



Battlefield Digitization

OOTW Operations Other Than War



Algorithmic Regulation

SYSTEM HEARTBEAT



NETWORK HEARTBEAT



INTERNET, NET of \$\$\$ =

- 1. Epoch Time Cycles**
- 2. Syntax instructions**



$\Delta \delta$

</K.0099>

</Org_ID>

{“URN”}

{“URN”} 300 + Use Case message sets

{“URN”} OPSCODE BREVITY CODES

</URN> - Symbols, symbol sets



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

FOUNDATION TECH shared framework

Standards. Sync. Stochastic Harmonization



Structured Data Standards / Quantum computing, A.I.



FOUNDATION TECH

For Programmable \$\$\$

Programmable Economy

Eco Economic Epochs

Symbol / Message Sets A.I.



FIREFLY Inspired

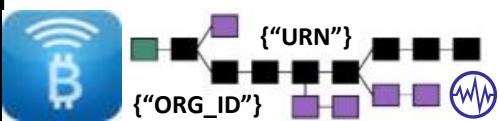
Heartbeat Algorithm

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

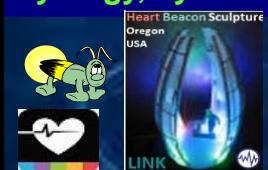


"Shared situational awareness enables collaboration synchronization, and enhances sustainability, speed of command"



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



OPERATIONS
OTHER
THAN
WAR



Beacon Communities

Vernetzte Operationsführung

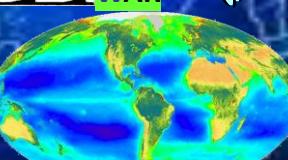


Proximity Beacons



JAEGERS

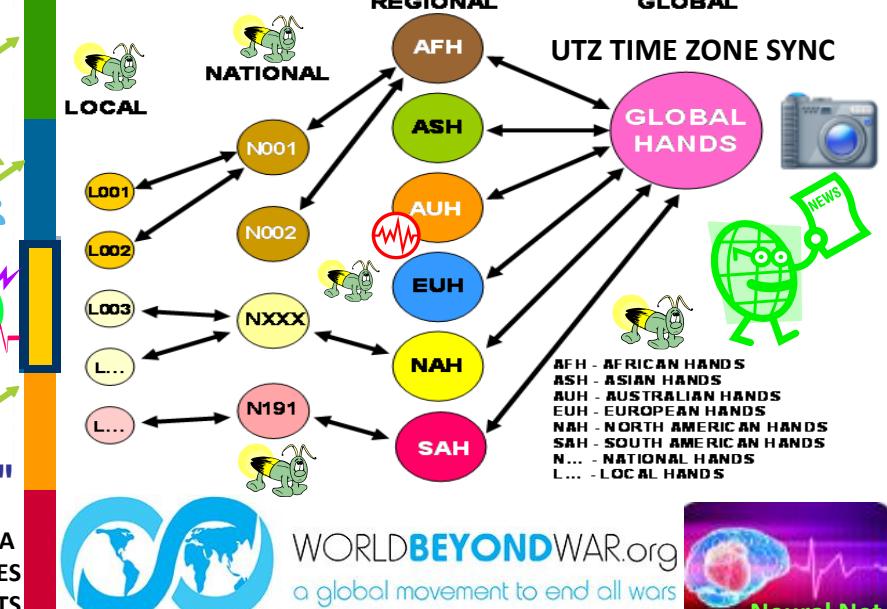
Closer < \$\$\$ < FUEL



KAIJU



SYSTEM
Of
SYSTEMS



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



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



DAN MILLMAN

OFF SHORE
OUTER BANKS



Eco Economic Epochs Heartbeat

DEFI FINTECH IP WARS / Litigation Foundation Tech



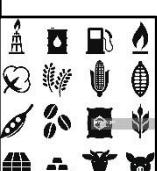
SWORDS to PLOWSHARES



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



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



YNC DELTA $\Delta\delta$
ATA SNAPSHOT

INFOCON
1 4 3 2 1
INFORMATION
CONDITION

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

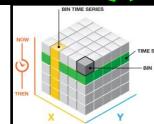
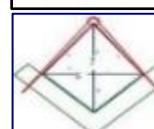
The collage includes the following elements:
 - A network diagram showing nodes connected by lines, with labels like "</URN>" and "{“ORG_ID”}".
 - A green cartoon ant with a speech bubble containing "K % Rule".
 - A blue circular icon featuring a white robot head.
 - A red heart with a yellow ECG line running through it.
 - A globe icon with a grid pattern.
 - A 3D cube diagram labeled "MIN TIME SERIES" with axes X, Y, and Z.

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

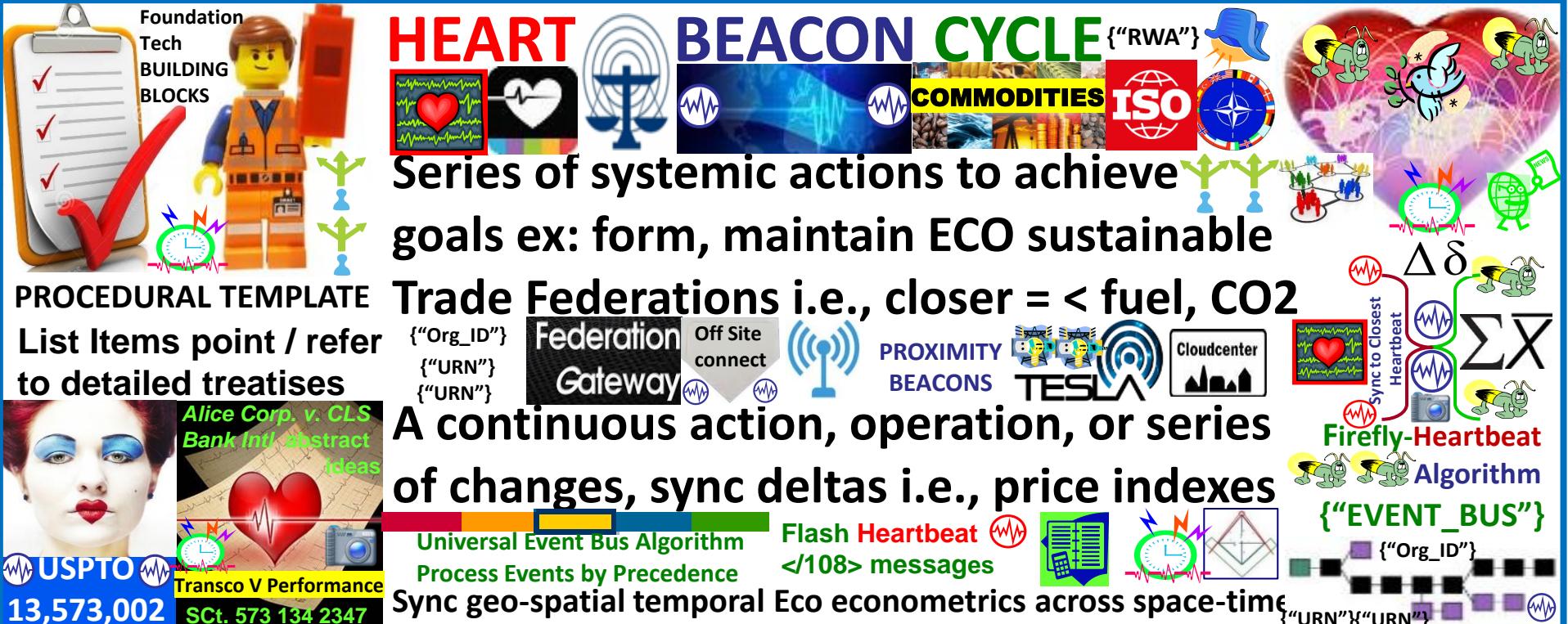


Net, Net of \$\$\$ money consists:

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



MEMO #1421



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

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

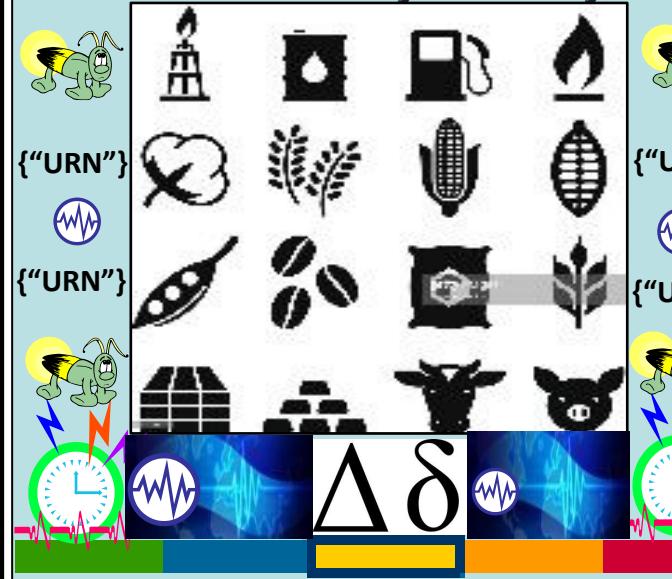
CHECKLIST: TRADE FEDERATION ECONOMIC FRAMEWORK EX:

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

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



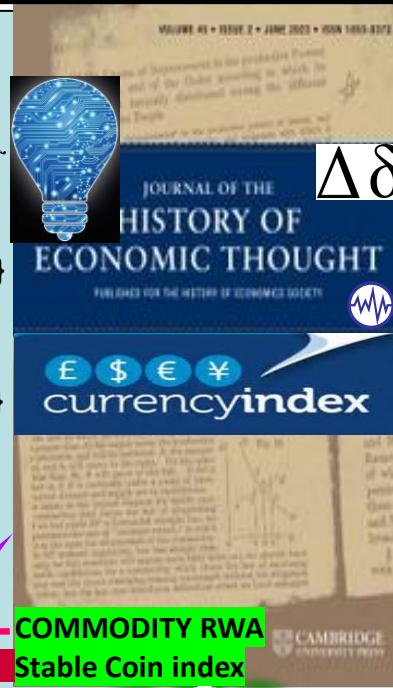
Tokenization of Physical Assets Enables Economy Of Everything



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



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



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



"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

Thomas Edison's Monetary Option

Cambridge University Press 2009

“Crops hold their value best over time”



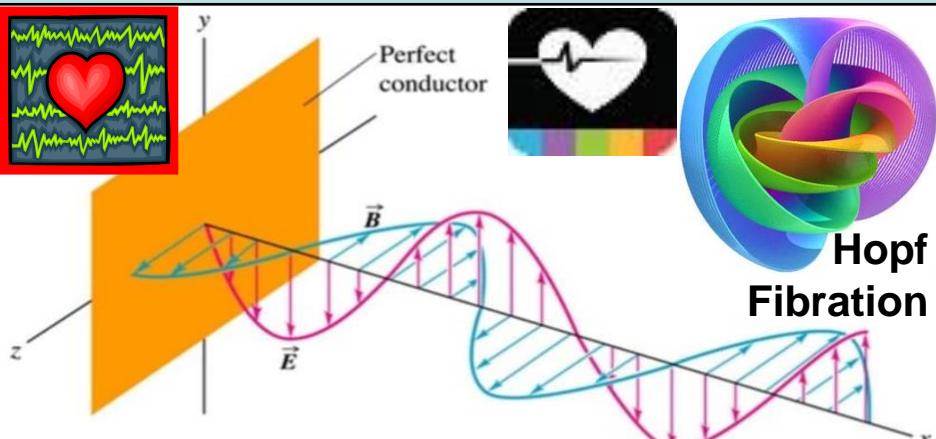
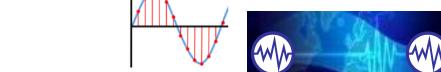
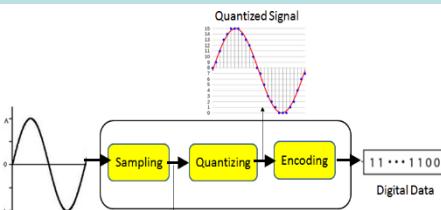
</Organizational_ID> </Personal_ID> USPTO 13/573.002 The Heart Beacon Cycle Time – Space Meter

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

ENERGY / DATA WAVE PROPAGATION / METRICS / METERS

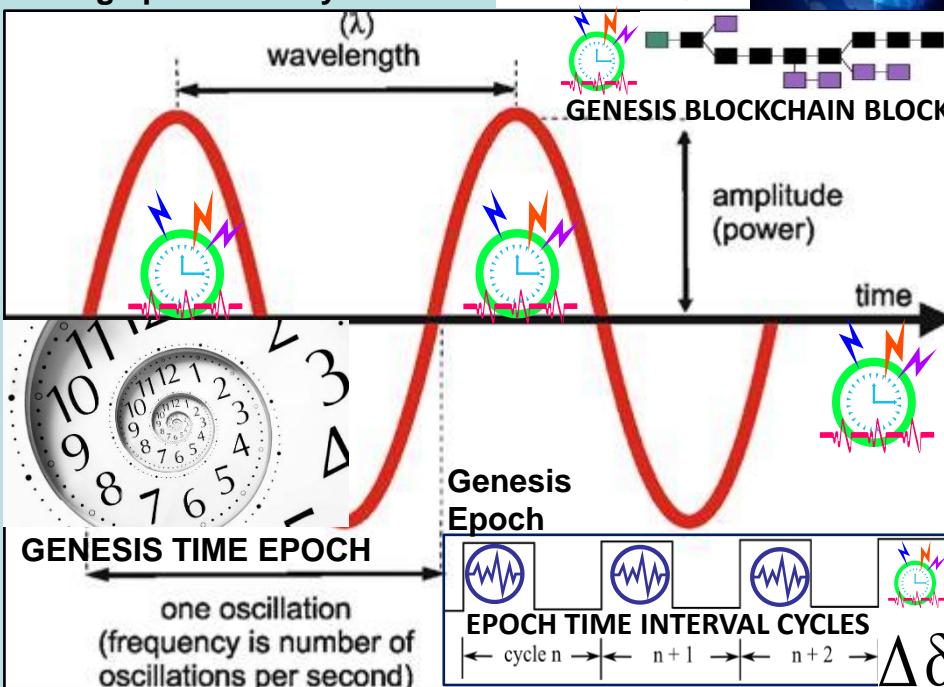
1) Time epochs created by quartz crystal silicon chips

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

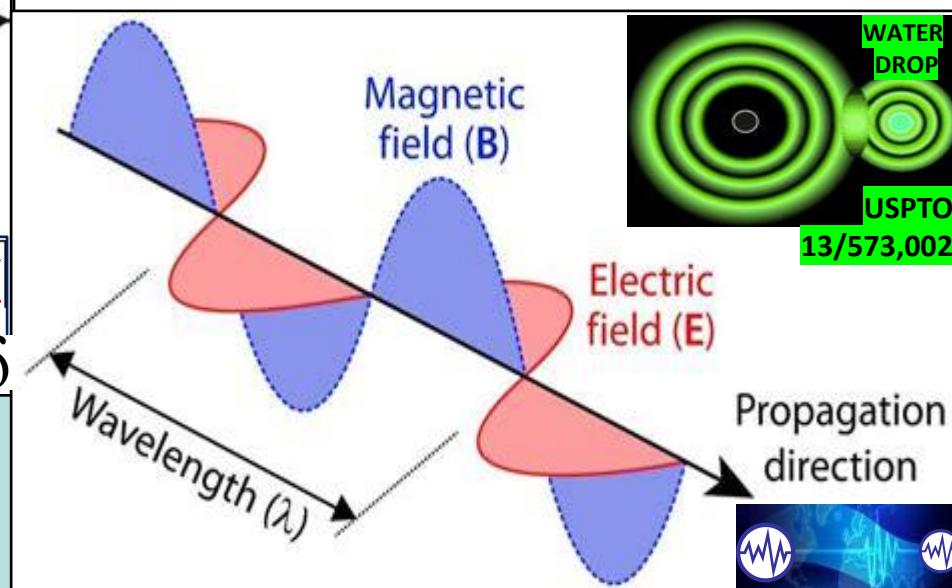


STANDING ELECTRO- MAGNETIC WAVE

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.

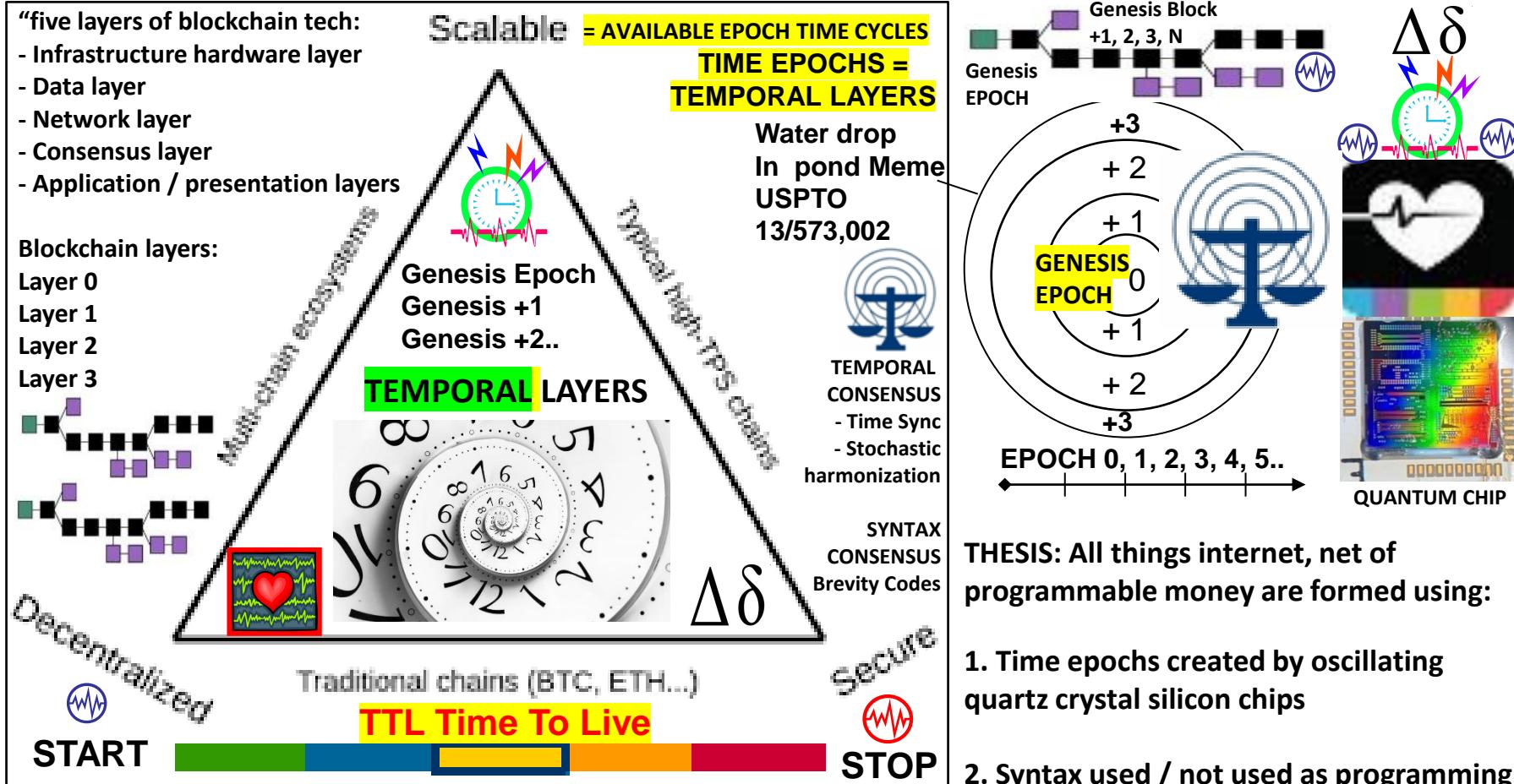


Quantum Computing Vibrations encode, process data like quantum computers. A simple mechanical system built from aluminum rods uses vibrations to encode information, mimicking quantum computing in a non-quantum system. "Light is made from photons, the quantum of light." mechanical vibrations or sound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



"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

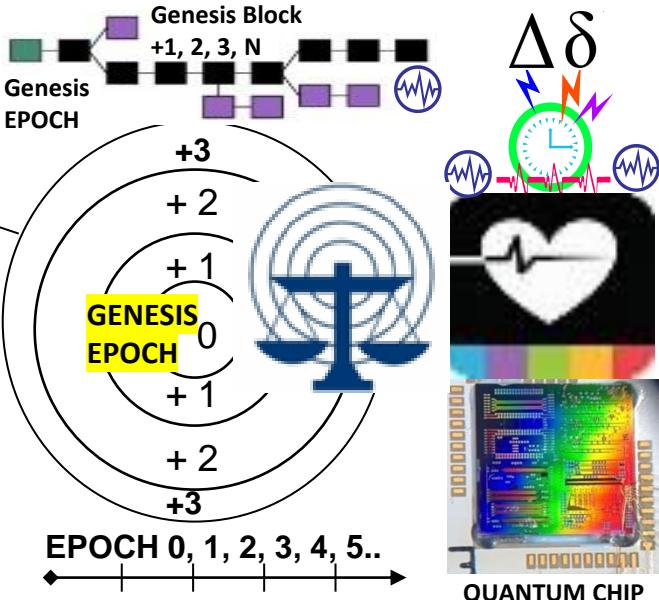
Blockchain Quad-lemma



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.

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

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



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

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

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



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

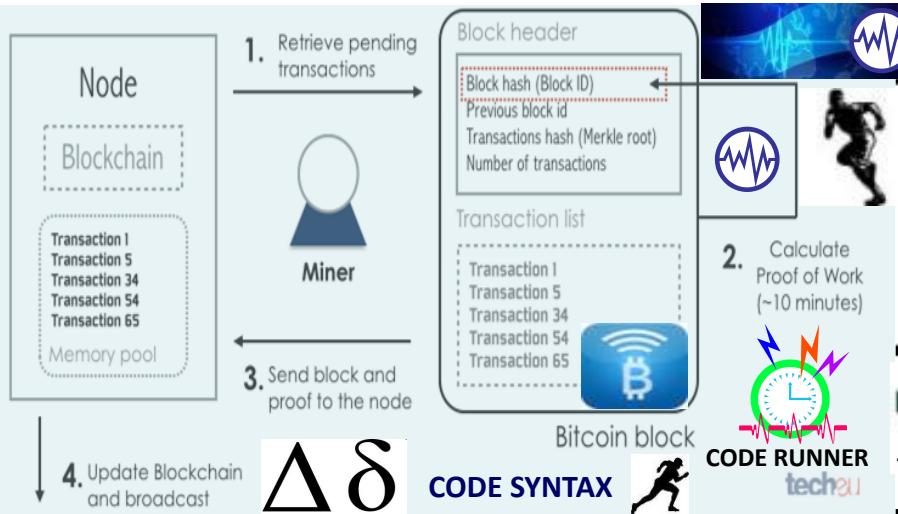


Bitcoin is a language”

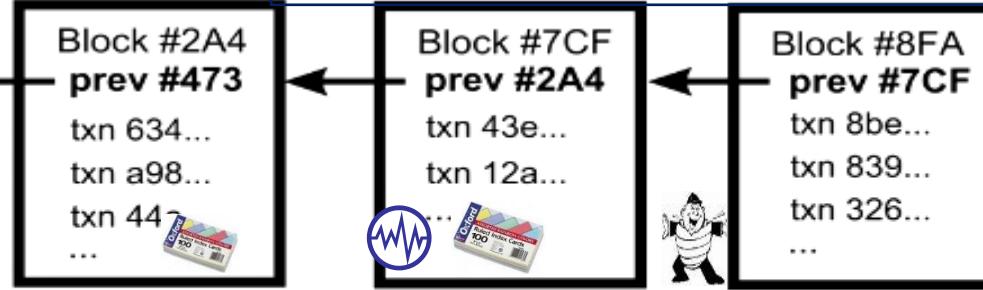
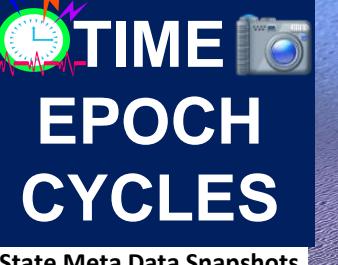
WIRED

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

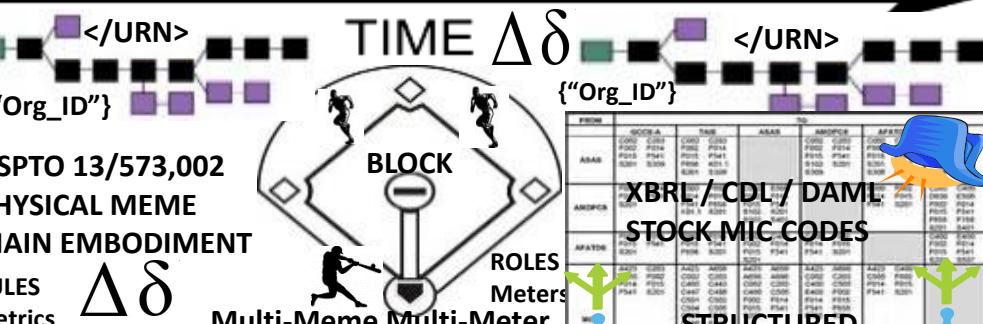
Alice Corp. v. CLS Bank International, 573 U.S. 134 SCt 2347 (2014) is a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).^[2] The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating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



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



BLOCKCHAIN = TIME / SYNTAX



Net of \$\$\$ formed with:

1 EPOCH TIME CYCLES

2 {"Syntax"} "The Word"

"In the Beginning" Genesis Block

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

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

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

NAMED DATA NETWORKING



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



STOCK MIC CODES

STRUCTURED
DATA EXCHANGE
TEMPLATE FORMS

300+ USE CASES
LOGIC / FILTERS

SYNTAX / SYMBOL
LEXICON LIBRARY

SYNTAX
LEXICON
Library

1st Compiler

R
W
A

Real
World
Assets

A.I.

Alpha
Numeric
Brevity
Codes

Coder Guide

Rosetta Stone

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

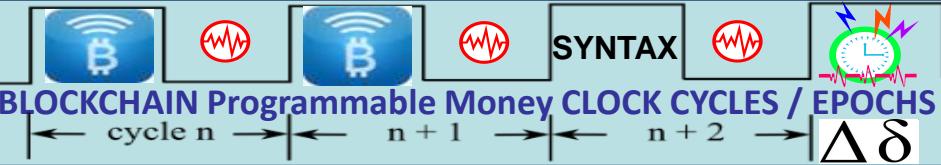
"claims may not be directed towards an abstract idea"

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

SETTLEMENTS / EXCHANGES
= TAXABLE EVENTS
AKIN TO PROPERTY

STATE META
DATA SHARDS

3 X 5
HASH TABLES

IRIS #1421

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
Stochastic
Harmonization

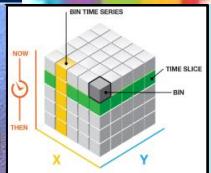
EVENTS

FLASH MESSAGE
EVENT BUS

TIME STAMP
SERVER

Epoch Time
Cycles

Δδ



BIN TIME SERIES

NOW
THEN

X
Y

Blockchain BLOCK in 3D = CUBE

Cube has Length, Depth,
Height, Volume

SETTLEMENTS / EXCHANGES
= TAXABLE EVENTS
AKIN TO PROPERTY

IRS #1421

STATE META
DATA SHARDS

3 X 5
HASH TABLES

IRIS #1421

SETTLEMENTS / EXCHANGES
= TAXABLE EVENTS
AKIN TO PROPERTY

Blockchain CONSENSUS ALGORITHMS

Proof-of-Capacity
Proof-of-Work
Proof-of-Stake
Proof-of-Delegated Work
Proof-of-Activity

Directed Acyclic Graphs
DAGs

Simple
Complex
Bipartite
Bi-directional
Fault Tolerance

Proof of Elapsed Time
Proof of Proof-of-Time
Proof of Proof-of-Work
Proof of Proof-of-Stake
Proof of Proof-of-Delegated Work
Proof of Proof-of-Activity
Proof of Directed Acyclic Graphs
Proof of Simple
Proof of Complex
Proof of Bipartite
Proof of Bi-directional
Proof of Fault Tolerance

Blockchain CONSENSUS ALGORITHMS

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

HEART BEACON CYCLE
USPTO 13/573,002
SURVEY METHODS

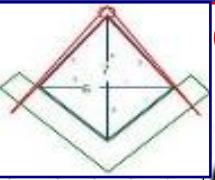
SC ALICE CORP VS CLS BANK: “claims may not direct towards abstract ideas”

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

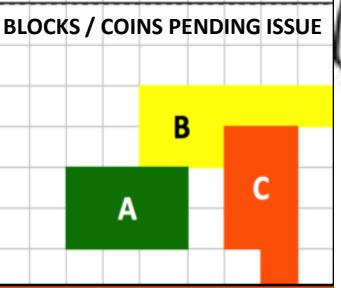


Memo #1421: Purchased Bitcoins are treated akin to property

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



Mined Bitcoins



$$\Delta\delta$$

Unmined Bitcoins



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

IDMaps-SONARHOPS distance estimation query-reply service

- End-state Bitcoin quantity will be fixed like land

“Bitcoin as protocol of ownership, not transfer”

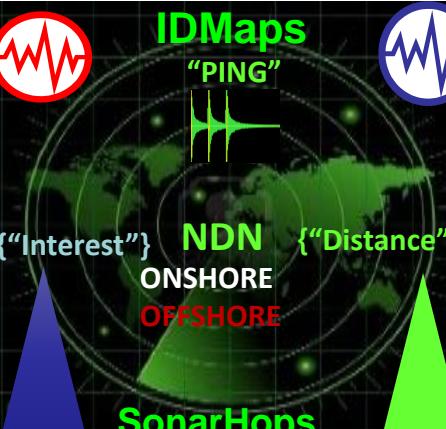
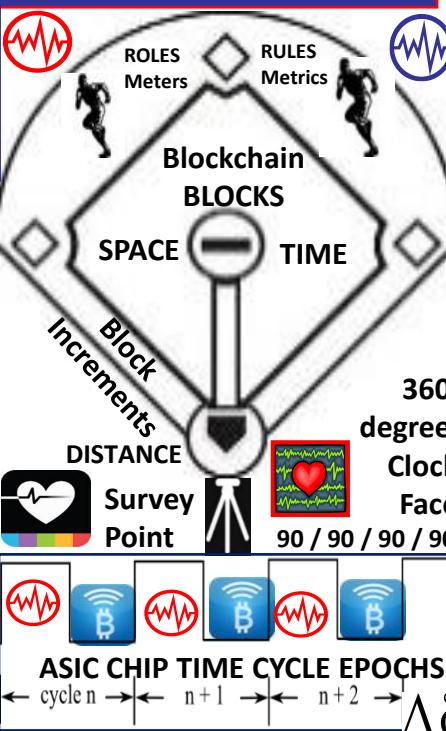
Coin never travel, but simply switch owners”

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

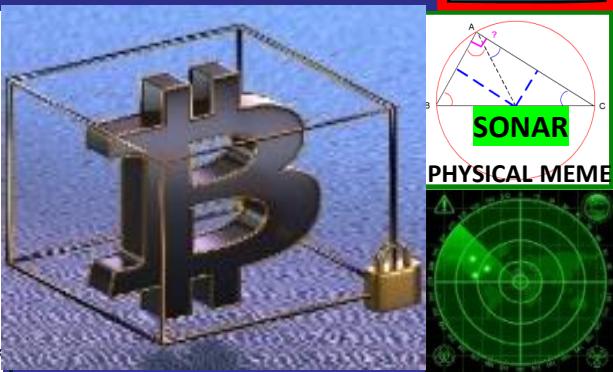
Step 4: Issuing Org of Record adjudicates w buyer



TRIANGULATION



DISTANCE ESTIMATION EUCLIDIAN GEOMETRY



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

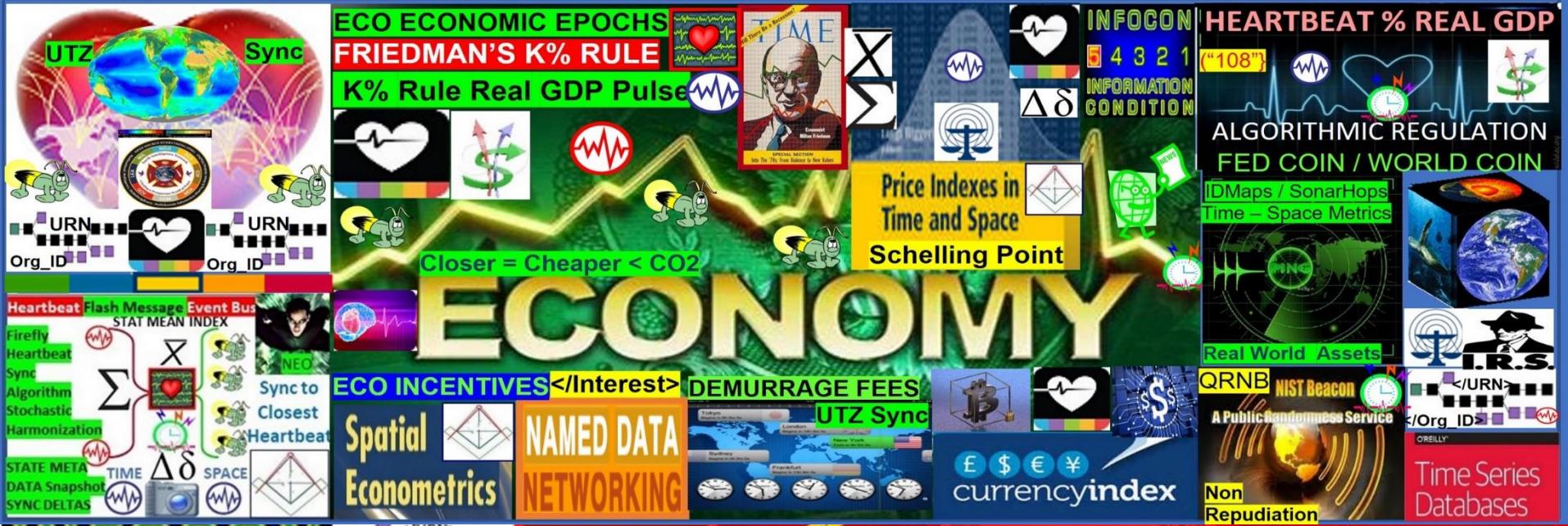


IDMaps / SonarHOPS collects distance data & builds virtual Internet distance maps & estimates distance between IP address pairs



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





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



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

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

- Eco sustainable, Equitable Economic econometrics.

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

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



**SCOTUS 2014 ruling
SC 573 134 2347**



claims may not direct towards abstract Ideas”

Trade
Reference
Currency
TERRA
TERC

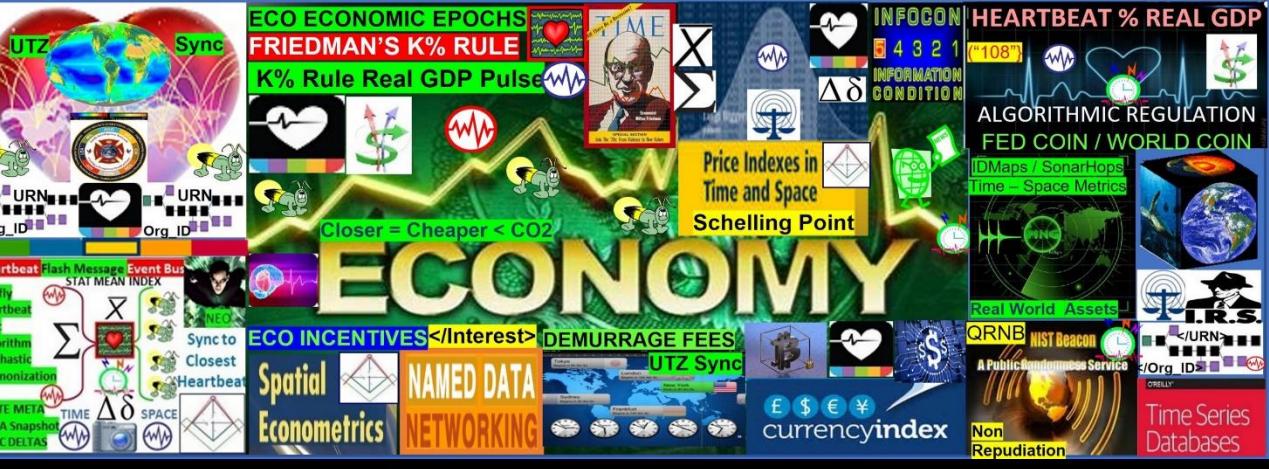
Physical = opposite of abstract

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

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

“Bitcoin is a language” “Bitcoin’s value = time itse
Blocktime = computing clock-time that creates
sync delta differentials in the chain of time [W]
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

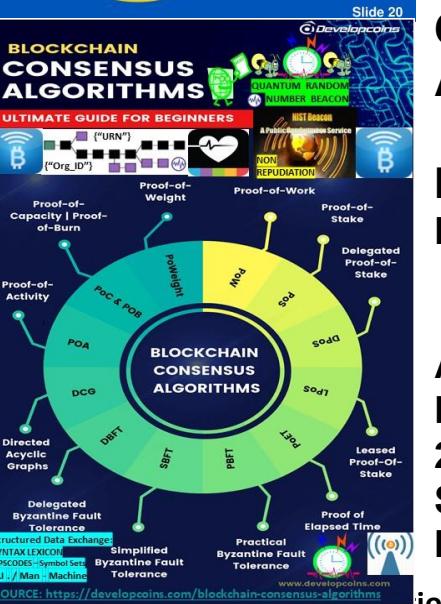
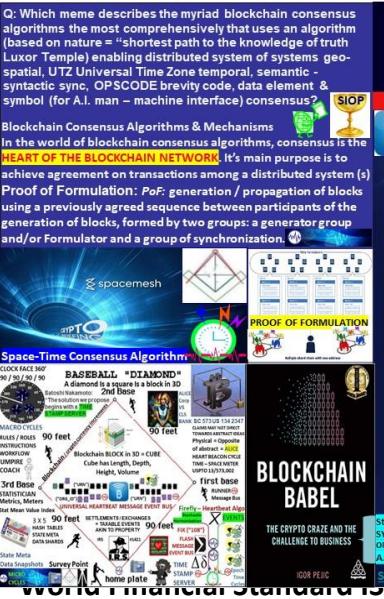
Financial Services

SC2 Security	SC4 Securities	SC7 Banking
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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



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>

NET FUNDAMENTALS USED BY MANY OTHER SYSTEMS / FRAMEWORKS

"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.



"Supports huge fanout. With the only standardized reliable multicast protocol, Connext DDS can provide updates to thousands of endpoints efficiently"

BOOK Large Scale Network Centric Distributed Systems

A workflow consists of an orchestrated, repeatable pattern of business activity enabled by the systematic organization of resources into processes that provide services, or process information. It can be depicted as a sequence of operations, declared as work for a person or GROUP, an organization of staff, or one or more simple or complex mechanisms.

