

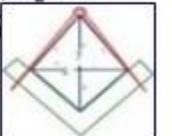
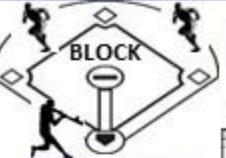


The Heart Beacon Cycle

Time – Space Meter

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

UNIVERSAL
MEME /
METAPHOR



Open
Source
Coder's Guide



SX
SAVE WORLD

SYNTAX
LEXICON

TERRA TRC
300 +
Templates
ROSETTA
STONE

DISTRIBUTED SMART
ECONOMY NETWORK
{"URN"}
{"Org_ID"}

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



HEART
BEACON
Sculpture



Beacon Communities

Vernetzte Operationsführung
OOTW: Operations Other Than War

JAEGER



FIREFLY
HEARTBEAT
ALGORITHM

EVENT / ALERT Flash Heartbeat Message Bus



KAIJU

MONEYBALL
ECONOMICS

r buckminster fuller
"Build a new mode
operating manual
for
spaceship earth"



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



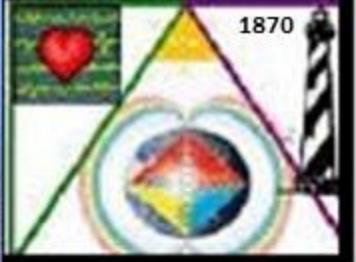
Satoshi Nakamoto Bitcoin Paper

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

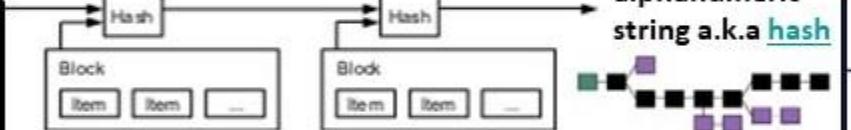
Craig WRIGHT a.k.a.
Satoshi NakamotoPHYSICAL =
OPPOSITE
OF ABSTRACTWright Brother's 1st Flight
Cape Hatteras Outer Banks

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

3. Timestamp Server

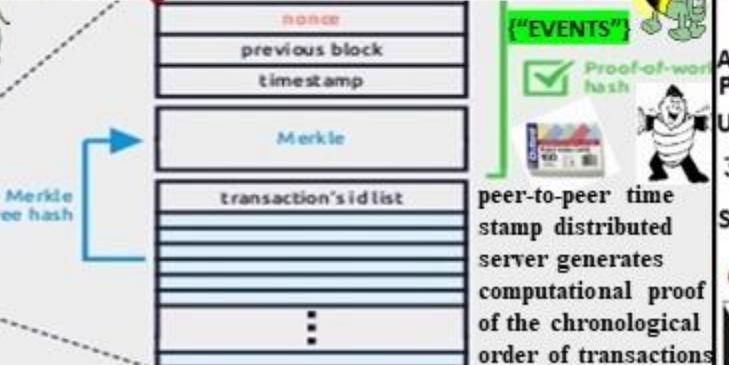
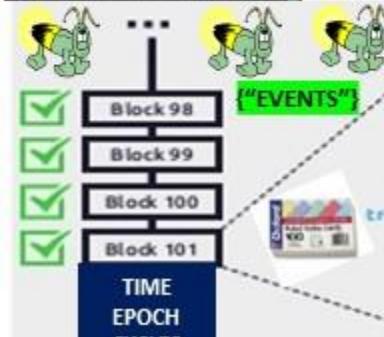
The solution we propose begins with a timestamp server. A timestamp server works by taking a hash of a block of items to be timestamped and widely publishing the hash, such as in a newspaper or Usenet post [2-5]. The timestamp proves that the data must have existed at the time, obviously, in order to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



peer-to-peer time stamp distributed server generates computational proof of the chronological order of transactions



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



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



Euclidian Geometry

TRIANGULATION

90 feet

Blockchains

90 feet

Blockchain

90 feet

Blockchain

90 feet

Blockchain

90 feet

Blockchain

1st Base Coach
first base
UMPIRE
 3×5

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"

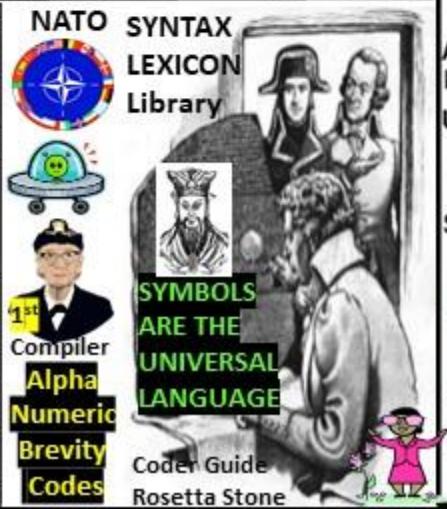
"A smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction reads / writes data in the blockchain's Dbase"

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



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

ALICE CORP VS CLS BANK

"claims may not be directed towards an abstract idea"

US SC 573 US 134 2347

FUTURE MEMES DOT COM

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

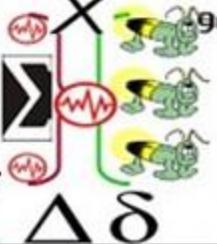


MACRO CYCLES
CLOCK FACE
90 / 90 / 90 / 90
= 360 degrees

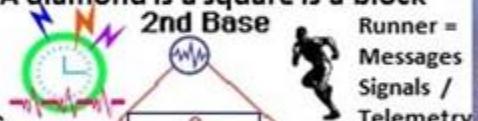
METRICS / METERS

ALGORITHM = RULES
PLAYERS = ROLES
UMPIRE = RULES

STATISTICIAN
3rd Base

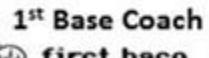


BASEBALL "DIAMOND"
A diamond Is a square Is a block
2nd Base



SC 573 US 134 2347
Physical = Opposite Of abstract

Euclidean Geometry TRIANGULATION.



90 feet

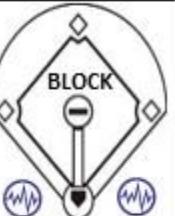
1st Base Coach
first base
UMPIRE

3 x 5 HASH TABLE

NONCE VALUES / CODE



MICRO-CYCLES





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



Humanitarian Assistance Networked Donor System

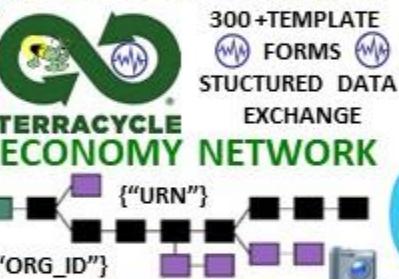
H.A.N.D.S: "Based on the need to speed up the processes of influencing an adversary, new concepts result in the adaptation of military doctrine, organization, training, material, infrastructure, interagency interaction, leadership, personnel and facilities" ... German Bundeswehr : concepts of "Network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



NEO
<https://neo.org>



Neural Net



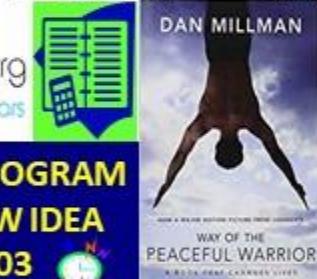
DISTRIBUTED SMART ECONOMY NETWORK



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



Federation Gateway



Spatial Econometrics



Beacon Communities

Vernetzte Operationsführung

Closer < \$ < FUEL

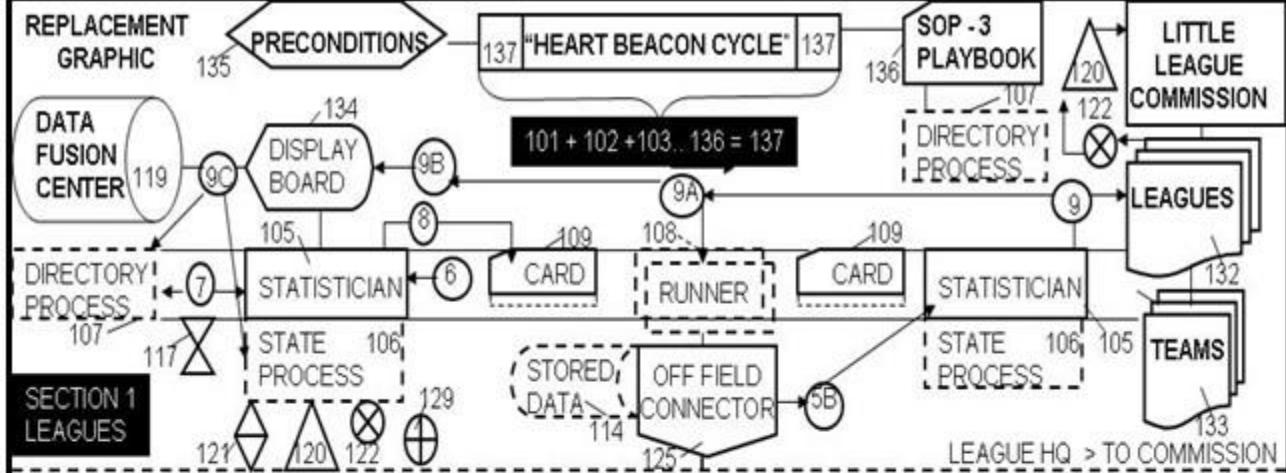
Proximity Beacons

Credit Unions

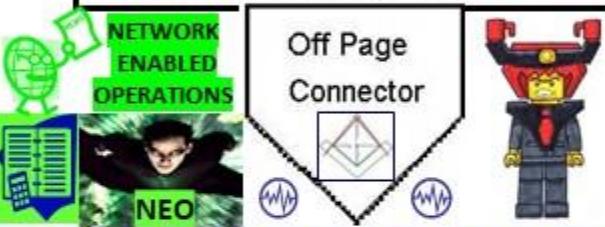
CU Ledger



KAIJU



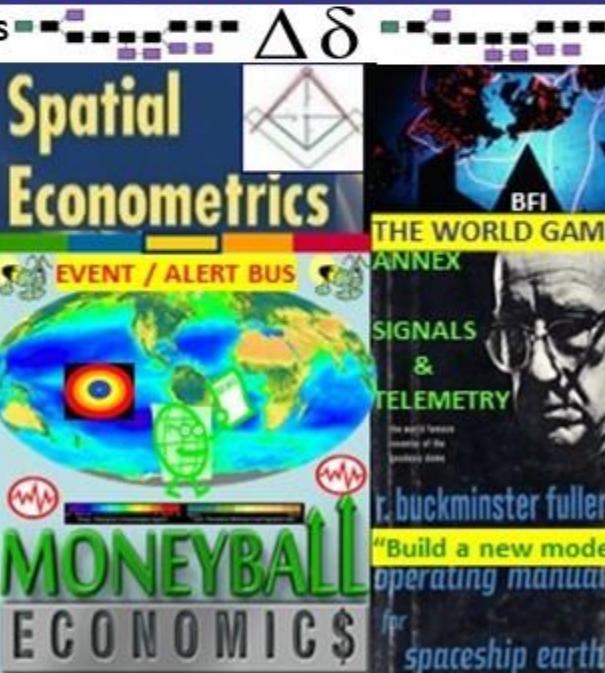
Federation Gateway

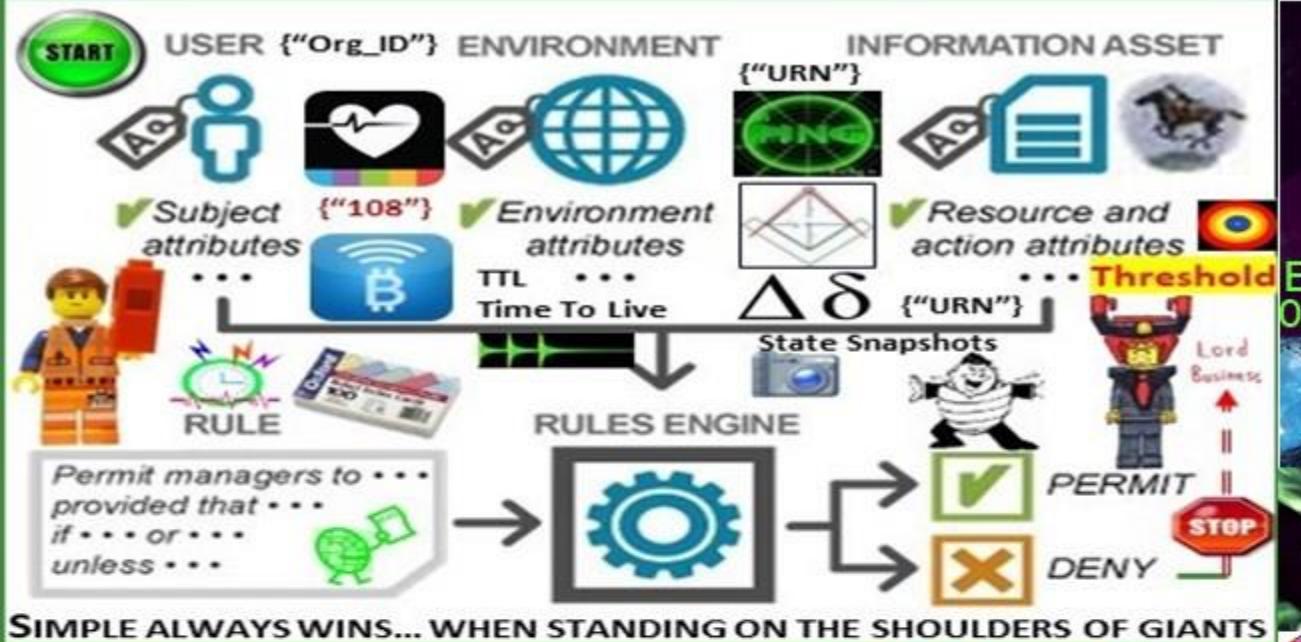


MINIMUM LIST OF COMPONENTS, BUILDING BLOCKS, PROCESSES, PROCEDURES AGREED ON BY TRADE FEDERATIONS TO ACHIEVE DISTRIBUTED AUTONOMOUS ORGANIZATION DAO CONSENSUS



EARTH DAY EVERYDAY ON THE BLOCKCHAIN



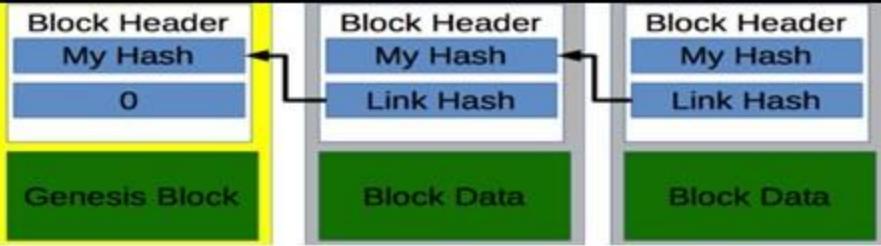


SIMPLE ALWAYS WINS... WHEN STANDING ON THE SHOULDERS OF GIANTS

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



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



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

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

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

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

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

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

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

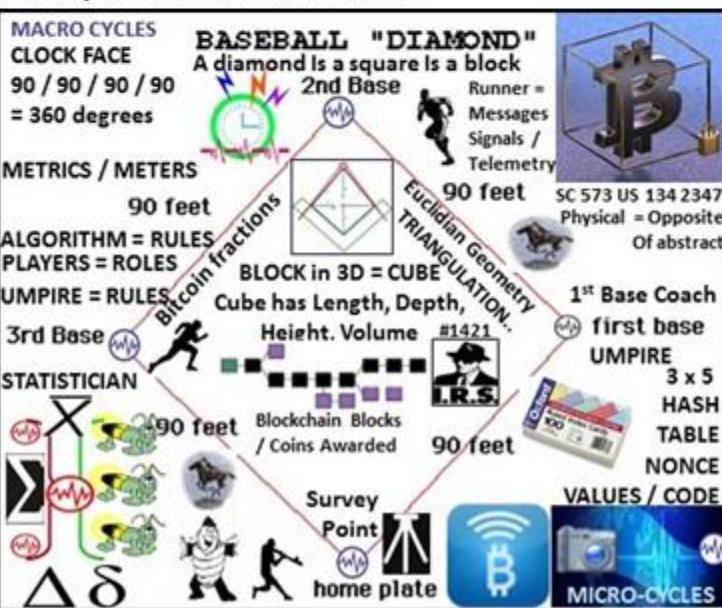
Consensus: distributed ledger blockchain nodes strategy determines chain's correctness
Consensus strategies: "proof of work," "proof of stake," and "delegated proof of stake"

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

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

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

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

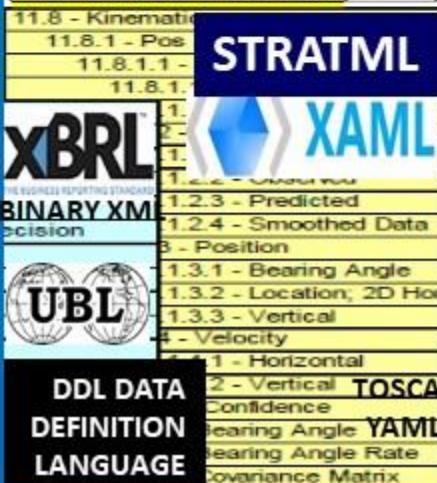


Structured
Data
Exchange

ALPHA NUMERIC
SYMBOL SETS

Coder's Guide

lexicon:



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



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

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



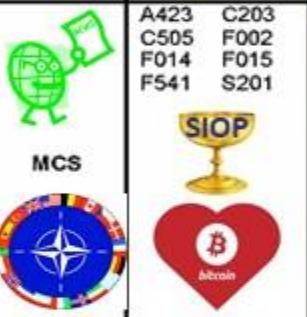
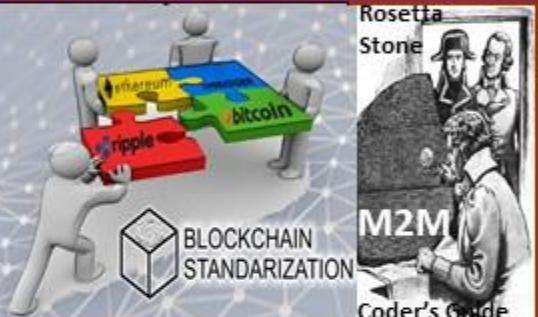
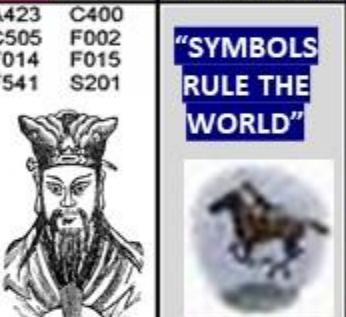
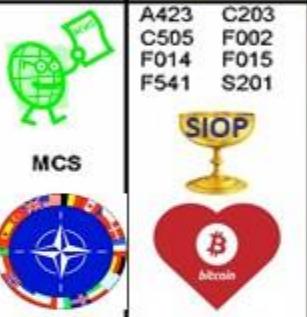
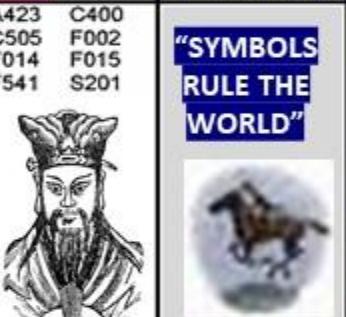
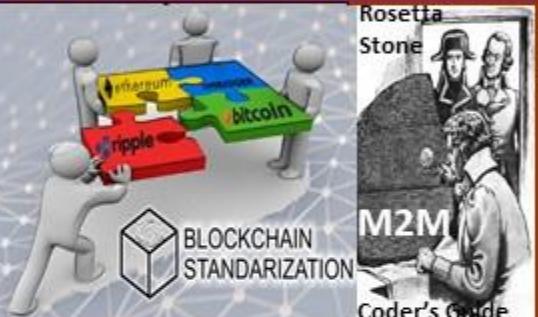
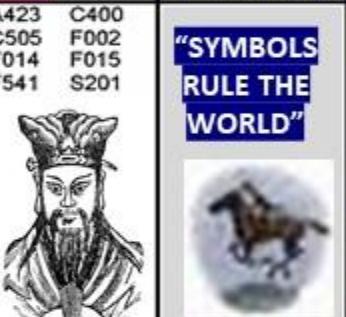
SYMBOLS	Friend	Neutral	Hostile	DICAL EVAC & HOSPITALISATION
	Partner		Competitor	- MILITARY OPERATIONS

NUMBERS ARE THE UNIVERSAL LANGUAGE / Symbols Rule the World"



FILTERS 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	targeting, reconning	COA {"Java JS"}
Infrastructure	Comm, power, transportation, water/sewer	Machine Trust Language MTI network, grid	Machine Trust Language MTI throughput, flow rates,	name, part-of relationships	BDA, op levels	repair, broadcasts	YAML expansion plans
Sociological	Culture, religion, economic, ethnic, government, history, languages	temples, historic structures	ER Model	Class Diagram	Relational Database	Object DBMS	XML DTD / Schema
Geophysical	Terrain, weather, climatology, oceanography, astrometry	feature lat/long, alt/dpth	Entity	Class	Table	Class	Element
			Attribute	Attribute	Field / Column	Attribute	Child Element or Element Attribute
			Domain Value	PURCHASE CODES	Instance, Value		DPI
							FFRN / FFN / FUDN
							DUI
							FUD
							FEDERATE

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

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

BY Form Field Position & NUMBER

Firefly-Heartbeat Flash Messages

PROCESS MESSAGE BY PRECEDENCE
UNIVERSAL EVENT / ALERT MESSAGE BUS

OPERATIONAL NODES / ACTIVITIES		
DATA	SYSTEM FUNCTIONS	PERFORMANCE
11.4 - Classification	11.8 - Kinematics	
11.4.1 - Category	11.8.1 - Pos / Vel / Acc (PVA)	
11.4.1.1 - Confidence Level	11.8.1.1 - Acceleration	11.8.1.1.1 - Angular
11.4.1.2 - Estimate Type	11.1.2 - Linear	11.1.2.1 - Alternative
11.4.1.2.1 - Alternative	11.2 - Estimate Type	11.2.1 - Estimated
11.4.1.2.2 - Evaluated D	11.2.2 - Observed	11.2.3 - Predicted
11.4.1.3 - Value	11.2.4 - Smoothed Data	
	PURCHASE CODES	
SYMBOL	Friend	Neutral
2525C	Partner	
		
		Hostile
		Competitor
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		<img alt="Orange Diamond" data-bbox="960 820 990 8

NAMED DATA NETWORKING

<CONTENT> CENTRIC NETWORKING

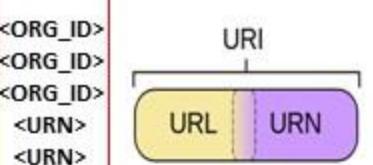


<ORG_ID>
<ORG_ID>
<ORG_ID>
<URN>
<URN>

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

Situational Awareness Reference Architecture (SARA)

IDENTITY, Inventory, Activity, and Sharing



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

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

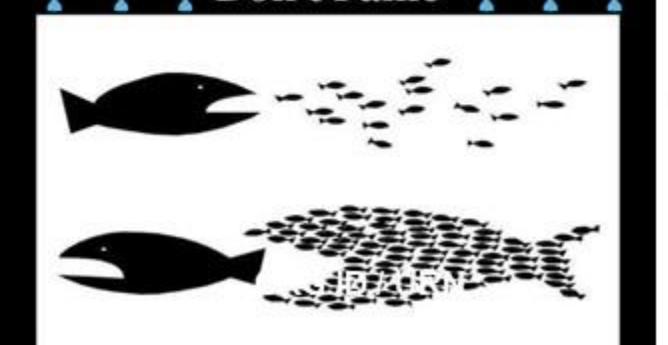
USMTF / XML MTF FORMATTED MESSAGE CATALOG

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

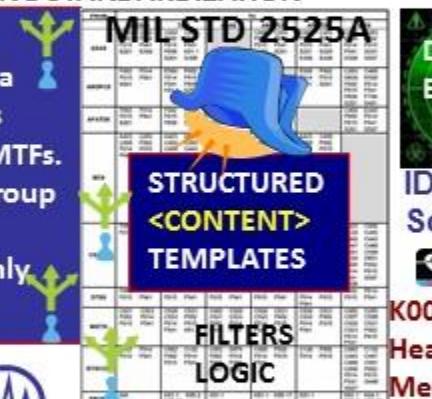
</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU

Don't Panic



FEDERATE



DISTANCE ESTIMATE SERVICE

IDMaps
SonarHOPS

K00.99
Heartbeat Message

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

CrowdSourcing

TRIANGULATION

TELCO MESH FABRIC

vector

CROWD SOURCING / FUNDING



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

PARTIDO X:
Distributed
Democratic
Participation

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

ETHEREUM:
Decentralized
Autonomous
Organizations

DAO

VOTE ON BLOCKCHAIN

PARTIDOS DEL FUTURO
FEDERATED ID





Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



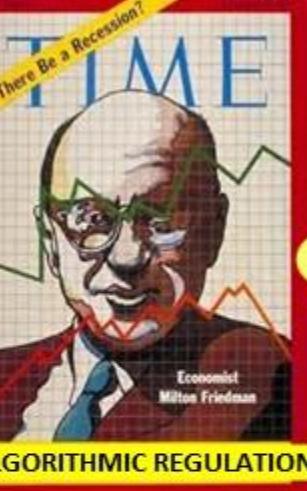
TERRACYCLE



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

Luxor Temple Egypt:

"The shortest road towards knowledge of truth is nature"



FRIEDMAN'S K % RULE
ECONOMIC MACRO CYCLES

CONTRIBUTIONS TO STATISTICS

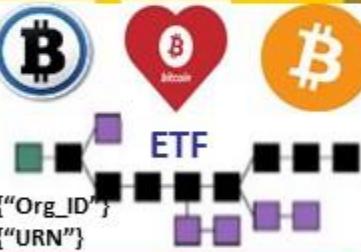
STAT MEAN VALUE INDEX



Price Indexes in Time and Space

Methods and Practices

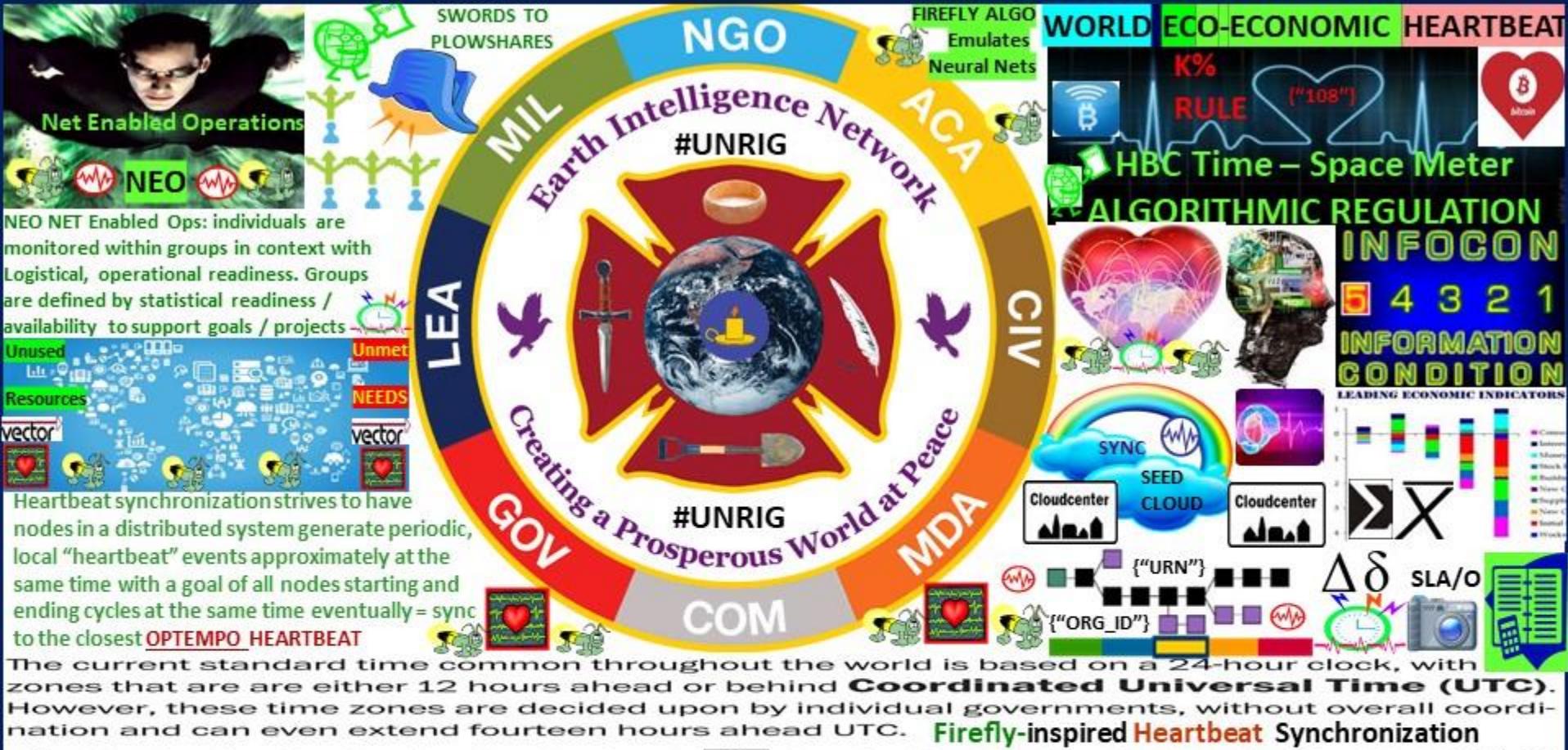
FRIEDMAN's K% RULE



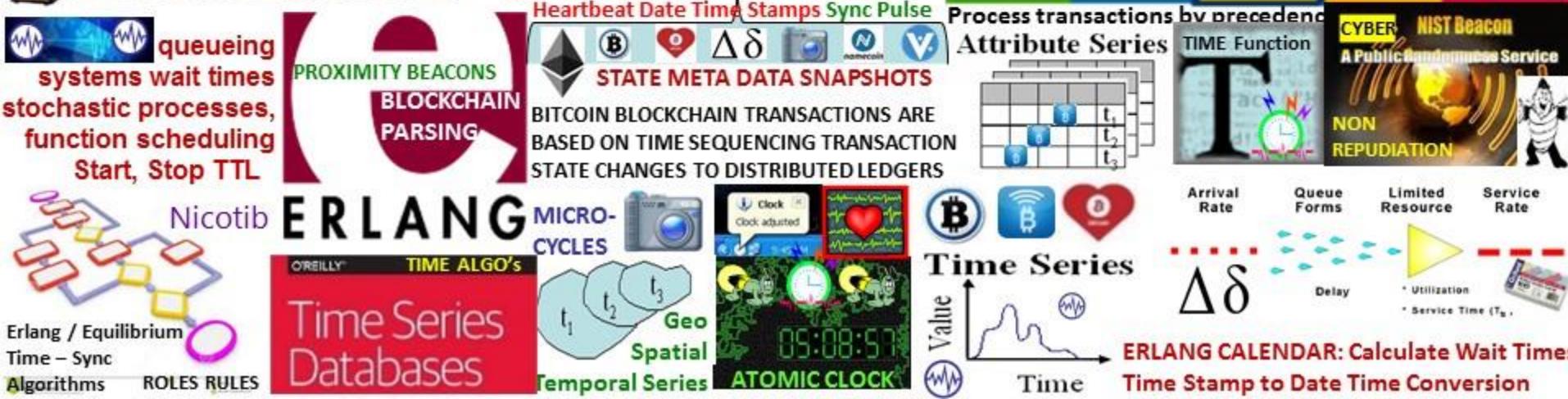
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.

"Heartbeat Synchronization 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 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.

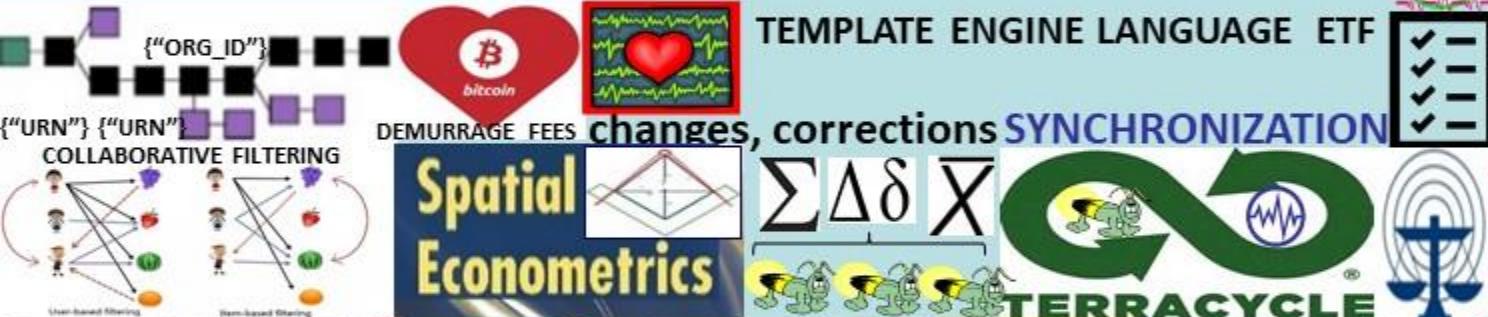




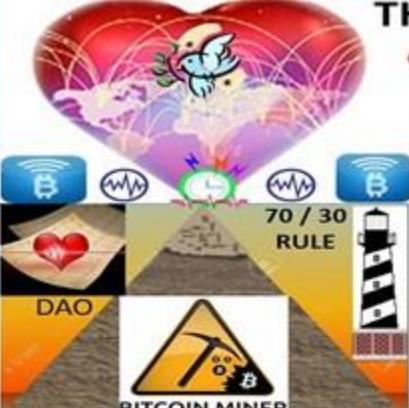
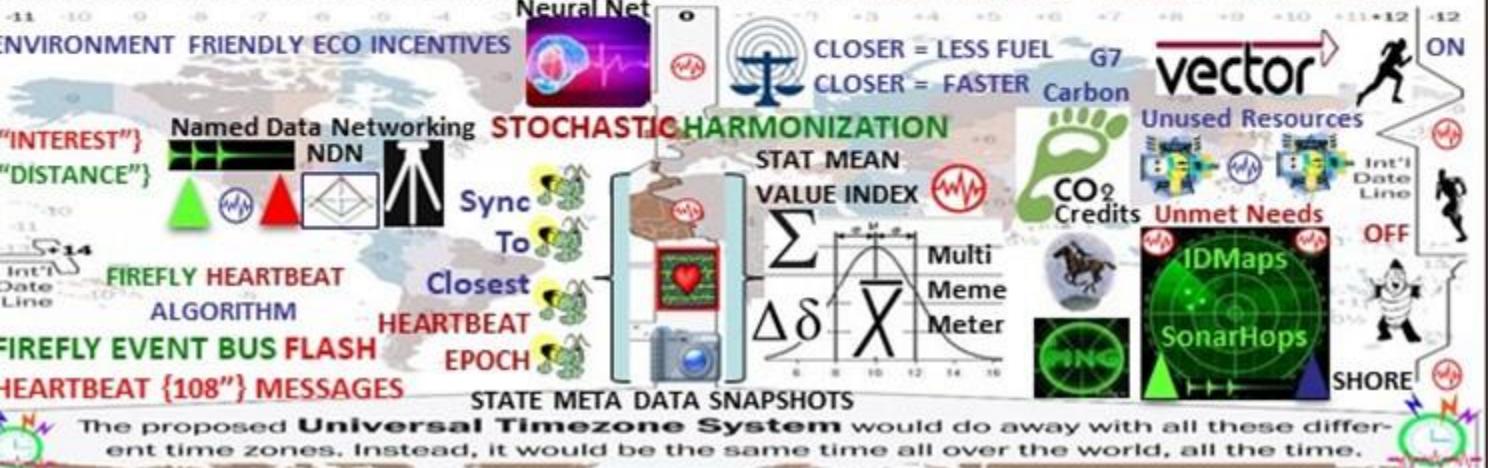
eGaaS: international blockchain platform for organizing economic, state, social activities of citizens, communities on the basis of smart law, smart contract system. eGaaS offers a comprehensive solution needed for state and business management on the blockchain platform.

