



# The Heart Beacon Cycle

## Time – Space Meter

- 300+ Structured Data Exchange Templates
- Syntax Lexicon Library Code Repository
- IeT / IoT, Big Data, net of \$ Blockchain Sync
- Ecologically supportive Econometrics Metrics, Meters
- Swords To Plowshare Network Enabled Operations NEO Reuse





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

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

CHECKLIST: TRADE FEDERATION ECONOMIC FRAMEWORK EX:

- 1) Organize by assigning Organization Identifiers {"Org\_ID"}
- 2) Track Resources by Uniform Resource Name </URN>
- 3) Take State Meta Data heartbeat snapshots @ 15 / N min
- 4) Honor Satoshi's intent for Bitcoin to be paired w markets
- 5) Use NIST Quantum Random Non-Repudiation Beacon
- 6) Earth Day Everyday / Spaceship Earth's Signals & Telemetry Annex



# Humanitarian Assistance Networked Donor System

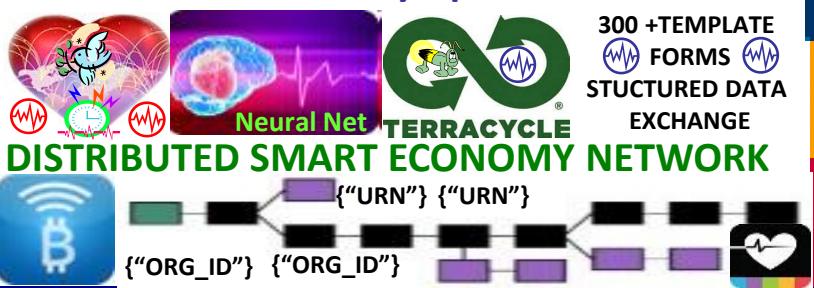
H.A.N.D.S: "Based on the need to speed up the processes of influencing an adversary, new concepts result in the adaptation of military doctrine, organization, training, material, infrastructure, interagency interaction, leadership, personnel and facilities" ... German Bundeswehr : concepts of "Network Centric Warfare" in the United States of America, "Network Enabled Operations" in Great Britain or "Vernetzte Operationsführung" in Germany



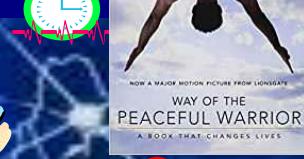
<https://neo.org>



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



Reuse best practice procedural template guides from Battlefield Digitization describing when, where, how, how often systemically among a systems of systems improving synergy and synchronicity

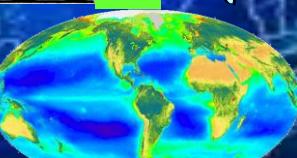


## Beacon Communities

Vernetzte Operationsführung



Closer < \$\$\$ < FUEL



KAIJU



## Federation Gateway



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



OFF SHORE  
OUTER BANKS



# DAO: Distributed Autonomous Organization

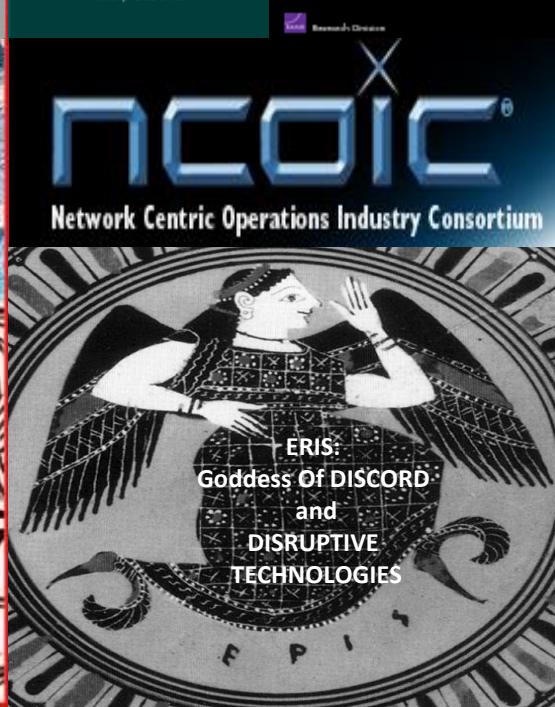
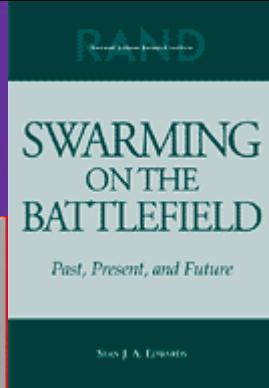
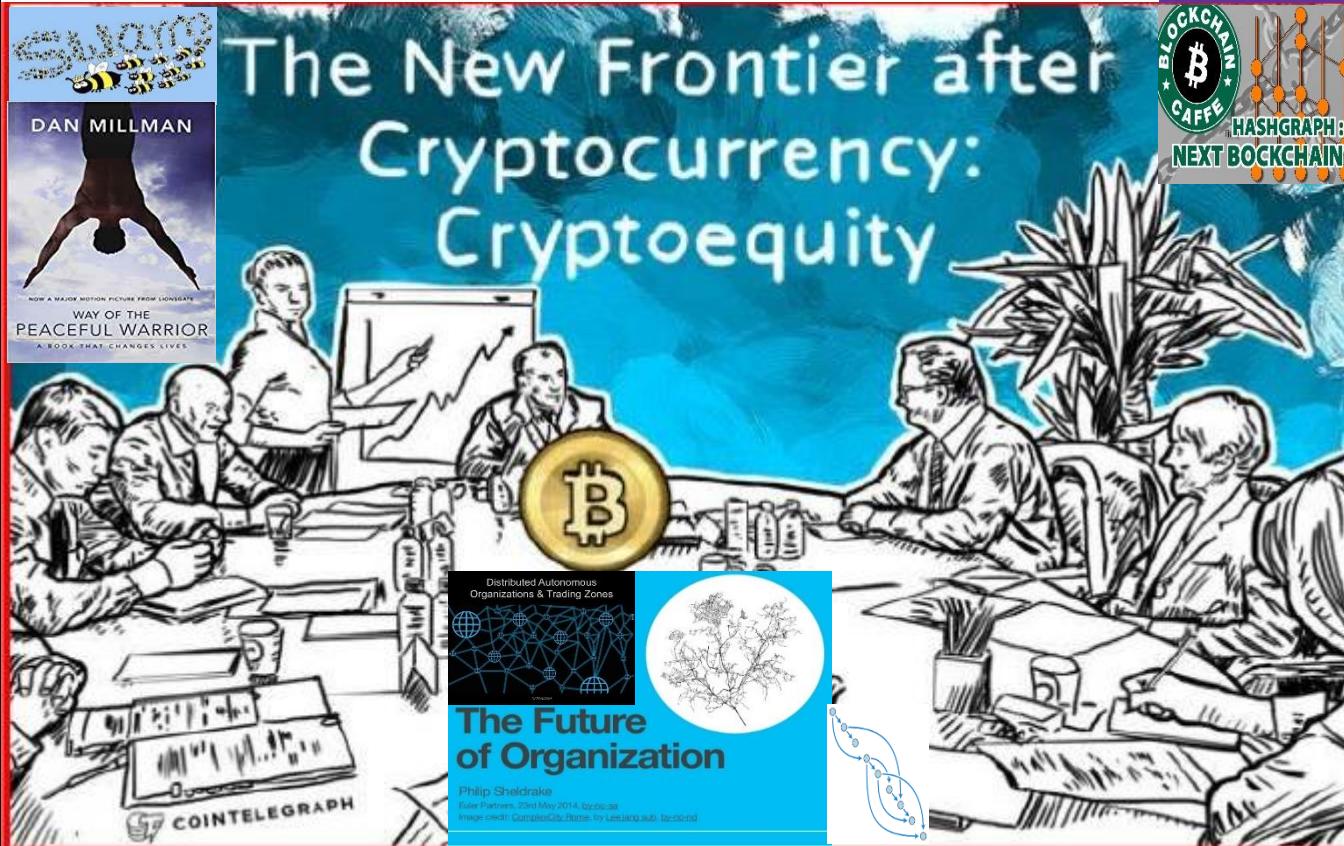
## RAND term circa 2000 / The TAO OF THE DAO

### SWARMING AND THE FUTURE OF CONFLICT



RAND  
Monograph Report

THE  
ADVENT  
Of NETWAR



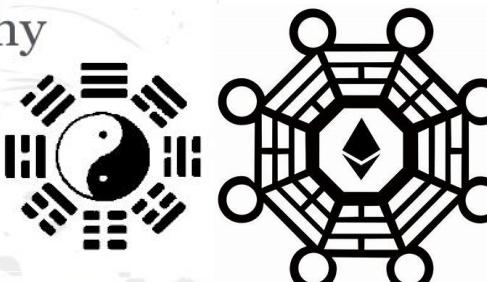
<http://cointelegraph.com/news/112077/the-new-frontier-after-cryptocurrency-cryptoequity>

## Taoism Philosophy

Taoism represents:

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

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



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

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

@TheBitcoinArmy



# Net / Net of \$\$\$ formed: Time Epoch Cycles {"Syntax"} Instructions

"In the beginning"

"The Word"

"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"

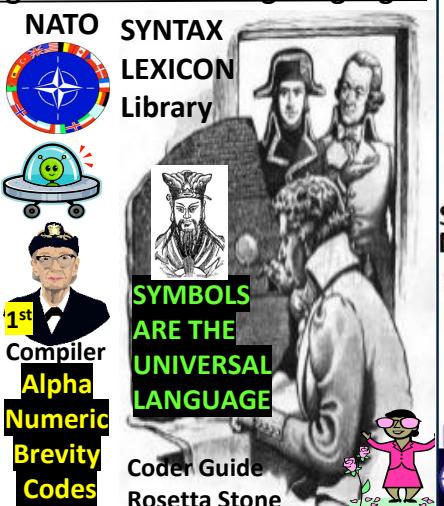
"A smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction reads / writes data in the blockchain's Dbase"

Gideon Greenspan "Beware the impossible smart contract"



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

PRIME	Q1Q2	T1T2	Q3Q4	A1A2	A3A4	W1
PRIM	F101 F102	F103 F104	F105 F106	F107 F108	F109 F110	F111 F112
AMERIC	F101 F102	F103 F104	F105 F106	F107 F108	F109 F110	F111 F112
AFATON	F101 F102	F103 F104	F105 F106	F107 F108	F109 F110	F111 F112
XBRL	X101 X102	X103 X104	X105 X106	X107 X108	X109 X110	X111 X112
CDL / DAML	D101 D102	D103 D104	D105 D106	D107 D108	D109 D110	D111 D112
STOCK MIC CODES	S101 S102	S103 S104	S105 S106	S107 S108	S109 S110	S111 S112



"Bitcoin is a LANGUAGE"  
DIGINOMICS

"Bitcoin's Value is TIME itself"  
"Time is specified in units of transaction block confirmation times"

FUTURE MEMES DOT COM



"BITCOIN MAKES MONEY PROGRAMMABLE.  
MONEY IS SIMPLY DATA"

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



HASH TABLE  
Nonce / Syntax  
90 feet  
3 X 5

RULES / ROLES  
INSTRUCTIONS



STATISTICIAN  
Metrics, Meters

State Meta  
Data Snapshots  
90 feet

MICRO-CYCLES

Survey Point

home plate

BASEBALL "DIAMOND"  
A diamond is a square is a block  
2nd Base

Runner =  
Messages  
Signals / Telemetry  
90 feet

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

EVENT BUS  
#1421 Org ID  
Blockchain Blocks / Coins Awarded

90 feet  
Survey Point  
home plate

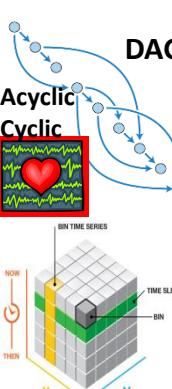


SC 573 US 134 2347  
Physical = Opposite  
Of abstract  
Euclidian Geometry

TRIANGULATION..  
first base

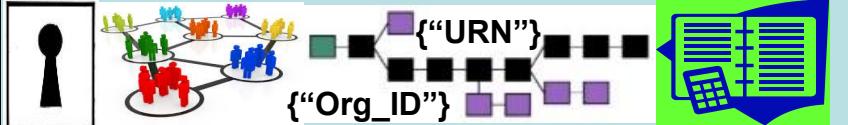
Firefly Algo  
Fix {"108"} Heartbeat

Sync Deltas



# Heart Beacon Cycle

## FEDERATE / TRADE FEDERATIONS



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

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

Federation  
Gateway



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



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



Bitcoin Mining Pools  
MEME / METAPHOR MEDIATION



DISTRIBUTED AUTONOMOUS ORGANIZATION = DAO RAND Corp

term coined circa 1991 now in use by Blockchain tech corporations

Uniform\_Resource\_Name



IeT DEVICE / PLATFORM  
IoT SENSOR DEVICE



STOCK EXCHANGE

MIC MARKET IDENTIFIER  
CODES / BREVITY CODES

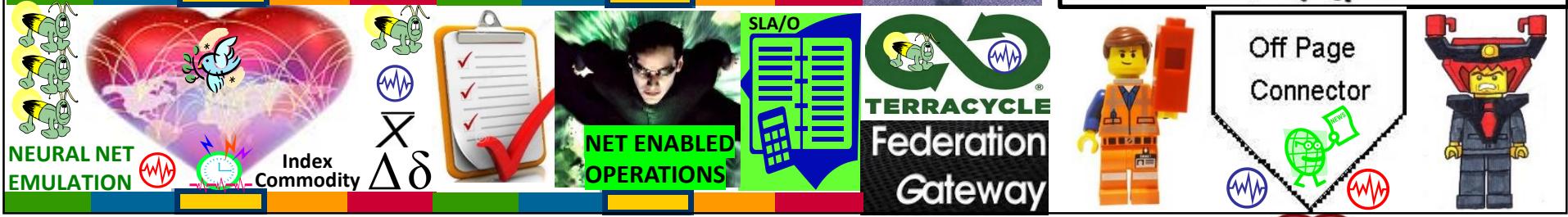


UUID 123e4567-e89b-12d3-a456-426655440000  
123e4567-e89b-12d3-a456-426655440001  
123e4567-e89b-12d3-a456-426655440002



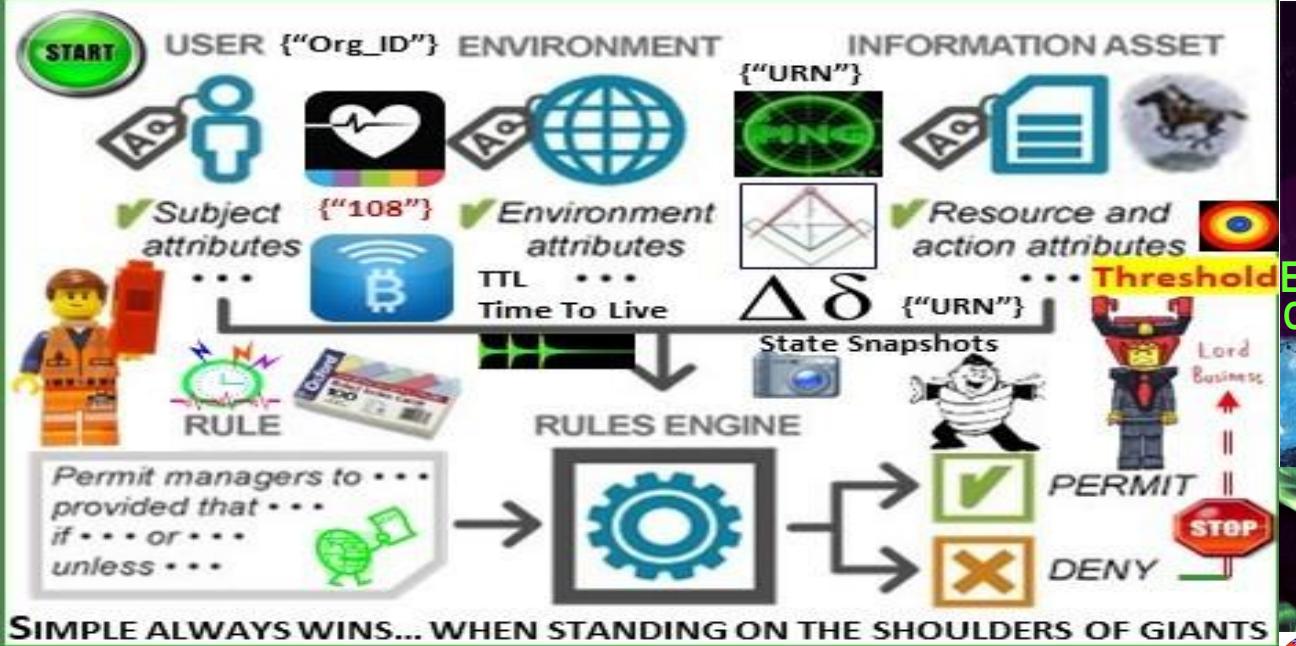
{"DUNS #"} {"Org\_ID"} Heartbeat Snaps  
QR CODE MICRO-CYCLES  
{"URN"} {"URN"} {"URN"}





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





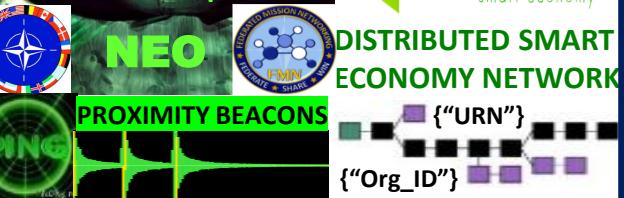
**SIMPLE ALWAYS WINS... WHEN STANDING ON THE SHOULDERS OF GIANTS**

DAO TRADE FEDERATIONS USE COMMON COMPONENTS,  
PROCESSES, METHODS, METRICS, METERS SIGNALING  
TELEMETRY SCHEDULE IN SMART CONTRACTS,  
SERVICE LEVEL AGREEMENTS / OPERATIONS SLA/O



**Vernetzte Operationsführung**

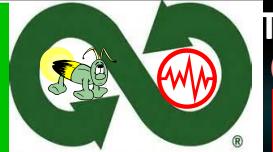
**OOTW: Operations Other Than War**





# Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



THE HEART BEACON CYCLE

{"108"}

108



K%



TERRACYCLE

ECONOMIC MACRO CYCLES

ECONOMIC HEARTBEAT

K% GDP ECONOMIC PULSE FEDCOIN WORLDCOIN

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



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



**LUXOR**  
EGYPT

HEARTBEAT FLASH MESSAGE EVENT BUS

PRECEDENCE  
PROCESSING

ETHEREUM THRESHOLD  
GAS

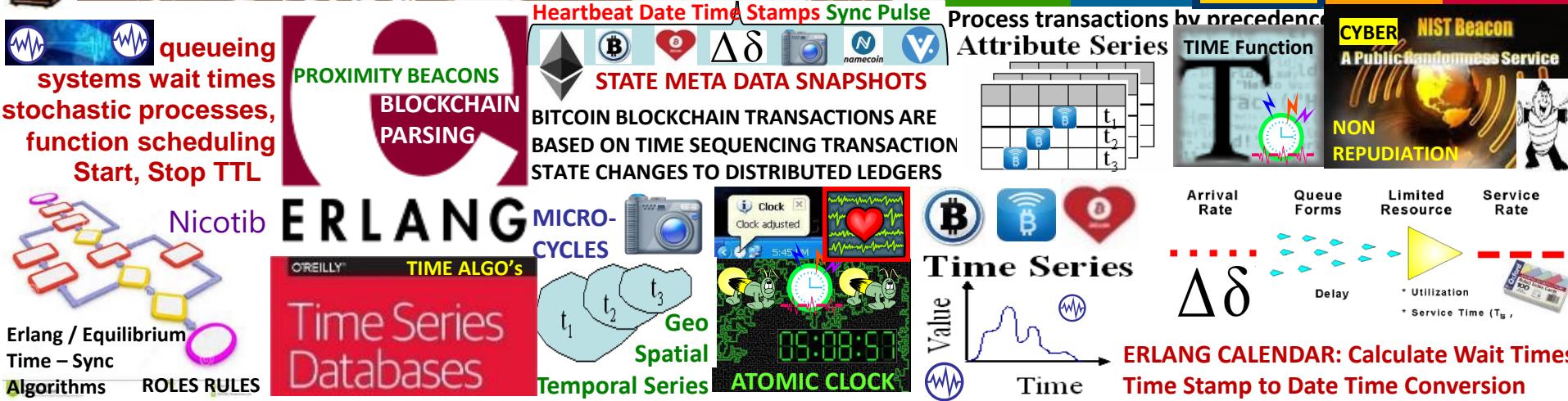
METRICS



TERRA  
TRC



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.

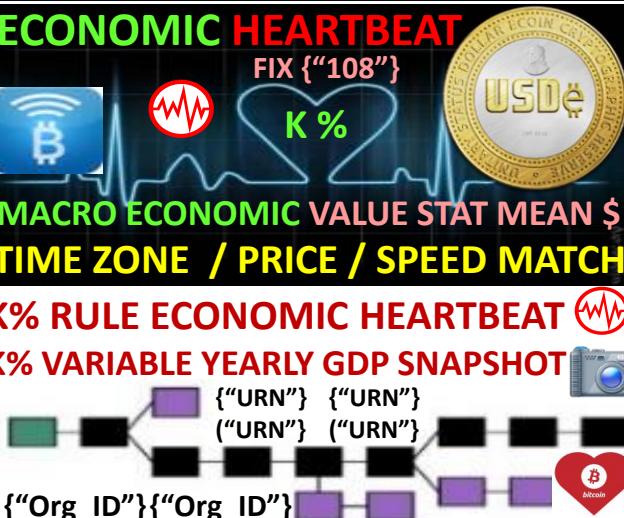
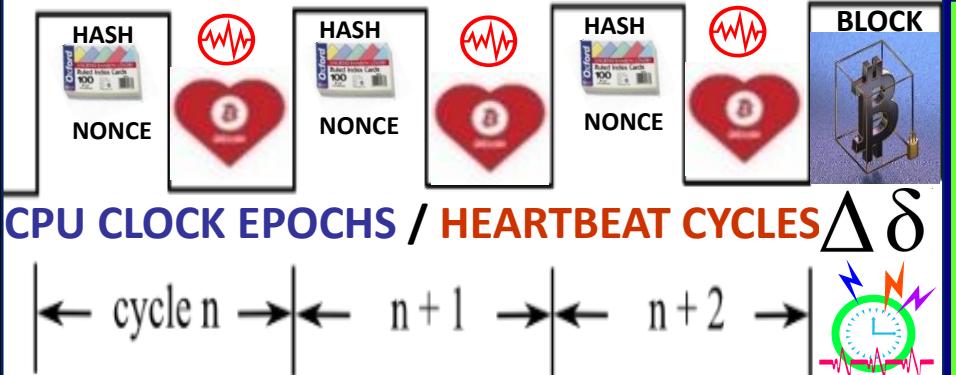




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The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



"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 TERRA (TRC)

## Trade Reference Currency



# ECONOMIC HEARTBEAT FEDCOIN / WORLD COIN



**TERRACI** \$0.49 USD

B 0001076 BTG

## **DEMURRAGE FEES**

## **Bitcoin**

# MICRO PAYMENTS

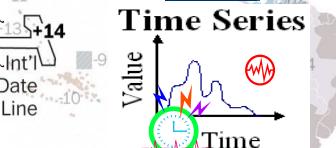
**Terra Trade Reference Currency TRC "world currency"**  
Bernard A. Lietaer Belgian economist proposed 1991  
Basket of 9-12 most important commodities. Public  
issued demurrage fees for storage, shipping, handling



**Example: 100 Terra = 1 barrel oil  
+ 10 bushels of wheat   
+ 20 kg of copper + 1/10 Oz gold**



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



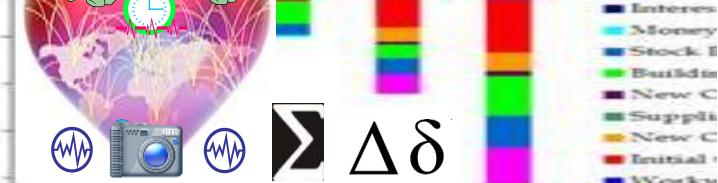
# French newspaper "Le Fédériste" "L'Europa monnaie de la paix" Money of peace" Born Jan 1st 1933 \$\$\$

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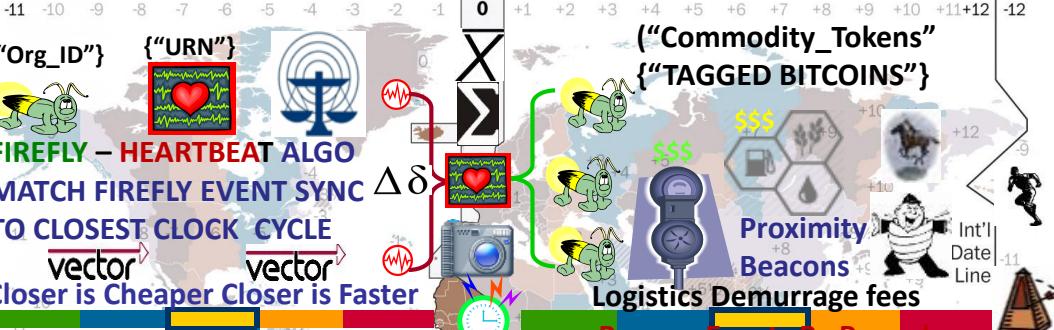
## Friedman's K % Rule

currencyindex



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**STOCHASTIC HARMONIZATION** **UNIVERSAL MESSAGE EVENT BUS**

## STOCHASTIC HARMONIZATION



The collage includes:

- A top-left corner showing a map of the world with a red circle highlighting Europe.
- A "Time Series" graph with a blue line plot showing fluctuations over time, accompanied by a clock icon.
- An "EVENT BUS" section featuring a globe icon and text about "HEARTBEAT" and "FLASH MESSAGES" with URNs like "/URN1 {"ORG\_ID"}".
- A "Process Events By Precedence" diagram showing three overlapping light-blue hexagons labeled  $t_1$ ,  $t_2$ , and  $t_3$ .
- A "Geo Spatial" section with a green globe icon.
- A "Temporal Series" section with a blue line graph and text about "EDISON / FORD MONITARY OPTION 1921".
- A "French newspaper 'Le Féderiste'" section with text "L'Europa monnaie de la paix" and "Money of peace" followed by a date "Born Jan 1st 1933 \$\$\$" and a corn icon.
- A "Monetary Option 1921" section with a corn icon and a running person icon.



