

- 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



# Humanitarian Assistance Networked Donor System

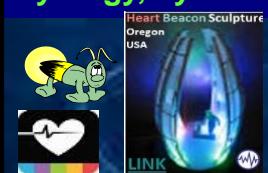
H.A.N.D.S: "Based on the need to speed up the processes of influencing an adversary, new concepts result in the adaptation of military doctrine, organization, training, material, infrastructure, interagency interaction, leadership, personnel and facilities" ... German Bundeswehr concept of "OOTW Operations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



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



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



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



## Beacon Communities

Vernetzte Operationsführung



PING

Proximity Beacons

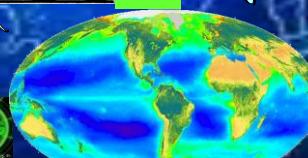
JAEGERS

BIOCOIN



Closer < \$\$\$ < FUEL

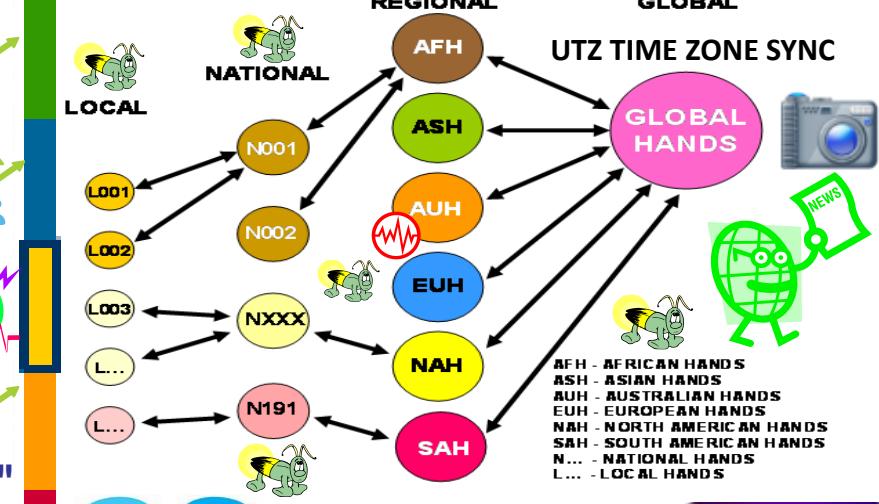
PING



FREELY  
HEARTBEAT  
EVENT / ALERT Flash Heartbeat Message Bus  
ALGORITHM



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



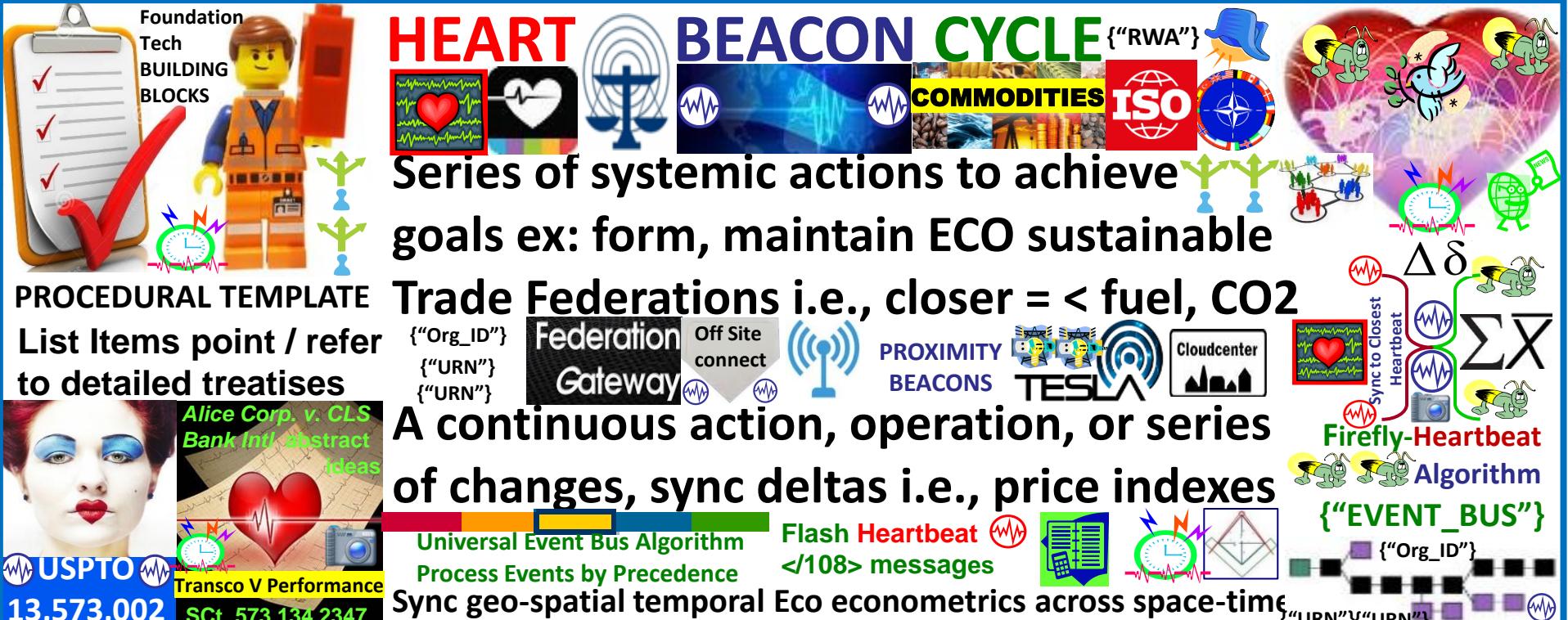
WORLD BEYOND WAR.org  
a global movement to end all wars

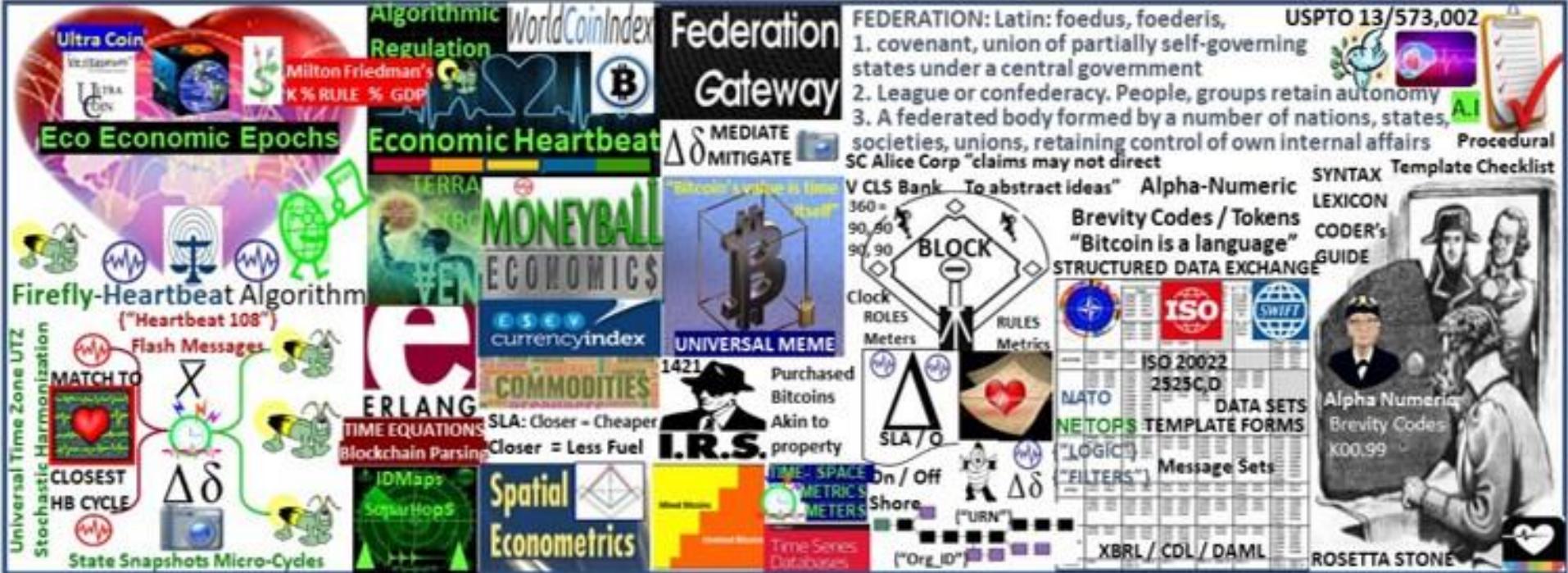


DAN MILLMAN

OFF SHORE  
OUTER BANKS

KAIJU

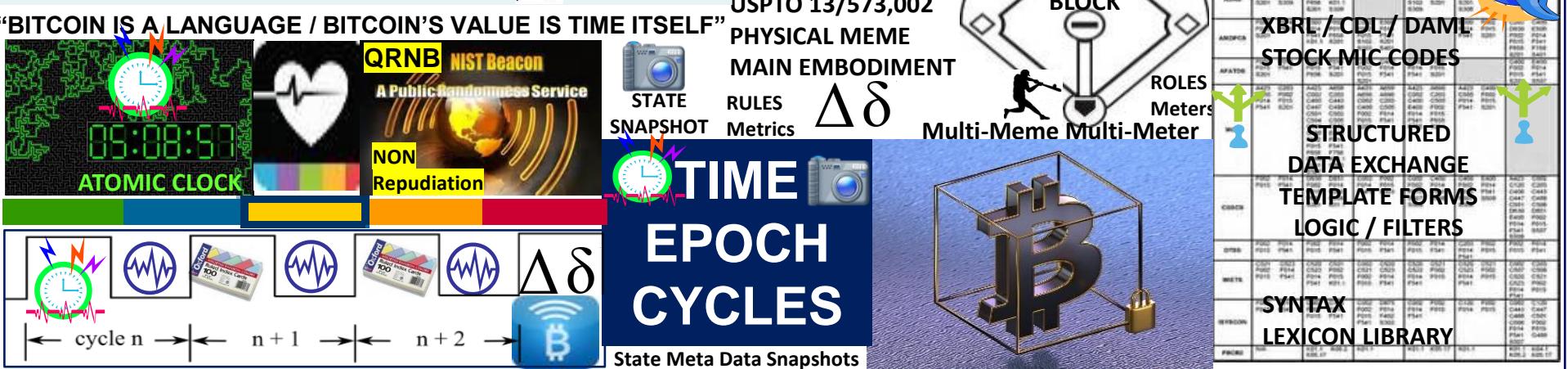
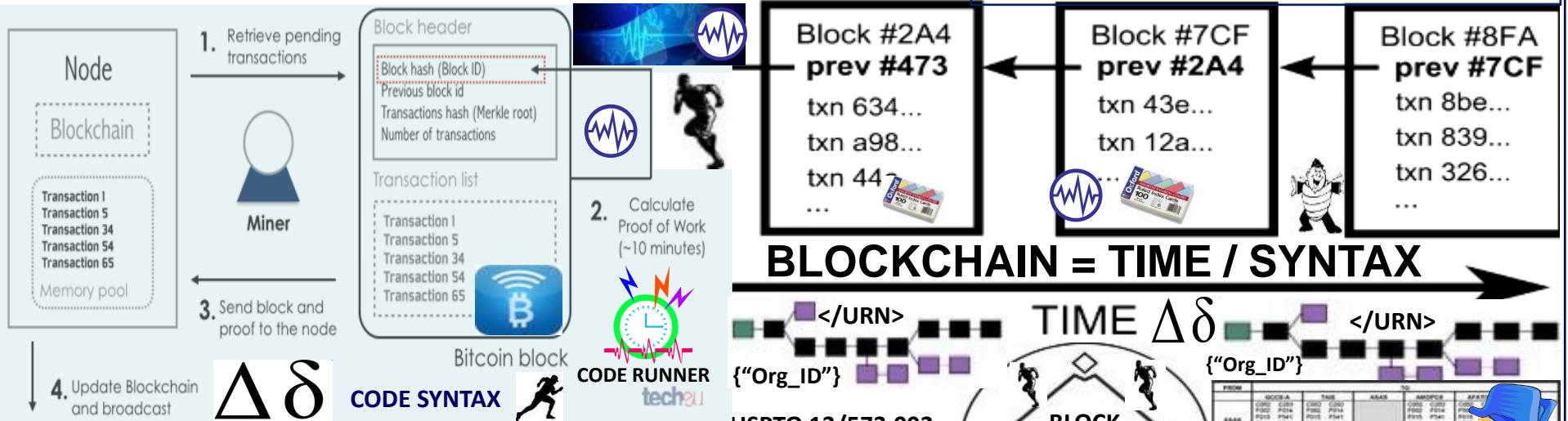








Alice Corp. v. CLS Bank International, 573 U.S. 134 SCt 2347 (2014) is a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).<sup>[2]</sup> The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating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



Net of \$\$\$ formed with:

1 EPOCH TIME CYCLES

2 {"Syntax"} "The Word"

"In the Beginning" Genesis Block

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

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

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

## NAMED DATA NETWORKING



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



STOCK MIC CODES

STRUCTURED  
DATA EXCHANGE  
TEMPLATE FORMS

300+ USE CASES

LOGIC / FILTERS

SYNTAX / SYMBOL  
LEXICON LIBRARY



SYNTAX  
LEXICON

Library

1<sup>st</sup> Compiler

R  
W  
A

Real  
World  
Assets

A.I.

Alpha  
Numeric

Brevity

Codes

Coder Guide  
Rosetta Stone



"BITCOIN MAKES MONEY  
PROGRAMMABLE.  
MONEY IS SIMPLY DATA"

"Bitcoin's Value is TIME itself"

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



ALICE CORP VS CLS BANK

"claims may not be directed towards an abstract idea"

US SC 573 US 134 2347



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

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



CLOCK FACE 360°  
90 / 90 / 90 / 90



MACRO CYCLES

RULES / ROLES

INSTRUCTIONS

WORKFLOW

UMPIRE

COACH

3rd Base

STATISTICIAN

Metrics, Meters

Stat Mean Value Index

90 feet

Blockchain BLOCK in 3D = CUBE

Cube has Length, Depth,

Height, Volume

SETTLEMENTS / EXCHANGES

= TAXABLE EVENTS

AKIN TO PROPERTY

IRS #1421

State Meta

Data Snapshots

Survey Point

MICRO CYCLES

90 feet

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

Epoch Time Cycles

Δδ

home plate

Time Stamp Server

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

HEART BEACON CYCLE  
USPTO 13/573,002  
SURVEY METHODS

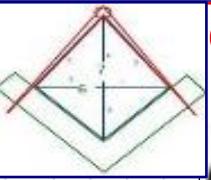
## SC ALICE CORP VS CLS BANK: “claims may not direct towards abstract ideas”

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

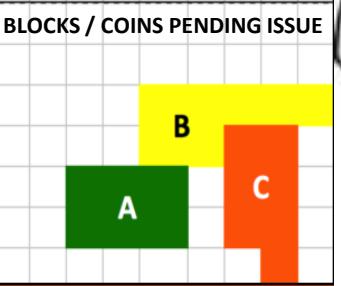


Memo #1421: Purchased Bitcoins are treated akin to property

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



## Mined Bitcoins



$$\Delta\delta$$

## Unmined Bitcoins



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

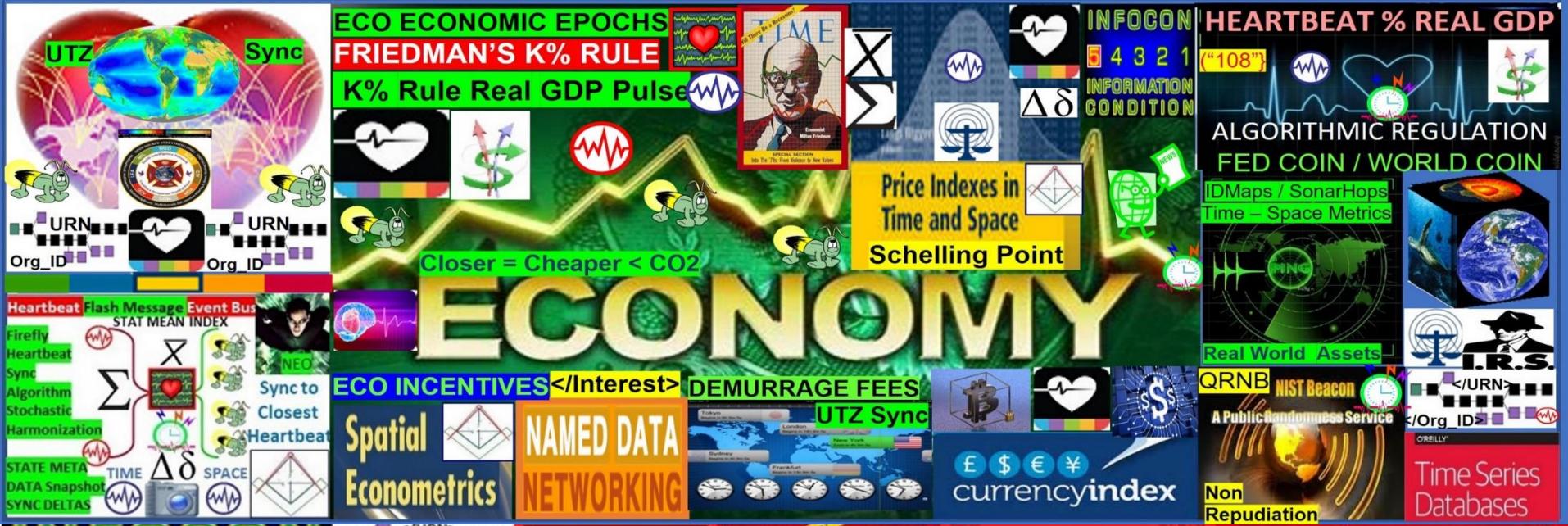
IDMaps-SONARHOPS distance estimation query-reply service





**FEDERATE: COMMON GOALS SYNCHRONIZED IN SPACE - TIME**





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.



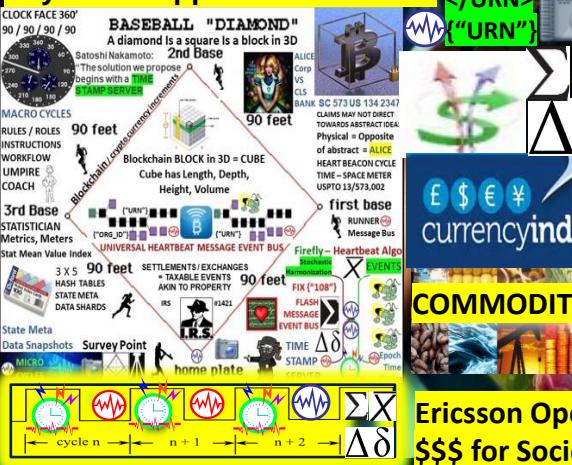
SCOTUS 2014 ruling  
SC 573 134 2347



"Claims may not direct towards abstract Ideas"

Trade Reference Currency  
TERRA TRC

Physical = opposite of abstract



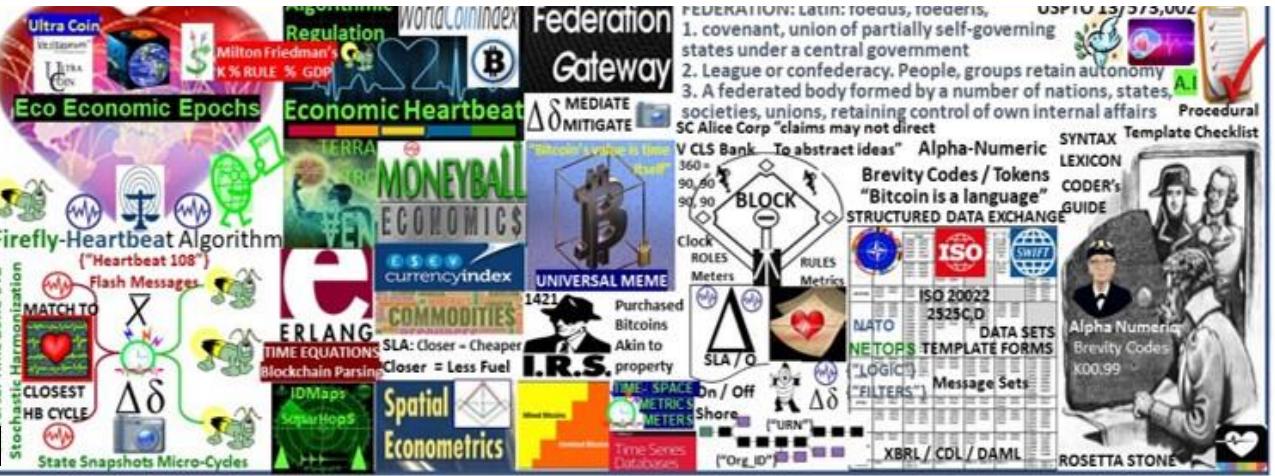
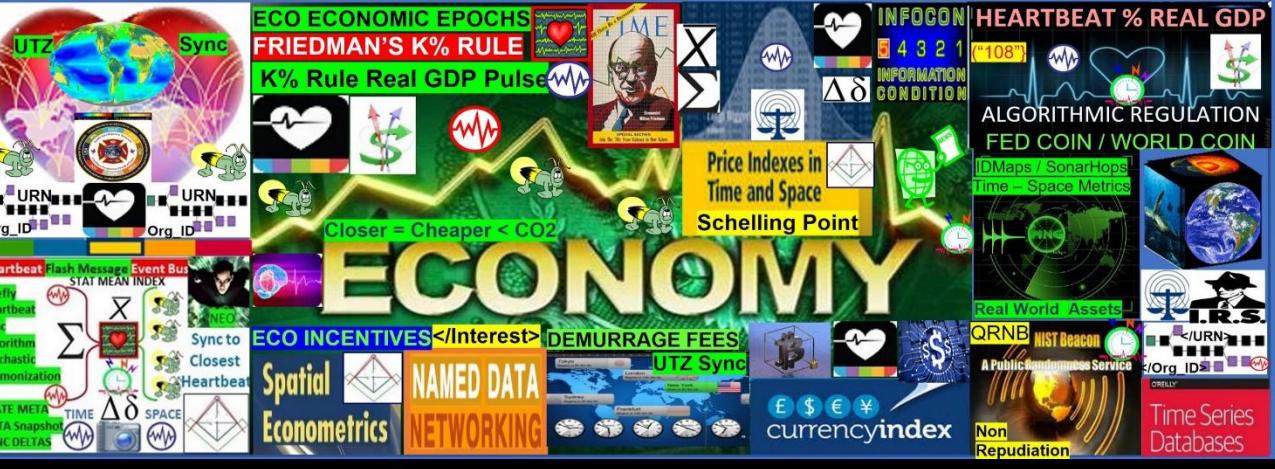
Ericsson Open \$\$\$ for Society

"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 itself"  
Blocktime = computing clock-time that creates sync delta differentials in the chain of time  
described by MTT Machine Trust Language  
smart contracts adjusted by time arbitrators

USPTO 20130166398 Ericsson System Method Implementing Context Based Payment System







ISO Technical Committee TC68

## Financial Services

SC2 Security	SC4 Securities	SC7 Banking
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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 v66

**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

The diagram illustrates the Spacemesh network structure and synchronization process. On the left, a blue circular background features a central node labeled "spacemesh" connected to four other nodes. A red diamond-shaped mesh structure is overlaid on this, representing the network's topology. To the right, a large red diamond is divided into four quadrants by a diagonal line, with the top-right quadrant containing a smaller red diamond. This visualizes how the network's structure is refined through iterative synchronization steps. Below this, a circular diagram shows a network of nodes connected by lines, with a legend indicating "The Network" and "The Mesh".

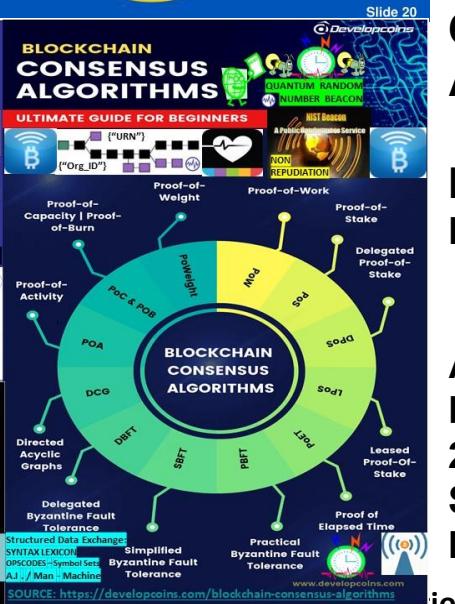
 PROOF OF FORMULATION  
Space-Time Consensus Algorithm

A collage of various logos and text related to blockchain and messaging, including BABEL, FIRELY, and various message bus and crypto-related terms.

describes a common platform

describes a common platform  
(methodology, process, rep.)  
• a modelling methodology

- a modelling methodology
- a central dictionary of business objects
- a set of XML and ASN.1 schema definitions



# FOUNDATION STANDARDS TECHNOLOGY

- The logo consists of several text elements arranged vertically. At the top is a blue square containing a white icon of a computer monitor with a bar chart. Below this is the text "ISO 20022" in large black letters. Underneath that is "MIL STD" in a slightly smaller font. The next section contains "Structured Data Exchange" in large, bold, black letters. Below this is "ePoD System of" followed by "systems" and "engineering" on separate lines. To the right of the main text, there is a vertical column of text: "Systems", "reliability", "BOOKS", "A world", "business", "resources", "information", "declarations", "staff", and "http://". At the bottom right is a small graphic of a globe.

# CONSENSUS ALGORITHMS

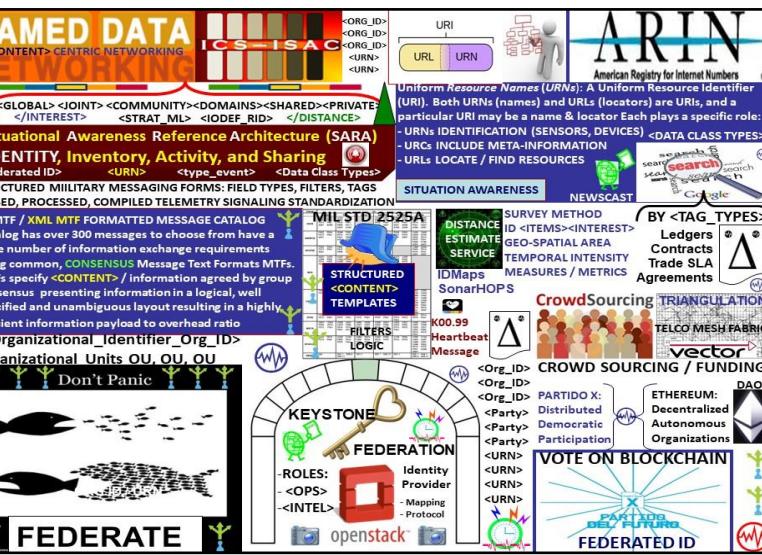
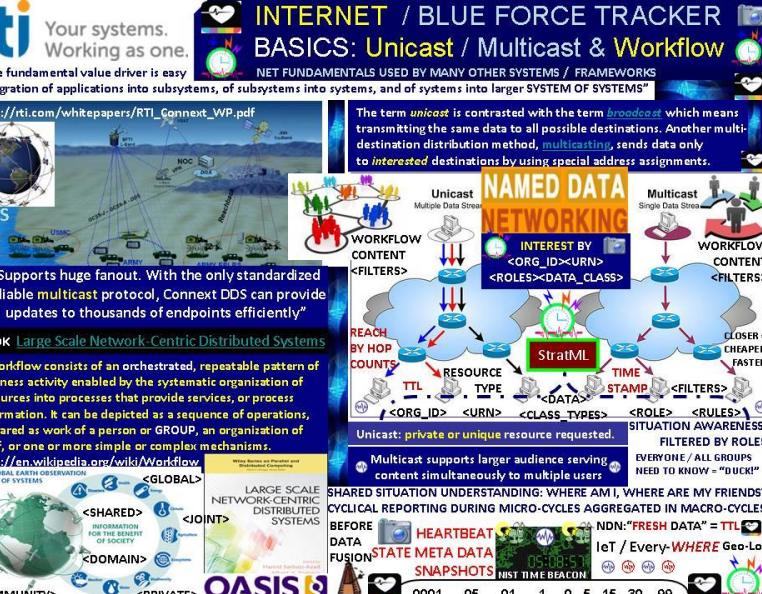
# NDN: Named Data Networking

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

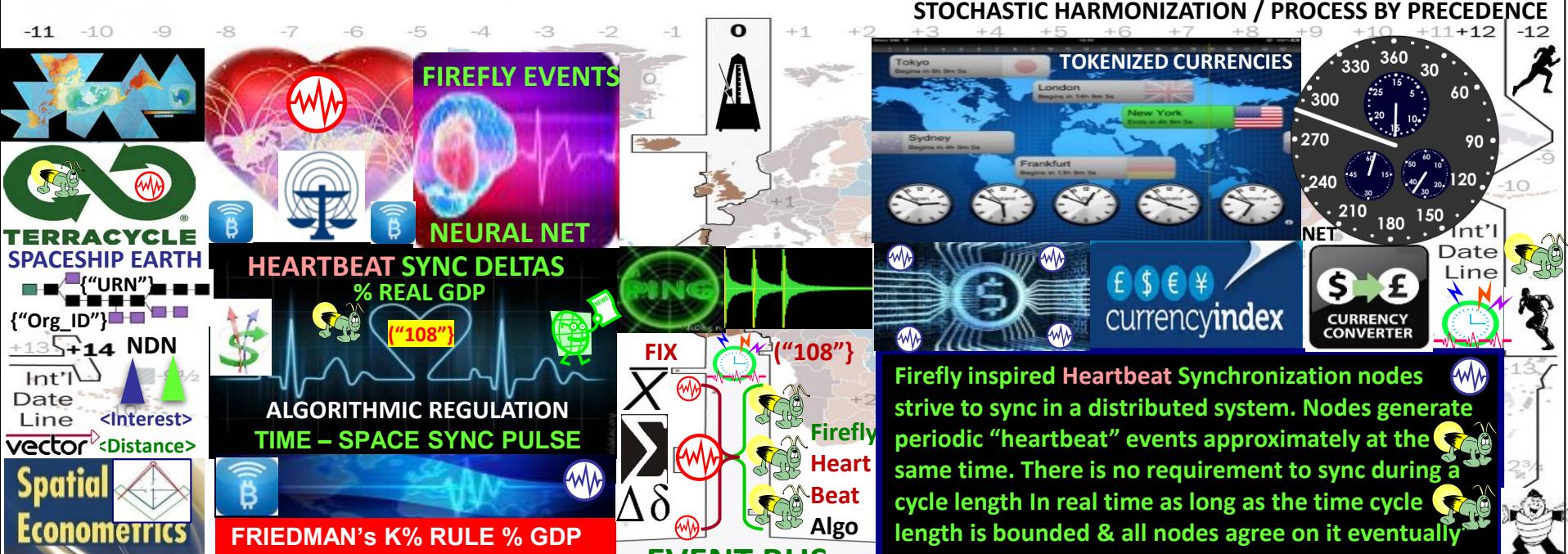
Final Standard prepared by ISO Technical Committee TC68 Financial Services. It

es in ASN.1 Abstract Syntax Notation: A single standardization approach

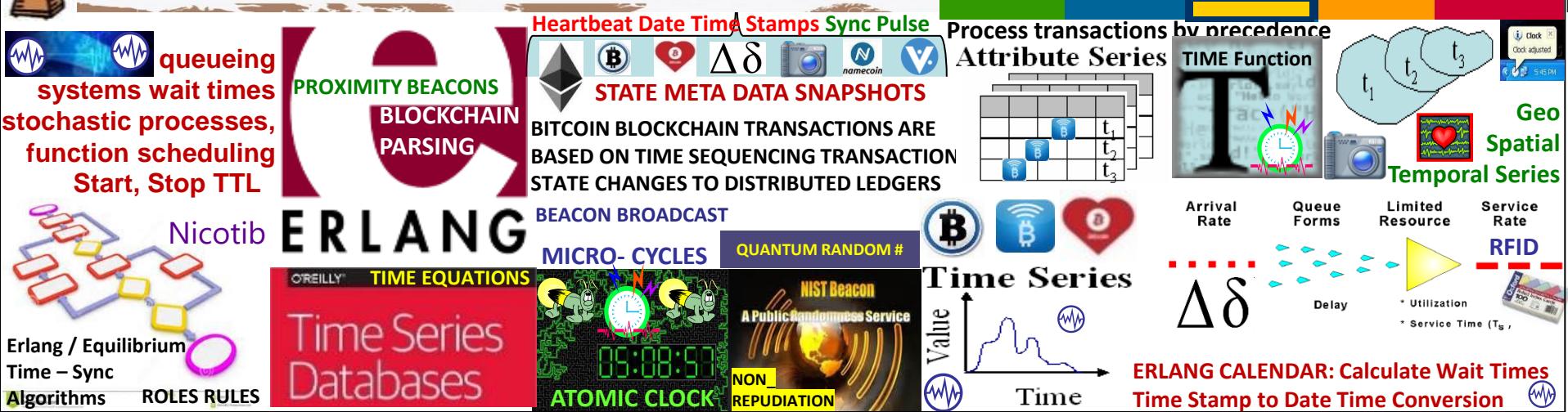
- standards initiatives. common platform for the development of messages using:  
ent way financial business areas, business transactions and message flows  
communications  
models into XML or ASN.1 schemas, whenever the use of the ISO 20022 XML or  
[www.iso20022.org/about-iso-20022](http://www.iso20022.org/about-iso-20022)



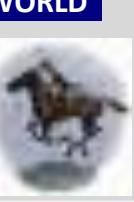
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



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





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

## MESSAGE CATALOG 300 + Use Cases

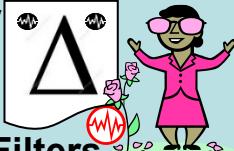
Data Elements: entity, attribute, relationship equivalents

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

Information Categories and Examples

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

- COI Determination Org Interaction
- Search and Discovery
- Ontologies STANDARDS
- Taxonomies REFERENCE
- Metadata Attributes / Filters  
({"Org\_ID"} {"URN"} </URN></URN> FILTERS



FFUDN: Field Format Unit Designator #

FFIRN Field Format Index Reference #

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

 {"108"}  NDN  Firefly-Heartbeat Flash Messages

PROCESS MESSAGE BY PRECEDENCE  
UNIVERSAL EVENT / ALERT MESSAGE BUS

## OPERATIONAL NODES / ACTIVITIES

DATA	SYSTEM FUNCTIONS	PERFORMANCE
11.4 - Classification	11.8 - Kinematics	
11.4.1 - Category	11.8.1 - Pos / Vel / Acc (PVA)	
11.4.1.1 - Confidence Level	11.8.1.1 - Acceleration	
11.4.1.2 - Estimate Type	11.8.1.1.1 - Angular	
11.4.1.2.1 - Alternative	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
2525C	Partner	
		Hostile 
		Competitor 
		1 - Velocity
		1.4.1 - Horizontal
		1.4.2 - Vertical
		VA Confidence
		1 - Bearing Angle
		2 - Bearing Angle Rate
		3 - Covariance Matrix

# NAMED DATA NETWORKING

<CONTENT> CENTRIC NETWORKING



<ORG\_ID>  
<ORG\_ID>  
<ORG\_ID>  
<URN>  
<URN>

<GLOBAL> <JOINT> <COMMUNITY> <DOMAINS> <SHARED> <PRIVATE>  
</INTEREST> <STRAT\_ML> <IODEF RID> </DISTANCE>

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

<Federated ID> <URN> <type\_event> <Data Class Types>

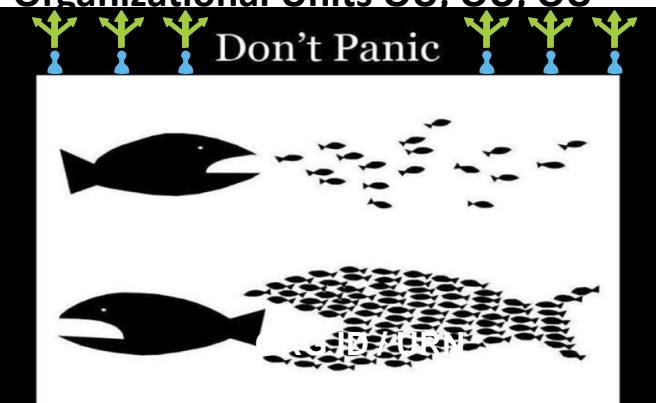
STRUCTURED MILITARY MESSAGING FORMS: FIELD TYPES, FILTERS, TAGS  
PARSED, PROCESSED, COMPILED TELEMETRY SIGNALING STANDARDIZATION

