



The Heart Beacon Time – Space Meter

- 300+ Structured Data Template Use Cases
- Syntax Lexicon Library Code Repository
- IeT / IoT, Big Data, net of \$ Bitcoin 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

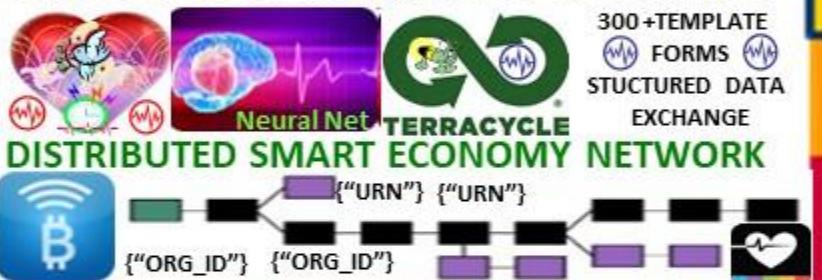


Humanitarian Assistance Networked Donor System

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>



Federation Gateway

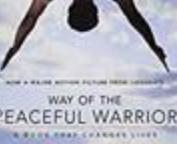


WORLD BEYOND WAR.org
a global movement to end all wars



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

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

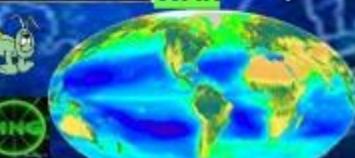


Beacon Communities

Vernetzte Operationsführung



Closer < \$\$\$ < FUEL



Proximity Beacons

JAEGERS



FIREFLY
HEARTBEAT
ALGORITHM

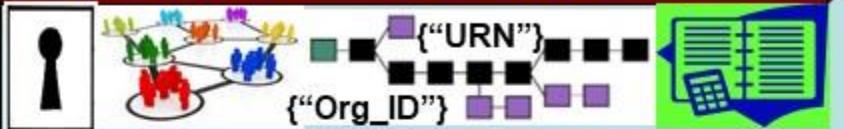
EVENT / ALERT Flash Heartbeat Message Bus



KAIJU

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

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



leT DEVICE / PLATFORM

IoT SENSOR DEVICE

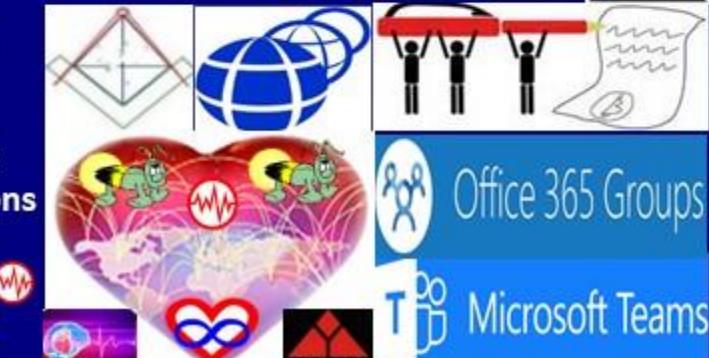


```
</RESOURCE> {"URN"}  
{"Asset Class"} </URN>
```

STOCK EXCHANGE

**STOCK EXCHANGE
MIC MARKET IDENTIFIER**

MIC MARKET IDENTIFIER CODES / BREVITY CODES



Office 365 Groups

 Microsoft Teams

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



Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



THE HEART BEACON CYCLE

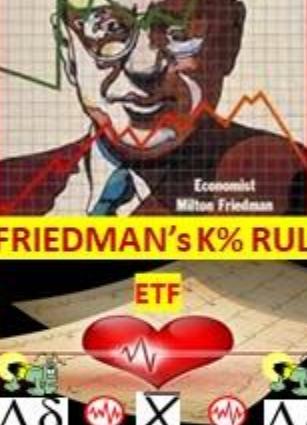
{"108"}



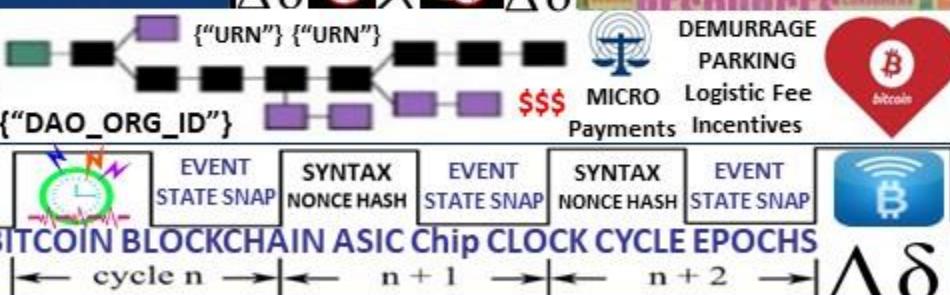
LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE

K% GDP ECONOMIC PULSE FEDCOIN WORLDCOIN

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



The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC. **UTZ TIME ZONE SYNC ("108")**

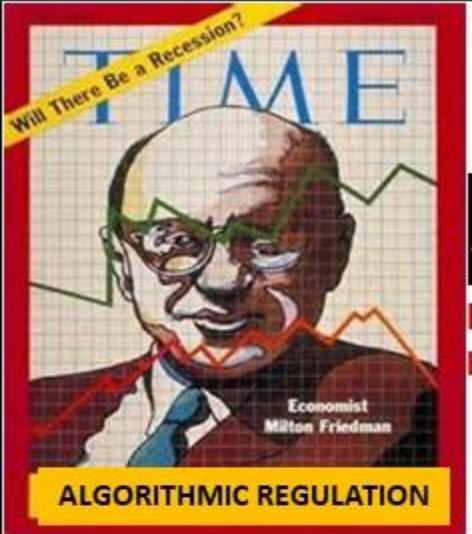


Heartbeat Synchronization nodes in a distributed system generate periodic local heartbeat events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. No rule governs the length of a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



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

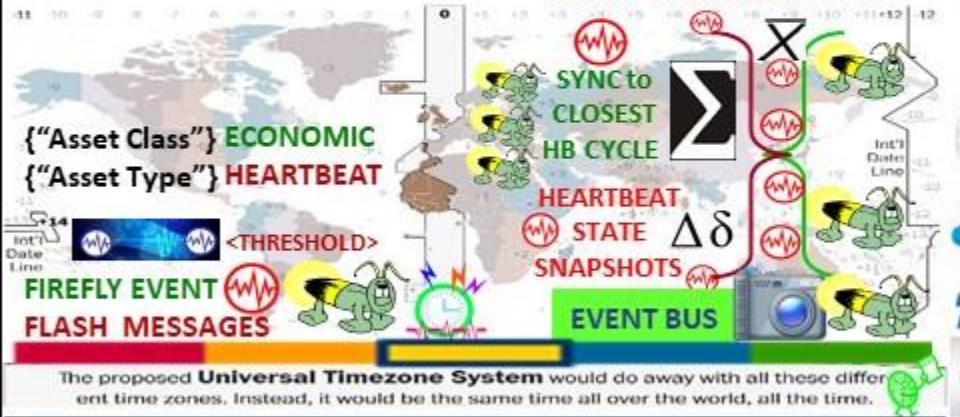




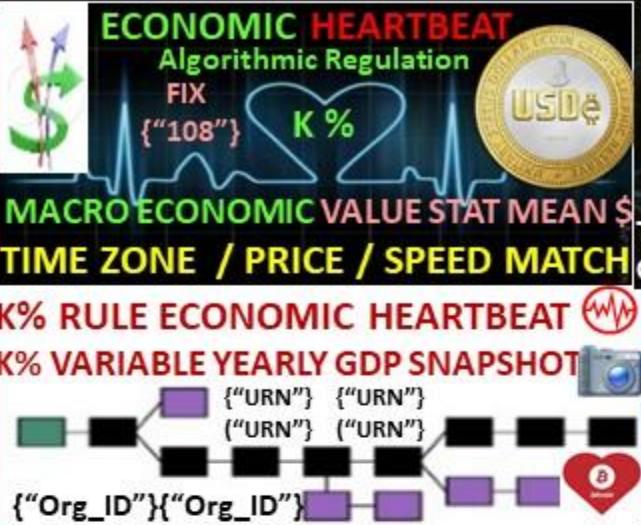
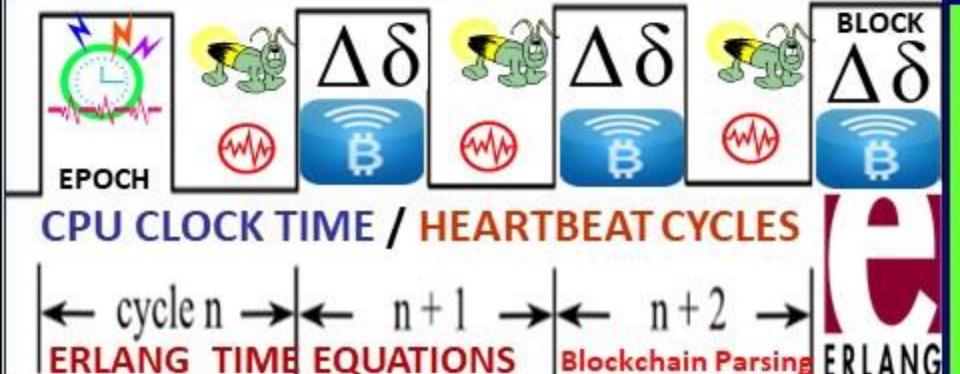
ALGORITHMIC REGULATION

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.

FIREFLY - HEARTBEAT ALGO



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.



'K-Percent Rule Macro economic money-supply automatically adjust money supply by a set amount ("K" variable) regardless of the cyclical state of the economy e.g., set growth variable at rate = to real yearly % GDP $\Delta \delta$



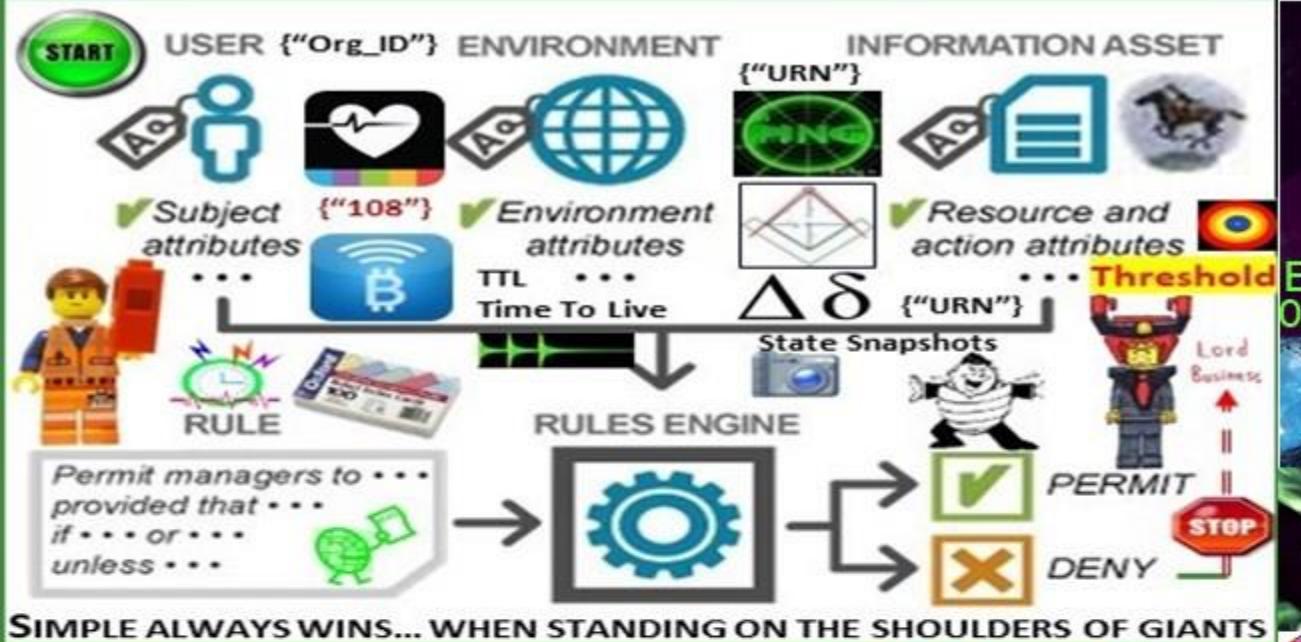
"Heartbeat Synchronization strives to have nodes in a distributed system generate periodic local "heartbeat" events approximately at the same time. It differs from classical clock sync in that Nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. There is no requirement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



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

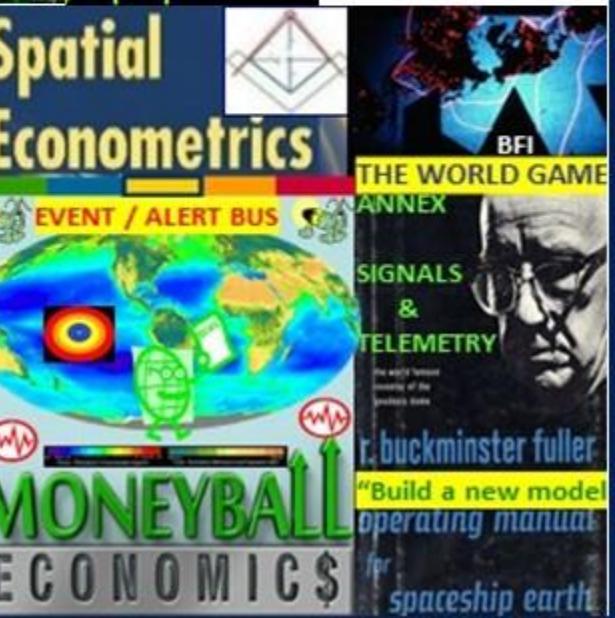


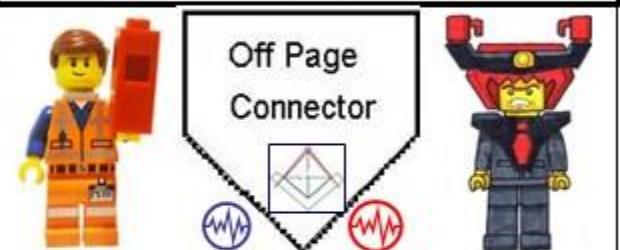
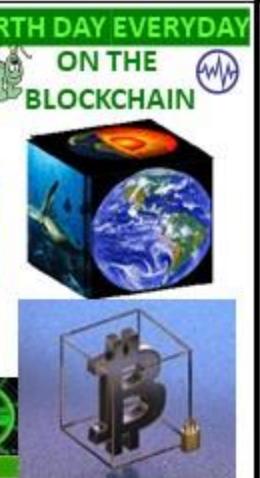
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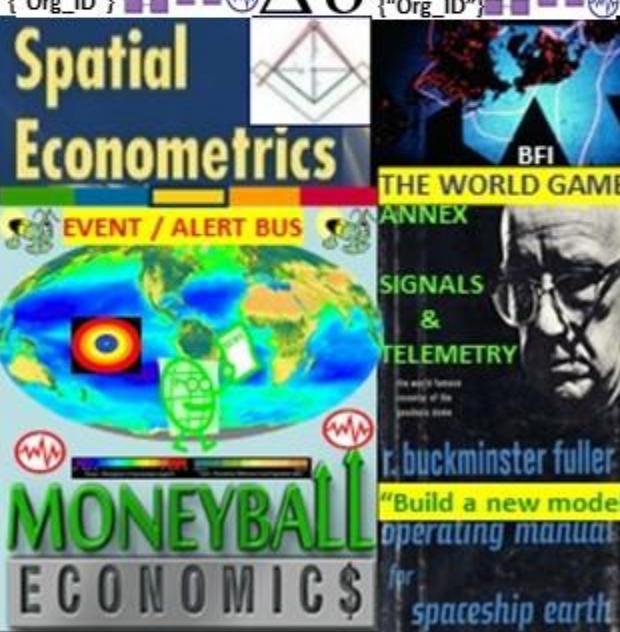
SIMPLE ALWAYS WINS... WHEN STANDING ON THE SHOULDERS OF GIANTS

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





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





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

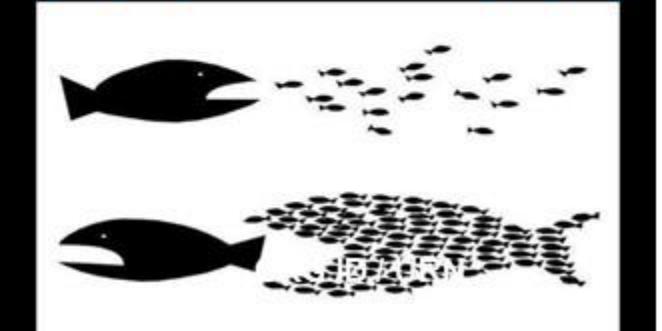
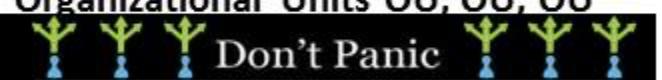
PARSED, PROCESSED, COMPILED TELEMETRY SIGNALING STANDARDIZATION

USMTF / XML MTF FORMATTED MESSAGE CATALOG

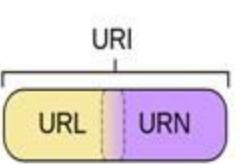
Catalog has over 300 messages to choose from have a wide number of information exchange requirements using common, CONSENSUS Message Text Formats MTFs. MTFs specify <CONTENT> / information agreed by group consensus presenting information in a logical, well specified and unambiguous layout resulting in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

</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU



FEDERATE



ARIN
American Registry for Internet Numbers

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

- URNs IDENTIFICATION (SENSORS, DEVICES) <DATA CLASS TYPES>
- URCs INCLUDE META-INFO
- URLs LOCATE / FIND RESOURCES



SITUATION AWARENESS

NEWSCAST



DISTANCE ESTIMATE SERVICE

IDMaps
SonarHOPS

K00.99
Heartbeat Message

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

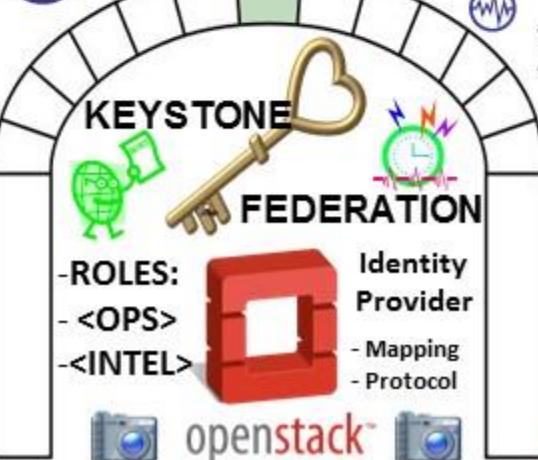
BY <TAG_TYPES>
Ledgers
Contracts
Trade SLA
Agreements



TRIANGULATION
TELCO MESH FABRIC

vector

CROWD SOURCING / FUNDING



<Org_ID>
<Org_ID>
<Org_ID>
<Party>
<Party>
<Party>

PARTIDO X:
Distributed
Democratic
Participation

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

ETHEREUM:
Decentralized
Autonomous
Organizations



VOTE ON BLOCKCHAIN



PARTIDOS DEL FUTURO

FEDERATED ID



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"

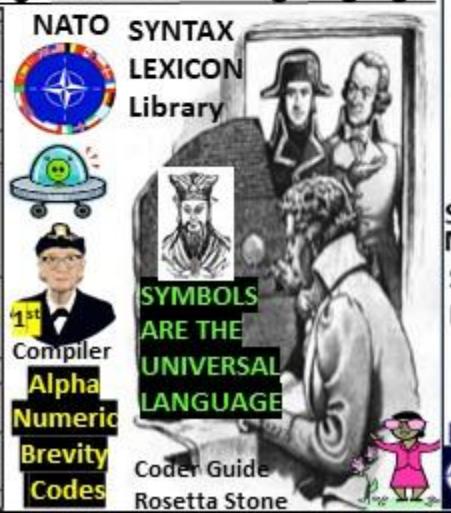
"A smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction reads / writes data in the blockchain's Dbase"

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"

XBRL / CDL / DAML	
STOCK MIC CODES	
STRUCTURED DATA EXCHANGE TEMPLATE FORMS	
300+ USE CASES	
LOGIC / FILTERS	
SYNTAX / SYMBOL LEXICON LIBRARY	