<http://en.wikipedia.org/wiki/Workflow>

THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS

White Boxes vs. Parallel and Distributed Computing

<SHARED>

<GLOBAL>

<JOINT>

<DOMAIN>

<COMMUNITY>

<PRIVATE>

<GLOBAL> <JOINT> <COMMUNITY><DOMAINS><SHARED><PRIVATE>

<INTEREST> <STRAT_ML> <IDDEF_ID> <DISTANCE>

Situational Awareness Reference Architecture (SARA)

IDENTITY, Inventory, Activity, and Sharing

<Federated ID>

<URN> <type_event> <Data Class Types>

STRUCTURED MILITARY MESSAGING FORMS: FIELD TYPES, FILTERS, TAGS

PARSED, PROCESSED, COMPILED TELEMETRY SIGNALING STANDARDIZATION

USMTF / XML MTF FORMATTED MESSAGE CATALOG

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

</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU

Don't Panic

KEYSTONE FEDERATION

Identity Provider

Mapping Protocol

<ROLE>

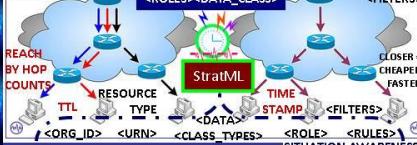
<OPS>

<INTEL>

openstack

FEDERATE

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.



Unicast: private or unique resource requested.

Multicast supports larger audience serving content simultaneously to multiple users

EVERYONE / ALL GROUPS NEED TO KNOW = "DUCK!"

SHARED SITUATION UNDERSTANDING: WHERE AM I, WHERE ARE MY FRIENDS? CYCLICAL REPORTING DURING MICRO-CYCLES AGGREGATED IN MACRO-CYCLES

BEFORE DATA FUSION STATE META DATA SNAPSHOTS JUST TIME BEACON

NDN: "FRESH DATA" = TTL

IoT / Every-WHERE Geo-Loc

ARIN American Registry for Internet Numbers

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

- URNs IDENTIFICATION (SENSORS, DEVICES) <DATA CLASS TYPES>

- URLs LOCATE / FIND RESOURCES

SITUATION AWARENESS NEWSCAST

BY <TAG TYPES> Ledgers Contracts Trade SLA Agreements

CrowdSourcing TRIANGULATION

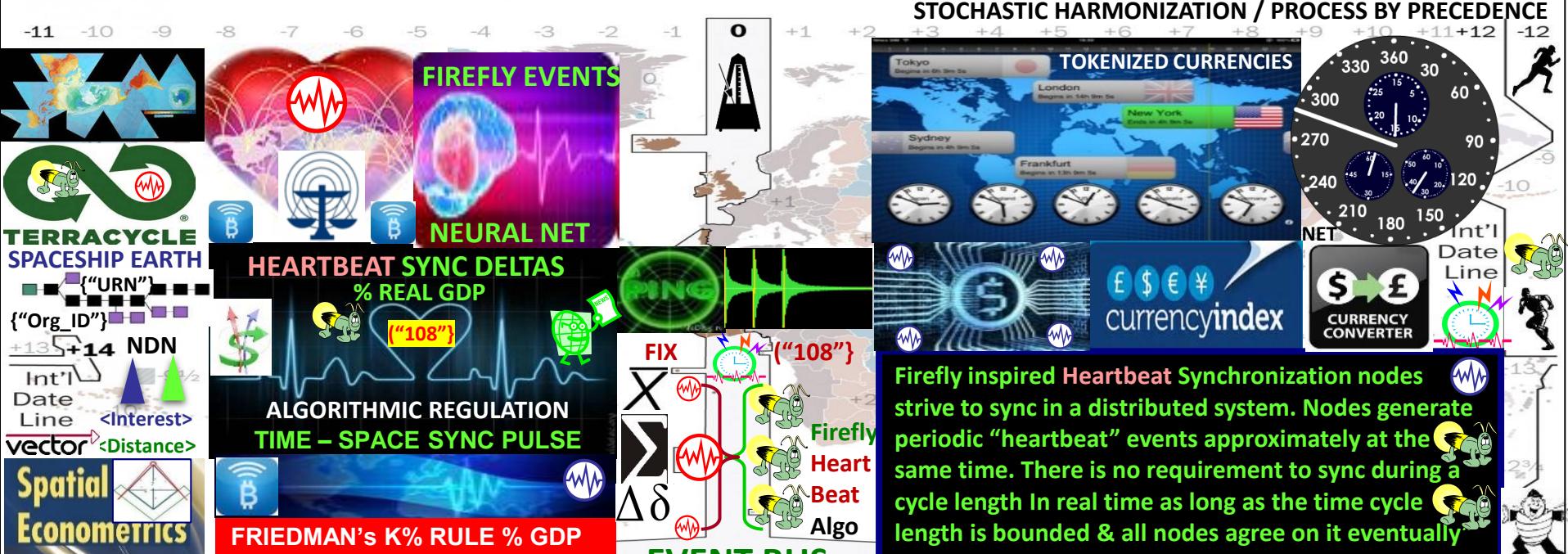
vector TELCO MESH FABRIC

CROWD SOURCING / FUNDING

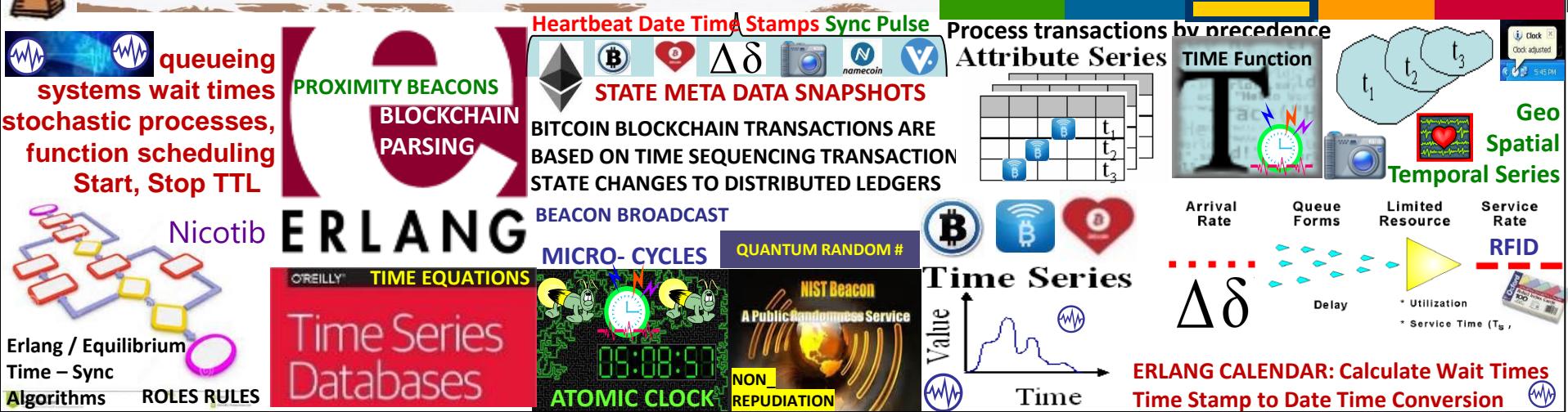
ETHEREUM: Decentralized Autonomous Organizations

VOTE ON BLOCKCHAIN FEDERATED ID

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



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



Structured Data Exchange



SYNTAX LEXICON
ROSETTA STONE

Coder's Guide lexicon.

STRUCTURED
<CONTENT>
EXCHANGE
TEMPLATES

MIL STD 2525ABC

ASSETS

ASSET TOKENS

"SYMBOLS RULE THE WORLD"

11.8 - Kinematic
11.8.1 - Pos
11.8.1.1 -
11.8.1 -

STRATML

XAML

BINARY XML
UBL

DDL DATA
DEFINITION
LANGUAGE

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



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

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

MTL Machine Trust Language



{"URN"} {"TRANSACTION ID"}

MESSAGE TEXT FORMAT :

SEG RPT OCC CLASSNAME SETID SEQ FIELD OCCURRENCE SET FORMAT NAME

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

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

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



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

DISTANCE

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



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



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



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



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



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



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

TOKENIZED ECONOMY BREVITY CODE OPSCOSE MAPPET TO SYMBOLS

Δδ INDEX REFERENCE #:
M015 STATUS :

EFFECTIVE: 14-DEC-99

PURCHASE CODES

FEDERATED PEGS

{"URN"}

{"ASSET_CLASS"}

{"URN"}

{"ASSET_TYPES"}

ISO 10383 – MIC

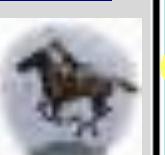
Market Identifier Codes



{"Org_ID"}

{"URN"}

{"Org_ID"}

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				
AMDPCS	TOKENS OPSCODE BREVITY CODES		F002 C203 F015 D630 S201 E500 F002 F014				
AFATDS	F002 F014 F015 F541 S201	A.I.  INFOCON 5 4 3 2 1 INFORMATION CONDITION					
MCS	 NEWS  SIOP  FEDERATED MISSION NETWORK SHARE * WIN * SUCCEED	A423 C203 C505 F002 F014 F015 F541 S201	A423 A659 C002 C203 C400 C443 C447 C488 C501 C503 C504 C505 C506 C507 C508 E400 F002 F014 F015 F541 F658 F756 G489 K01.1 S201 S303 S507	A423 A659 A656 A690 C002 C203 C400 C505 F002 F014 F015 F541	 Rosetta Stone  Syntax Lexicon  Coder's Guide	A423 C505 F014 F015 S201	M2M  "SYMBOLS RULE THE WORLD" 

MESSAGE CATALOG

300 + Use Cases

Data Elements: entity, attribute, relationship equivalents **HEARTBEAT MESSAGE = K00.99 </108> {"108"}**

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

Information Elements Roles

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



FFUDN: Field Format Unit Designator

EIRN Field Format Index Reference #

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



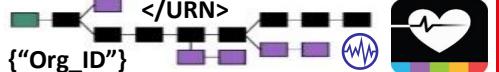
PROCESS MESSAGE BY PRECEDENCE UNIVERSAL EVENT / ALERT MESSAGE BUS

OPERATIONAL NODES / ACTIVITIES

DATA SYSTEM FUNCTIONS		PERFORMANCE	
11.4 - Classification		11.8 - Kinematics	
11.4.1 - Category		11.8.1 - Pos / Vel / Acc (PVA)	
11.4.1.1 - Confidence Level		11.8.1.1 - Acceleration	
11.4.1.2 - Estimate Type		11.8.1.1.1 - Angular	
11.4.1.2.1 - Alternative		1.1.2 - Linear	
11.4.1.2.2 - Evaluated D		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	
PURCHASE CODES			
SYMBOL	Friend	Neutral	Hostile
2525C	Partner		Competitor
11.4.1.3.4 - Substance			4 - Velocity
11.4.1.3.5 - Surface			1.4.1 - Horizontal
11.4.2 - Platform / Point / Fea		ture 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



MIL STD 2525A, B, C, D



20022

STRUCTURED
DATA
EXCHANGE
SYNTAX LEXICON
ROSETTA STONE

Coder's Guide lexicon

STRUCTURED <CONTENT> EXCHANGE TEMPLATES	
MIL	STD 2525ABC
MIL	ASSET TOKENS
MIL	SYMBOLS RULE THE WORLD
MIL	STRATML
MIL	XAML

11.8 - Kinematics
11.8.1 - Pos.
11.8.1.1 - 11.8.1.2 - 11.8.1.3 -11.8.2 - Predicted
11.8.2.1 - Smoothed Data
11.8.2.2 - Position11.8.3 - Bearing Angle
11.8.3.1 - Location; 2D Hor
11.8.3.2 - Vertical11.8.4 - Horizontal
11.8.4.1 - Vertical11.8.5 - Confidence
11.8.5.1 - TOSCA
11.8.5.2 - Learning Angle Rate
11.8.5.3 - Covariance Matrix11.8.6 - Friend
11.8.6.1 - Neutral
11.8.6.2 - Hostile11.8.7 - Partner
11.8.7.1 - Competitor

11.8.8 - MILITARY OPERATIONS

11.8.9 - MEDICAL EVAC & HOSPITALISATION

11.8.10 - ARBITRAGE

11.8.11 - BLOCK TIME

11.8.12 - ERLANG

11.8.13 - FILTERS

11.8.14 - TIME

11.8.15 - EQUATIONS

11.8.16 - NAMED DATA

11.8.17 - EXCHANGE

11.8.18 - NETWORKING

11.8.19 - PRECEDENCE

11.8.20 - PROCESSING

11.8.21 - TOKENS

11.8.22 - FILTERS

11.8.23 - BLOCK TIME

11.8.24 - ERLANG

11.8.25 - TIME

11.8.26 - EQUATIONS

11.8.27 - NAMED DATA

11.8.28 - EXCHANGE

11.8.29 - NETWORKING

11.8.30 - PRECEDENCE

11.8.31 - PROCESSING

11.8.32 - TOKENS

11.8.33 - FILTERS

11.8.34 - BLOCK TIME

11.8.35 - ERLANG

11.8.36 - TIME

11.8.37 - EQUATIONS

11.8.38 - NAMED DATA

11.8.39 - EXCHANGE

11.8.40 - NETWORKING

11.8.41 - PRECEDENCE

11.8.42 - PROCESSING

11.8.43 - TOKENS

11.8.44 - FILTERS

11.8.45 - BLOCK TIME

11.8.46 - ERLANG

11.8.47 - TIME

11.8.48 - EQUATIONS

11.8.49 - NAMED DATA

11.8.50 - EXCHANGE

11.8.51 - NETWORKING

11.8.52 - PRECEDENCE

11.8.53 - PROCESSING

11.8.54 - TOKENS

11.8.55 - FILTERS

11.8.56 - BLOCK TIME

11.8.57 - ERLANG

11.8.58 - TIME

11.8.59 - EQUATIONS

11.8.60 - NAMED DATA

11.8.61 - EXCHANGE

11.8.62 - NETWORKING

11.8.63 - PRECEDENCE

11.8.64 - PROCESSING

11.8.65 - TOKENS

11.8.66 - FILTERS

11.8.67 - BLOCK TIME

11.8.68 - ERLANG

11.8.69 - TIME

11.8.70 - EQUATIONS

11.8.71 - NAMED DATA

11.8.72 - EXCHANGE

11.8.73 - NETWORKING

11.8.74 - PRECEDENCE

11.8.75 - PROCESSING

11.8.76 - TOKENS

11.8.77 - FILTERS

11.8.78 - BLOCK TIME

11.8.79 - ERLANG

11.8.80 - TIME

11.8.81 - EQUATIONS

11.8.82 - NAMED DATA

11.8.83 - EXCHANGE

11.8.84 - NETWORKING

11.8.85 - PRECEDENCE

11.8.86 - PROCESSING

11.8.87 - TOKENS

11.8.88 - FILTERS

11.8.89 - BLOCK TIME

11.8.90 - ERLANG

11.8.91 - TIME

11.8.92 - EQUATIONS

11.8.93 - NAMED DATA

11.8.94 - EXCHANGE

11.8.95 - NETWORKING

11.8.96 - PRECEDENCE

11.8.97 - PROCESSING

11.8.98 - TOKENS

11.8.99 - FILTERS

11.8.100 - BLOCK TIME

11.8.101 - ERLANG

11.8.102 - TIME

11.8.103 - EQUATIONS

11.8.104 - NAMED DATA

11.8.105 - EXCHANGE

11.8.106 - NETWORKING

11.8.107 - PRECEDENCE

11.8.108 - PROCESSING

11.8.109 - TOKENS

11.8.110 - FILTERS

11.8.111 - BLOCK TIME

11.8.112 - ERLANG

11.8.113 - TIME

11.8.114 - EQUATIONS

11.8.115 - NAMED DATA

11.8.116 - EXCHANGE

11.8.117 - NETWORKING

11.8.118 - PRECEDENCE

11.8.119 - PROCESSING

11.8.120 - TOKENS

11.8.121 - FILTERS

11.8.122 - BLOCK TIME

11.8.123 - ERLANG

11.8.124 - TIME

11.8.125 - EQUATIONS

11.8.126 - NAMED DATA

11.8.127 - EXCHANGE

11.8.128 - NETWORKING

11.8.129 - PRECEDENCE

11.8.130 - PROCESSING

11.8.131 - TOKENS

11.8.132 - FILTERS

11.8.133 - BLOCK TIME

11.8.134 - ERLANG

11.8.135 - TIME

11.8.136 - EQUATIONS

11.8.137 - NAMED DATA

11.8.138 - EXCHANGE

11.8.139 - NETWORKING

11.8.140 - PRECEDENCE

11.8.141 - PROCESSING

11.8.142 - TOKENS

11.8.143 - FILTERS

11.8.144 - BLOCK TIME

11.8.145 - ERLANG

11.8.146 - TIME

11.8.147 - EQUATIONS

11.8.148 - NAMED DATA

11.8.149 - EXCHANGE

11.8.150 - NETWORKING

11.8.151 - PRECEDENCE

11.8.152 - PROCESSING

11.8.153 - TOKENS

11.8.154 - FILTERS

11.8.155 - BLOCK TIME

11.8.156 - ERLANG

11.8.157 - TIME

11.8.159 - EQUATIONS

11.8.160 - NAMED DATA

11.8.161 - EXCHANGE

11.8.162 - NETWORKING

11.8.163 - PRECEDENCE

11.8.164 - PROCESSING

11.8.165 - TOKENS

11.8.166 - FILTERS

11.8.167 - BLOCK TIME

11.8.168 - ERLANG

11.8.169 - TIME

11.8.170 - EQUATIONS

11.8.171 - NAMED DATA

11.8.172 - EXCHANGE

11.8.173 - NETWORKING

11.8.174 - PRECEDENCE

11.8.175 - PROCESSING

11.8.176 - TOKENS

11.8.177 - FILTERS

11.8.178 - BLOCK TIME

11.8.179 - ERLANG

11.8.180 - TIME

11.8.181 - EQUATIONS

11.8.182 - NAMED DATA

11.8.183 - EXCHANGE

11.8.184 - NETWORKING

11.8.185 - PRECEDENCE

11.8.186 - PROCESSING

11.8.187 - TOKENS

11.8.188 - FILTERS

11.8.189 - BLOCK TIME

11.8.190 - ERLANG

11.8.191 - TIME

11.8.192 - EQUATIONS

11.8.193 - NAMED DATA

11.8.194 - EXCHANGE

11.8.195 - NETWORKING

11.8.196 - PRECEDENCE

11.8.197 - PROCESSING

11.8.198 - TOKENS

11.8.199 - FILTERS

11.8.200 - BLOCK TIME

11.8.201 - ERLANG

11.8.202 - TIME

11.8.203 - EQUATIONS

11.8.204 - NAMED DATA

11.8.205 - EXCHANGE

11.8.206 - NETWORKING

11.8.207 - PRECEDENCE

11.8.208 - PROCESSING

11.8.209 - TOKENS

11.8.210 - FILTERS

11.8.211 - BLOCK TIME

11.8.212 - ERLANG

11.8.213 - TIME

11.8.214 - EQUATIONS

11.8.215 - NAMED DATA

11.8.216 - EXCHANGE

11.8.217 - NETWORKING

11.8.218 - PRECEDENCE

11.8.219 - PROCESSING

11.8.220 - TOKENS

11.8.221 - FILTERS

11.8.222 - BLOCK TIME

11.8.223 - ERLANG

11.8.224 - TIME

11.8.225 - EQUATIONS

11.8.226 - NAMED DATA

11.8.227 - EXCHANGE

11.8.228 - NETWORKING

11.8.229 - PRECEDENCE

11.8.230 - PROCESSING

11.8.231 - TOKENS

11.8.232 - FILTERS

11.8.233 - BLOCK TIME

11.8.234 - ERLANG

11.8.235 - TIME

11.8.236 - EQUATIONS

11.8.237 - NAMED DATA

11.8.238 - EXCHANGE

11.8.239 - NETWORKING

11.8.240 - PRECEDENCE

11.8.241 - PROCESSING

11.8.242 - TOKENS

11.8.243 - FILTERS

11.8.244 - BLOCK TIME

11.8.245 - ERLANG

11.8.246 - TIME

11.8.247 - EQUATIONS

11.8.248 - NAMED DATA

11.8.249 - EXCHANGE

11.8.250 - NETWORKING

11.8.251 - PRECEDENCE

11.8.252 - PROCESSING

11.8.253 - TOKENS

11.8.254 - FILTERS

11.8.255 - BLOCK TIME

11.8.256 - ERLANG

11.8.257 - TIME

11.8.258 - EQUATIONS

11.8.259 - NAMED DATA

11.8.260 - EXCHANGE

11.8.261 - NETWORKING

11.8.262 - PRECEDENCE

11.8.263 - PROCESSING

11.8.264 - TOKENS

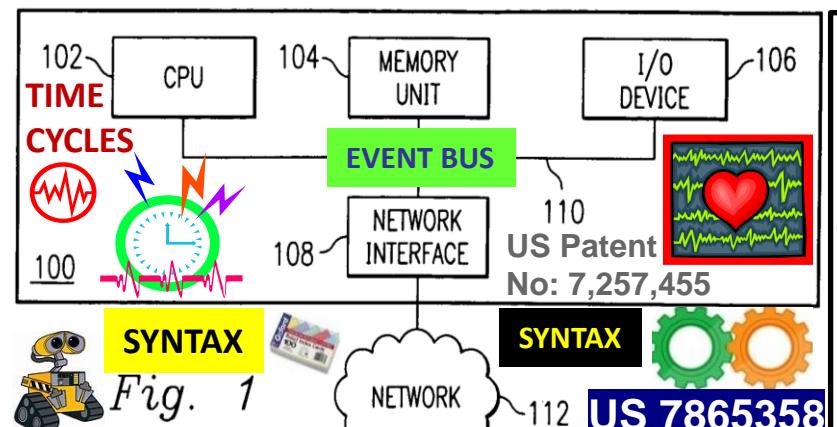
11.8.265 - FILTERS

11.8.266 - BLOCK TIME

11.8.267 - ERLANG

11.8.268 - TIME

11.8.269 - EQUATIONS



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

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

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

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



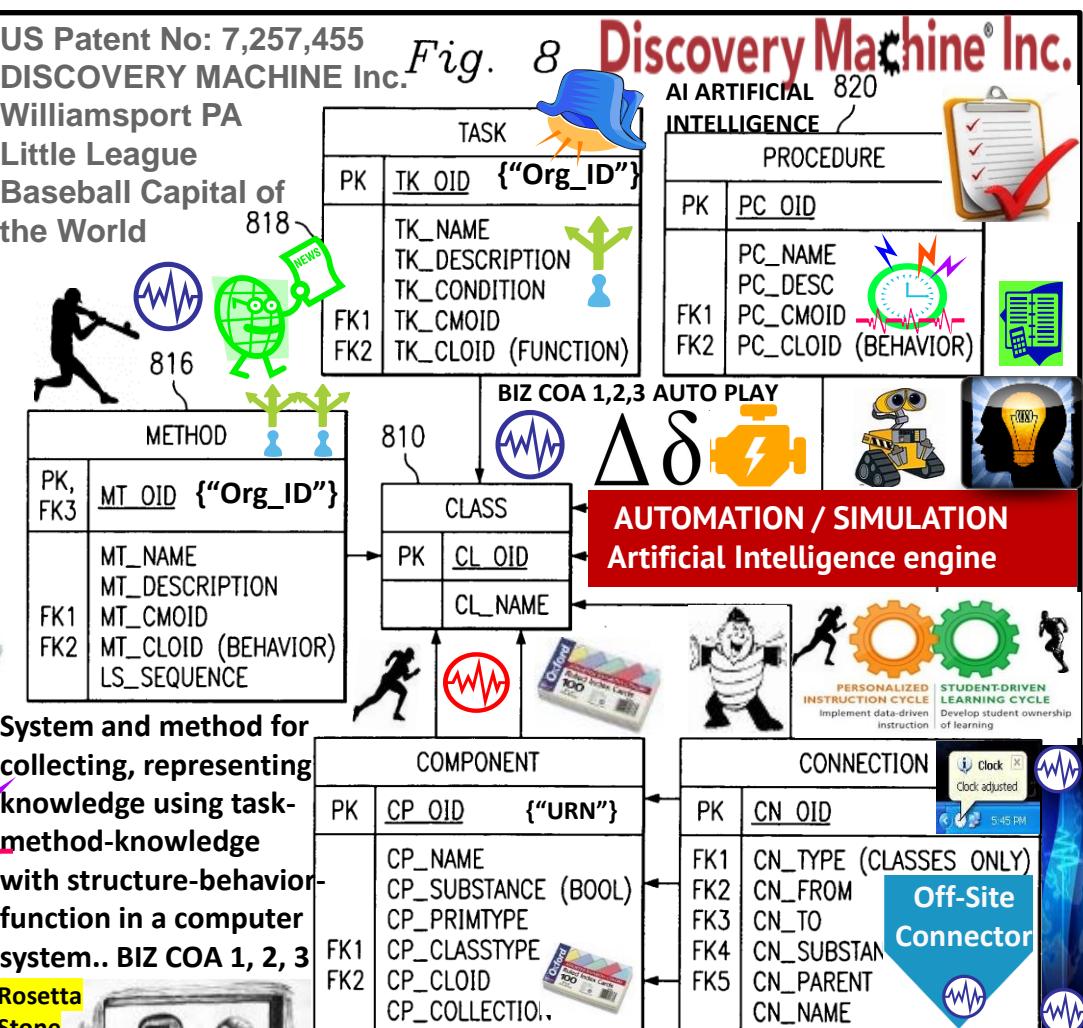
"SIGNS AND SYMBOLS RULE THE WORLD, NOT RULES OR LAWS"

Confucius



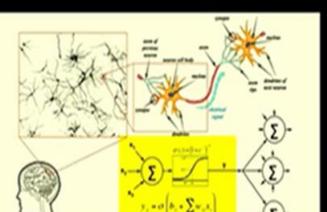
Alpha-numeric OPSCODE

Brevity codes mapped to symbols,
Symbol sets = structured data



Neuro-Symbolic AI

Neural Networks
(Deep Learning)



Breaking the world into symbols (rather than neurons)

Symbolic (human-readable) representations

Symbolic AI

Brevity Codes



Symbols

Symbol

Set 2525C



Symbol

Set 2525C



Symbol

Set 2525C

Symbol

Symbolic artificial intelligence: collection of all methods in artificial intelligence

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

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

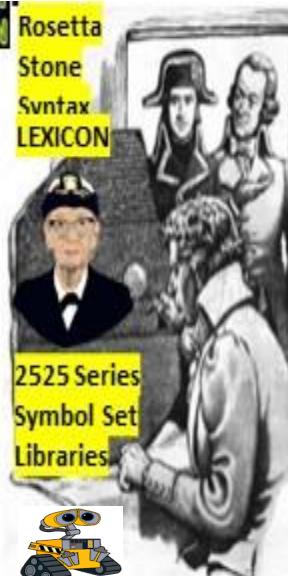
This claim implies both that human thinking is a kind of symbol manipulation (because a symbol system is necessary for intelligence) and that machines can be intelligent (because a symbol system is sufficient for intelligence).[3] The idea has philosophical roots in Hobbes (who claimed reasoning was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

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

data from a first form to a second form

CONDITION

Rosetta
Stone
Syntax
LEXICON



2525 Series
Symbol Set
Libraries



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



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

FRZ T CP CLOUD FRS T LN PAREN

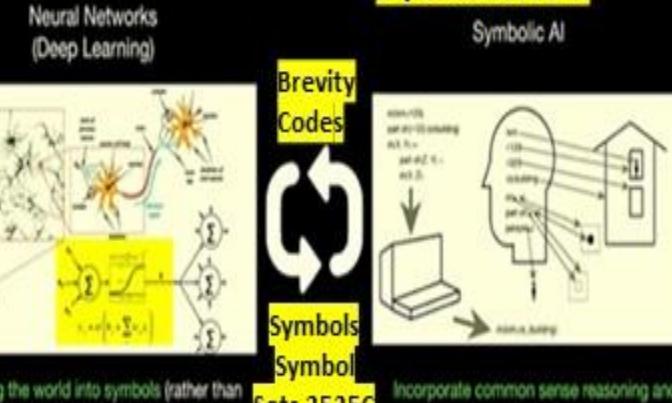
ABCA OPS CODE BREVITY CODES

Neuro-Symbolic AI

Symbolic (human-readable)
representations

Symbolic AI

Symbolic AI



Breaking the world into symbols (rather than
symbols into symbols)

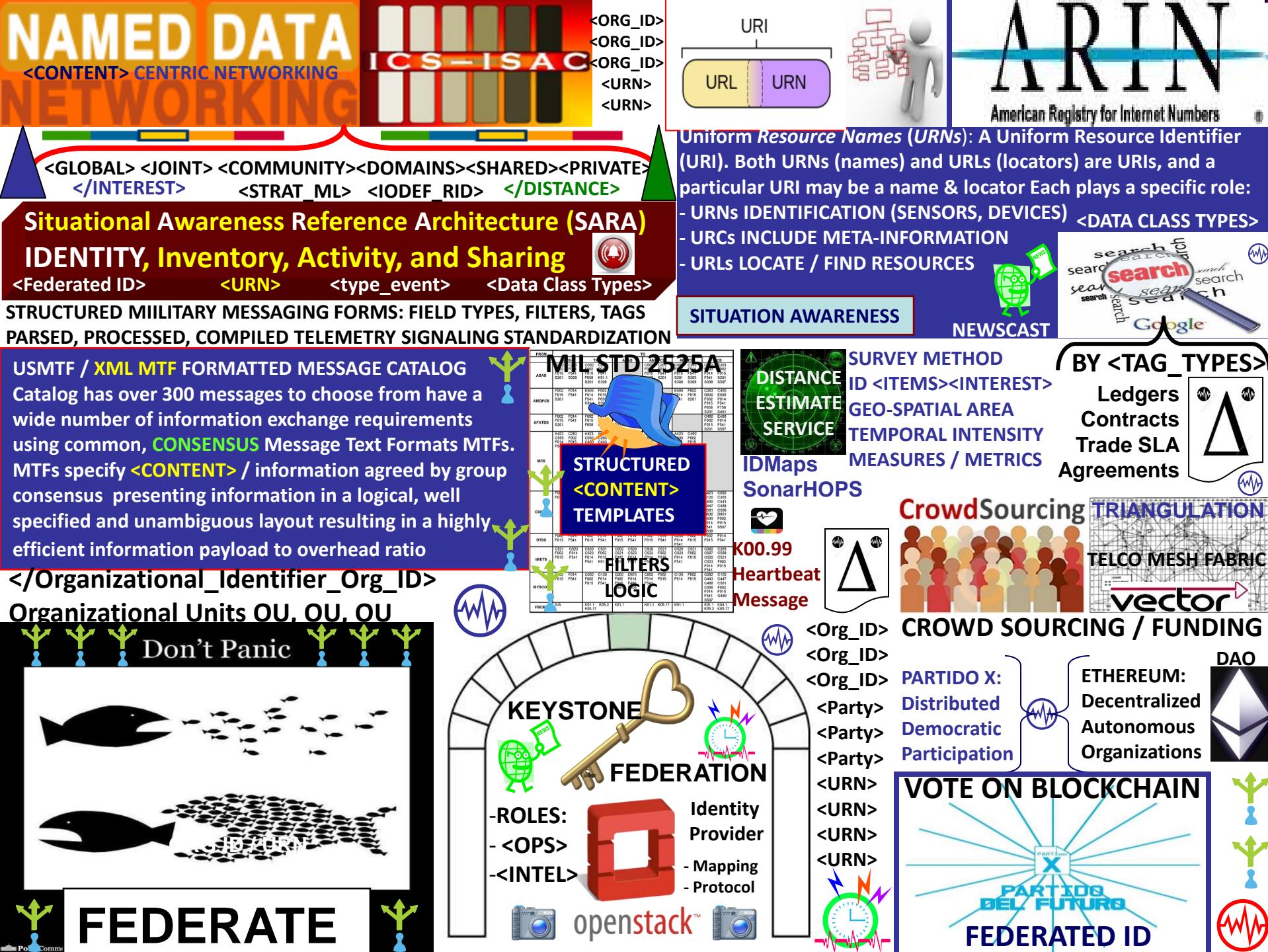
Sets 2525

Brevity
Codes

Symbols

Symbols

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>



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

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

CONTENT LEXICON
ROSETTA STONE

NDN



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

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

NIEM

NAMED DATA
NETWORKING

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

NIST CYBER SECURITY FRAMEWORK

MIL-STD-2525A

STRUCTURED
<CONTENT>
TEMPLATES

MCB

CBRS

DTB

MTS

IBSON

FBCE

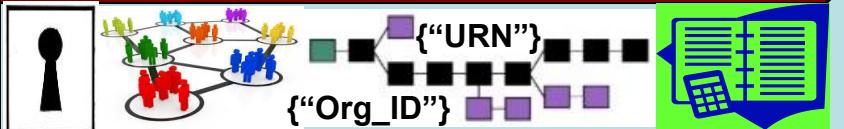
USMTF / XML MTF FORMATTED MESSAGE CATALOG

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



Heart Beacon Cycle

FEDERATE / TRADE FEDERATIONS



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

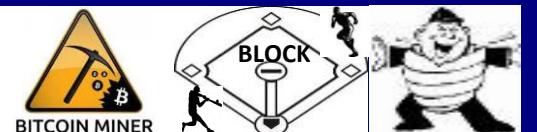
Net joins, drops, splits, merges, moves  {"
Agile, adhoc NETOPS Vs acquisition preserves the CHANNEL



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

Bitcoin Mining Pools





DISTRIBUTED AUTONOMOUS ORGANIZATION = DAO RAND Corp

term coined circa 1991 now in use by Blockchain tech corporations

Uniform Resource Name



IoT	DEVICE / PLATFORM
IoT	SENSOR DEVICE



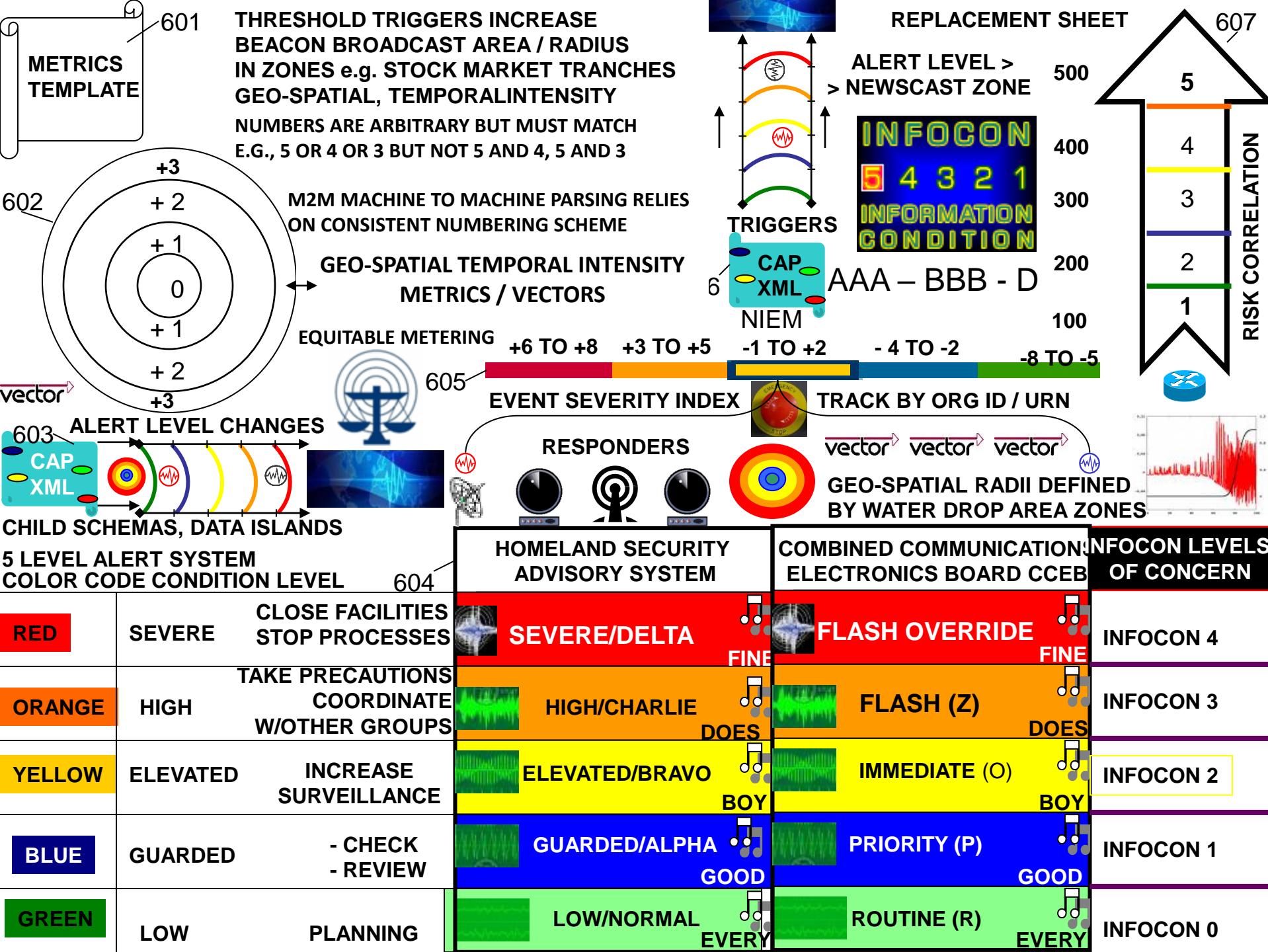
“DUNS #”{“Org_ID”} Heartbeat Snaps
QR CODE MICROS-CYCLES
“URN”{“URN”}{“URN”} 





