



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

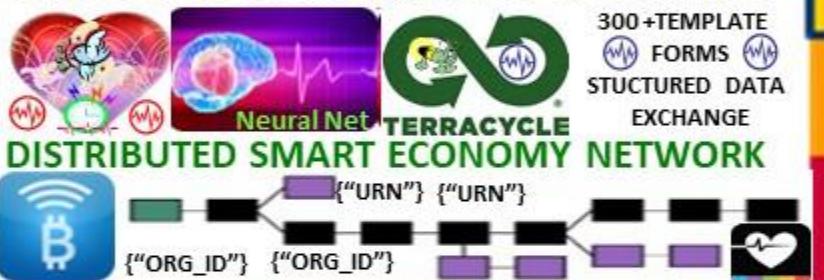


Humanitarian Assistance Networked Donor System

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



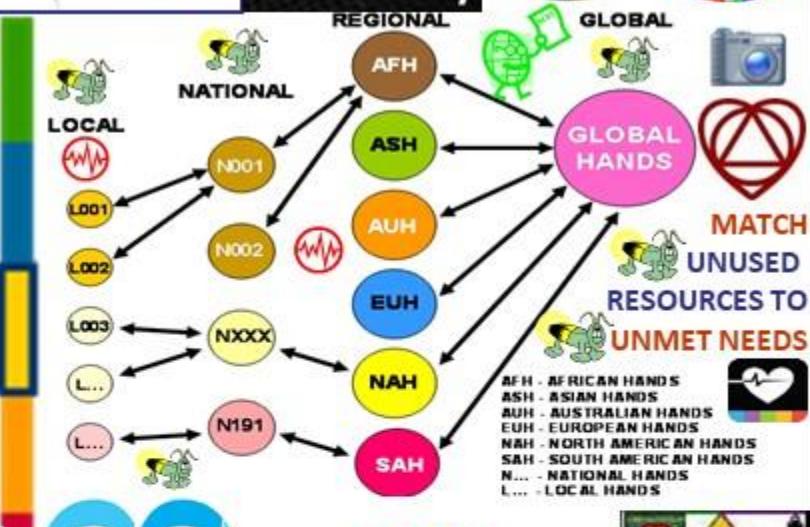
<https://neo.org>



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



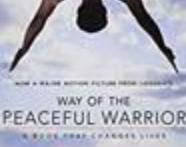
Federation Gateway



a global movement to end all wars



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

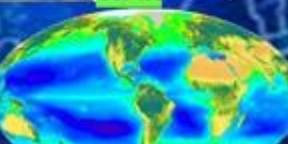


Beacon Communities

Vernetzte Operationsführung



Closer < \$\$\$ < FUEL



Proximity Beacons
JAEGERS

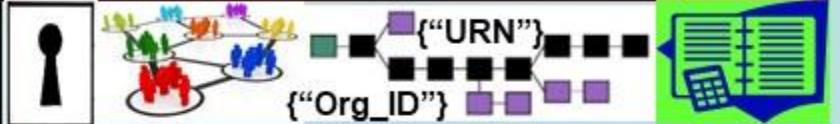


FIREFLY
HEARTBEAT ALGORITHM
EVENT / ALERT Flash Heartbeat Message Bus

KAIJU

Heart Beacon Cycle

FEDERATE / TRADE FEDERATIONS



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

Net joins, drops, splits, merges, moves

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

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

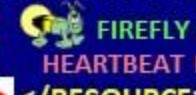
Bitcoin Mining Pools MEME / METAPHOR MEDIATION



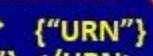
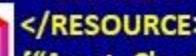
DISTRIBUTED AUTONOMOUS ORGANIZATION = DAO RAND Corp

term coined circa 1991 now in use by Blockchain tech corporations

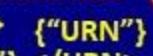
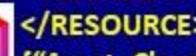
Uniform_Resource_Name



IoT DEVICE / PLATFORM



IoT SENSOR DEVICE

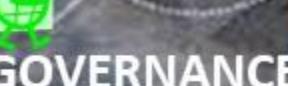
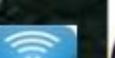


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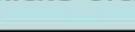
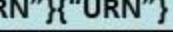
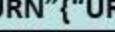
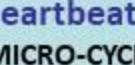
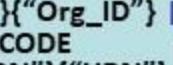
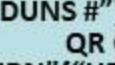
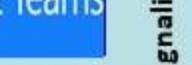
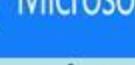
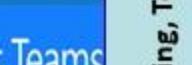
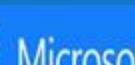
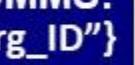
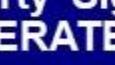
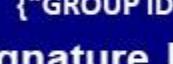
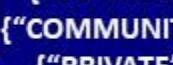
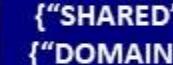
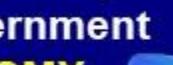
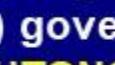
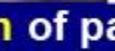
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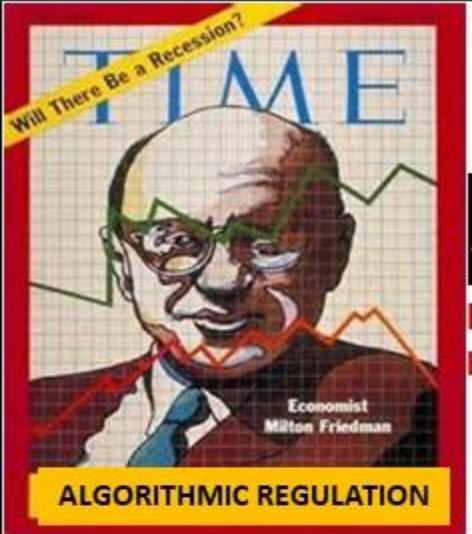
K %



GOVERNANCE 2.0



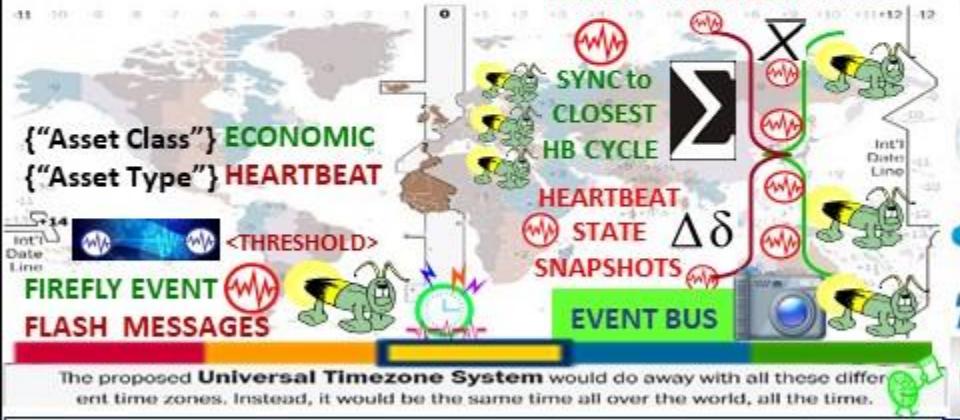




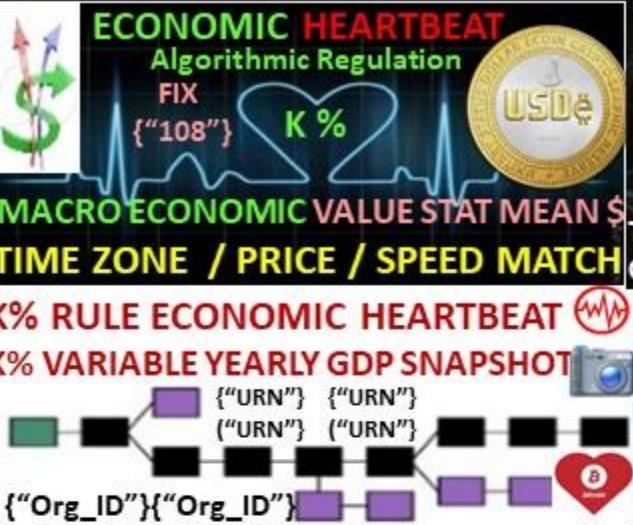
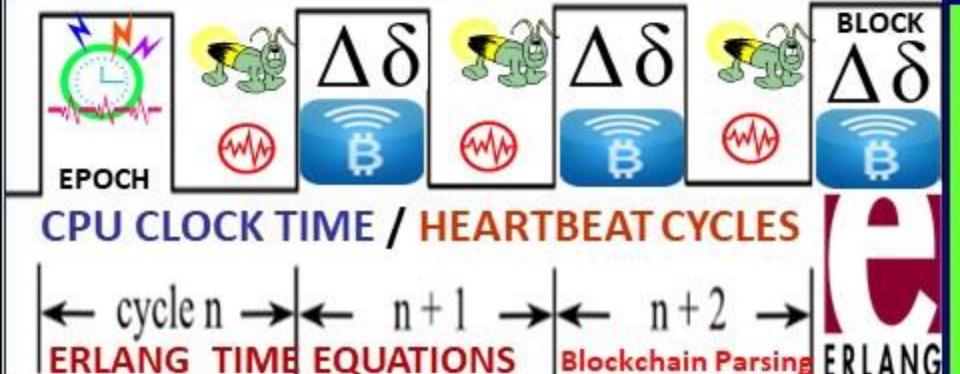
ALGORITHMIC REGULATION

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 $\Delta \delta$



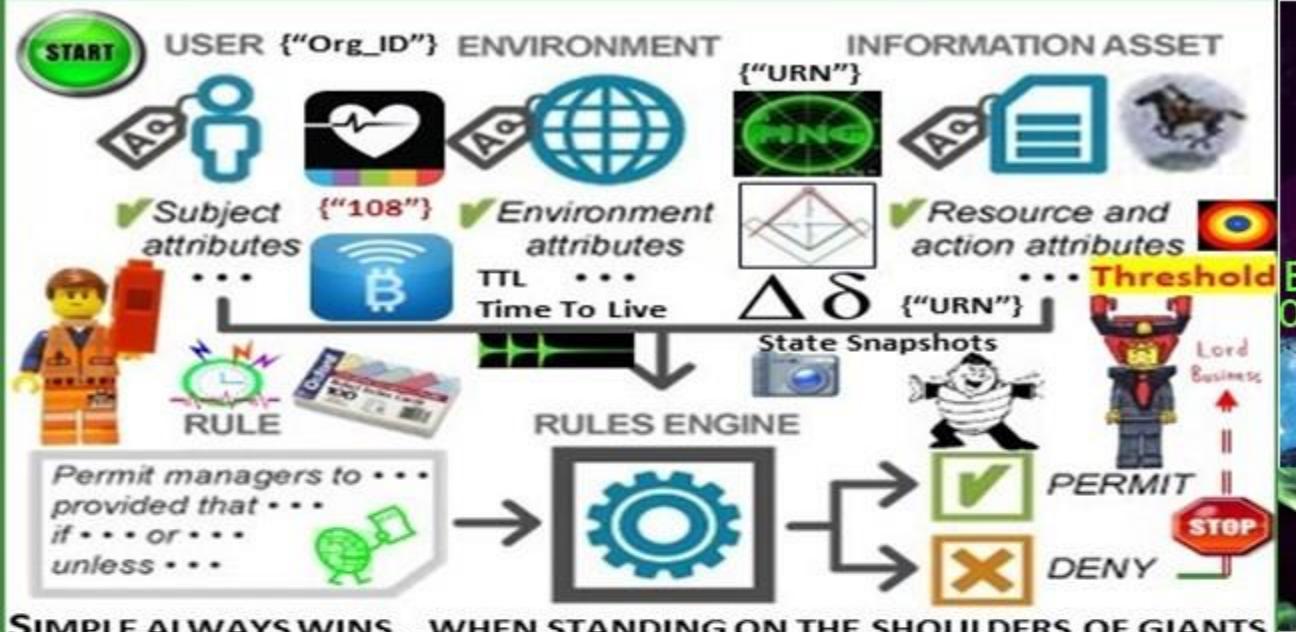
"Heartbeat Synchronization strives to have nodes in a distributed system generate periodic local "heartbeat" events approximately at the same time. It differs from classical clock sync in that Nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. There is no requirement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



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.



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**



Net Enabled Operations



NEO



DISTRIBUTED SMART ECONOMY NETWORK



PROXIMITY BEACONS

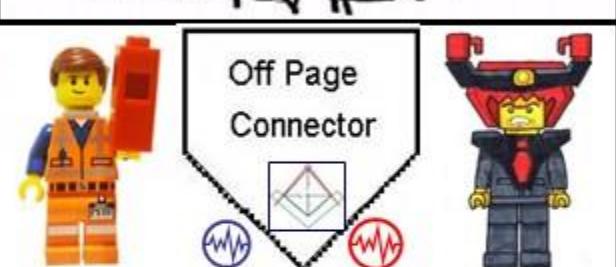
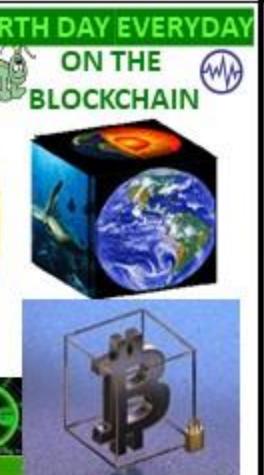


Spatial Econometrics

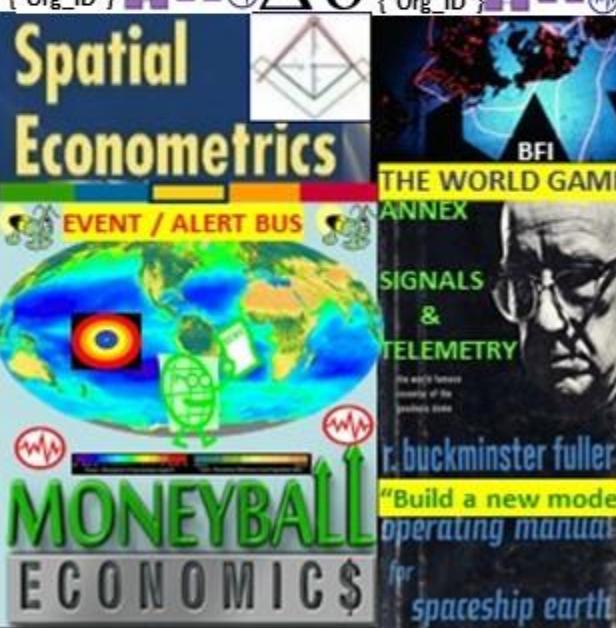


THE WORLD GAME ANNEX SIGNALS & TELEMETRY

The world famous
journal of the
gentle art
r. buckminster fuller
"Build a new model
operating manual
for
spaceship earth



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

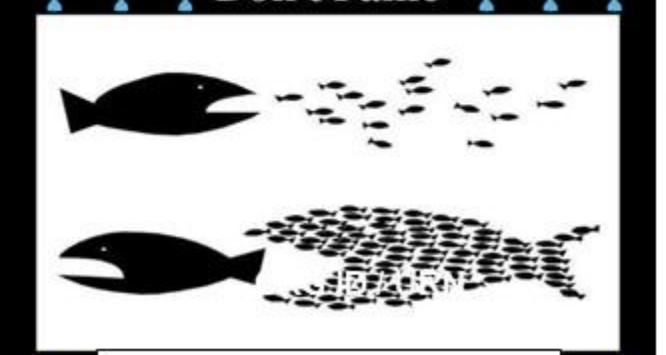
USMTF / XML MTF FORMATTED MESSAGE CATALOG

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

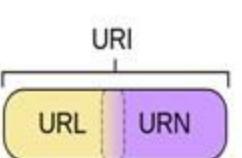
</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU

Don't Panic



FEDERATE



ARIN
American Registry for Internet Numbers

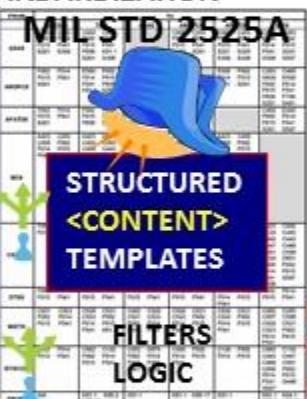
Uniform Resource Names (URNs): A Uniform Resource Identifier (URI). Both URNs (names) and URLs (locators) are URIs, and a particular URI may be a name & locator. Each plays a specific role:

- 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

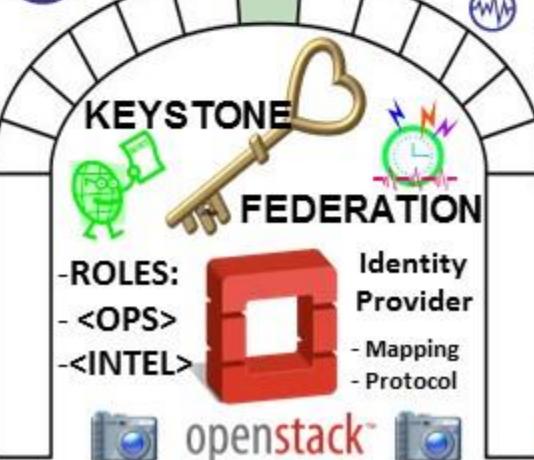


TRIANGULATION
TELCO MESH FABRIC
vector

CrowdSourcing

TRIANGULATION
TELCO MESH FABRIC
vector

CROWD SOURCING / FUNDING



Identity Provider
- Mapping
- Protocol



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

PARTIDO X:
Distributed
Democratic
Participation

ETHEREUM:
Decentralized
Autonomous
Organizations



VOTE ON BLOCKCHAIN



PARTIDOS DEL FUTURO

FEDERATED ID



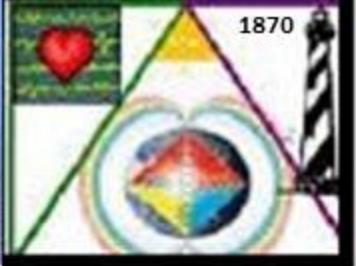
Satoshi Nakamoto Bitcoin Paper

What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party e.g., a bank.