Time is specified in units of transaction block confirmation times

"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



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

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



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



RULES / ROLES
INSTRUCTIONS
UMPIRE
COACH

STATISTICIAN Metrics, Meters
State Meta Data Snapshots

90 feet
Survey Point

MICRO-CYCLES



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

#1421 Org ID
Blockchain Blocks / Coins Awarded

90 feet
EVENT BUS

90 feet
home plate



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

first base

Fix {"108"} Heartbeat Algo



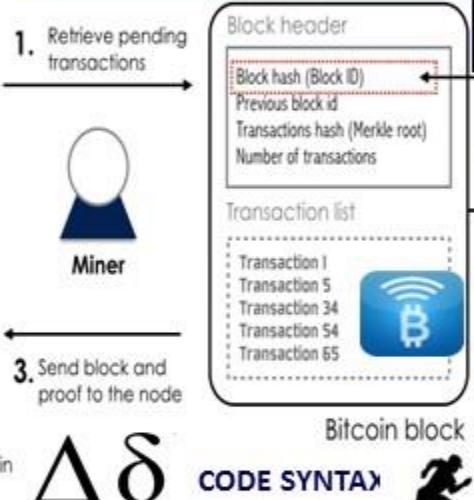
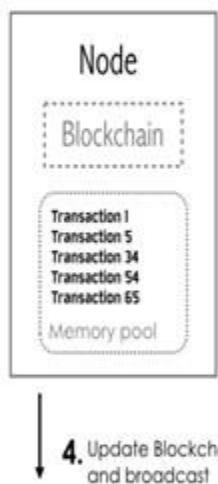
SYNC Deltas



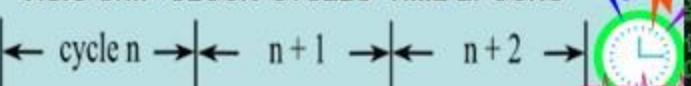
"Closest path to Knowledge of Truth is nature" Luxor Temple

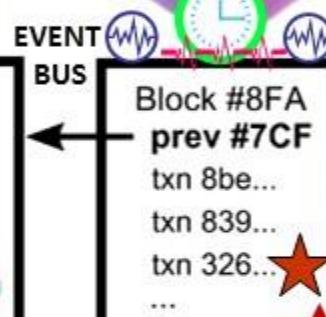
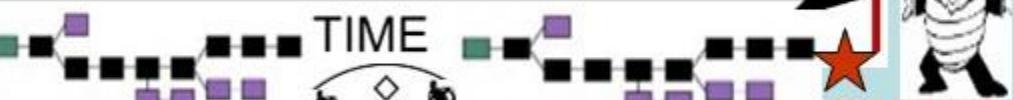
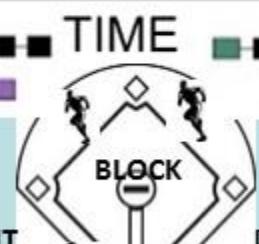


Alice Corp. v. CLS Bank International, 573 U.S. __, 134 S. Ct. 2347 (2014),[1] was a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).[2] The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating financial transactions covered abstract ideas ineligible for patent protection. The patents were held to be invalid because the claims were drawn to an abstract idea, and implementing those claims on a computer was not enough to transform that idea into patentable subject matter.


 $\Delta\delta$
CODE SYNTAX

CODE RUNNER

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

ATOMIC CLOCK

 $\Delta\delta$
TIME EPOCH CYCLES

BLOCKCHAIN = TIME / SYNTAX

**USPTO 13/573,002
PHYSICAL MEME
MAIN EMBODIMENT**
RULES
 $\Delta\delta$
Metrics

Multi-Meme Multi-Meter

	State Meta Data Snapshots
	ROLES Meters
	XBRL / CDL / DAML STOCK MIC CODES

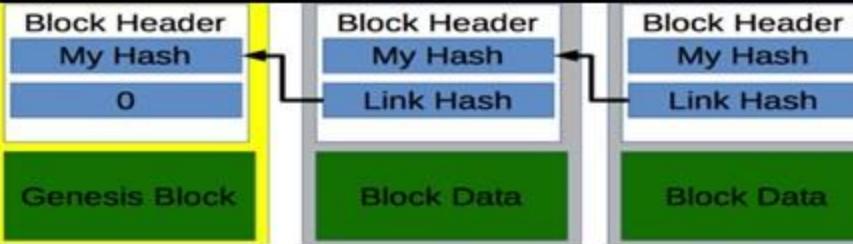
ID'd by Alpha-Numerics
STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS
SYNTAX LEXICON LIBRARY




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



Blockchain: linked list of records of transactions involving data state changes over time. Linkage of blocks of records is done using cryptographic algorithms, that merge together information about transactions recorded in the current block, and information about the preceding block.



BLOCK: container (or simply a descriptor) of data relevant to this blockchain. The data is typically a collection of transactions that describe changes to the data. Blocks contain a header holding meta-information about blocks, including a reference to the preceding block.

HASH: value computed by an algorithm uniquely identifying input data without revealing the contents of that data. Hash values are used to ensure the veracity of data on the blockchain. Block headers contain the previous block's hash, ensuring integrity of entire chain

GENESIS BLOCK: first block in the chain created when a blockchain is first deployed, serving as the anchor to which all other blocks link.

TRANSACTION: record of change to data set (s). Transactions are based on rules defined by the blockchain e.g., rules comprise contracts

SMART CONTRACT: may include behavior / actions to trigger events that independently create transactions.

Node: host in a network capable of adding blocks to chain (s). The way nodes are able to do this varies based on the needs of the chain.

Distributed Ledger: recording of transactions shared across nodes. A blockchain on which many nodes contribute blocks

Consensus: distributed ledger blockchain nodes strategy determines chain's correctness

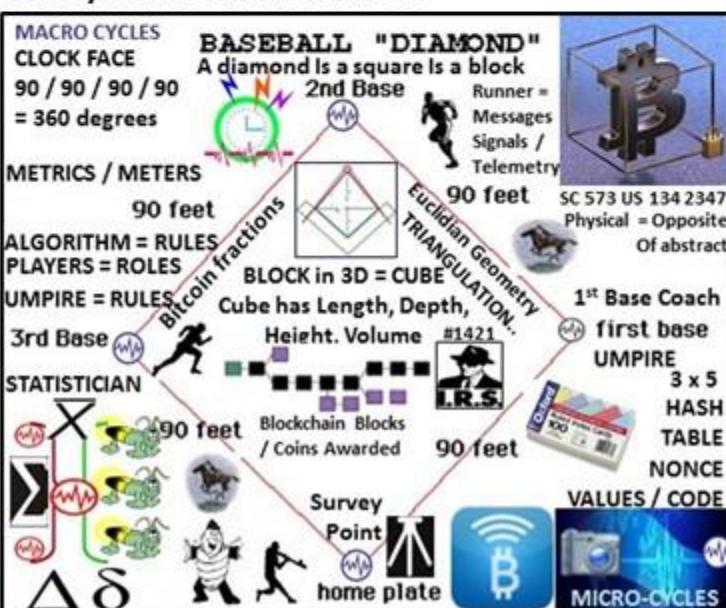
Consensus strategies: "proof of work," "proof of stake," and "delegated proof of stake"

Proof of work (PoW)—A consensus strategy with a computationally difficult challenge to solve to find the hash of a new block, the discovered solution is easy to verify, allowing the other participating nodes to quickly agree that new block is correct

Proof of stake (PoS)—A consensus strategy that relies on nodes which hold collateral to participate in contributing blocks to the chain.

Delegated proof of stake (DPoS): variation of proof of stake where responsibility of the creating blocks is delegated to third party nodes, known as "witnesses."

Witness—A node in a DPoS blockchain that performs the task of creating new blocks.

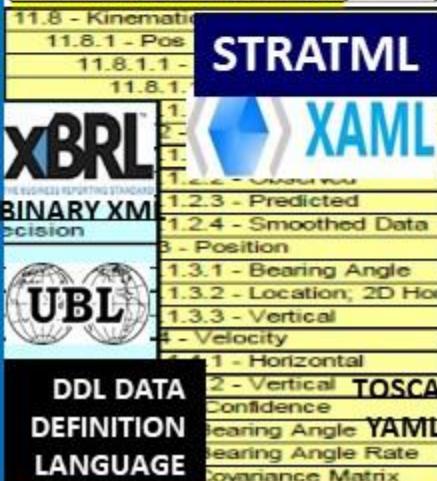


Structured
Data
Exchange

ALPHA NUMERIC
SYMBOL SETS

Coder's Guide

lexicon:



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



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

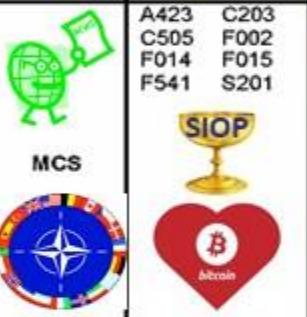
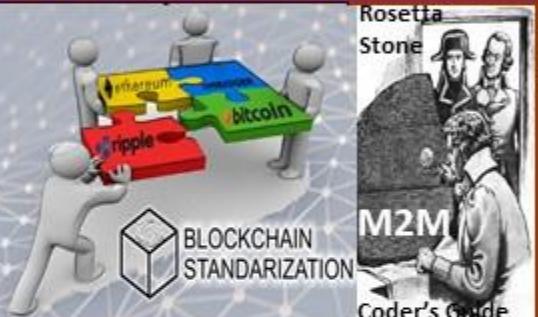
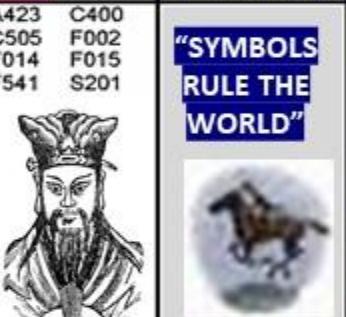
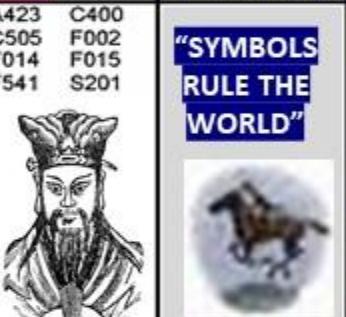
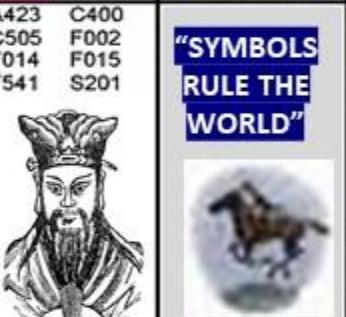
GOAL: vide a common lexicon / syntax / term library used among FEDERATIONS identified by Federated ID
GOAL: Provide a common, consistent, reliable schedule to share signaling and telemetry within federations.



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

NUMBERS ARE THE UNIVERSAL LANGUAGE / Symbols Rule the World"



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	C002 F014 F541 S305 S309	C002 C203 E400 F002 F014 F015 F541 S201 S309 S507	F002 F015 S201	C203 C400 D630 E500 F002 F014
		A423 C203 C505 F002 F014 F015 F541 S201		A423 C400 C505 F002 F014 F015 F541 S201		INFOCON 5 4 3 2 1 INFORMATION CONDITION
						"SYMBOLS RULE THE WORLD"
						HEARTBEAT MESSAGE = K00.99

MESSAGE CATALOG 300 + Use Cases

Data Elements: entity, attribute, relationship equivalents

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

- Information Elements Roles**
- 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

OPERATIONAL NODES / ACTIVITIES

DATA	SYSTEM FUNCTIONS	PERFORMANCE
11.4 - Classification	11.8 - Kinematics	11.8.1 - Pos / Vel / Acc (PVA)
11.4.1 - Category	11.8.1.1 - Acceleration	11.8.1.1.1 - Angular
11.4.1.1 - Confidence Level	11.8.1.1.1.1 - Linear	11.2 - Linear
11.4.1.2 - Estimate Type	11.8.1.1.1.2 - Estimate Type	2 - Estimate Type
11.4.1.2.1 - Alternative	11.2.1 - Estimated	1.2.1 - Estimated
11.4.1.2.2 - Evaluated D	11.2.2 - Observed	1.2.2 - Observed
11.4.1.3 - Value	11.2.3 - Predicted	1.2.3 - Predicted
	CODES	1.2.4 - Smoothed Data
SYMBOL	Friend	Neutral
2525C	Partner	
11.4.1.3.5 - Surface		4 - Velocity
11.4.2 - Platform / Point / Feature Type		1.4.1 - Horizontal
11.4.3 - Specific Type		1.4.2 - Vertical
11.4.4 - Type Modifier		VA Confidence
11.4.5 - Unit		1 - Bearing Angle
		2 - Bearing Angle Rate
		3 - Covariance Matrix





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.

Syntax Lexicon Library

TOOLSET: Kickstarter, UpWork, GitHub, Slack, Jira, Google Docs, Dropbox, ICO...

KICK STARTER

Upwork™

GitHub

JIRA

OPEN SOURCE SOFTWARE

slack

ICO
Initial Coin Offering

Dropbox

CODER'S GUIDE

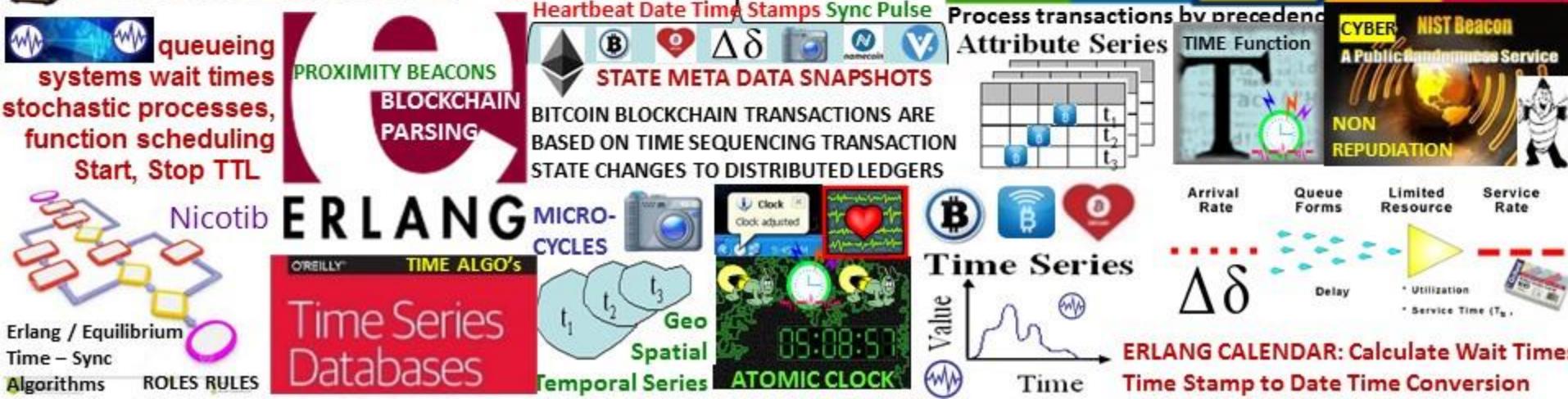
NATO

STRUCTURED DATA EXCHANGE

PROJECT HBCnet: build artificial intelligence neural network supporting #UNRIG's Earth Intelligence Network EIN with Signals, Telemetry Mesh

300+ TEMPLATES

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.

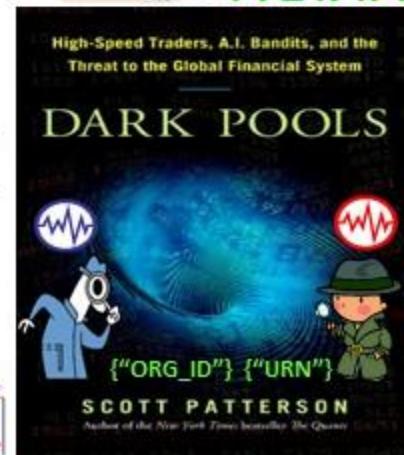
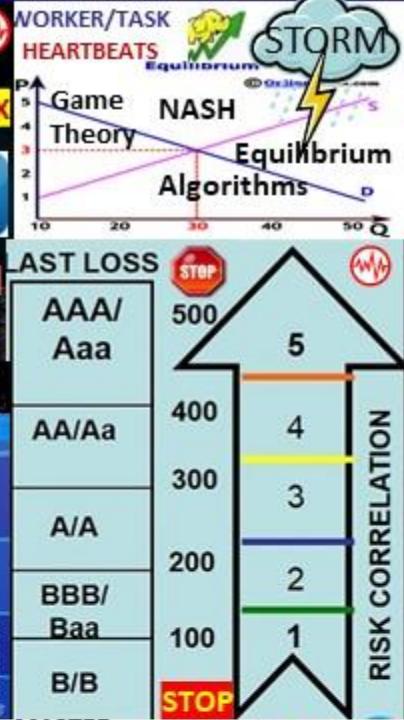




The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



SCOTT PATTERSON

Author of the New York Times bestseller *The Quants*

B PROOF-OF-WORK



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



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



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

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



GUESS stores the guess
Effectively, it begins at infinity.



Proof-of-Work: users perform some form of work to participate. Work must be difficult for the client but easy for the server/network to verify. POW determines the approximate time between blocks = rate that new bitcoins are created. Work is submitted as a message/timestamp payload with a nonce value. Payloads are made unique through use of public key encryption or address. Nonce allows checking the work without retracing all the procedural steps.



FIREFLY-HEARTBEAT ALGORITHM
STOCHASTIC HARMONY ACROSS TIME ZONES

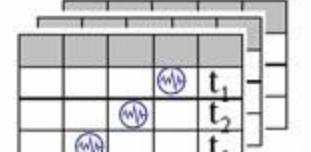


- MESSAGE ex:
 - Hashing string
 - Hash Table

300+Message Templates

CLOCK FACE 360°	BASEBALL "DIAMOND"	LOGIC FILTERS
90 / 90 / 90 / 90	A diamond Is a square Is a block	LOGIC GATES
MACRO CYCLES	2nd Base	SYNTAX LIBRARY
HASH TABLE	Runner = Messages Signals / Telemetry	LEXICON
Nonce / Syntax	90 feet	CODER'S GUIDE
3 X 5	BLOCK in 3D = CUBE	
RULES / ROLES	Cube has Length, Depth, Height, Volume	
INSTRUCTIONS	SC 573 US 134 2347	
UMPIRE	Physical = Opposite Of abstract	
COACH	Euclidian Geometry	
3rd Base	TRIANGULATION..	
STATISTICIAN	first base	
Metrics, Meters	Fix {"108"} Heartbeat	
State Meta	Algo	
Data Snapshots	Firefly	
90 feet	X	
MICRO-CYCLES	Blockchain Blocks / Coins Awarded	
Survey Point	Org ID	
HASH	Event Bus	
NONCE	#1421	
HASH	Blockchain Blocks / Coins Awarded	
90 feet	90 feet	
UMPIRE	90 feet	
SUMMARY	90 feet	
Sync Delta	90 feet	

POW PAYLOAD : COMBINATIONS OF ENCRYPTED SYNTAX Attribute Series



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

MICRO-CYCLES

TRANSACTIONS
PER CYCLE
METRICS

IRS Memo #1421
Bitcoin purchase
= property

BASEBALL "DIAMOND"

A diamond Is a square Is a block

2nd Base

Runner =
Messages
Signals /
Telemetry



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

3 X 5

Crypto currency fractions

BLOCK in 3D = CUBE

Cube has Length, Depth,
Height, Volume



#1421

Org ID

Blockchain Blocks / Coins Awarded



90 feet

EVENT BUS

first base

Fix {"108"}

Heartbeat

Algo

Σ

Sync

Deltas



UMPIRE

home plate

Bitcoin icon



SPATIAL

TEMPORAL Series

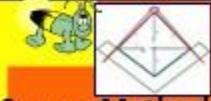
Series

PROOF-OF-STAKE

UXTO



Mined Bitcoins



Survey Methods

Proximity Beacons



Unmined Bitcoins



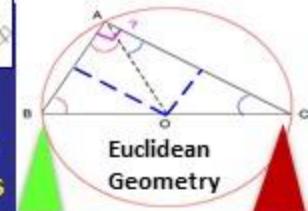
CALENDAR

MICRO-CYCLES



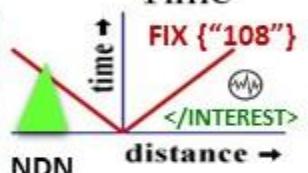
UTXO: unspent transaction output'. bitcoins sent somewhere but not yet spent. Unspent transaction output set= latest STATE of every Bitcoins ever mined" % Block Mined / % Block owned

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



NAMED DATA NETWORKING

Time Series



- 1: prove coin ownership <Org_ID> Coin Issuer
- 2: # coins sent where, when Lat / Long, DTG
- 3: NIST Random # Beacon Non-Repudiation
4. Issuing {"Org_ID"} adjudicates w buyers

FIREFLY-HEARTBEAT ALGORITHM EVENT BUS

O'REILLY Time Series Databases

CALENDAR

Stake-Time algorithm favors both # of coins held & how often, frequently coins are staked Velocity based selection PoSV encourages velocity i.e. coin movement between people Vs hoarding.