### Blocknet internet of blockchains

Bitcoin, Ethereum, XCurrency, BitNation, StealthCoin, and BitSwift

**The Blocknet is founded on the Xbridge inter-node communication open source peer-to-peer protocol enabling communication between nodes on different blockchains. It connects an open-ended centralized or decentralized array of services**

Any coin that supports OP\_CHECKLOCKTIMEVERIFY and has a stock JSON RPC interface cloned from Bitcoin Core

### P2P atomic swap exchange using BIP65 capable chains

BlocknetDX Specs:

- 1 Minute Block Time
- 5k for servicenodes
- Diff. adjustment per block
- Supports Fast Transactions w/ SwiftTX
- Supports Decentralized voting/funding

• core components are:

- A blockchain router, xbridgep2p™
- A coin exchange protocol
- An inter-chain data transport

• The core services are:

- Decentralized exchange of coins
- Inter-blockchain service delivery
- Service monetisation



# PHOENIX

Phoenix Project Financial Algorithm

**Phoenix autonomous decentralized organization (DAO) ensuring transparency and safety of all processes happening within its framework using the Ethereum virtual machine global decentralized computer storing information on all system transactions.**

**Phoenix financial algorithm works on a system of rounds. accruals happen after the successful termination of each round.**

**Each round proceeds until it reaches the target sum which is calculated as the doubled target sum of the previous round plus the sum paid under the contract for the entire period. For the first round the target sum is 100 ETH. The round can last up to 365 days or before achievement of the target sum. The rounds which were not closed can become the only risk for investors. In that case, only those participants that have made the investments on the round previous to the open one will be able to receive a return of the funds.**



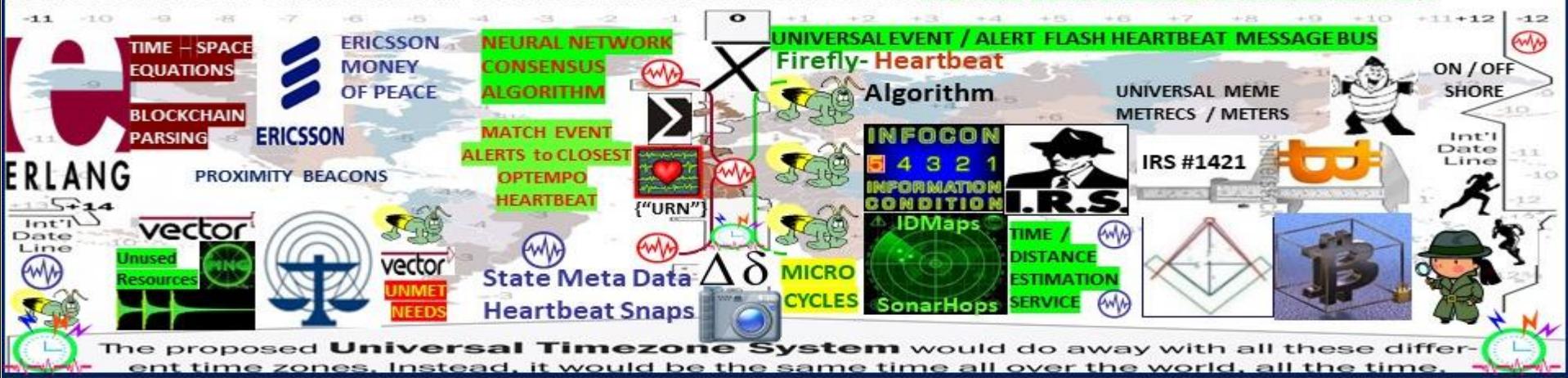
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



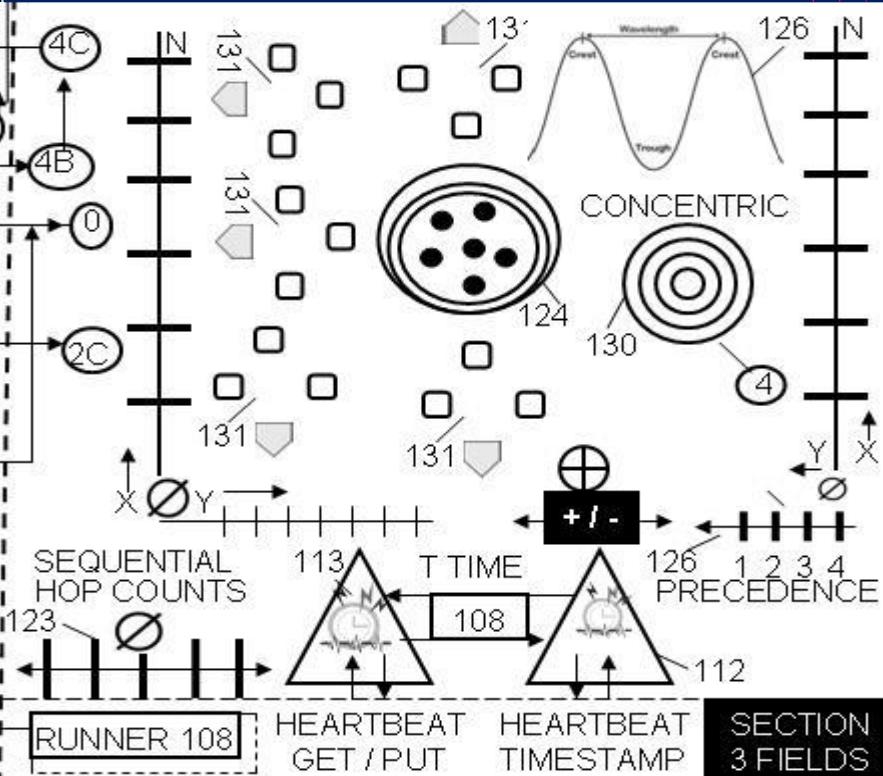
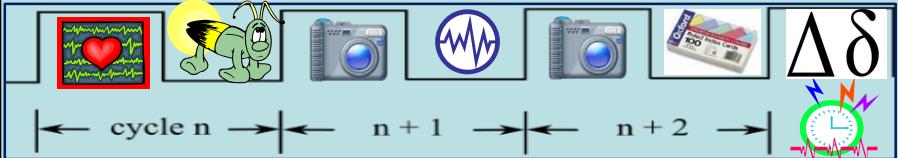
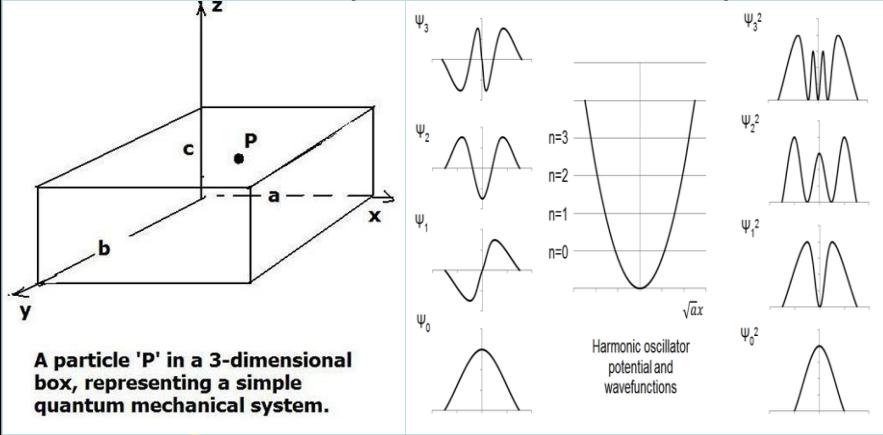
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## QUANTUM COMPUTING / HBC TIME – SPACE METER / METRICS

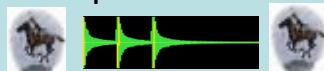


#QuantumComputing USct Alice Corp Vs CLS Bank compliant memes:  
In quantum computing, a qubit (or quantum bit (sometimes qbit) is a unit of quantum information—the quantum analogue of the classical binary bit. A qubit is a two-state quantum-mechanical system, such as the polarization of a single photon: 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

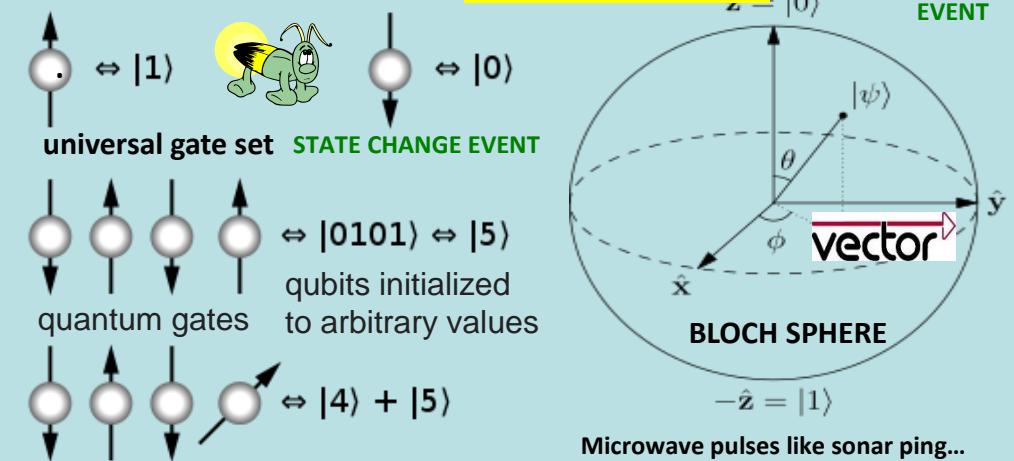
Vertical polarization vectors from a known point 0 null Sonar Hop meme



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)

CLOCK FACE 360'

90 / 90 / 90 / 90

**MACRO CYCLES**



HASH TABLE

Nonce /  
Syntax

90 feet

2nd Base

Runner =



90 feet

BLOCK in 3D = CUBE

Cube has Length, Depth,  
Height, Volume

Euclidian Geometry

TRIANGULATION..

first base

EVENT BUS

Blockchain Blocks  
/ Coins Awarded

FIX {"108"}

Firefly Heartbeat

Algo

$\Sigma$

Sync Deltas

$\Delta$

UMPIRE

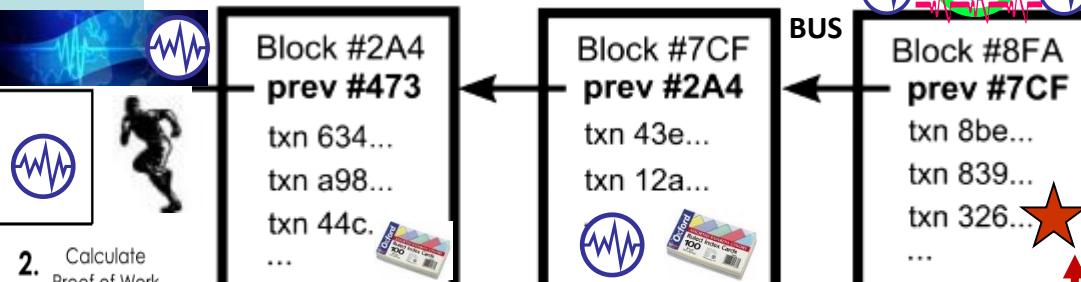
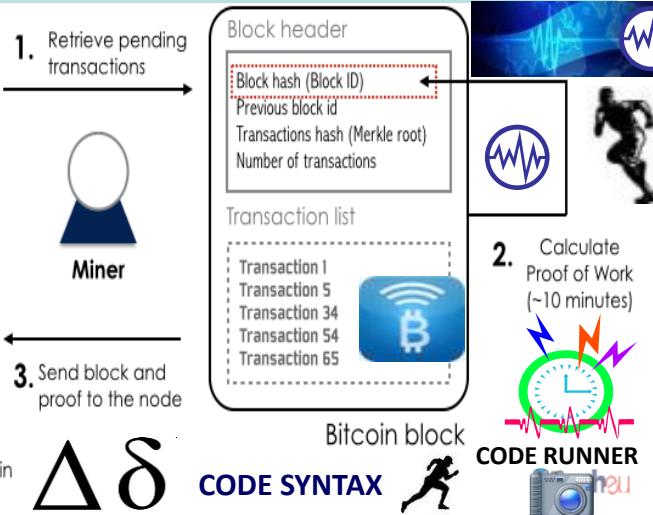
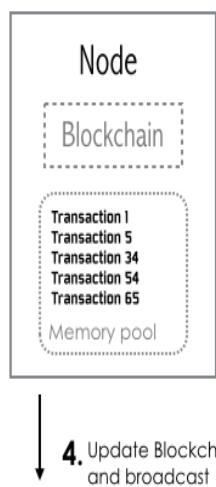
home plate

90 feet

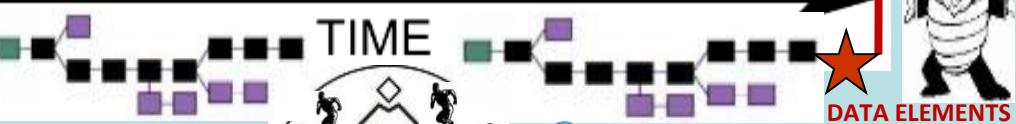




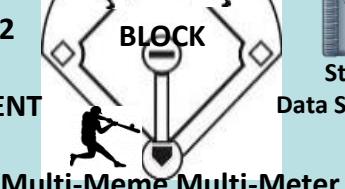
Alice Corp. v. CLS Bank International, 573 U.S. 134 SCt 2347 (2014) is a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).<sup>[2]</sup> The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating 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.



**BLOCKCHAIN = TIME / SYNTAX**



USPTO 13/573,002  
PHYSICAL MEME  
MAIN EMBODIMENT  
RULES  
Metrics



State Meta Data Snapshots  
ROLES Meters

ID'd by Alpha-Numerics

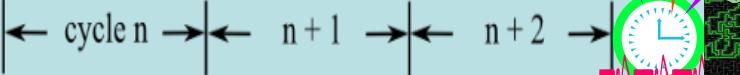
XBRL / CDL / DAML STOCK MIC CODES

STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

SYNTAX LEXICON LIBRARY

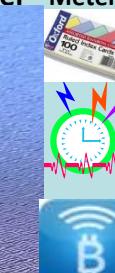


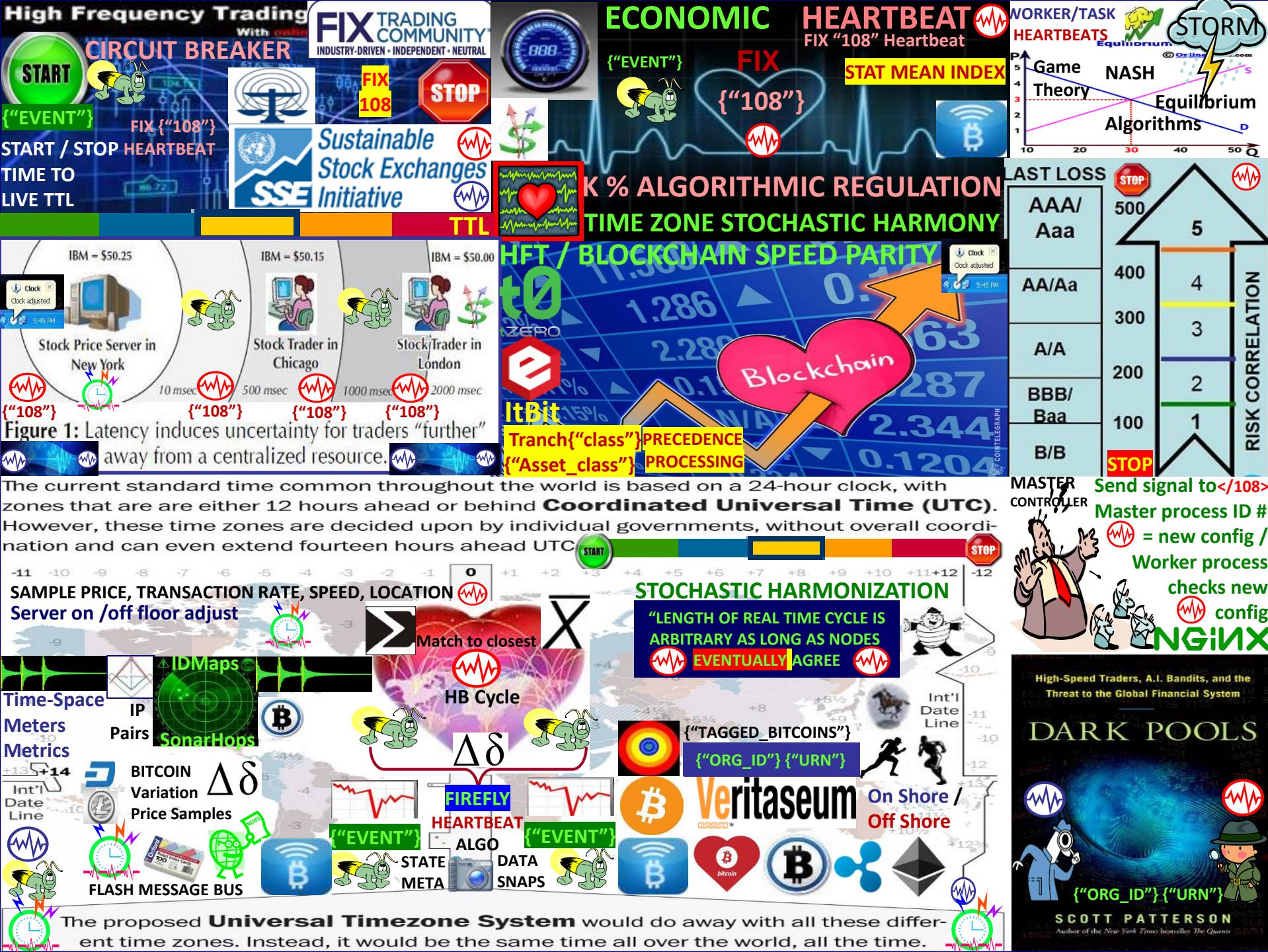
ASIC CHIP CLOCK CYCLES TIME EPOCHS

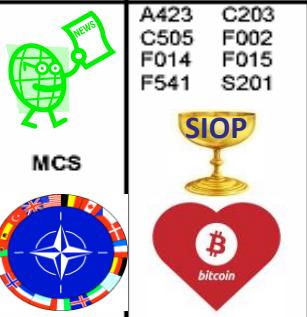
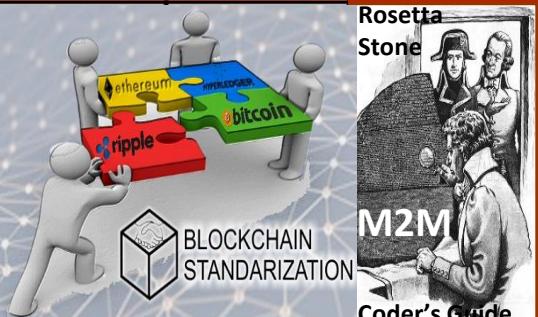
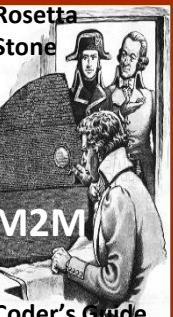


TIME EPOCH CYCLES

ATOMIC CLOCK





FROM	GCCS-A	ALPHA-Numeric Brevity Codes						CODE GUIDE
ASAS	C002 C203 F002 F014 F015 F541 S201 S309	C002 C203	C002 C203	C002	ATDS	MCS		
		USMTF / XML MTF FORMATTED MESSAGE CATALOG = 300 + messages info exchange sets using common, CONSENSUS Message Text Formats MTFs. MTFs specify </CONTENT> / info agreed by group consensus presenting information in a logical, well specified unambiguous layout resulting in a highly efficient info payload to overhead ratio			C203 F014 F541 S305 S309	C002 C203 E400 F002 F014 F015 S201 S507		
		A423 C203 C505 F002 F014 F015 F541 S201			A423 C400 C505 F002 F014 F015 F541 S201			
		SIOP						
								
<b>MESSAGE CATALOG</b> 300 + Use Cases								
Data Elements: entity, attribute, relationship equivalents								
Object Categories		Information Categories and Examples						
OOB	SYNTAX LEXICON		STRUCTURED DATA	EXCHANGE	Message	Sets	{ "Java JS" }	
		lat/long	spd/hdg	country / alliance, type/class	readiness	targeting, reconning		
Infrastructure		Machine Trust Language MTL	CDL Contract Description Language					
Sociological		temples, historic structures	E-R Model	Class Diagram	Relational Database	Object DBMS	TADILs	MTF
Geophysical		feature lat/long, alt/dpth	Entity	Class	Table	Class	Element	Message
			Attribute	Attribute	Field / Column	Attribute	Child Element or Element Attribute	FFIRN / FFN / FUDN
			Domain Value	PURCHASE CODES	Instance, Value	FEDERATE	DUI	FUD
<b>Information Elements Roles</b>								
• COI Determination Org Interaction								
• Search and Discovery								
• Ontologies STANDARDS								
• Taxonomies REFERENCE								
• Metadata Attributes / Filters								
("Org_ID") {"URN"}								
FILTERS								
FFUDN: Field Format Unit Designator #								
FFIRN Field Format Index Reference #								
Structured military messaging ID's messages, message sets, data element, symbol fields								
BY Form Field Position & NUMBER								
								
PROCESS MESSAGE BY PRECEDENCE UNIVERSAL EVENT / ALERT MESSAGE BUS								
<b>OPERATIONAL NODES / ACTIVITIES</b>								
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		11.2 - Linear						
11.4.1.2.2 - Evaluated D		2 - Estimate Type						
11.4.1.3 - Value		1.2.1 - Estimated						
PURCHASE CODES								
SYMBOL	Friend	Neutral	Hostile					
2525C	Partner		Competitor					
11.4.1.3.4 - Substance			4 - Velocity					
11.4.1.3.5 - Surface			1.4.1 - Horizontal					
11.4.2 - Platform / Point / Feature Type			1.4.2 - Vertical					
11.4.3 - Specific Type			VA Confidence					
11.4.4 - Type Modifier			1 - Bearing Angle					
11.4.5 - Unit			2 - Bearing Angle Rate					
			3 - Covariance Matrix					





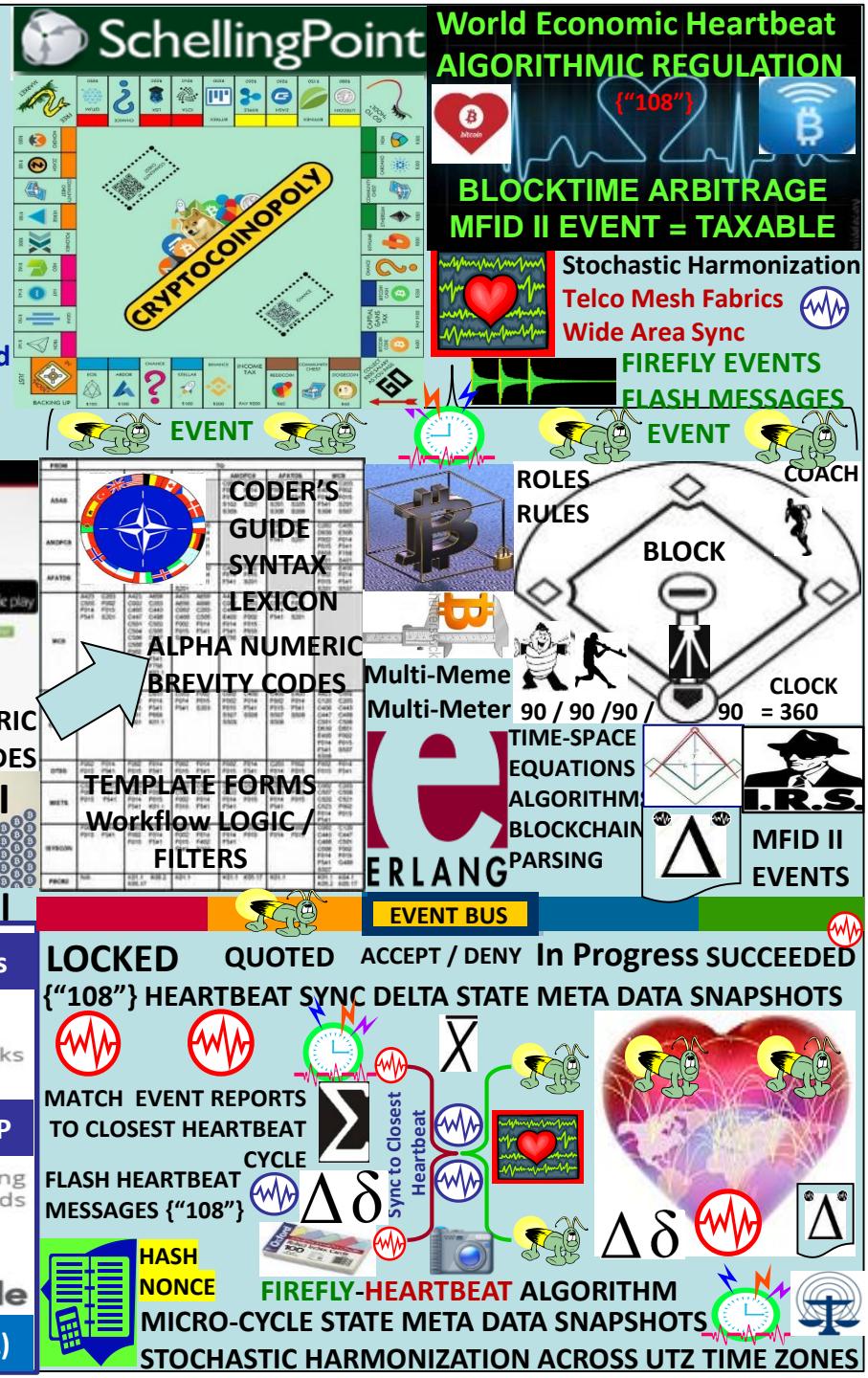
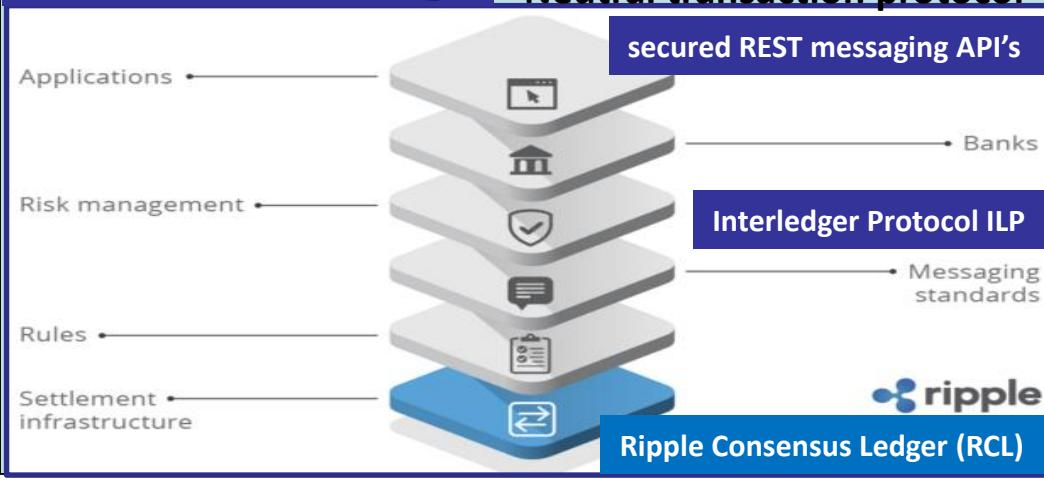
**real-time gross settlement system,  
currency exchange, remittance network**

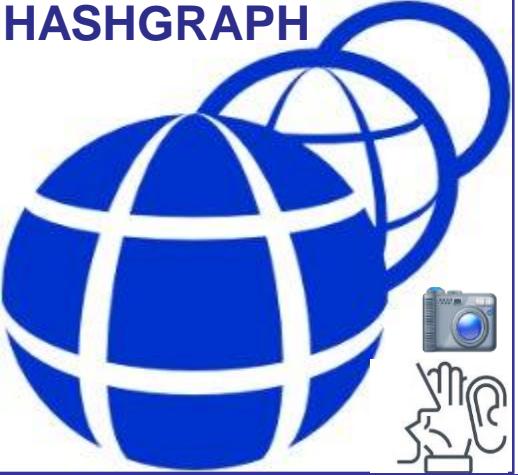
A.K.A Ripple Transaction Protocol or Ripple protocol, built on a distributed open source Internet protocol, consensus ledger and native currency called XRP. Ripple enables "secure, instant and nearly free global financial transactions of any size with no chargebacks." Ripple supports tokens representing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





**Hashgraph consensus algorithm for replicated state machines**

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

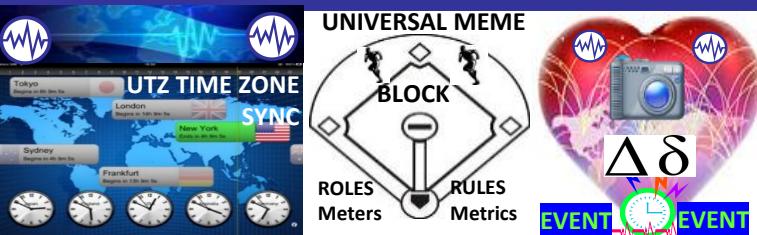
data structure that records who gossiped to whom in what order  $\Delta\delta$

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



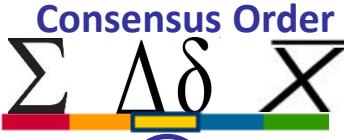
DAG "Directed Acyclic Graph" large number of blocks arrive at the same time. DAG system reaches consensus leveraging "Gossip"... information spread by a computer calling up other computers at random, sharing everything it knows