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

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



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



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

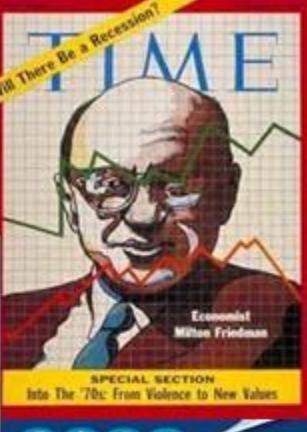






THE TERRA (TRC)®

Trade Reference Currency



ECONOMIC HEARTBEAT FEDCOIN / WORLDCOIN

FIX {"108"}



UNUSED RESOURCES / UNMET NEEDS

Friedman's K % Rule ALGORITHMIC REGULATION



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

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



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

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

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

C. UNIVERSAL TIME ZONE UTZ UNIVERSAL MESSAGE EVENT BUS





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

Futarchy PREDICTION MARKETS GnosisAMA

Gnosis trading interface alpha
WIZ token fee payment
INFORMATION ARBITRAGE ECONOMICS



TERRACYCLE

Price Oracle

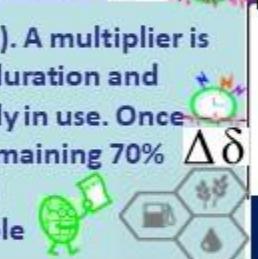
Gnosis Wisdom (WIZ) pay platform fees in Services layer, Wiz subsidize other participants fees, provide initial subsidies for markets, or market trading.



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

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

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



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

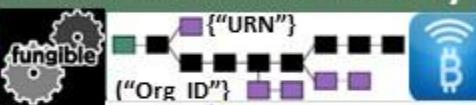


The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



THE TERRA (TRC)

Trade Reference Currency



\$0.49 USD
0.001076 BTC

MICRO PAYMENTS
Bitcoin
Need Bitcoin?



Demurrage Fees

UNIVERSAL METER

Geo-Spatial Temporal Econometrics meters



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

ZEPPELIN

ZEPPELIN OPEN, GLOBAL ECONOMY

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



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



ZEPPELIN / zeppelinOS Common Functionality:

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

Create and customize your own ERC20 Token.

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



Contract development

Dapp

Dapp

Dapp

Dapp

Contract interaction

Kernel libraries

Scheduler

Marketplace

State channels

zeppelinOS

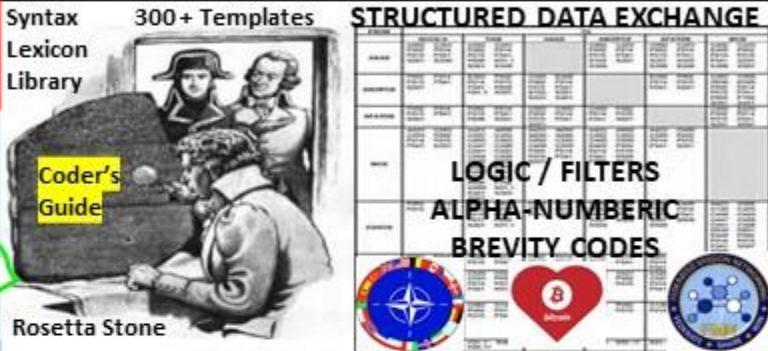
EVM

Blockchain

WORLD ECONOMIC HEARTBEAT



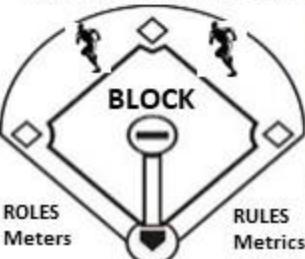
HEART BEACON CYCLE TIME – SPACE METER ECO-ECONOMETRICS ON THE BITCOIN BLOCKCHAIN



STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



UNIVERSAL MEME

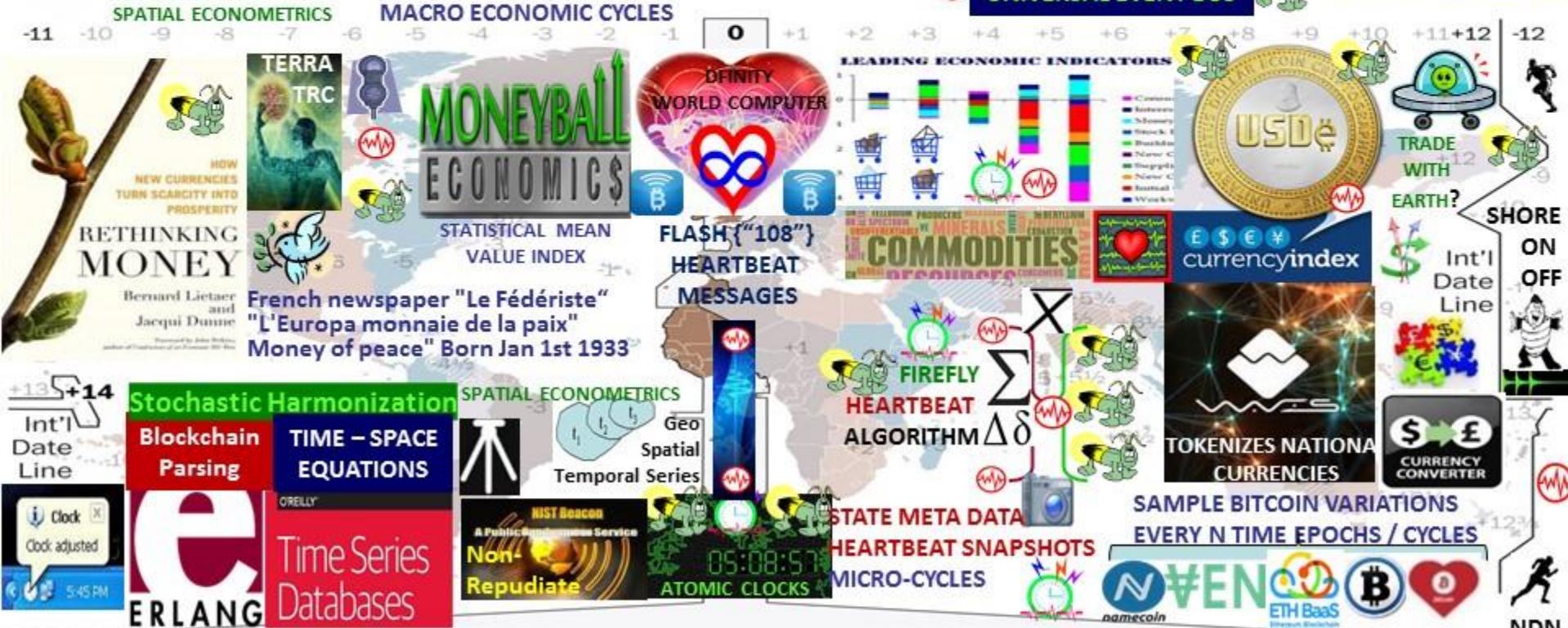


Micro Cycle State Snaps





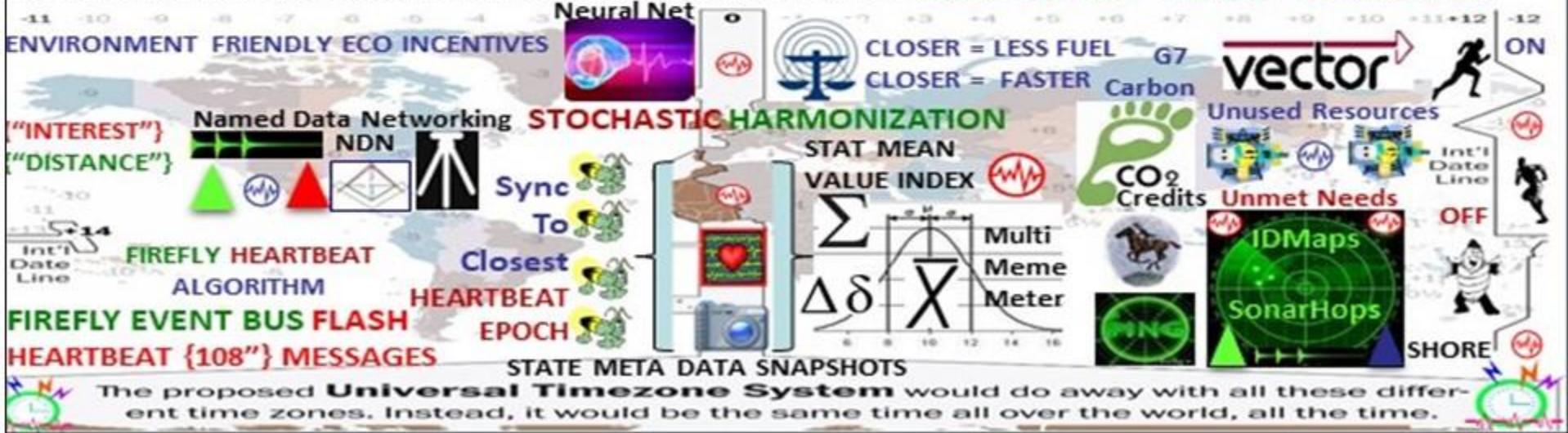
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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

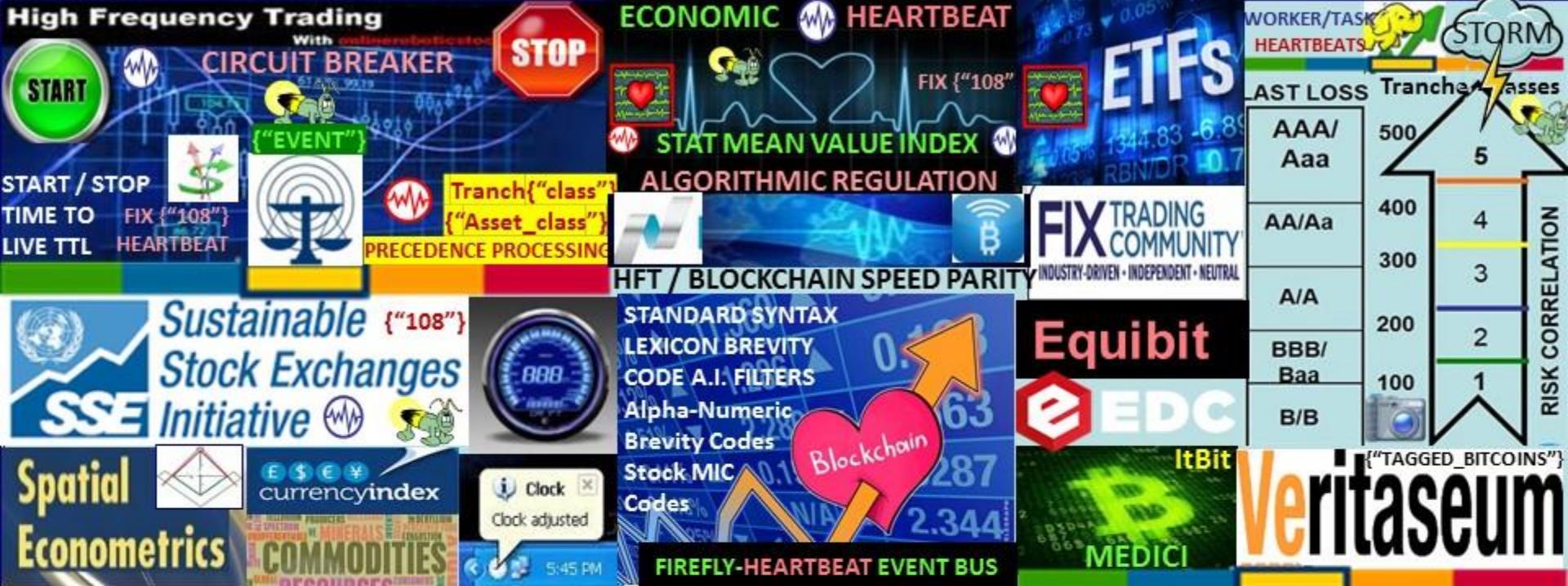


The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.

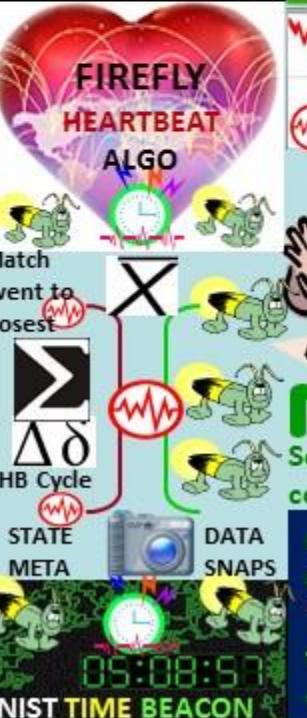
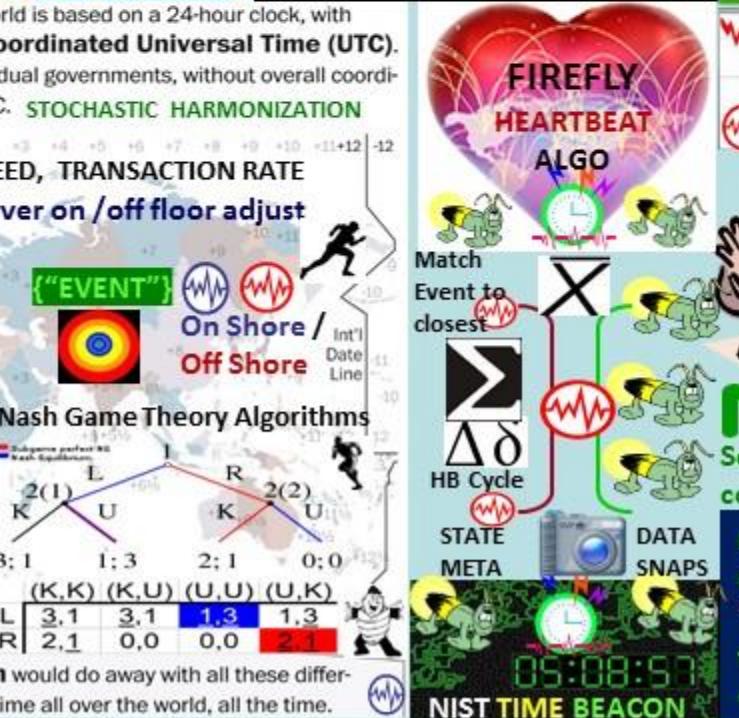
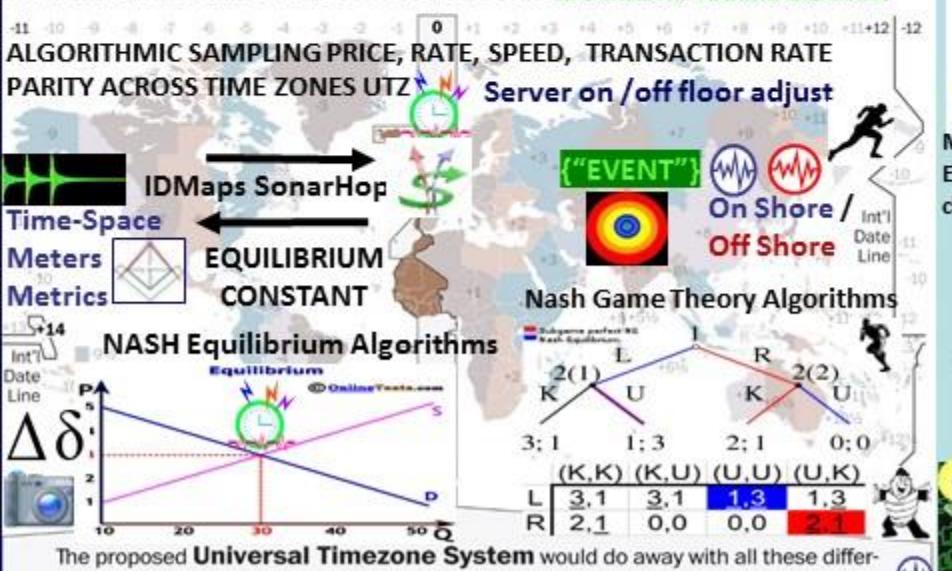


The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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





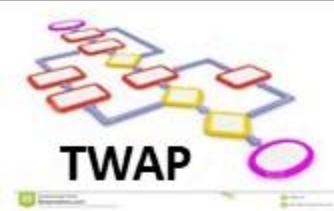
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

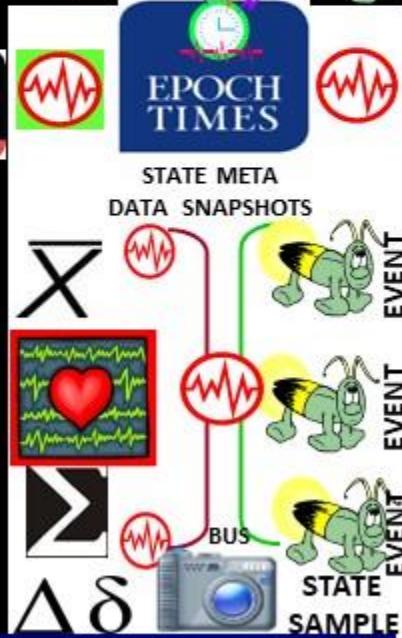
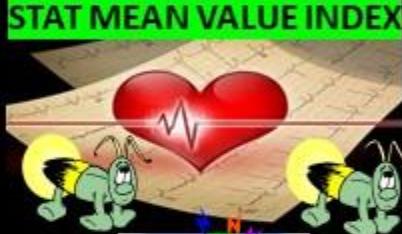


TWAP GOAL: provide a Time Weighted Average Price Benchmark



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

queueing systems
stochastic processes, function
scheduling Start, Stop TTL

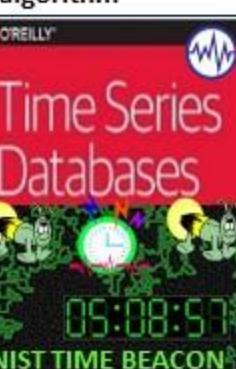


distributed "noSQL" database, embedded right into Erlang,
supports indexing, replication, transactions, and fail-over
Fast ETS in-memory, and DETS persistent on-disk database

Mnesia database ("Organization_ID")

Global name resolution

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.