Coin Age proof-of-stake system combines randomization with the concept of "coin age," a number derived from the product of the number of coins times the number of days the coins have been held. Randomized block selection randomization predicts following generator by using a formula that looks for the lowest hash value stake size

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

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





Hashgraph

Hashgraph consensus algorithm for replicated state machines

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

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

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

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

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

DAG finite directed graph
= no directed cycles

Consensus Order
 $\Sigma \Delta\delta \times$

Round created
Witness
0/1

Famous witness
Election

Vote
See

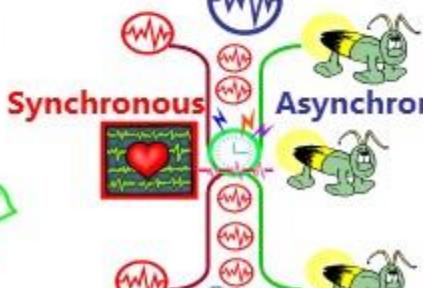
Strongly see
Supermajority

Decide
0/1

Round created
Round received

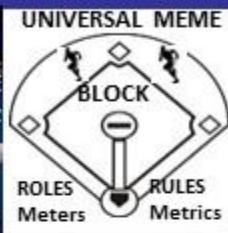
Consensus timestamp
Consensus order $\Delta\delta$

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



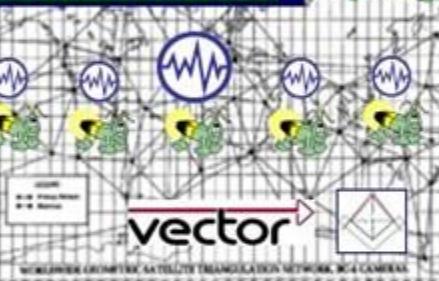
Micro-Cycle
State Meta
Data Snapshots

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



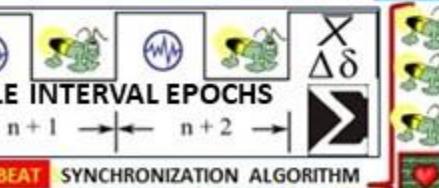
USPTO 13/573,002
sawconcepts.com/index
Heart Beacon Cycle Time – Space Meter
Geo-Spatial Temporal Intensity Metrics

TRIANGULATION



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

FIREFLY HEARTBEAT Synchronization Algorithm



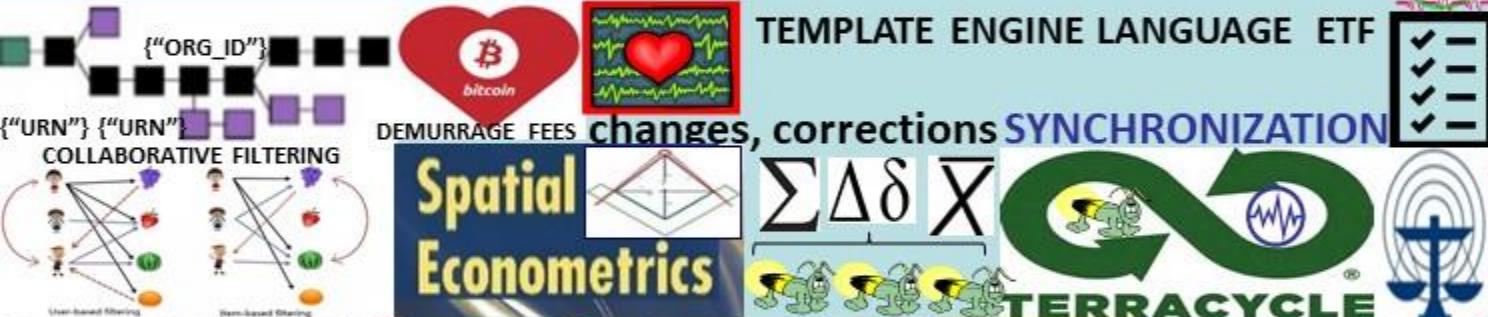
"LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE" $\Delta\delta$



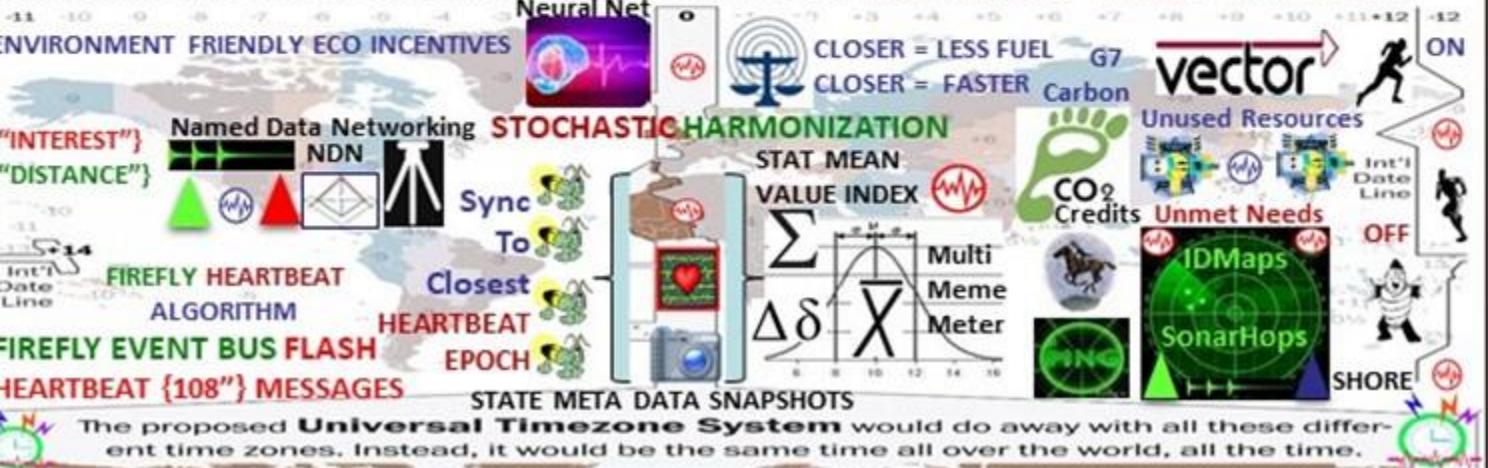
eGaaS: international blockchain platform for organizing economic, state, social activities of citizens, communities on the basis of smart law, smart contract system. eGaaS offers a comprehensive solution needed for state and business management on the blockchain platform.

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

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



FROM	TO	TYPE	NAME	VERSION	SIZE	FORMAT	LAST UPD.
API	UI	SYNTAX / SYMBOL LEXICON LIBRARY					
API	UI	STRUCTURED DATA EXCHANGE					
API	UI	300 + TEMPLATE FORMS					
API	UI	LOGIC / FILTERS					
API	UI	ALPHA-NUMERIC BREVITY CODES					
API	UI	Time Series Databases					
API	UI	ERLANG					







"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

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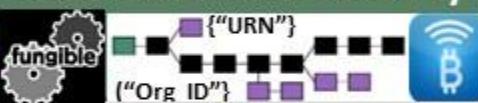


The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



THE TERRA (TRC)

Trade Reference Currency



\$0.49 USD
0.001076 BTC

MICRO PAYMENTS
Bitcoin
Need Bitcoin?



Demurrage Fees



Geo-Spatial Temporal Econometrics meters



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"

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

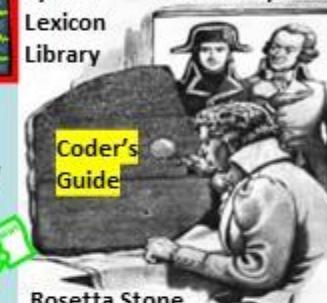


HEART BEACON CYCLE TIME – SPACE METER

ECO-ECONOMETRICS ON THE BITCOIN BLOCKCHAIN

Syntax
Lexicon
Library

300+ Templates



STRUCTURED DATA EXCHANGE



LOGIC / FILTERS
ALPHA-NUMERIC
BREVITY CODES



Rosetta Stone

STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



PAUSABLE
START
STOP
TIME TO LIVE
INSTRUCTIONS



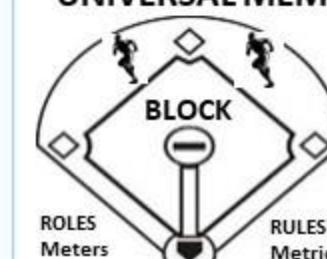
STATE
META
DATA
SNAPSHOTS

Erlang
Time Equations
Function calls

FLASH
HEARTBEAT
MESSAGE BUS

ERLANG
Blockchain Parsing

UNIVERSAL MEME



ZEPPELIN / zeppelinOS Common Functionality:

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

Create and customize your own ERC20 Token.

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



Contract development



Contract interaction



EVM



HASH / NONCE



FLASH
MESSAGE BUS
TIME CYCLES
SYNTAX

STATE
META
DATA
SNAPSHOTS



UNIVERSAL MEME



BLOCK

ROLES
Metrics

RULES
Metrics

METERS



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

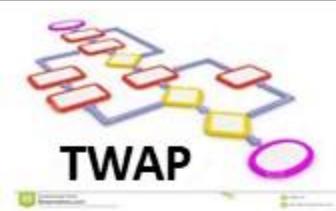


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TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

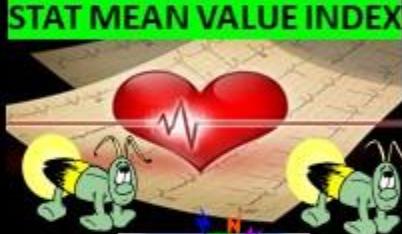


TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX

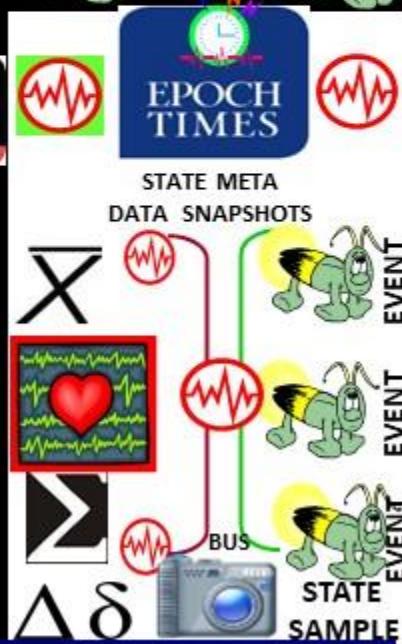
TWAP Works To gauge trading performance, many traders in different asset classes (equity, fixed income, currency) often use average price as a benchmark. The two common ways to calculate an average are a time-weighted average price (TWAP) and a volume-weighted average price (VWAP). TWAP is the average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



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



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



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

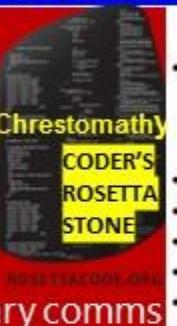




Erlang programming language / mini OS
massively scalable high availability, real-time Erlang's runtime system built-in concurrency distribution, fault tolerance



- 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)



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 $\frac{\text{Arrival Rate } \Delta \delta}{\text{Service Rate per unit time}}$



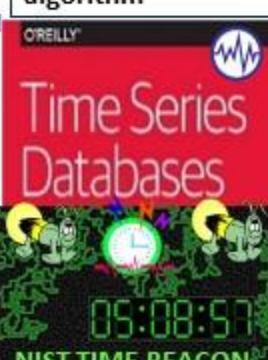
distributed "noSQL" database, embedded right into Erlang,
supports indexing, replication, transactions, and fail-over

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

Mnesia database ("Organization_ID")

Global name resolution

XBRL / CDL / DAML
ALPHA NUMERIC
BREVITY CODES
AZURE BLETCHLEY
STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS



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

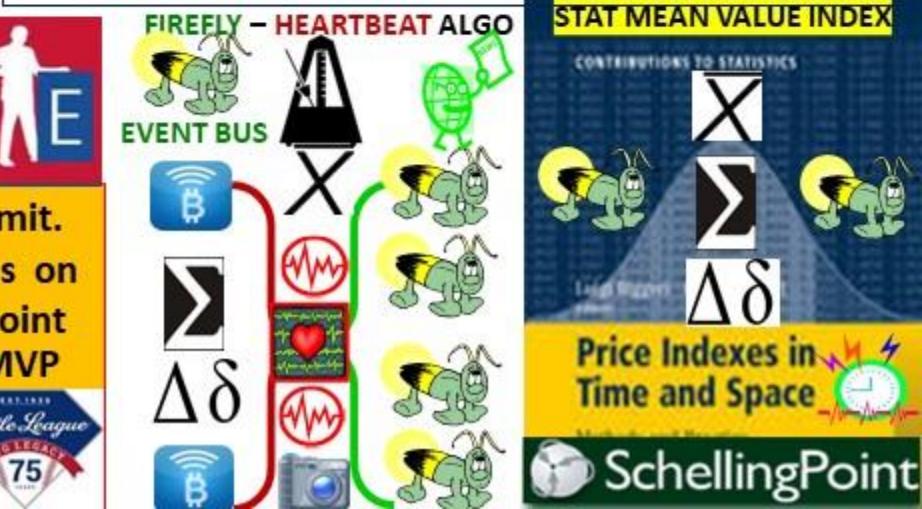
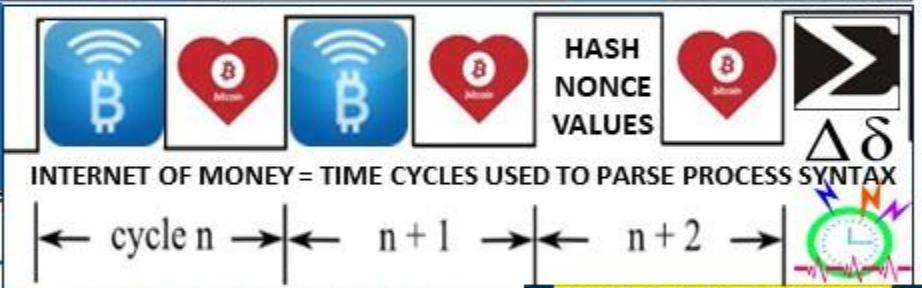
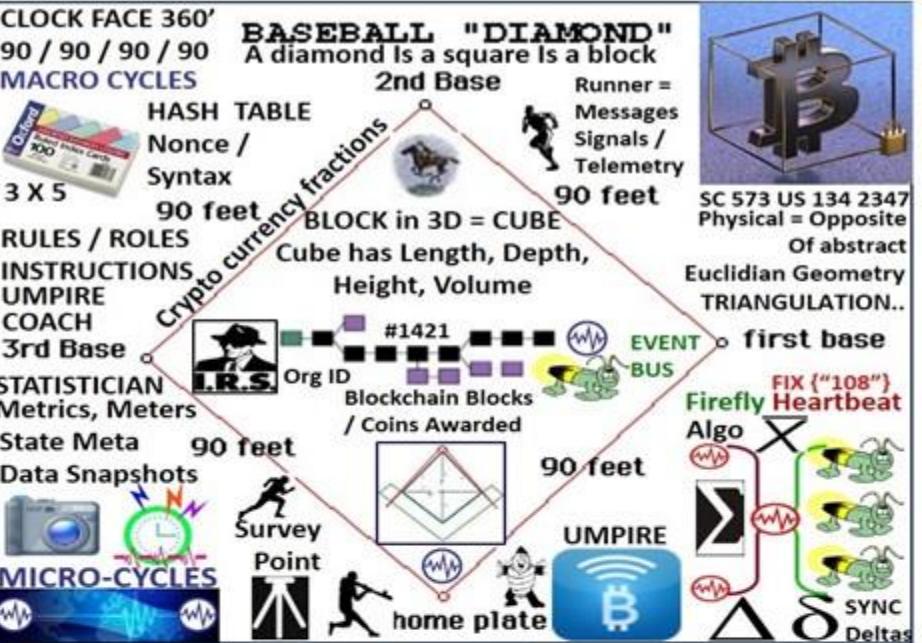


NONCE VALUES

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.  



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



Microsoft 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

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FIREFLY EVENTS
FLASH MESSAGES
SYNC TO CLOSEST
HEARTBEAT EPOCH

EVENT BUS
FIREFLY HEARTBEAT ALGORITHM
 $\Delta\delta$
STATE META DATA SNAPSHOTS

MULTI-MEME MULTI-METER
MYRIAD MEMES MEDIATION
BLOCKCHAIN

MULTI-MEME MULTI-METER

Microsoft
AZURE BLETCHLEY

Blockchain Startups

Top Blockchain startups
disrupting non-financial markets



{"URN"}
{"Org_ID"}



OFF-SITE
OFF-PAGE
CONNECTOR



{"URN"}
{"Org_ID"} DAO



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



3 X 5
HASH TABLE
Nonce / Syntax

90 feet
BLOCK in 3D = CUBE

Cube has Length, Depth,
Height, Volume

2nd Base
Runner =
Messages
Signals / Telemetry

90 feet
EVENT BUS

#1421
Org ID
Blockchain Blocks / Coins Awarded

90 feet
Survey Point

90 feet
UMPIRE

home plate

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



Runner =
Messages
Signals / Telemetry

90 feet
FIX {"108"}
Firefly Heartbeat

Algo

Sync Deltas

UMPIRE

EVENT BUS

HEART BEACON

STATE META DATA SNAPSHOTS

CYCLE



SC 573 US 134 2347
Physical = Opposite
Of abstract

Euclidian Geometry
TRIANGULATION..

first base

FIX {"108"}
Firefly Heartbeat

Algo

Sync Deltas

IoT

Microsoft Orleans

TIME-SPACE
EQUATIONS
ALGORITHMS
BLOCKCHAIN
PARSING





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



Bitcoin Address Shortener

Bitcoin Address Shortener is an Android app that you can use to shorten those lengthy bitcoin addresses! Simply enter a long Bitcoin address to have it transformed into a short one, and vice-versa! You can get it for free [here!](#)

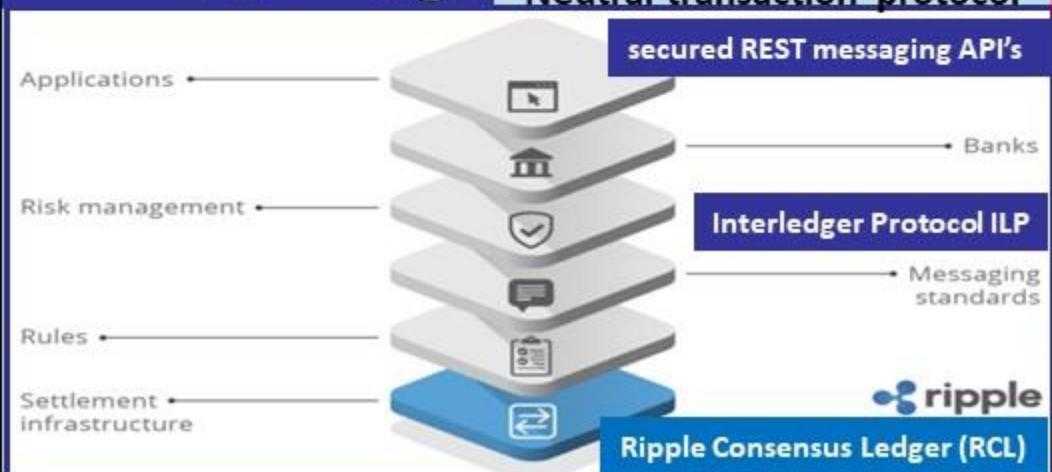
ALPHA NUMERIC BREVITY CODES

To retrieve addresses on your computer, use [bitcaddr](#)

