



The Heart Beacon Cycle

Time – Space Meter

- 300+ Structured Data Template Use Cases
- Syntax Lexicon Library Code Repository
- IeT / IoT, Big Data, net of Money Bitcoin Blockchain Sync
- Ecologically supportive Econometrics Metrics, Meters
- Swords To Plowshare Network Enabled Operations NEO Reuse



Vernetzte Operationsführung

OOTW: Operations Other Than War



JAEGER

FIREFLY

HEARTBEAT

EVENT / ALERT Flash Heartbeat Message Bus

ALGORITHM

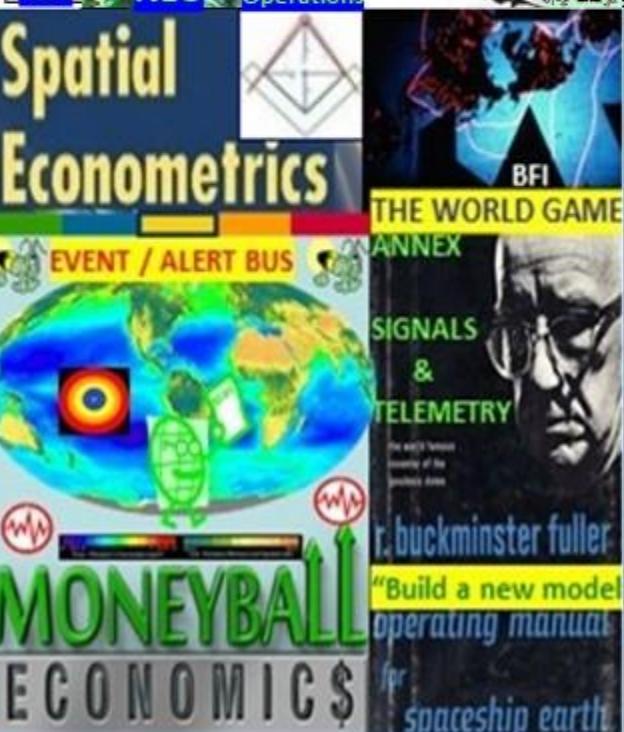
Federation
Gateway

OFF SHORE
OUTER
BANKS

KAIJU

CODE MONKEY

K %
Rule





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

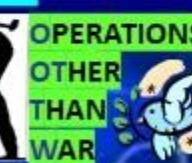
H.A.N.D.S: "Based on the need to speed up the processes of influencing an adversary, new concepts result in the adaptation of military doctrine, organization, training, material, infrastructure, interagency interaction, leadership, personnel and facilities" ... German Bundeswehr : concepts of "Network 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 systemically
among a systems of systems improving synergy and synchronicity



Beacon Communities

JAEGERS



Vernetzte Operationsführung

Proximity Beacons

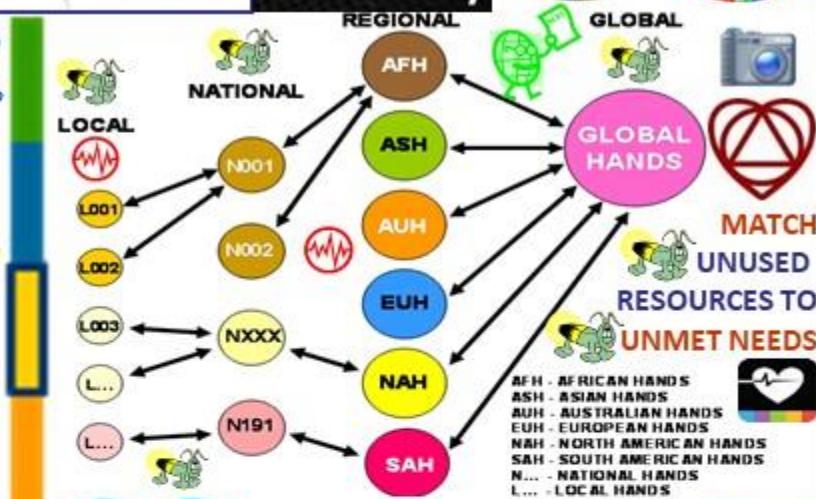


FIREFLY
HEARTBEAT
ALGORITHM

EVENT / ALERT Flash Heartbeat Message Bus



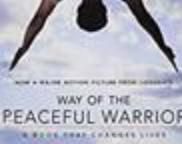
Federation Gateway



a global movement to end all wars



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

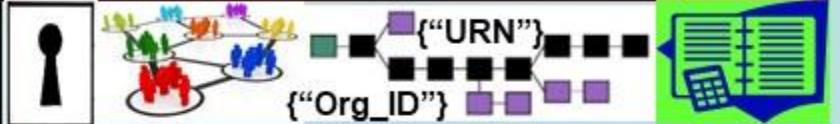


OFF SHORE
OUTER BANKS



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



FIREFLY FLASH

HEARTBEAT MESSAGES

</RESOURCE> {"URN"}

{"Asset_Class"} </URN>

STOCK EXCHANGE

MIC MARKET IDENTIFIER

CODES / BREVITY CODES

IoT DEVICE / PLATFORM



</RESOURCE> {"URN"}

{"Asset_Type"} </URN>

STOCK EXCHANGE

MIC MARKET IDENTIFIER

CODES / BREVITY CODES

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

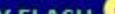
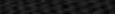
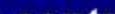
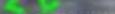
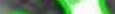
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123e4567-e89b-12d3-a456-426655440002

K %



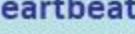
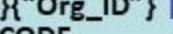
GOVERNANCE 2.0



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

123e4567-e89b-12d3-a456-426655440001

123e4567-e89b-12d3-a456-426655440002



{"DUNS #"} {"Org_ID"} Heartbeat Snaps

QR CODE

MICRO-CYCLES





Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



THE HEART BEACON CYCLE

{"108"}



K%



TERRACYCLE

ECONOMIC MACRO CYCLES

ECONOMIC HEARTBEAT

K% GDP ECONOMIC PULSE

FEDCOIN WORLDCOIN

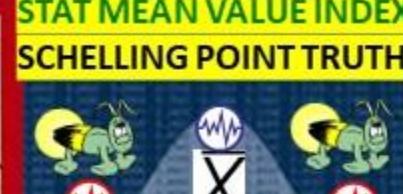
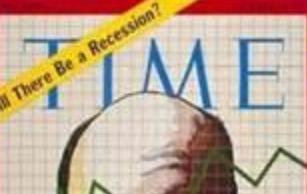
LENGTH OF REAL TIME CYCLE IS ARBITRARY AS LONG AS NODES EVENTUALLY AGREE



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

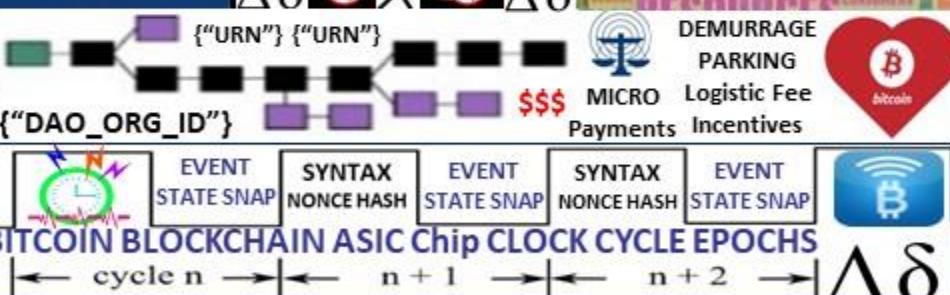


LUXOR
EGYPT
HEARTBEAT FLASH MESSAGE EVENT BUS
PRECEDENCE ETHEREUM THRESHOLD
PROCESSING GAS METRICS



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

UTZ TIME ZONE SYNC ("108")

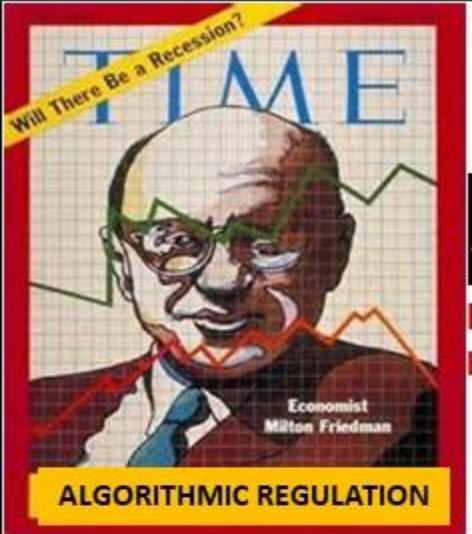


"Heartbeat Synchronization nodes in a distributed system generate periodic local heartbeat events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. No rule governs the length of a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

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



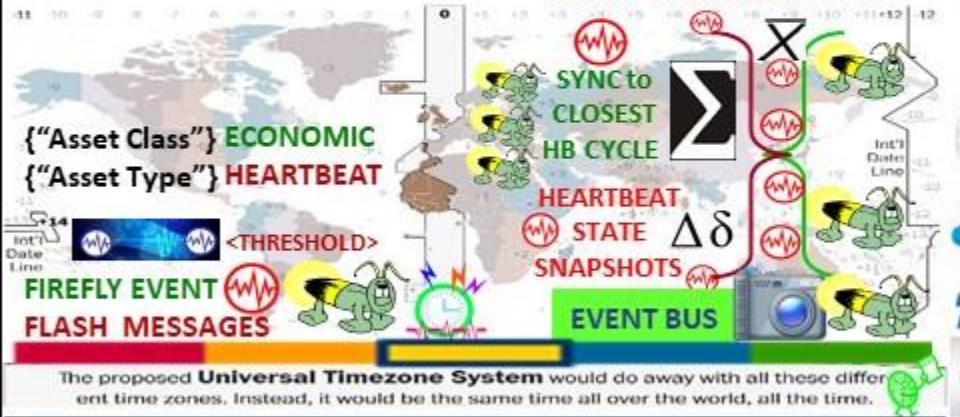




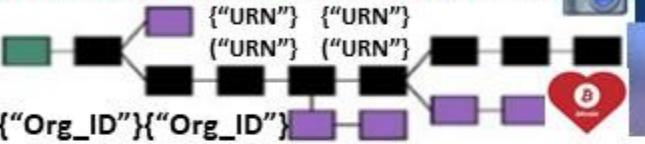
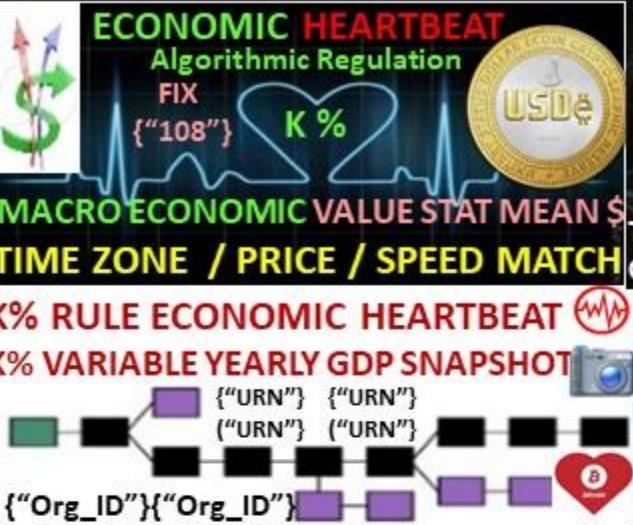
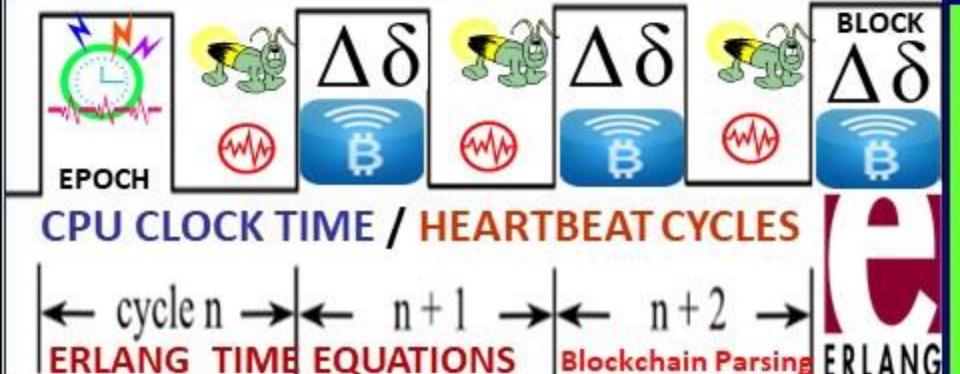
ALGORITHMIC REGULATION

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

FIREFLY - HEARTBEAT ALGO



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



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



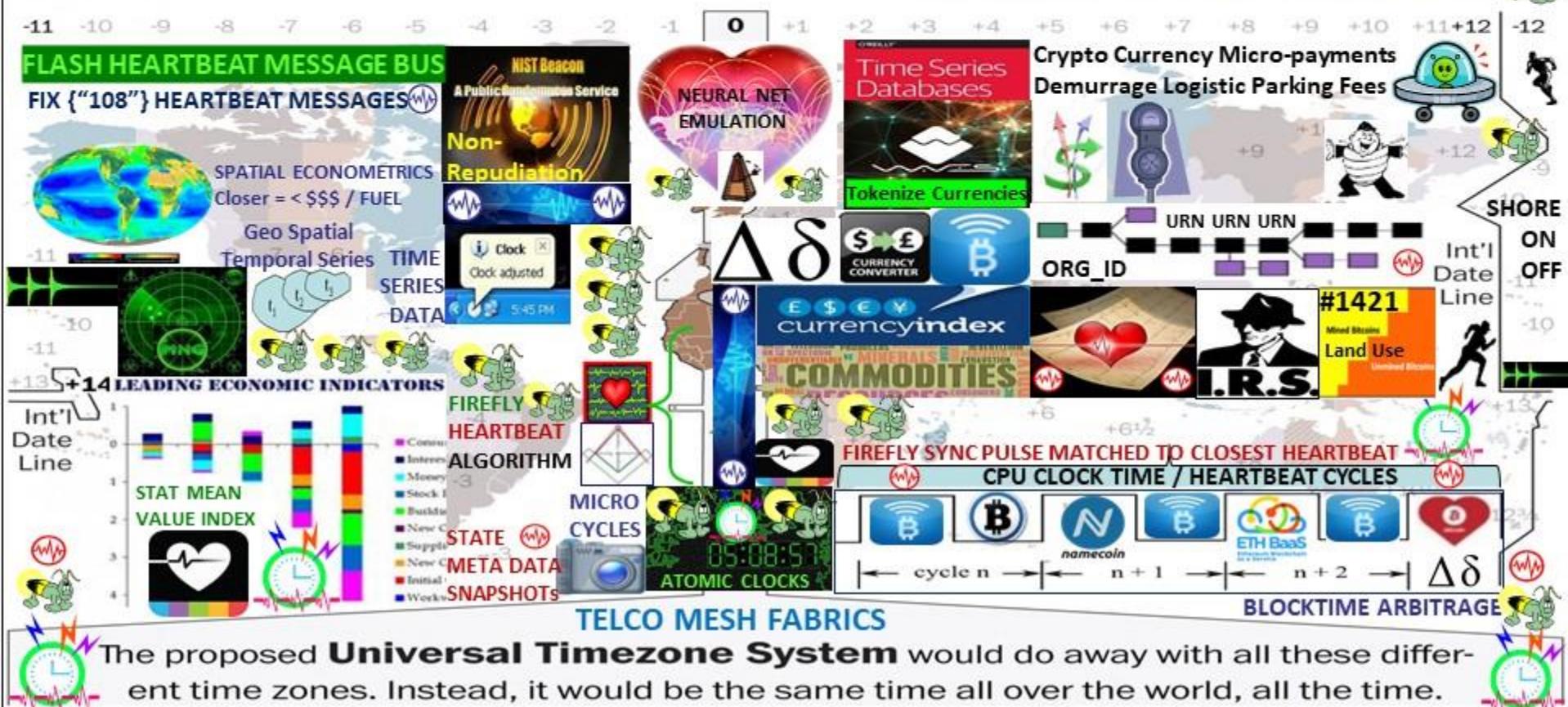
LEADING ECONOMIC INDICATORS

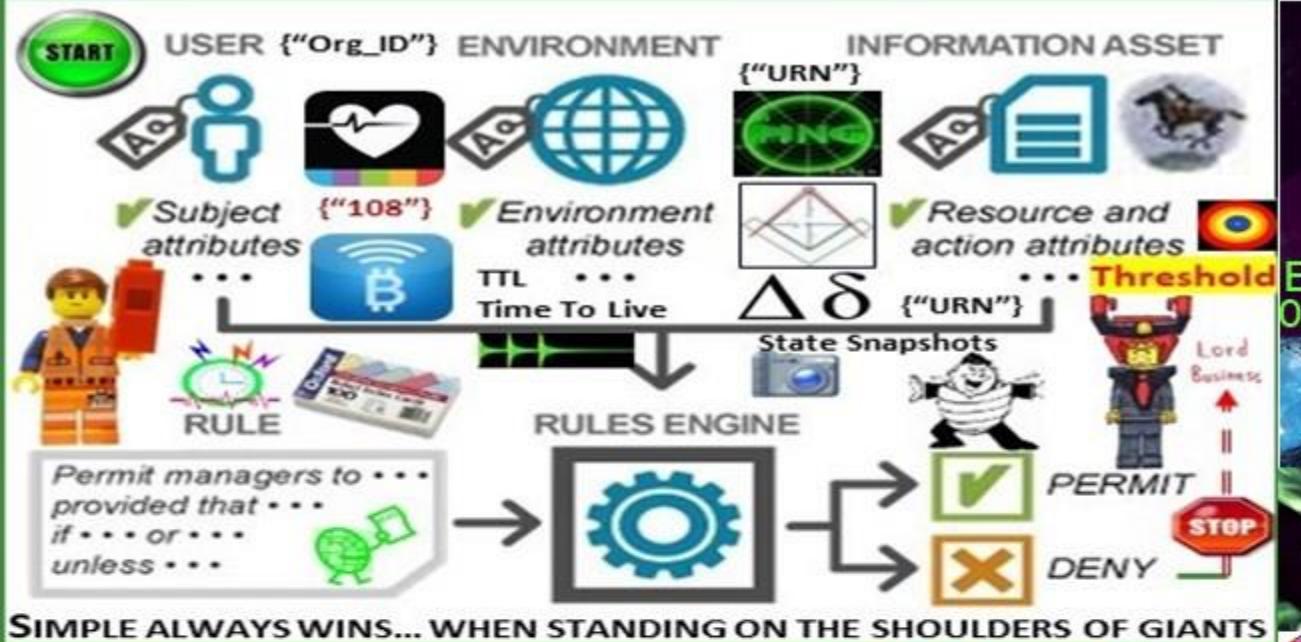


"Heartbeat Synchronization strives to have nodes in a distributed system generate periodic local "heartbeat" events approximately at the same time. It differs from classical clock sync in that Nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. There is no requirement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

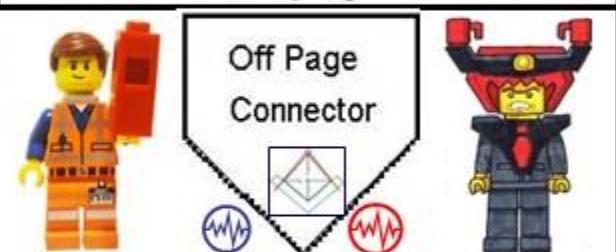
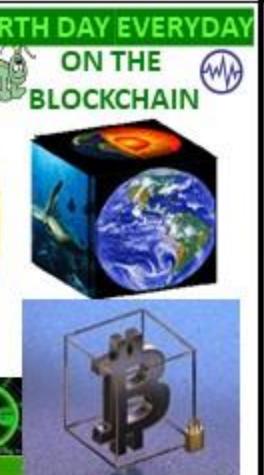




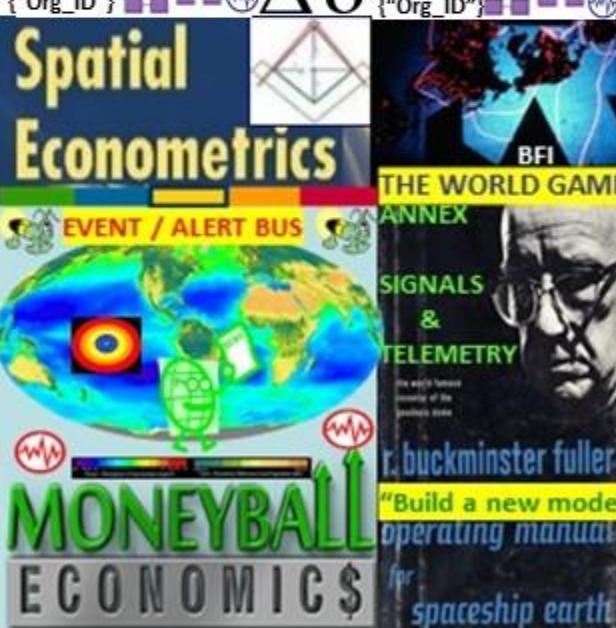
SIMPLE ALWAYS WINS... WHEN STANDING ON THE SHOULDERS OF GIANTS

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





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





NAMED DATA NETWORKING

<CONTENT> CENTRIC NETWORKING



<ORG_ID>
<ORG_ID>
<ORG_ID>
<URN>
<URN>

<GLOBAL> <JOINT> <COMMUNITY> <DOMAINS> <SHARED> <PRIVATE>
</INTEREST> <STRAT_ML> <IODEF_RID> </DISTANCE>

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

<Federated ID> <URN> <type_event> <Data Class Types>

STRUCTURED MILITARY MESSAGING FORMS: FIELD TYPES, FILTERS, TAGS

PARSED, PROCESSED, COMPILED TELEMETRY SIGNALING STANDARDIZATION

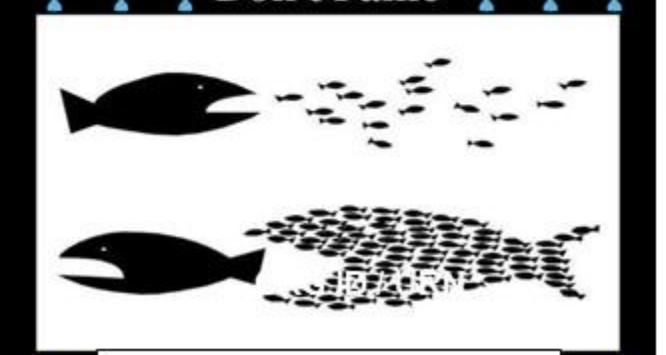
USMTF / XML MTF FORMATTED MESSAGE CATALOG

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

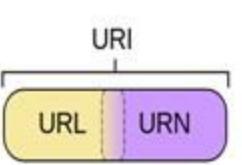
</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU

Don't Panic



FEDERATE



ARIN
American Registry for Internet Numbers

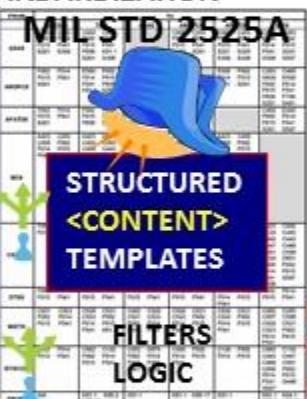
Uniform Resource Names (URNs): A Uniform Resource Identifier (URI). Both URNs (names) and URLs (locators) are URIs, and a particular URI may be a name & locator. Each plays a specific role:

- 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

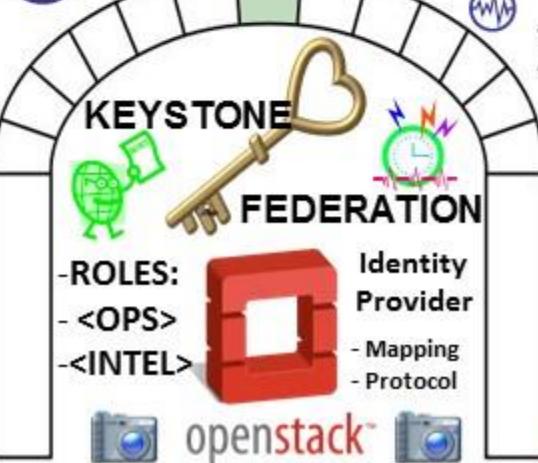
BY <TAG_TYPES>
Ledgers
Contracts
Trade SLA
Agreements



CrowdSourcing

TRIANGULATION
TELCO MESH FABRIC
vector

CROWD SOURCING / FUNDING



KEYSTONE
FEDERATION

- ROLES:
- <OPS>
- <INTEL>



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



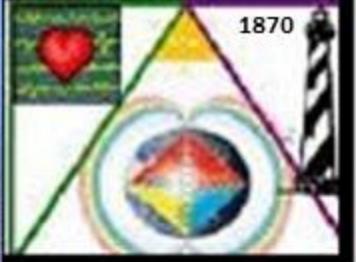
Satoshi Nakamoto Bitcoin Paper

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

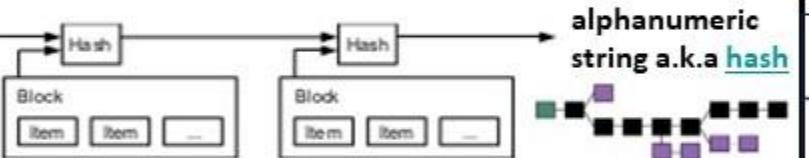
Craig WRIGHT a.k.a.
Satoshi NakamotoPHYSICAL =
OPPOSITE
OF ABSTRACTWright Brother's 1st Flight
Cape Hatteras Outer Banks

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

3. Timestamp Server

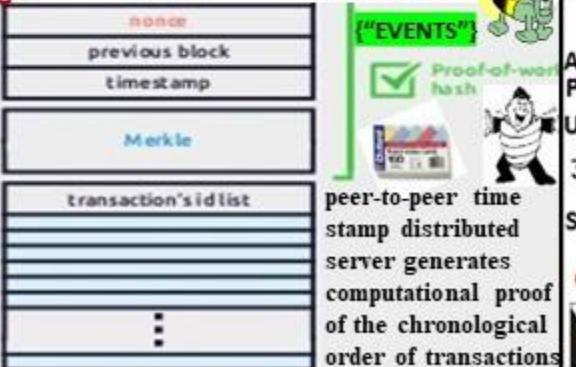
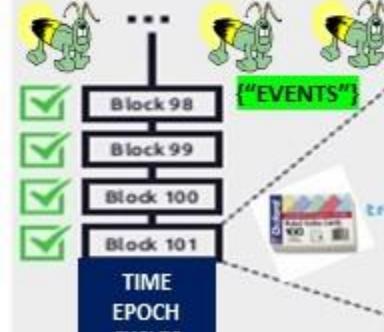
The solution we propose begins with a timestamp server. A timestamp server works by taking a hash of a block of items to be timestamped and widely publishing the hash, such as in a newspaper or Usenet post [2-5]. The timestamp proves that the data must have existed at the time, obviously, in order to 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



JapanNet Crypto Time Authentication Service (Timestamp Service)

Alice Corp V CLS Bank
Physical = opposite
of Abstract



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

Header - Contains service information (version info, nonce, previous block id and timestamp).

Merkle - A summary built from the block's transaction identifiers.

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"



MACRO CYCLES
CLOCK FACE
 $90 / 90 / 90 / 90$
= 360 degrees

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

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

90 feet

BLOCK in 3D = CUBE

Cube has Length, Depth,

Height. Volume

#1421

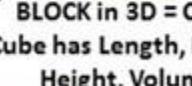
Blockchain Blocks / Coins Awarded

90 feet

Survey Point

home plate

$\Delta\delta$



1st Base Coach
first base
UMPIRE

3 x 5

HASH

TABLE

NONCE

VALUES / CODE

MICRO-CYCLES

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"

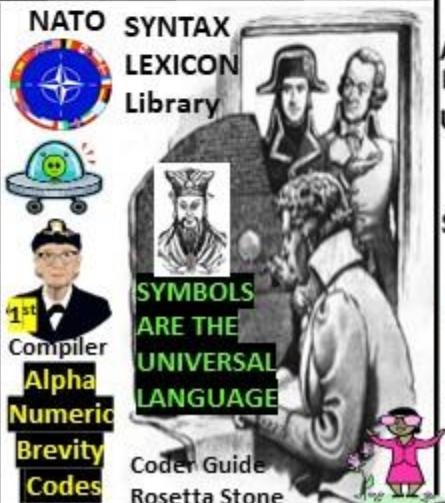
"A smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction reads / writes data in the blockchain's Dbase"

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
STRUCTURED DATA EXCHANGE
TEMPLATE FORMS
300+ USE CASES
LOGIC / FILTERS
SYNTAX / SYMBOL LEXICON LIBRARY



DIGINOMICS

"Bitcoin is a LANGUAGE" "Bitcoin's Value is TIME itself"

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

WIRED

"BITCOIN MAKES MONEY PROGRAMMABLE. MONEY IS SIMPLY DATA"

ALICE CORP VS CLS BANK

"claims may not be directed towards an abstract idea"

US SC 573 US 134 2347

FUTURE MEMES DOT COM

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

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



MACRO CYCLES
CLOCK FACE
90 / 90 / 90 / 90
= 360 degrees

METRICS / METERS

ALGORITHM = RULES
PLAYERS = ROLES
UMPIRE = RULES

STATISTICIAN

SYMBOLS ARE THE UNIVERSAL LANGUAGE

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

Runner = Messages Signals / Telemetry

90 feet

Euclidean Geometry TRIANGULATION.

BLOCK in 3D = CUBE
Cube has Length, Depth, Height. Volume #1421

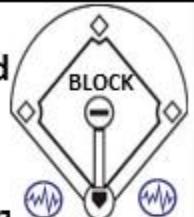
90 feet

Blockchain Blocks / Coins Awarded

Survey Point home plate



SC 573 US 134 2347
Physical = Opposite Of abstract

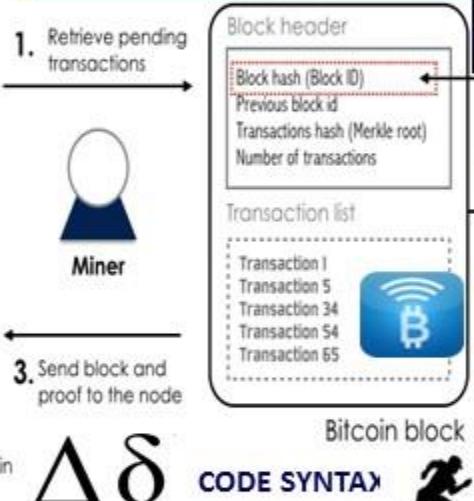
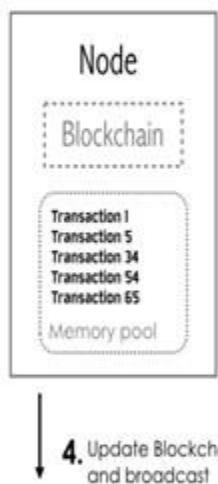


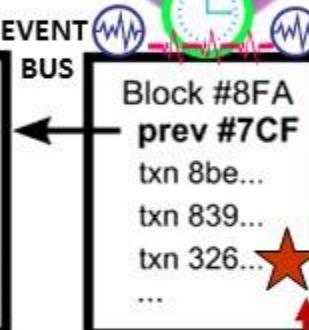
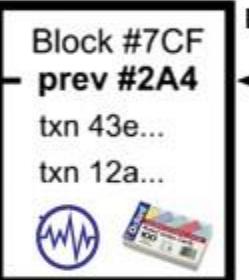
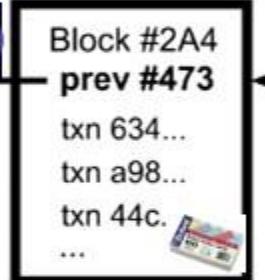
MICHAEL LEWIS



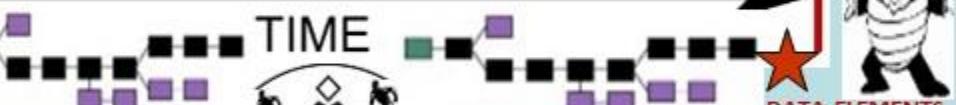


Alice Corp. v. CLS Bank International, 573 U.S. __, 134 S. Ct. 2347 (2014),[1] was a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).[2] The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating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


DATA ELEMENTS
ID'd by Alpha-Numerics
USPTO 13/573,002
PHYSICAL MEME
MAIN EMBODIMENT
RULES
 $\Delta\delta$
Metrics

Multi-Meme Multi-Meter

State Meta
Data Snapshots
ROLES
Meters
XBRL / CDL / DAML STOCK MIC CODES
STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS
SYNTAX LEXICON LIBRARY
BITCOIN IS A LANGUAGE / BITCOIN'S VALUE IS TIME ITSELF"

ASIC CHIP CLOCK CYCLES TIME EPOCHS
 \leftarrow
 $cycle n$
 $n+1$
 $n+2$
 \rightarrow
 $\Delta\delta$

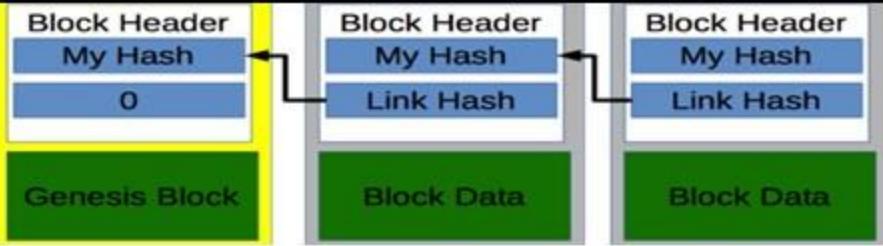
ATOMIC CLOCK




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.

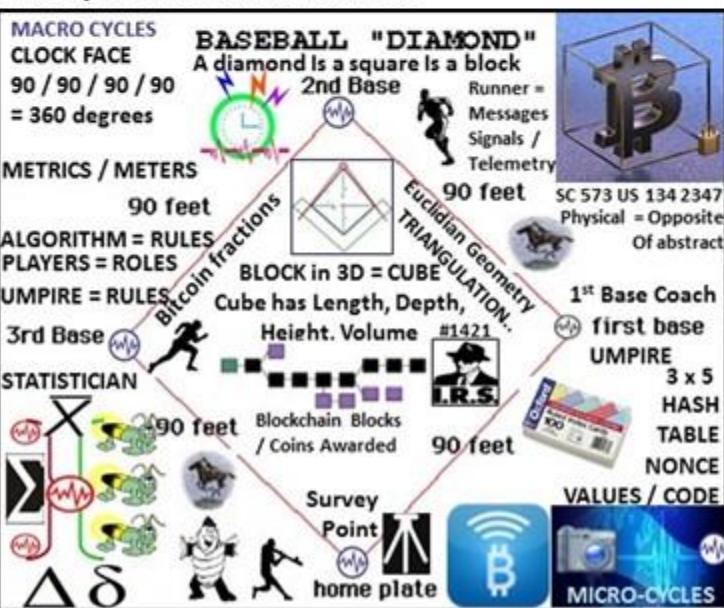
Consensus: distributed ledger blockchain nodes strategy determines chain's correctness
Consensus strategies: "proof of work," "proof of stake," and "delegated proof of stake"

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.

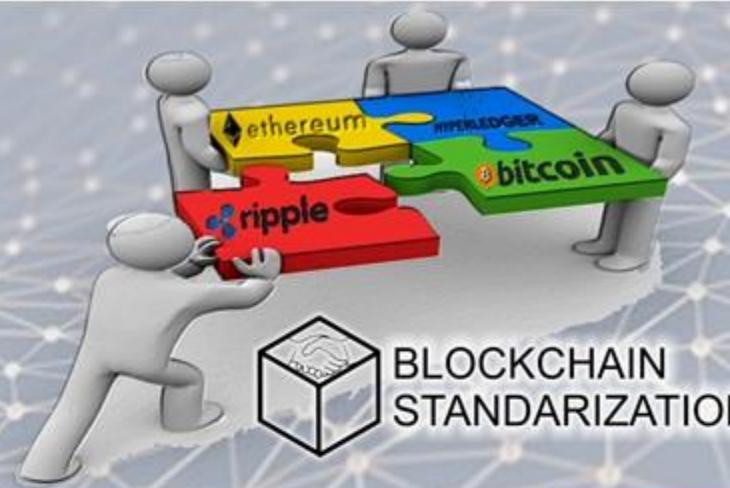
Delegated proof of stake (DPoS): variation of proof of stake where responsibility of the creating blocks is delegated to third party nodes, known as "witnesses."

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



SAW CONCEPTS LLC

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



INTERNET FORMED BY:

- 1) Time Cycles / Epochs
- 2 ("SYNTAX") </SYNTAX>

"In the beginning... " "The Word"

All things internet are formed with CPU time cycles used to process, parse, syntax, instruction code

"A smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction ready / writes on the blockchain's Dossier

Blockchain is a consensus-based system. It only works if all nodes reach an identical result.

"A smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction ready / writes on the blockchain's Dossier

BLOCKCHAIN ASIC CHIP CYCLES / EPOCHS

US SC 573 US 134 2347 PHYSICAL = OPPOSITE OF ABSTRACT

BITCOIN BLOCKCHAIN ASIC CHIP CYCLES / EPOCHS

90 / 90 / 90 / 90 = 360 degrees

TIME CYCLES / PATTERN

STRUCTURED - MILITARY MESSAGE

TEMPLATE FORMS

LOGIC / PATTERN

STRUCTURE CODES

SYNTAX SYMBOLIC

SECONDARY LIBRARY

Microsoft Blockchain modular framework: choose combination of technologies best fits Bitz domain

AZURE: Core, KeyVault, Universal Protocol

Fabric: Peer consortium mode CryptoDelegate in VM or UTTO Adapter, Azure, AzureStack, AWS,

Unspent Transaction Output protocols UTXO

Crypto Tokenized Assets: Digital Bearer Bonds unique for identity of issued artifacts

Utility Cryptos: encryption, time & date events, external data access, authentication "CryptoDelegate" adapter

Blockchain mediation identity and operations, intelligence services like machine learning, new middleware work with existing Azure services like Active Directory and Key Vault

Blockchain Fabric Blockchain Gateway Services Interoperability 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, S3, etc) off chain data referenced by public keys, auditing, Advanced Analytics, Machine Learning, Dashboarding, Regulators

SmartContract: Decentralized can remove and embed Cryptos into their Contracts to make them robust and transparent

Contract Cryptos are full delegation engines that act as

SmartContract enforces rule off the chain. Cryptos provide execution logic and security store data in the Smart Contract

Alpha Numerics: ABSY COSES, SYMBOL COSES

STRUCTURED - MILITARY MESSAGE

TEMPLATE FORMS

LOGIC / PATTERN

STRUCTURE CODES

SYNTAX SYMBOLIC

SECONDARY LIBRARY

EVENT BUS

FLASH-MESSAGE

SYNS TO CLOSEOUT

HEARTBEAT CYCLES

STRUCTURED - MILITARY MESSAGE

TEMPLATE FORMS

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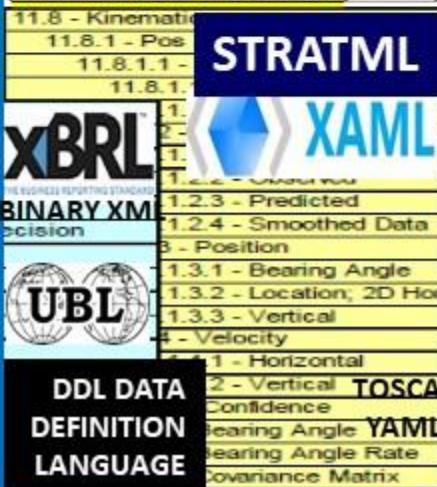
TEMPLATE FORMS

Structured
Data
Exchange

ALPHA NUMERIC
SYMBOL SETS

Coder's Guide

lexicon:



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



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

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

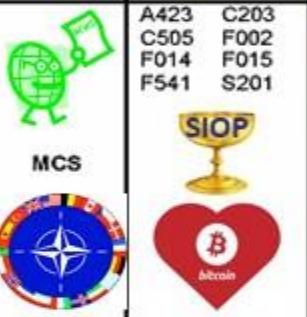
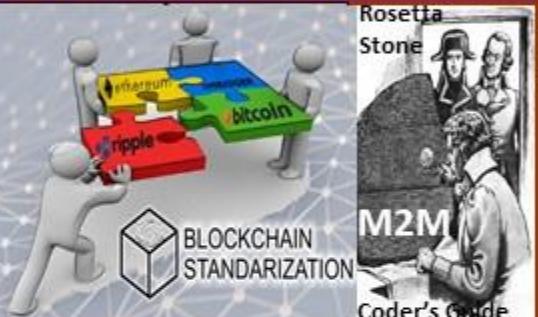
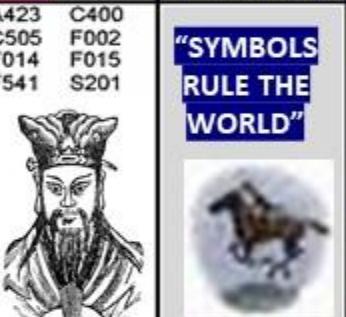
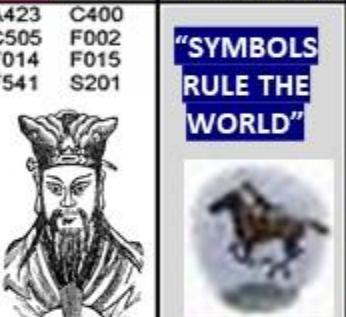


SYMBOLS	Friend	Neutral	Hostile	DICAL EVAC & HOSPITALISATION
	Partner		Competitor	- MILITARY OPERATIONS
1 - Horizontal				
2 - Vertical				
Confidence				
Bearing Angle				
Bearing Angle Rate				
Governance Matrix				

NUMBERS ARE THE UNIVERSAL LANGUAGE / Symbols Rule the World"



INFOCON
5 4 3 2 1
INFORMATION CONDITION

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	COA targeting, reconning	{"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	YAML repair, broadcasts	expansion plans
Sociological	Culture, religion, economic, ethnic, government, history, languages	temples, historic structures	ER Model	Class Diagram	Relational Database	Object DBMS	XML DTD / Schema
Geophysical	Terrain, weather, climatology, oceanography, astrometry	feature lat/long, alt/dpth	Entity	Class	Table	Class	Element
			Attribute	Attribute	Field / Column	Attribute	Child Element or Element Attribute
			Domain Value	PURCHASE CODES	Instance, Value		DPI
							FFRN / FFN / FUDN
							DUI
							FUD
							FEDERATE

- Information Elements Roles**
- COI Determination Org Interaction
 - Search and Discovery
 - Ontologies STANDARDS
 - Taxonomies REFERENCE
 - Metadata Attributes / Filters ("Org_ID") {"URN"}
- FILTERS**

FFUDN: Field Format Unit Designator #
FFIRN: Field Format Index Reference #
 Structured military messaging ID's messages, message sets, data element, symbol fields
BY Form Field Position & NUMBER



PROCESS MESSAGE BY PRECEDENCE
UNIVERSAL EVENT / ALERT MESSAGE BUS

OPERATIONAL NODES / ACTIVITIES

DATA	SYSTEM FUNCTIONS	PERFORMANCE
11.4 - Classification	11.8 - Kinematics	11.8.1 - Pos / Vel / Acc (PVA)
11.4.1 - Category	11.8.1.1 - Acceleration	11.8.1.1.1 - Angular
11.4.1.1 - Confidence Level	11.8.1.1.1.1 - Linear	11.2 - Linear
11.4.1.2 - Estimate Type	11.8.1.1.1.2 - Estimate Type	2 - Estimate Type
11.4.1.2.1 - Alternative	11.8.1.1.1.3 - Alternative	1.2.1 - Estimated
11.4.1.2.2 - Evaluated D	11.8.1.1.1.4 - Evaluated D	1.2.2 - Observed
11.4.1.3 - Value	11.8.1.1.1.5 - Value	1.2.3 - Predicted
	CODES	1.2.4 - Smoothed Data
SYMBOL	Friend	Neutral
2525C	Partner	
11.4.1.3.5 - Surface		4 - Velocity
11.4.2 - Platform / Point / Feature Type		1.4.1 - Horizontal
11.4.3 - Specific Type		1.4.2 - Vertical
11.4.4 - Type Modifier		VA Confidence
11.4.5 - Unit		1 - Bearing Angle
		2 - Bearing Angle Rate
		3 - Covariance Matrix





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

Syntax Lexicon Library

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

KICK STARTER

Upwork™

GitHub

JIRA

OPEN SOURCE SOFTWARE

slack

ICO
Initial Coin Offering

Dropbox

CODER'S GUIDE

NATO

STRUCTURED DATA EXCHANGE

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

300+ TEMPLATES

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

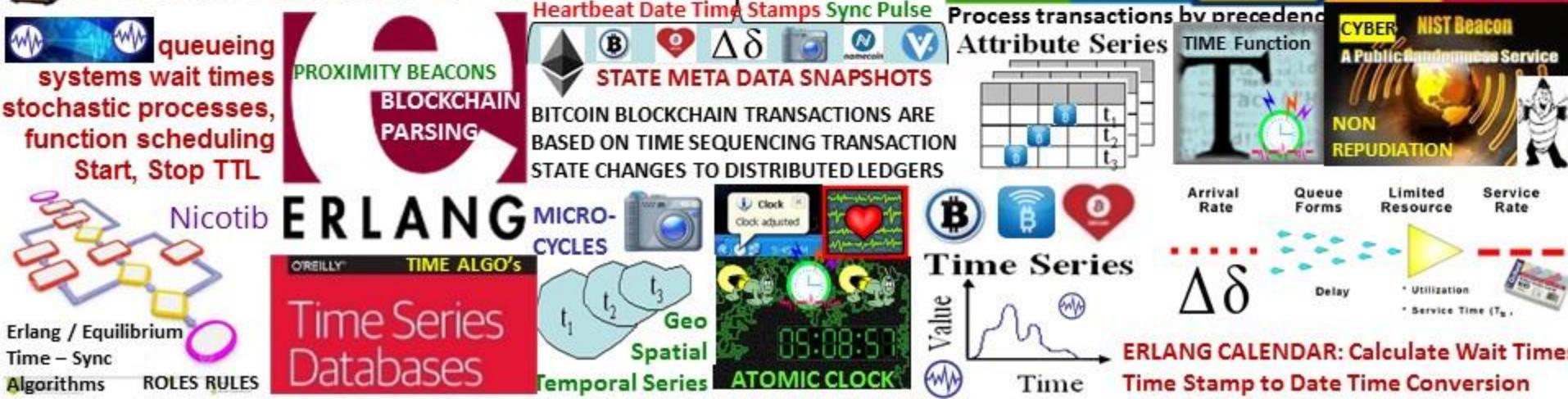




Figure 1: Latency induces uncertainty for traders "further" away from a centralized resource.