### USMTF / XML MTF FORMATTED MESSAGE CATALOG

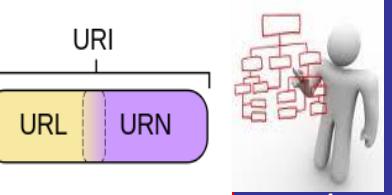
Catalog has over 300 messages to choose from have a wide number of information exchange requirements using common, CONSENSUS Message Text Formats MTFs. MTFs specify <CONTENT> / information agreed by group consensus presenting information in a logical, well specified and unambiguous layout resulting in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

</Organizational\_Identifier\_Org\_ID>

Organizational Units OU, OU, OU



FEDERATE



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

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



STRUCTURED  
<CONTENT>  
TEMPLATES

FILTERS  
LOGIC



IDMaps  
SonarHOPS



K0.99  
Heartbeat  
Message

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

BY <TAG\_TYPES>  
Ledgers  
Contracts  
Trade SLA  
Agreements



CrowdSourcing



CROWD SOURCING / FUNDING



- ROLES:
- <OPS>
- <INTEL>



openstack™

- Identity Provider
- Mapping Protocol



<Org\_ID>  
<Org\_ID>  
<Org\_ID>  
<Party>  
<Party>  
<Party>

PARTIDO X:  
Distributed  
Democratic  
Participation

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

ETHEREUM:  
Decentralized  
Autonomous  
Organizations



VOTE ON BLOCKCHAIN



FEDERATED ID



# Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

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



**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

Industrial Control System Information Sharing and Analysis Center

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

<URN><URN> <NEWS>  
<URN><URN> <COMMODITY><WATER><ENERGY><AVAILABLE UNITS>  
<URN><URN> vector <GEO-SPATIAL TEMPORAL INTENSITY METRICS / METERS>

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

**ACTIVITY:** <EVENT><ALERT> <TIME\_STAMP><ORG\_ID><URN>

<GEO\_LOC\_GPS><STATUS>  
<Halt><Moving><Stale><Ready>

CONTENT LEXICON  
ROSETTA STONE

**SHARING:**

COMMON <TAGS>

<Organizational\_ID>

Resource Names <URN>

<Time\_Stamps>

<State-Meta\_Data>

<DATA\_CLASS\_TYPE>

<Heartbeat\_snapshots>

<TAG>LIBRARY  
TEMPLATES



NAMED DATA  
<Content> Centric  
NETWORKING



AVALANCHE

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

NIST CYBER SECURITY FRAMEWORK

FROM	F002	F003	F004	F005	F006	F007	F008	F009	F010	F011	F012	T0	TO	A001	A002	A003	A004	A005	A006	A007	M008
A001	F013	F014	F015	F016	F017	F018	F019	F020	F021	F022	F023	F024	F025	F026	F027	F028	F029	F030	F031	F032	F033
AMOPCS	F034	F035	F036	F037	F038	F039	F040	F041	F042	F043	F044	F045	F046	F047	F048	F049	F050	F051	F052	F053	F054
AFATPS	F055	F056	F057	F058	F059	F060	F061	F062	F063	F064	F065	F066	F067	F068	F069	F070	F071	F072	F073	F074	F075
MCS	F076	F077	F078	F079	F080	F081	F082	F083	F084	F085	F086	F087	F088	F089	F090	F091	F092	F093	F094	F095	F096
CIBRS	F097	F098	F099	F100	F101	F102	F103	F104	F105	F106	F107	F108	F109	F110	F111	F112	F113	F114	F115	F116	F117
DTBS	F118	F119	F120	F121	F122	F123	F124	F125	F126	F127	F128	F129	F130	F131	F132	F133	F134	F135	F136	F137	F138
IMETS	F139	F140	F141	F142	F143	F144	F145	F146	F147	F148	F149	F150	F151	F152	F153	F154	F155	F156	F157	F158	F159
IRSYON	F160	F161	F162	F163	F164	F165	F166	F167	F168	F169	F170	F171	F172	F173	F174	F175	F176	F177	F178	F179	F180
FB001	F181	F182	F183	F184	F185	F186	F187	F188	F189	F190	F191	F192	F193	F194	F195	F196	F197	F198	F199	F200	F201

STRUCTURED  
<CONTENT>  
TEMPLATES

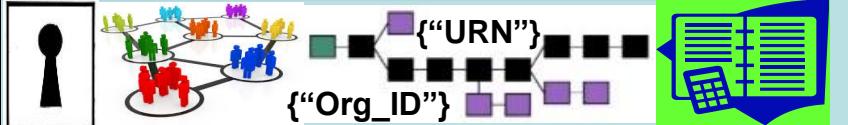
USMTF / XML MTF FORMATTED MESSAGE CATALOG  
Catalog has over 300 messages to choose from have a wide number of information exchange requirements using common, CONSENSUS Message Text Formats MTFs specify <CONTENT> / information agreed by group consensus presenting information in a logical well specified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

<TAG>  
LIBRARY



# Heart Beacon Cycle

## FEDERATE / TRADE FEDERATIONS



ECONOMIC HEARTBEAT



K %



DAO

BITNATION

FEDERATE  
SHARE  
WIN

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

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

Federation  
Gateway

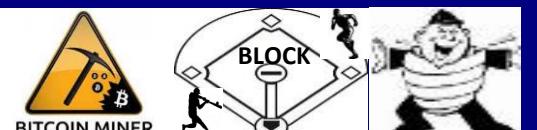


{"GLOBAL"}  
{"SHARED"}  
{"DOMAIN"}  
{"COMMUNITY"}  
{"PRIVATE"}  
{"GROUP ID"}



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

Bitcoin Mining Pools  
MEME / METAPHOR MEDIATION



DISTRIBUTED AUTONOMOUS ORGANIZATION = DAO RAND Corp

term coined circa 1991 now in use by Blockchain tech corporations

Uniform\_Resource\_Name



IeT DEVICE / PLATFORM  
IoT SENSOR DEVICE



FIREFLY FLASH

HEARTBEAT MESSAGES

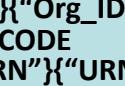
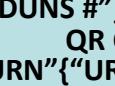
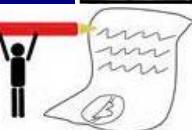
</RESOURCE> {"URN"}

{"Asset\_Class"} </URN>

STOCK EXCHANGE

MIC MARKET IDENTIFIER

CODES / BREVITY CODES



{"DUNS #"} {"Org\_ID"} Heartbeat Snaps  
QR CODE

{"URN"} {"URN"} {"URN"} MICRO-CYCLES

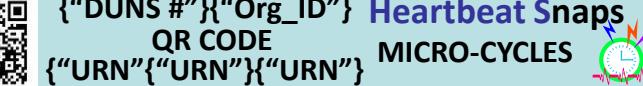
EVENT BUS

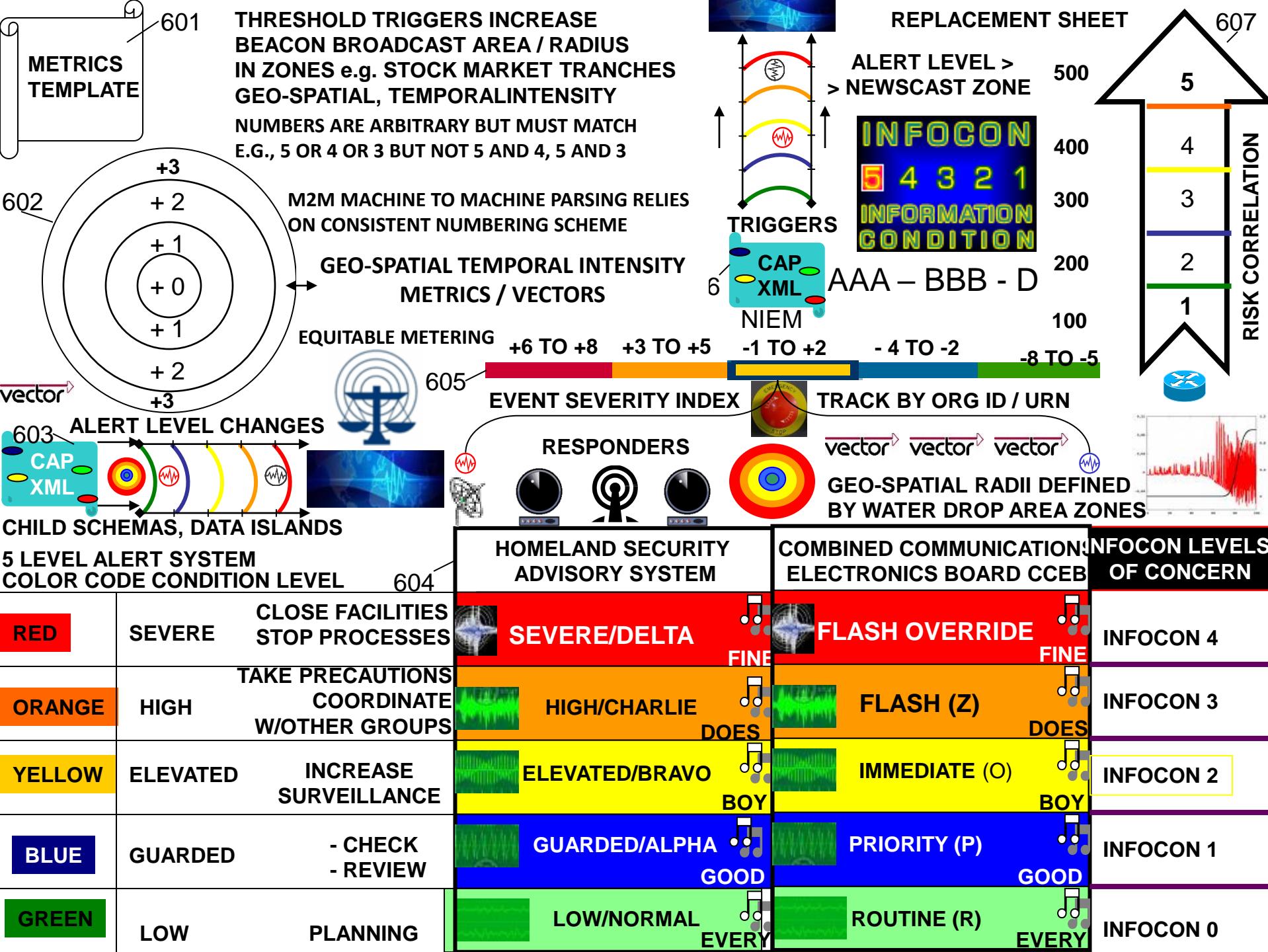


Signalling, Telemetry



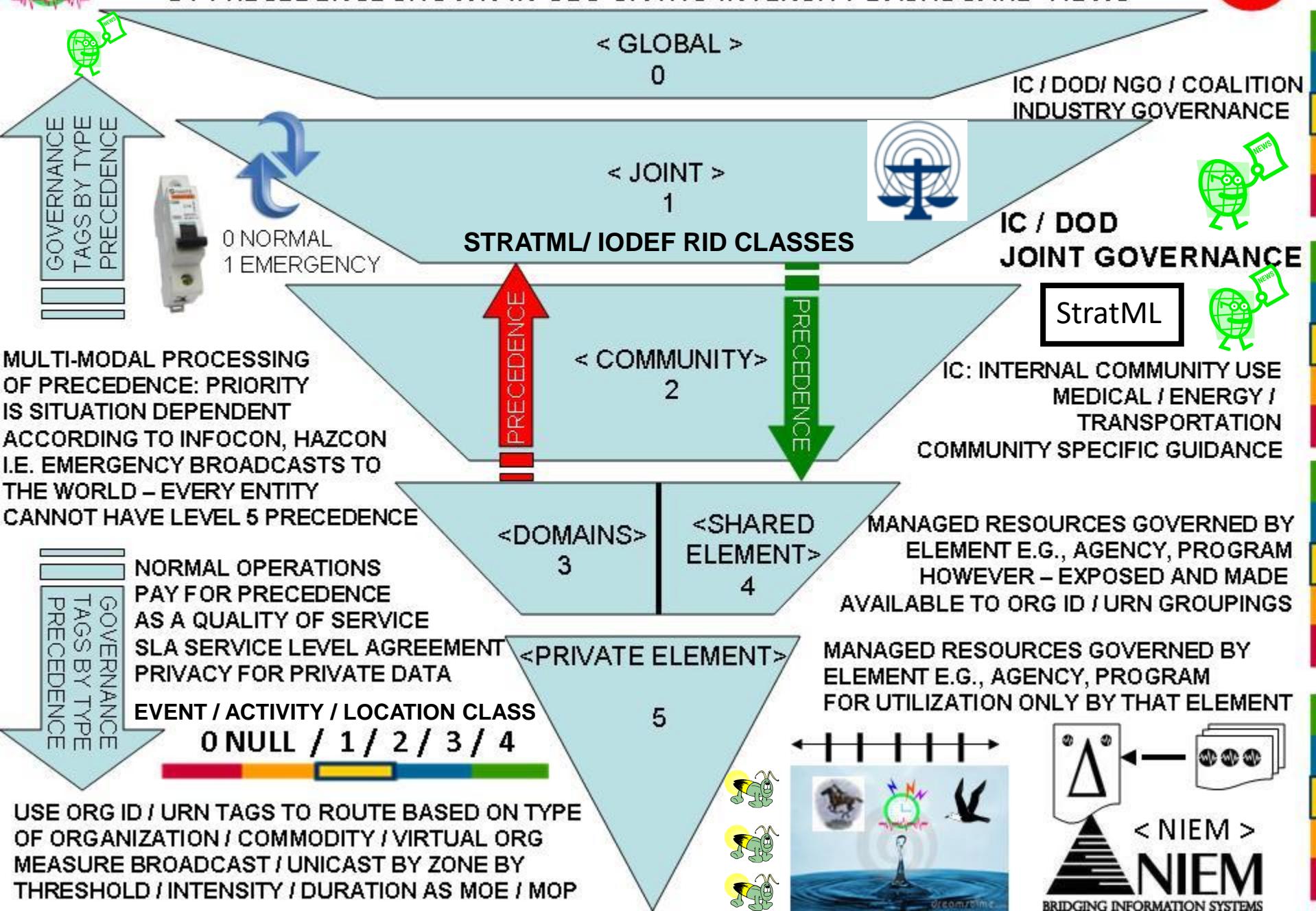
UUID 123e4567-e89b-12d3-a456-426655440000  
123e4567-e89b-12d3-a456-426655440001  
123e4567-e89b-12d3-a456-426655440002







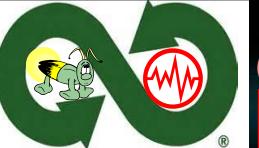
# ENABLE MAPPING OF GOVERNANCE / MANAGEMENT RESOURCES BY PRECEDENCE SHOWN IN GEO-SPATIO INTENSITY DASHBOARD VIEWS





# Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



## ECO ECONOMIC HEARTBEAT

("108")



K%



## ECONOMIC MACRO CYCLES

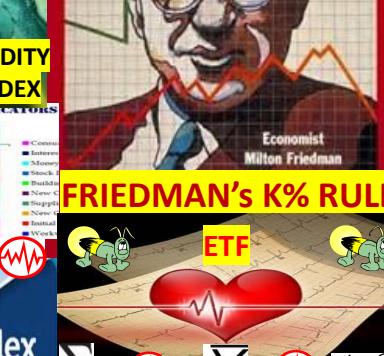
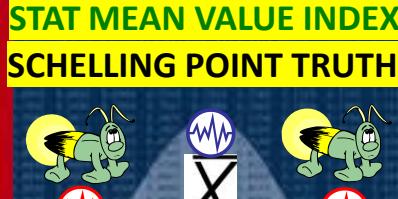
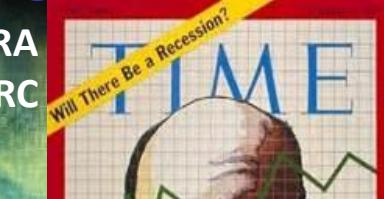
## TIME-SPACE SYNC

K% GDP ECONOMIC PULSE FEDCOIN WORLDCOIN

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



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



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

**UTZ TIME ZONE SYNC**



UTZ TIME ZONE SYNC

SYNC TO CLOSEST HEARTBEAT

UTZ STOCHASTIC HARMONIZATION

Universal Metrics / Meters

Geo-spatial Temporal Syntax-Semantic Sync & Consensus

CURRENCY PAIR SAMPLING

ON / OFF SHORE

SYNC DELTA STATE META DATA SNAPSHOTS

Fix ("108") {"Org\_ID"} MFID EVENTS

Int'l Date Line

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.



DEMURRAGE PARKING Logistic Fee Incentives

MICRO Payments

EVENT STATE SNAP SYNTAX NONCE HASH

EVENT STATE SNAP SYNTAX NONCE HASH

EVENT STATE SNAP

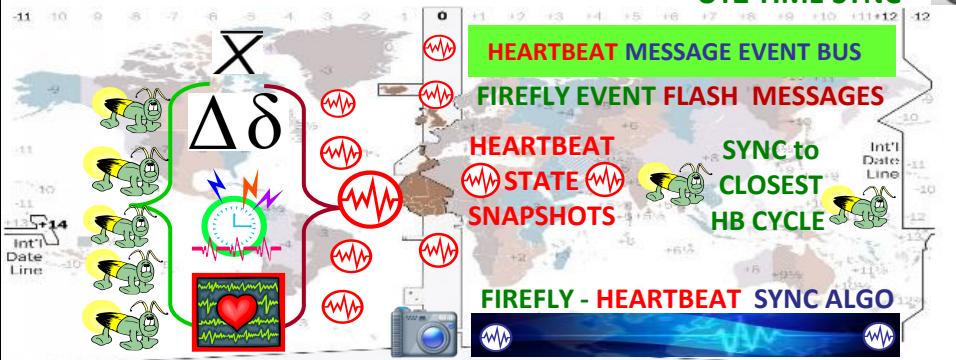
All things Net, Net of \$\$\$ formed by Time Epoch Cycles

cycle n n + 1 n + 2 Δδ

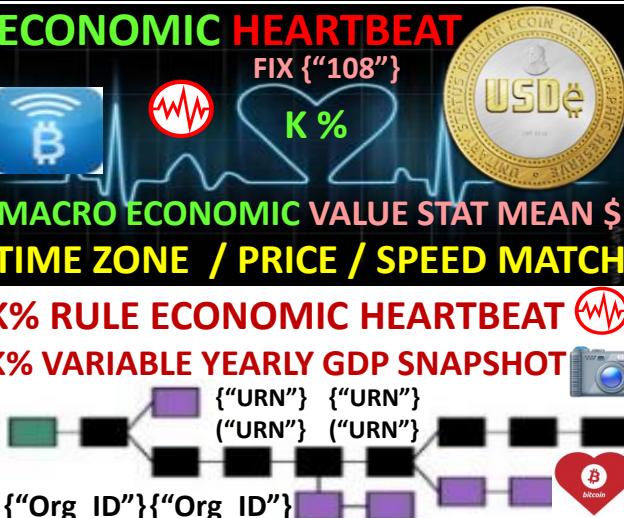
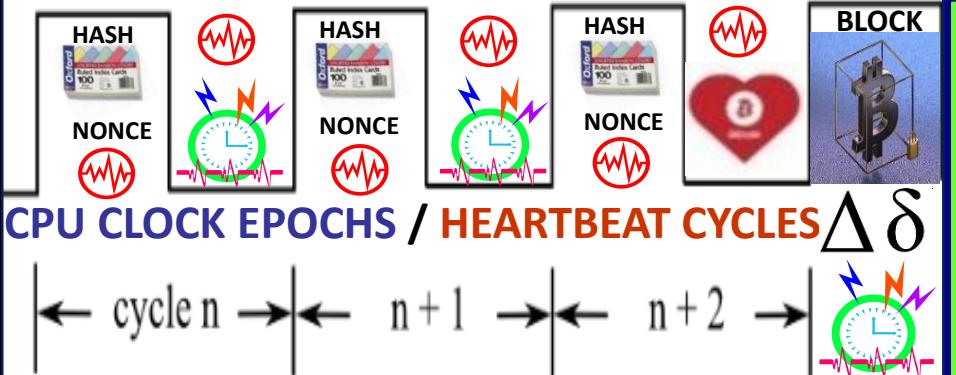
"Heartbeat Synchronization nodes in a distributed system generate periodic local heartbeat events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. No rule governs the length of a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



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



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

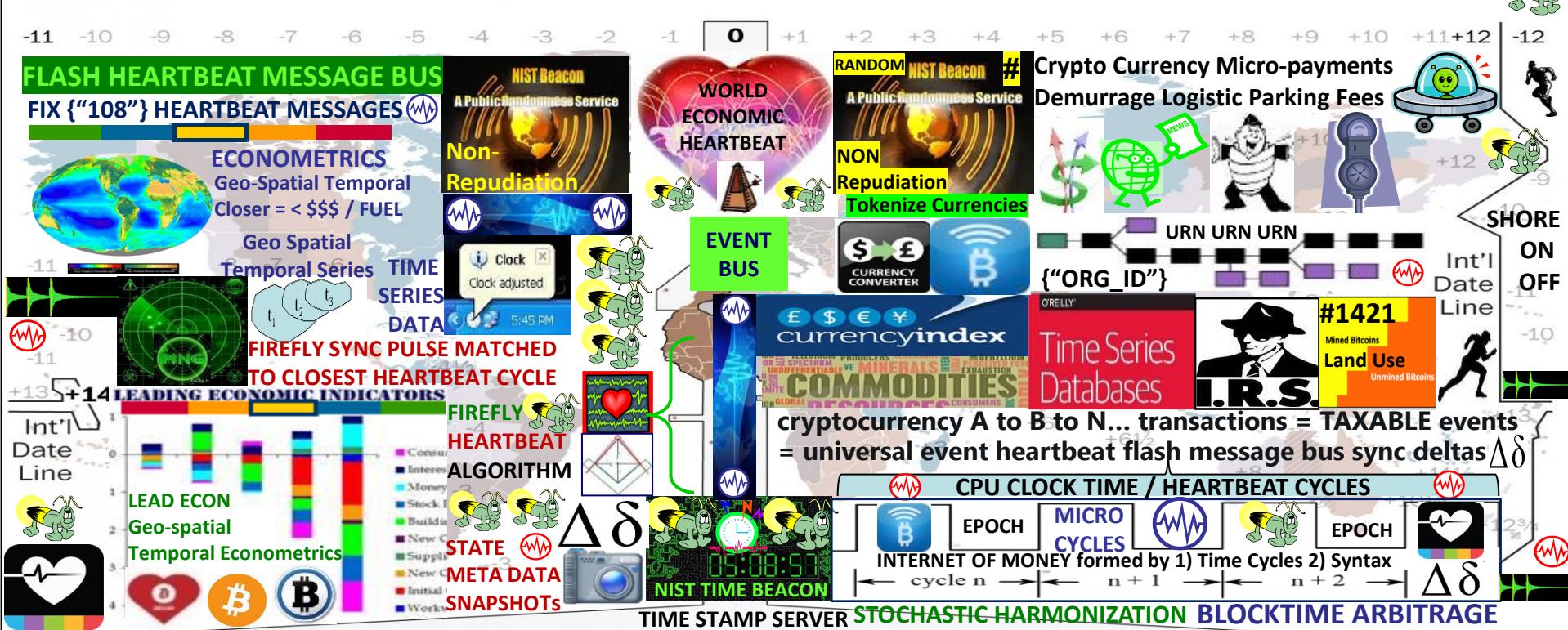


"Heartbeat Synchronization strives to have nodes in a distributed system generate periodic local "heartbeat" events approximately at the same time. It differs from classical clock sync in that Nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. There is no requirement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





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



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

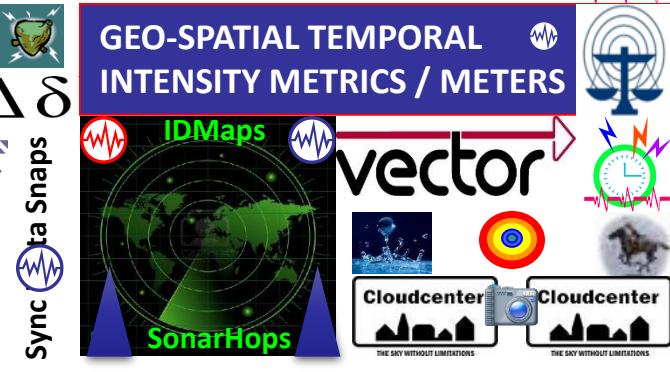
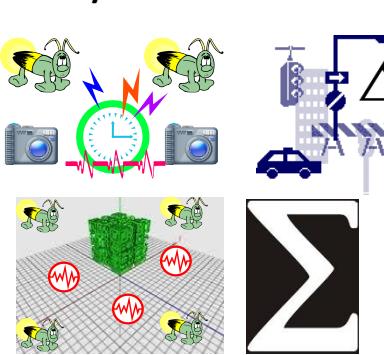
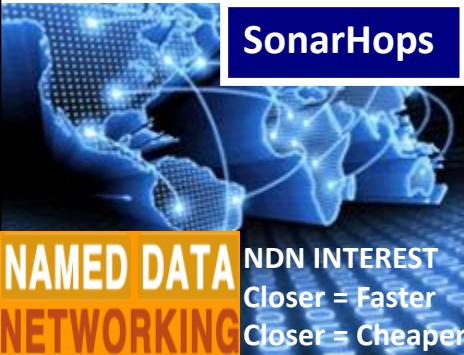




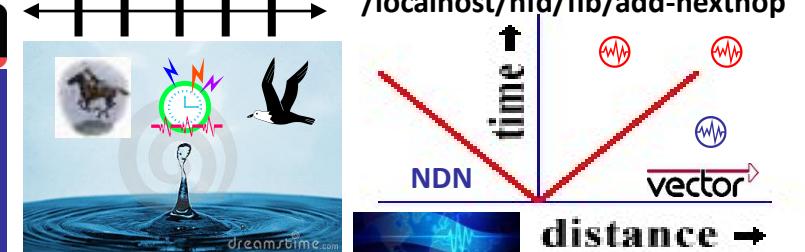
# IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



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

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

Name Prefix  
<Org\_ID> Trie (NPT)



**NDN NAMES**

NDN NAMED DATA NETWORK RIB /  
FIB Datasets event notification

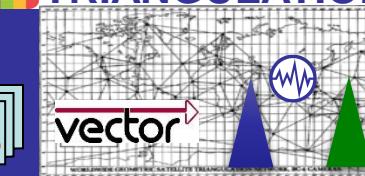
Distance information adjusts to “permanent” topology changes e.g., splits, joins, adds, moves, drops, merges in lieu of formal merger / acquisition

NDN INTEREST LENGTH  
= DISTANCE BY HOPS

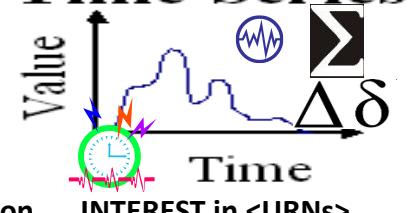
NDN  
INTEREST

IS DATA  
FRESH ?

**TRIANGULATION**



**Time Series**



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

Datasets and Event Notification

INTEREST in <URNs>

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**



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:



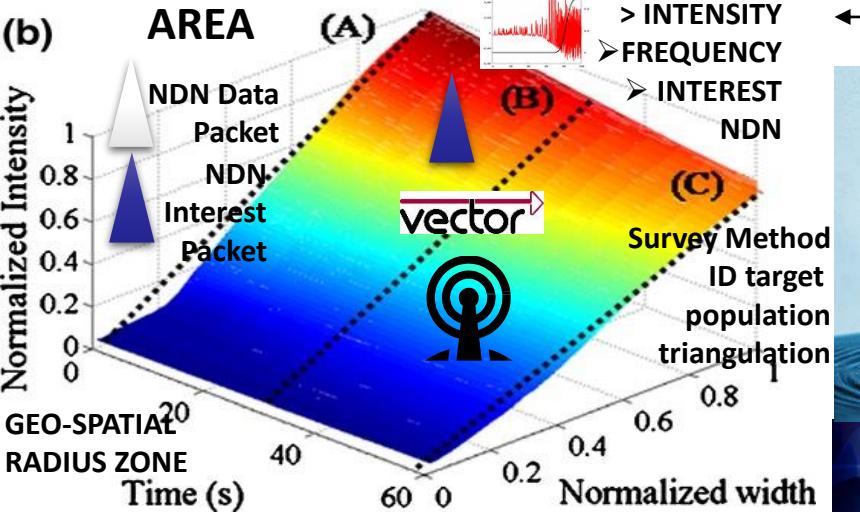
Paul Revere = linear, sequential



TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY Cyclic Frequency



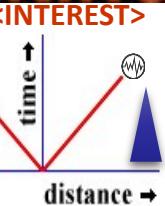
# NAMED DATA NETWORKING

</IoT>  
MQTT



NIST TIME BEACON

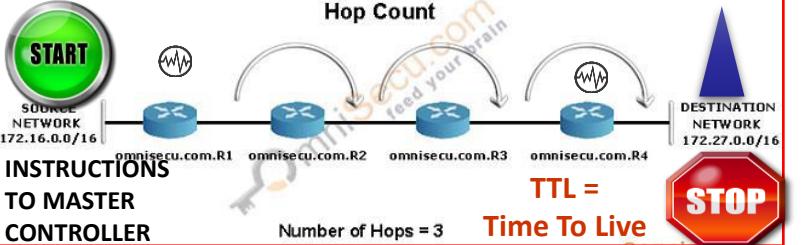
05:08:50



ARRESTED-D

TELEMETRY TRANSPORT

Hop Count



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

IDMAPS  
SONARHOPS  
INTERNET  
TRIANGULATION



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

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

vector WirelessHART

time synchronized,  
self-organizing,  
mesh Net

ALERT LEVEL >  
> NEWSCAST ZONE



SINE-WAVE

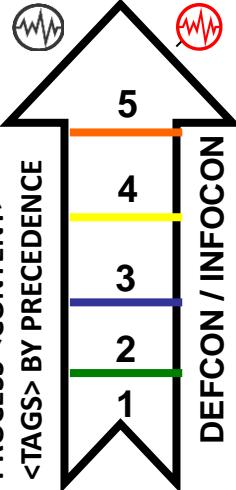
TRIGGERS  
CAP XML

NDN  
<INTEREST> BY  
INTENSITY / FREQUENCY

INFOCON  
XML  
MTF  
300 +  
MSG

5 4 3 2 1

INFORMATION CONDITION



# 13/573,002 HEART BEACON CYCLE

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

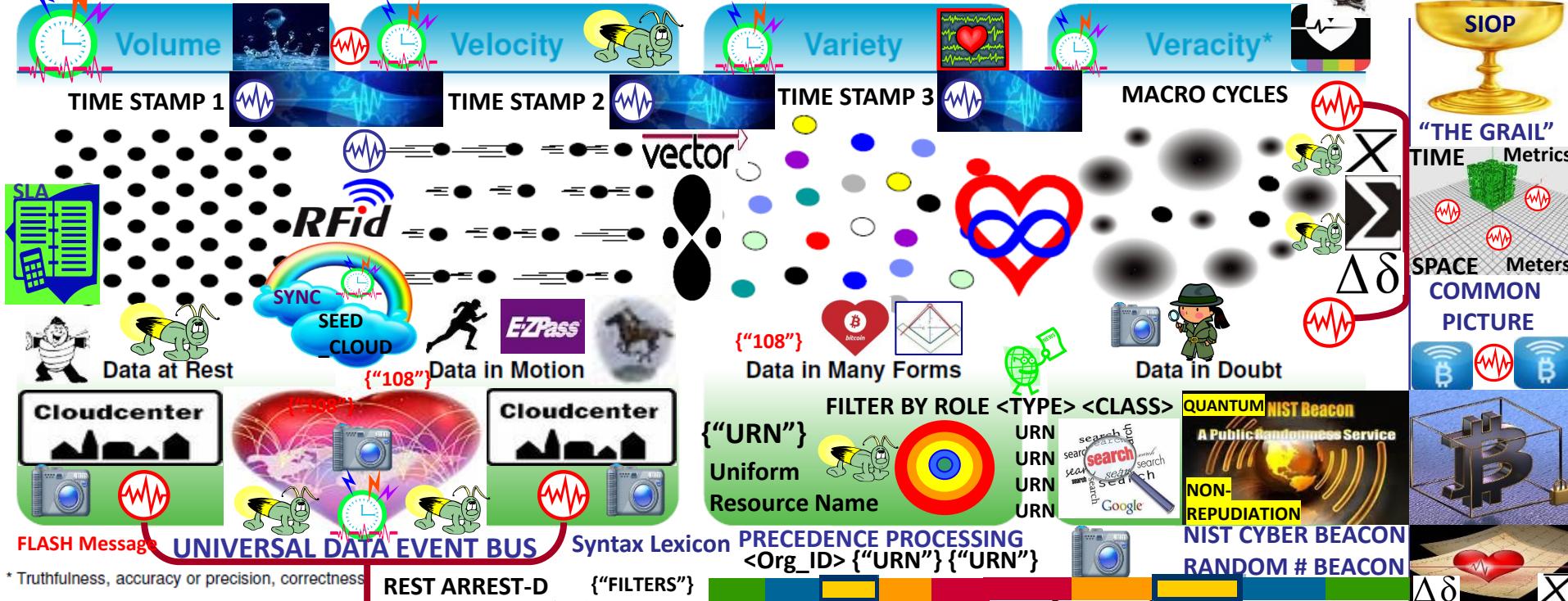


## The four dimensions of Big Data

vector

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

TIME STAMP BY Org\_ID, URN Before FUSION CENTER



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

State Meta Data  
Heartbeat Snaps

MICRO

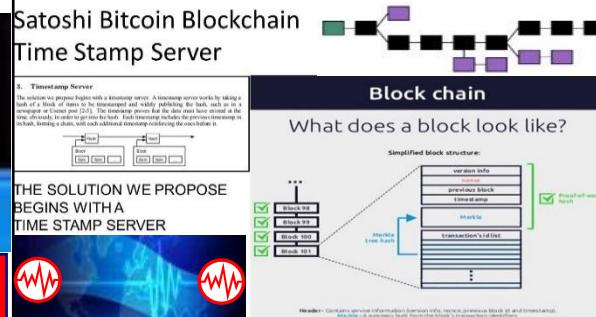
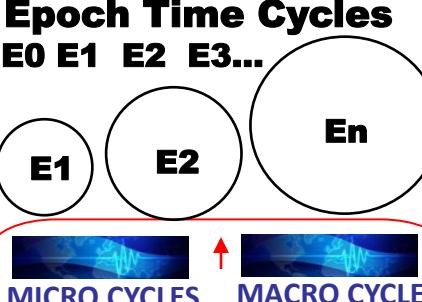
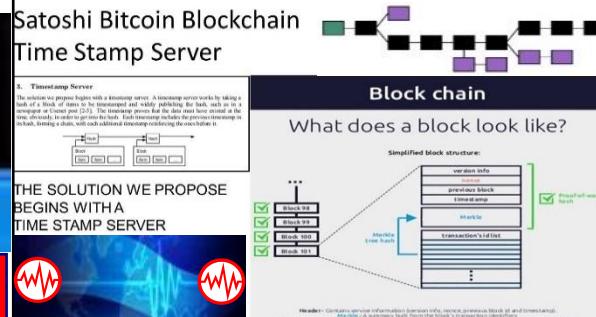
CYCLES