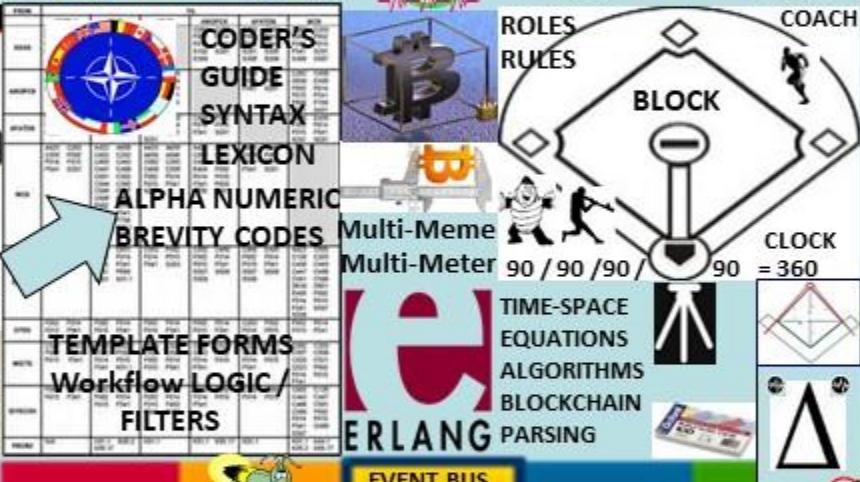
A.I

Clock Clock adjusted

Neutral transaction protocol



EVENT EVENT



World Economic Heartbeat
ALGORITHMIC REGULATION



BLOCKTIME ARBITRAGE System of Systems Sync

Stochastic Harmonization
Telco Mesh Fabrics
Wide Area Sync

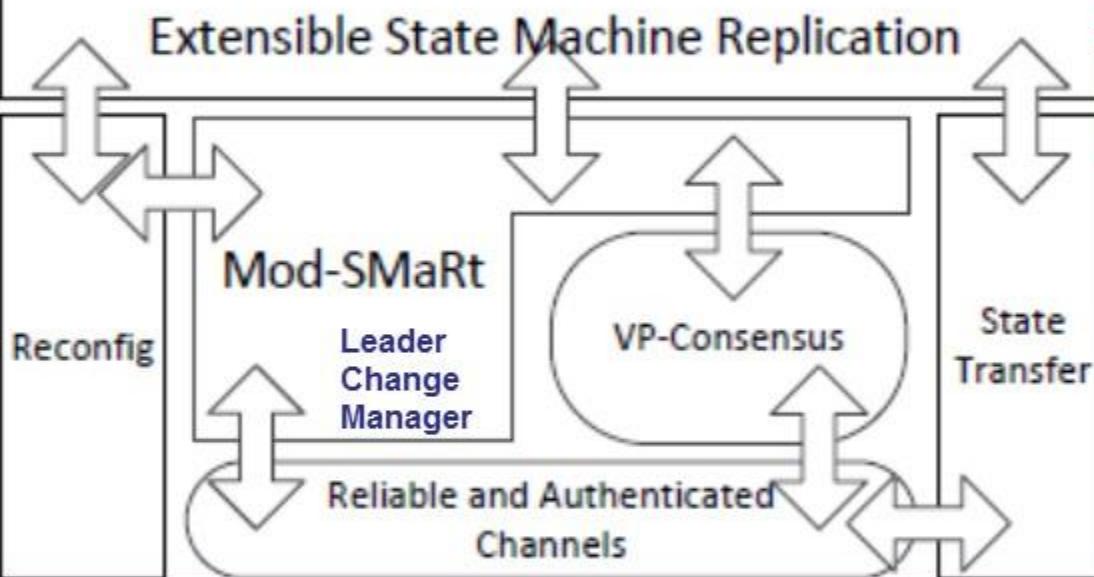
FIREFLY EVENTS

FLASH MESSAGES

EVENT EVENT

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 METE

USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT



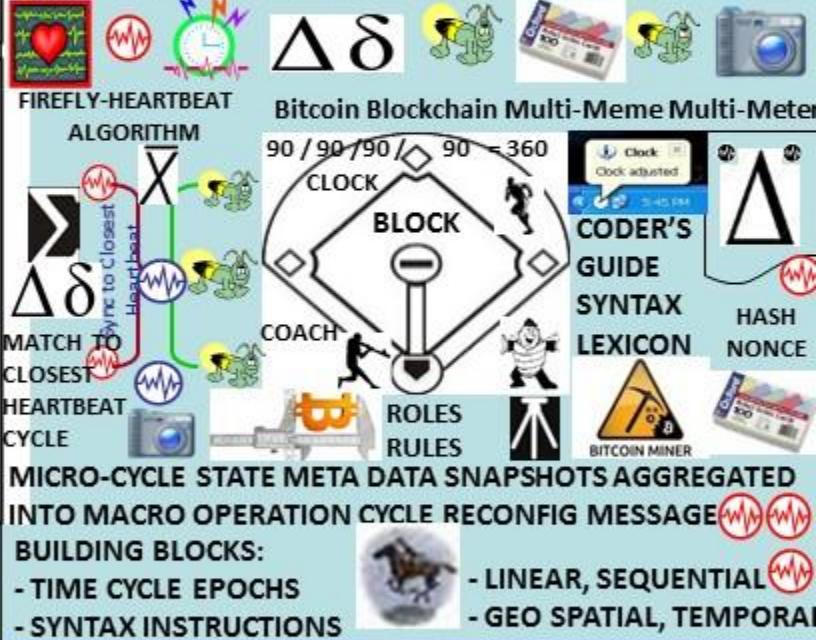
DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"}

ADDS, JOINS, DROPS, MOVES TO / FROM DAO

CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

K00.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOT



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

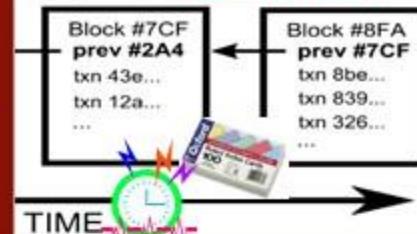
HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$ Shared Ledger



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



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

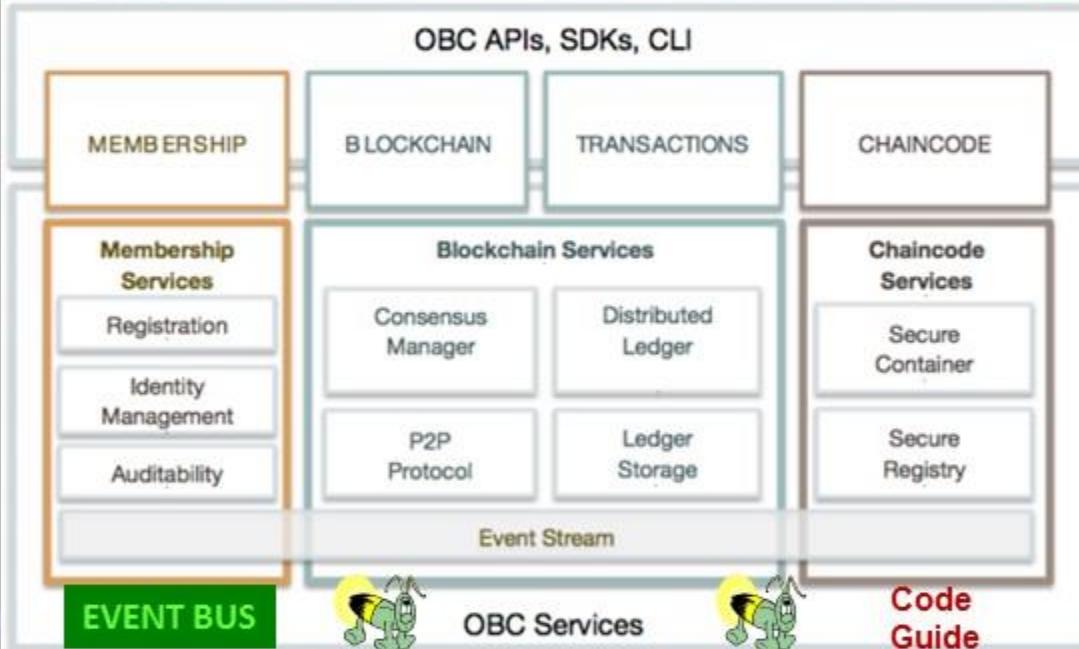
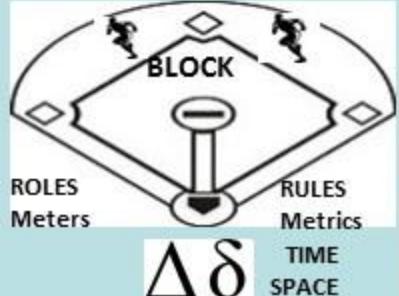
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



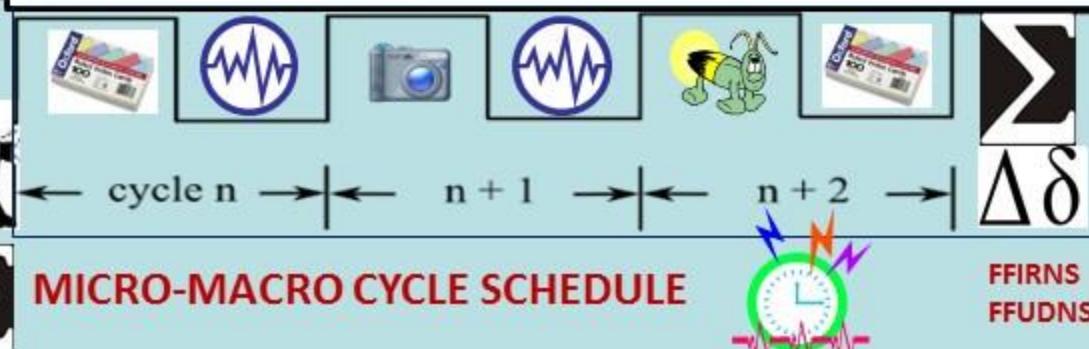
BLOCK TIME ARBITRAGE



ROSETTA STONE



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



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

e.g. Derivatives

e.g. Trade Finance

e.g. KYC / AML

App

App

App

App

App

App

App

App

App

Concord Platform Services

CorDapp Store

Notaries

Network Map Service

Trusted Digital Backbone Network

Regulatory Reporting

Oracles

Service Provider Gateways

Bank-Internal Gateways

Concord Vault Interoperability

Asset Registry

Trade Registry

Cash

Identity Vault

Concord Operations Centre

Business Monitoring

Technical Alerting

Management Information

Compliance Audit



Δδ

Inter-Network Adapters

FEDWIRE

CHIPS

DTCC

CLS

Corda Core Node Services

Agreement States

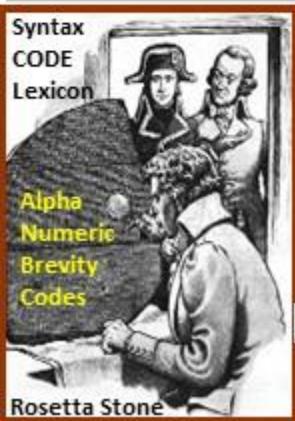
Transactions

Sandbox

Digital Signing

Interaction Protocols

Contract Verification



UNIVERSAL EVENT BUS



Syntax CODE Lexicon

STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

XBRL / CDL / DAML STOCK MIC CODES



300+ Use Case Templates



PROOF OF WORK



PROOF OF STAKE

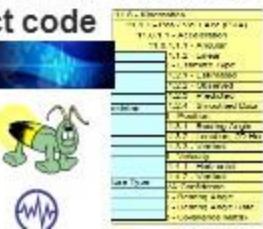


STATE CHANNELS



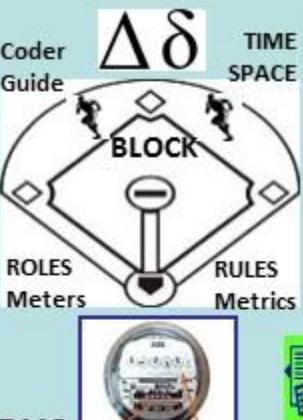
BITCOIN NEXGEN LIGHTNING / DASH..

Federation Gateway



KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



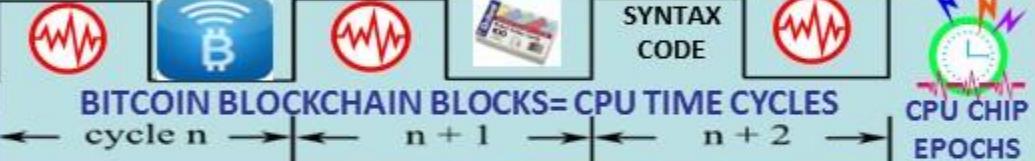
MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



	FROM	TO	INFO
XBRL	CDL	DAML	
STRUCTURED	STOCK	MIC CODES	
MILITARY MESSAGE	TEMPLATE	FORMS	
LOGIC / FILTERS			
NDN			
SYNTAX			
LEXICON LIBRARY			

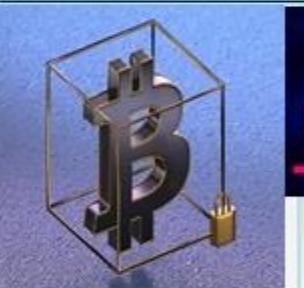
EVENT BUS



long exponential intervals (10 min)

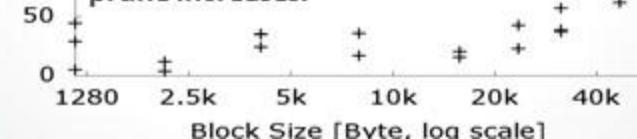


COMMAND SYNTAX
RESTFUL State Transfer



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

STATE: stored data at a given instant in time

STATE CHANNELS: blockchain interactions

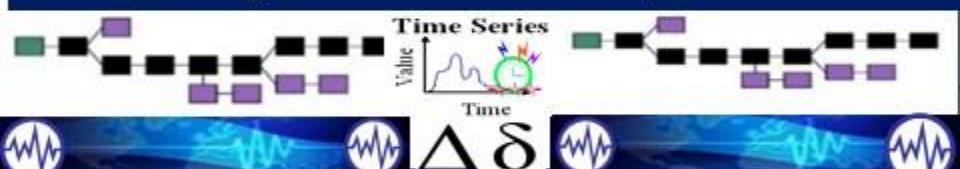
which could occur on the blockchain, but instead get conducted off of the blockchain, without significantly increasing the risk of any participant.



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.

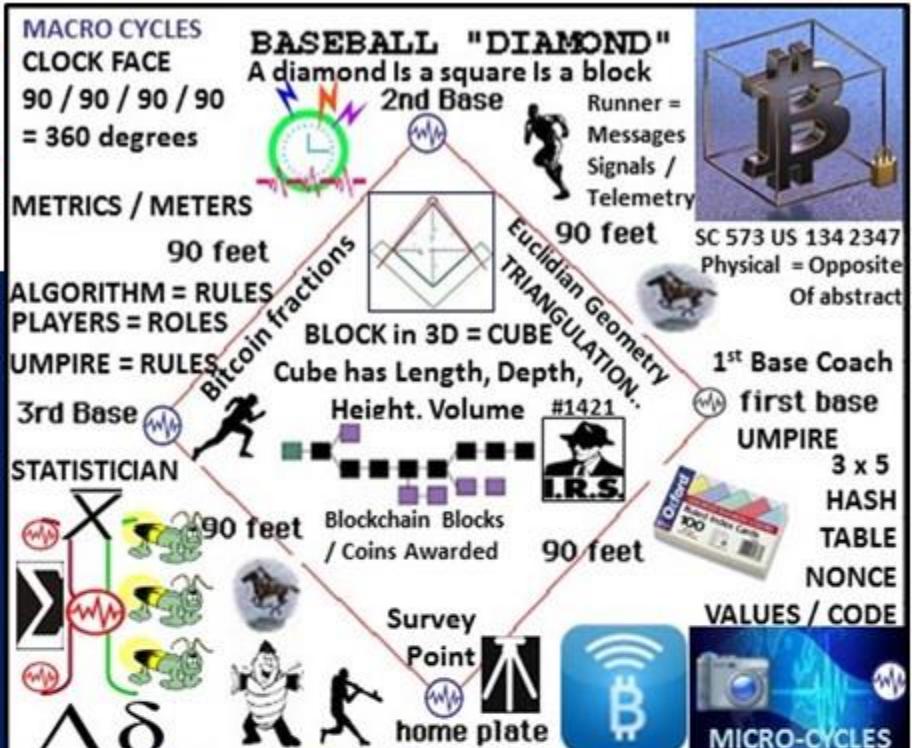
2. Participants update the state amongst themselves by constructing and signing transactions that *could* be submitted to the blockchain, but instead are merely held onto for now. Each new update "trumps" previous updates.

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/](http://jeffcoleman.ca/state-channels/)



FLASH HEARTBEAT MESSAGES
HEARTBEAT STATE META-DATA
SNAPSHOTS EVERY
10, N MIN MICRO TO
MACRO ECON CYCLE

HASH TABLES

A cartoon illustration of two ants carrying a large heart-shaped balloon. The balloon is filled with colorful, wavy lines and features a brain icon in the center. The ants are smiling and appear to be working together to carry the balloon.

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

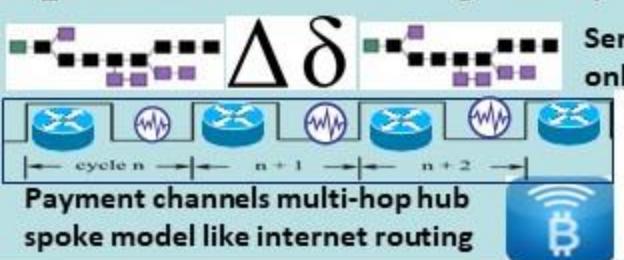


PROJECT LIGHTING



Hashed TIME LOCK contracts component for global consensus

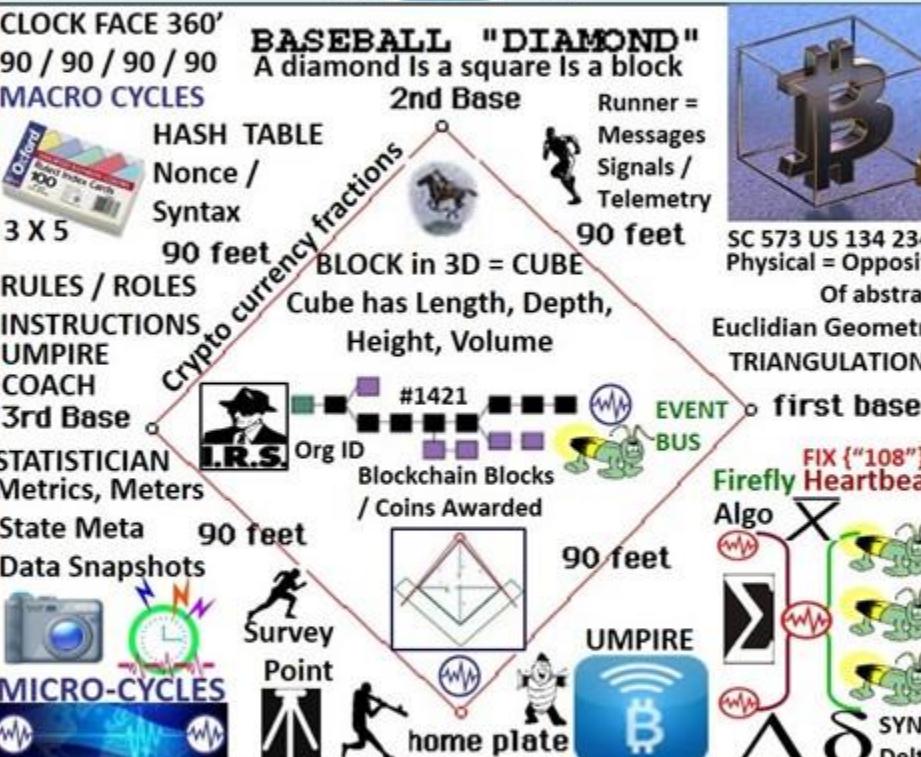
OP_CHECKLOCKTIMEVERIFY During Macro Cycle w/Random # BEACON