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



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





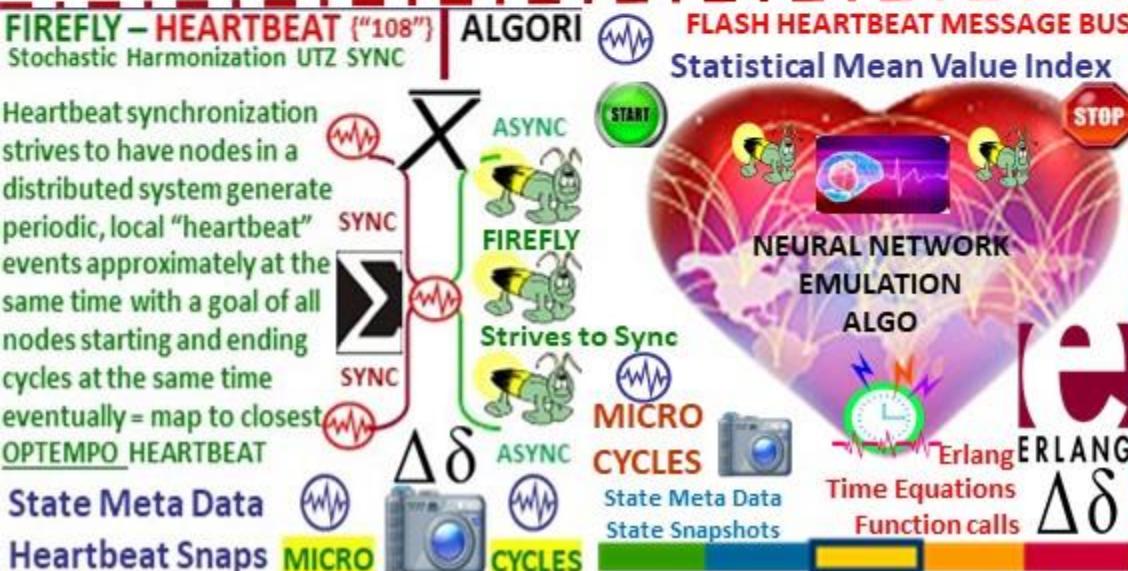
Hashgraph consensus algorithm for replicated state machines

- Interval Time Stamps
 - Object Pairing Sync
 - *Virtual voting*: each member has a Hashgraph copy
 - Famous witnesses

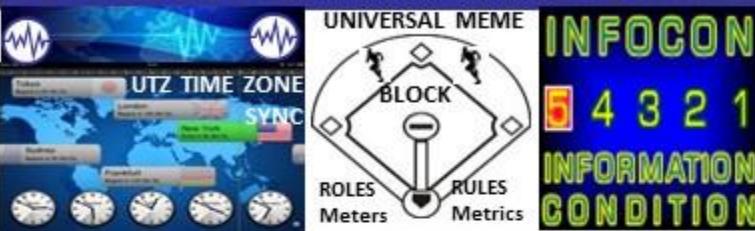
data structure that records who gossiped to whom in what order.

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

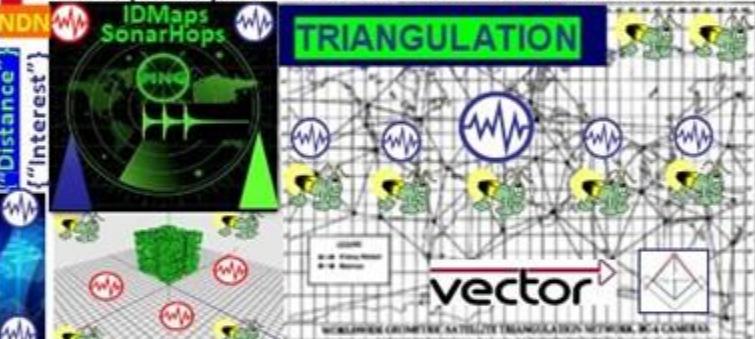
Gossip In Bitcoin, transactions and mined blocks are gossiped. It's fast (information spreads exponentially fast) and reliable (a single computer going down can't stop the gossip). Consensus is enhanced via "gossip about gossip" a concept in which Hashgraph is a thought leader.



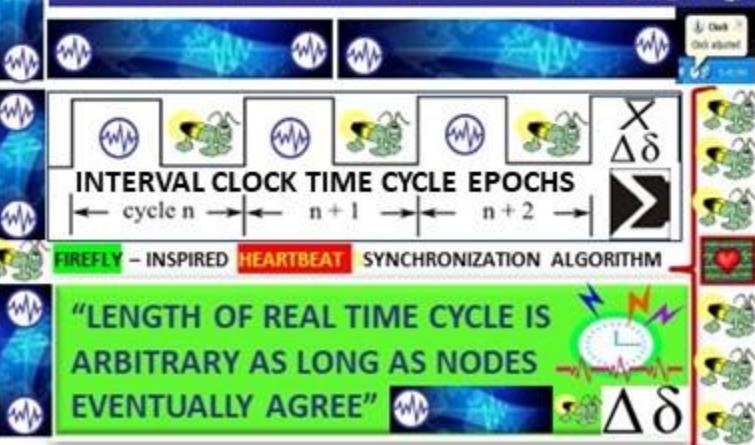
The Heart Beacon Cycle Time – Space Meter
Adaptive Procedural Template Checklist
Heartbeat Sync Delta state meta data
structured data exchange snapshots
300 + Use Case message template sets
Syntax lexicon Rosetta Stone Coder's guide



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



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







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

Futarchy PREDICTION MARKETS GnosisAMA

Gnosis trading interface alpha
WIZ token fee payment
INFORMATION ARBITRAGE ECONOMICS



TERRACYCLE

Price Oracle

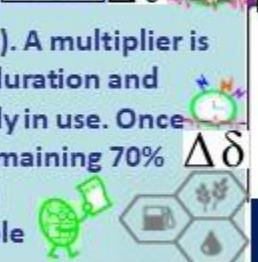
Gnosis Wisdom (WIZ) pay platform fees in Services layer, Wiz subsidize other participants fees, provide initial subsidies for markets, or market trading.



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

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

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



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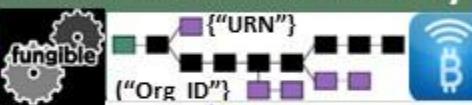


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THE TERRA (TRC)

Trade Reference Currency



\$0.49 USD
0.001076 BTC

MICRO PAYMENTS
Bitcoin
Need Bitcoin?



Demurrage Fees

UNIVERSAL METER

SLA - SLO



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"

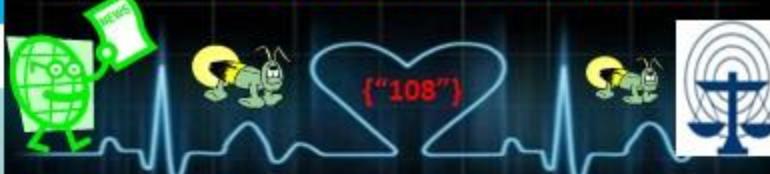
ZEPPELIN



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."

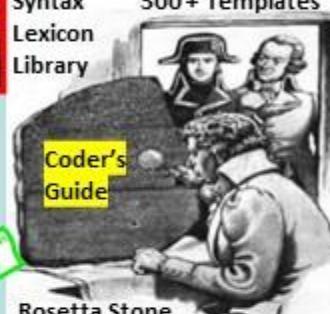
WORLD ECONOMIC HEARTBEAT



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



PAUSABLE
START
STOP
TIME TO LIVE
INSTRUCTIONS



STATE
META
DATA
SNAPSHOTS

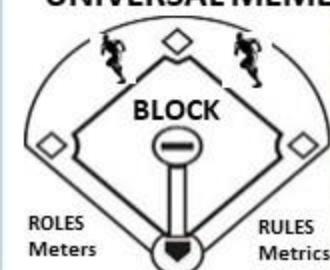


Erlang
Time Equations
Function calls
Blockchain Parsing



FLASH
MESSAGE BUS

UNIVERSAL MEME



Micro Cycle State Snaps

ZEPPELIN / zeppelinOS Common Functionality:

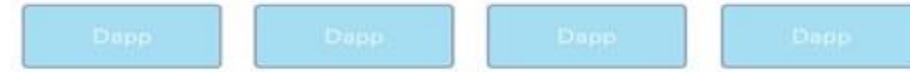
zeppelinOS Kernel common set of functions for smart contracts requesting services from the OS rather than re-implementing them from scratch. Functions will be available as an on-chain standard library of reusable contracts and functions, nspired by [OpenZeppelin Libraries](#)

Create and customize your own ERC20 Token.

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



Contract development



Contract interaction



Off chain tools





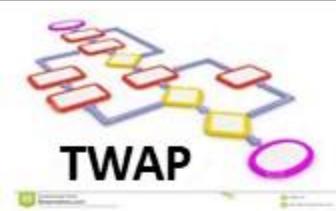
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

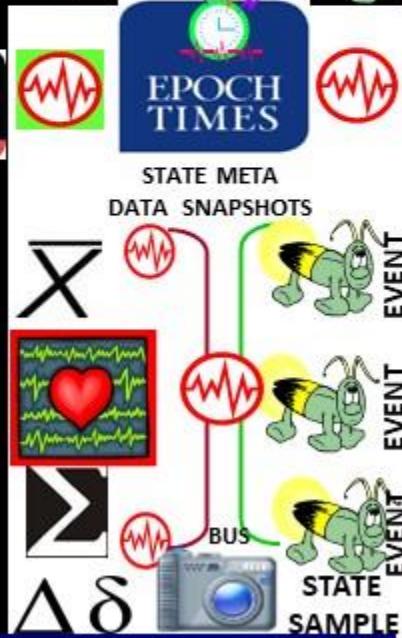
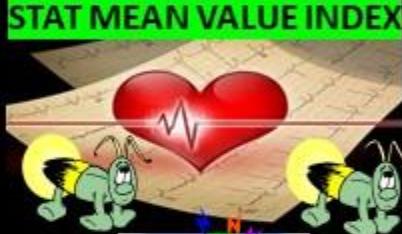


TWAP GOAL: provide a Time Weighted Average Price Benchmark



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

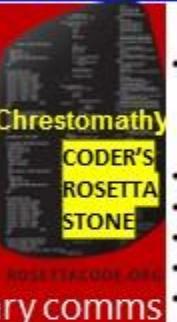
Firefly Heartbeat Sync nodes strive to sync in a distributed system. Nodes emit periodic "heartbeat" events at approximately the same time. There is no need to sync during a cycle as long as the cycle length is bounded & nodes eventually agree. HBC's improvement is stipulating a clock cycle value e.g.,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

Ericsson Open Money
For Society Patent App
[20130166398](#) "System And Method
For Implementing A Context
Based Payment System."

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



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

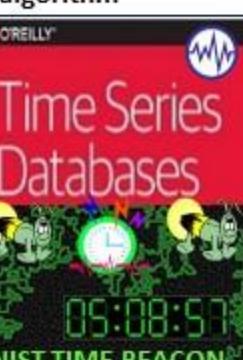


distributed "noSQL" database, embedded right into Erlang,
supports indexing, replication, transactions, and fail-over
Fast ETS in-memory, and DETS persistent on-disk database

Mnesia database ("Organization_ID")

Global name resolution

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



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



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



HASH TABLES
NONCE VALUES

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



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.



SchellingPoint

Microsoft Bletchley modular framework: choose combination of technologies best fits Biz domain

AZURE: Core/Kernel/Universal Protocol

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

Unspent Transaction Output protocols UTXO

Crypto Tokenized Assets Digital Bearer Bonds
unique identity for owned artifacts

Utility Cryptlets encryption, time & date events, external data access, authentication "CryptoDelegate" / adapter

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

Blockchain Fabric: Blockchain Gateway Services [Interledge](#) 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

Rosetta Stone Syntax



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

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



MULTI-MEME MULTI-METER

Microsoft AZURE BLETCHLEY



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



MYRIAD MEMES MEDIATION
BLOCKCHAIN



MACRO CYCLES

CLOCK FACE
90 / 90 / 90 / 90
= 360 degrees

METRICS / METERS

90 feet
ALGORITHM = RULES
PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

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

Runner =
Messages
Signals /
Telemetry

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

BLOCK in 3D = CUBE
Cube has Length, Depth,
Height. Volume #1421

Bitcoin fractions
Blockchain Blocks / Coins Awarded

Survey Point
home plate
90 feet
1st Base Coach
first base
UMPIRE
3 x 5
HASH TABLE
NONCE

VALUES / CODE
MICRO-CYCLES

IoT
Microsoft Orleans

TIME-SPACE
EQUATIONS
ALGORITHMS
BLOCKCHAIN
PARSING

ERLANG



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

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

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

Provides information about total costs of the transaction



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

pull model



Bitcoin Address Shortener

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

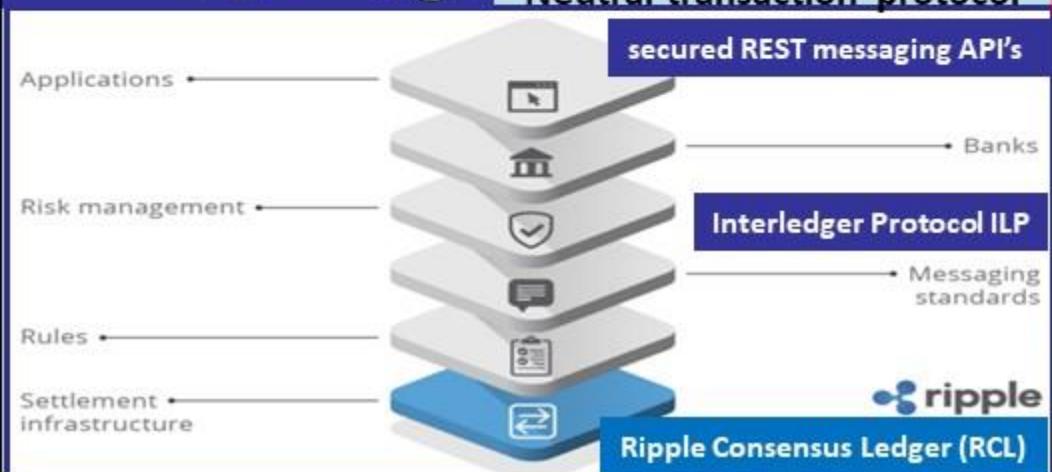
ALPHA NUMERIC BREVITY CODES

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

A.I

Clock Clock adjusted

Neutral transaction protocol



SchellingPoint



EVENT

ROLES RULES

COACH

BLOCK

CLOCK

= 360

TIME-SPACE EQUATIONS

ALGORITHMS BLOCKCHAIN PARSING

ERLANG

EVENT BUS

LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED

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

MATCH EVENT REPORTS TO CLOSEST HEARTBEAT CYCLE

FLASH HEARTBEAT MESSAGES {"108"} Δδ

HASH NONCE FIREFLY-HEARTBEAT ALGORITHM

MICRO-CYCLE STATE META DATA SNAPSHOTS

AGGREGATE INTO MACRO ECONOMIC CYCLE MESSAGE

World Economic Heartbeat
ALGORITHMIC REGULATION



["108"]

BLOCK TIME ARBITRAGE System of Systems Sync

Stochastic Harmonization Telco Mesh Fabrics Wide Area Sync

FIREFLY EVENTS FLASH MESSAGES

EVENT

COACH

BLOCK

CLOCK

= 360

TIME-SPACE EQUATIONS

ALGORITHMS BLOCKCHAIN PARSING

ERLANG

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LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED

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HASH NONCE FIREFLY-HEARTBEAT ALGORITHM

MICRO-CYCLE STATE META DATA SNAPSHOTS

AGGREGATE INTO MACRO ECONOMIC CYCLE MESSAGE

INFOCON 5 4 3 2 1

INFORMATION CONDITION

DFINITY

RANDOM # BEACON

NIST Beacon
A Public Randomness Service

QUANTUM RANDOM #

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

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

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 3×5 and updates to state stored on shards... State transitions passed to Validation Tree

Each process has mining identity

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

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

MACRO CYCLES
CLOCK FACE
 $90 / 90 / 90 / 90$
= 360 degrees

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

METRICS / METERS
90 feet
Euclidian Geometry TRIANGULATION:
90 feet

ALGORITHM = RULES
PLAYERS = ROLES
UMPIRE = RULES

BLOCK in 3D = CUBE
Cube has Length, Depth, Height. Volume #1421

3rd Base
Blockchain Blocks / Coins Awarded

STATISTICIAN

90 feet

Survey Point

home plate

SC 573 US 134 2347
Physical = Opposite Of abstract

1st Base Coach

first base

UMPIRE

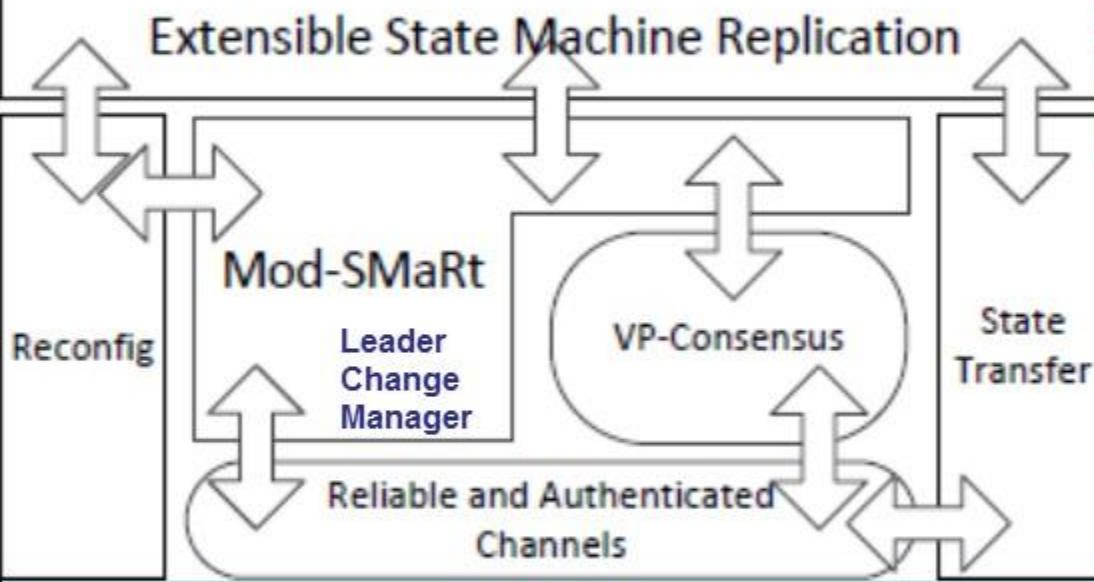
3 x 5 HASH TABLE NONCE

VALUES / CODE

MICRO-CYCLES

Byzantine Fault-Tolerant State Machine Replication

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



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

BFT-SMaRt needs an eventually synchronous system

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

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

USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT

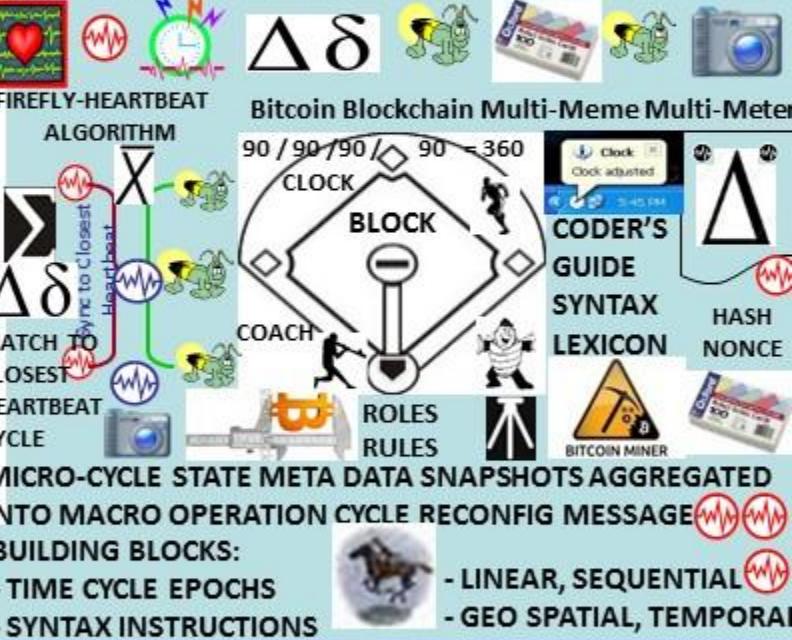


DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"} ADDS, JOINS, DROPS, MOVES TO / FROM DAO

CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

K00.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOT



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

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

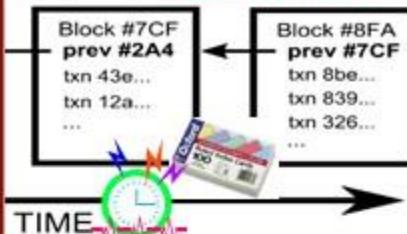
HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$ Shared Ledger



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



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

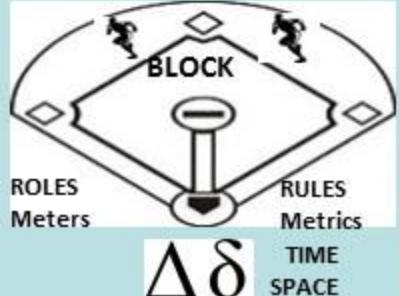
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