Satoshi

Nakamoto

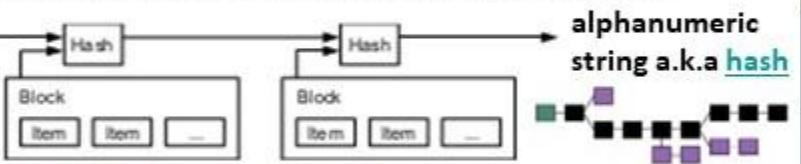
Craig WRIGHT a.k.a.
Satoshi NakamotoPHYSICAL =
OPPOSITE
OF ABSTRACTWright Brother's 1st Flight
Cape Hatteras Outer Banks

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

3. Timestamp Server

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

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



ATOMIC CLOCK
Heartbeat {"108"}
Heartbeat Message



JapanNet Crypto Time Authentication Service (Timestamp Service)

Alice Corp v CLS Bank
Physical = opposite of Abstract

nonce
previous block
timestamp

Merkle
("EVENTS")
Proof-of-work hash

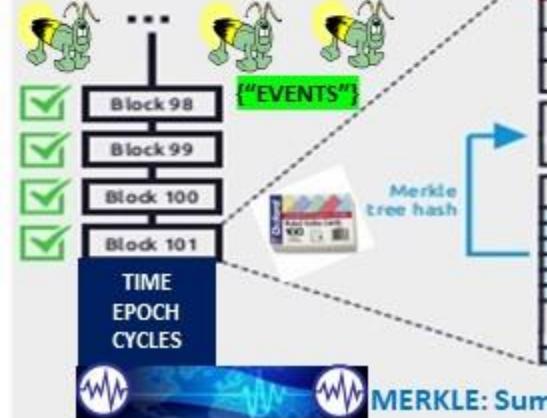
3 X 5
90 feet
RULES / ROLES
INSTRUCTIONS

UMPIRE
COACH
3rd Base

STATISTICIAN
Metrics, Meters
State Meta

Data Snapshots
MICRO-CYCLES

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

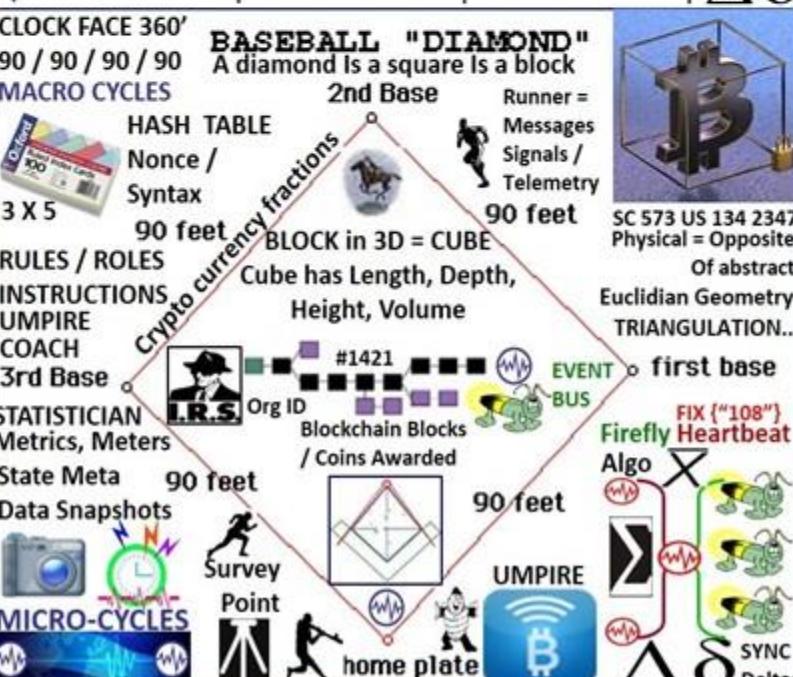


MERKLE: Summary built from block's transaction ID's

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

US Sct 573 US 134 2347 USPTO 13/573,002

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



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"

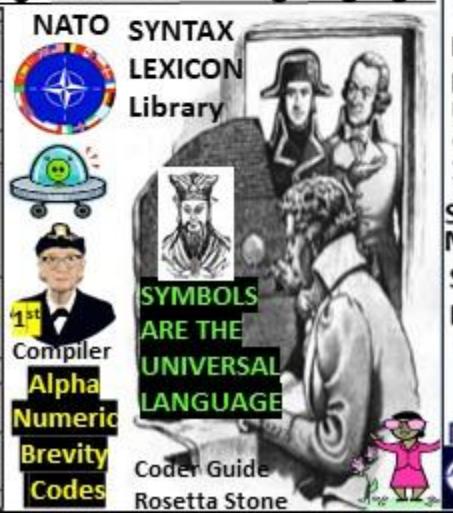
"A smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction reads / writes data in the blockchain's Dbase"

Gideon Greenspan "Beware the impossible smart contract"



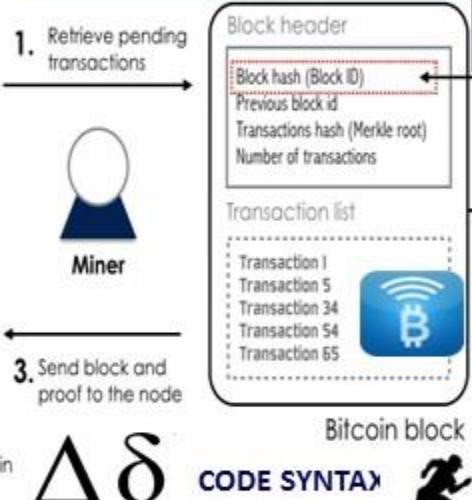
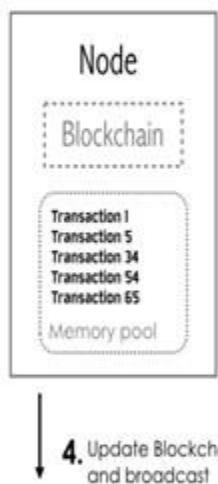
"Blockchain consortiums are working less on distributed ledgers and more on Contract Description Languages CDL., DAML Digital Asset Modeling Language"

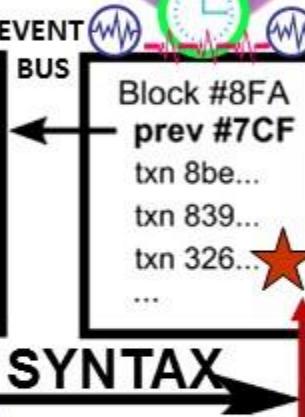
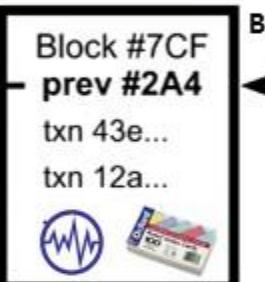
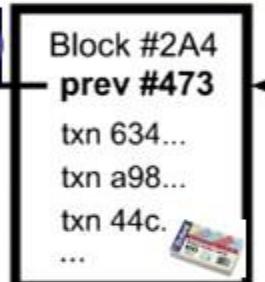
XBRL / CDL / DAML	
STOCK MIC CODES	
STRUCTURED DATA EXCHANGE TEMPLATE FORMS	
300+ USE CASES	
LOGIC / FILTERS	
SYNTAX / SYMBOL LEXICON LIBRARY	



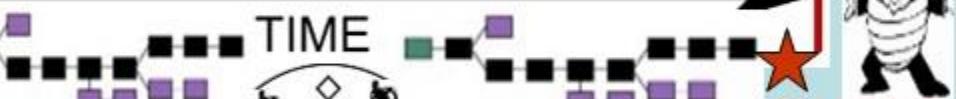


Alice Corp. v. CLS Bank International, 573 U.S. __, 134 S. Ct. 2347 (2014),[1] was a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).[2] The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating 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
 $\Delta\delta$


BLOCKCHAIN = TIME / SYNTAX


ID'd by Alpha-Numerics

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



ASIC CHIP CLOCK CYCLES TIME EPOCHS

 $\leftarrow \text{cycle } n \rightarrow \leftarrow n+1 \rightarrow \leftarrow n+2 \rightarrow$

ATOMIC CLOCK
 $\Delta\delta$
TIME EPOCH CYCLES

05:08:53



USPTO 13/573,002
PHYSICAL MEME
MAIN EMBODIMENT

 RULES
Metrics

 $\Delta\delta$

TIME
BLOCK
Multi-Meme Multi-Meter

State Meta
Data Snapshots

 ROLES
Meters

XBRL / CDL / DAML STOCK MIC CODES
STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

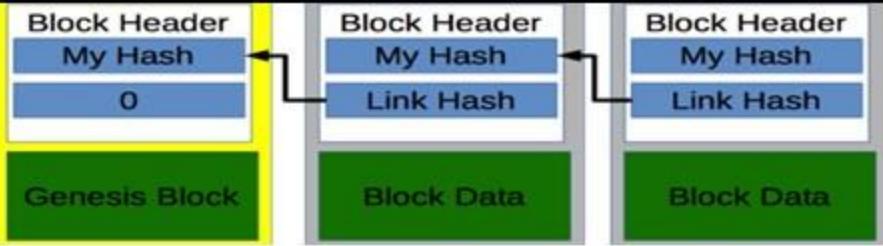
SYNTAX LEXICON LIBRARY



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.

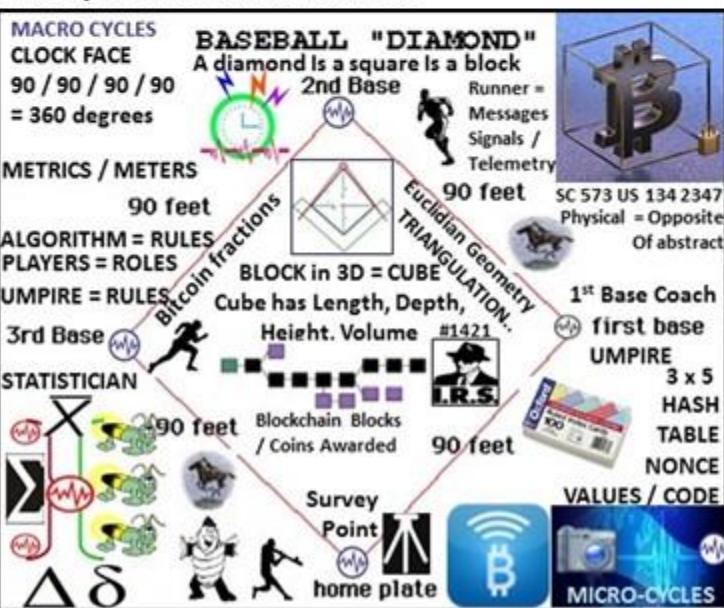
Consensus: distributed ledger blockchain nodes strategy determines chain's correctness
Consensus strategies: "proof of work," "proof of stake," and "delegated proof of stake"

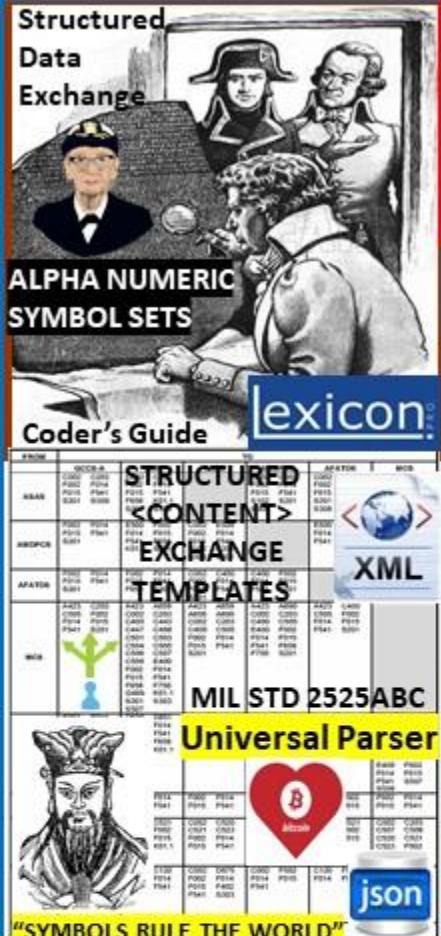
Proof of work (PoW)— A consensus strategy with a computationally difficult challenge to solve to find the hash of a new block, the discovered solution is easy to verify, allowing the other participating nodes to quickly agree that new block is correct

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

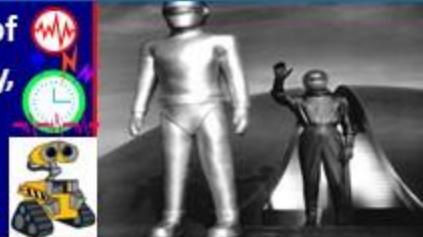
Delegated proof of stake (DPoS): variation of proof of stake where responsibility of the creating blocks is delegated to third party nodes, known as "witnesses."

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





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

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.

MESSAGE TEXT FORMAT: {“URN”}{“URN”} {“TRANSACTION”}

“URN”{“URN”}

{"TRANSACTION ID"

**SEG RPT OCC CLASSNAME SETID SEQ FIELD OCCURRENCE SET FORMAT NAME
O 11NUPRES EXER 1 /M /O // (NU) EXERCISE IDENTIFICATION**

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

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

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

V // (NU) REFERENCED MESSAGE

DATE-TIME GROUP

M / M / M / M / C // (NU) ORGANIZATION DESIGN

M // (NU) 1.A ENEMY FORCES / COMPETITORS

1 // (NU) 1.B FRIENDLY FORCES / TRADE FEDERATION

STANDARDIZATION M // (NU) 1.C ATTACHMENT / DETACHMENT

M// (NU) 1.D COMMANDERS EVALUATION

011NUPRES GENTEXT 12 /M /M // (NU) 1.E ENVIRONMENTAL INFORMATION

M 11NUPRES GENTEXT 13 / M / M // (NU) 2. MISSION KOO.99 / FI

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

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

© INNOPRES GENTEX 21/M/M// (NU) (S) INFORMATION OPERATIONS

O INUPRES GENTEXT 28 / M / M // (NU) (S) COMMS INFORMATION SYSTEMS

U11NUPRES GENTEXT 35 /M-M// (NU) 3.D COORDINATING INSTRUCTIONS

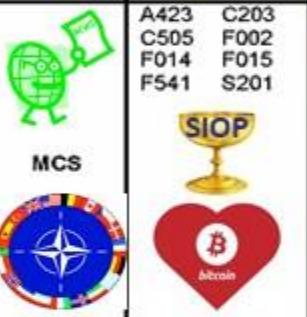
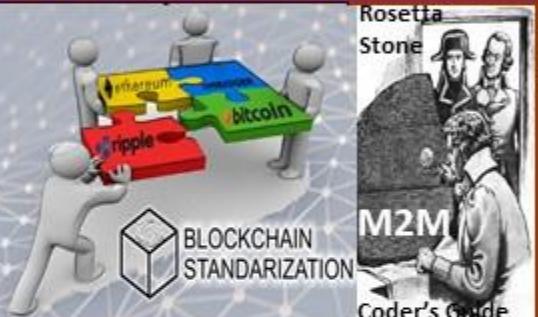
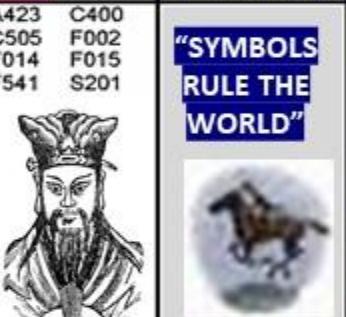
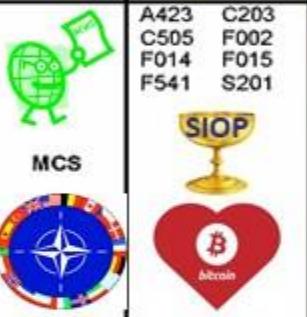
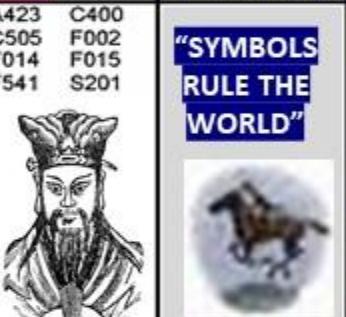
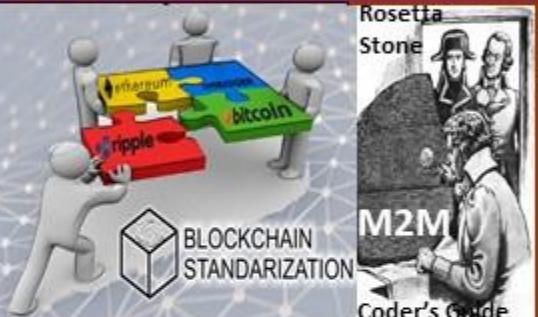
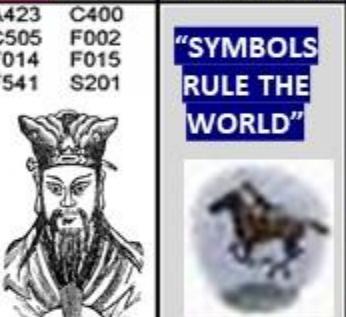
M 110UPRES GENTEXT BE // (NU) 4.A SUPPORT CONCEPT (Logistics)

M 11NUPRES GENTEXT 37//M// (NU) 4 - MATERIAL AND SERVICES

SYMBOLS Friend Neutral Hostile DICAL EVAC & HOSPITALIS - - MILITARY OPERATIONS

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	11.8.1.2 - Estimate Type	11.1.2 - Linear
11.4.1.2 - Estimate Type	11.4.1.2.1 - Alternative	11.2 - Estimated
11.4.1.2.1 - Alternative	11.4.1.2.2 - Evaluated D PURCHASE CODES	1.2.1 - Observed
11.4.1.2.2 - Evaluated D PURCHASE CODES	11.4.1.3 - Value	1.2.3 - Predicted
11.4.1.3 - Value	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

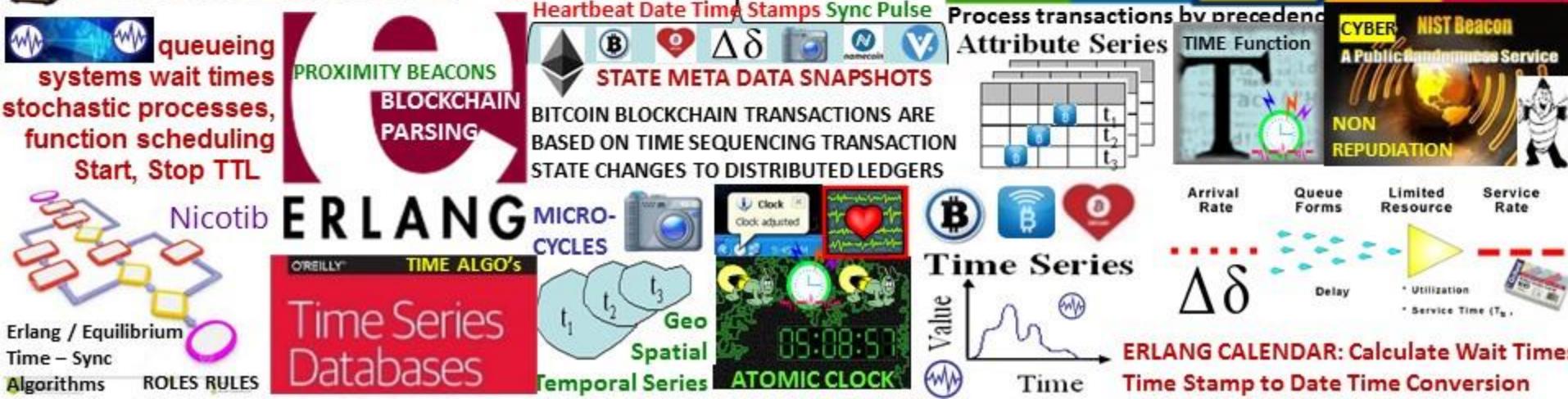
NATO

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.





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**SAMPLE PRICE, TRANSACTION RATE, SPEED, LOCATION
Server on /off floor adjust**



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

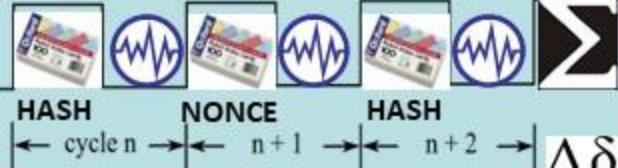


THROTTLE equivalent to difficulty. State •target = maximum value of 8 bytes Snap (2^64) divided by the difficulty. Shots

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.

OREILLY Time Series Databases



FIREFLY-HEARTBEAT ALGORITHM STOCHASTIC HARMONY ACROSS TIME ZONES

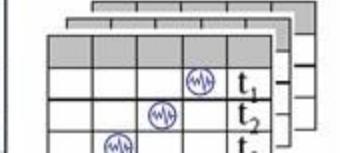


- MESSAGE ex:
 - Hashing string
 - Hash Table

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	POW PAYLOAD :
RULES / ROLES	Cube has Length, Depth, Height, Volume	COMBINATIONS OF ENCRYPTED SYNTAX
INSTRUCTIONS	90 feet	Attribute Series
UMPIRE	90 feet	
COACH	90 feet	
3rd Base	90 feet	
STATISTICIAN	90 feet	
Metrics, Meters	90 feet	
State Meta	90 feet	
Data Snapshots	90 feet	
MICRO-CYCLES	90 feet	
SURVEY POINT	90 feet	
HASH	90 feet	
NONCE	90 feet	
HASH	90 feet	
cycle n	90 feet	
n + 1	90 feet	
n + 2	90 feet	
Δ	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

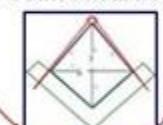
EVENT BUS
first base
Firefly Heartbeat

Algo X
 Σ
Sync Deltas

UMPIRE



Survey Point



90 feet



home plate

COMPUTER CHIP EPOCHS

cycle n → n + 1 → n + 2

SPATIAL
TEMPORAL Series

PROOF-OF-STAKE

UXTO



Mined Bitcoins



Survey Methods

Proximity Beacons



CALENDAR

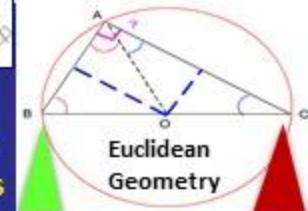
MICRO-CYCLES

Unmined Bitcoins



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

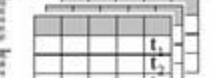
A BASEBALL DIAMOND IS A SQUARE. HBC USES A BASEBALL METAPHOR TO DESCRIBE METRICS, METERS. ROUNDING BASES FORM A BLOCK. METRICS, METERS & SURVEY METHODS MEASURE COIN MINING COMPLETION % AWARDS



STRUCTURED {"CONTENT"} TEMPLATES

Digital Asset
Modeling
Language
DAML ("INTEREST")
LEXICON LIBRARY
SYNTAX, SYMBOLS
LOGIC – FILTERS
CODE SEQUENCE
ROLES / RULES

Attribute Series



Contract
Description

Language CDL

(INTEREST)
"DISTANCE"

FBI

IDMaps
SonarHops

NDN

time ↑

distance →

FIX {"108"}

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

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





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

$$\Delta \Sigma$$

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



Bitcoin Address Shortener

Bitcoin Address Shortener is an Android app that you can use to shorten those lengthy bitcoin addresses!

