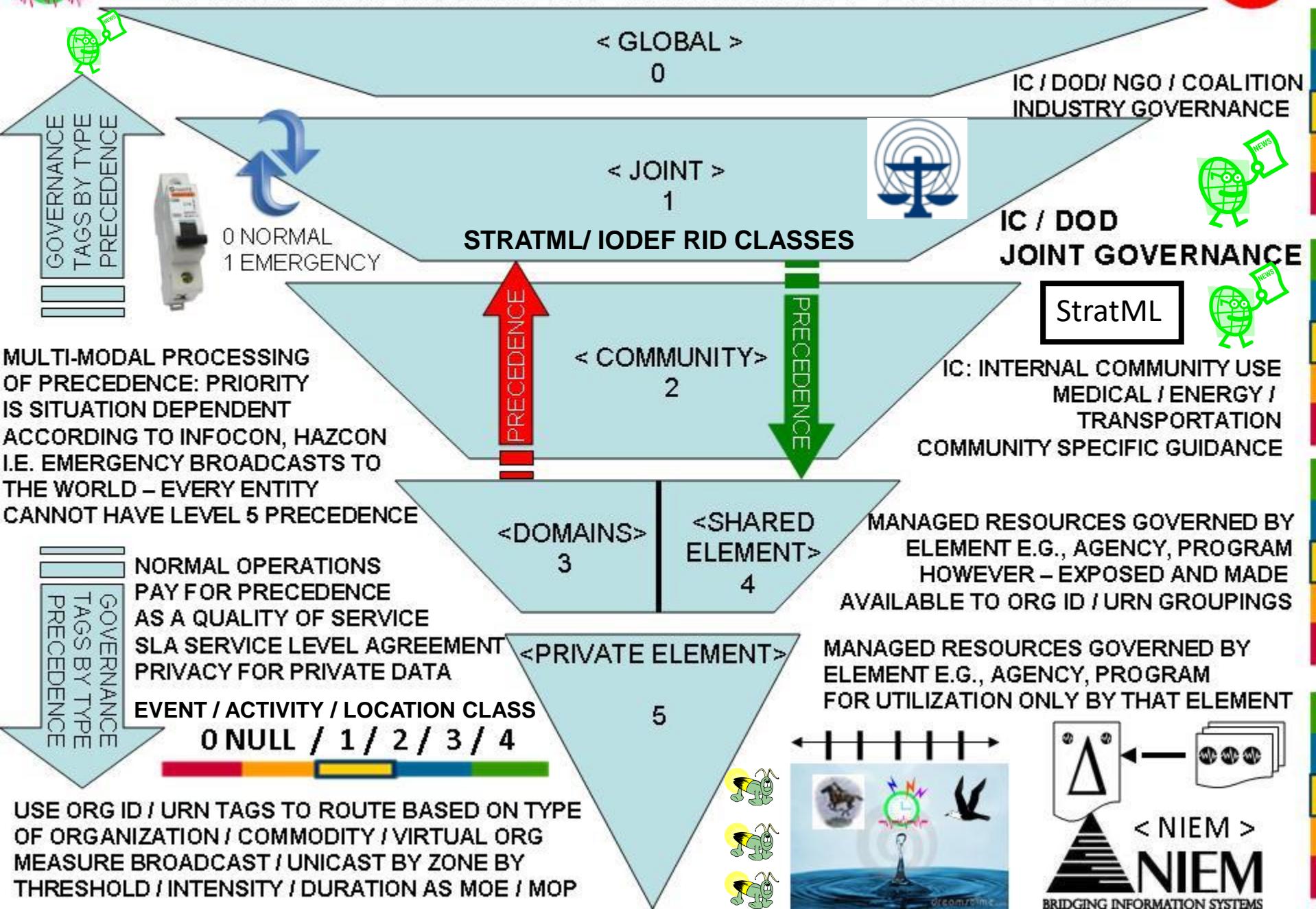
FEDERATE: COMMON GOALS SYNCHRONIZED IN SPACE - TIME







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





Firefly - Heartbeat Algo

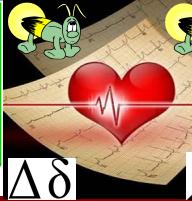


University of Bologna Italy / Hungary

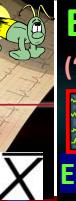
LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE

ECO ECONOMIC HEARTBEAT

$\Delta\delta X$



$\Delta\delta$



X

K%

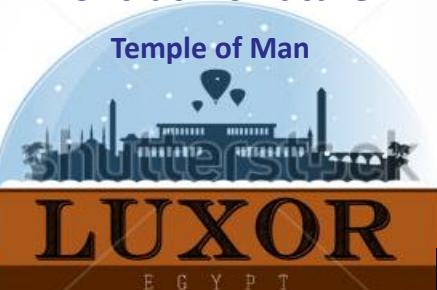
ECONOMIC MACRO CYCLES

TIME-SPACE SYNC

K% GDP ECONOMIC PULSE FEDCOIN WORLDCOIN

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

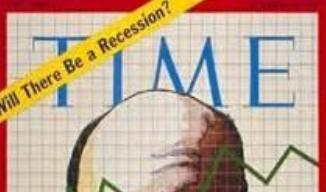
Temple of Man



LUXOR
EGYPT

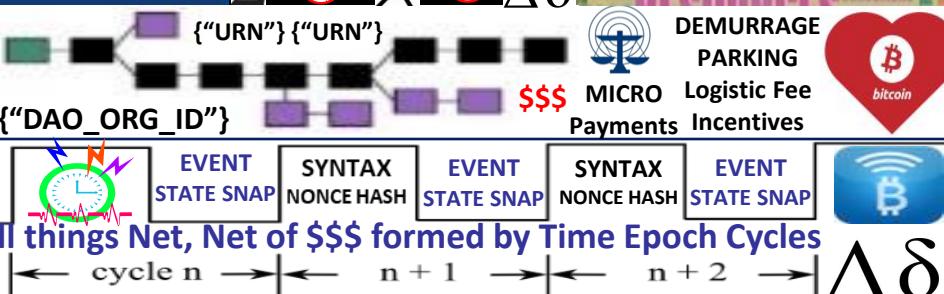
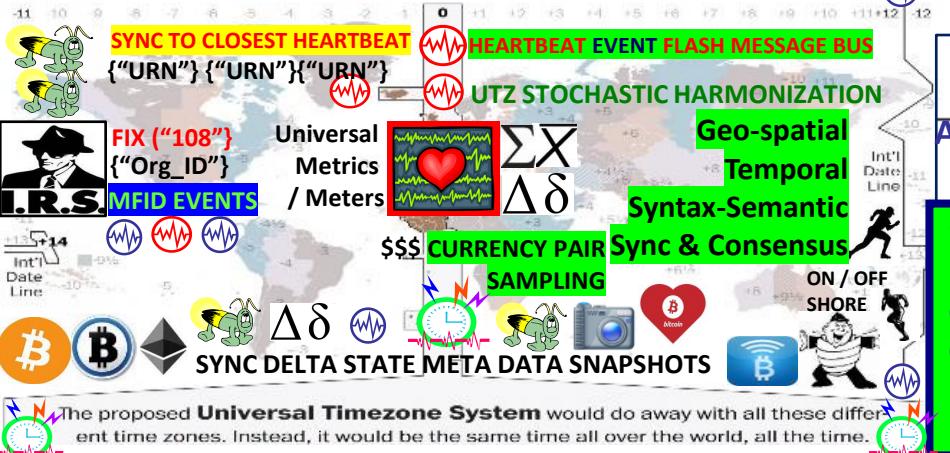
FIREFLY inspired Heartbeat Sync Algo

PRECEDENCE UTZ SYNC SYNC
PROCESSING PULSE DELTAS



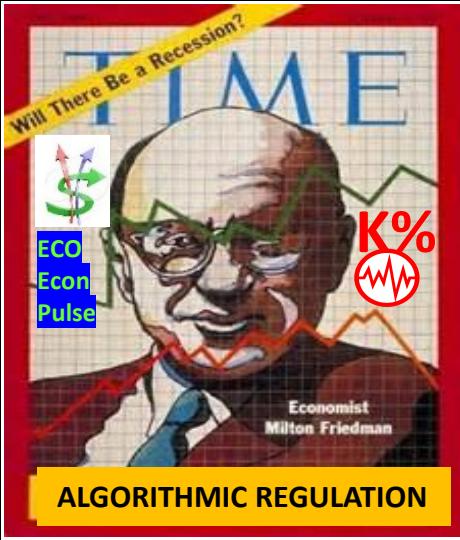
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind Coordinated Universal Time (UTC). However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours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

UTZ TIME ZONE SYNC



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

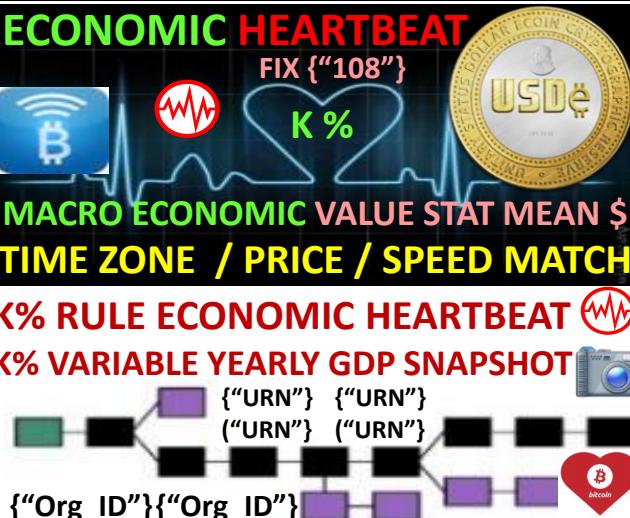
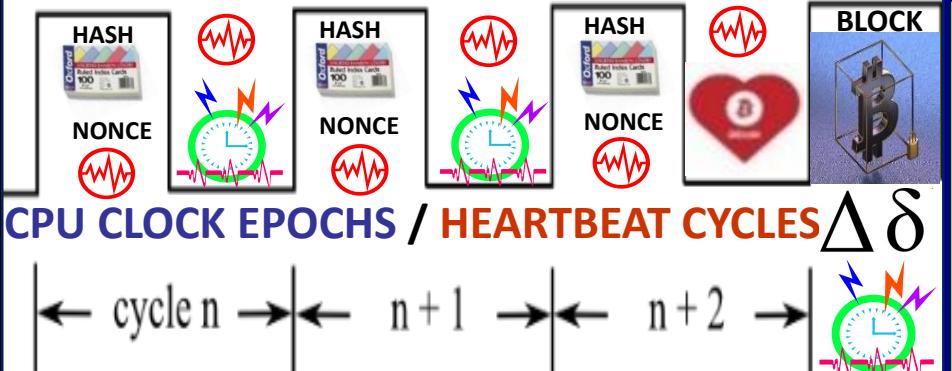
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



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.

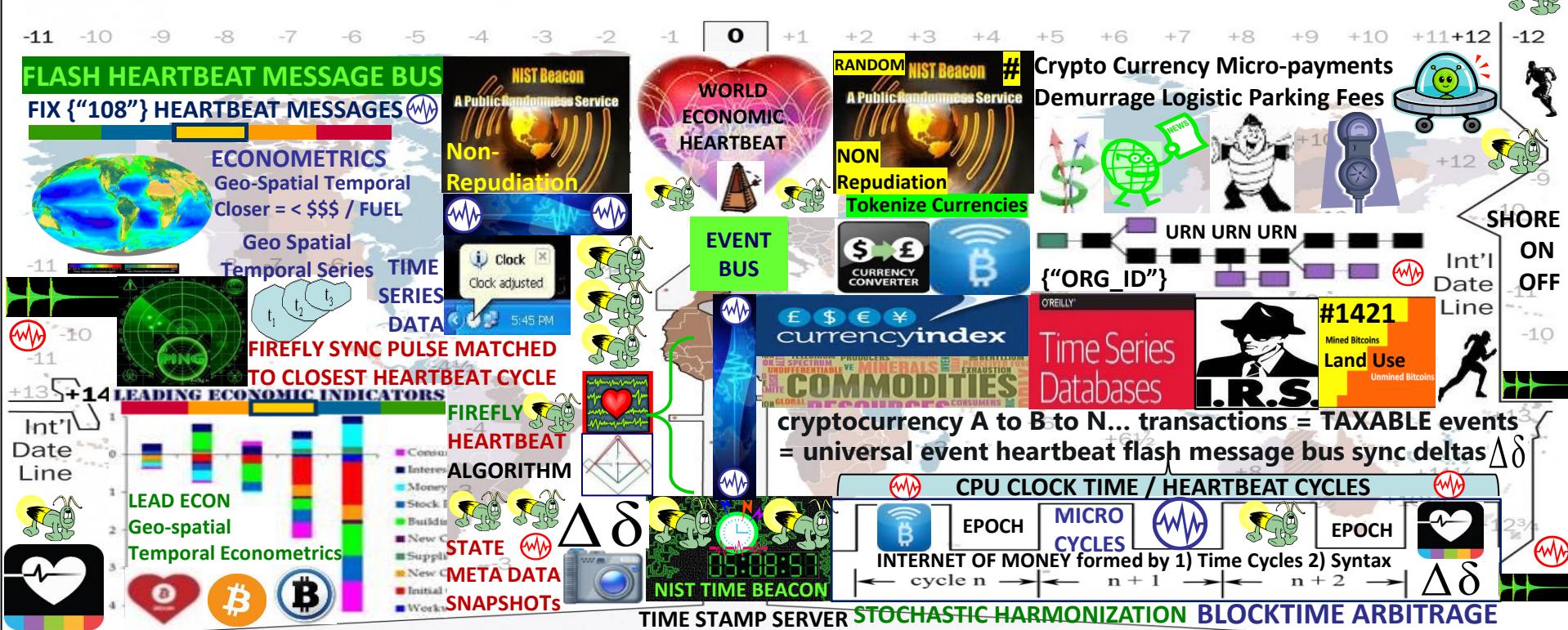


"Heartbeat Synchronization strives to have nodes in a distributed system generate periodic local "heartbeat" events approximately at the same time. It differs from classical clock sync in that Nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. There is no requirement 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.

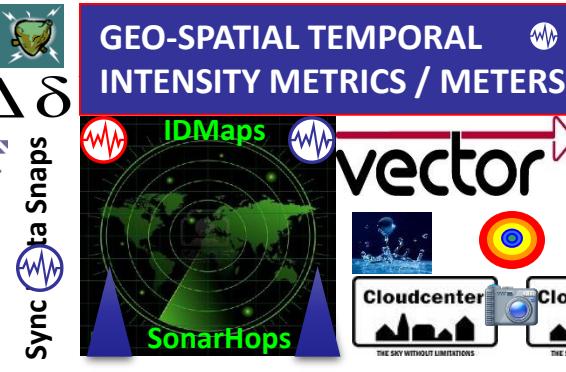
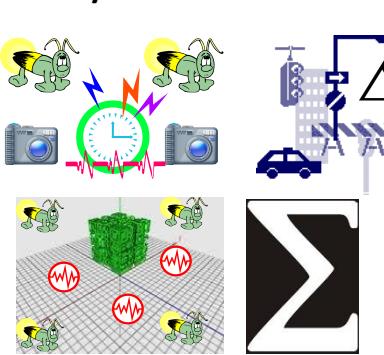




IDMaps: Global Internet Host Distance Estimation Service



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



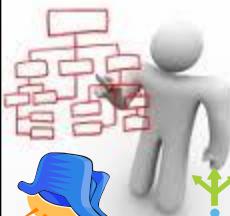
IDMaps scalable Internet-wide architecture measures, disseminates distance information



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

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

Name Prefix
<Org_ID> Trie (NPT)



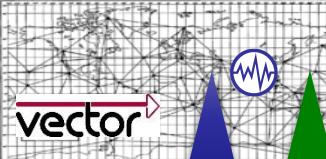
NDN NAMES

NDN NAMED DATA NETWORK RIB / FIB Datasets event notification

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



TRIANGULATION



NDN INTEREST LENGTH = DISTANCE BY HOPS

NDN INTEREST

IS DATA FRESH ?



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

Datasets and Event Notification

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



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



MICRO-CYCLES



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

GEO-SPATIAL TEMPORAL INTENSITY METRICS, METERS, VECTORS



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



Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:



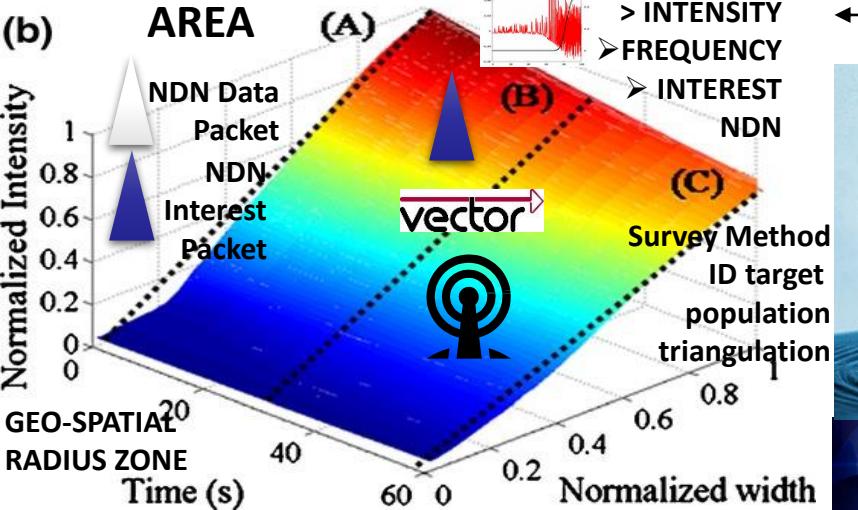
Paul Revere = linear, sequential



TCP/IP hop by hop counts, by hop controls

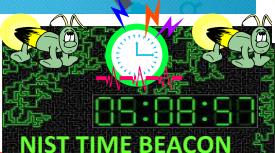


Water Drop = AREA / INTENSITY Cyclic Frequency

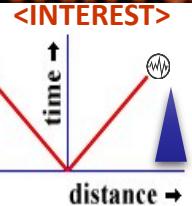


NAMED DATA NETWORKING

<INTEREST>
MQTT



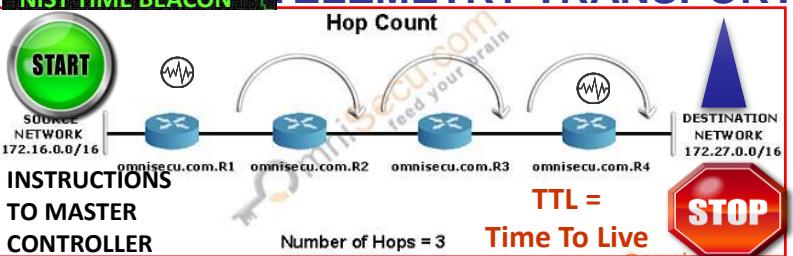
NIST TIME BEACON



ARRESTED-D

IEEE 802.15.4 OASIS MQTT

TELEMETRY TRANSPORT



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

IDMAPS
SONARHOPS
INTERNET
TRIANGULATION



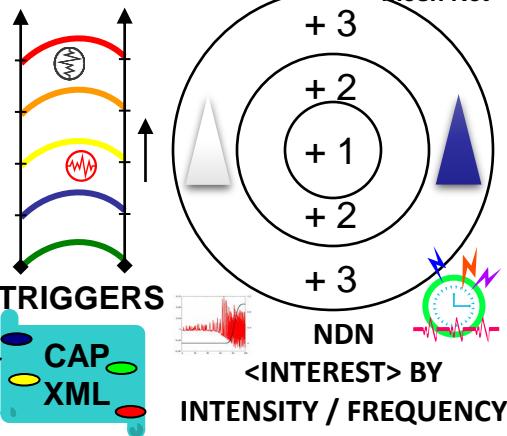
vector WirelessHART

time synchronized,
self-organizing,
mesh Net

ALERT LEVEL >
> NEWSCAST ZONE



SINE-WAVE



INFOCON
XML
MTF
300 +
MSG

5 4 3 2 1
INFORMATION CONDITION

13/573,002 HEART BEACON CYCLE

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

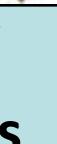
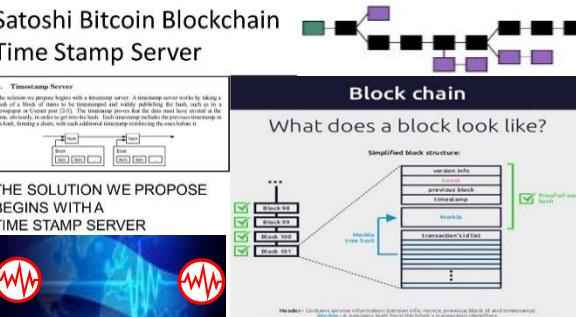
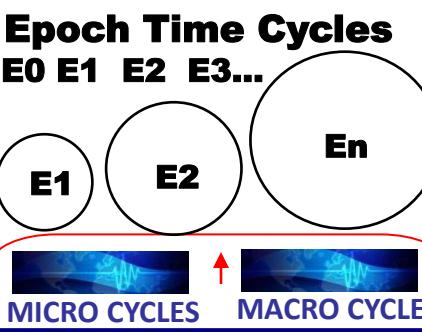
The four dimensions of Big Data

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

TIME STAMP BY Org_ID, URN Before FUSION CENTER

Position of a point in space relative to another point



Interface Name	HEARTBEAT Administration Interface [SCOP]		
Documentation URL	http://scop.sourceforge.net/ http://linuxvirtualserver.org/software/index.html		
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>	 <p>Cloudcenter THE SKY WITHOUT LIMITATIONS</p>
Programmable Money World Computer / Blockchain	#Big_Data	 <p>LOCATE <CONTENT> IDMAPS / SonarHOPS 4 / 3 / 2 / 1 / NULL / 1 / 2 / 3 / 4 0001 .05 .01 .1 0 5 15 30 90</p>	 <p>Cloudcenter THE SKY WITHOUT LIMITATIONS</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>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 heartbeat: defining a default lease duration delaying updates until the next cycle"</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 of publication, since it cannot be altered without changing the timestamp. In our case, forming a chain, with each additional timestamp confirming the previous one:</p> <p>THE SOLUTION WE PROPOSE BEGINS WITH A TIME STAMP SERVER</p> <p>Block chain: What does a block look like?</p> <p>Simplified block structure:</p> <ul style="list-style-type: none"> Block 0 Block 1 Block 2 Block 3 Block 4 Block 5 Block 6 Block 7 Block 8 Block 9 Block 10 Block 11 <p>Header: Contains basic information about the block, hence previous block's hash and timestamp. Transactions id list: A list of transactions that need to be processed by the block. Transaction hash: Hash of the transaction.</p>	<p>Epoch Time Cycles E0 E1 E2 E3...</p>  <p>MICRO CYCLES</p> <p>MACRO CYCLES</p>
<p>QubitCoin Interval: Every 30 Seconds</p>			

SOFTWARE DEFINED NETWORKING

NETOPS

Command Syntax

REST State Transfer

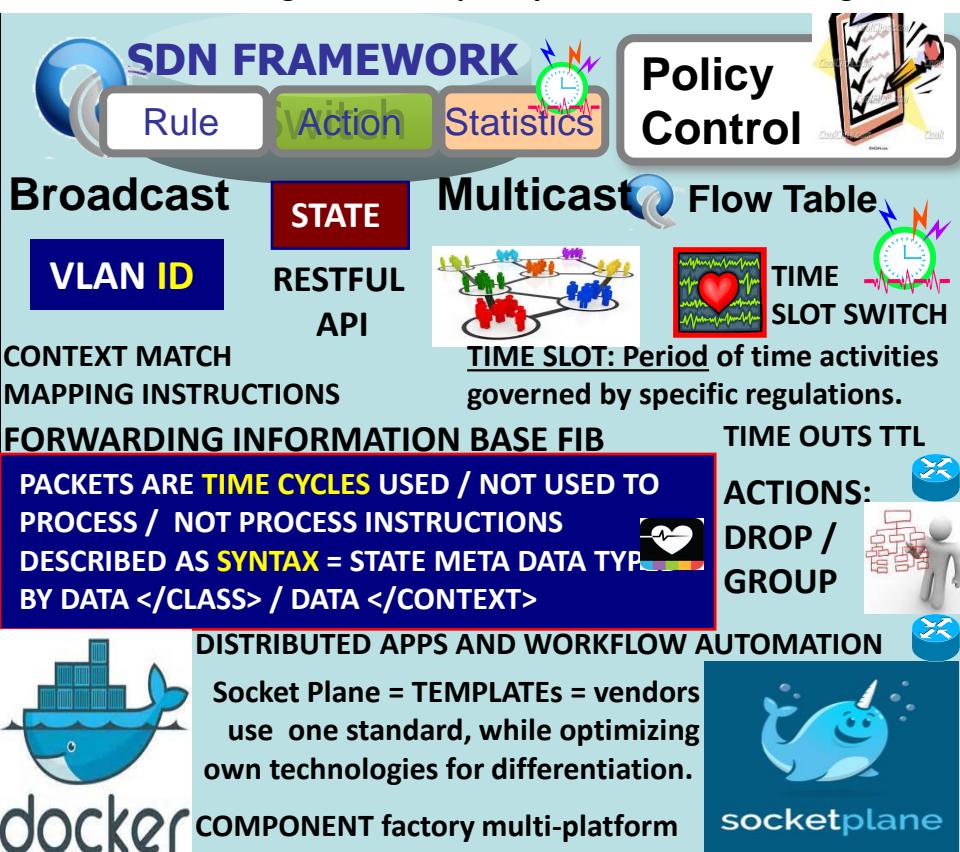
COMMAND SYNTAX
STATE TRANSFER
Unicast / Multicast
Flow Tables / Workflow
Dynamic Network
Configuration Management

NET CENTRIC WARFARE
SYSTEM OF SYSTEMS TELEMETRY

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

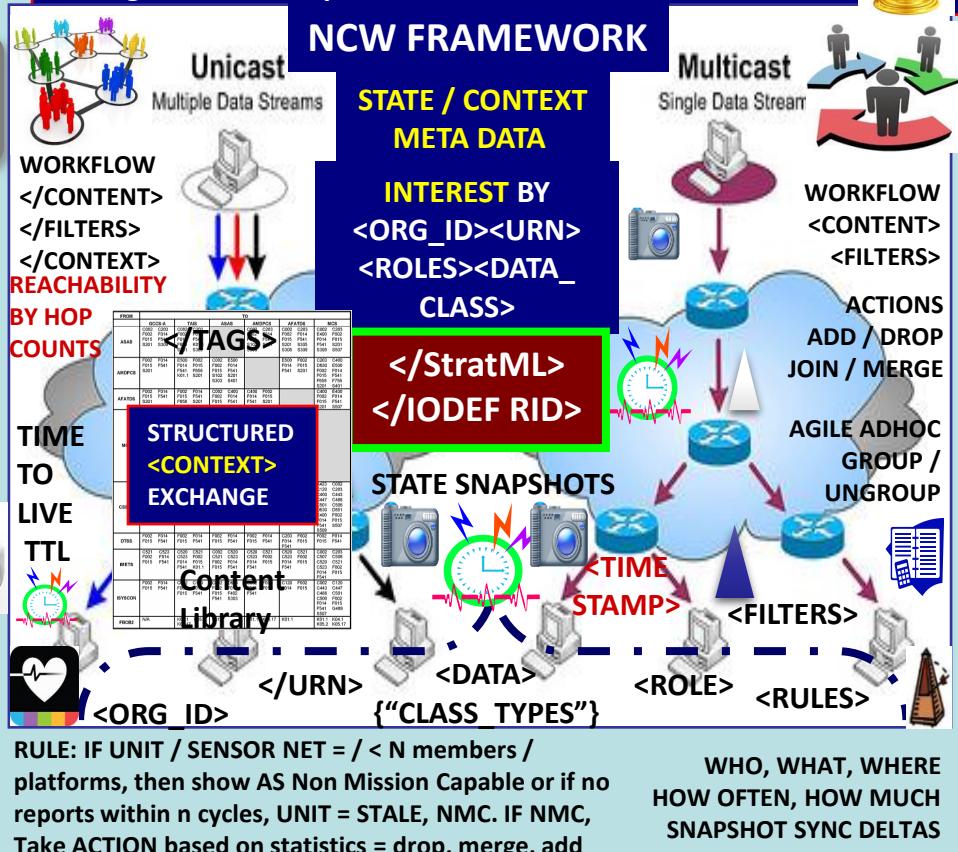
- SDN is a *framework* to allow network administrators to *automatically* and dynamically manage and control a *large number* of network devices, *services*, topology, traffic paths, and packet handling (quality of

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

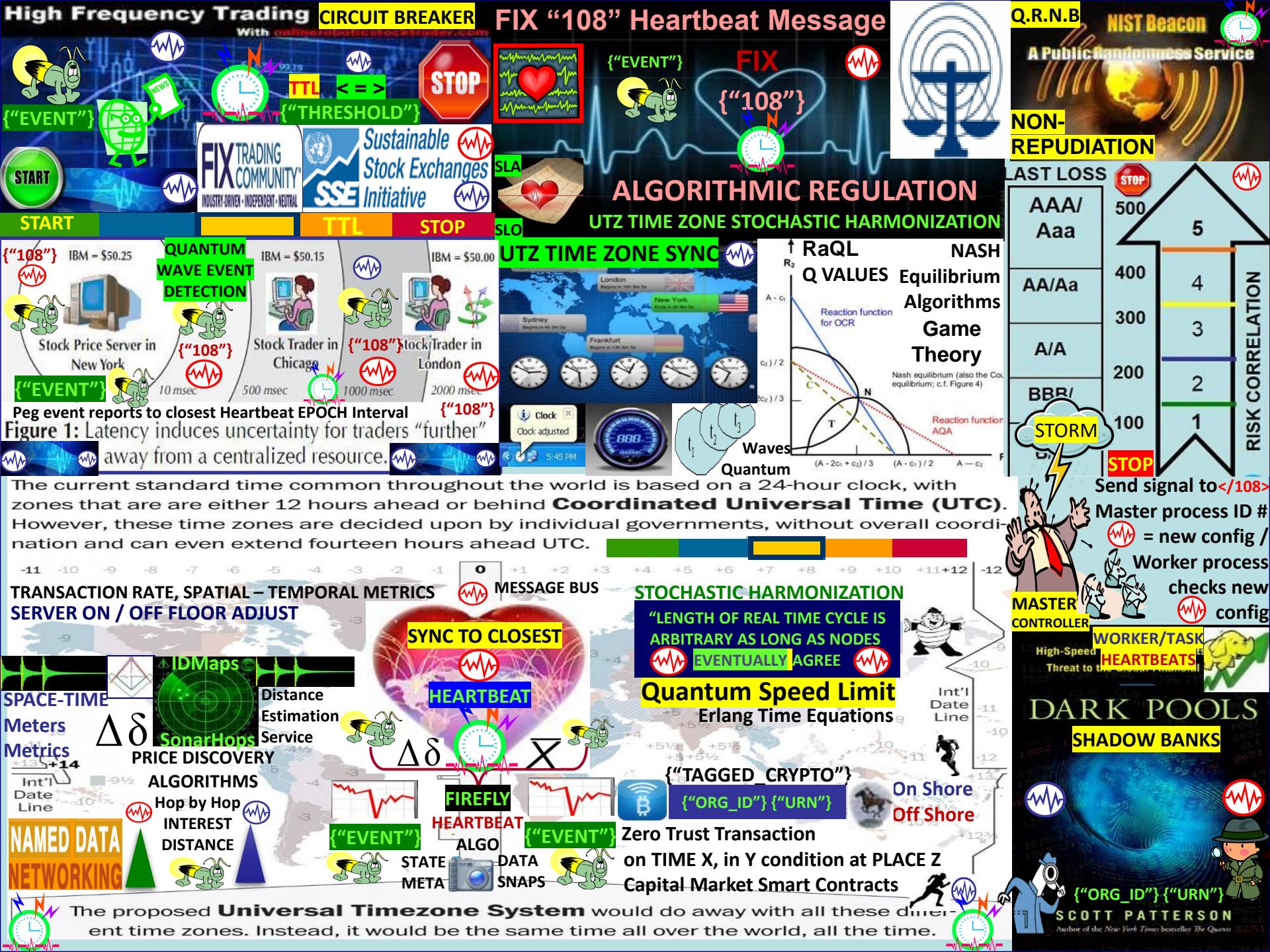


Netcentric / "network-centric" participating in a continuously evolving, complex community of people, devices, information and services interconnected by a network to optimize resource management and provide information on events and conditions.