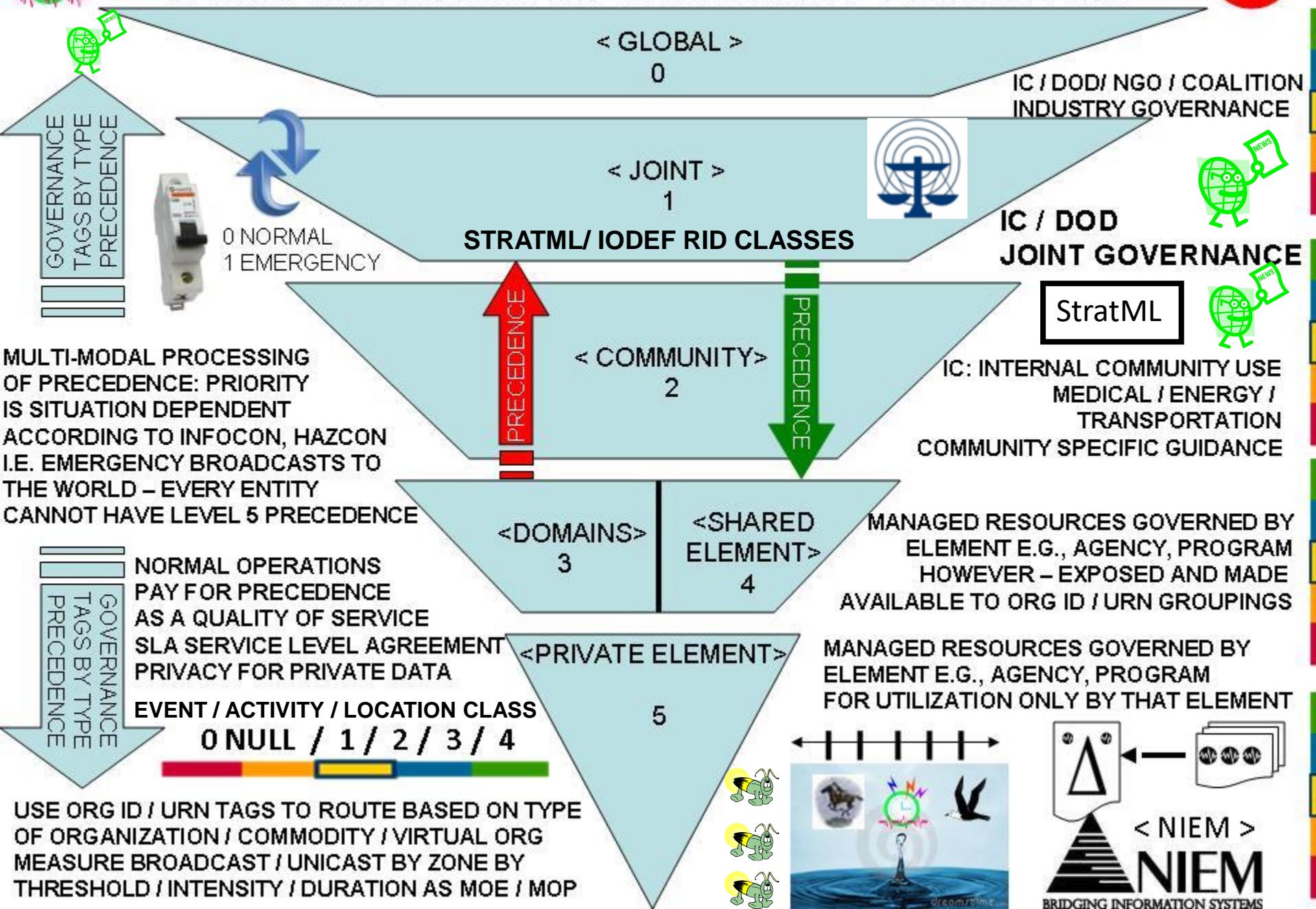
FEDERATE: COMMON GOALS SYNCHRONIZED IN SPACE - TIME





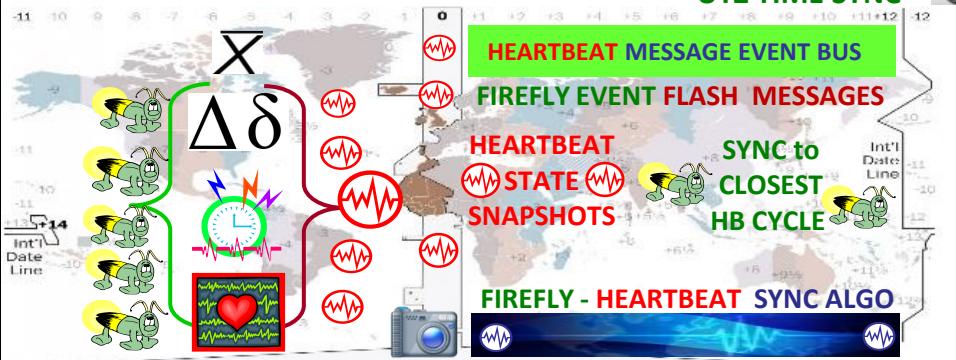


ENABLE MAPPING OF GOVERNANCE / MANAGEMENT RESOURCES BY PRECEDENCE SHOWN IN GEO-SPATIO INTENSITY DASHBOARD VIEWS

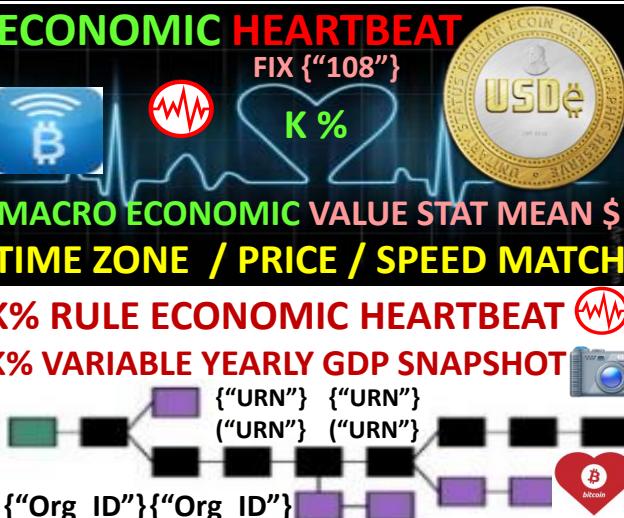
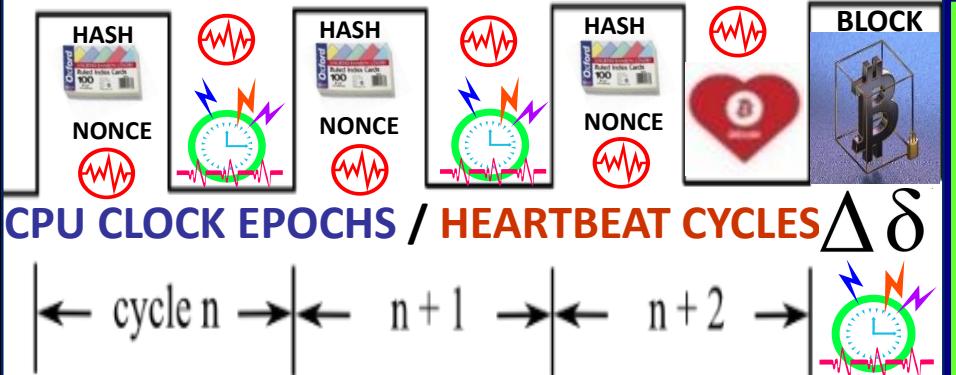




The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



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

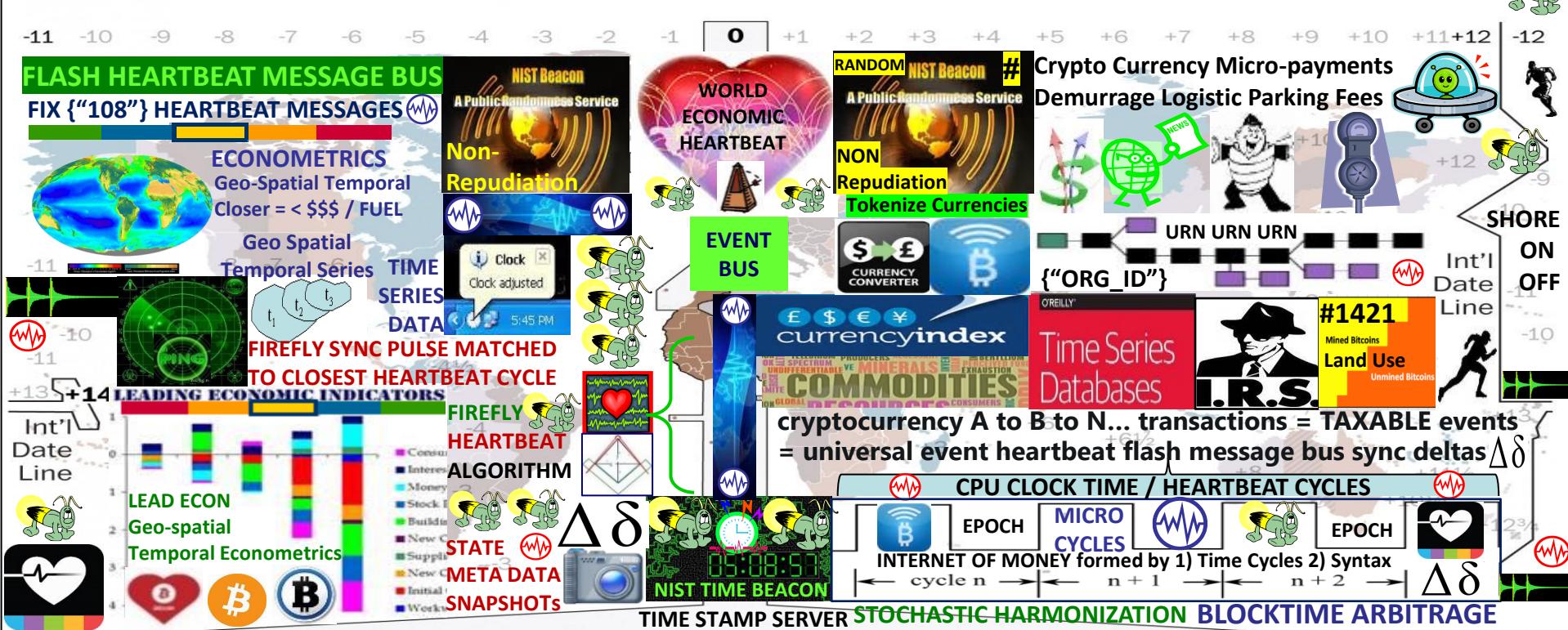


"Heartbeat Synchronization strives to have nodes in a distributed system generate periodic local "heartbeat" events approximately at the same time. It differs from classical clock sync in that Nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. There is no requirement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





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



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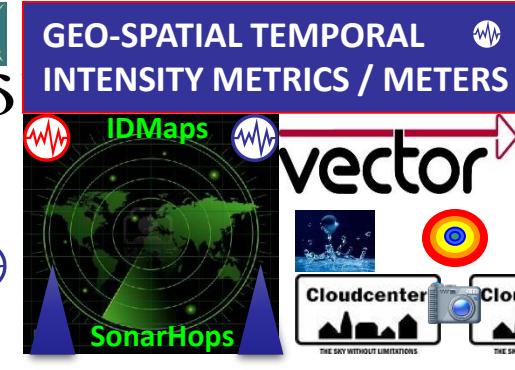
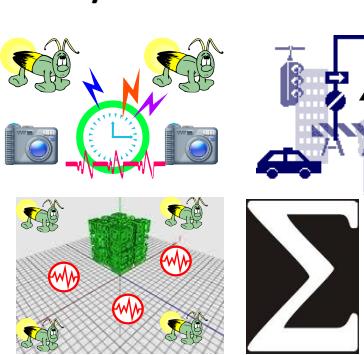
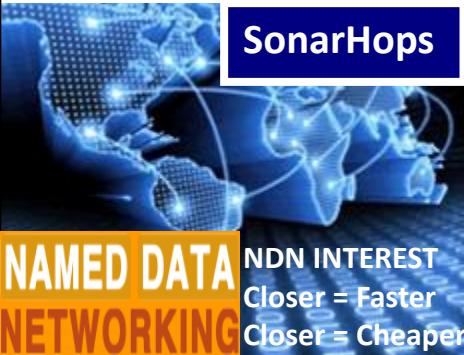
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



IDMaps: Global Internet Host Distance Estimation Service



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



vector



IDMaps scalable Internet-wide architecture measures, disseminates distance information



HOP COUNTS

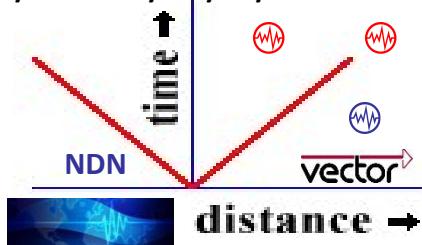


REACHABILITY



/localhost/nfd/fib/add-nexthop

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



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

Name Prefix
<Org_ID> Trie (NPT)



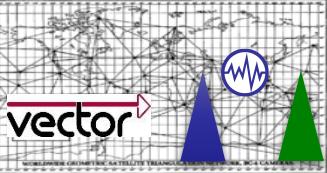
NDN NAMES

NDN NAMED DATA NETWORK RIB / FIB Datasets event notification

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



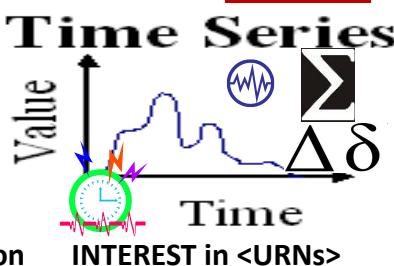
TRIANGULATION



NDN INTEREST 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:



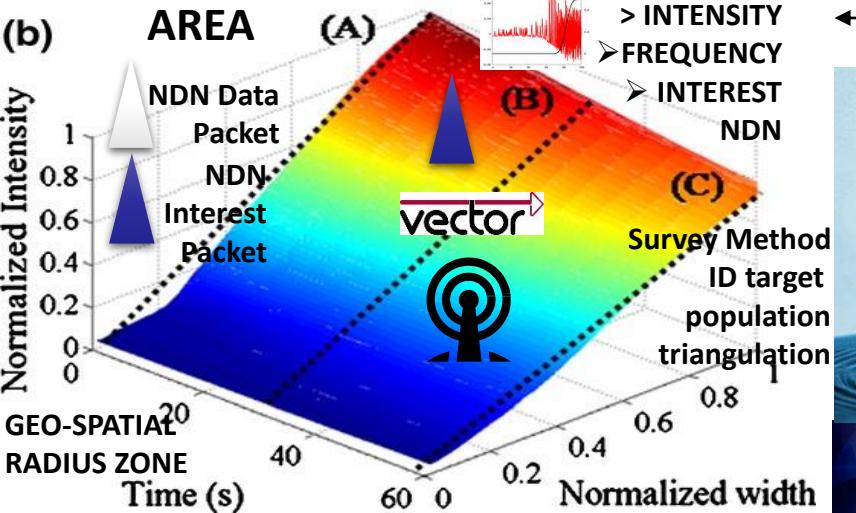
Paul Revere = linear, sequential



TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY Cyclic Frequency



NAMED DATA NETWORKING

</IoT>
MQTT



NIST TIME BEACON

Hop Count

INSTRUCTIONS TO MASTER CONTROLLER

Number of Hops = 3

TTL = Time To Live

STOP

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

SOURCE NETWORK 172.16.0.0/16

omnisecu.com.R1 omnisecu.com.R2 omnisecu.com.R3 omnisecu.com.R4

DESTINATION NETWORK 172.27.0.0/16

feed your brain

START

Number of Hops = 3

Time To Live

STOP

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

INSTRUCTIOMS TO MASTER CONTROLLER

Number of Hops = 3

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DESTINATION NETWORK 172.27.0.0/16

feed your brain

START

Number of Hops = 3

Time To Live

13/573,002 HEART BEACON CYCLE

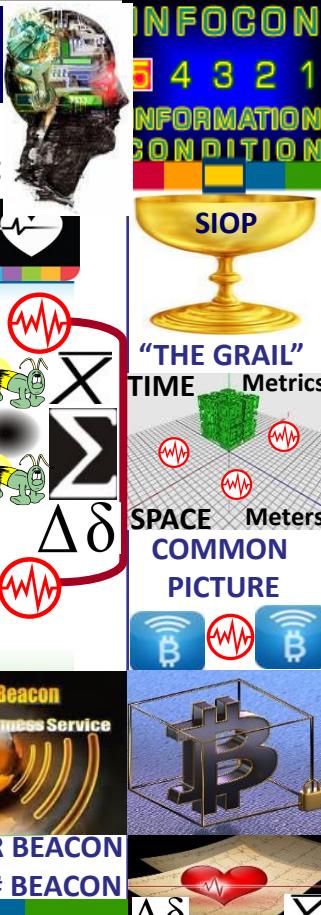
Time -Space meter, metrics / Universal data event, alert bus
Internet of Everything “ability to hear the world’s heartbeat”

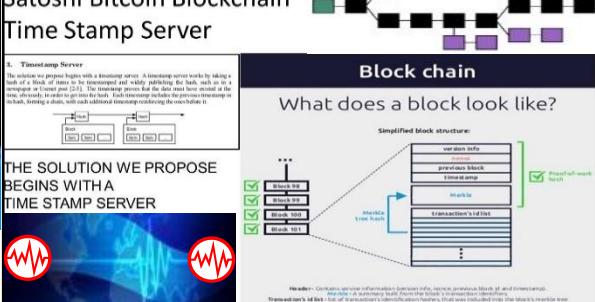
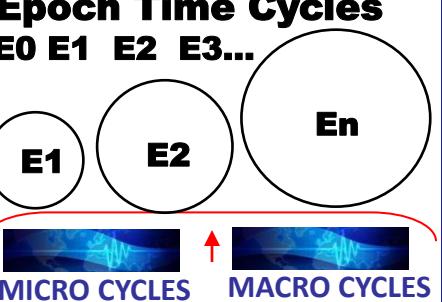
The four dimensions of Big Data

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>
 <p>#leT</p> 	Functionality Areas	 <p>Cloudcenter THE SKY WITHOUT LIMITATIONS</p>	Cloudcenter THE SKY WITHOUT LIMITATIONS
Programmable Money World Computer / Blockchain	 	API Operation Count	 <p>Cloudcenter LOCATE <CONTENT> IDMAPS / SonarHOPS</p>
		Web service access type Network Effects / A.I.	Web application, front end to [network, device, system, blockchain] heartbeat
 	LANGUAGE / PLATFORM BINDINGS	 <p>Cloudcenter PHP Java Erlang...</p>	 <p>Cloudcenter THE SKY WITHOUT LIMITATIONS</p>
Interface Characteristics		SCOP is a web application, PHP based front-end to heartbeat, IP Virtual Server ipvs and Idirectord [e.g., check interval @ 5 seconds] SCOP can start/stop services, view/ edit configuration files e.g., heartbeat message state management snapshots, backups, take a service online/offline, add/ remove virtual/real servers, services etc.	
<p>"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>THE SOLUTION WE PROPOSE BEGINS WITH A TIME STAMP SERVER</p> <p>Block chain</p> <p>What does a block look like?</p> <p>Block structure:</p> <ul style="list-style-type: none"> Header Timestamp Previous Block Hash Transactions Signature <p>Header: Contains basic information about the block, previous block of and timestamp. Transactions: A list of transactions that the miner has chosen to include in the block. Signature: A digital signature that proves the block is valid.</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

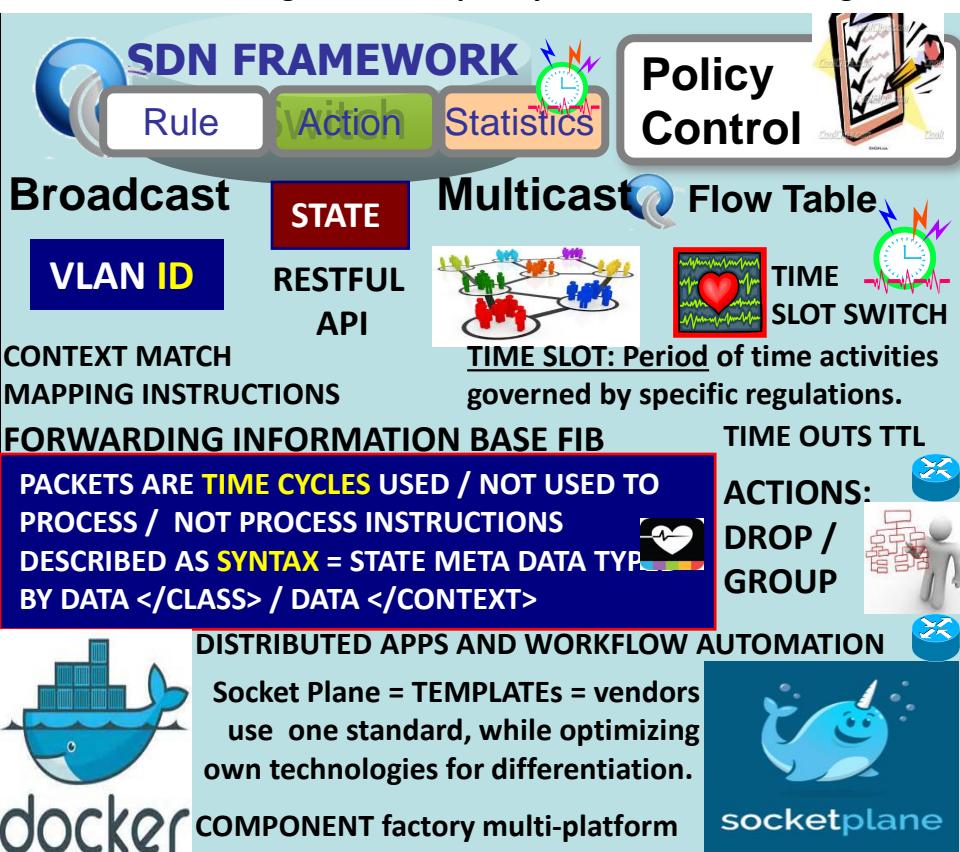
COMMAND SYNTAX
STATE TRANSFER
Unicast / Multicast
Flow Tables / Workflow
Dynamic Network
Configuration Management

NET CENTRIC WARFARE
SYSTEM OF SYSTEMS TELEMETRY

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

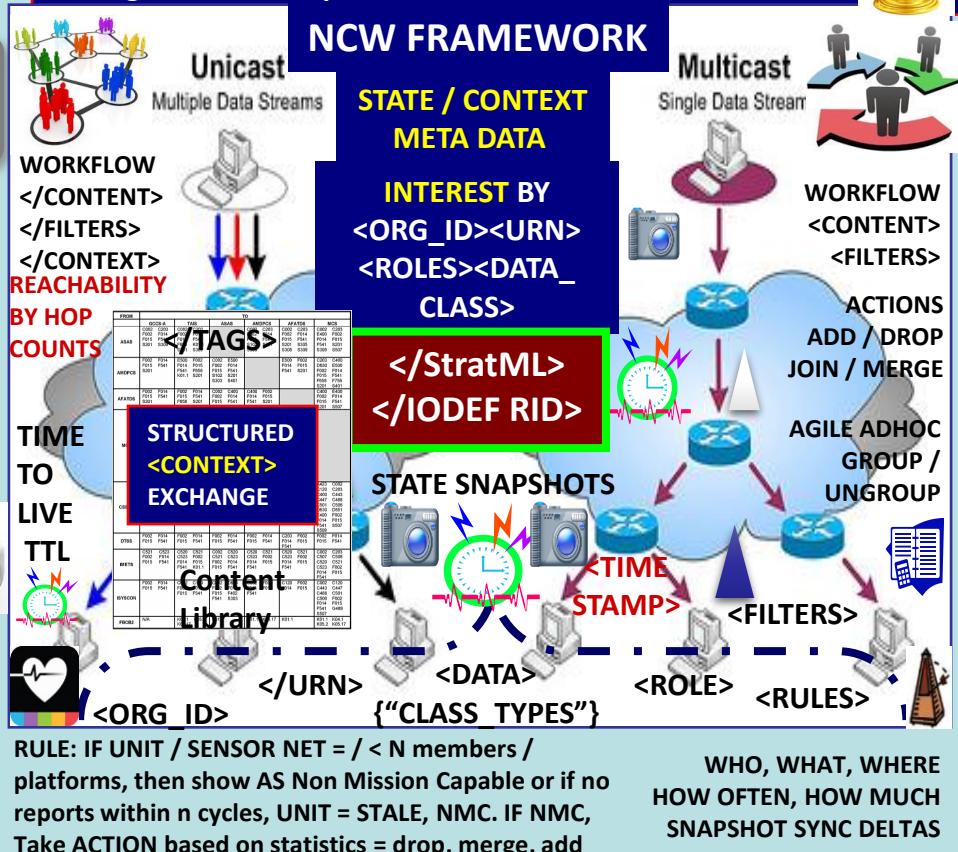
- SDN is a *framework* to allow network administrators to *automatically* and dynamically manage and control a *large number* of network devices, *services*, topology, traffic paths, and packet handling (quality of

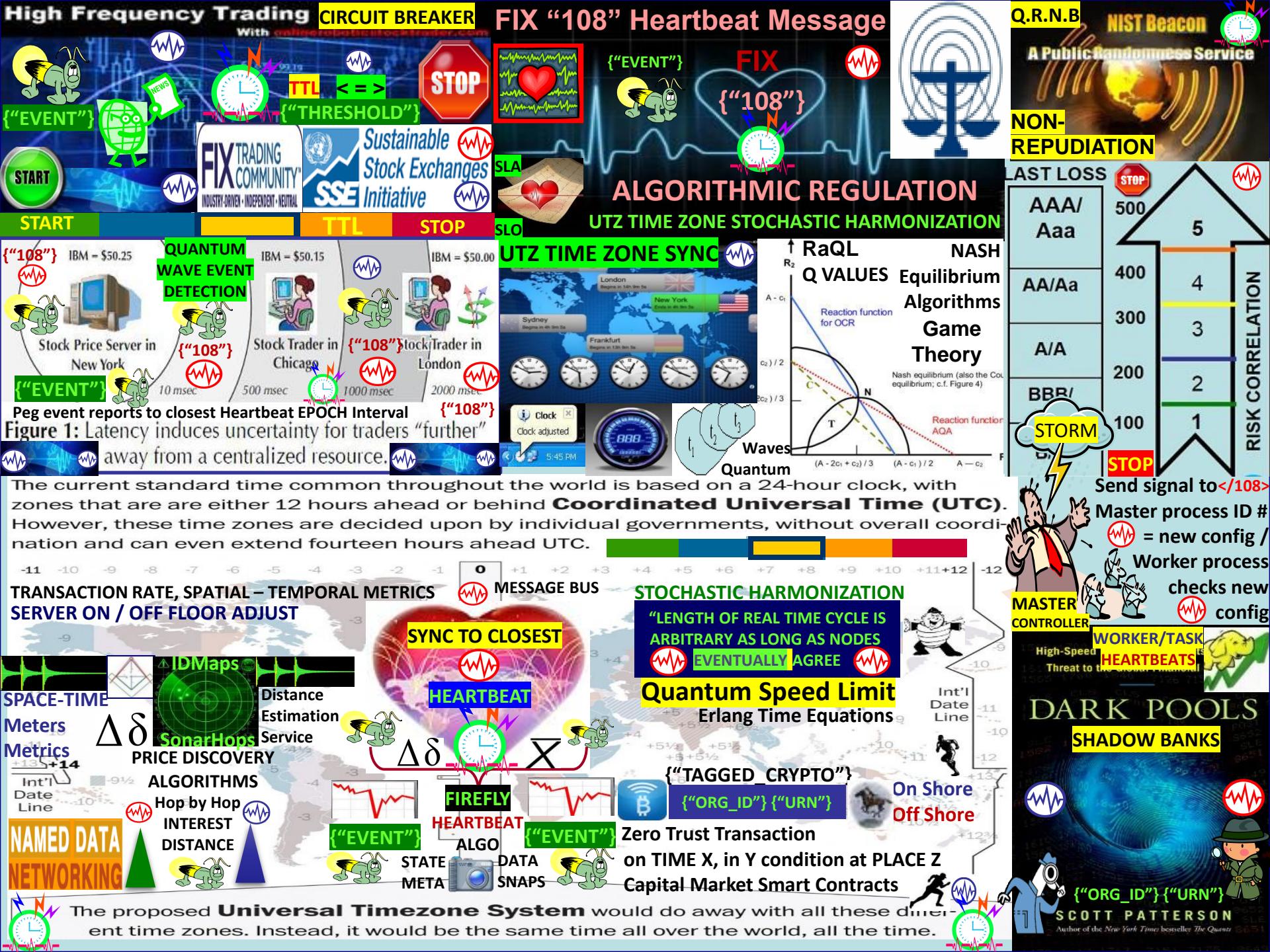
DevOps model and tools to enable scale, programmable agility, and policy-driven automation, and provides network virtualization to mask network configuration complexity with set of networking APIs



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."





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

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

SCt 573 ALICE CORP VS CLS BANK PHYSICAL MEMES

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



TIME / DISTANCE SERVICE LEVEL
AGREEMENT SLA / O Operations

IEEE 802.15.4 OASIS MQTT

TELEMETRY TRANSPORT

IEEE 802.1AG HOP BY HOP
DETECTION

IEEE 802.11
HOP BY HOP CONTROL



Unused Resources / Unmet Needs

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

DISTANCE
INFO SERVICE

Time Series

RISK

Value

Time

WATER DROP IN POND MEME IS

SONAR NAVY METAPHOR / MEME

NDN </INTEREST>

NDN {"DISTANCE"}

NAMED DATA

NETWORKING

602

$\Delta\delta$

PAUL REVERE

LINEAR, SEQUENTIAL

603

$\Delta\delta$

TCP/IP HOP BY HOP COUNT

Energy Attenuates over Distances

IEEE C37.118

Harmonization

& Sync heartbeat

update Interval

CLOSER SOURCE

CHEAPER RATE

$\Delta\delta$

TESLA

TIME / DISTANCE SERVICE LEVEL
AGREEMENT SLA / O Operations

Spatial
Econometrics

TIME-SPACE BEACON

INFOCON

Spaceship

METRICS / METERS

INFORMATION
CONDITION

Earth

TRADE WITH EARTH

???

Signals &

??? SIRIUS DISCLOSURE

Operating manual

Telemetry

for spaceship earth

Annex

???

ASTEROID BELTS =

RARE MINERALS

MOON =

MAIN ASTEROID BELT

???

"Numbers are the
Universal Language

MERCURY

offered by deity to humans as
confirmation of the truth"

EARTH

VENUS

???

ALPHA NUMERIC

MARS

???

BREVITY CODES

MAIN ASTEROID BELT

???

SYNTAX LEXICON

ERLANG

???

K0.99

TIME- SPACE METRICS

???

ANDERSON INSTITUTE

FARHER = More Cost

↗ Fuel, Resources

???

STOCHASTIC

HARMONIZATION

???

Service Level Agreements

???

???

TROJAN ASTEROIDS

???

???

EVENT MESSAGE BUS

???

???

ERLANG

???

???

TIME- SPACE METRICS

???

???

FIREFLY-HEARTBEAT

???

???

ALGORITHM

???

???

UNIVERSAL

???

???

EVENT MESSAGE BUS

???

???

43

22

13

Light minutes

0

Astronomical units

1.5

1.5

2.7

5.2

Time

Space

Time-Space

Event

Message

Bus

Epoch

Time Cycles

Intervals

cycle n

n + 1

n + 2

Time

Space

Time-Space

Event

Message

Bus

Epoch

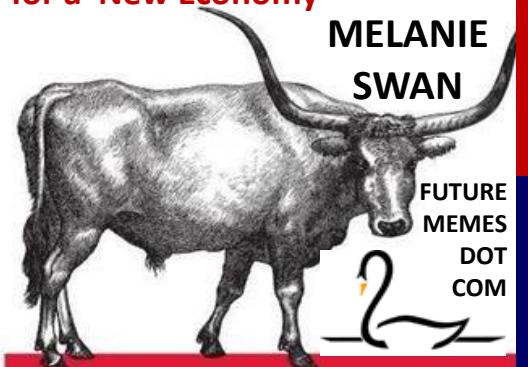
Time Cycles

Intervals

Time

Space

Time-Space



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

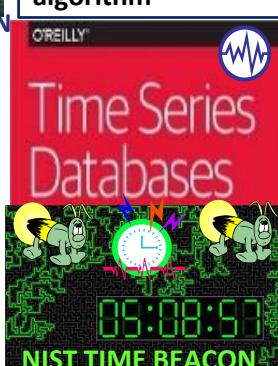


distributed "noSQL" database, embedded right into Erlang, supports indexing, replication, transactions, and fail-over

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

Mnesia database ("Organization_ID") Global name resolution

FROM	TO/CC-A	THRU	AM/PM	INFO	INFO	INFO	INFO
XBRL	/ CDL / DAML						
ALPHA NUMERIC							
BREVITY CODES							
AZURE	BLETCHLEY						
STRUCTURED							
MILITARY MESSAGE							
TEMPLATE FORMS							
LOGIC / FILTERS							





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



$\Delta\delta$

Price Indexes in
Time and Space
Methods and Practice

SchellingPoint

Closer = cheaper



Firefly – Heartbeat

Algorithm Emulation

Neural Net

Qubit

Time – Space
Meter Metrics



Algorithmic Regulation

A.I.

UTZ SYNC
STOCHASTIC HARMONIZATION

London
Sydney
New York
Frankfurt

16w Advanced
16w
16w
16w

Search {"108"} {"108"}

#DeFi All Market Orders {"108"}

Pay {"Org_ID"} {"URN"} {"Tagged_Bitcoins"}

Expiry {"108"} {"108"}

Collateral Notional Expiry

FIREFLY HEARTBEAT ALGO EVENT MSG BUS

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

{"Org_ID"} {"Tagged"} {"URN"}

Cryptos

Non Repudiation

QRNB NIST Beacon

A Public Randomness Service

IDMaps SonarHops

DISTANCE ESTIMATION SERVICE

SYNTAX LEXICON OPSCODE

Brevity Codes mapped

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

Place Order X veritaseum™

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

NAMED DATA NETWORKING {"TAGGED"} CRYPTO

Denominating Asset: ~BTC:SATOSHIS

Contract Expiry: 16w

Contract Starts at: -

Contract Ends at: -

Cancel Contract at: -

Est. Trans. Fees: \$0.0437

Transaction Fees: \$1.0262

Leverage Fees: \$3.2528

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

Total Required: \$104.3227

05:08:50

NIST TIME BEACON

UTZ Time Zone Sync

START

Heartbeat Flash Messages Precedence Processing

Collateral Notional Expiry

FIREFLY HEARTBEAT ALGO EVENT MSG BUS

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

{"Org_ID"} {"Tagged"} {"URN"}

STOP TTL

t₁ t₂ t₃

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



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



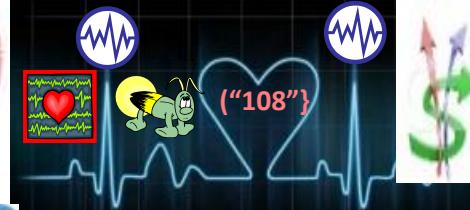
- Creates an online store for users to sell goods for Bitcoin
- Connects these stores directly to each other on a global network
- Users browse individual stores, search for products across whole network
- A buyer directly connects, purchases good from the merchant using Bitcoin
- Bitcoin payments via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

OPENBAZAAR.ORG
BLOCKCHAIN ARBITRAGE



CLOSER = < \$
CLOSER = < CO2

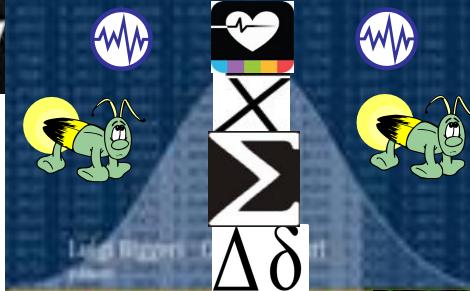
SLA
COMMODITIES
ECONOMIC HEARTBEAT



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

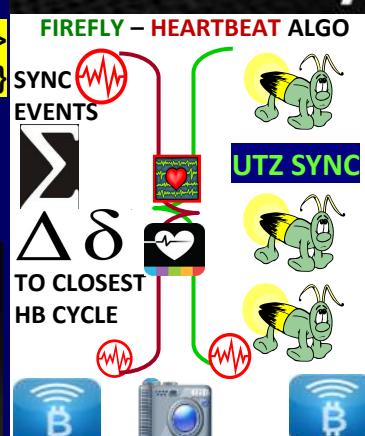
ORG ID
Gateway

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)

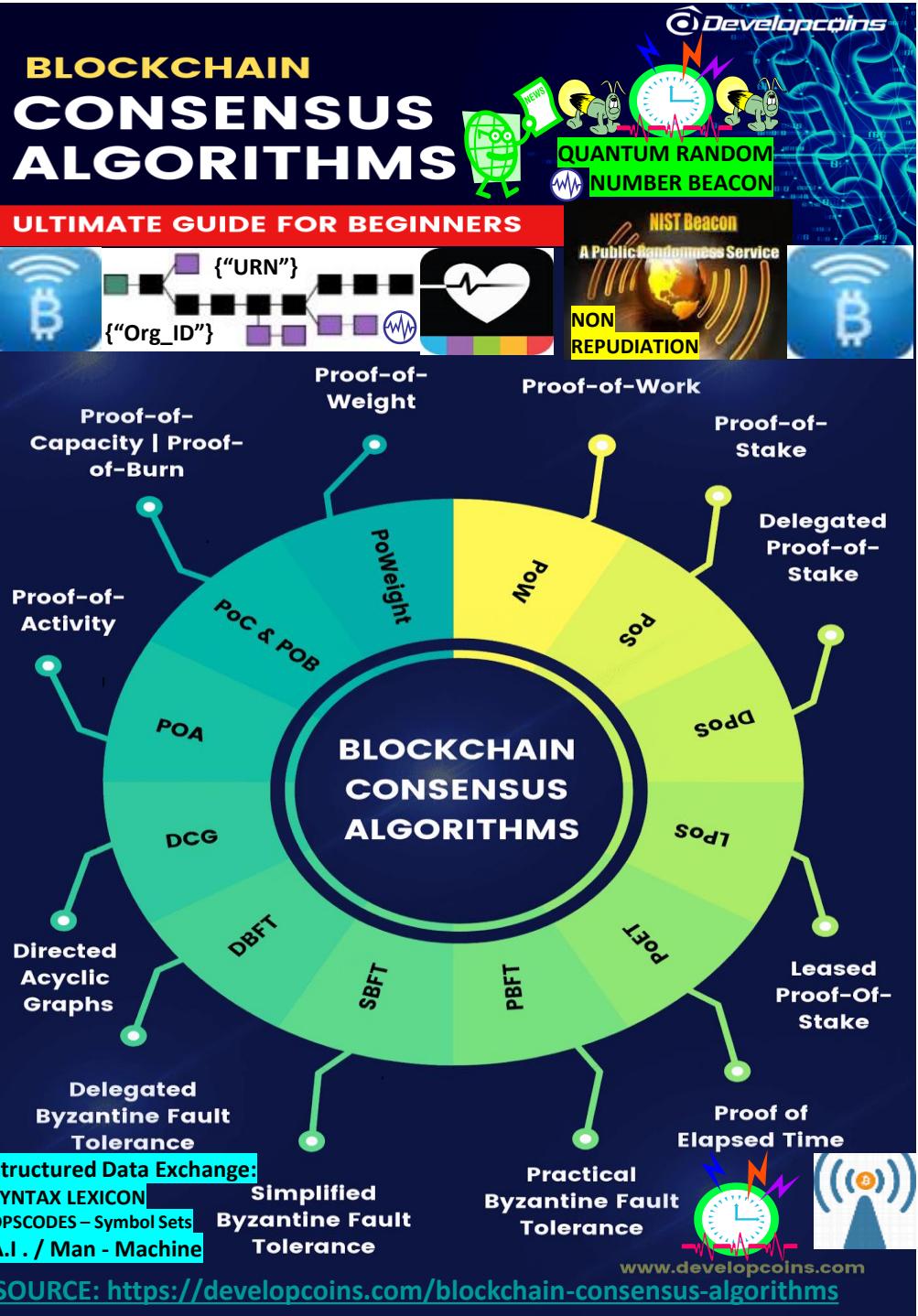
Proof of Formulation: PoF: generation / propagation of blocks using a previously agreed sequence between participants of the generation of blocks, formed by two groups: a generator group and/or Formulator and a group of synchronization.