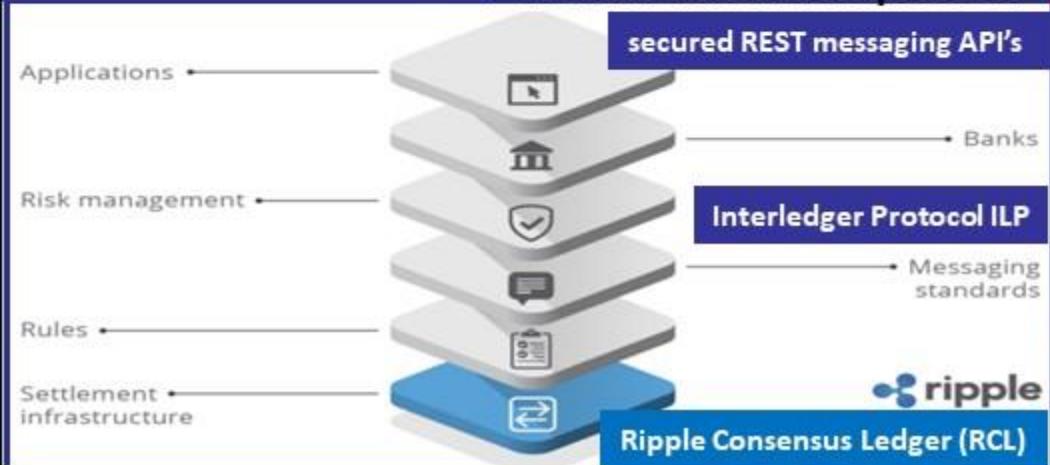
Simply enter a long Bitcoin address to have it transformed into a short one, and vice-versa!

You can get it for free [here!](#)

GET IT ON Google play

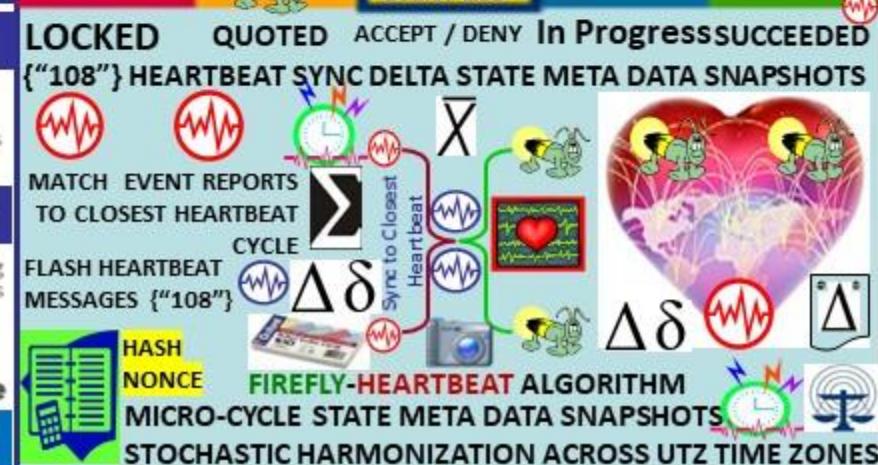
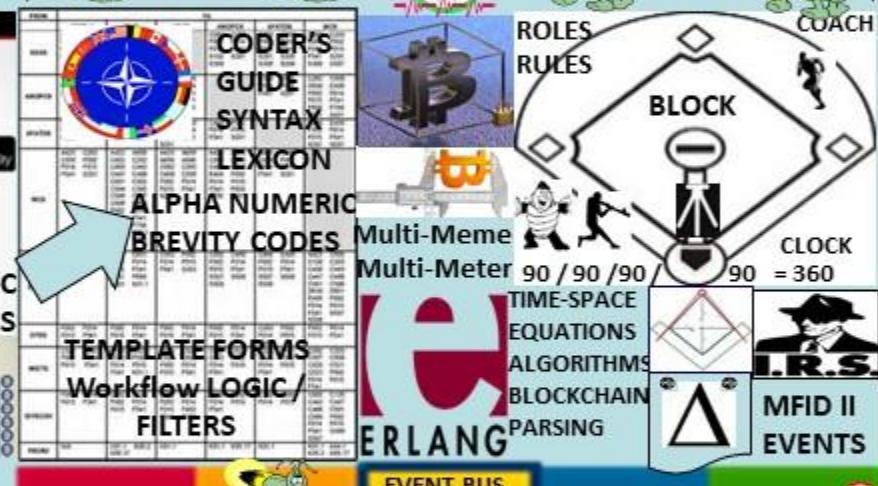
ALPHA NUMERIC BREVITY CODES A.I.

Neutral transaction protocol



World Economic Heartbeat
ALGORITHMIC REGULATION
("108")
BLOCKTIME ARBITRAGE
MFID II EVENT = TAXABLE

Stochastic Harmonization
Telco Mesh Fabrics
Wide Area Sync
FIREFLY EVENTS
FLASH MESSAGES
EVENT



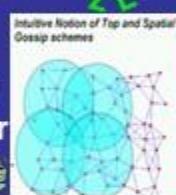


Hashgraph consensus algorithm for replicated state machines

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

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

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



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

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

DAG finite directed graph
= no directed cycles

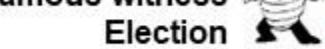
Consensus Order
 $\sum \Delta\delta \times$



Round created
Witness



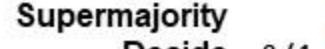
Famous witness
Election



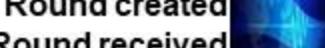
Vote



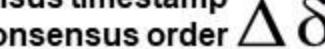
See



Strongly see



Supermajority



Decide

Round created

Round received

Consensus timestamp

Consensus order

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



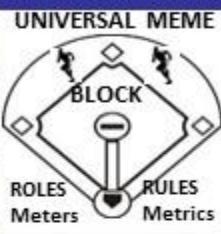
Hash
Nonce

Micro-Cycle
State Meta
Data Snapshots

Consensus timestamp

Consensus order

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



FIREFLY - INSPIRED HEARTBEAT SYNCHRONIZATION ALGORITHM

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

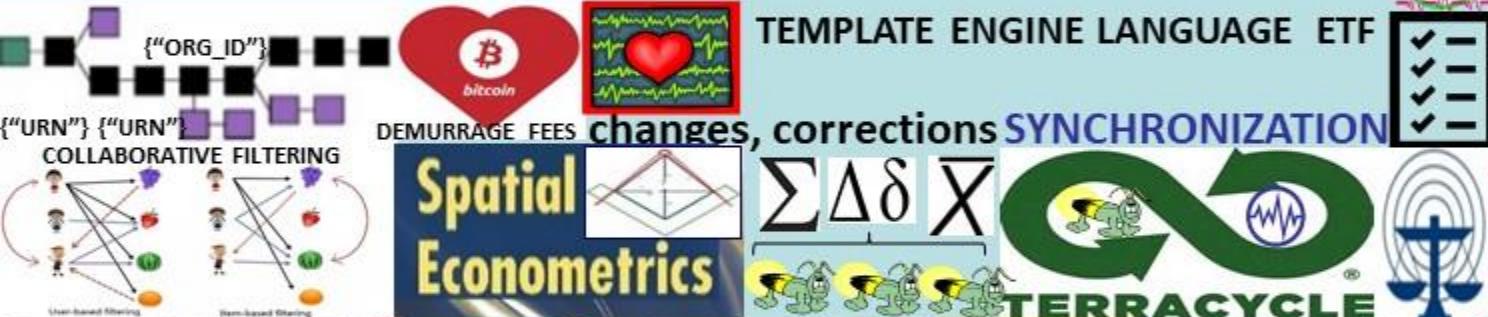




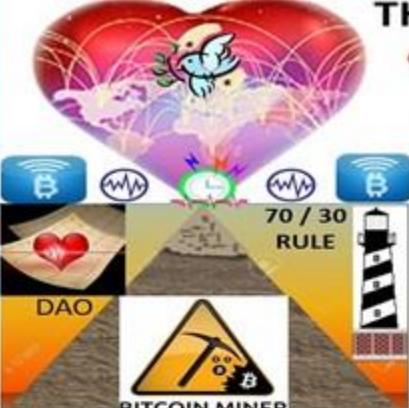
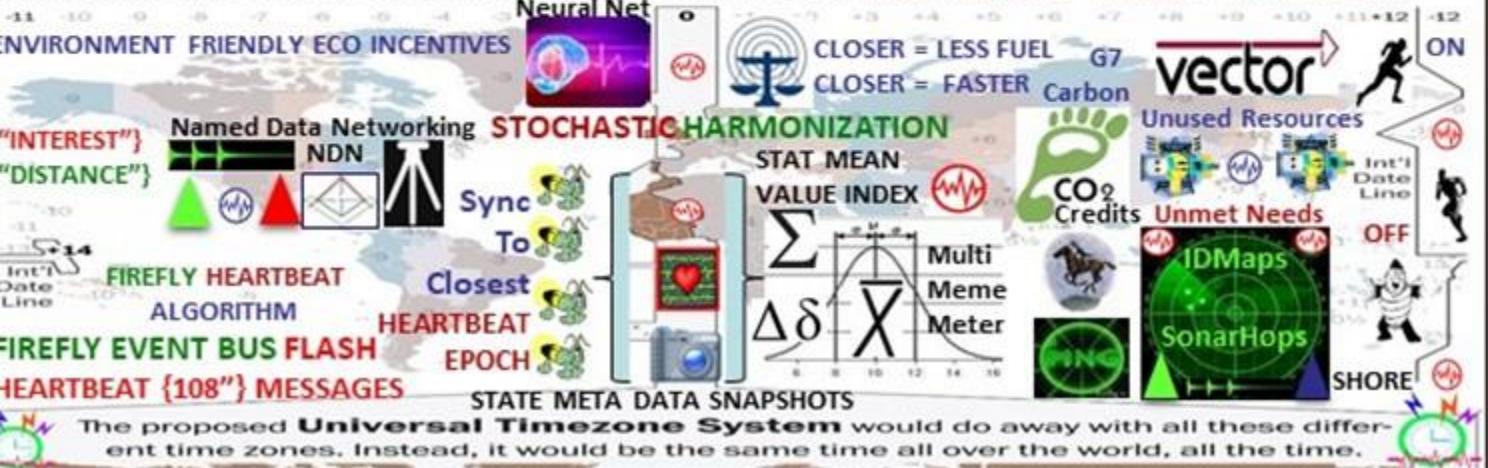
eGaaS: international blockchain platform for organizing economic, state, social activities of citizens, communities on the basis of smart law, smart contract system. eGaaS offers a comprehensive solution needed for state and business management on the blockchain platform.

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

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.

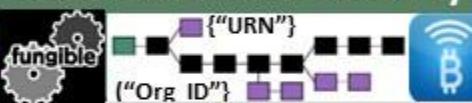


The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



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."

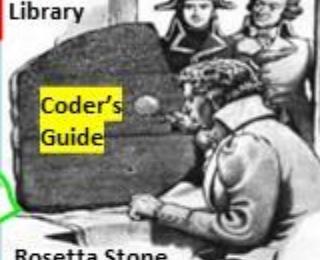
WORLD ECONOMIC HEARTBEAT



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



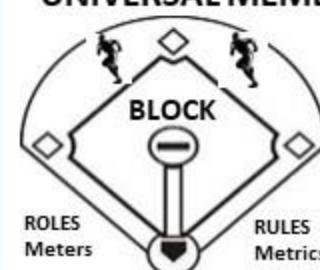
Rosetta Stone

STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



HASH / NONCE
STATE
META
DATA
SNAPSHOTS

UNIVERSAL MEME



FLASH
MESSAGE BUS
TIME CYCLES
SYNTAX
PAUSABLE
START
STOP
TIME TO LIVE
INSTRUCTIONS
Erlang
Time Equations
Function calls
Blockchain Parsing



Micro Cycle State Snaps

ZEPPELIN / zeppelinOS Common Functionality:

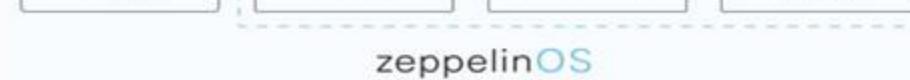
zeppelinOS Kernel common set of functions for smart contracts requesting services from the OS rather than re-implementing them from scratch. Functions will be available as an on-chain standard library of reusable contracts and functions, inspired by [OpenZeppelin Libraries](#)

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



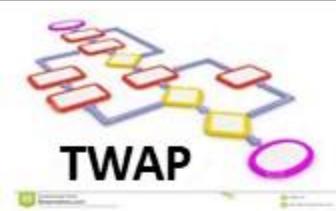
Off chain tools



TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

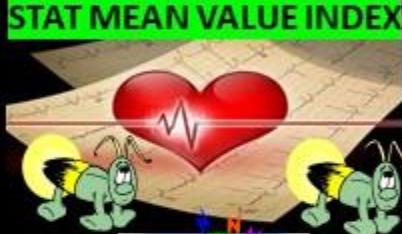


TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX

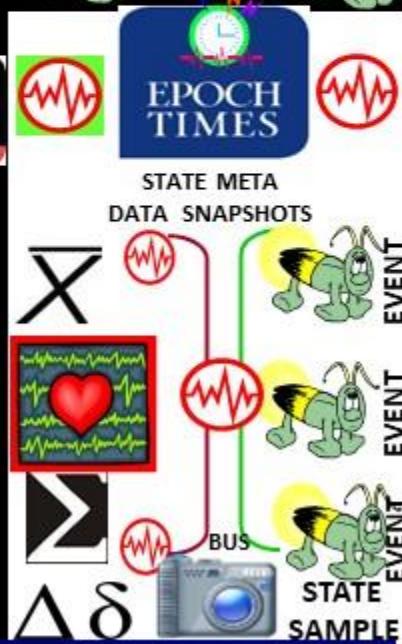
TWAP Works To gauge trading performance, many traders in different asset classes (equity, fixed income, currency) often use average price as a benchmark. The two common ways to calculate an average are a time-weighted average price (TWAP) and a volume-weighted average price (VWAP). TWAP is the average 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..

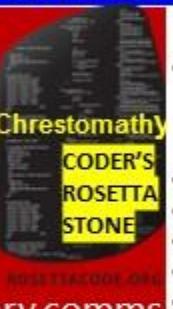




Erlang programming language / mini OS
massively scalable high availability, real-time
Erlang's runtime system built-in
concurrency distribution, fault tolerance



- 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)

SORTING ALGO'S

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



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

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

Mnesia database ("Organization_ID")

Global name resolution

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



Ericsson Open Money
For Society Patent App

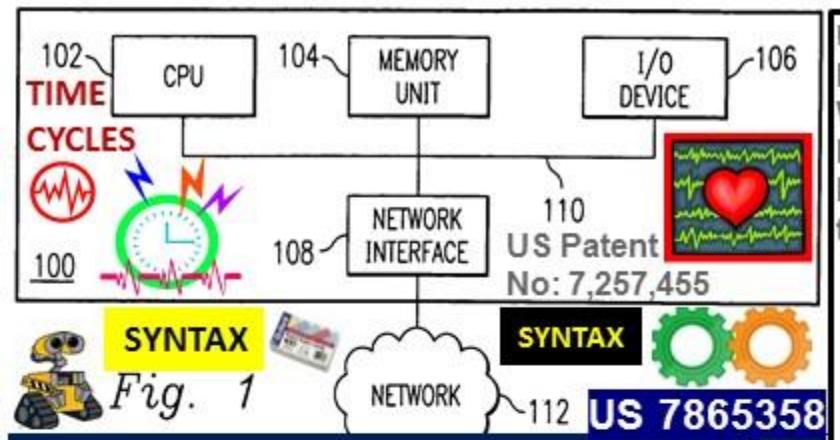


20130166398 "System And Method
For Implementing A Context
Based Payment System."

"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"



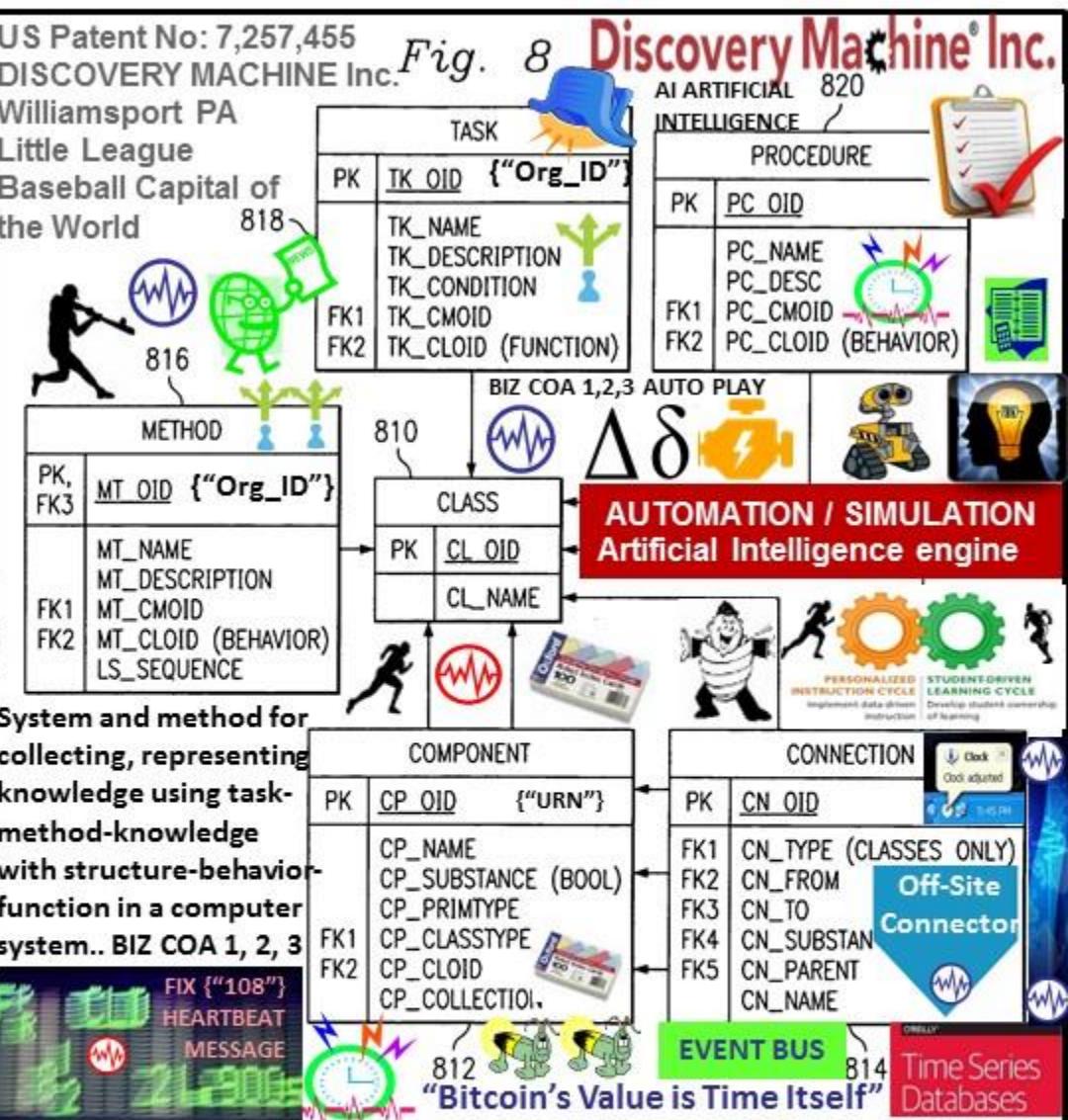
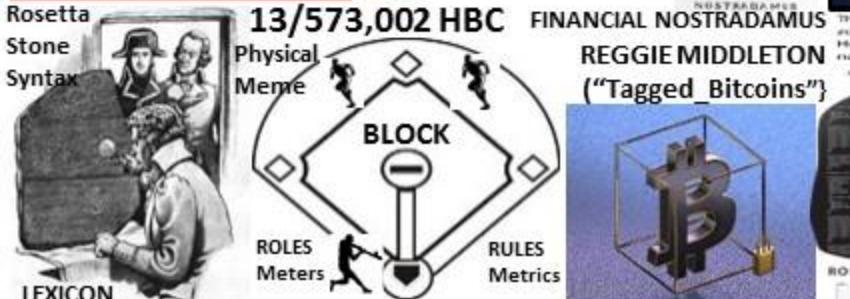