ERLANG

{"Org\_ID"}

{"URN"}

FIREFLY SYNC CONSENSUS

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

# SOFTWARE DEFINED NETWORKING

NETOPS

Command Syntax

REST State Transfer

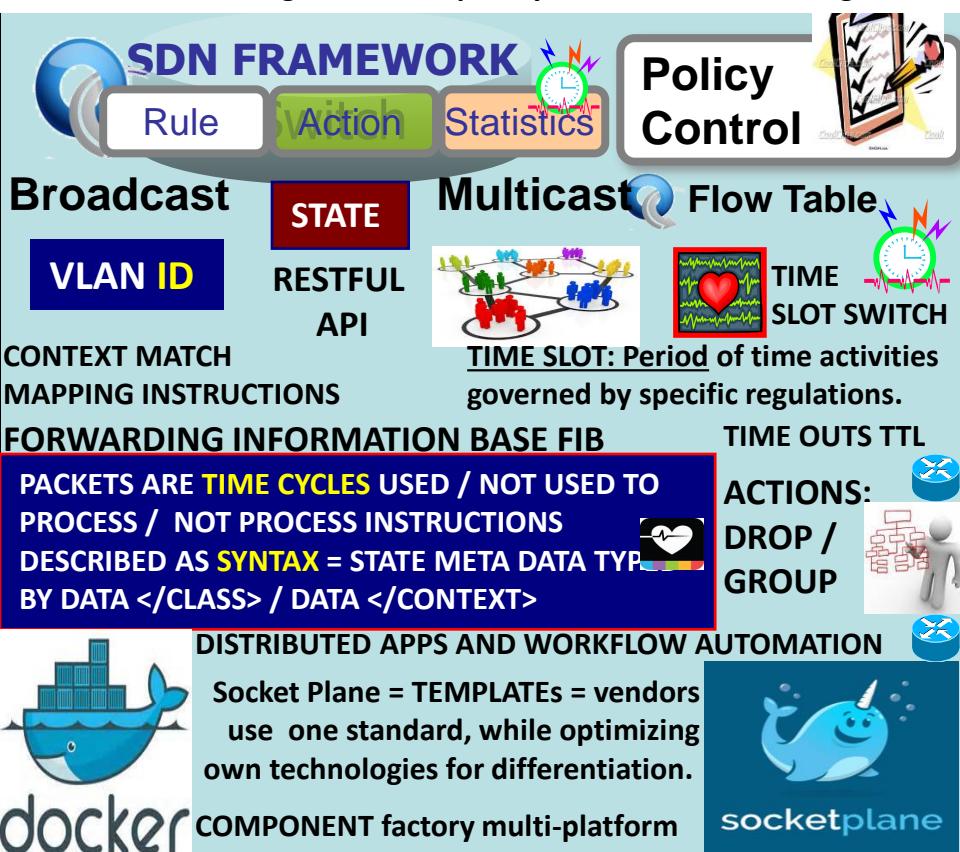
COMMAND SYNTAX  
STATE TRANSFER  
Unicast / Multicast  
Flow Tables / Workflow  
Dynamic Network  
Configuration Management

NET CENTRIC WARFARE  
SYSTEM OF SYSTEMS TELEMETRY

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

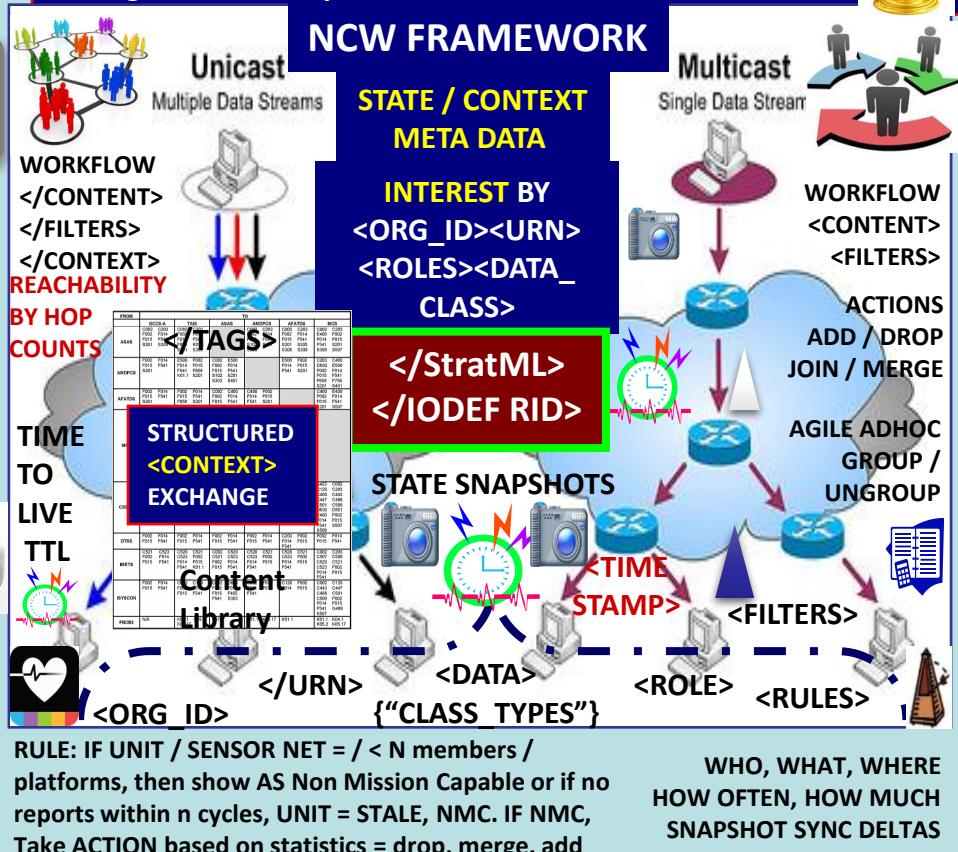
- SDN is a *framework* to allow network administrators to *automatically* and dynamically manage and control a *large number* of network devices, *services*, topology, traffic paths, and packet handling (quality of

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

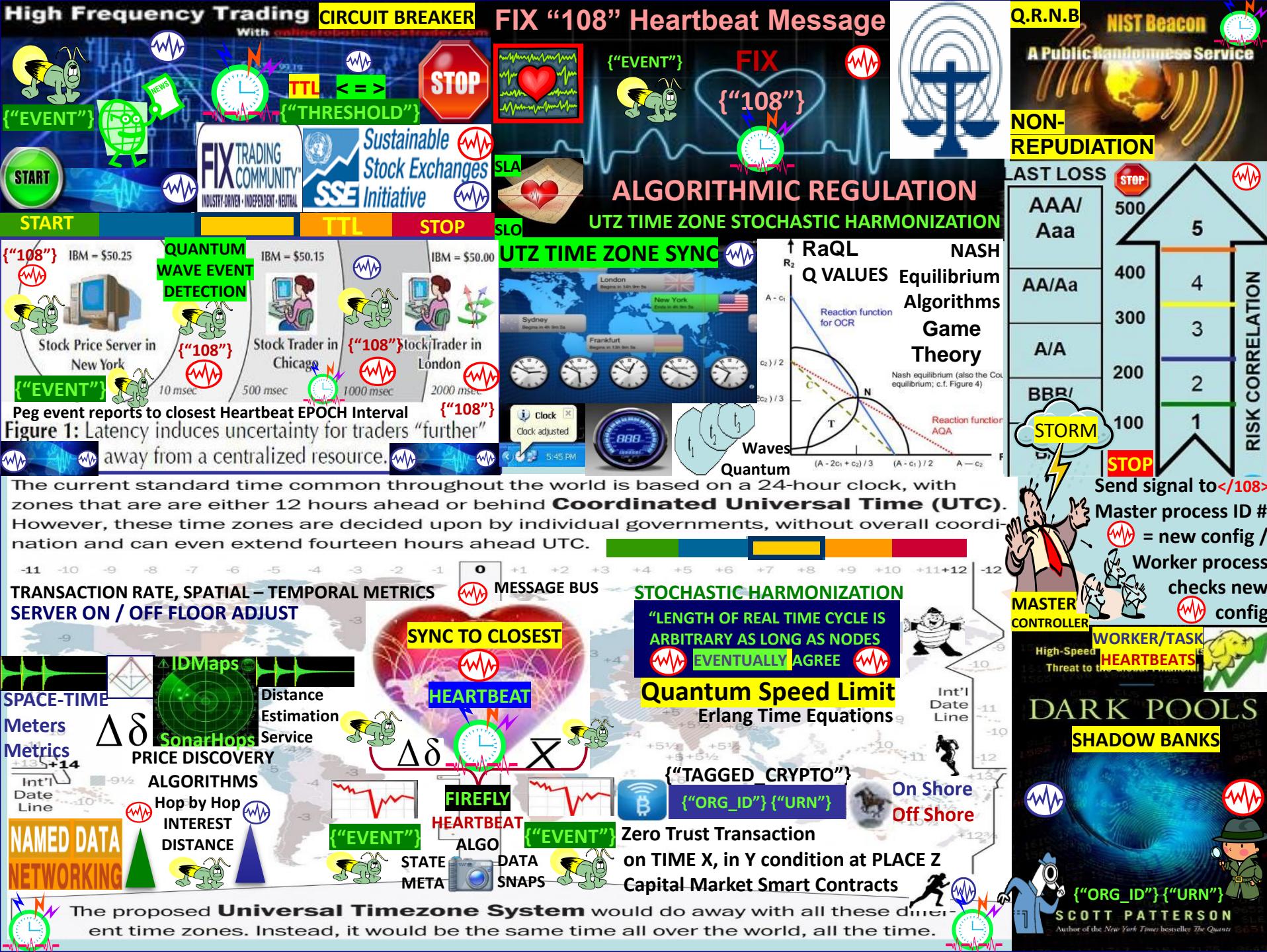


Netcentric / "network-centric" participating in a continuously evolving, complex community of people, devices, information and services interconnected by a network to optimize resource management and provide information on events and conditions.

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



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



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

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

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



TIME / DISTANCE SERVICE LEVEL  
AGREEMENT SLA / O Operations

IEEE 802.15.4 OASIS MQTT

TELEMETRY TRANSPORT

IEEE 802.1AG HOP BY HOP  
DETECTION

IEEE 802.11  
HOP BY HOP CONTROL



Unused Resources / Unmet Needs

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

DISTANCE  
INFO SERVICE

Time Series

Value  
Time



WATER DROP IN POND MEME IS  
SONAR NAVY METAPHOR / MEME

NDN </INTEREST>  
NDN {"DISTANCE"}

NAMED DATA  
NETWORKING

IEEE C37.118  
Harmonization  
& Sync heartbeat  
update Interval

CLOSER SOURCE  
CHEAPER RATE



vector

602

+3

+2

+1

Null

0

+1

+2

+3

UNUSED RESOURCES  
UNMET NEEDS

Spatial  
Econometrics

Spaceship  
Earth  
Signals &  
Telemetry  
Annex

TIME-SPACE BEACON INFOCON  
METRICS / METERS TRADE WITH EARTH  
SIRIUS DISCLOSURE

INFORMATION CONDITION

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

ASTEROID BELTS = RARE MINERALS

MAIN ASTEROID BELT

MARS

MERCURY

VENUS

EARTH

STOCHASTIC

HARMONIZATION

Farther = More Cost  
➤ Fuel, Resources

Service Level Agreements

FIREFLY-HEARTBEAT ALGORITHM UNIVERSAL EVENT MESSAGE BUS

ERLANG TIME- SPACE METRICS

TROJAN ASTEROIDS

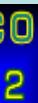
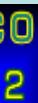
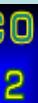
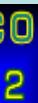
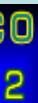
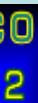
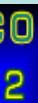
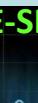
43 22 13 0 1.5 2.7 5.2

Light minutes

Astronomical units

FIREFLY – HEARTBEAT ALGORITHM MESSAGE EVENT BUS

EPOCH / TIME CYCLES / INTERVALS  
← cycle n → ← n + 1 → ← n + 2 →





# Blockchain

BLUEPRINT FOR A NEW ECONOMY



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



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

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



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



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



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



### Functional Sequential Erlang

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

### SORTING ALGO'S

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



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

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



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

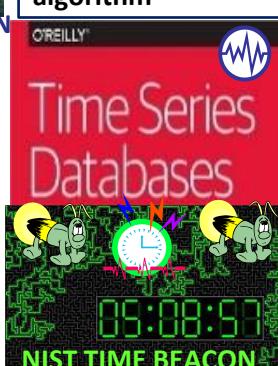


distributed "noSQL" database, embedded right into Erlang, supports indexing, replication, transactions, and fail-over

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

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

FROM	SOCA	THAI	ABAD	AMROPE	AFATON	WIC
ANODR	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK
AFATON	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK
WIC	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK
STRUCTURED	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK
MILITARY MESSAGE	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK
TEMPLATE FORMS	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK
LOGIC / FILTERS	PEAK	PEAK	PEAK	PEAK	PEAK	PEAK

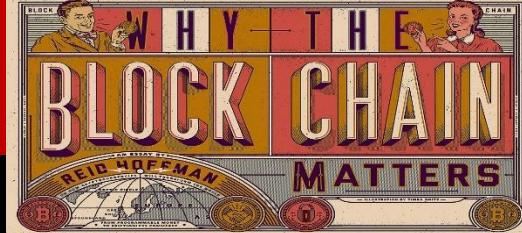


HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX

# TradeNet

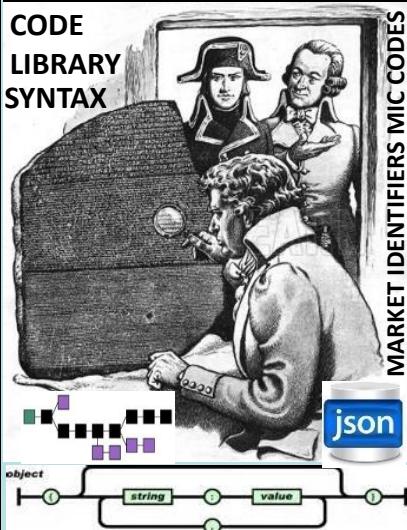


## Programmable Money \$\$\$



RIED HOFFMAN 15 May 2015 [LINK](#)

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



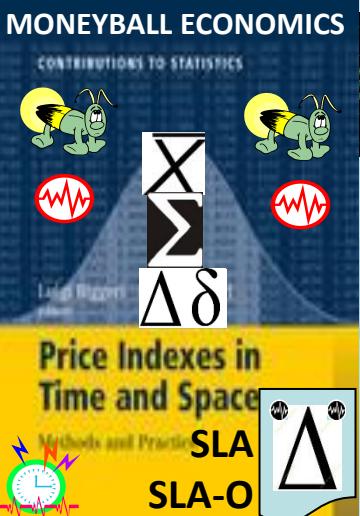
FROM	TO	MCS
ASAS	PSM1	F405 PSM1
ARDCPS	PSM1	F406 PSM1
MFATOS	PSM1	F407 PSM1
ICRS	PSM1	F408 PSM1
CSCS	PSM1	F409 PSM1
OTRS	PSM1	F410 PSM1
WETS	PSM1	F411 PSM1
ISYCON	PSM1	F412 PSM1
FRICS	PSM1	F413 PSM1

### ORGANIZATIONS



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

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





## VERITAS TOKENS P2P Capital Market smart contracts Eco Economic HEARTBEAT

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



INFOCON  
5 4 3 2 1  
INFORMATION  
CONDITION



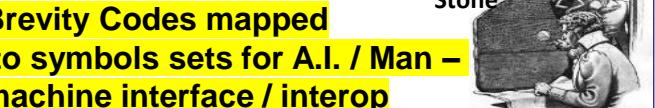
{"108"}

STATISTICAL MEAN VALUE INDEX PULSE

GDP INDEX ECONOMY K% RULE



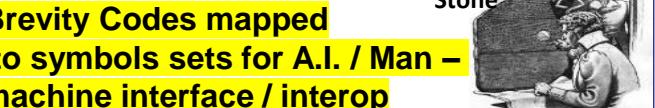
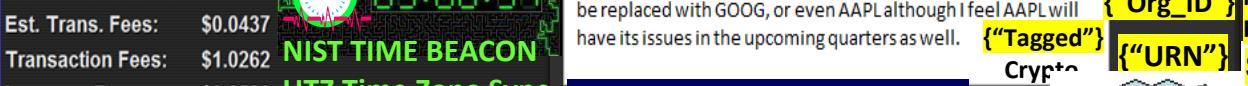
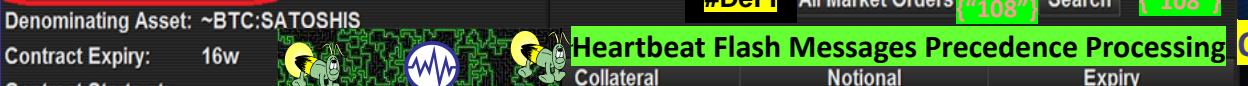
E \$ € ¥  
currency index



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

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

DAO Distributed Autonomous Organization Investor Pools





# 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

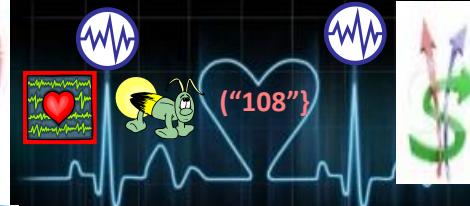
OPENBAZAAR.ORG  
BLOCKCHAIN ARBITRAGE



CLOSER = < \$  
CLOSER = < CO2

SLA

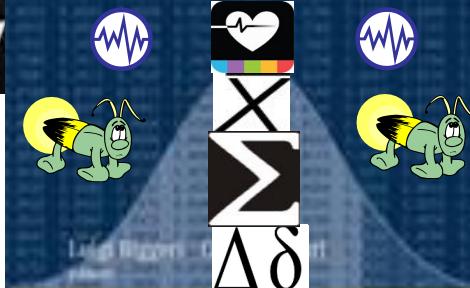
COMMODITIES  
ECONOMIC HEARTBEAT



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>

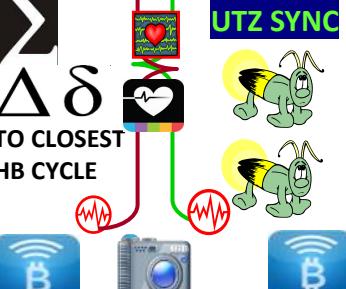


commodities

Federation

ORG ID  
Gateway

FIREFLY – HEARTBEAT ALGO  
SYNC EVENTS  
UTZ SYNC



Bitcoin: OpenBazaar transactional currency



Cryptographic Security

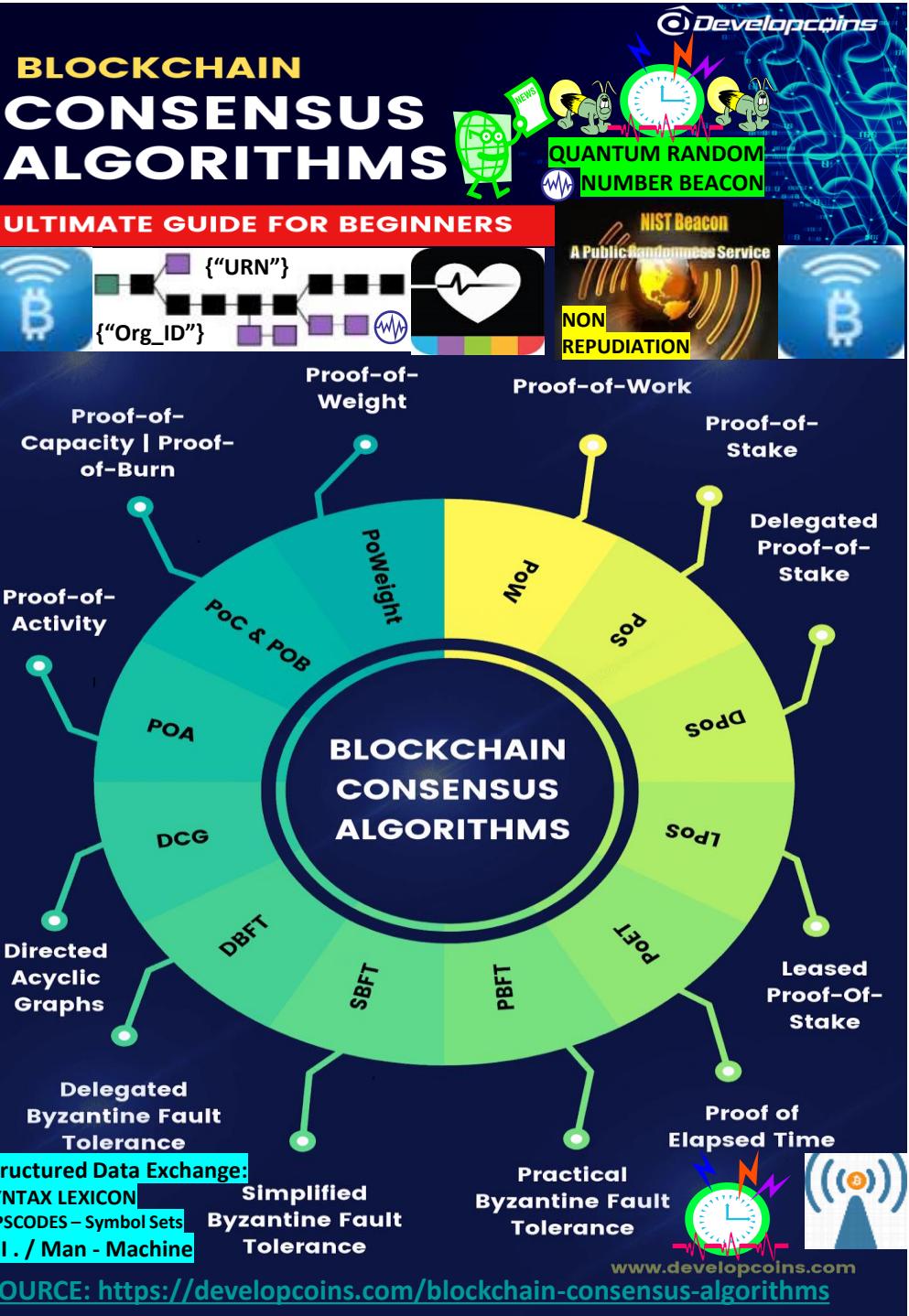
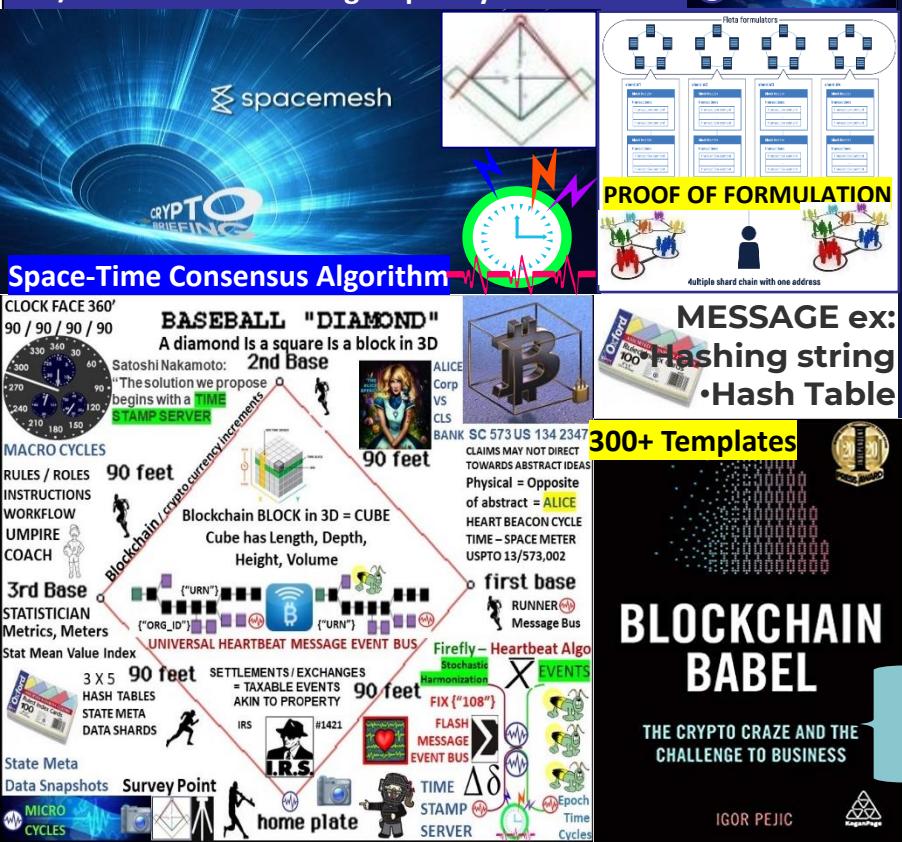
- tamper-proof agreements
- 1) minimize potential disputes
- 2) fast-track dispute resolution

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)

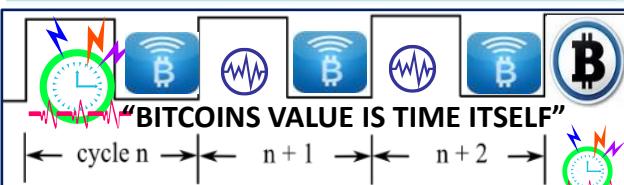
**Proof of Formulation:** PoF: generation / propagation of blocks using a previously agreed sequence between participants of the generation of blocks, formed by two groups: a generator group and/or Formulator and a group of synchronization.



# PROOF-OF-WORK



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



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

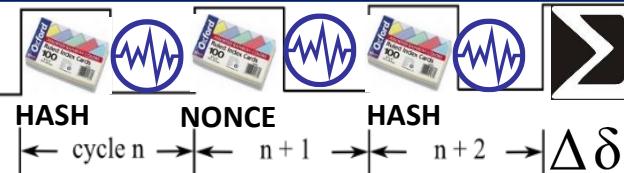


THROTTLE equivalent to difficulty. State  
•target = maximum value of 8 bytes Snap  
( $2^{64}$ ) divided by the difficulty.

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



GUESS stores the guess  
Effectively, it begins at infinity.



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

## Time Series Databases

CLOCK FACE 360°  
90 / 90 / 90 / 90



MACRO CYCLES

RULES / ROLES  
INSTRUCTIONS  
WORKFLOW  
UMPIRE  
COACH

3rd Base

STATISTICIAN  
Metrics, Meters  
Stat Mean Value Index

3 X 5 HASH TABLES  
STATE META  
DATA SHARDS

State Meta

Data Snapshots

Survey Point

MICRO CYCLES

Time Series

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

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

SETTLEMENTS / EXCHANGES = TAXABLE EVENTS AKIN TO PROPERTY

IRS #1421

Fix ("108")

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

Epoch Time Cycles

home plate

Firefly – Heartbeat Algo Stochastic Harmonization

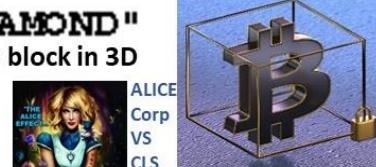
X EVENTS

EVENTS

Time Stamp Server

Time Stamp Server

FIREFLY-HEARTBEAT ALGORITHM STOCHASTIC HARMONY ACROSS TIME ZONES



first base RUNNER Message Bus

SYNTAX LIBRARY LEXICON

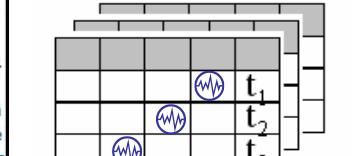
CODER'S GUIDE



300+Message Templates

FROM	ODERA	TAB	AAAB	APICL	AFATD	WTR
ABAB	CG001	CG002	CG003	CG004	CG005	CG006
ANPICA	CG007	CG008	CG009	CG010	CG011	CG012
ANPICA	CG013	CG014	CG015	CG016	CG017	CG018
ANPICA	CG019	CG020	CG021	CG022	CG023	CG024
ANPICA	CG025	CG026	CG027	CG028	CG029	CG030
ANPICA	CG031	CG032	CG033	CG034	CG035	CG036
ANPICA	CG037	CG038	CG039	CG040	CG041	CG042
ANPICA	CG043	CG044	CG045	CG046	CG047	CG048
ANPICA	CG049	CG050	CG051	CG052	CG053	CG054
ANPICA	CG055	CG056	CG057	CG058	CG059	CG060
ANPICA	CG061	CG062	CG063	CG064	CG065	CG066
ANPICA	CG067	CG068	CG069	CG070	CG071	CG072
ANPICA	CG073	CG074	CG075	CG076	CG077	CG078
ANPICA	CG079	CG080	CG081	CG082	CG083	CG084
ANPICA	CG085	CG086	CG087	CG088	CG089	CG090
ANPICA	CG091	CG092	CG093	CG094	CG095	CG096
ANPICA	CG097	CG098	CG099	CG100	CG101	CG102

POW PAYLOAD : COMBINATIONS OF ENCRYPTED SYNTAX Attribute Series





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

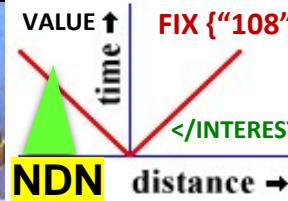


## TIME – SPACE MEASUREMENTS OF TOKENIZED COMMODITIES, SECURITIES... STOCHASTICALLY HARMONIZED ACROSS UTZ Universal Time Zone

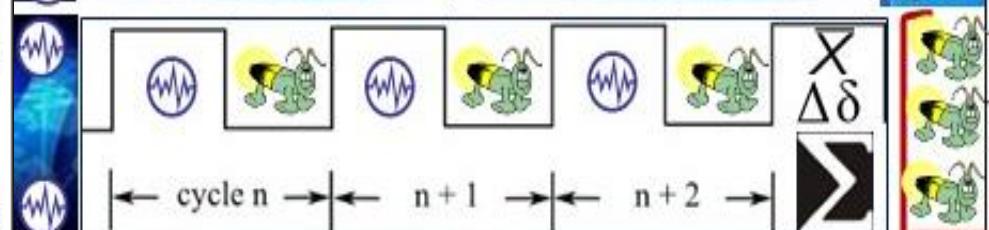
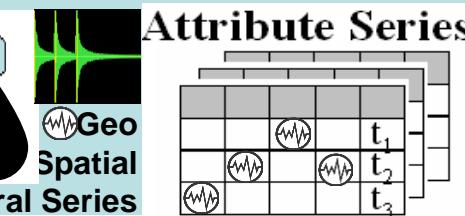


The Volumetric Weight is often referred to as dimensional weight

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



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



**FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM**



## DON: DECENTRALIZED ORACLE NETWORKS



### Explicit Staking

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

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



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



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



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



ALERT LEVEL >

> NEWSCAST ZONE

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



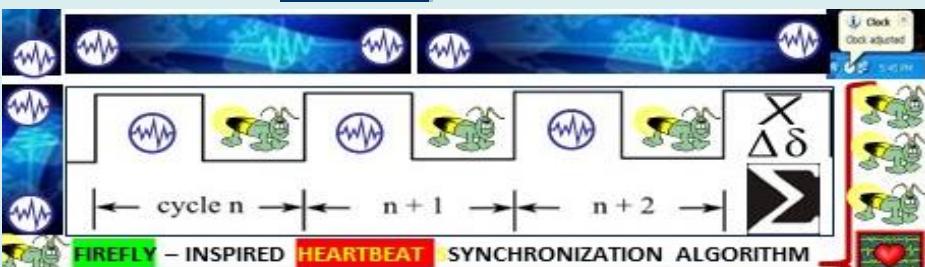
## DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

# Heart Beacon Cycle

## FEDERATE / TRADE FEDERATIONS

### Linear Sequential Meme

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



FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM



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



$\Delta \delta$

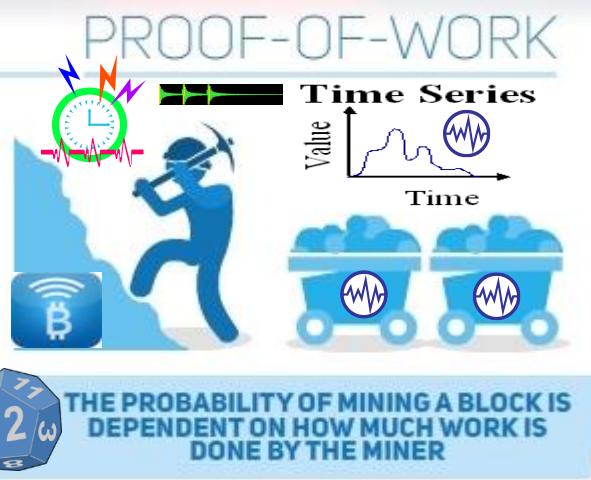
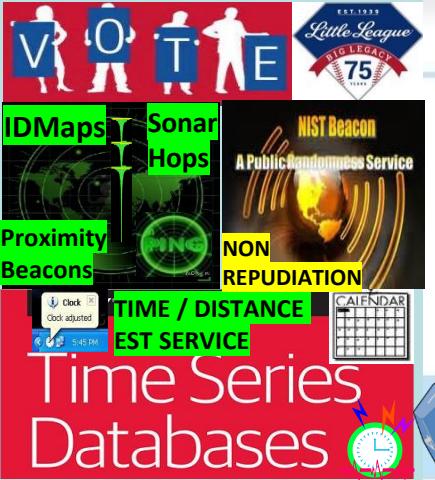


Adaptive  
Procedural  
Checklist

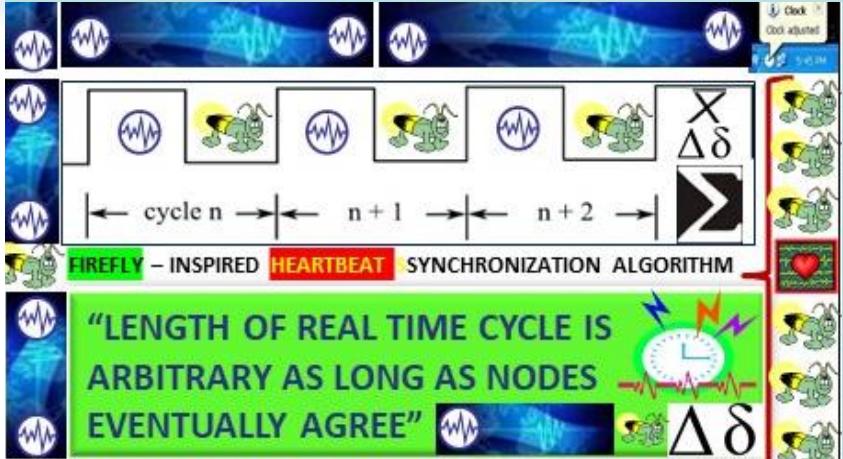
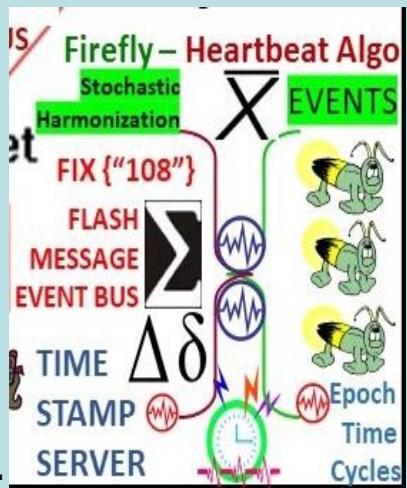
## Proof-of-activity PoA is a combination of Proof of Work / Stake blockchain consensus algorithms:

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

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

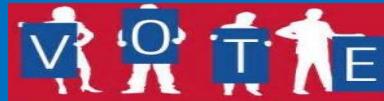


HEART BEACON CYCLE 13/573,002

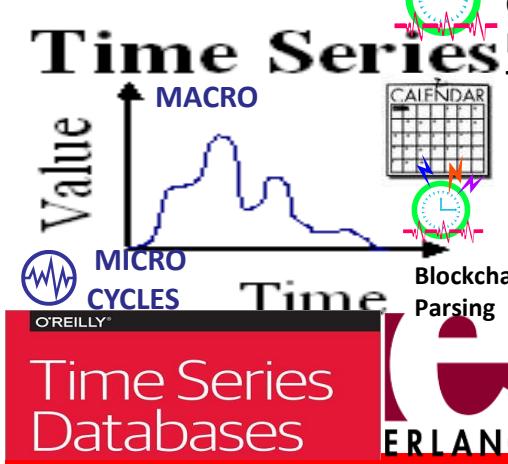


# SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

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



## PROOF OF ELAPSED TIME



## Time Series Databases

### QUORUM VOTING PROTOCOL

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

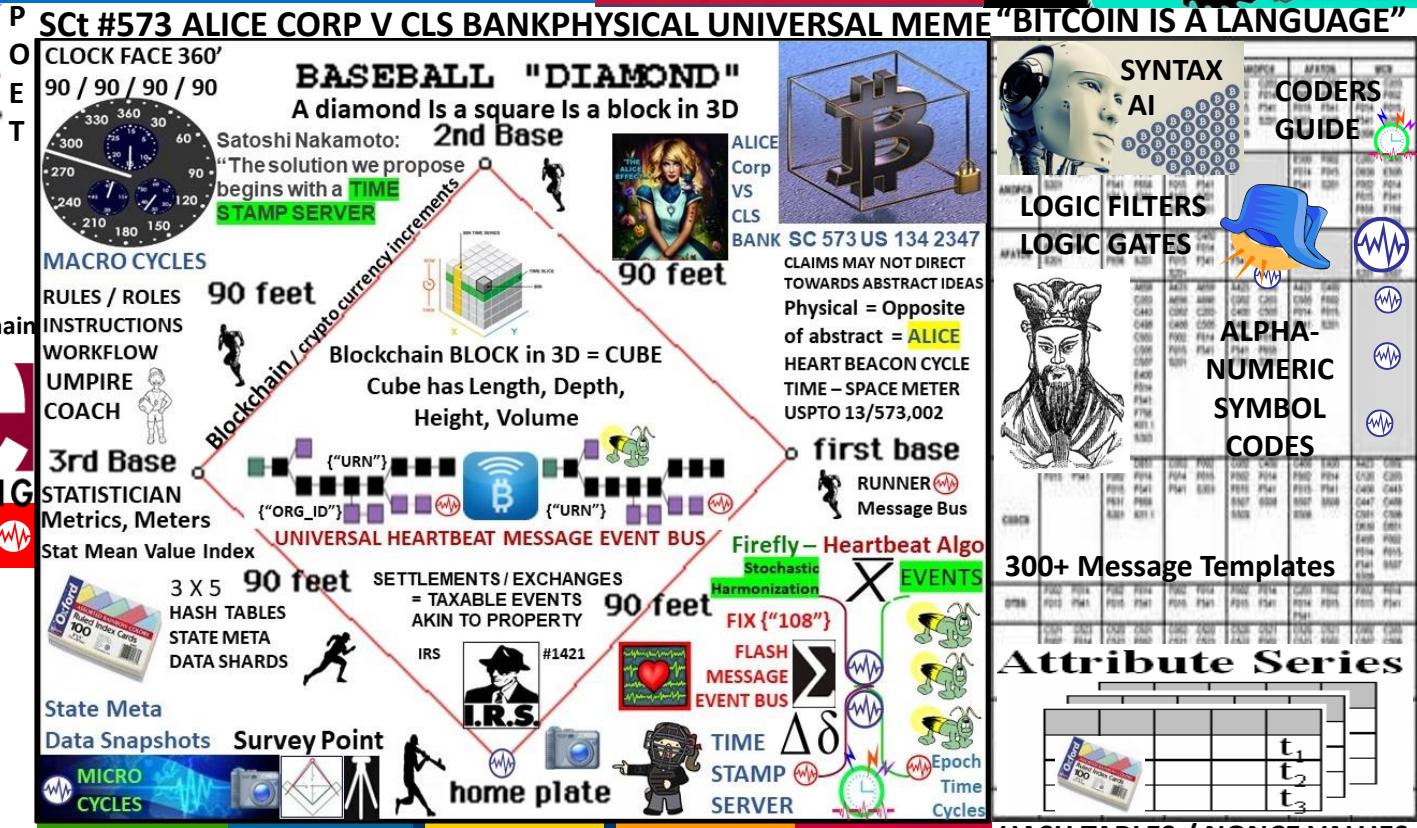
Voting based selection Instead of only using the stake size, the block generators can be selected by votes  
ex: League MVP

MVP



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

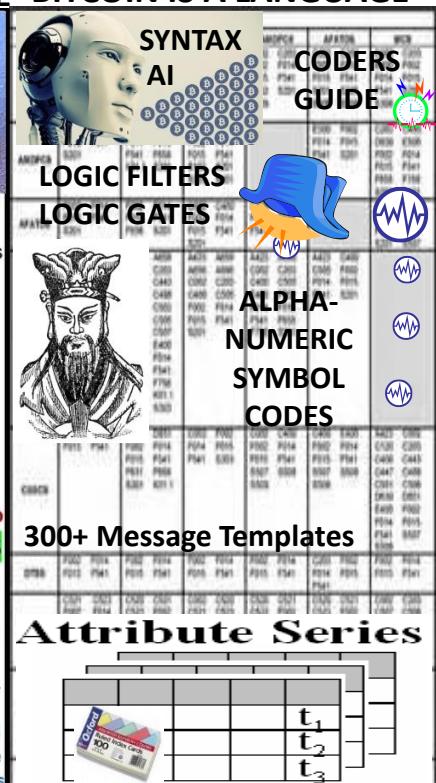
## TOURNAMENT LEAGUE BOARD



## FIREFLY-HEARTBEAT FLASH MESSAGES UNIVERSAL EVENT BUS



"BITCOIN'S VALUE IS TIME ITSELF – DIGINOMICS"

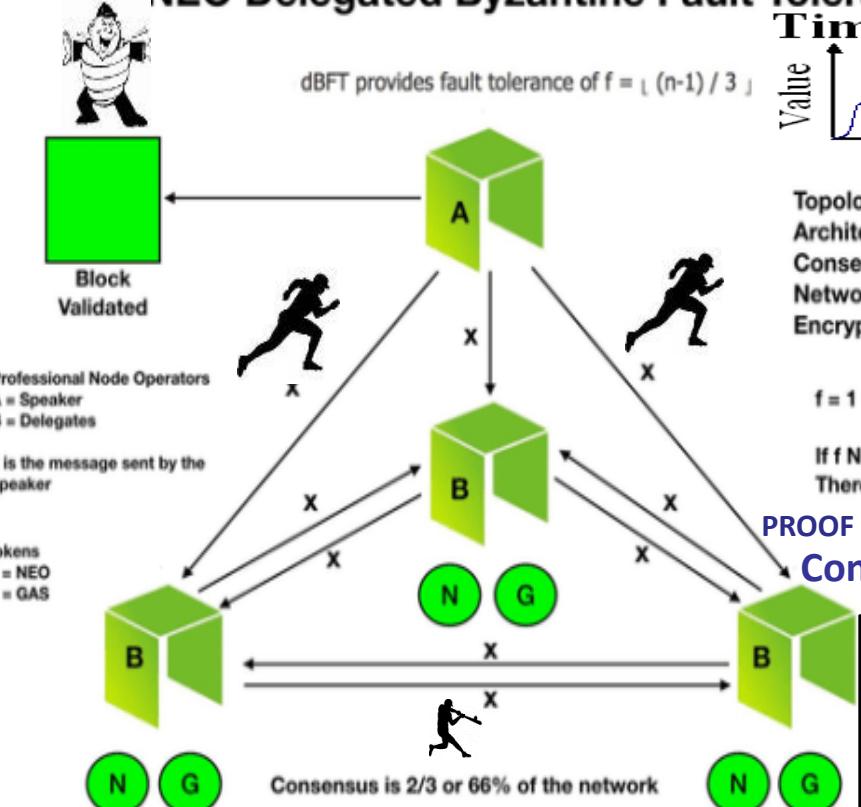


## HASH TABLES / NONCE VALUES

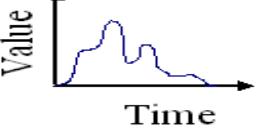
Capture ledger's state  $\Delta \delta$   
Transaction language changes ledger state  
Consensus, transaction acceptance protocol



# NEO Delegated Byzantine Fault Tolerance (dBFT)



## Time Series



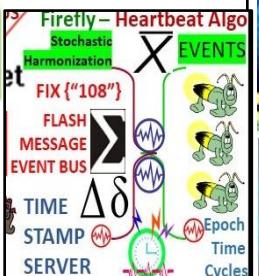
dBFT provides fault tolerance of  $f = \lfloor (n-1) / 3 \rfloor$

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

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

If  $f$  NOT 1 OR  $< 0.66$   
There is no consensus

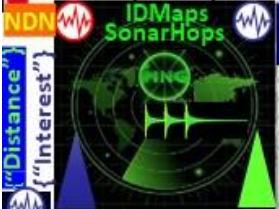
## PROOF OF ELAPSED TIME Consensus Order



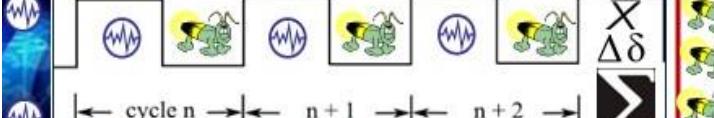
USPTO 13/573,002  
[sawconcepts.com/index](http://sawconcepts.com/index)

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

## TRIANGULATION



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



FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

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

Δδ

EVENT BUS

LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED

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

MATCH EVENT REPORTS TO CLOSEST HEARTBEAT CYCLE

FLASH HEARTBEAT MESSAGES {"108"} Δδ Sync to Closest Heartbeat

HASH NONCE FIREFLY-HEARTBEAT ALGORITHM MICRO-CYCLE STATE META DATA SNAPSHOTS

STOCHASTIC HARMONIZATION ACROSS UTZ TIME ZONES

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

Round created

Witness

Famous witness

Election

Vote

See

Strongly see

Supermajority

Decide

Round created

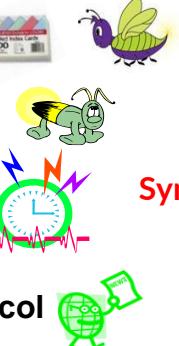
Round received

Consensus timestamp

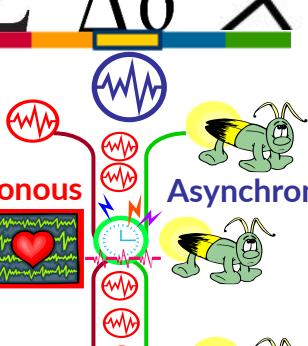
Consensus order

$\Delta\delta$

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



Hash Nonce

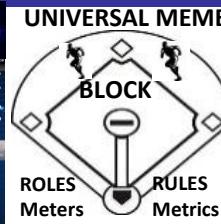


Micro-Cycle State Meta Data Snapshots



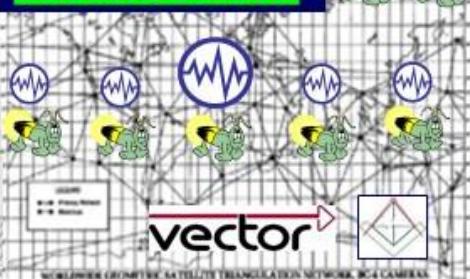
Consensus timestamp Consensus order  $\Delta\delta$

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

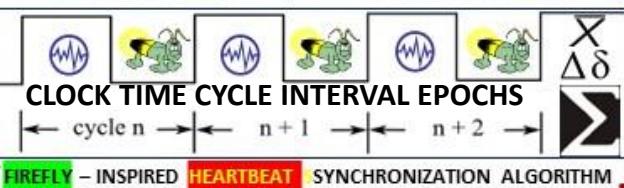
TRIANGULATION



vector

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

FIREFLY HEARTBEAT Synchronization Algorithm



CLOCK TIME CYCLE INTERVAL EPOCHS  
cycle n      n + 1      n + 2

FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

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



# Proof of Burn



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

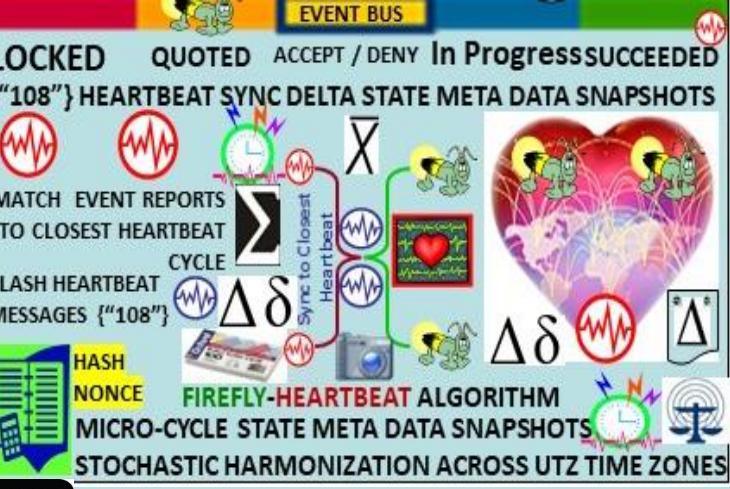
Iain Stewart, the inventor of the POB algorithm, uses an analogy to describe the algorithm: burnt coins are like mining rigs. In this analogy, a miner burns their coins to buy a virtual mining rig that gives them the power to mine blocks. The more coins burned by the miner, the bigger their virtual mining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

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



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

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



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.

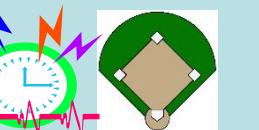
TAG	SLA/O	Token Award
{"Org_ID"} ActiveID	[UFO2_ACTIVEID]	</EVENT>
IF1_Heartbeat (IF-Node1)	[UFO2_HEARTBEAT:#]	</EVENT>
IF2_Heartbeat (IF-Node2)	[UFO2_HEARTBEAT:#]	</EVENT>
{"UUID"} IF1_DeviceStatus (IF-Node1)	[UFO2_DEVICESTAT:#]	</EVENT>
{"UUID"} IF2_DeviceStatus (IF-Node2)	[UFO2_DEVICESTAT:#]	</EVENT>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

# Proof of Capacity PoC



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

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



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



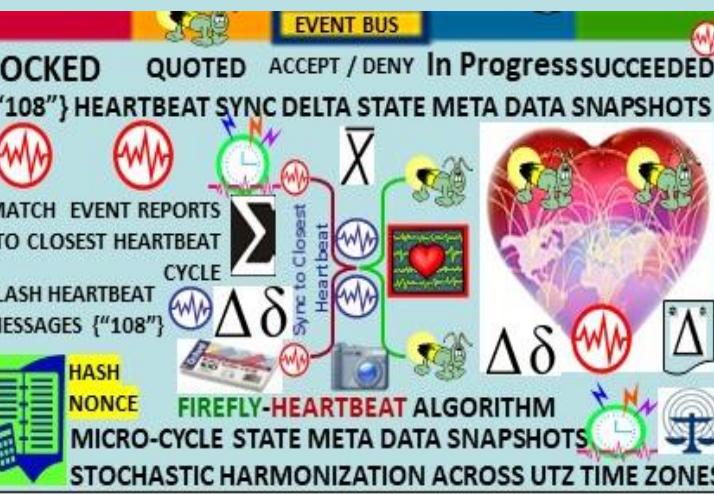
The larger the hard drive, the > possible solution values one can store on the hard drive, the more chances a miner has to match required hash value from his list, resulting in more chances to win the mining reward.



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



Bitcoin purchase akin to property

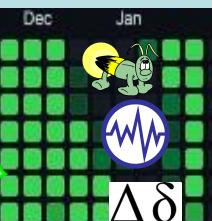


# PoST Proof-of-Spacetime (PoST)

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

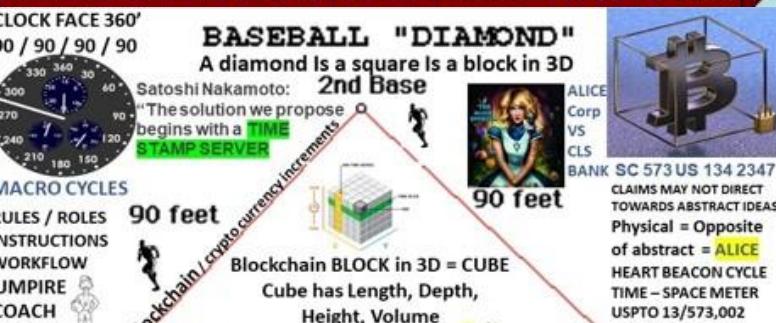


PoST users / nodes must prove that they are spending a certain amount of space for storage.

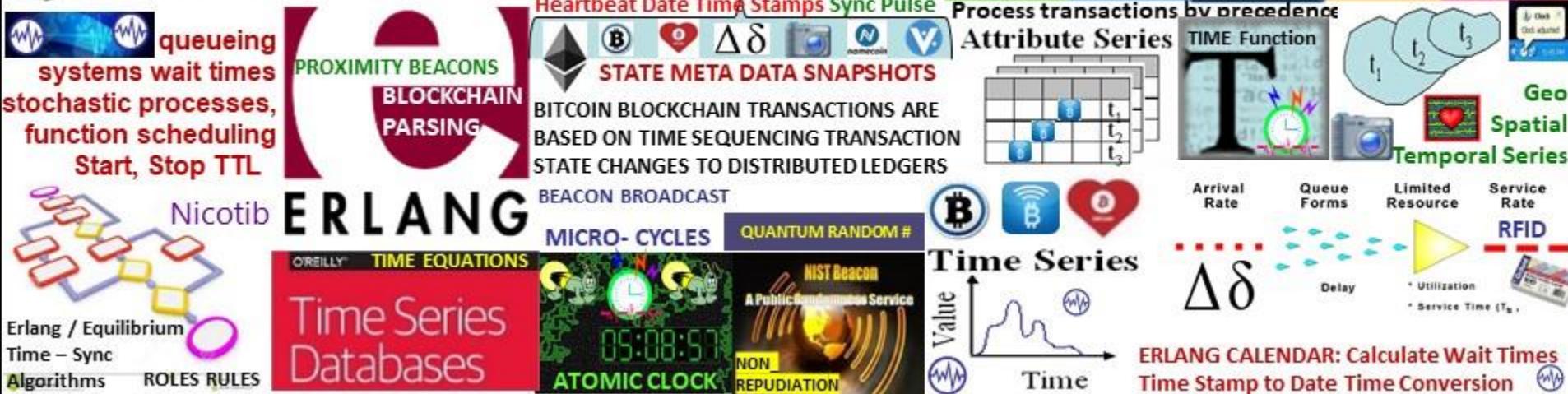


DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

## Heart Beacon Cycle FEDERATE / TRADE FEDERATIONS



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



# 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**



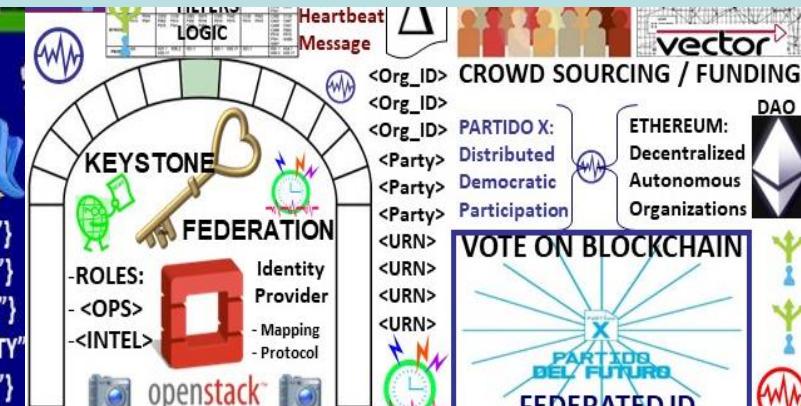
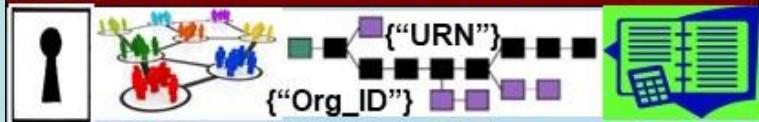
Net joins, drops, splits, merges, moves

Agile, adhoc NETOPS Vs acquisition preserves the

DISTRIBUTED AUTONOMOUS ORGANIZATIONS DAO

## Heart Beacon Cycle

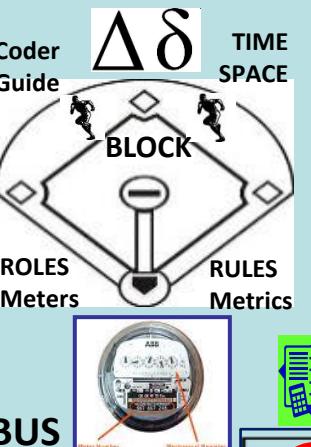
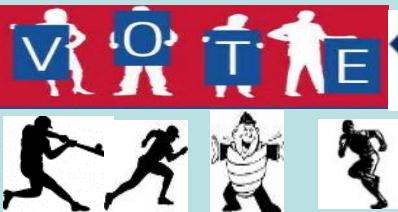
### FEDERATE / TRADE FEDERATIONS



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

## KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



MVP

EVENT BUS

## MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



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

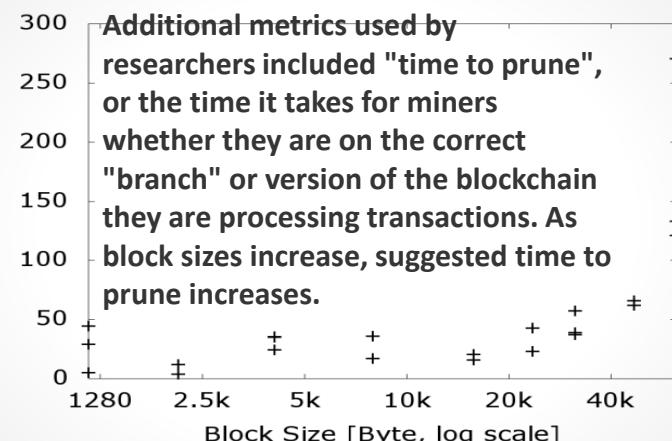
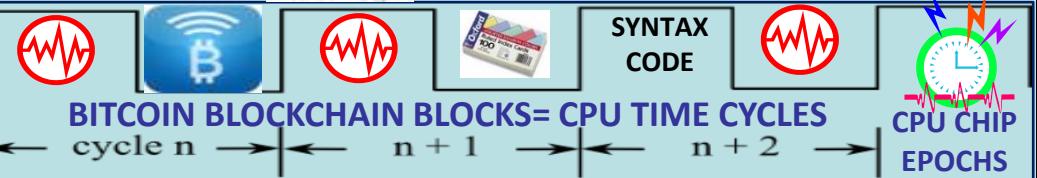
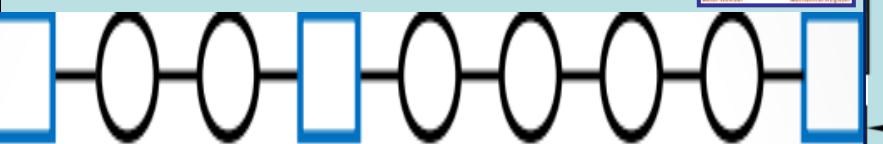
XBRIL / CDL / DAML  
STRUCTURED STOCK MIC CODES

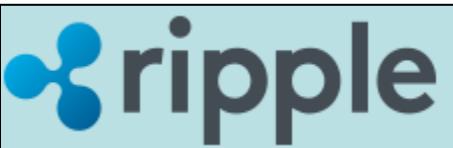
MILITARY MESSAGE TEMPLATE FORMS

LOGIC / FILTERS

SYNTAX LEXICON LIBRARY

CPU CHIP EPOCHS





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

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

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

Provides information about total  
costs of the transaction



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



**Bitcoin Address Shortener**

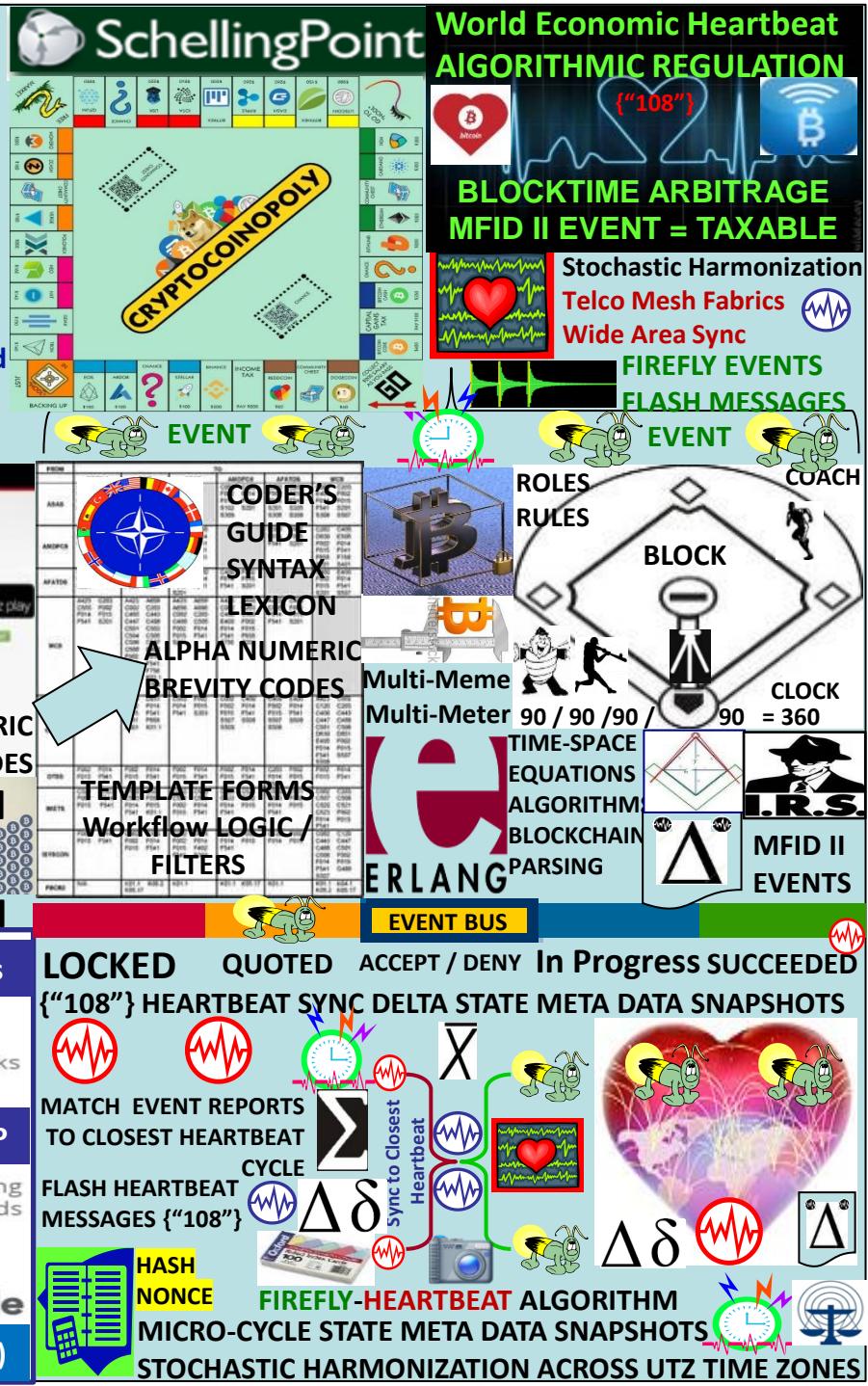
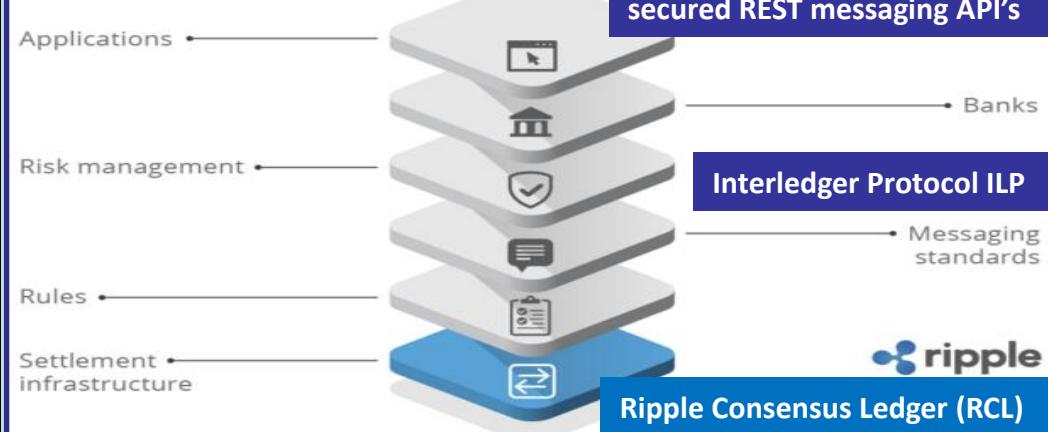
Bitcoin Address Shortener is an Android app that you can use to shorten those lengthy bitcoin addresses! Simply enter a long Bitcoin address to have it transformed into a short one, and VICE-VERSA!

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

GET IT ON Google play

ALPHA NUMERIC BREVITY CODES A.I

Neutral transaction protocol



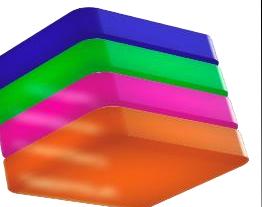


## PROTON A CHAIN Virtual Machine

## CONTRACT C CHAIN Smart contract

## PLATFORM P CHAIN Meta Data

## EXCHANGE X CHAIN Cross blockchain



Universal @names Identity / Governance / Resources / Staking

Snowball Consensus

Algorithm

preference := pizza

consecutiveSuccesses := 0

while not decided:

ask k random people preference

if >= α give the same response:

    preference := response with >=

α

    if preference == old preference:

        consecutiveSuccesses++

    else:

        consecutiveSuccesses = 1

    else:

        consecutiveSuccesses = 0

if consecutiveSuccesses > β:  
    decide(preference)

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

Delegated Proof  
of Stake {"Org\_ID"}



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



DAG Acyclic Graph Parameters:

n: number of participants

k (sample size): between 1 and n

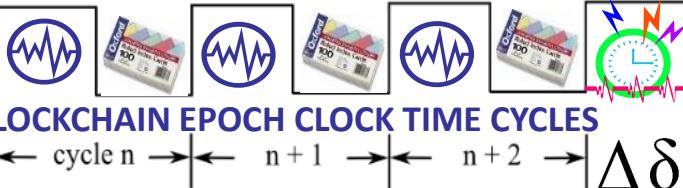
α (quorum size): between 1 and k

β (decision threshold): >= 1

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

1) EPOCH TIME INTERVALS

2) SYNTAX (not) used in epochs

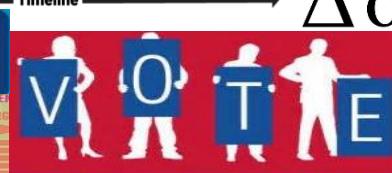
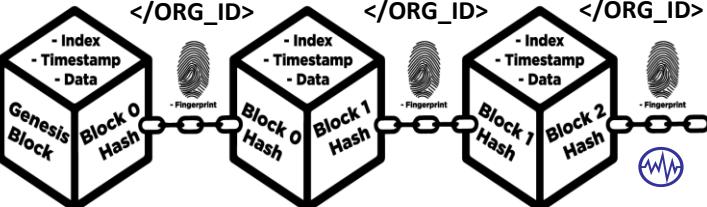


GENESIS BLOCK: "Layers" = follow on epoch time intervals

Block 0

Block 1

Block 2



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



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





# UNICOIN

## Digital Capital Exchange

### Unicoin: IMF CBDC legal tender settlement coin

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

The primary value of any commodity is its utility value.