BLOCK TIME ARBITRAGE



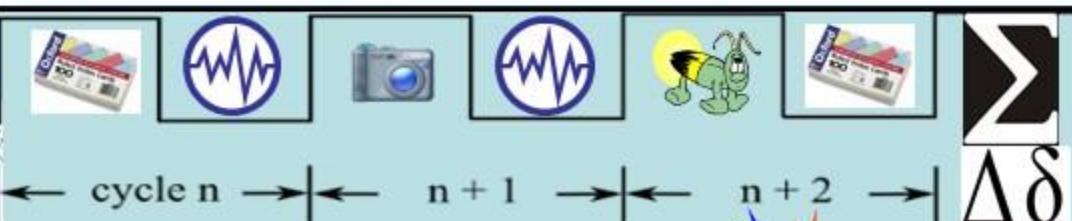
OBC APIs, SDKs, CLI



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

e.g. Derivatives

e.g. Trade Finance

e.g. KYC / AML

App

App

App

App

App

App

App

App

App

Concord Platform Services

CorDapp Store

Notaries

Network Map Service

Trusted Digital Backbone Network

Regulatory Reporting

Oracles

Service Provider Gateways

Bank-Internal Gateways

Concord Vault Interoperability

Asset Registry

Trade Registry

Cash

Identity Vault

Concord Operations Centre

Business Monitoring

Technical Alerting

Management Information

Compliance Audit



Δδ

Inter-Network Adapters

FEDWIRE

CHIPS

DTCC

CLS

Corda Core Node Services

Agreement States

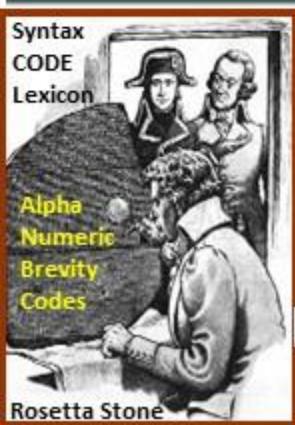
Transactions

Sandbox

Digital Signing

Interaction Protocols

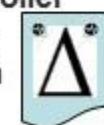
Contract Verification



UNIVERSAL EVENT BUS



- 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



XBRL / CDL / DAML STOCK MIC CODES



STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS



300+ Use Case Templates



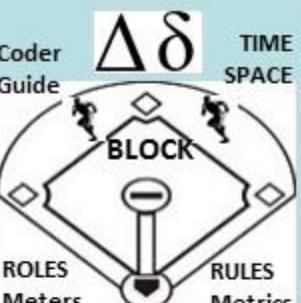
Federation Gateway



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

KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



MVP

EVENT BUS



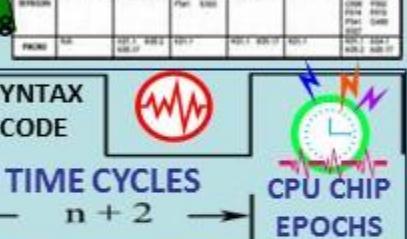
MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



NDN

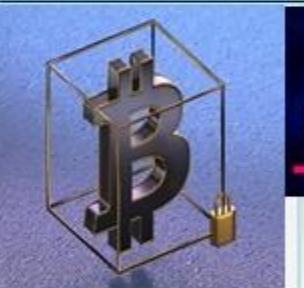
WITH SYNTAX LEXICON LIBRARY



long exponential intervals (10 min)

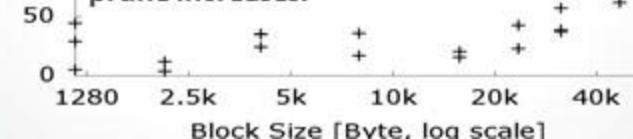


COMMAND SYNTAX
RESTFUL State Transfer



Subjective Time to Prune

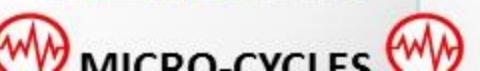
Additional metrics used by researchers included "time to prune", or the time it takes for miners whether they are on the correct "branch" or version of the blockchain they are processing transactions. As block sizes increase, suggested time to prune increases.



short deterministic intervals (10 sec)



ATOMIC CLOCK



MICRO-CYCLES

FROM	NEEDLE	THIN	ASKE	AMPC	AFATR	WIR
ARMADA	P0001	P0002	P0003	P0004	P0005	P0006
ARMADA	P0007	P0008	P0009	P0010	P0011	P0012
ARMADA	P0013	P0014	P0015	P0016	P0017	P0018
ARMADA	P0019	P0020	P0021	P0022	P0023	P0024
ARMADA	P0025	P0026	P0027	P0028	P0029	P0030
ARMADA	P0031	P0032	P0033	P0034	P0035	P0036
ARMADA	P0037	P0038	P0039	P0040	P0041	P0042
ARMADA	P0043	P0044	P0045	P0046	P0047	P0048
ARMADA	P0049	P0050	P0051	P0052	P0053	P0054
ARMADA	P0055	P0056	P0057	P0058	P0059	P0060
ARMADA	P0061	P0062	P0063	P0064	P0065	P0066
ARMADA	P0067	P0068	P0069	P0070	P0071	P0072
ARMADA	P0073	P0074	P0075	P0076	P0077	P0078
ARMADA	P0079	P0080	P0081	P0082	P0083	P0084
ARMADA	P0085	P0086	P0087	P0088	P0089	P0090
ARMADA	P0091	P0092	P0093	P0094	P0095	P0096
ARMADA	P0097	P0098	P0099	P0100	P0101	P0102
ARMADA	P0103	P0104	P0105	P0106	P0107	P0108
ARMADA	P0109	P0110	P0111	P0112	P0113	P0114
ARMADA	P0115	P0116	P0117	P0118	P0119	P0120
ARMADA	P0121	P0122	P0123	P0124	P0125	P0126
ARMADA	P0127	P0128	P0129	P0130	P0131	P0132
ARMADA	P0133	P0134	P0135	P0136	P0137	P0138
ARMADA	P0139	P0140	P0141	P0142	P0143	P0144
ARMADA	P0145	P0146	P0147	P0148	P0149	P0150
ARMADA	P0151	P0152	P0153	P0154	P0155	P0156
ARMADA	P0157	P0158	P0159	P0160	P0161	P0162
ARMADA	P0163	P0164	P0165	P0166	P0167	P0168
ARMADA	P0169	P0170	P0171	P0172	P0173	P0174
ARMADA	P0175	P0176	P0177	P0178	P0179	P0180
ARMADA	P0181	P0182	P0183	P0184	P0185	P0186
ARMADA	P0187	P0188	P0189	P0190	P0191	P0192
ARMADA	P0193	P0194	P0195	P0196	P0197	P0198
ARMADA	P0199	P0200	P0201	P0202	P0203	P0204
ARMADA	P0205	P0206	P0207	P0208	P0209	P0210
ARMADA	P0211	P0212	P0213	P0214	P0215	P0216
ARMADA	P0217	P0218	P0219	P0220	P0221	P0222
ARMADA	P0223	P0224	P0225	P0226	P0227	P0228
ARMADA	P0229	P0230	P0231	P0232	P0233	P0234
ARMADA	P0235	P0236	P0237	P0238	P0239	P0240
ARMADA	P0241	P0242	P0243	P0244	P0245	P0246
ARMADA	P0247	P0248	P0249	P0250	P0251	P0252
ARMADA	P0253	P0254	P0255	P0256	P0257	P0258
ARMADA	P0259	P0260	P0261	P0262	P0263	P0264
ARMADA	P0265	P0266	P0267	P0268	P0269	P0270
ARMADA	P0271	P0272	P0273	P0274	P0275	P0276
ARMADA	P0277	P0278	P0279	P0280	P0281	P0282
ARMADA	P0283	P0284	P0285	P0286	P0287	P0288
ARMADA	P0289	P0290	P0291	P0292	P0293	P0294
ARMADA	P0295	P0296	P0297	P0298	P0299	P0300
ARMADA	P0301	P0302	P0303	P0304	P0305	P0306
ARMADA	P0307	P0308	P0309	P0310	P0311	P0312
ARMADA	P0313	P0314	P0315	P0316	P0317	P0318
ARMADA	P0319	P0320	P0321	P0322	P0323	P0324
ARMADA	P0325	P0326	P0327	P0328	P0329	P0330
ARMADA	P0331	P0332	P0333	P0334	P0335	P0336
ARMADA	P0337	P0338	P0339	P0340	P0341	P0342
ARMADA	P0343	P0344	P0345	P0346	P0347	P0348
ARMADA	P0349	P0350	P0351	P0352	P0353	P0354
ARMADA	P0355	P0356	P0357	P0358	P0359	P0360
ARMADA	P0361	P0362	P0363	P0364	P0365	P0366
ARMADA	P0367	P0368	P0369	P0370	P0371	P0372
ARMADA	P0373	P0374	P0375	P0376	P0377	P0378
ARMADA	P0379	P0380	P0381	P0382	P0383	P0384
ARMADA	P0385	P0386	P0387	P0388	P0389	P0390
ARMADA	P0391	P0392	P0393	P0394	P0395	P0396
ARMADA	P0397	P0398	P0399	P0400	P0401	P0402
ARMADA	P0403	P0404	P0405	P0406	P0407	P0408
ARMADA	P0409	P0410	P0411	P0412	P0413	P0414
ARMADA	P0415	P0416	P0417	P0418	P0419	P0420
ARMADA	P0421	P0422	P0423	P0424	P0425	P0426
ARMADA	P0427	P0428	P0429	P0430	P0431	P0432
ARMADA	P0433	P0434	P0435	P0436	P0437	P0438
ARMADA	P0439	P0440	P0441	P0442	P0443	P0444
ARMADA	P0445	P0446	P0447	P0448	P0449	P0450
ARMADA	P0451	P0452	P0453	P0454	P0455	P0456
ARMADA	P0457	P0458	P0459	P0460	P0461	P0462
ARMADA	P0463	P0464	P0465	P0466	P0467	P0468
ARMADA	P0469	P0470	P0471	P0472	P0473	P0474
ARMADA	P0475	P0476	P0477	P0478	P0479	P0480
ARMADA	P0481	P0482	P0483	P0484	P0485	P0486
ARMADA	P0487	P0488	P0489	P0490	P0491	P0492
ARMADA	P0493	P0494	P0495	P0496	P0497	P0498
ARMADA	P0499	P0500	P0501	P0502	P0503	P0504
ARMADA	P0505	P0506	P0507	P0508	P0509	P0510
ARMADA	P0511	P0512	P0513	P0514	P0515	P0516
ARMADA	P0517	P0518	P0519	P0520	P0521	P0522
ARMADA	P0523	P0524	P0525	P0526	P0527	P0528
ARMADA	P0529	P0530	P0531	P0532	P0533	P0534
ARMADA	P0535	P0536	P0537	P0538	P0539	P0540
ARMADA	P0541	P0542	P0543	P0544	P0545	P0546
ARMADA	P0547	P0548	P0549	P0550	P0551	P0552
ARMADA	P0553	P0554	P0555	P0556	P0557	P0558
ARMADA	P0559	P0560	P0561	P0562	P0563	P0564
ARMADA	P0565	P0566	P0567	P0568	P0569	P0570
ARMADA	P0571	P0572	P0573	P0574	P0575	P0576
ARMADA	P0577	P0578	P0579	P0580	P0581	P0582
ARMADA	P0583	P0584	P0585	P0586	P0587	P0588
ARMADA	P0589	P0590	P0591	P0592	P0593	P0594
ARMADA	P0595	P0596	P0597	P0598	P0599	P0600
ARMADA	P0601	P0602	P0603	P0604	P0605	P0606
ARMADA	P0607	P0608	P0609	P0610	P0611	P0612
ARMADA	P0613	P0614	P0615	P0616	P0617	P0618
ARMADA	P0619	P0620	P0621	P0622	P0623	P0624
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ARMADA	P0631	P0632	P0633	P0634	P0635	P0636
ARMADA	P0637	P0638	P0639	P0640	P0641	P0642
ARMADA	P0643	P0644	P0645	P0646	P0647	P0648
ARMADA	P0649	P0650	P0651	P0652	P0653	P0654
ARMADA	P0655	P0656	P0657	P0658	P0659	P0660
ARMADA	P0661	P0662	P0663	P0664	P0665	P0666
ARMADA	P0667	P0668	P0669	P0670	P0671	P0672
ARMADA	P0673	P0674	P0675	P0676	P0677	P0678
ARMADA	P0679	P0680	P0681	P0682	P0683	P0684
ARMADA	P0685	P0686	P0687	P0688	P0689	P0690
ARMADA	P0691	P0692	P0693	P0694	P0695	P0696
ARMADA	P0697	P0698	P0699	P0700	P0701	P0702
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ARMADA	P0739	P0740	P0741	P0742	P0743	P0744
ARMADA	P0745	P0746	P0747	P0748	P0749	P0750
ARMADA	P0751	P0752	P0753	P0754	P0755	P0756
ARMADA	P0757	P0758	P0759	P0760	P0761	P0762
ARMADA	P0763	P0764	P0765	P0766	P0767	P0768
ARMADA	P0769	P0770	P0771	P0772	P0773	P0774
ARMADA	P0775	P0776	P0777	P0778	P0779	P0780
ARMADA	P0781	P0782	P0783	P0784	P0785	P0786
ARMADA	P0787	P0788	P0789	P0790	P0791	P0792
ARMADA	P0793	P0794	P0795	P0796	P0797	P0798
ARMADA	P0799	P0800	P0801	P0802	P0803	P0804
ARMADA	P0805	P0806	P0807	P0808	P0809	P0810
ARMADA	P0811	P0812	P0813	P0814	P0815	P0816
ARMADA	P0817	P0818	P0819	P0820	P0821	P0822
ARMADA	P0823	P0824	P0825	P0826	P0827	P0828
ARMADA	P0829	P0830	P0831	P0832	P0833	P0834
ARMADA	P0835	P0836	P0837	P0838	P0839	P0840
ARMADA	P0841	P0842	P0843	P0844	P0845	P0846
ARMADA	P0847	P0848	P0849	P0850	P0851	P0852
ARMADA	P0853	P0854	P0855	P0856	P0857	P0858
ARMADA	P0859	P0860	P0861	P0862	P0863	P0864
ARMADA	P0865	P0866	P0867	P0868	P0869	P0870
ARMADA	P0871	P0872	P0873	P0874	P0875	P0876
ARMADA	P0877	P0878	P0879	P0880	P0881	P0882
ARMADA	P0883	P0884	P0885	P0886	P0887	P0888
ARMADA	P0889	P0890	P0891	P0892	P0893	P0894
ARMADA	P0895	P0896	P0897	P0898	P0899	P0900
ARMADA	P0901	P0902	P0903	P0904	P0905	P0906
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ARMADA	P0931	P0932	P0933	P0934	P0935	P0936
ARMADA	P0937	P0938	P0939	P0940	P0941	P0942
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ETHER: Compensate Resource Contribution

Gas: price to
Run contract
transactions

ethereum

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



Ether hedged against other
crypto / FIAT currencies
price changes

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

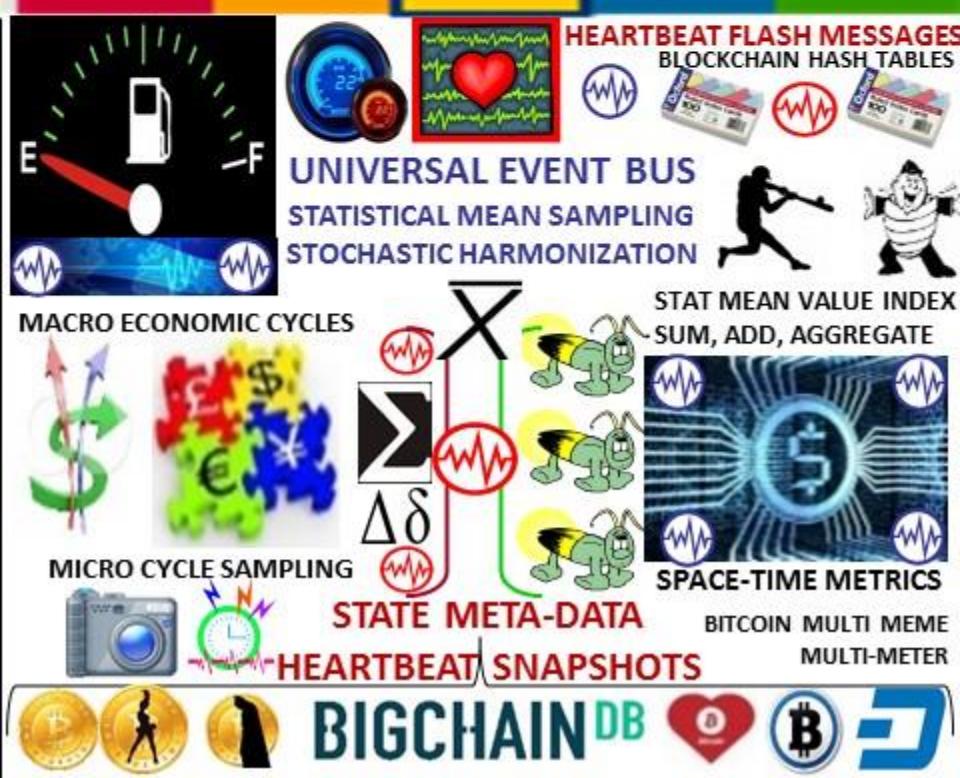
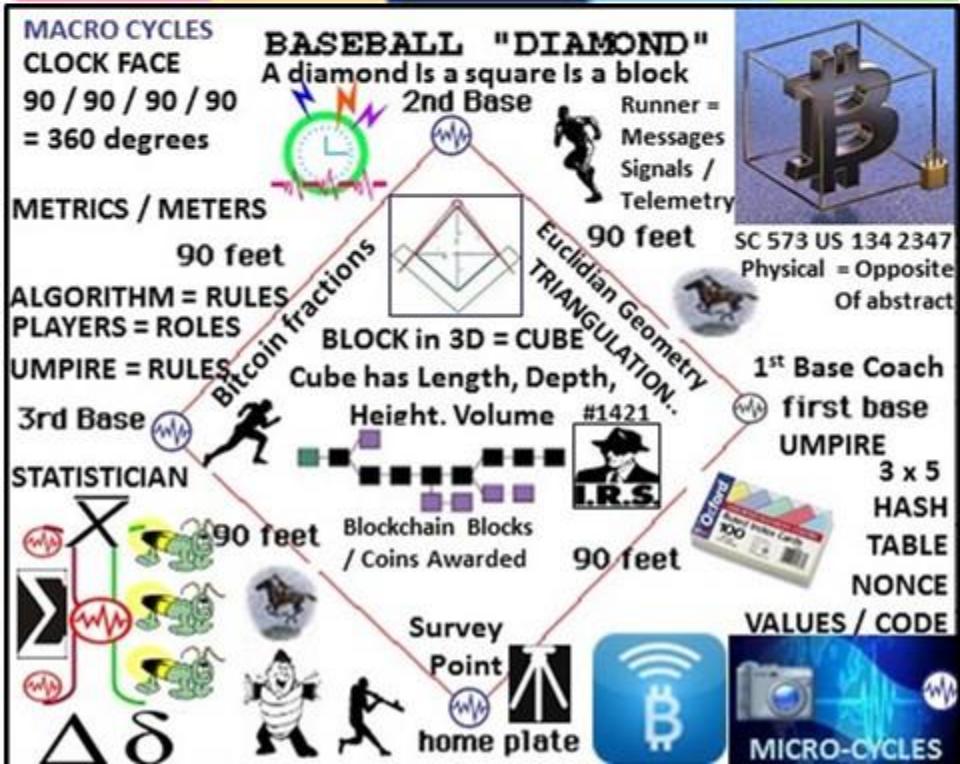
EVENTUALLY

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

SWARM
(storage)

WHISPER
(messaging)

EVM
(consensus)



MACRO CYCLES
CLOCK FACE
90 / 90 / 90 / 90
= 360 degrees

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

X

90 feet

Blockchain Blocks / Coins Awarded

90 feet

Survey Point

home plate

$\Delta \delta$

TRANSACTIONS

PER CYCLE

METRICS

cycle n

COMPUTER CHIP EPOCHS

n + 1

n + 2

SPATIAL

TEMPORAL Series

t₁ t₂ t₃

PROOF-OF-STAKE

UXTO

Mined Bitcoins

Unmined Bitcoins

Survey Methods

Proximity Beacons

MICRO-CYCLES

CALENDAR

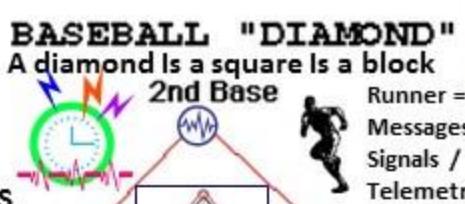
Unmined Bitcoins

Radar

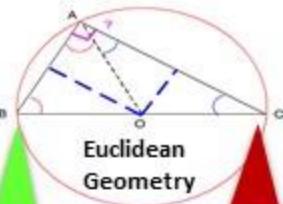
UTXO: unspent transaction output'. bitcoins sent somewhere

but not yet spent. Unspent transaction output set= latest

STATE of every Bitcoins ever mined" % Block Mined / % Block owned



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



NAMED DATA NETWORKING

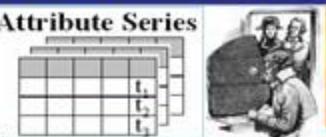
Time Series

Value ↑ Time

FIX {"108"} ↓

time ↑ distance →

NDN



Digital Asset Modeling Language DAML ("INTEREST")

Contract Description Language CDL ("DISTANCE")



1: prove coin ownership <Org_ID> Coin Issuer

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

3: NIST Random # Beacon Non-Repudiation

4. Issuing {"Org_ID"} adjudicates w buyers



FIREFLY-HEARTBEAT

ALGORITHM EVENT BUS

O'REILLY

Time Series Databases

CALENDAR

Time Series Databases



IRS Memo #1421

Bitcoin purchase

= property

CALENDAR

Unmined Bitcoins

Radar

UTXO: unspent transaction output'. bitcoins sent somewhere

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STATE of every Bitcoins ever mined" % Block Mined / % Block owned

CALENDAR

Time Series Databases

CALENDAR



STATE: stored data at a given instant in time

STATE CHANNELS: blockchain interactions

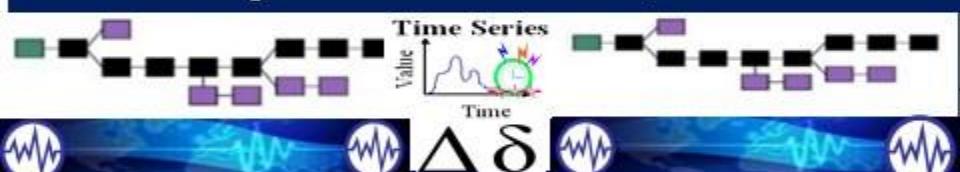
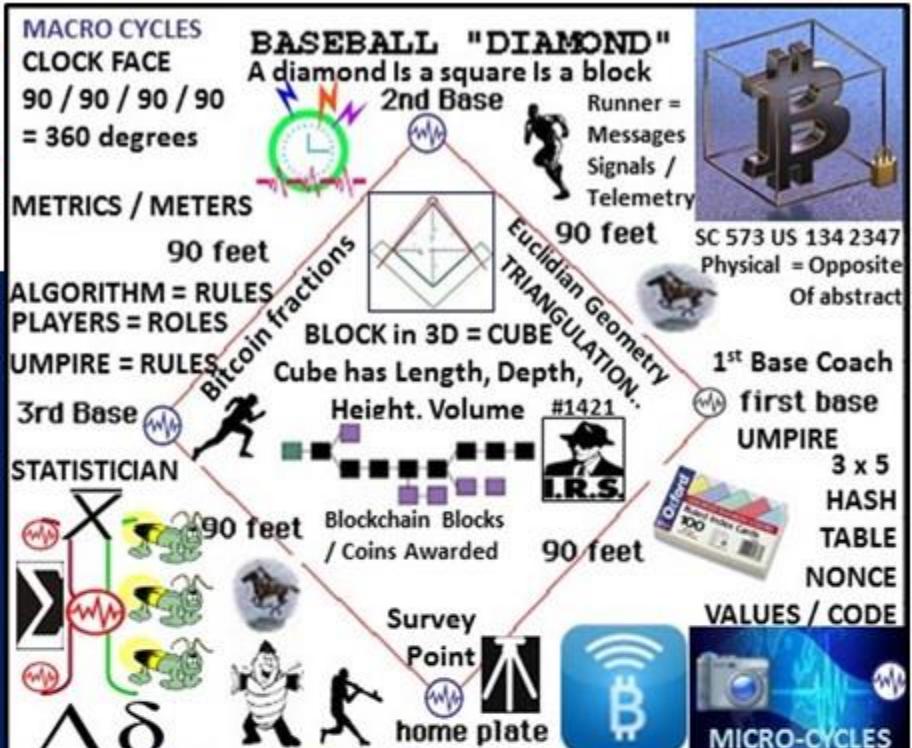
which could occur on the blockchain, but instead get conducted off of the blockchain, without significantly increasing the risk of any participant.