FIREFLY – HEARTBEAT ALGORITHM



EVENT REPORTING ACROSS TIME-SPACE



Segregated witness = Separated signatures

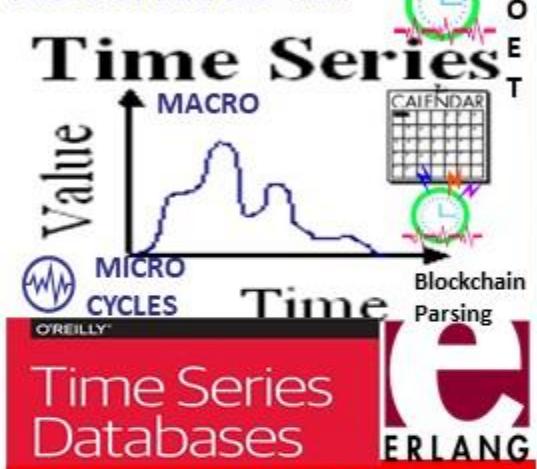
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signatures are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a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

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

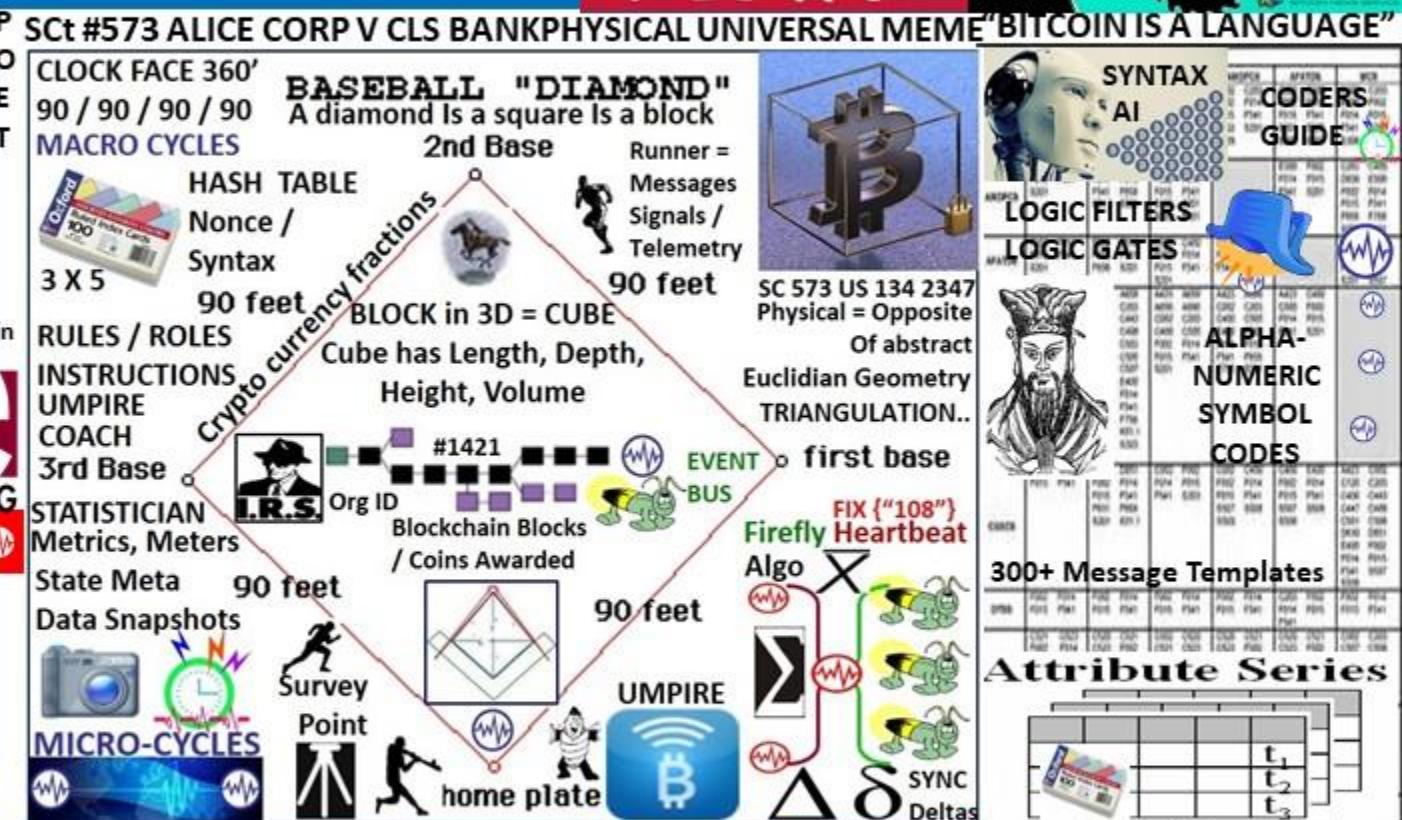
Voting based selection Instead of only using the stake size, the block generators can be selected by votes
ex: League MVP

MVP



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

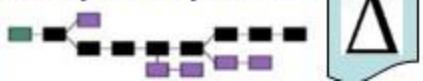
TOURNAMENT LEAGUE BOARD



FIREFLY-HEARTBEAT FLASH MESSAGES UNIVERSAL EVENT BUS



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



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'**



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/>

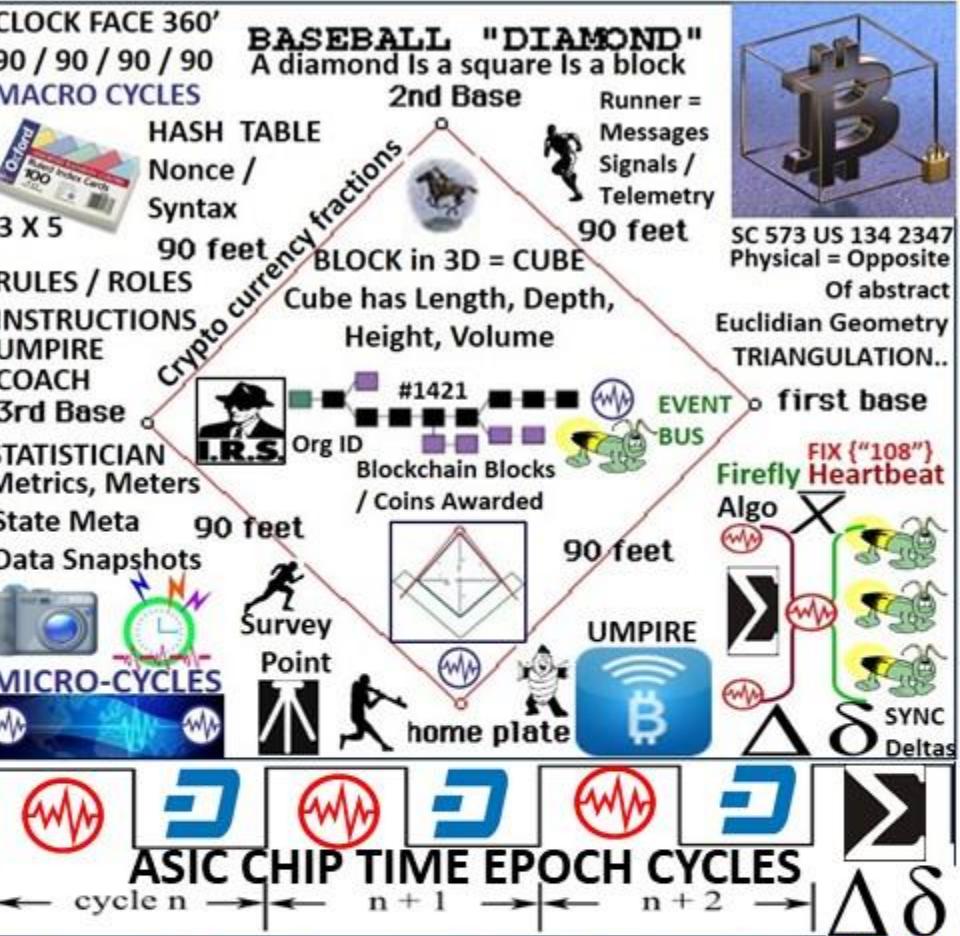
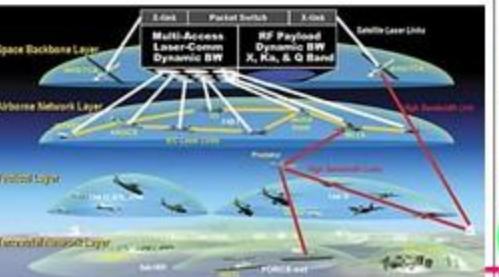
"all digital currency networks, the base layer of people generating the blockchain — "miners," "stakers," "witnesses," "validators," or "forgers" — all get paid to do so" "consensus," or an agreement upon what the rules should be; and second, the execution of said rules.

"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



STOCHASTIC HARMONIZATION FIREFLY-HEARTBEAT EVENT BUS

HEART BEACON CYCLE = IMPROVEMENT TO NETWORK CENTRIC WARFARE



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



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

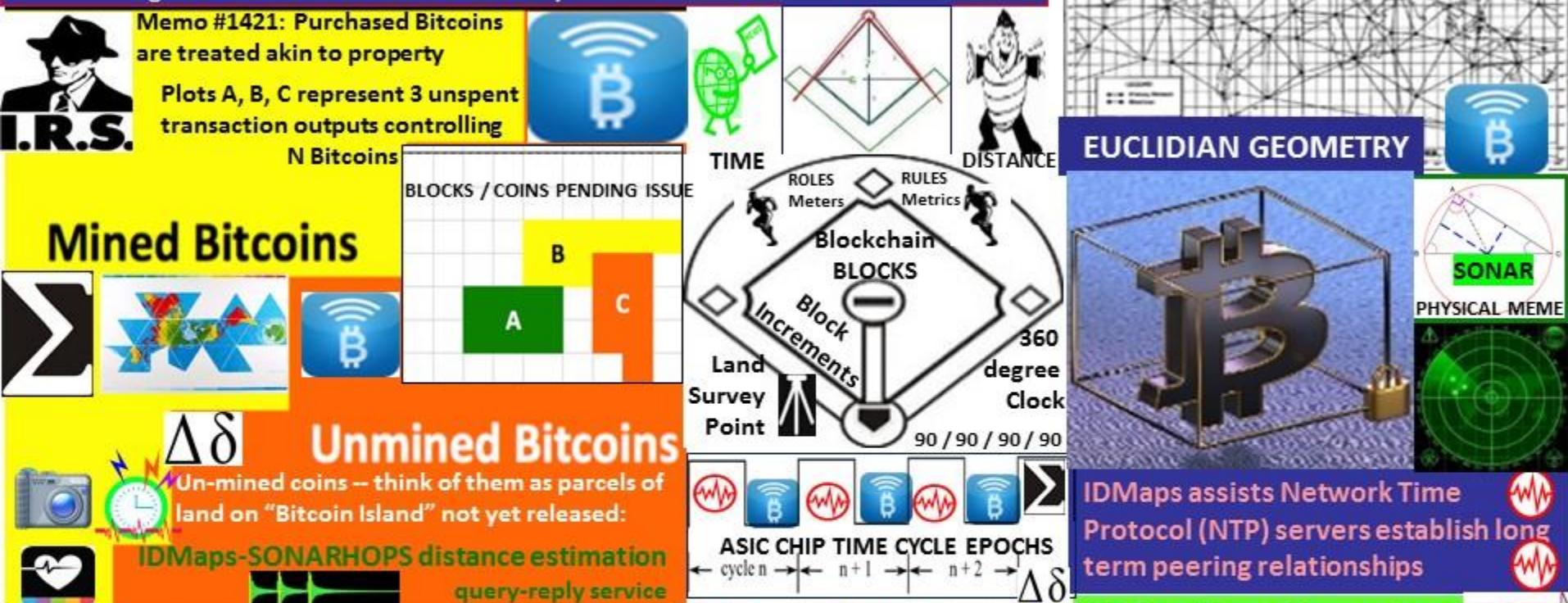
HEART BEACON CYCLE

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.



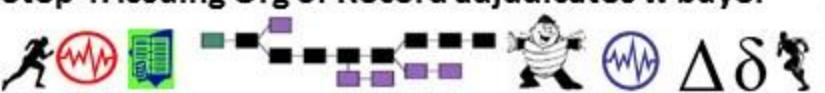
- End-state Bitcoin quantity will be fixed like land
"Bitcoin as protocol of ownership, not transfer"
Coins never travel, but simply switch owners"

Step 1: prove coin ownership <Org_ID> Coin Issuer

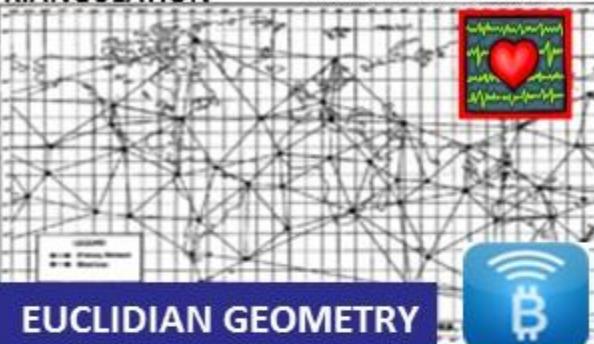
Step 2: coins sent where, when Lat-Long, Time Stamp

Step 3: specify ownership <Org_ID> issuing agent

Step 4: Issuing Org of Record adjudicates w buyer



TRIANGULATION



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

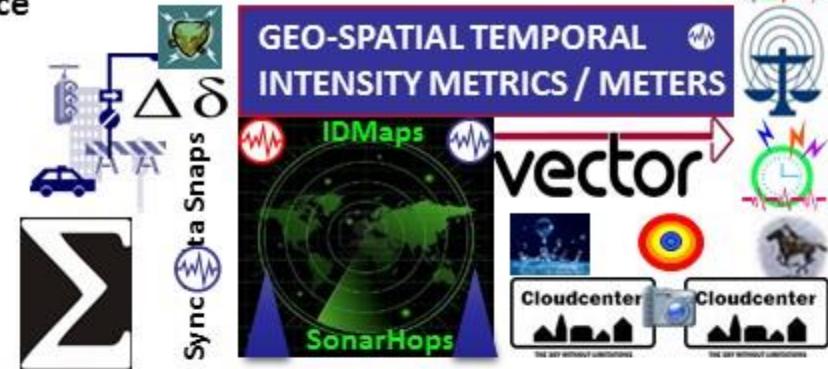
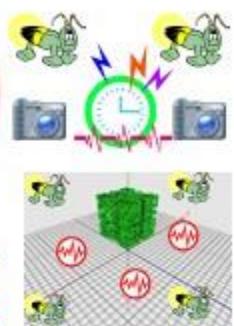




IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



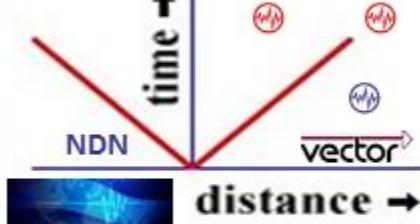
HOP COUNTS



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

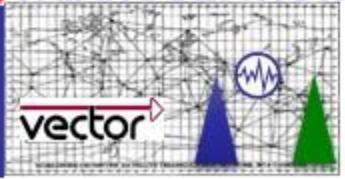
Distance information adjusts to "permanent" topology changes e.g., splits, joins, adds, moves, drops, merges in lieu of formal merger / acquisition



NDN RIB



TRIANGULATION

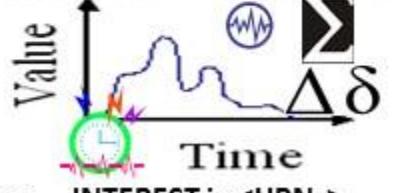


NDN INTEREST LENGTH = DISTANCE BY HOPS

NDN INTEREST

IS DATA FRESH ?

Time Series



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

Datasets and Event Notification

INTEREST in <URNs>

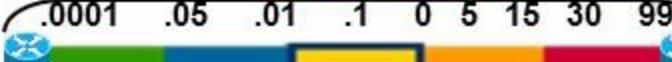
IDMaps assists Network Time Protocol (NTP) servers establish long term peering relationships



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



MICRO-CYCLES

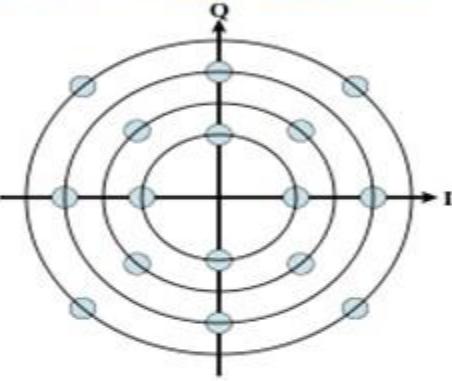


NDN INTEREST LIFETIME = TTL Time To Live

HEARTBEAT STATE META DATASNAP SHOTS



www.RLighthouse.com



Quadrature amplitude modulation

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

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

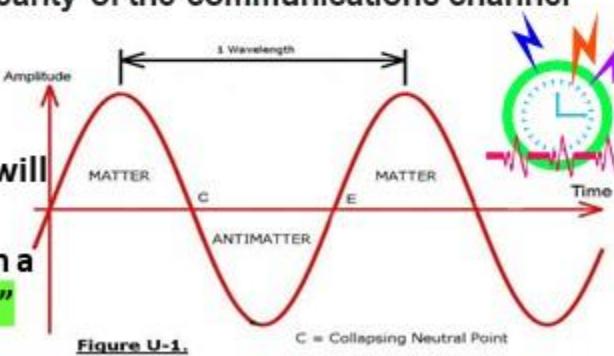


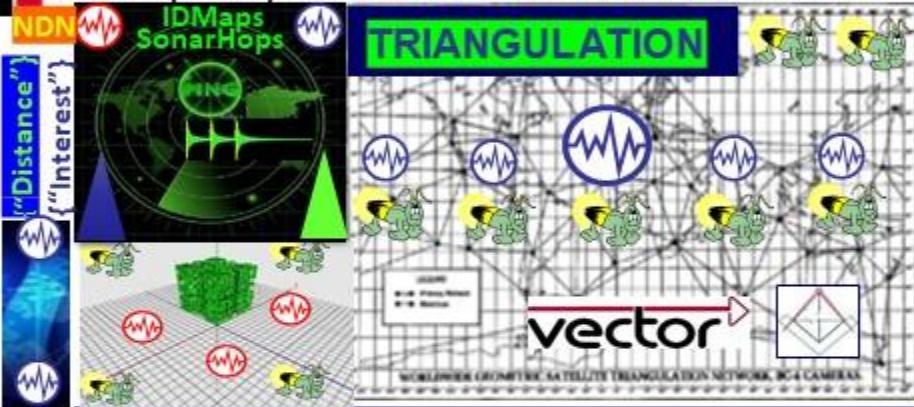
Figure U-1.