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



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

DAG finite directed graph  
= no directed cycles



Round created  
Witness



Famous witness  
Election



Vote  
See



Strongly see  
Supermajority



Decide  
Round created

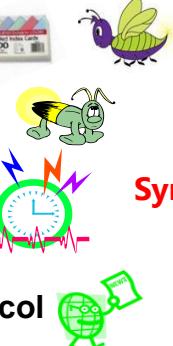


Round received  
Consensus timestamp

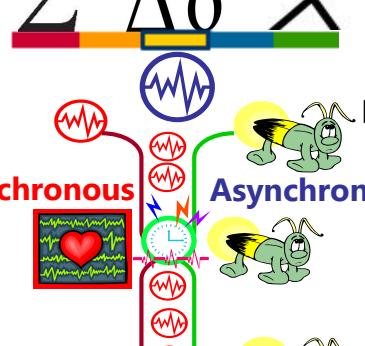


Consensus order  $\Delta\delta$

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

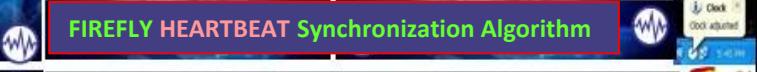


Hash Nonce



Micro-Cycle State Meta Data Snapshots

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



FIREFLY HEARTBEAT Synchronization Algorithm



FIREFLY – INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

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



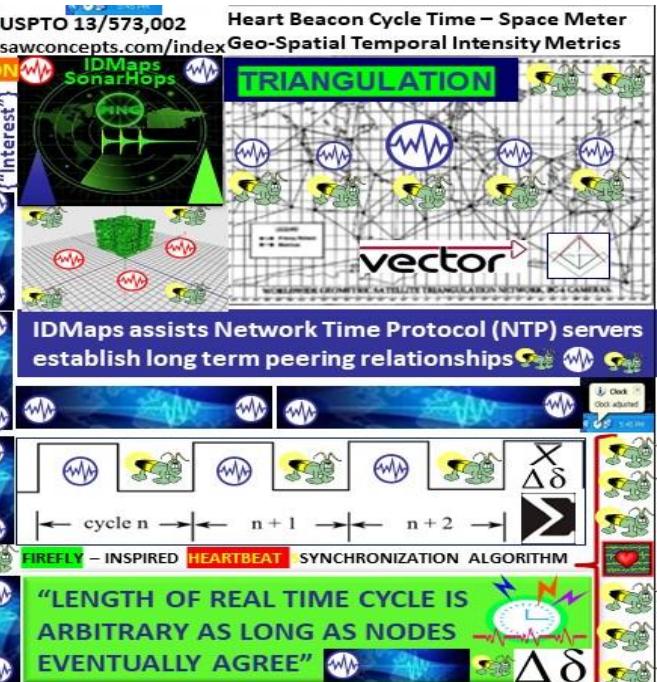
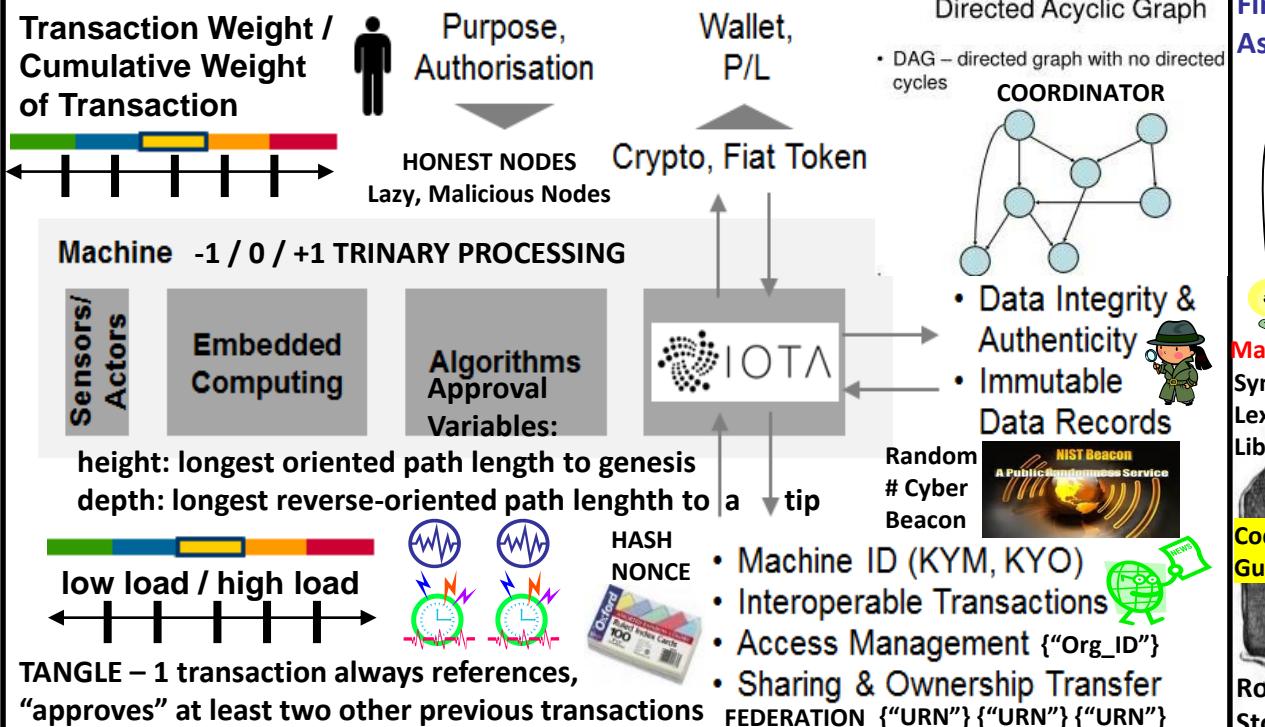


## IOTA: Internet Of Things IOT distributed ledger with microtransactions without fees

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



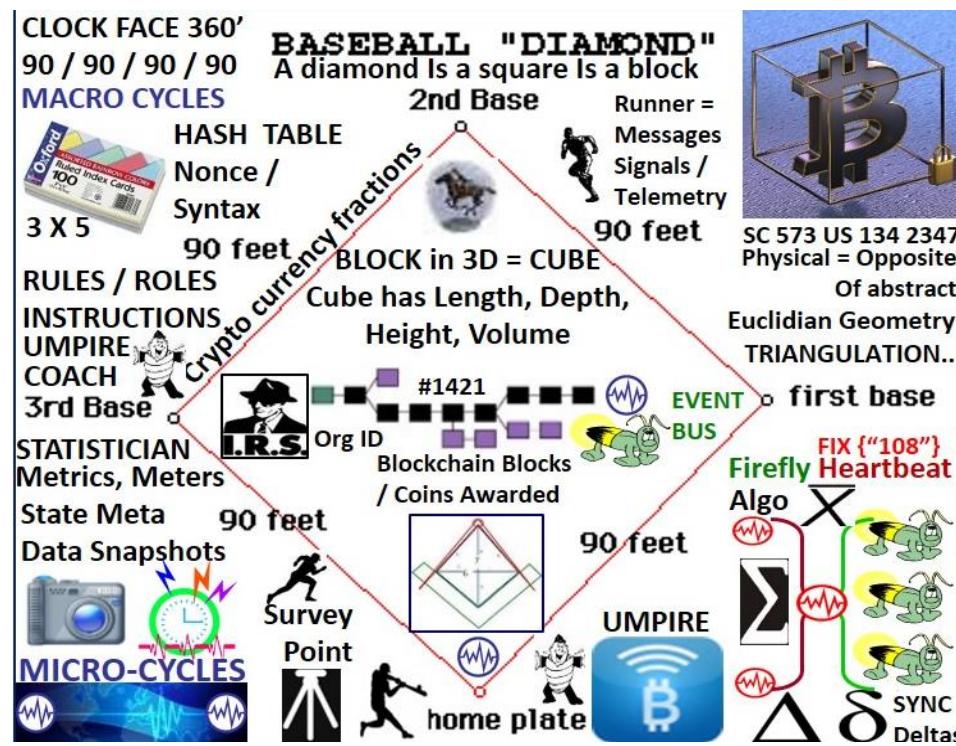
# STELLAR LUMEN



# Connecting Banks, Payment Systems, People with Affordable Financial Services Via Blockchain

## CUSTOMIZABLE PAYMENTS INFRASTRUCTURE

middleware between financial products and institutions





# ZEPPELIN



## ZEPPELIN OPEN, GLOBAL ECONOMY

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

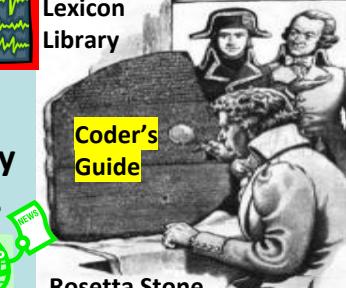
zeppelinOS, operating system for smart contracts  
*"the rate of innovation in building decentralized applications is limited by the manual and duplicative efforts developers must make to ensure basic usability and security."*



## WORLD ECONOMIC HEARTBEAT

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

Syntax Lexicon Library 300 + Templates



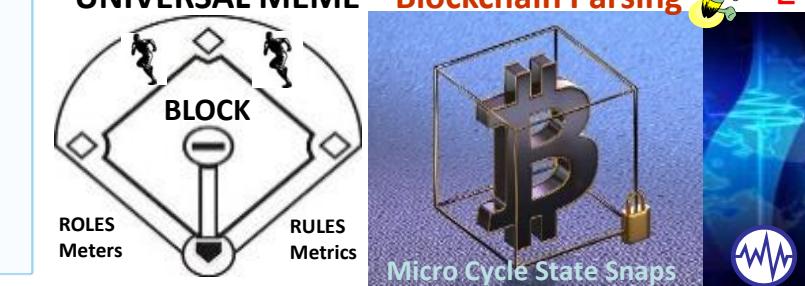
### STRUCTURED DATA EXCHANGE

Category	Protocol	Version	Standard	API	Method	Parameter	Value
ASAS	POST	HTTP/1.1	HTTP/1.1	POST	POST1	POST1	POST1
ANOTHER	POST	HTTP/1.1	HTTP/1.1	POST	POST2	POST2	POST2
APATOB	POST	HTTP/1.1	HTTP/1.1	POST	POST3	POST3	POST3
MIC	POST	HTTP/1.1	HTTP/1.1	POST	POST4	POST4	POST4
COCOM	POST	HTTP/1.1	HTTP/1.1	POST	POST5	POST5	POST5

LOGIC / FILTERS  
 ALPHA-NUMERIC  
 BREVITY CODES



### STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



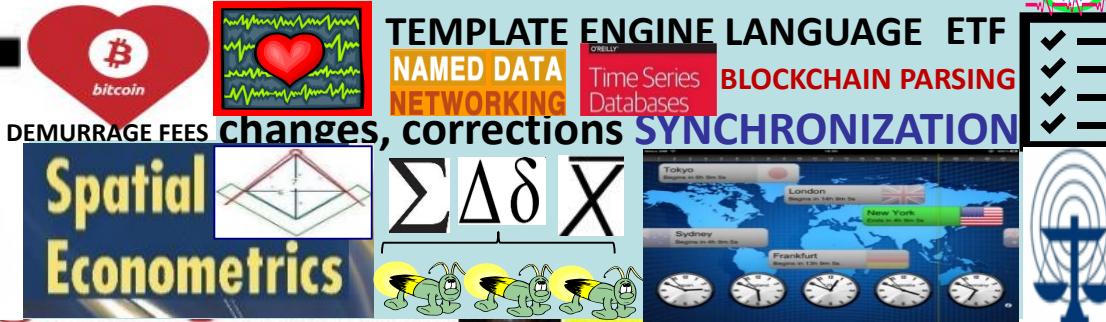
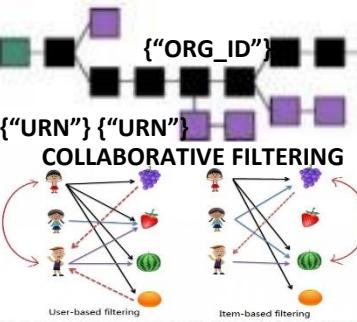
Micro Cycle State Snaps



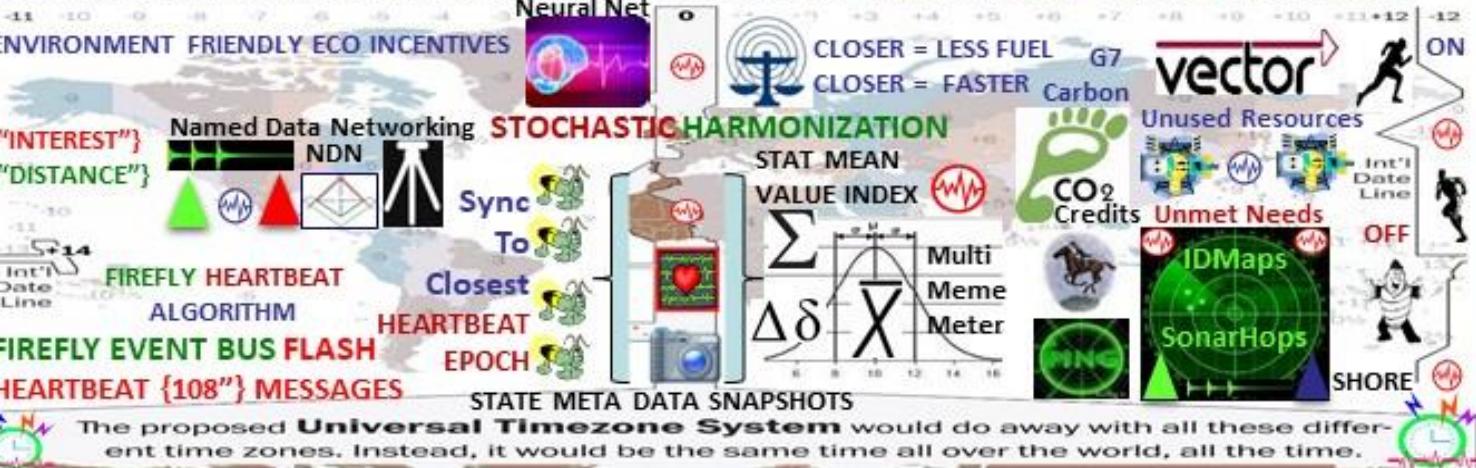
# EGaaS

ELECTRONIC GOVERNMENT AS A SERVICE

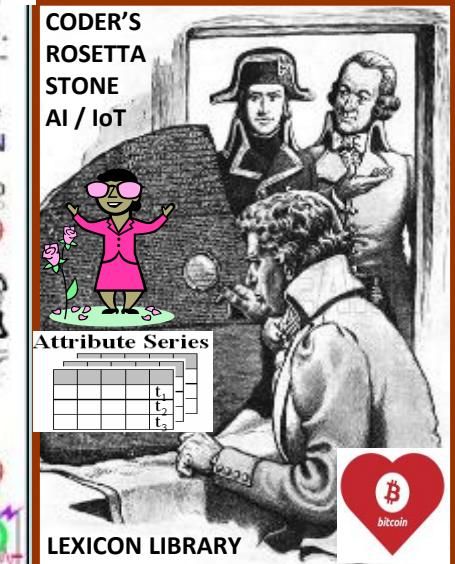
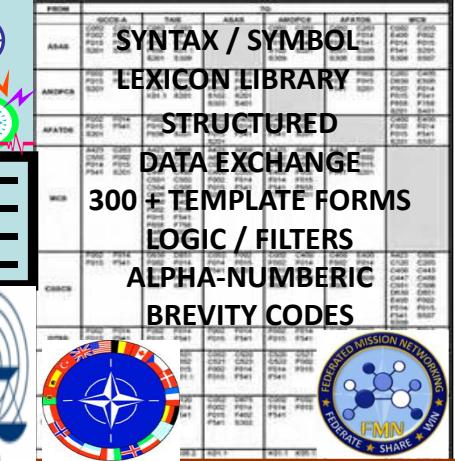
Distributed digital asset registries were the first projects that used blockchain systems such as databases designed for secure storage of records on real estate property, stocks, copyright and so on. It is assumed hosting any document on the blockchain is equivalent to notarization of its content at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

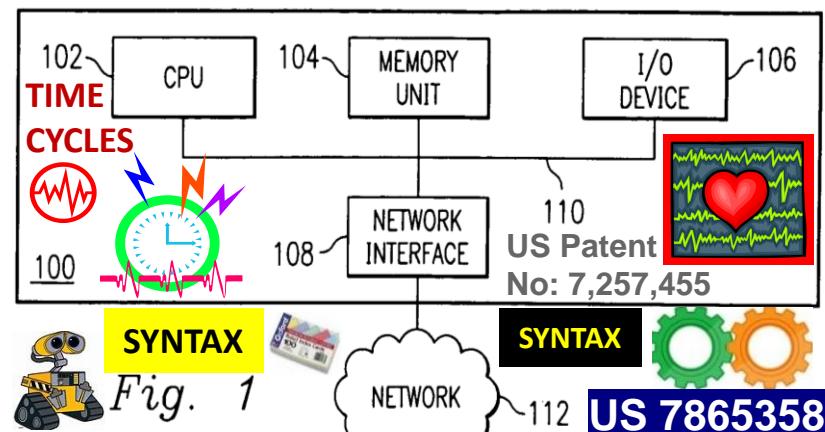


The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



eGaaS: 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.



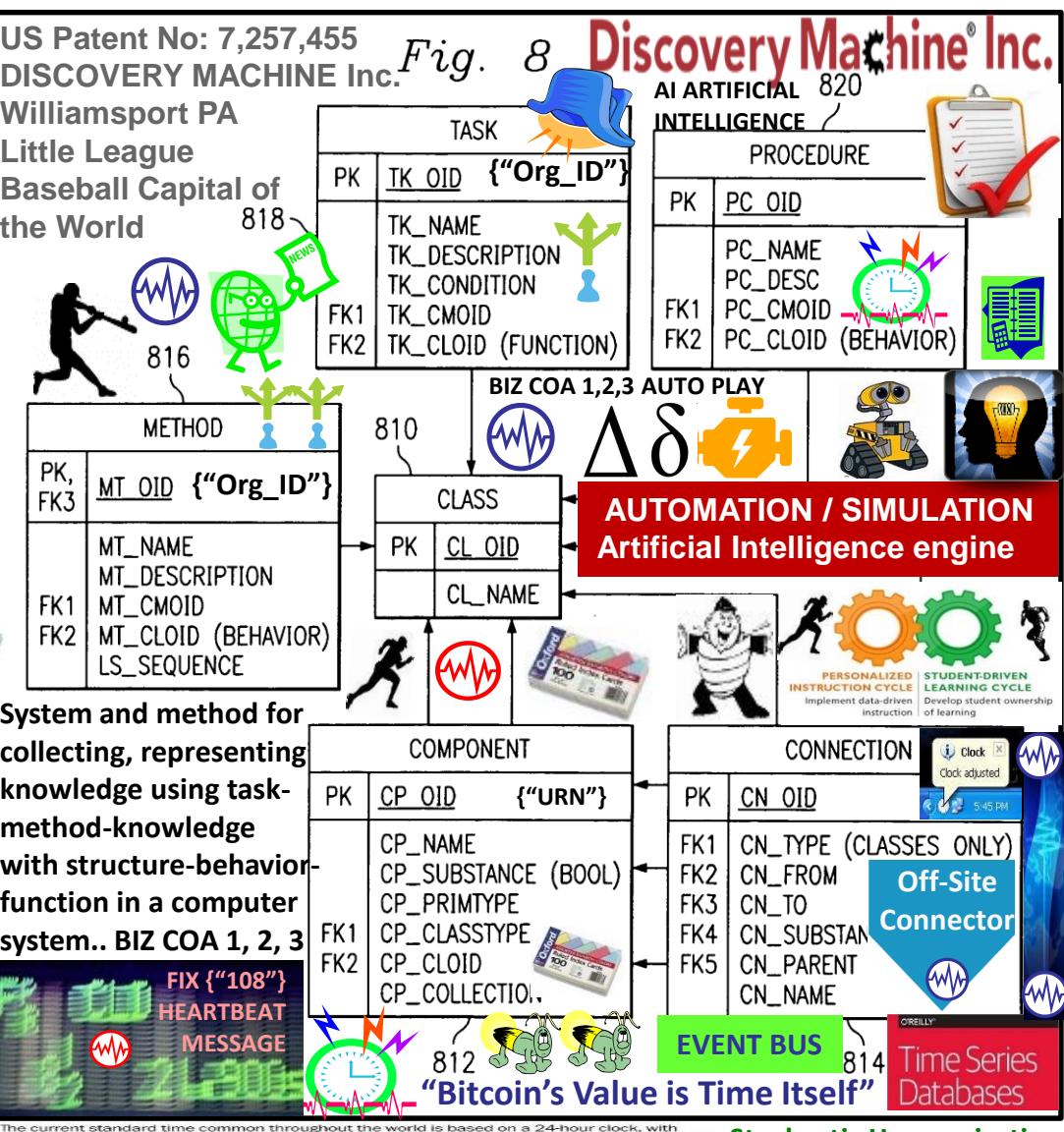
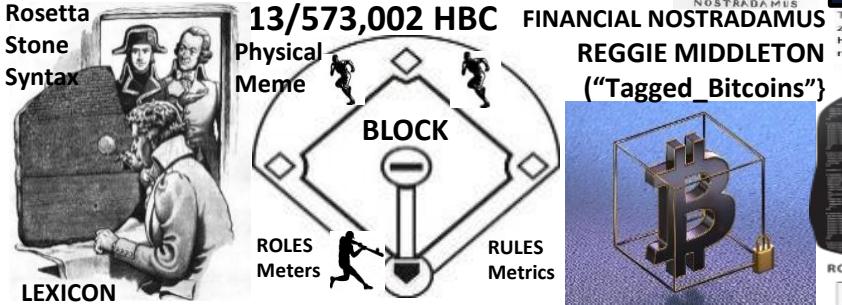


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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





"EARTHDAY EVERYDAY ON THE BITCOIN BLOCKCHAIN"

"GIVE A HOOT, DON'T POLLUTE" Woodsy The Owl

# GNOSIS

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

Futarchy PREDICTION MARKETS  
GnosisAMA

Gnosis trading interface alpha  
WIZ token fee payment  
INFORMATION ARBITRAGE ECONOMICS

TERRACYCLE Price Oracle

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

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

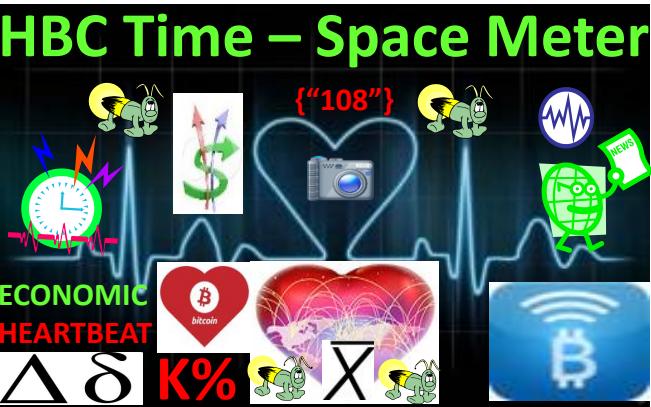
Gnosis tokens (GNO) generate Wisdom token s(WIZ) via smart contract

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

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



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.



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"



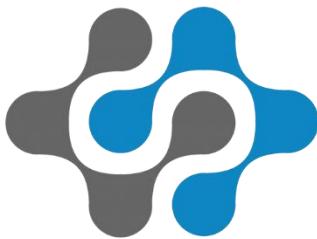
**Ardor is a blockchain-as-a-service platform that will allow people to utilize the blockchain technology of Nxt through the use of child chains.**



# ARAGON

Unstoppable organizations

Create value without borders or intermediaries



# bitsquare

- Infrastructure: Bitsquare uses a P2P network (there are no servers);
- Security: Bitsquare does not hold users funds (neither bitcoin nor fiat);
- Privacy: Bitsquare does not hold users data (no registration, uses Tor);
- Openness: It is open source (AGPL license);
- Independence: It is funded by donations and personal savings;
- Governance: Bitsquare is organized as a DAO (Decentralized Autonomous Organisation), comprising the people who build, support and maintain the project;
- Sustainability: Trading fees go to arbitrators and the DAO.

***But a community which has a common goal – like making Bitcoin a success – should strive for solutions which are efficient and have been proven to deliver great results.***



 BitTorrent

 bitcoin

 bitsquare

 OpenBazaar

 BitMarkets

# 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>

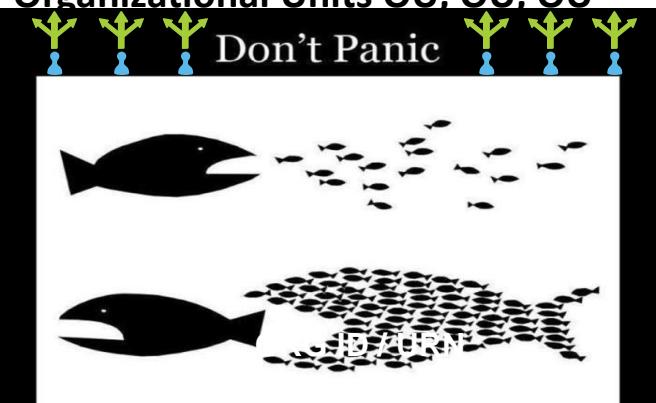
STRUCTURED MILITARY MESSAGING FORMS: FIELD TYPES, FILTERS, TAGS  
PARSED, PROCESSED, COMPILED TELEMETRY SIGNALING STANDARDIZATION

### USMTF / XML MTF FORMATTED MESSAGE CATALOG

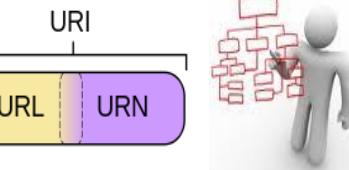
Catalog has over 300 messages to choose from have a wide number of information exchange requirements using common, CONSENSUS Message Text Formats MTFs. MTFs specify <CONTENT> / information agreed by group consensus presenting information in a logical, well specified and unambiguous layout resulting in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

</Organizational\_Identifier\_Org\_ID>

Organizational Units OU, OU, OU



**FEDERATE**



American Registry for Internet Numbers

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

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

### SITUATION AWARENESS



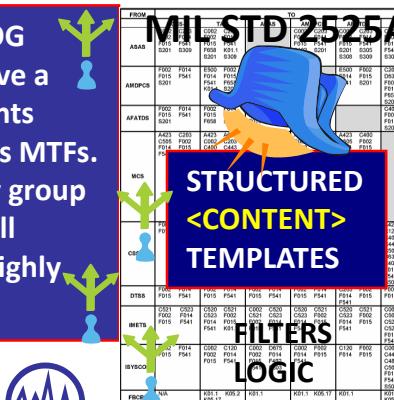
NEWSCAST



BY <TAG\_TYPES>

Ledgers  
Contracts  
Trade SLA  
Agreements

### MIL-STD 2525A



### DISTANCE ESTIMATE SERVICE

IDMaps  
SonarHOPS



### SURVEY METHOD

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

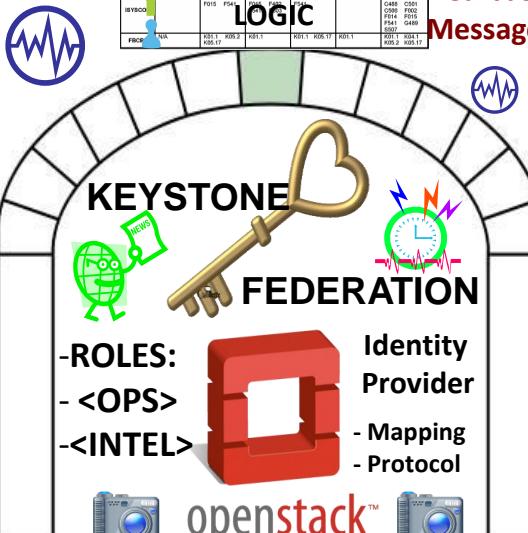


vector

### CrowdSourcing



CROWD SOURCING / FUNDING



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

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

PARTIDO X:  
Distributed  
Democratic  
Participation

DAO  
ETHEREUM:  
Decentralized  
Autonomous  
Organizations

### VOTE ON BLOCKCHAIN







Dogezer software development platform allows team members to become product investors by investing their time, labor. The Dogezer Platform combines the functionality of Kickstarter, UpWork, GitHub, Slack, Jira, Google Docs, Dropbox and ICO analogues with a set of defined processes how these solutions relate to each other in a clear, transparent and predictable way. Dogezer gives an opportunity to start a project in minutes; organize a set of teams working on the project; define how project contributions are rewarded, driving a project to completion by using independent contributor skills around the world.