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



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



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

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

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



TIME / DISTANCE SERVICE LEVEL
AGREEMENT SLA / O Operations

IEEE 802.15.4 OASIS MQTT

TELEMETRY TRANSPORT

IEEE 802.1AG HOP BY HOP
DETECTION

IEEE 802.11
HOP BY HOP CONTROL



Unused Resources / Unmet Needs

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

DISTANCE
INFO SERVICE

Time Series

Value
Time

IDMaps

SonarHops

WATER DROP IN POND MEME IS
SONAR NAVY METAPHOR / MEME

NDN </INTEREST>
NDN {"DISTANCE"}

NAMED DATA
NETWORKING

IEEE C37.118
Harmonization
& Sync heartbeat
update Interval

CLOSER SOURCE
CHEAPER RATE



vector

602

+3

+2

+1

Null

0

+1

+2

+3

603

+1

+2

NULL

+1

+2

PAUL REVERE

LINEAR, SEQUENTIAL

RADIUS

WATER DROP IN POND MEME

Attribute Series

t₁

t₂

t₃

INTEREST
DISTANCE

Temporal Series

Geo
Spatial

Micro Grids Closer - Cheaper

BLOCKCHAIN
MICROGRIDS

Spatial
Econometrics

TIME-SPACE BEACON INFOCON
METRICS / METERS TRADE WITH EARTH
INFORMATION CONDITION

Spaceship
Earth
Signals &
Telemetry
Annex

???
SIRIUS DISCLOSURE

ASTEROID BELTS =
RARE MINERALS

MOON =
HELIUM 3
"Numbers are the
Universal Language
offered by deity to humans as
confirmation of the truth"

MAIN
ASTEROID
BELT

Alpha
Numeric
Brevity
Codes
SYNTAX
LEXICON
K00.99

Farther = More Cost
➤ Fuel, Resources

STOCHASTIC
HARMONIZATION

Service Level Agreements

ERLANG
TIME- SPACE METRICS

FIREFLY-HEARTBEAT
ALGORITHM
UNIVERSAL
EVENT MESSAGE BUS

JUPITER

TROJAN ASTEROIDS
EVENT MESSAGE BUS

ANDERSON
INSTITUTE

ERLANG
TIME- SPACE METRICS

Light minutes
Astronomical units

FIREFLY - HEARTBEAT ALGORITHM MESSAGE EVENT BUS

EPOCH / TIME CYCLES / INTERVALS

cycle n
n + 1
n + 2

5.2
2.7
1.5
0
1.5
2.7
43
22
13
0
1.5
2.7
5.2



Blockchain

BLUEPRINT FOR A NEW ECONOMY



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



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

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



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



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



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



Functional Sequential Erlang

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

SORTING ALGO'S

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



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

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



Rho ratio *Arrival Rate* $\Delta\delta$
Service Rate per unit time

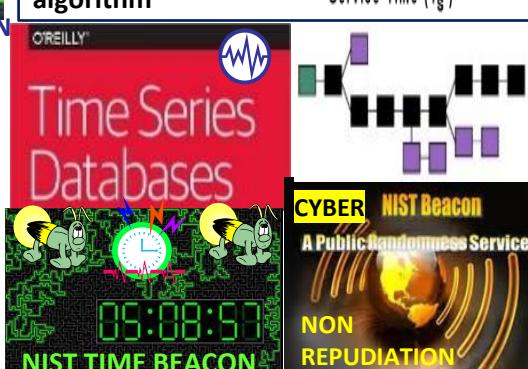
queueing systems wait times
stochastic processes, function scheduling Start, Stop TTL



distributed "noSQL" database, embedded right into Erlang,
supports indexing, replication, transactions, and fail-over
Fast ETS in-memory, and DETS persistent on-disk database

Mnesia database ("Organization_ID") Global name resolution

FROM	SOCA	THAI	ABAD	AMPOKE	AFATOK	WIC
ANODR	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK
AFATOK	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK
WIC	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK
STRUCTURED	ALPHA NUMERIC	BREVITY CODES	HEARTBEAT EPOCH	FIREFLY EVENTS FLASH MESSAGES	Sync To Closest	HEARTBEAT
MILITARY MESSAGE	XBRL / CDL / DAML	STRUCTURED	HEARTBEAT EPOCH	FIREFLY EVENTS FLASH MESSAGES	Sync To Closest	HEARTBEAT
TEMPLATE FORMS	ALPHA NUMERIC	BREVITY CODES	HEARTBEAT EPOCH	FIREFLY EVENTS FLASH MESSAGES	Sync To Closest	HEARTBEAT
LOGIC / FILTERS	BREVITY CODES	STRUCTURED	HEARTBEAT EPOCH	FIREFLY EVENTS FLASH MESSAGES	Sync To Closest	HEARTBEAT

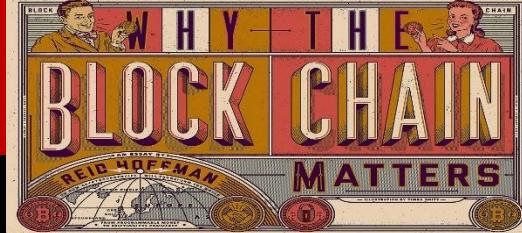


HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX

TradeNet

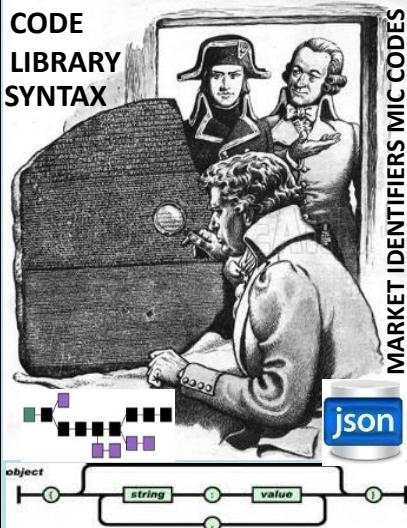


Programmable Money \$\$\$



RIED HOFFMAN 15 May 2015 [LINK](#)

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



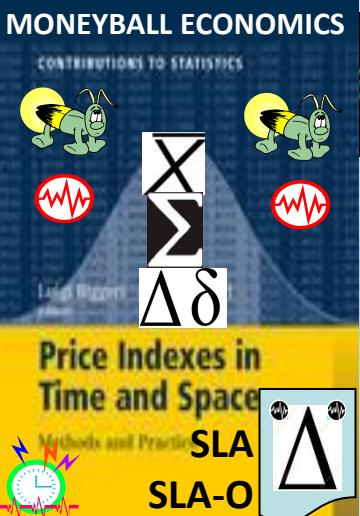
FROM	TO	MCS
ASAS	PSM1	F400
ARDCPS	PSM1	F401
MFATOS	PSM1	F402
ICRS	PSM1	F403
CSCS	PSM1	F404
OTRS	PSM1	F405
WETS	PSM1	F406
ISYCON	PSM1	F407
FRICS	PSM1	F408

ORGANIZATIONS



</Org_ID>
{"URN"}
Organizational Units OU, OU

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





VERITAS TOKENS P2P Capital Market smart contracts Eco Economic HEARTBEAT

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



INFOCON
5 4 3 2 1
INFORMATION
CONDITION



{"108"}

STATISTICAL MEAN VALUE INDEX PULSE

GDP INDEX ECONOMY K% RULE



E \$ € ¥
currency index



Price Indexes in
Time and Space
Methods and Practice



SchellingPoint

Closer = cheaper



Firefly – Heartbeat



Algorithm Emulation



Neural Net



Qubit



Time – Space



Meter Metrics



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

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

DAO Distributed Autonomous Organization Investor Pools

Place Order X ritaseum™





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



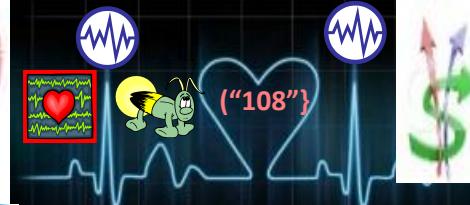
- Creates an online store for users to sell goods for Bitcoin
- Connects these stores directly to each other on a global network
- Users browse individual stores, search for products across whole network
- A buyer directly connects, purchases good from the merchant using Bitcoin
- Bitcoin payments via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

OPENBAZAAR.ORG
BLOCKCHAIN ARBITRAGE



CLOSER = < \$
CLOSER = < CO2

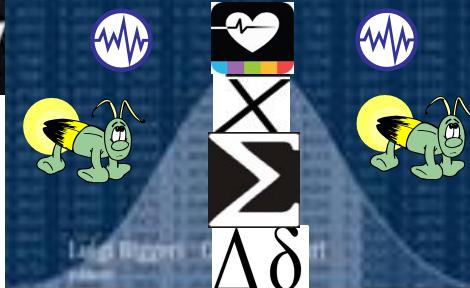
SLA
COMMODITIES
ECONOMIC HEARTBEAT



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

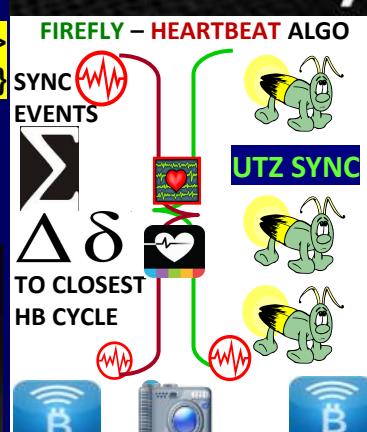
ORG ID
Gateway

Bitcoin: OpenBazaar transactional currency



Cryptographic Security

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



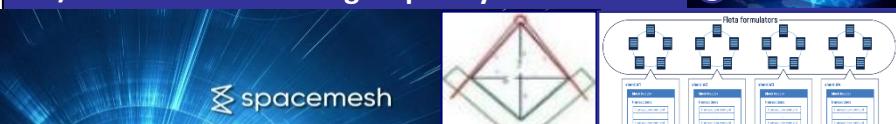
Q: Which meme describes the myriad blockchain consensus algorithms the most comprehensively that uses an algorithm (based on nature = “shortest path to the knowledge of truth Luxor Temple) enabling distributed system of systems geo-spatial, UTZ Universal Time Zone temporal, semantic - syntactic sync,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

Blockchain Consensus Algorithms & Mechanisms



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

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



BLOCKCHAIN CONSENSUS ALGORITHMS

ULTIMATE GUIDE FOR BEGINNERS

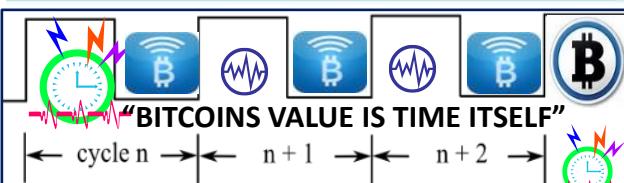


SOURCE: <https://developcoins.com/blockchain-consensus-algorithms>

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

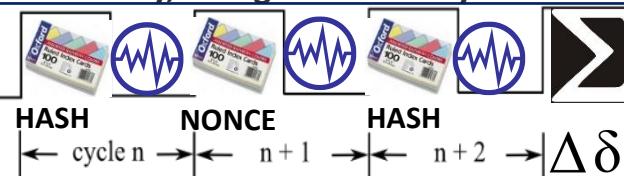


THROTTLE equivalent to difficulty. State
•target = maximum value of 8 bytes Snap
Shots

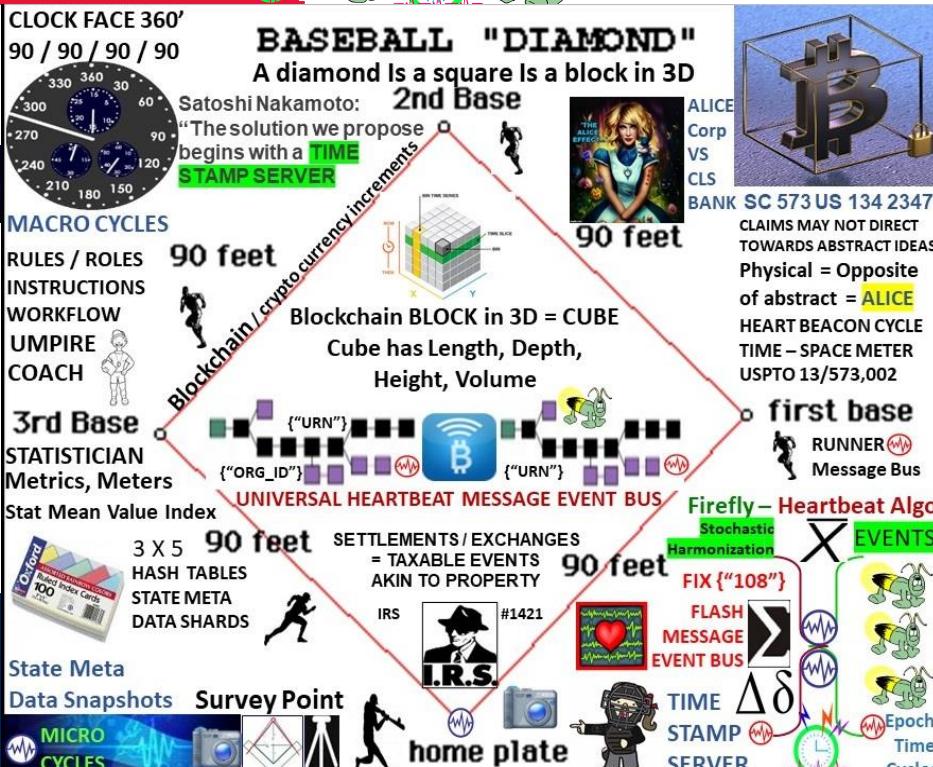
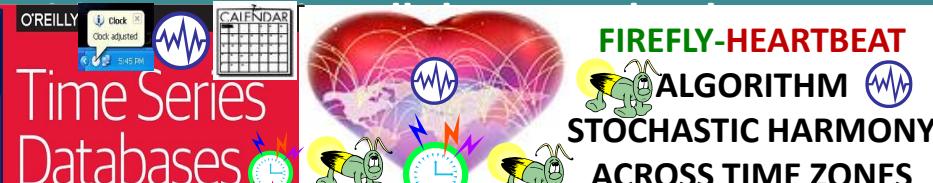


NONCE increments from 0..N until the target is met.

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

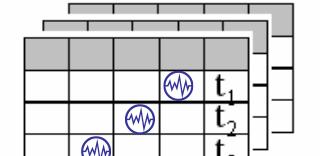


MESSAGE example:
Hash string
•Hash Table

300+Message Templates

FROM	ODERA	TABD	AAAB	APICDE	AFABCD	WIBZ
ANPDR	C0001	E0002	F0003	G0004	H0005	I0006
ANPDR	P0001	P0002	P0003	P0004	P0005	P0006
ANPDR	S0001	S0002	S0003	S0004	S0005	S0006
ANPDR	T0001	T0002	T0003	T0004	T0005	T0006
ANPDR	U0001	U0002	U0003	U0004	U0005	U0006
ANPDR	V0001	V0002	V0003	V0004	V0005	V0006
ANPDR	W0001	W0002	W0003	W0004	W0005	W0006
ANPDR	X0001	X0002	X0003	X0004	X0005	X0006
ANPDR	Y0001	Y0002	Y0003	Y0004	Y0005	Y0006
ANPDR	Z0001	Z0002	Z0003	Z0004	Z0005	Z0006

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.

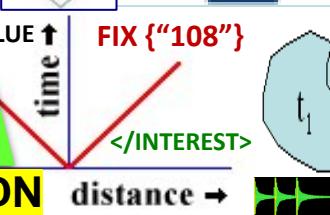
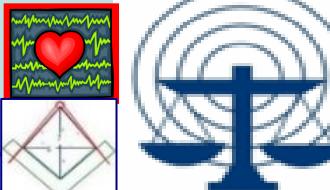


TIME – SPACE MEASUREMENTS OF TOKENIZED COMMODITIES, SECURITIES... STOCHASTICALLY HARMONIZED ACROSS UTZ Universal Time Zone

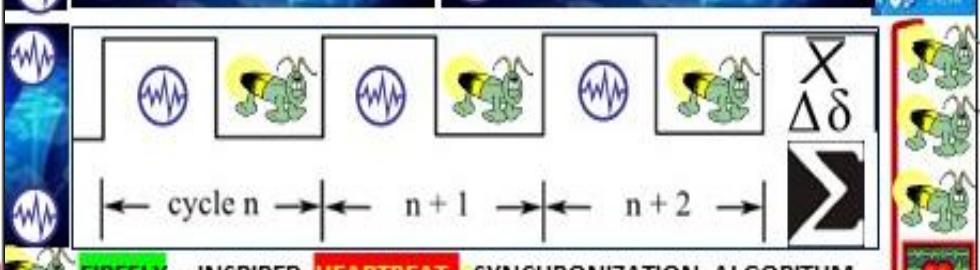
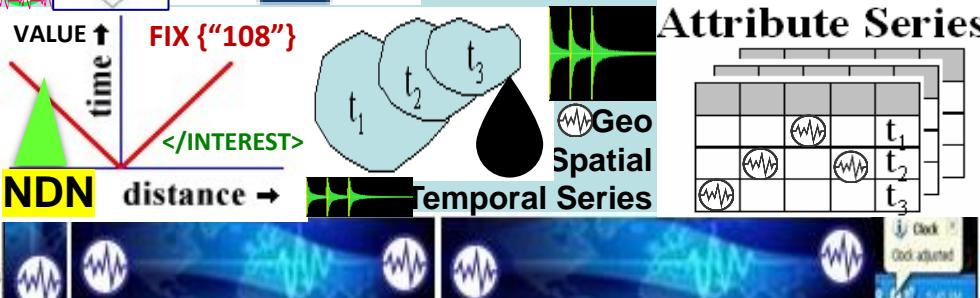


The Volumetric Weight is often referred to as dimensional weight

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



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



"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.



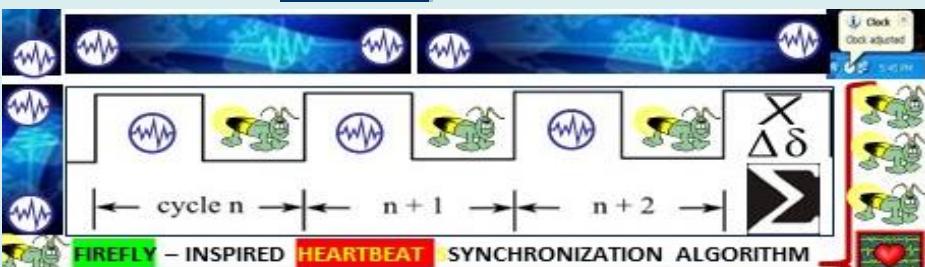
DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

Heart Beacon Cycle

FEDERATE / TRADE FEDERATIONS

Linear Sequential Meme

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



The current standard time common throughout the world is based on a 24-hour clock, with time zones that are either 2 hours ahead or behind Coordinated Universal Time (UTC). However, these time zones are decided upon by individual governments, without overall coordination and can cover up to fourteen hours ahead UTC.



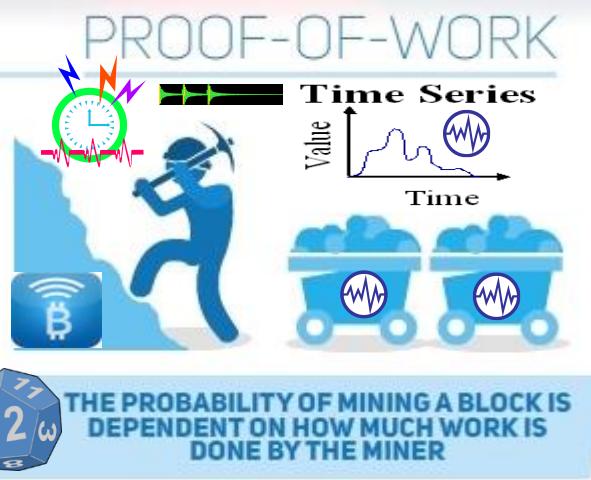
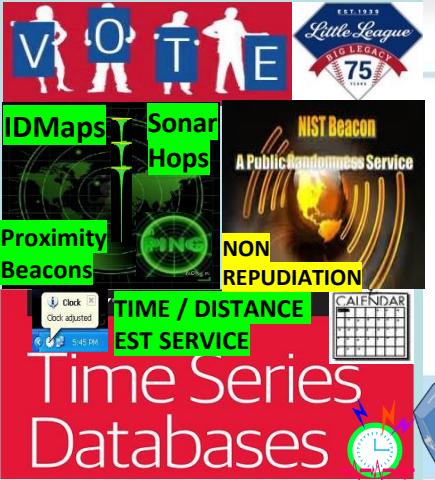


Adaptive
Procedural
Checklist

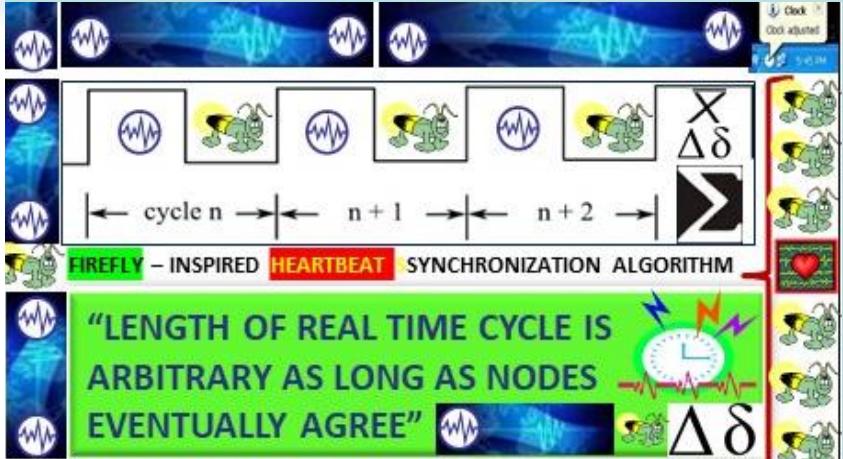
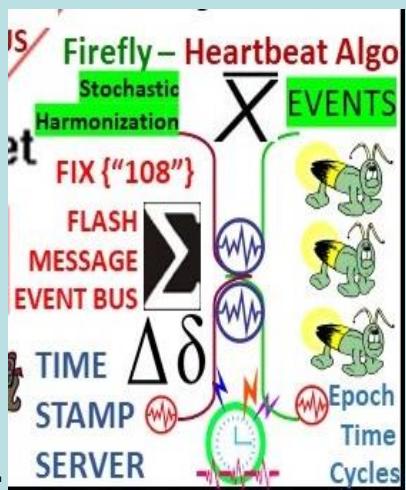
Proof-of-activity PoA is a combination of Proof of Work / Stake blockchain consensus algorithms:

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



HEART BEACON CYCLE 13/573,002

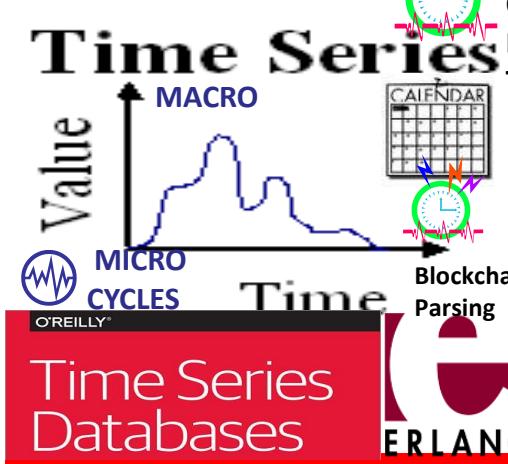


SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

"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



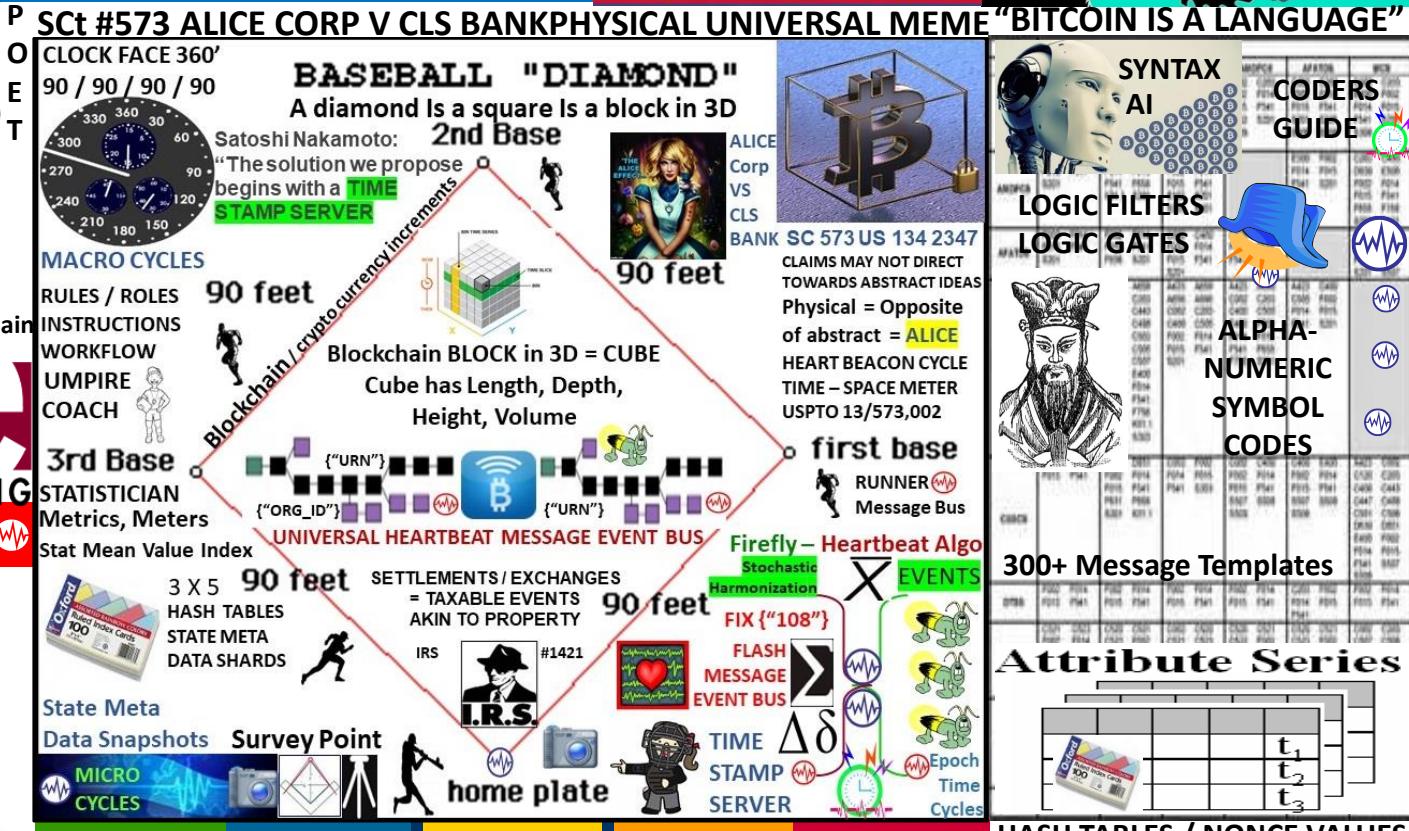
Voting Based Selection: stake size & block generators selected by votes