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

Ü



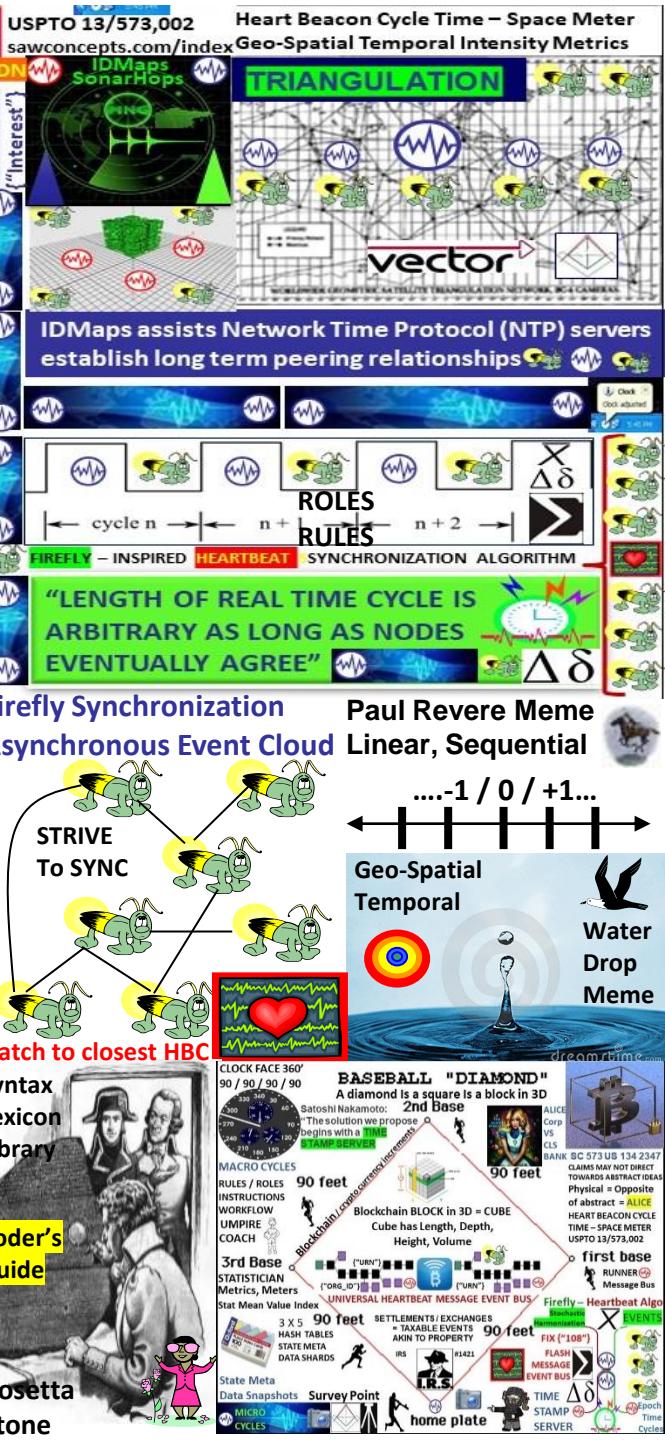
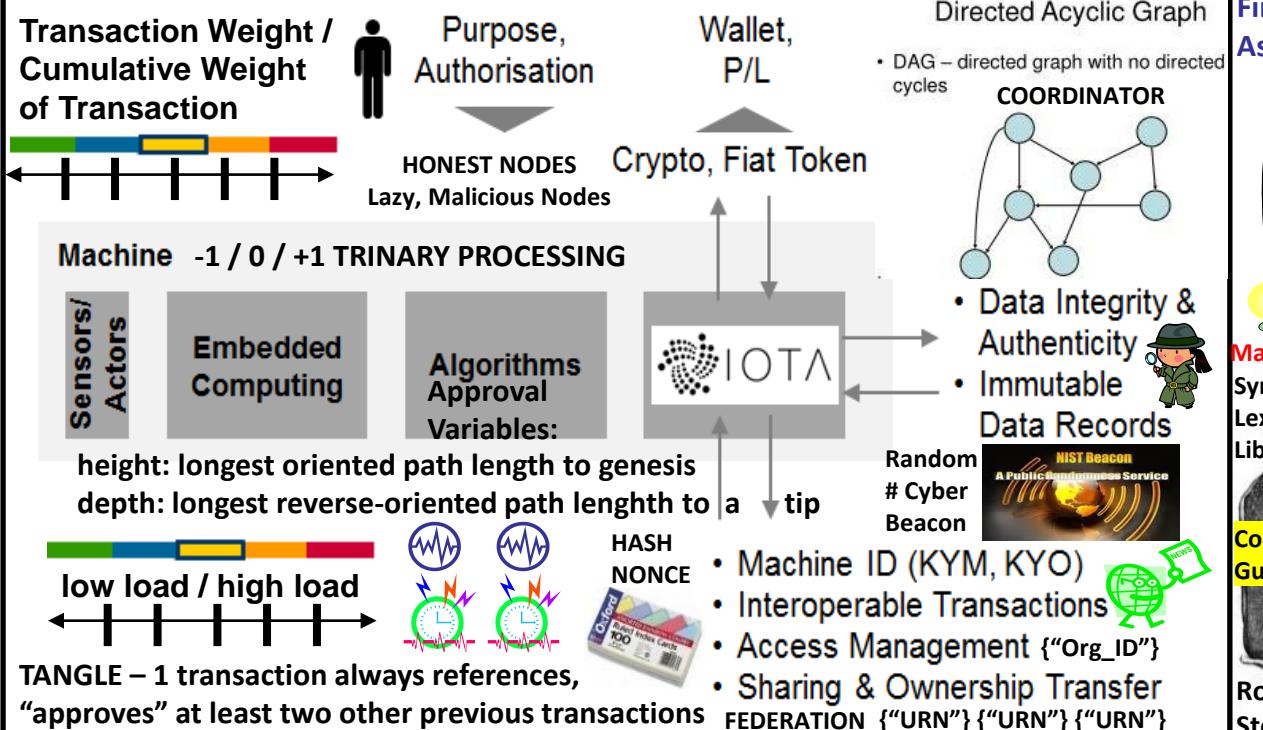


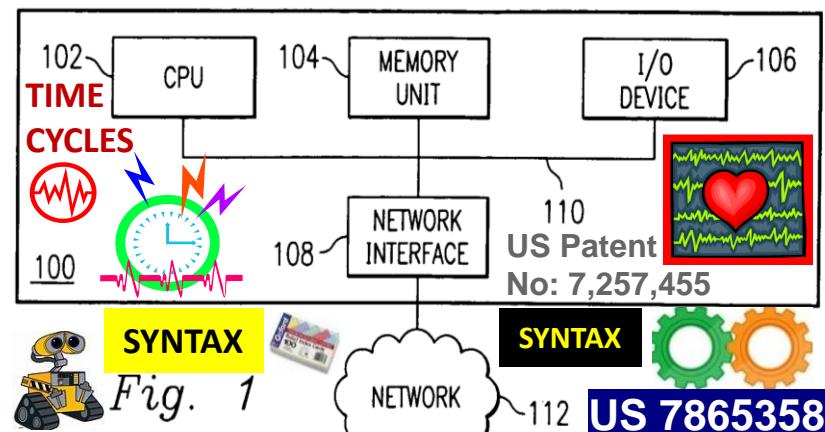
## IOTA: Internet Of Things IOT distributed ledger with microtransactions without fees

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



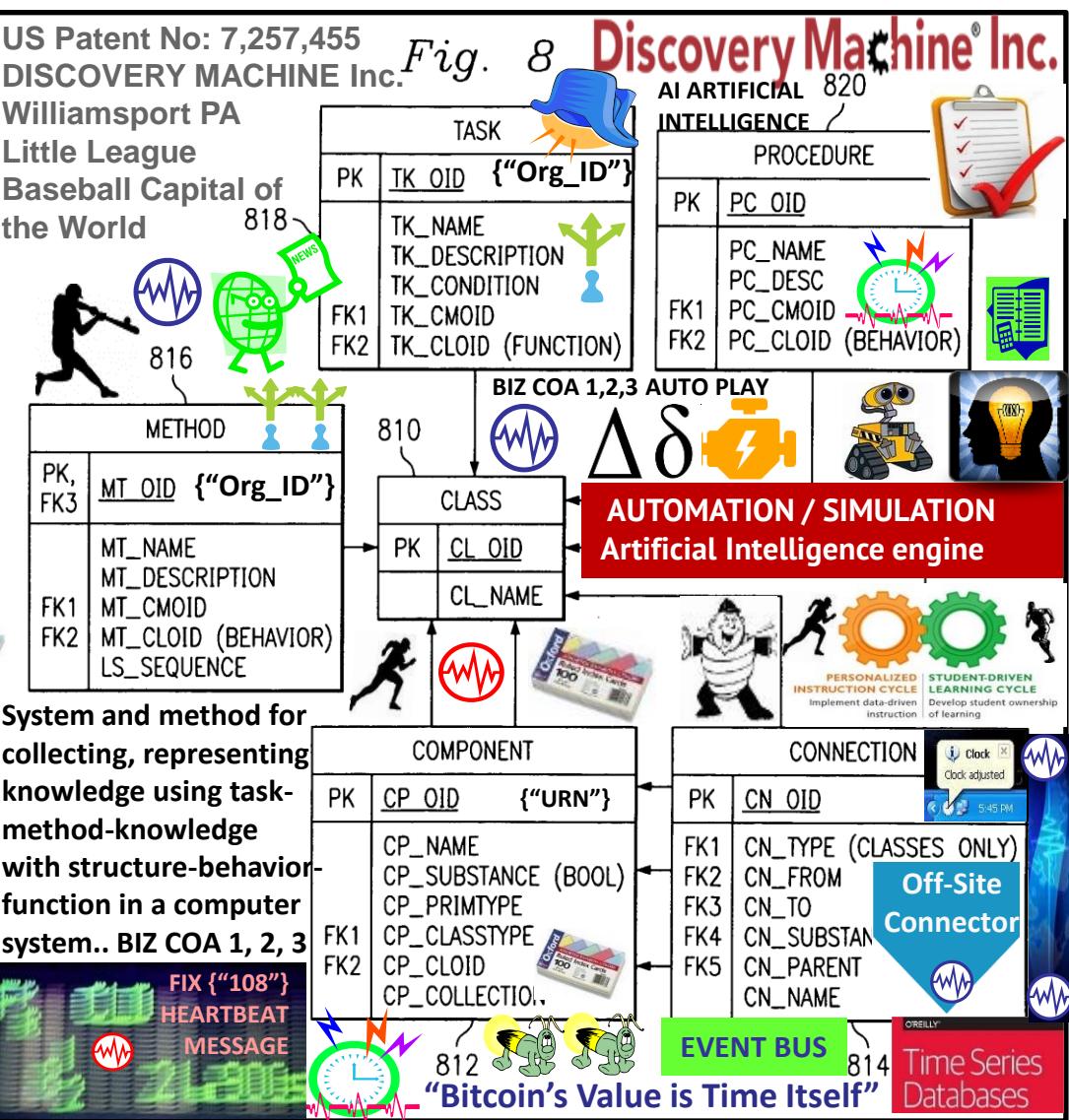
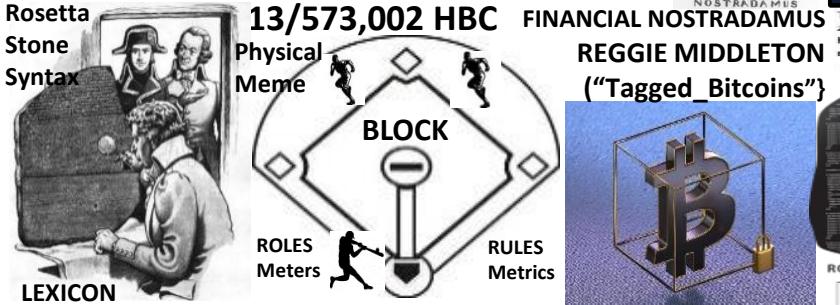


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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

**ORACLE Veritaseum**



# ZEPPELIN



## ZEPPELIN OPEN, GLOBAL ECONOMY

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

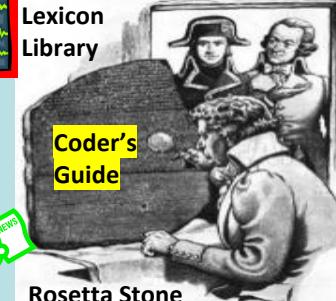
zeppelinOS, operating system for smart contracts  
*"the rate of innovation in building decentralized applications is limited by the manual and duplicative efforts developers must make to ensure basic usability and security."*

## WORLD ECONOMIC HEARTBEAT



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

Syntax Lexicon Library  
300 + Templates



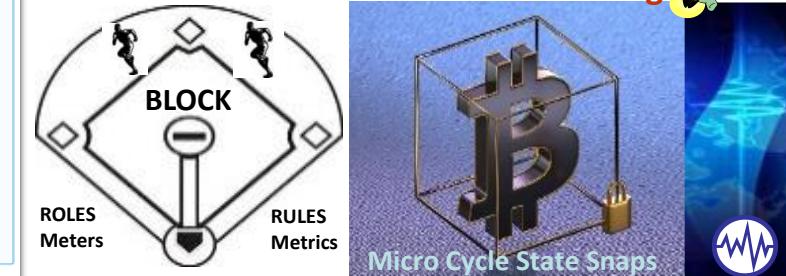
### STRUCTURED DATA EXCHANGE

CODES	DATA	ALARM	ANALYTICS	API/FUNCTIONS	LOGIC	STRUCTURE	MISSION
ASAS	P101 P102 P103 P104 P105 P106 P107 P108	P101 P102 P103 P104 P105 P106 P107 P108	P101 P102 P103 P104 P105 P106 P107 P108	P101 P102 P103 P104 P105 P106 P107 P108	P101 P102 P103 P104 P105 P106 P107 P108	P101 P102 P103 P104 P105 P106 P107 P108	P101 P102 P103 P104 P105 P106 P107 P108
ANOPC	P109 P110 P111 P112 P113 P114 P115 P116	P109 P110 P111 P112 P113 P114 P115 P116	P109 P110 P111 P112 P113 P114 P115 P116	P109 P110 P111 P112 P113 P114 P115 P116	P109 P110 P111 P112 P113 P114 P115 P116	P109 P110 P111 P112 P113 P114 P115 P116	P109 P110 P111 P112 P113 P114 P115 P116
APAFTR	P117 P118 P119 P120 P121 P122 P123 P124	P117 P118 P119 P120 P121 P122 P123 P124	P117 P118 P119 P120 P121 P122 P123 P124	P117 P118 P119 P120 P121 P122 P123 P124	P117 P118 P119 P120 P121 P122 P123 P124	P117 P118 P119 P120 P121 P122 P123 P124	P117 P118 P119 P120 P121 P122 P123 P124
MIC	P125 P126 P127 P128 P129 P130 P131 P132	P125 P126 P127 P128 P129 P130 P131 P132	P125 P126 P127 P128 P129 P130 P131 P132	P125 P126 P127 P128 P129 P130 P131 P132	P125 P126 P127 P128 P129 P130 P131 P132	P125 P126 P127 P128 P129 P130 P131 P132	P125 P126 P127 P128 P129 P130 P131 P132
CHOC	P133 P134 P135 P136 P137 P138 P139 P140	P133 P134 P135 P136 P137 P138 P139 P140	P133 P134 P135 P136 P137 P138 P139 P140	P133 P134 P135 P136 P137 P138 P139 P140	P133 P134 P135 P136 P137 P138 P139 P140	P133 P134 P135 P136 P137 P138 P139 P140	P133 P134 P135 P136 P137 P138 P139 P140

LOGIC / FILTERS  
ALPHA-NUMERIC  
BREVITY CODES



### STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



Micro Cycle State Snaps

### ZEPPELIN / zeppelinOS Common Functionality:

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

Create and customize your own ERC20 Token.

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



Off chain tools

EVM

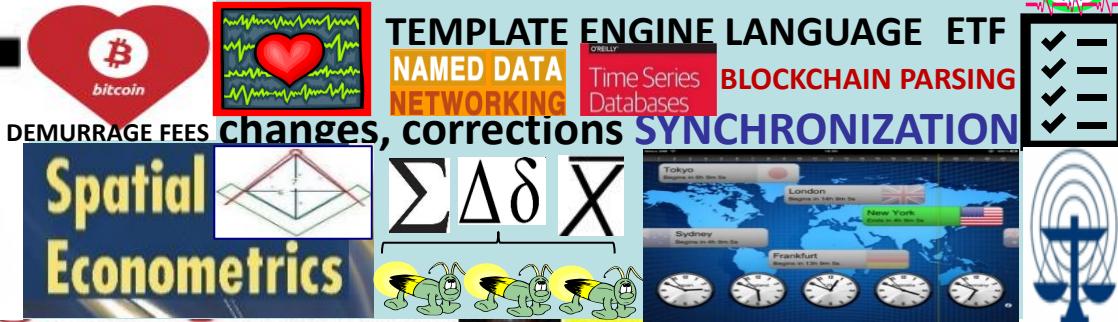
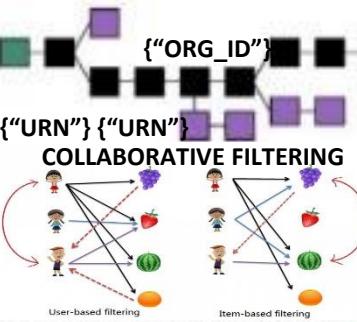
Blockchain



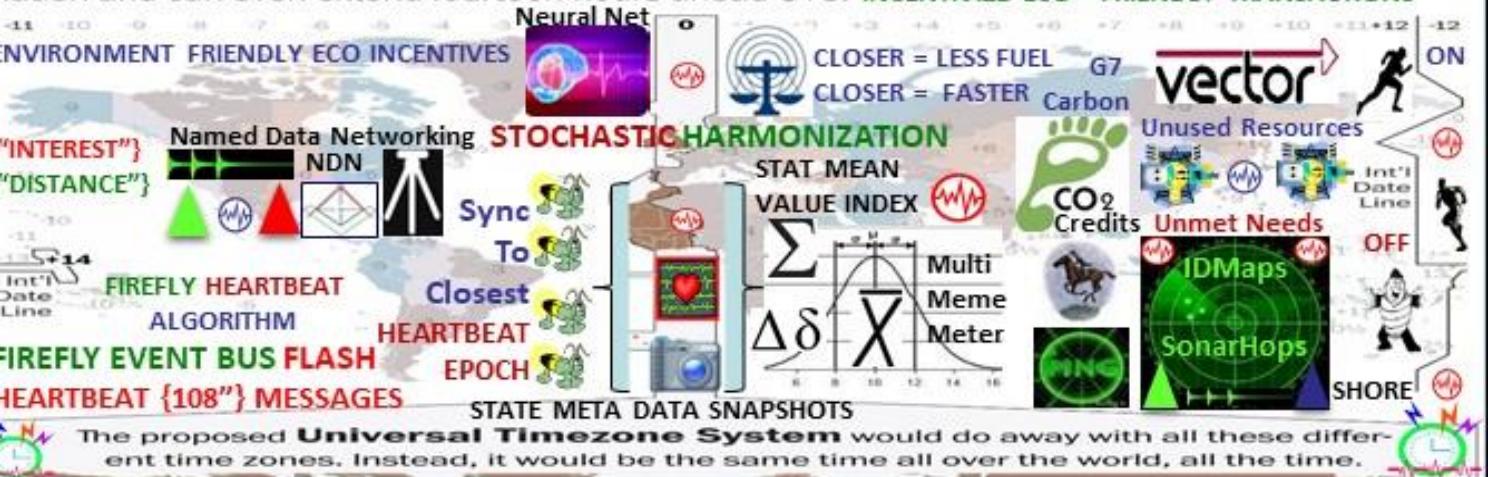
# EGaaS

ELECTRONIC GOVERNMENT AS A SERVICE

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



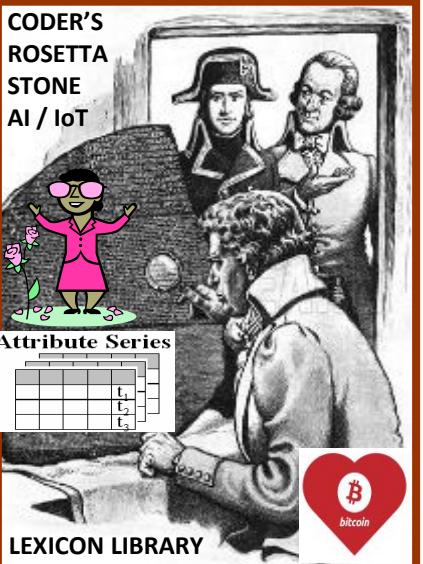
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind Coordinated Universal Time (UTC). However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours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



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



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





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

# GNOSIS

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

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

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

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

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

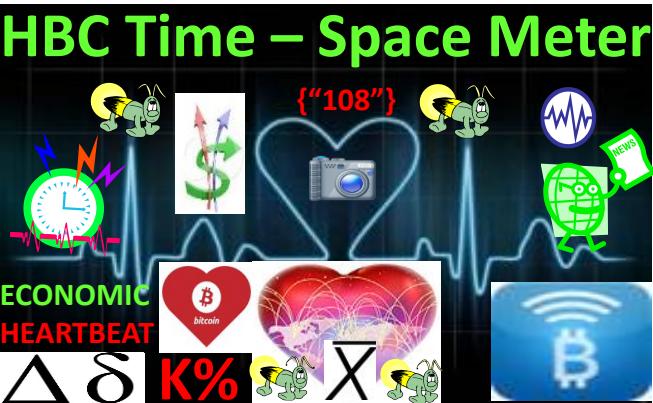
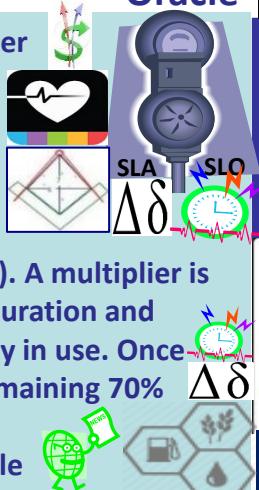


"Our mission is to build an accessible prediction market platform enabling free flow of useful information / the "Google" of Customized Information Searching"

Futarchy PREDICTION MARKETS  
GnosisAMA

Gnosis trading interface alpha  
WIZ token fee payment  
INFORMATION ARBITRAGE ECONOMICS

TERRACYCLE Price Oracle

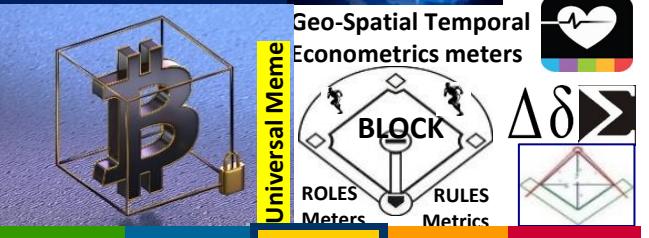


## THE TERRA (TRC)

Trade Reference Currency



## Demurrage Fees



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

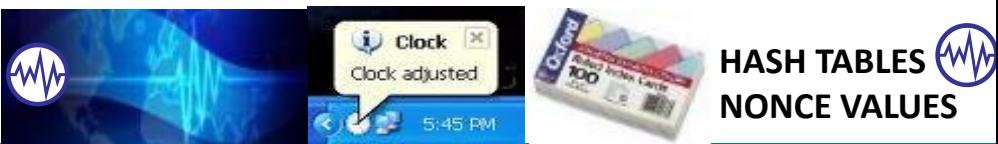




**Bitcoin Classic** seeks to mitigate the problem of more transactions, which are causing transaction backlogs and increased transaction costs, by increasing the block size - the number of kilobytes in a block of transactions - from 1MB to 2MB.



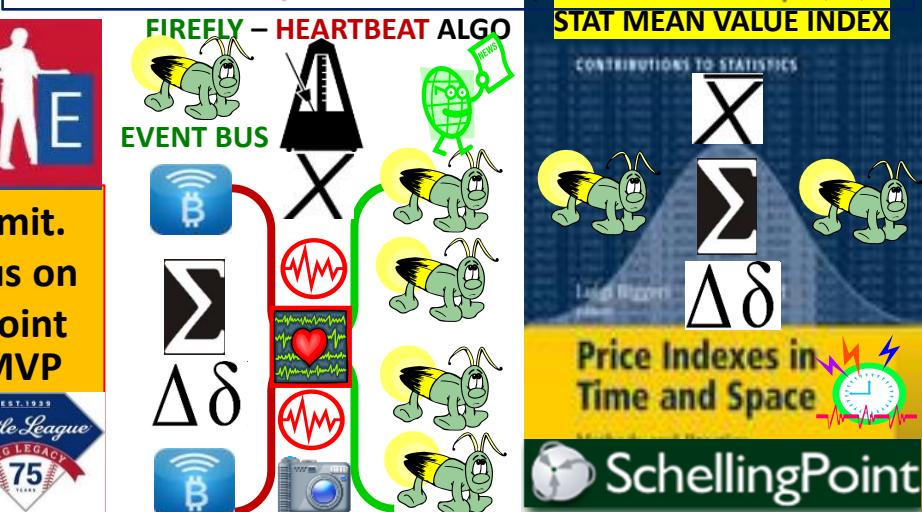
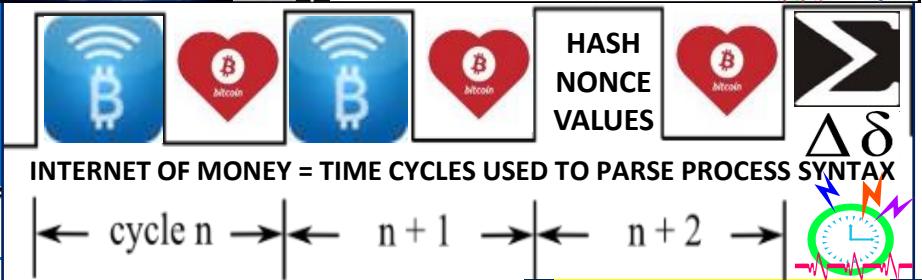
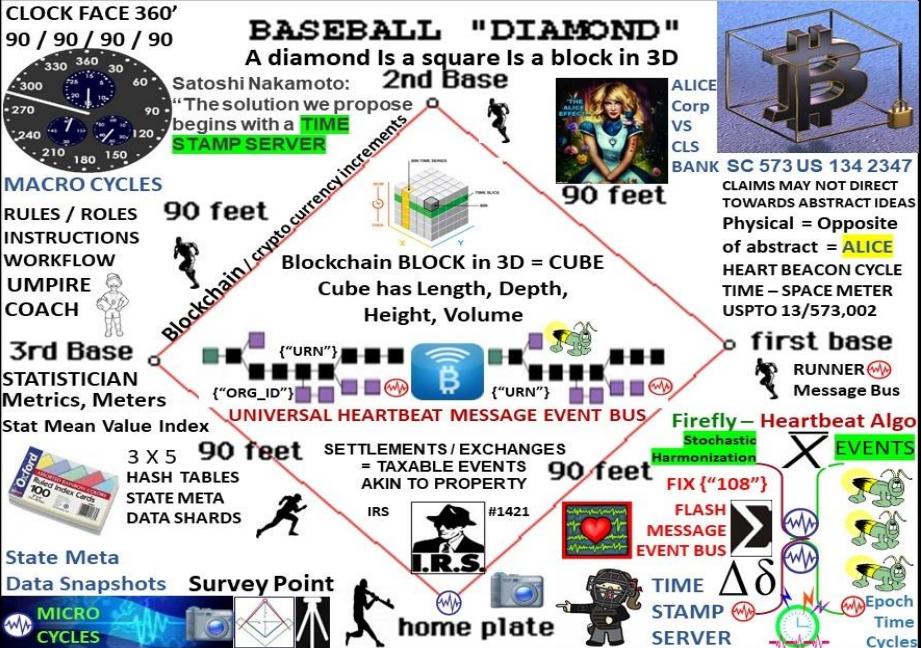
ALL THINGS INTERNET FORMED W 1) TIME EPOCHS 2) SYNTAX



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



**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 MVP 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

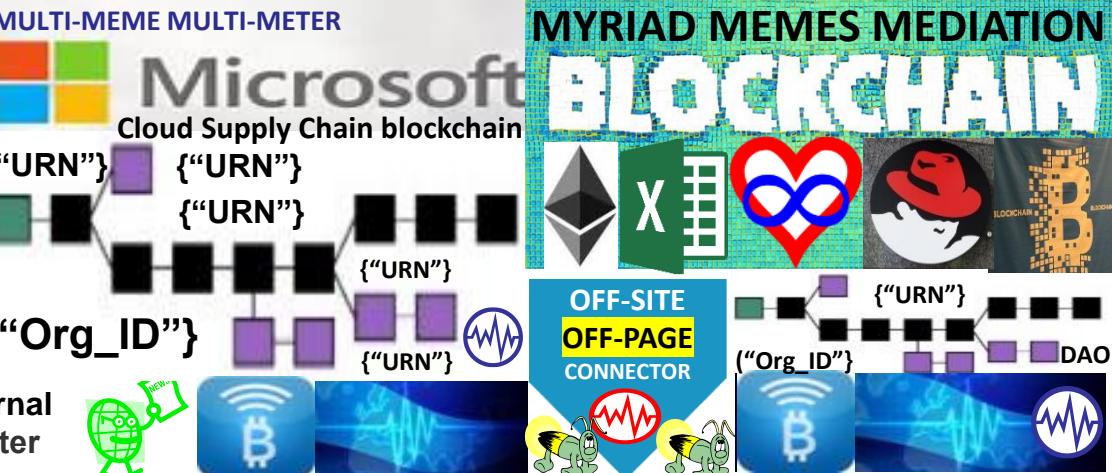


Fabric Tier consortium node CryptoDelegate in VM or UTXO Adapter, (Azure, AzureStack, AWS..)

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.

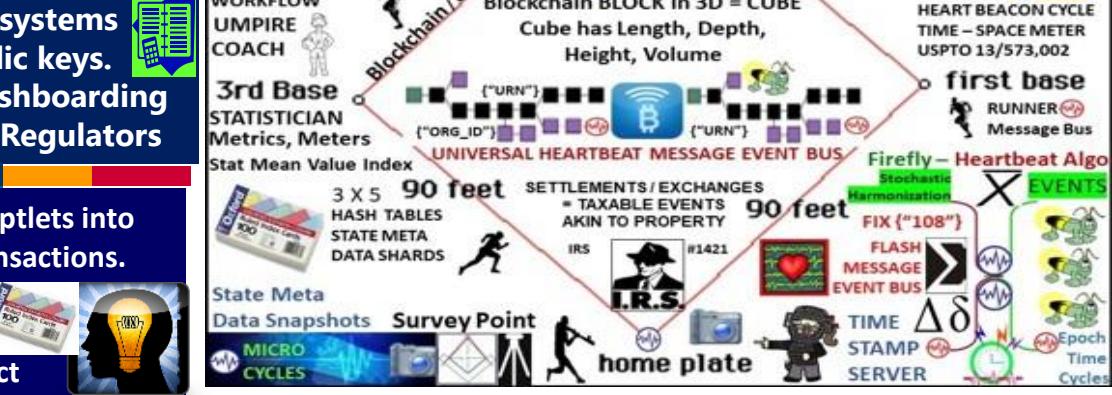


Data Services - key data services like distributed file systems (IPFS, Storj, etc) of off-chain data referenced by public keys.

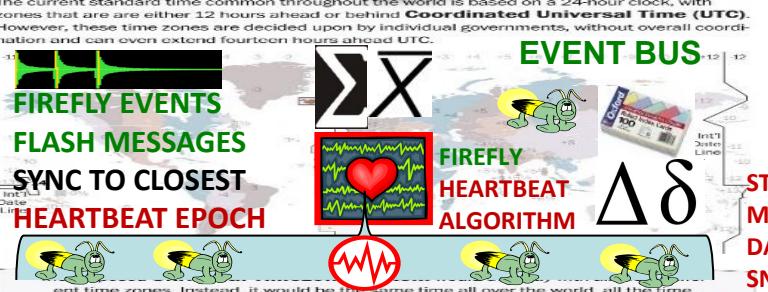


Auditing, Advanced Analytics, Machine Learning, Dashboarding services for SmartContracts, Blockchains, Consortia, Regulators

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

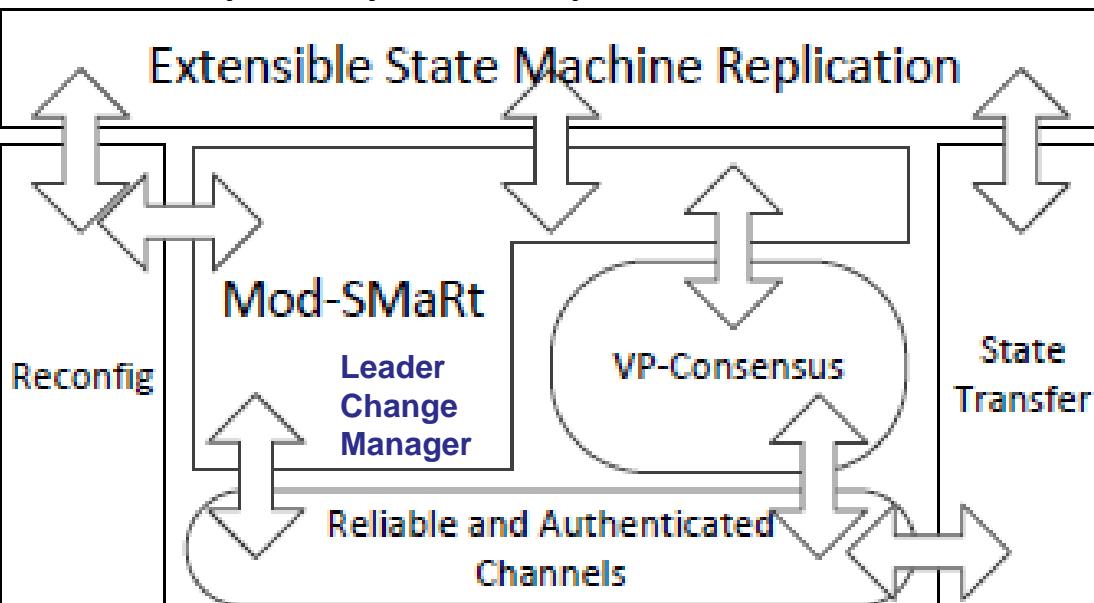


ALPHA NUMERIC
BREVITY CODES
SYMBOL CODES
STRUCTURED MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS



# 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



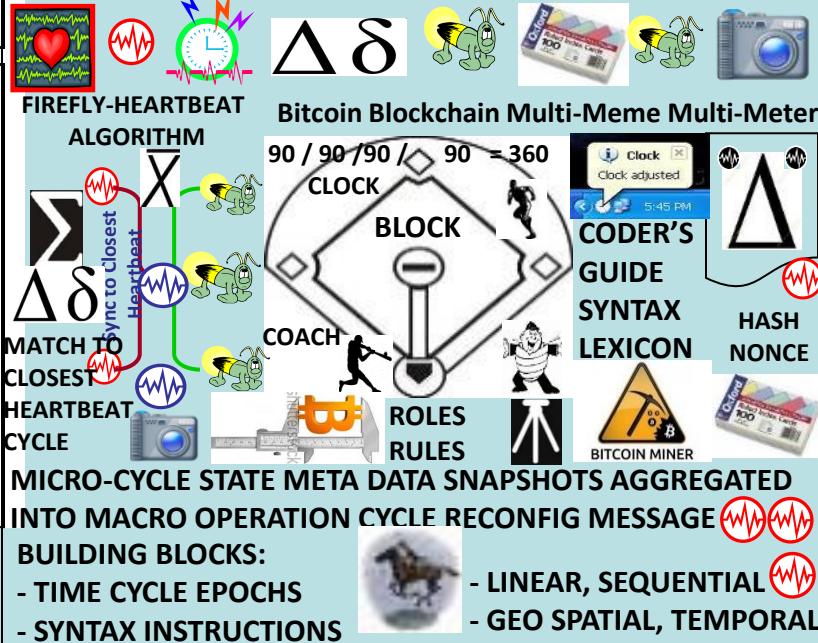
DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

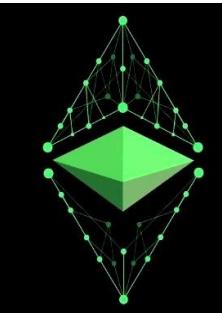
FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG\_ID"}

ADDS, JOINS, DROPS, MOVES TO / FROM DAO

CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

## 00.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOTS





## ETHER: Compensate Resource Contribution

Gas: price to  
Run contract  
transactions

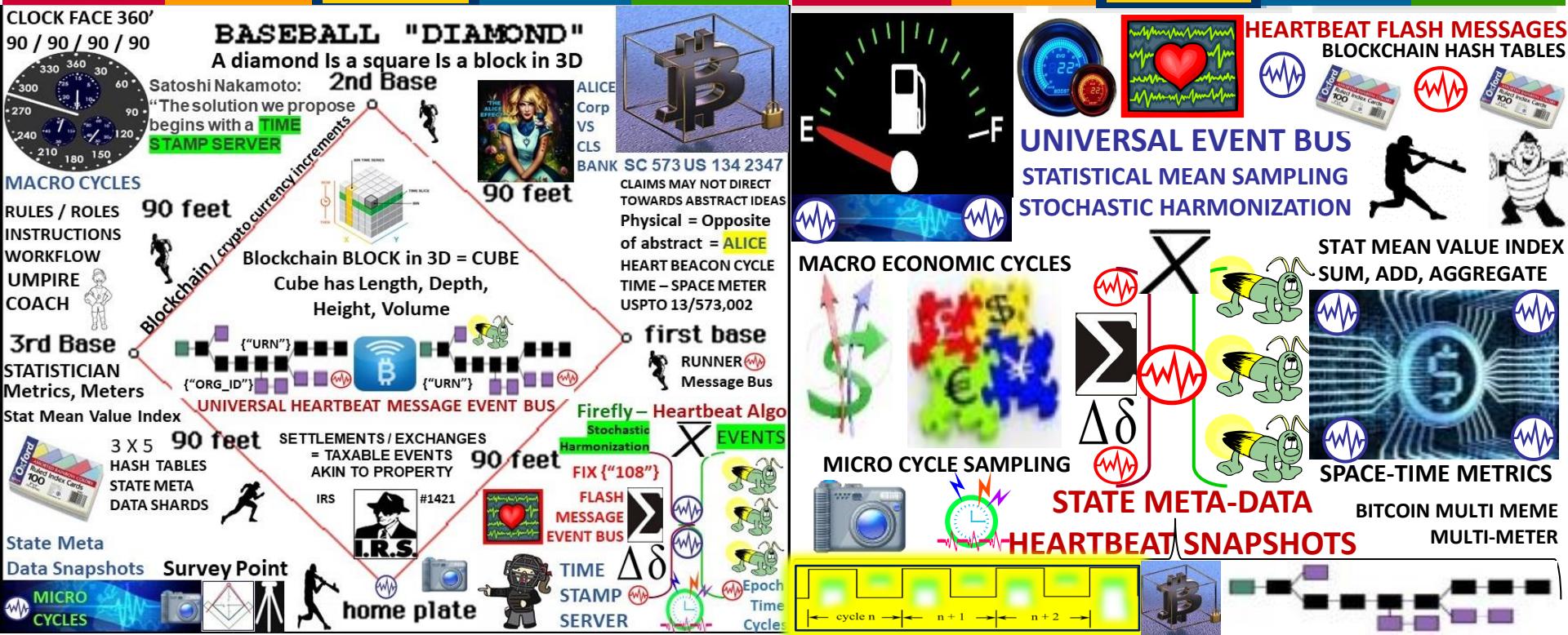
ethereum

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



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

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



**D F I N I T Y**



**RANDOM # BEACON**



**NIST Beacon**  
A Public Randomness Service



**Each process has mining identity**

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

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

**FIREFLY-HEARTBEAT FLASH Msg EVENT BUS**



**GROUP Signature is random number**

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

**HYPER GEOMETRIC PROBABILITY CALCULATOR**

**CONSENSUS / RANDOM BEACON**

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



**3 x 5 HASH TABLES STATE META DATA SHARDS**

**3 x 5 INDEX CARDS**

**QUANTUM RANDOM #**

**3 x 5**

**3 x 5 INDEX CARDS**

**INDEX CARD="SHARD"**

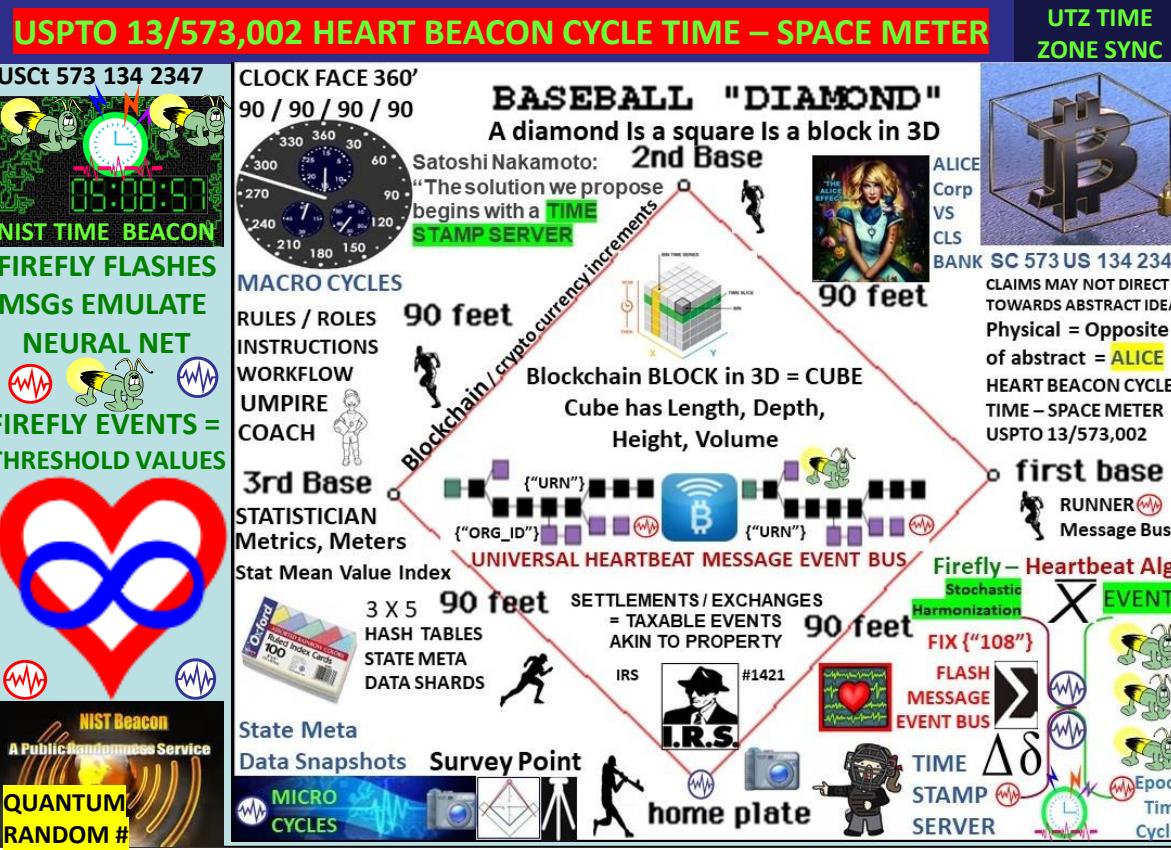
**HBC "ORG\_ID" {"URN"} CLASS ASSET TYPE {"UUID"} DEVICE TYPE**

**Threshold Relay Chain techniques**

Probabilistic Slot Protocol (PSP) When Gh is selected, members start stopwatches  
Choosing Leaders Randomness selects priority list block forgers at height h  
Short Term Convergence Correct processes build on highest scoring chain  
Threshold Timestamping group signs blocks at h until next group appends another.