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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

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

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

ORACLE Veritaseum



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



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

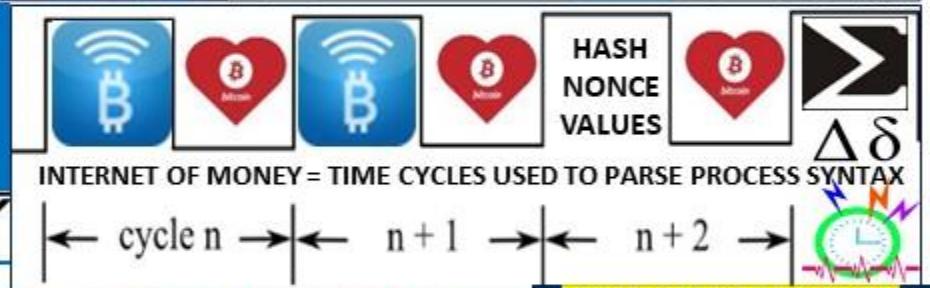
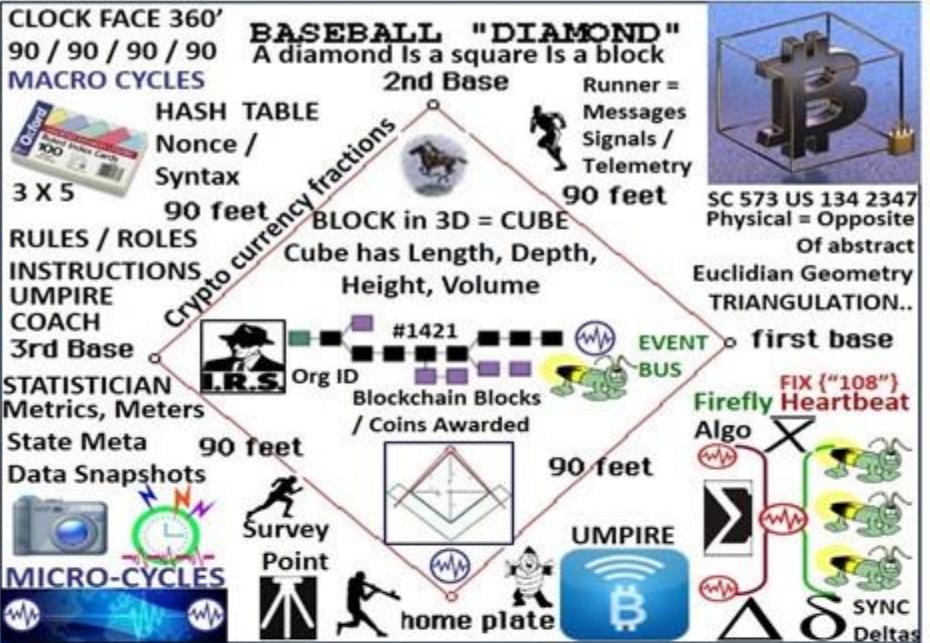


HASH TABLES
NONCE VALUES

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



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



Microsoft 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

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 EVENTS
FLASH MESSAGES
SYNC TO CLOSEST
HEARTBEAT EPOCH

EVENT BUS

FIREFLY HEARTBEAT ALGORITHM

 $\Delta\delta$

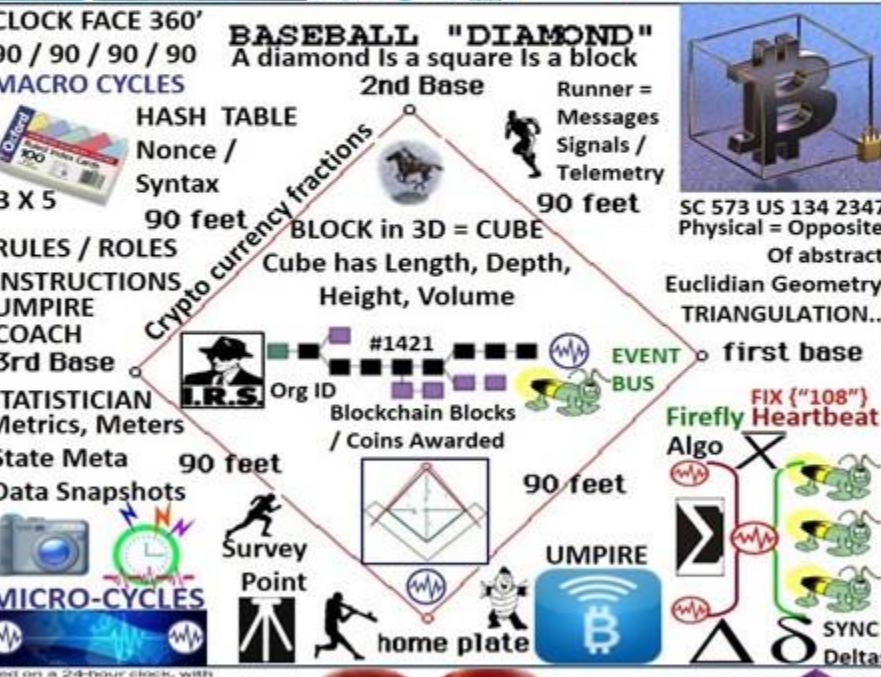
STATE META DATA SNAPSHOTS

MULTI-MEME MULTI-METER
MYRIAD MEMES MEDIATION
BLOCKCHAIN



Microsoft
AZURE BLETCHLEY

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



IoT
Microsoft Orleans
TIME-SPACE EQUATIONS ALGORITHMS BLOCKCHAIN PARSING
ERLANG

DFINITY

RANDOM # BEACON

BLOCKCHAIN NERVOUS SYSTEM

HEARTBEAT {"108"} State Meta Data Snapshot Msgs

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

FIREFLY-HEARTBEAT FLASH Msg EVENT BUS

GROUP Signature is random number

- Number selects next group {"Org_ID"} {"Org_ID"}
- Next group use previous no. as message
- Verifiable Random Function
- Numbers verifiable using group public key
- New values produced in threshold agreement
- **Random members** {"Org_ID"} {"Org_ID"}
- Each process is a member of multiple groups
- Groups intersect, have +/- 400 members

BLS signature scheme

- Math magic... If 51% of group members broadcast "signature shares" on a message, these are combined to create the group's threshold signature.

HYPER GEOMETRIC PROBABILITY CALCULATOR

CONSENSUS / RANDOM BEACON

Threshold relay chain generates randomness, records network metadata & validation tree "state root". State 3x5 and updates to state stored on shards... State transitions passed to Validation Tree

NIST Beacon A Public Randomness Service QUANTUM RANDOM #

Each process has mining identity

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

Threshold Relay Chain techniques

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

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

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

USCt 573 134 2347 Alice Corp V CLS Bank = ABSTRACT IDEAS = NO NO = PHYSICAL MEMES

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

BASEBALL "DIAMOND"
A diamond Is a square Is a block
2nd Base
Runner = Messages Signals / Telemetry
90 feet

HASH TABLE
Nonce / Syntax
3 X 5

RULES / ROLES
INSTRUCTIONS
UMPIRE COACH

STATISTICIAN
Metrics, Meters
State Meta Data Snapshots

CRYPTO CURRENCY FRACTIONS
Blockchain Blocks / Coins Awarded

EVENT BUS

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

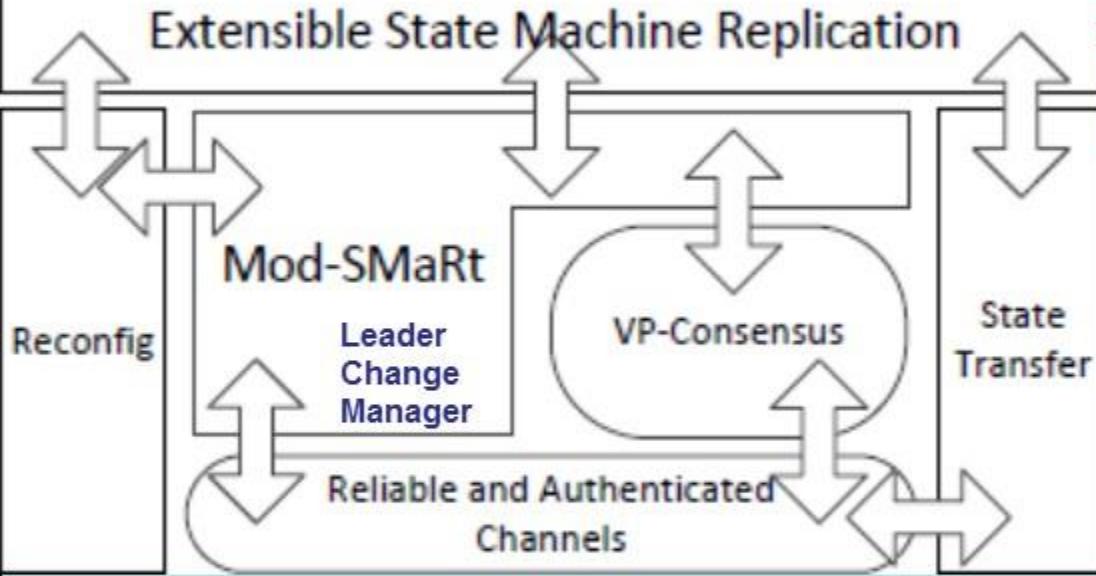
FIX {"108"} Firefly Heartbeat Algo

UMPIRE

SYNC Deltas

Byzantine Fault-Tolerant State Machine Replication

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



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

BFT-SMART needs an eventually synchronous system

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

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

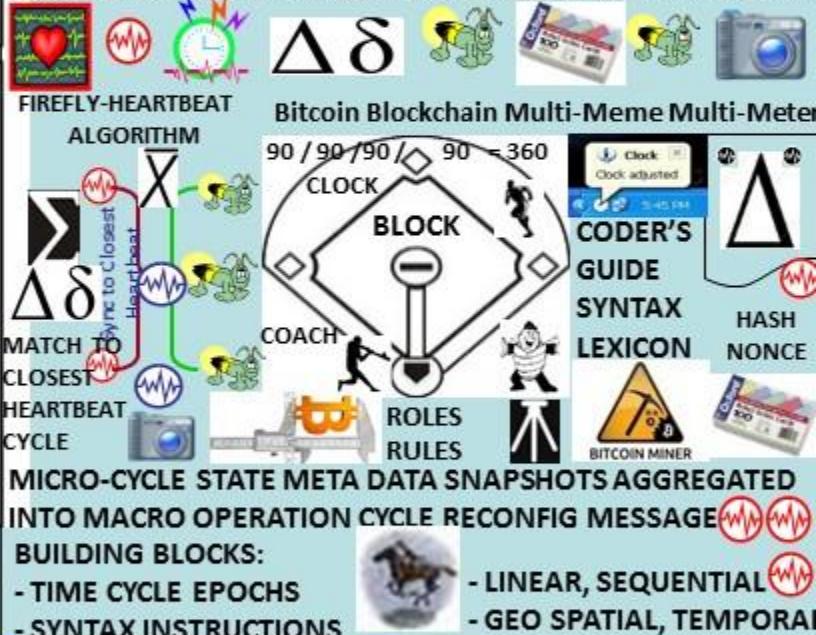
USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT



DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS
FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"}
ADDS, JOINS, DROPS, MOVES TO / FROM DAO
CHANGES IN STATE VIEWED IN "APPLIQUE" OVERLAY VIEW

KOO.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".

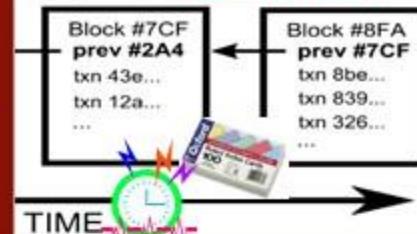
HYPER LEDGER OPEN SOURCE BLOCKCHAIN

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

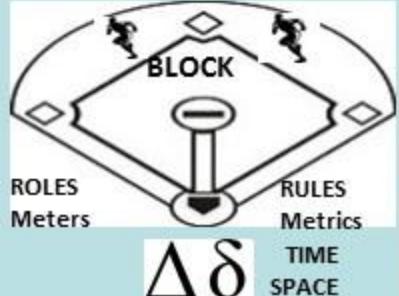
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



BLOCK TIME ARBITRAGE



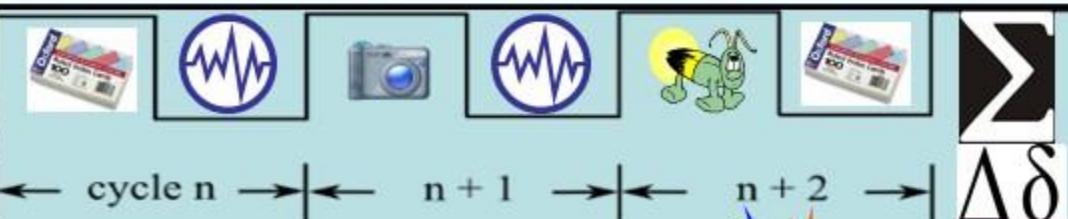
OBC APIs, SDKs, CLI



ROSETTA STONE



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



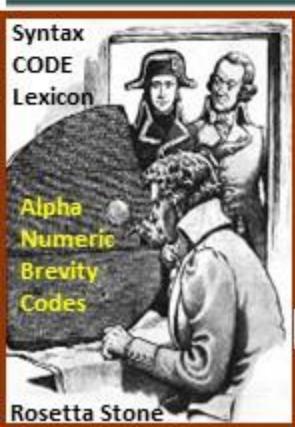
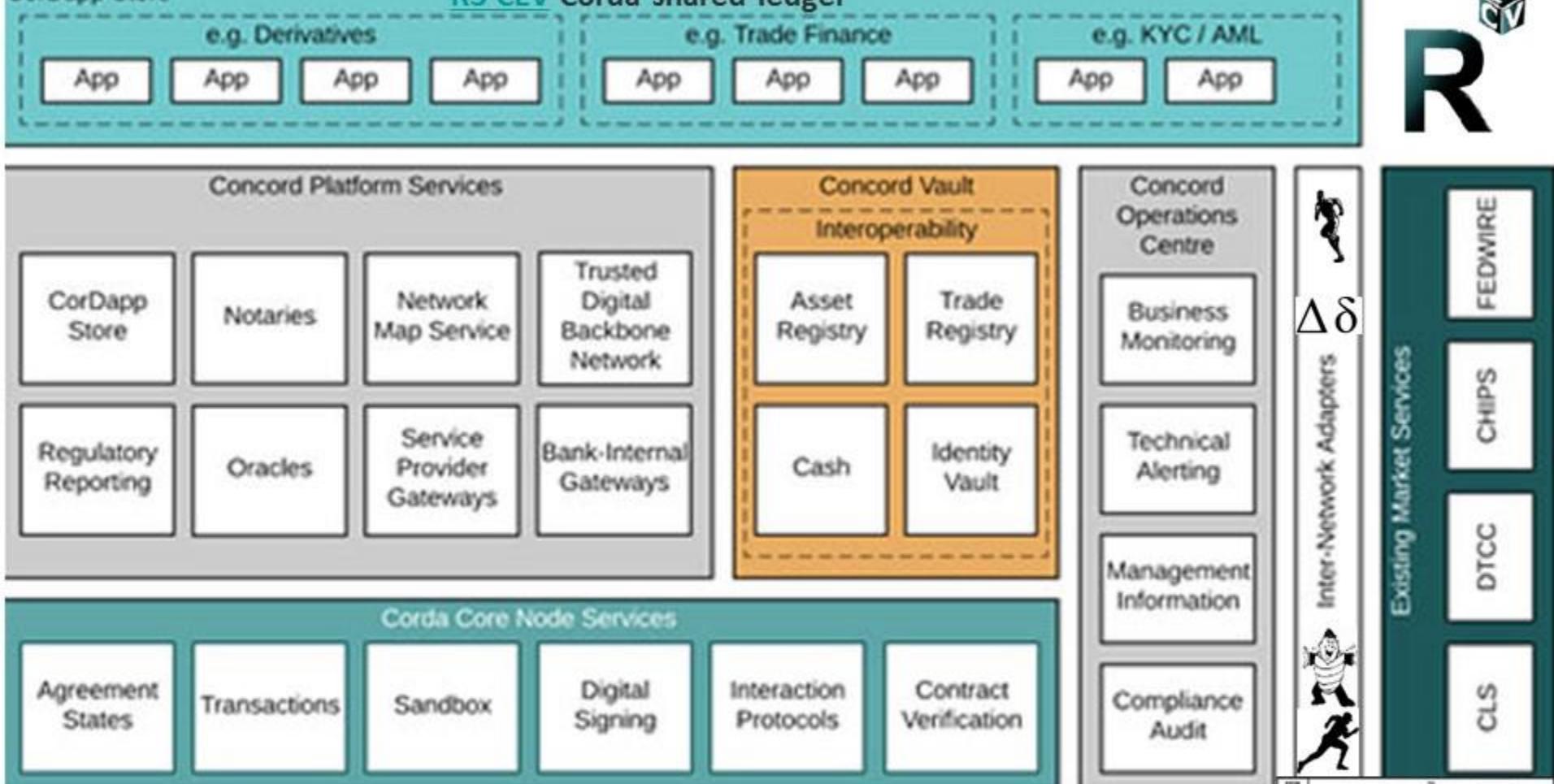
MICRO-MACRO CYCLE SCHEDULE



FFIRNS
FFUDNS

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

Alpha-Numerics



UNIVERSAL
EVENT BUS



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



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



XBRL / CDL / DAML
STOCK MIC CODES

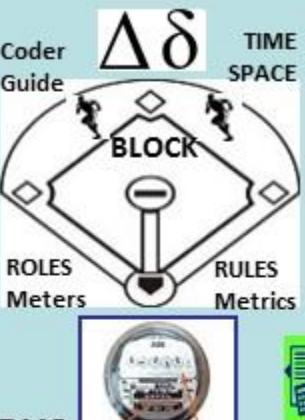
STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS

300+
Use Case Templates



KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION

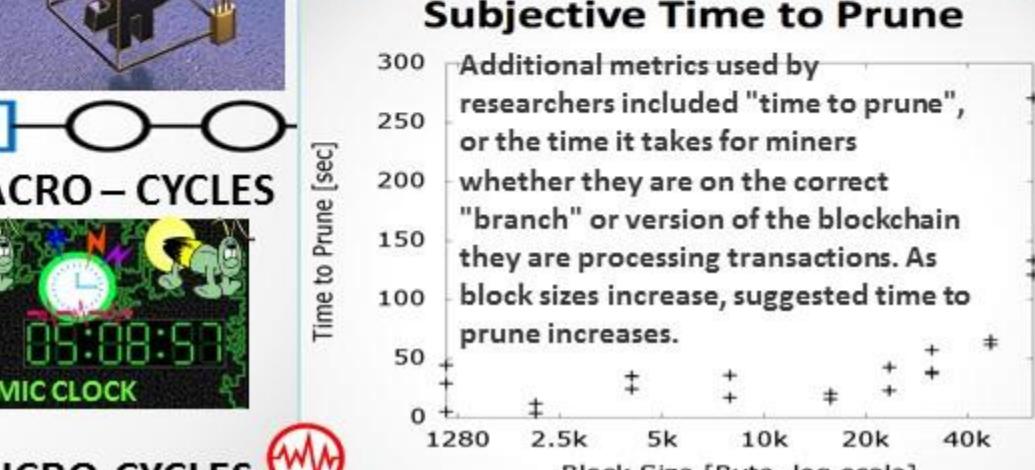
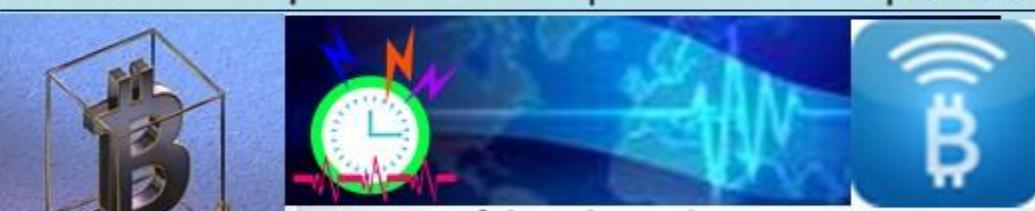


MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



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



short deterministic
intervals (10 sec)

MICRO-CYCLES

STATE: stored data at a given instant in time

STATE CHANNELS: blockchain interactions

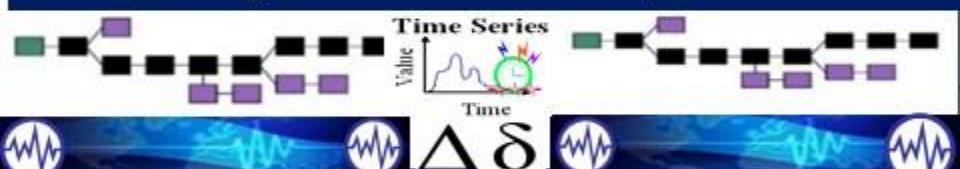
which could occur on the blockchain, but instead get conducted off of the blockchain, without significantly increasing the risk of any participant.