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

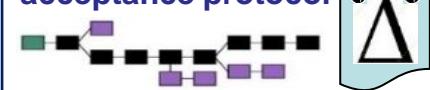
TOURNAMENT LEAGUE BOARD



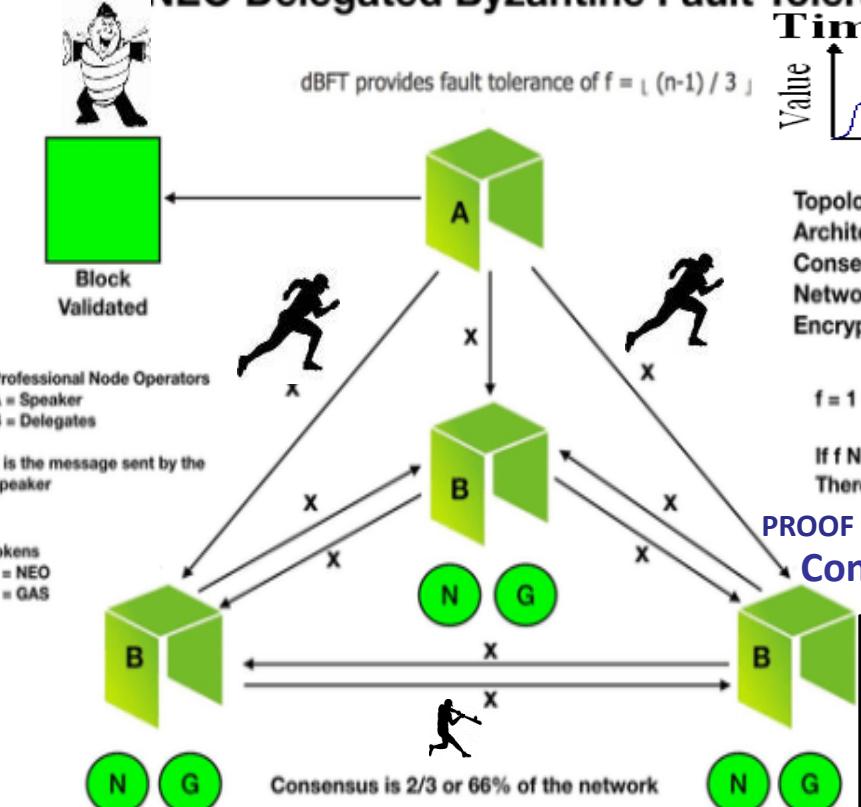
FIREFLY-HEARTBEAT FLASH MESSAGES UNIVERSAL EVENT BUS



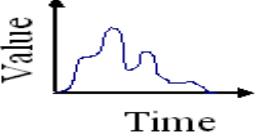
Capture ledger's state $\Delta \delta$
Transaction language changes ledger state
Consensus, transaction acceptance protocol



NEO Delegated Byzantine Fault Tolerance (dBFT)



Time Series

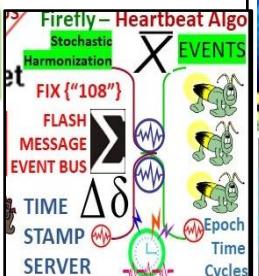


Topology: Hierarchical Star
Architecture: Distributed
Consensus: dBFT
Network: TCP/IP
Encryption: ECDH

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

If f NOT 1 OR < 0.66
There is no consensus

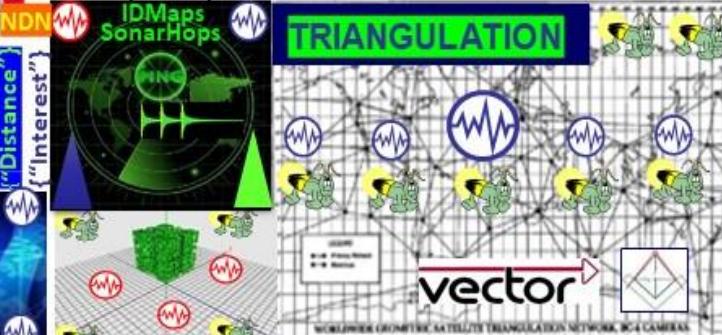
PROOF OF ELAPSED TIME Consensus Order



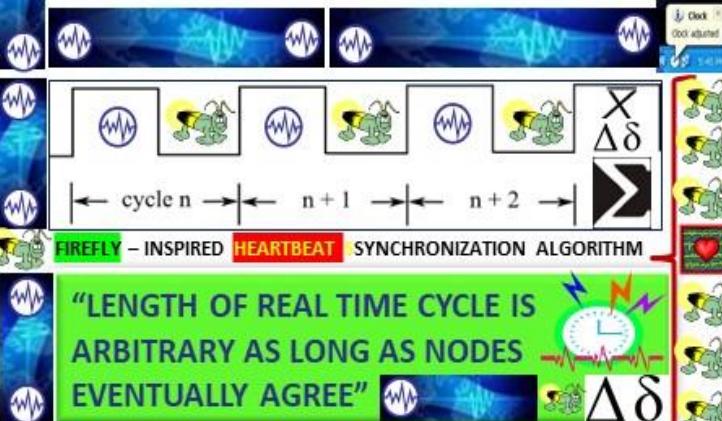
USPTO 13/573,002
sawconcepts.com/index

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

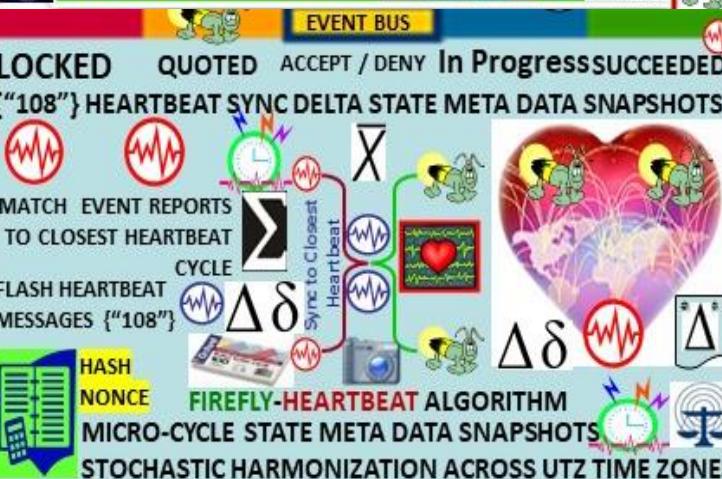
TRIANGULATION



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



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



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

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





Hashgraph consensus algorithm for replicated state machines

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

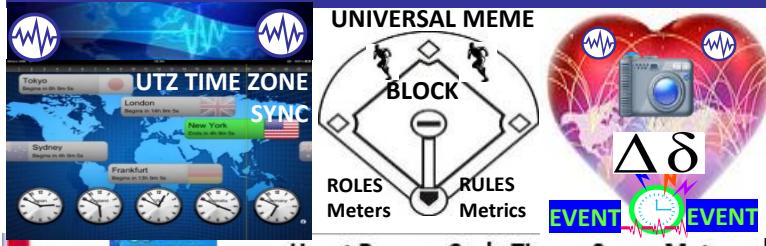
data structure that records who gossiped to whom in what order $\Delta\delta$

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



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

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



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

DAG finite directed graph
= no directed cycles



Round created
Witness



Famous witness
Election

Vote
See
Strongly see
Supermajority
Decide

Round created
Round received

Consensus timestamp
Consensus order $\Delta\delta$

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



Synchronous



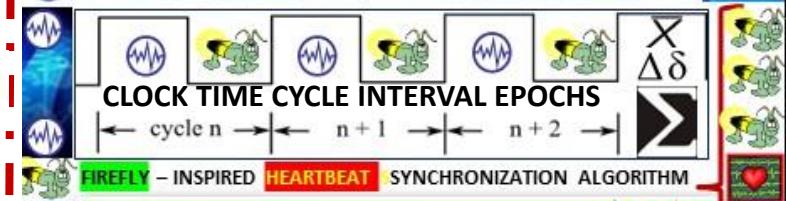
Asynchronous



Hash Nonce
Micro-Cycle State Meta Data Snapshots

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" $\Delta\delta$

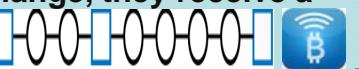
Proof of Burn



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

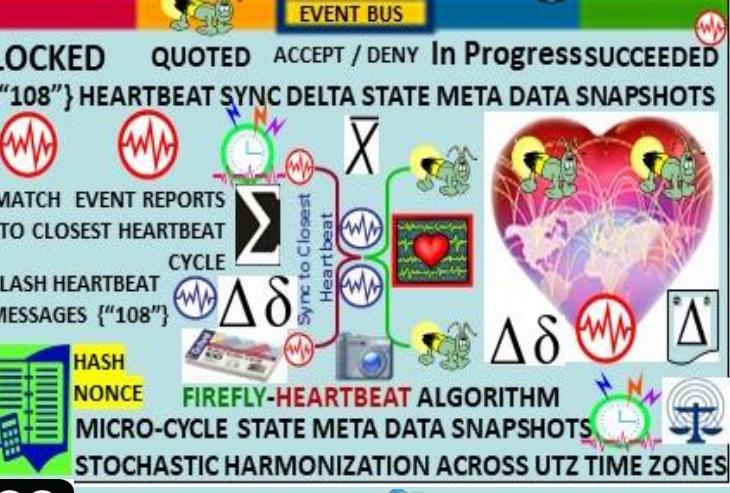
Iain Stewart, the inventor of the POB algorithm, uses an analogy to describe the algorithm: burnt coins are like mining rigs. In this analogy, a miner burns their coins to buy a virtual mining rig that gives them the power to mine blocks. The more coins burned by the miner, the bigger their virtual mining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

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



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

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



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

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



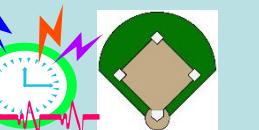
TAG	Volume / Size + / - Of rig	Token Award
{"Org_ID"} ActiveID	[UFO2_ACTIVEID]	</EVENT>
IF1_Heartbeat (IF-Node1)	[UFO2_HEARTBEAT:#]	</EVENT>
IF2_Heartbeat (IF-Node2)	[UFO2_HEARTBEAT:#]	</EVENT>
{"UUID"} IF1_DeviceStatus (IF-Node1)	[UFO2_DEVICESTAT:#]	</EVENT>
{"UUID"} IF2_DeviceStatus (IF-Node2)	[UFO2_DEVICESTAT:#]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

Proof of Capacity PoC



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

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



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



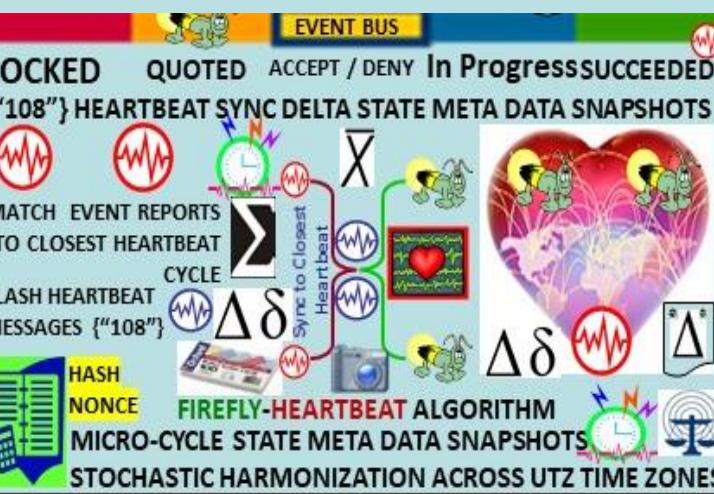
The larger the hard drive, the > possible solution values one can store on the hard drive, the more chances a miner has to match required hash value from his list, resulting in more chances to win the mining reward.



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



Bitcoin purchase akin to property

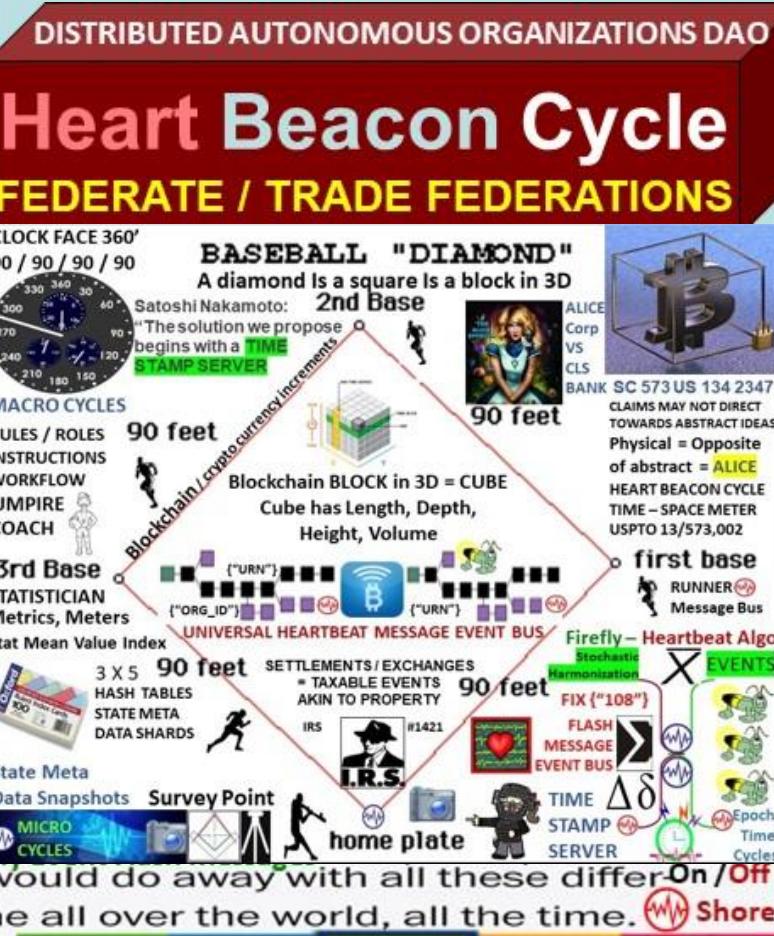


PoST Proof-of-Spacetime (PoST)

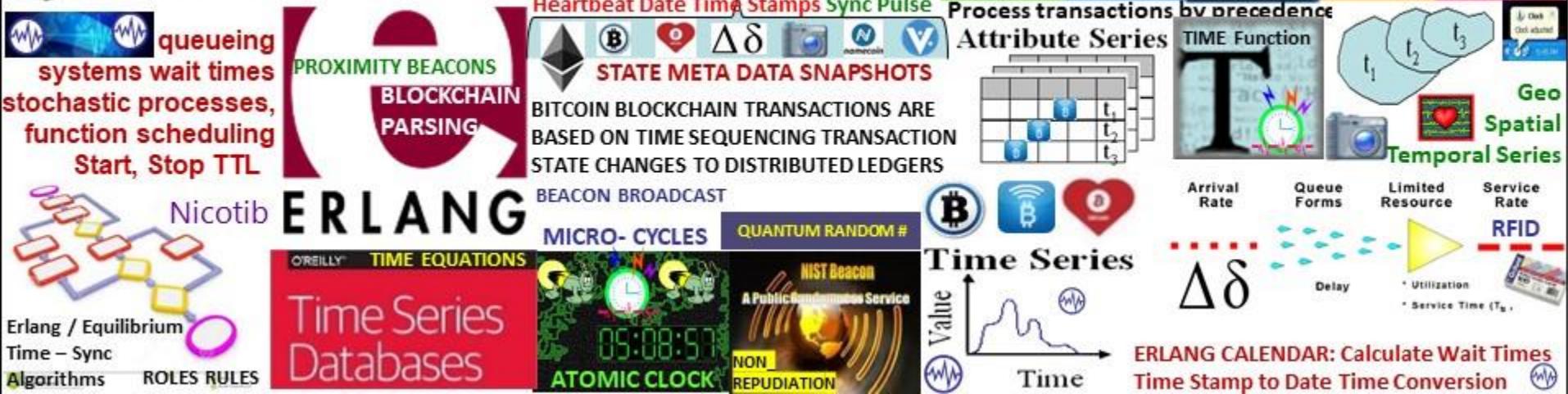
PoST shows that physically storing data (spent "spacetime" resource/allocated storage capacity to the network) over a certain period of time.



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



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



Proof of Authority



{"GROUP ID"}
{"Org_ID"}

Not pay to play, Node identity is kept as stake

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



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

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

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

Federation
Gateway



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

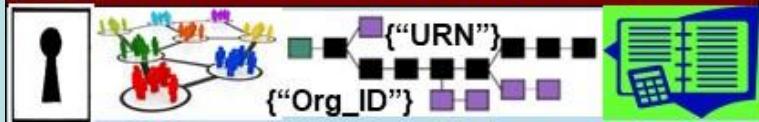
Net joins, drops, splits, merges, moves

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

DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

Heart Beacon Cycle

FEDERATE / TRADE FEDERATIONS



Bitcoin Mining Pools	MEME / METAPHOR MEDIATION	BITCOIN MINER	BLOCK	BLOCK
DISTRIBUTED AUTONOMOUS ORGANIZATION = DAO RAND Corp	term coined circa 1991 now in use by Blockchain tech corporations	BITCOIN MINER	BLOCK	BLOCK
Uniform_Resource_Name	FIREFLY FLASH	HEARTBEAT MESSAGES		
IoT DEVICE / PLATFORM	</RESOURCE> {"URN"}			
IoT SENSOR DEVICE	{"Asset_Type"}			
UUID 123e4567-e89b-12d3-a456-426655440000				
UUID 123e4567-e89b-12d3-a456-426655440001				
UUID 123e4567-e89b-12d3-a456-426655440002				

STOCK EXCHANGE

MIC MARKET IDENTIFIER

CODES / BREVITY CODES

vector DAO

ETHEREUM: Decentralized Autonomous Organizations

CROWD SOURCING / FUNDING

DAO

PARTIDO X: Distributed Democratic Participation

VOTE ON BLOCKCHAIN

PARTIDO DEL FUTURO

FEDERATED ID

openstack

Identity Provider

Mapping Protocol

Partido del Futuro

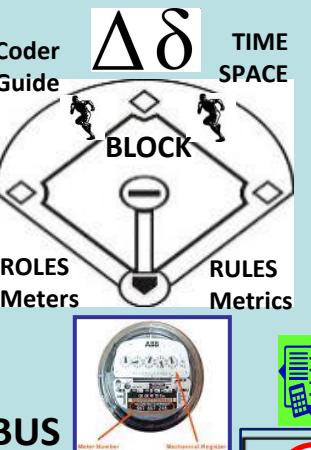
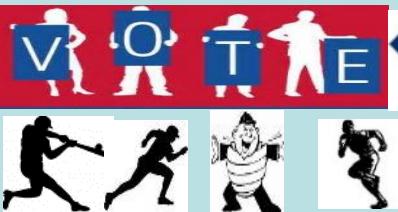
KESTONE FEDERATION

ROLES: - OPS - INTEL

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

KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



MVP

EVENT BUS

MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



FROM	GCDA	TAB	ASAS	AMPCDS	AFATON	WCR	TO
GCDA	FC001	FC002	FC003	FC004	FC005	FC006	FC007
TAB	FC008	FC009	FC010	FC011	FC012	FC013	FC014
ASAS	FC015	FC016	FC017	FC018	FC019	FC020	FC021
AMPCDS	FC022	FC023	FC024	FC025	FC026	FC027	FC028
AFATON	FC029	FC030	FC031	FC032	FC033	FC034	FC035
WCR	FC036	FC037	FC038	FC039	FC040	FC041	FC042

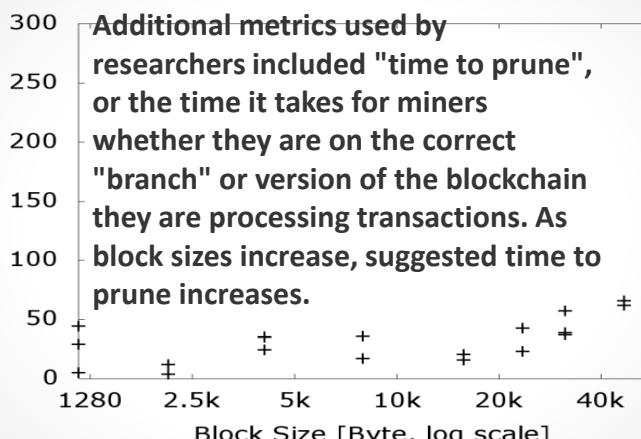
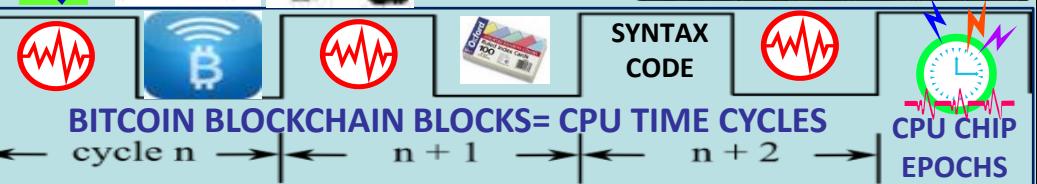
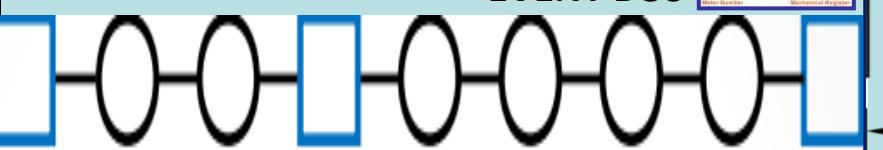
XBRIL / CDL / DAML
STRUCTURED STOCK MIC CODES

MILITARY MESSAGE TEMPLATE FORMS

LOGIC / FILTERS

SYNTAX LEXICON LIBRARY

CPU CHIP EPOCHS





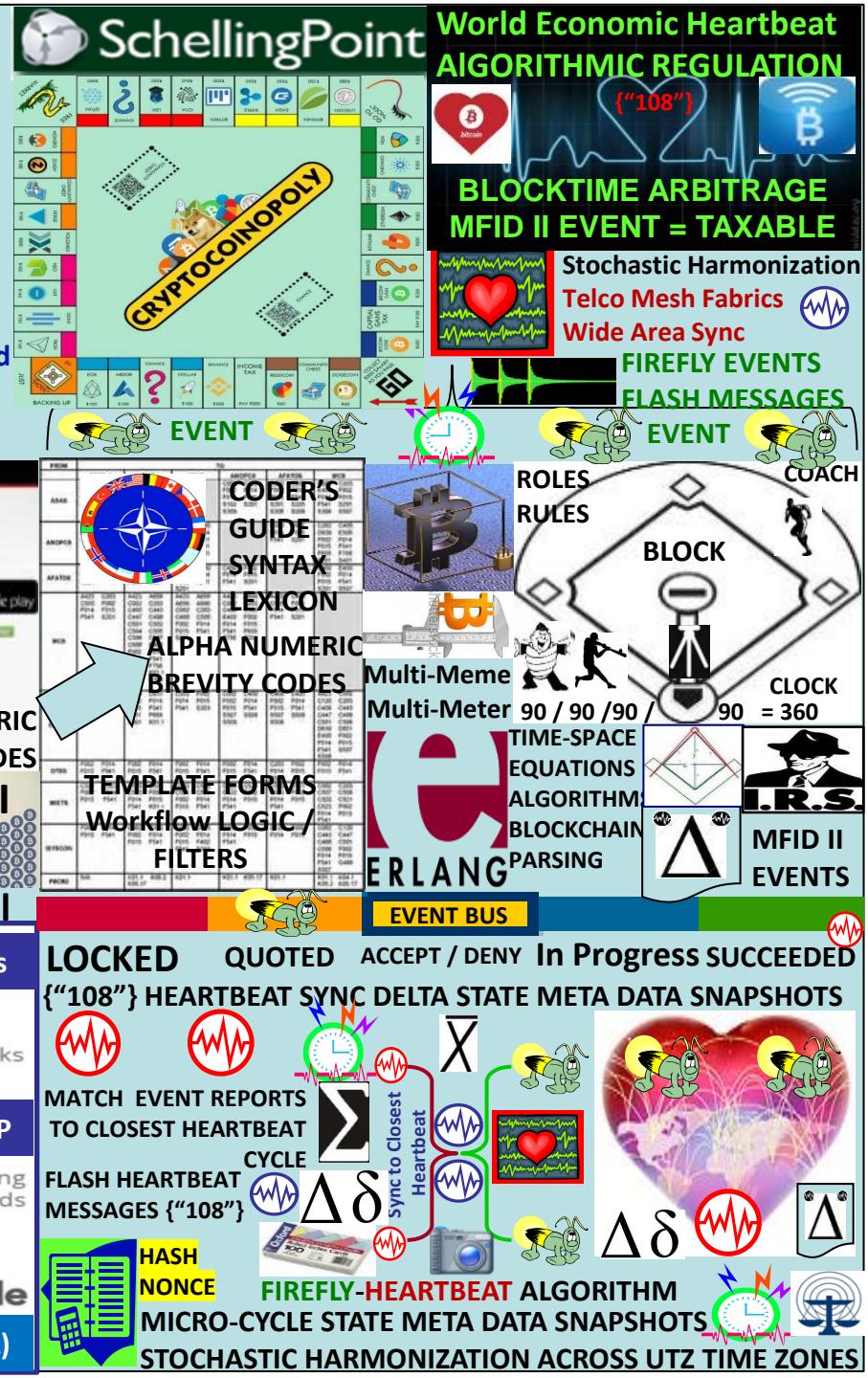
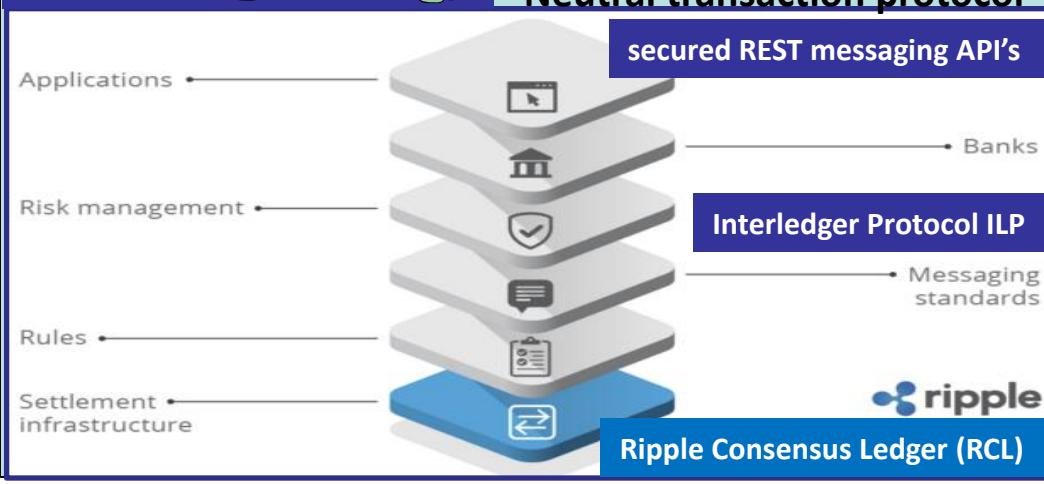
**real-time gross settlement system,
currency exchange, remittance network**

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

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

Provides information about total costs of the transaction.