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

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



**UTZ TIME ZONE SYNC**

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

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

**90 feet**

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

**3rd Base**  
STATISTICIAN Metrics, Meters

**90 feet**

**SETTLEMENTS / EXCHANGES = TAXABLE EVENTS AKIN TO PROPERTY**

**IRS #1421**

**home plate**

**Fix "108"**

**FLASH MESSAGE EVENT BUS**

**TIME STAMP SERVER**

**EVENTS**

**STOCHASTIC HARMONIZATION**

**EVENTS**

**TIME CYCLES**

**Epoch Time Cycles**

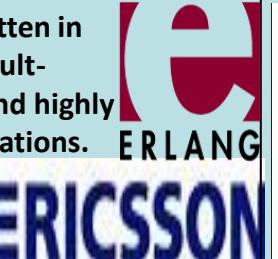
**ALICE Corp VS CLS BANK SC 573 US 134 2347 CLAIMS MAY NOT DIRECT TOWARDS ABSTRACT IDEAS Physical = Opposite of abstract = ALICE HEART BEACON CYCLE TIME – SPACE METER USPTO 13/573,002**

**first base**  
RUNNER Message Bus



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.



**HEARTBEAT FLASH MESSAGES EMULATE NEURAL NETWORKS**

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**

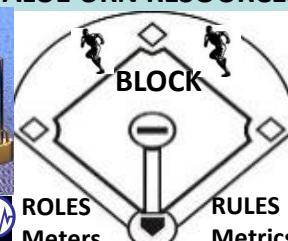
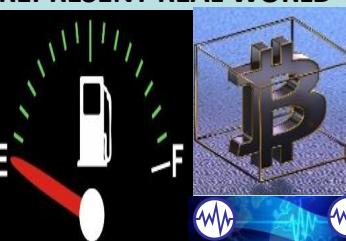
$\Delta\delta$



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



**BLOCK**

**ROLES Metrics**

**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")

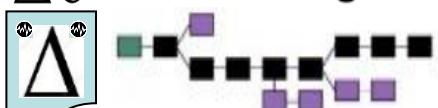


American Registry for Internet Numbers

# HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$  Shared Ledger



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

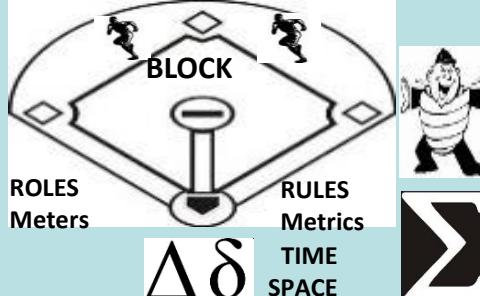
FEDERATION  
**Federation Gateway**

METRICS ("Organization ID")  
METERS

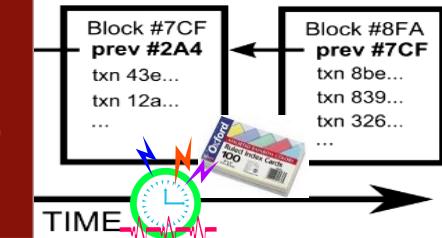
RESTFUL SYNC DELTA  
CHANGE MANAGEMENT  
MICRO-MACRO CYCLE



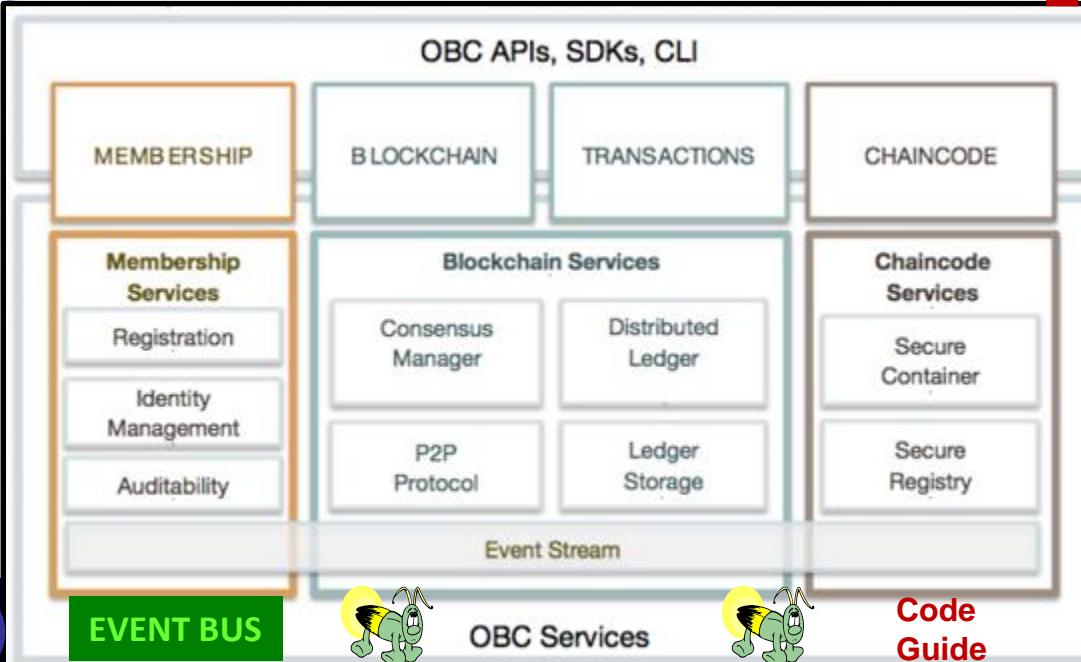
BLOCKTIME ARBITRAGE



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



Alpha-Numerics



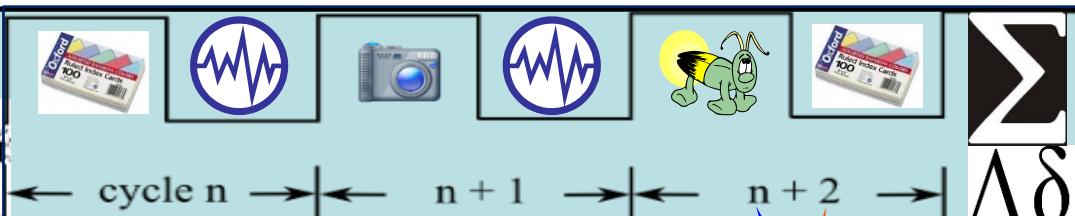
ROSETTA STONE

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"

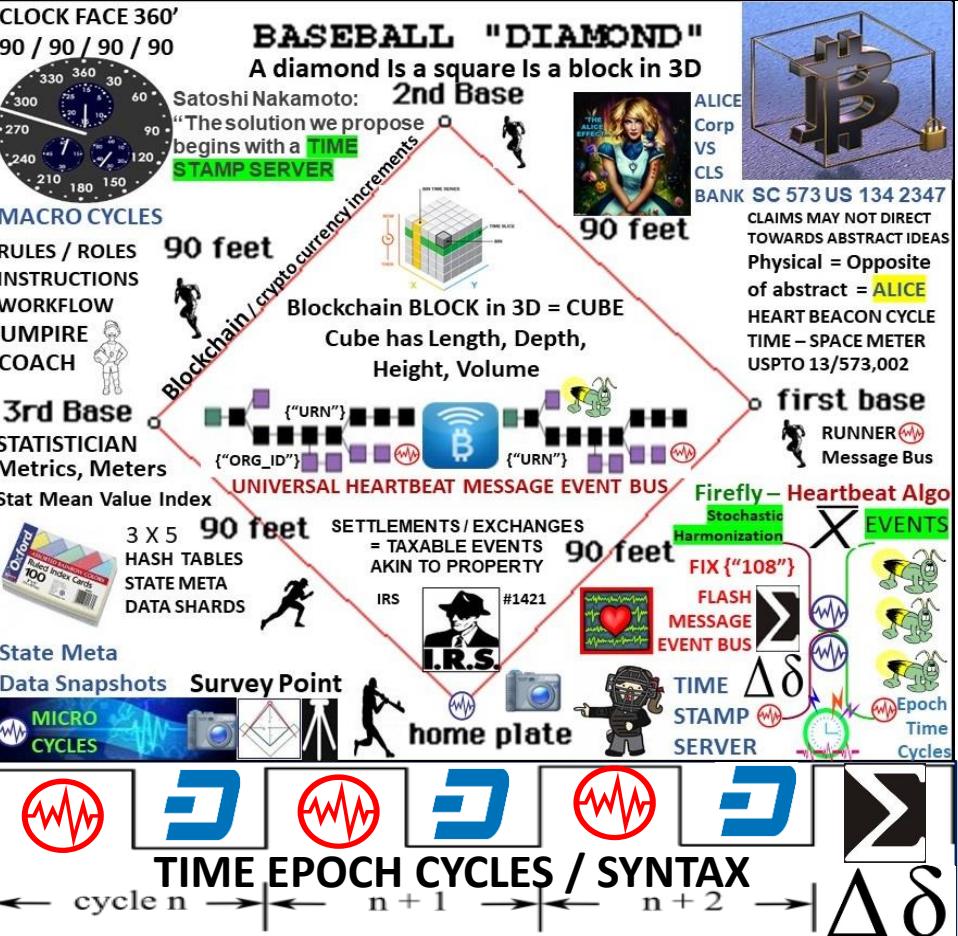
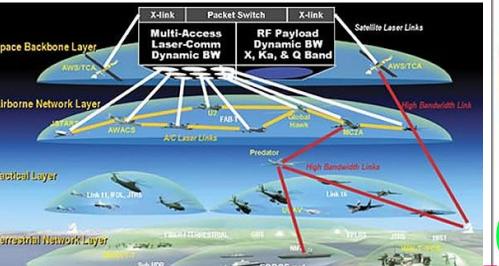
**InstantX:** To solve the problem of lag time in transactions, Masternodes are able to instantly lock transactions and receive payments for their service to the network

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

NETWORK CENTRIC WARFARE  
Developing and Leveraging Information Superiority



Vs CLS BANK



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



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

**STATE CHANNELS:** blockchain interactions

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



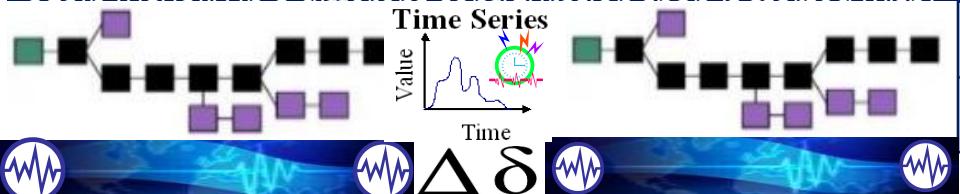
1. Part of the blockchain state is locked via multisignature or smart contract convention, so that a specific set of participants must completely agree with each other to update it.



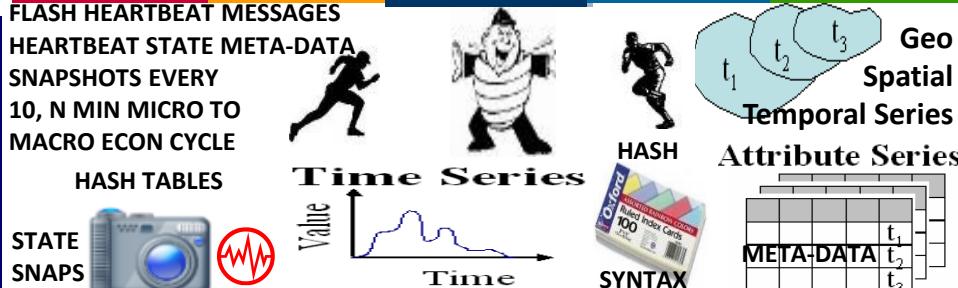
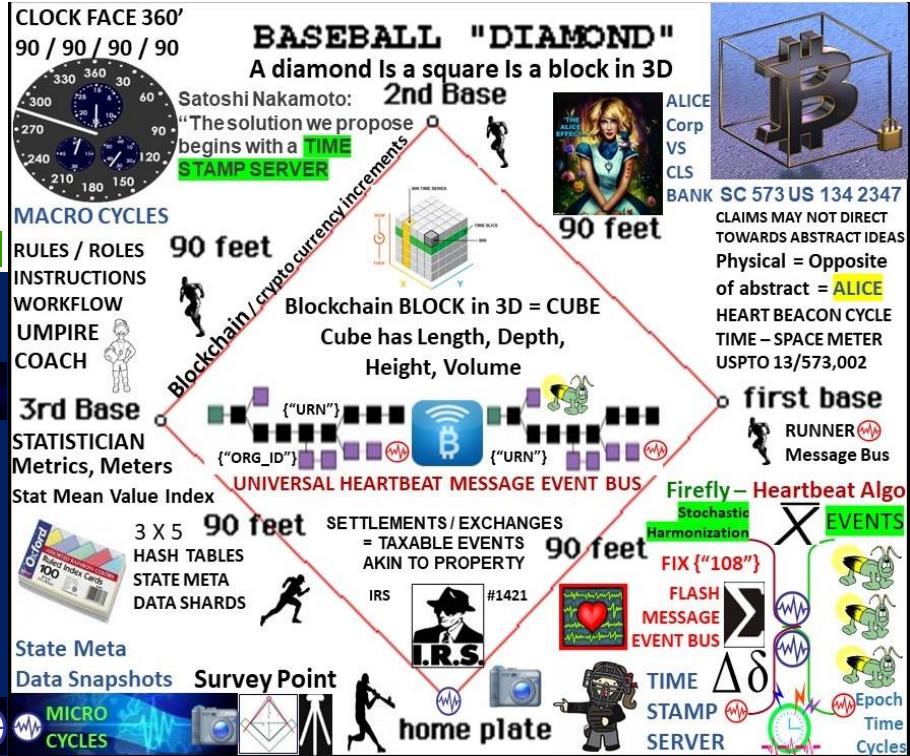
2. Participants update the state amongst themselves by constructing and signing transactions that *could* be submitted to the blockchain, but instead are made public before a new update "trumps" previous updates.



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



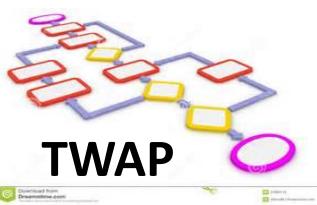
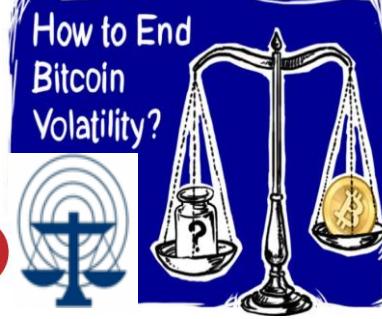
**NEW UPDATES OVERWRITE THE PREVIOUS:** simplest way is to have any unlocking attempt start a timer, during which any *newer* update can replace the old update (restarting the timer). When the timer completes, the channel is closed and the state adjusted to reflect the last update received. The length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



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

# TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

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



FIREFLY HEARTBEAT ALGO  
STAT MEAN VALUE INDEX

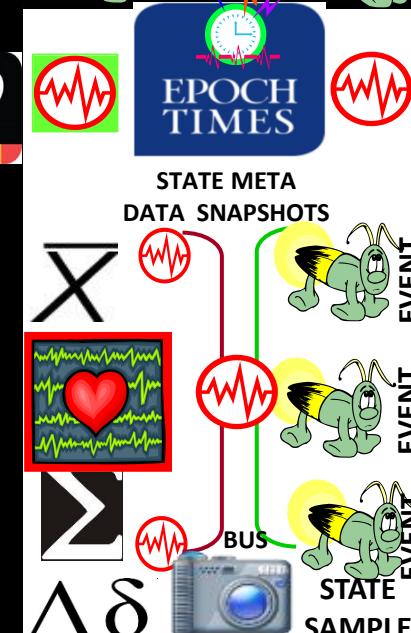
**TWAP Works To gauge trading performance, many traders in different asset classes (equity, fixed income, currency) often use average price as a benchmark. The two common ways to calculate an average are a time-weighted average price (TWAP) and a volume-weighted average price (VWAP). TWAP is the average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



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



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



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.

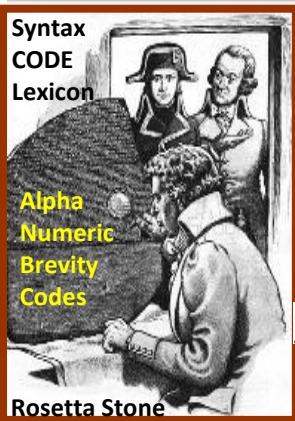
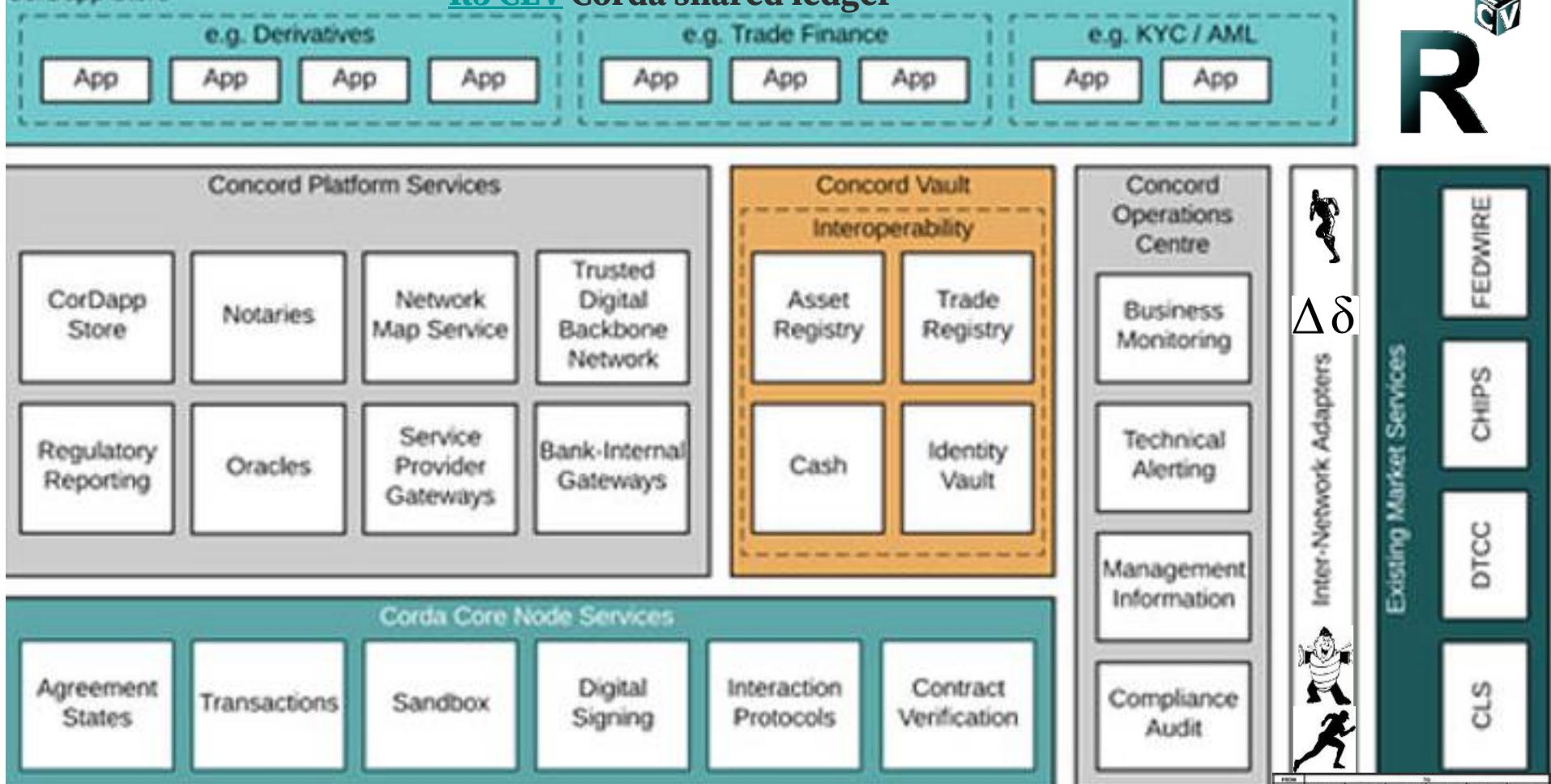
"Blocks are a measure of time":

The Bitcoin Blockchain 'B-WAP'

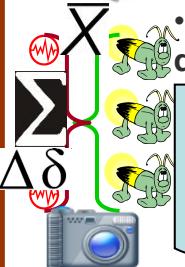
• Exchanges Covered: Price discovery for the B-WAP comes from utilizing the BNC [Bitcoin Liquid Index](#) (BLX) bitcoin price calculation.

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



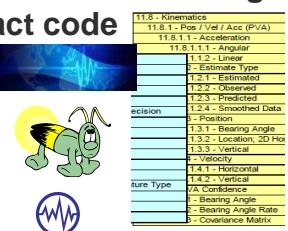


### UNIVERSAL EVENT BUS



- 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

Federation Gateway



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

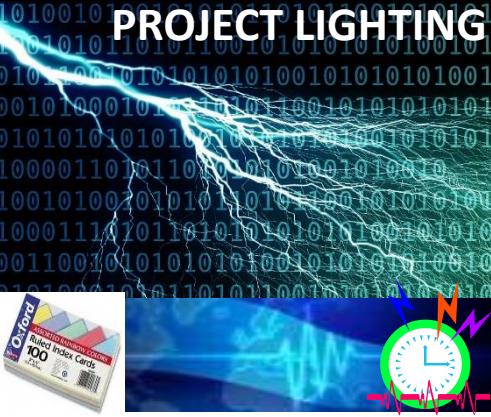


XBRL / CDE / DAML STOCK MIC CODES

STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

300+ Use Case Templates

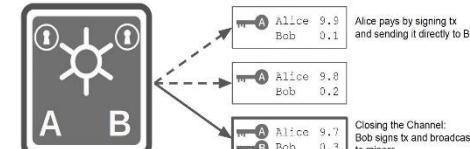
R



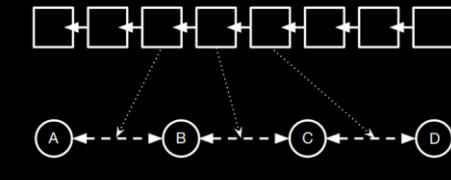
**transactions sent over / off chain  
micropayment channels**

Micropayment Channels

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



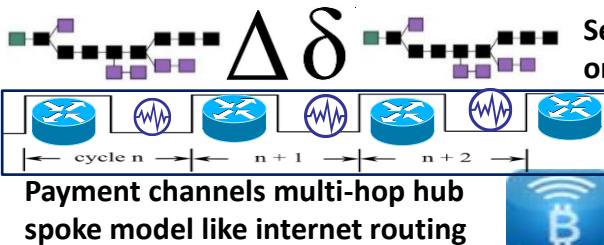
## LIGHTNING



Millions of Transactions. Milliseconds of Delay.

Hashed TIME LOCK contracts component for global consensus

OP\_CHECKLOCKTIMEVERIFY During Macro Cycle w/ Random # BEACON



Payment channels multi-hop hub  
spoke model like internet routing

## FIREFLY – HEARTBEAT ALGORITHM



### FIREFLY – HEARTBEAT

CLOCK FACE 360'  
90 / 90 / 90 / 90



### MACRO CYCLES

RULES / ROLES

INSTRUCTIONS

WORKFLOW

UMPIRE

COACH

3rd Base

STATISTICIAN

Metrics, Meters

Stat Mean Value Index



3 X 5 HASH TABLES  
STATE META  
DATA SHARDS

State Meta

Data Snapshots

Survey Point

MICRO CYCLES

home plate

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

Epoch Time Cycles

Server nodes, miners  
only keep recent blocks



Sync Delta  
State Meta  
Data Snaps

ADJACENT FIELDS  
SEPARATE CHANNELS

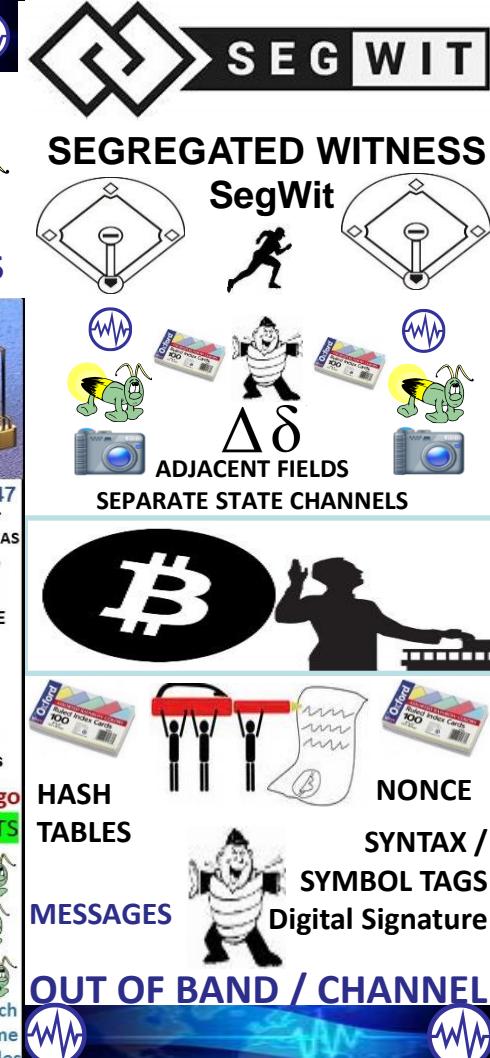


EVENT REPORTING  
ACROSS TIME-SPACE



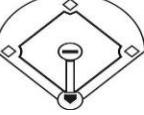
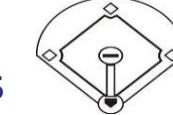
$\Delta\delta$

MESSAGE EVENT BUS

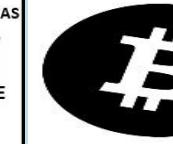


## SEGREGATED WITNESS

SegWit



$\Delta\delta$   
ADJACENT FIELDS  
SEPARATE STATE CHANNELS



HASH  
TABLES



NONCE

SYNTAX /  
SYMBOL TAGS



Digital Signature

MESSAGES



OUT OF BAND / CHANNEL



Segregated witness = Separated  
signatures

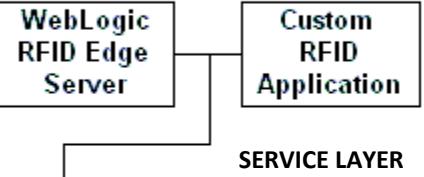
- signatures are cryptographic proofs also known as witnesses
  - moving signatures out of transactions
  - keeping a separate repository of the signatures
  - making them optional in propagation and storage
  - signature are the biggest part of transactions
  - can be implemented as a soft-fork vs a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

# Electronic Product Code Information Services (EPCIS)

## GS1 Standard for creating, sharing visibility event data



## Epcis DATA MODEL



SERVICE LAYER

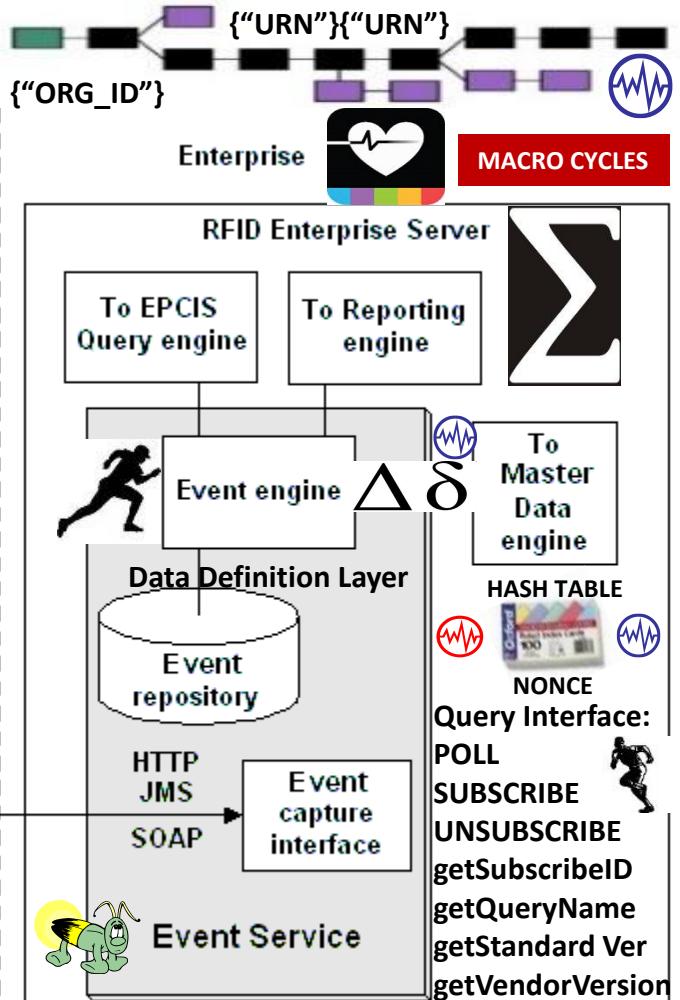
XML

ObjectEvent

AggregationEvent

QuantityEvent

TransactionEvent



## Core Business Vocabulary (CBV)

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

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

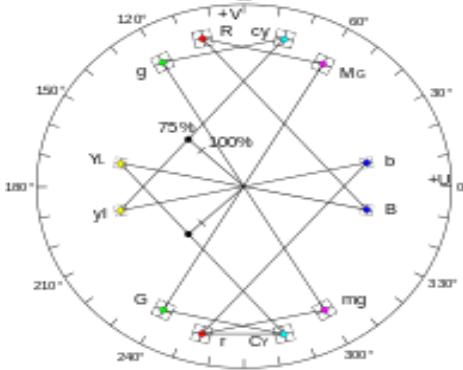
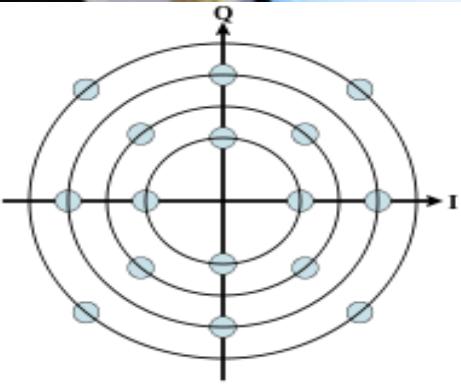
Where location identifier where event occurred, identifier of location where object(s) are expected to be following the event

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

**Richard Lighthouse** Tonight on LNM Radio  
Time Travel & The Blinking Universe



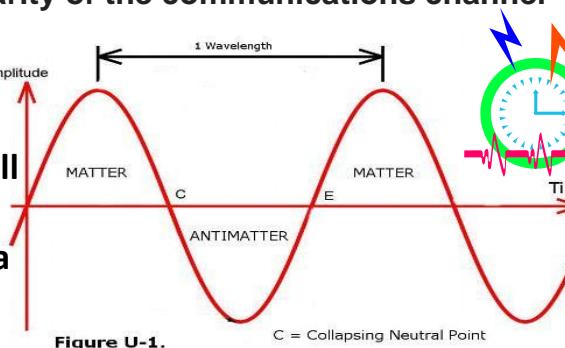
[www.RLighthouse.com](http://www.RLighthouse.com)



### Quadrature amplitude modulation

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

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



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



USPTO 13/573,002

[sawconcepts.com/index](http://sawconcepts.com/index)