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.

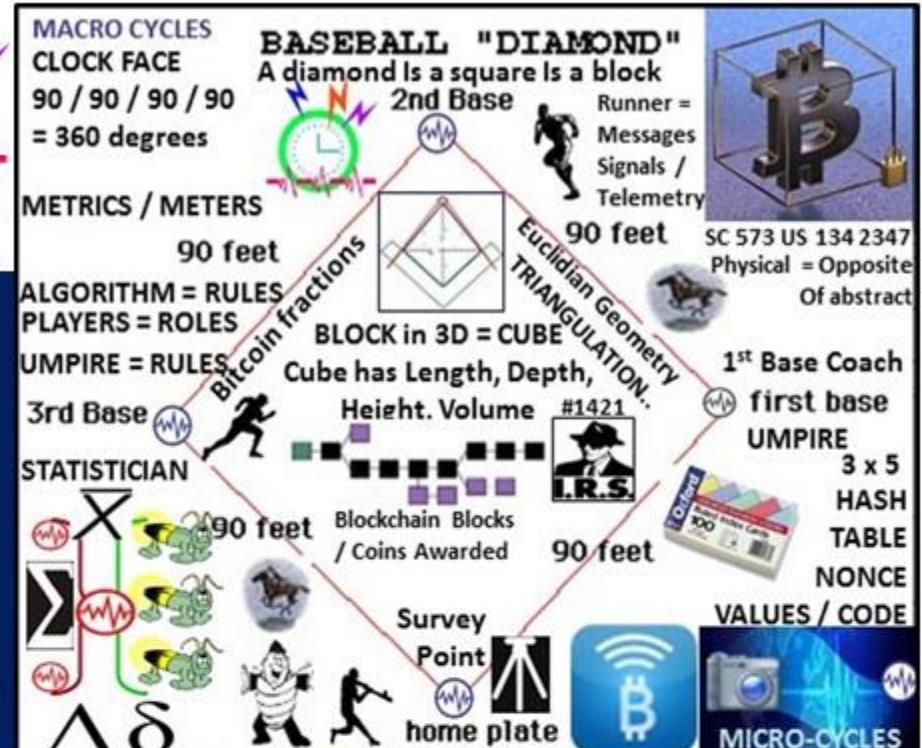
2. Participants update the state amongst themselves by constructing and signing transactions that *could* be submitted to the blockchain, but instead are merely held onto for now. Each new update "trumps" previous updates.

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-DAT
SNAPSHOTS EVERY
10, N MIN MICRO TO
MACRO ECON CYCLE

HASH TABLES

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

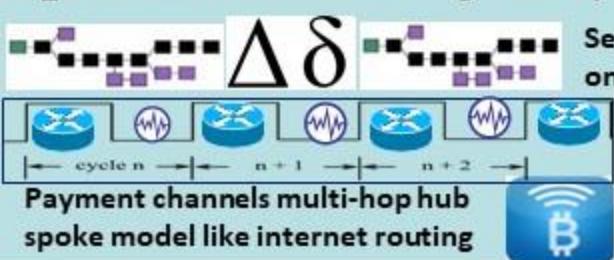


PROJECT LIGHTING



Hashed TIME LOCK contracts component for global consensus

OP_CHECKLOCKTIMEVERIFY During Macro Cycle w/ Random # BEACON



server nodes, miners
only keep recent blocks

Time Series

16

Wahl

- 1 -

Time

18

△0

Sync De

State M
Data Sp

Data Sh

FIREFLY –
HEARTBEAT
ALGORITHM



FIREFLY – HEARTBEAT



SEGREGATED WITNESS SegWit



HASH TABLES  NONCE
MESSAGES SYNTAX / SYMBOL TAGS

OUT OF BAND / CHANNEL

Segregated witness = Separated signatures

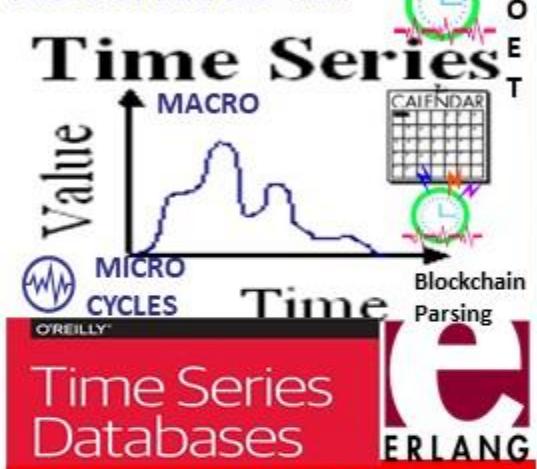
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signature are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a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

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

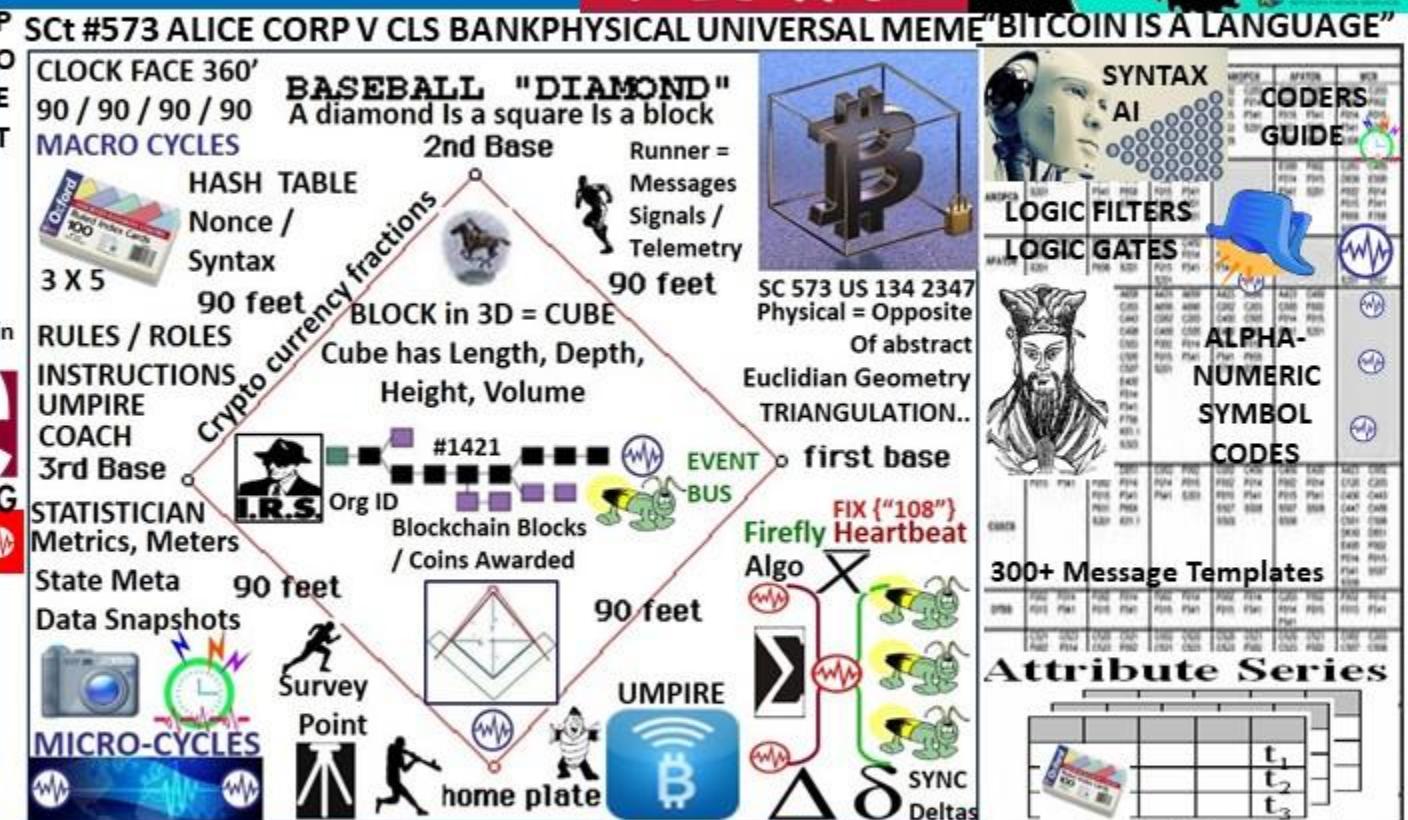
Voting based selection Instead of only using the stake size, the block generators can be selected by votes
ex: League MVP

MVP



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

TOURNAMENT LEAGUE BOARD



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/>

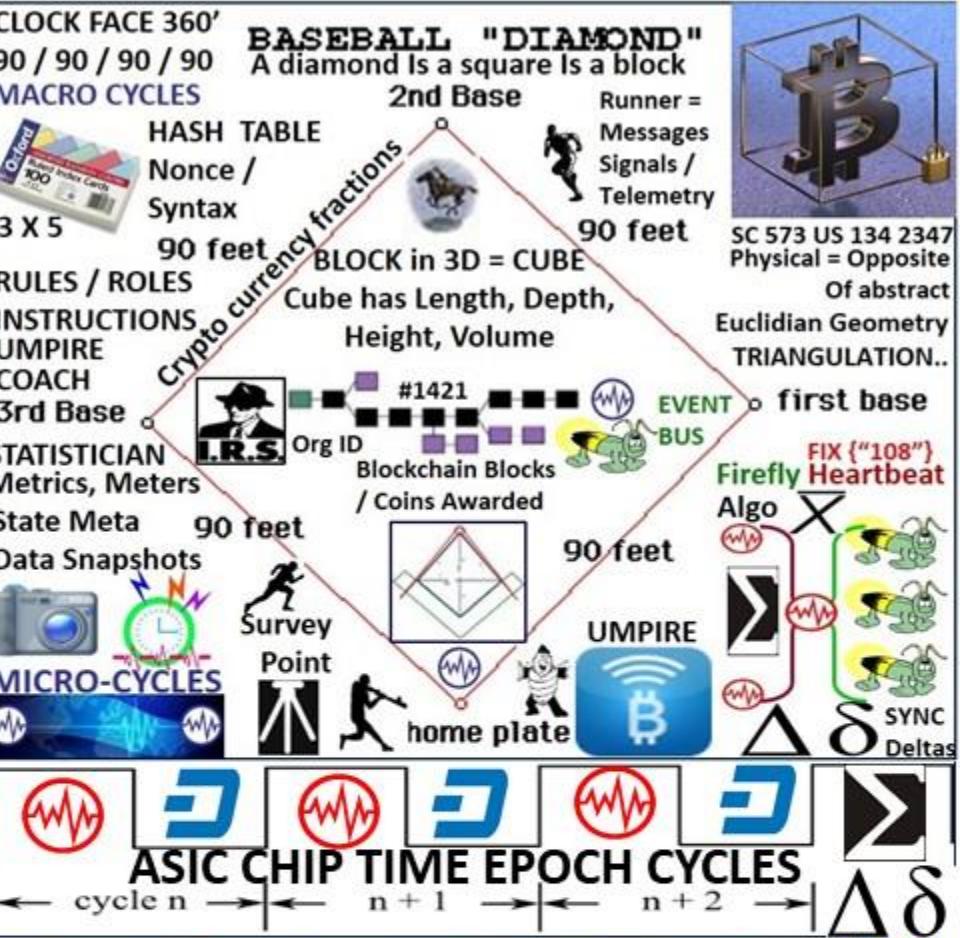
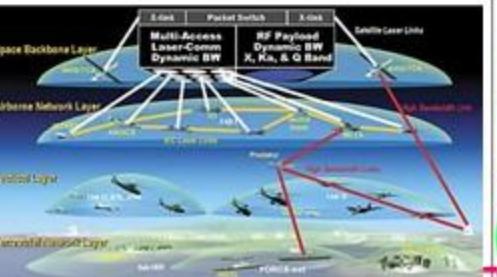
"all digital currency networks, the base layer of people generating the blockchain — "miners," "stakers," "witnesses," "validators," or "forgers" — all get paid to do so" "consensus," or an agreement upon what the rules should be; and second, the execution of said rules.

"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

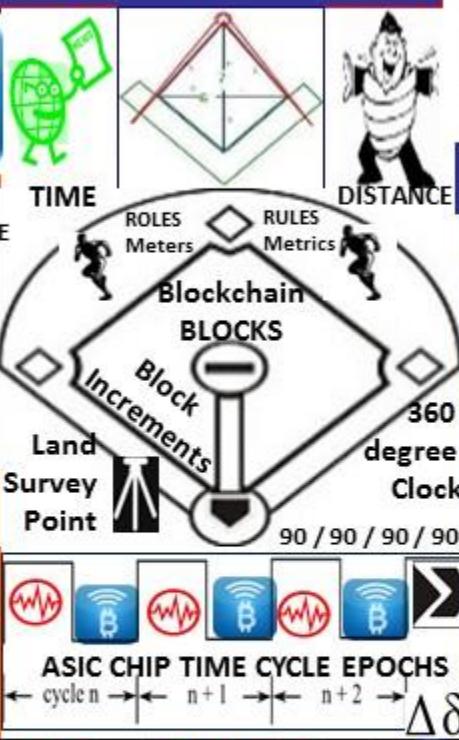
“Bitcoin as protocol of ownership, not transfer”

Coins never travel, but simply switch owners”

Step 1: prove coin ownership <Org ID> Coin Issue

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

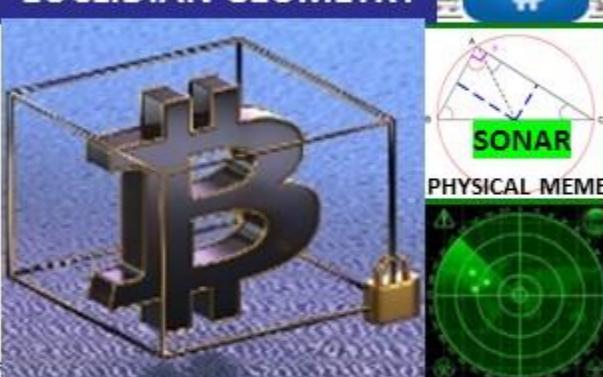
Step 3: specify ownership <Org_ID> issuing agent



TRIANGULATION



FUCLIDIAN 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



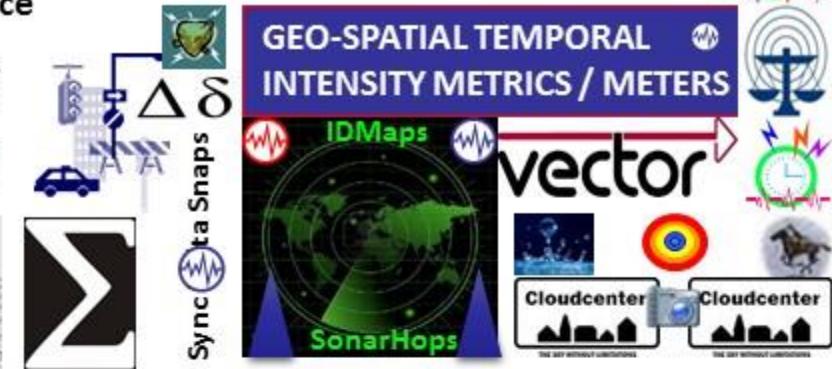
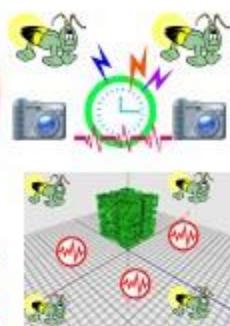
IDMaps Distance Metrics:
latency (round-trip delay)
available bandwidth estimation



IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



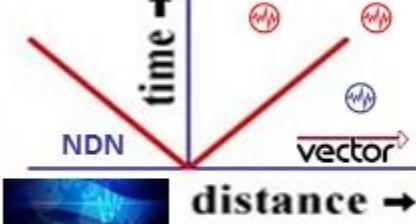
HOP COUNTS



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

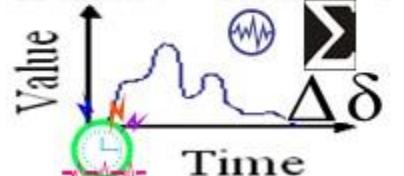
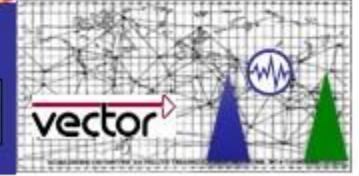
NDN INTEREST LENGTH
= DISTANCE BY HOPS

NDN
INTEREST

IS DATA
FRESH ?

TRIANGULATION

Time Series



Datasets and Event Notification

INTEREST in <URNs>

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

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

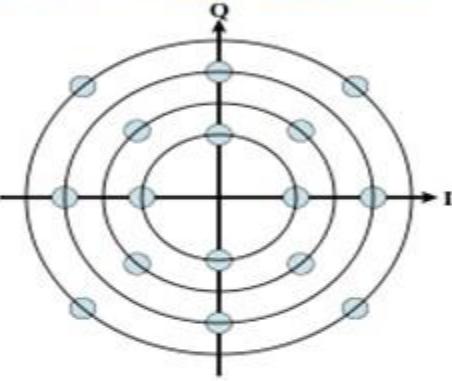


NDN INTEREST LIFETIME = TTL Time To Live

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"

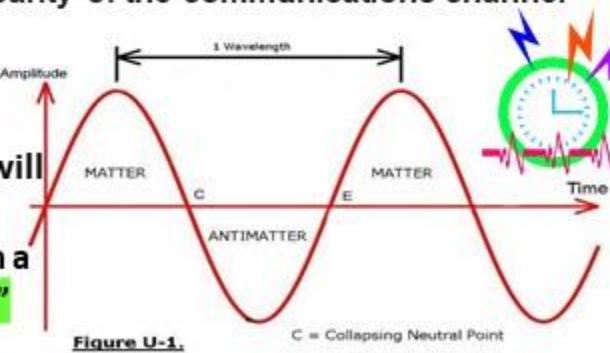


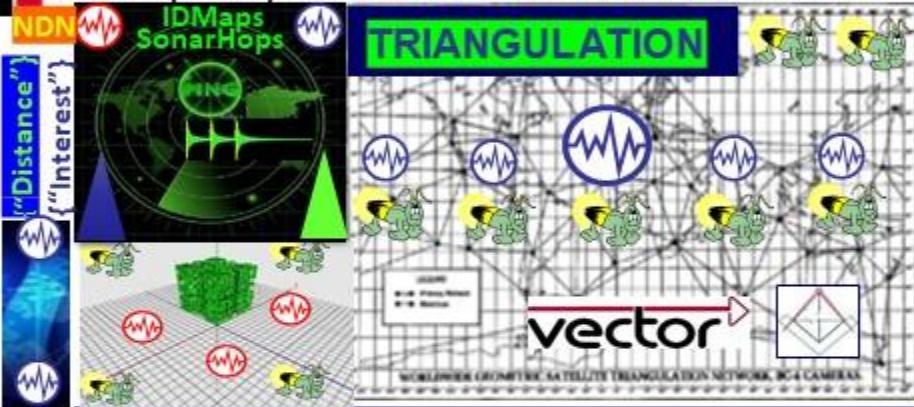
Figure U-1.