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



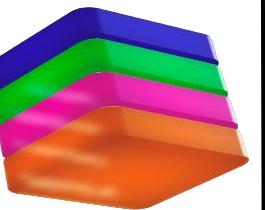


PROTON A CHAIN Virtual Machine

CONTRACT C CHAIN Smart contract

PLATFORM P CHAIN Meta Data

EXCHANGE X CHAIN Cross blockchain



Universal @names Identity / Governance / Resources / Staking

Snowball Consensus

Algorithm

preference := pizza

consecutiveSuccesses := 0

while not decided:

ask k random people preference

if >= α give the same response:

 preference := response with >=

α

 if preference == old preference:

 consecutiveSuccesses++

 else:

 consecutiveSuccesses = 1

 else:

 consecutiveSuccesses = 0

if consecutiveSuccesses > β:
 decide(preference)

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

Delegated Proof
of Stake {"Org_ID"}



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



DAG Acyclic Graph Parameters:

n: number of participants

k (sample size): between 1 and n

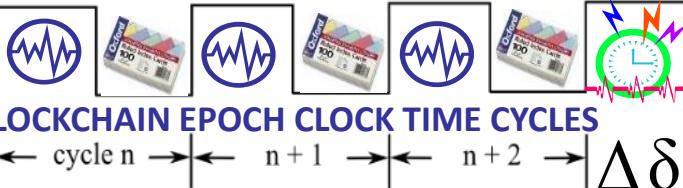
α (quorum size): between 1 and k

β (decision threshold): >= 1

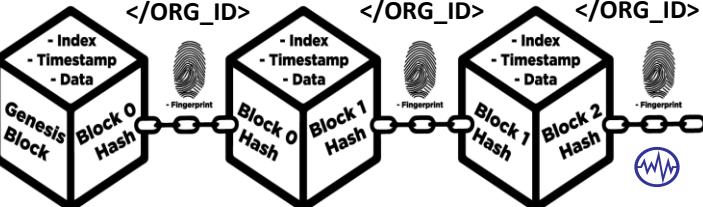
ALL THINGS NET, NET OF \$\$\$

1) EPOCH TIME INTERVALS

2) SYNTAX (not) used in epochs



GENESIS BLOCK: "Layers" = follow on epoch time intervals
Block 0 Block 1 Block 2



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



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





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

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





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Create	Create	Money Services	Authorizations
Modify	Modify	Transfer	Grant Authorization
Suspend	Suspend		Revoke Authorization
Issuers	Pause	Escrow	Rates
Create	Unpause	Create Escrow	Create Rate
Modify	Mint	Accept Escrow	Modify Rate
Suspend	Burn	Cancel Escrow	Suspend Rate
Post Rates	Redeem	Release Escrow	
Branches	Swap	Milestones	Limits
Create	Supply	Create Milestone	Create Limit
Modify	Price	Modify Milestone	Modify Limit
Suspend	Wallets	Cancel Milestone	Suspend Limit
Agents	Create	Release Milestone	Sanctions
Create	Modify		Create Sanction
Modify	Suspend		Modify Sanction
Suspend	Pause		Suspend Sanction
	Unpause		
	Attach		

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





UNICOIN

Digital Capital Exchange

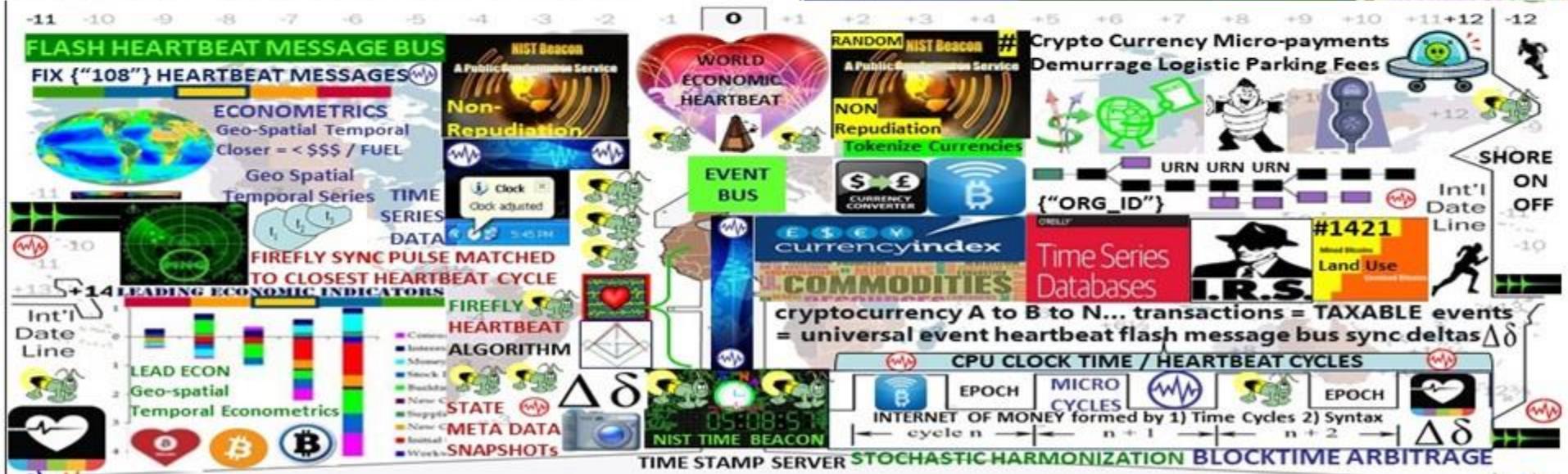
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Ü



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.

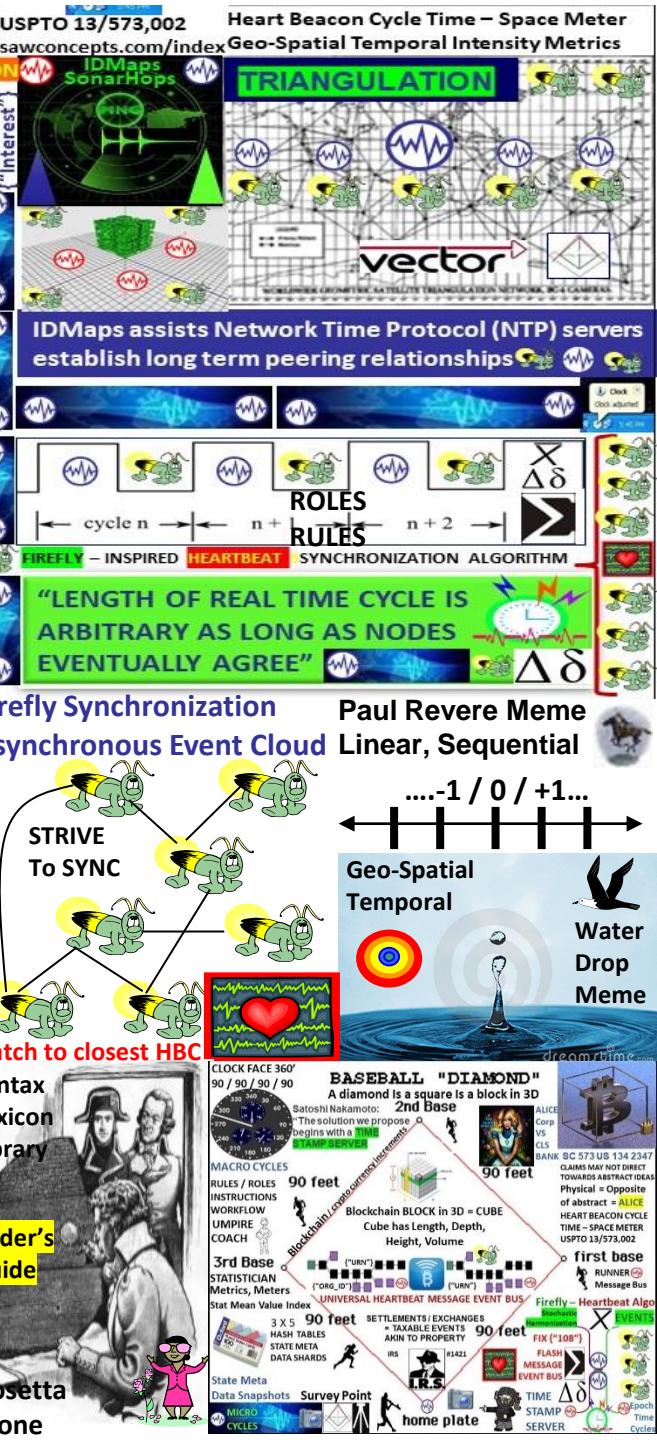
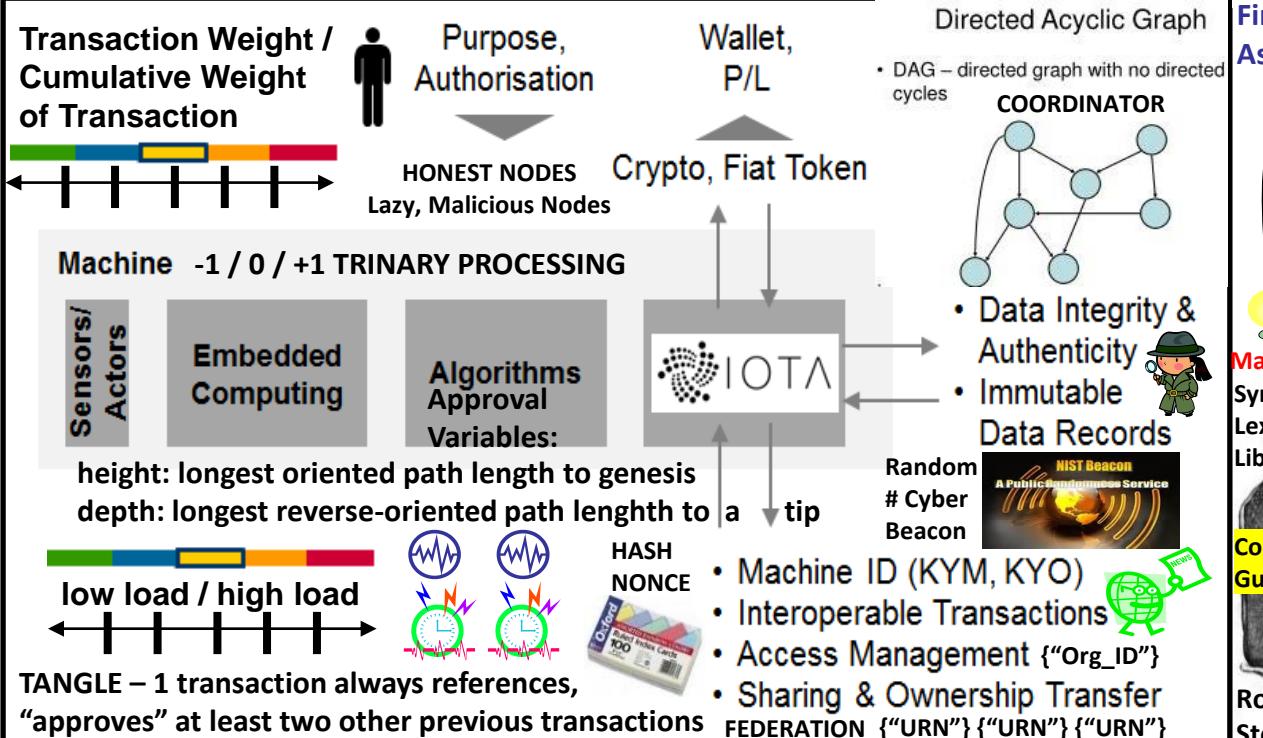


OTA: Internet Of Things IOT distributed ledger
with microtransactions without fees

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

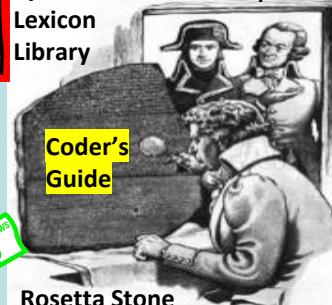
zeppelinOS, operating system for smart contracts
"the rate of innovation in building decentralized applications is limited by the manual and duplicative efforts developers must make to ensure basic usability and security."



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

Syntax Lexicon Library

300 + Templates



STRUCTURED DATA EXCHANGE

Category	Sub-Category	Function	Parameter	Value
ASAS	ASAS	ASAS	ASAS	ASAS
ANOPIC	ANOPIC	ANOPIC	ANOPIC	ANOPIC
APAFOR	APAFOR	APAFOR	APAFOR	APAFOR
MIC	MIC	MIC	MIC	MIC
COCOM	COCOM	COCOM	COCOM	COCOM

LOGIC / FILTERS
ALPHA-NUMERIC
BREVITY CODES



STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics

HASH / NONCE



SLA/O



TIME



CYCLES



SYNTAX



Erlang



Time Equations



Function calls



Blockchain Parsing



FLASH



MESSAGE BUS



HEARTBEAT



FLASH

MESSAGE BUS

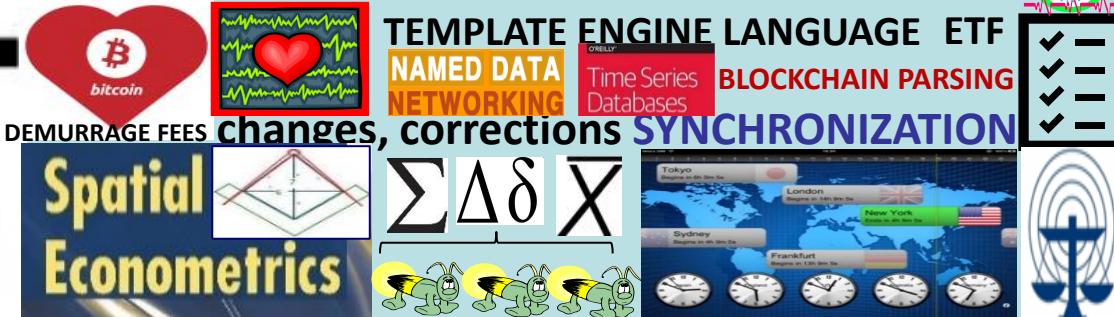
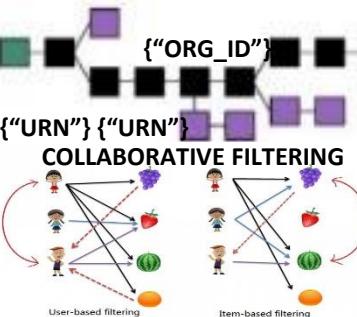


EGAAS

ELECTRONIC GOVERNMENT AS A SERVICE

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

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



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





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

GNOSIS

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

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

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

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

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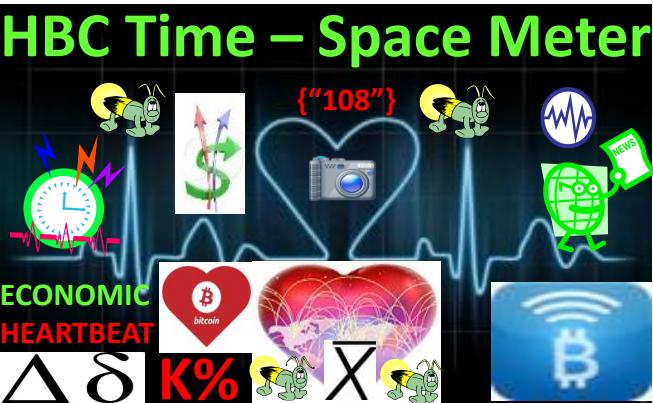
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"Our mission is to build an accessible prediction market platform enabling free flow of useful information / the "Google" of Customized Information Searching"

Futarchy PREDICTION MARKETS
GnosisAMA

Gnosis trading interface alpha
WIZ token fee payment
INFORMATION ARBITRAGE ECONOMICS

TERRACYCLE Price Oracle

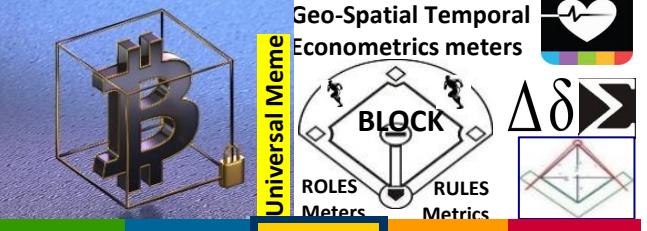


THE TERRA (TRC)

Trade Reference Currency



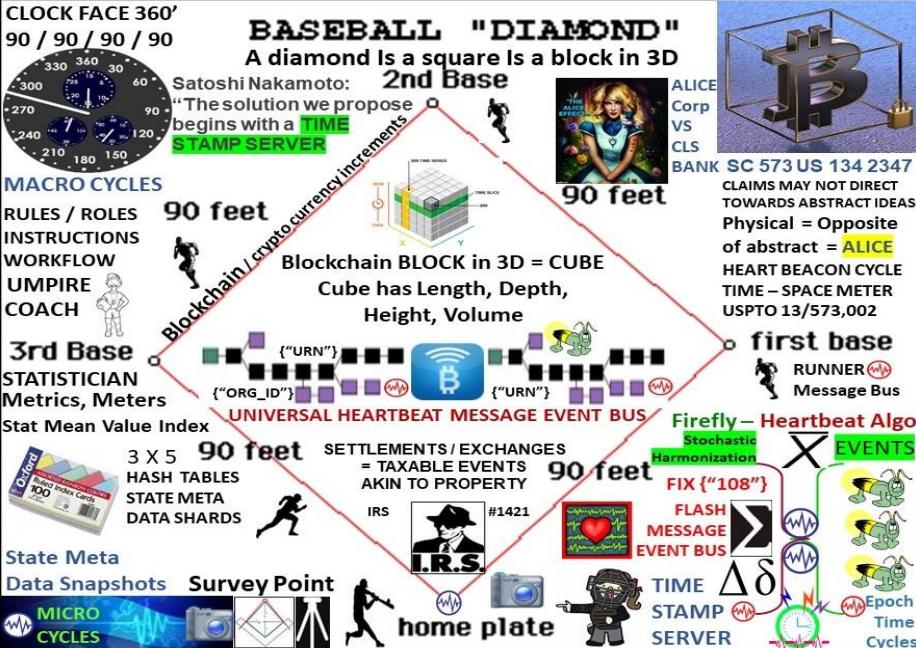
Demurrage Fees



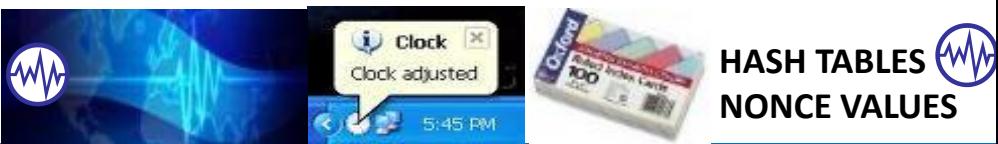
Firefly inspired Heartbeat Synchronization nodes strive to sync in a distributed system. Nodes generate periodic "heartbeat" events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles to agree on the ID of the current clock cycle. There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



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



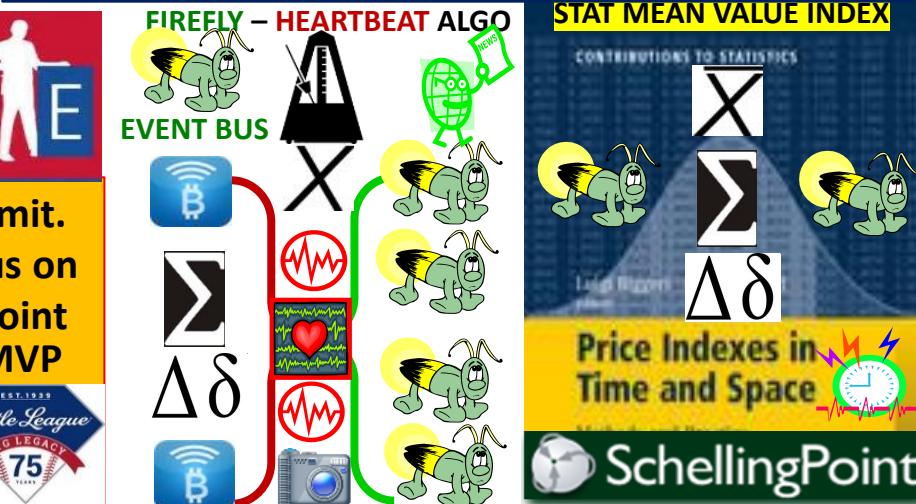
ALL THINGS INTERNET FORMED W 1) TIME EPOCHS 2) SYNTAX



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



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



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

AZURE: Core/Kernel/Universal Protocol 

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

Unspent Transaction Output protocols UTXO

Crypto Tokenized Assets Digital Bearer Bonds
unique identity for owned artifacts

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

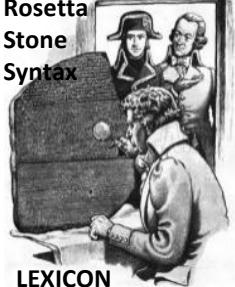
Blockchain middleware: identity and operations management, data,
intelligence services like analytics and machine learning. New middleware
works with existing Azure services, like Active Directory and Key Vault

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

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

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

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

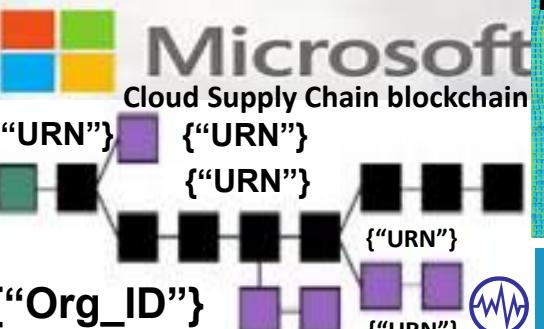


ALPHA NUMERIC BREVITY CODES SYMBOL CODES	
STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS	

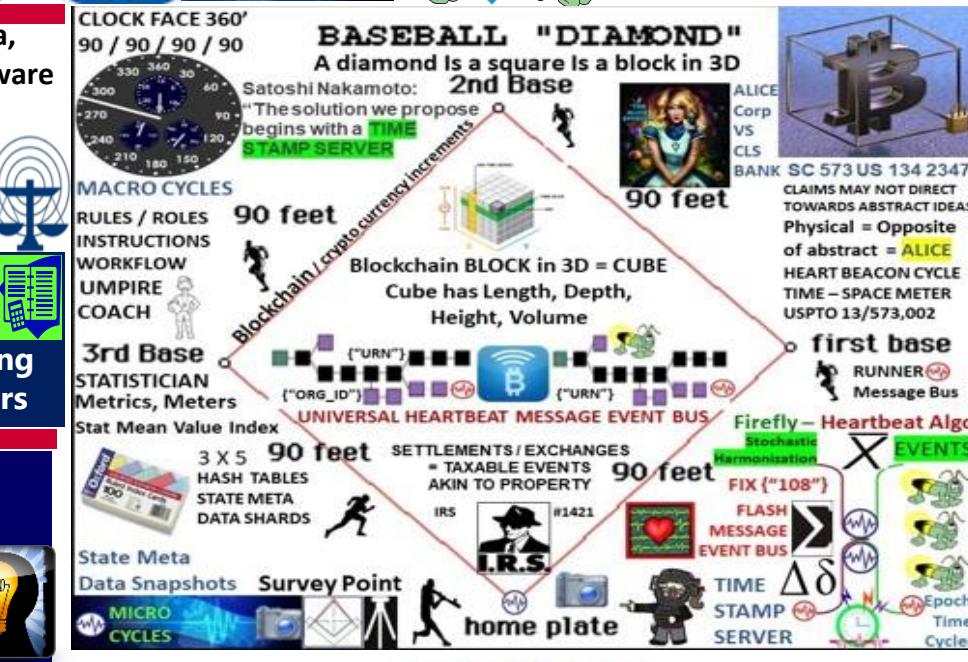
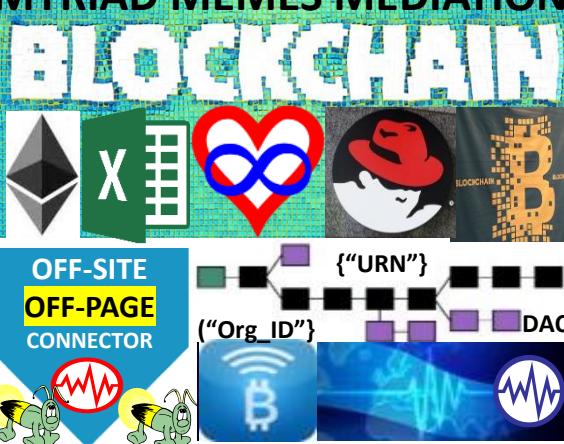
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind Coordinated Universal Time (UTC). However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours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



MULTI-MEME MULTI-METER

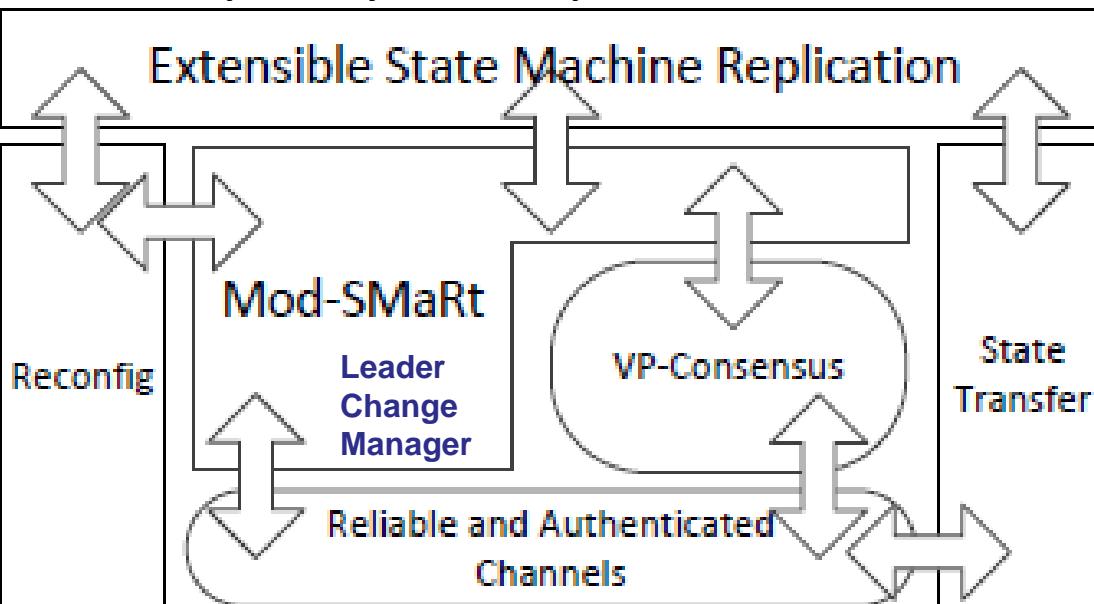


MYRIAD MEMES MEDiation



Byzantine Fault-Tolerant State Machine Replication

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



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

BFT-SMaRT needs an eventually synchronous system

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

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

USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT



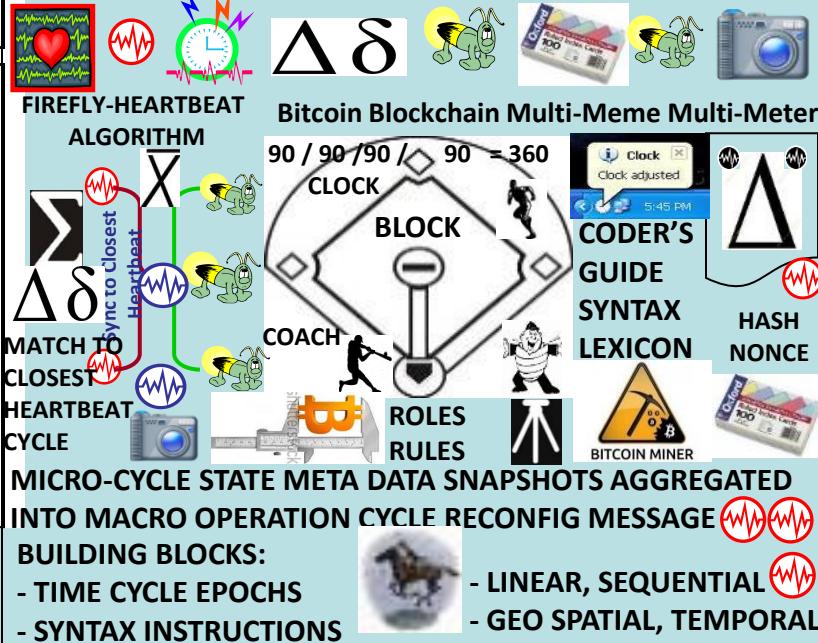
DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"}

ADDS, JOINS, DROPS, MOVES TO / FROM DAO

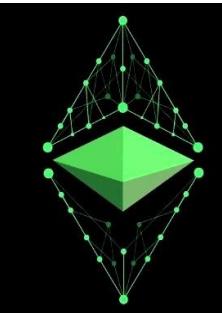
CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