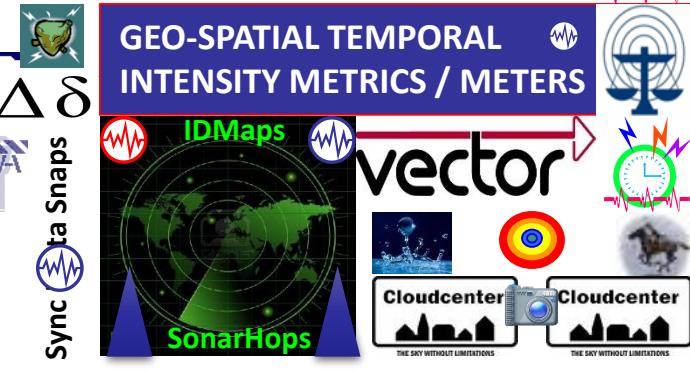
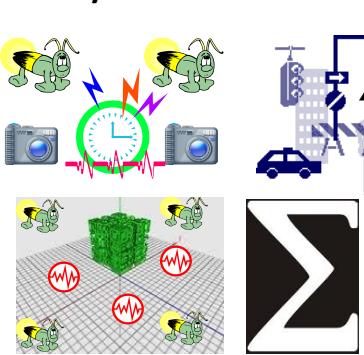
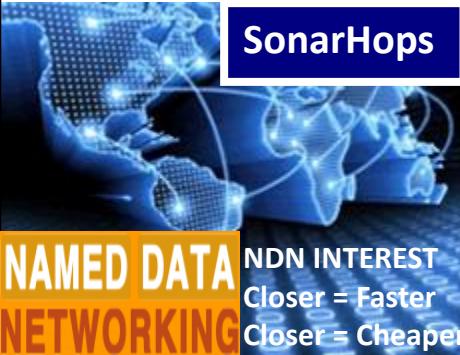




# IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



HOP COUNTS

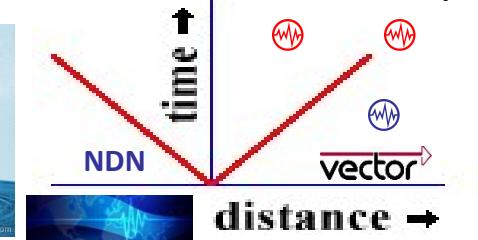


REACHABILITY



/localhost/nfd/fib/add-nexthop

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



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

Name Prefix  
<Org\_ID> Trie (NPT)



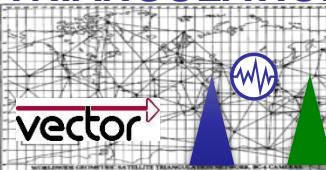
**NDN NAMES**

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

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



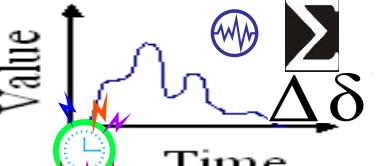
**TRIANGULATION**



**NDN INTEREST**

**IS DATA FRESH ?**

**Time Series**



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

Datasets and Event Notification

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



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



**MICRO-CYCLES**



NDN INTEREST LIFETIME = TTL Time To Live

HEARTBEAT STATE META DATASNAPSHOTS

# 13/573,002 HEART BEACON CYCLE

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

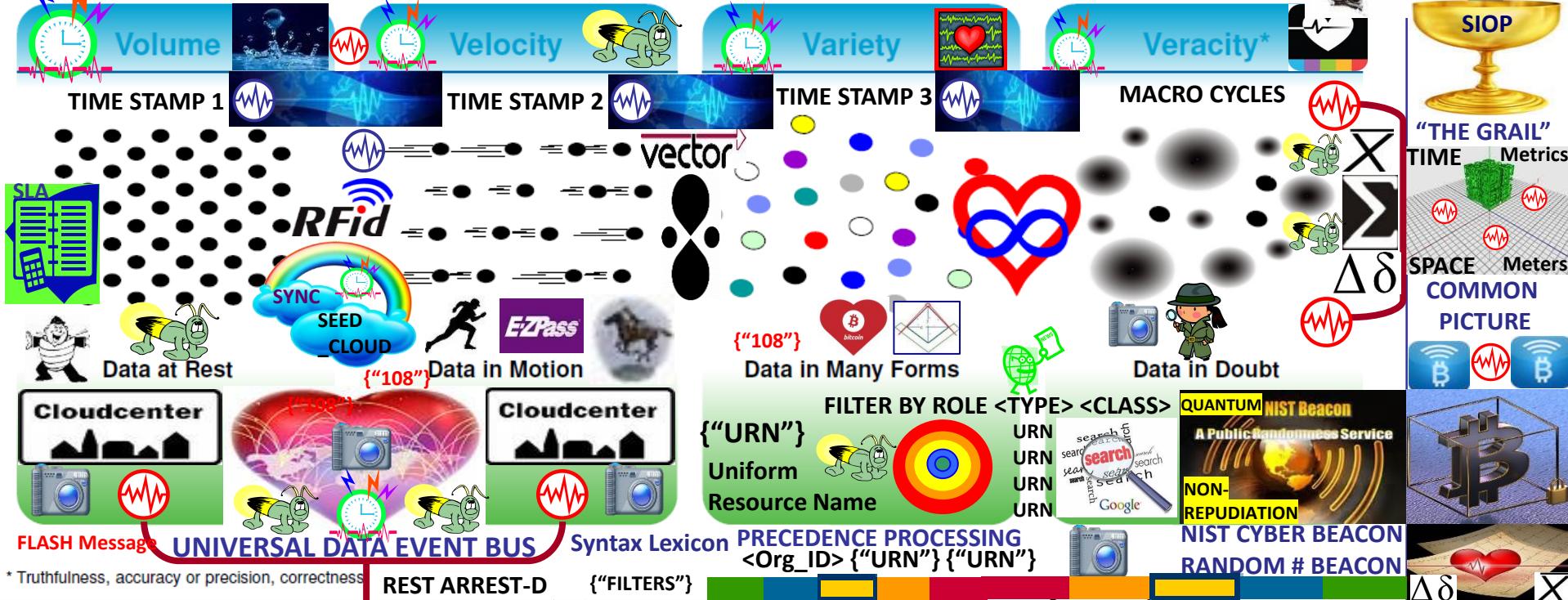


## The four dimensions of Big Data

vector

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

TIME STAMP BY Org\_ID, URN Before FUSION CENTER



FIREFLY – HEARTBEAT {"108"}

Stochastic Harmonization UTZ SYNC

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

State Meta Data  
Heartbeat Snaps

MICRO

CYCLES



$\Delta\delta$

ERLANG

{Org\_ID} {URN}

FIREFLY SYNC CONSENSUS

< / = / >

HEARTBEAT SYNCRONIZATION

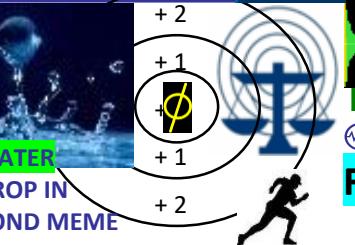


FOAM spatial protocol  
Ethereum Blockchain

World Computer  
Neural Network



FOAM



Distance Est Service



FOAM spatial protocol  
Ethereum Blockchain

World Computer  
Neural Network



FOAM



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

FINANCIAL  
NOSTRADAMUS  
REGGIE MIDDLETON



Zero Trust Transaction: money performs according to terms agreed to by the 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. Global stock, currency, commodities exchanges, letters of credit, insurance underwriting, trading, intellectual property...



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



**VERITAS TOKENS = KEYS TO P2P Capital Market!** Proprietary P2P smart contracts combined with the transformational power of blockchain, allow the entire world to participate in the reimagining of global capital markets.

Purchasing Veritas tokens is analogous to purchasing keys to the internet of money – the most monumental paradigm shift since the advent of the net

Place Order

Principal:	\$100.00
Collateral:	0%
Leverage:	10x
Notional Amount:	\$1000.00
Receive:	QCOM
Pay:	INTC
Denominating Asset:	~BTC:SATOSHIS
Contract Expiry:	16w
Contract Starts at:	-
Contract Ends at:	-
Cancel Contract at:	-
Est. Trans. Fees:	\$0.0437
Transaction Fees:	\$1.0262
Leverage Fees:	\$3.2528
Max. Profit/Loss:	+ \$95.6773 / - \$104.3227
Total Required:	\$104.3227

NEWS EVENT BUS FIREFLY HEARTBEAT ALGO EVENT BUS

DAO Distributed Autonomous Organization SOFTWARE POOLS

All Market Orders Search

UTZ TIME SYNC Collateral Notional Expiry

Heartbeat Flash Messages Precedence Processing

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

INVESTOR POOL WORLD COMPUTER DFINITY

UTZ Stochastic Harmonization

REGGIE MIDDLETON

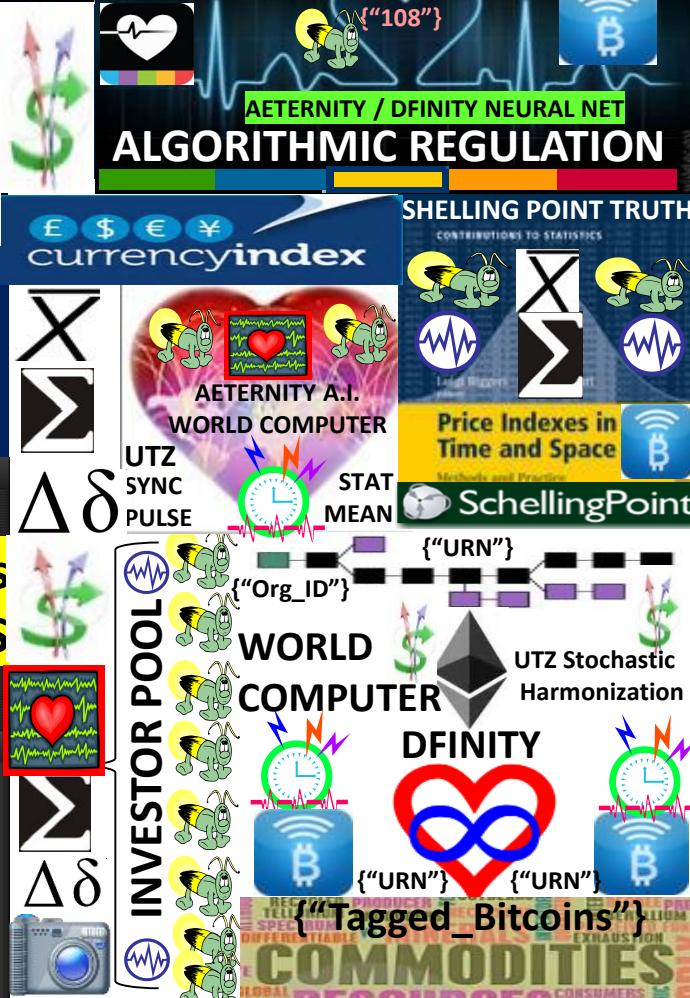
FINANCIAL NOSTRADAMUS

COMMODITIES EXHAUSTION

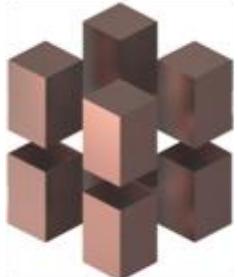
GLOBAL RESOURCES CONSUMERS

RENEWABLE ENERGY SPECTRUM DIFFERENTIABLE PRODUCERS

“Tagged\_Bitcoins”







# FOAM

FOAM, an open source spatial protocol built on the Ethereum blockchain. The protocol ties every latitude-longitude coordinate pair on Earth (down to one square meter) to a specific smart contract address, allowing developers and applications to tie business logic to specific spaces to crowdsourced data the blockchain.

Foamspace explored the speculative relationship between decentralized infrastructure and the production of the built environment. The installation was made entirely of factory-standard EPS geofoam blocks, which additionally served as a visual metaphor for the bitcoin blockchain.

*Imagine a decentralized architecture office that distributes equity and shares in the built environment and comprises a mesh of users: investors, clients, designers and established offices*

The Tropical Mining Station was a space produced by extracting the surplus energy from the process of mining Ethereum to produce a heated space. Custom miners were built that funneled excess heat and required airflow to inflate a pneumatic space, which became a spatialized node on the decentralized network.

**<https://archinect.com/features/article/142920059/towards-a-decentralized-architecture-with-foam-the-blockchain>**



# district0x

decentralized markets communities network. Create, operate, govern. Powered by Ethereum, Aragon, IPFS.

Districts are marketplaces and communities that exist as decentralized autonomous organizations on the district0x Network. All internet citizens will be able to deploy districts to the network free of charge, forever. All districts possess the following core functionalities...

- |  |   |   |
|--|---|---|
| Signaling via <a href="#">CarbonVote</a> | Graphene executables:                     | <ul style="list-style-type: none"><li>● Posting and listings</li><li>● Search and filtering</li><li>● Ranking and reputation</li><li>● Payments and invoicing</li></ul> |
| Status = browser,<br>messenger, gateway  | witness_node,<br>cli_wallet, genesis_util |   |

d0xINFRA provides districts with core functionalities required to operate an online market or community. e.g., ability for users to post listings, filter and search listings, rank peers, amass reputation, send invoices, collect payments

**district0x Network Token:** means of facilitating open participation and coordination on the network. Voting rights are utilized to come to a consensus on everything ranging from a district's branding and design decisions, to what functionality is added to the district via auxiliary modules, to the appropriate settings for any adjustable parameters of these modules, to the means in which revenue collected by a district is distributed

**NAME BAZAAR:** peer-to-peer marketplace for the exchange of names registered via the Ethereum Name Service trading of subdomains, enabling the exchange of usernames in decentralized applications such as **STATUS** and **ORGANIZATION NAMES** in the Aragon Network **COMPANY REGISTRY**

**Meme Factory** users mint their own tokenized memes for sale i.e., rare digital assets on the Ethereum blockchain posted to a bulletin board-style marketplace exchange.

**Dharma Credit** is a suite of tools that make it easy to plug a line of credit into any decentralized application. In lieu of forcing your first-time users to purchase crypto at a brokerage or exchange, a Dharma Credit integration will give your users a button that they can click and get a small cryptocurrency loan within your app in under 5 minutes.



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 comms



### Functional Sequential Erlang

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

### SORTING ALGO'S

Ericsson Open Money  
For Society Patent App

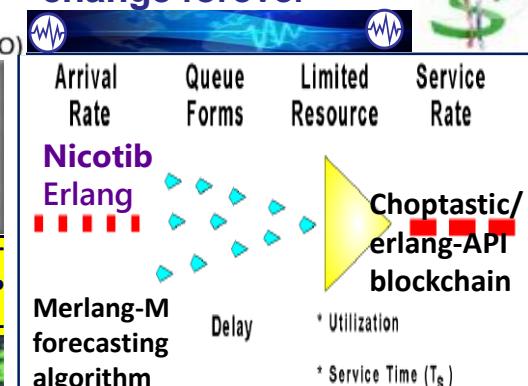


[20130166398](#) "System And Method For Implementing A Context Based Payment System."

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



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



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

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

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



# 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

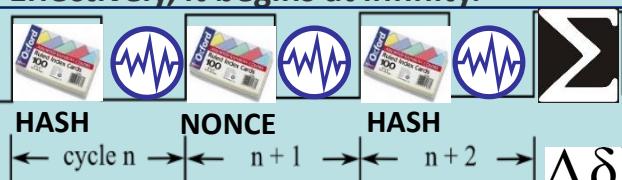


THROTTLE equivalent to difficulty. State  
•target = maximum value of 8 bytes Snap  
( $2^{64}$ ) divided by the difficulty.

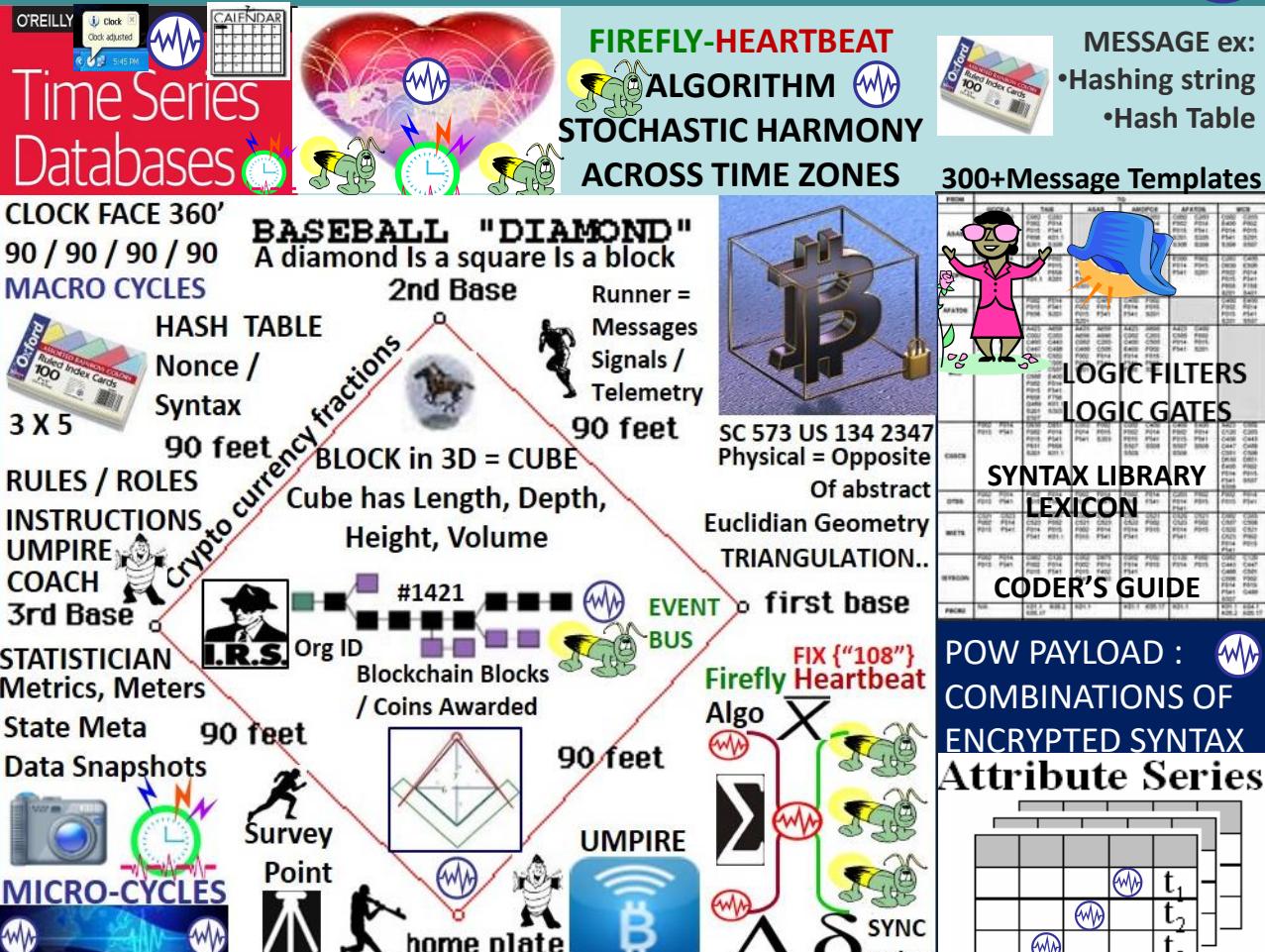
NONCE increments from 0..N until the target is met.



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 without retracing all the procedural steps.





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

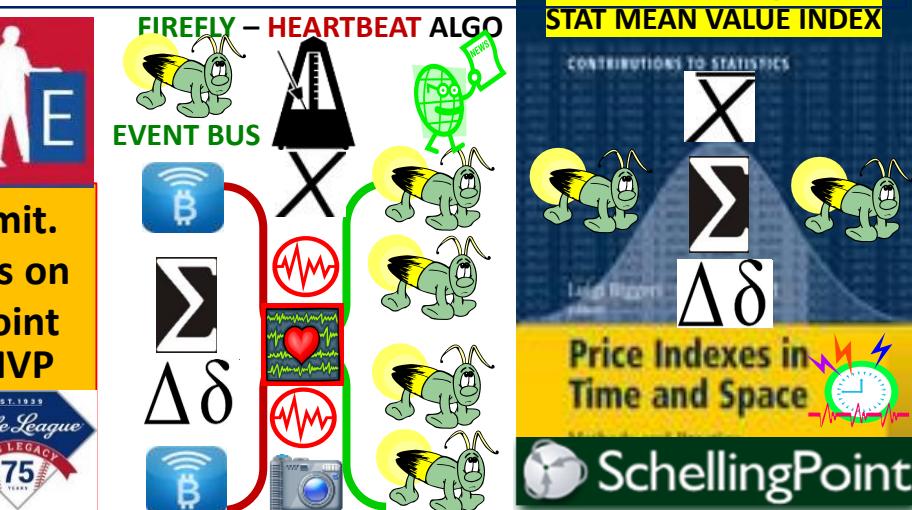
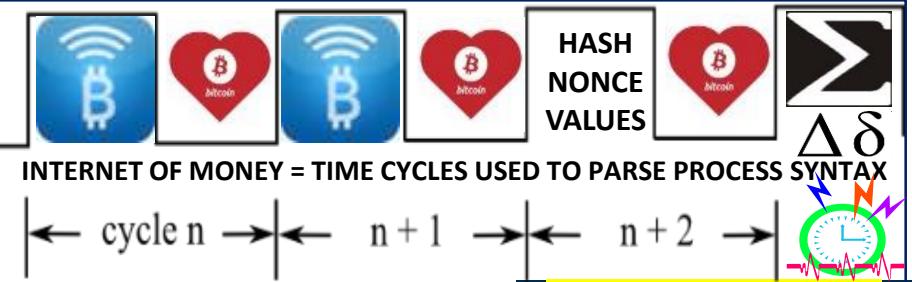
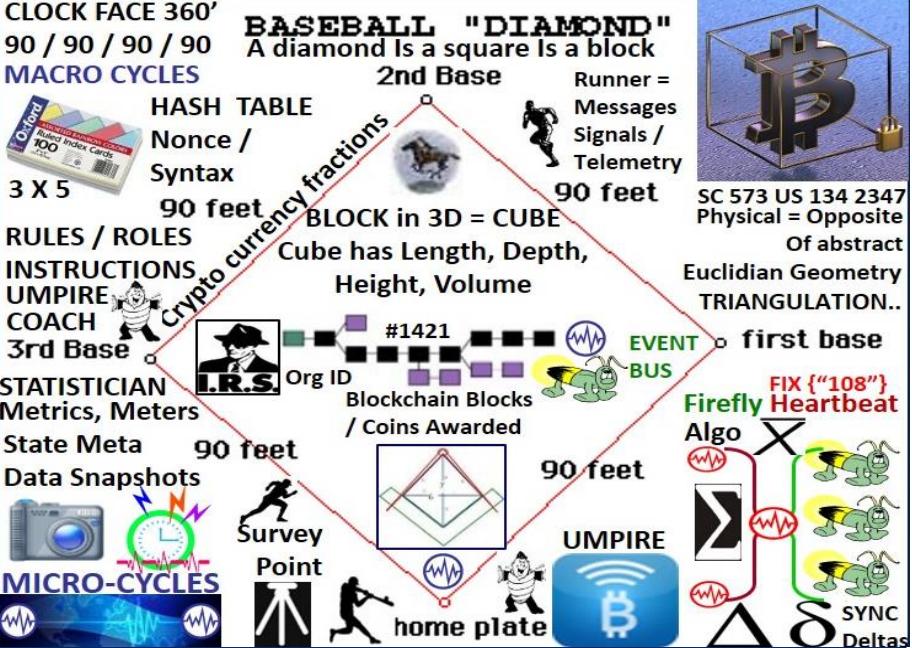


HASH TABLES  
NONCE VALUES

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



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



MVP  
Price Indexes in Time and Space  
SchellingPoint

Microsoft Bletchley modular framework: choose combination of technologies 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

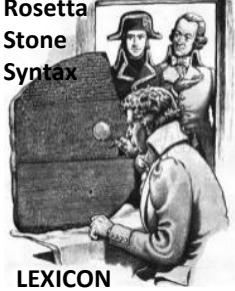
Blockchain middleware: identity and operations management, data, intelligence services like analytics and machine learning. New middleware works with existing Azure services, like Active Directory and Key Vault

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



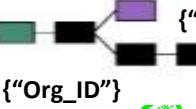
ALPHA NUMERIC	
BREVITY CODES	
SYMBOL CODES	
STRUCTURED MILITARY MESSAGE	
TEMPLATE FORMS	LOGIC / FILTERS



MULTI-MEME MULTI-METER

Microsoft AZURE BLETCHLEY

Blockchain Startups  
Top Blockchain startups disrupting non-financial markets  
Venture Radar



CLOCK FACE 360°  
90 / 90 / 90 / 90  
MACRO CYCLES

HASH TABLE  
Nonce / Syntax  
90 feet

RULES / ROLES  
INSTRUCTIONS

UMPIRE  
COACH  
3rd Base

STATISTICIAN  
Metrics, Meters  
State Meta

Data Snapshots  
90 feet

MICRO-CYCLES  
Survey Point

EVENT BUS  
home plate

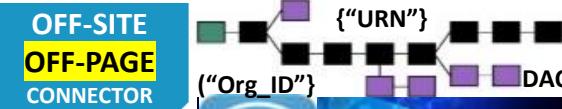
HEART BEACON  
STATE META DATA SNAPSHTOS

CYCLE  
TIME-SPACE EQUATIONS ALGORITHMS

BLOCKCHAIN PARSING

MYRIAD MEMES MEDIATION

BLOCKCHAIN



CLOCK FACE 360°  
90 / 90 / 90 / 90  
MACRO CYCLES

HASH TABLE  
Nonce / Syntax  
90 feet

RULES / ROLES  
INSTRUCTIONS

UMPIRE  
COACH  
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STATISTICIAN  
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Data Snapshots  
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MICRO-CYCLES  
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EVENT BUS  
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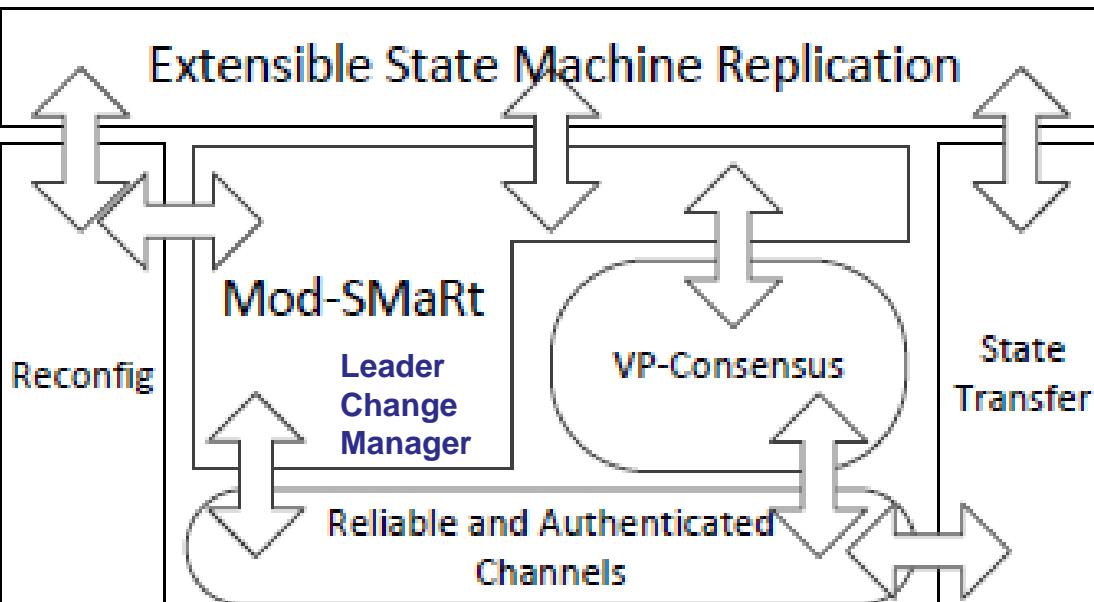
HEART BEACON  
STATE META DATA SNAPSHTOS

CYCLE  
TIME-SPACE EQUATIONS ALGORITHMS

BLOCKCHAIN PARSING

# Byzantine Fault-Tolerant State Machine Replication

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



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

## BFT-SMaRt needs an eventually synchronous system

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

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

USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT



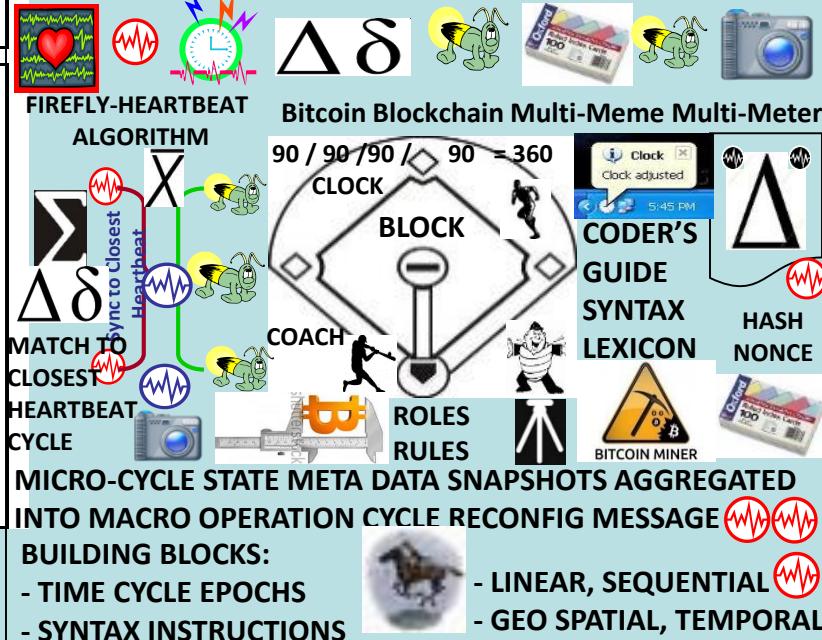
DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

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

ADDS, JOINS, DROPS, MOVES TO / FROM DAO

CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

## 00.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOTS



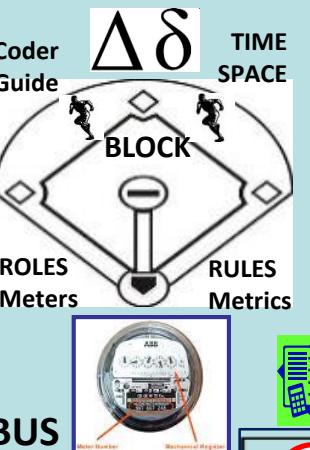
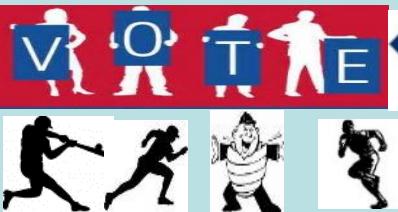
Firefly inspired Heartbeat Synchronization nodes strive to sync in a distributed system. Nodes generate periodic "heartbeat" events approximately at the same time.