BLOCKCHAIN BABEL

THE CRYPTO CRAZE AND THE CHALLENGE TO BUSINESS

IGOR PEJIC

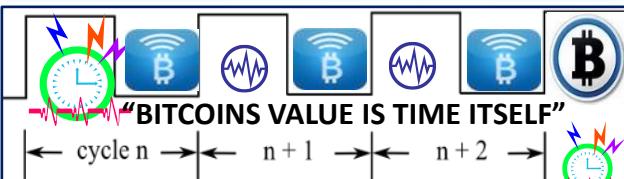




PROOF-OF-WORK



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



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

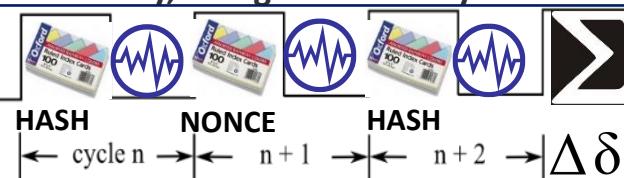


THROTTLE equivalent to difficulty. State
•target = maximum value of 8 bytes Snap
(2^{64}) divided by the difficulty. Shots

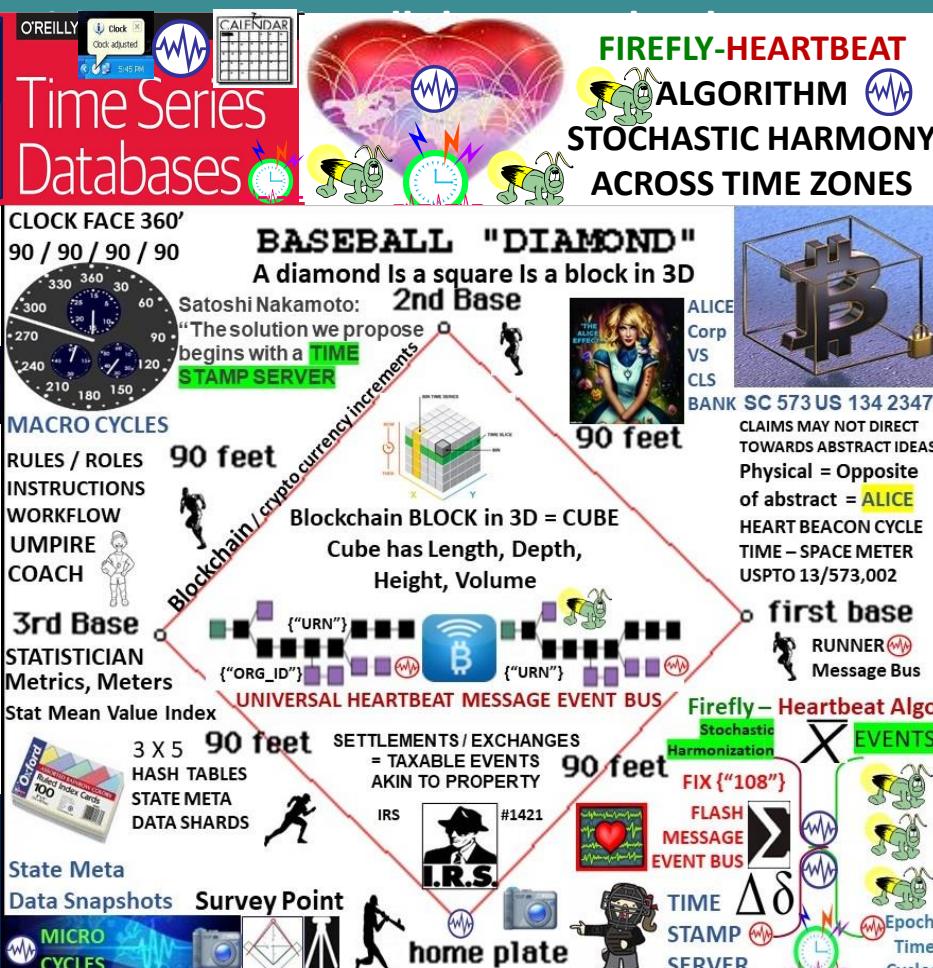
NONCE increments from 0..N until the target is met.



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



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



A photograph of a box of Oxford brand ruled index cards. The box is white with blue and yellow accents. The word 'Oxford' is printed in blue at the top left. Below it, in a larger font, is 'RULED INDEX CARDS'. At the bottom right of the box, the number '100' is prominently displayed. A barcode is visible at the bottom right corner of the box.

300+Message Templates

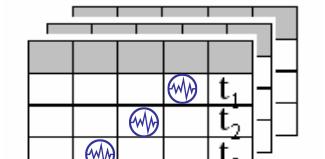
LOGIC FILTERS

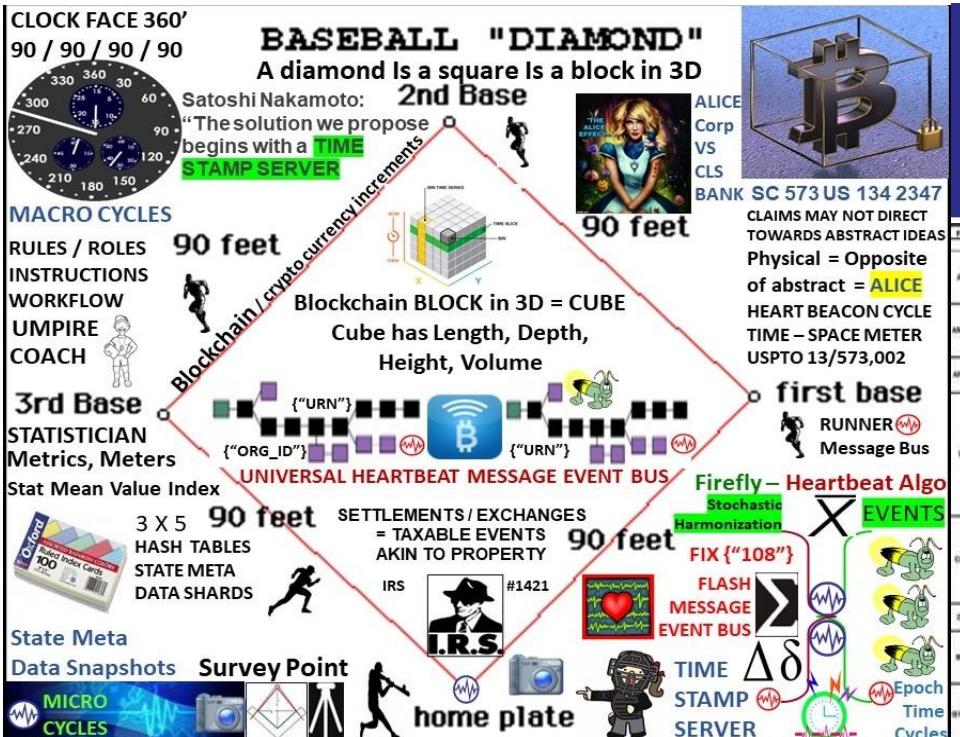
LOGIC GATES

SYNTAX LIBRARY LEXICON

CODER'S GUIDE

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





TRANSACTIONS PER CYCLE METRICS

The image shows the official logo of the Internal Revenue Service (IRS). It features a black silhouette of a man wearing a fedora hat and a suit jacket over a white shirt. The man's hands are clasped together near his chin, suggesting a thoughtful or stern expression. Below the silhouette, the letters "I.R.S." are written in a large, bold, black font. Underneath "I.R.S.", there is a line of text that reads "IRS Memo #1421" followed by "Bitcoin purchase" and "property".

UTXO: unspent transaction output'. bitcoins **sent somewhere** but not yet spent. Unspent transaction output set= latest  **STATE** of every Bitcoins ever mined" % Block Mined / % Block owned

A BASEBALL DIAMOND IS A SQUARE. HBC USES A BASEBALL METAPHOR TO DESCRIBE METRICS, METERS. ROUNDING BASES FORM A BLOCK. METRICS, METERS & SURVEY METHODS MEASURE COIN MINING COMPLETION % AWARDS

STRUCTURED {"CONTENT"} TEMPLATES

	FTR1	FTR2	FTR3	FTR4	FTR5	FTR6	FTR7	FTR8	FTR9	FTR10	FTR11	FTR12	FTR13	FTR14	FTR15	FTR16	FTR17	FTR18	FTR19	FTR20	FTR21	FTR22	FTR23	FTR24	FTR25	FTR26	FTR27	FTR28	FTR29	FTR30	FTR31	FTR32	FTR33	FTR34	FTR35	FTR36	FTR37	FTR38	FTR39	FTR40	FTR41	FTR42	FTR43	FTR44	FTR45	FTR46	FTR47	FTR48	FTR49	FTR50	FTR51	FTR52	FTR53	FTR54	FTR55	FTR56	FTR57	FTR58	FTR59	FTR60	FTR61	FTR62	FTR63	FTR64	FTR65	FTR66	FTR67	FTR68	FTR69	FTR70	FTR71	FTR72	FTR73	FTR74	FTR75	FTR76	FTR77	FTR78	FTR79	FTR80	FTR81	FTR82	FTR83	FTR84	FTR85	FTR86	FTR87	FTR88	FTR89	FTR90	FTR91	FTR92	FTR93	FTR94	FTR95	FTR96	FTR97	FTR98	FTR99	FTR100	FTR101	FTR102	FTR103	FTR104	FTR105	FTR106	FTR107	FTR108	FTR109	FTR110	FTR111	FTR112	FTR113	FTR114	FTR115	FTR116	FTR117	FTR118	FTR119	FTR120	FTR121	FTR122	FTR123	FTR124	FTR125	FTR126	FTR127	FTR128	FTR129	FTR130	FTR131	FTR132	FTR133	FTR134	FTR135	FTR136	FTR137	FTR138	FTR139	FTR140	FTR141	FTR142	FTR143	FTR144	FTR145	FTR146	FTR147	FTR148	FTR149	FTR150	FTR151	FTR152	FTR153	FTR154	FTR155	FTR156	FTR157	FTR158	FTR159	FTR160	FTR161	FTR162	FTR163	FTR164	FTR165	FTR166	FTR167	FTR168	FTR169	FTR170	FTR171	FTR172	FTR173	FTR174	FTR175	FTR176	FTR177	FTR178	FTR179	FTR180	FTR181	FTR182	FTR183	FTR184	FTR185	FTR186	FTR187	FTR188	FTR189	FTR190	FTR191	FTR192	FTR193	FTR194	FTR195	FTR196	FTR197	FTR198	FTR199	FTR200	FTR201	FTR202	FTR203	FTR204	FTR205	FTR206	FTR207	FTR208	FTR209	FTR210	FTR211	FTR212	FTR213	FTR214	FTR215	FTR216	FTR217	FTR218	FTR219	FTR220	FTR221	FTR222	FTR223	FTR224	FTR225	FTR226	FTR227	FTR228	FTR229	FTR230	FTR231	FTR232	FTR233	FTR234	FTR235	FTR236	FTR237	FTR238	FTR239	FTR240	FTR241	FTR242	FTR243	FTR244	FTR245	FTR246	FTR247	FTR248	FTR249	FTR250	FTR251	FTR252	FTR253	FTR254	FTR255	FTR256	FTR257	FTR258	FTR259	FTR260	FTR261	FTR262	FTR263	FTR264	FTR265	FTR266	FTR267	FTR268	FTR269	FTR270	FTR271	FTR272	FTR273	FTR274	FTR275	FTR276	FTR277	FTR278	FTR279	FTR280	FTR281	FTR282	FTR283	FTR284	FTR285	FTR286	FTR287	FTR288	FTR289	FTR290	FTR291	FTR292	FTR293	FTR294	FTR295	FTR296	FTR297	FTR298	FTR299	FTR300	FTR301	FTR302	FTR303	FTR304	FTR305	FTR306	FTR307	FTR308	FTR309	FTR310	FTR311	FTR312	FTR313	FTR314	FTR315	FTR316	FTR317	FTR318	FTR319	FTR320	FTR321	FTR322	FTR323	FTR324	FTR325	FTR326	FTR327	FTR328	FTR329	FTR330	FTR331	FTR332	FTR333	FTR334	FTR335	FTR336	FTR337	FTR338	FTR339	FTR340	FTR341	FTR342	FTR343	FTR344	FTR345	FTR346	FTR347	FTR348	FTR349	FTR350	FTR351	FTR352	FTR353	FTR354	FTR355	FTR356	FTR357	FTR358	FTR359	FTR360	FTR361	FTR362	FTR363	FTR364	FTR365	FTR366	FTR367	FTR368	FTR369	FTR370	FTR371	FTR372	FTR373	FTR374	FTR375	FTR376	FTR377	FTR378	FTR379	FTR380	FTR381	FTR382	FTR383	FTR384	FTR385	FTR386	FTR387	FTR388	FTR389	FTR390	FTR391	FTR392	FTR393	FTR394	FTR395	FTR396	FTR397	FTR398	FTR399	FTR400	FTR401	FTR402	FTR403	FTR404	FTR405	FTR406	FTR407	FTR408	FTR409	FTR410	FTR411	FTR412	FTR413	FTR414	FTR415	FTR416	FTR417	FTR418	FTR419	FTR420	FTR421	FTR422	FTR423	FTR424	FTR425	FTR426	FTR427	FTR428	FTR429	FTR430	FTR431	FTR432	FTR433	FTR434	FTR435	FTR436	FTR437	FTR438	FTR439	FTR440	FTR441	FTR442	FTR443	FTR444	FTR445	FTR446	FTR447	FTR448	FTR449	FTR450	FTR451	FTR452	FTR453	FTR454	FTR455	FTR456	FTR457	FTR458	FTR459	FTR460	FTR461	FTR462	FTR463	FTR464	FTR465	FTR466	FTR467	FTR468	FTR469	FTR470	FTR471	FTR472	FTR473	FTR474	FTR475	FTR476	FTR477	FTR478	FTR479	FTR480	FTR481	FTR482	FTR483	FTR484	FTR485	FTR486	FTR487	FTR488	FTR489	FTR490	FTR491	FTR492	FTR493	FTR494	FTR495	FTR496	FTR497	FTR498	FTR499	FTR500	FTR501	FTR502	FTR503	FTR504	FTR505	FTR506	FTR507	FTR508	FTR509	FTR510	FTR511	FTR512	FTR513	FTR514	FTR515	FTR516	FTR517	FTR518	FTR519	FTR520	FTR521	FTR522	FTR523	FTR524	FTR525	FTR526	FTR527	FTR528	FTR529	FTR530	FTR531	FTR532	FTR533	FTR534	FTR535	FTR536	FTR537	FTR538	FTR539	FTR540	FTR541	FTR542	FTR543	FTR544	FTR545	FTR546	FTR547	FTR548	FTR549	FTR550	FTR551	FTR552	FTR553	FTR554	FTR555	FTR556	FTR557	FTR558	FTR559	FTR560	FTR561	FTR562	FTR563	FTR564	FTR565	FTR566	FTR567	FTR568	FTR569	FTR570	FTR571	FTR572	FTR573	FTR574	FTR575	FTR576	FTR577	FTR578	FTR579	FTR580	FTR581	FTR582	FTR583	FTR584	FTR585	FTR586	FTR587	FTR588	FTR589	FTR590	FTR591	FTR592	FTR593	FTR594	FTR595	FTR596	FTR597	FTR598	FTR599	FTR600	FTR601	FTR602	FTR603	FTR604	FTR605	FTR606	FTR607	FTR608	FTR609	FTR610	FTR611	FTR612	FTR613	FTR614	FTR615	FTR616	FTR617	FTR618	FTR619	FTR620	FTR621	FTR622	FTR623	FTR624	FTR625	FTR626	FTR627	FTR628	FTR629	FTR630	FTR631	FTR632	FTR633	FTR634	FTR635	FTR636	FTR637	FTR638	FTR639	FTR640	FTR641	FTR642	FTR643	FTR644	FTR645	FTR646	FTR647	FTR648	FTR649	FTR650	FTR651	FTR652	FTR653	FTR654	FTR655	FTR656	FTR657	FTR658	FTR659	FTR660	FTR661	FTR662	FTR663	FTR664	FTR665	FTR666	FTR667	FTR668	FTR669	FTR670	FTR671	FTR672	FTR673	FTR674	FTR675	FTR676	FTR677	FTR678	FTR679	FTR680	FTR681	FTR682	FTR683	FTR684	FTR685	FTR686	FTR687	FTR688	FTR689	FTR690	FTR691	FTR692	FTR693	FTR694	FTR695	FTR696	FTR697	FTR698	FTR699	FTR700	FTR701	FTR702	FTR703	FTR704	FTR705	FTR706	FTR707	FTR708	FTR709	FTR710	FTR711	FTR712	FTR713	FTR714	FTR715	FTR716	FTR717	FTR718	FTR719	FTR720	FTR721	FTR722	FTR723	FTR724	FTR725	FTR726	FTR727	FTR728	FTR729	FTR7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STRUCTURED {"CONTENT"} TEMPLATES

SYNTAX, SYMBOLS LEXICON LIBRARY

LOGIC – FILTERS CODE SEQUENCE

ROLES / RULES

Attribute Series

Digital Asset Modeling Language

DAML Language CDL

IDMaps SonarHops

Contract Description

Euclidean Geometry

Named Data Networking

Time Series

Fix {"108"}

NDN

distance →

time ↑

firefly – Heartbeat Event Bus

1: prove coin ownership <Org_ID> Coin Issuer

2: # coins sent where, when Lat / Long, DTG

3: NIST Random # Beacon Non-Repudiation

4: Issuing {"Org_ID"} adjudicates w buyers

Coin Age proof-of-stake system combines randomization with the concept of "coin age," a number derived from the product of the number of coins times the number of days the coins have been held.

Randomized block selection randomization predicts following generator by using a formula that looks for the lowest hash value stake size

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



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.

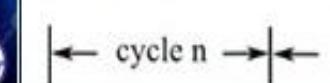
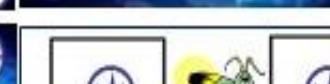
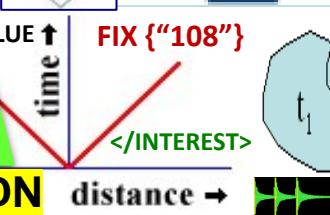
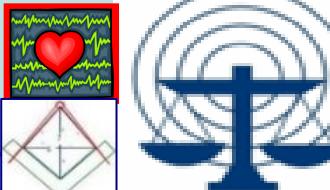


TIME – SPACE MEASUREMENTS OF TOKENIZED COMMODITIES, SECURITIES... STOCHASTICALLY HARMONIZED ACROSS UTZ Universal Time Zone



The Volumetric Weight is often referred to as dimensional weight

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

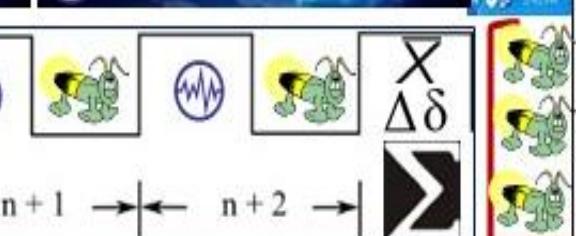
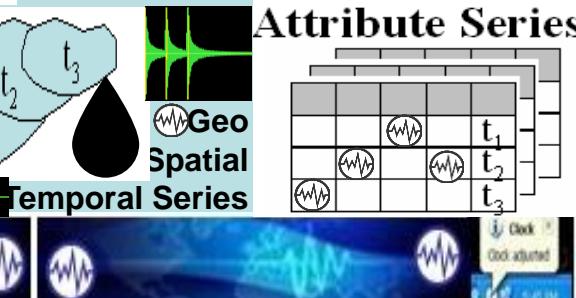


FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

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



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



X Δδ

N Δδ

DON: DECENTRALIZED ORACLE NETWORKS



Explicit Staking

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

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



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



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



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



ALERT LEVEL >

> NEWSCAST ZONE

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



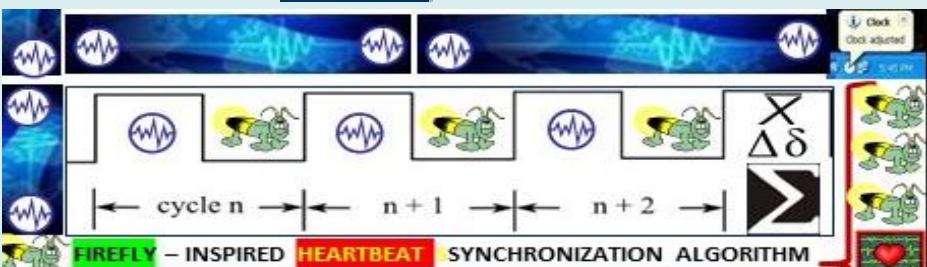
DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

Heart Beacon Cycle

FEDERATE / TRADE FEDERATIONS

Linear Sequential Meme

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



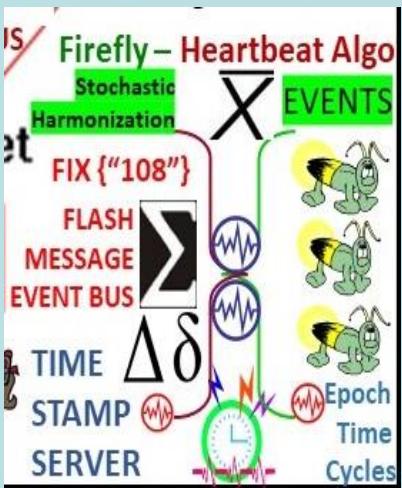
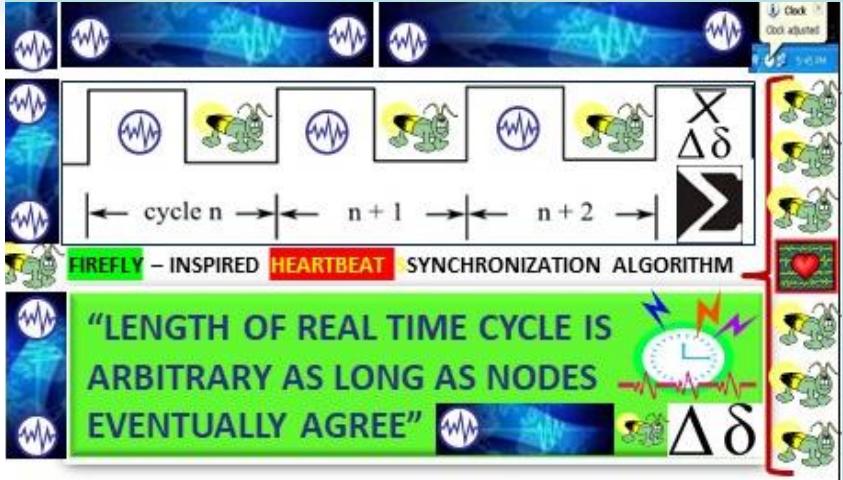
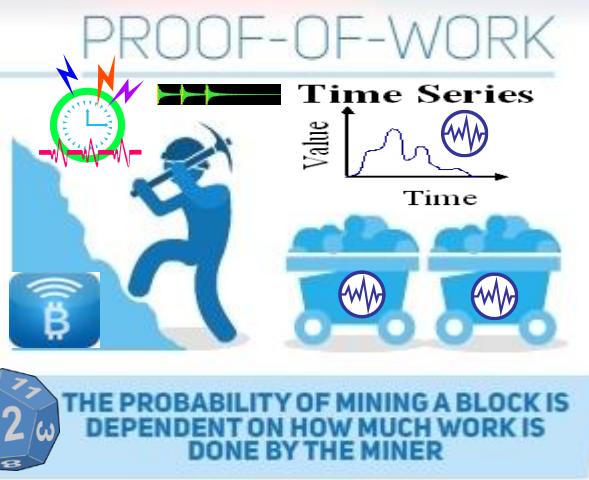
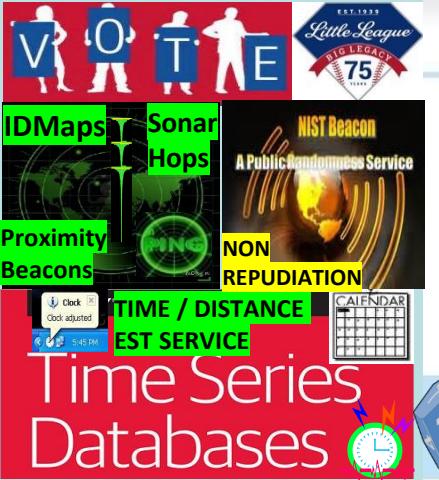


Proof-of-activity PoA is a combination of Proof of Work / Stake blockchain consensus algorithms:

Example of Proof-of-Activity (PoA)

HEART BEACON CYCLE 13/573,002

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

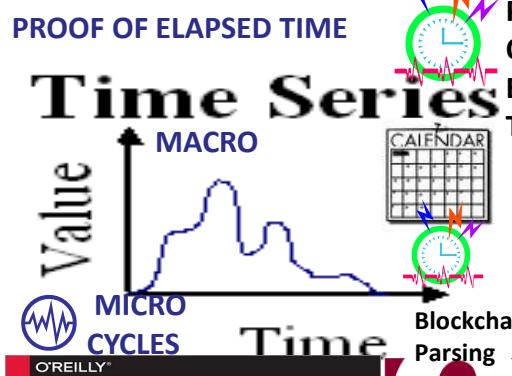


SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

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



PROOF OF ELAPSED TIME



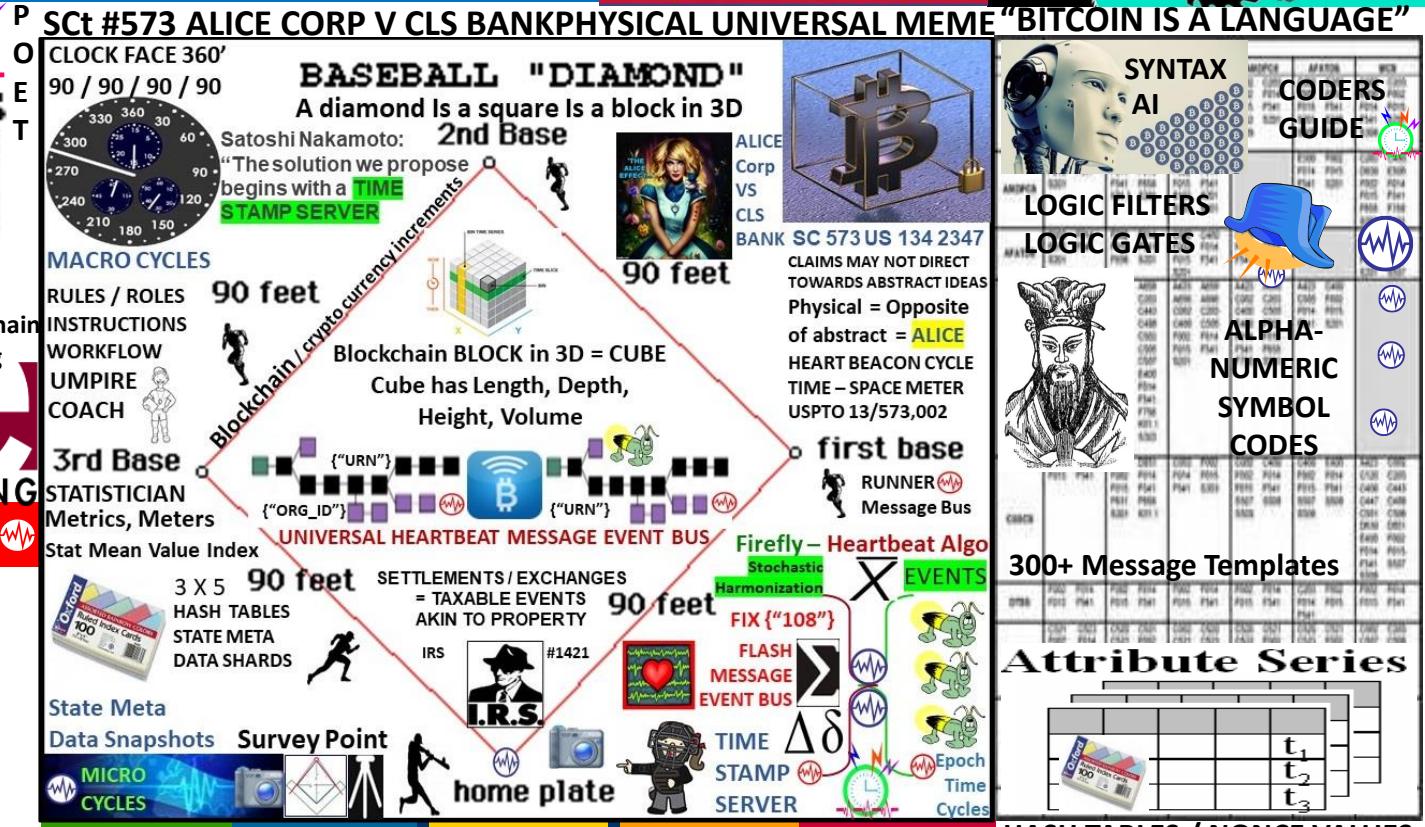
Voting Based Selection: stake size & block generators selected by votes

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

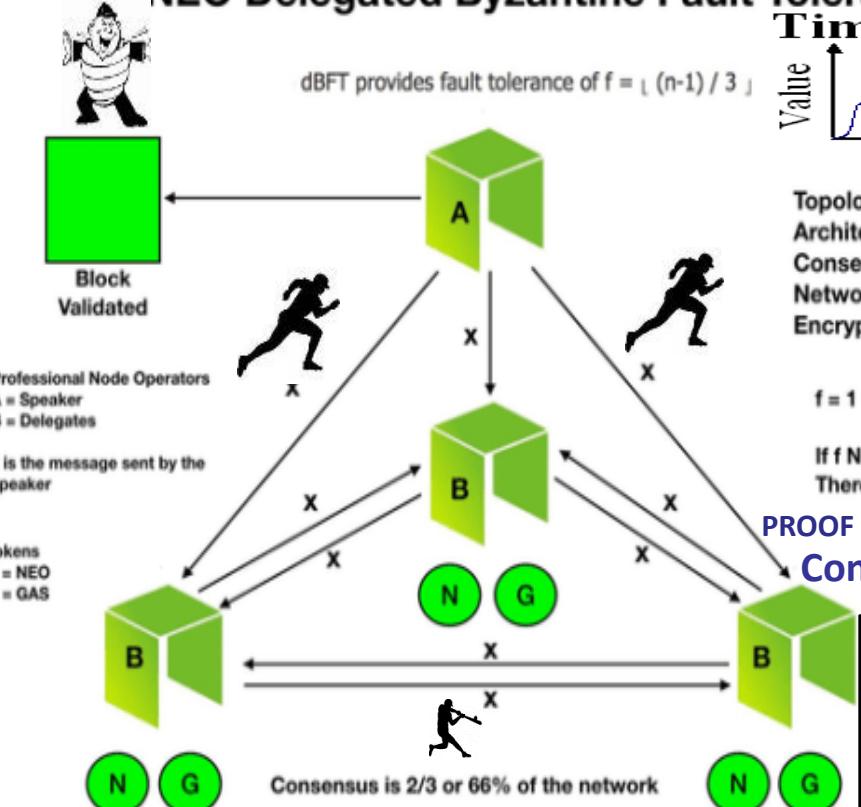


HASH TABLES / NONCE VALUES

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

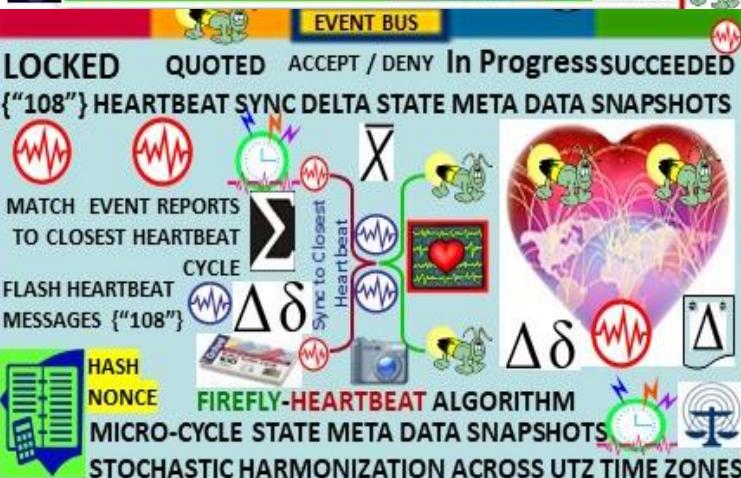
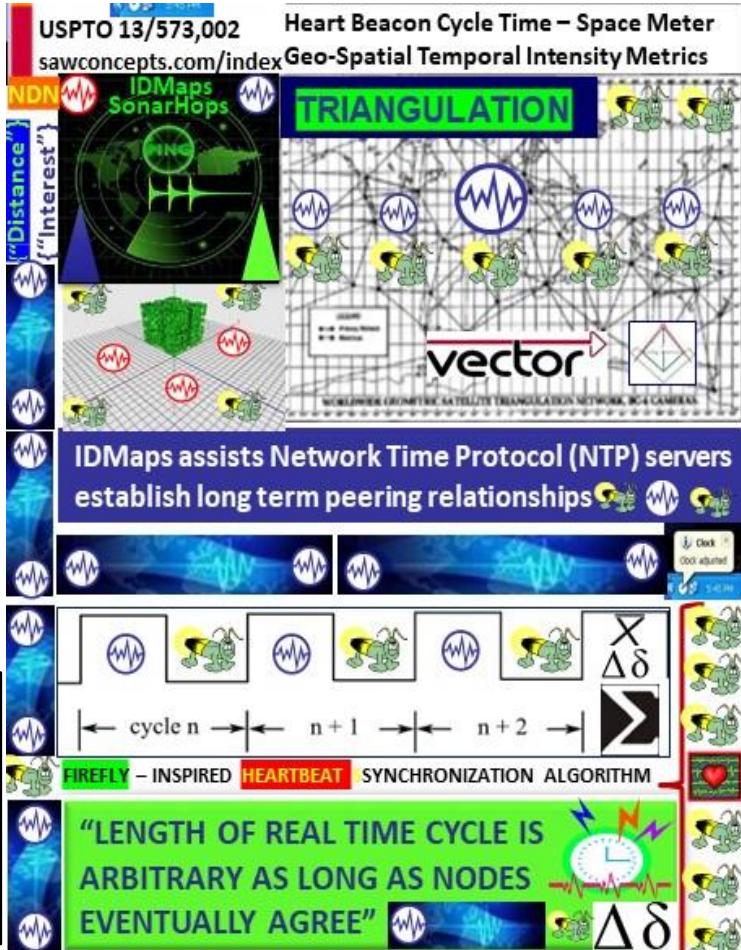


NEO Delegated Byzantine Fault Tolerance (dBFT)



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

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





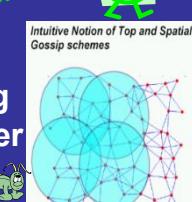
HASHGRAPH
Directed Acyclic
Graph DAG

Hashgraph consensus algorithm
for replicated state machines

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

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

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



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

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

DAG finite directed graph
= no directed cycles

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



0 / 1

Witness

Famous witness

Election

Vote

See

Strongly see

Supermajority

Decide

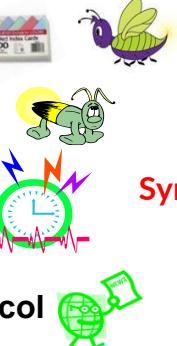
Round created

Round received

Consensus timestamp

Consensus order $\Delta\delta$

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



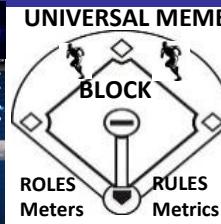
Hash Nonce

Synchronous Asynchronous

Micro-Cycle State Meta Data Snapshots

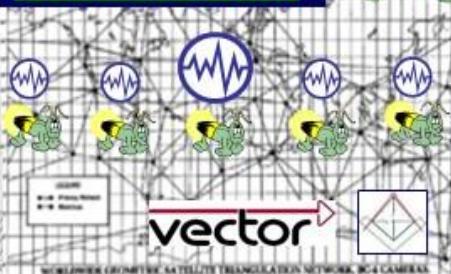
Consensus timestamp Consensus order $\Delta\delta$

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



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

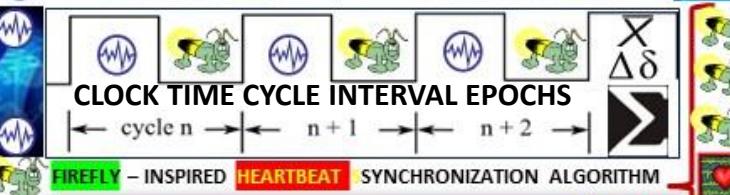
TRIANGULATION



vector
WORLDWIDE LOCATING SATELLITE TRIANGULATION NETWORK, INC & COMPANY

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

FIREFLY HEARTBEAT Synchronization Algorithm



FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

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

Proof of Burn



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

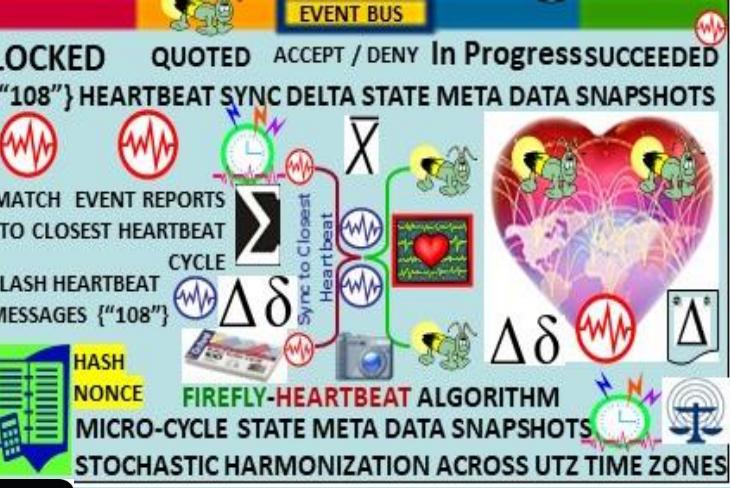
Iain Stewart, the inventor of the POB algorithm, uses an analogy to describe the algorithm: burnt coins are like mining rigs. In this analogy, a miner burns their coins to buy a virtual mining rig that gives them the power to mine blocks. The more coins burned by the miner, the bigger their virtual mining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

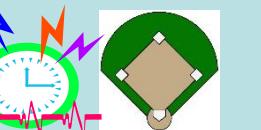
TAG	SLA/O	Token Award
{"Org_ID": ActiveID}	[UFO2_ACTIVEID]	</EVENT>
IF1_Heartbeat (IF-Node1)	[UFO2_HEARTBEAT:#]	</EVENT>
IF2_Heartbeat (IF-Node2)	[UFO2_HEARTBEAT:#]	</EVENT>
{"UUID": IF1_DeviceStatus (IF-Node1)}	[UFO2_DEVICESTAT:#]	</EVENT>
{"UUID": IF2_DeviceStatus (IF-Node2)}	[UFO2_DEVICESTAT:#]	</EVENT>
IF1_State (IF-Node1)	Δδ	[UFO2_STATE:#] IF_State
IF2_State (IF-Node2)	Δδ	[UFO2_STATE:#] 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](#).