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



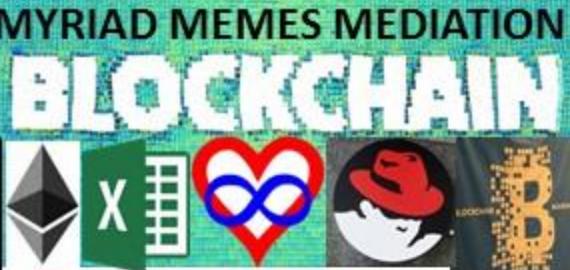
ALPHA NUMERIC
BREVITY CODES
SYMBOL CODES
STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS

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.

FIREFLY EVENTS
FLASH MESSAGES
SYNC TO CLOSEST
HEARTBEAT EPOCH

EVENTBUS
FIREFLY HEARTBEAT ALGORITHM
 $\Delta\delta$
STATE META DATA SNAPSHOTS

MULTI-MEME MULTI-METER



Blockchain Startups

Top Blockchain startups
disrupting non-financial markets

Venture
Radar

{"URN"}



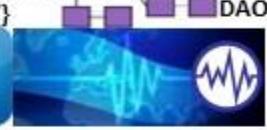
X



OFF-SITE
OFF-PAGE
CONNECTOR



{"URN"}



MACRO CYCLES

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

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

90 feet

Blockchain Blocks / Coins Awarded

Survey Point

home plate

90 feet

Blockchain Blocks / Coins Awarded

Survey Point

home plate

90 feet

Blockchain Blocks / Coins Awarded

Survey Point

home plate

90 feet

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

1st Base Coach first base UMPIRE

3 x 5 HASH TABLE

NONCE VALUES / CODE

MICRO-CYCLES



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!](#)

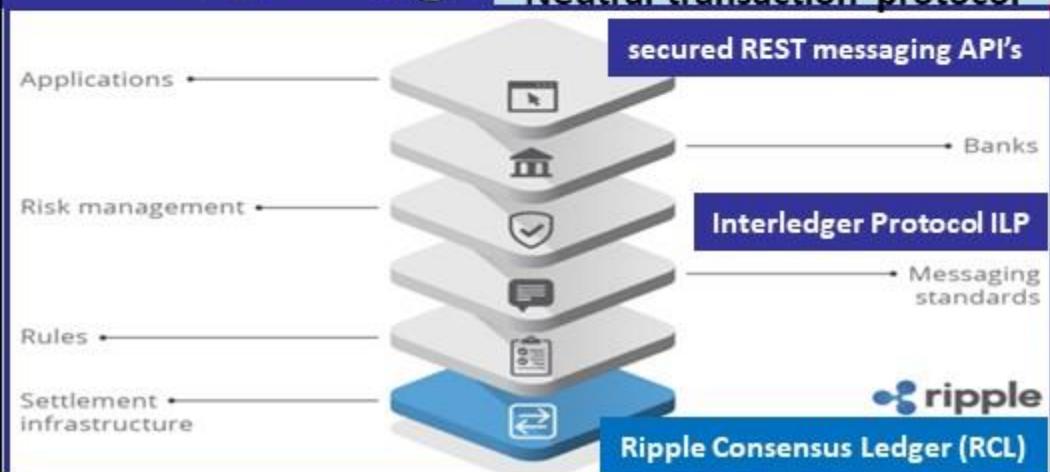
ALPHA NUMERIC BREVITY CODES

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

A.I

Clock Clock adjusted

Neutral transaction protocol



SchellingPoint



EVENT

ROLES RULES

COACH

BLOCK

CLOCK

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"} Sync to Closest Heartbeat

X

INFOCON

5 4 3 2 1

INFORMATION CONDITION

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

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

3×5

HASH TABLE

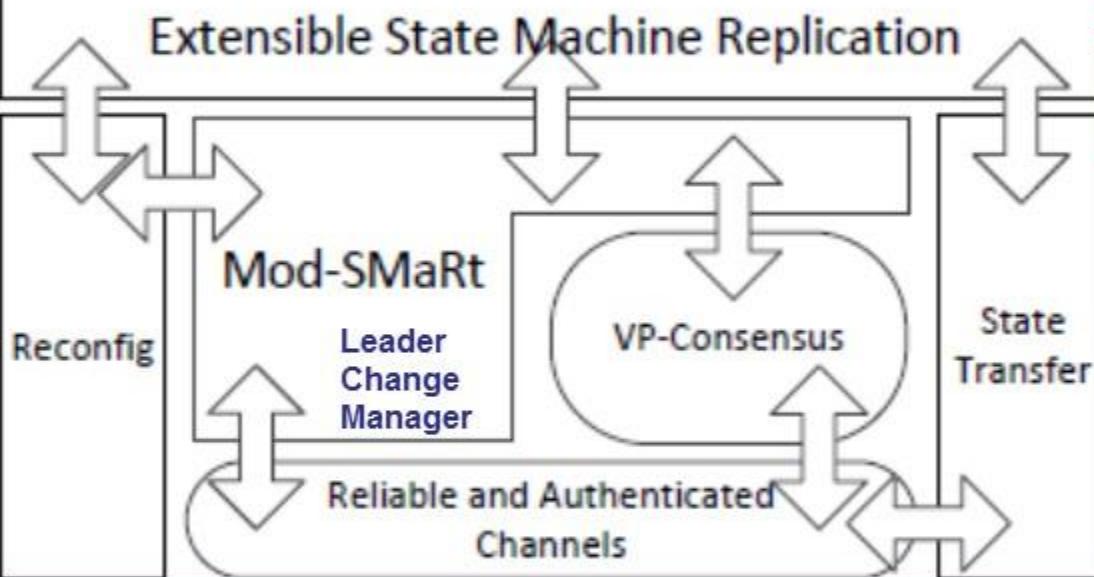
NONCE

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 METEOR

USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT



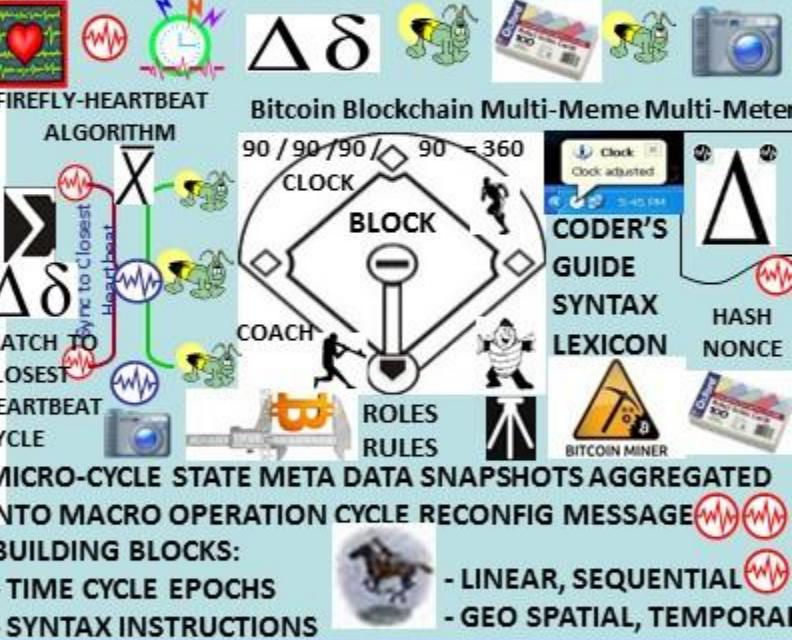
DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

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"

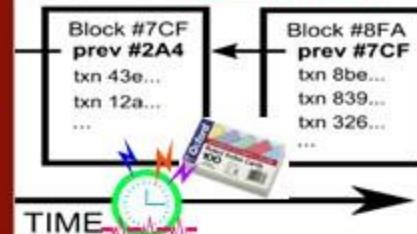
HYPER LEDGER OPEN SOURCE BLOCKCHAIN

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

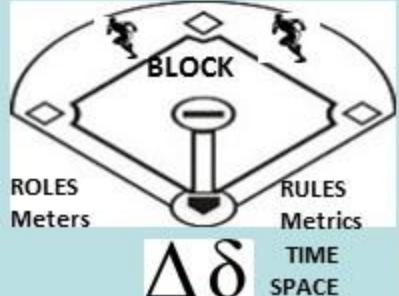
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



BLOCK TIME ARBITRAGE



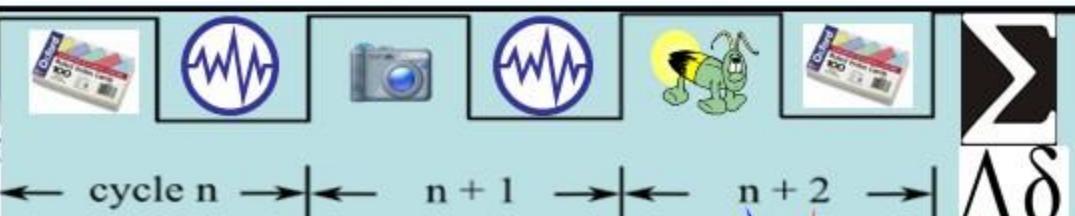
OBC APIs, SDKs, CLI



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

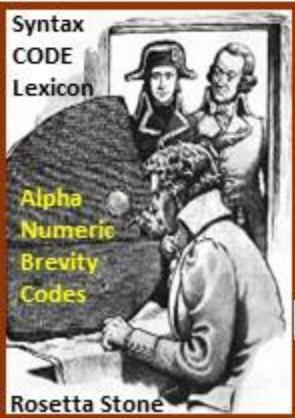
Transactions

Sandbox

Digital Signing

Interaction Protocols

Contract Verification



UNIVERSAL EVENT BUS



Syntax CODE Lexicon

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

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..



XBRL / CDL / DAML STOCK MIC CODES



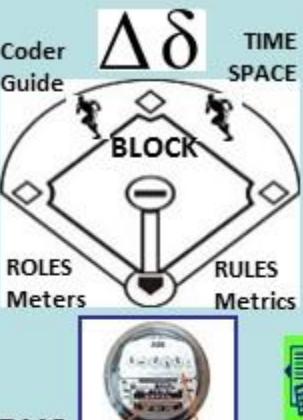
STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

300+ Use Case Templates



KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



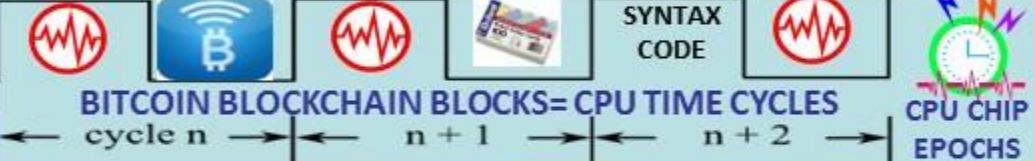
MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



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

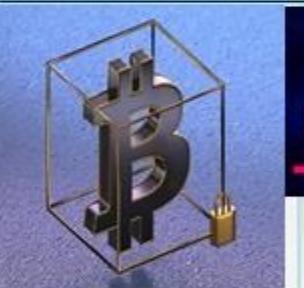
EVENT BUS



long exponential intervals (10 min)



COMMAND SYNTAX
RESTFUL State Transfer



Subjective Time to Prune

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

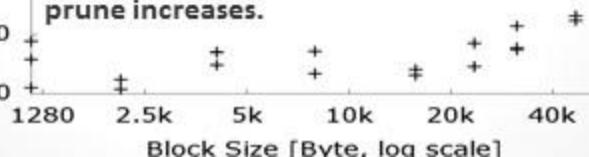
MACRO - CYCLES



Time to Prune [sec]

short deterministic intervals (10 sec)

MICRO-CYCLES





ETHER: Compensate Resource Contribution

Gas: price to
Run contract
transactions

ethereum

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



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...

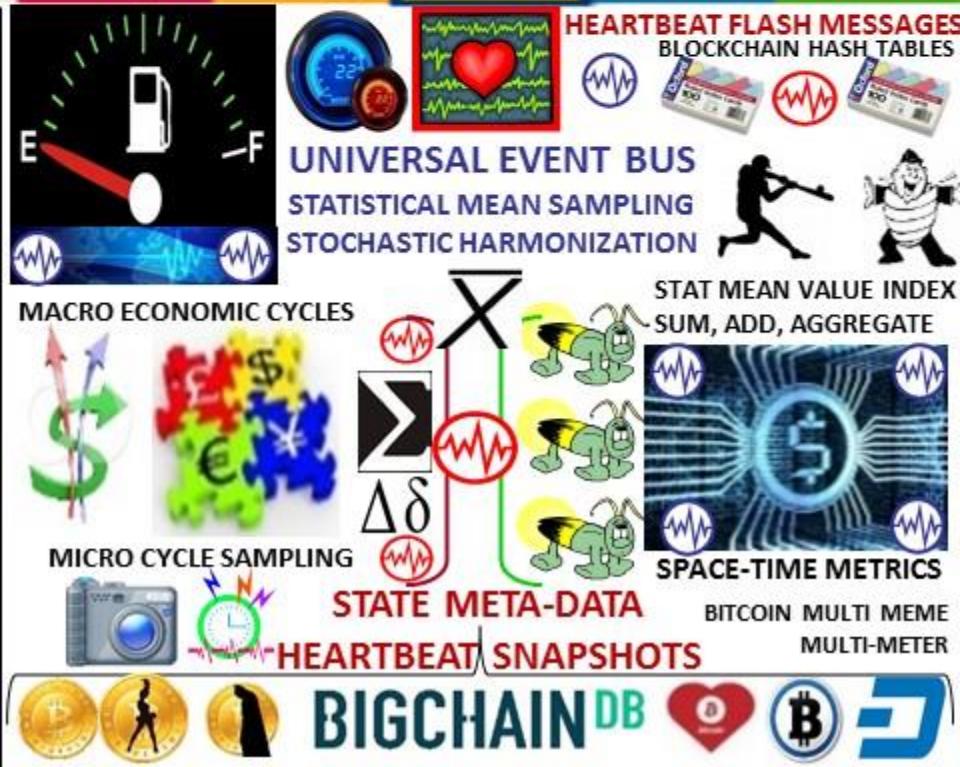
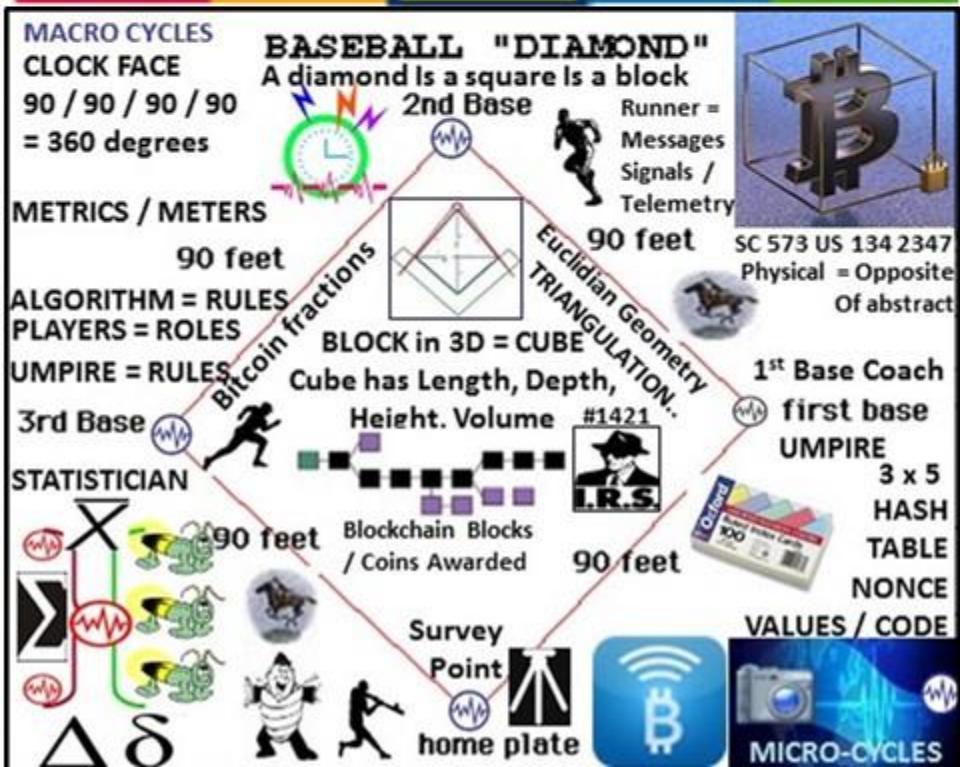
EVENTUALLY

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

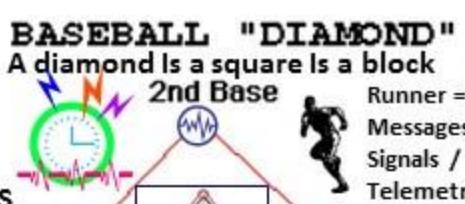
Unmined Bitcoins

Radar

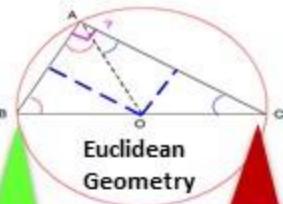
UTXO: unspent transaction output'. bitcoins sent somewhere

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



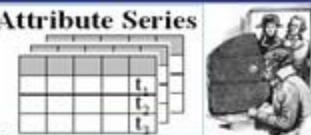
NAMED DATA NETWORKING

Time Series

Value Time

FIX {"108"} time distance

NDN



Digital Asset Modeling Language DAML

Contract Description Language CDL

{"INTEREST"} {"DISTANCE"} IDMaps SonarHops

FBI

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 Event Bus

cycle n n + 1 n + 2

Stake-Time algorithm favors both # of coins held & how often, frequently coins are staked

Velocity based selection PoSV encourages velocity

i.e. coin movement between people Vs hoarding.