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/>





PROOF-OF-WORK



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



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



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

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



GUESS stores the guess
Effectively, it begins at infinity.



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

OREILLY Time Series Databases



FIREFLY-HEARTBEAT ALGORITHM STOCHASTIC HARMONY ACROSS TIME ZONES



- MESSAGE ex:
 - Hashing string
 - Hash Table

300+Message Templates



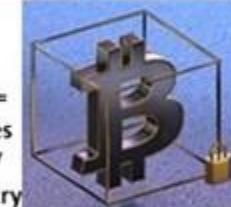
LOGIC FILTERS
LOGIC GATES

SYNTAX LIBRARY
LEXICON

CODER'S GUIDE

MACRO CYCLES
CLOCK FACE
 $90 / 90 / 90 / 90$
= 360 degrees

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

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

X

Σ

Blockchain Blocks

/ Coins Awarded

90 feet

Survey Point

home plate

Δ

Σ

Δ

Euclidian Geometry
TRIANGULATION..

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

#1421

1st Base Coach
first base
UMPIRE

3 x 5

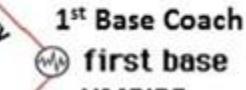
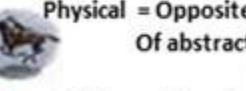
HASH

TABLE

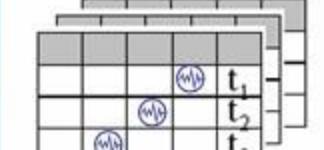
NONCE

VALUES / CODE

MICRO-CYCLES



POW PAYLOAD :
COMBINATIONS OF
ENCRYPTED SYNTAX
Attribute Series





ETHER: Compensate Resource Contribution

Gas: price to
Run contract
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ethereum

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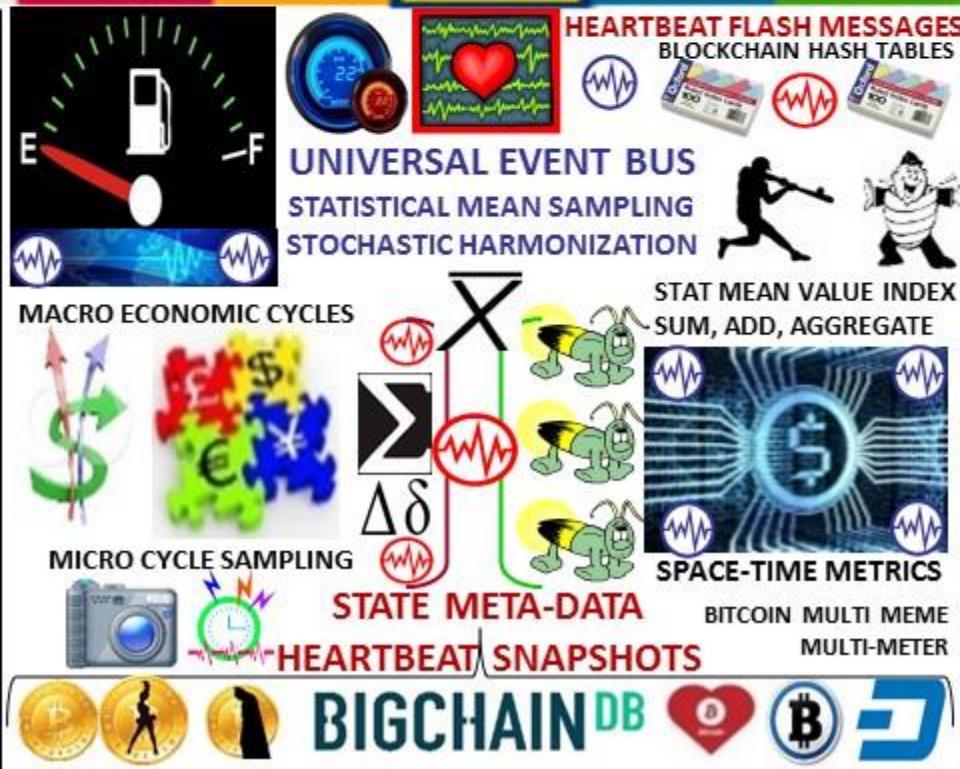
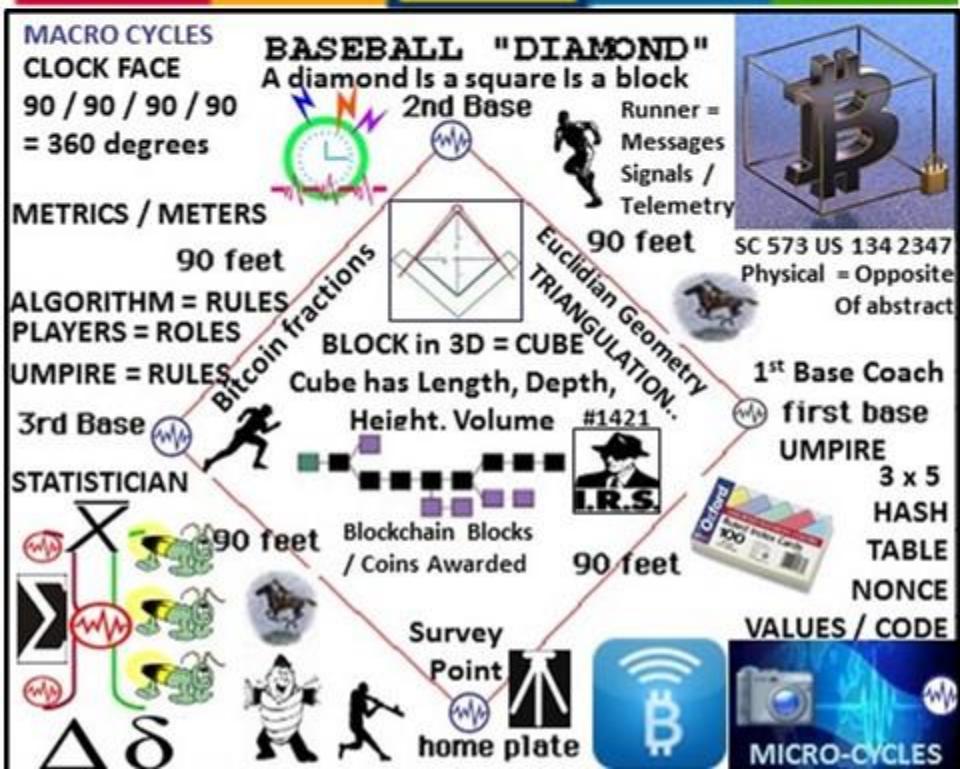
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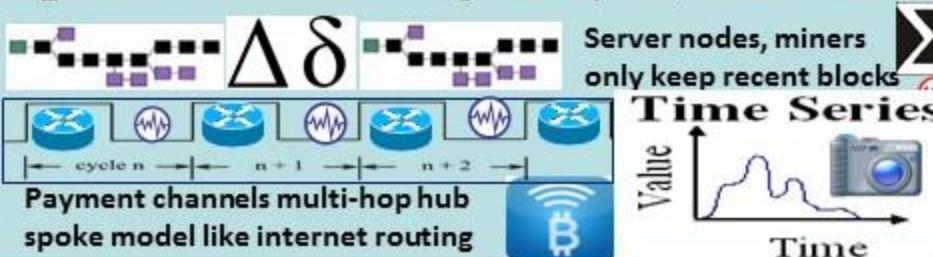


PROJECT LIGHTING



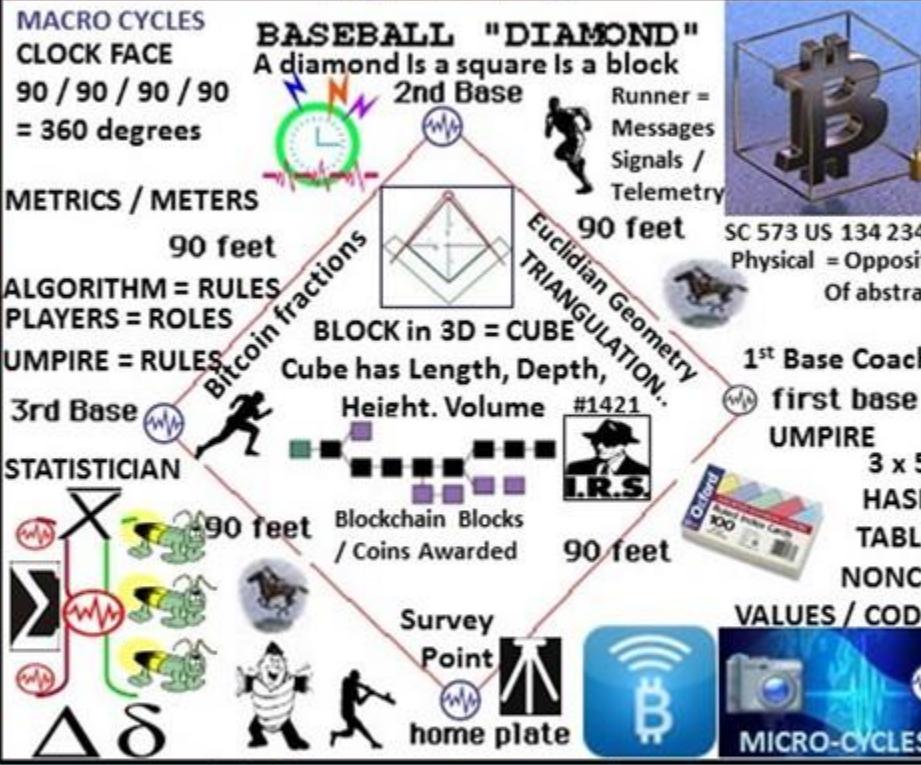
Hashed TIME LOCK contracts component for global consensus

OP_CHECKLOCKTIMEVERIFY During Macro Cycle w/Random # BEACON



FIREFLY – HEARTBEAT ALGORITHM





Segregated witness = Separated signatures

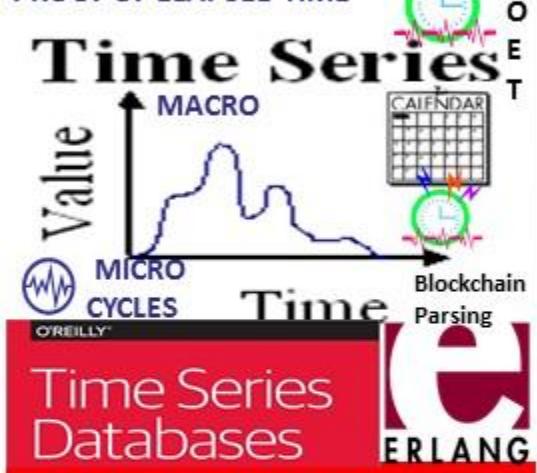
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signatures are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a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

SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

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



PROOF OF ELAPSED TIME



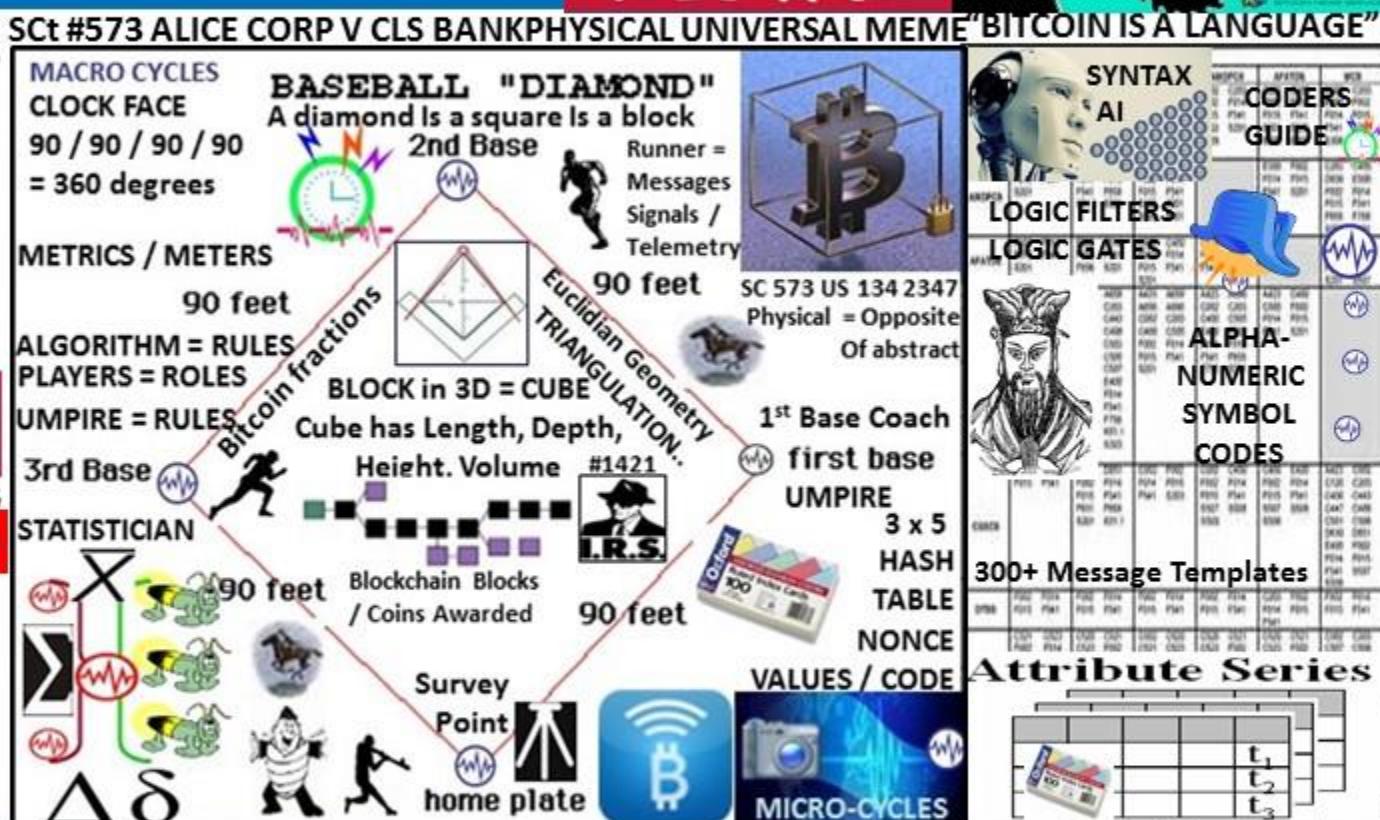
Voting Based Selection: stake size & block generators selected by votes

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



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

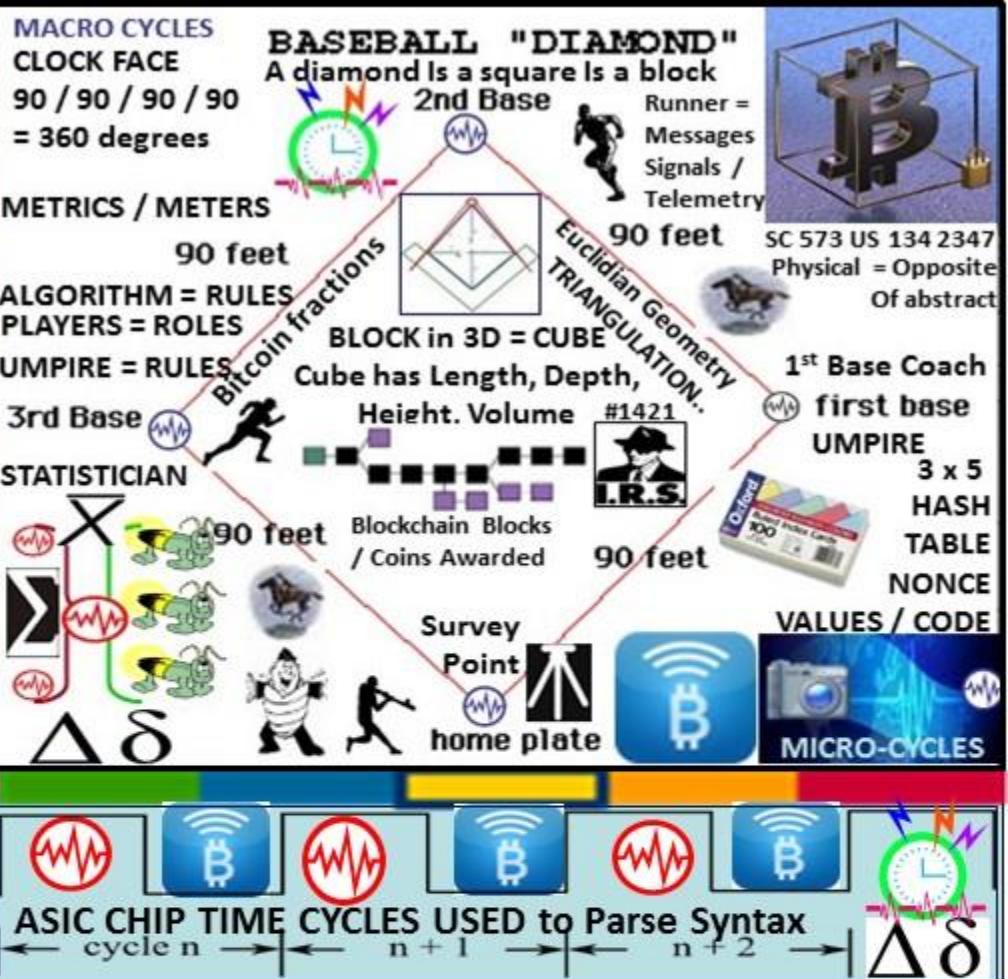
Transaction ID, Block ID, time-stamp, BWAP per block, Value in USD. BTC per transaction, bitcoin transaction fees per transaction

- 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'



FIREFLY – HEARTBEAT ALGORITHM UNIVERSAL EVENT BUS

MATCH EVENTS TO CLOSEST HBC

API CODE INSTRUCTIONS



UTZ TIME ZONE TIME SYNC

EVENT BUS

IRS #1421

Purchased Coins

Mined Bitcoins



Unmined Bitcoins

STATE META DATA SNAP SHOTS

DASH



"All decentralized, blockchain-based networks are DAOs, or decentralized autonomous organizations" Bitcoinist

"A DAO can be summed up as an organization of people who communicate with each other via a "network protocol," which is to say that they communicate with one another via a ruleset"

[LINK](http://bitcoinist.net/how-dash-dao-work/) <http://bitcoinist.net/how-dash-dao-work/>

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

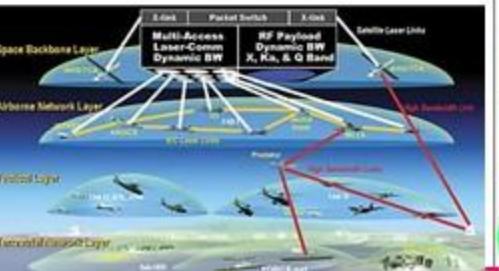
"Its makeup is thus: the block reward is divvied up in three parts. The first 45 percent goes to [Dash's miners](#). Another 45 percent goes to its Masternodes. And 10 percent is set aside to fund whatever other jobs or expenditures the Dash network deems necessary"

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

Masternodes receive payments for their service to the network.

DAO: RAND THINK TANK TERM COINED + / - 2001

NETWORK CENTRIC WARFARE
Developing and improving information superiority



MACRO CYCLES
CLOCK FACE
90 / 90 / 90 / 90
= 360 degrees

METRICS / METERS

90 feet

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3rd Base

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Blockchain Blocks / Coins Awarded

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home plate

$\Delta\delta$

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



Euclidian Geometry TRIANGULATION..