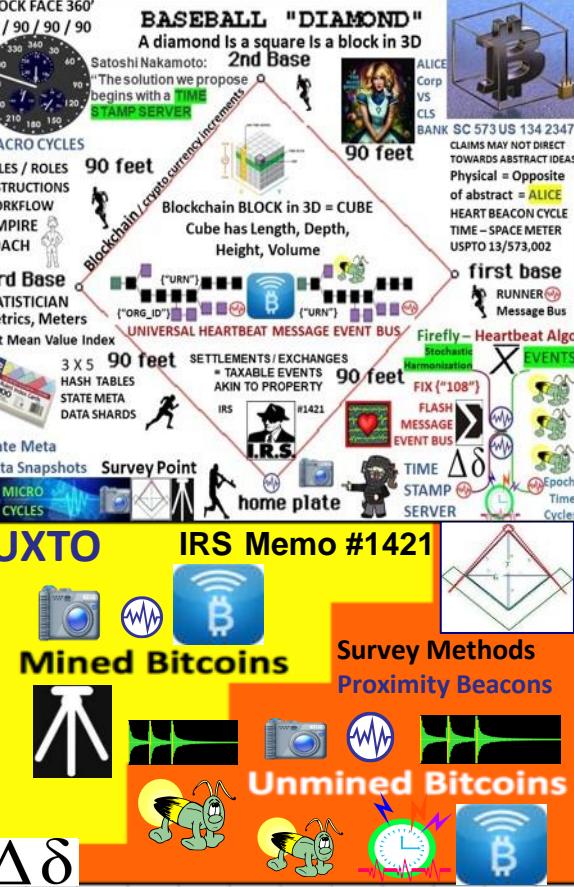
Instead of repeatedly altering the numbers in the block header & repeated hashing for the solution value as in a PoW system, PoC works by storing a list of possible solutions on the mining device's hard drive before mining activity starts



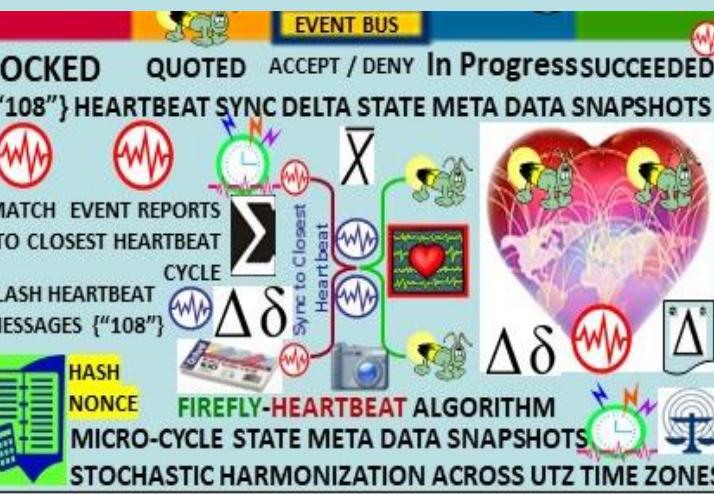
The larger the hard drive, the > possible solution values one can store on the hard drive, the more chances a miner has to match required hash value from his list, resulting in more chances to win the mining reward.



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)

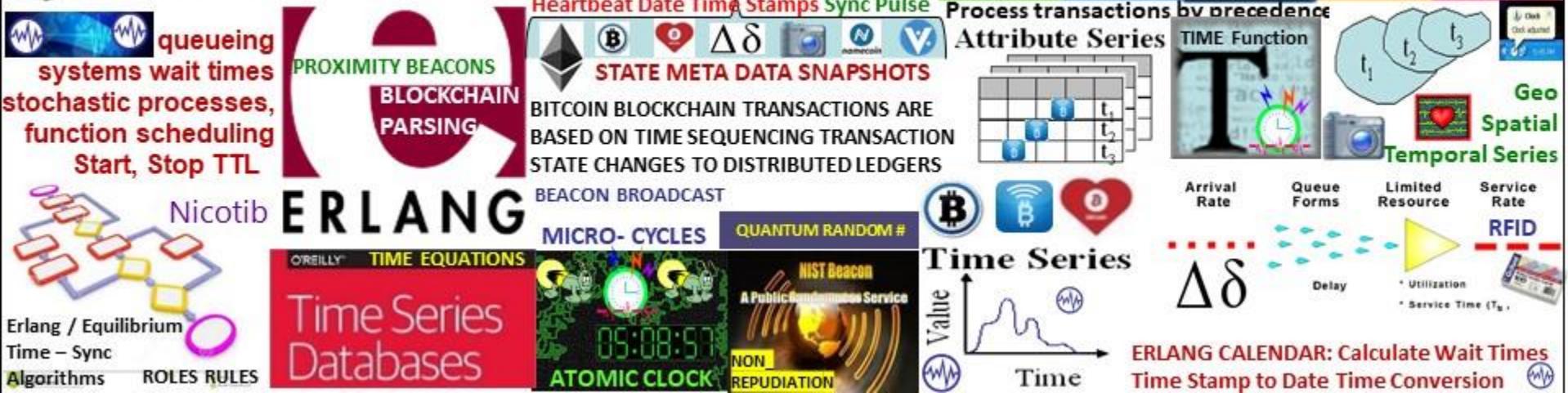
PoST shows that physically storing data (spent "spacetime" resource/allocated storage capacity to the network) over a certain period of time.



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"}

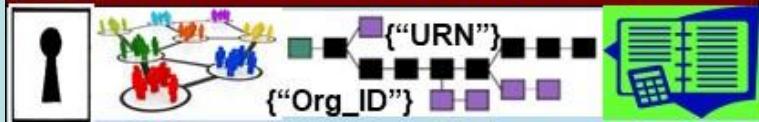
Net joins, drops, splits, merges, moves

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

DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

Heart Beacon Cycle

FEDERATE / TRADE FEDERATIONS

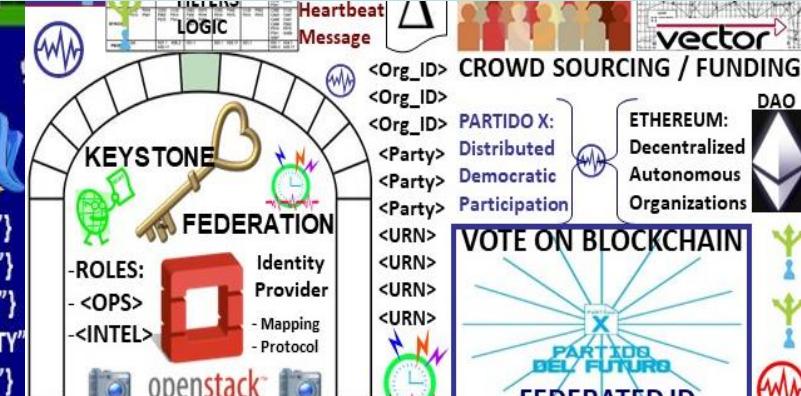


Bitcoin Mining Pools	MEME / METAPHOR MEDIATION	BITCOIN MINER	BLOCK	BLOCK
DISTRIBUTED AUTONOMOUS ORGANIZATION = DAO RAND Corp	term coined circa 1991 now in use by Blockchain tech corporations	BITCOIN MINER	BLOCK	BLOCK
Uniform_Resource_Name	FIREFLY FLASH	HEARTBEAT MESSAGES		
IoT DEVICE / PLATFORM	</RESOURCE> {"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

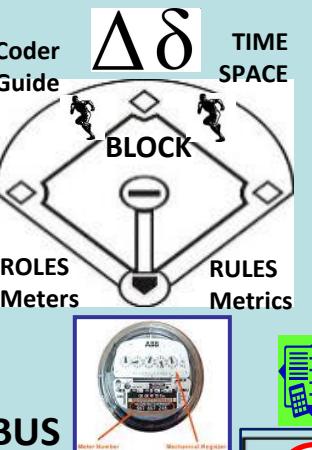
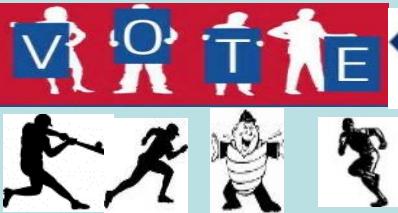
CODES / BREVITY CODES



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

KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



MVP

EVENT BUS

MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



NDN

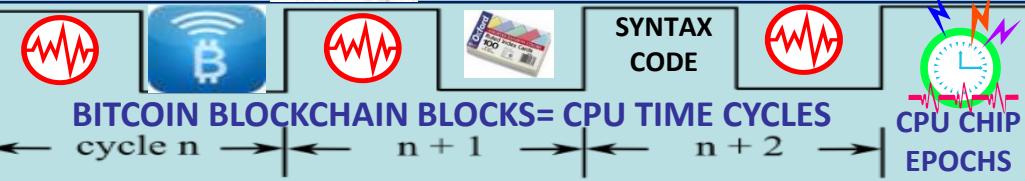
XBRIL / CDL / DAML
STOCK MIC CODES

STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS

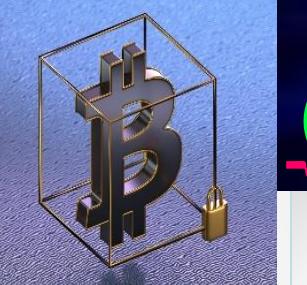


SYNTAX
LEXICON LIBRARY

CPU CHIP
EPOCHS

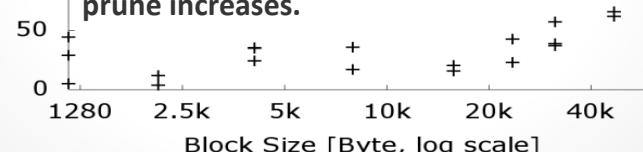


long exponential
intervals (10 min)



Subjective Time to Prune

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



COMMAND SYNTAX
RESTFUL State Transfer

MACRO – CYCLES



short deterministic
intervals (10 sec)

MICRO-CYCLES





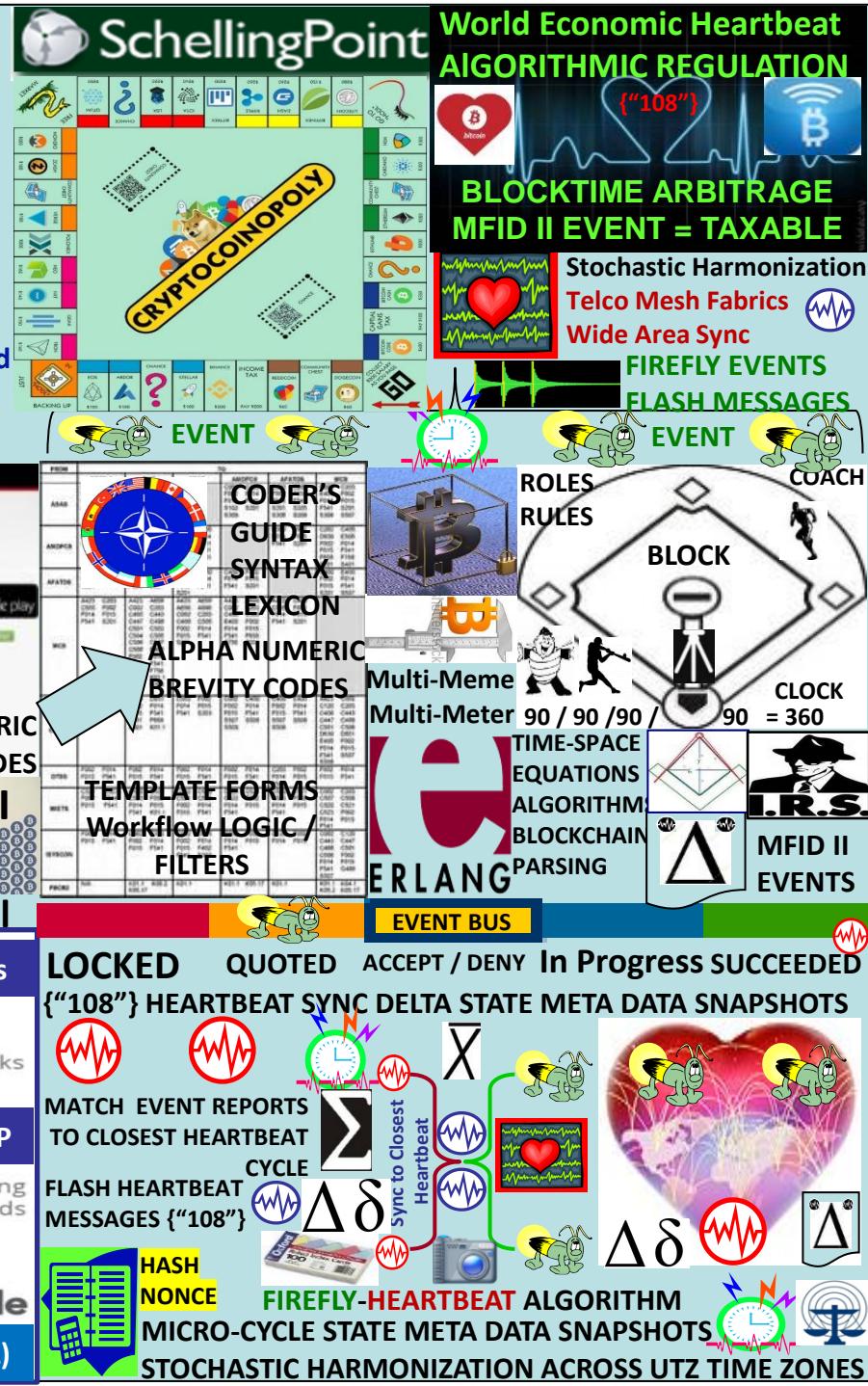
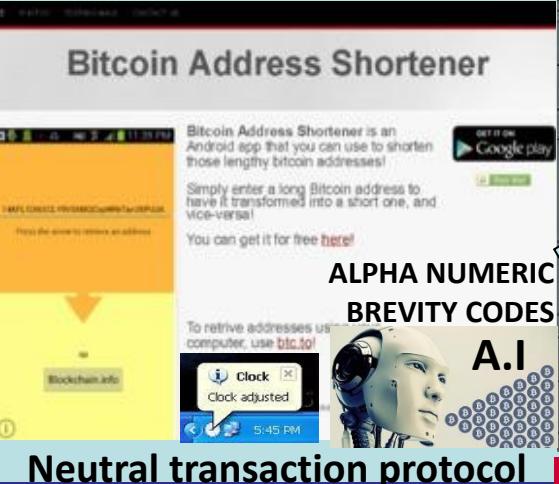
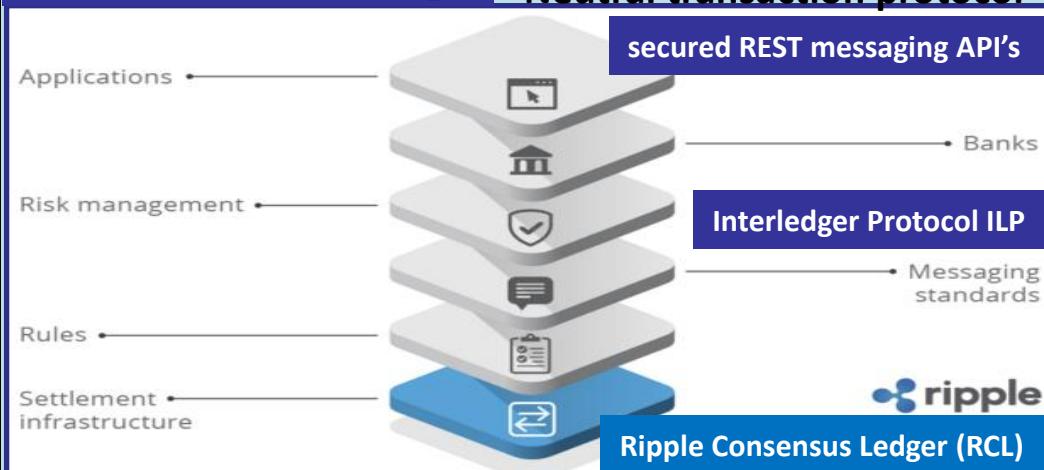
**real-time gross settlement system,
currency exchange, remittance network**

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

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

Provides information about total costs of the transaction.  

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





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

Ü

The DCMA – Digital Public Monetary System

KYC Entity	Ledgers	FX Rates	SPOT Protocol
Create	Create	Activity	Stake
Modify	Modify	Deposit	Cashout
Suspend	Suspend	Withdraw	Reject
KYC People	CBDC	Money Services	Authorizations
Create	Create	Transfer	Grant Authorization
Modify	Modify		Revoke Authorization
Suspend	Suspend		
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		Cancel Milestone	Suspend Limit
Agents	Wallets	Release Milestone	Sanctions
Create	Create		Create Sanction
Modify	Modify		Modify Sanction
Suspend	Suspend		Suspend Sanction
	Pause		
	Unpause		
	Attach		

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





UNICOIN

Digital Capital Exchange

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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

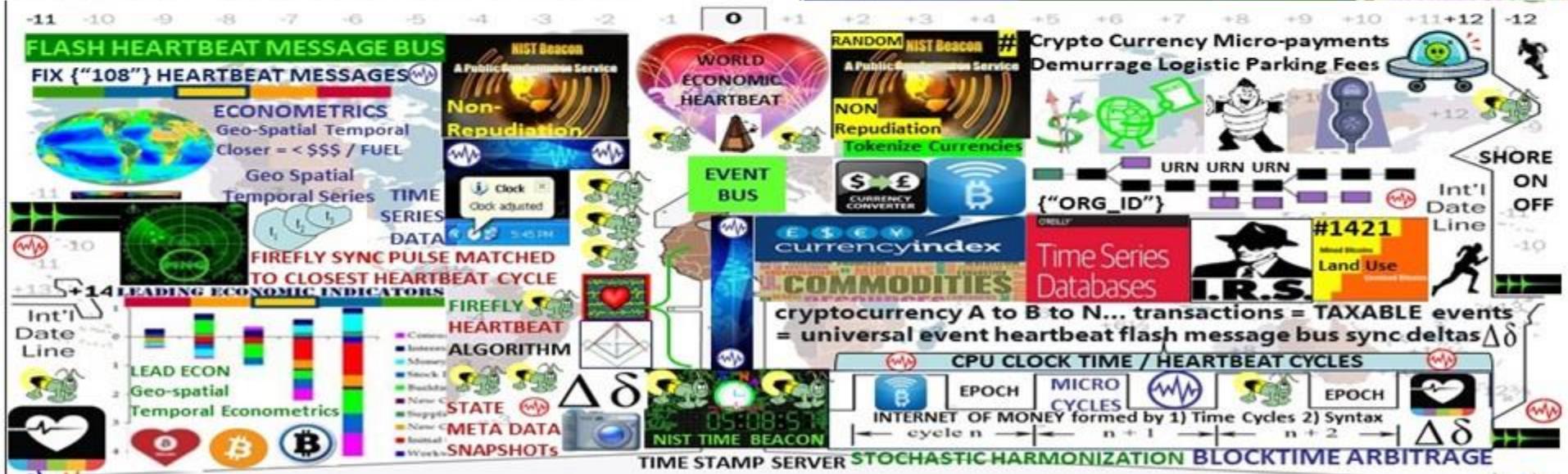
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Ü



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.



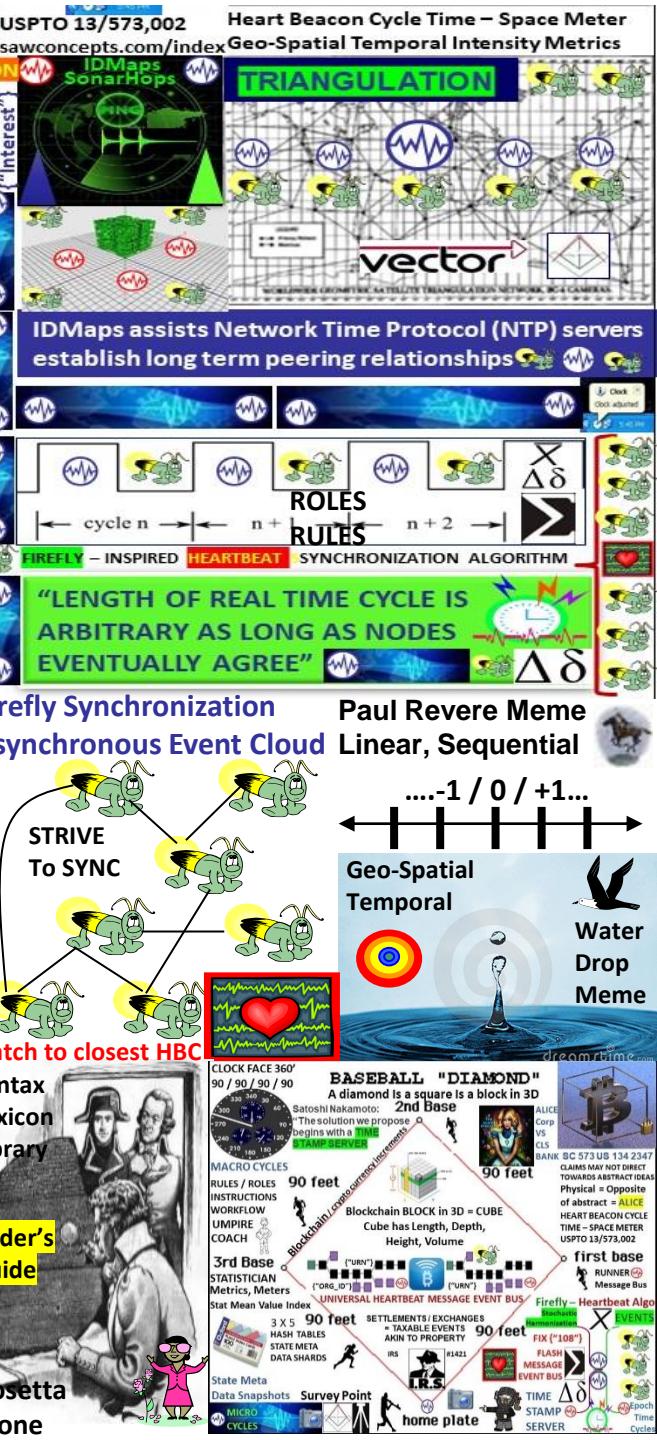
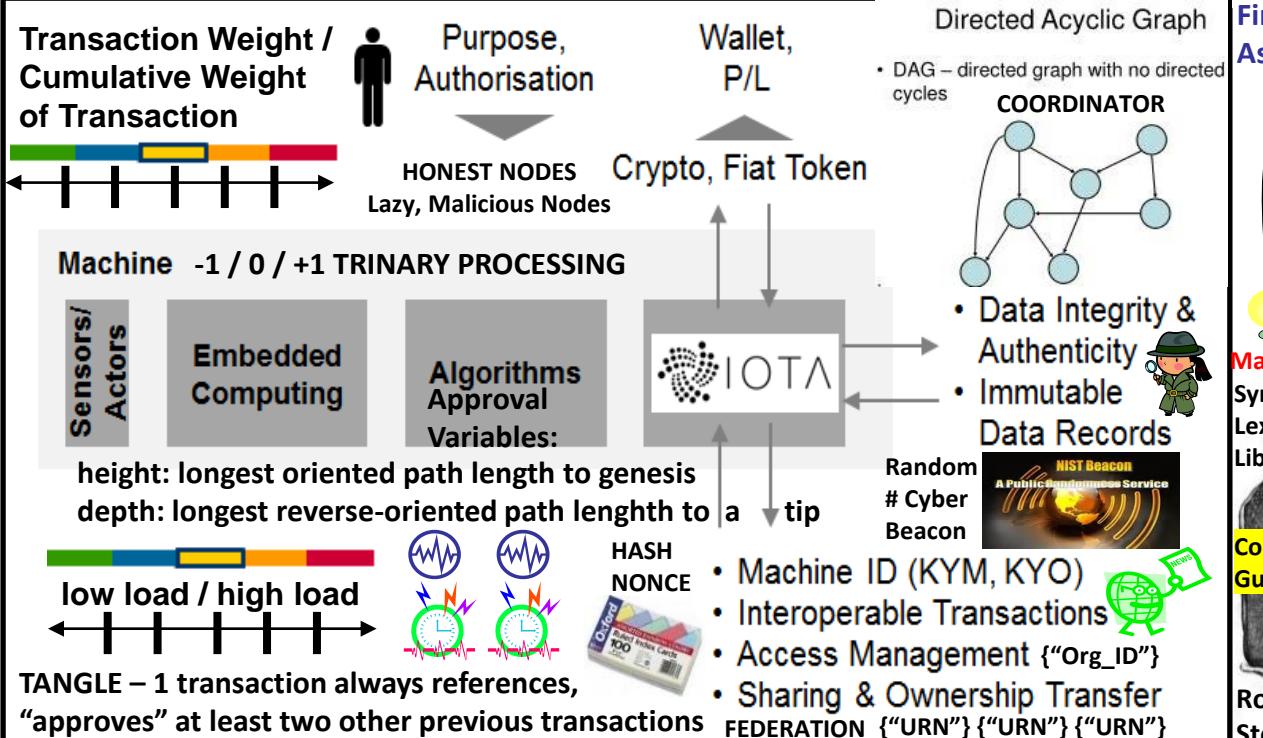


OTA: Internet Of Things IOT distributed ledger
with microtransactions without fees

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

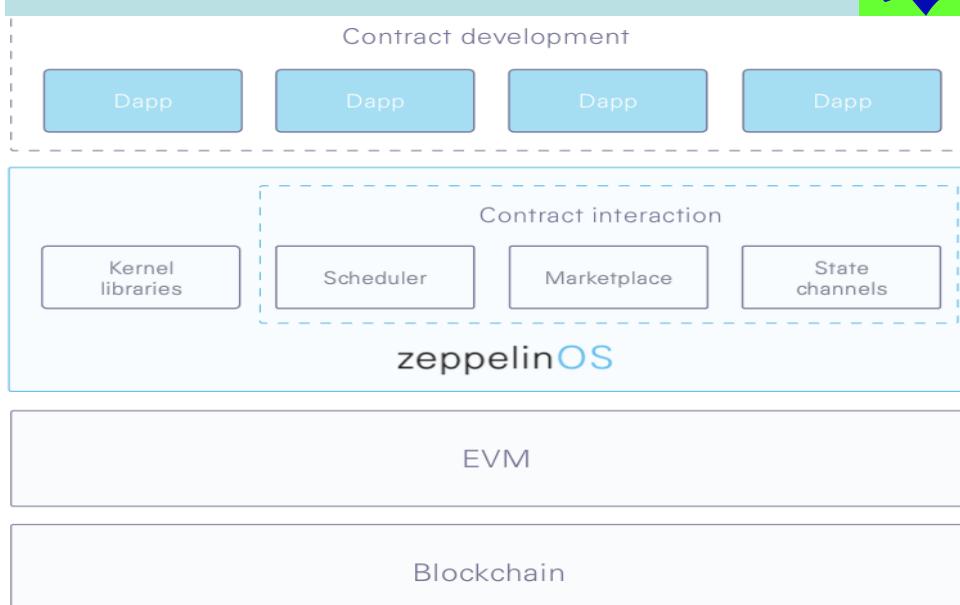
zeppelinOS, operating system for smart contracts
“the rate of innovation in building decentralized applications is limited by the manual and duplicative efforts developers must make to ensure basic usability and security.”

ZEPPELIN / zeppelinOS Common Functionality:

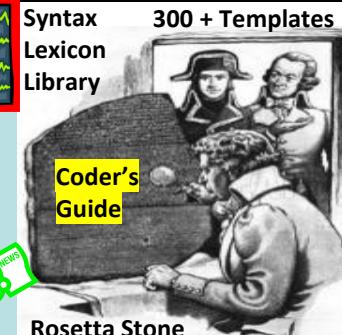
zeppelinOS Kernel common set of functions for smart contracts requesting services from the OS rather than re-implementing them from scratch. Functions will be available as an on-chain standard library of reusable contracts and functions, inspired by [OpenZeppelin](#) Libraries

Create and customize your own ERC20 Token.

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



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



STRUCTURED DATA EXCHANGE

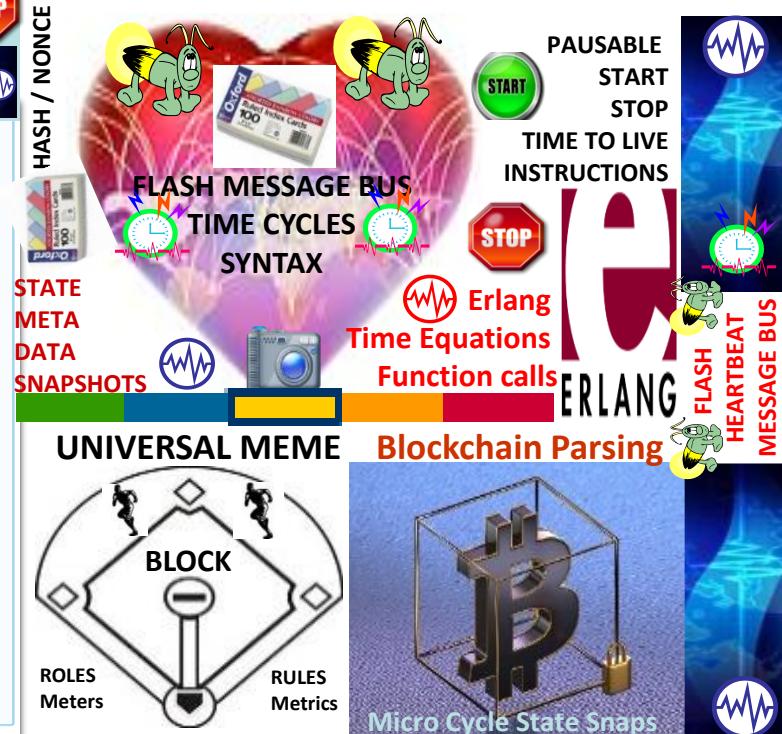
LOGIC / FILTERS

ALPHA-NUMERIC

BREVITY CODES



STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



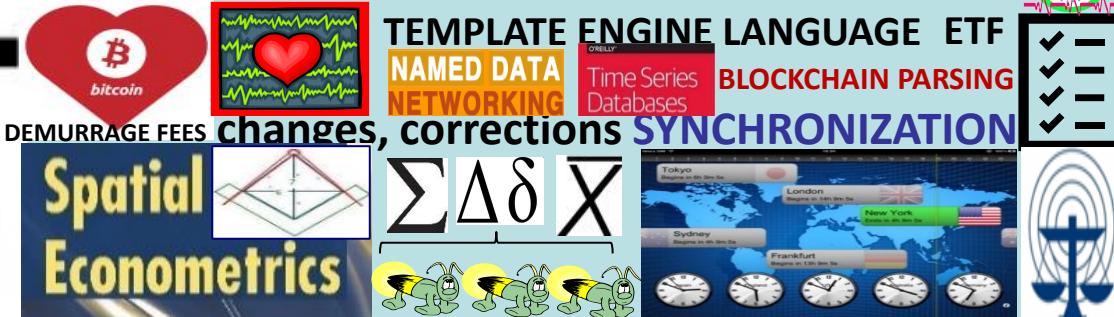
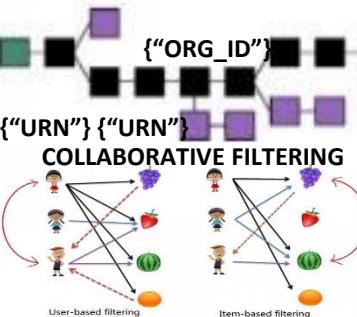


EGAAS

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

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.



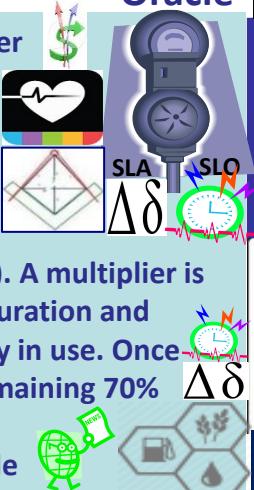
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.

"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

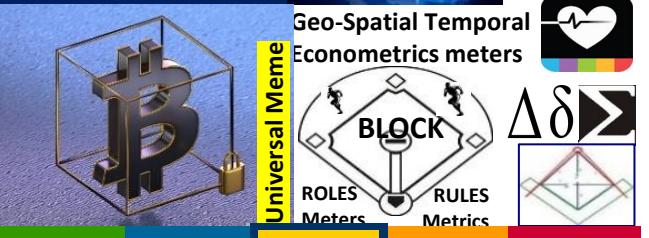


THE TERRA (TRC)

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"

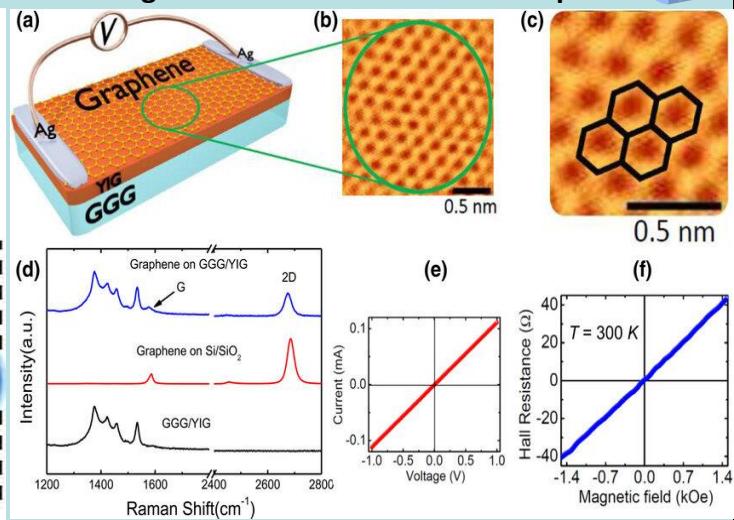
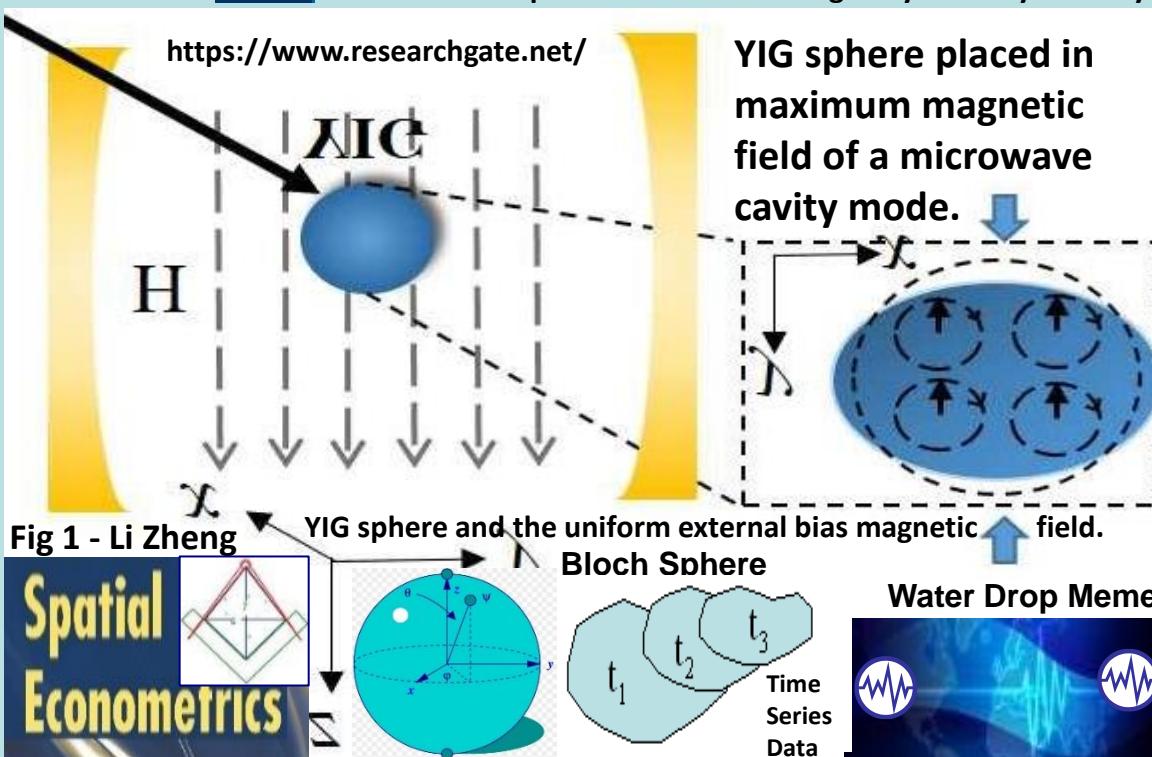




"When space-time spins, it creates mass. It produces energy in space that radiates. This radiation is what we call mass". Nassim Haramein

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]





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.