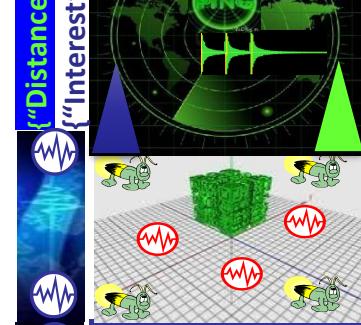
NDN

IDMaps

SonarHops

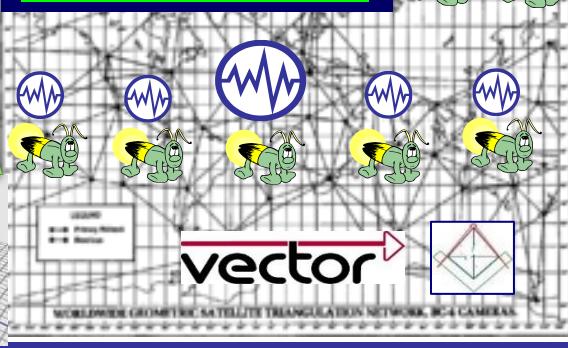
{“Distance”}

{“Interest”}

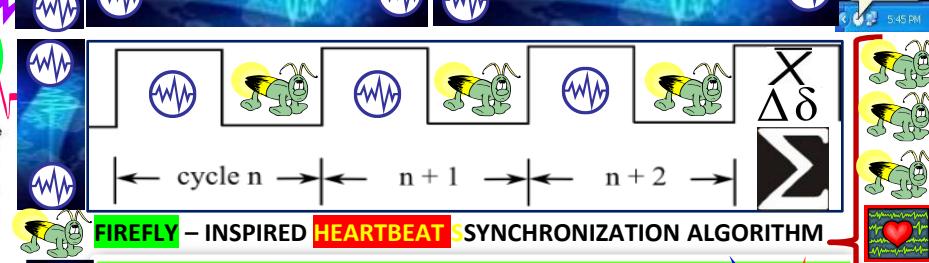


Heart Beacon Cycle Time – Space Meter  
Geo-Spatial Temporal Intensity Metrics

TRIANGULATION



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



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





TERRA  
TRC

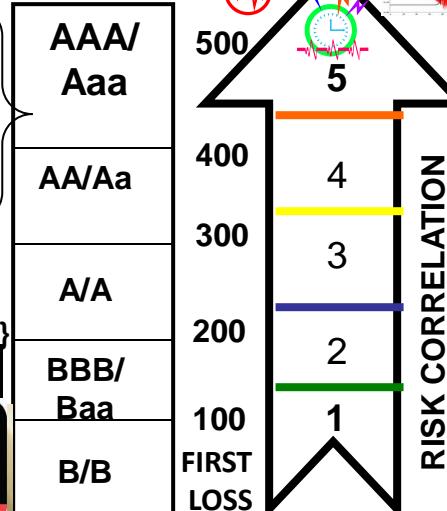


ECONOMIC HEARTBEAT

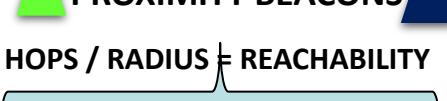
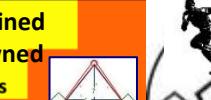
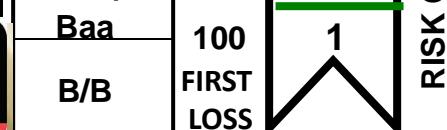
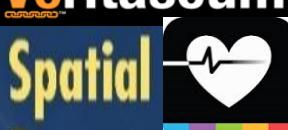
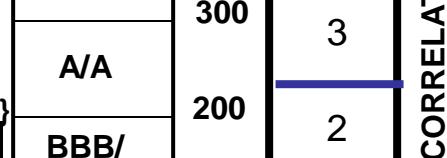
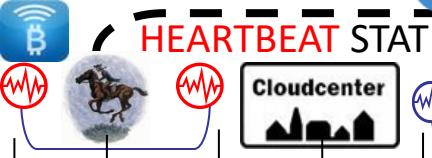
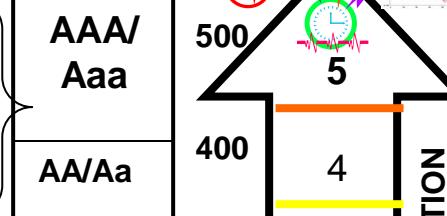
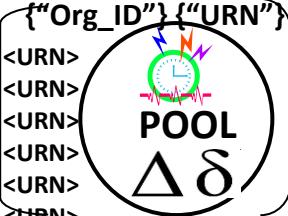


HB MSG </108>  
FIX PROTOCOL  
INDUSTRY-DRIVEN MESSAGING STANDARD

LAST LOSS



PROCESS BY </PRECEDENCE>  
SonarMaps ID\_Hops

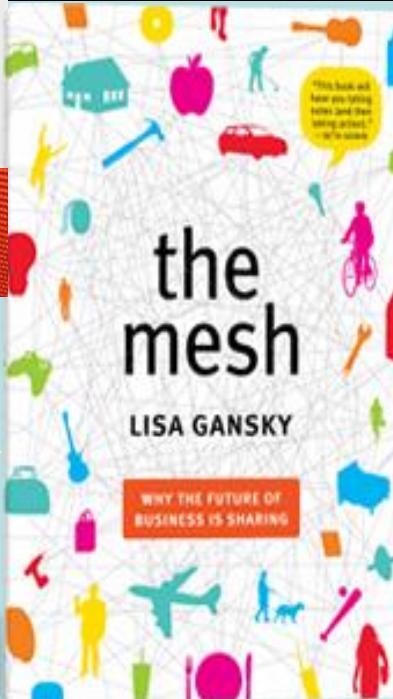
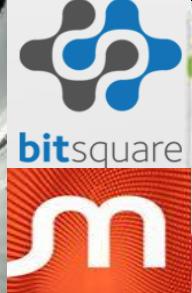




COINTELEGRAPH  
live cryptocurrency community opinion



## 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



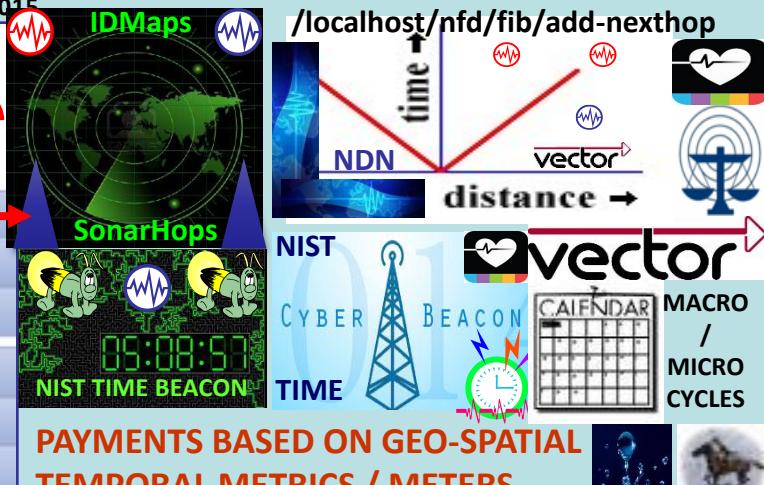
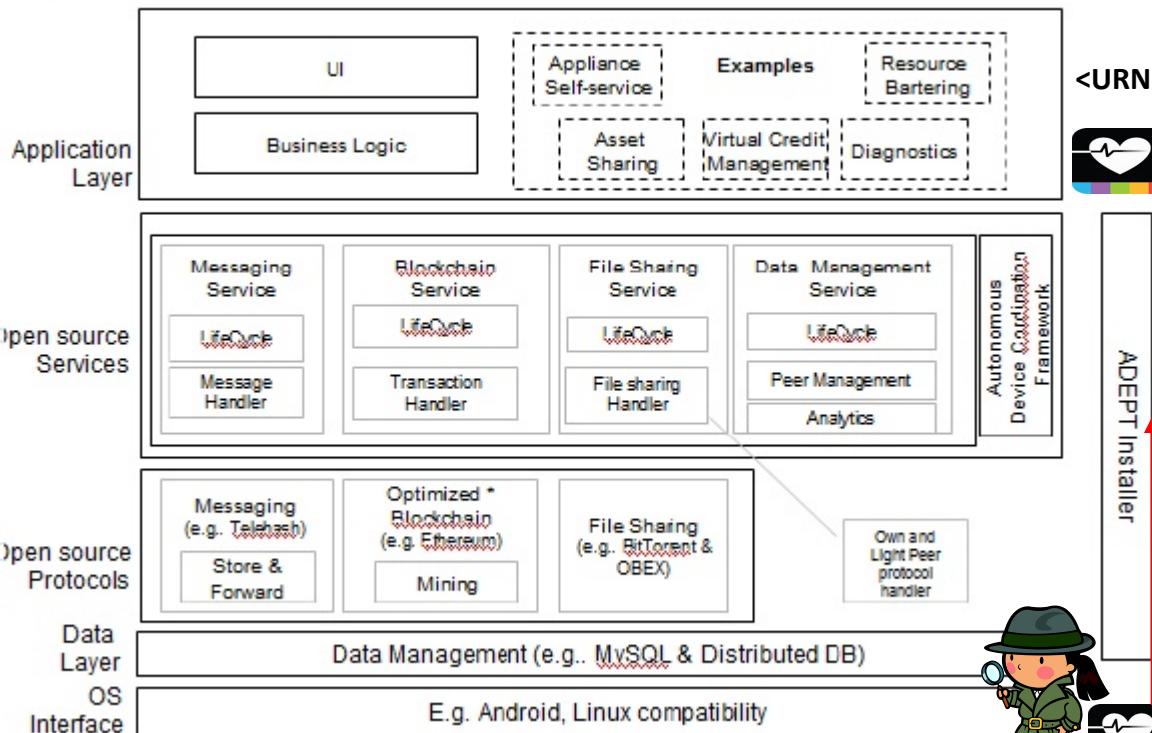
- Registration
- Authentication
- Proximity based rules
- Consensus based rules
- Contracts
- Checklists

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

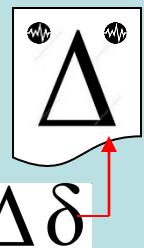


PAYMENTS BASED ON GEO-SPATIAL TEMPORAL METRICS / METERS  
<URN> DESCRIBES COMMODITIES ETC BY UNIFORM RESOURCE NAME BY </INTEREST>>



ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML\_Wf>

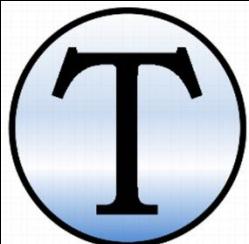


FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH



OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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



## Three ideas combined

HOW TRUTHCOIN WORKS:

### 1) Tradable Reputation

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

### 2) SVD Cross-Validation

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



### 3) Strategic Use of TIME

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

## 2. A kind of ‘Future Wikipedia’

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

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

## 3. A software protocol

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

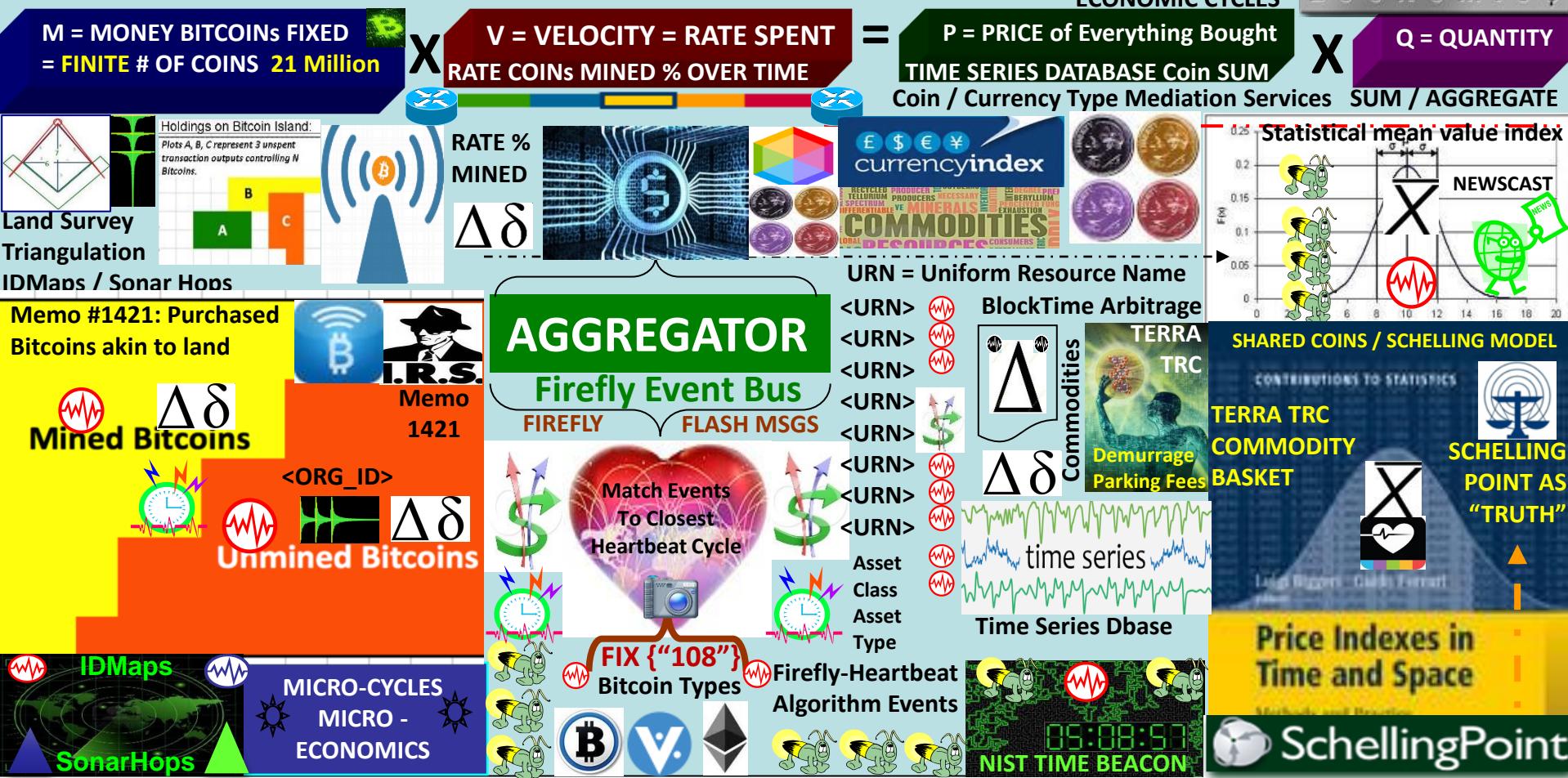


Protocol (Decentralized)	Centralized Non-Protocol
Spoken English	Shakespeare’s Globe Theatre, The Library of Alexandria, MLA Citation Format, Walt Whitman, J.K. Rowling.
Rules to American Football	The NFL, ESPN, The Buffalo Bills.
Bluetooth	A Set of Stereo Speakers, The iPhone 6, A Car Radio Equipped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

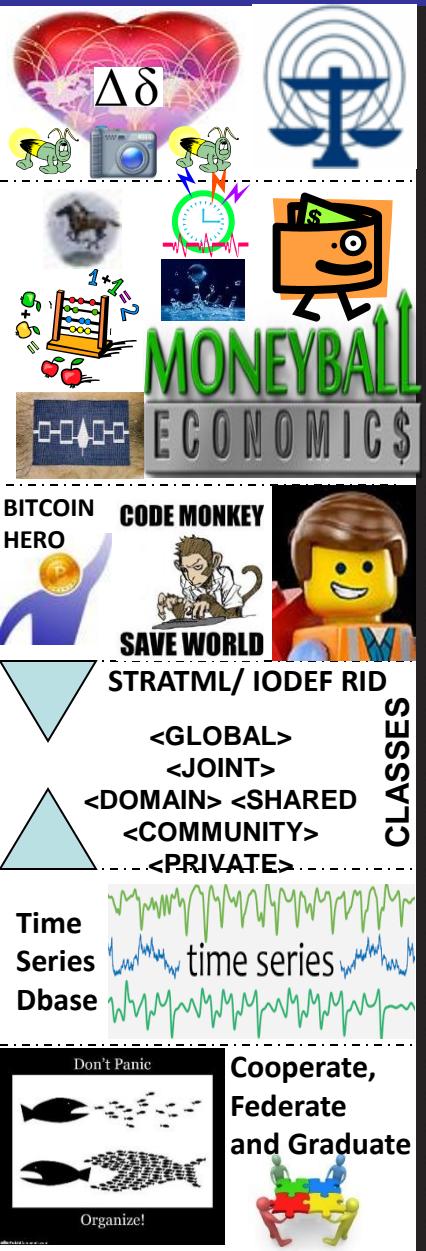
# How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

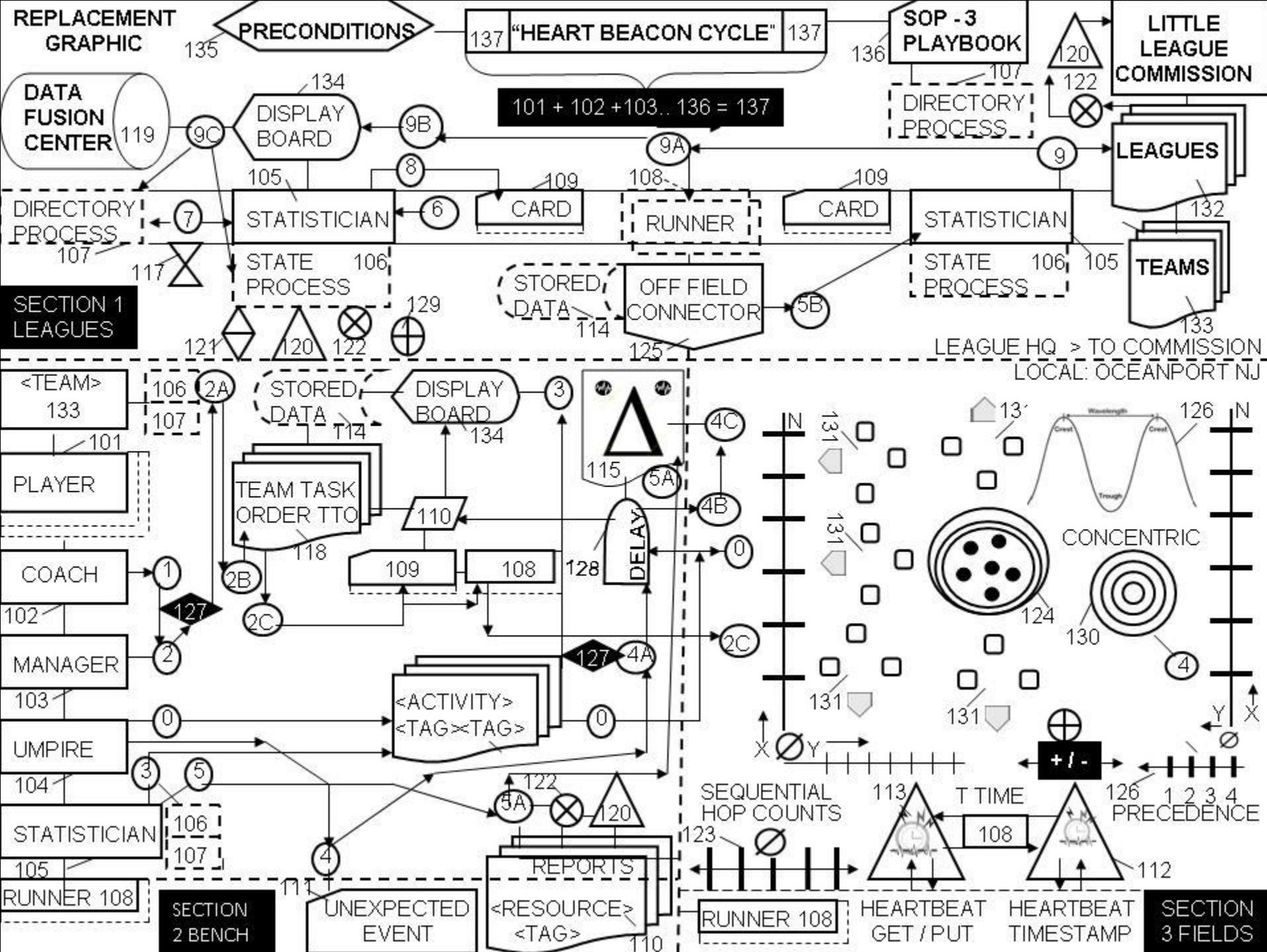
The most important equation in monetary economics, the equation of exchange:  $MV=PQ$ . The quantity of money (M) times the rate spent (V for velocity) equals the price of everything bought (P) times the amount bought (Q for quantity). In Bitcoin, M Money is on a predetermined path, converging to 21m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

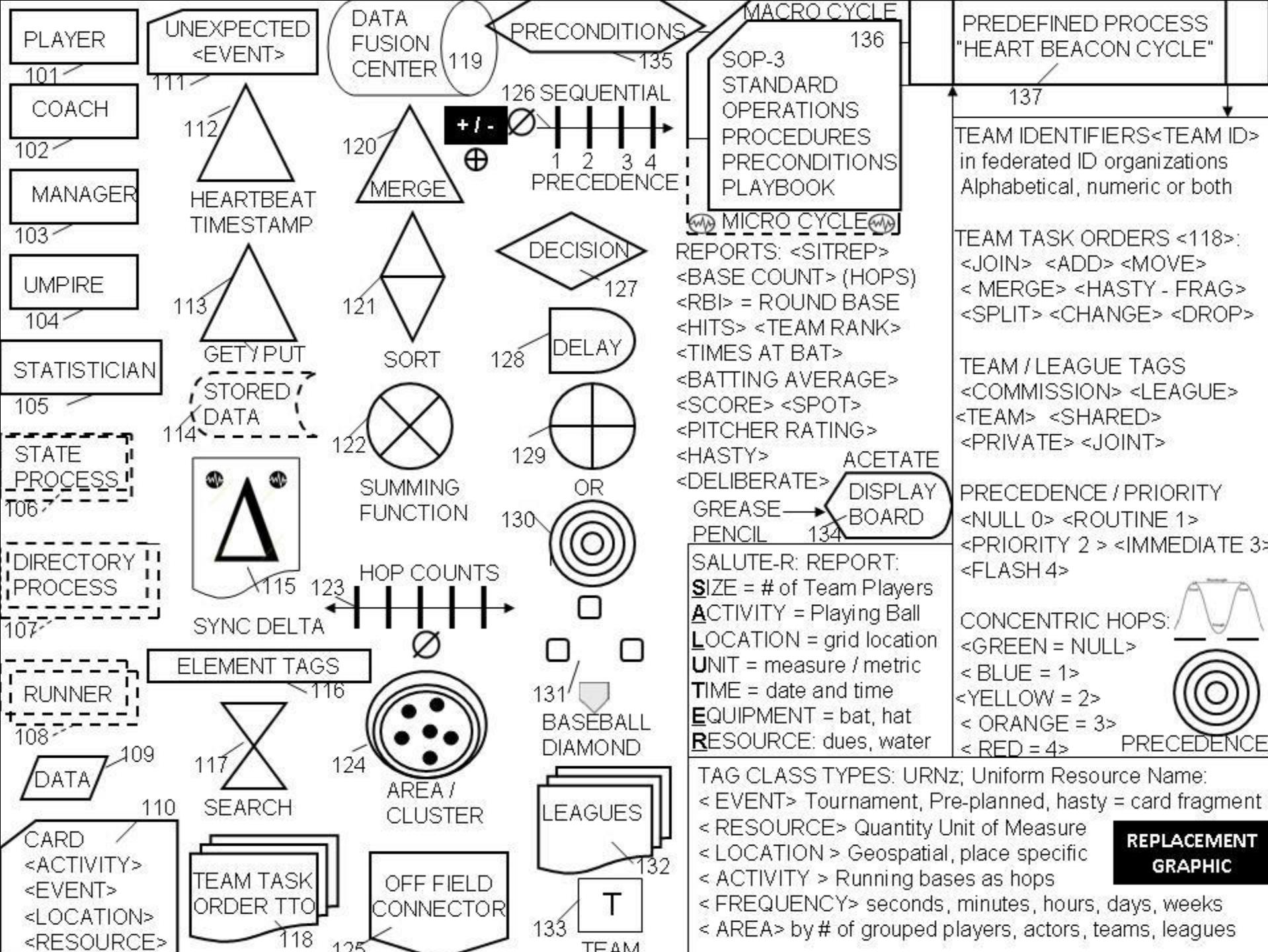


**Gamification** is the use of game thinking and game mechanics in non-game contexts to engage users in solving problems. Gamification techniques strive to leverage people's natural desires for competition, achievement, status, self-expression, altruism, closure.









# BUILDING BLOCKS



TASK ON / OFF

201

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



MACRO CYCLES



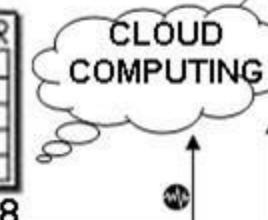
.0001

MICRO CYCLES

216



218



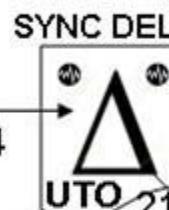
219

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

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



214



UTO 213

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



215 LEADER'S  
INTENT  
DECISIONS



211 SNAPSHOTS

210

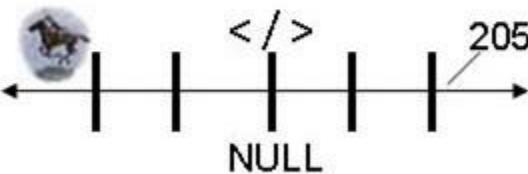


203

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



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



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

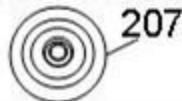
208



APPLIQUE' OVERLAYS



LENGTH, THRESHOLD, INTENSITY, DURATION



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

209



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

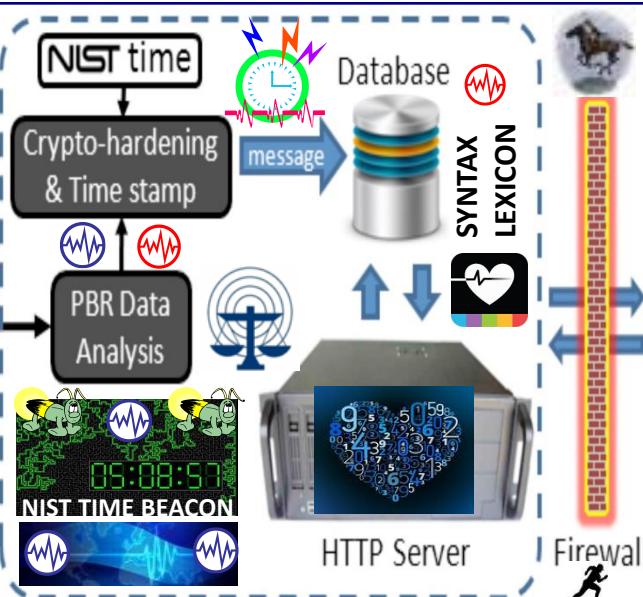
SECURE MULTI

PARTY /  
AUTHENTICATION

Entanglement  
Source

RANDOM  
NUMBER  
GENERATOR

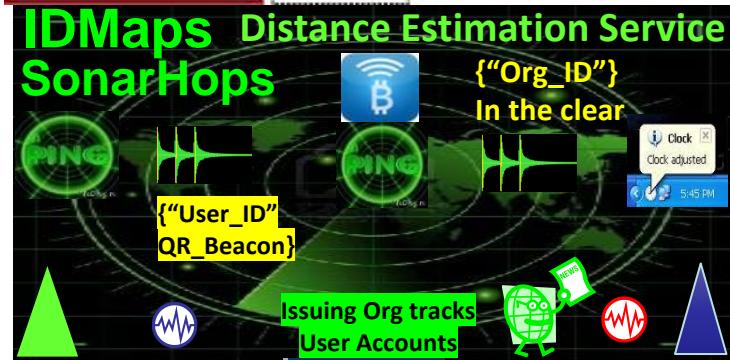
Bell  
Test



**NIST**

**NON  
REPUDIATION**

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



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors

**NAMED DATA  
NETWORKING**



NDN  
 </Interest>  
 </Distance>

**SURVEY METHODS + TRIANGULATION**

Euclidian Geometry

**Geodesic System** Routing Info Base RIB

ACCOUNT BELONGS TO </Org\_ID>

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

DEVICE / SENSORS <UUID><UUID>

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

Time / Distance Metrics



PROXIMITY

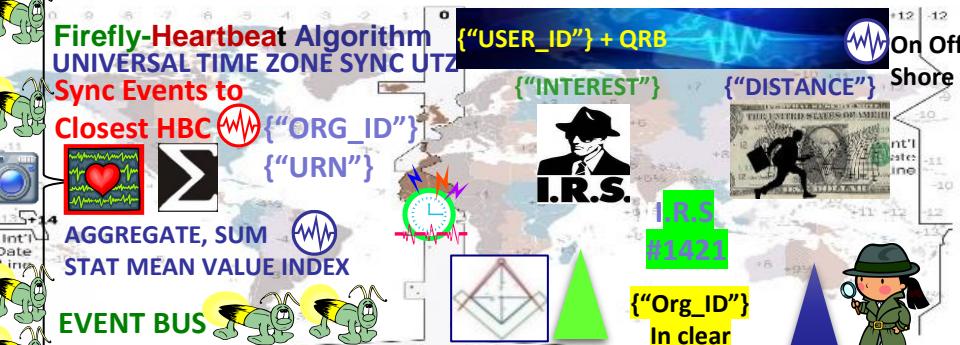
**OFFSHORE BEACONS ONSHORE**

NDN

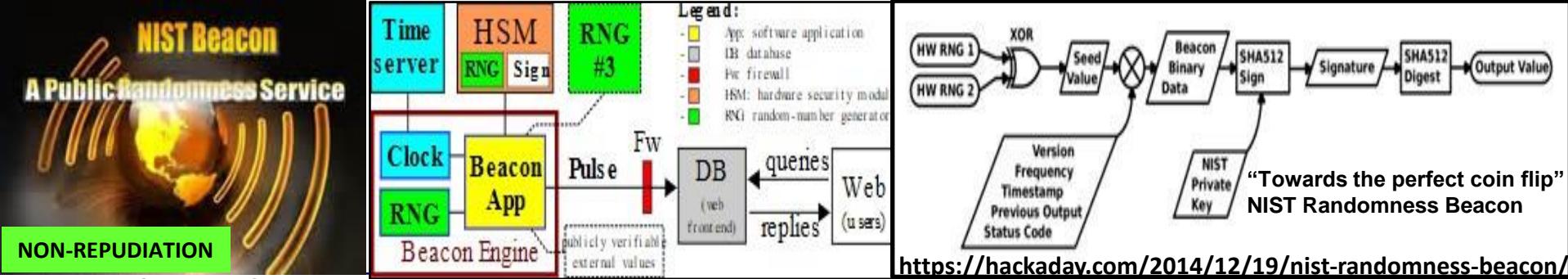
NDN

</interest></distance>

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

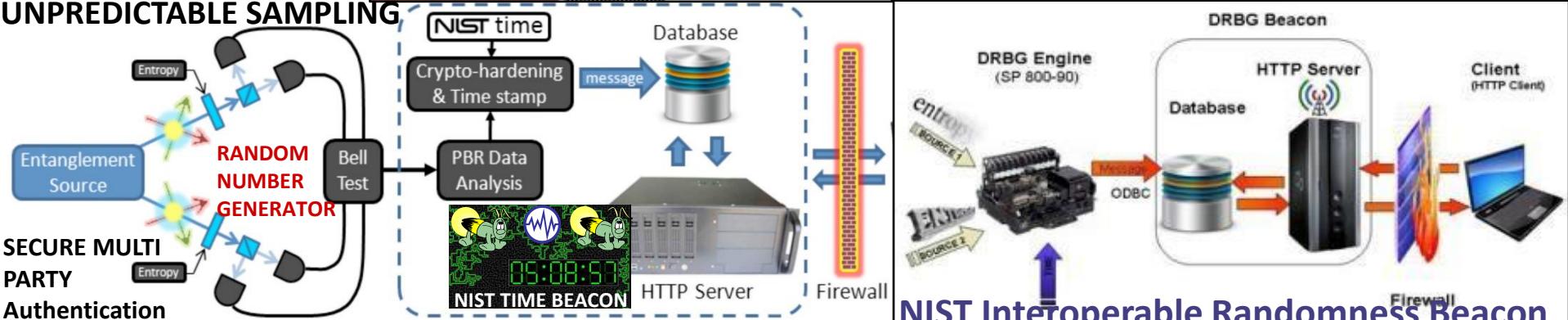


The proposed Universal Timezone System would do away with all these different



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

"Towards the perfect coin flip"  
**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

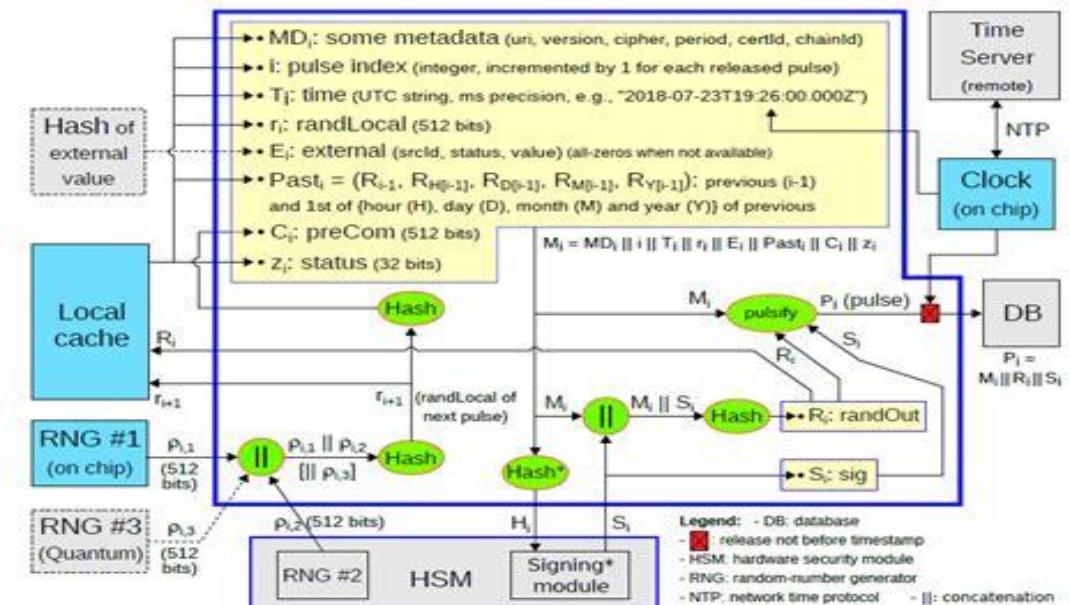
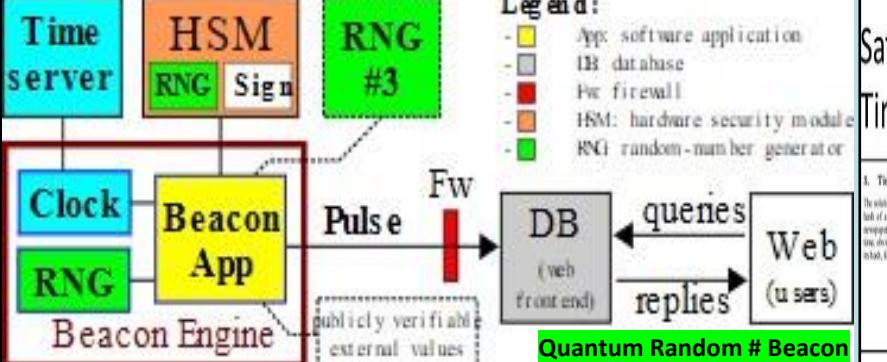


Figure 2. Illustration of the generation of the  $i^{th}$  pulse by a Beacon App (2.0)

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**"

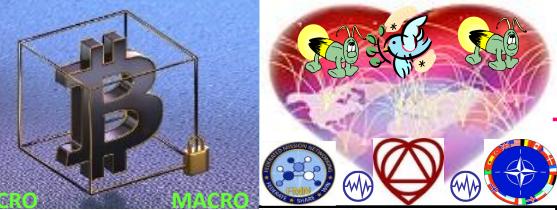


## QubitCoin Interval: Every 30 Seconds

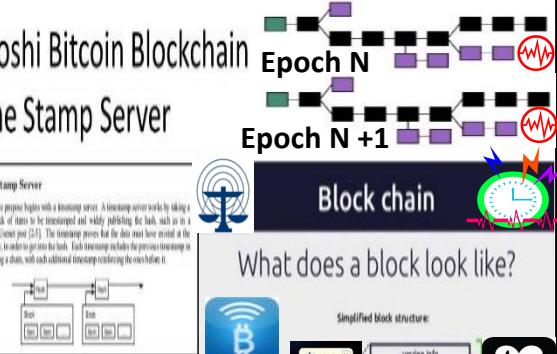
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



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



## Satoshi Bitcoin Blockchain Time Stamp Server



## Epoch Time Cycles



## Structured Data Exchange

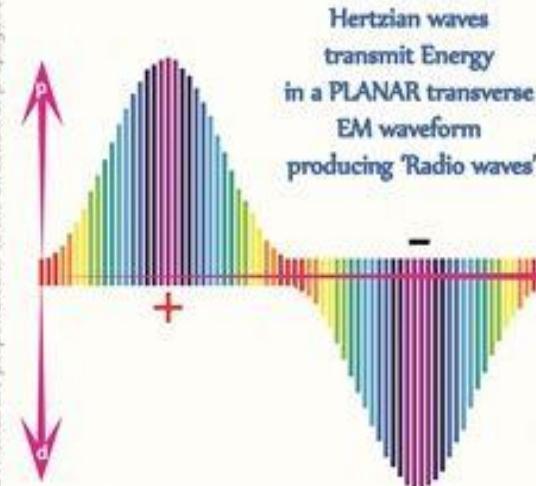


CLOSER = < Infrastructure  
= CHEAPER SLA

# ElectroMagnetic waveforms



ENERGY / DATA  
Over  
Transmission  
Lines / Airwaves



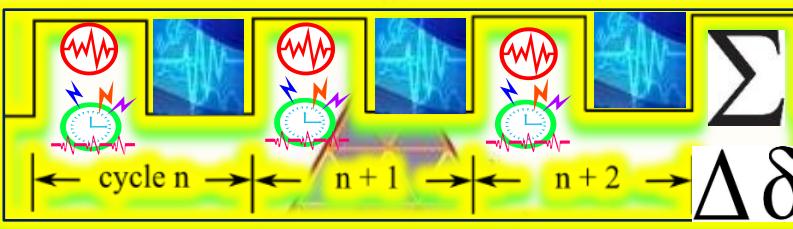
In 1887, Heinrich Hertz demonstrated the reality of Maxwell's electromagnetic waves by experimentally generating radio waves in his laboratory.