1st Base Coach first base UMPIRE

3 x 5 HASH TABLE

NONCE

VALUES / CODE

MICRO-CYCLES



STOCHASTIC HARMONIZATION FIREFLY-HEARTBEAT EVENT BUS

HEART BEACON CYCLE = IMPROVEMENT TO NETWORK CENTRIC WARFARE



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



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

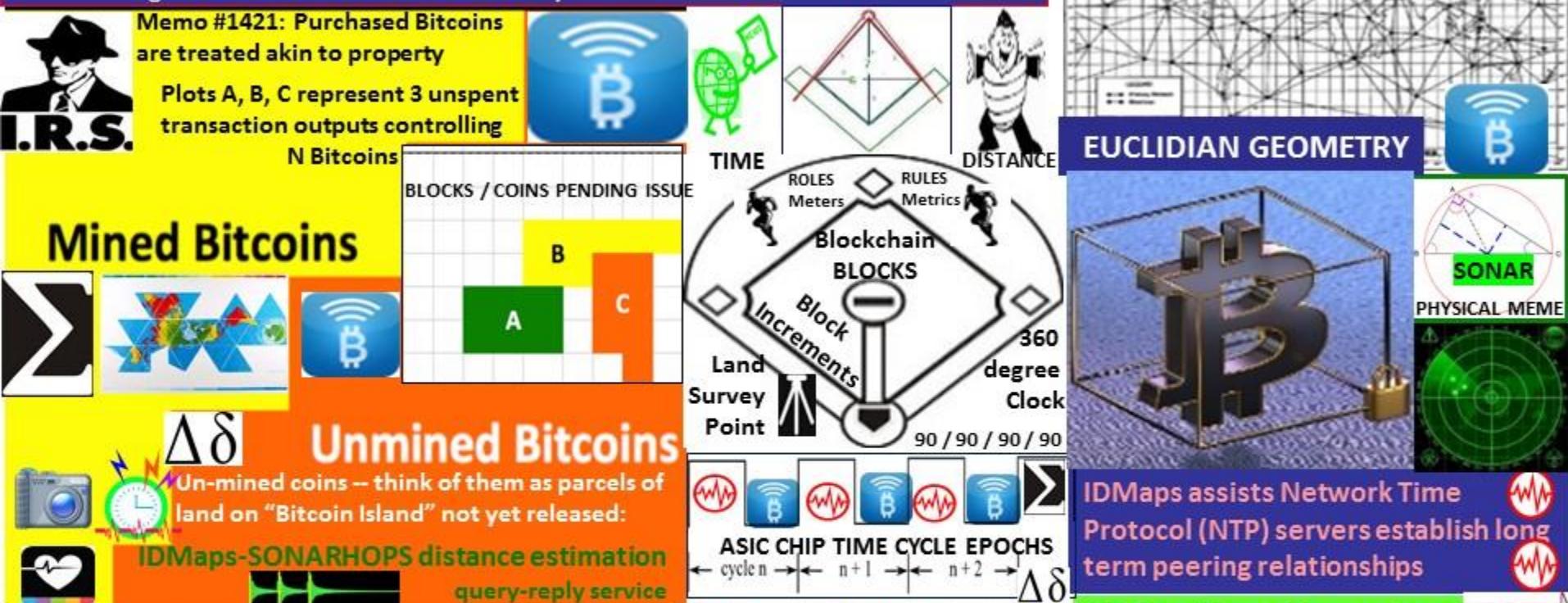
HEART BEACON CYCLE

USPTO 13/573,002

SURVEY METHODS

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

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



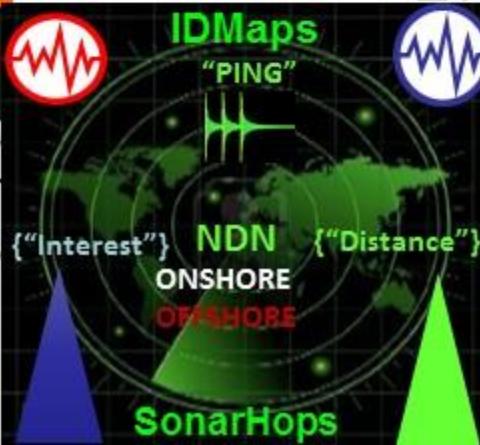
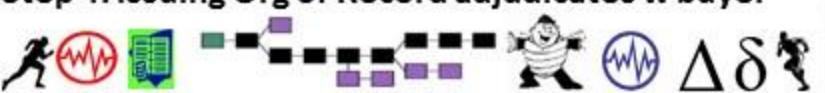
- End-state Bitcoin quantity will be fixed like land
"Bitcoin as protocol of ownership, not transfer"
Coins never travel, but simply switch owners"

Step 1: prove coin ownership <Org_ID> Coin Issuer

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

Step 3: specify ownership <Org_ID> issuing agent

Step 4: Issuing Org of Record adjudicates w buyer



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



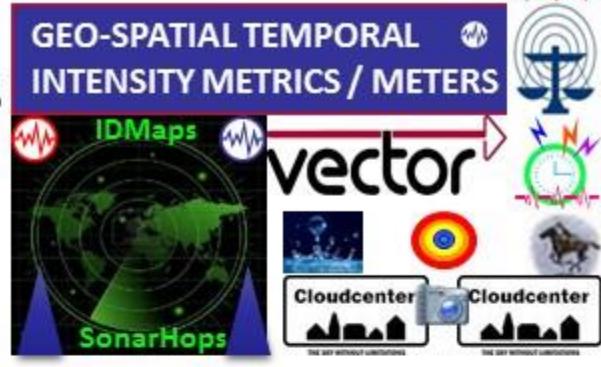
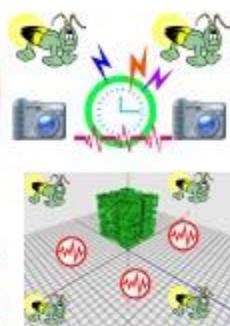
IDMaps Distance Metrics: latency (round-trip delay) available bandwidth estimation



IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



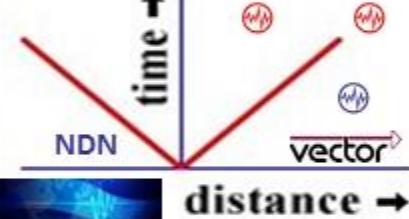
HOP COUNTS



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

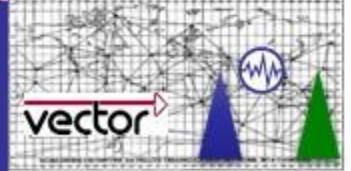
NDN RIB

NDN INTEREST LENGTH
= DISTANCE BY HOPS

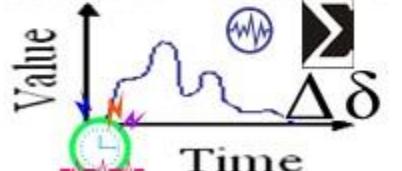
NDN
INTEREST

IS DATA
FRESH ?

TRIANGULATION



Time Series



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

Datasets and Event Notification

INTEREST in <URNs>

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



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



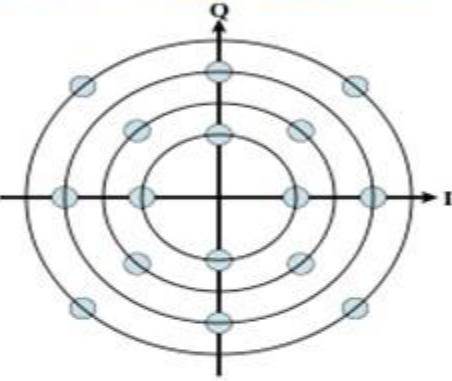
MICRO-CYCLES



NDN INTEREST LIFETIME = TTL Time To Live
HEARTBEAT STATE META DATASNAP SHOTS



www.RLighthouse.com



Quadrature amplitude modulation

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

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

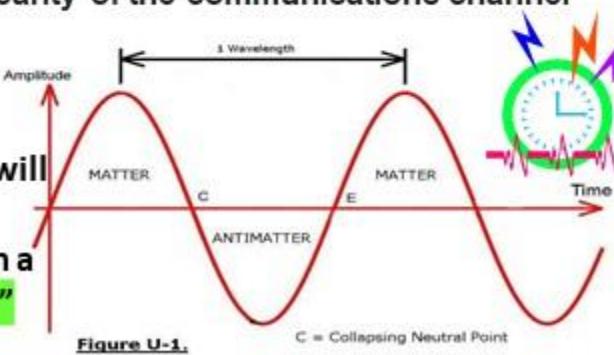


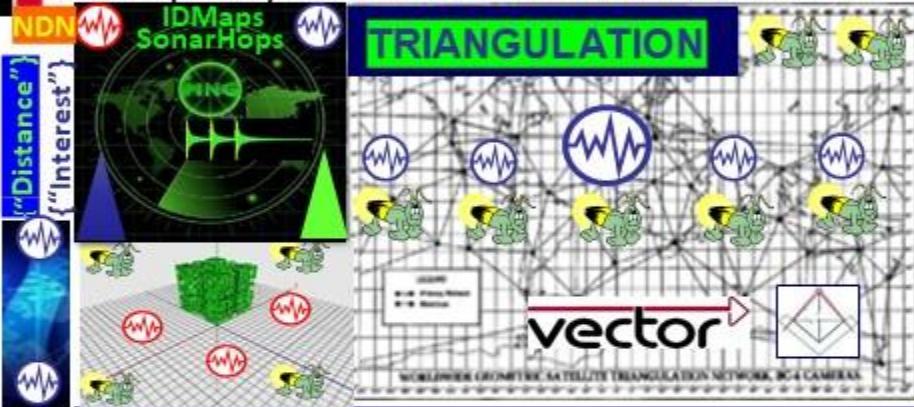
Figure U-1.

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

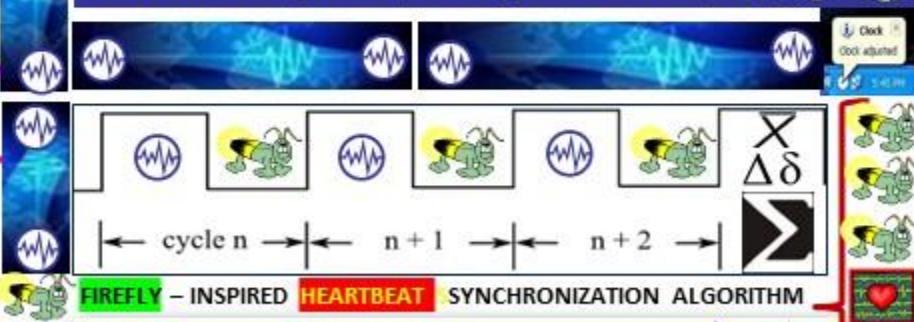


USPTO 13/573,002
sawconcepts.com/index

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



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



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

13/573,002 HEART BEACON CYCLE

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

The four dimensions of Big Data

vector → 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



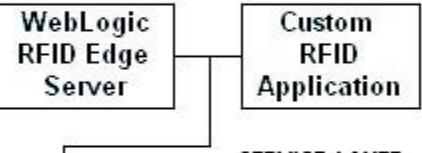
Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data

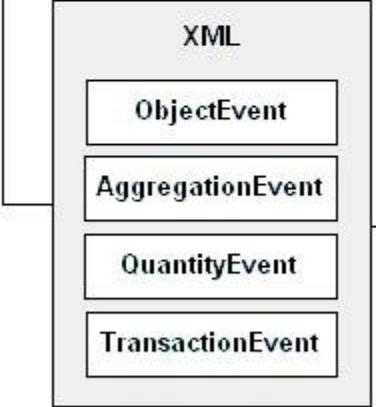


Epcis

EPCIS DATA MODEL



SERVICE LAYER



Core Business Vocabulary (CBV)

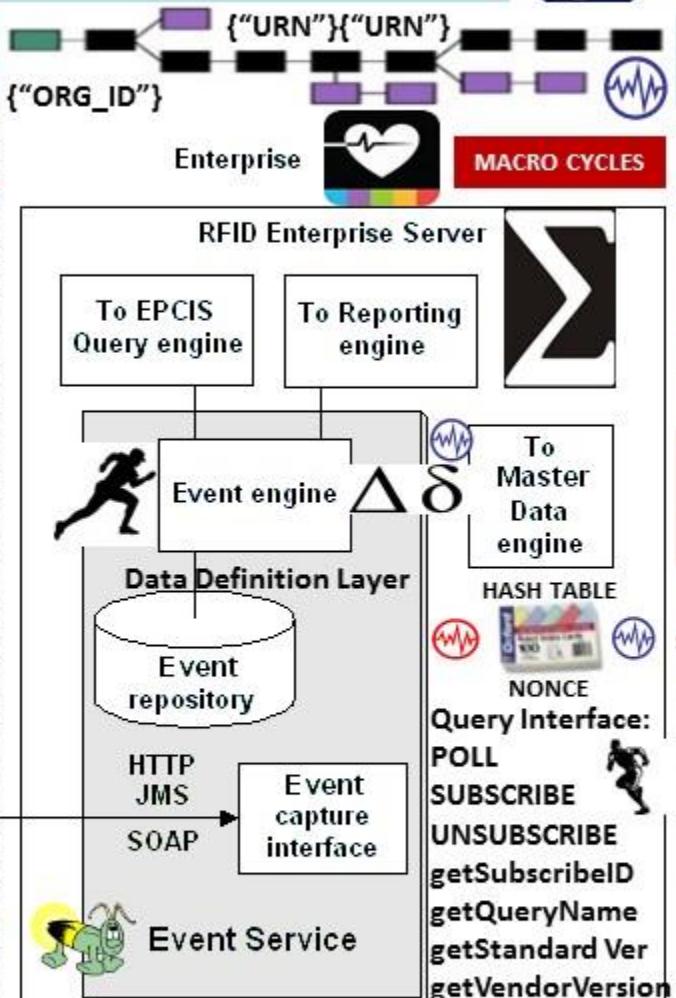
What identifiers of object(s) or entities / subject of the event

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

$\Delta\delta$



BIZ USE CASES
ALPHA NUMERIC BREVITY CODES

SYNTAX LEXICON CODE GUIDE



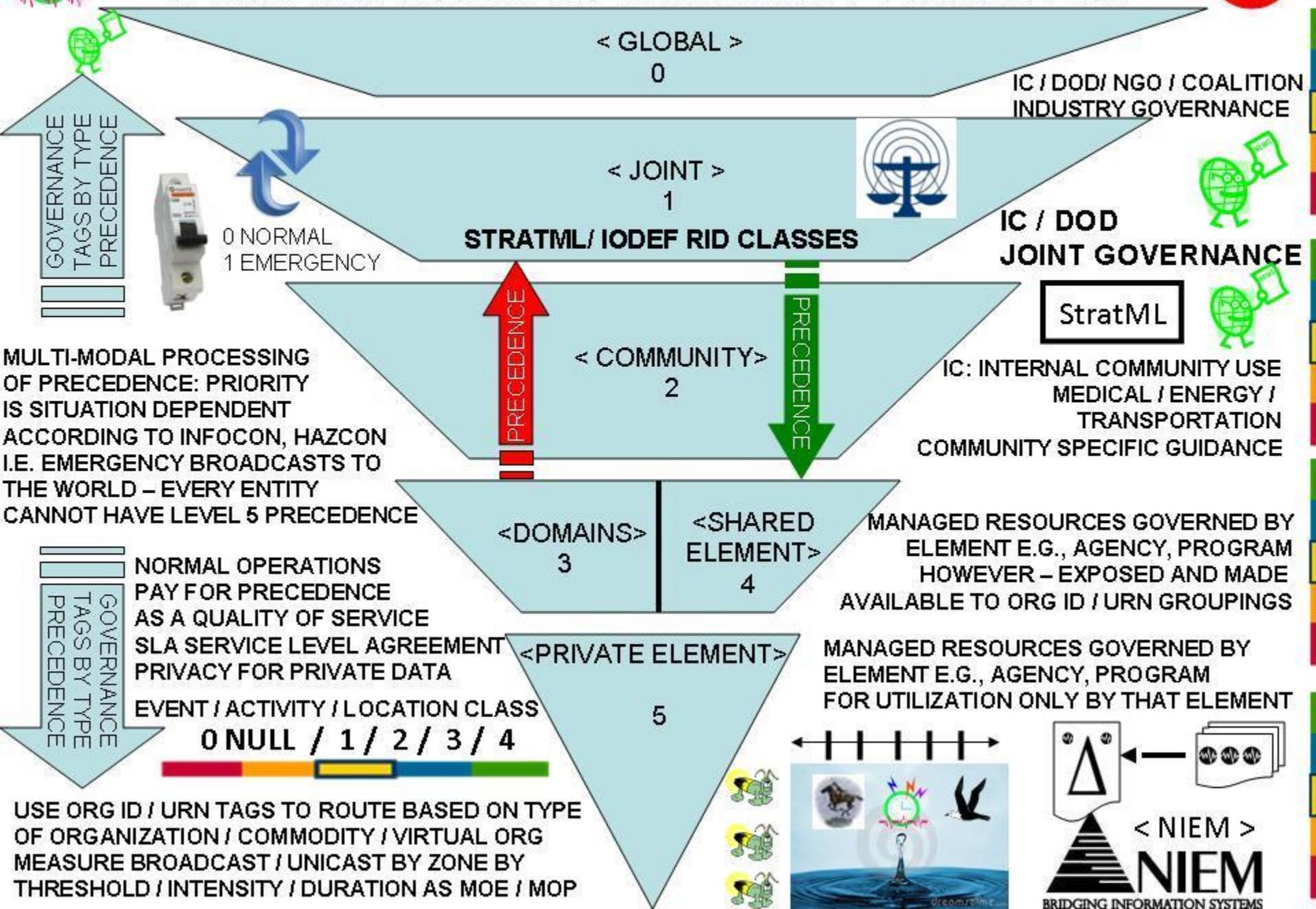
!st Compiler DESIGN Still the BEST



ROSETTA STONE



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>

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

STRATEGIC
MARKUP

StratML

LANGUAGE

IODEF

Analysis Center

INVENTORY: Uniform Resource Name <URN>

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



vector

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

GEO-SPATIAL TEMPORAL INTENSITY METRICS

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

GEO-SPATIAL TEMPORAL
INTENSITY METRICS / METERS



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

CONTENT LEXICON
ROSETTA STONE

NDN

<INTEREST>



NDN

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

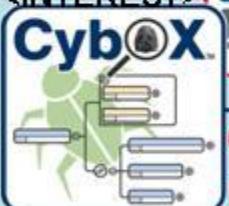
A V A L A N C H E

SHARING:

COMMON <TAGS>
<Organizational_ID>
Resource Names <URN>
<Time_Stamps>
<State-Meta_Data
<DATA_CLASS_TYPE>
<Heartbeat_snapshots>

NDN

<INTEREST>



<INTEREST>

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

CYBER SECURITY CONTENT
LEXICON ROSETTA STONE

MIL-STD 2525A
STRUCTURED <CONTENT> TEMPLATES

<TAG> LIBRARY
TEMPLATES

NAMED DATA
NETWORKING

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 logically
well specified and unambiguous layout i.e., templates

<TAG>
LIBRARY





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

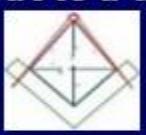
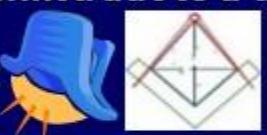
OPENBAZAAR.ORG
BLOCKCHAIN ARBITRAGE



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

• VALUES:



HASH Values
Nonce Values

SCT Alice V Cls Bank



Federation

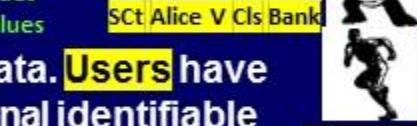
Gateway



• Privacy

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

Bitcoin: OpenBazaar transactional currency



</DATA>
("FILTERS")

FIREFLY - HEARTBEAT ALGO

SYNC EVENTS

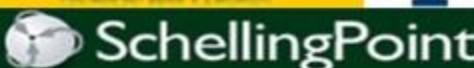
UTZ SYNC

TO CLOSEST HB CYCLE



Cryptographic Security

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



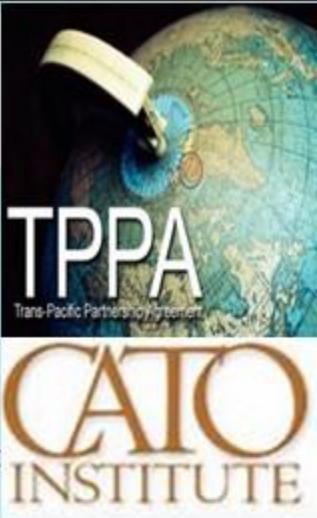
Non-
Repudiation

SchellingPoint

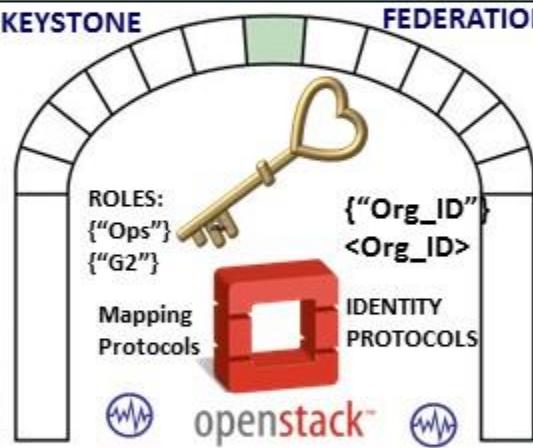
NIST Beacon
A Public Randomness Service



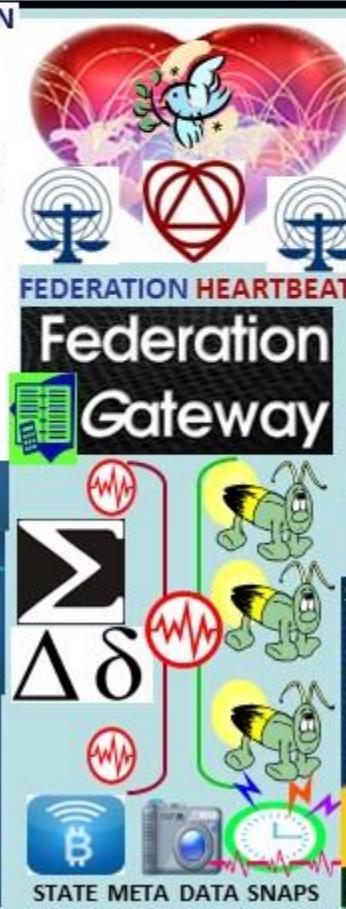
Trans-Pacific Partnership is great for elites. Is it good for anyone else? by [Timothy B. Lee](#) on April 17, 2015



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



The diagram illustrates the concept of system integration and the system of systems. At the top, the text "THE DAO IS AUTONOMOUS." is displayed in white. Below it, a central horizontal bar is labeled "SYSTEM OF SYSTEMS". This bar is connected to various icons representing different systems: a house, a laptop, a smartphone, a car, a factory building, a battery, a truck, and a person. The background features a blue gradient with abstract shapes, and there is a small circular icon with a waveform at the bottom left.



The collage includes the following elements:

- ALGORITHMIC REGULATION
- DFINITY NEURAL NET
- ECOHEART
- ECONOMIC HEARTBEAT
- COMMODITIES
- currencyindex
- MONEYBALL ECONOMICS
- SHELLING POINT TRUTH
- CONTRIBUTIONS TO STATISTICS
- Price Indexes in Time and Space
- Methods and Practice
- SchellingPoint
- ethereum

Other visual elements include a heart with a blue infinity symbol, a heart with the number "108", a Bitcoin icon, a 3D Bitcoin logo inside a glass cube, a blue infinity symbol, and a green diamond shape.