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

# 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

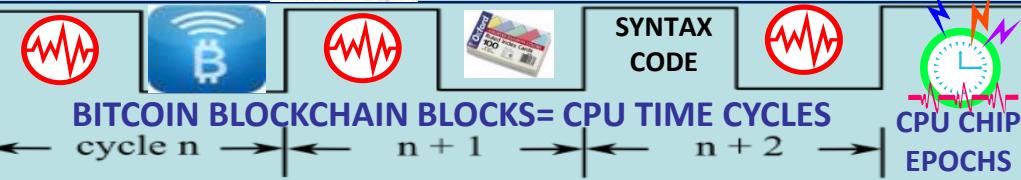
XBRIL / CDL / DAML  
STOCK MIC CODES

STRUCTURED  
MILITARY MESSAGE  
TEMPLATE FORMS  
LOGIC / FILTERS



SYNTAX  
LEXICON LIBRARY

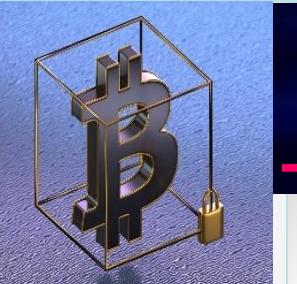
CPU CHIP  
EPOCHS



long exponential  
intervals (10 min)

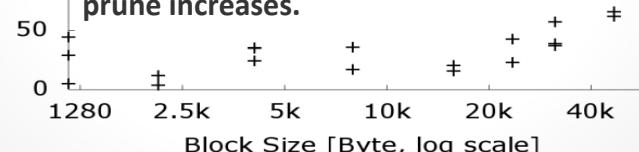


COMMAND SYNTAX  
RESTFUL State Transfer



Subjective Time to Prune

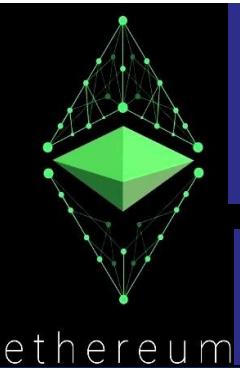
Additional metrics used by researchers included "time to prune", or the time it takes for miners whether they are on the correct "branch" or version of the blockchain they are processing transactions. As block sizes increase, suggested time to prune increases.



short deterministic  
intervals (10 sec)



MICRO-CYCLES



## 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 (see the CAP theorem).



Ether hedged against other  
crypto / FIAT currencies  
price changes

**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**

CLOCK FACE 360'  
90 / 90 / 90 / 90  
MACRO CYCLES

3 X 5  
HASH TABLE  
Nonce / Syntax  
90 feet

RULES / ROLES  
INSTRUCTIONS  
UMPIRE

COACH  
3rd Base  
STATISTICIAN  
Metrics, Meters  
State Meta  
Data Snapshots

MICRO-CYCLES  
Survey Point  
home plate

**BASEBALL "DIAMOND"**  
A diamond is a square is a block  
2nd Base  
Runner = Messages Signals / Telemetry  
90 feet  
BLOCK in 3D = CUBE  
Cube has Length, Depth, Height, Volume

Org ID #1421  
Blockchain Blocks / Coins Awarded

90 feet  
EVENT BUS  
FIX {"108"}  
Firefly Heartbeat  
Algo

SC 573 US 134 2347  
Physical = Opposite  
Of abstract  
Euclidian Geometry  
TRIANGULATION..

first base  
SUM, ADD, AGGREGATE

UMPIRE  
MICRO CYCLE SAMPLING  
STATE META-DATA  
HEARTBEAT SNAPSHOTS

Txs	State transition:	Txs	State transition:	Txs	State transition:
0cb4	123: 400	5581	905: 560	7ce6	123: 440
9f12	8723: 0	2fc3	1141: 8021	1141:	7981
42:	15776	42:	15775		

SWARM  
(storage)

WHISPER  
(messaging)

EVM  
(consensus)

HEARTBEAT FLASH MESSAGES  
BLOCKCHAIN HASH TABLES

UNIVERSAL EVENT BUS  
STATISTICAL MEAN SAMPLING  
STOCHASTIC HARMONIZATION

MACRO ECONOMIC CYCLES  
STAT MEAN VALUE INDEX

SUM, ADD, AGGREGATE  
SPACE-TIME METRICS

BITCOIN MULTI MEME  
MULTI-METER

BIGCHAIN DB

**D F I N I T Y**






**BLOCKCHAIN NERVOUS SYSTEM**  
HEARTBEAT {"108"} State Meta Data Snapshot Msgs

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



**GROUP Signature is random number**

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

**HYPER GEOMETRIC PROBABILITY CALCULATOR**

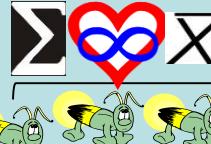
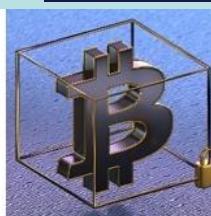
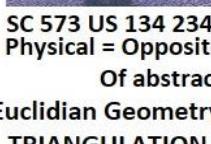
**CONSENSUS / RANDOM BEACON**  
Threshold relay chain generates randomness, records network metadata & validation tree "state root". State 3 x 5 and updates to state stored on shards... State transitions passed to Validation Tree



**Each process has mining identity**

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







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.



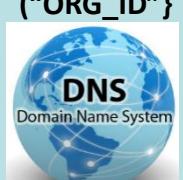
Aeons: energy for applications implemented on the platform.

**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

**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.



(“ORG\_ID”)  
(“ORG\_ID”)



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



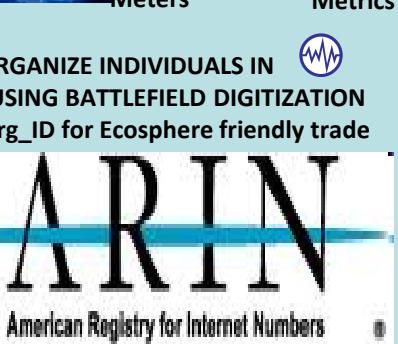
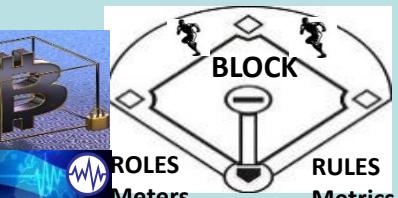
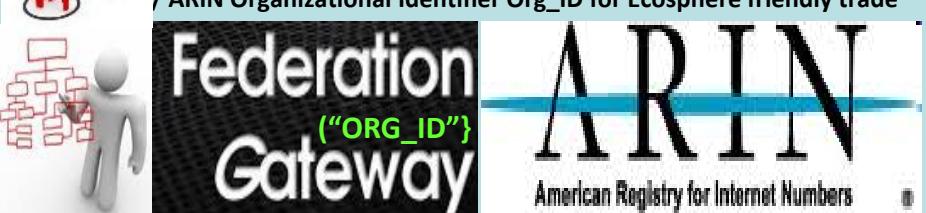
Terra Trade Reference Currency TRC "world currency" Bernard A. Lietaer Belgian economist proposed 1991 Basket of 9-12 most important commodities. Public issued demurrage fees for storage, shipping, handling

**TOKENS REPRESENT REAL WORLD VALUE URN RESOURCES**

ETHEREUM BASED USES GAS GAUGE MEME INDICATING THRESHOLD MET / NOT MET TO PROCESS



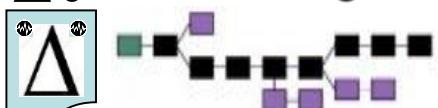
HBC's PRIMARY USE CASE IS TO ORGANIZE INDIVIDUALS IN TRADE FEDERATION GROUPS RE-USING BATTLEFIELD DIGITIZATION / ARIN Organizational Identifier Org\_ID for Ecosphere friendly trade



# HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$  Shared Ledger



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

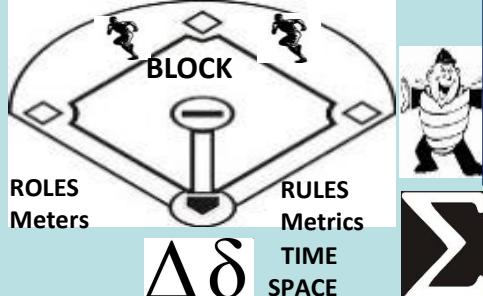
FEDERATION  
*Federation Gateway*

METRICS ("Organization ID")  
METERS

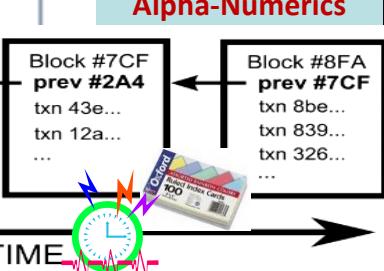
RESTFUL SYNC DELTA  
CHANGE MANAGEMENT  
MICRO-MACRO CYCLE



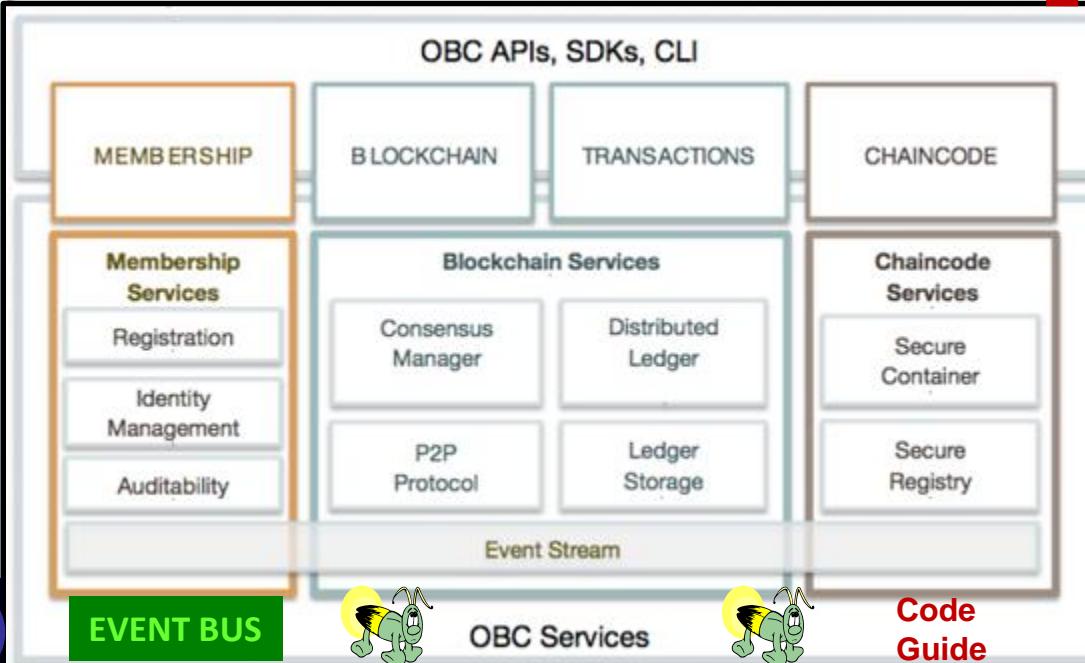
BLOCKTIME ARBITRAGE



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



Alpha-Numerics



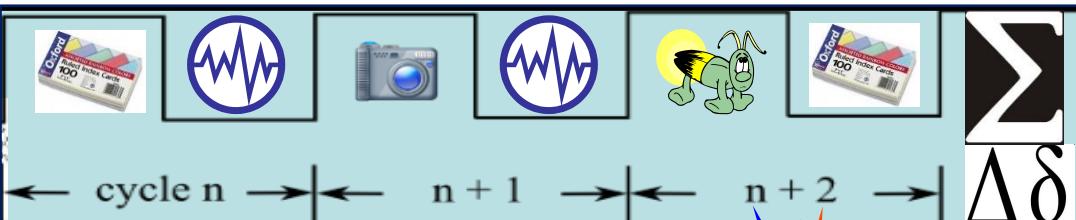
ROSETTA STONE

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

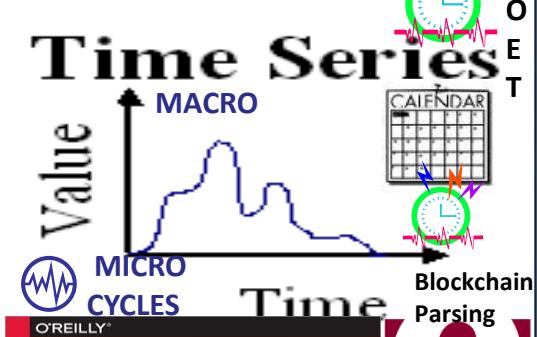
HYPER LEDGER USES  
JSON ("tag") / YAML  
Text indentation –  
UNIVERSAL LANGUAGE  
= ALPHA-NUMERICS

# SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

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



## PROOF OF ELAPSED TIME



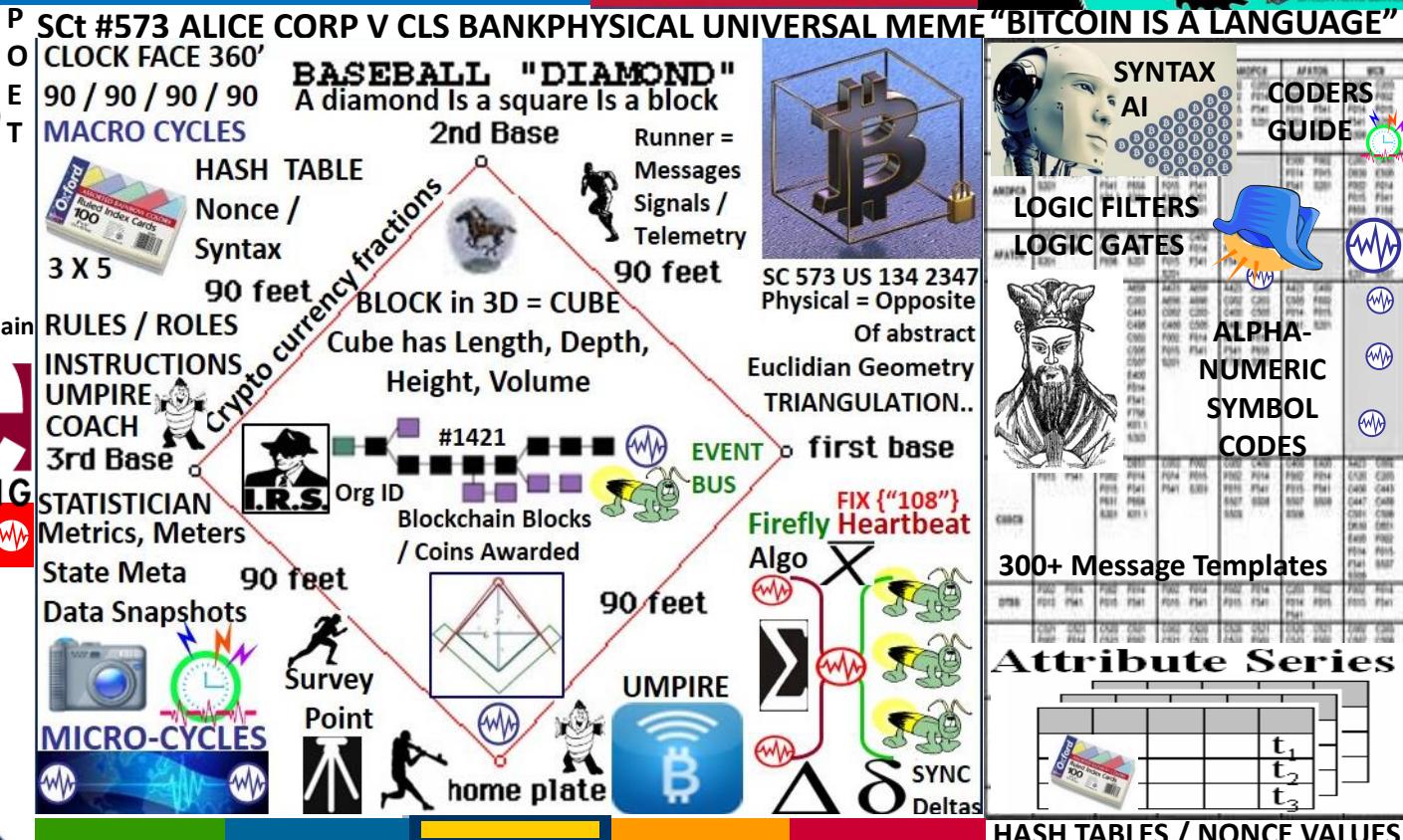
Voting Based Selection: stake size & block generators selected by votes

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



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

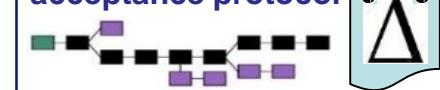
## TOURNAMENT LEAGUE BOARD



## FIREFLY-HEARTBEAT FLASH MESSAGES UNIVERSAL EVENT BUS



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



# 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.

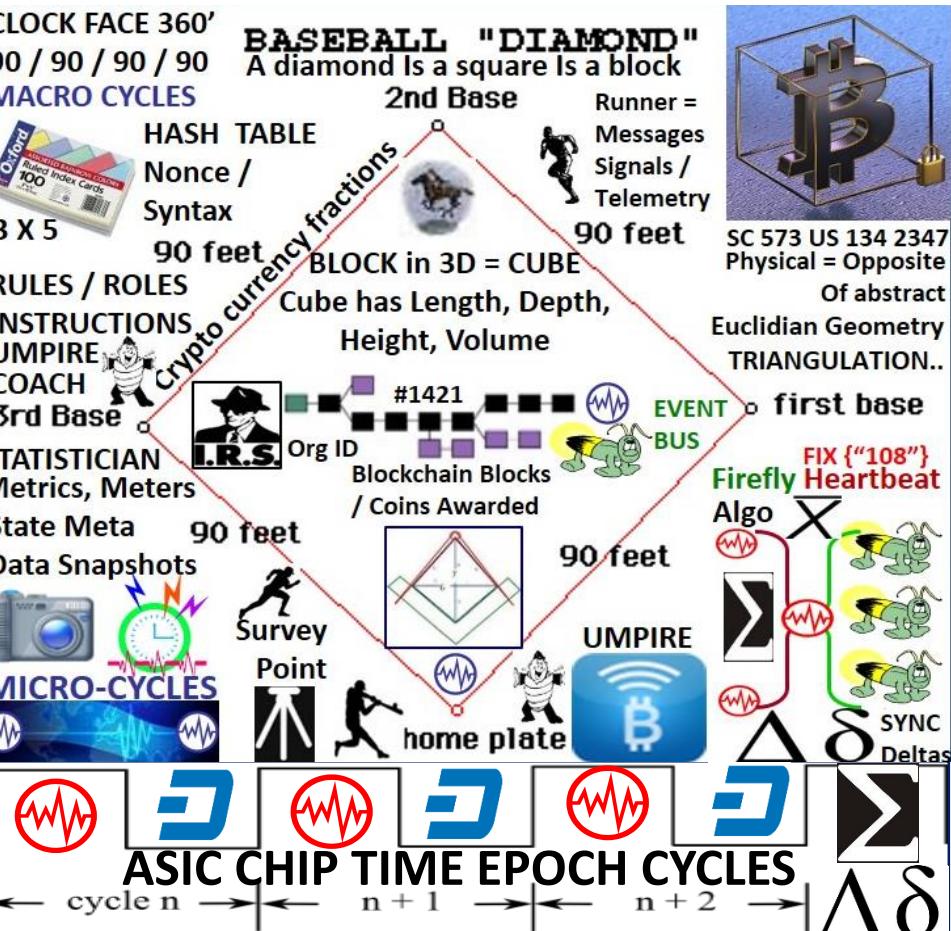
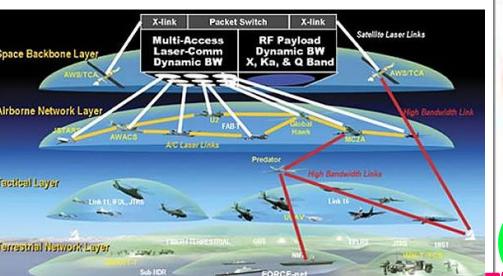
"Its makeup is thus: the block reward is divvied up in three parts. The first 45 percent goes to [Dash's miners](#). Another 45 percent goes to its Masternodes. And 10 percent is set aside to fund whatever other jobs or expenditures the Dash network deems necessary"

**InstantX:** To solve the problem of lag time in transactions, Masternodes are able to instantly lock transactions.

Masternodes receive payments for their service to the network.

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

NETWORK CENTRIC WARFARE  
Developing and Leveraging Information Superiority



HEART BEACON CYCLE = IMPROVEMENT TO NETWORK CENTRIC WARFARE



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



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

**STATE CHANNELS:** blockchain interactions

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



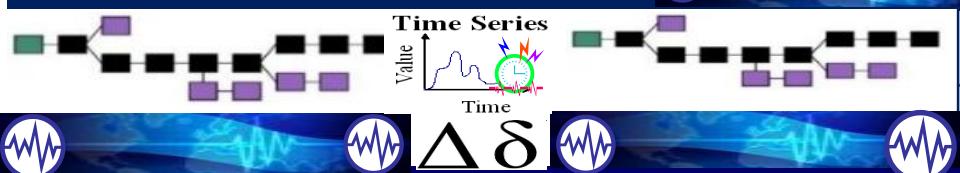
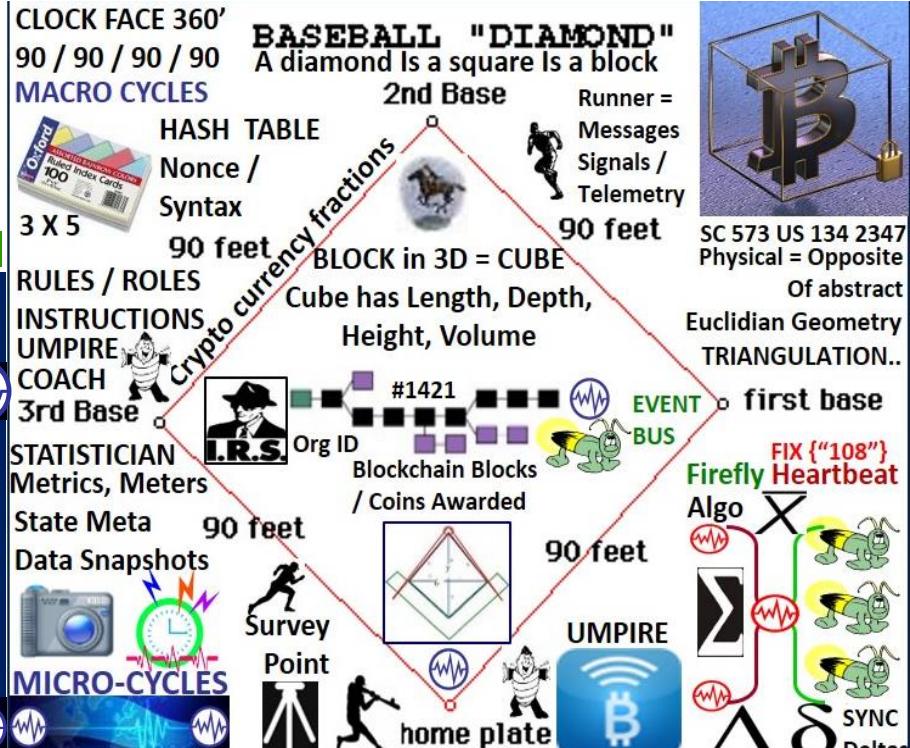
1. Part of the blockchain state is locked via multisignature or some sort of smart contract, so that a specific set of participants must completely agree with each other to update it.



2. Participants update the state amongst themselves by constructing and signing transactions that *could* be submitted to the blockchain, but instead are merely held onto for now. Each new update "trumps" previous updates.

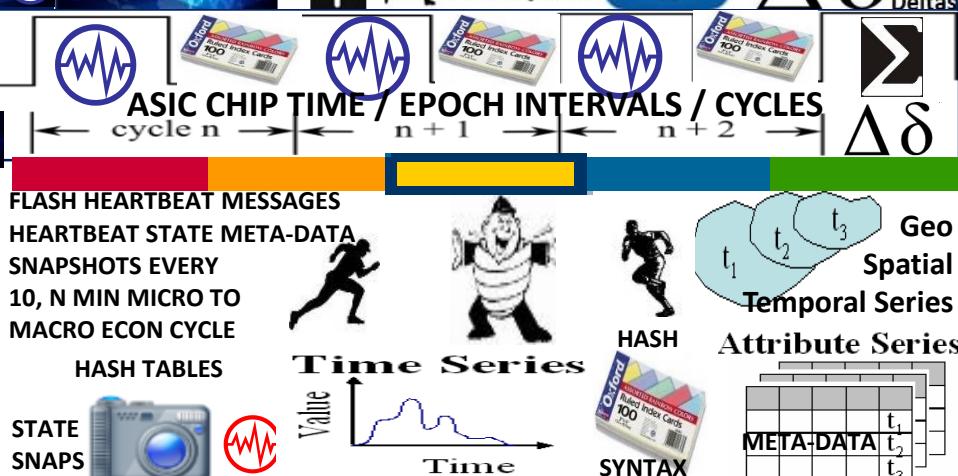


3. Finally, participants submit the state back to the blockchain, which closes the state channel and unlocks the state again (usually in a different configuration than it started with)



**EACH NEW UPDATE TRUMPS 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 transactions didn't happen.

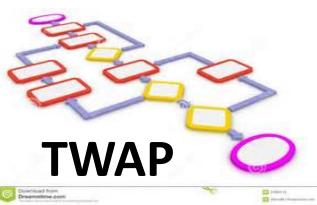
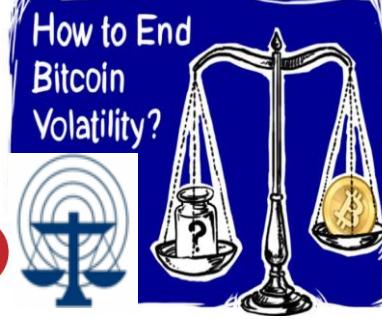
LINK: <http://jeffcoleman.ca/state-channels/>



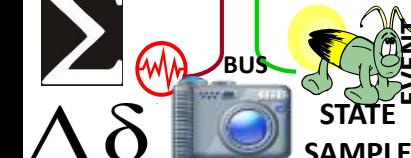
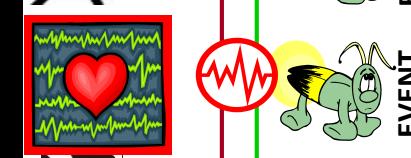
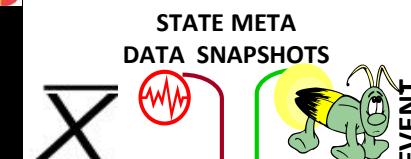
Firefly - Heartbeat synchronization: nodes in a distributed system generate periodic, local "heartbeat" events approximately at the same time with a goal of all nodes starting / ending cycles at the same time eventually = HB CYCLE

# TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

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



FIREFLY HEARTBEAT ALGO  
STAT MEAN VALUE INDEX



STATE SAMPLE

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



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



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

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



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

#### Key Features:

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



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

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

All rates time-stamped in UTC.

Ability to look up by time-stamp.

Ability to look up by block-height.