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

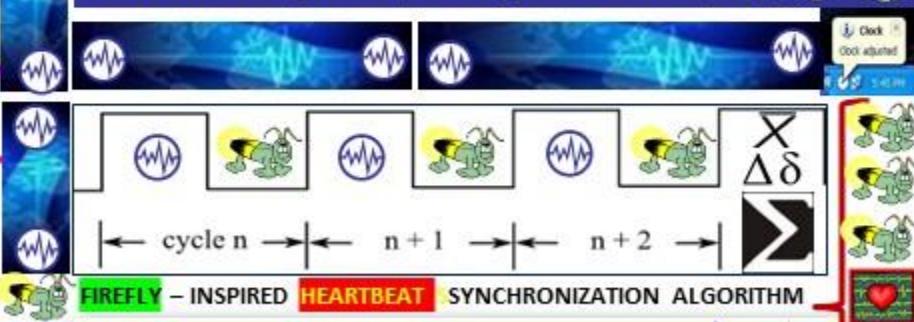


USPTO 13/573,002
sawconcepts.com/index

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



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



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

13/573,002 HEART BEACON CYCLE

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

The four dimensions of Big Data

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



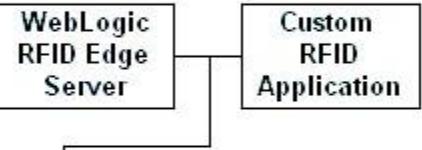
Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data

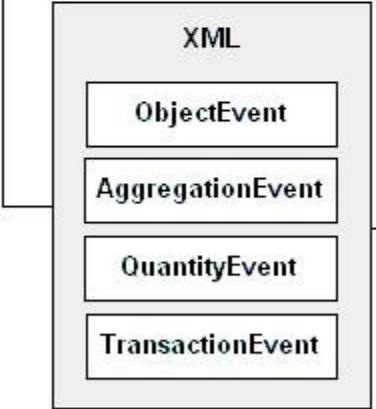


Epcis

EPCIS DATA MODEL



SERVICE LAYER



Core Business Vocabulary (CBV)

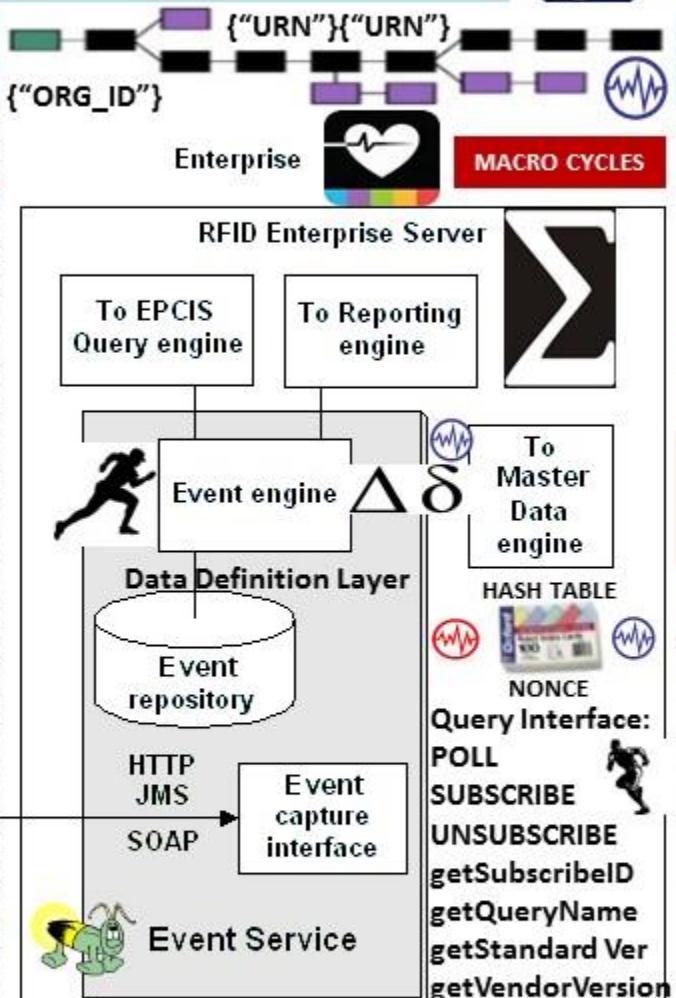
What identifiers of object(s) or entities / subject of the event

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

MICRO CYCLES



CLOSER IS CHEAPER
CLOSER IS FASTER

$\Delta\delta$



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

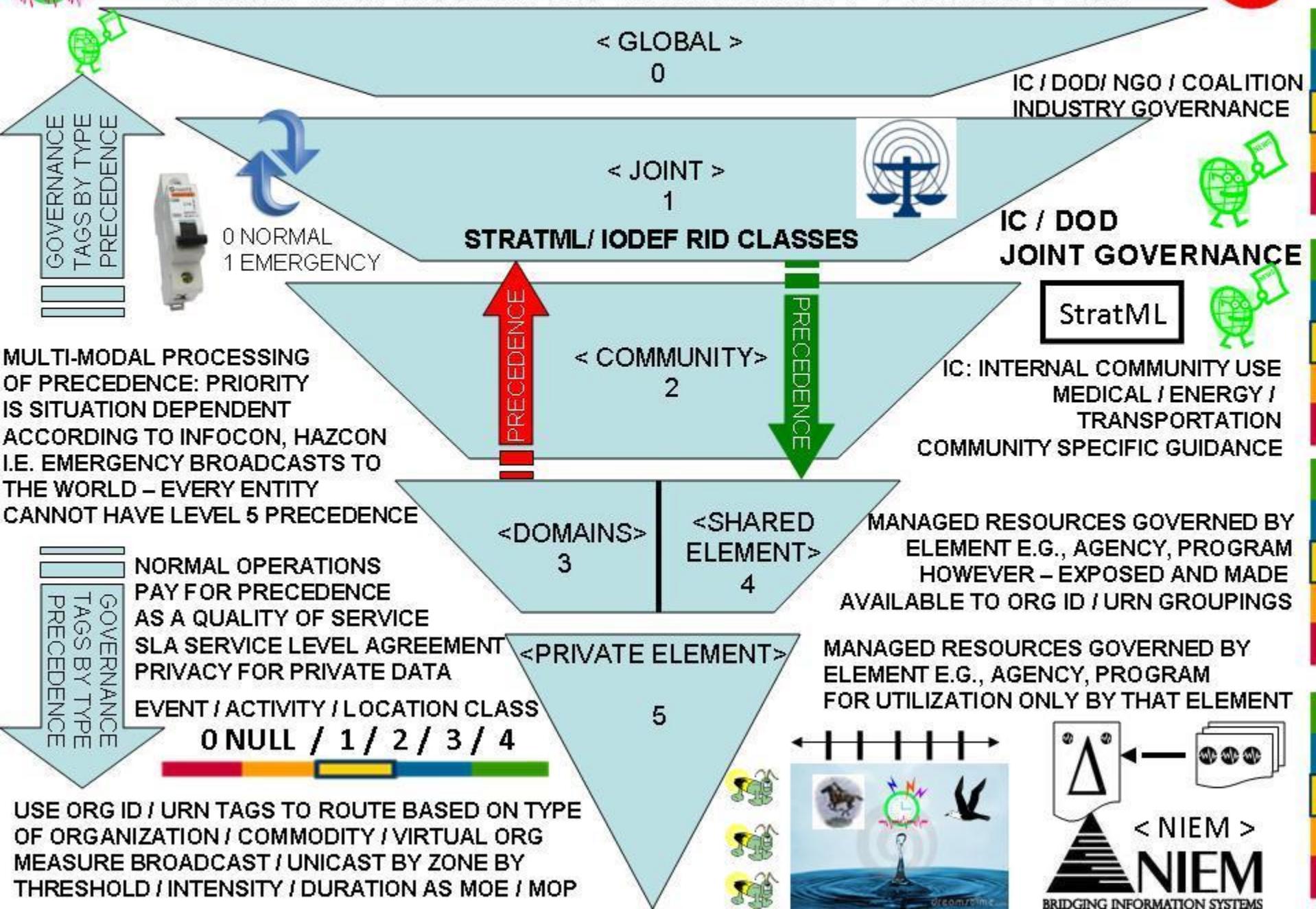
RFID Configuration TCP/IP heartbeat message

STRUCTURED DATA EXCHANGE /
STRUCTURED MILITARY MESSAGES

FROM	BATTLEFIELD DIGITIZATION		CENTRIC WARFARE		BIZ USE CASES	ALPHA NUMERIC BREVITY CODES										
	ASIAN NETWORK	AFRICAN NETWORK	AMERICAN NETWORK	EUROPEAN NETWORK												
AFRICA	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P030 P031 P032 P033 P034 P035 P036 P037 P038 P039 P040 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P052 P053 P054 P055 P056 P057 P058 P059 P060 P061 P062 P063 P064 P065 P066 P067 P068 P069 P070 P071 P072 P073 P074 P075 P076 P077 P078 P079 P080 P081 P082 P083 P084 P085 P086 P087 P088 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P0100	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	SYNTAX LEXICON CODE GUIDE	1st Compiler DESIGN Still the BEST									
ASIA	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 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P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 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P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P049 P051 P052 P053 P054 P055 P056 P057 P058 P059 P059 P061 P062 P063 P064 P065 P066 P067 P068 P069 P069 P071 P072 P073 P074 P075 P076 P077 P078 P079 P079 P081 P082 P083 P084 P085 P086 P087 P087 P089 P090 P091 P092 P093 P094 P095 P096 P097 P098 P099 P099	P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P019 P020 P021 P022 P023 P024 P025 P026 P027 P028 P029 P029 P031 P032 P033 P034 P035 P036 P037 P038 P039 P039 P041 P042 P043 P044 P045 P046 P047 P048 P049 P04



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/>



Industrial Control System
Information Sharing and
Analysis Center

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

<ELEMENTS>

STRATEGIC
MARKUP

StratML

LANGUAGE

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

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

<GEO_LOC_GPS><STATUS>



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



NDN

<INTEREST>



NDN

<INTEREST>



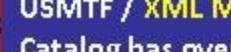
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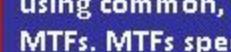
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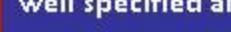
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<INTEREST>



NDN

<INTEREST>



NDN

<INTEREST>

NDN

<INTEREST>

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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 Fees TERRATRC TRADE
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



HASH Values
Nonce Values

SCT Alice V Cls Bank



Federation
Gateway



• Privacy

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



</DATA>
("FILTERS")

FIREFLY - HEARTBEAT ALGO
SYNC EVENTS



Bitcoin: OpenBazaar transactional currency



</DATA>
("FILTERS")

FIREFLY - HEARTBEAT ALGO
SYNC EVENTS



Cryptographic Security

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



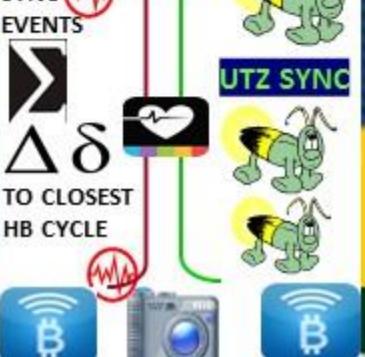
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FIREFLY - HEARTBEAT ALGO
SYNC EVENTS



NIST Beacon
A Public Randomness Service

Non-
Repudiation



Price Indexes in
Time and Space

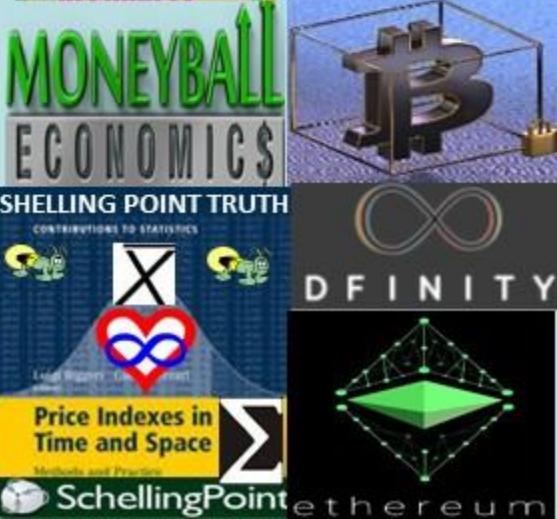
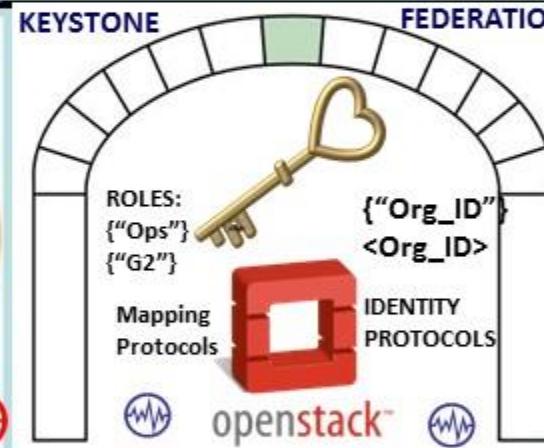
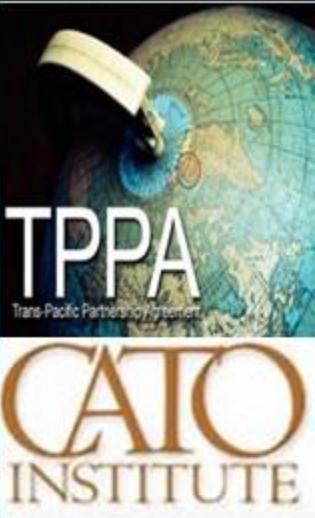
Methods and Practice

SchellingPoint



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



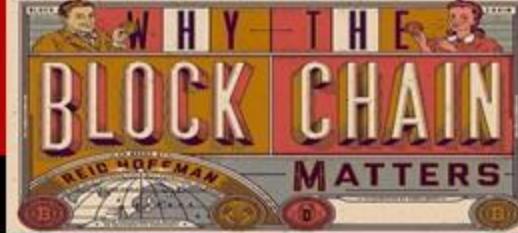
HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX



TradeNet

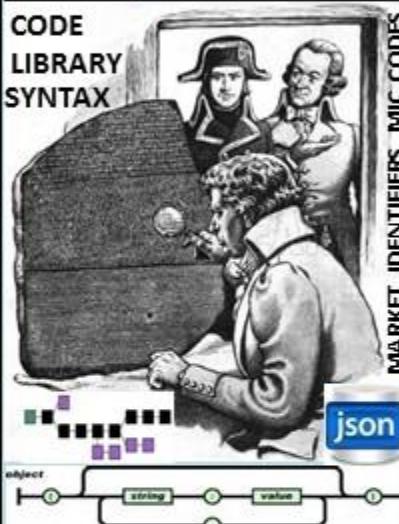


Programmable Money \$\$\$

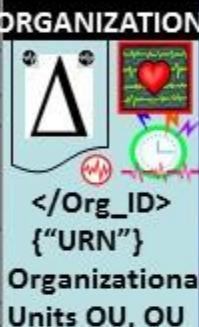


RIED HOFFMAN 15 May 2015 [LINK](#)

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



300 + MESSAGE TEMPLATES
SYNTAX LIBRARY
PROGRAMMING
STRUCTURED <CONTENT> EXCHANGE
BREVITY CODES
MARKET ID CODES

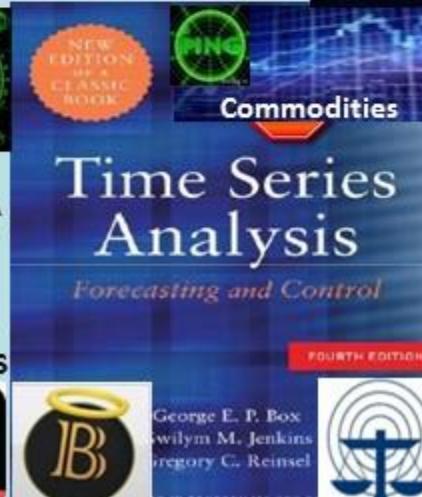


Bitcoin and the blockchain function as a medium of exchange, a store of value, a unit of account. Bitcoin adds digital, cryptographic, distributed server functions to currencies. Because it functions simultaneously as a currency, an asset and a platform, Bitcoin is better described as a global cryptoCAP (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





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

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 reimaging 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

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.

UTZ TIME SYNC

INVESTOR POOL WORLD COMPUTER DFINITY

FINANCIAL
NOSTRADAMUS
REGGIE MIDDLETON



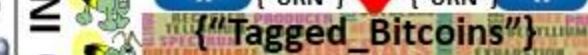
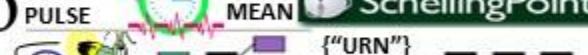
ECONOMIC HEARTBEAT
STATISTICAL MEAN VALUE INDEX PULSE



ALGORITHMIC REGULATION



SHELLING POINT TRUTH



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

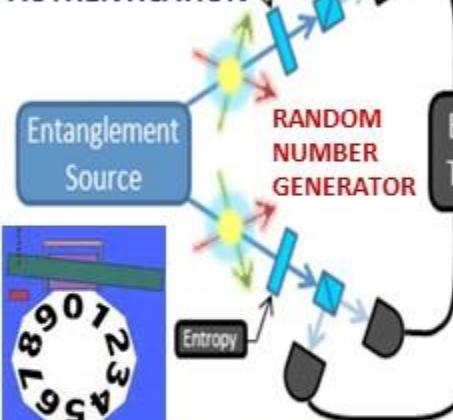


NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

UNPREDICTABLE SAMPLING



SECURE AUTHENTICATION
SECURE MULTI
PARTY /
AUTENTICATION



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors



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

Time / Distance Metrics
PROXIMITY
NDN
</interest></distance>

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

Stochastic Harmonization



The proposed Universal Timezone System would do away with all these different time zones and instead use a single global time zone called UTC, which stands for Coordinated Universal 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

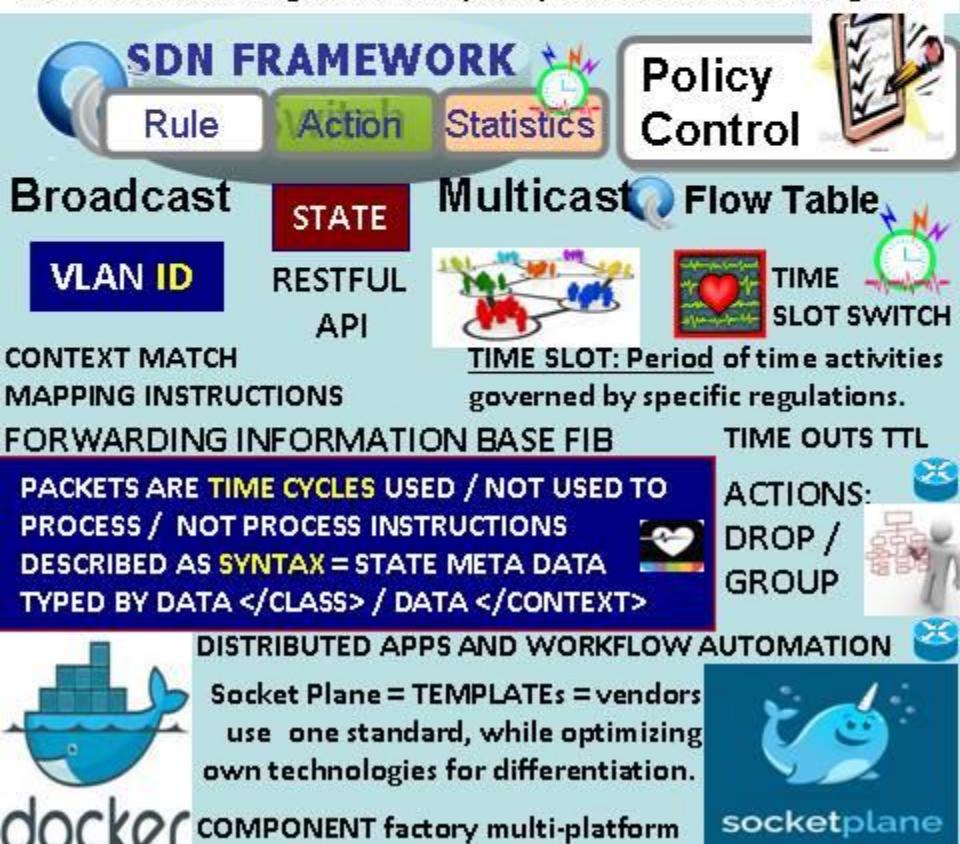
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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