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

UTZ Stochastic Harmonization

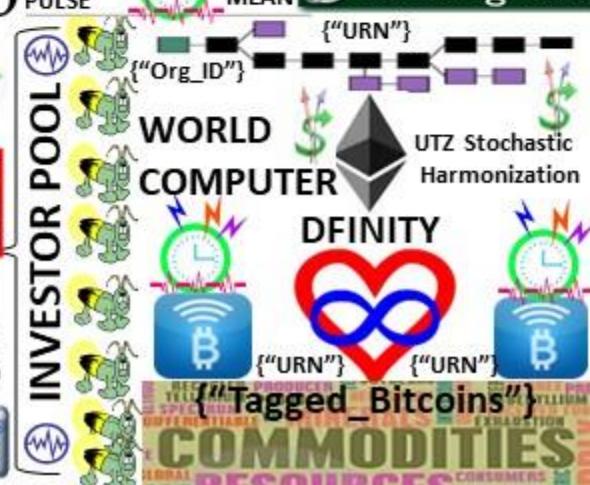
FINANCIAL
NOSTRADAMUS
REGGIE MIDDLETON



ECONOMIC HEARTBEAT
STATISTICAL MEAN VALUE INDEX PULSE



SHELLING POINT TRUTH

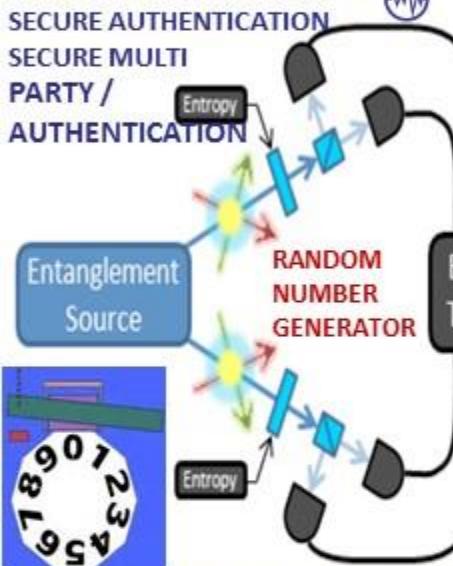


NIST RANDOMNESS BEACON: broadcast full-entropy bit-strings in blocks of 512 bits every 60 seconds. Each value is time-stamped, signed, & includes hash of previous value to chain sequence of values together. This prevents all, even the source, from retroactively changing an output packet without being 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

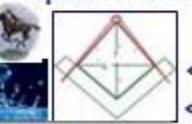
UNPREDICTABLE SAMPLING



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

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

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

Stochastic Harmonization



The proposed Universal Timezone System would do away with all these different time zones and instead use a single global time zone based on UTC.



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

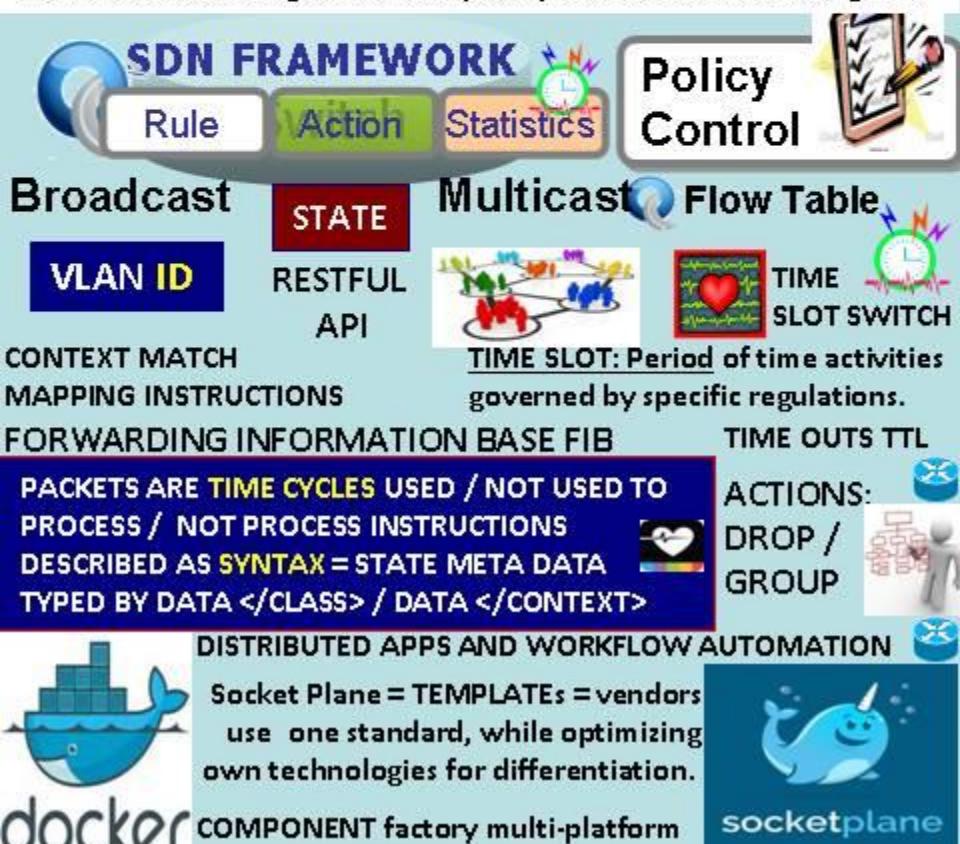
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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

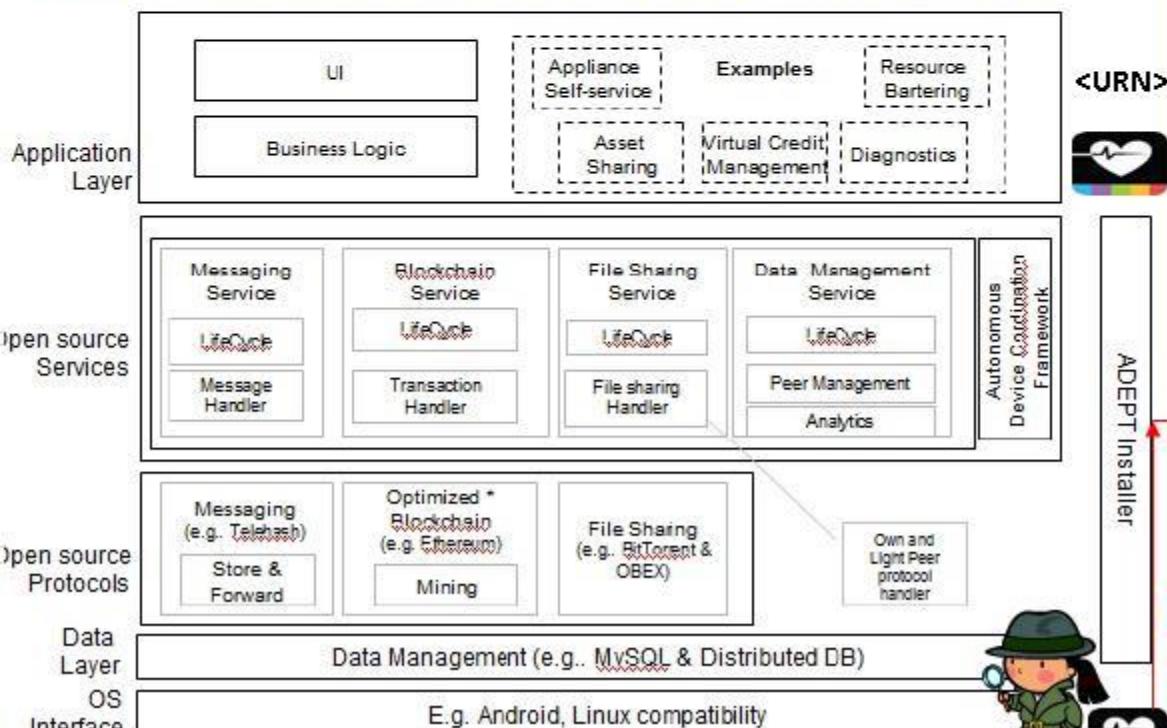
Payments

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

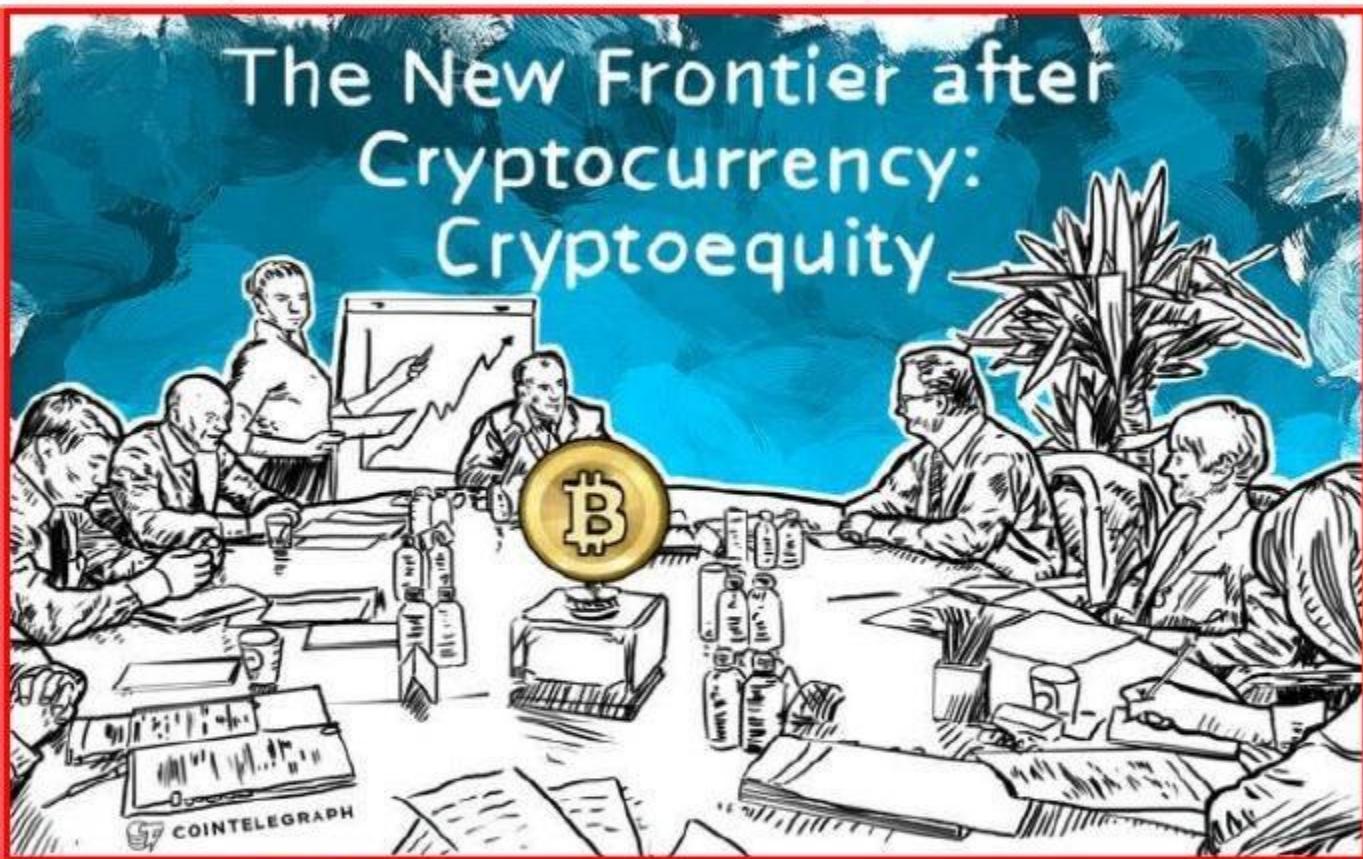


OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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

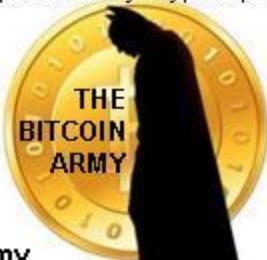


Eris -- The Dawn of Distributed Autonomous Organizations and The Future of Governance



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/>

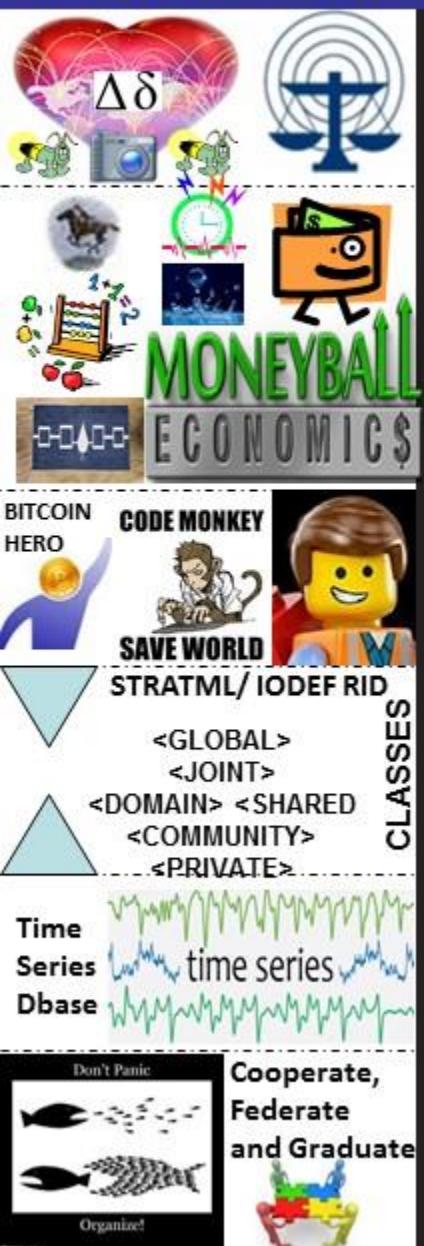
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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

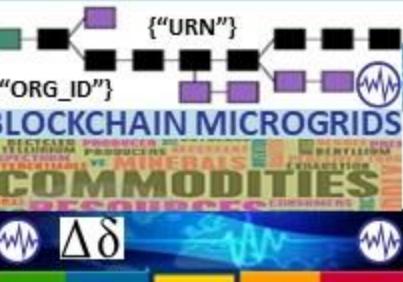
TAG	vector	ENERGY TOKENS ExDesc / COMMODITIES	digitalset
{"Org_ID"} ActiveID		[UFO2_ACTIVEID]	</EVENT>
IF1_Heartbeat (IF-Node1)		[UFO2_HEARTBEAT:#]	</EVENT>
IF2_Heartbeat (IF-Node2)		[UFO2_HEARTBEAT:#]	</EVENT>
{"UUID"} IF1_DeviceStatus (IF-Node1)		[UFO2_DEVICESTAT:#]	</EVENT>
{"UUID"} IF2_DeviceStatus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



TOKENIZED ECONOMY

↔

Paul Revere = Linear, Sequential meme



$\Delta\delta$



Geo Spatial

Temporal Series

Water Drop Meme

Geospatial Radius

WATER DROP

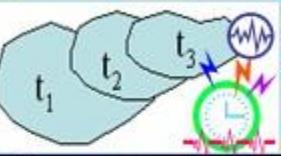
MEME= RADIUS

DISTANCE FROM

ENERGY SOURCE

Micro Payments

Demurrage Fees



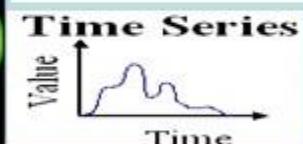
CLOSER = < CO2



BLOCK TIME – SPACE ARBITRAGE TRADE
ENERGY TOKENS FOR FOOD, WATER,
TRANSPORTATION LOCALLY, REGIONALLY



IEC 61850 Objects logical nodes, data
objects or data attributes resends
message with the heartbeat cycle



Unilnt does
not examine
the remaining
attributes, the
point source
and location
must match
Micro Payments
Demurrage Fees

Heartbeat
State meta
Data snapshots

IEEE 802.1AG HOP BY HOP DETECTION
IEEE 802.11 HbH HOP BY HOP CONTROL

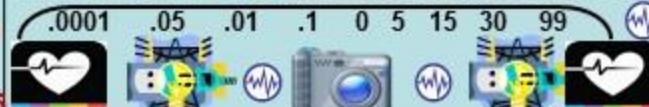
< HOPS = CHEAPER Sync Delta Heartbeat Messages

CROSS LEVEL OVERAGES / SHORTAGES ADJUST FOR

TIME / DISTANCE BETWEEN NETWORK NODES

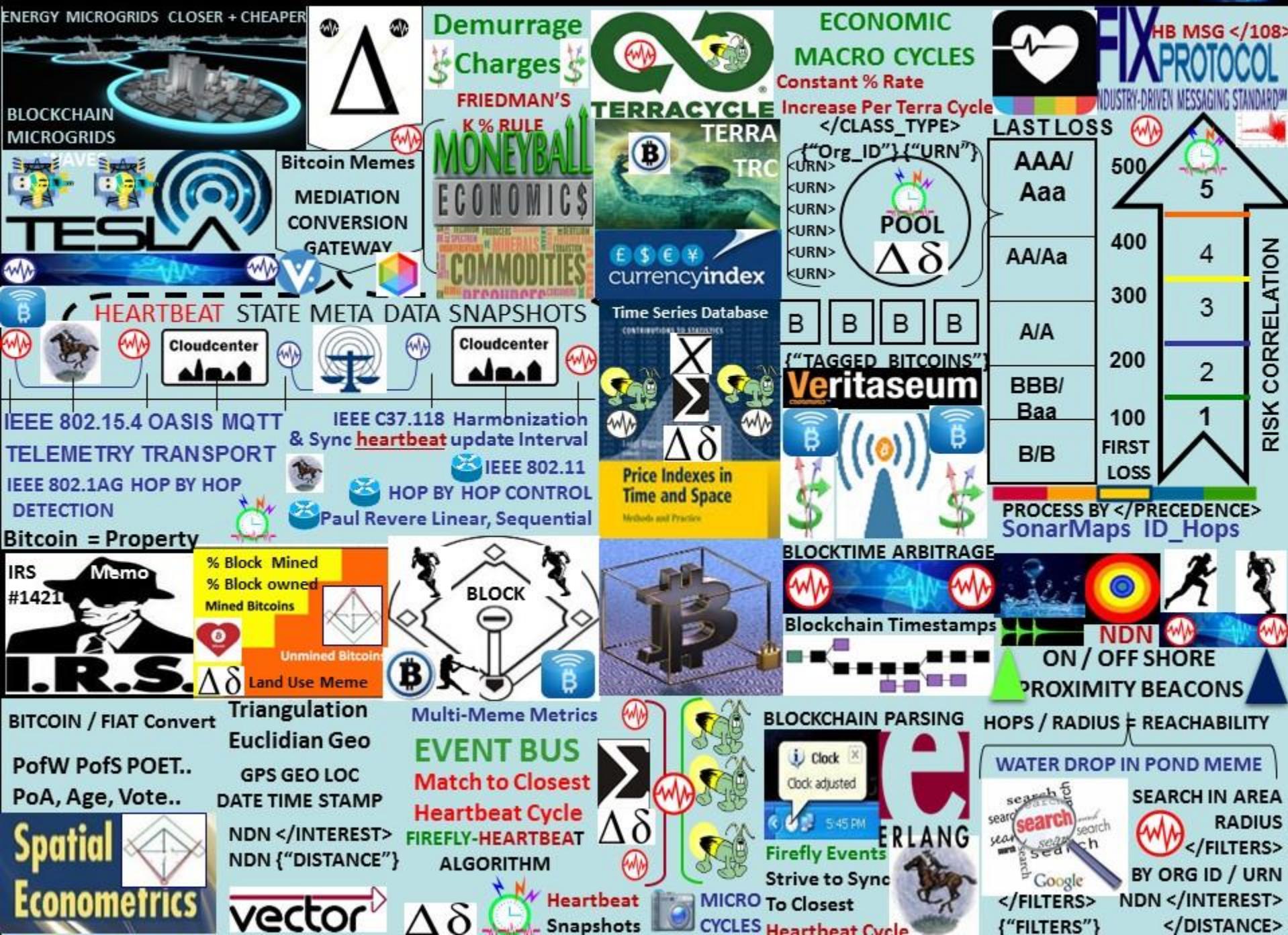


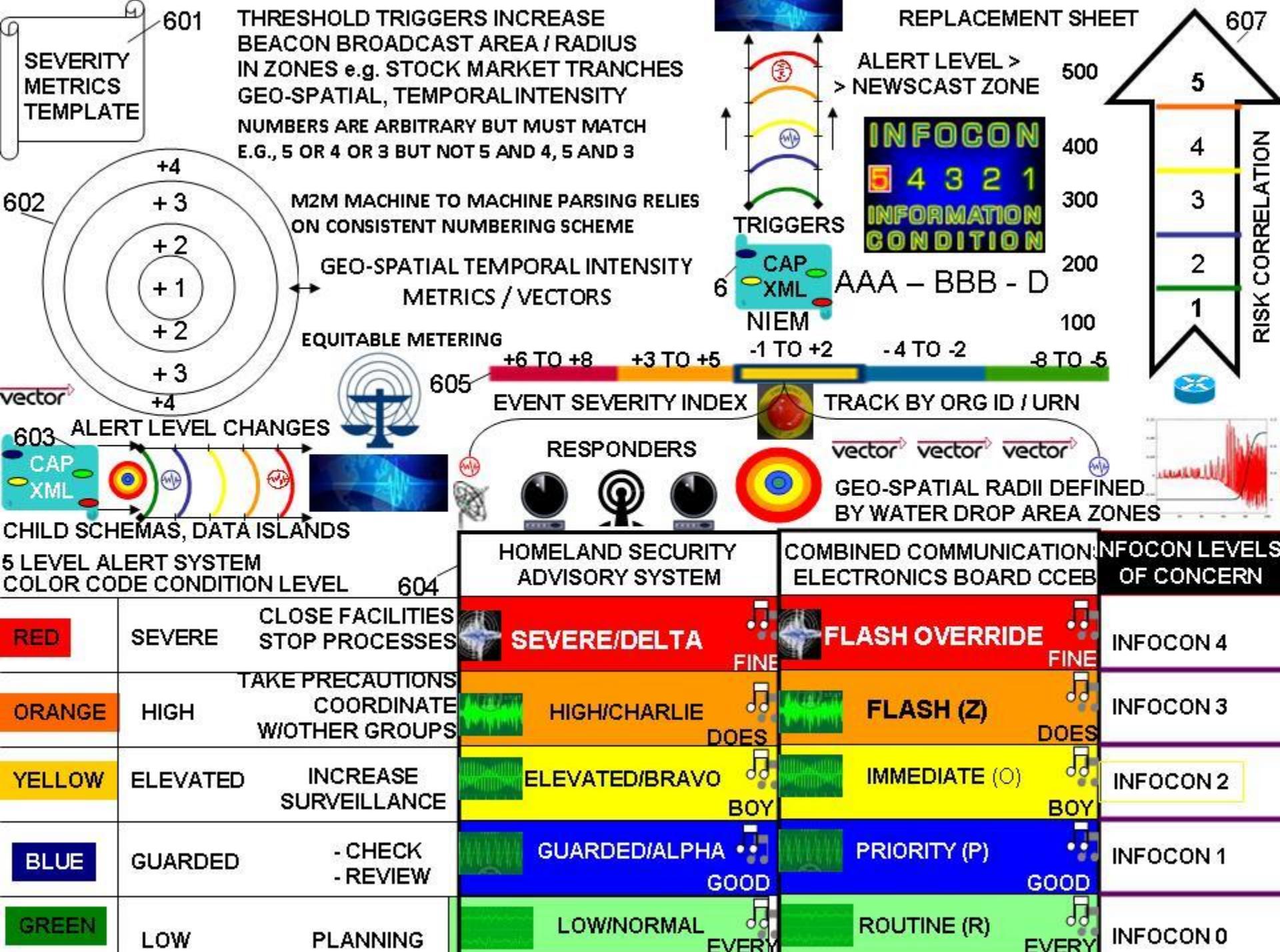
FIREFLY-HEARTBEAT ALGO EVENT MESSAGE BUS