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

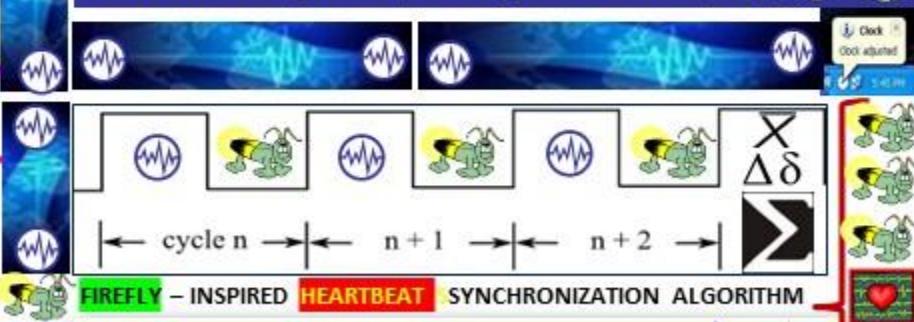


USPTO 13/573,002
sawconcepts.com/index

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

TIME STAMP BY Org_ID, URN Before FUSION CENTER position of a point in space relative to another point.



Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data



epcis

EPCIS DATA MODEL



SERVICE LAYER

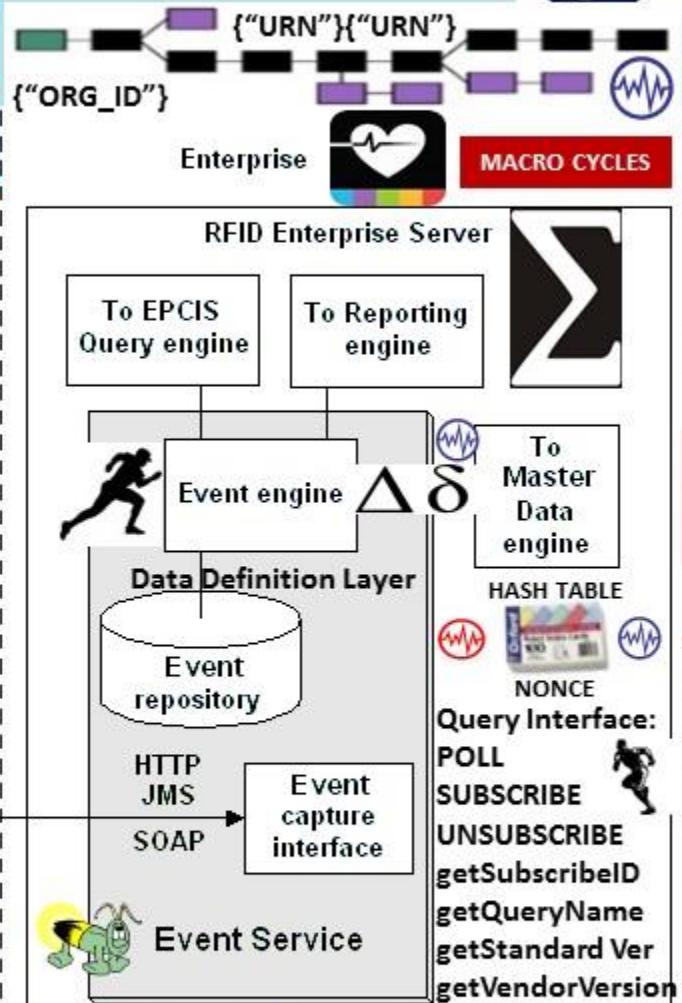
XML

ObjectEvent

AggregationEvent

QuantityEvent

TransactionEvent



Core Business Vocabulary (CBV)

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

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

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

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

MICRO CYCLES



CLOSER IS CHEAPER
CLOSER IS FASTER

$\Delta\delta$



$\Delta\delta$



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

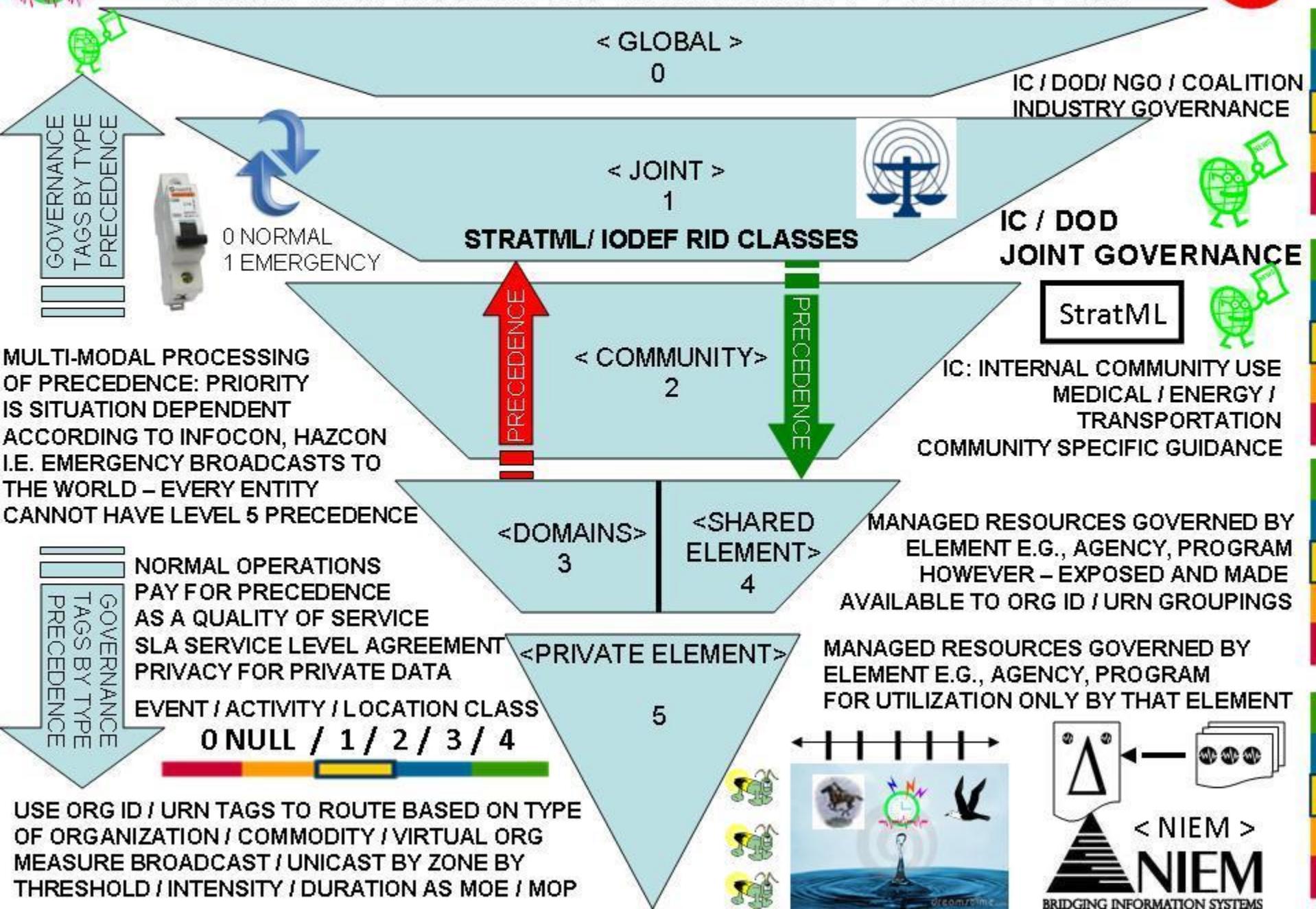
RFID Configuration TCP/IP heartbeat message

STRUCTURED DATA EXCHANGE /
STRUCTURED MILITARY MESSAGES

FROM	BATTLEFIELD DIGITIZATION	TO
ASIAN NETWORK	PFS1 PFS2 PFS3 PFS4 PFS5 PFS6 PFS7 PFS8 PFS9 PFS10 PFS11 PFS12 PFS13 PFS14 PFS15 PFS16 PFS17 PFS18 PFS19 PFS20 PFS21 PFS22 PFS23 PFS24 PFS25 PFS26 PFS27 PFS28 PFS29 PFS30 PFS31 PFS32 PFS33 PFS34 PFS35 PFS36 PFS37 PFS38 PFS39 PFS40 PFS41 PFS42 PFS43 PFS44 PFS45 PFS46 PFS47 PFS48 PFS49 PFS50 PFS51 PFS52 PFS53 PFS54 PFS55 PFS56 PFS57 PFS58 PFS59 PFS60 PFS61 PFS62 PFS63 PFS64 PFS65 PFS66 PFS67 PFS68 PFS69 PFS70 PFS71 PFS72 PFS73 PFS74 PFS75 PFS76 PFS77 PFS78 PFS79 PFS79 PFS80 PFS81 PFS82 PFS83 PFS84 PFS85 PFS86 PFS87 PFS88 PFS89 PFS90 PFS91 PFS92 PFS93 PFS94 PFS95 PFS96 PFS97 PFS98 PFS99 PFS99 PFS100 PFS101 PFS102 PFS103 PFS104 PFS105 PFS106 PFS107 PFS108 PFS109 PFS1010 PFS1011 PFS1012 PFS1013 PFS1014 PFS1015 PFS1016 PFS1017 PFS1018 PFS1019 PFS1020 PFS1021 PFS1022 PFS1023 PFS1024 PFS1025 PFS1026 PFS1027 PFS1028 PFS1029 PFS10210 PFS10211 PFS10212 PFS10213 PFS10214 PFS10215 PFS10216 PFS10217 PFS10218 PFS10219 PFS10220 PFS10221 PFS10222 PFS10223 PFS10224 PFS10225 PFS10226 PFS10227 PFS10228 PFS10229 PFS10230 PFS10231 PFS10232 PFS10233 PFS10234 PFS10235 PFS10236 PFS10237 PFS10238 PFS10239 PFS10240 PFS10241 PFS10242 PFS10243 PFS10244 PFS10245 PFS10246 PFS10247 PFS10248 PFS10249 PFS10250 PFS10251 PFS10252 PFS10253 PFS10254 PFS10255 PFS10256 PFS10257 PFS10258 PFS10259 PFS10260 PFS10261 PFS10262 PFS10263 PFS10264 PFS10265 PFS10266 PFS10267 PFS10268 PFS10269 PFS10270 PFS10271 PFS10272 PFS10273 PFS10274 PFS10275 PFS10276 PFS10277 PFS10278 PFS10279 PFS10279 PFS10280 PFS10281 PFS10282 PFS10283 PFS10284 PFS10285 PFS10286 PFS10287 PFS10288 PFS10289 PFS102810 PFS102811 PFS102812 PFS102813 PFS102814 PFS102815 PFS102816 PFS102817 PFS102818 PFS102819 PFS102820 PFS102821 PFS102822 PFS102823 PFS102824 PFS102825 PFS102826 PFS102827 PFS102828 PFS102829 PFS1028210 PFS1028211 PFS1028212 PFS1028213 PFS1028214 PFS1028215 PFS1028216 PFS1028217 PFS1028218 PFS1028219 PFS1028220 PFS1028221 PFS1028222 PFS1028223 PFS1028224 PFS1028225 PFS1028226 PFS1028227 PFS1028228 PFS1028229 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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>



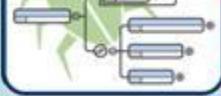
NDN

<INTEREST>



NDN

<INTEREST>



CYBER SECURITY CONTENT
LEXICON ROSETTA STONE

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

NIST CYBER SECURITY FRAMEWORK

MIL-STD 2525A
STRUCTURED <CONTENT> TEMPLATES

<TAG> LIBRARY
STRUCTURED <CONTENT> TEMPLATES



<TAG> LIBRARY
TEMPLATES

NAMED DATA
NETWORKING

<Content> Centric



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

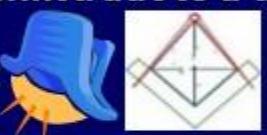
OPENBAZAAR.ORG
BLOCKCHAIN ARBITRAGE



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



</DATA>
("FILTERS")

FIREFLY - HEARTBEAT ALGO
SYNC EVENTS



NIST Beacon
A Public Randomness Service
Non-
Repudiation

FIREFLY - HEARTBEAT ALGO
SYNC EVENTS



TO CLOSEST HB CYCLE
 $\Delta\delta$
UTZ SYNC

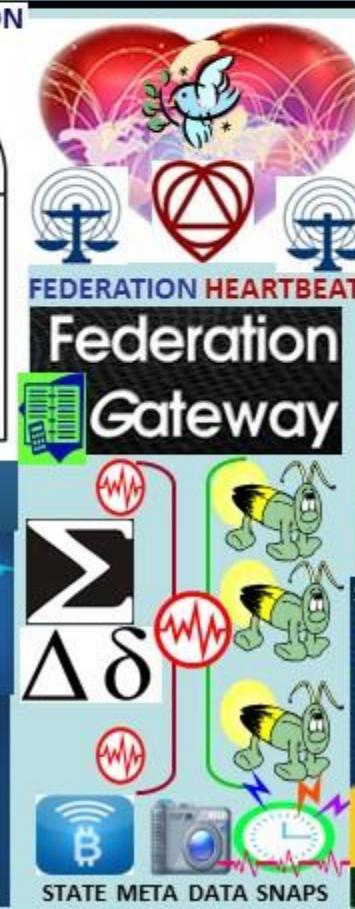
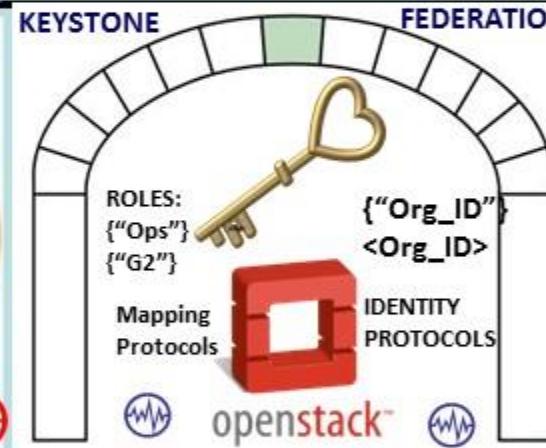
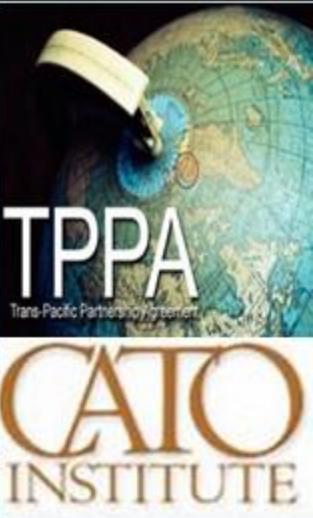


SchellingPoint



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



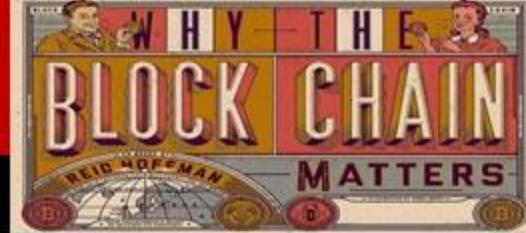
HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX



TradeNet

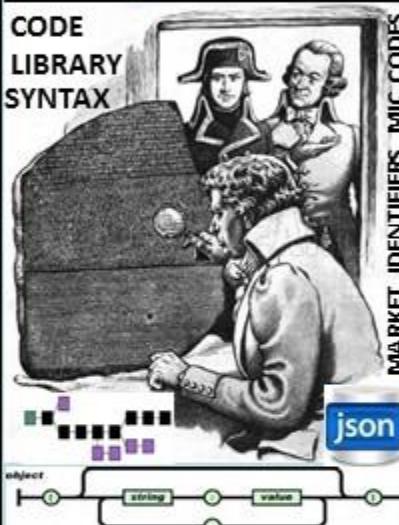


Programmable Money \$\$\$



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

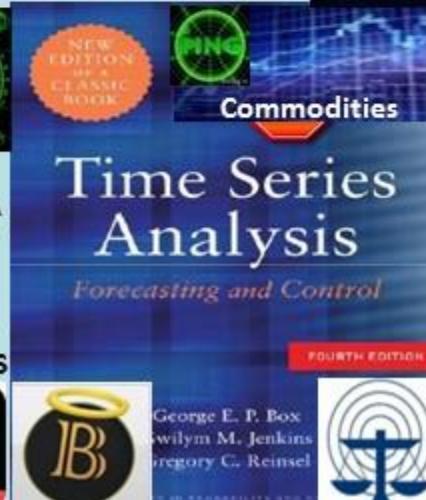


Bitcoin and the blockchain function as a medium of exchange, a store of value, a unit of account. Bitcoin adds digital, cryptographic, distributed server functions to currencies. Because it functions simultaneously as a currency, an asset and a platform, Bitcoin is better described as a global cryptoCAP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



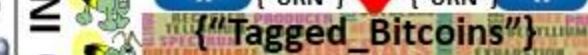
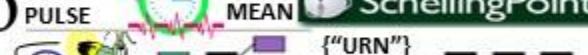
ECONOMIC HEARTBEAT
STATISTICAL MEAN VALUE INDEX PULSE



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

NAMED DATA NETWORKING



NDN
</Interest>
</Distance>

SURVEY METHODS
+ TRIANGULATION
Euclidian Geometry

Geodesic System Routing Info Base RIB

ACCOUNT BELONGS TO </Org_ID>

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

DEVICE / SENSORS <UUID><UUID>

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



NDN

</interest></distance>

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

Firefly-Heartbeat Algorithm
UNIVERSALTIME ZONE SYNC UTC

Sync Events to
Closest HBC

AGGREGATE, SUM

STAT MEAN VALUE INDEX

EVENT BUS

<"USER_ID"> + QRB

<"INTEREST">

<"DISTANCE">

On Off Shore

<"Org_ID">

In clear

Int'l Date Line

12 11 10 9 8 7 6 5 4 3 2 1 0

12 11 10 9 8 7 6 5 4 3 2 1 0

12 11 10 9 8 7 6 5 4 3 2 1 0

12 11 10 9 8 7 6 5 4 3 2 1 0

12 11 10 9 8 7 6 5 4 3 2 1 0

12 11 10 9 8 7 6 5 4 3 2 1 0

12 11 10 9 8 7 6 5 4 3 2 1 0

12 11 10 9 8 7 6 5 4 3 2 1 0

12 11 10 9 8 7 6 5 4 3 2 1 0

12 11 10 9 8 7 6 5 4 3 2 1 0

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 is based on the International Atomic Time (TAI).