- 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



Autonomous Device Coordination Framework



Registration

Authentication

Proximity based rules

Consensus based rules

FEDERATION AGREEMENTS

PROCEDURAL TEMPLATE

Contracts

Checklists

FEDERATION

<UUID><ORG_ID><URN>

LDAP DIRECTORY

Physical proximity

Social proximity

Temporal proximity

Agreements

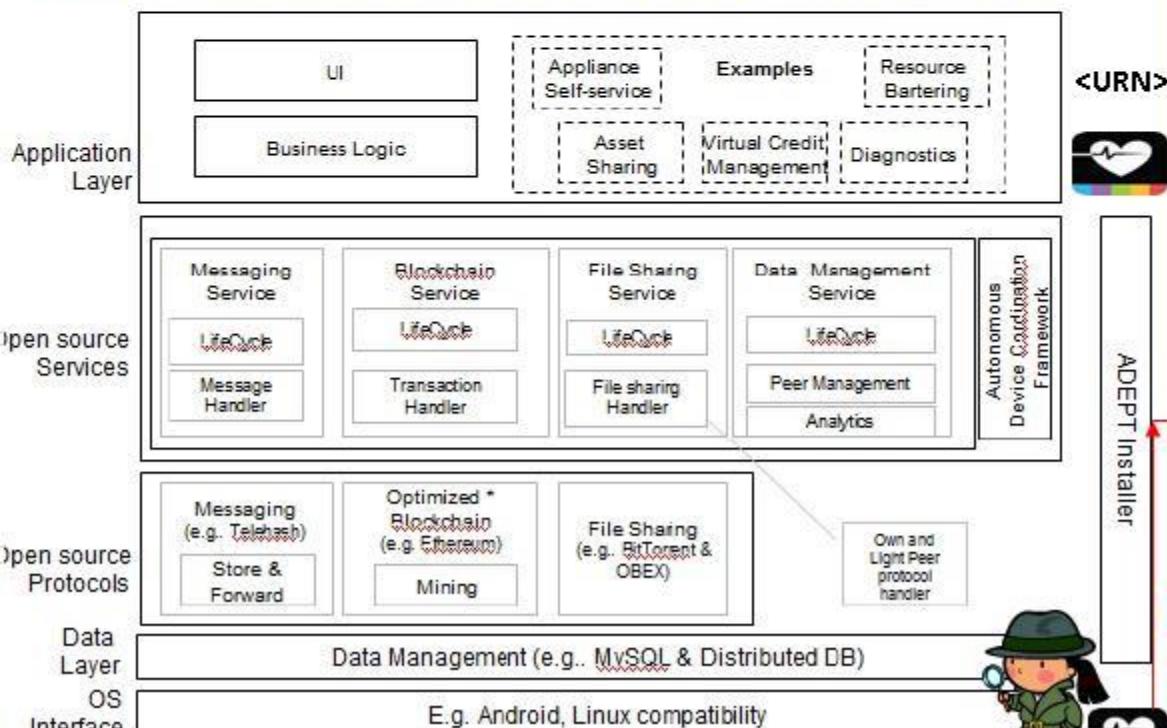
Payments

Barter



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

ADEPT Standard Peer Architecture – Logical View



<URN>



ADEPT Installer



ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML_Wf>

FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH

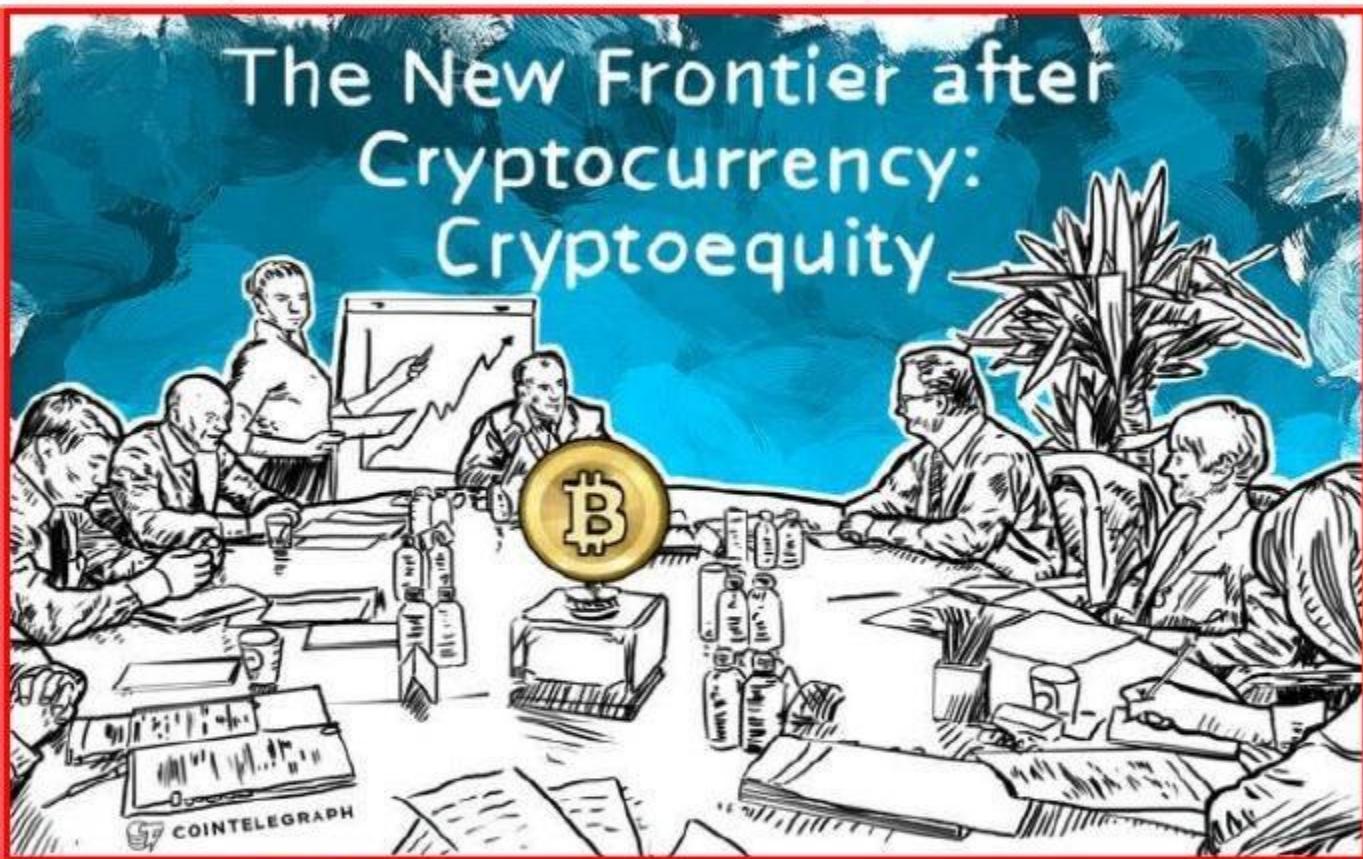


OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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

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

DAO: Distributed Autonomous Organization. RAND Corporation first used in a military context in 2000 http://rand.org/pubs/documents_briefings/DB311.html
[Swarming and the Future of Conflict | RAND www.rand.org](#)



RAND
Monograph
Report

THE
ADVENT
Of NETWAR

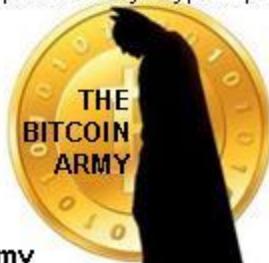


Eris -- The Dawn of Distributed Autonomous Organizations and The Future of Governance



Ethereum: use of DAO in crypto coin sphere
BitShares.org too ☺

<https://twitter.com/TheBitcoinArmy>



ERIS: GODDESS OF DISCORD
DISRUPTIVE TECHNOLOGIES:

- BITCOIN ETHEREUM
- BITCOIN STELLAR
- BITCOIN NAMECOIN
- BITCOIN RIPPLE



<http://hplusmagazine.com/2014/06/17/eris-the-dawn-of-distributed-autonomous-organizations-and-the-future-of-governance/>

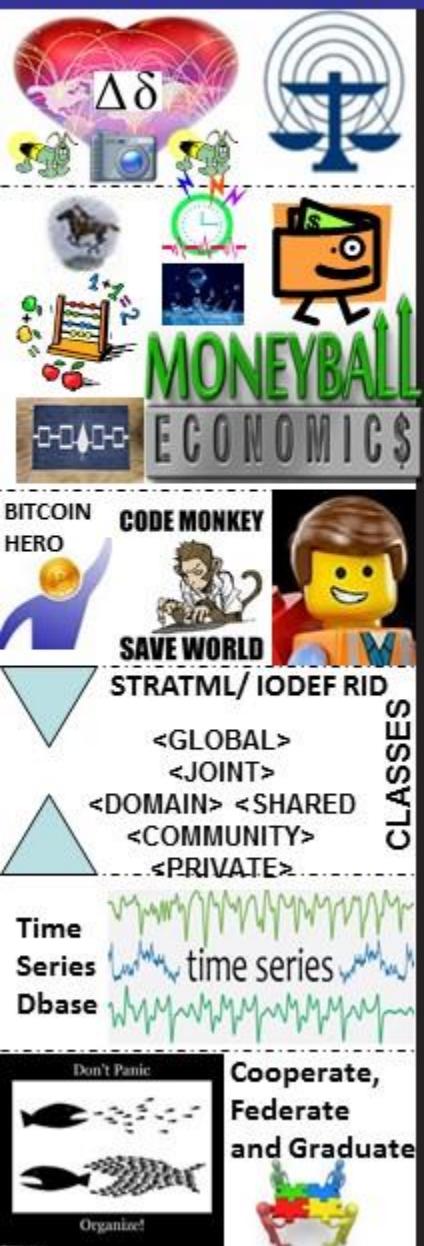
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

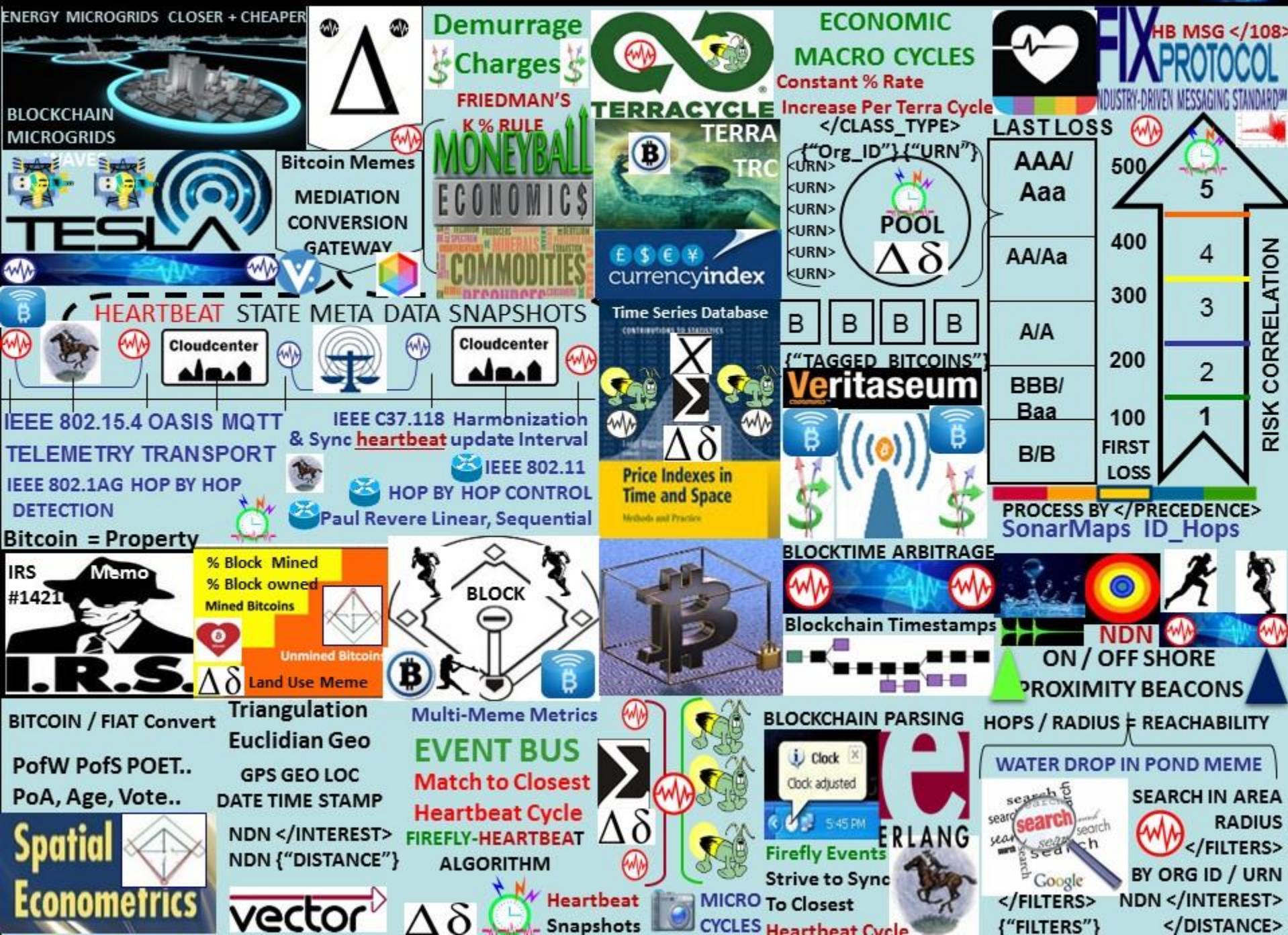
$$MV=PQ \text{ Money} \times \text{Velocity} = \text{Price} \times \text{Quantity}$$

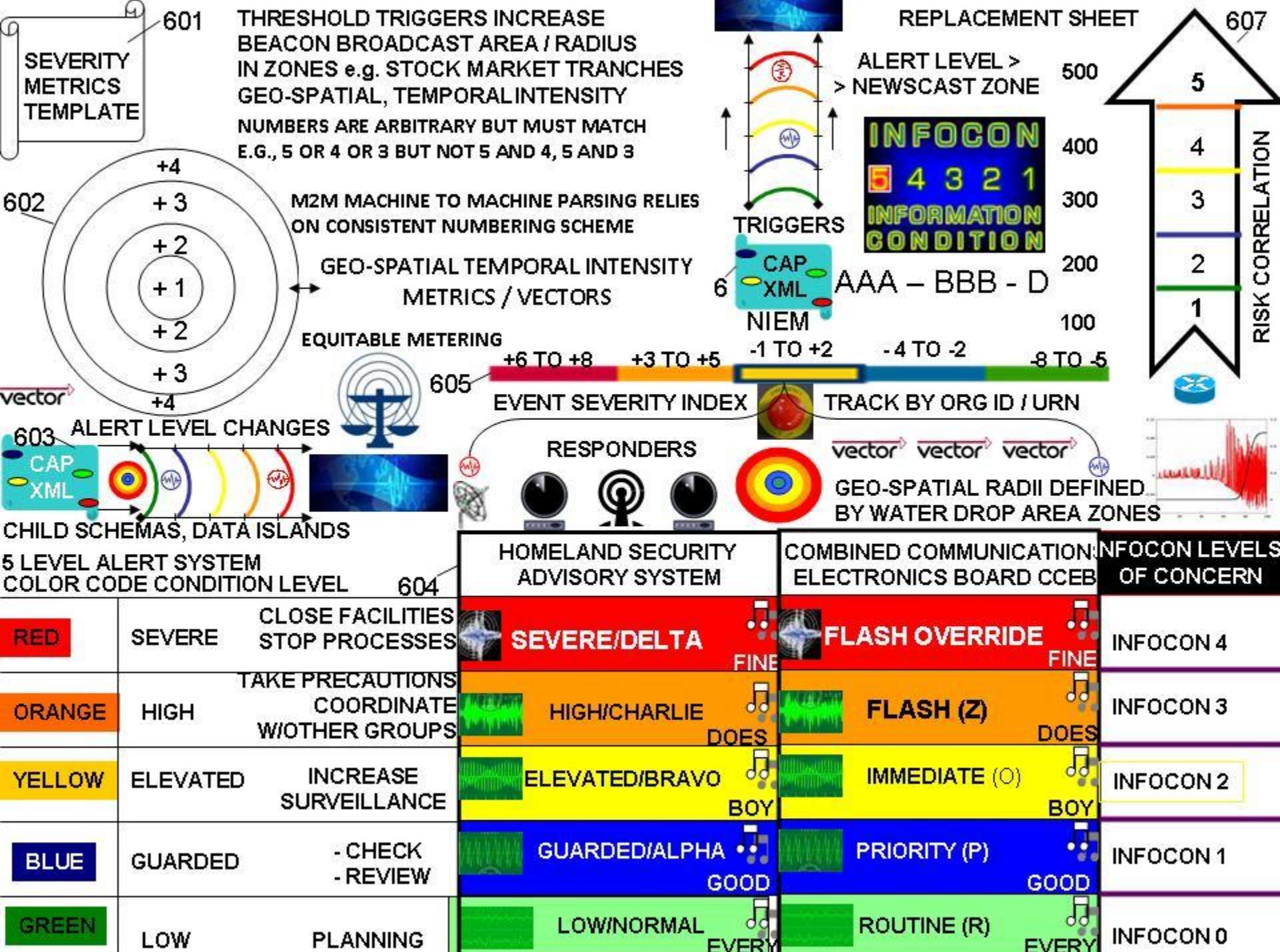
The most important equation in monetary economics, the equation of exchange: $MV=PQ$. The quantity of money (M) times the rate spent (V for velocity) equals the price of everything bought (P) times the amount bought (Q for quantity). In Bitcoin, M Money is on a predetermined path, converging to 21m bitcoins.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







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

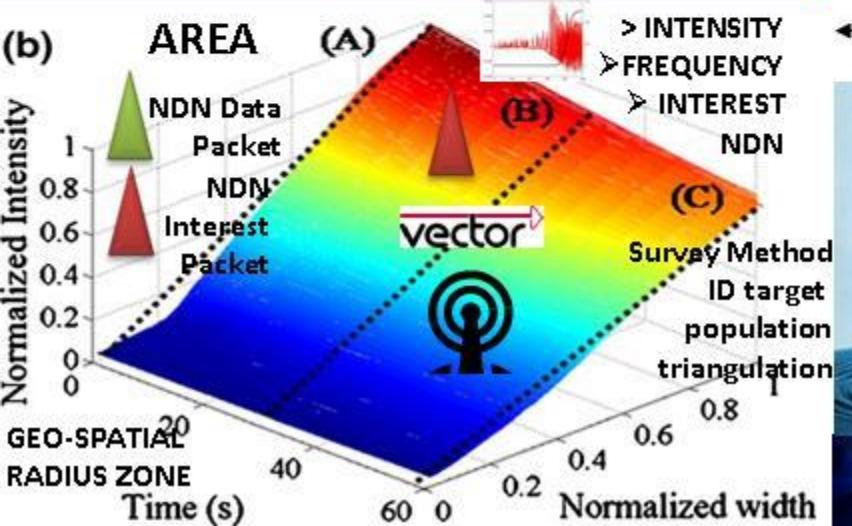
Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:



Paul Revere = linear, sequential

TCP/IP hop by hop counts, by hop controls

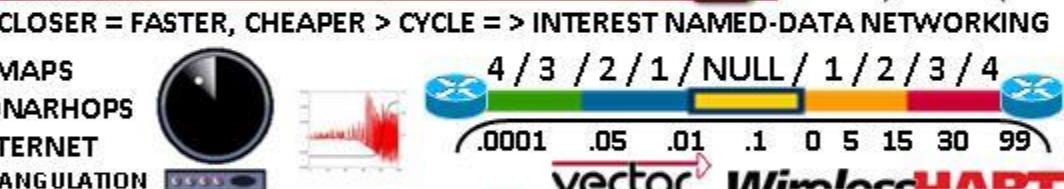
**Water Drop = AREA / INTENSITY
Cyclic Frequency**



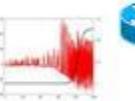
NAMED DATA NETWORKING

A graph with 'time' on the vertical axis and 'distance' on the horizontal axis. A straight line starts from the origin and slopes upwards to the right, representing motion with constant velocity. A shaded red triangle is formed by the line, the vertical axis, and the horizontal axis.