Distance Estimation Service







GEO-SPATIAL TEMPORAL INTENSITY METRICS, METERS, VECTORS



INFOCON / DEFCON ALERT EVENTS INFORM STAKEHOLDERS OF STATUS CHANGE i.e., NORMAL TO ELEVATED, HIGH OR SEVERE. ALERT LEVELS ARE ARBITRARY BUT MUST BE CONSISTENT e.g., 3 OR 5 FOR MACHINE TO MACHINE PROCESSING



Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:



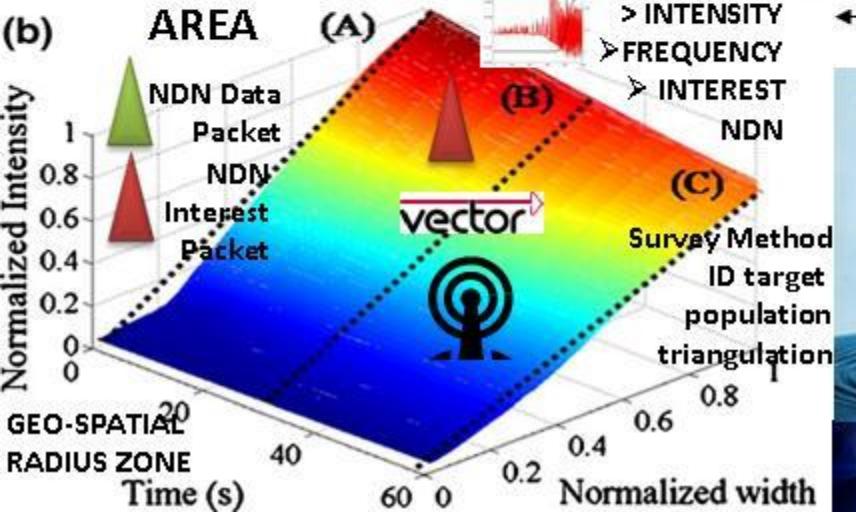
Paul Revere = linear, sequential



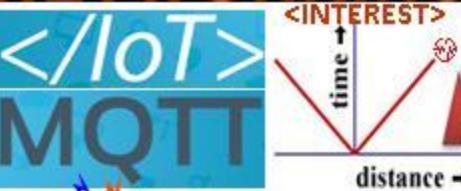
TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY Cyclic Frequency



NAMED DATA NETWORKING



NIST TIME BEACON

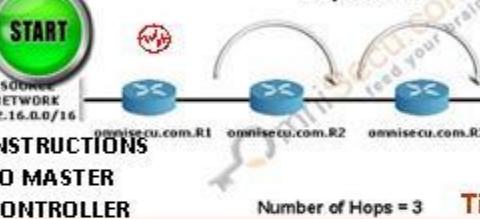
05:08:57

time

distance

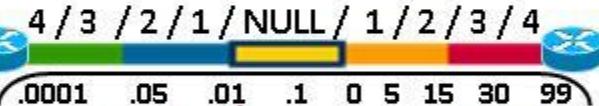
ARRESTED-D

Hop Count



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

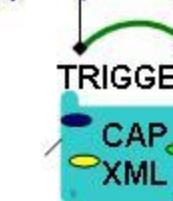
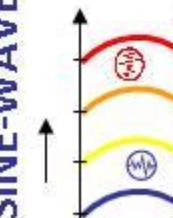
IDMAPS
SONARHOPS
INTERNET
TRIANGULATION



vector WirelessHART

time synchronized,
self-organizing,
mesh Net

ALERT LEVEL >
> NEWSCAST ZONE

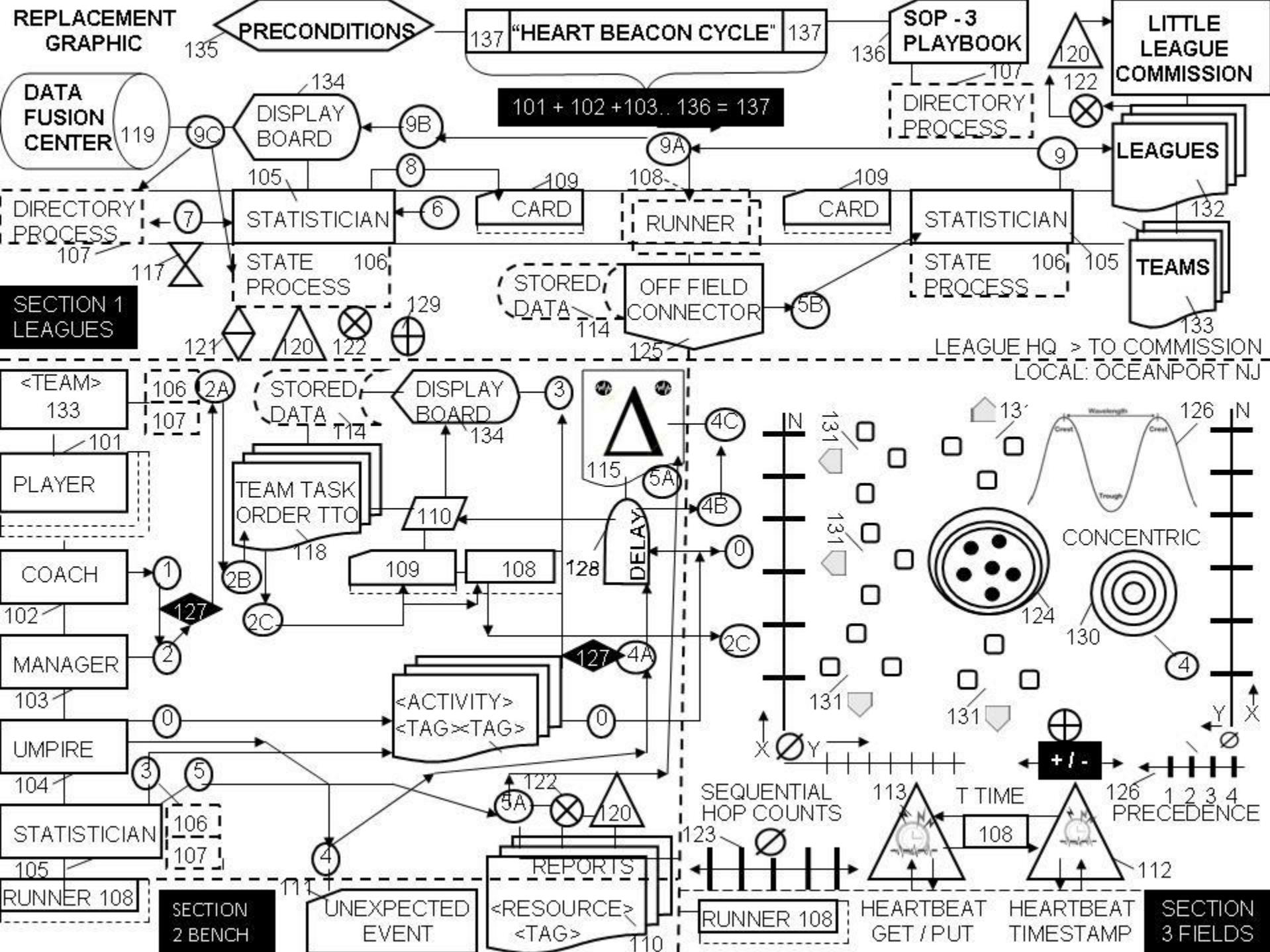


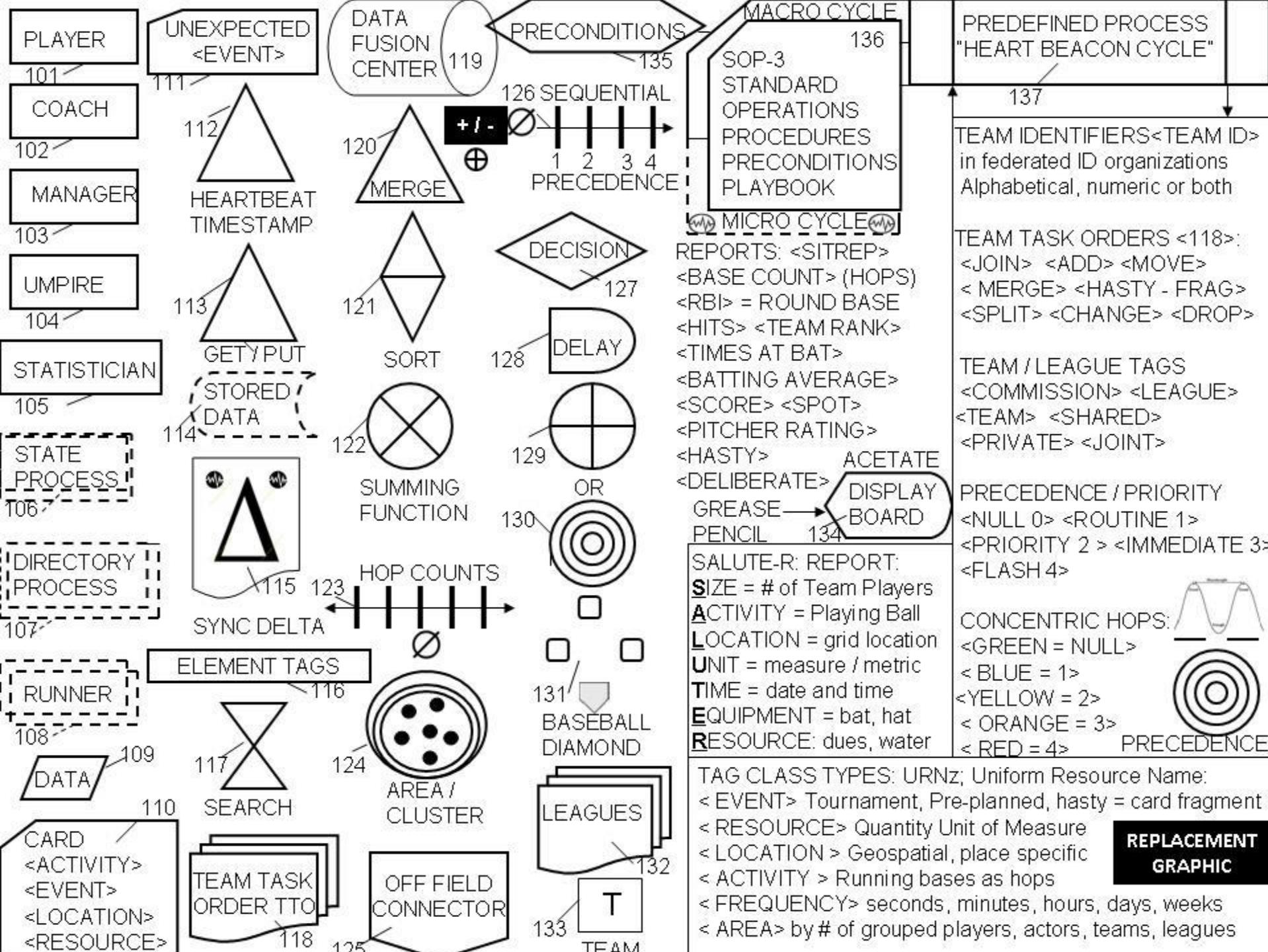
INFOCON
XML
MTF
300 +
MSG
INFORMATION CONDITION



DEFCON / INFOCON

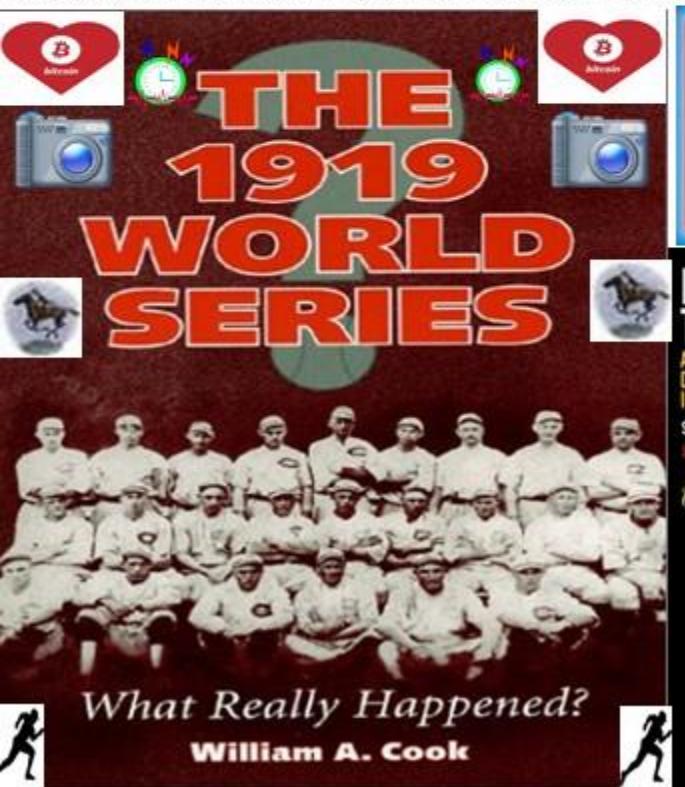
Interface Name	HEARTBEAT Administration Interface [SCOP]		
Documentation URL	http://scop.sourceforge.net/ http://linuxvirtualserver.org/software/index.html		
API Information	     #Big_Data		
#IeT	Functionality Areas	Cloud Interface Management, configuration, start, stop cloud services, edit configuration (heartbeat messages)	
	API Operation Count	 LOCATE <CONTENT> IDMAPS / SonarHOPS  4 / 3 / 2 / 1 / NULL / 1 / 2 / 3 / 4  0.0001 .05 .01 .1 0 5 15 30 90 	
	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>		
"The external environment could update resources at random...One solution is a heartbeat: defining a default lease duration and delaying updates until the next cycle"	   		
QubitCoin Interval: Every 30 Seconds	  		





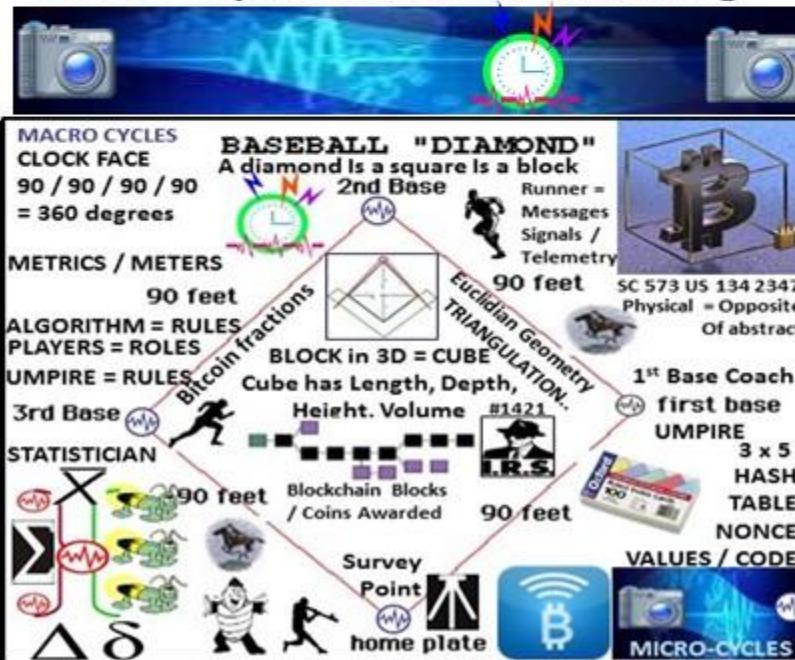


SAW Concepts LLC Owner's Father is from Blackfoot First Nation Native American Indian



USPTO SCREEN CAPTURES SUSPENDED PAIR RULES

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





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

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

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



TIME / DISTANCE SERVICE LEVEL
AGREEMENT SLA / O Operations

IEEE 802.15.4 OASIS MQTT

IEEE 802.11



TELEMETRY TRANSPORT

HOP BY HOP CONTROL

IEEE 802.1AG HOP BY HOP
DETECTION

Unused Resources / Unmet Needs

/localhost/nfd/fib/add-nexthop

Geo-Spatial Temporal

Metrics, Meters

DISTANCE
INFO SERVICE

Time Series

RISK

Value

Time

WATER DROP IN POND MEME IS

SONAR NAVY METAPHOR / MEME

NDN </INTEREST>

NDN {"DISTANCE"}

NAMED DATA

NETWORKING

IEEE C37.118

Harmonization & Sync heartbeat

update Interval

CLOSER SOURCE

CHEAPER RATE

Energy Attenuates over Distances

TCP/IP HOP BY HOP COUNT

Attribute Series

INTEREST DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

$\Delta\delta$

RADIUS

WATER DROP IN POND MEME

INTENSITY

Service Level Agreements

FARHER = More Cost

> Fuel, Resources

STOCHASTIC

HARMONIZATION

ERLANG

TIME- SPACE METRICS

43

22

13

0

Light minutes

Astronomical units

5.2

ANDERSON INSTITUTE

ALPHA NUMERIC BREVITY CODES

SYNTAX LEXICON

K00.99

Micro Grids Closer - Cheaper

Blockchain

MICROGRIDS

BLOCKCHAIN

MICROGRIDS

TIME CYCLES / INTERVALS

EPOCH / TIME CYCLES / INTERVALS

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n + 2

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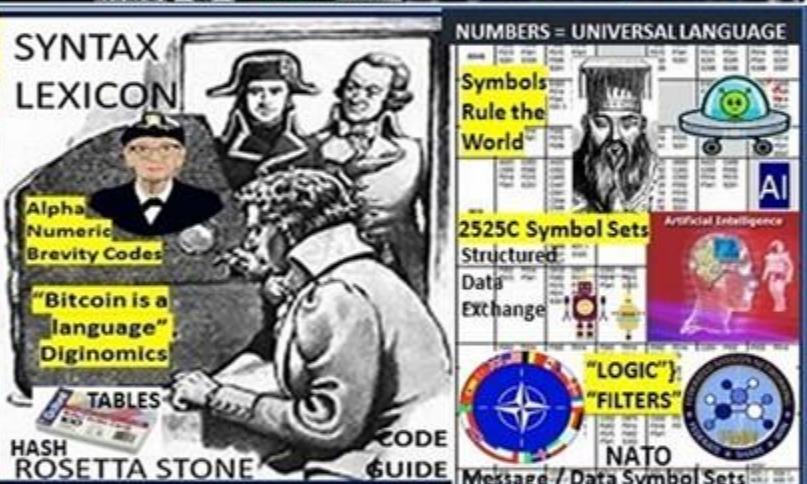
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SIGNALS
Telemetry
ANNEX

r. buckminster fuller operating manual for spaceship earth

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



INCENTIVIZE SUSTAINABLE Eco-Econometrics

ECONOMIC HEARTBEAT

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

Algorithmic Regulation

Stat Mean Value Index

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

TERRACYCLE

Crypto Currency
Micro Payment
Demurrage Fees



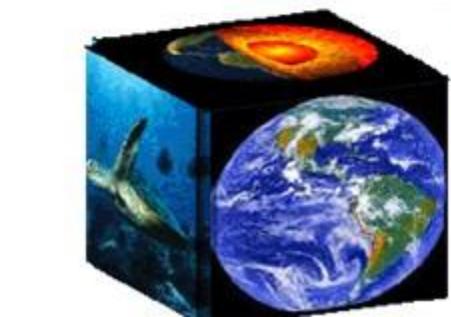
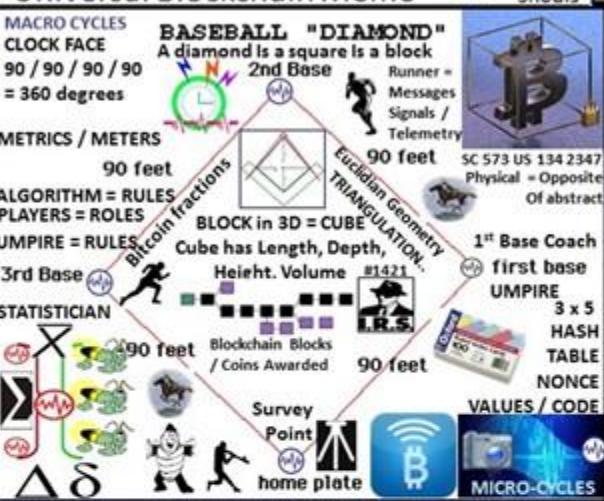
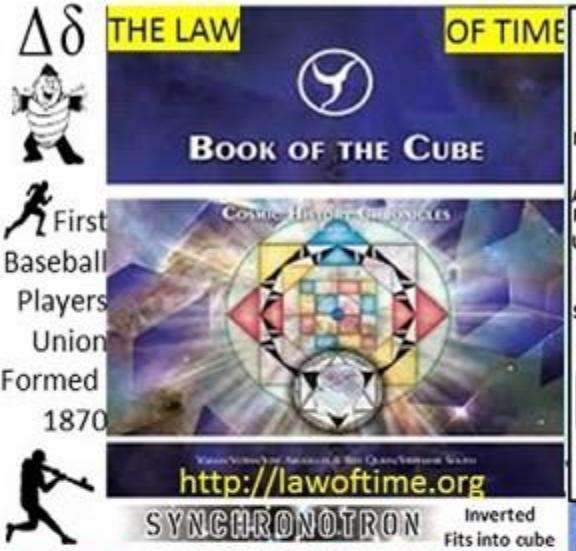
USPTO APPLICATION 13/573 002

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



INSTITUTE OF HEARTMATH®
Empowering Heart-Based Living
<https://www.heartmath.org>