Asset Classes: Digital Currencies

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

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

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

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

**BRAVE NEW COIN.**  
Digital Currency Insights

“Blocks are a measure of time”: The Bitcoin Blockchain ‘B-WAP’



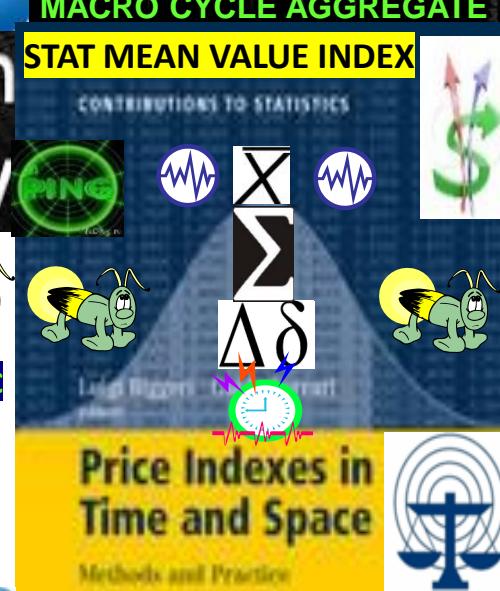


# OpenBazaar open source decentralized peer to peer network online commerce —using Bitcoin —no fees and no restrictions

- 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



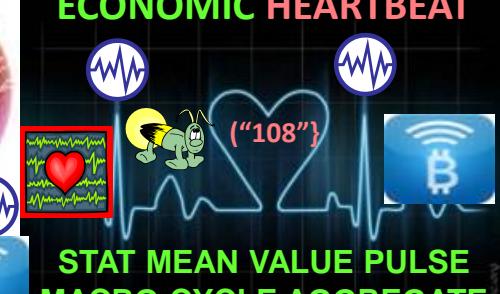
OpenBazaar is a different approach to online commerce. OpenBazaar connects buyers and sellers directly. Because there is no one in the middle of your transactions there are no fees, no restrictions, no accounts to create, and you only reveal personal information you choose.

## PROJECT PHILOSOPHY: *MAKE TRADE FREE*

Mission: *shift trade to a decentralized platform*



Demurrage TERRATRC TRADE  
Fees REFERENCE CURRENCY  
"Money of Peace"  
Commodity / Currency Index



Free and open markets:

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

## • Privacy

- Users should fully control their data. Users have freedom to reveal as much personal identifiable information as they want, when they want

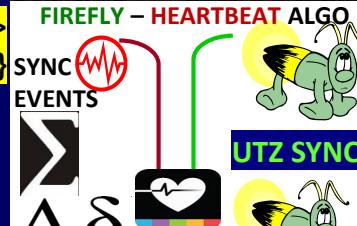


HASH Values  
Nonce Values

SCT Alice V Cls Bank



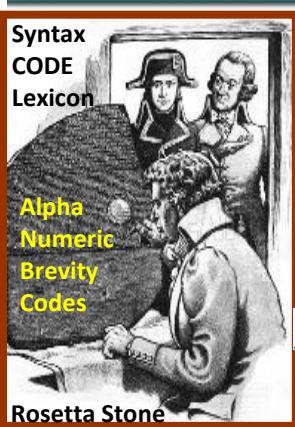
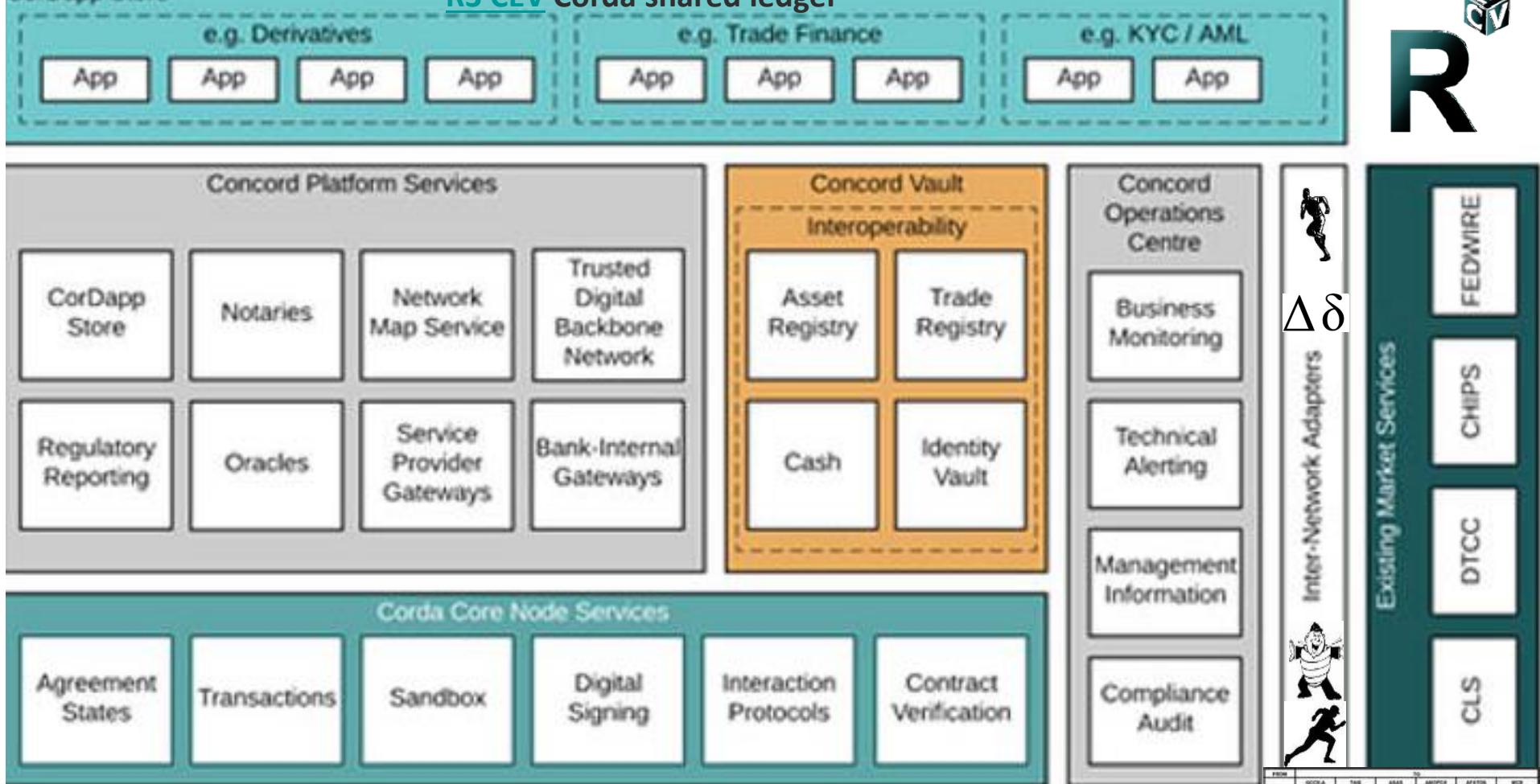
Bitcoin: OpenBazaar transactional currency



## Cryptographic Security

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





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

11.8 - Kinematics									
11.8.1 - Acceleration									
11.8.2 - Angular									
11.8.3 - Linear									
11.8.4 - Position									
11.8.5 - Estimated									
11.8.6 - Estimated									
11.8.7 - Smoothed									
11.8.8 - Predicted									
11.8.9 - Bearing Angle									
11.8.10 - Vertical									
11.8.11 - Horizontal									
11.8.12 - Vertical									
11.8.13 - Covariance Matrix									

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



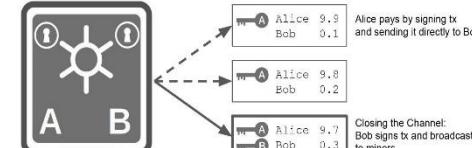
# PROJECT LIGHTING



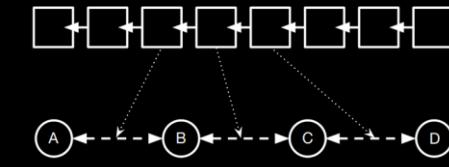
transactions sent over / off chain  
micropayment channels

Micropayment Channels

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



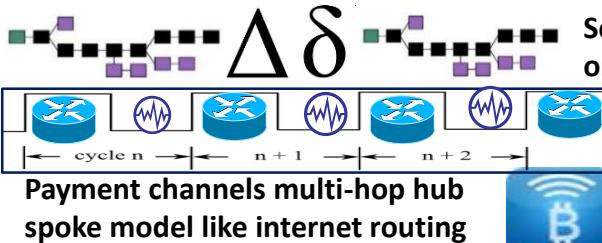
## LIGHTNING



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



EVENT REPORTING ACROSS TIME-SPACE


 $\Delta\delta$ 


MESSAGE EVENT BUS

CLOCK FACE 360'  
90 / 90 / 90 / 90  
MACRO CYCLES



HASH TABLE

Nonce /  
Syntax  
3 X 5

RULES / ROLES

INSTRUCTIONS

UMPIRE

COACH

3rd Base

STATISTICIAN

Metrics, Meters

State Meta

Data Snapshots

MICRO-CYCLES

90 feet

Survey Point

home plate

BASEBALL "DIAMOND"  
A diamond Is a square Is a block  
2nd Base

Runner =  
Messages  
Signals /  
Telemetry  
90 feet

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

Blockchain Blocks  
/ Coins Awarded

EVENT BUS

#1421  
Org ID

Survey Point

home plate



SC 573 US 134 2347  
Physical = Opposite  
Of abstract  
Euclidian Geometry  
TRIANGULATION..

first base

FIX {"108"}

Firefly Heartbeat

Algo

$\Sigma$

MESSAGES

SYNC Deltas

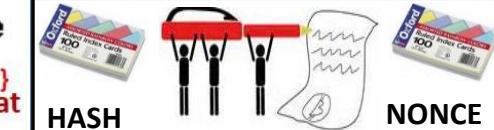
OUT OF BAND / CHANNEL



SEG WIT

SEGREGATED WITNESS

SegWit



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



# 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



PAUL REVERE  
LINEAR, SEQUENTIAL

603 +1 +2



TCP/IP HOP BY HOP COUNT

Energy Attenuates over Distances

TIME / DISTANCE SERVICE LEVEL  
AGREEMENT SLA / O Operations



Spatial  
Econometrics



TIME-SPACE BEACON INFOCON



METRICS / METERS  
TRADE WITH EARTH

5 4 3 2 1

INFORMATION  
CONDITION

Spaceship  
Earth  
Signals &  
Telemetry  
Annex



???  
SIRIUS DISCLOSURE

ASTEROID BELTS =  
RARE MINERALS

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

MAIN  
ASTEROID  
BELT

Farther = More Cost  
➤ Fuel, Resources  
STOCHASTIC  
HARMONIZATION

Service Level Agreements

FIREFLY-HEARTBEAT  
ALGORITHM

UNIVERSAL  
EVENT MESSAGE BUS

ERLANG

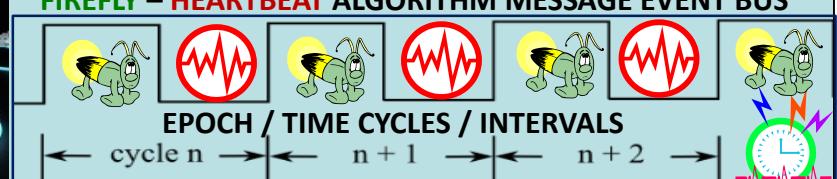
TIME- SPACE METRICS

43 22 13 0 1.5 2.7 5.2

Light minutes

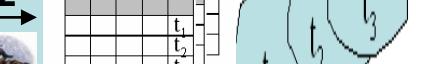
Astronomical units

FIREFLY - HEARTBEAT ALGORITHM MESSAGE EVENT BUS



RADIUS  
WATER DROP IN POND MEME

Attribute Series



INTEREST  
DISTANCE

Geo  
Spatial  
Temporal Series



Micro Grids Closer - Cheaper

BLOCKCHAIN  
MICROGRIDS





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

HEART BEACON CYCLE

USPTO 13/573,002

SURVEY METHODS

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

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

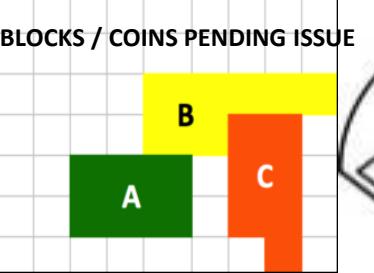


Memo #1421: Purchased Bitcoins are treated akin to property

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



## Mined Bitcoins



$$\Delta\delta$$

## Unmined Bitcoins



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

IDMaps-SONARHOPS distance estimation query-reply service

- End-state Bitcoin quantity will be fixed like land

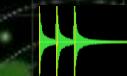
"Bitcoin as protocol of ownership, not transfer"

Coin never travel, but simply switch owners"



**IDMaps**

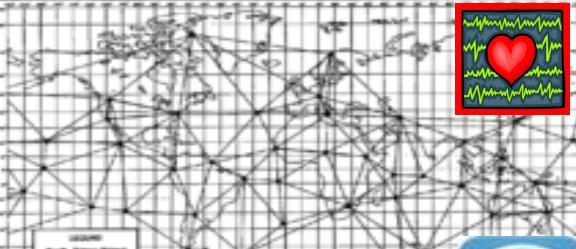
"PING"



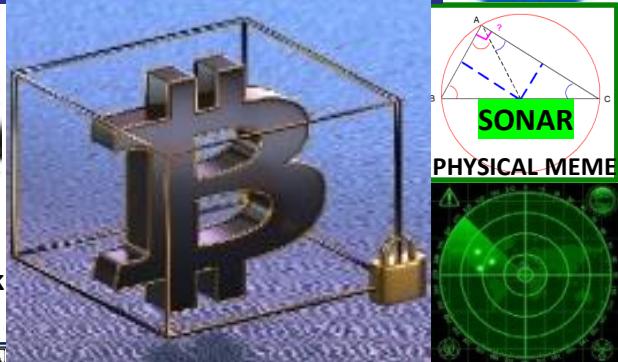
{"Interest"}      **NDN**      {"Distance"}  
ONSHORE  
OFFSHORE

**SonarHops**

TRIANGULATION



EUCLIDIAN GEOMETRY



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



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



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

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

Step 2: coins sent where, when Lat-Long, Time Stamp

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

Step 4: Issuing Org of Record adjudicates w buyer



$$\Delta\delta$$



# **Electronic Product Code Information Services (EPCIS) GS1 Standard for creating, sharing visibility event data**

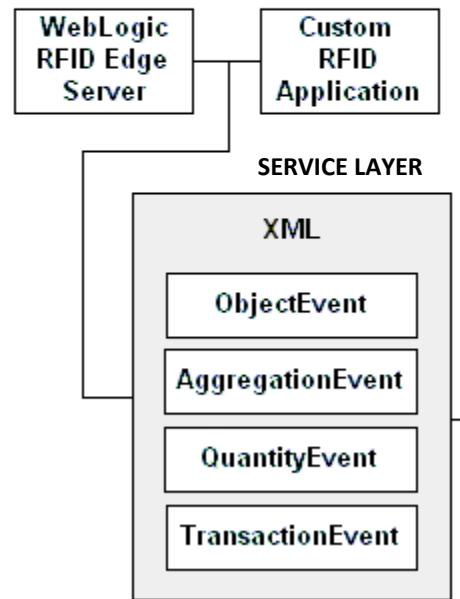


**HBC**  
SYSTEM OF SYSTEMS  
TIME-SPACE SYNC

# UNIVERSAL EVENT BUS

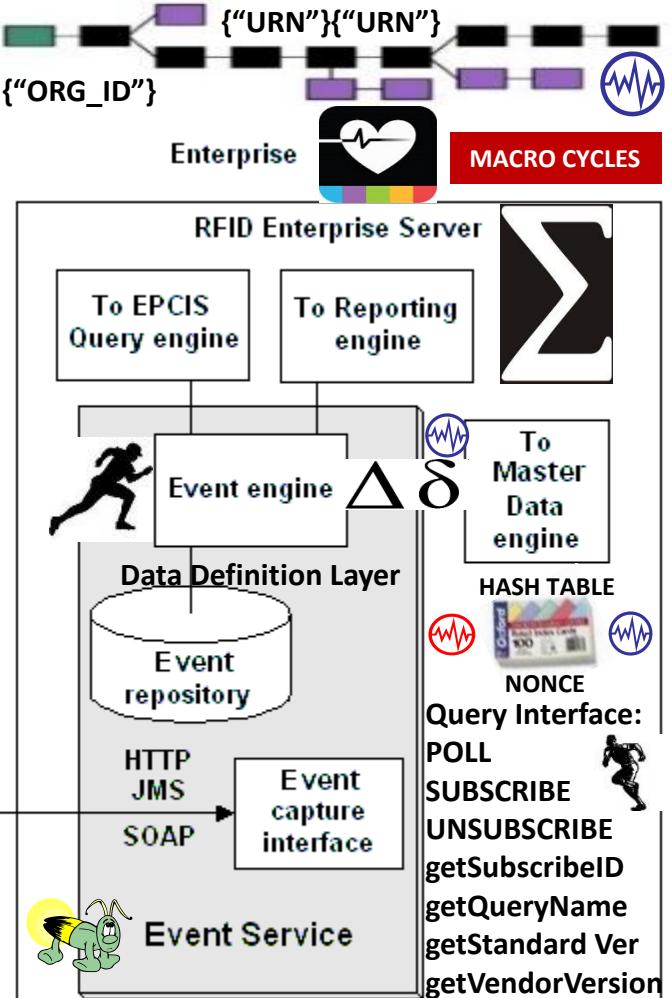


**EPCIS  
EPCIS DATA MODEL**



## Core Business Vocabulary (CBV)

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



CLOSER IS CHEAPER

CLOSER IS FASTER

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

**CASES** **BREVITY CODES**

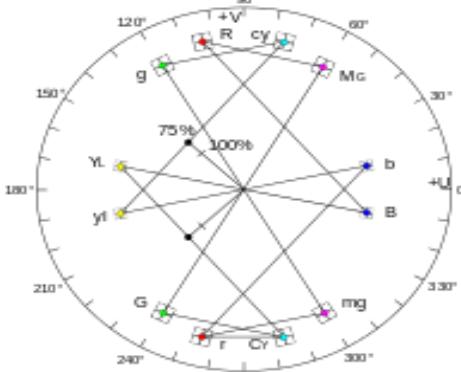
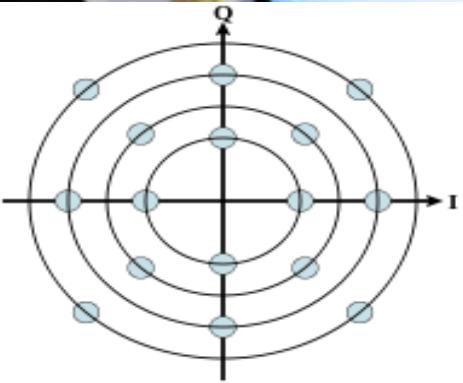
# !st Compiler DESIGN Still the **BEST**

## ROSETTA STONE

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



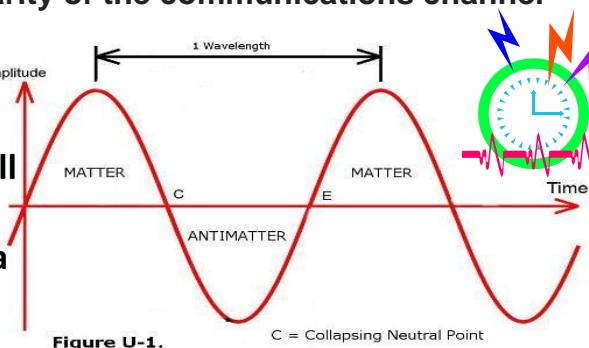
[www.RLighthouse.com](http://www.RLighthouse.com)



### 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”

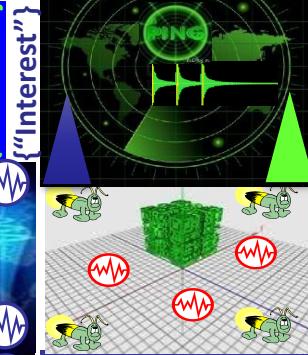


Sine wave of our blinking universe. The 4 fundamental forces will all be found to vary continuously when sampled at 2x the blinking frequency, per Nyquist-Shannon theory



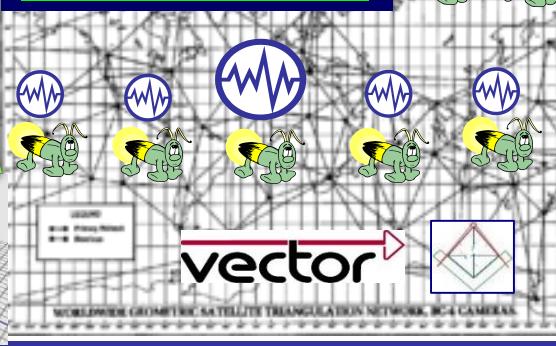
USPTO 13/573,002  
[sawconcepts.com/index](http://sawconcepts.com/index)

NDN  
IDMaps  
SonarHops

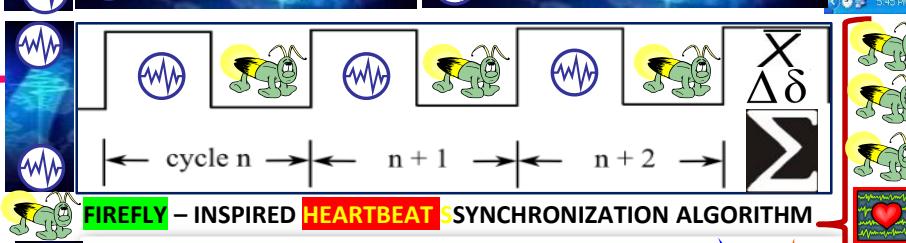


Heart Beacon Cycle Time – Space Meter  
Geo-Spatial Temporal Intensity Metrics

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”





Demurrage Charges  
FRIEDMAN'S K % RULE

**MONEYBALL ECONOMICS**  
COMMODITIES



ECONOMIC MACRO CYCLES  
Constant % Rate

Increase Per Terra Cycle

</CLASS\_TYPE>

{"Org\_ID"} {"URN"}

<URN>

<URN>

<URN>

<URN>

<URN>

<URN>

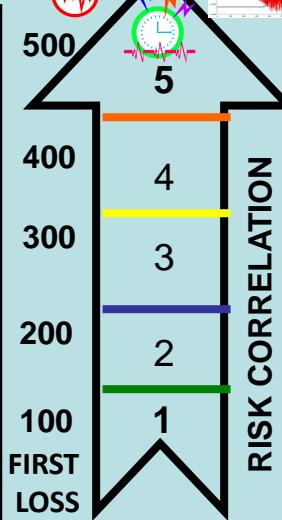
POOL

$\Delta\delta$



FIX PROTOCOL  
INDUSTRY-DRIVEN MESSAGING STANDARD™

LAST LOSS



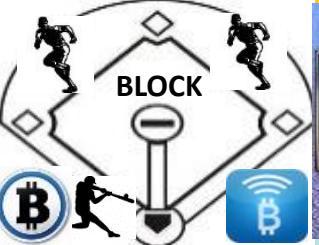
IEEE 802.15.4 OASIS MQTT

TELEMETRY TRANSPORT

IEEE 802.1AG HOP BY HOP

DETECTION

Bitcoin = Property



BLOCKTIME ARBITRAGE

Blockchain Timestamps



BTC / FIAT Convert

Triangulation

PoW PoS POET..

Euclidian Geo

PoA, Age, Vote..

GPS GEO LOC

DATE TIME STAMP

Firefly-Heartbeat



ALGORITHM

Heartbeat Snapshots

Microcycles Heartbeat Cycle

Multi-Meme Metrics

EVENT BUS

Match to Closest

Heartbeat Cycle

Firefly Events

Strive to Sync

To Closest

Heartbeat Cycle



BLOCKCHAIN PARSING

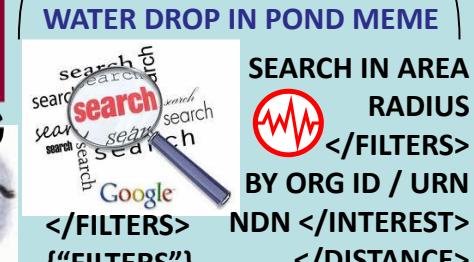
ERLANG

Firefly Events

Strive to Sync

To Closest

Heartbeat Cycle



# SOFTWARE DEFINED NETWORKING

NETOPS

Command Syntax

REST State Transfer

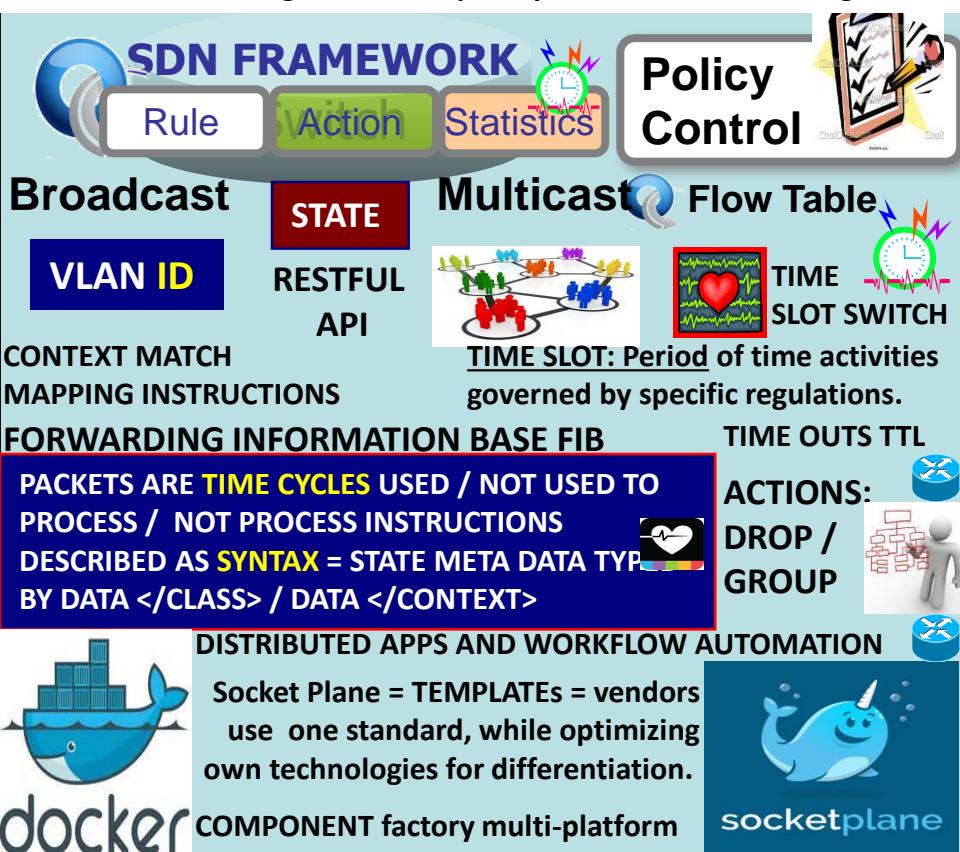
COMMAND SYNTAX  
STATE TRANSFER  
Unicast / Multicast  
Flow Tables / Workflow  
Dynamic Network  
Configuration Management

NET CENTRIC WARFARE  
SYSTEM OF SYSTEMS TELEMETRY

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

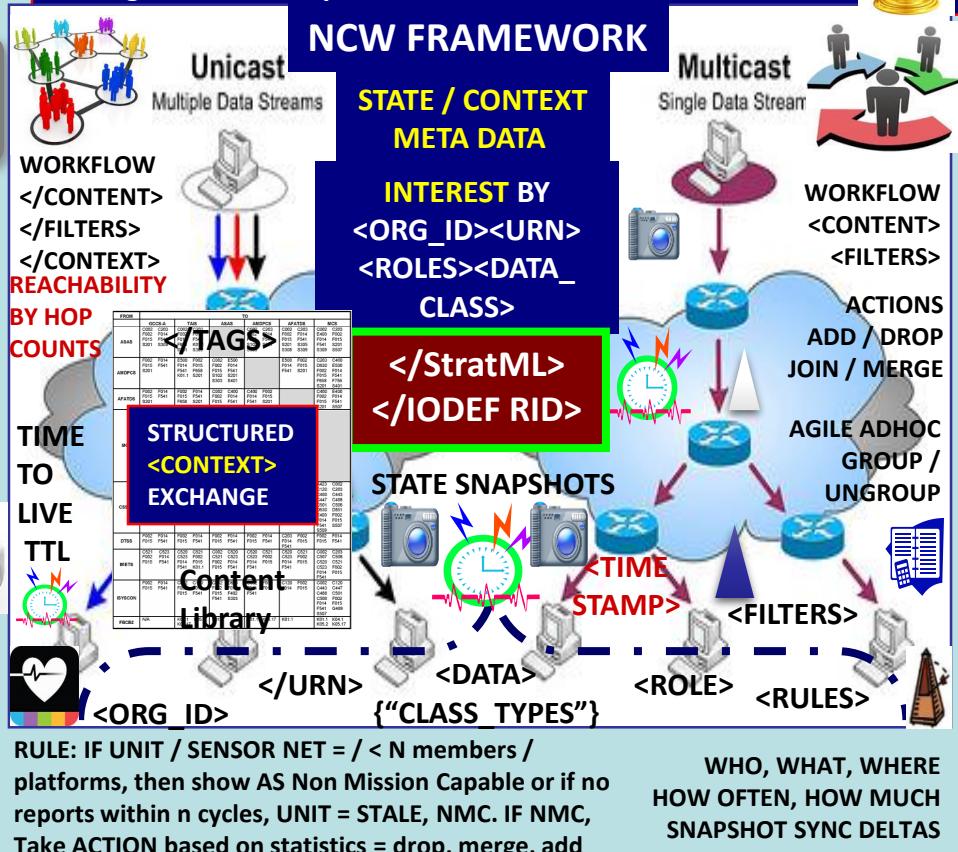
- SDN is a *framework* to allow network administrators to *automatically* and dynamically manage and control a *large number* of network devices, *services*, topology, traffic paths, and packet handling (quality of

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."