00.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOTS



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

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



ETHER: Compensate Resource Contribution

Gas: price to
Run contract
transactions

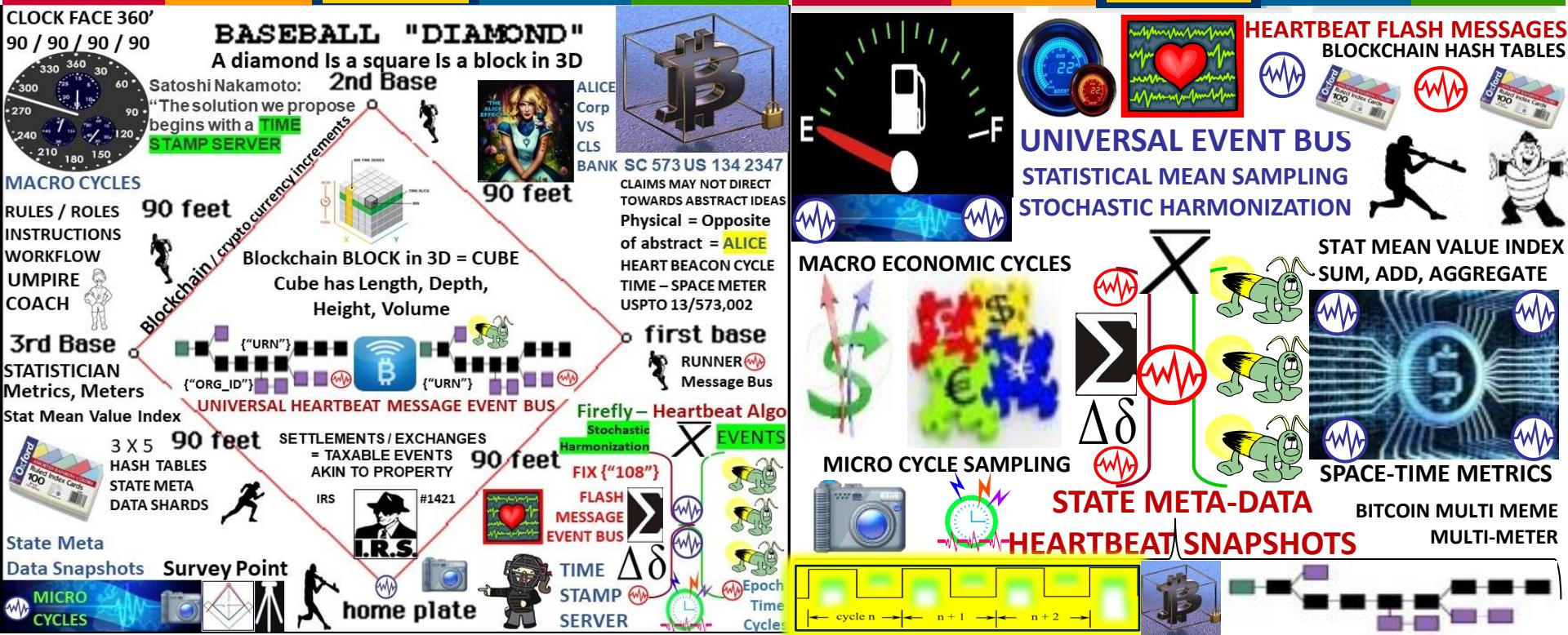
ethereum

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**



D F I N I T Y



RANDOM # BEACON



NIST Beacon
A Public Randomness Service



Each process has mining identity

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

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

FIREFLY-HEARTBEAT FLASH Msg EVENT BUS



GROUP Signature is random number

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

HYPER GEOMETRIC PROBABILITY CALCULATOR

CONSENSUS / RANDOM BEACON

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



3 x 5 HASH TABLES STATE META DATA SHARDS

3 x 5 INDEX CARDS

QUANTUM RANDOM #

3 x 5

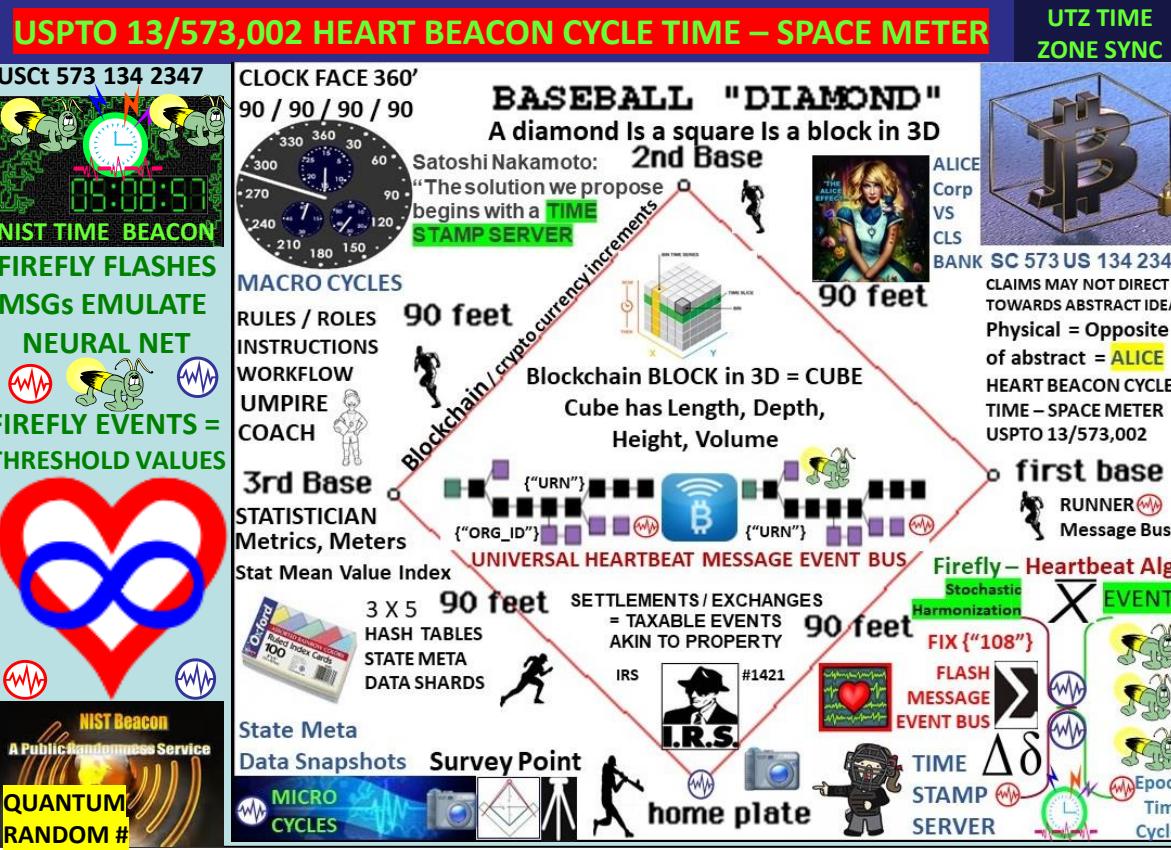
3 x 5 INDEX CARDS

INDEX CARD="SHARD"

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

UTZ TIME ZONE SYNC

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





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

ERLANG API FOR BLOCKCHAIN



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

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

CROSS – CHAIN ATOMIC SWAPS

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



Aeons: energy for applications implemented on the platform.

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



("ORG_ID")
("ORG_ID")

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



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

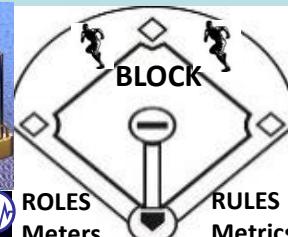
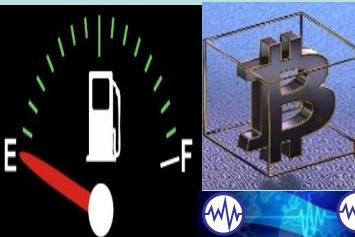
AETERNITY CROSS-CHAIN ATOMIC SWAPS CORRESPOND TO HEART BEACON CYCLE'S USE OF BATTLEFIELD DIGITIZATION DERIVED HEARTBEAT SYNC DELTAS



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

TOKENS REPRESENT REAL WORLD VALUE URN RESOURCES

ETHEREUM USES GAS GUAGE MEME INDICATING THRESHOLD MET / NOT MET



ROLES Meters RULES Metrics

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

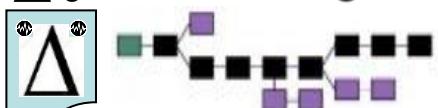
Federation Gateway
("ORG_ID")



HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$ Shared Ledger



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

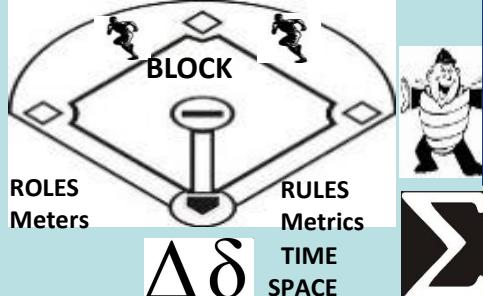
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

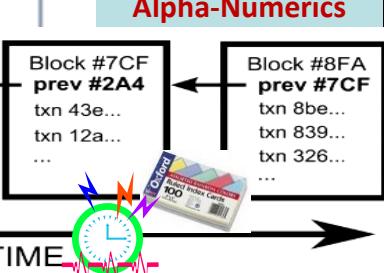
RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



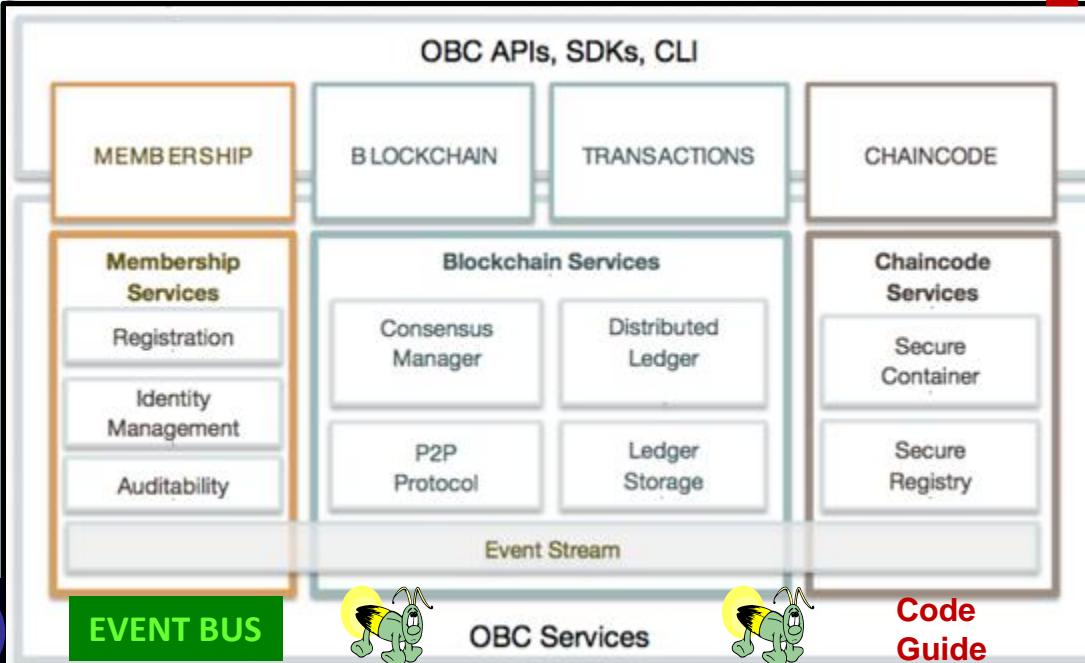
BLOCKTIME ARBITRAGE



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



Alpha-Numerics



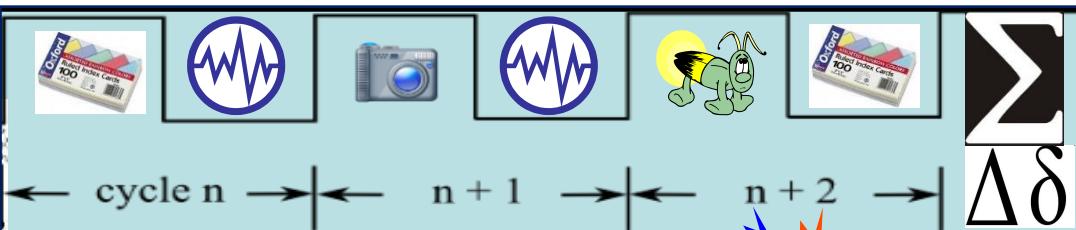
ROSETTA STONE

XBR / CDL / DAML
STOCK MIC CODES

STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS

SYNTAX
SYMBOL LIBRARY

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



MICRO-MACRO CYCLE SCHEDULE

FFIRNS
FFUDNS

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

DASH



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

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

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

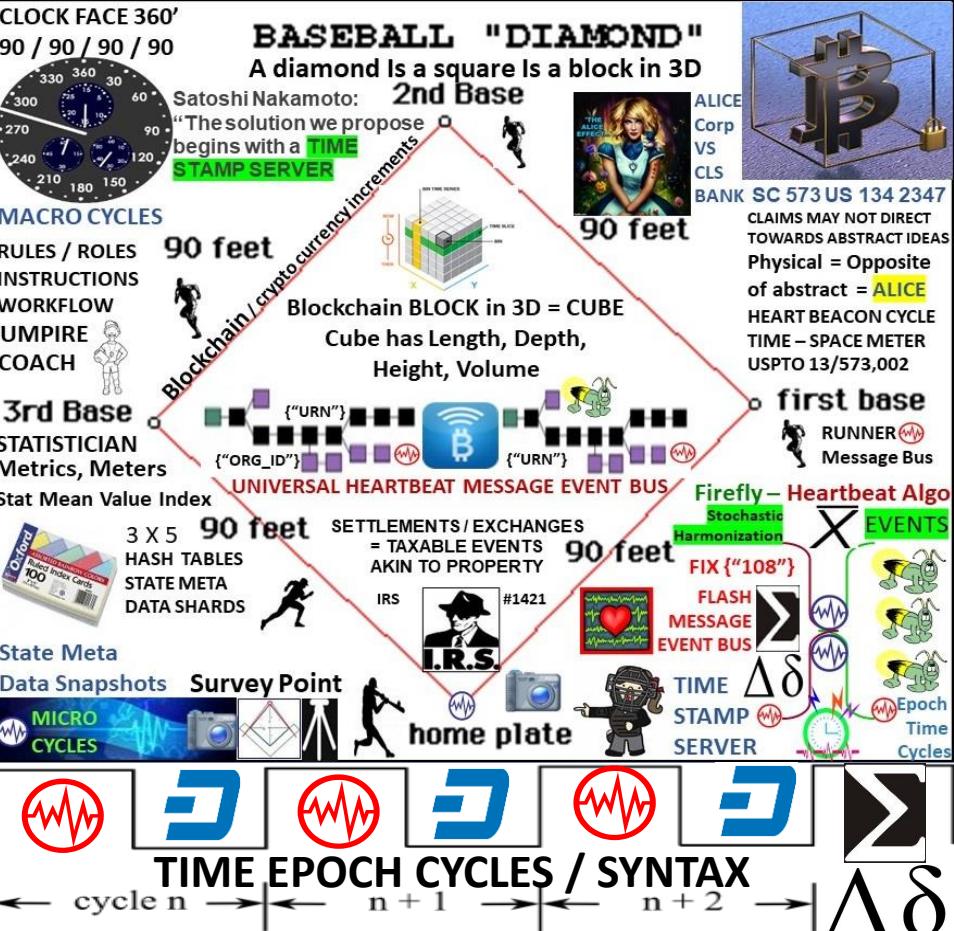
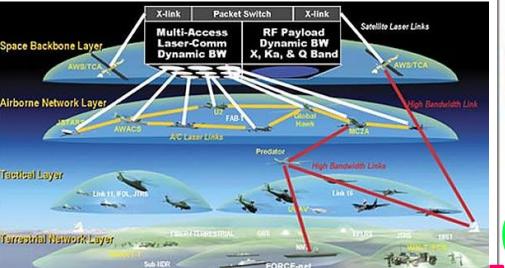
"all digital currency networks, the base layer of people generating the blockchain — "miners," "stakers," "witnesses," "validators," or "forgers" — all get paid to do so" "consensus," or an agreement upon what the rules should be; and second, the execution of said rules.

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

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

DAO: RAND THINK TANK TERM COINED + / - 2001

NETWORK CENTRIC WARFARE
Developing and Leveraging Information Superiority



STOCHASTIC HARMONIZATION FIREFLY-HEARTBEAT EVENT BUS

HEART BEACON CYCLE = IMPROVEMENT TO NETWORK CENTRIC WARFARE



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



STATE: stored data at a given instant in time

STATE CHANNELS: blockchain interactions

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



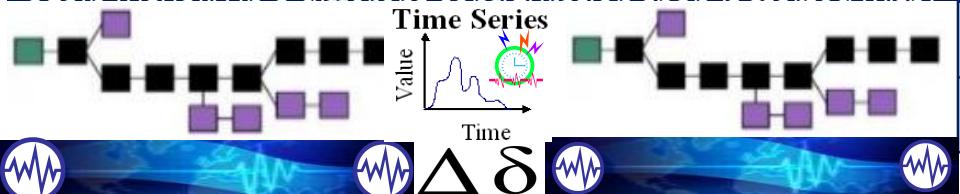
1. Part of the blockchain state is locked via multisignature or smart contract convention, so that a specific set of participants must completely agree with each other to update it.



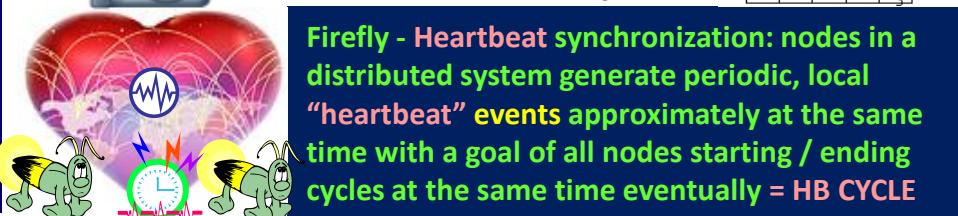
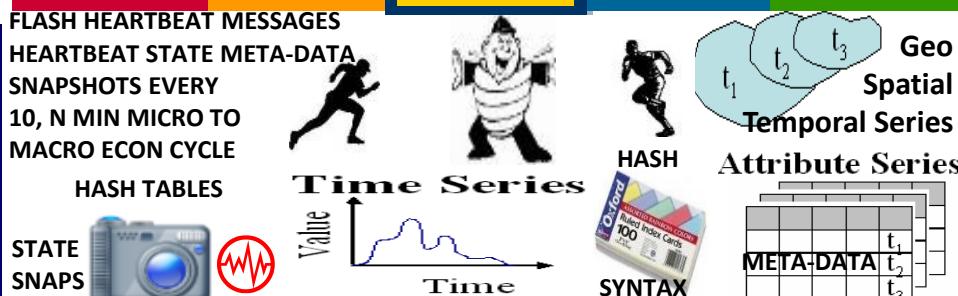
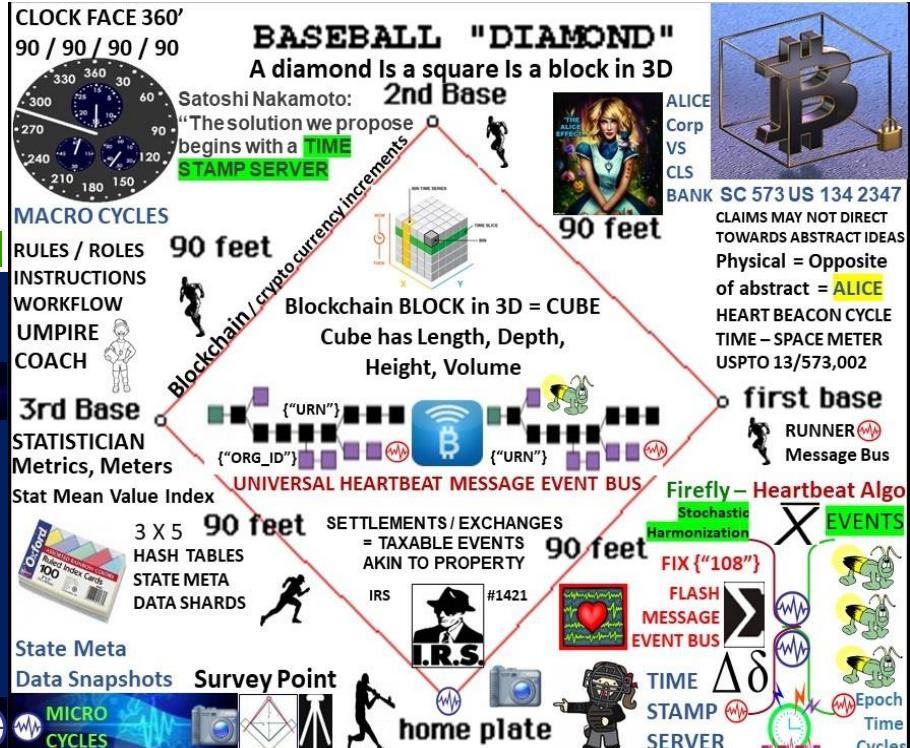
2. Participants update the state amongst themselves by constructing and signing transactions that *could* be submitted to the blockchain, but instead are made available for a new update "trumps" previous update.



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



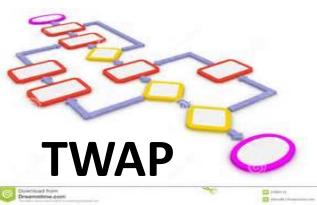
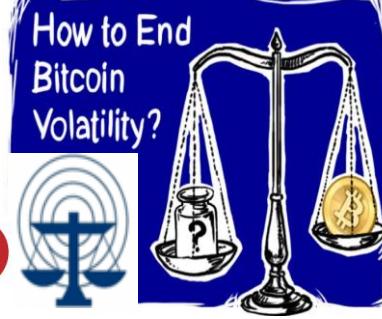
NEW UPDATES OVERWRITE THE PREVIOUS: simplest way is to have any unlocking attempt start a timer, during which any *newer* update can replace the old update (restarting the timer). When the timer completes, the channel is closed and the state adjusted to reflect the last update received. The length of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



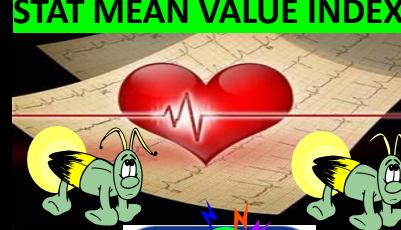
Firefly - Heartbeat synchronization: nodes in a distributed system generate periodic, local "heartbeat" events approximately at the same time with a goal of all nodes starting / ending cycles at the same time eventually = HB CYCLE

TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

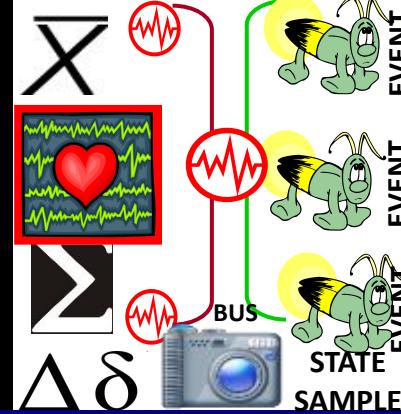
TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX



STATE META
DATA SNAPSHOTS



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



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



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

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



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

Key Features:

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



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

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

All rates time-stamped in UTC.

Ability to look up by time-stamp.

Ability to look up by block-height.

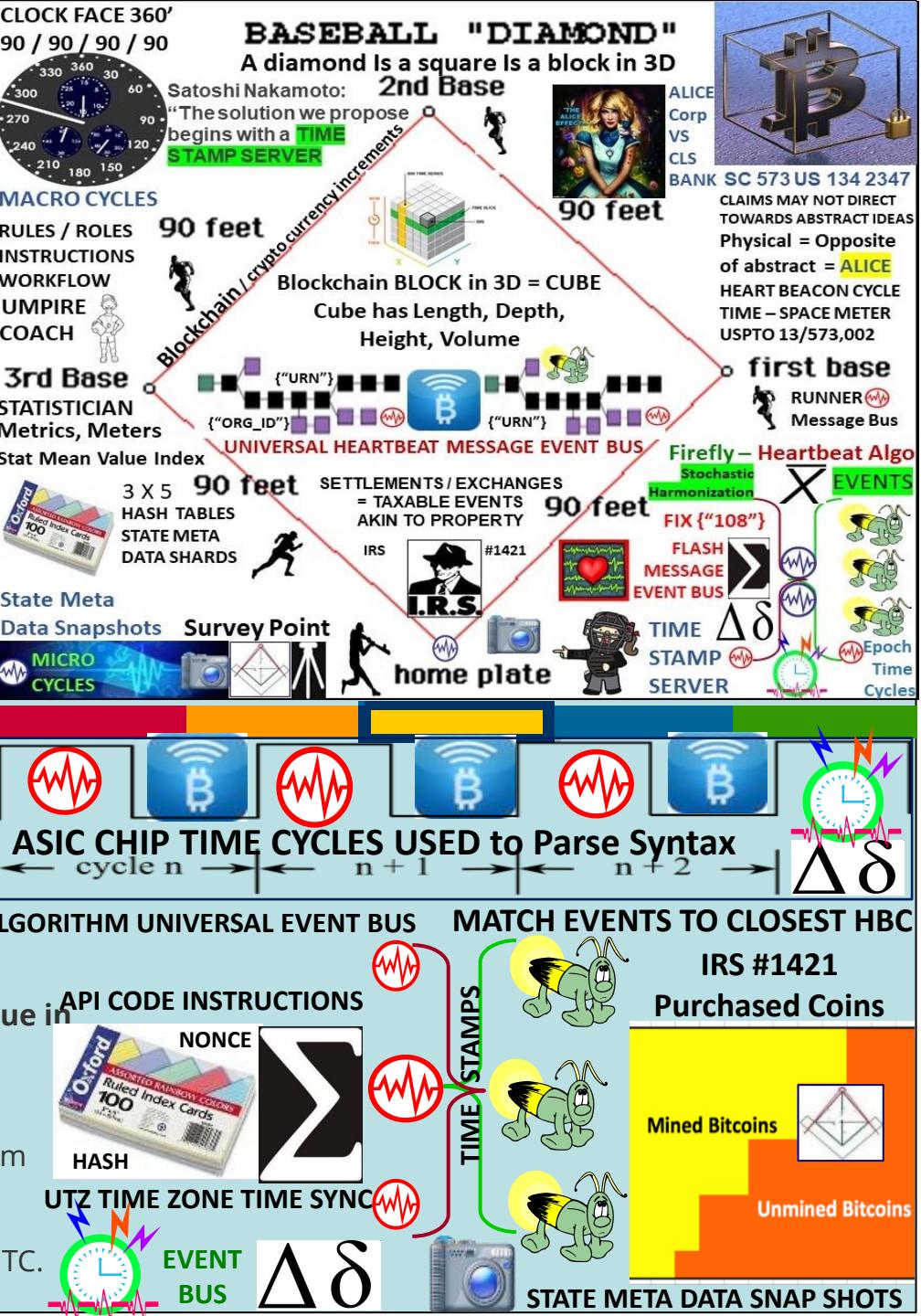
Asset Classes: Digital Currencies

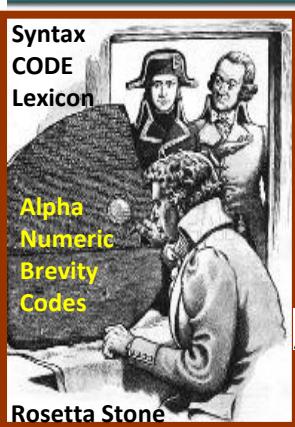
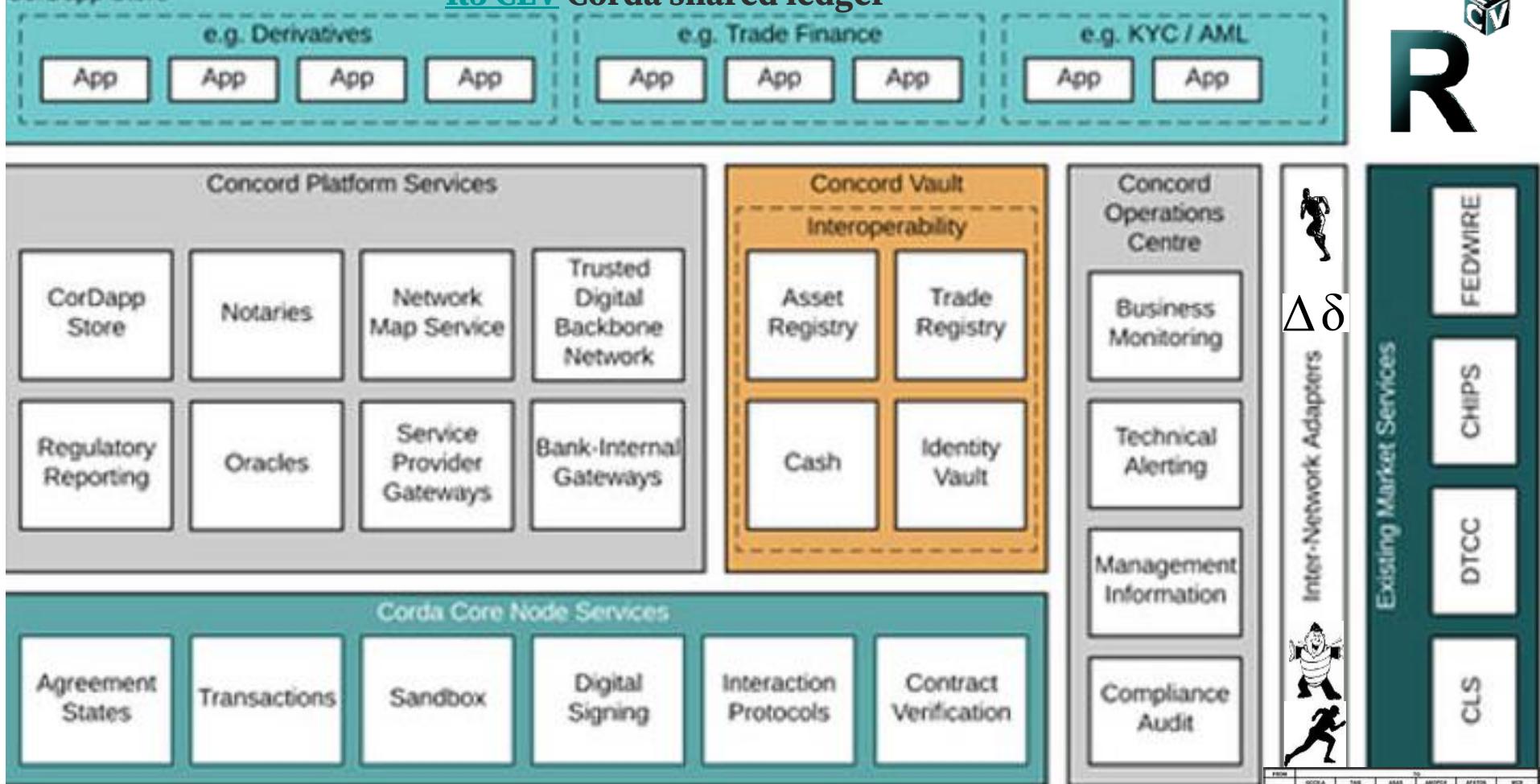
Get by: Block-height, Time-stamp or Transaction