Coin Age proof-of-stake system combines randomization with the concept of "coin age," a number derived from the product of the number of coins times the number of days the coins have been held.

Randomized block selection randomization predicts following generator by using a formula that looks for the lowest hash value stake size

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

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

FIREFLY-HEARTBEAT ALGORITHM EVENT BUS

O'REILLY

Time Series Databases

CALENDAR

UTXO

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

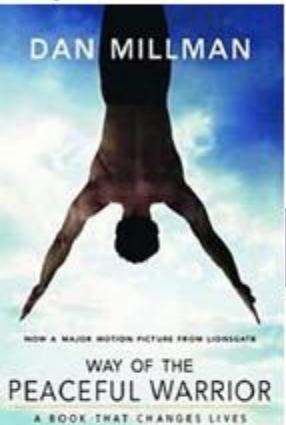
STATE of every Bitcoins ever mined" % Block Mined / % Block owned

Little League BIG LEGACY 75 years



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 Capabilities" in Great Britain or "Vernetzte Operationsführung" in Germany



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

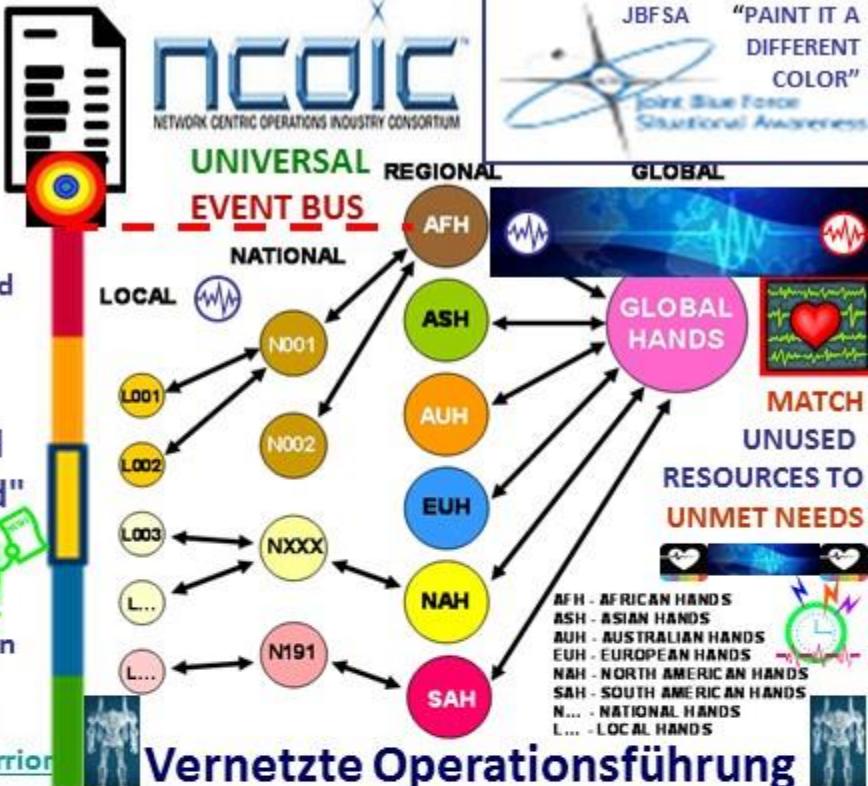


"The secret of change is to focus all of your energy, not on fighting the old, but on building the new." Dan Millman
Way of the Peaceful Warrior A Book That Changes Lives
http://en.wikipedia.org/wiki/Way_of_the_Peaceful_Warrior

Derive best practice procedural template guides from Battlefield Digitization describing when, where, how, how often systemically among a systems of systems promoting synergy, synchronicity.



The sculpture, similar to a lighthouse, is an interactive enclosure of light, color, and sound acting as a symbol of hope and resilience for the community. Pulses create a thumping sound that resonates through the steel frame and flickers the lighting matching the pattern to their heartbeat. By measuring a small, internal element such as a heartbeat and amplifying it to a monumental scale the piece becomes a powerful reflection of individual life and reminder of what is worth saving.



Vernetzte Operationsführung

REUSE OF A PENTAGON ACAT-1A SITUATION
AWARENESS PROGRAMS WORDS TO PLOWSHARES
PROPOSED BY GERMAN MILITARY CIRCA 2003

FEDERATION



STATE: stored data at a given instant in time

STATE CHANNELS: blockchain interactions

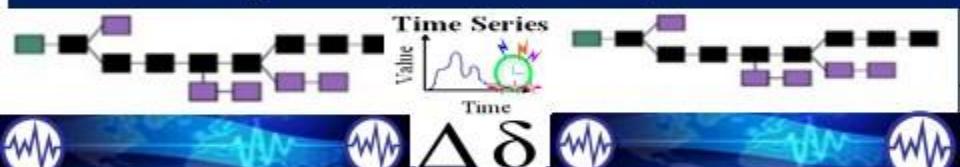
which could occur on the blockchain, but instead get conducted off of the blockchain, without significantly increasing the risk of any participant.



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

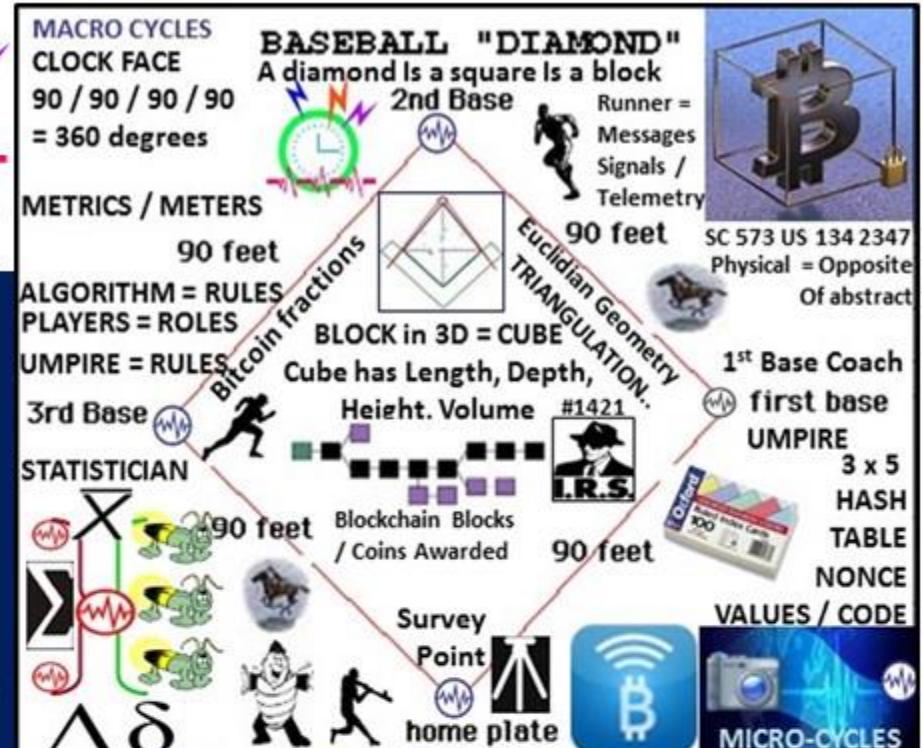
2. Participants update the state amongst themselves by constructing and signing transactions that *could* be submitted to the blockchain, but instead are merely held onto for now. Each new update "trumps" previous updates.

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



EACH NEW UPDATE TRUMPS THE PREVIOUS: simplest way is to have any unlocking attempt start a timer, during which any *newer* update can replace the old update (restarting the timer). When the timer completes, the channel is closed and the state adjusted to reflect the last update received. The length of the timer would be chosen for each state channel, balancing the inconvenience of a long channel closing time with the increased safety it would provide against internet connection or [blockchain problems](#). Alternatively, one could structure channel with a financial penalty so anyone publishing an inaccurate update to the blockchain will lose more than gain by pretending later transactions didn't happen.

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



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

HASH TABLES
STATE SNAPS

A cartoon illustration of two ants carrying a large heart-shaped balloon. The balloon is filled with colorful, swirling patterns and features a pulse monitor (ECG) and a clock face on its surface.

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



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	

POW PAYLOAD : COMBINATIONS OF ENCRYPTED SYNTAX Attribute Series

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
90 feet

SC 573 US 134 2347

Physical = Opposite Of abstract

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

X

Σ

90 feet

Blockchain Blocks / Coins Awarded

90 feet

Survey Point

Σ

Δ

Δ

Δ

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

90 feet



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...

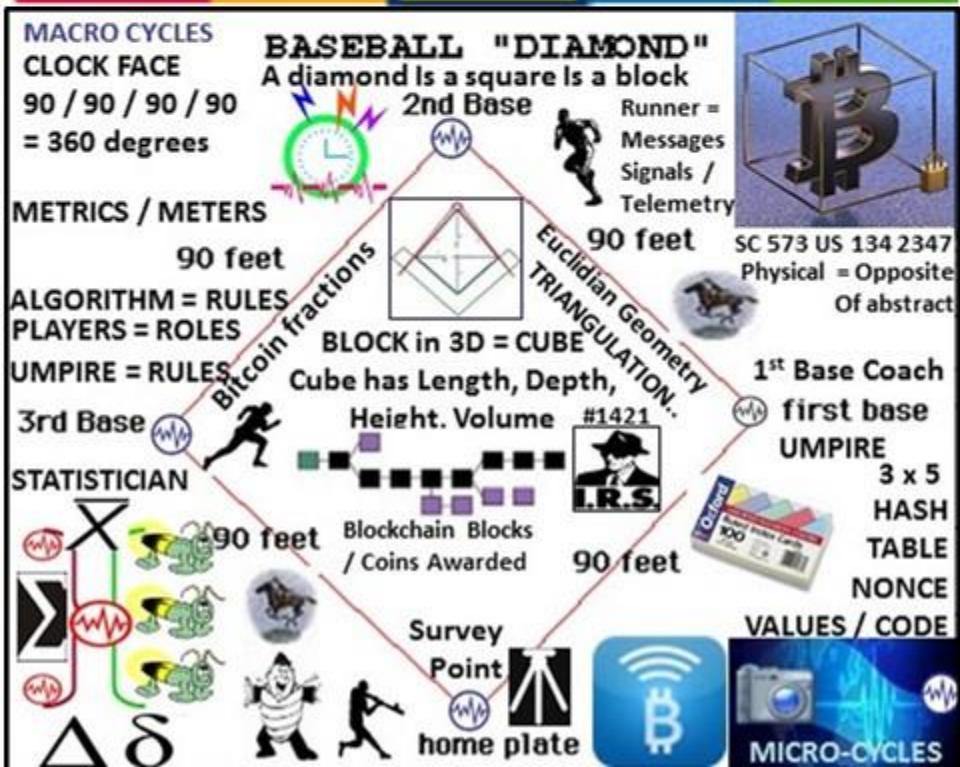
EVENTUALLY

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)





PROJECT LIGHTING

FIREFLY - HEARTBEAT ALGORITHM

FIREFLY - HEARTBEAT

ERLANG

Time Series Databases

UTZ UNIVERSAL TIME ZONE SYNC

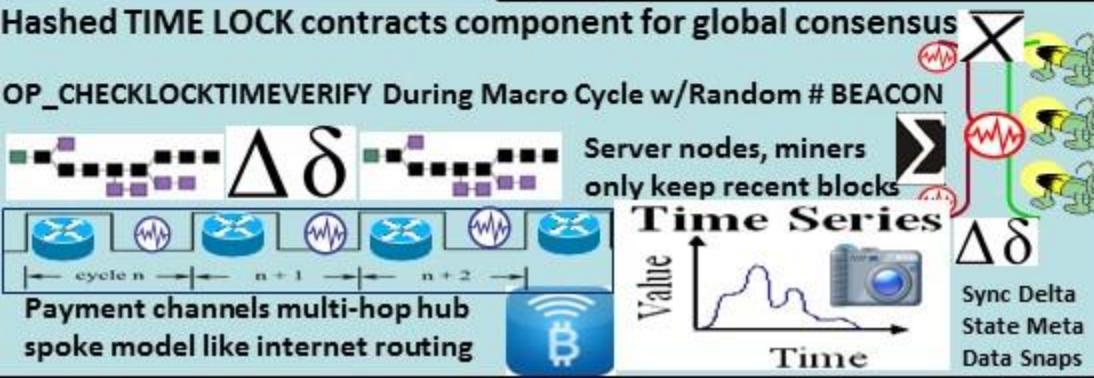
OP_CHECKLOCKTIMEVERIFY During Macro Cycle w/ Random # BEACON

Payment channels multi-hop hub spoke model like internet routing

transactions sent over off blockchain micropayment channels

OREILLY

Stochastic Harmonization



Segregated witness = Separated signatures

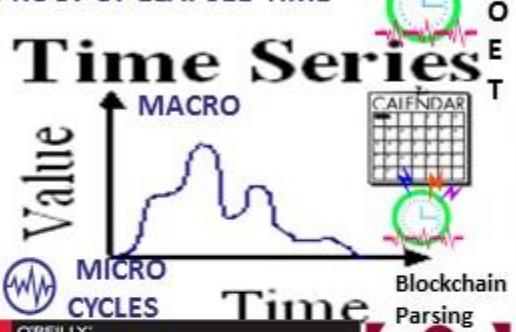
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signature are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a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

SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

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



PROOF OF ELAPSED TIME



Time Series Databases

QUORUM VOTING PROTOCOL

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

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

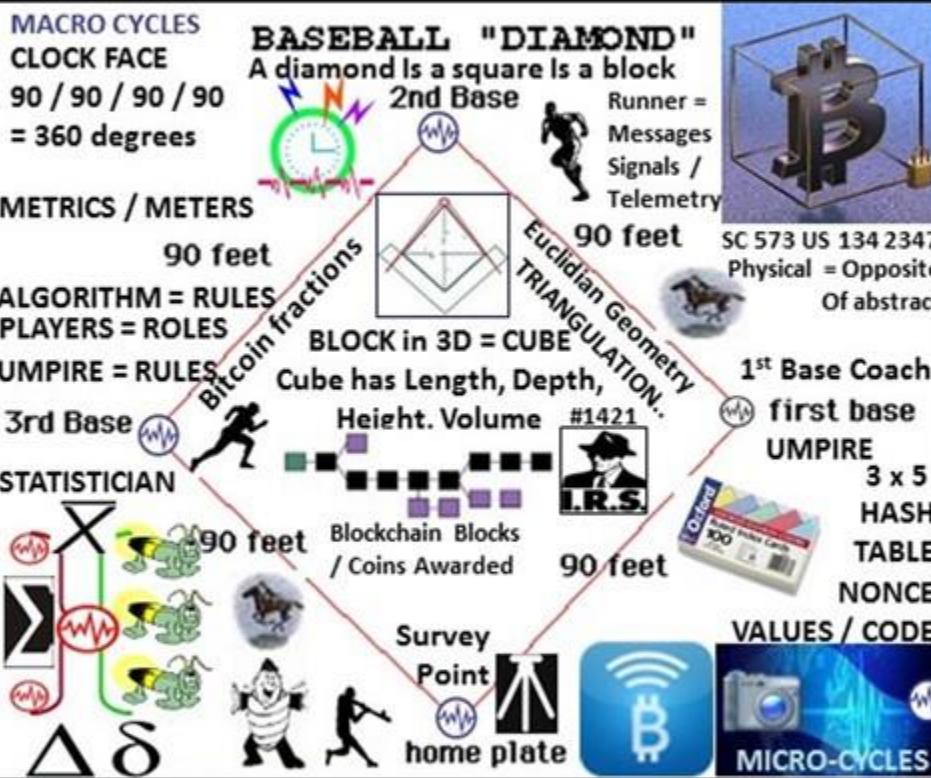
ex: League MVP



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

TOURNAMENT LEAGUE BOARD

Sct #573 ALICE CORP V CLS BANKPHYSICAL UNIVERSAL MEME BITCOIN IS A LANGUAGE



FIREFLY-HEARTBEAT FLASH MESSAGES UNIVERSAL EVENT BUS



Attribute Series



HASH TABLES / NONCE VALUES

Capture ledger's state
Transaction language
changes ledger state
Consensus, transaction
acceptance protocol

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

Key Features:

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



Built using historic bitcoin price index - the BNC BLX.

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

All rates time-stamped in UTC.

Ability to look up by time-stamp.

Ability to look up by block-height.

Asset Classes: Digital Currencies

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

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

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

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

BRAVE NEW COIN.
Digital Currency Insights

**"Blocks are a measure of time":
The Bitcoin Blockchain 'B-WAP'**



DASH



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

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

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

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

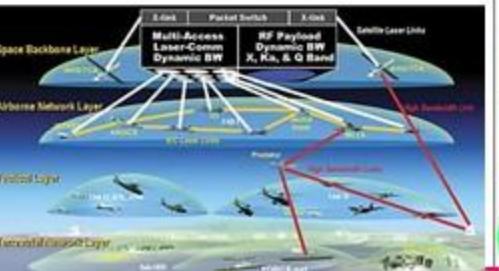
"Its makeup is thus: the block reward is divvied up in three parts. The first 45 percent goes to [Dash's miners](#). Another 45 percent goes to its Masternodes. And 10 percent is set aside to fund whatever other jobs or expenditures the Dash network deems necessary"

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

Masternodes receive payments for their service to the network.