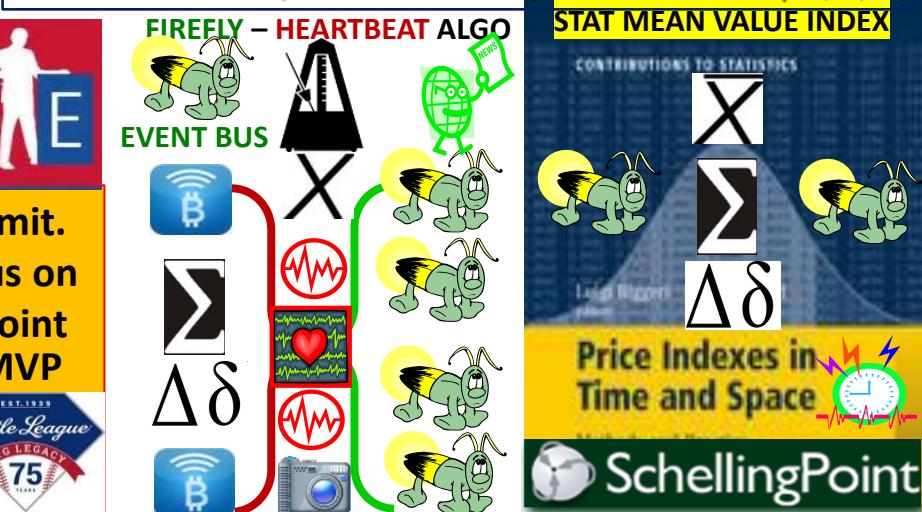
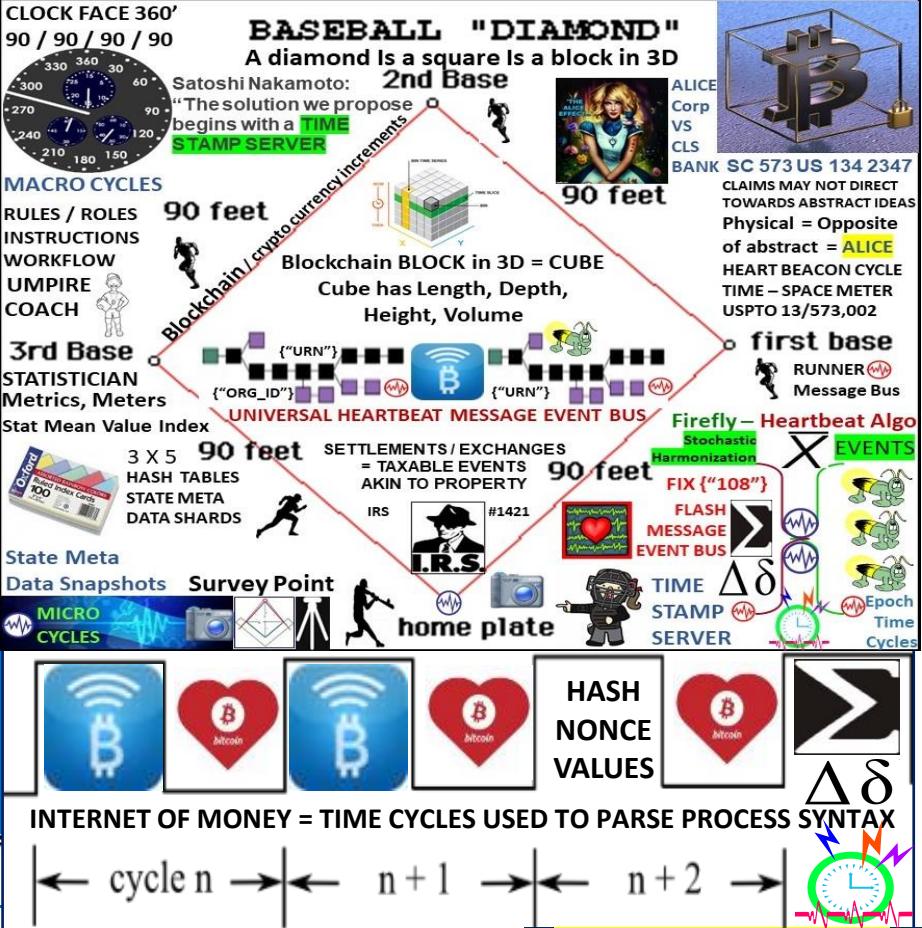
ALL THINGS INTERNET FORMED W 1) TIME EPOCHS 2) SYNTAX



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

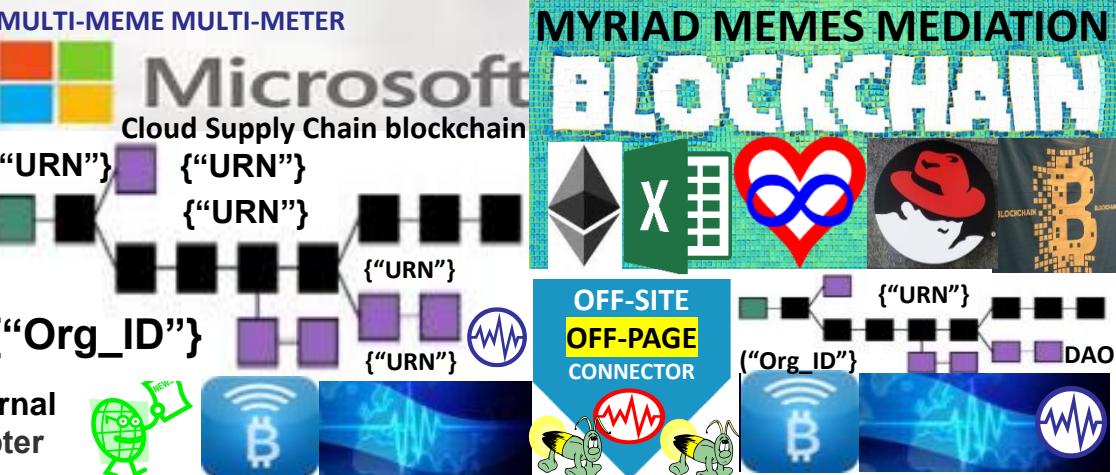


Fabric Tier consortium node CryptoDelegate in VM or UTXO Adapter, (Azure, AzureStack, AWS..)

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



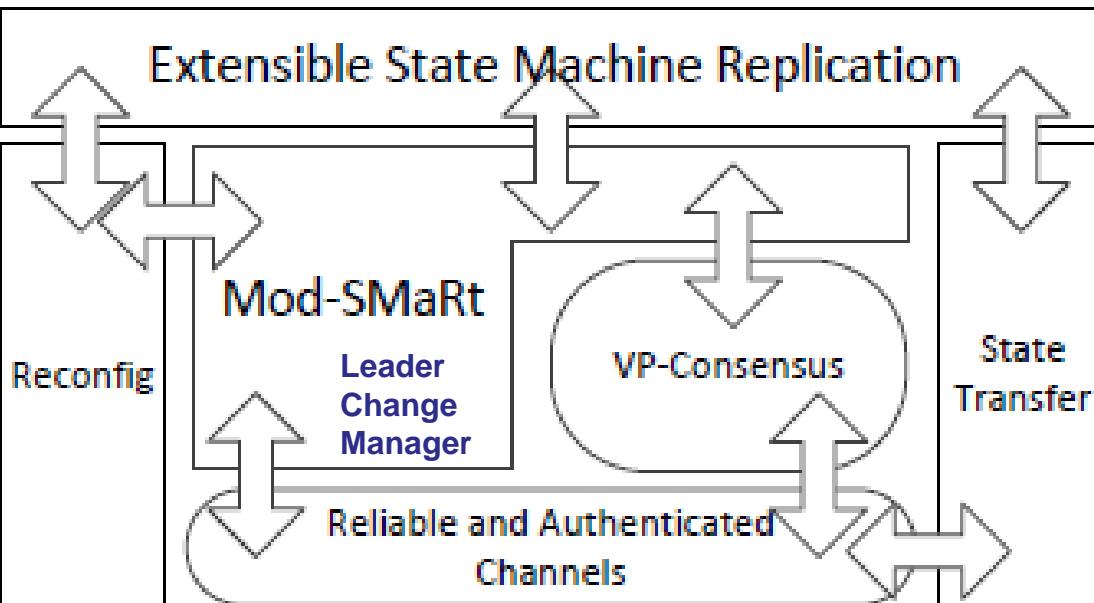
ALPHA NUMERIC
BREVITY CODES
SYMBOL CODES
STRUCTURED MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS

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.



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



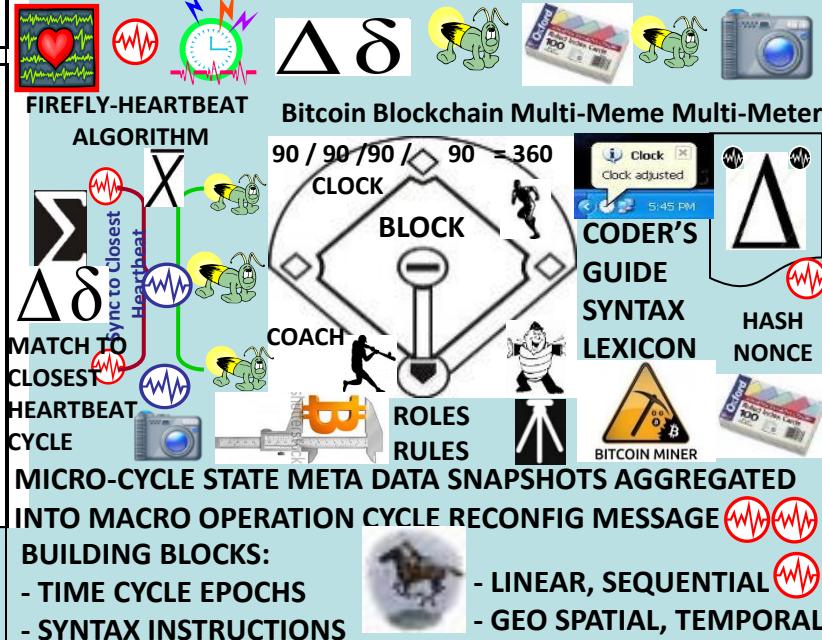
DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"}

ADDS, JOINS, DROPS, MOVES TO / FROM DAO

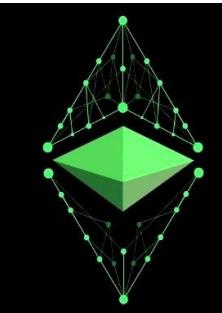
CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

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

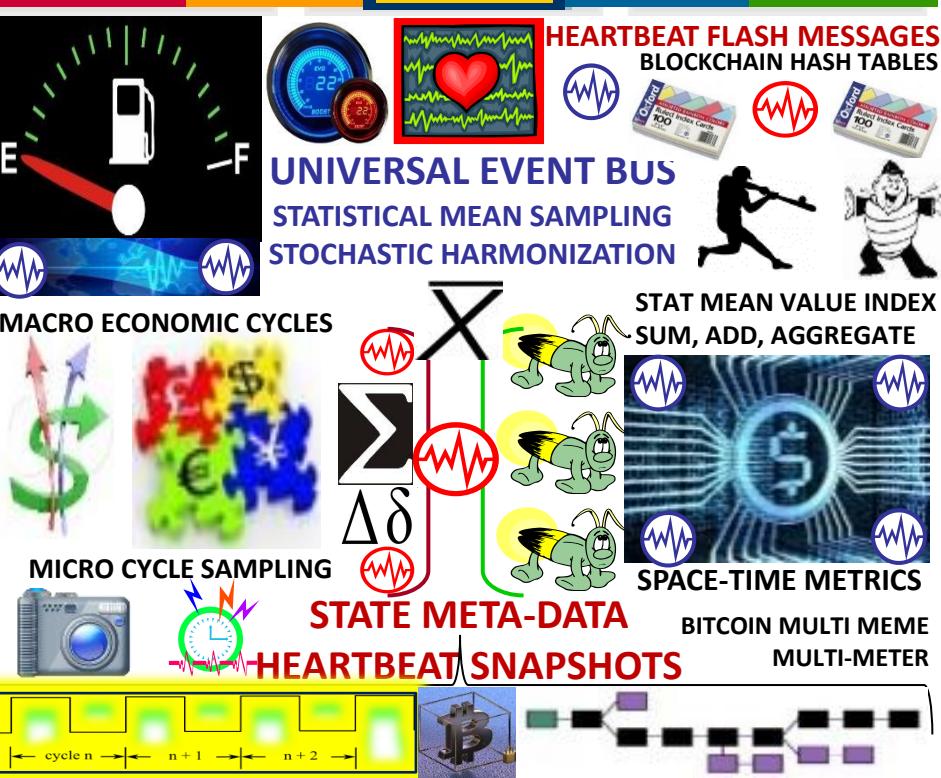
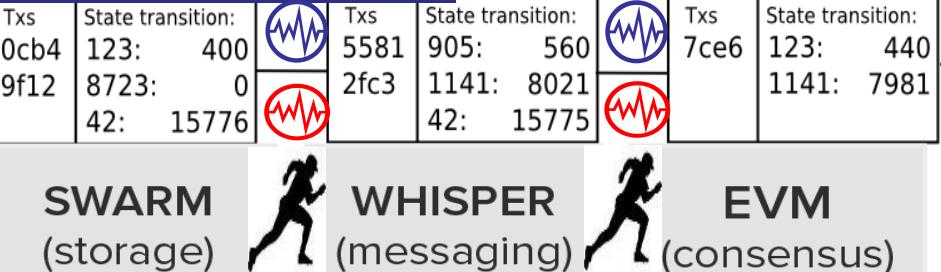
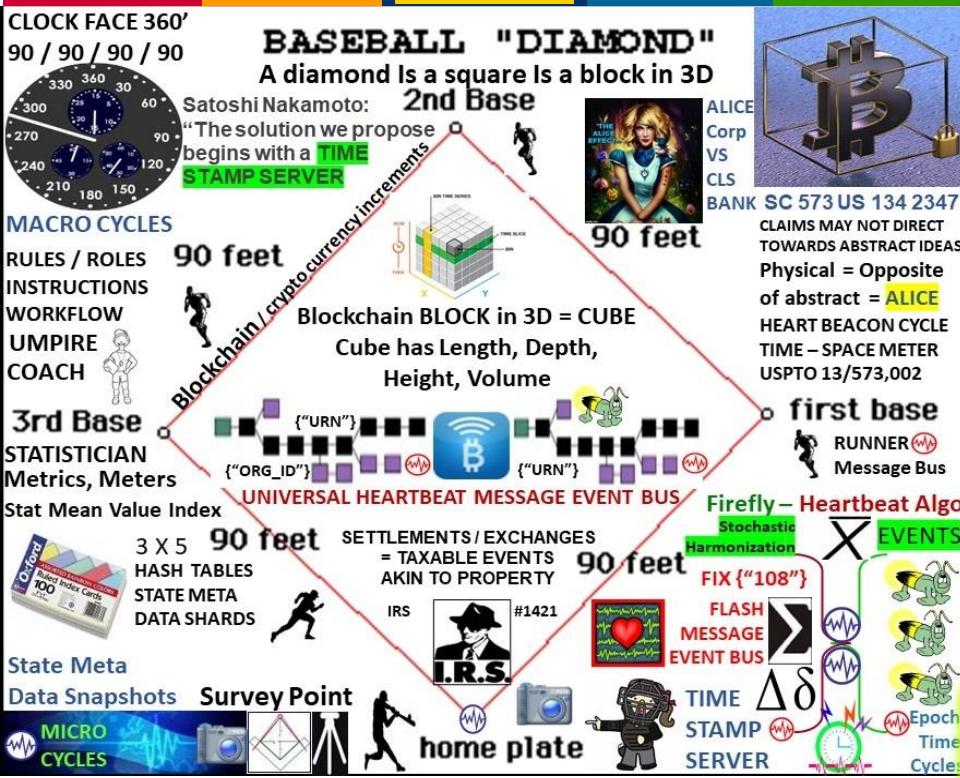
Casper is a security-deposit based economic consensus protocol. Nodes = "bonded validators" place security deposit (an action called "bonding") If a validator generates an invalid action, account deposits are forfeited along with consensus privilege. Use of security deposits address "nothing at stake" 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

QUANTUM RANDOM #

BLOCKCHAIN NERVOUS SYSTEM

HEARTBEAT {"108"} State Meta Data Snapshot Msgs

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

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

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

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

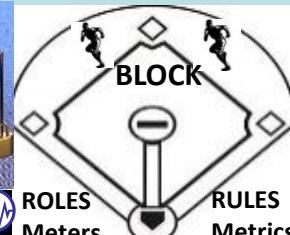
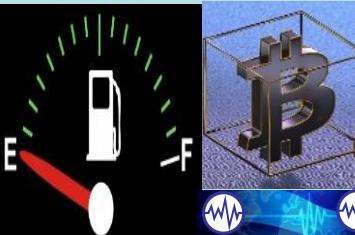
AETERNITY CROSS-CHAIN ATOMIC SWAPS CORRESPOND TO HEART BEACON CYCLE'S USE OF BATTLEFIELD DIGITIZATION DERIVED HEARTBEAT SYNC DELTAS



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

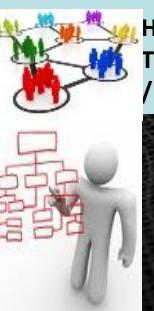
TOKENS REPRESENT REAL WORLD VALUE URN RESOURCES

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



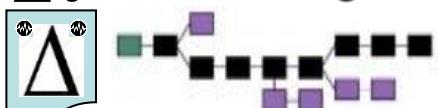
Federation Gateway
("ORG_ID")



HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$ Shared Ledger



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

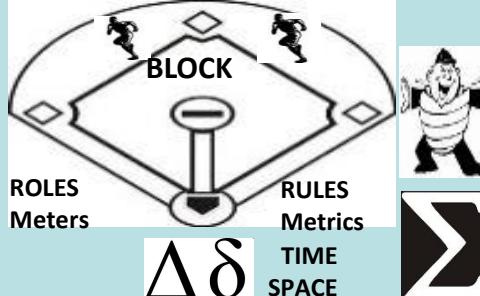
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

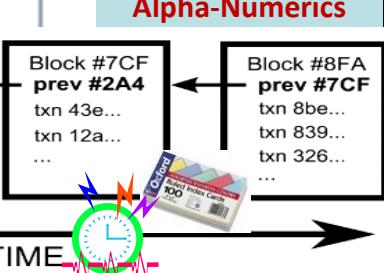
RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



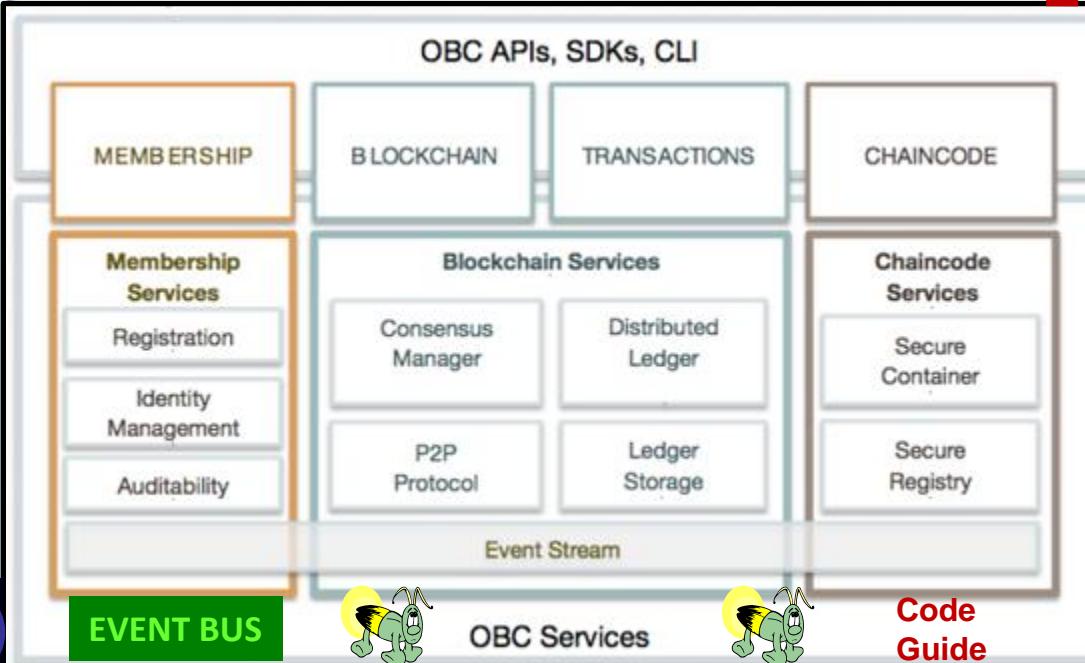
BLOCKTIME ARBITRAGE



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



Alpha-Numerics



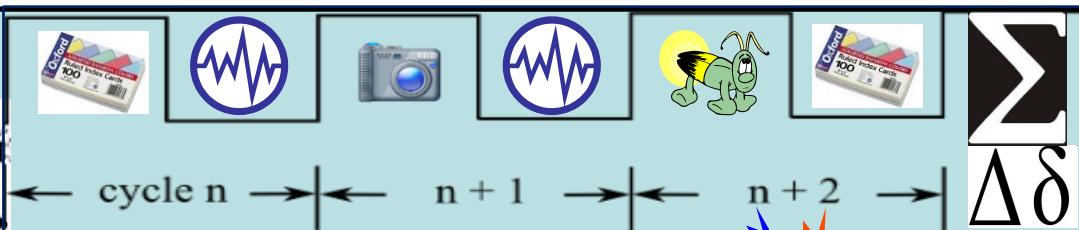
ROSETTA STONE

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.

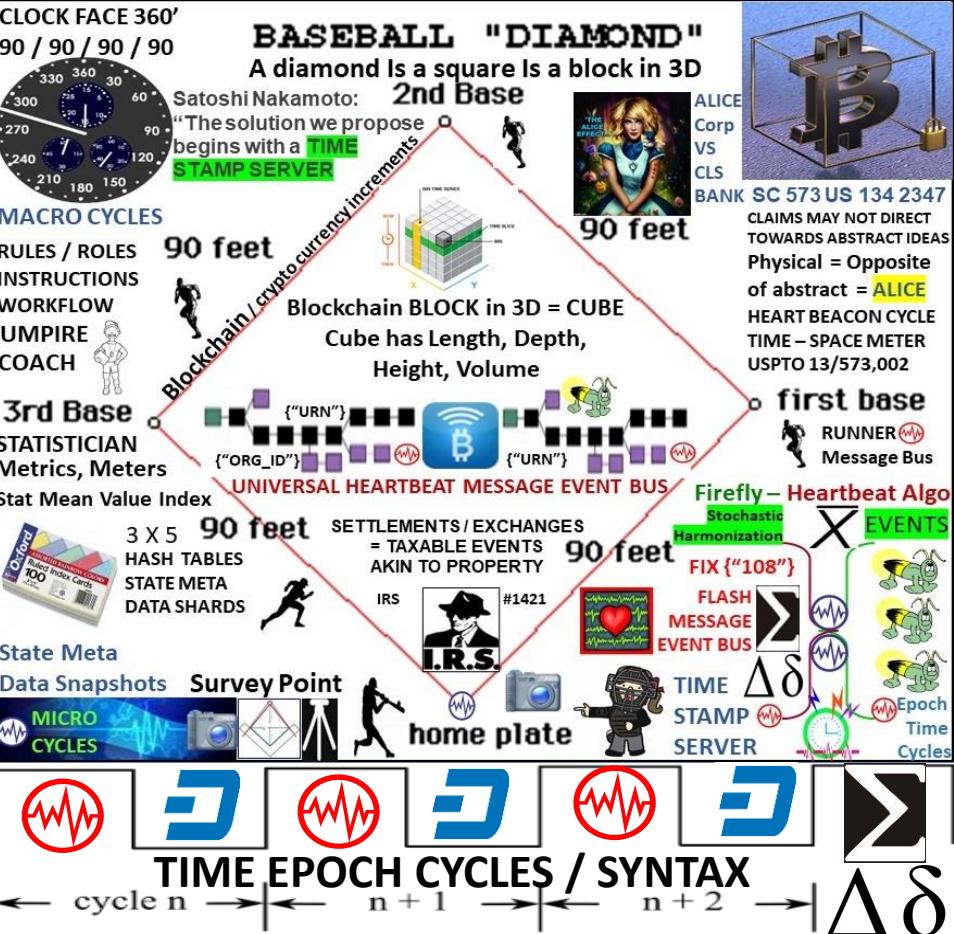
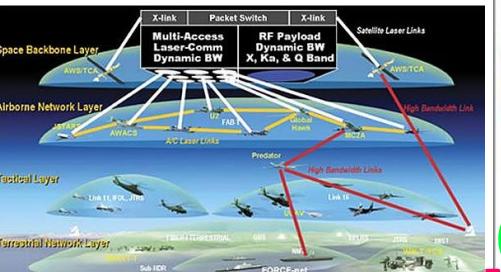
"Its makeup is thus: the block reward is divvied up in three parts. The first 45 percent goes to [Dash's miners](#). Another 45 percent goes to its Masternodes. And 10 percent is set aside to fund whatever other jobs or expenditures the Dash network deems necessary"

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

DAO: RAND THINK TANK TERM COINED + / - 2001

NETWORK CENTRIC WARFARE
Developing and Leveraging Information Superiority

ALICE CORP Vs CLS BANK



STOCHASTIC HARMONIZATION FIREFLY-HEARTBEAT EVENT BUS

HEART BEACON CYCLE = IMPROVEMENT TO NETWORK CENTRIC WARFARE



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



STATE: stored data at a given instant in time

STATE CHANNELS: blockchain interactions

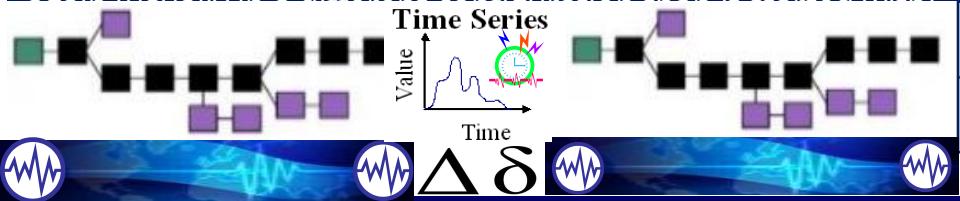
which *could* occur on the blockchain, but instead get conducted *off* of the blockchain, without significantly increasing the risk of any participant.



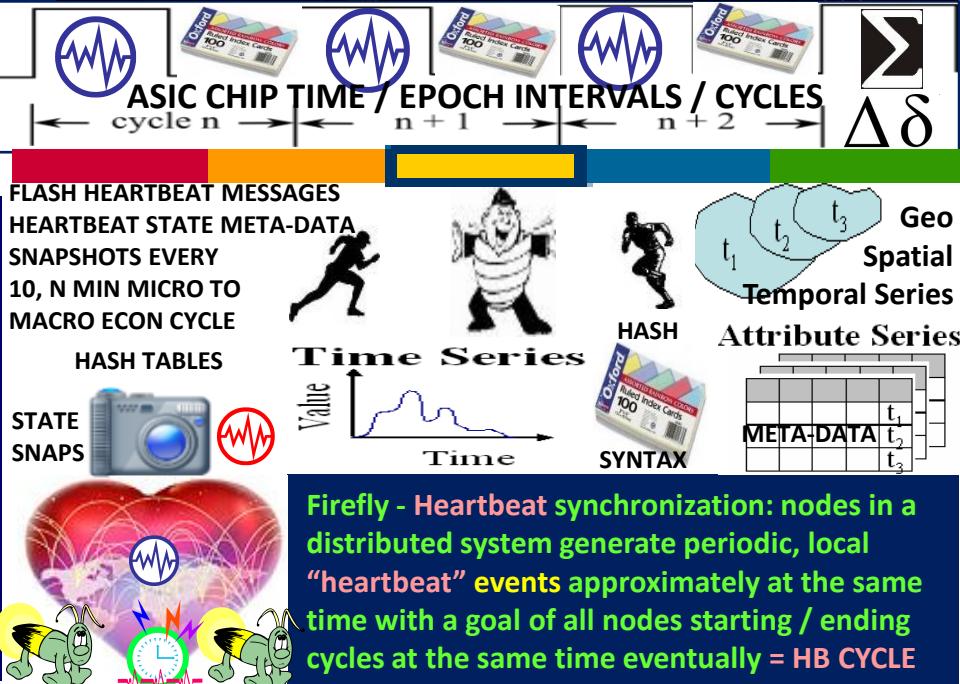
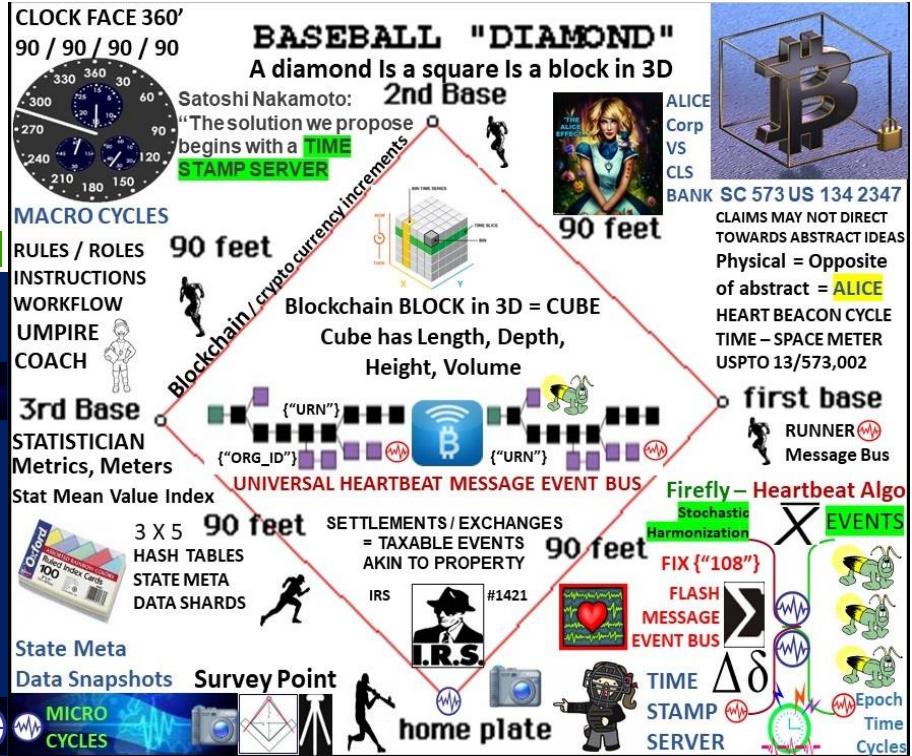
1. Part of the blockchain state is locked via multisignature or smart contract convention, so that a specific set of participants must completely agree with each other to update it.

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

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



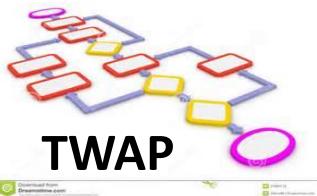
NEW UPDATES OVERWRITE THE PREVIOUS: simplest way is to have any unlocking attempt start a timer, during which any *newer* update can replace the old update (restarting the timer). When the timer completes, the channel is closed and the state adjusted to reflect the last update received. The length of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



TWAP Algorithm Manages Bitcoin Price Volatility Algorithm



TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX

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



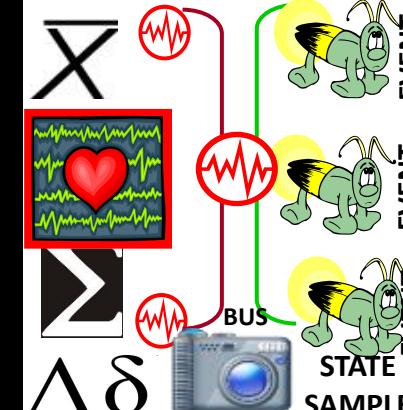
The algorithm trades over a desired time, either 1, 6, 12 or 24 hours and will give you a TWAP over that time period. For example, set the TWAP algorithm to sell 12 bitcoins over 12 hours, the algorithm will sell throughout the period, aiming to get a 12-hour TWAP



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



STATE META
DATA SNAPSHOTS



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

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

Key Features:

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



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

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

All rates time-stamped in UTC.

Ability to look up by time-stamp.

Ability to look up by block-height.

Asset Classes: Digital Currencies

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

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

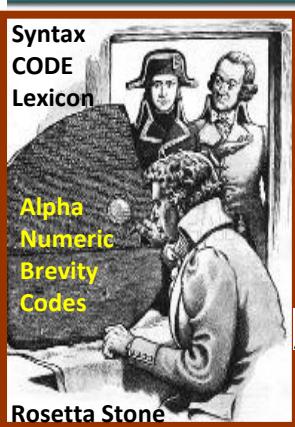
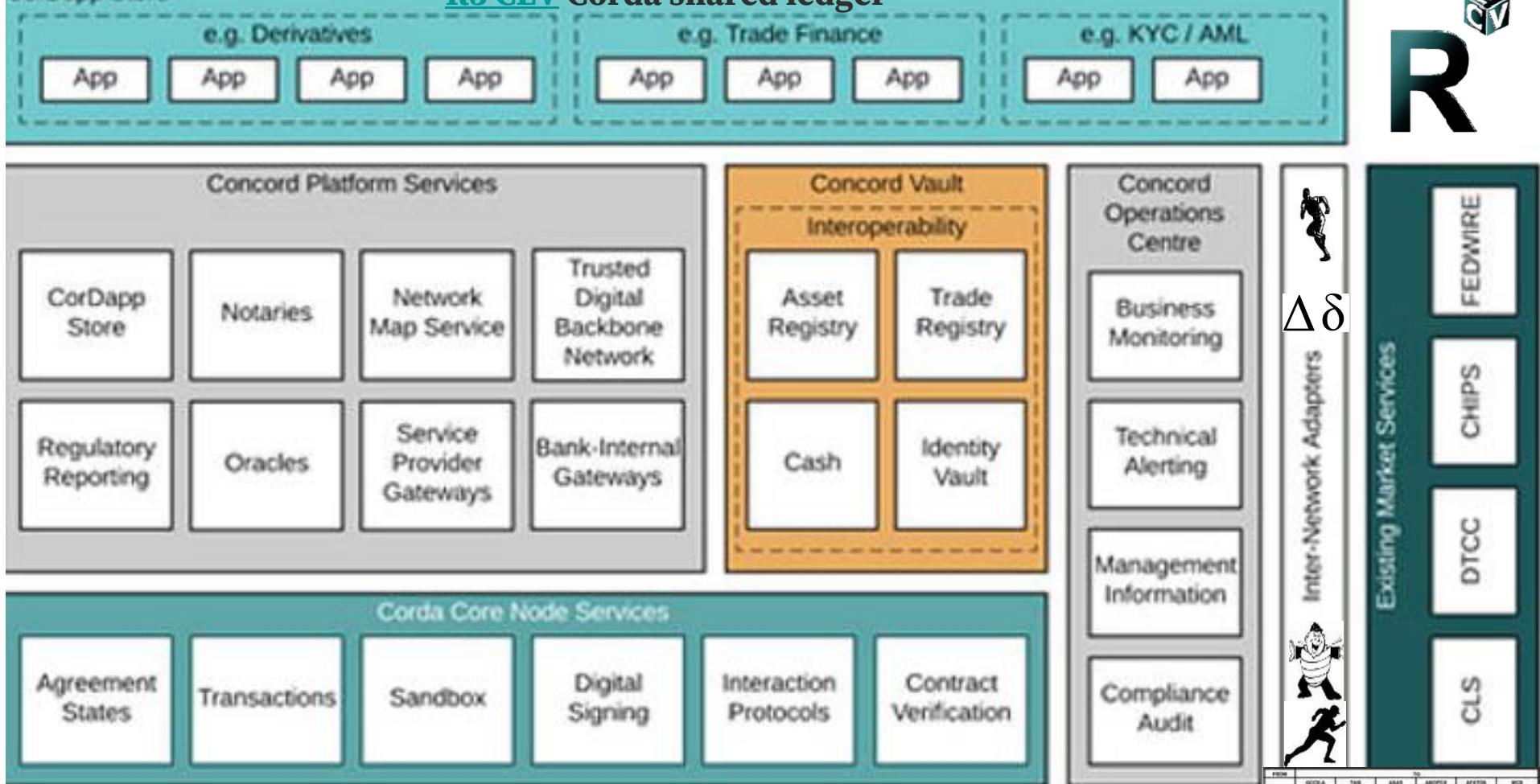
"Blocks are a measure of time":

The Bitcoin Blockchain 'B-WAP'

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

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



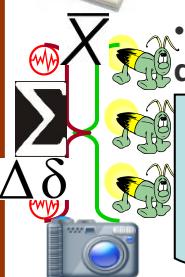


UNIVERSAL EVENT BUS



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

	Q1Q2	Q2Q3	Q3Q4	Q4Q1	Q1Q2	Q2Q3	Q3Q4	Q4Q1	Q1Q2
ABAR	F0001	F0002	F0003	F0004	F0005	F0006	F0007	F0008	F0009
AMDFPS	F0009	F0010	F0011	F0012	F0013	F0014	F0015	F0016	F0017
AFATON	F0017	F0018	F0019	F0020	F0021	F0022	F0023	F0024	F0025
CORCFC	F0025	F0026	F0027	F0028	F0029	F0030	F0031	F0032	F0033
DTSB	F0033	F0034	F0035	F0036	F0037	F0038	F0039	F0040	F0041
METS	F0041	F0042	F0043	F0044	F0045	F0046	F0047	F0048	F0049
PNCB	F0049	F0050	F0051	F0052	F0053	F0054	F0055	F0056	F0057



Federation Gateway

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



XBRL / CDE / DAML
STOCK MIC CODES

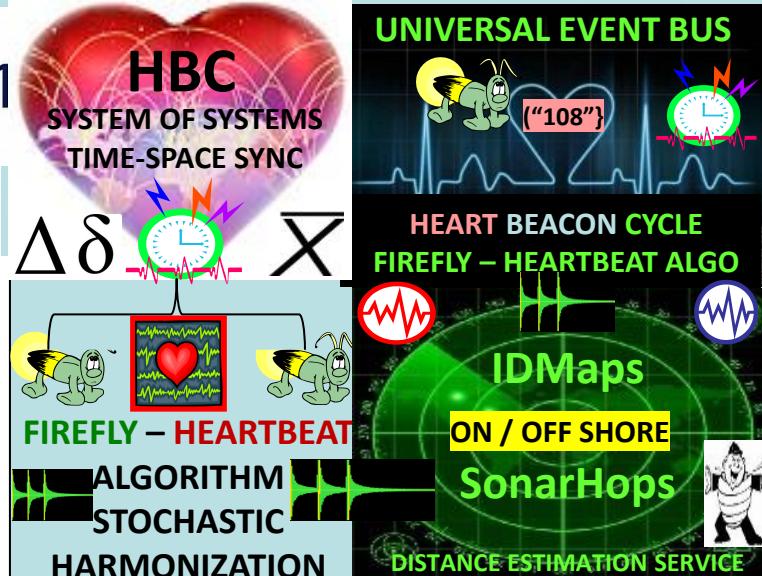
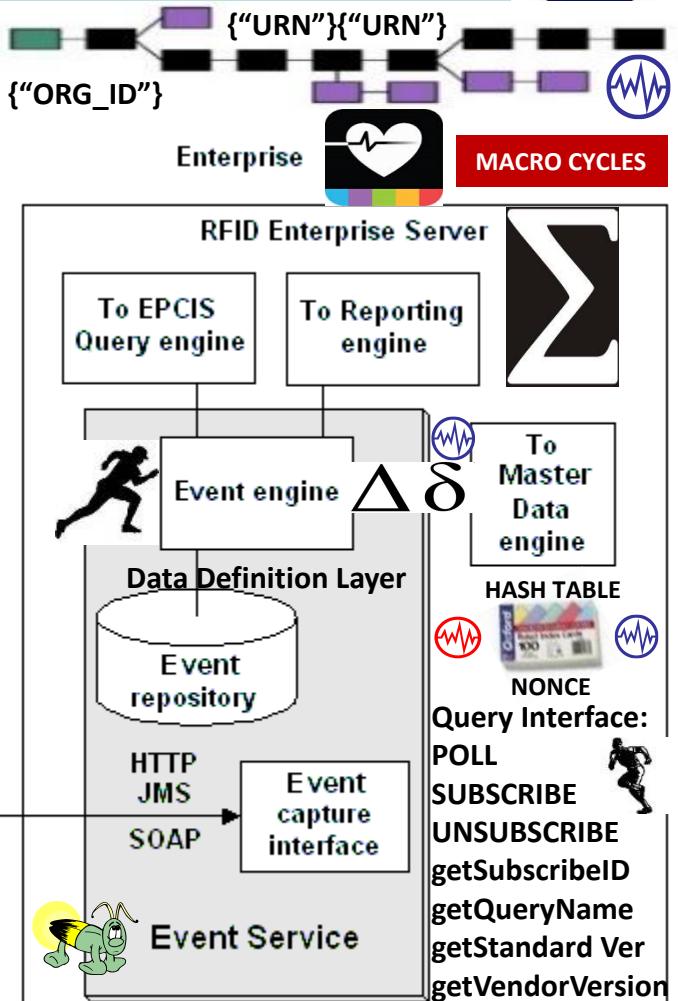
STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS
300+
Use Case Templates

Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data



HBC
SYSTEM OF SYSTEMS
TIME-SPACE SYNC



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

RFID Configuration TCP/IP heartbeat message

STRUCTURED DATA EXCHANGE / STRUCTURED MILITARY MESSAGES

Core Business Vocabulary (CBV)

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

When date time when event took place, local time zone in effect
Where location identifier where event occurred, identifier of

location where object(s) are expected to be following the step
Why Information about the business context, including:
a Identifier that indicates the business step taking place



**CLOSER IS CHEAPER
CLOSER IS FASTER**



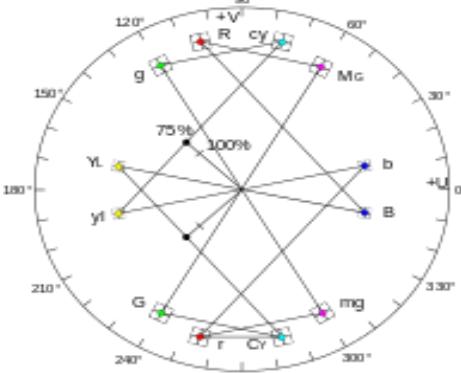
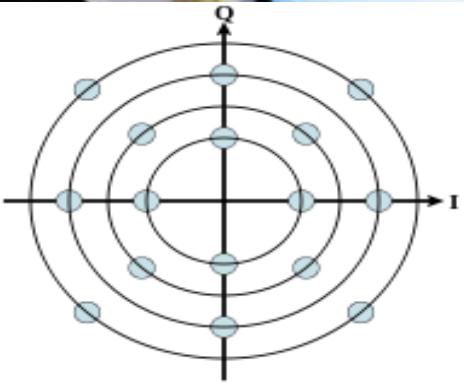
MICRO CYCLES

!st Compiler DESIGN Still the **BEST**





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”

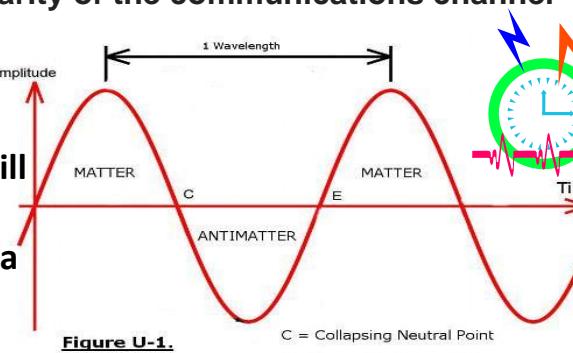
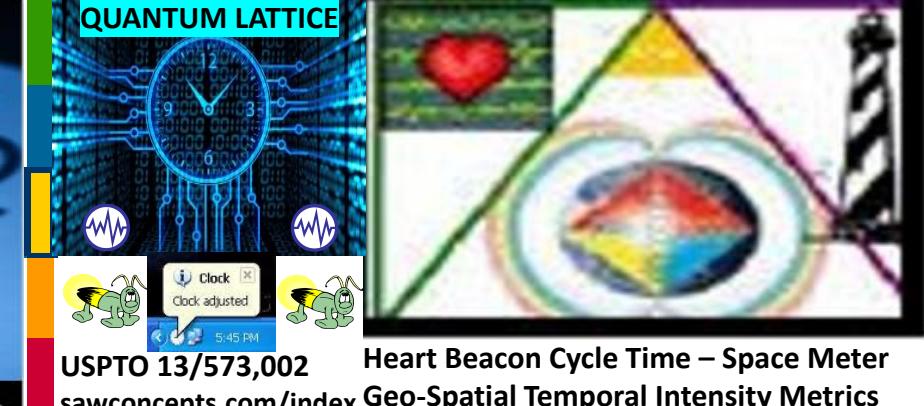


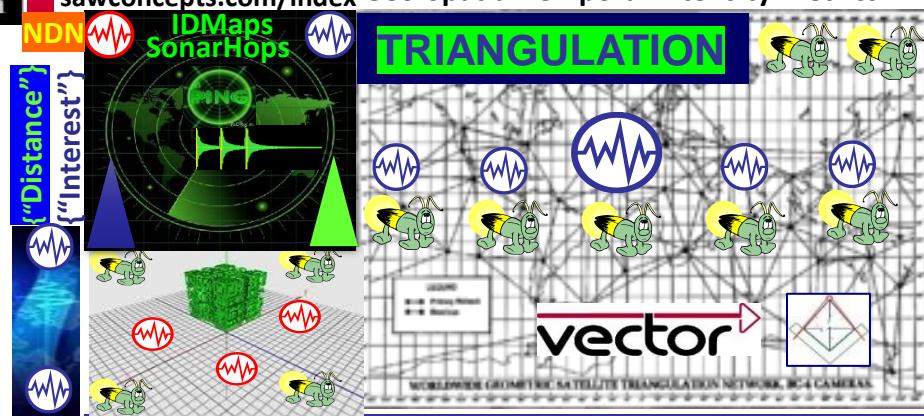
Figure U-1.