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

- 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

	Q4Q1A	T4T1A	A4A1A	W4W1A	Q1Q2A	A1A2A	W1W2A
ABAB	F002	F003	F004	F005	F006	F007	F008
AMDFP	F009	F010	F011	F012	F013	F014	F015
AFATPN	F016	F017	F018	F019	F020	F021	F022
AFATPS	F023	F024	F025	F026	F027	F028	F029
AFATPS	F030	F031	F032	F033	F034	F035	F036
AFATPS	F037	F038	F039	F040	F041	F042	F043
AFATPS	F044	F045	F046	F047	F048	F049	F050
AFATPS	F051	F052	F053	F054	F055	F056	F057
AFATPS	F058	F059	F060	F061	F062	F063	F064
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AFATPS	F099	F100	F101	F102	F103	F104	F105
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AFATPS	F456	F457	F458	F459	F460	F461	F462
AFATPS	F463	F464	F465	F466	F467	F468	F469
AFATPS	F470	F471	F472	F473	F474	F475	F476
AFATPS	F477	F478	F479	F480	F481	F482	F483
AFATPS	F484	F485	F486	F487	F488	F489	F490
AFATPS	F491	F492	F493	F494	F495	F496	F497
AFATPS	F498	F499	F500	F501	F502	F503	F504
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AFATPS	F519	F520	F521	F522	F523	F524	F525
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AFATPS	F561	F562	F563	F564	F565	F566	F567
AFATPS	F568	F569	F570	F571	F572	F573	F574
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AFATPS	F585	F586</					

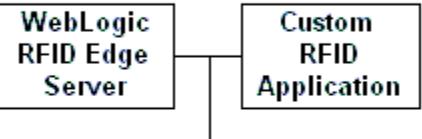
Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data



epcis

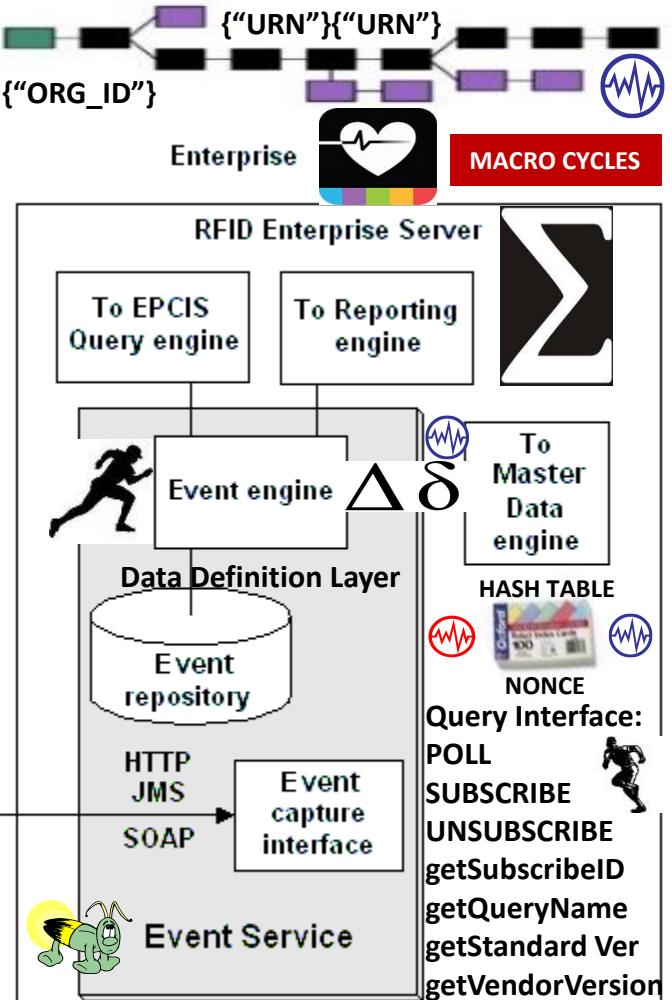
EPCIS DATA MODEL



SERVICE LAYER

XML

- ObjectEvent
- AggregationEvent
- QuantityEvent
- TransactionEvent



Core Business Vocabulary (CBV)

What identifiers of object(s) or entities / subject of the event
 When date time when event took place, local time zone in effect
 Where location identifier where event occurred, identifier of location where object(s) are expected to be following the event
 Why Information about the business context, including:
 a Identifier that indicates the business step taking place



CLOSER IS CHEAPER
CLOSER IS FASTER



MICRO CYCLES

$\Delta\delta$



NETOPS SOP



NETOPS SOP



NETOPS SOP



NETOPS SOP



NETOPS SOP



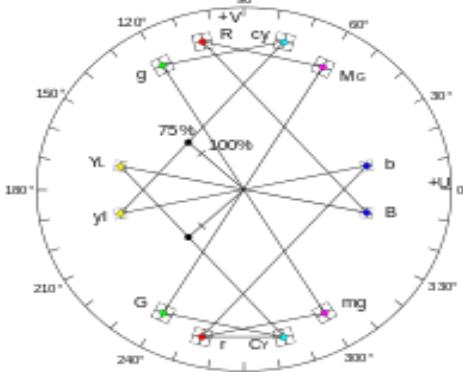
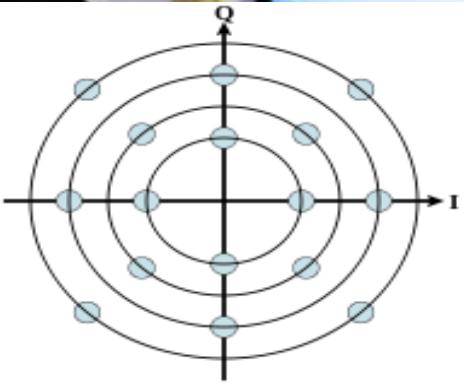
NETOPS SOP



NETOPS SOP



www.RLighthouse.com



Quadrature amplitude modulation

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

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

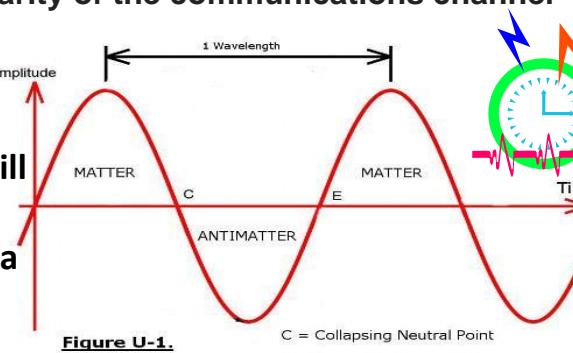
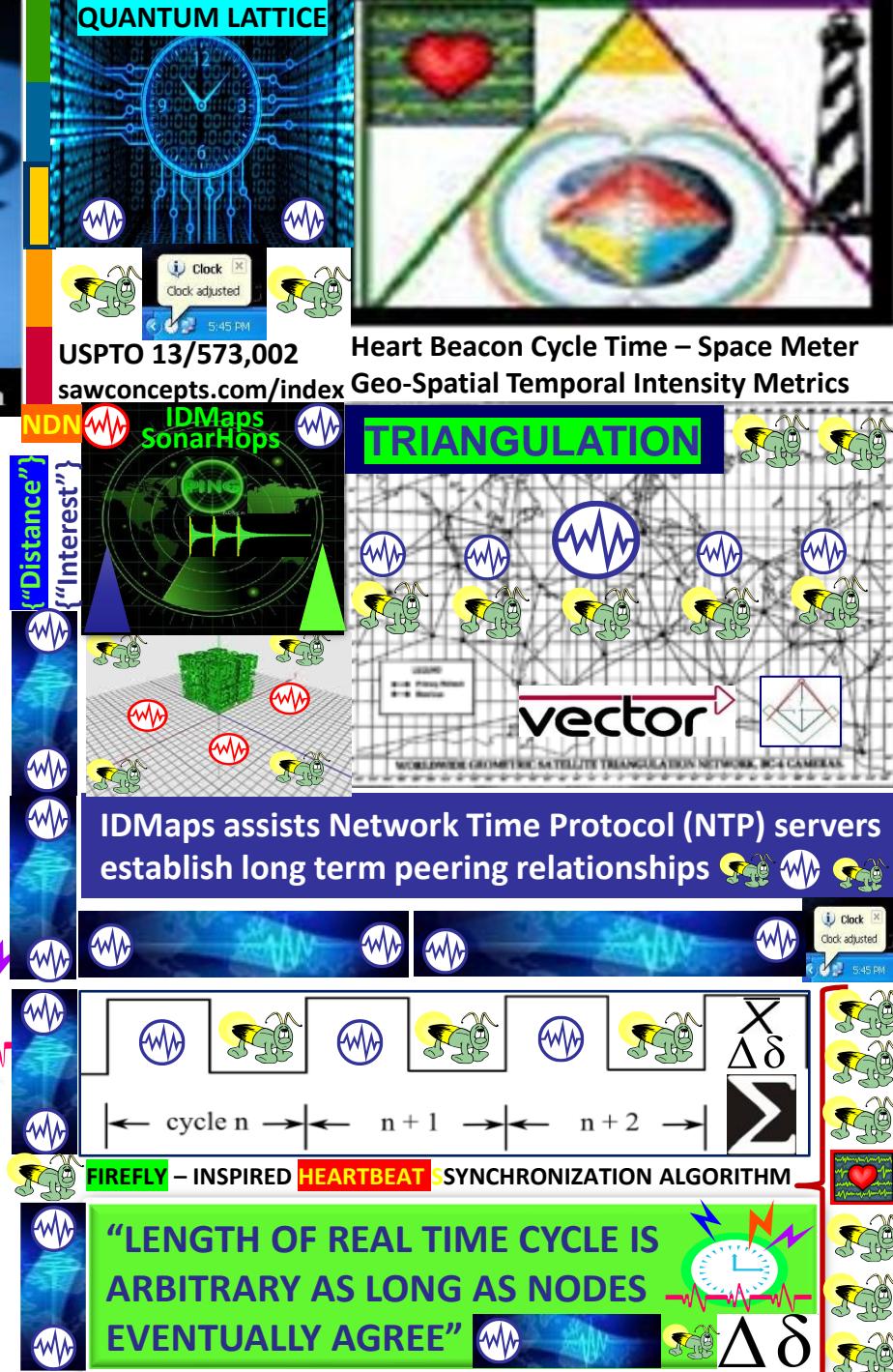


Figure U-1.

E = Expanding Neutral Point

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





TERRA
TRC



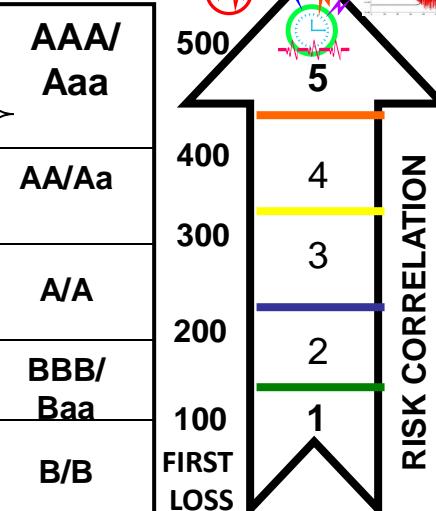
ECONOMIC HEARTBEAT



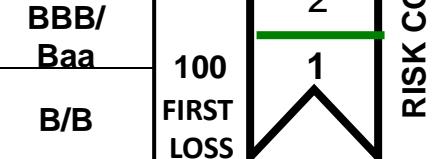
HB MSG </108>
PROTOCOL

INDUSTRY-DRIVEN MESSAGING STANDARD

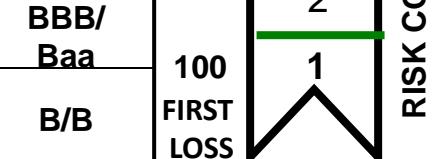
LAST LOSS



RISK CORRELATION



PROCESS BY PRECEDENCE



RISK CORRELATION

IEEE 802.15.4 OASIS MQTT

TELEMETRY TRANSPORT

IEEE 802.1AG HOP BY HOP

DETECTION

Bitcoin = Property

IRS Memo #1421

% Block Mined
% Block owned
Mined Bitcoins

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

Triangulation

Euclidian Geo

GPS GEO LOC

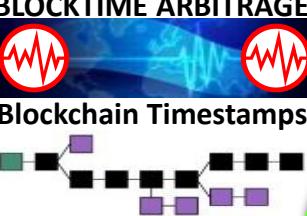
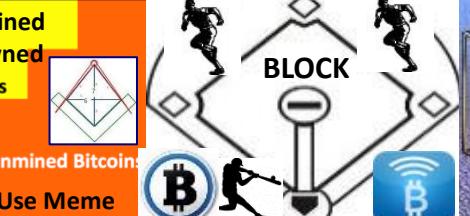
DATE TIME STAMP

NDN </INTEREST>

NDN {"DISTANCE"}

Demurrage Charges

vector



RISK CORRELATION

ON OFF SHORE

GEO LOC LAT / LONG

PING

Latency

Demurrage

Charges

vector

Triangulation

Euclidian Geo

GPS GEO LOC

DATE TIME STAMP

NDN </INTEREST>

NDN {"DISTANCE"}

Demurrage Charges

Multi-Meme Metrics

EVENT BUS

Match to Closest

Heartbeat Cycle

FIREFLY-HEARTBEAT

ALGORITHM

Heartbeat Snapshots

BLOCKCHAIN PARSING

ERLANG

Firefly Events

Strive to Sync

To Closest

Heartbeat

HOPS / RADIUS = REACHABILITY

WATER DROP IN POND MEME

AREA RADIUS

</FILTERS>

BY ORG ID / URN

NDN </INTEREST>

</DISTANCE>

Closer = Cheaper

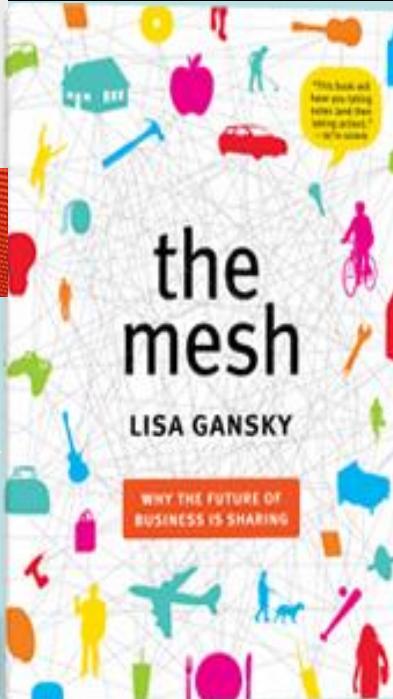
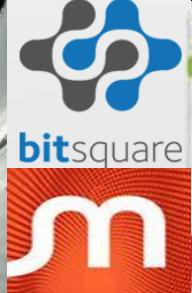
Closer = < Fuel



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

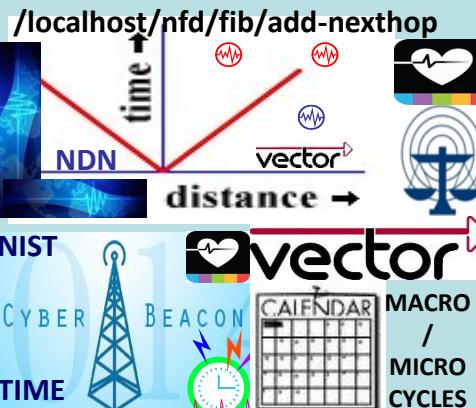
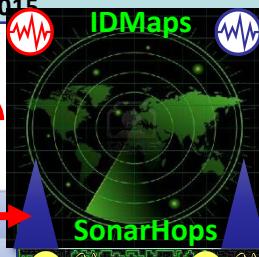
Social proximity

Temporal proximity

Agreements

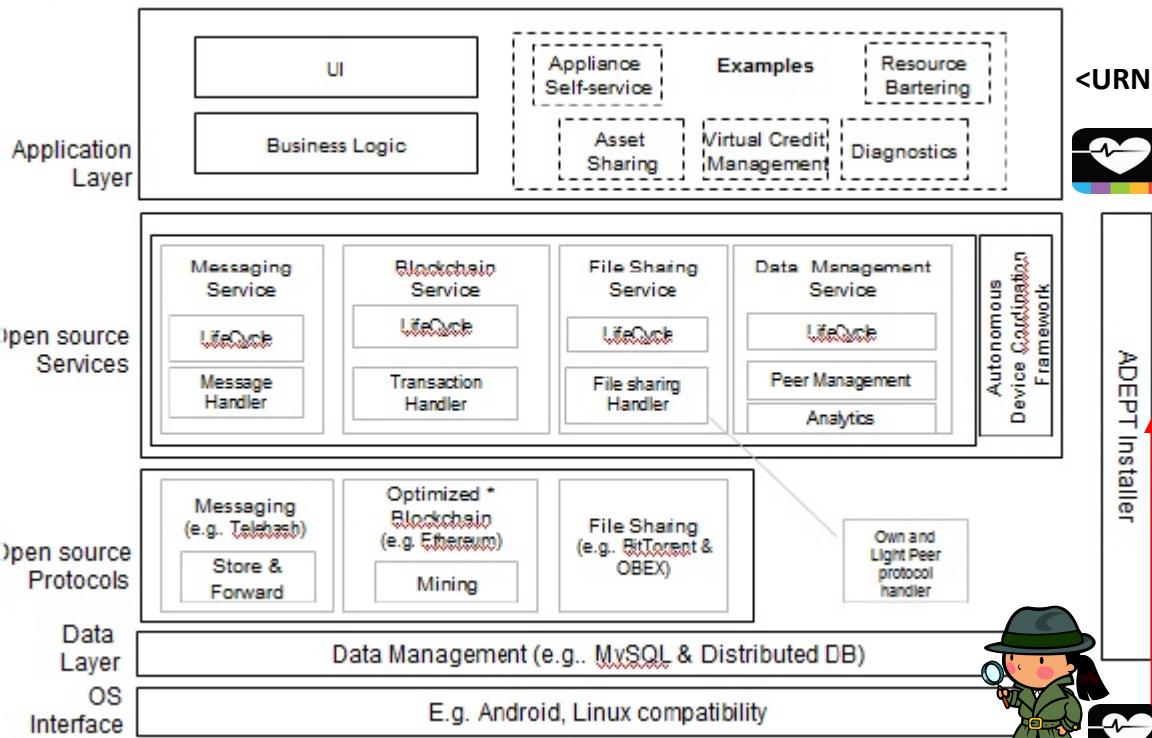
Payments

Barter



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

ADEPT Standard Peer Architecture – Logical View

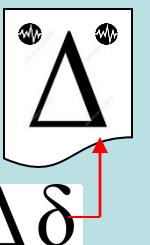


ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML_Wf>

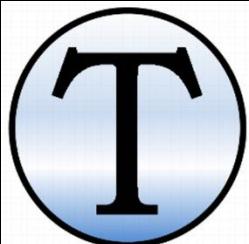


FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH



OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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



Three ideas combined

HOW TRUTHCOIN WORKS:

1) Tradable Reputation

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

2) SVD Cross-Validation

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



3) Strategic Use of TIME

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

2. A kind of ‘Future Wikipedia’

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

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

3. A software protocol

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

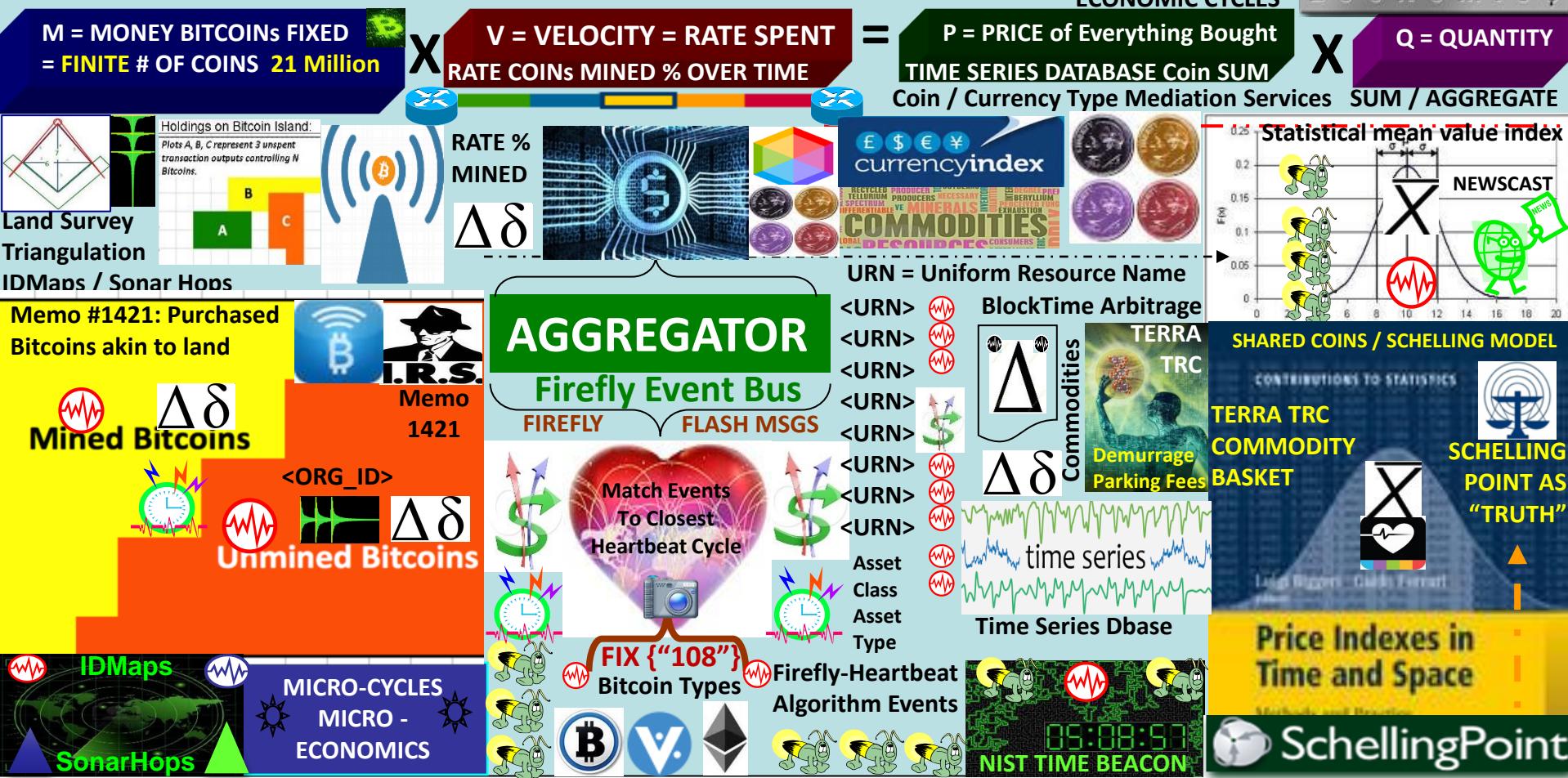


Protocol (Decentralized)	Centralized Non-Protocol
Spoken English	Shakespeare’s Globe Theatre, The Library of Alexandria, MLA Citation Format, Walt Whitman, J.K. Rowling.
Rules to American Football	The NFL, ESPN, The Buffalo Bills.
Bluetooth	A Set of Stereo Speakers, The iPhone 6, A Car Radio Equipped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

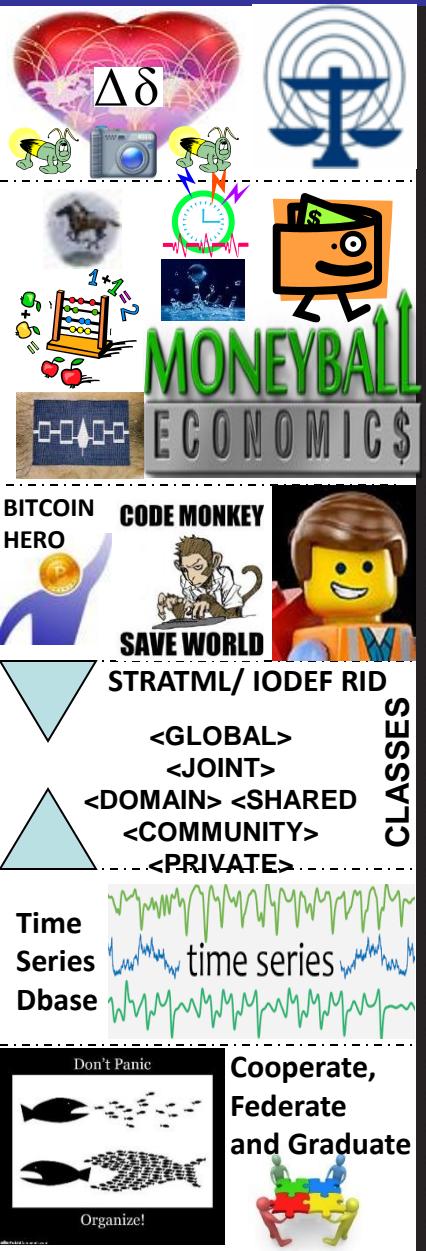
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

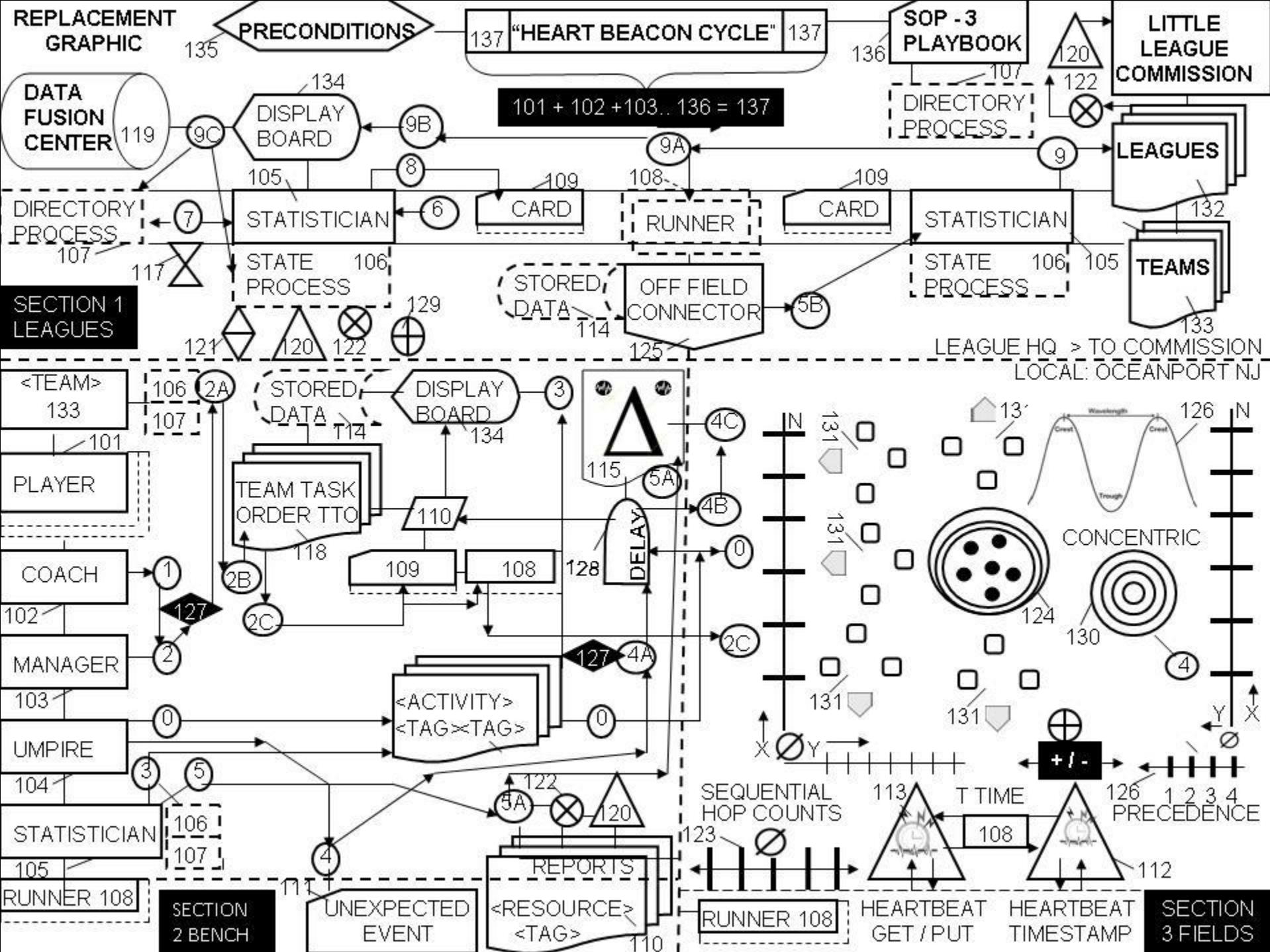
The most important equation in monetary economics, the equation of exchange: $MV=PQ$. The quantity of money (M) times the rate spent (V for velocity) equals the price of everything bought (P) times the amount bought (Q for quantity). In Bitcoin, M Money is on a predetermined path, converging to 21m bitcoins.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