DAO: RAND THINK TANK TERM COINED + / - 2001

NETWORK CENTRIC WARFARE
Developing and improving information superiority



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

METRICS / METERS

90 feet

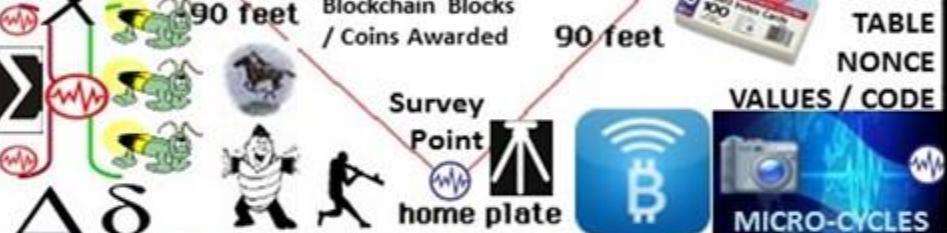
ALGORITHM = RULES
PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

90 feet



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*?

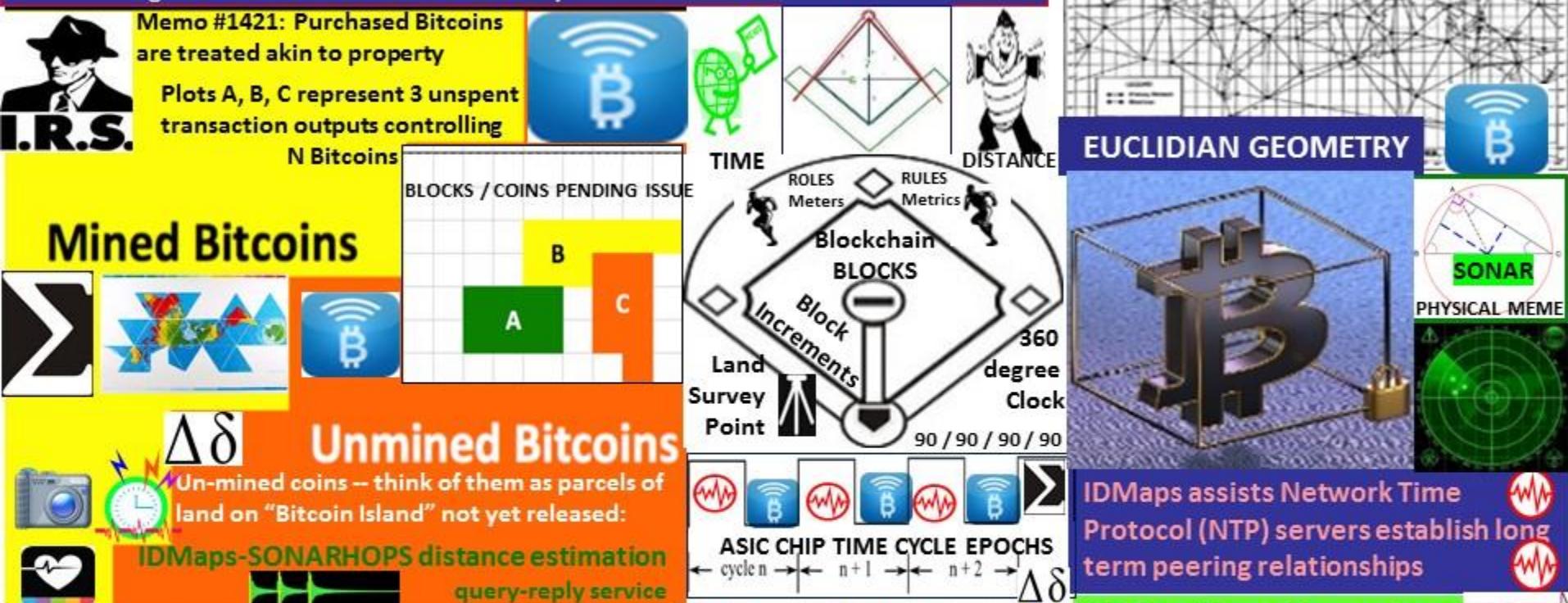
HEART BEACON CYCLE

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.



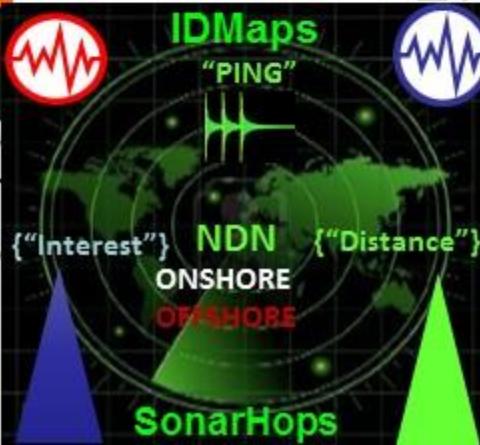
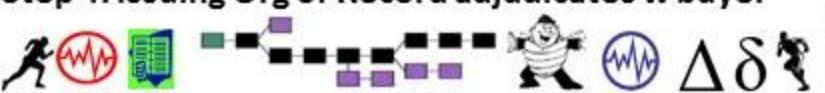
- End-state Bitcoin quantity will be fixed like land
"Bitcoin as protocol of ownership, not transfer"
Coins never travel, but simply switch owners"

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



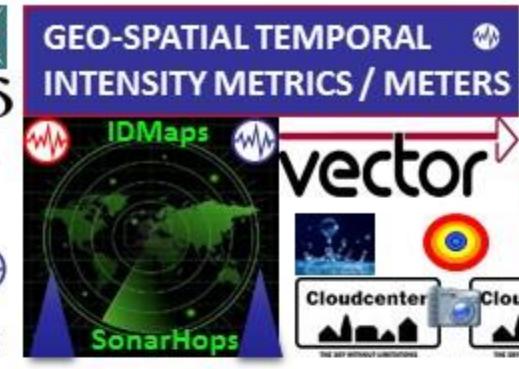
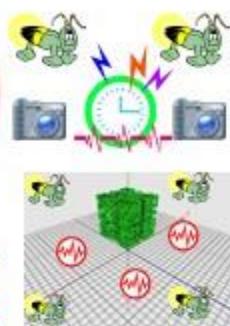
IDMaps Distance Metrics: latency (round-trip delay) available bandwidth estimation



IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



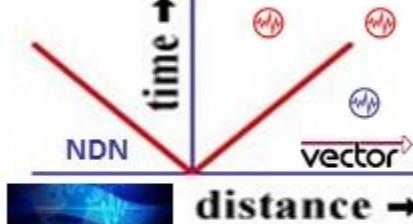
HOP COUNTS



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

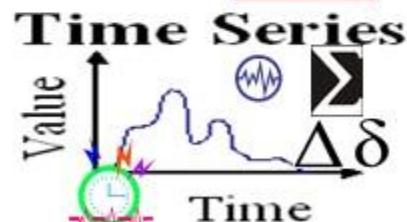
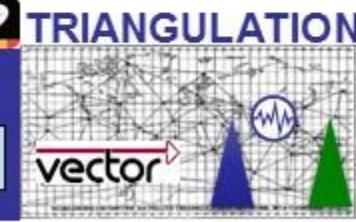


NDN RIB

NDN INTEREST LENGTH
= DISTANCE BY HOPS

NDN
INTEREST

IS DATA
FRESH ?



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

Datasets and Event Notification

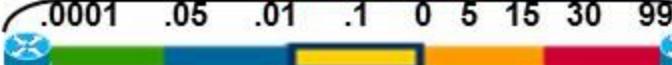
IDMaps assists Network Time Protocol (NTP) servers establish long term peering relationships



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



MICRO-CYCLES



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

13/573,002 HEART BEACON CYCLE

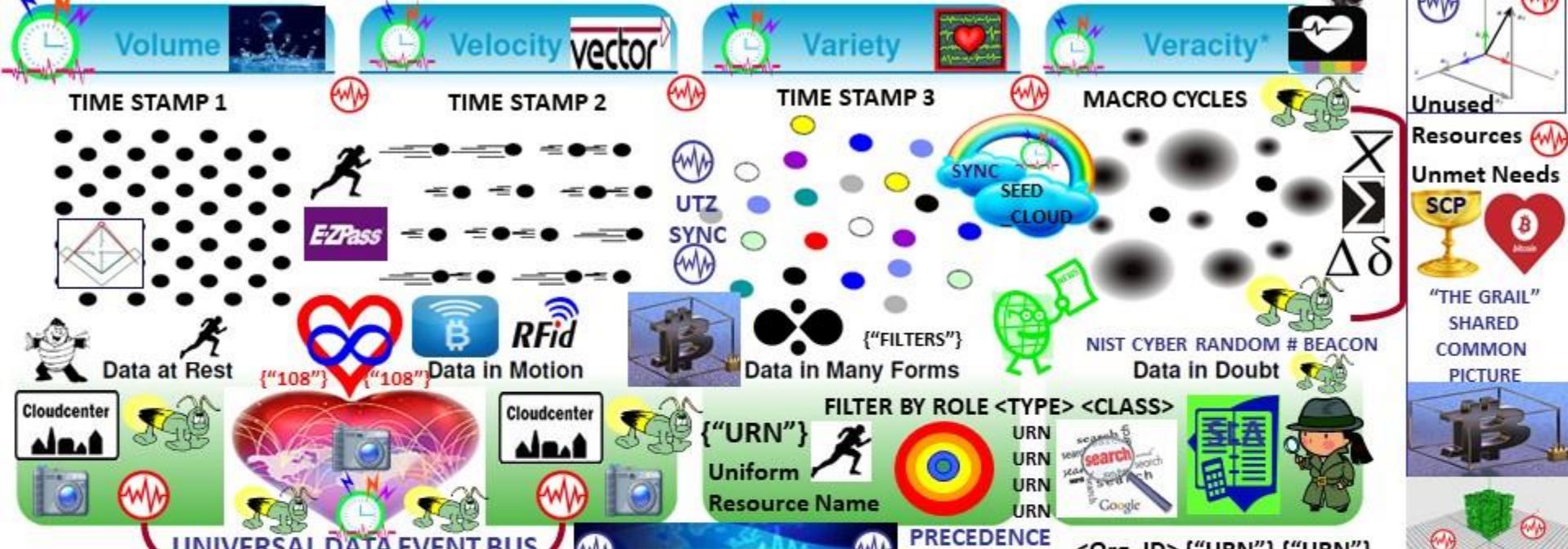
Time -Space meter, metrics / Universal data event, alert bus
Internet of Everything IET ability to hear the world's heartbeat



The four dimensions of Big Data

TIME STAMP BY Org_ID, URN Before FUSION CENTER

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

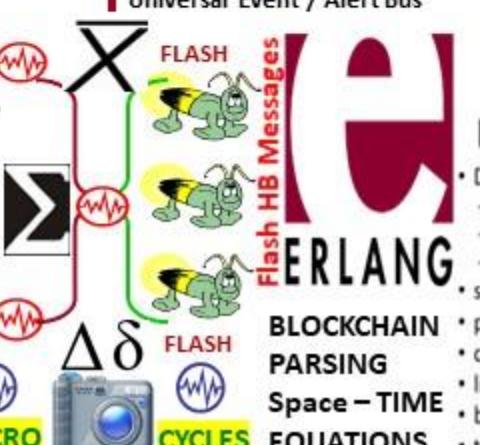


* Truthfulness, accuracy or precision, correctness

FIREFLY – HEARTBEAT {"108"}
Stochastic Harmonization

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

State Meta Data
Heartbeat Snaps



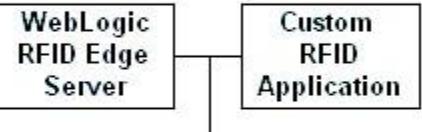
Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data



epcis

EPCIS DATA MODEL



SERVICE LAYER

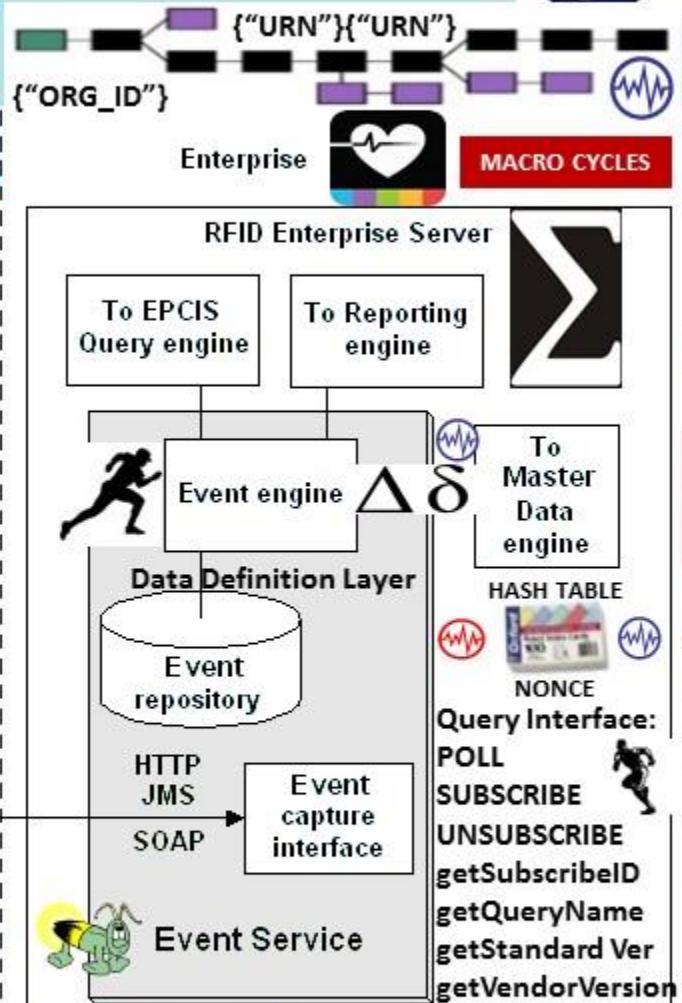
XML

ObjectEvent

AggregationEvent

QuantityEvent

TransactionEvent



Core Business Vocabulary (CBV)

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

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

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

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

MICRO CYCLES



CLOSER IS CHEAPER
CLOSER IS FASTER

$\Delta\delta$



$\Delta\delta$



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

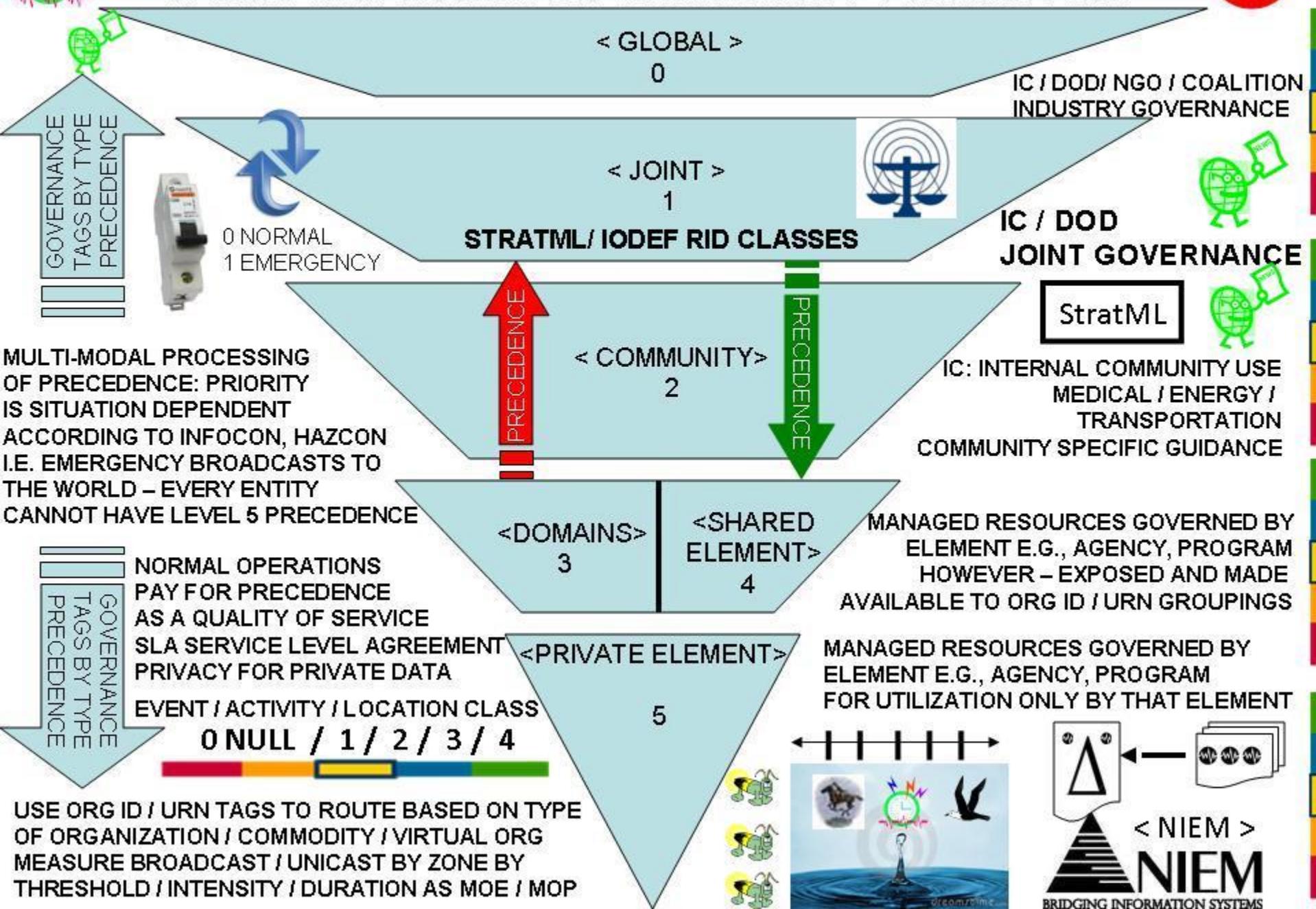
RFID Configuration TCP/IP heartbeat message