**INFOCON
4 3 2 1
INFORMATION
CONDITION**



1



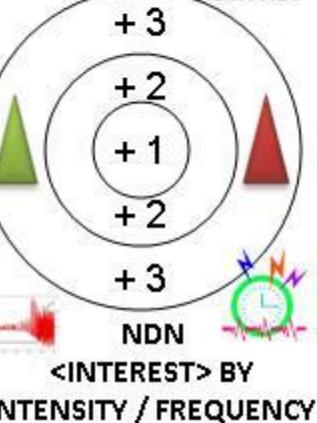
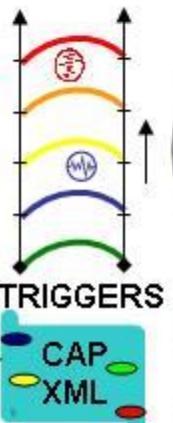
The logo for Vector Wireless HART, featuring the word "vector" in red script above "Wireless HART" in red block letters, all set against a blue background.

vector[®] WirelessHART™

**time synchronized,
self-organizing,
mesh Net**

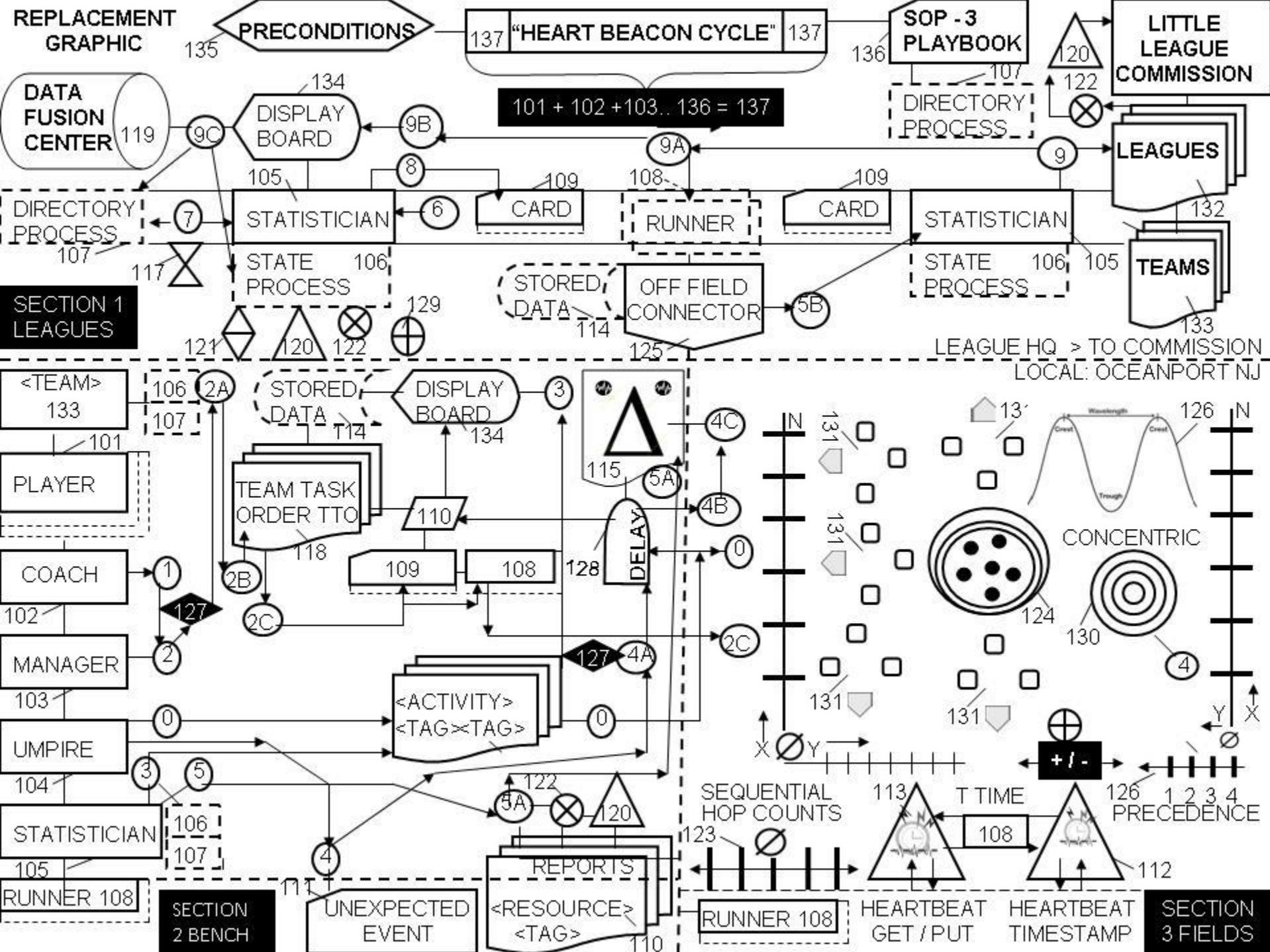


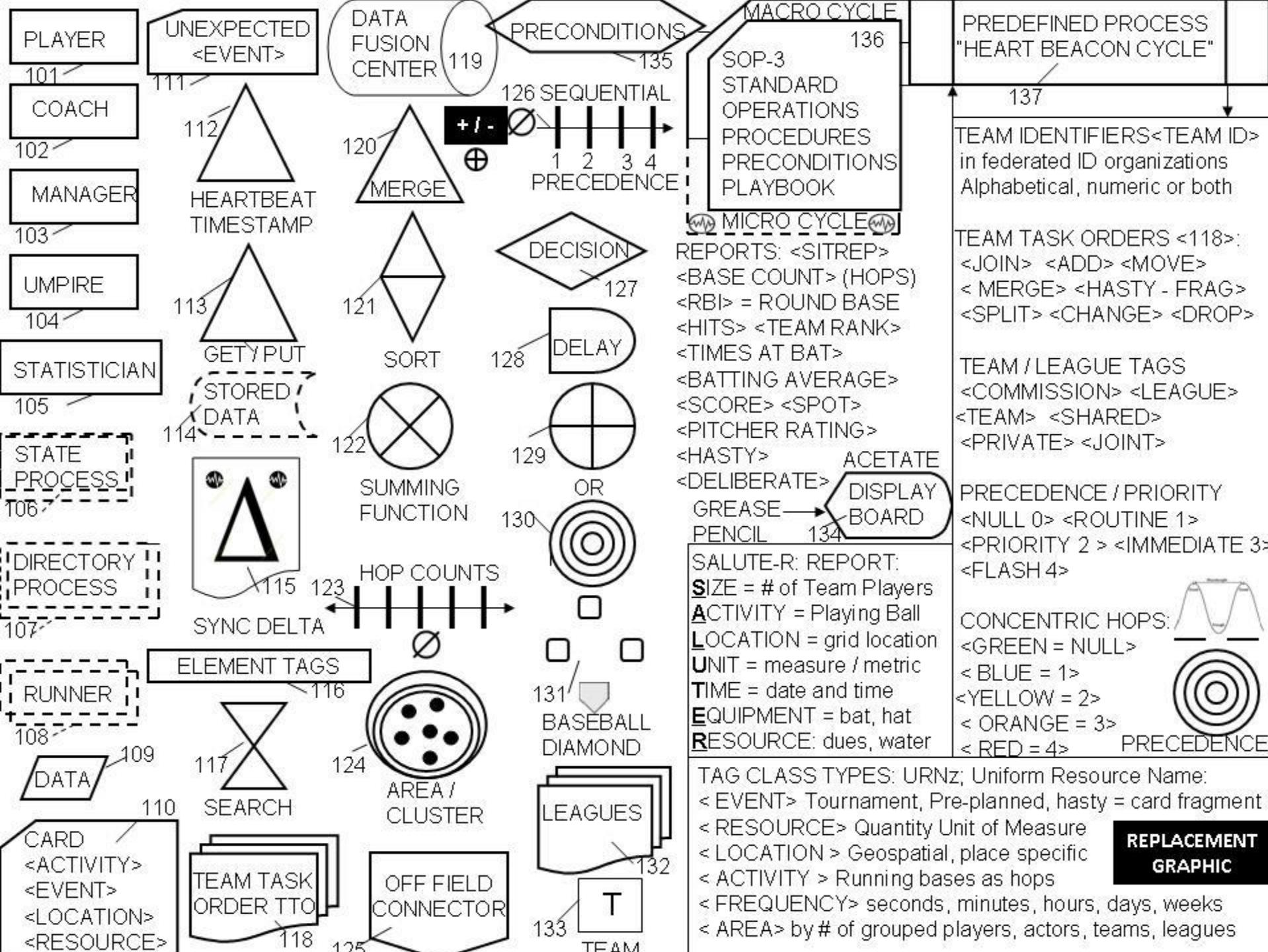
SINE-WAVE



Interface Name	HEARTBEAT Administration Interface [SCOP]		
Documentation URL	http://scop.sourceforge.net/ http://linuxvirtualserver.org/software/index.html		
API Information	      		
#Big_Data	Functionality Areas	Cloud Interface Management, configuration, start, stop cloud services, edit configuration (heartbeat messages)	
	API Operation Count		
	Web service access type	Web application, front end to [network, device, system] heartbeat	
	LANGUAGE / PLATFORM BINDINGS	PHP	 
Interface Characteristics	 <p>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>		

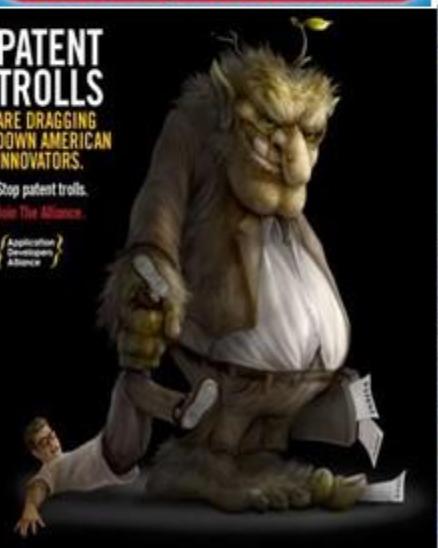
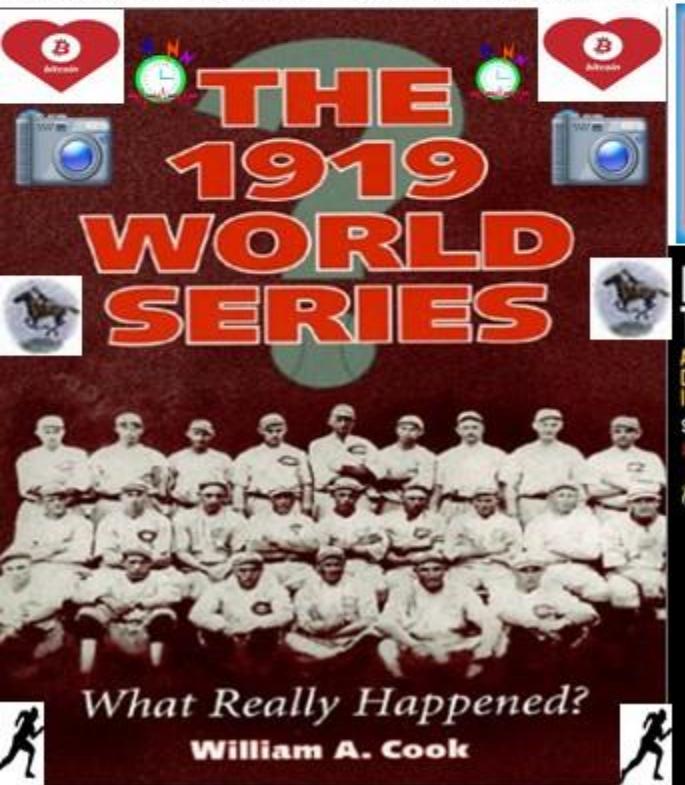




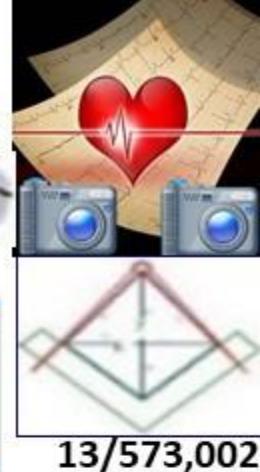




SAW Concepts LLC Owner's Father is from Blackfoot First Nation Native American Indian



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

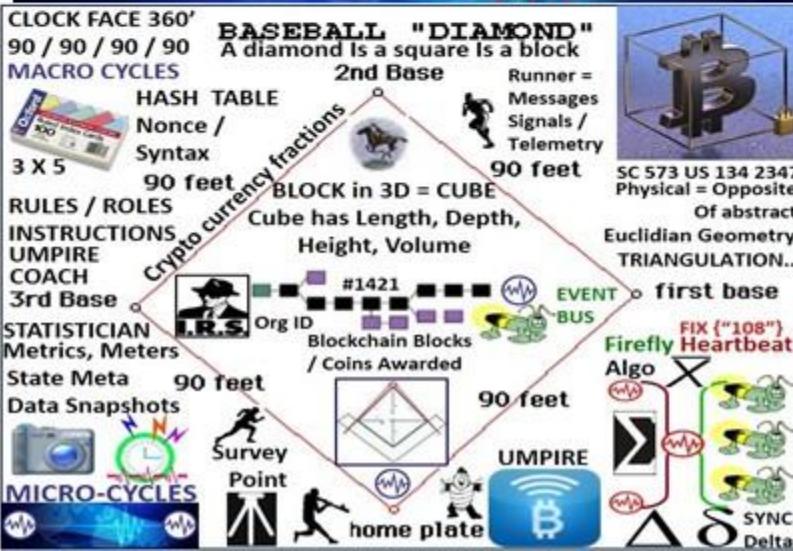


13/573,002



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





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

IEEE 802.11



TELEMETRY TRANSPORT

HOP BY HOP CONTROL

IEEE 802.1AG HOP BY HOP
DETECTION

Unused Resources / Unmet Needs

/localhost/nfd/fib/add-nexthop

Geo-Spatial Temporal

Metrics, Meters

DISTANCE
INFO SERVICE

Time Series

RISK

Value

Time

WATER DROP IN POND MEME IS

SONAR NAVY METAPHOR / MEME

NDN </INTEREST>

NDN {"DISTANCE"}

NAMED DATA

NETWORKING

IEEE C37.118

Harmonization

& Sync heartbeat

update Interval

CLOSER SOURCE

CHEAPER RATE

Energy Attenuates over Distances

TCP/IP HOP BY HOP COUNT

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

Radius

Water Drop in Pond Meme

Attribute Series

Interest

Distance

Temporal Series

Geo Spatial

Paul Revere

Linear, Sequential

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Attribute Series

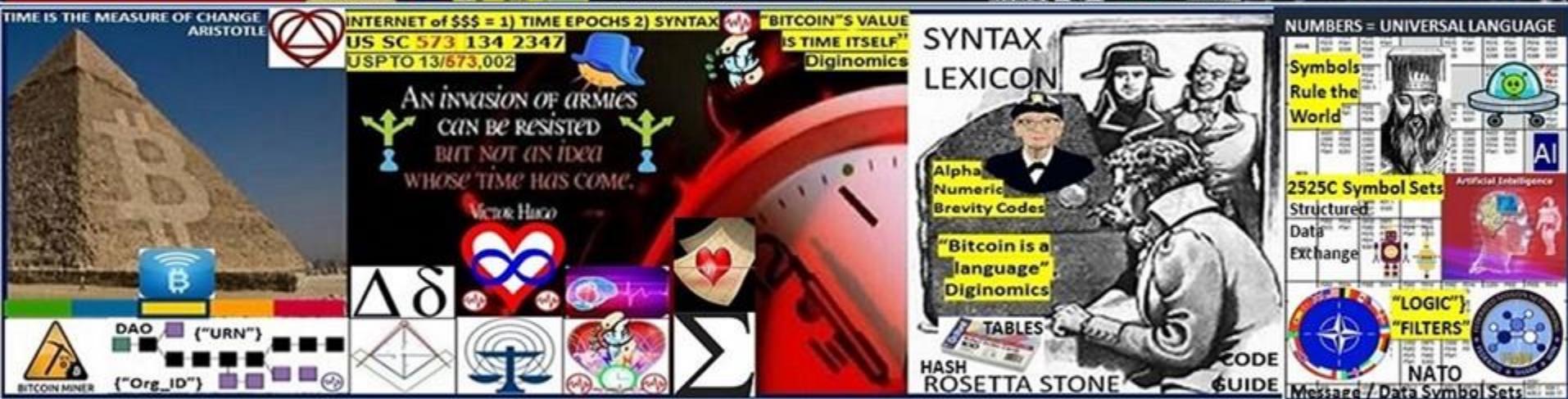
Interest

Distance

Temporal Series

Geo Spatial

Paul Revere



SIGNALS
Telemetry
ANNEX



Buckminster Fuller 1968 *Operating Manual for Spaceship Earth*
"we can make all of humanity successful through science's world-engulfing industrial evolution. We have the tools"

"The Dymaxion Map reveals a One-World Island in a One-World Ocean" which helps us to view the world as one interdependent system [of systems] of relationships. This is what is most fundamentally at HEART when we speak of Spaceship Earth "The planet is a [system of] system (s)"

SPACESHIP EARTH: comprehensive planetary planning describing new strategies intended to enable all of humanity to live with freedom, comfort and dignity, without negatively impacting the earth's ecosystem's regenerative ability

INFOCON

5 4 3 2 1

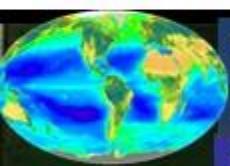
INFORMATION CONDITION
The World Game



The Book Spaceship Earth relates Earth to a spaceship flying through space. Our spaceship has a finite amount of resources and cannot be resupplied.

INCENTIVIZE
SUSTAINABLE
Eco-Econometrics

HEART BEACON CYCLE: SIGNALING, TELEMETRY FRAMEWORK ANNEX
BUCKMINSTER FULLER'S OPERATING MANUAL for SPACESHIP EARTH



Spatial Econometrics

70 / 30 RULE

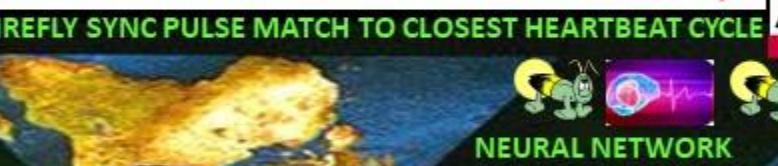
UNUSED RESOURCES

Firefly Heartbeat Algorithm

UNMET NEEDS

COMMODITIES

SLA/Q



NEURAL NETWORK WORLD COMPUTER



$\Delta\delta$

HEARTBEAT CYCLE

UNIVERSAL EVENT / ALERT BUS

TRADE WITH EARTH ???

Trade w Earth ???

Closer = < Fuel

CLOSER = Cheaper, Faster

ENERGY TOKENS

URN

Org_ID

Start

Stop

Vector

Our Spaceship Earth

one Island in one ocean ... from space

Heartbeat Flash Message

Bitcoin Army

TERRA TRC

Blocktime Arbitrage

Economic Heartbeat

Algorithmic Regulation

Stat Mean Value Index

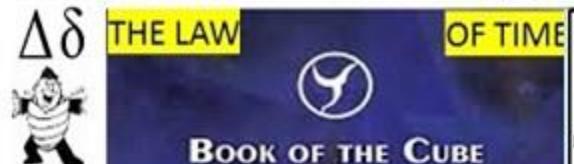
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

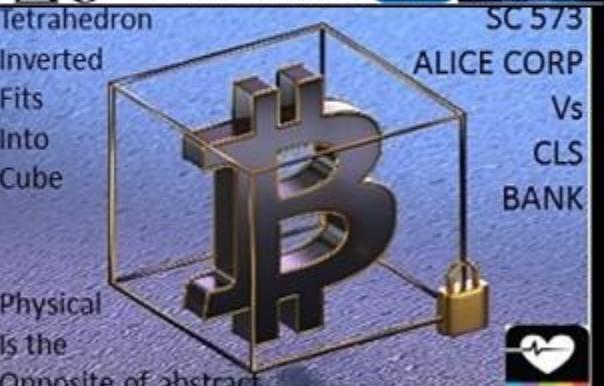
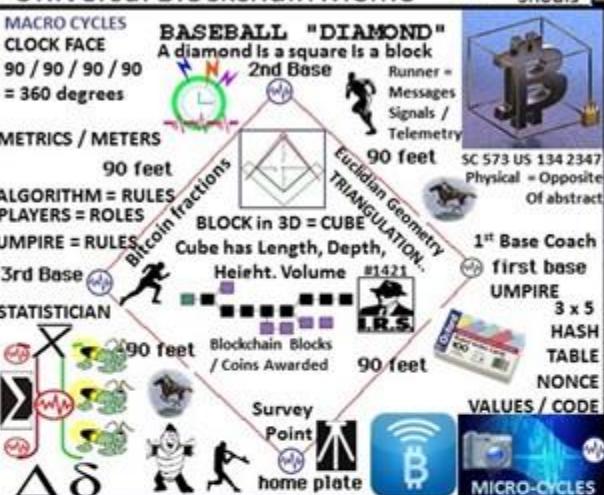
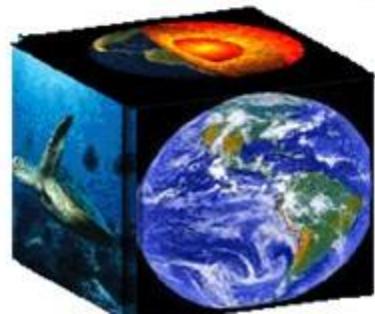
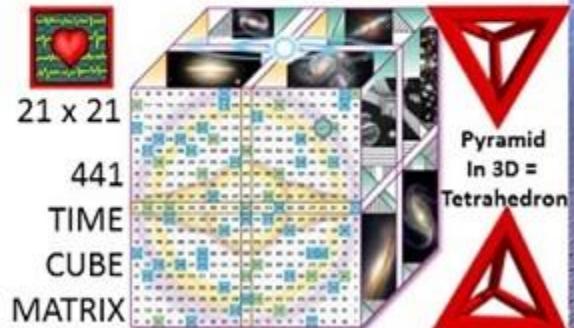
Main Embodiment: Baseball Diamond = block in 3D = cube

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

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



First
Baseball
Players
Union
Formed
1870



INSTITUTE OF HEARTMATH®

Empowering Heart-Based Living
<https://www.heartmath.org>