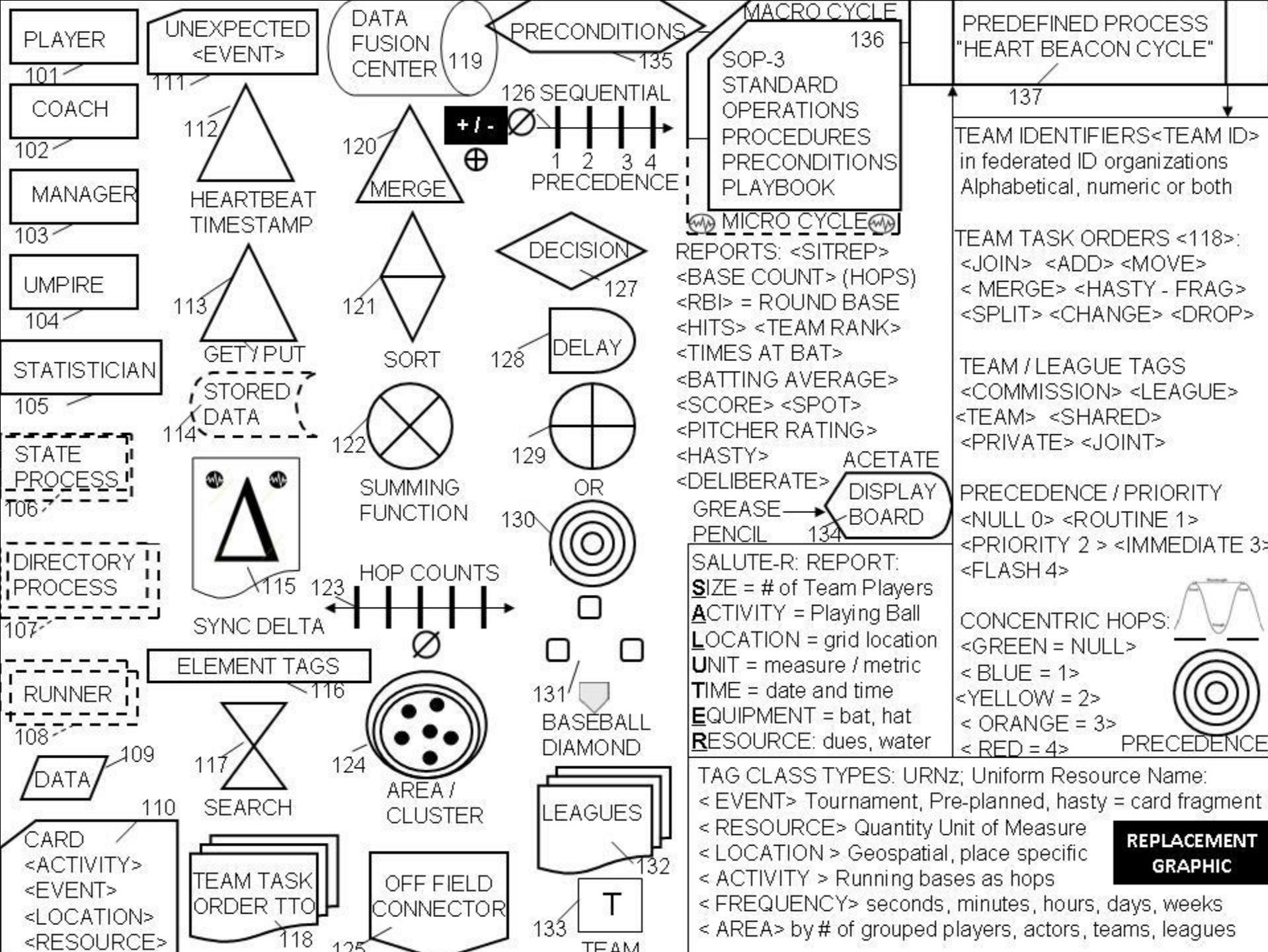


Gamification is the use of game thinking and game mechanics in non-game contexts to engage users in solving problems. Gamification techniques strive to leverage people's natural desires for competition, achievement, status, self-expression, altruism, closure.









BUILDING BLOCKS



TASK ON / OFF

201

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



MACRO CYCLES



.0001

MICRO CYCLES
216

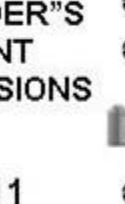
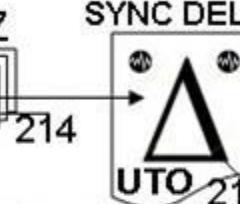
218

CLOUD COMPUTING

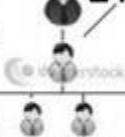
219

202 FEDERATED GROUP JOINS, MERGE, ADDS, DROPS

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



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

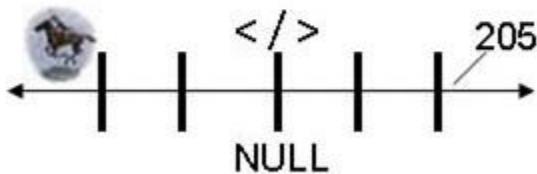


203

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

205



207

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



APPLIQUE' OVERLAYS



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

204

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



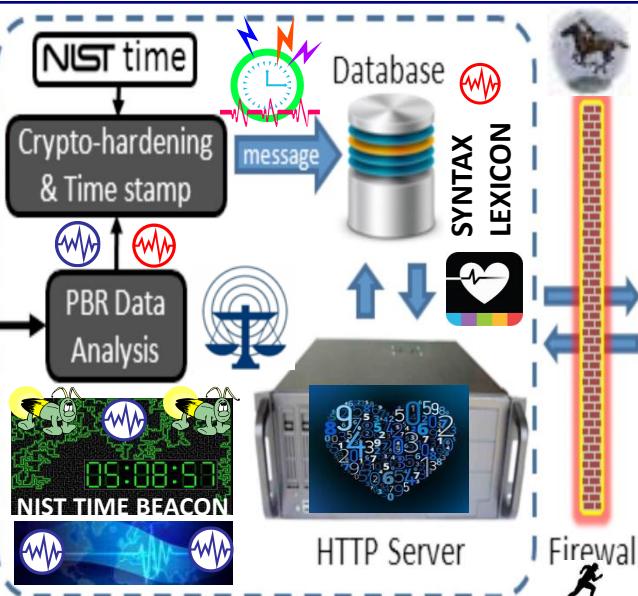
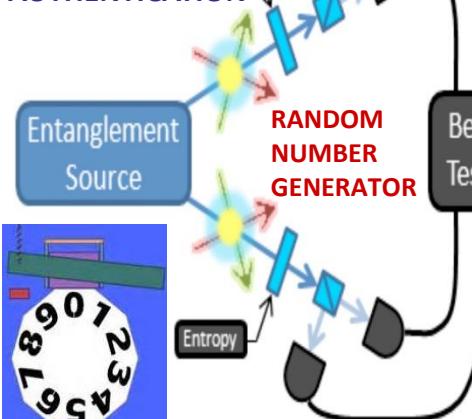
NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

UNPREDICTABLE SAMPLING

SECURE AUTHENTICATION

SECURE MULTI

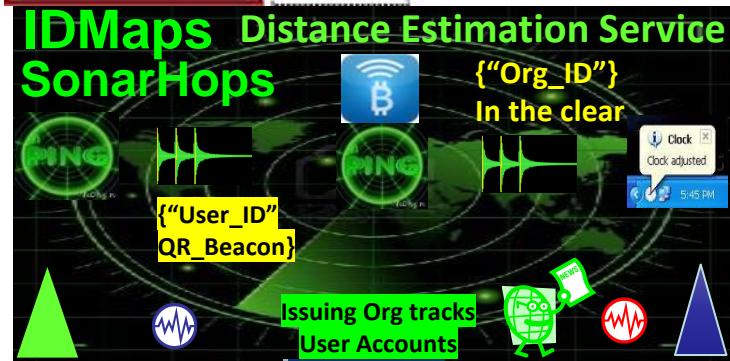
PARTY /
AUTHENTICATION



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**

Time / Distance Metrics



PROXIMITY

NDN
</Interest>
</Distance>

SURVEY METHODS
+ TRIANGULATION
Euclidian Geometry

Geodesic System Routing Info Base RIB

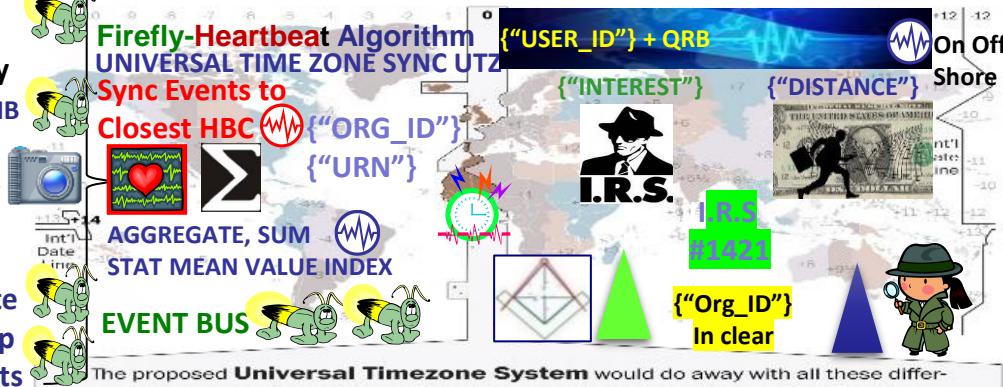
ACCOUNT BELONGS TO </Org_ID>

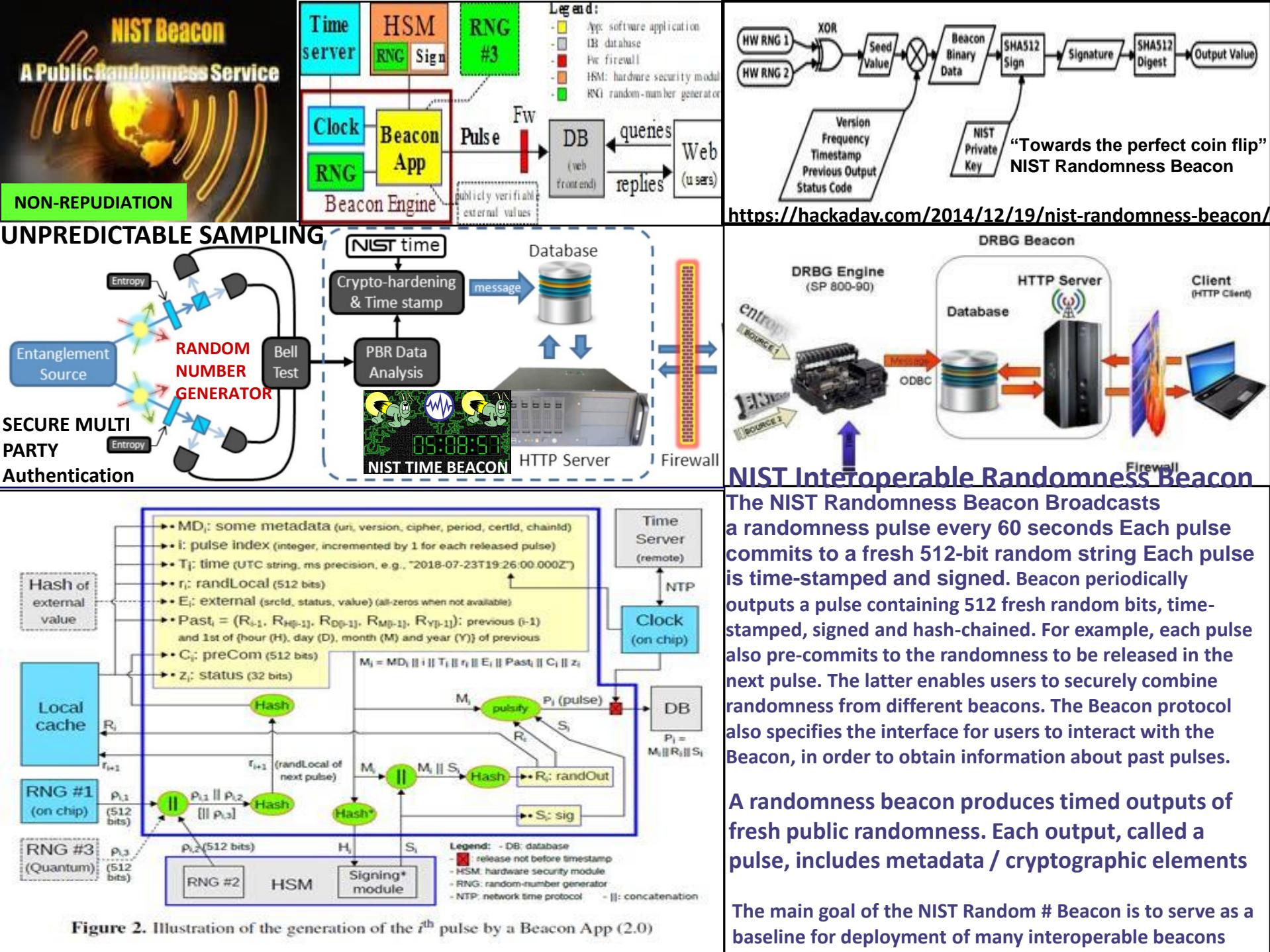
RESOURCE TYPE: <URN><URN><URN>

DEVICE / SENSORS <UUID><UUID>

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

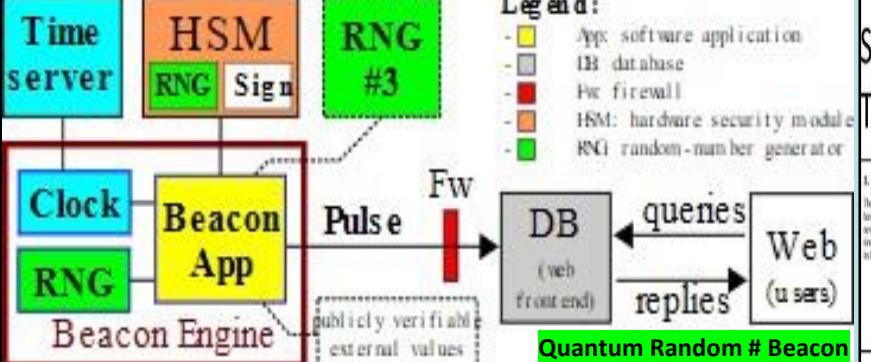
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind Coordinated Universal Time (UTC). However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours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





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

NIST Quantum Random Number Beacon



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

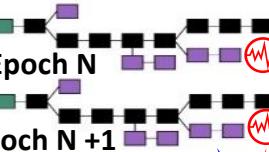
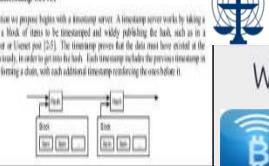


One solution is a **heartbeat**: defining a default lease duration delaying updates until the next **cycle**"

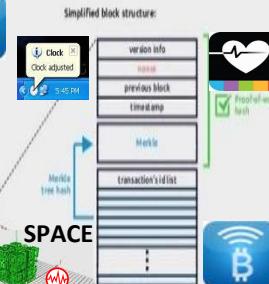


Satoshi Bitcoin Blockchain Time Stamp Server

1. Timestamp Server



What does a block look like?



ALGORITHMIC REGULATION HEARTBEAT SYNC DELTAS



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

Epoch Time Cycles

E0 E1 E2 E3...



ROSETTA ("Org_ID"){"URN"}



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



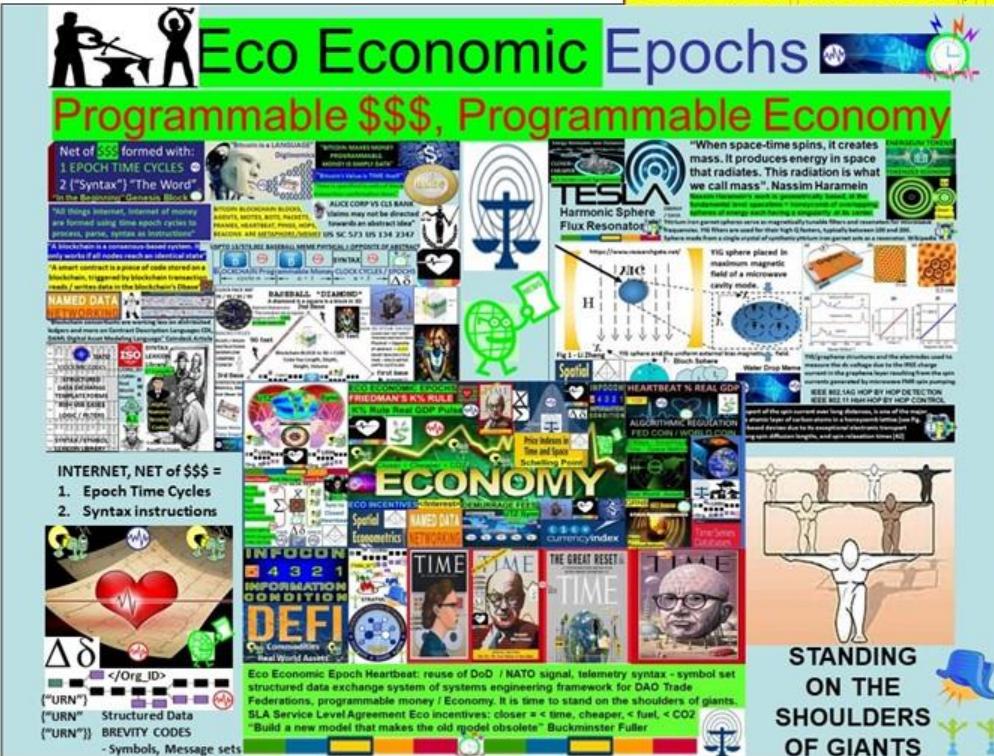
World monetary unit World energy grid



MICRO CHIP BASED CURRENCIES
CRYPTO CURRENCY
MINING CHIP FARMS

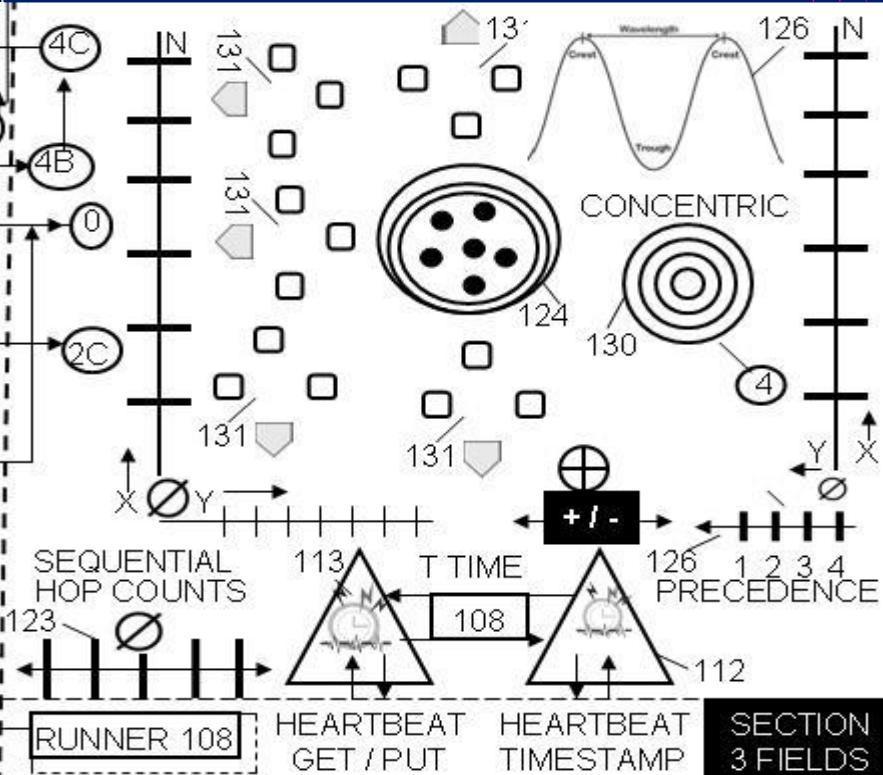
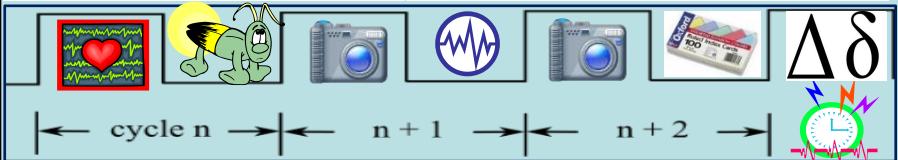
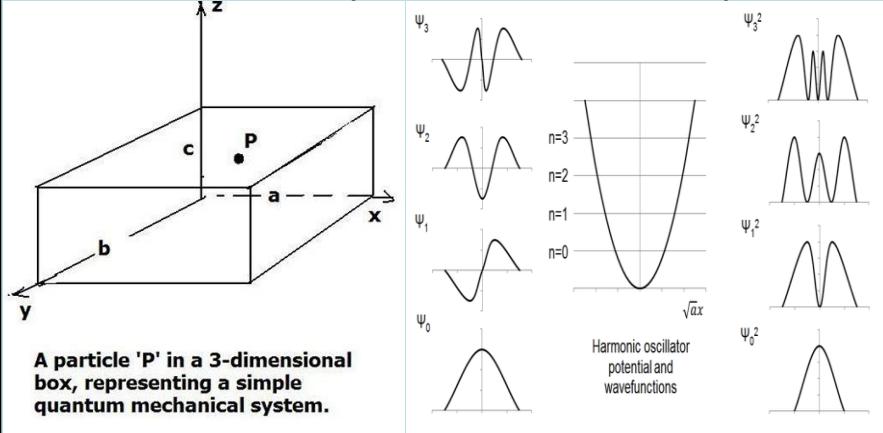


GEO MAGNETIC POLE SHIFT EVENTS



Germany Weimar Republic 1929
E 5 reichsmark Silver Silver Plated

QUANTUM COMPUTING / HBC TIME – SPACE METER / METRICS



#QuantumComputing USct Alice Corp Vs CLS Bank compliant memes:
In quantum computing, a qubit (or quantum bit (sometimes qbit) is a unit of quantum information—the quantum analogue of the classical binary bit. A qubit is a two-state quantum-mechanical system, such as the polarization of a single photon: the two states are vertical polarization and horizontal polarization. In a classical system, a bit has to be in one state or the other. Quantum mechanics allows a qubit to be in a superposition of both states at the same time, a fundamental quantum computing property

US Sct Alice Corp Vs CLS Bank Physical memes

Linear sequential “Paul Revere” meme = horizontal polarization

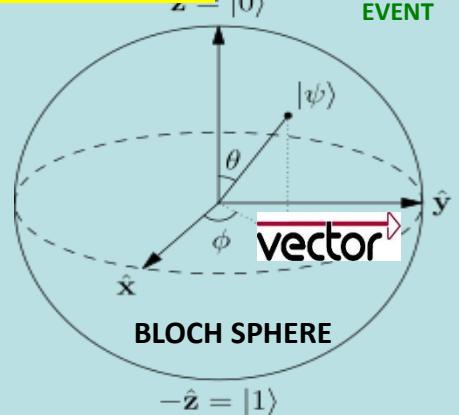
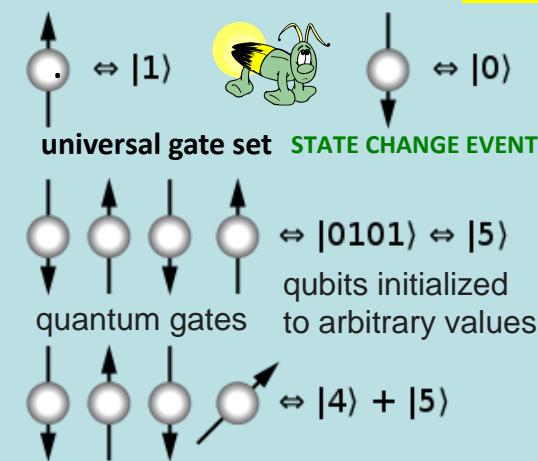
Vertical polarization vectors from a known point 0 null Sonar Hop meme



particle representation / samples



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



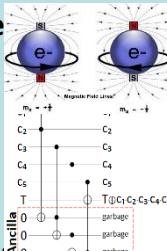
qubits can be in a superposition of all the classically allowed states

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



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

$$|00\rangle = \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix} \quad |01\rangle = \begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix} \quad |11\rangle = \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix}$$

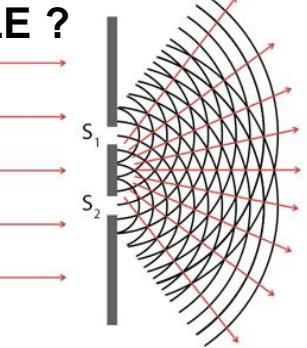


Double-Slit Experiment

Screen with two slits

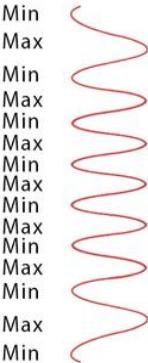
PARTICLE ?

Sodium lamp



Screen

WAVE ?