E = Expanding Neutral Point

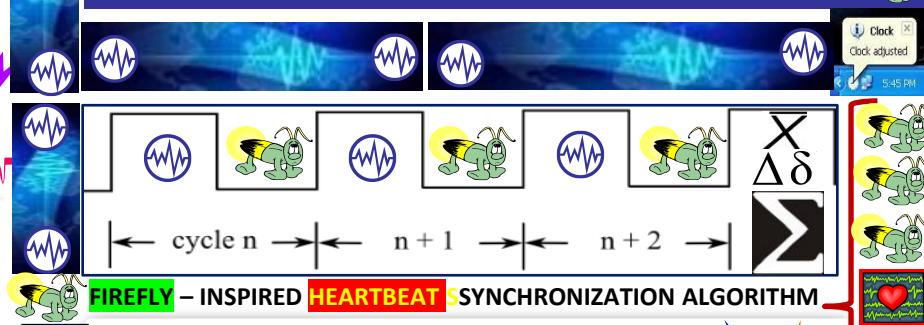
Sine wave of our blinking universe. The 4 fundamental forces will all be found to vary continuously when sampled at 2x the blinking frequency, per Nyquist-Shannon theory



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



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”

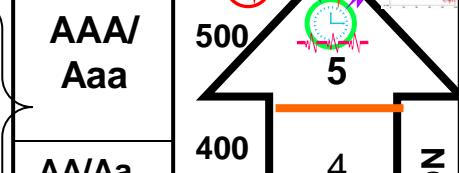
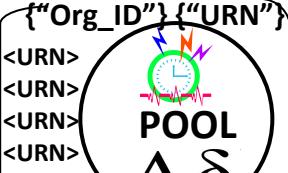


TERRA
TRC

ECONOMIC HEARTBEAT



HB MSG </108>
PROTOCOL



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

ON OFF SHORE

GEO LOC LAT / LONG

PING

Triangulation

Euclidian Geo

GPS GEO LOC

DATE TIME STAMP

NDN </INTEREST>

NDN {"DISTANCE"}

Demurrage

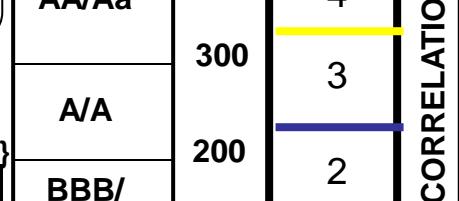
Charges

vector

IEEE C37.118 Harmonization & Sync heartbeat update Interval

IEEE 802.11 HOP BY HOP CONTROL

Paul Revere Linear, Sequential



PROCESS BY </PRECEDENCE>
SonarMaps ID_Hops

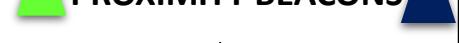
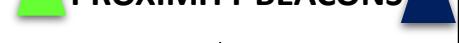
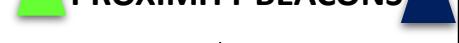
ON / OFF SHORE
PROXIMITY BEACONS

NDN NDN

NDN ON / OFF SHORE

NDN PROXIMITY BEACONS

NDN ON / OFF SHORE

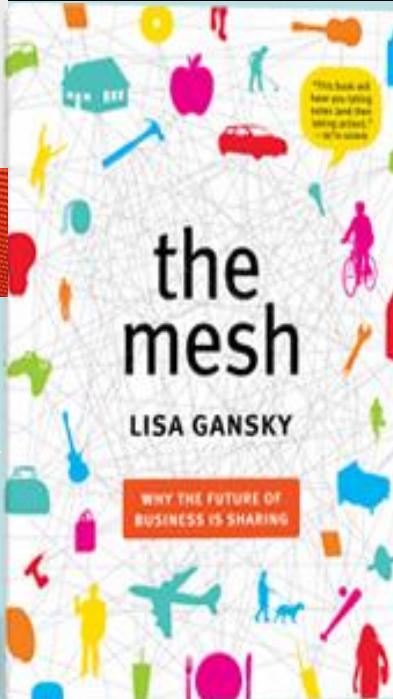




COINTELEGRAPH
live cryptocurrency community opinion



Decentralized Exchange Meets Decentralized Crowdfunding



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

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



Autonomous Device Coordination Framework



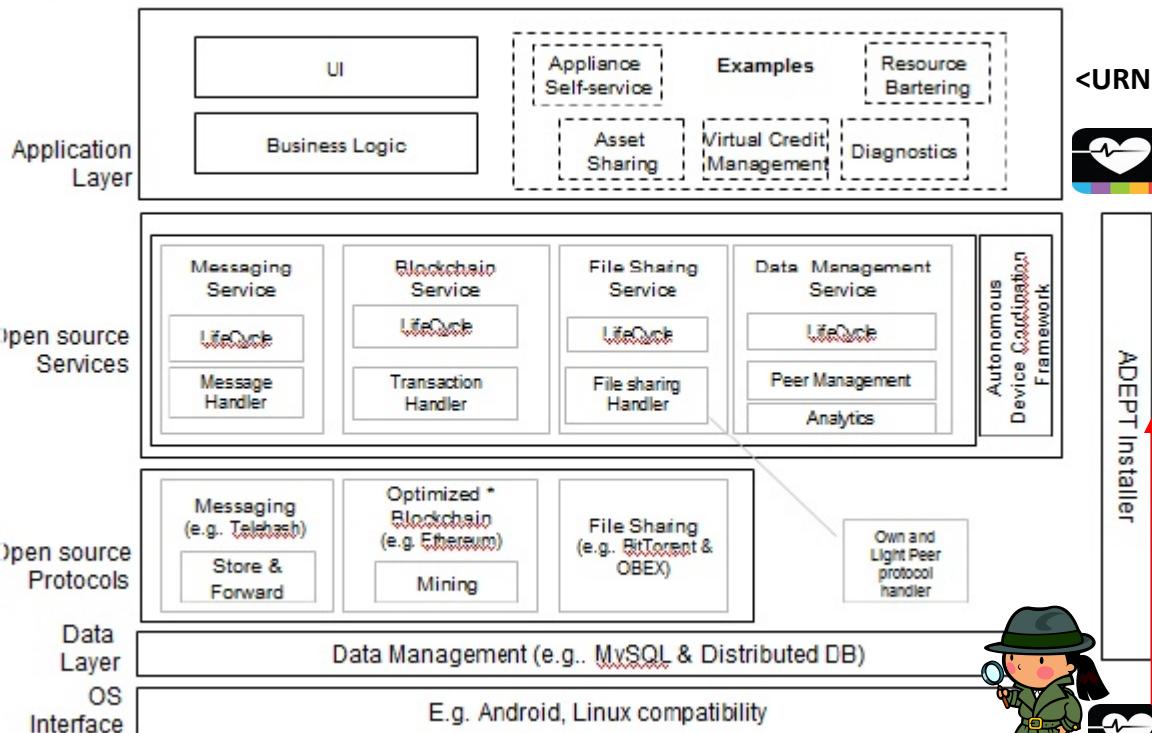
- Registration
- Authentication
- Proximity based rules
- Consensus based rules
- Contracts
- Checklists

FEDERATION
AGREEMENTS
PROCEDURAL
TEMPLATE

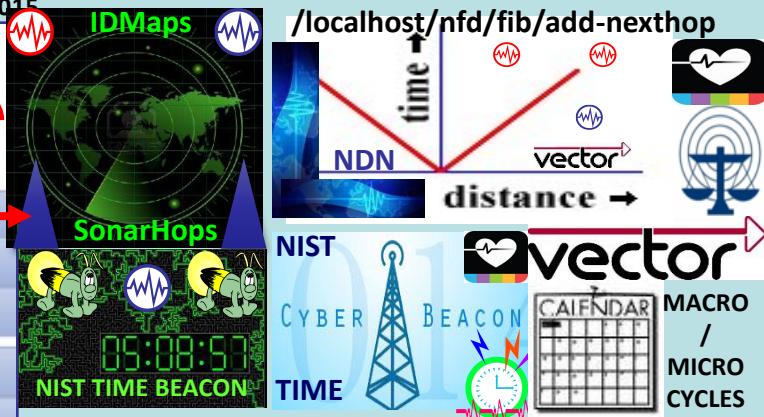
FEDERATION

- <UUID> <ORG_ID> <URN>
- LDAP DIRECTORY
- Physical proximity
- Social proximity
- Temporal proximity
- Agreements
- Payments
- Barter

ADEPT Standard Peer Architecture – Logical View



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

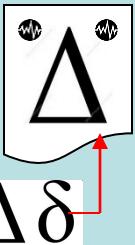


PAYMENTS BASED ON GEO-SPATIAL TEMPORAL METRICS / METERS
<URN> DESCRIBES COMMODITIES ETC BY UNIFORM RESOURCE NAME BY </INTEREST>>



ASSET SHARING WITHIN FEDERATION

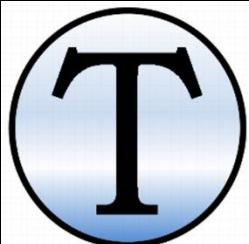
BUSINESS LOGIC = WORKFLOW <XML_Wf>



OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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





Three ideas combined

HOW TRUTHCOIN WORKS:

1) Tradable Reputation

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

2) SVD Cross-Validation

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



3) Strategic Use of TIME

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

2. A kind of ‘Future Wikipedia’

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

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.

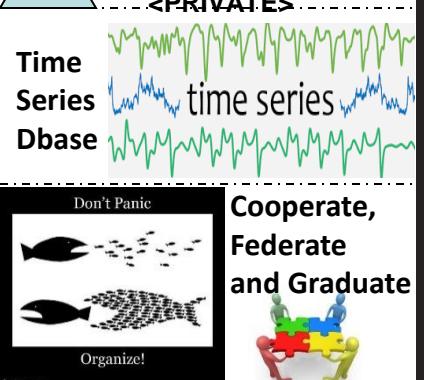
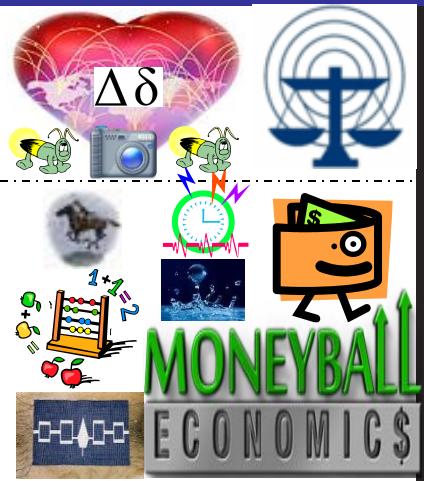
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

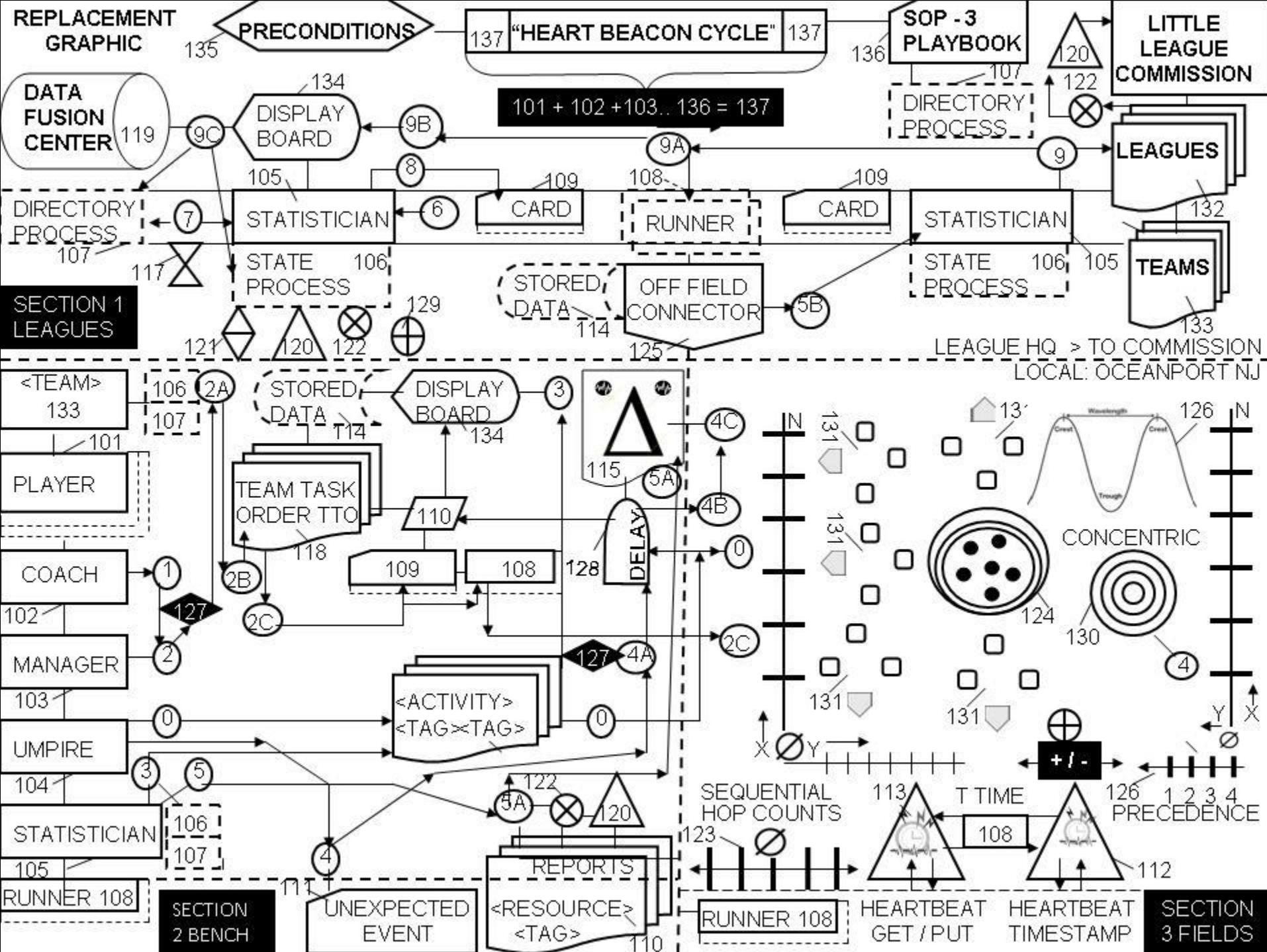
The most important equation in monetary economics, the equation of exchange: $MV=PQ$. The quantity of money (M) times the rate spent (V for velocity) equals the price of everything bought (P) times the amount bought (Q for quantity). In Bitcoin, M Money is on a predetermined path, converging to 21m bitcoins.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

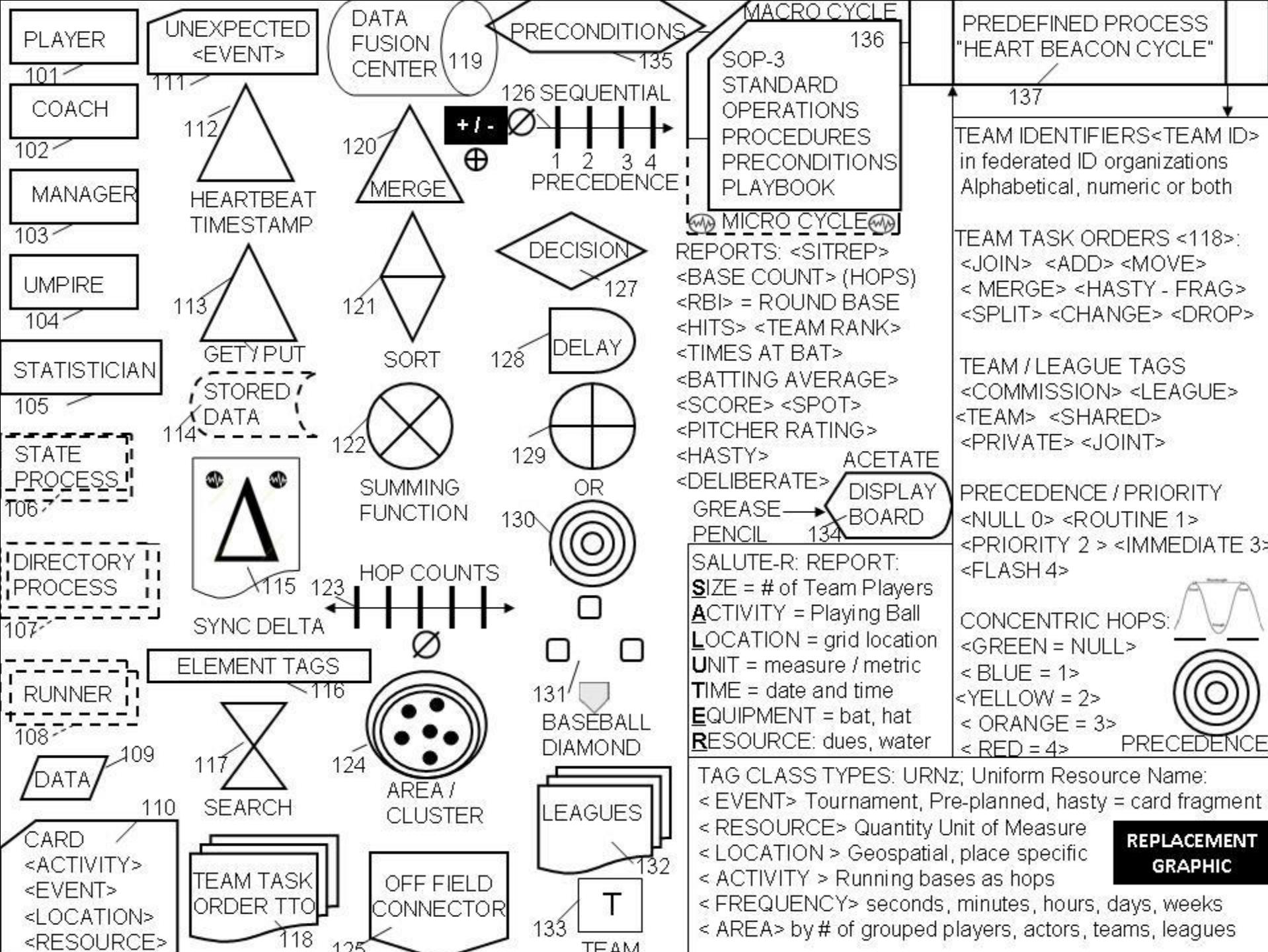


Gamification is the use of game thinking and game mechanics in non-game contexts to engage users in solving problems. Gamification techniques strive to leverage people's natural desires for competition, achievement, status, self-expression, altruism, closure.









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

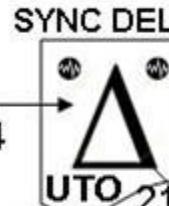
MICRO CYCLES

216

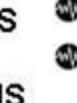
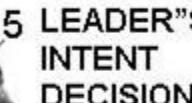


202 FEDERATED GROUP JOINS, MERGE, ADDS, DROPS

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



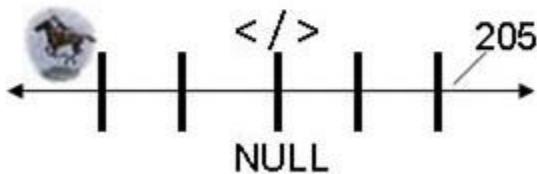
210

203

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



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



NULL

< / >



LENGTH, THRESHOLD, INTENSITY, DURATION



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

208



APPLIQUE' OVERLAYS



209

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

204

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

NIST RANDOMNESS BEACON: broadcast full-entropy bit-strings in blocks of 512 bits every 60 seconds. Each value is time-stamped, signed, & includes hash of previous value to chain sequence of values together. This prevents all, even the source, from retroactively changing an output packet without being detected. The beacon keeps all output packets and makes them available online. 1st, Beacon-generated numbers cannot be predicted before they are published. 2nd, public, Beacon's time-bound, authenticated nature of the Beacon proves true random numbers not known before a certain point in time. 3rd, this proof can be presented offline at any point in the future



NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

UNPREDICTABLE SAMPLING

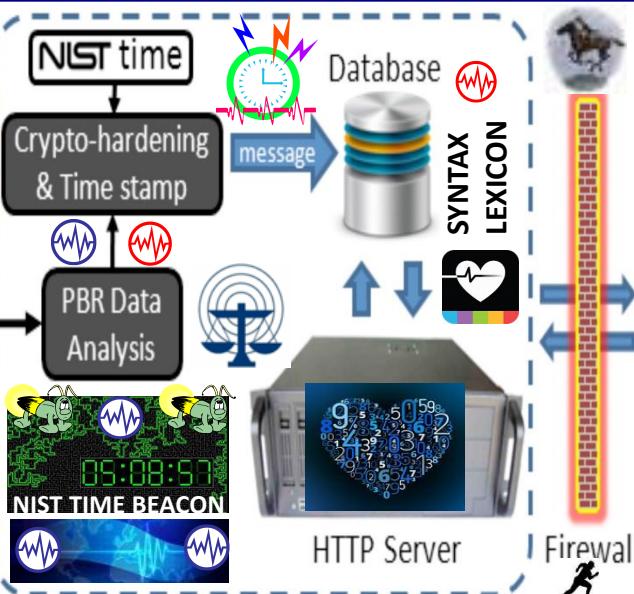
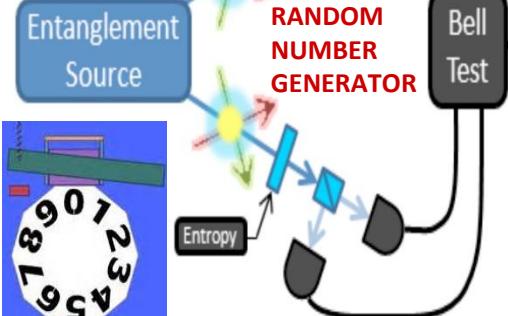
SECURE AUTHENTICATION

SECURE MULTI

PARTY /
AUTHENTICATION

Entanglement
Source

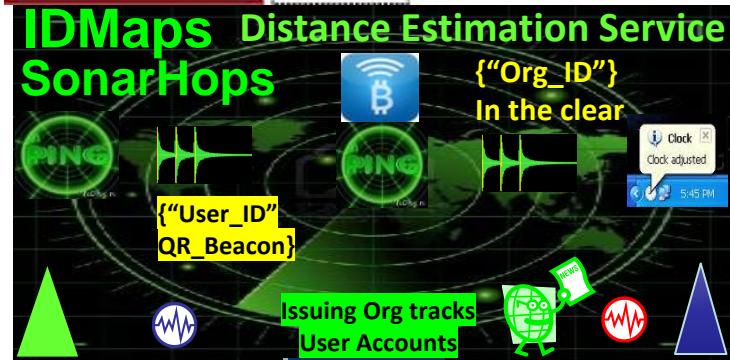
RANDOM
NUMBER
GENERATOR



NIST

**NON
REPUDIATION**

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



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors

**NAMED DATA
NETWORKING**



NDN
 </Interest>
 </Distance>

SURVEY METHODS
 + TRIANGULATION
 Euclidian Geometry

Geodesic System Routing Info Base RIB

ACCOUNT BELONGS TO </Org_ID>

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

DEVICE / SENSORS <UUID><UUID>

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

Time / Distance Metrics



PROXIMITY

OFFSHORE BEACONS ONSHORE

NDN
 </interest></distance>

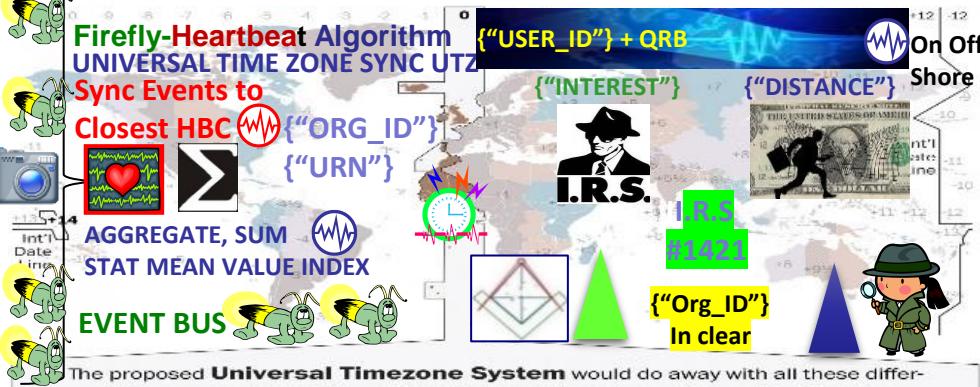


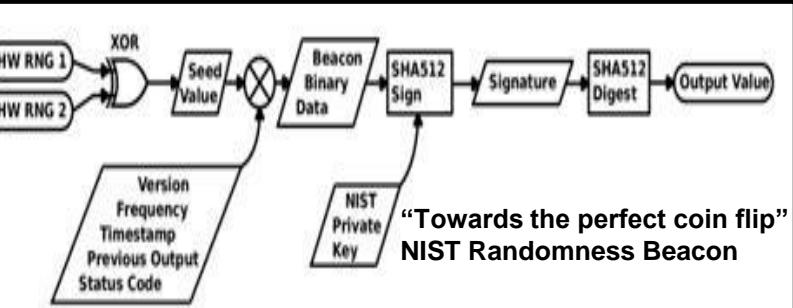
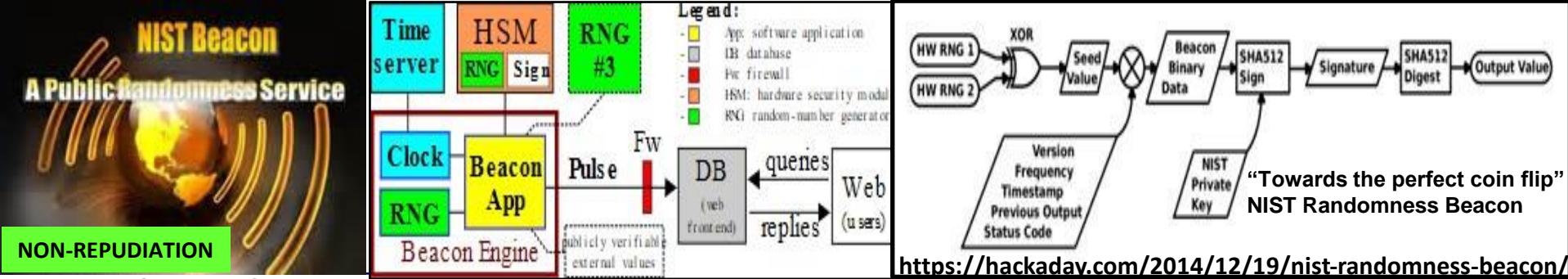
State
 Snap
 Shots

AGGREGATE, SUM
 STAT MEAN VALUE INDEX

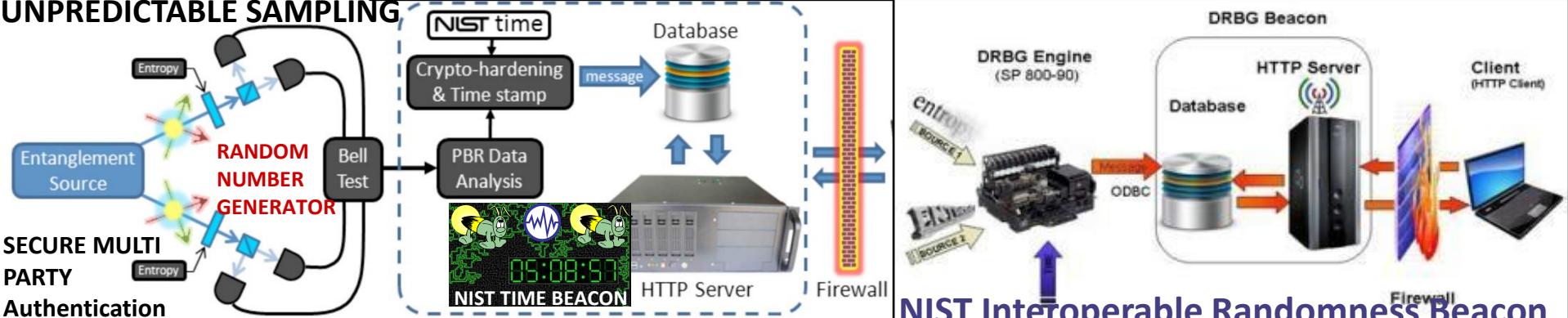
EVENT BUS

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





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



NIST Interoperable Randomness Beacon

The NIST Randomness Beacon Broadcasts a randomness pulse every 60 seconds. Each pulse commits to a fresh 512-bit random string. Each pulse is time-stamped and signed. Beacon periodically outputs a pulse containing 512 fresh random bits, time-stamped, signed and hash-chained. For example, each pulse also pre-commits to the randomness to be released in the next pulse. The latter enables users to securely combine randomness from different beacons. The Beacon protocol also specifies the interface for users to interact with the Beacon, in order to obtain information about past pulses.

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

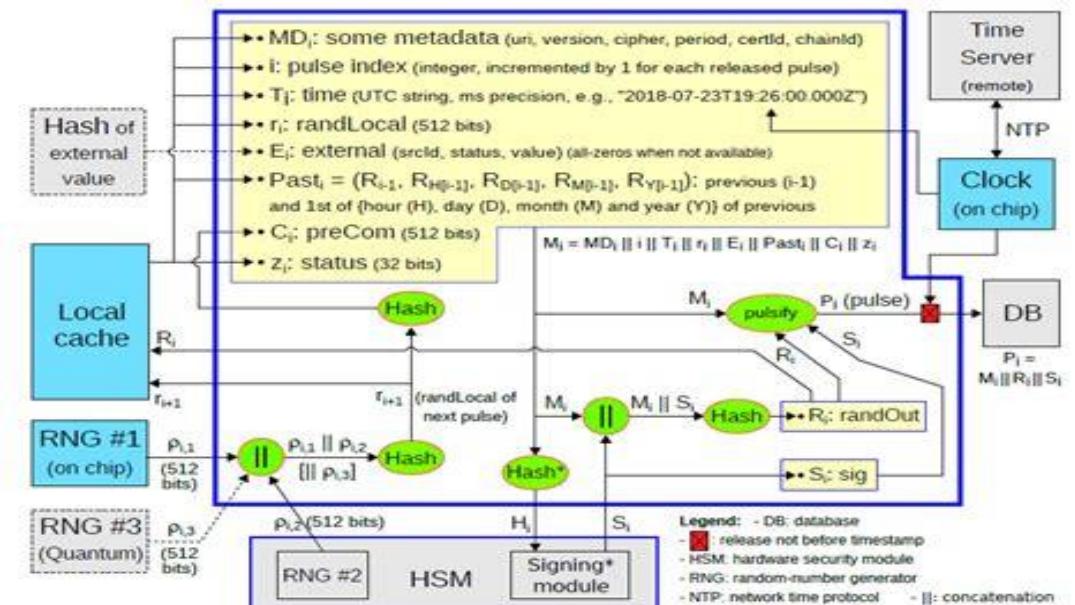
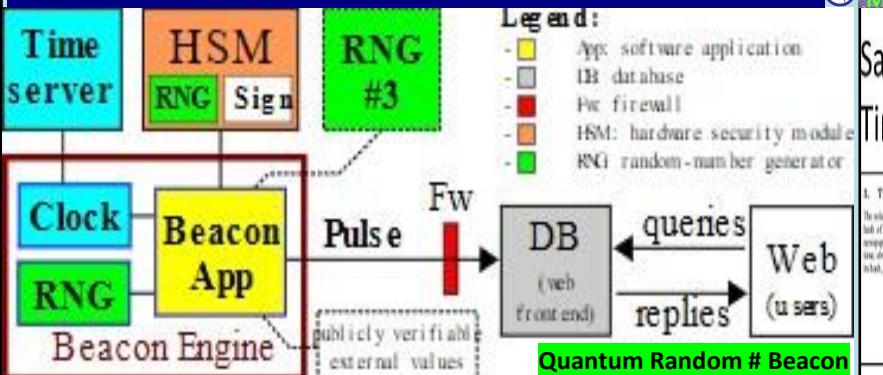


Figure 2. Illustration of the generation of the i^{th} pulse by a Beacon App (2.0)

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

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

NIST Quantum Random Number Beacon



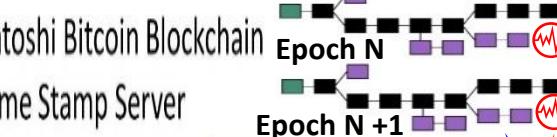
"The external environment could update resources at random..."



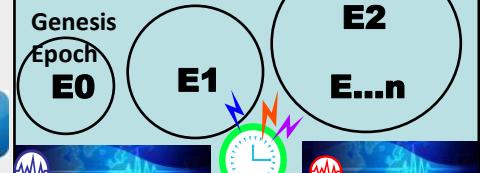
One solution is a **heartbeat**: defining a default lease duration delaying updates until the next **cycle**"



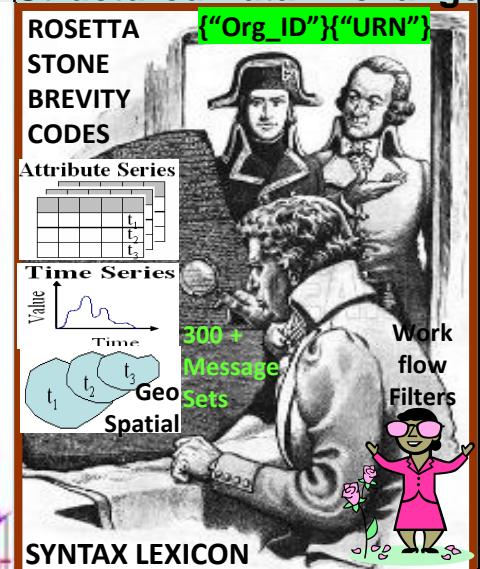
QUANTUM RANDOM # BEACON



Epoch Time Cycles
E0 E1 E2 E3...