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



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

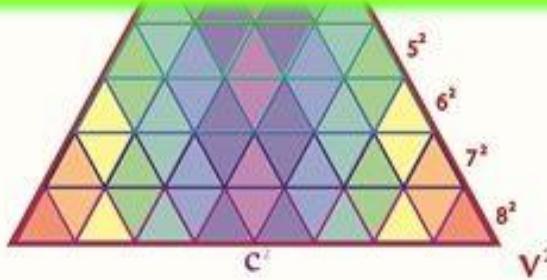
Although they utilise the same EM energies, different EM waveforms can be produced where the Electric fields are in 90° opposition to each other thus leading to conflicting theories of EM wave propagation

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

Nikola Tesla



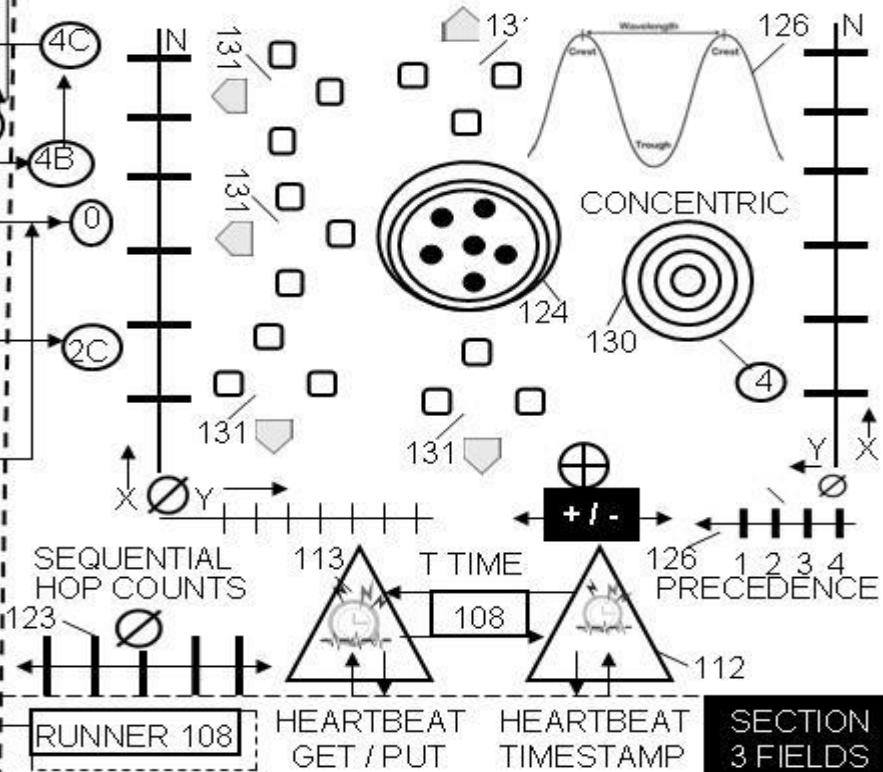
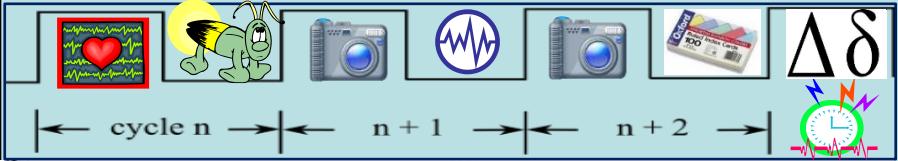
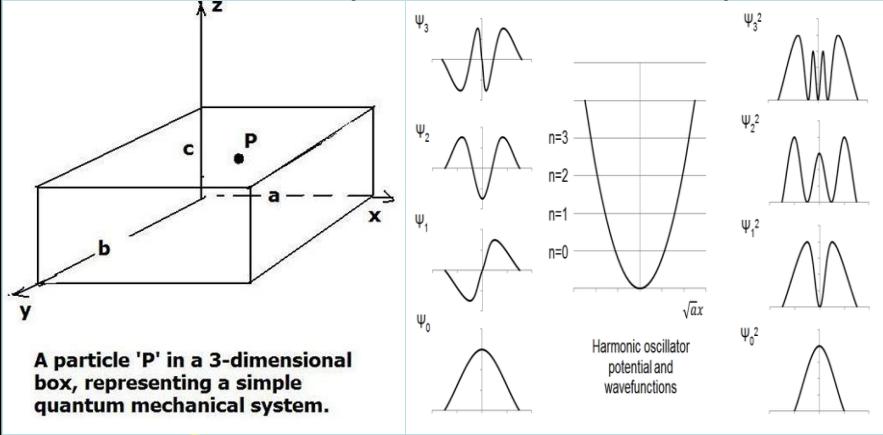
(10 July 1856 - 7 January 1943)



Volts per Second

V

## QUANTUM COMPUTING / HBC TIME – SPACE METER / METRICS

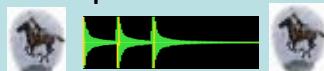


#QuantumComputing USct Alice Corp Vs CLS Bank compliant memes:  
In quantum computing, a qubit (or quantum bit (sometimes qbit) is a unit of quantum information—the quantum analogue of the classical binary bit. A qubit is a two-state quantum-mechanical system, such as the polarization of a single photon: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

US Sct Alice Corp Vs CLS Bank Physical memes

Linear sequential "Paul Revere" meme = horizontal polarization

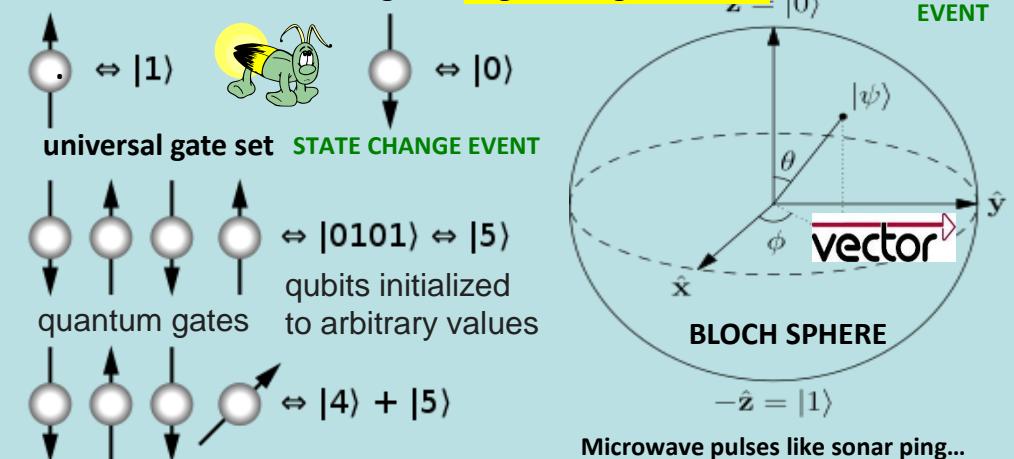
Vertical polarization vectors from a known point 0 null Sonar Hop meme



particle representation / samples



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



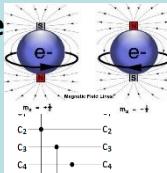
qubits can be in a superposition of all the classically allowed states

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



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

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

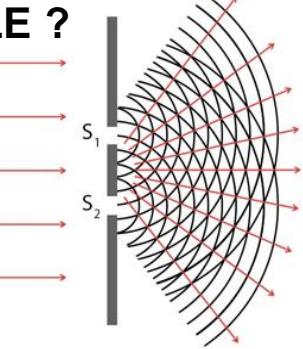


# Double-Slit Experiment

Screen with two slits

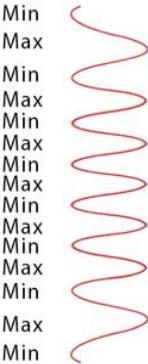
**PARTICLE ?**

Sodium lamp



Screen

**WAVE ?**

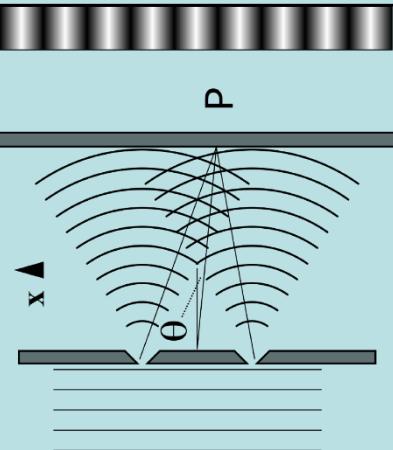


Light source      Rays of light coming from the source reach the slits

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

Alternating bright and dark fringes due to interference of light waves

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



CLOCK FACE 360°  
90 / 90 / 90 / 90



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



ALICE Corp VS CLS BANK SC 573 US 134 2347

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

first base  
RUNNER  
Message Bus

EVENTS

Firefly – Heartbeat Algo

X EVENTS

Fix {"108"}

FLASH MESSAGE EVENT BUS

TIME STAMP SERVER

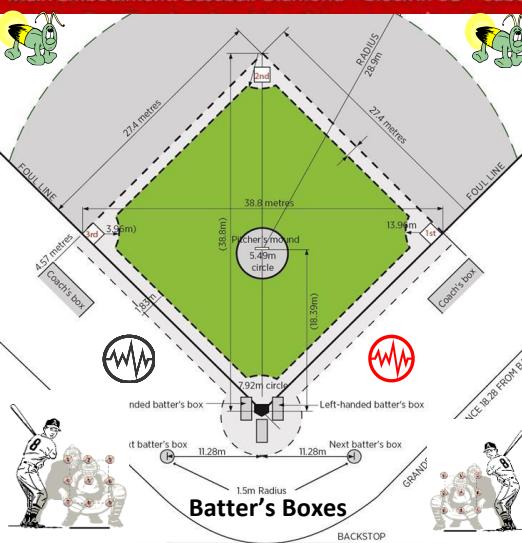
Δδ

Epoch Time Cycles

USPTO APPLICATION 13/573 002

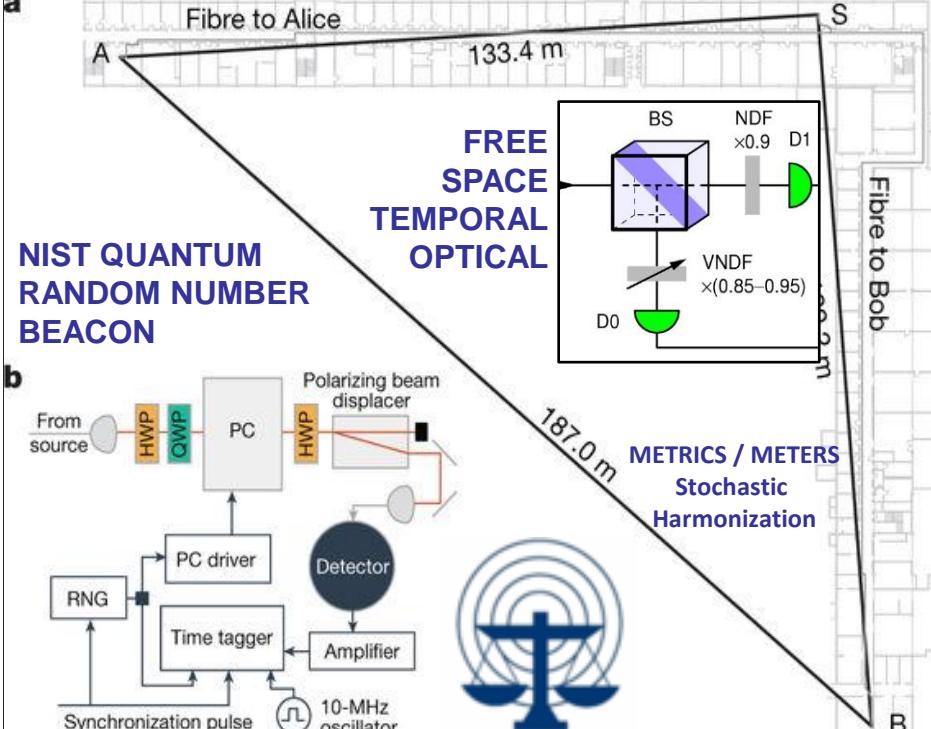
The Heart Beacon Cycle Time-Space Meter

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

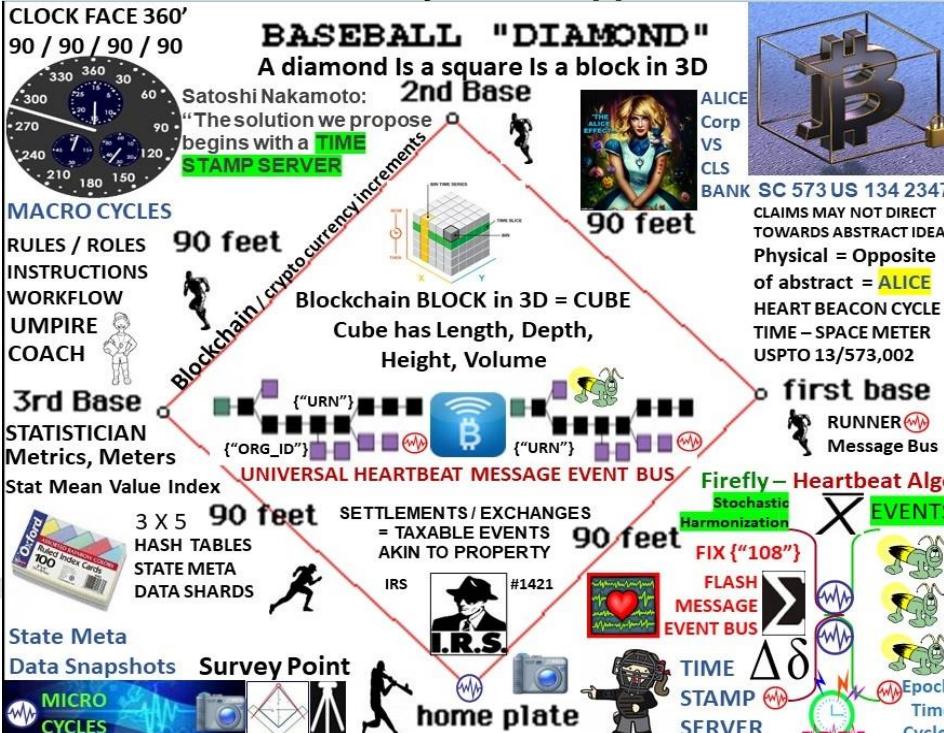


**SCOTUS ALICE RULING: "Claims may not direct towards abstract ideas" / Physical = opposite of abstract**

a



b



# The Hopf Fibration

Edmund Harriss

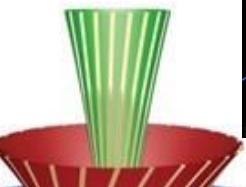
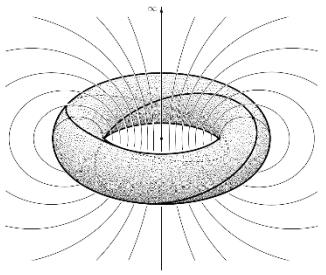
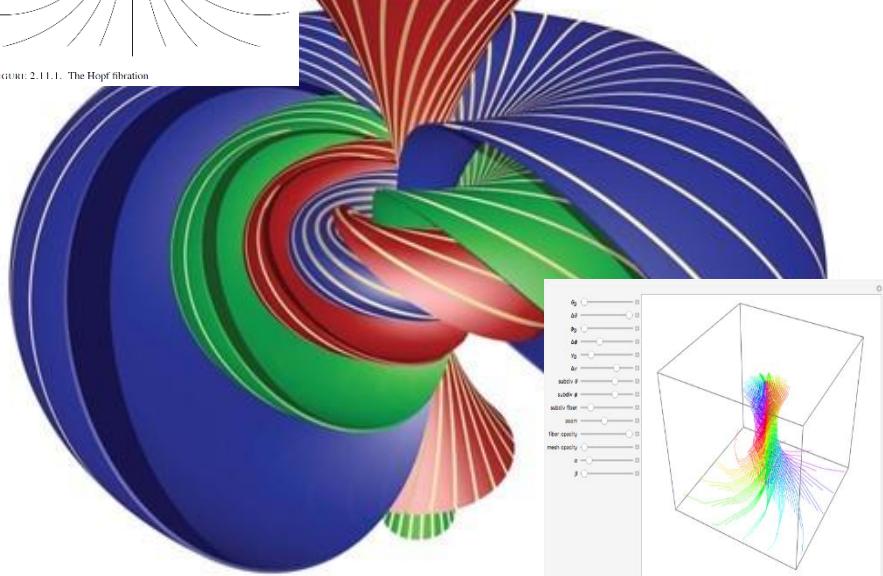
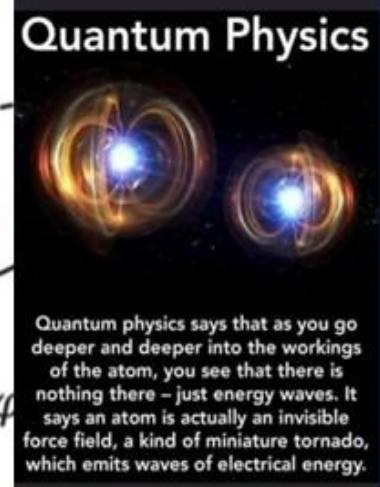
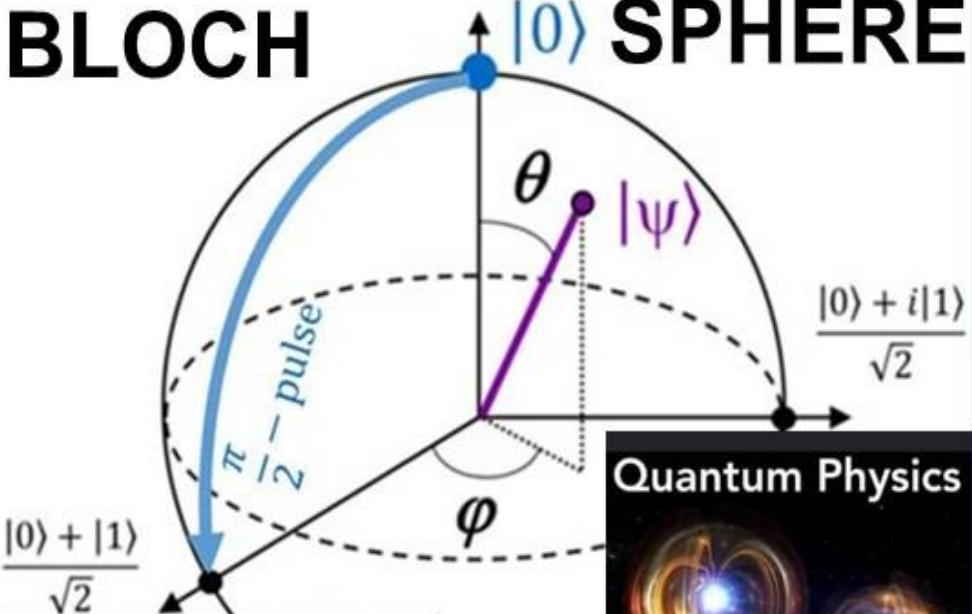


FIGURE 2.11.1. The Hopf fibration



# BLOCH SPHERE



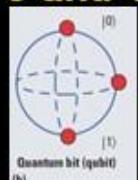
## Hopf Fibration / #Bloch sphere

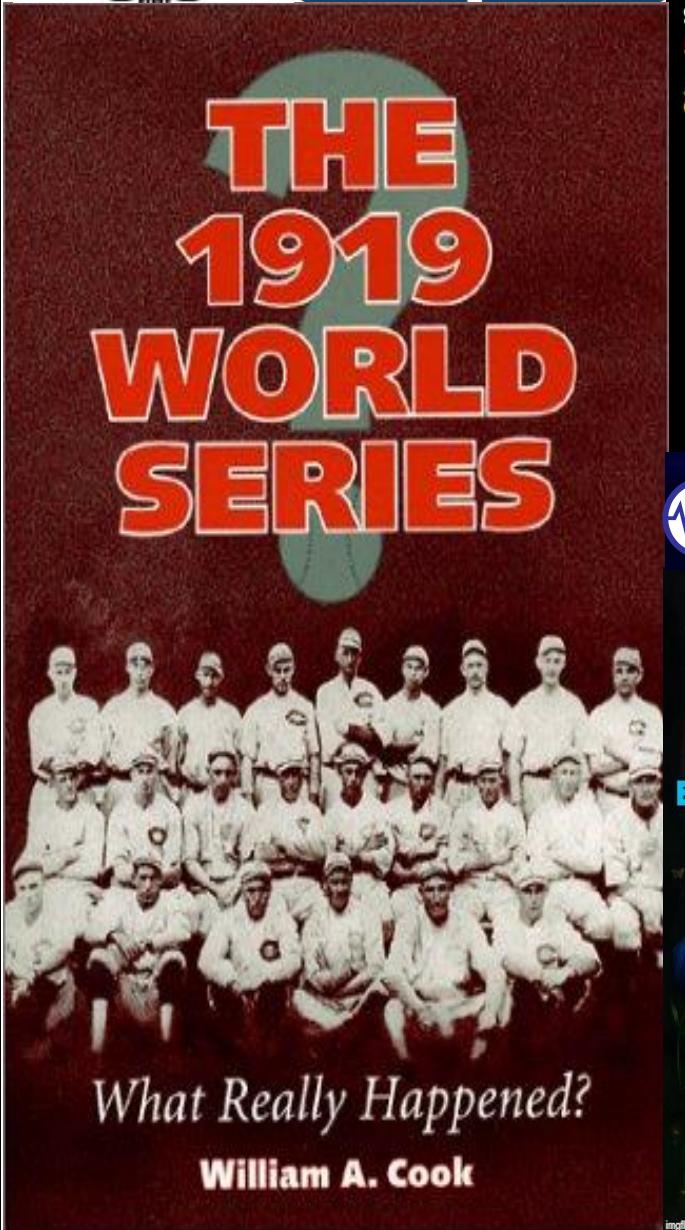
"the most important object in the universe"

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

Paul Revere linear - sequential hop count meme

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



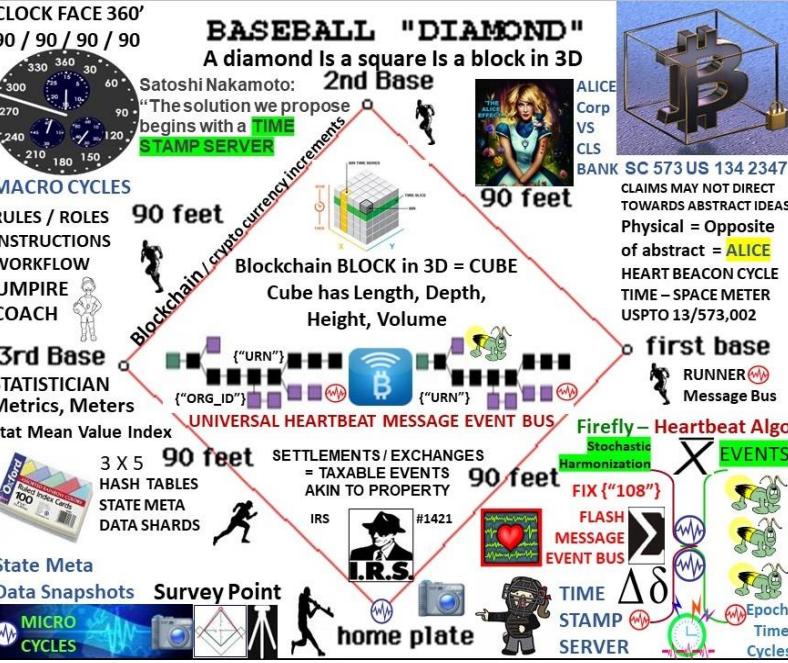


*Alice Corp. v. CLS Bank International, 573 U.S. 134 S. Ct. 2347 (2014)*  
RULING: "claims may not direct towards abstract ideas"



## 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





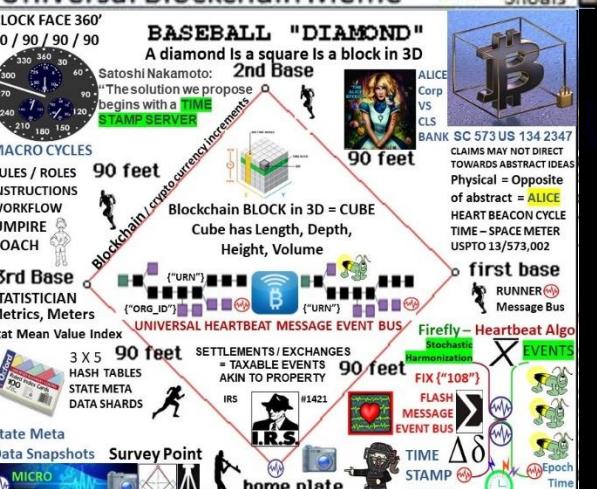
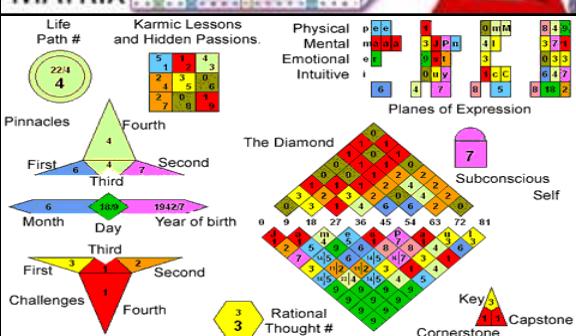
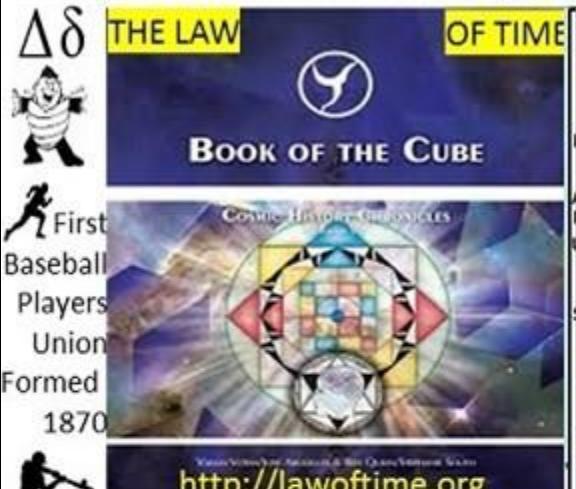
USPTO APPLICATION 13/573 002

## The Heart Beacon Cycle Time-Space Meter

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

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

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



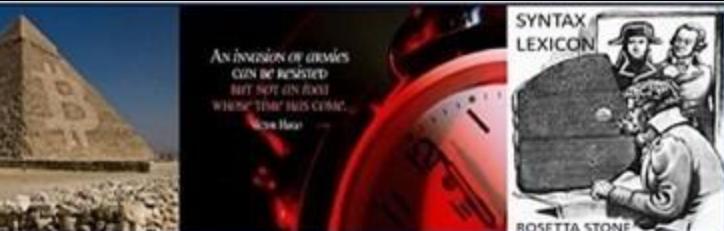
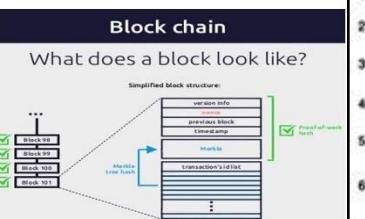
atoshi Bitcoin Blockchain  
ime Stamp Server

**TIMESTAMP SERVER**  
 In order to propose begins with a timestamp server. A timestamp server works by taking a block of blocks to be timestamped and publicly publishing the hash, such as  $H_1$ , of the first block. This hash is then used to timestamp the second block,  $H_2$ . This continues until the obviously, in order to get into the hash. Each timestamp includes the previous timestamp in its header, forming a chain, with each additional timestamp referencing the one before it.



```

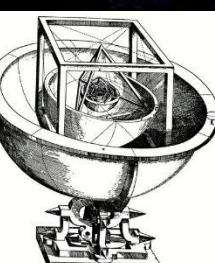
graph LR
    subgraph TS [Timestamp Server]
        direction TB
        TS_in[Blocks] --> TS_out[Hash]
    end
    TS_in --- TS_out
  
```



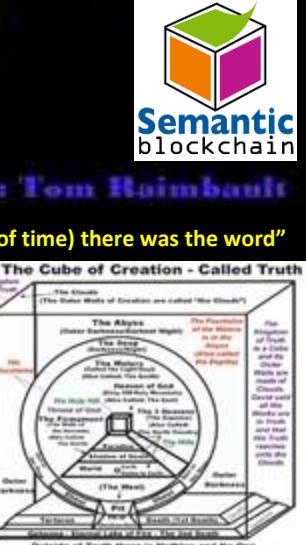
## Metatron's Cube and the Platonic Solids

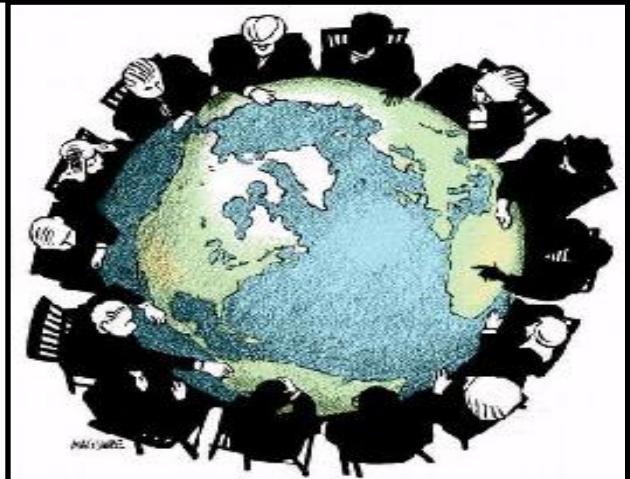


**“In the beginning (of time) there was the word”**



GENESIS OF ALL FORM





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



# #UNRIG Marine Corps Data

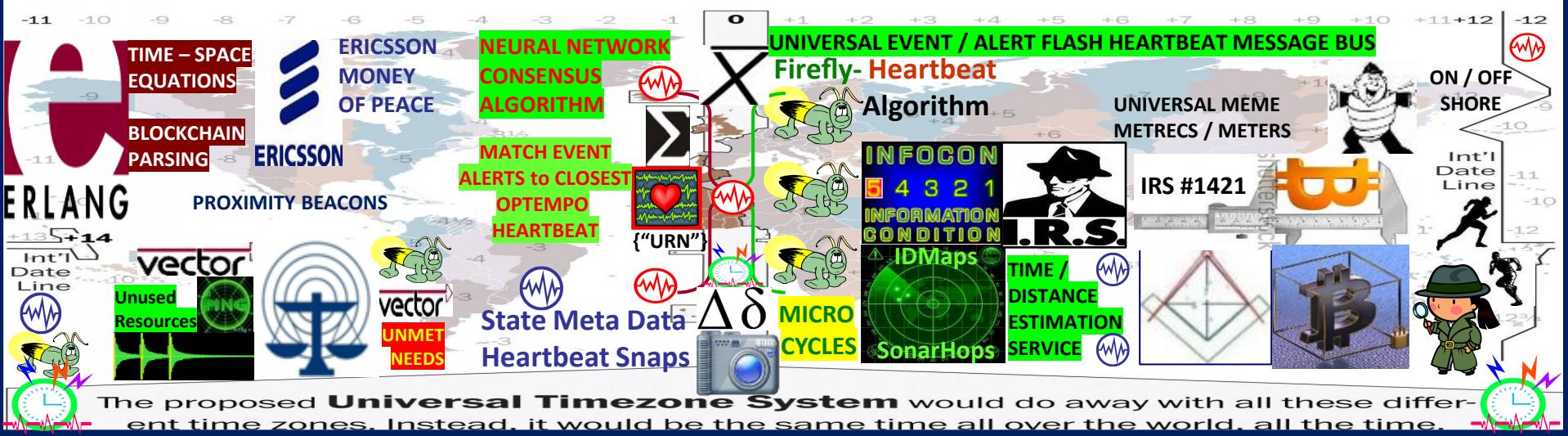
## Center Robert Steele RIP

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



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

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



# DAO: Distributed Autonomous Organization

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

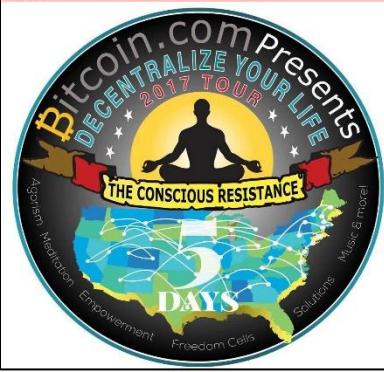
### SWARMING AND THE FUTURE OF CONFLICT



RAND

RAND  
Monograph  
Report

THE  
ADVENT  
Of NETWAR



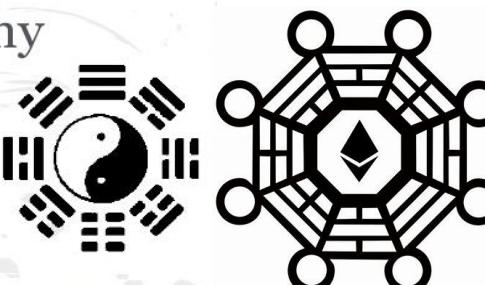
<http://cointelegraph.com/news/112077/the-new-frontier-after-cryptocurrency-cryptoequity>

## Taoism Philosophy

Taoism represents:

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

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



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

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

@TheBitcoinArmy