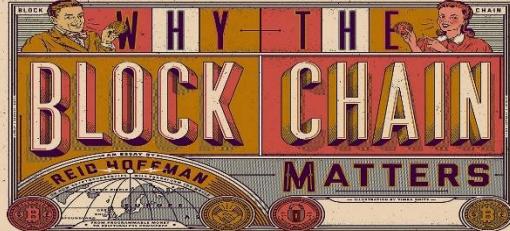
HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX



# TradeNet



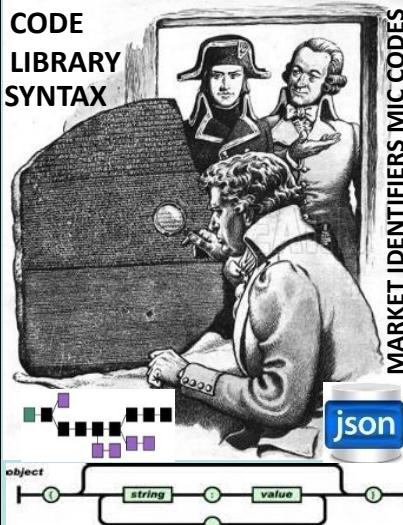
## Programmable Money \$\$\$



RIED HOFFMAN 15 May 2015 [LINK](#)

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

CODE  
LIBRARY  
SYNTAX



MARKET IDENTIFIERS MIC CODES

300 + MESSAGE  
TEMPLATES  
SYNTAX LIBRARY  
PROGRAMMING  
**STRUCTURED <CONTENT> EXCHANGE**

BREVITY CODES  
MARKET ID CODES  
USE CASE TEMPLATES  
SIGNALLING, TELEMETRY

NATO

ORGANIZATIONS



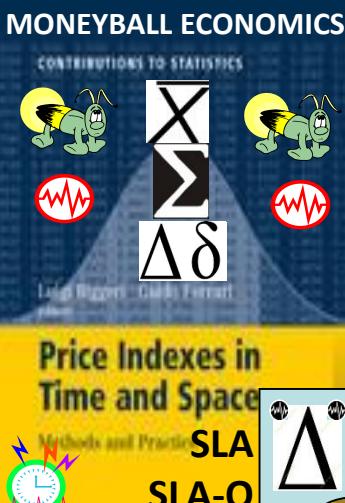
Organizational Units OU, OU

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, properties as E-assets.

WIRE

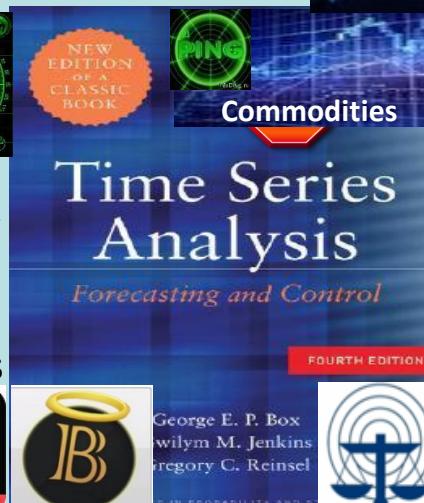
[http://en.wikipedia.org/wiki/Organizational\\_unit\\_\(computing\)](http://en.wikipedia.org/wiki/Organizational_unit_(computing))

In computing, an organizational unit (OU) is a way of classifying directories objects, or names in a **DIGITAL CERTIFICATE HIERARCHY**



Price Indexes in Time and Space  
Methods and Practice

SLA  
SLA-O



Time Series Analysis  
Forecasting and Control

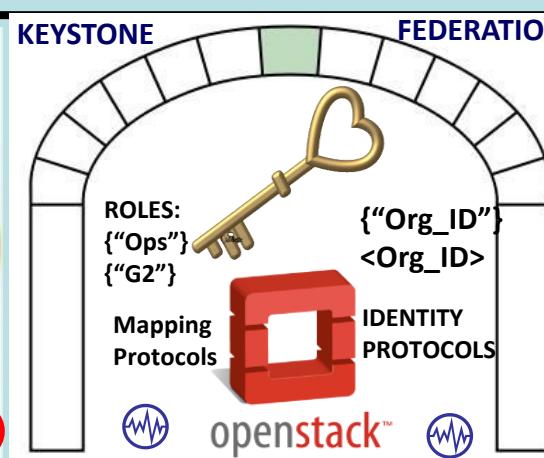
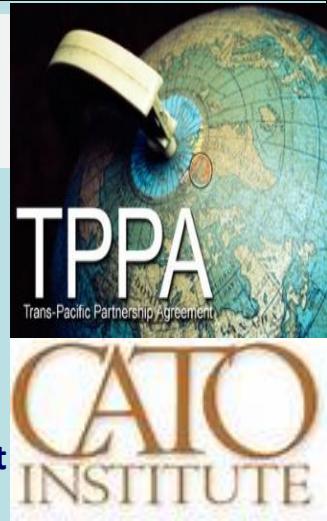
FOURTH EDITION

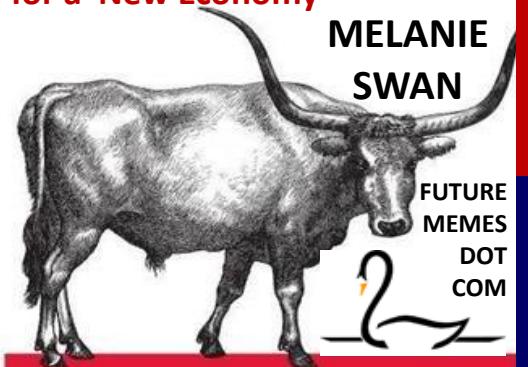




## Trans-Pacific Partnership is great for elites. Is it good for anyone else? by [Timothy B. Lee](#) on April 17, 2015

How the TPP empowers elites. The nature of trade agreements has shifted. They're no longer just about removing barriers to trade. They've become a mechanism for setting global economic rules more generally. This system for setting global rules has some serious defects. We expect the laws that govern our economic lives will be made in a transparent, representative, and accountable fashion. The TPP negotiation process is none of these — it's secretive, it's dominated by powerful insiders, and it provides little opportunity for public input. Attributed to CATO Institute





# 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.



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

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## Autonomous Device Coordination Framework



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

FEDERATION  
AGREEMENTS  
PROCEDURAL  
TEMPLATE

## FEDERATION

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

## LDAP DIRECTORY

Physical proximity

Social proximity

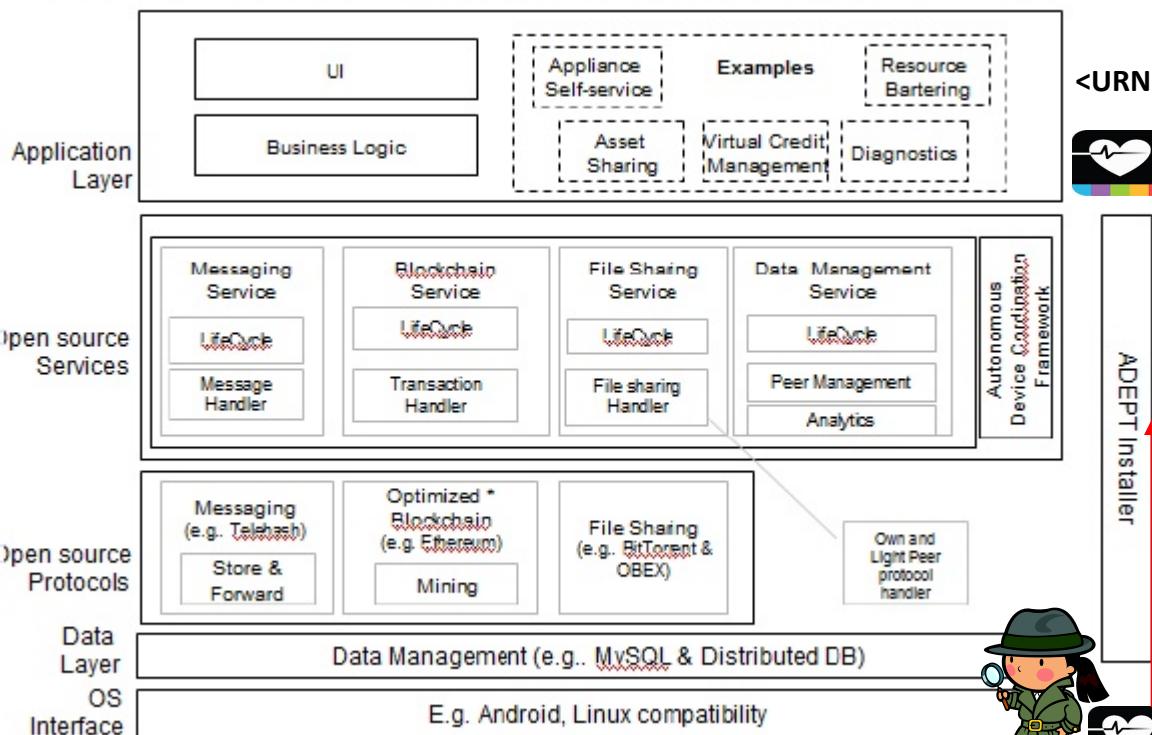
Temporal proximity

Agreements

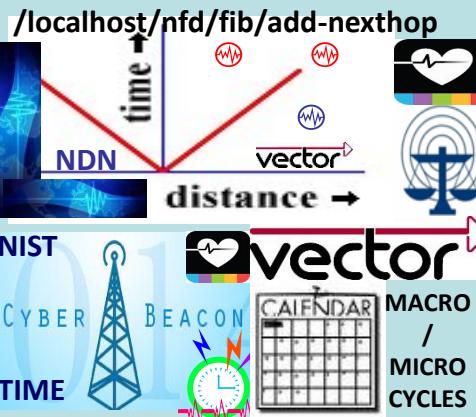
Payments

Barter

## ADEPT Standard Peer Architecture – Logical View



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

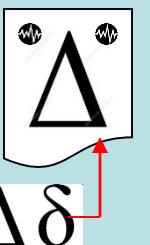


PAYMENTS BASED ON GEO-SPATIAL TEMPORAL METRICS / METERS  
<URN> DESCRIBES COMMODITIES ETC BY UNIFORM RESOURCE NAME BY </INTEREST>>



ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML\_Wf>



FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH



OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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



**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

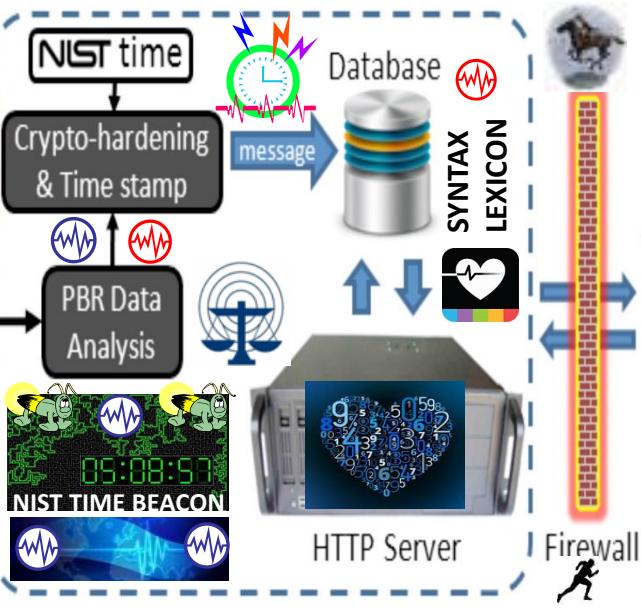


## NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

UNPREDICTABLE SAMPLING  
SECURE AUTHENTICATION  
SECURE MULTI  
PARTY /  
AUTENTICATION

Entropy  
Entanglement Source  
RANDOM NUMBER GENERATOR

Bell Test



SEC REGULATION:  
{"Org\_ID"}  
In the clear  
Issuing Org tracks  
User Accounts  
NIST Cyber  
BEACON =  
Non-Repudiation



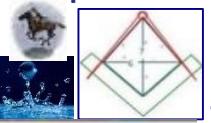
{"USER\_ID"} Encrypted w QRB



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>

OFFSHORE BEACONS ONSHORE

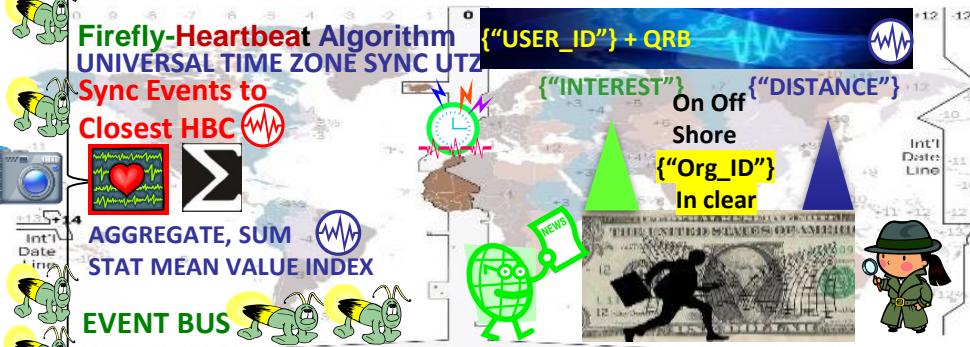
NDN PROXIMITY

NDN

</interest></distance>

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

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



Time / Distance Metrics



PROXIMITY

Geodesic System

Routing Info Base RIB

ACCOUNT BELONGS TO </Org\_ID>

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

DEVICE / SENSORS <UUID><UUID>

OFFSHORE BEACONS ONSHORE

NDN PROXIMITY

NDN

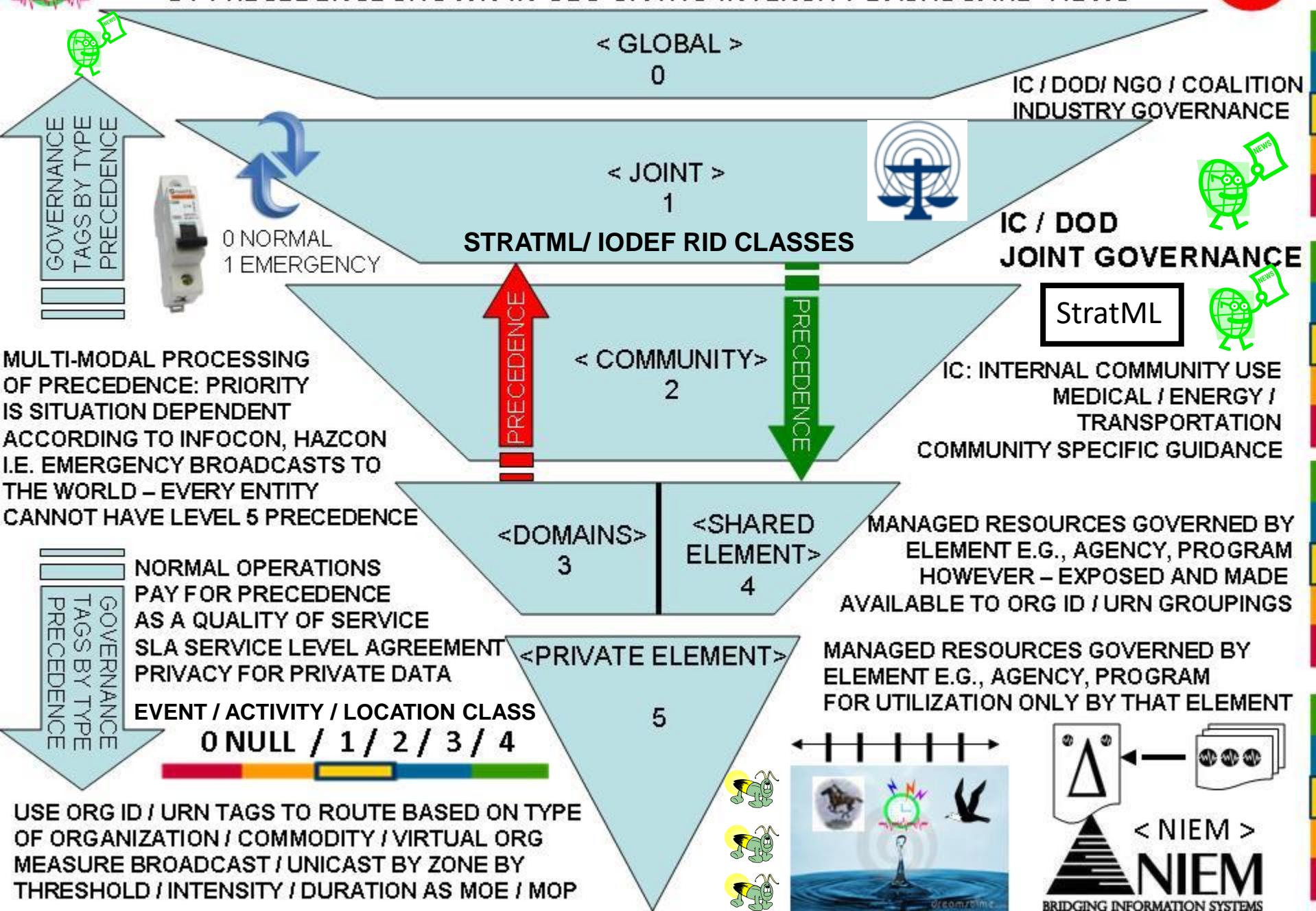
</interest></distance>

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

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



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



# 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>  
<URN><URN>  
<URN><URN>



vector

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

GEO-SPATIAL TEMPORAL INTENSITY METRICS

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

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

CONTENT LEXICON  
ROSETTA STONE

NDN



<INTEREST>



NDN

<INTEREST>

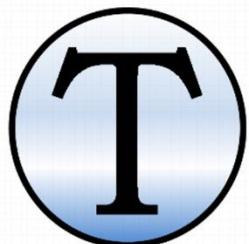


CYBER SECURITY CONTENT  
LEXICON ROSETTA STONE

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

NIST CYBER SECURITY FRAMEWORK

FROM	F002	F003	F004	F005	F006	F007	F008	F009	F010	F011	F012	F013	F014	F015	F016	F017	F018	F019	F020	F021	F022	F023	F024	F025	F026	F027	F028	F029	F030	F031	F032	F033	F034	F035	F036	F037	F038	F039	F040	F041	F042	F043	F044	F045	F046	F047	F048	F049	F050	F051	F052	F053	F054	F055	F056	F057	F058	F059	F060	F061	F062	F063	F064	F065	F066	F067	F068	F069	F070	F071	F072	F073	F074	F075	F076	F077	F078	F079	F080	F081	F082	F083	F084	F085	F086	F087	F088	F089	F090	F091	F092	F093	F094	F095	F096	F097	F098	F099	F099	F100	F101	F102	F103	F104	F105	F106	F107	F108	F109	F110	F111	F112	F113	F114	F115	F116	F117	F118	F119	F120	F121	F122	F123	F124	F125	F126	F127	F128	F129	F130	F131	F132	F133	F134	F135	F136	F137	F138	F139	F140	F141	F142	F143	F144	F145	F146	F147	F148	F149	F150	F151	F152	F153	F154	F155	F156	F157	F158	F159	F160	F161	F162	F163	F164	F165	F166	F167	F168	F169	F170	F171	F172	F173	F174	F175	F176	F177	F178	F179	F180	F181	F182	F183	F184	F185	F186	F187	F188	F189	F190	F191	F192	F193	F194	F195	F196	F197	F198	F199	F199	F200	F201	F202	F203	F204	F205	F206	F207	F208	F209	F210	F211	F212	F213	F214	F215	F216	F217	F218	F219	F220	F221	F222	F223	F224	F225	F226	F227	F228	F229	F229	F230	F231	F232	F233	F234	F235	F236	F237	F238	F239	F239	F240	F241	F242	F243	F244	F245	F246	F247	F248	F249	F249	F250	F251	F252	F253	F254	F255	F256	F257	F258	F259	F259	F260	F261	F262	F263	F264	F265	F266	F267	F268	F268	F269	F270	F271	F272	F273	F274	F275	F276	F277	F278	F279	F279	F280	F281	F282	F283	F284	F285	F286	F287	F288	F289	F289	F290	F291	F292	F293	F294	F295	F296	F297	F298	F298	F299	F299	F300	F301	F302	F303	F304	F305	F306	F307	F308	F309	F309	F310	F311	F312	F313	F314	F315	F316	F317	F318	F319	F319	F320	F321	F322	F323	F324	F325	F326	F327	F328	F329	F329	F330	F331	F332	F333	F334	F335	F336	F337	F338	F339	F339	F340	F341	F342	F343	F344	F345	F346	F347	F348	F349	F349	F350	F351	F352	F353	F354	F355	F356	F357	F358	F359	F359	F360	F361	F362	F363	F364	F365	F366	F367	F368	F368	F369	F370	F371	F372	F373	F374	F375	F376	F377	F378	F379	F379	F380	F381	F382	F383	F384	F385	F386	F387	F388	F388	F389	F390	F391	F392	F393	F394	F395	F396	F397	F398	F398	F399	F399	F400	F401	F402	F403	F404	F405	F406	F407	F408	F408	F409	F410	F411	F412	F413	F414	F415	F416	F417	F418	F418	F419	F420	F421	F422	F423	F424	F425	F426	F427	F428	F428	F429	F429	F430	F431	F432	F433	F434	F435	F436	F437	F438	F439	F439	F440	F441	F442	F443	F444	F445	F446	F447	F448	F449	F449	F450	F451	F452	F453	F454	F455	F456	F457	F458	F459	F459	F460	F461	F462	F463	F464	F465	F466	F467	F468	F468	F469	F470	F471	F472	F473	F474	F475	F476	F477	F478	F478	F479	F479	F480	F481	F482	F483	F484	F485	F486	F487	F488	F489	F489	F490	F491	F492	F493	F494	F495	F496	F497	F498	F498	F499	F499	F500	F501	F502	F503	F504	F505	F506	F507	F508	F508	F509	F510	F511	F512	F513	F514	F515	F516	F517	F518	F518	F519	F519	F520	F521	F522	F523	F524	F525	F526	F527	F528	F528	F529	F529	F530	F531	F532	F533	F534	F535	F536	F537	F538	F538	F539	F539	F540	F541	F542	F543	F544	F545	F546	F547	F548	F548	F549	F549	F550	F551	F552	F553	F554	F555	F556	F557	F558	F558	F559	F559	F560	F561	F562	F563	F564	F565	F566	F567	F568	F568	F569	F569	F570	F571	F572	F573	F574	F575	F576	F577	F577	F578	F578	F579	F579	F580	F581	F582	F583	F584	F585	F586	F587	F587	F588	F588	F589	F589	F590	F591	F592	F593	F594	F595	F596	F597	F597	F598	F598	F599	F599	F600	F601	F602	F603	F604	F605	F606	F607	F607	F608	F608	F609	F610	F611	F612	F613	F614	F615	F616	F617	F617	F618	F618	F619	F619	F620	F621	F622	F623	F624	F625	F626	F627	F627	F628	F628	F629	F629	F630	F631	F632	F633	F634	F635	F636	F637	F637	F638	F638	F639	F639	F640	F641	F642	F643	F644	F645	F646	F647	F647	F648	F648	F649	F649	F650	F651	F652	F653	F654	F655	F656	F657	F657	F658	F658	F659	F659	F660	F661	F662	F663	F664	F665	F666	F667	F667	F668	F668	F669	F669	F670	F671	F672	F673	F674	F675	F676	F677	F677	F678	F678	F679	F679	F680	F681	F682	F683	F684	F685	F686	F687	F687	F688	F688	F689	F689	F690	F691	F692	F693	F694	F695	F696	F697	F697	F698	F698	F699	F699	F700	F701	F702	F703	F704	F705	F706	F707	F707	F708	F708	F709	F709	F710	F711	F712	F713	F714	F715	F716	F717	F717	F718	F718	F719	F719	F720	F721	F722	F723	F724	F725	F726	F727	F727	F728	F728	F729	F729	F730	F731	F732	F733	F734	F735	F736	F737	F737	F738	F738	F739	F739	F740	F741	F742	F743	F744	F745	F746	F747	F747	F748	F748	F749	F749	F750	F751	F752	F753	F754	F755	F756	F757	F757	F758	F758	F759	F759	F760	F761	F762	F763	F764	F765	F766	F767	F767	F768	F768	F769	F769	F770	F771	F772	F773	F774	F775	F776	F777	F777	F778	F778	F779	F779	F780	F781	F782	F783	F784	F785	F786	F787	F787	F788	F788	F789	F789	F790	F791	F792	F793	F794	F795	F796	F797	F797	F798	F798	F799	F799	F800	F801	F802	F803	F804	F805	F806	F807	F807	F808	F808	F809	F809	F810	F811	F812	F813	F814	F815	F816	F817	F817	F818	F818	F819	F819	F820	F821	F822	F823	F824	F825	F826	F827	F827	F828	F828	F829	F829	F830	F831	F832	F833	F834	F835	F836	F837	F837	F838	F838	F839	F839	F840	F841	F842	F843	F844	F845	F846	F847	F847	F848	F848	F849	F849	F850	F851	F852	F853	F854	F855	F856	F857	F857	F858	F858	F859	F859	F860	F861	F862	F863	F864	F865	F866	F867	F867	F868	F868	F869	F869	F870	F871	F872	F873	F874	F875	F876	F877	F877	F878	F878	F879	F879	F880	F881	F882	F883	F884	F885	F886	F887	F887	F888	F888	F889	F889	F890	F891	F892	F893	F894	F895	F896	F897	F897	F898	F898	F899	F899	F900	F901	F902	F903	F904	F905	F906	F907	F907	F908	F908	F909	F909	F910	F911	F912	F913	F914	F915	F916	F917	F917	F918	F918	F919	F919	F920	F921	F922	F923	F924	F925	F926	F927	F927	F928	F928	F929	F929	F930	F931	F932	F933	F934	F935	F936	F937	F937	F938	F938	F939	F939	F940	F941	F942	F943	F944	F945	F946	F947	F947	F948	F948	F949	F949	F950	F951	F952	F953	F954	F955	F956	F957	F957	F958	F958	F959	F959	F960	F961	F962	F963	F964	F965	F966	F967	F967	F968	F968	F969	F969	F970	F971	F972	F973	F974	F975	F976	F977	F977	F978	F978	F979	F979	F980	F981	F982	F983	F984	F985	F986	F987	F987	F988	F988	F989	F989	F990	F991	F992	F993	F994	F995	F996	F997	F997	F998	F998	F999	F999	F1000	F1001	F1002	F1003	F1004	F1005	F1006	F1007	F1007	F1008	F1008	F1009	F1009	F1010	F1011	F1012	F1013	F1014	F1015	F1016	F1017	F1017	F1018	F1018	F1019	F1019	F1020	F1021	F1022	F1023	F1024	F1025	F1026	F1027	F1027	F1028	F1028	F1029	F1029	F1030	F1031	F1032	F1033	F1034	F1035	F1036	F1037	F1037	F1038	F1038	F1039	F1039	F1040	F1041	F1042	F1043	F1044	F1045	F1046	F1047	F1047	F1048	F1048	F1049	F1049	F1050	F1051	F1052	F1053	F1054	F1055	F1056	F1057	F1057	F1058	F1058	F1059	F1059	F1060	F1061	F1062	F1063	F1064	F1065	F1066	F1067	F1067	F1068	F1068	F1069	F1069	F1070	F1071	F1072	F1073	F1074	F1075	F1076	F1077	F1077	F1078	F1078	F1079	F1079	F1080	F1081	F1082	F1083	F1084	F1085	F1086	F1087	F1087	F1088	F1088	F1089	F1089	F1090	F1091	F1092	F1093	F1094	F1095	F1096	F1097	F1097	F1098	F1098	F1099	F1099	F1100	F1101	F1102	F1103	F1104	F1105	F1106	F1107	F1107	F1108	F1108	F1109	F1109	F1110	F1111	F1112	F1113	F1114	F1115	F1116	F1117	F1117	F1118</



## Three ideas combined

HOW TRUTHCOIN WORKS:

### 1) Tradable Reputation

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

### 2) SVD Cross-Validation

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



### 3) Strategic Use of TIME

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

## 2. A kind of ‘Future Wikipedia’

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

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

## 3. A software protocol

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

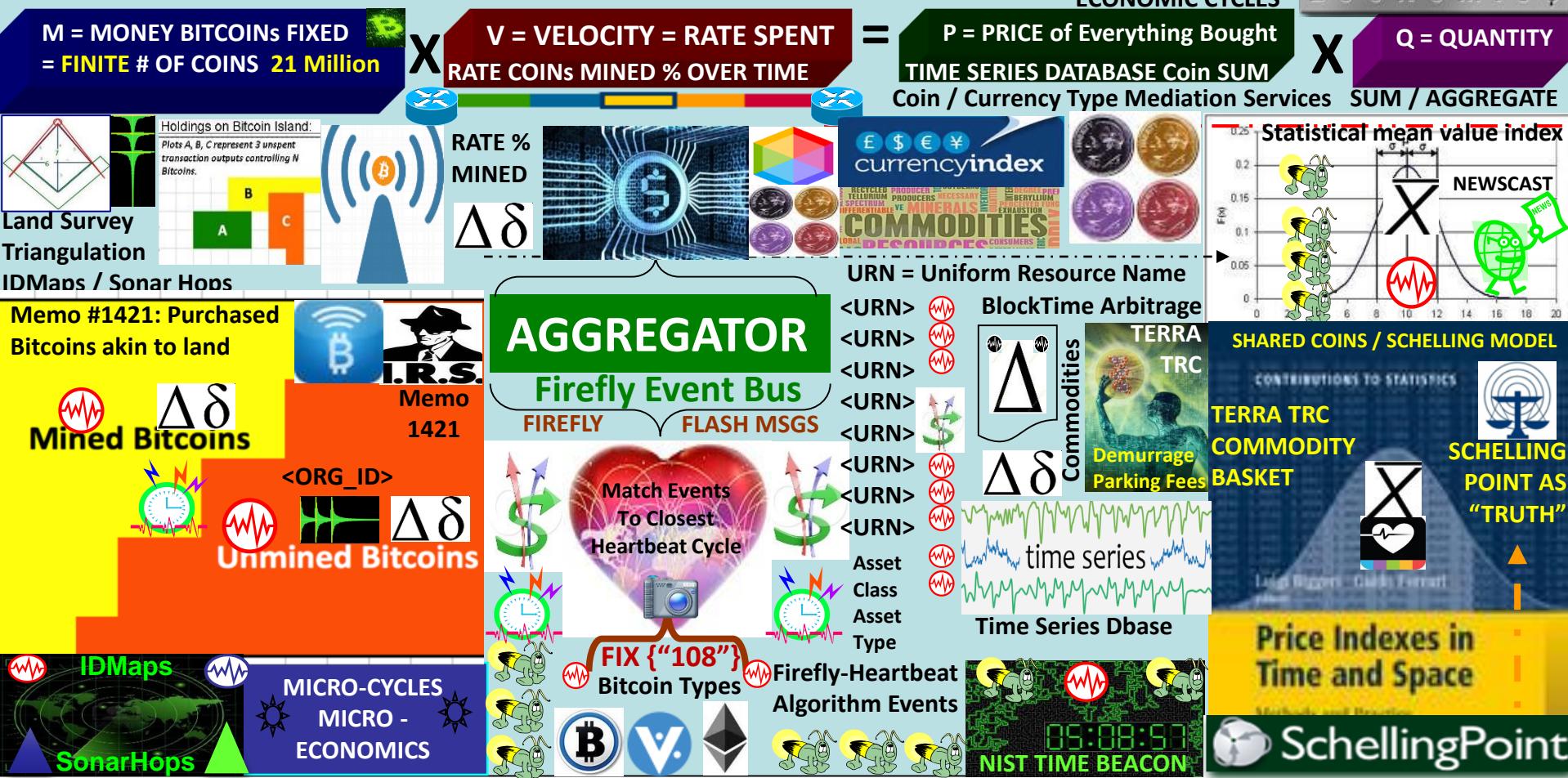


Protocol (Decentralized)	Centralized Non-Protocol
Spoken English	Shakespeare’s Globe Theatre, The Library of Alexandria, MLA Citation Format, Walt Whitman, J.K. Rowling.
Rules to American Football	The NFL, ESPN, The Buffalo Bills.
Bluetooth	A Set of Stereo Speakers, The iPhone 6, A Car Radio Equipped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

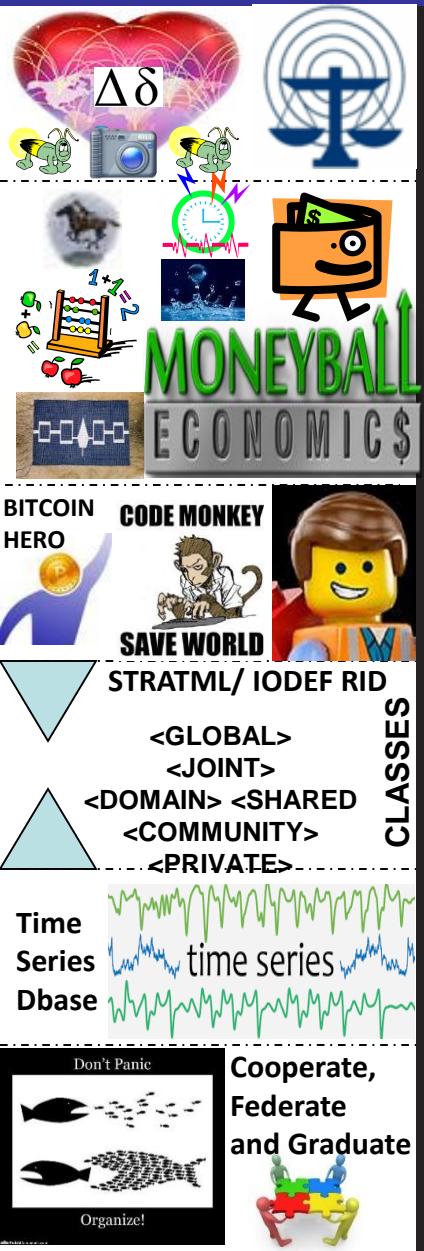
# How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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



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



## HOW GAMIFICATION WORKS:

### 5 COMMON MECHANICS

#### POINTS

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

#### BADGES

Reward achievements visually

#### LEVELS

Encourage users to progress and unlock new rewards

#### LEADERBOARDS

Organise players by rank

#### CHALLENGES

Encourage engagement by offering specific tasks to complete

### 4 MAIN WAYS TO DRIVE ENGAGEMENT

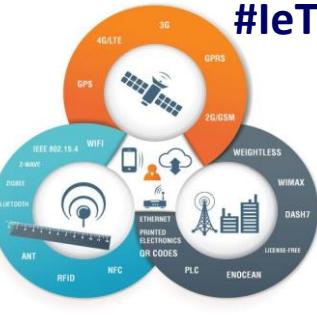
#### ACCELERATED FEEDBACK CYCLES

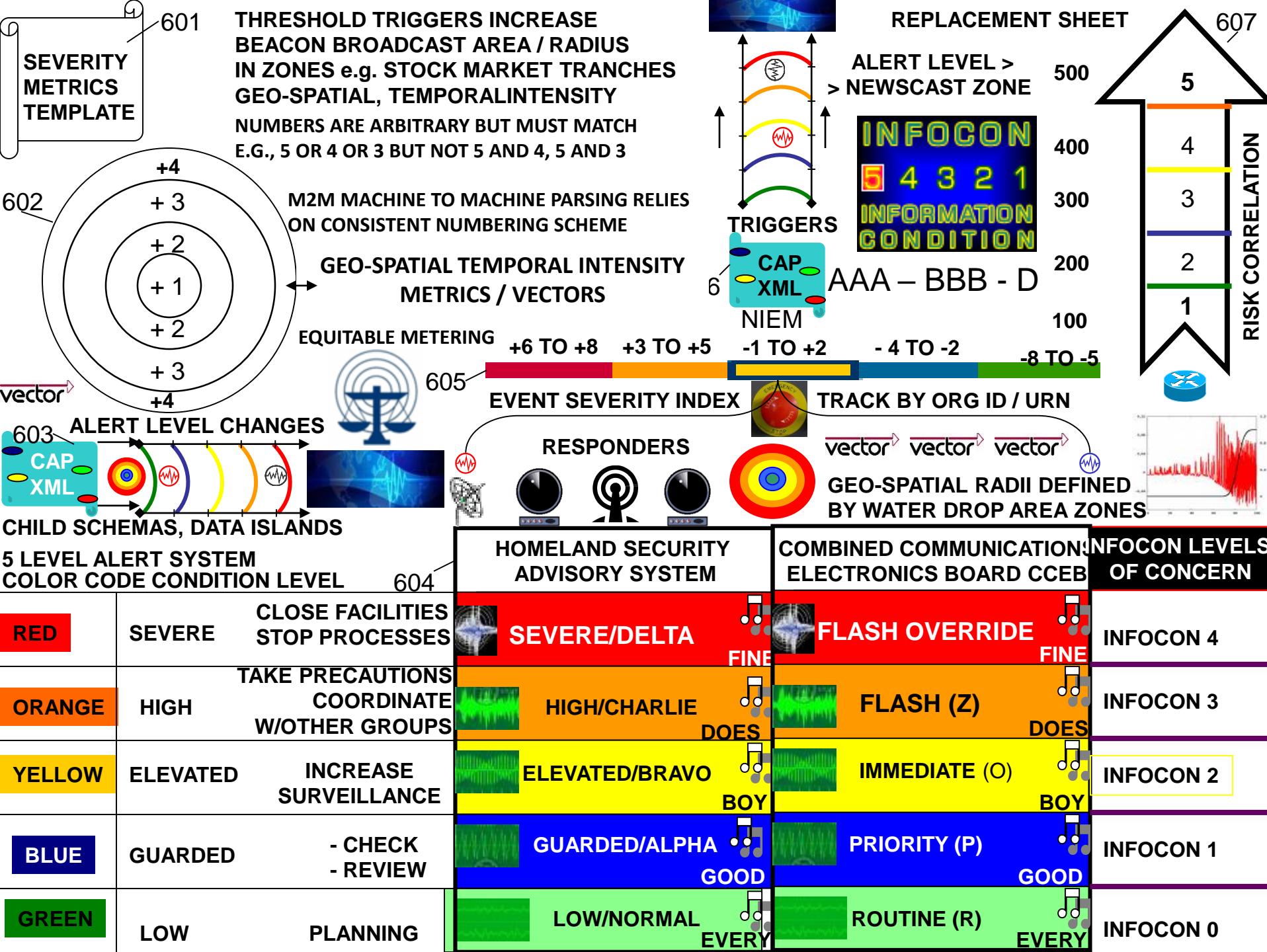
#### CLEAR GOALS AND RULES OF PLAY

#### A COMPELLING NARRATIVE

#### CHALLENGING BUT ACHIEVABLE TASKS



Interface Name	<b>HEARTBEAT Administration Interface [SCOP]</b>					
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>					
<b>API Information</b>  	<b>Functionality Areas</b>  	<b>Cloud Interface Management</b> , configuration, start, stop cloud services, edit configuration (heartbeat messages)				
	<b>API Operation Count</b>	 				
	<b>Web service access type</b>	<b>Web application, front end to [network, device, system] heartbeat]</b>				
	<b>LANGUAGE / PLATFORM BINDINGS</b>	<b>PHP</b>	  			
<b>Interface Characteristics</b>	SCOP is a web application, PHP based, that is a front-end to heartbeat, IP Virtual Server ipvs and Idirectord [check interval e.g., every 5 seconds] software. With SCOP you can start/stop services, view/ edit configuration files e.g., heartbeat message state management snapshots, make backups, take a server online/offline, add/ remove virtual/real servers, etc.					
	<p>The external environment could update <u>resources</u> at random... One solution is a <b>heartbeat</b>: defining a default lease duration and delaying updates until the next <b>cycle</b>"</p>					
  						
<b>QubitCoin Interval: Every 30 Seconds</b>						



# 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:



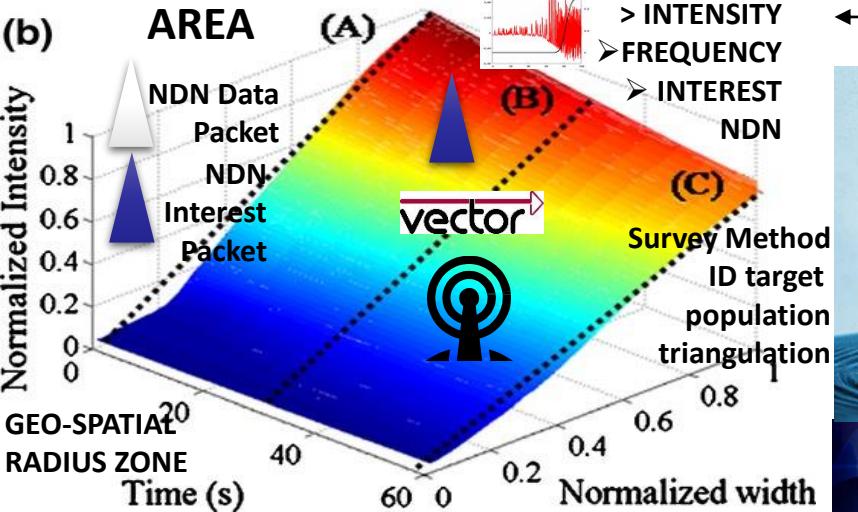
Paul Revere = linear, sequential



TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY  
Cyclic Frequency



# NAMED DATA NETWORKING

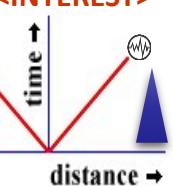
</IoT>  
MQTT



NIST TIME BEACON

05:08:50

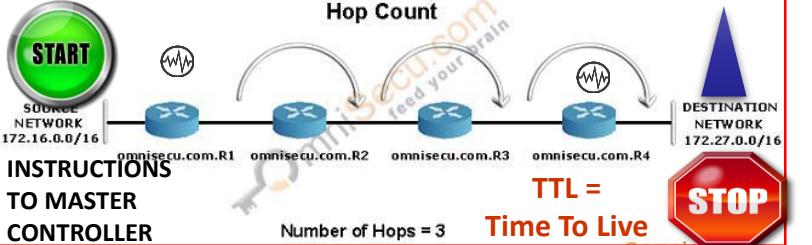
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ARRESTED-D

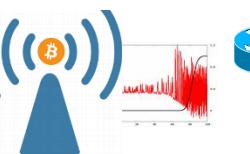
IEEE 802.15.4  
OASIS MQTT

TELEMETRY TRANSPORT



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

IDMAPS  
SONARHOPS  
INTERNET  
TRIANGULATION



vector WirelessHART

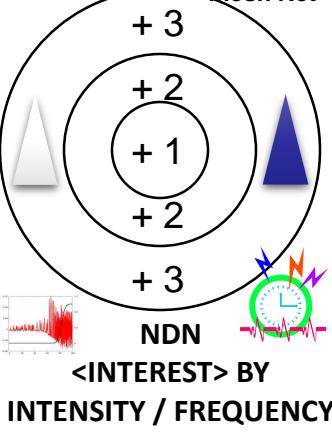
time synchronized,  
self-organizing,  
mesh Net

ALERT LEVEL >  
> NEWSCAST ZONE



SINE-WAVE

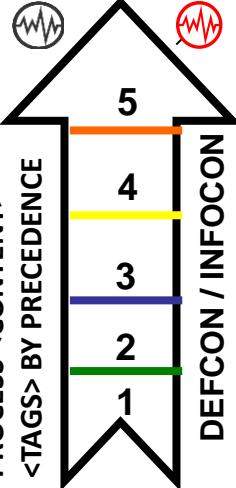
TRIGGERS  
CAP XML

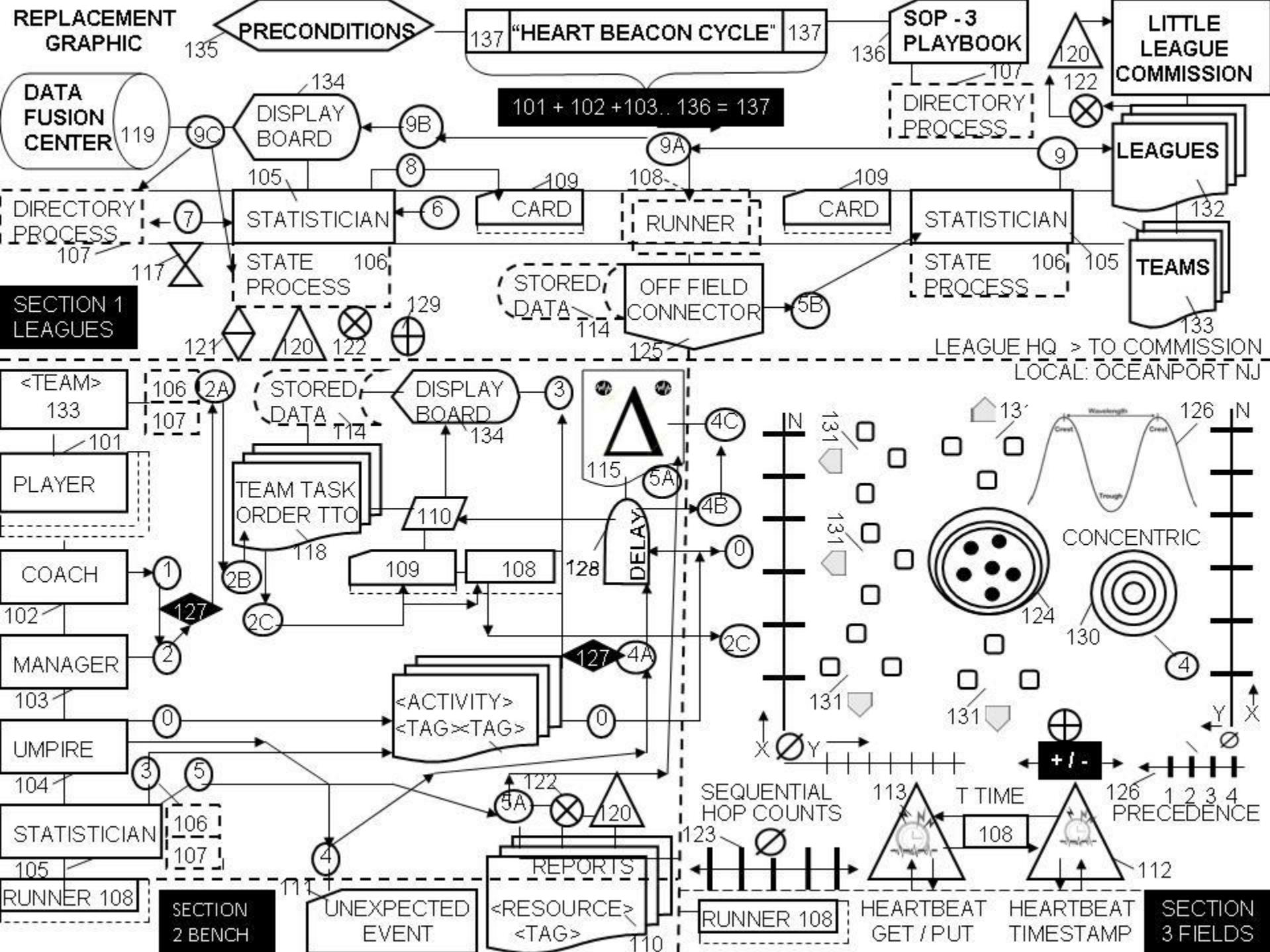


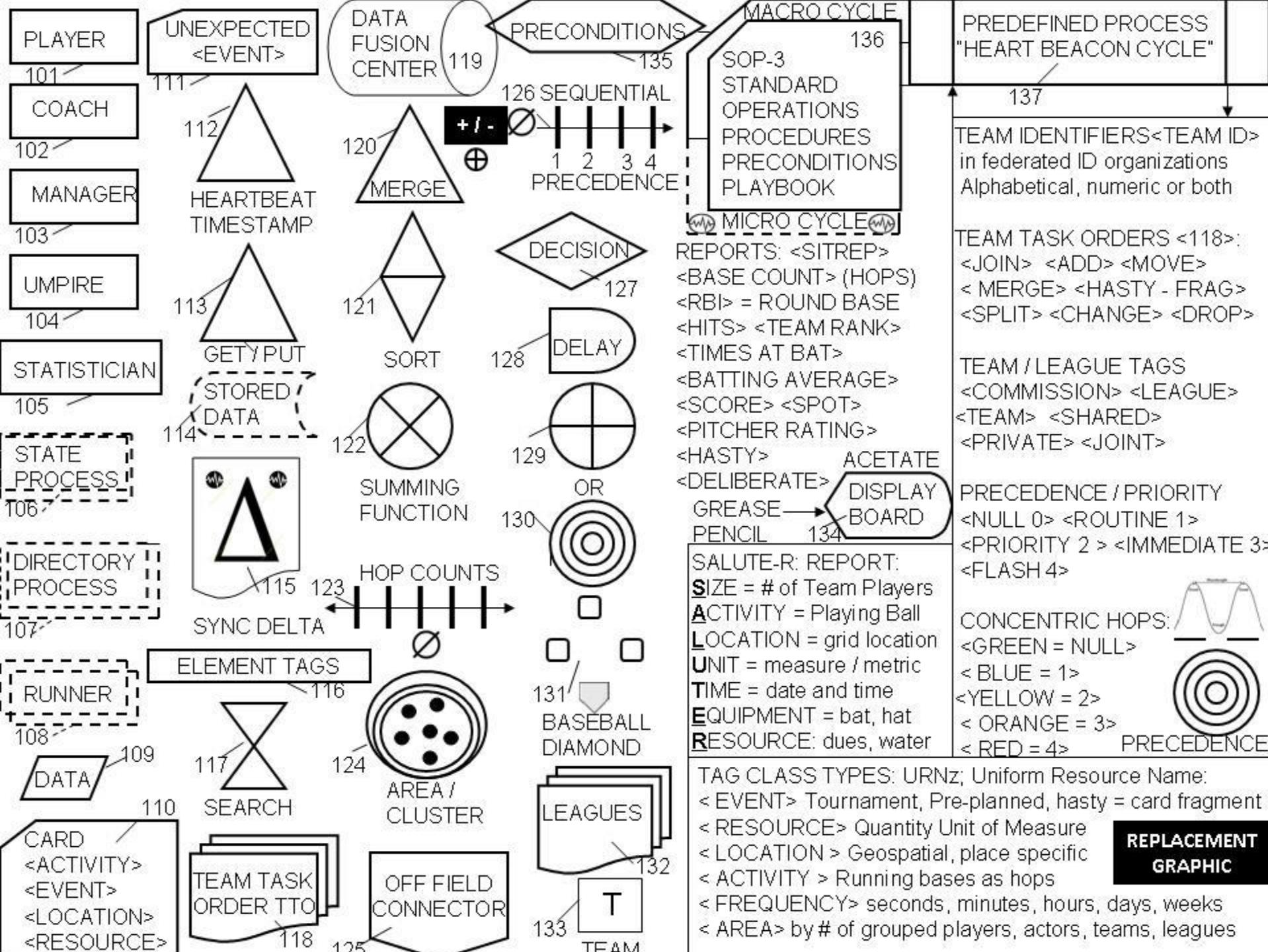
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INTENSITY / FREQUENCY

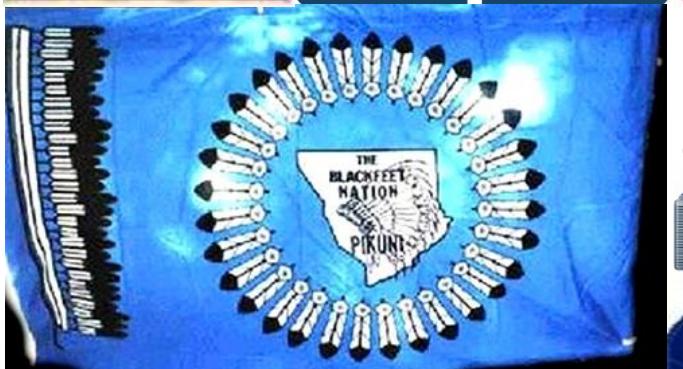
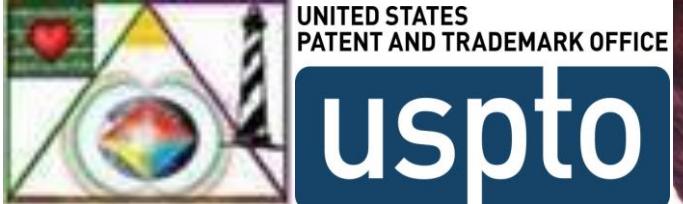
INFOCON  
XML  
MTF  
300 +  
MSG

5 4 3 2 1  
INFORMATION CONDITION

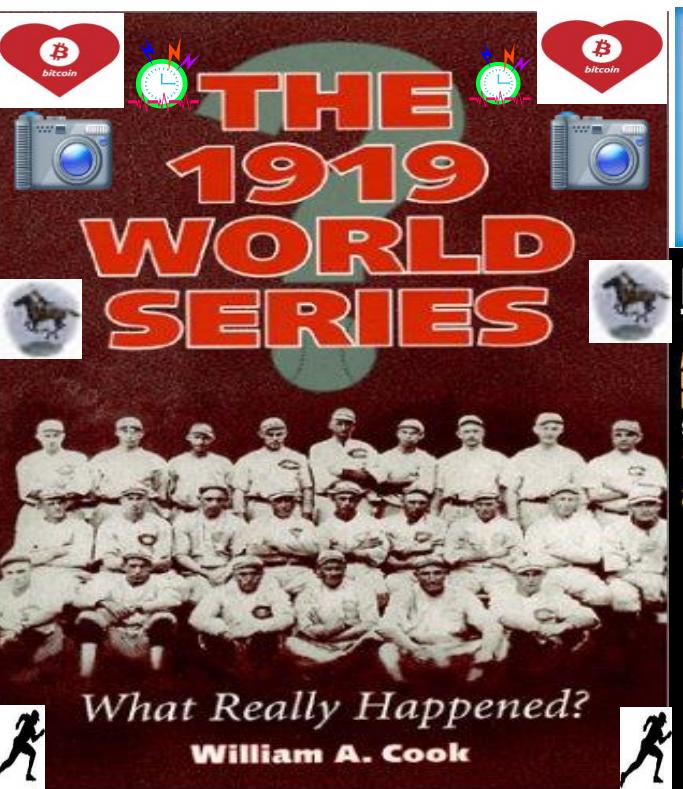








SAW Concepts LLC Owner's Father is from Blackfoot First Nation Native American Indian



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

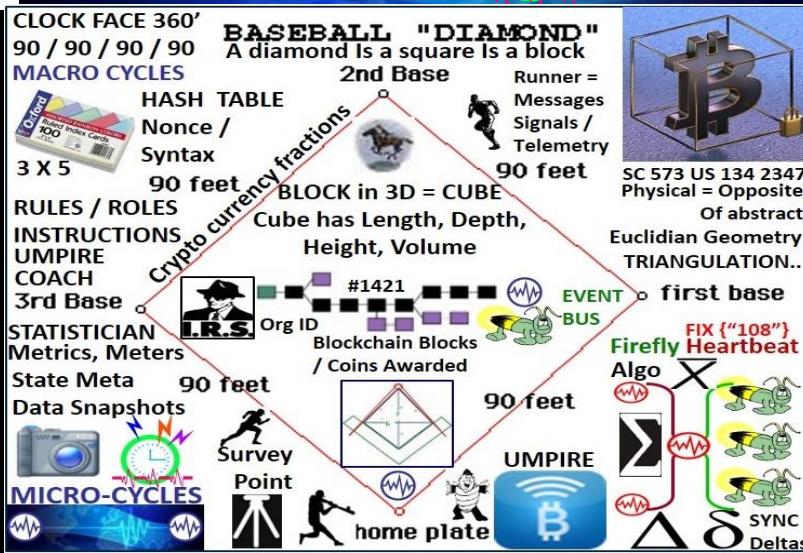


13/573,002



## USPTO SCREEN CAPTURES SUSPENDED PAIR RULES

- Moved Examination outside PAIR
- No need for forms, fees, amendments
- No Time Stamps = Temporal Ambiguity
- Screen captures before / after filing











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



**DAO**

Heartbeat Sync Algorithm for Stochastic Harmonization

BITCOIN MINER

$\Delta\delta$

Sync to Closest Heartbeat

**Firefly-Heartbeat Sync Algorithm**

Heartbeat Flash Message Event Bus

STAT MEAN VALUE INDEX

Time-Space Meter Procedural Template

SIMPLE WINS CONCEPTS LLC

ECO-ECONOMIC HEARTBEAT

Cell: 732-768-5440

Web: <http://sawconcepts.com/index>

[http://patreon.com/beacon\\_heart](http://patreon.com/beacon_heart)

<http://github.com/Beacon-Heart>