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

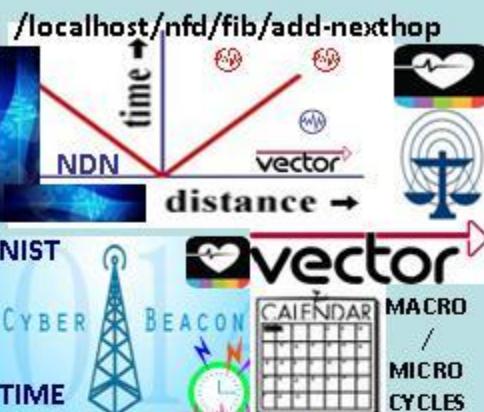
Social proximity

Temporal proximity

Agreements

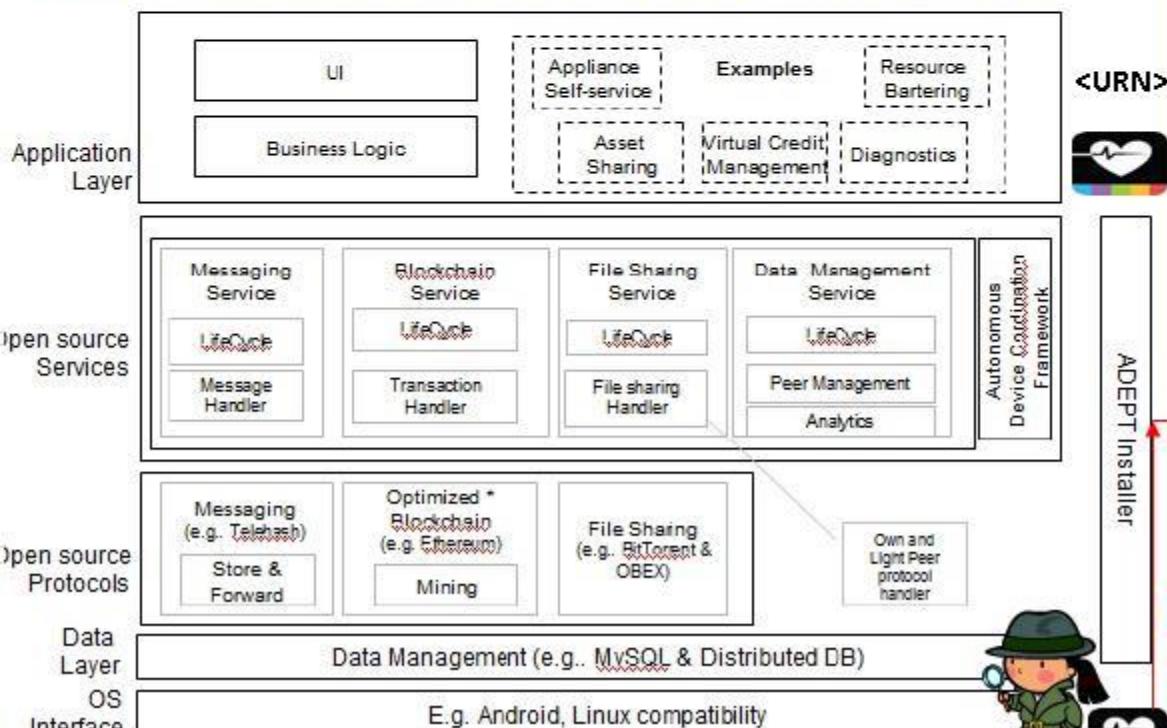
Payments

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

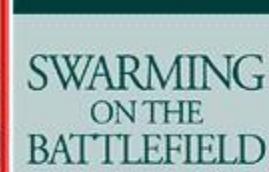
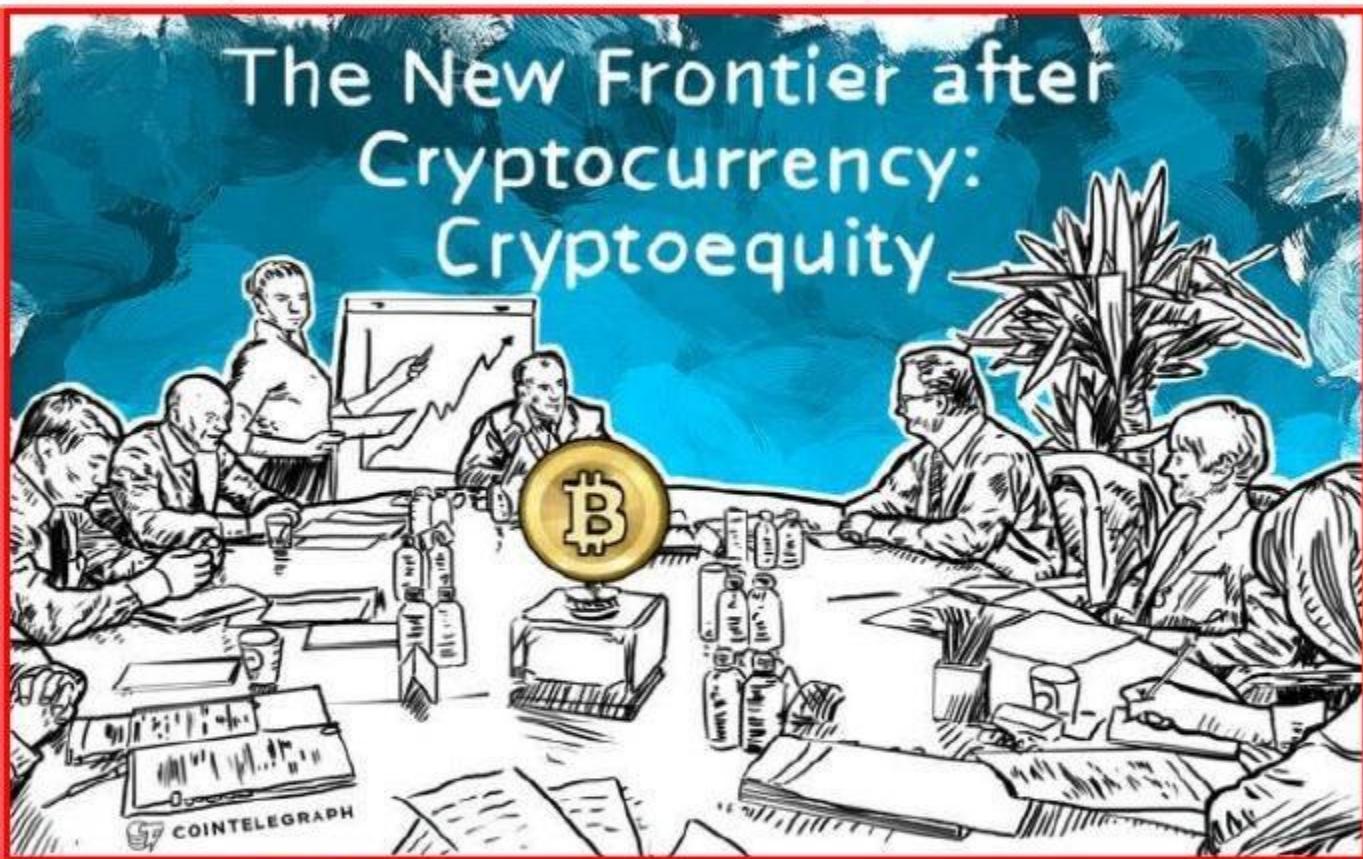


OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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

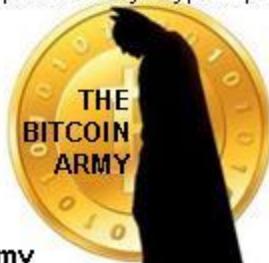


Eris -- The Dawn of Distributed Autonomous Organizations and The Future of Governance



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/>

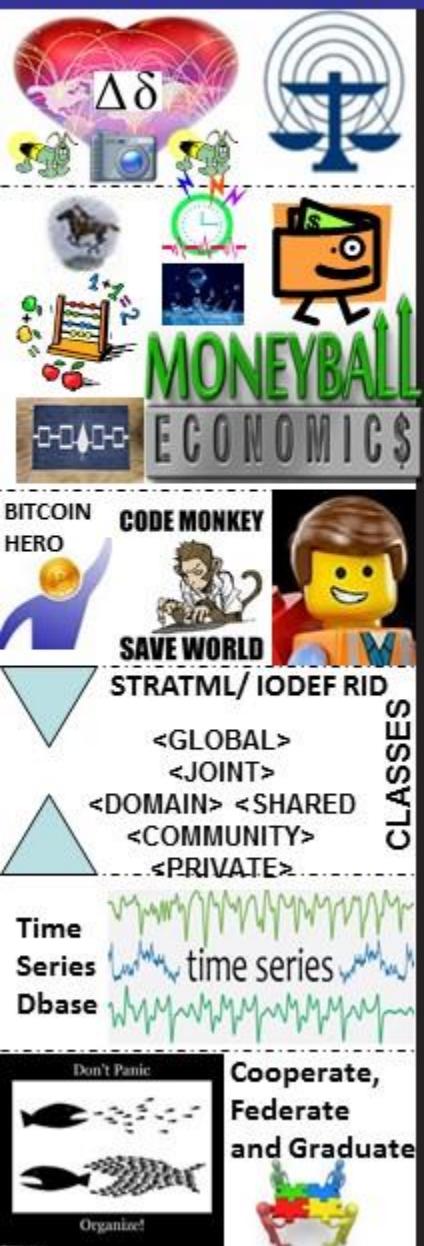
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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.



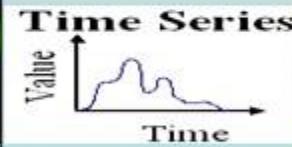
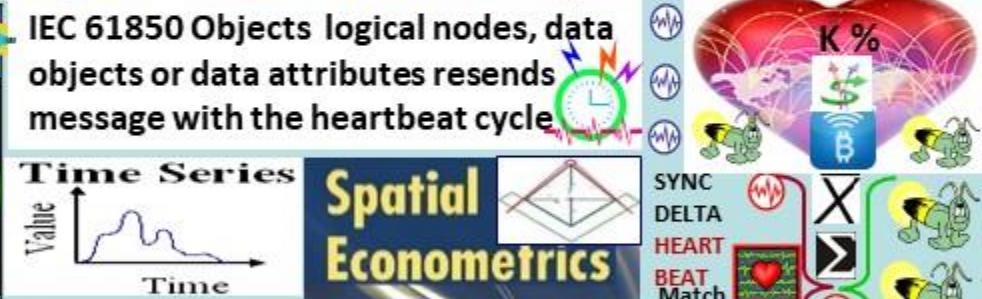
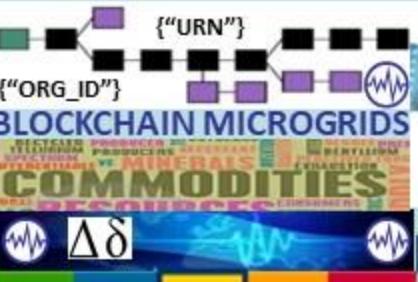


IEEE C37.118 Time Synchronization
Harmonization Heartbeat update Interval
PMU data time-stamp measure C37.118

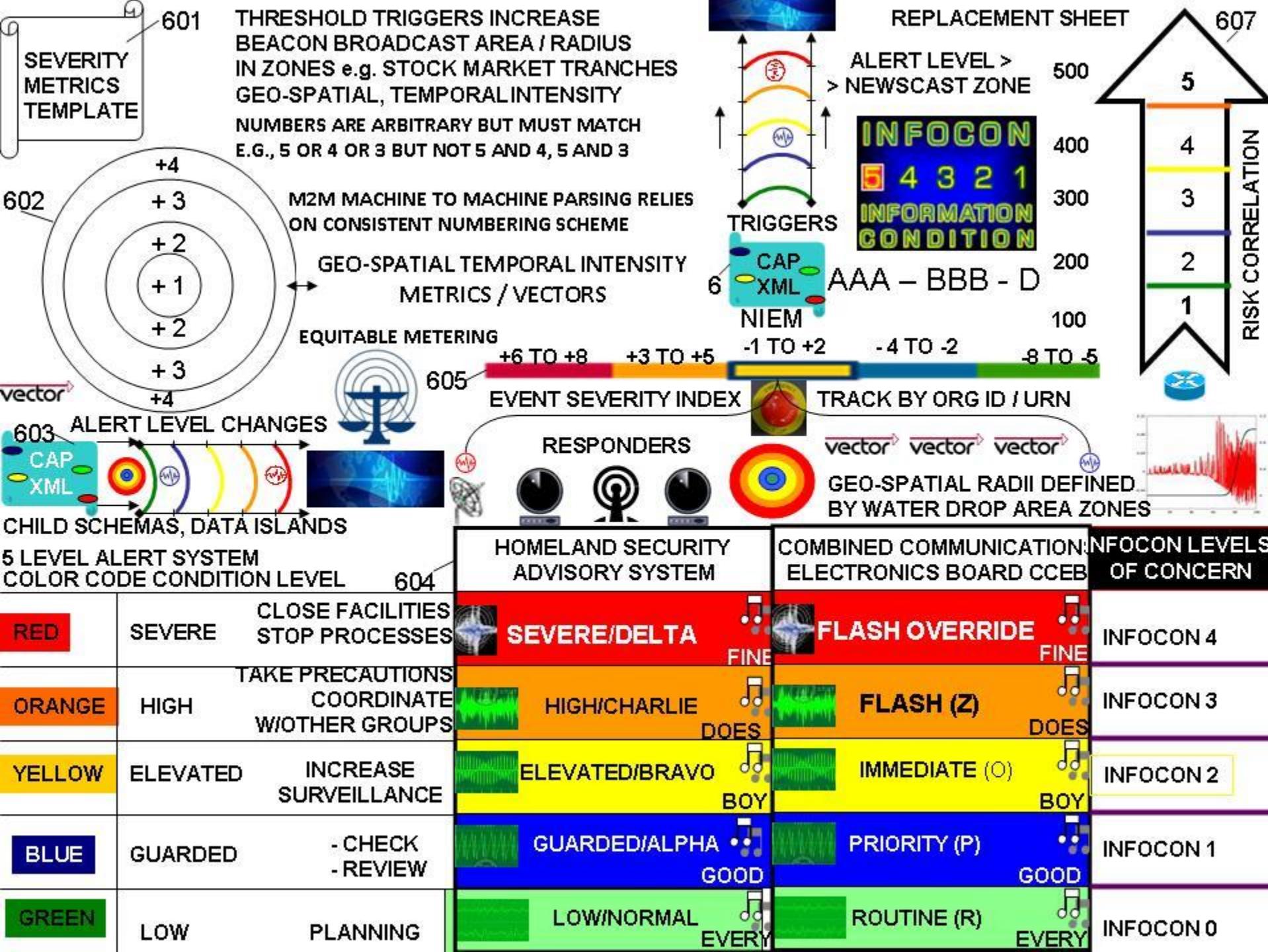
Phase 2: Shared file stores data for 5 tags:

- (1) Active ID
 - (2) Heartbeat 1.
 - (3) Heartbeat 2.
 - (4) Device Status 1.
 - (5) Device Status 2.
-
- SLA/O

TAG	vector	ENERGY TOKENS ExDesc / COMMODITIES	digitalset
{"Org_ID"} ActiveID		[UFO2_ACTIVEID]	</EVENT>
IF1_Heartbeat (IF-Node1)		[UFO2_HEARTBEAT:#]	</EVENT>
IF2_Heartbeat (IF-Node2)		[UFO2_HEARTBEAT:#]	</EVENT>
{"UUID"} IF1_DeviceStatus (IF-Node1)		[UFO2_DEVICESTAT:#]	</EVENT>
{"UUID"} IF2_DeviceStatus (IF-Node2)		[UFO2_DEVICESTAT:#]	</EVENT>
IF1_State (IF-Node1)	$\Delta\delta$	[UFO2_STATE:#]	$\Delta\delta$ IF_State
IF2_State (IF-Node2)	$\Delta\delta$	[UFO2_STATE:#]	$\Delta\delta$ IF_State







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

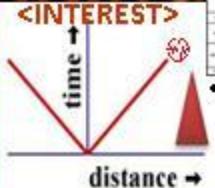
Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:



Paul Revere = linear, sequential

NAMED DATA NETWORKING

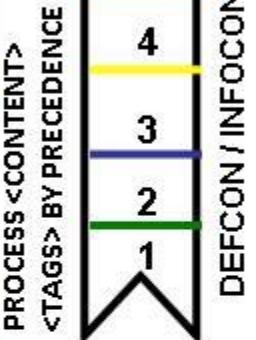
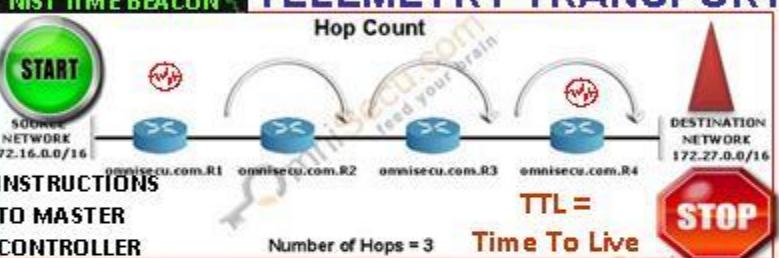
<INTEREST>
time ↑
distance →
<CONTENT>



INFOCON
MTF
300 +
MSG
INFORMATION CONDITION

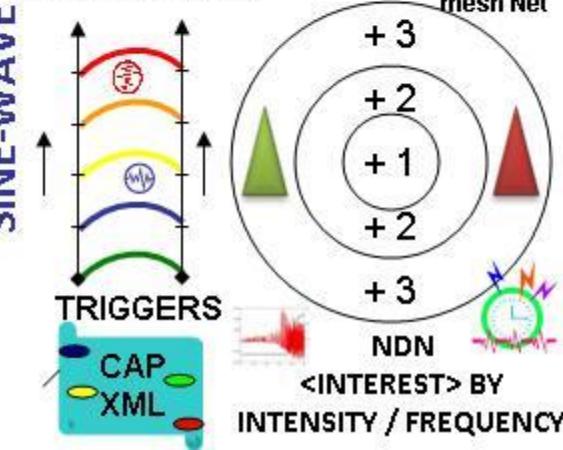
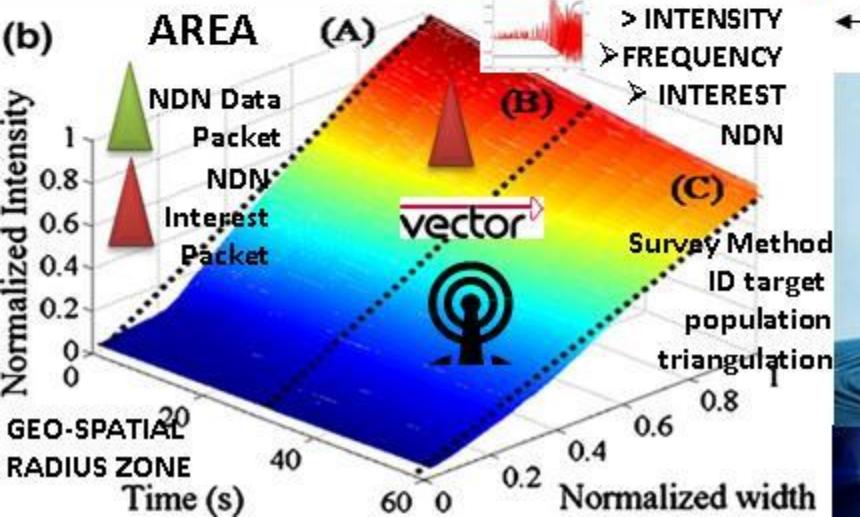
OASIS