STRUCTURED DATA EXCHANGE /
STRUCTURED MILITARY MESSAGES

FROM	BATTLEFIELD DIGITIZATION	TO
ASIAN NETWORK	PFS1 PFS2 PFS3 PFS4 PFS5 PFS6 PFS7 PFS8 PFS9 PFS10 PFS11 PFS12 PFS13 PFS14 PFS15 PFS16 PFS17 PFS18 PFS19 PFS20 PFS21 PFS22 PFS23 PFS24 PFS25 PFS26 PFS27 PFS28 PFS29 PFS30 PFS31 PFS32 PFS33 PFS34 PFS35 PFS36 PFS37 PFS38 PFS39 PFS40 PFS41 PFS42 PFS43 PFS44 PFS45 PFS46 PFS47 PFS48 PFS49 PFS50 PFS51 PFS52 PFS53 PFS54 PFS55 PFS56 PFS57 PFS58 PFS59 PFS60 PFS61 PFS62 PFS63 PFS64 PFS65 PFS66 PFS67 PFS68 PFS69 PFS70 PFS71 PFS72 PFS73 PFS74 PFS75 PFS76 PFS77 PFS78 PFS79 PFS80 PFS81 PFS82 PFS83 PFS84 PFS85 PFS86 PFS87 PFS88 PFS89 PFS90 PFS91 PFS92 PFS93 PFS94 PFS95 PFS96 PFS97 PFS98 PFS99 PFS100 PFS101 PFS102 PFS103 PFS104 PFS105 PFS106 PFS107 PFS108 PFS109 PFS110 PFS111 PFS112 PFS113 PFS114 PFS115 PFS116 PFS117 PFS118 PFS119 PFS120 PFS121 PFS122 PFS123 PFS124 PFS125 PFS126 PFS127 PFS128 PFS129 PFS130 PFS131 PFS132 PFS133 PFS134 PFS135 PFS136 PFS137 PFS138 PFS139 PFS140 PFS141 PFS142 PFS143 PFS144 PFS145 PFS146 PFS147 PFS148 PFS149 PFS150 PFS151 PFS152 PFS153 PFS154 PFS155 PFS156 PFS157 PFS158 PFS159 PFS160 PFS161 PFS162 PFS163 PFS164 PFS165 PFS166 PFS167 PFS168 PFS169 PFS170 PFS171 PFS172 PFS173 PFS174 PFS175 PFS176 PFS177 PFS178 PFS179 PFS180 PFS181 PFS182 PFS183 PFS184 PFS185 PFS186 PFS187 PFS188 PFS189 PFS190 PFS191 PFS192 PFS193 PFS194 PFS195 PFS196 PFS197 PFS198 PFS199 PFS199 PFS200 PFS201 PFS202 PFS203 PFS204 PFS205 PFS206 PFS207 PFS208 PFS209 PFS210 PFS211 PFS212 PFS213 PFS214 PFS215 PFS216 PFS217 PFS218 PFS219 PFS220 PFS221 PFS222 PFS223 PFS224 PFS225 PFS226 PFS227 PFS228 PFS229 PFS229 PFS230 PFS231 PFS232 PFS233 PFS234 PFS235 PFS236 PFS237 PFS238 PFS239 PFS239 PFS240 PFS241 PFS242 PFS243 PFS244 PFS245 PFS246 PFS247 PFS248 PFS249 PFS249 PFS250 PFS251 PFS252 PFS253 PFS254 PFS255 PFS256 PFS257 PFS258 PFS259 PFS259 PFS260 PFS261 PFS262 PFS263 PFS264 PFS265 PFS266 PFS267 PFS267 PFS268 PFS269 PFS269 PFS270 PFS270 PFS271 PFS271 PFS272 PFS272 PFS273 PFS273 PFS274 PFS274 PFS275 PFS275 PFS276 PFS276 PFS277 PFS277 PFS278 PFS278 PFS279 PFS279 PFS280 PFS280 PFS281 PFS281 PFS282 PFS282 PFS283 PFS283 PFS284 PFS284 PFS285 PFS285 PFS286 PFS286 PFS287 PFS287 PFS288 PFS288 PFS289 PFS289 PFS290 PFS290 PFS291 PFS291 PFS292 PFS292 PFS293 PFS293 PFS294 PFS294 PFS295 PFS295 PFS296 PFS296 PFS297 PFS297 PFS298 PFS298 PFS299 PFS299 PFS300 PFS300 PFS301 PFS301 PFS302 PFS302 PFS303 PFS303 PFS304 PFS304 PFS305 PFS305 PFS306 PFS306 PFS307 PFS307 PFS308 PFS308 PFS309 PFS309 PFS310 PFS310 PFS311 PFS311 PFS312 PFS312 PFS313 PFS313 PFS314 PFS314 PFS315 PFS315 PFS316 PFS316 PFS317 PFS317 PFS318 PFS318 PFS319 PFS319 PFS320 PFS320 PFS321 PFS321 PFS322 PFS322 PFS323 PFS323 PFS324 PFS324 PFS325 PFS325 PFS326 PFS326 PFS327 PFS327 PFS328 PFS328 PFS329 PFS329 PFS330 PFS330 PFS331 PFS331 PFS332 PFS332 PFS333 PFS333 PFS334 PFS334 PFS335 PFS335 PFS336 PFS336 PFS337 PFS337 PFS338 PFS338 PFS339 PFS339 PFS340 PFS340 PFS341 PFS341 PFS342 PFS342 PFS343 PFS343 PFS344 PFS344 PFS345 PFS345 PFS346 PFS346 PFS347 PFS347 PFS348 PFS348 PFS349 PFS349 PFS350 PFS350 PFS351 PFS351 PFS352 PFS352 PFS353 PFS353 PFS354 PFS354 PFS355 PFS355 PFS356 PFS356 PFS357 PFS357 PFS358 PFS358 PFS359 PFS359 PFS360 PFS360 PFS361 PFS361 PFS362 PFS362 PFS363 PFS363 PFS364 PFS364 PFS365 PFS365 PFS366 PFS366 PFS367 PFS367 PFS368 PFS368 PFS369 PFS369 PFS370 PFS370 PFS371 PFS371 PFS372 PFS372 PFS373 PFS373 PFS374 PFS374 PFS375 PFS375 PFS376 PFS376 PFS377 PFS377 PFS378 PFS378 PFS379 PFS379 PFS380 PFS380 PFS381 PFS381 PFS382 PFS382 PFS383 PFS383 PFS384 PFS384 PFS385 PFS385 PFS386 PFS386 PFS387 PFS387 PFS388 PFS388 PFS389 PFS389 PFS390 PFS390 PFS391 PFS391 PFS392 PFS392 PFS393 PFS393 PFS394 PFS394 PFS395 PFS395 PFS396 PFS396 PFS397 PFS397 PFS398 PFS398 PFS399 PFS399 PFS400 PFS400 PFS401 PFS401 PFS402 PFS402 PFS403 PFS403 PFS404 PFS404 PFS405 PFS405 PFS406 PFS406 PFS407 PFS407 PFS408 PFS408 PFS409 PFS409 PFS410 PFS410 PFS411 PFS411 PFS412 PFS412 PFS413 PFS413 PFS414 PFS414 PFS415 PFS415 PFS416 PFS416 PFS417 PFS417 PFS418 PFS418 PFS419 PFS419 PFS420 PFS420 PFS421 PFS421 PFS422 PFS422 PFS423 PFS423 PFS424 PFS424 PFS425 PFS425 PFS426 PFS426 PFS427 PFS427 PFS428 PFS428 PFS429 PFS429 PFS430 PFS430 PFS431 PFS431 PFS432 PFS432 PFS433 PFS433 PFS434 PFS434 PFS435 PFS435 PFS436 PFS436 PFS437 PFS437 PFS438 PFS438 PFS439 PFS439 PFS440 PFS440 PFS441 PFS441 PFS442 PFS442 PFS443 PFS443 PFS444 PFS444 PFS445 PFS445 PFS446 PFS446 PFS447 PFS447 PFS448 PFS448 PFS449 PFS449 PFS450 PFS450 PFS451 PFS451 PFS452 PFS452 PFS453 PFS453 PFS454 PFS454 PFS455 PFS455 PFS456 PFS456 PFS457 PFS457 PFS458 PFS458 PFS459 PFS459 PFS460 PFS460 PFS461 PFS461 PFS462 PFS462 PFS463 PFS463 PFS464 PFS464 PFS465 PFS465 PFS466 PFS466 PFS467 PFS467 PFS468 PFS468 PFS469 PFS469 PFS470 PFS470 PFS471 PFS471 PFS472 PFS472 PFS473 PFS473 PFS474 PFS474 PFS475 PFS475 PFS476 PFS476 PFS477 PFS477 PFS478 PFS478 PFS479 PFS479 PFS480 PFS480 PFS481 PFS481 PFS482 PFS482 PFS483 PFS483 PFS484 PFS484 PFS485 PFS485 PFS486 PFS486 PFS487 PFS487 PFS488 PFS488 PFS489 PFS489 PFS490 PFS490 PFS491 PFS491 PFS492 PFS492 PFS493 PFS493 PFS494 PFS494 PFS495 PFS495 PFS496 PFS496 PFS497 PFS497 PFS498 PFS498 PFS499 PFS499 PFS500 PFS500 PFS501 PFS501 PFS502 PFS502 PFS503 PFS503 PFS504 PFS504 PFS505 PFS505 PFS506 PFS506 PFS507 PFS507 PFS508 PFS508 PFS509 PFS509 PFS510 PFS510 PFS511 PFS511 PFS512 PFS512 PFS513 PFS513 PFS514 PFS514 PFS515 PFS515 PFS516 PFS516 PFS517 PFS517 PFS518 PFS518 PFS519 PFS519 PFS520 PFS520 PFS521 PFS521 PFS522 PFS522 PFS523 PFS523 PFS524 PFS524 PFS525 PFS525 PFS526 PFS526 PFS527 PFS527 PFS528 PFS528 PFS529 PFS529 PFS530 PFS530 PFS531 PFS531 PFS532 PFS532 PFS533 PFS533 PFS534 PFS534 PFS535 PFS535 PFS536 PFS536 PFS537 PFS537 PFS538 PFS538 PFS539 PFS539 PFS540 PFS540 PFS541 PFS541 PFS542 PFS542 PFS543 PFS543 PFS544 PFS544 PFS545 PFS545 PFS546 PFS546 PFS547 PFS547 PFS548 PFS548 PFS549 PFS549 PFS550 PFS550 PFS551 PFS551 PFS552 PFS552 PFS553 PFS553 PFS554 PFS554 PFS555 PFS555 PFS556 PFS556 PFS557 PFS557 PFS558 PFS558 PFS559 PFS559 PFS560 PFS560 PFS561 PFS561 PFS562 PFS562 PFS563 PFS563 PFS564 PFS564 PFS565 PFS565 PFS566 PFS566 PFS567 PFS567 PFS568 PFS568 PFS569 PFS569 PFS570 PFS570 PFS571 PFS571 PFS572 PFS572 PFS573 PFS573 PFS574 PFS574 PFS575 PFS575 PFS576 PFS576 PFS577 PFS577 PFS578 PFS578 PFS579 PFS579 PFS580 PFS580 PFS581 PFS581 PFS582 PFS582 PFS583 PFS583 PFS584 PFS584 PFS585 PFS585 PFS586 PFS586 PFS587 PFS587 PFS588 PFS588 PFS589 PFS589 PFS590 PFS590 PFS591 PFS591 PFS592 PFS592 PFS593 PFS593 PFS594 PFS594 PFS595 PFS595 PFS596 PFS596 PFS597 PFS597 PFS598 PFS598 PFS599 PFS599 PFS600 PFS600 PFS601 PFS601 PFS602 PFS602 PFS603 PFS603 PFS604 PFS604 PFS605 PFS605 PFS606 PFS606 PFS607 PFS607 PFS608 PFS608 PFS609 PFS609 PFS610 PFS610 PFS611 PFS611 PFS612 PFS612 PFS613 PFS613 PFS614 PFS614 PFS615 PFS615 PFS616 PFS616 PFS617 PFS617 PFS618 PFS618 PFS619 PFS619 PFS620 PFS620 PFS621 PFS621 PFS622 PFS622 PFS623 PFS623 PFS624 PFS624 PFS625 PFS625 PFS626 PFS626 PFS627 PFS627 PFS628 PFS628 PFS629 PFS629 PFS630 PFS630 PFS631 PFS631 PFS632 PFS632 PFS633 PFS633 PFS634 PFS634 PFS635 PFS635 PFS636 PFS636 PFS637 PFS637 PFS638 PFS638 PFS639 PFS639 PFS640 PFS640 PFS641 PFS641 PFS642 PFS642 PFS643 PFS643 PFS644 PFS644 PFS645 PFS645 PFS646 PFS646 PFS647 PFS647 PFS648 PFS648 PFS649 PFS649 PFS650 PFS650 PFS651 PFS651 PFS652 PFS652 PFS653 PFS653 PFS654 PFS654 PFS655 PFS655 PFS656 PFS656 PFS657 PFS657 PFS658 PFS658 PFS659 PFS659 PFS660 PFS660 PFS661 PFS661 PFS662 PFS662 PFS663 PFS663 PFS664 PFS664 PFS665 PFS665 PFS666 PFS666 PFS667 PFS667 PFS668 PFS668 PFS669 PFS669 PFS670 PFS670 PFS671 PFS671 PFS672 PFS672 PFS673 PFS673 PFS674 PFS674 PFS675 PFS675 PFS676 PFS676 PFS677 PFS677 PFS678 PFS678 PFS679 PFS679 PFS680 PFS680 PFS681 PFS681 PFS682 PFS682 PFS683 PFS683 PFS684 PFS684 PFS685 PFS685 PFS686 PFS686 PFS687 PFS687 PFS688 PFS688 PFS689 PFS689 PFS690 PFS690 PFS691 PFS691 PFS692 PFS692 PFS693 PFS693 PFS694 PFS694 PFS695 PFS695 PFS696 PFS696 PFS697 PFS697 PFS698 PFS698 PFS699 PFS699 PFS700 PFS700 PFS701 PFS701 PFS702 PFS702 PFS703 PFS703 PFS704 PFS704 PFS705 PFS705 PFS706 PFS706 PFS707 PFS707 PFS708 PFS708 PFS709 PFS709 PFS710 PFS710 PFS711 PFS711 PFS712 PFS712 PFS713 PFS713 PFS714 PFS714 PFS715 PFS715 PFS716 PFS716 PFS717 PFS717 PFS718 PFS718 PFS719 PFS719 PFS720 PFS720 PFS721 PFS721 PFS722 PFS722 PFS723 PFS723 PFS724 PFS724 PFS725 PFS725 PFS726 PFS726 PFS727 PFS727 PFS728 PFS728 PFS729 PFS729 PFS730 PFS730 PFS731 PFS731 PFS732 PFS732 PFS733 PFS733 PFS734 PFS734 PFS735 PFS735 PFS736 PFS736 PFS737 PFS737 PFS738 PFS738 PFS739 PFS739 PFS740 PFS740 PFS741 PFS741 PFS742 PFS742 PFS743 PFS743 PFS744 PFS744 PFS745 PFS745 PFS746 PFS746 PFS747 PFS747 PFS748 PFS748 PFS749 PFS749 PFS750 PFS750 PFS751 PFS751 PFS752 PFS752 PFS753 PFS753 PFS754 PFS754 PFS755 PFS755 PFS756 PFS756 PFS757 PFS757 PFS758 PFS758 PFS759 PFS759 PFS760 PFS760 PFS761 PFS761 PFS762 PFS762 PFS763 PFS763 PFS764 PFS764 PFS765 PFS765 PFS766 PFS766 PFS767 PFS767 PFS768 PFS768 PFS769 PFS769 PFS770 PFS770 PFS771 PFS771 PFS772 PFS772 PFS773 PFS773 PFS774 PFS774 PFS775 PFS775 PFS776 PFS776 PFS777 PFS777 PFS778 PFS778 PFS779 PFS779 PFS780 PFS780 PFS781 PFS781 PFS782 PFS782 PFS783 PFS783 PFS784 PFS784 PFS785 PFS785 PFS786 PFS786 PFS787 PFS787 PFS788 PFS788 PFS789 PFS789 PFS790 PFS790 PFS791 PFS791 PFS792 PFS792 PFS793 PFS793 PFS794 PFS794 PFS795 PFS795 PFS796 PFS796 PFS797 PFS797 PFS798 PFS798 PFS799 PFS799 PFS800 PFS800 PFS801 PFS801 PFS802 PFS802 PFS803 PFS803 PFS804 PFS804 PFS805 PFS805 PFS806 PFS806 PFS807 PFS807 PFS808 PFS808 PFS809 PFS809 PFS810 PFS810 PFS811 PFS811 PFS812 PFS812 PFS813 PFS813 PFS814 PFS814 PFS815 PFS815 PFS816 PFS816 PFS817 PFS817 PFS818 PFS818 PFS819 PFS819 PFS820 PFS820 PFS821 PFS821 PFS822 PFS822 PFS823 PFS823 PFS824 PFS824 PFS825 PFS825 PFS826 PFS826 PFS827 PFS827 PFS828 PFS828 PFS829 PFS829 PFS830 PFS830 PFS831 PFS831 PFS832 PFS832 PFS833 PFS833 PFS834 PFS834 PFS835 PFS835 PFS836 PFS836 PFS837 PFS837 PFS838 PFS838 PFS839 PFS839 PFS840 PFS840 PFS841 PFS841 PFS842 PFS842 PFS843 PFS843 PFS844 PFS844 PFS845 PFS845 PFS846 PFS846 PFS847 PFS847 PFS848 PFS848 PFS849 PFS849 PFS850 PFS850 PFS851 PFS851 PFS852 PFS852 PFS853 PFS853 PFS854 PFS854 PFS855 PFS855 PFS856 PFS856 PFS857 PFS857 PFS858 PFS858 PFS859 PFS859 PFS860 PFS860 PFS861 PFS861 PFS862 PFS862 PFS863 PFS863 PFS864 PFS864 PFS865 PFS865 PFS866 PFS866 PFS867 PFS867 PFS868 PFS868 PFS869 PFS869 PFS870 PFS870 PFS871 PFS871 PFS872 PFS872 PFS873 PFS873 PFS874 PFS874 PFS875 PFS875 PFS876 PFS876 PFS877 PFS877 PFS878 PFS878 PFS879 PFS879 PFS880 PFS880 PFS881 PFS881 PFS882 PFS882 PFS883 PFS883 PFS884 PFS884 PFS885 PFS885 PFS886 PFS886 PFS887 PFS887 PFS888 PFS888 PFS889 PFS889 PFS890 PFS890 PFS891 PFS891 PFS892 PFS892 PFS893 PFS893 PFS894 PFS894 PFS895 PFS895 PFS896 PFS896 PFS897 PFS897 PFS898 PFS898 PFS899 PFS899 PFS900 PFS900 PFS901 PFS901 PFS902 PFS902 PFS903 PFS903 PFS904 PFS904 PFS905 PFS905 PFS906 PFS906 PFS907 PFS907 PFS908 PFS908 PFS909 PFS909 PFS910 PFS910 PFS911 PFS911 PFS912 PFS912 PFS913 PFS913 PFS914 PFS914 PFS915 PFS915 PFS916 PFS916 PFS917 PFS917 PFS918 PFS918 PFS919 PFS919 PFS920 PFS920 PFS921 PFS921 PFS922 PFS922 PFS923 PFS923 PFS924 PFS924 PFS925 PFS925 PFS926 PFS926 PFS927 PFS927 PFS928 PFS928 PFS929 PFS929 PFS930 PFS930 PFS931 PFS931 PFS932 PFS932 PFS933 PFS933 PFS934 PFS934 PFS935 PFS935 PFS936 PFS936 PFS937 PFS937 PFS938 PFS938 PFS939 PFS939 PFS940 PFS940 PFS941 PFS941 PFS942 PFS942 PFS943 PFS943 PFS944 PFS944 PFS945 PFS945 PFS946 PFS946 PFS947 PFS947 PFS948 PFS948 PFS949 PFS949 PFS950 PFS950 PFS951 PFS951 PFS952 PFS952 PFS953 PFS953 PFS954 PFS954 PFS955 PFS955 PFS956 PFS956 PFS957 PFS957 PFS958 PFS958 PFS959 PFS959 PFS960 PFS960 PFS961 PFS961 PFS962 PFS962 PFS963 PFS963 PFS964 PFS964 PFS965 PFS965 PFS966 PFS966 PFS967 PFS967 PFS968 PFS968 PFS969 PFS969 PFS970 PFS970 PFS971 PFS971 PFS972 PFS972 PFS973 PFS973 PFS974 PFS974 PFS975 PFS975 PFS976 PFS976 PFS977 PFS977 PFS978 PFS978 PFS979 PFS979 PFS980 PFS980 PFS981 PFS981 PFS982 PFS982 PFS983 PFS983 PFS984 PFS984 PFS985 PFS985 PFS986 PFS986 PFS987 PFS987 PFS988 PFS988 PFS989 PFS989 PFS990 PFS990 PFS991 PFS991 PFS992 PFS992 PFS993 PFS993 PFS994 PFS994 PFS995 PFS995 PFS996 PFS996 PFS997 PFS997 PFS998 PFS998 PFS999 PFS999 PFS1000 PFS1000 PFS1001 PFS1001 PFS1002 PFS1002 PFS1003 PFS1003 PFS1004 PFS1004 PFS1005 PFS1005 PFS1006 PFS1006 PFS1007 PFS1007 PFS1008 PFS1008 PFS1009 PFS1009 PFS1010 PFS1010 PFS1011 PFS1011 PFS1012 PFS1012 PFS1013 PFS1013 PFS1014 PFS1014 PFS1015 PFS1015 PFS1016 PFS1016 PFS1017 PFS1017 PFS1018 PFS1018 PFS1019 PFS1019 PFS1020 PFS1020 PFS1021 PFS1021 PFS1022 PFS1022 PFS1023 PFS1023 PFS1024 PFS1024 PFS1025 PFS1025 PFS1026 PFS1026 PFS1027 PFS1027 PFS1028 PFS1028 PFS1029 PFS1029 PFS1030 PFS1030 PFS1031 PFS1031 PFS1032 PFS1032 PFS1033 PFS1033 PFS1034 PFS1034 PFS1035 PFS1035 PFS1036 PFS1036 PFS1037 PFS1037 PFS1038 PFS1038 PFS1039 PFS1039 PFS1040 PFS1040 PFS1041 PFS1041 PFS1042 PFS1042 PFS1043 PFS1043 PFS1044 PFS1044 PFS1045 PFS1045 PFS1046 PFS1046 PFS1047 PFS1047 PFS1048 PFS1048 PFS1049 PFS1049 PFS1050 PFS1050 PFS1051 PFS1051 PFS1052 PFS1052 PFS1053 PFS1053 PFS1054 PFS1054 PFS1055 PFS1055 PFS1056 PFS1056 PFS1057 PFS1057 PFS1058 PFS1058 PFS1059 PFS1059 PFS1060 PFS1060 PFS1061 PFS1061 PFS1062 PFS1062 PFS1063 PFS1063 PFS1064 PFS1064 PFS1065 PFS1065 PFS1066 PFS1066 PFS1067 PFS1067 PFS1068 PFS1068 PFS1069 PFS1069 PFS1070 PFS1070 PFS1071 PFS1071 PFS1072 PFS1072 PFS1073 PFS1073 PFS1074 PFS1074 PFS1075 PFS1075 PFS1076 PFS1076 PFS1077 PFS1077 PFS1078 PFS1078 PFS1079 PFS1079 PFS1080 PFS1080 PFS1081 PFS1081 PFS1082 PFS1082 PFS1083 PFS1083 PFS1084 PFS1084 PFS1085 PFS1085 PFS1086 PFS1086 PFS1087 PFS1087 PFS1088 PFS1088 PFS1089 PFS1089 PFS1090 PFS1090 PFS1091 PFS1091 PFS1092 PFS1092 PFS1093 PFS1093 PFS1094 PFS1094 PFS1095 PFS1095 PFS1096 PFS1096 PFS1097 PFS1097 PFS1098 PFS1098 PFS1099 PFS1099 PFS1100 PFS1100 PFS1101 PFS1101 PFS1102 PFS1102 PFS1103 PFS1103 PFS1104 PFS1104 PFS1105 PFS1105 PFS1106 PFS1106 PFS1107 PFS1107 PFS1108 PFS1108 PFS1109 PFS1109 PFS1110 PFS1110 PFS1111 PFS1111 PFS1112 PFS1112 PFS1113 PFS1113 PFS1114 PFS1114 PFS1115 PFS1115 PFS1116 PFS1116 PFS1117 PFS1117 PFS1118 PFS1118 PFS1119 PFS1119 PFS1120 PFS1120 PFS1121 PFS1121 PFS1122 PFS1122 PFS1123 PFS1123 PFS1124 PFS1124 PFS1125 PFS1125 PFS1126 PFS1126 PFS1127 PFS1127 PFS1128 PFS1128 PFS1129 PFS1129 PFS1130 PFS1130 PFS1131 PFS1131 PFS1132 PFS1132 PFS1133 PFS1133 PFS1134 PFS1134 PFS1135 PFS1135 PFS1136 PFS1136 PFS1137 PFS1137 PFS1138 PFS1138 PFS1139 PFS1139 PFS1140 PFS1140 PFS1141 PFS1141 PFS1142 PFS	