Structured Data Exchange



QubitCoin Interval: Every 30 Seconds

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**

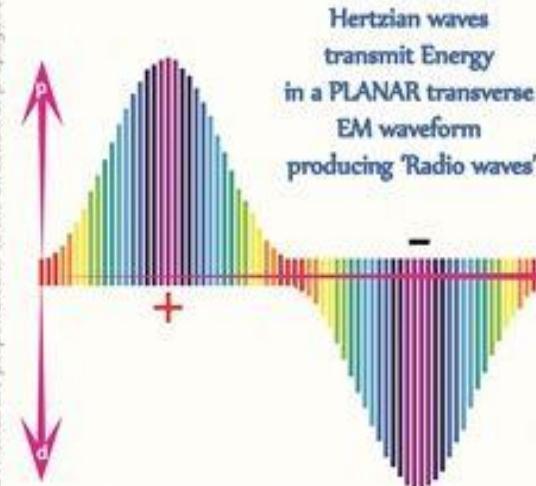


CLOSER = < Infrastructure
= CHEAPER SLA

ElectroMagnetic waveforms



ENERGY / DATA
Over
Transmission
Lines / Airwaves



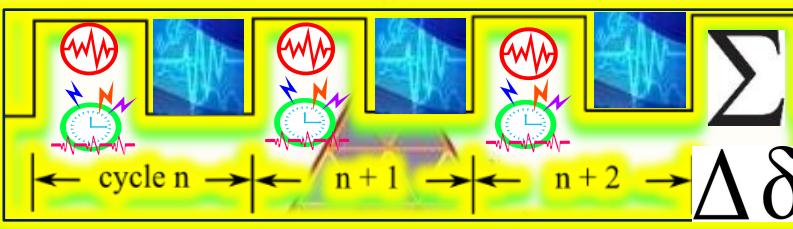
In 1887, Heinrich Hertz demonstrated the reality of Maxwell's electromagnetic waves by experimentally generating radio waves in his laboratory.

f



(22 February 1857 - January 1 1894)

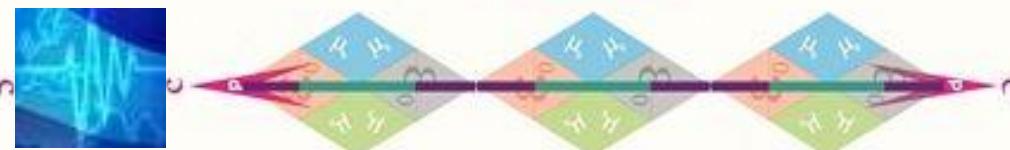
INTERNET = 1. TIME EPOCH CYCLES 2. Syntax (not) Processed in cycle



Cycles per Second

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

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

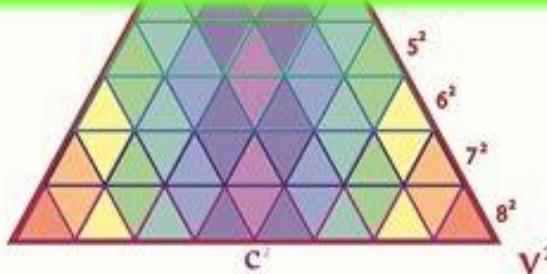


Through longitudinal waves, Tesla transferred energy to receiving devices. He sent electrostatic forces through the air, transferred electrical energies and noted the lethal forces produced by these waves.

Nikola Tesla



(10 July 1856 - 7 January 1943)



Volts per Second

V

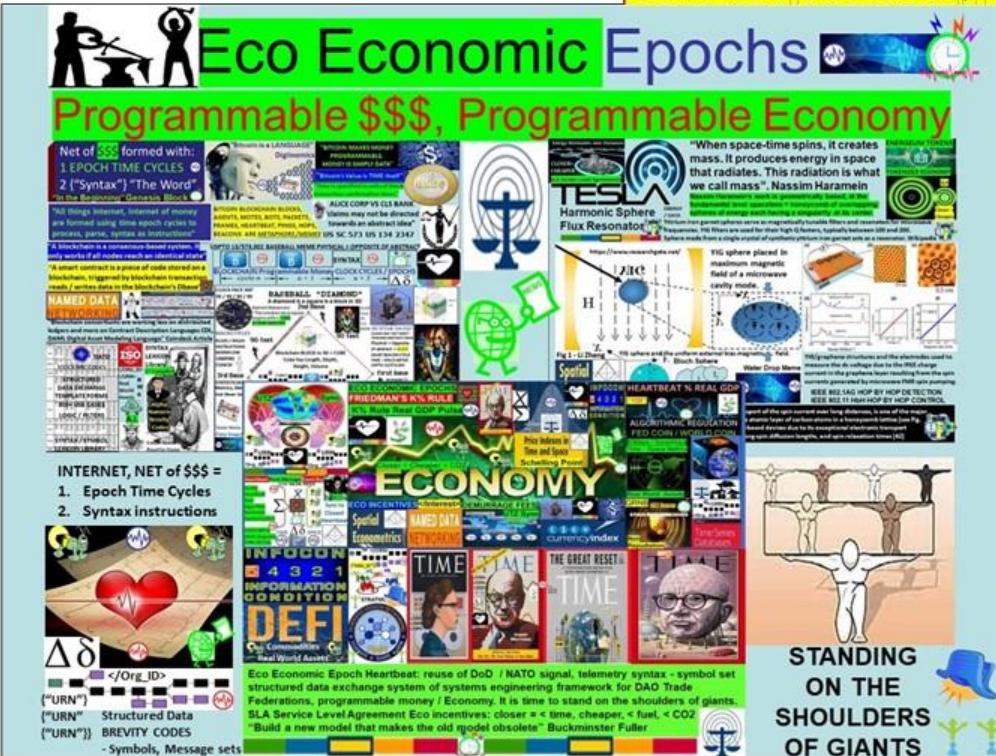
World monetary unit World energy grid



MICRO CHIP BASED CURRENCIES
CRYPTO CURRENCY
MINING CHIP FARMS



GEO MAGNETIC POLE SHIFT EVENTS

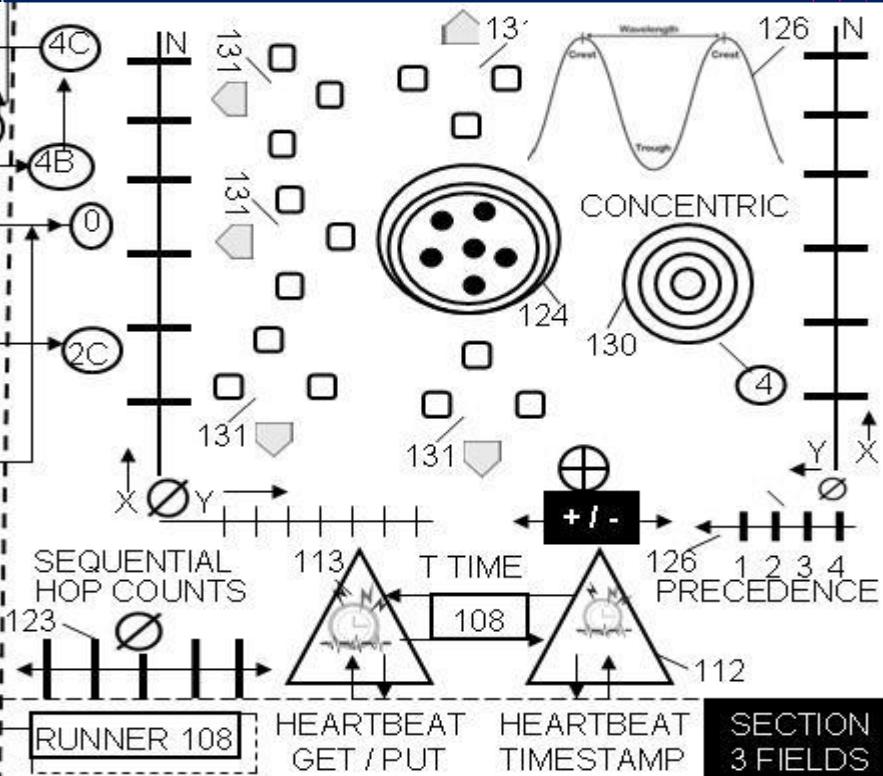
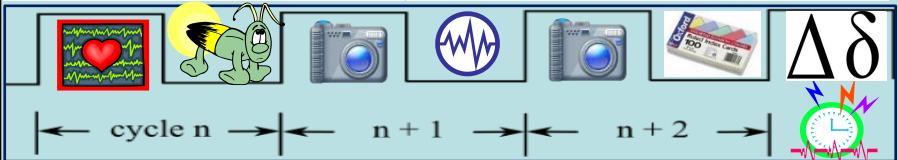
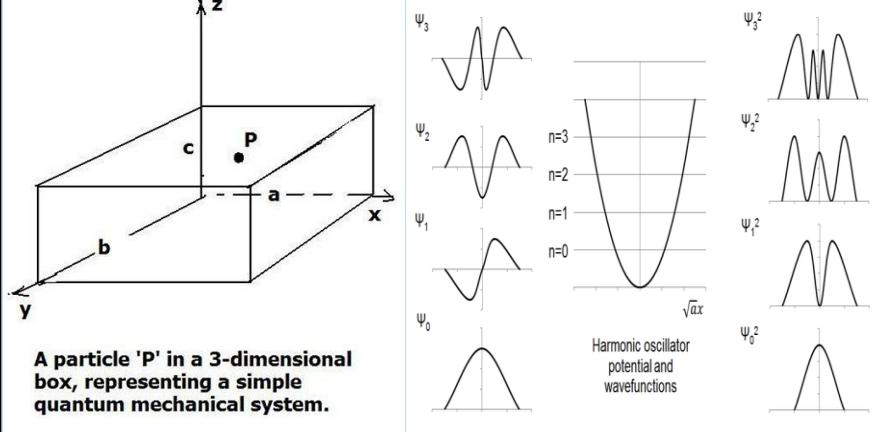


Germany Weimar Republic 1929
E 5 reichsmark Silver Silver Plated

Solar Nova + Pole shift Vs Crypto chips

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

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

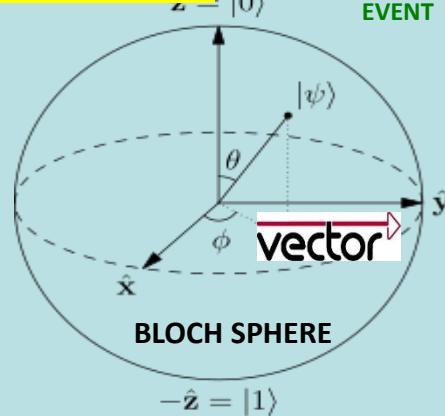
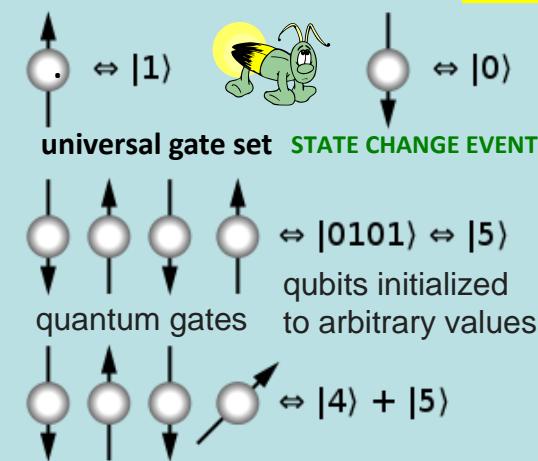
Vertical polarization vectors from a known point 0 null Sonar Hop meme



particle representation / samples

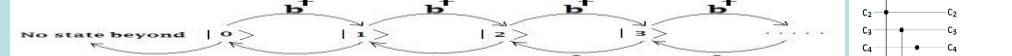


Instead of each bit having two potential states — on or off — a quantum bit or qubit has three. It can be on, off, or both, and you only know which one it is once you look at it. How can you tell if a bit of data is correct if looking at it might change its state?

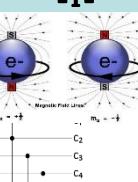


qubits can be in a superposition of all the classically allowed states

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)



The Hopf Fibration

Edmund Harriss

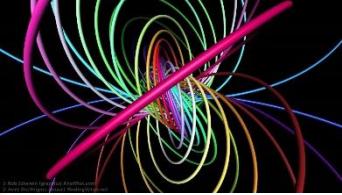
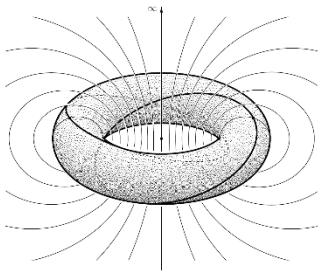
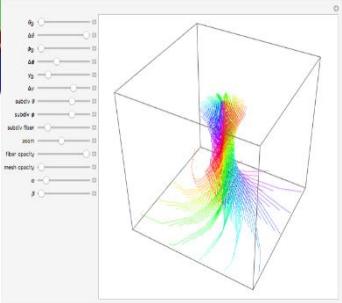
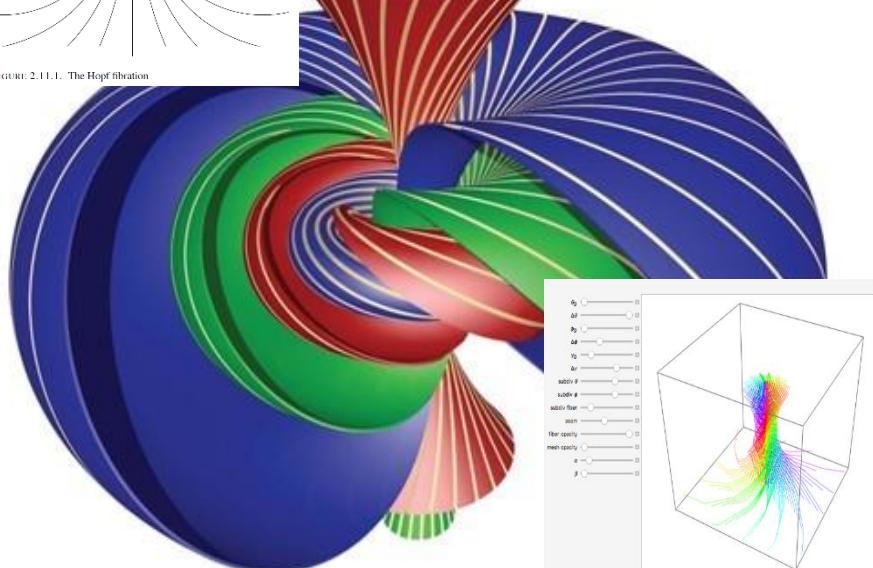
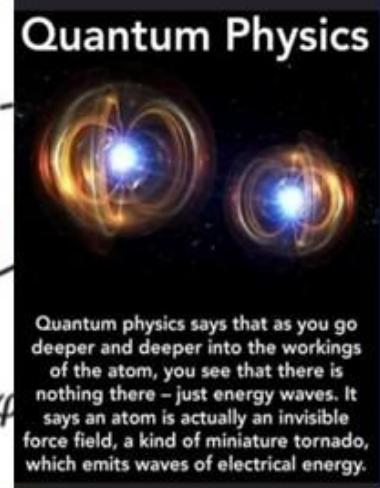
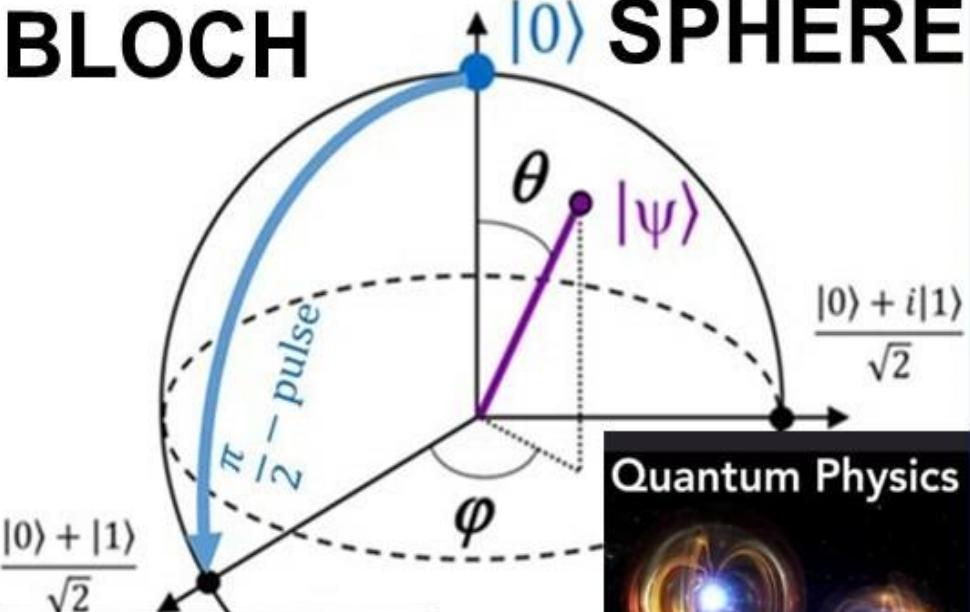


FIGURE 2.11.1. The Hopf fibration



BLOCH SPHERE



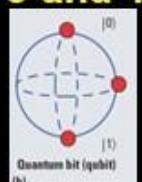
Hopf Fibration / #Bloch sphere

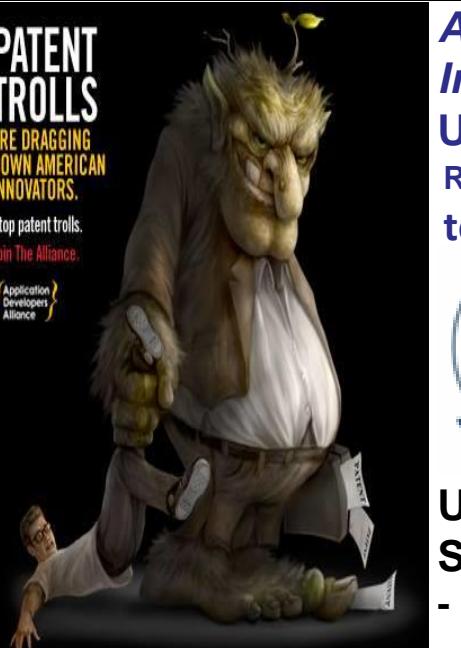
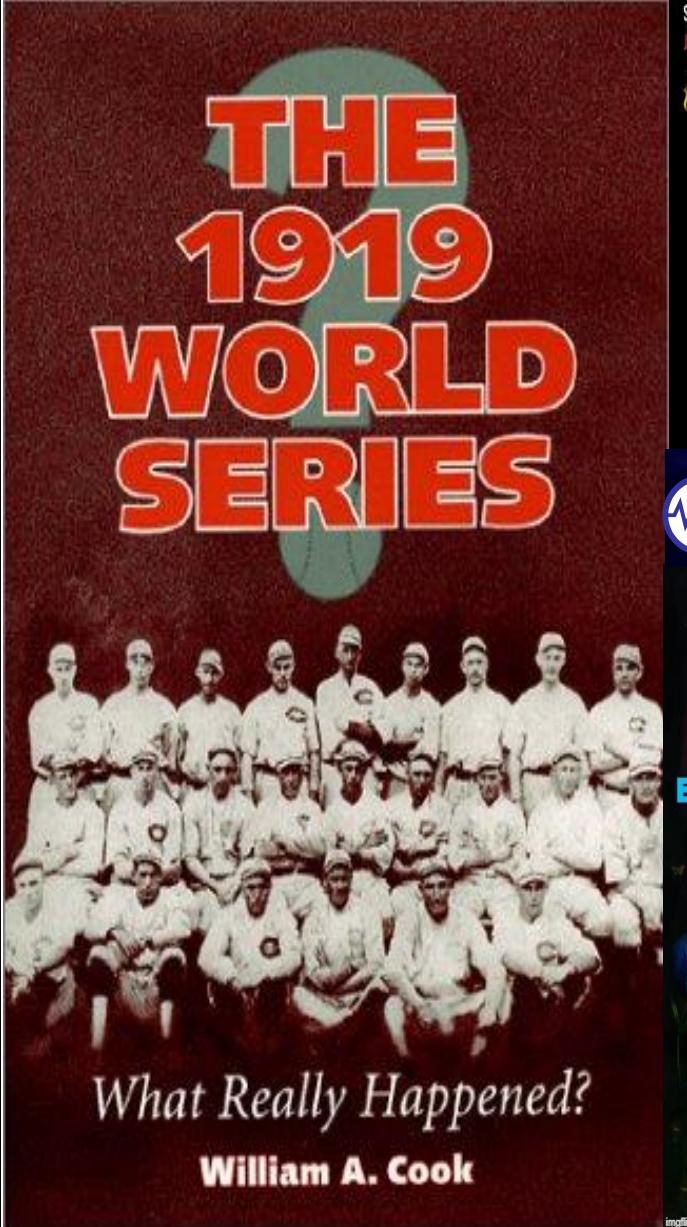
"the most important object in the universe"

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

Paul Revere linear - sequential hop count meme

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



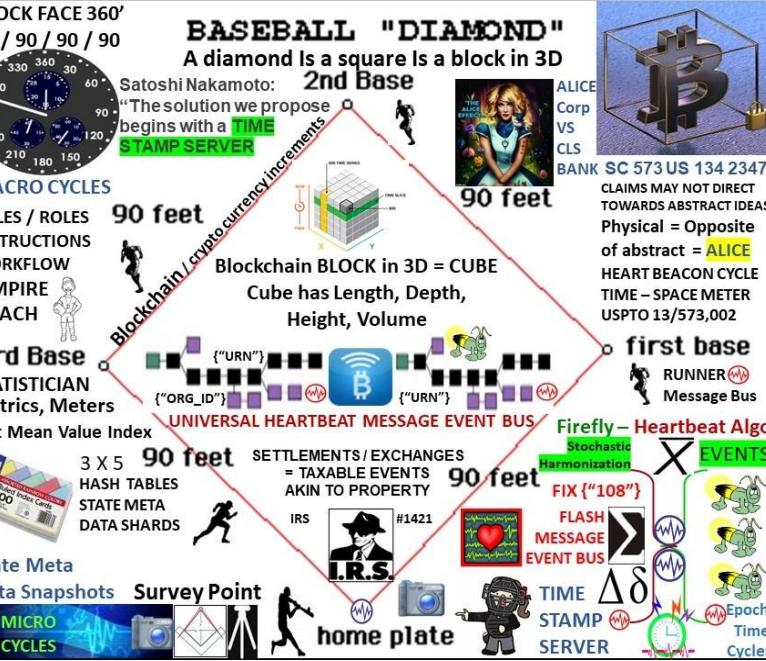


Alice Corp. v. CLS Bank International, 573 U.S. 134 S. Ct. 2347 (2014)
RULING: "claims may not direct towards abstract ideas"

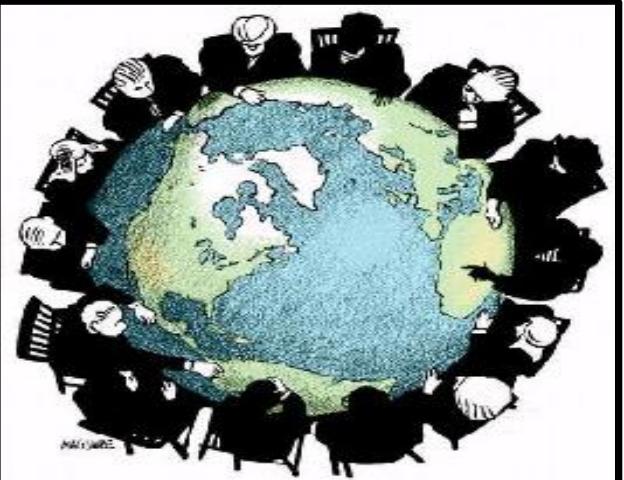


USPTO SCREEN CAPTURES SUSPENDED PAIR RULES

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





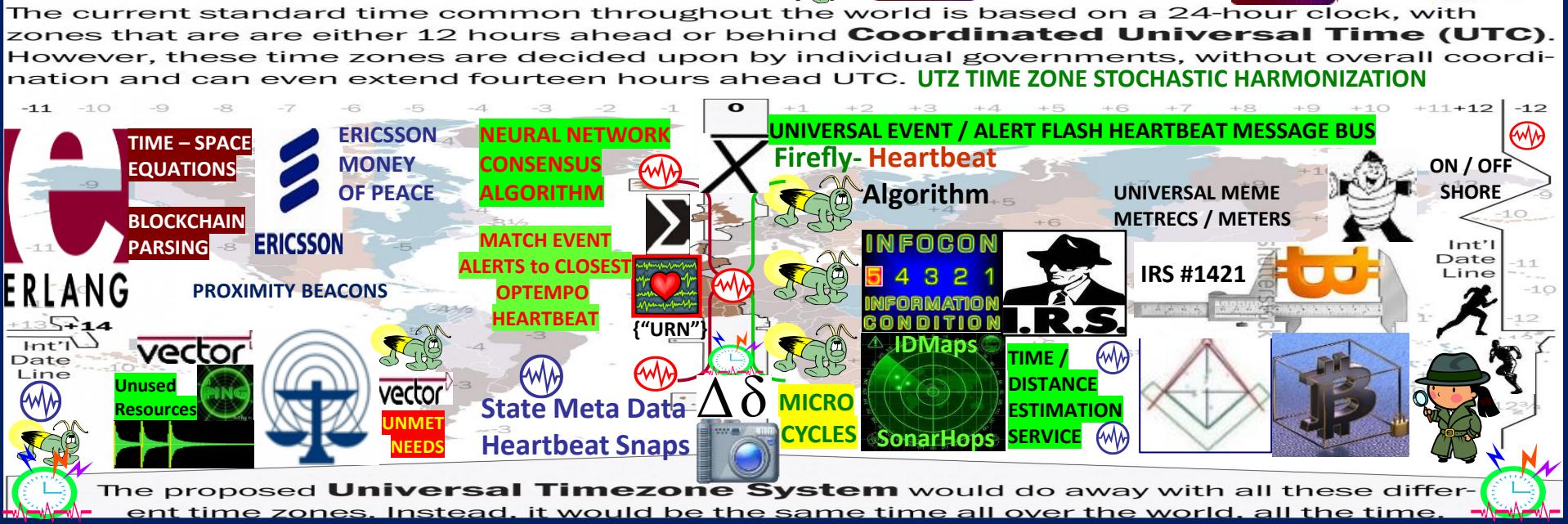
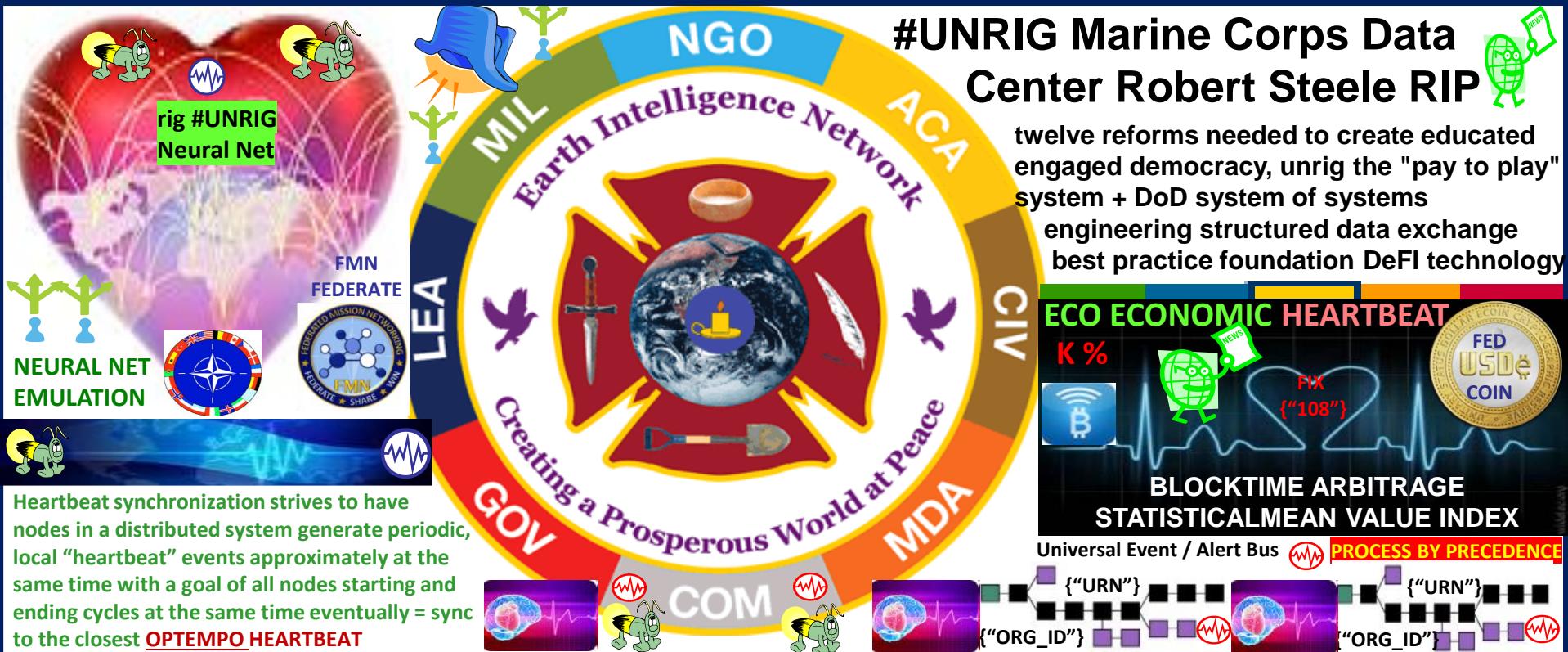


MINIMUM LIST OF COMPONENTS, BUILDING BLOCKS, PROCESSES, PROCEDURES AGREED ON BY TRADE FEDERATIONS TO ACHIEVE DISTRIBUTED AUTONOMOUS ORGANIZATION DAO CONSENSUS,



#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



DAO: Distributed Autonomous Organization

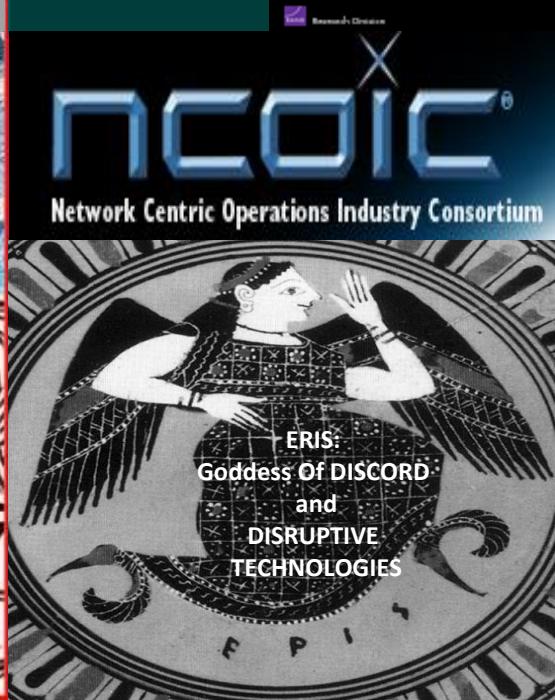
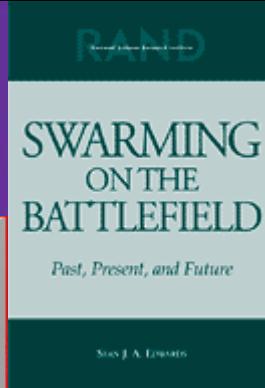
RAND term circa 2000 / The TAO OF THE DAO

SWARMING AND THE FUTURE OF CONFLICT



RAND
Monograph Report

THE
ADVENT
Of NETWAR



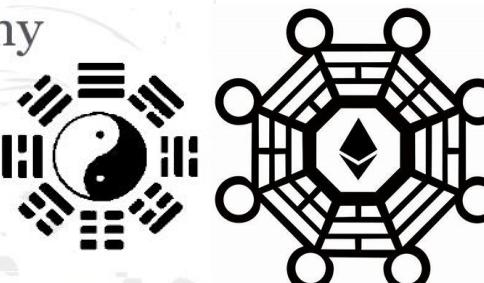
<http://cointelegraph.com/news/112077/the-new-frontier-after-cryptocurrency-cryptoequity>

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





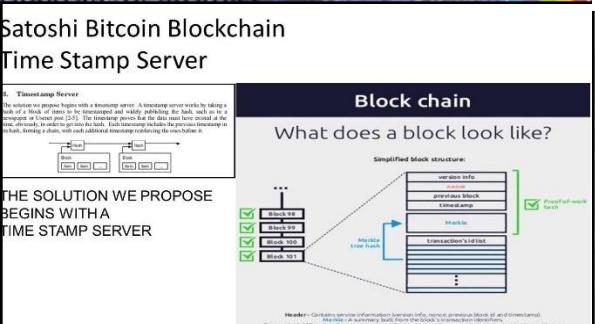
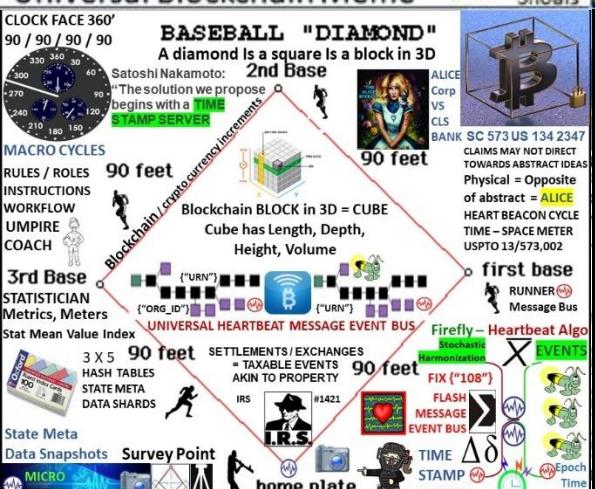
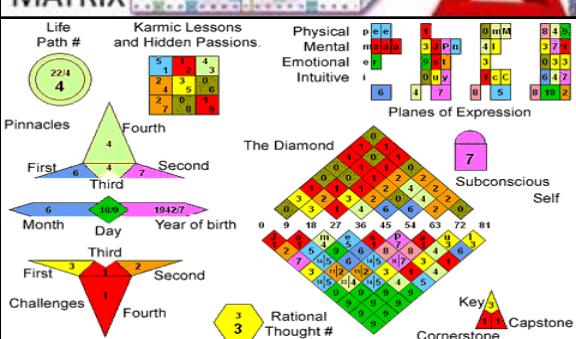
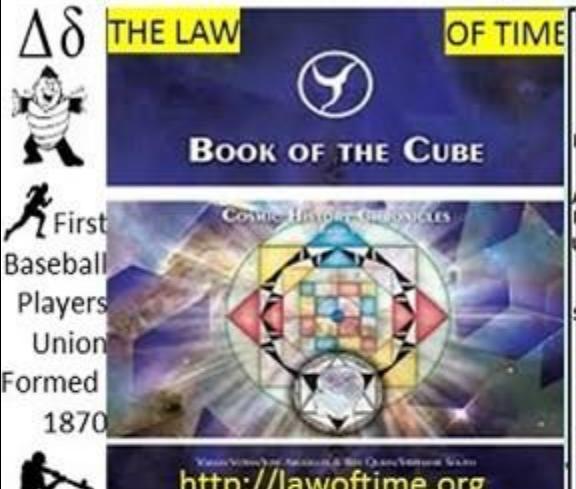
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

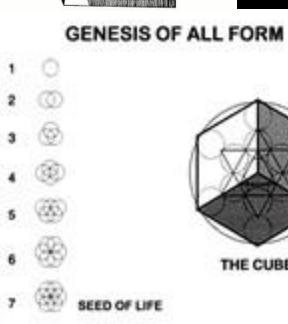
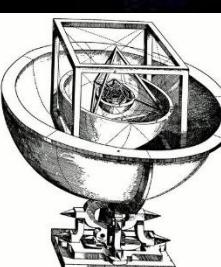
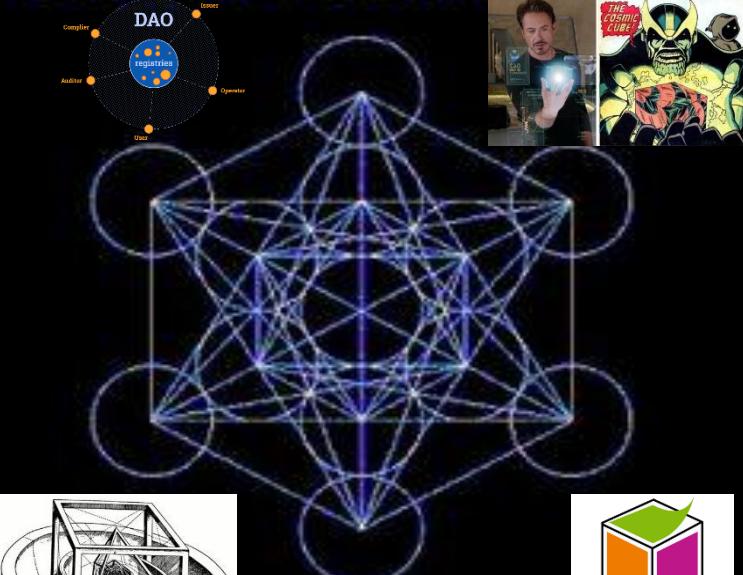
Main Embodiment: Baseball Diamond = block in 3D = cube

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

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

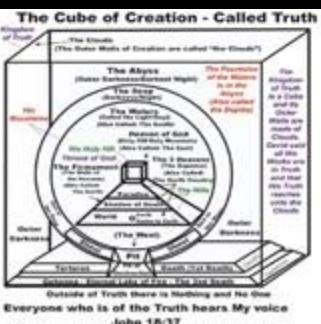


Metatron's Cube and the Platonic Solids



by: Tom Rimbault

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





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

-Buckminster Fuller



THE GREAT CONJUNCTION IN AQUARIUS

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

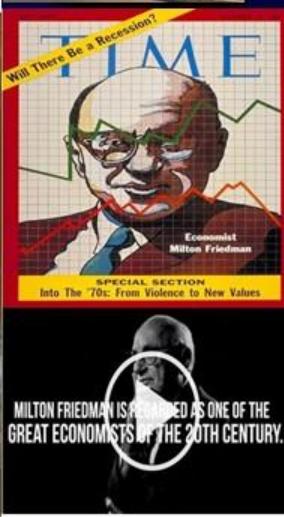
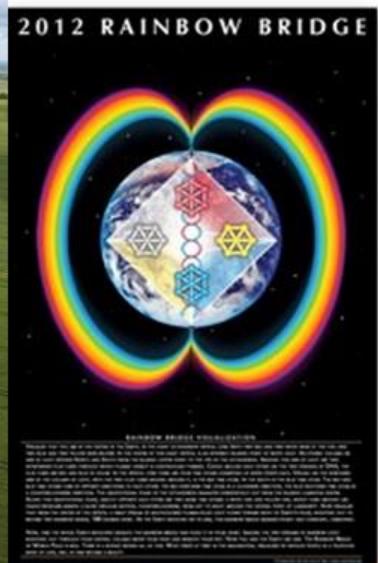
Over the next ten years, we are going to see our world innovate unlike never before, particularly in the fields of AI, technology, science, space travel, UFOs, networks, and the Internet. Major Universal truths will also be revealed as we welcome the New Age of Aquarius. The old world will soon come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

photo by werner du plessis



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

~ Edgar Cayce



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

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

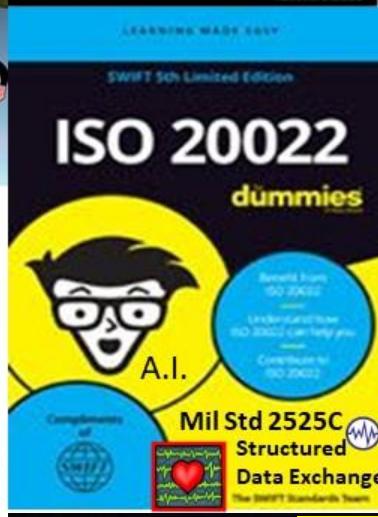
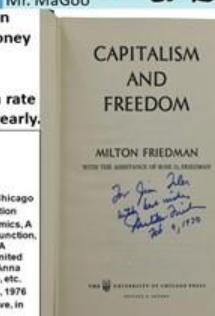
Milton Friedman — Preface to Capitalism & Freedom 1962

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

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

Milton Friedman

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



The Age of Aquarius: Aquarius, Aquarius Rising @ 6:44 A.M. Feb 10th 1960

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

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

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



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