IEEE 802.15.4
OASIS MQTT
TELEMETRY TRANSPORT



TCP/IP hop by hop counts, by hop controls

Water Drop = AREA / INTENSITY Cyclic Frequency



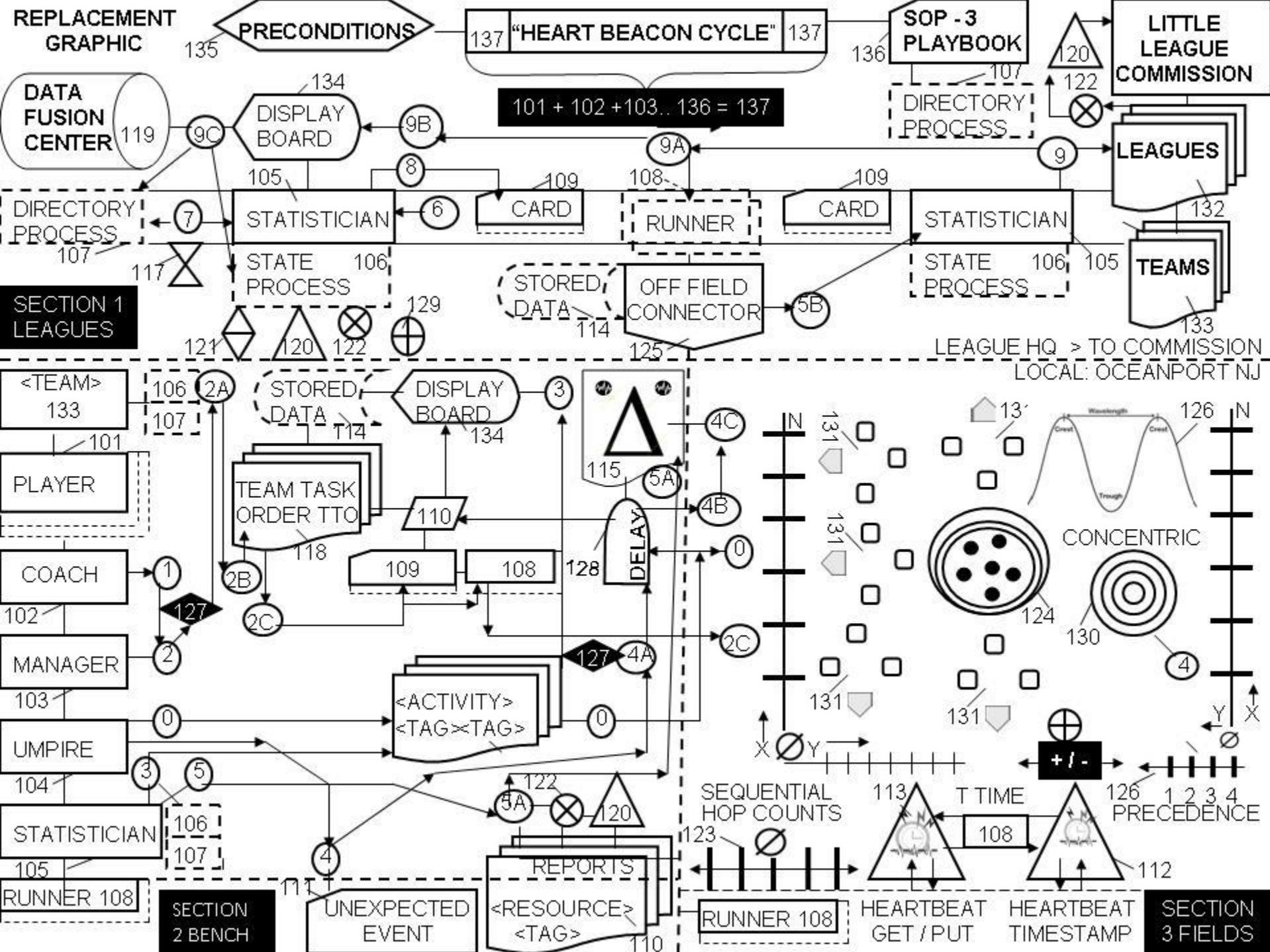
WirelessHART

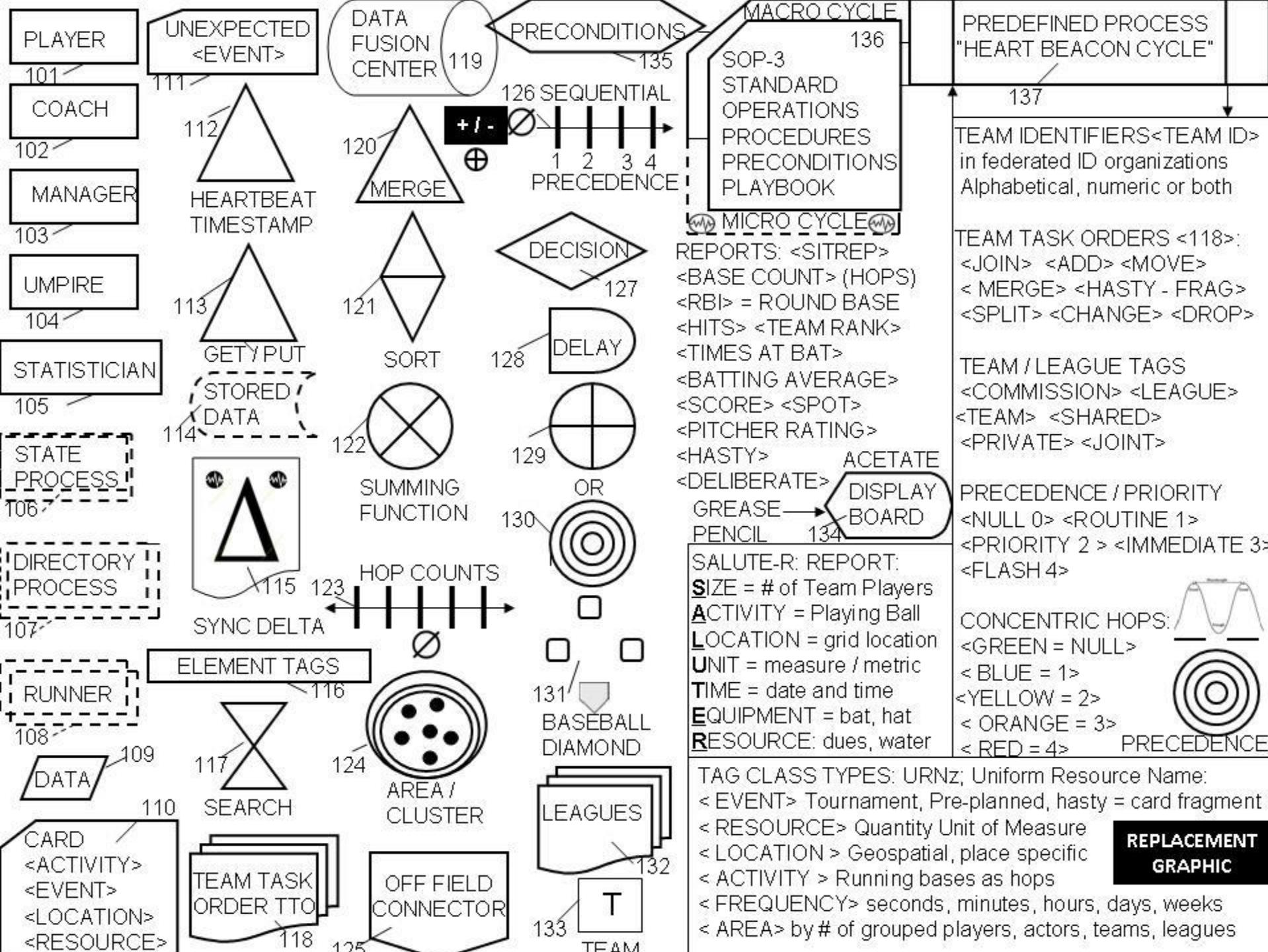
time synchronized,
self-organizing,
mesh Net

vector
ALERT LEVEL
> NEWSCAST ZONE

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>		

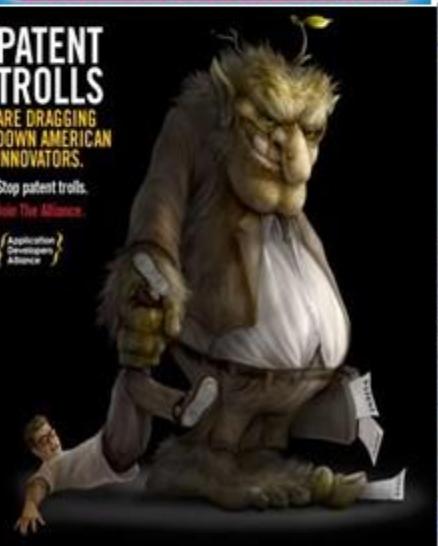
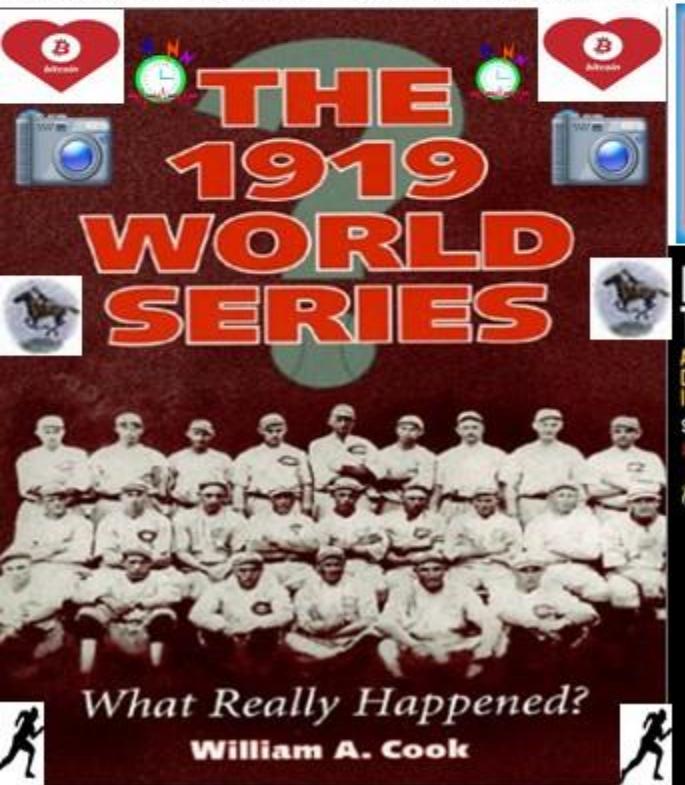




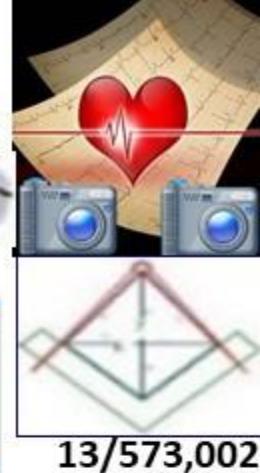




SAW Concepts LLC Owner's Father is from Blackfoot First Nation Native American Indian



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

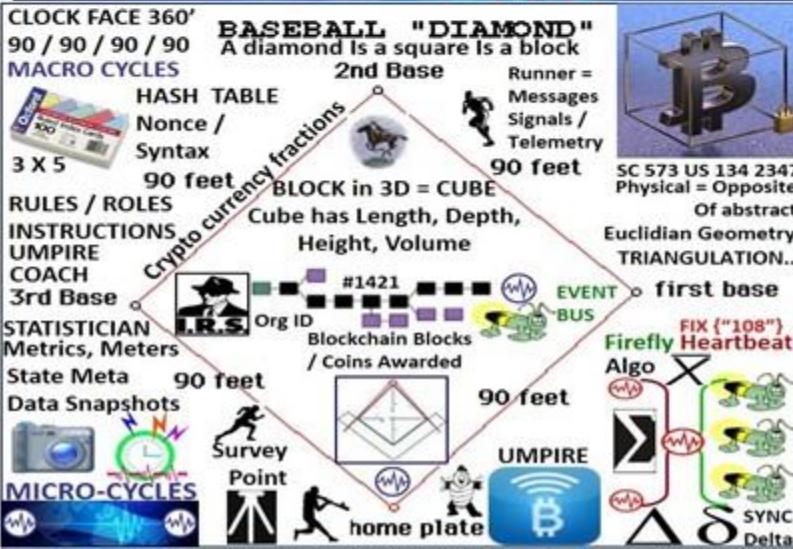


13/573,002



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



HOP BY HOP CONTROL

TELEMETRY TRANSPORT

IEEE 802.1AG HOP BY HOP
DETECTION



/localhost/nfd/fib/add-nexthop

Geo-Spatial Temporal

Metrics, Meters

DISTANCE
INFO SERVICE

Time Series

Value

Time

WATER DROP IN POND MEME IS

SONAR NAVY METAPHOR / MEME

NDN </INTEREST>

NDN {"DISTANCE"}

NAMED DATA

NETWORKING

IEEE C37.118

Harmonization

& Sync heartbeat

update Interval

CLOSER SOURCE

CHEAPER RATE

Energy Attenuates over Distances

TCP/IP HOP BY HOP COUNT

Attribute Series

LINEAR, SEQUENTIAL

PAUL REVERE

RADIUS

WATER DROP IN POND MEME

Interest Distance

Temporal Series

Geo Spatial

Micro Grids Closer - Cheaper

Blockchain Microgrids

TESLA

Unused Resources / Unmet Needs

HOP BY HOP CONTROL

vector

602

+3

+ 2

+ 1

Null

0

+ 1

+ 2

+3

603

+1

+2

NULL

Attribute Series

Interest Distance

Temporal Series

Geo Spatial

Micro Grids Closer - Cheaper

Blockchain Microgrids

TESLA

Time Series

Water Drop in Pond Meme

Radius

Interest Distance

Temporal Series

Geo Spatial

Micro Grids Closer - Cheaper

Blockchain Microgrids

TESLA

Time Series

Water Drop in Pond Meme

Radius

Interest Distance

Temporal Series

Geo Spatial

Micro Grids Closer - Cheaper

Blockchain Microgrids

TESLA

Spatial Econometrics

Spaceship Earth

Signals & Telemetry

Operating manual Annex

spaceship earth

ASTEROID BELTs = RARE MINERALS

MAIN ASTEROID BELT

MERCURY

VENUS

EARTH

MARS

FARHER = MORE COST

> Fuel, Resources

Service Level Agreements

STOCHASTIC HARMONIZATION

Event Message Bus

ERLANG

TIME- SPACE METRICS

FIREFLY - HEARTBEAT ALGORITHM MESSAGE EVENT BUS

TROJAN ASTEROIDS

UNIVERSAL

ANDERSON INSTITUTE

Light minutes

Astronomical units

Epoch / Time Cycles / Intervals

cycle n

n + 1

n + 2

Time Series

Water Drop in Pond Meme

Radius

Interest Distance

Temporal Series

Geo Spatial

Micro Grids Closer - Cheaper

Blockchain Microgrids

TESLA

TIME-SPACE BEACON

INFOCON

4 3 2 1

INFORMATION CONDITION

???

SIRIUS DISCLOSURE

"Numbers are the

Universal Language

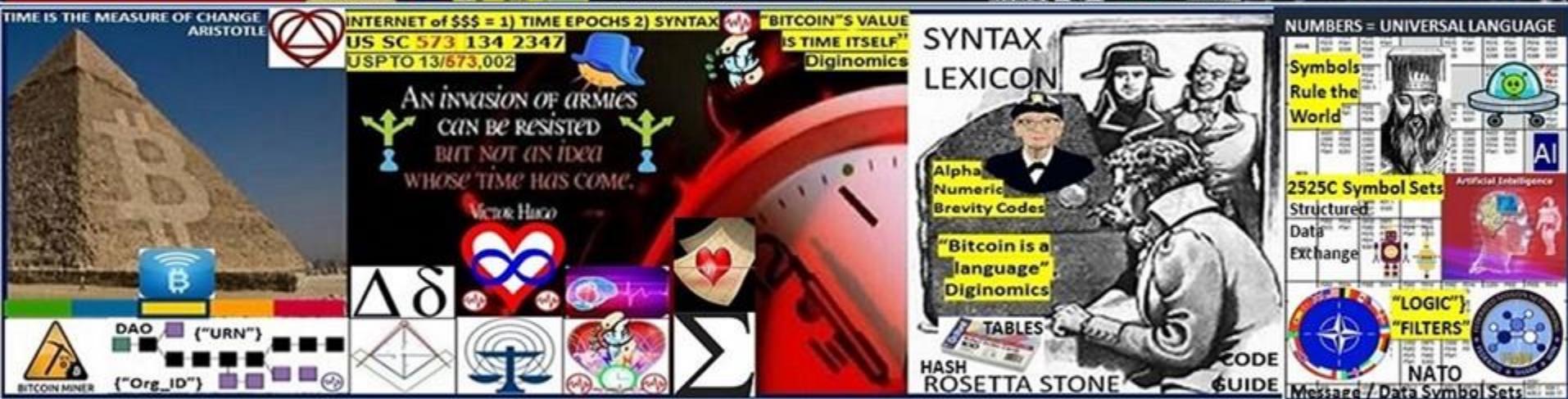
offered by deity to humans as

confirmation of the truth"

Alpha Numeric Brevity Codes

SYNTAX LEXICON

K00.99



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

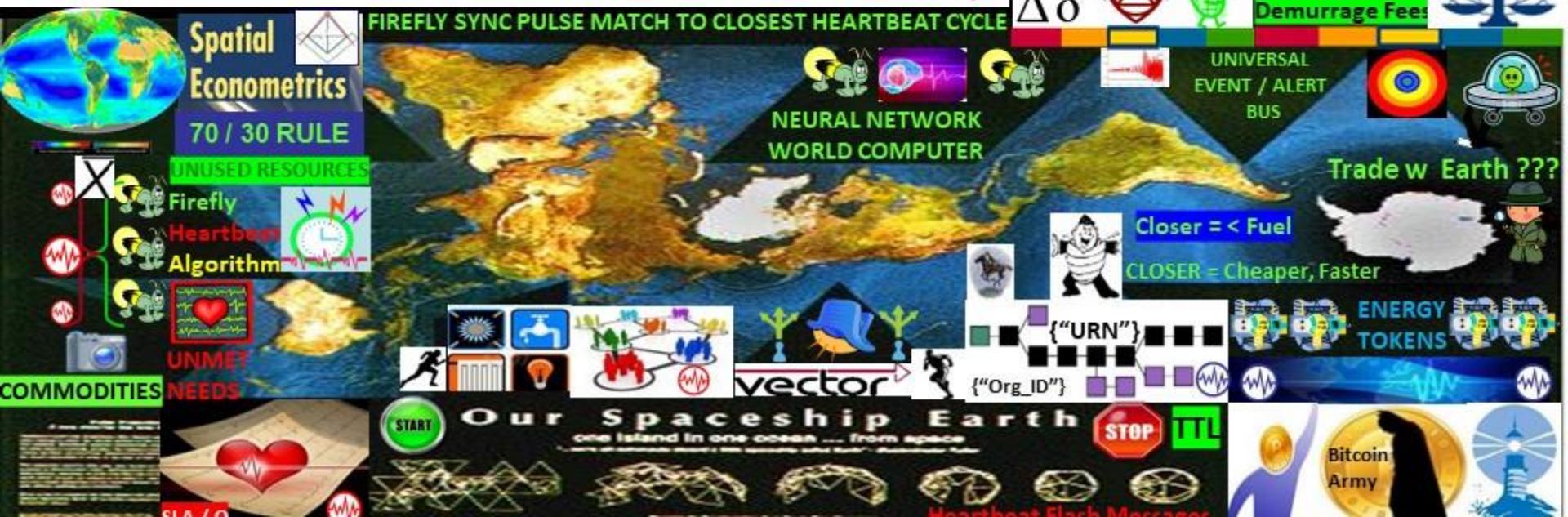
5 4 3 2 1

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.

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



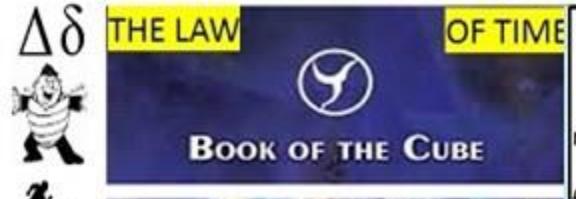
USPTO APPLICATION 13/573 002

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

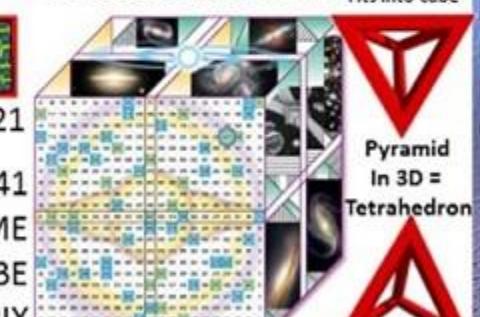


<http://lawoftime.org>

SYNCHRONOTRON Inverted
Fits into cube



21 x 21
441
TIME
CUBE
MATRIX



Pyramid
In 3D =
Tetrahedron



Physical Is the Opposite of abstract

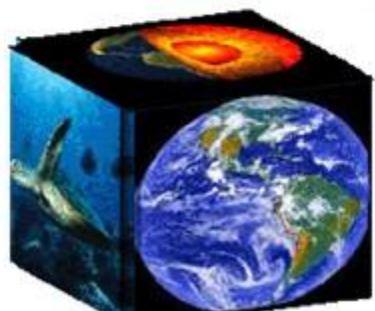
Metatron's Cube and the Platonic Solids



Saturn Shabatai/Shabbatai
Astrological Equations

by: Tom Rimbault

<http://bit.ly/2cqLo74>



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