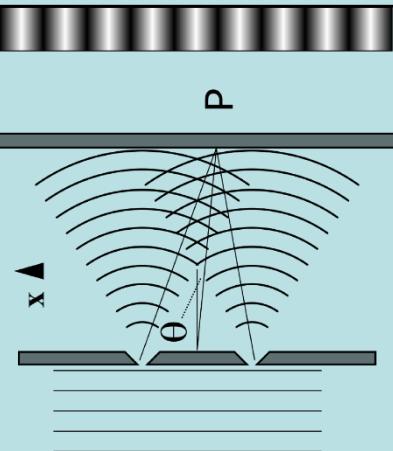


Light source Rays of light coming from the source reach the slits

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

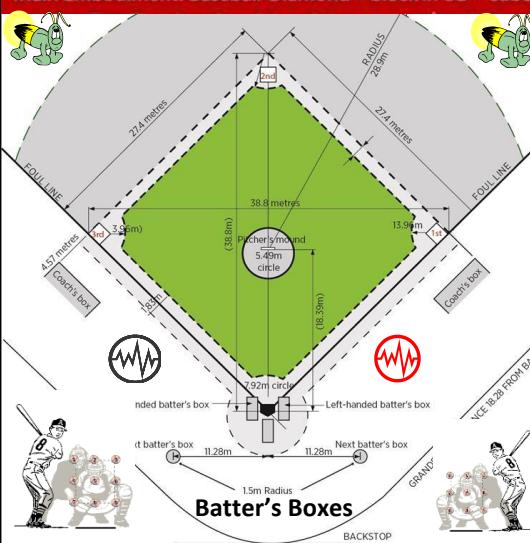


SCOTUS ALICE RULING: "Claims may not direct towards abstract ideas" / Physical = opposite of abstract

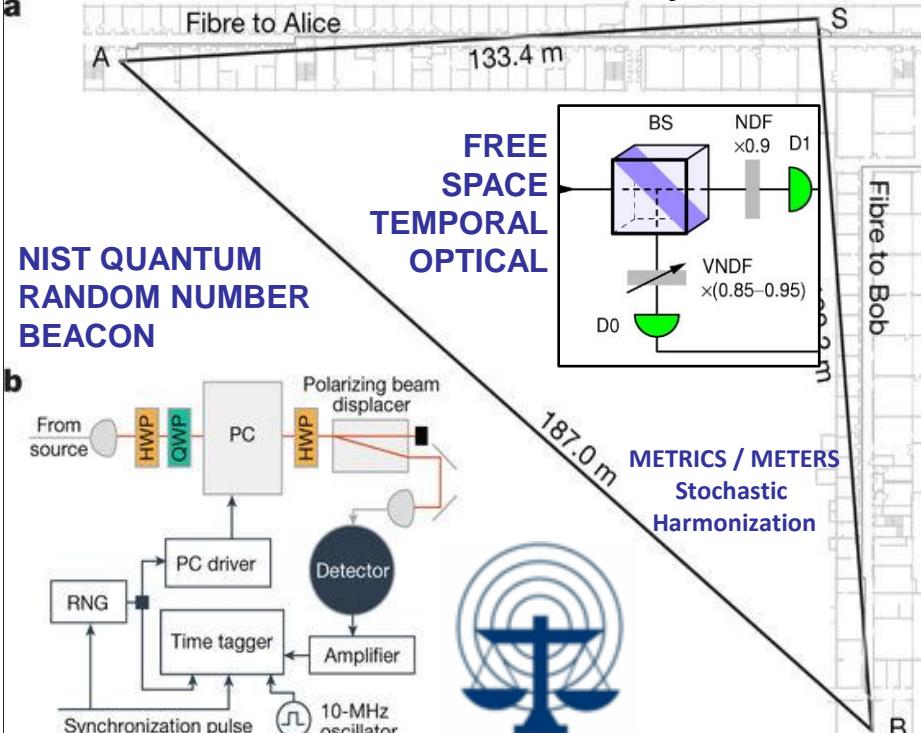
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

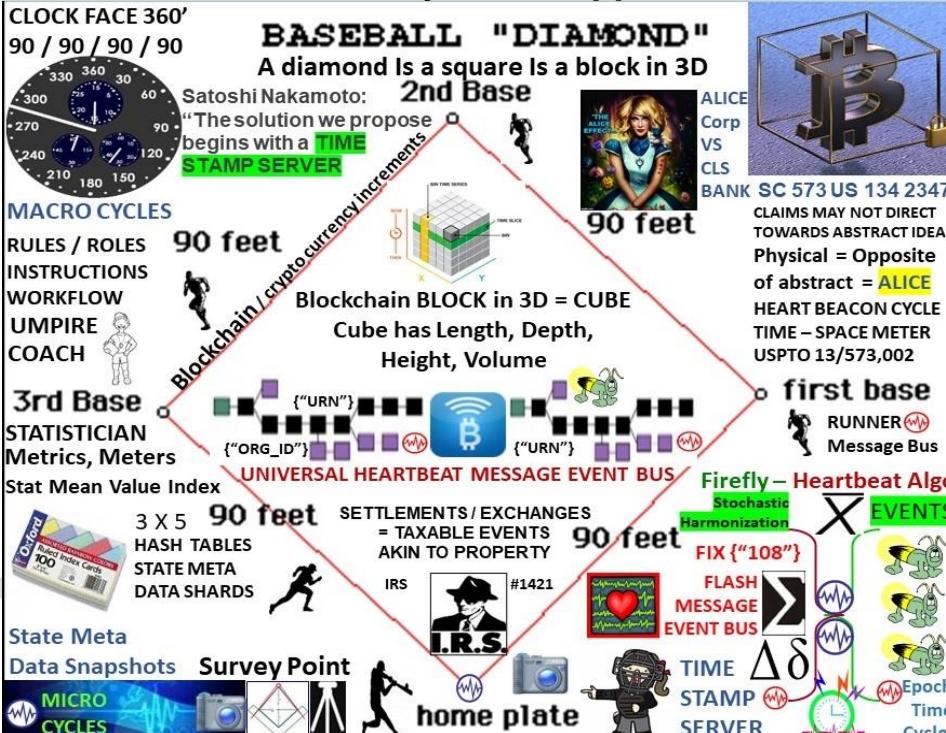
Main Embodiment: Baseball Diamond = block in 3D = cube



a



b



The Hopf Fibration

Edmund Harriss

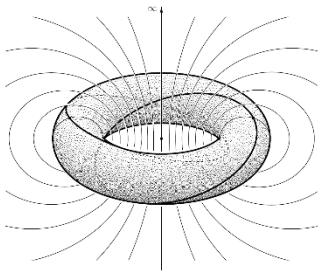
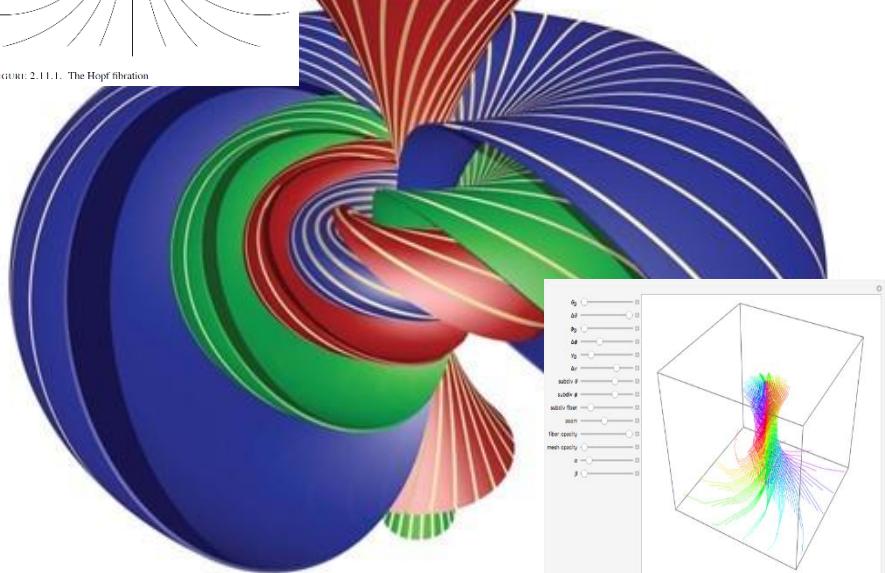
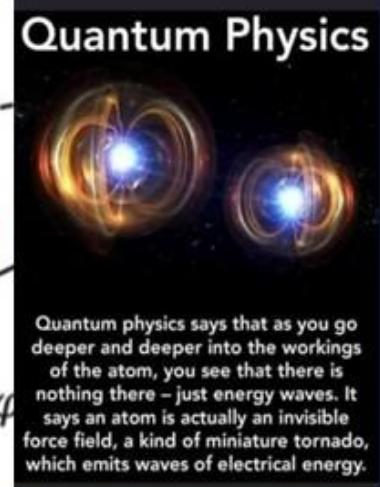
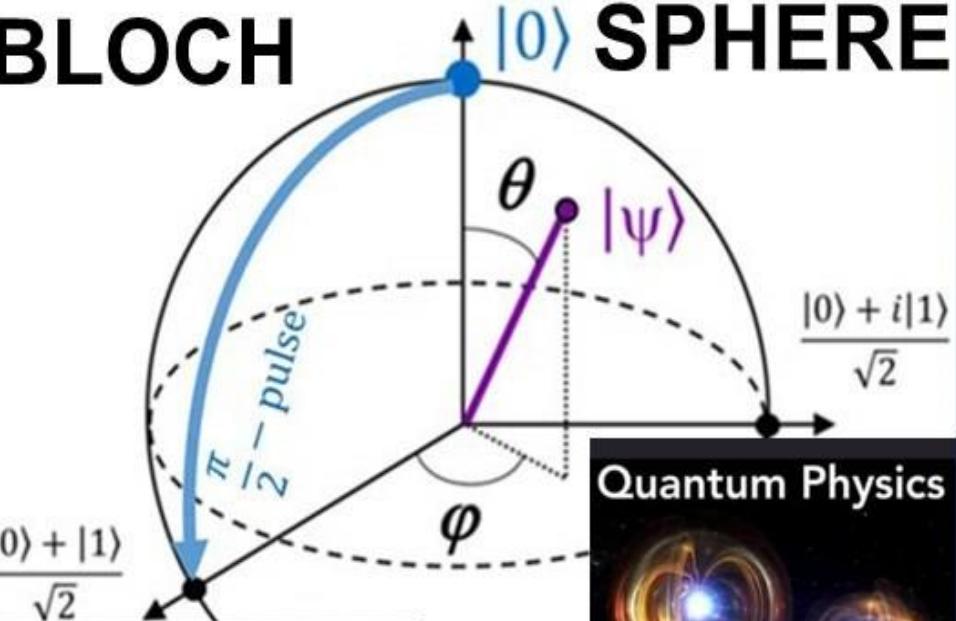


FIGURE 2.11.1. The Hopf fibration



BLOCH SPHERE



Quantum physics says that as you go deeper and deeper into the workings of the atom, you see that there is nothing there – just energy waves. It says an atom is actually an invisible force field, a kind of miniature tornado, which emits waves of electrical energy.

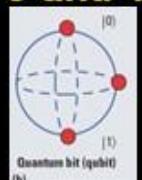
Hopf Fibration / #Bloch sphere

"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

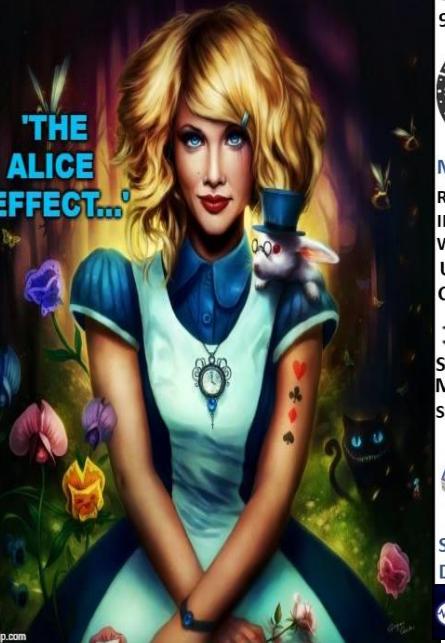
What Really Happened?

William A. Cook



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

Application Developers Alliance

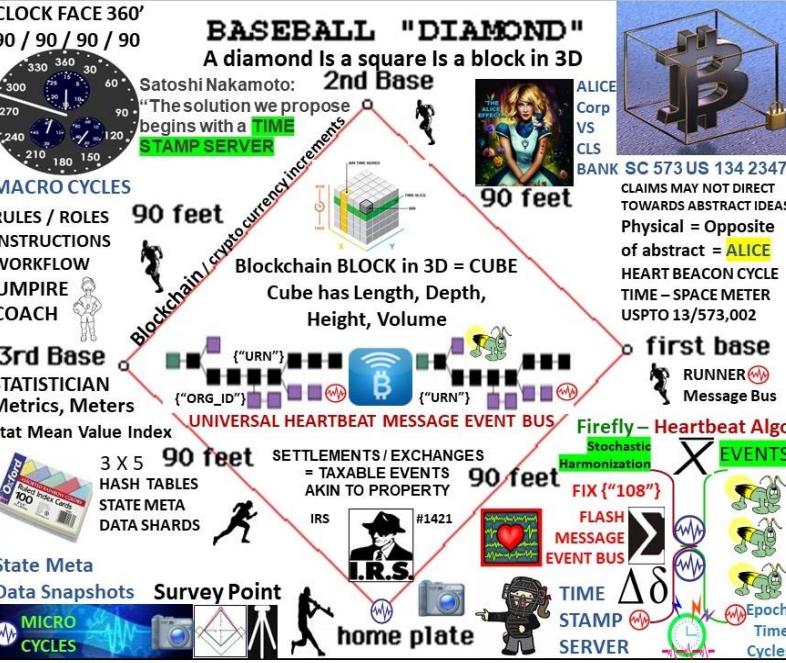


Alice Corp. v. CLS Bank International, 573 U.S. 134 S. Ct. 2347 (2014)
RULING: “claims may not direct towards abstract ideas”

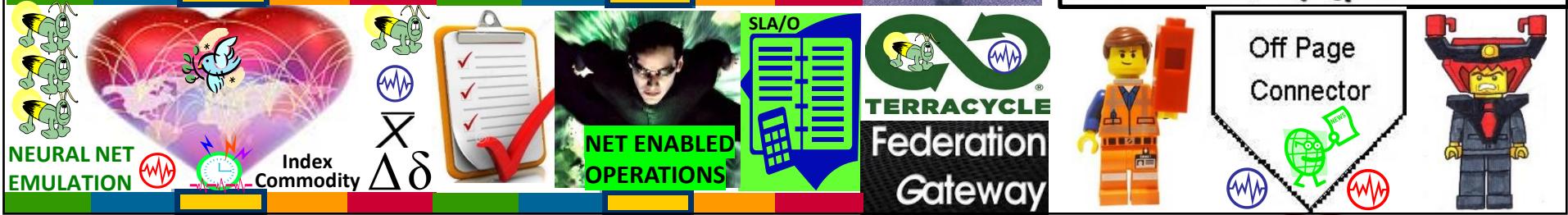


USPTO SCREEN CAPTURES SUSPENDED PAIR RULES

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

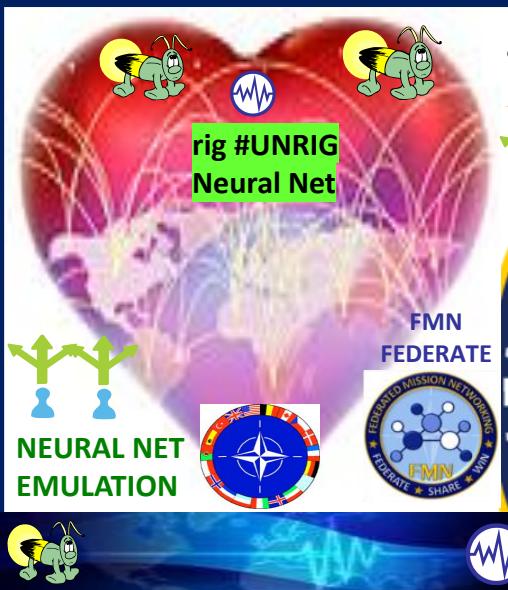






MINIMUM LIST OF COMPONENTS, BUILDING BLOCKS, PROCESSES, PROCEDURES AGREED ON BY TRADE FEDERATIONS TO ACHIEVE DISTRIBUTED AUTONOMOUS ORGANIZATION DAO CONSENSUS





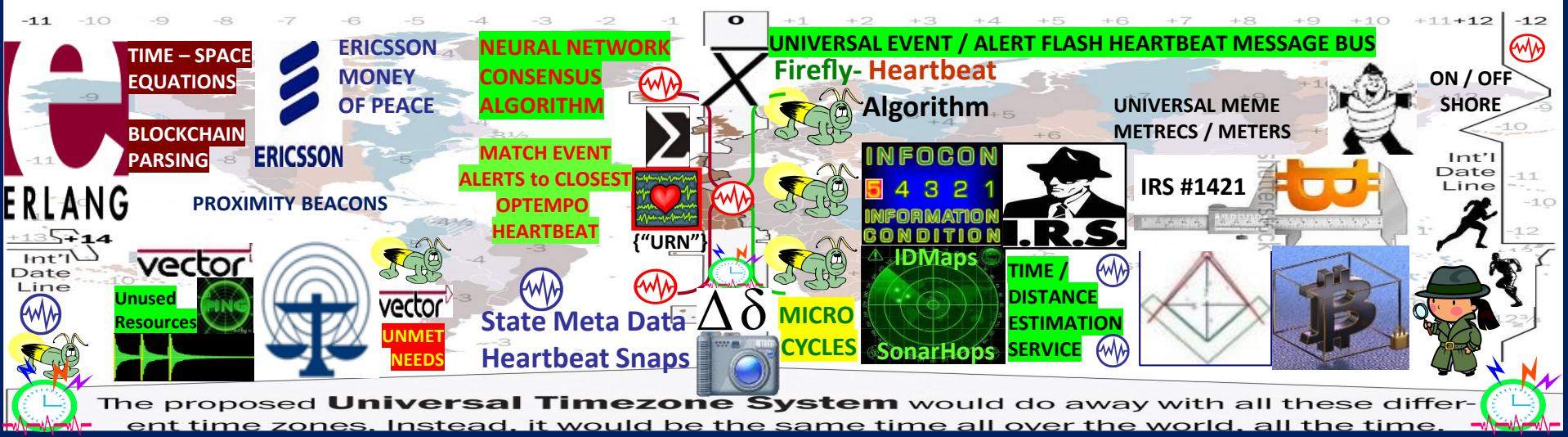
#UNRIG Marine Corps Data Center Robert Steele RIP

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



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

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



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

DAO: Distributed Autonomous Organization

RAND term circa 2000 / The TAO OF THE DAO

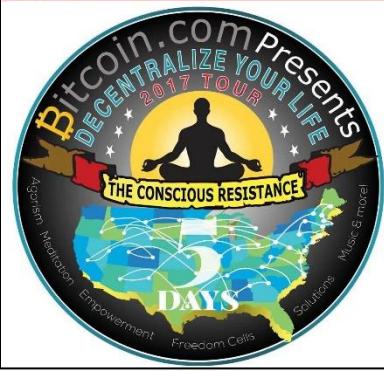
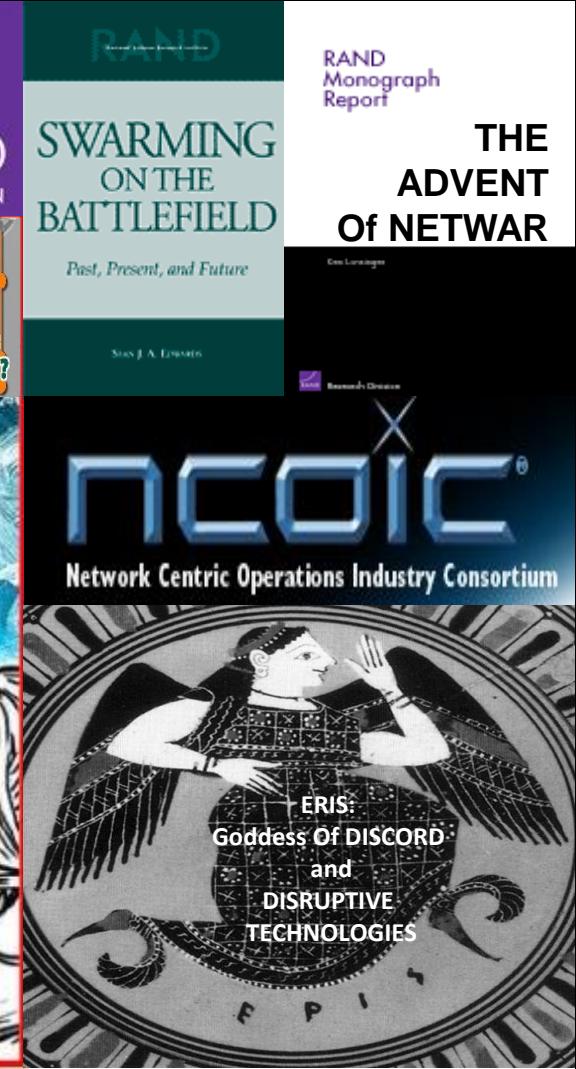
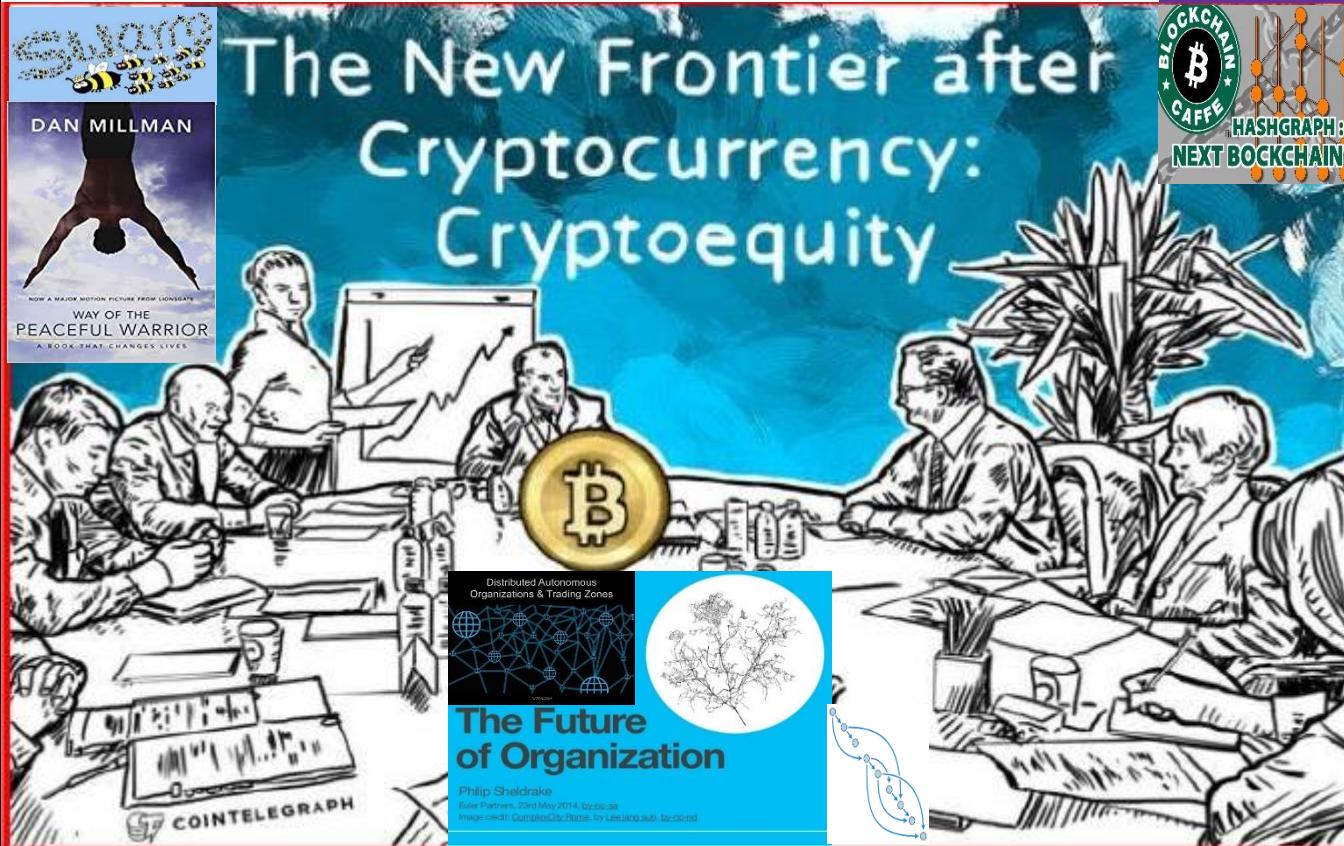
SWARMING AND THE FUTURE OF CONFLICT



RAND

RAND
Monograph
Report

THE
ADVENT
Of NETWAR



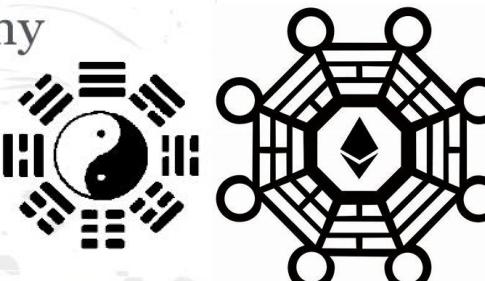
<http://cointelegraph.com/news/112077/the-new-frontier-after-cryptocurrency-cryptoequity>

Taoism Philosophy

Taoism represents:

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

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



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

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

@TheBitcoinArmy





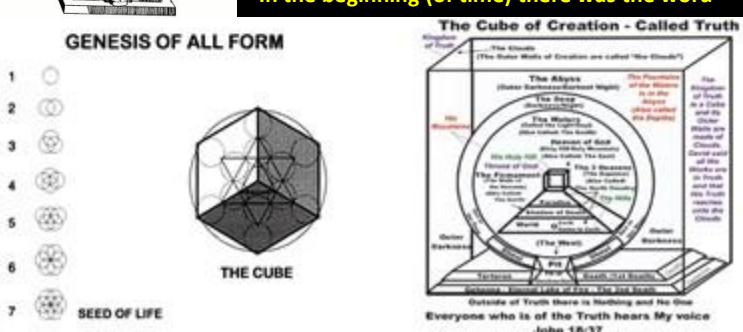
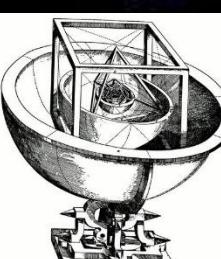
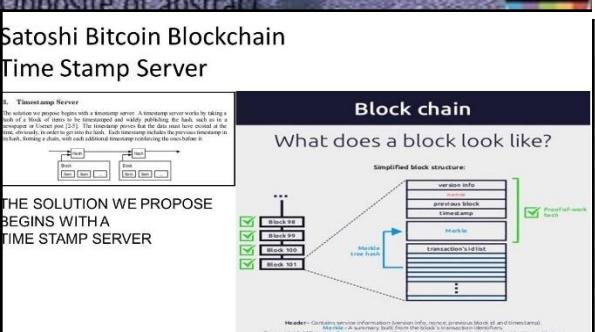
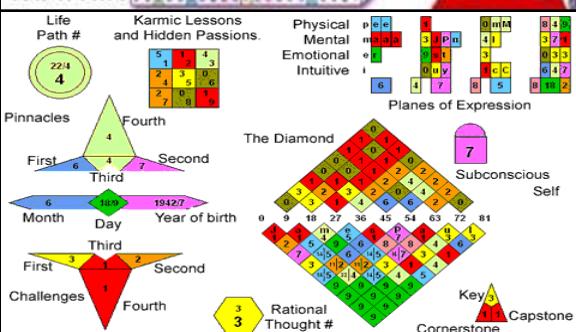
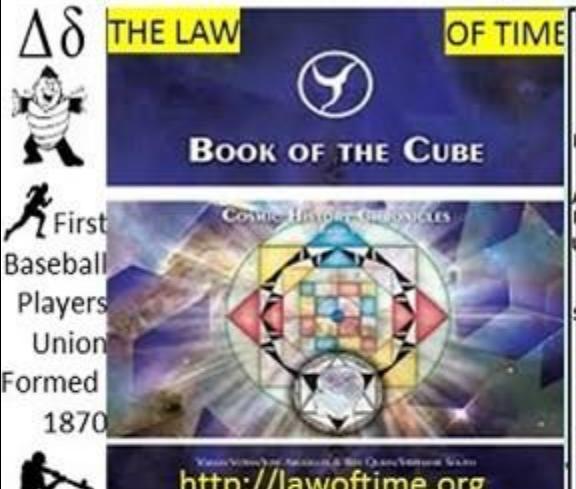
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

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

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

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



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





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

-Buckminster Fuller

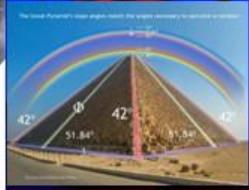


THE GREAT CONJUNCTION IN AQUARIUS

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

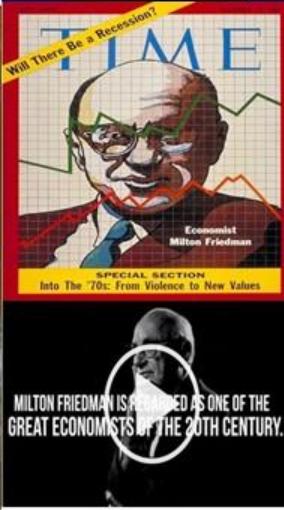
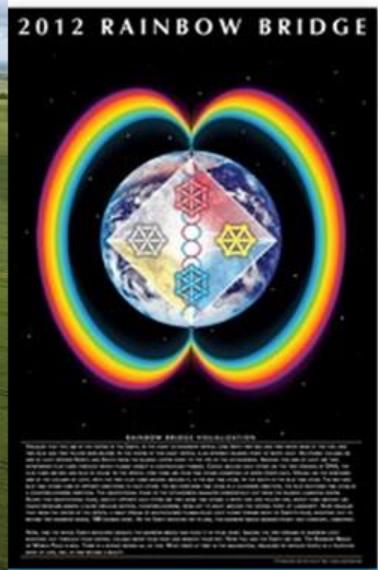
Over the next ten years, we are going to see our world innovate unlike never before, particularly in the fields of AI, technology, science, space travel, UFOs, networks, and the Internet. Major Universal truths will also be revealed as we welcome the New Age of Aquarius. The old world will soon come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

photo by werner du plessis



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

~ Edgar Cayce



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

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

Milton Friedman — Preface to Capitalism & Freedom 1962

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

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

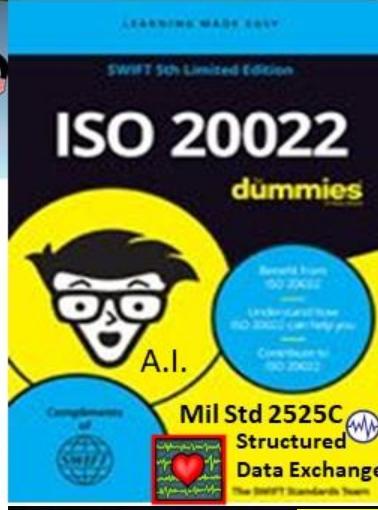
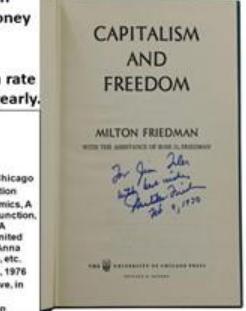


Milton Friedman

- 1912-2006
- Economist, monetarist
- 1946-1977: University of Chicago
- 1977-2006: Hoover Institution
- Essays on Positive Economics, A Theory of Consumption Function, Capitalism and Freedom, A Monetary History of the United States (1867-1960) - with Anna Schwartz, Price Theory, 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 10th 1960

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

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

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