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



Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

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



Industrial Control System
Information Sharing and
Analysis Center

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

<ELEMENTS>

STRATEGIC
MARKUP

StratML

LANGUAGE

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

INVENTORY: Uniform Resource Name <URN>

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



vector

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

GEO-SPATIAL TEMPORAL INTENSITY METRICS

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

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

CONTENT LEXICON
ROSETTA STONE

NDN

<GEO_LOC_GPS><STATUS>



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



NDN

<INTEREST>



NDN

<INTEREST>



AVALANCHE

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

NIST CYBER SECURITY FRAMEWORK

CYBER SECURITY CONTENT
LEXICON ROSETTA STONE

MIL-STD 2525A
STRUCTURED <CONTENT> TEMPLATES

<TAG> LIBRARY
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



Heart Beacon Cycle

Trade Federation on Bitcoin Blockchain



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

Net joins, drops, splits, merges, moves

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

Federation Gateway



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

Bitcoin Mining Pools
MEME / METAPHOR MEDIATION



Office 365 Groups



TERM **DISTRIBUTED AUTONOMOUS ORGANIZATION DAO** first coined by RAND

Circa 1991 now in use by Blockchain tech corporations..

FIREFLY FLASH
HEARTBEAT MESSAGES



Uniform_Resource_Name

```
</RESOURCE> {"URN"}  
{"Asset_Class"} </URN>
```



iET DEVICE / PLATFORM
IoT SENSOR DEVICE

{"Asset_Type"}

STOCK EXCHANGE
MIC MARKET IDENTIFIER
CODES / BREVITY CODES



FEDERATED ID
Org Unit OU, OU, OU

Heartbeat Snaps

EVENT BUS



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

MIC MARKET IDENTIFIER
CODES / BREVITY CODES

{"DUNS #"} {"Org_ID"}
{"URN"} {"URN"} {"URN"} MICRO-CYCLES





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



- Creates an online store for users to sell goods for Bitcoin
- Connects these stores directly to each other on a global network
- Users browse individual stores, search for products across whole network
- A buyer directly connects, purchases good from the merchant using Bitcoin
- Bitcoin payments via escrow protect merchants & buyers during trade

OPENBAZAAR.ORG
BLOCKCHAIN ARBITRAGE



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

PROJECT PHILOSOPHY: *MAKE TRADE FREE*

Mission: *shift trade to a decentralized platform*



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



Free and open markets:

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



HASH Values
Nonce Values

SCT Alice V Cls Bank

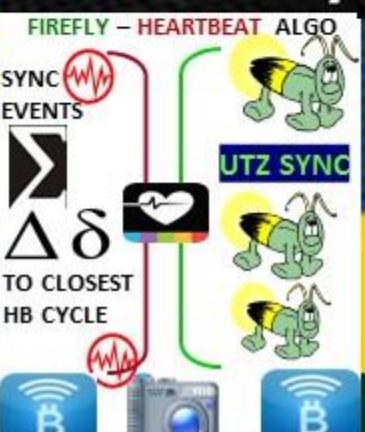


Federation
Gateway



• Privacy

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



Bitcoin: OpenBazaar transactional currency



Non-
Repudiation

Cryptographic Security

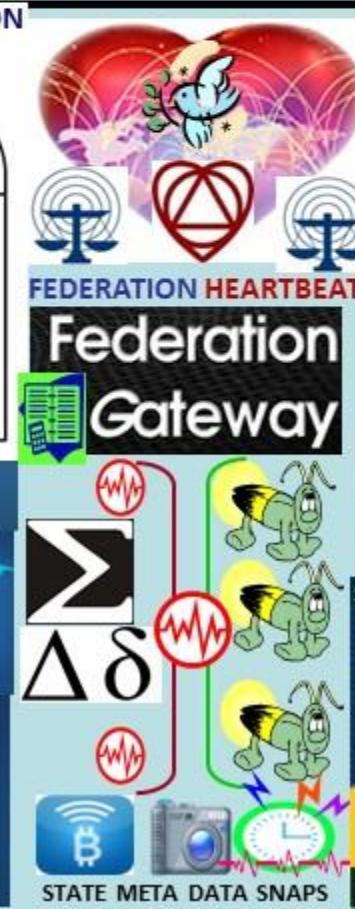
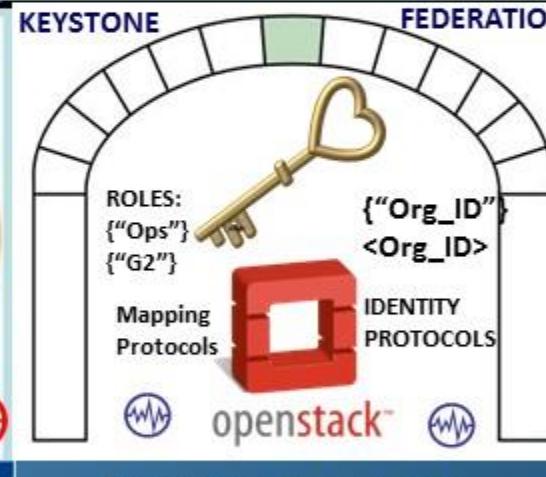
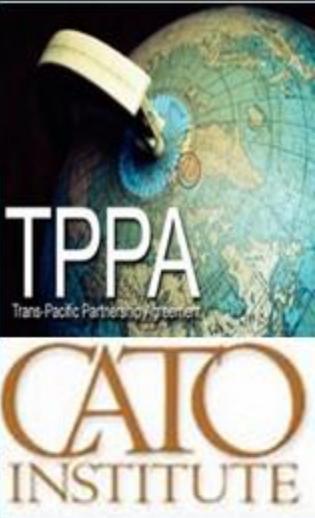
- tamper-proof agreements
- 1) minimize potential disputes
- 2) fast-track dispute resolution

SchellingPoint



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

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



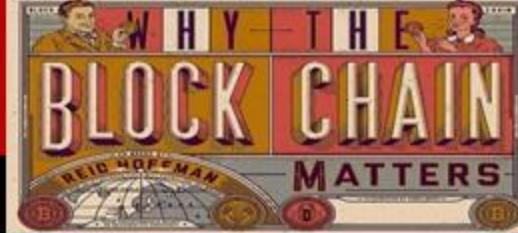
HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX



TradeNet

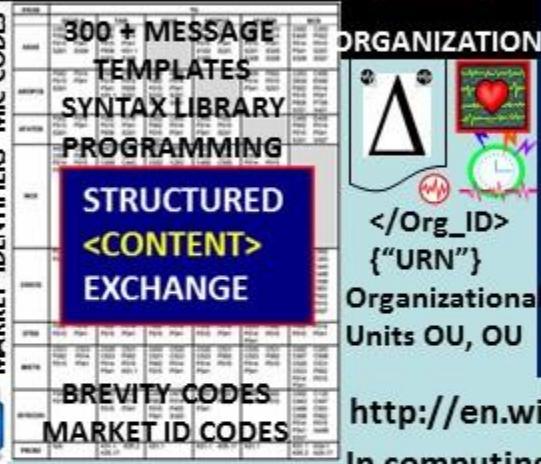
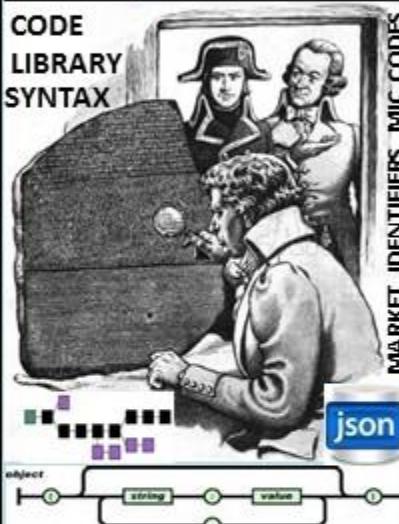


Programmable Money \$\$\$



RIED HOFFMAN 15 May 2015 [LINK](#)

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

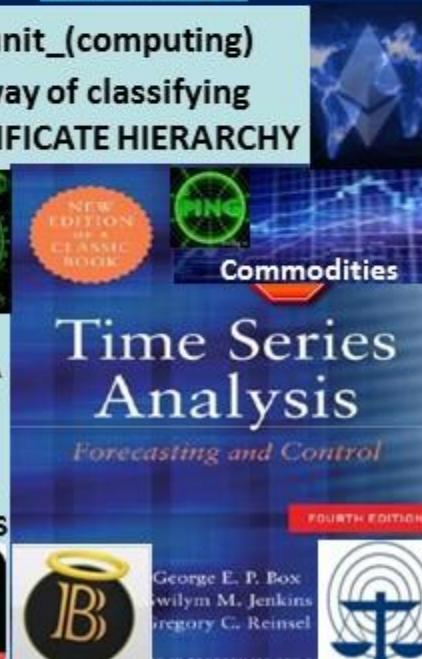
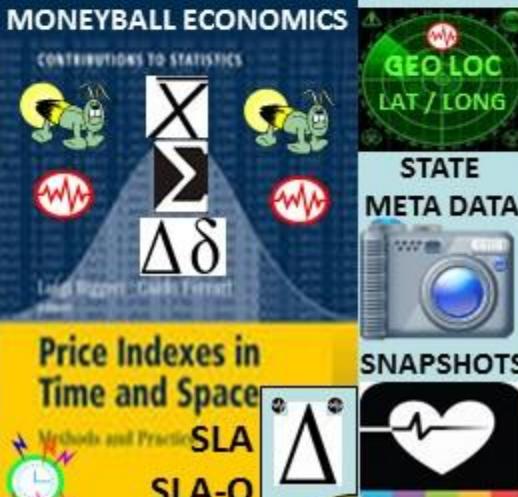


Bitcoin and the blockchain function as a medium of exchange, a store of value, a unit of account. Bitcoin adds digital, cryptographic, distributed server functions to currencies. Because it functions simultaneously as a currency, an asset and a platform, Bitcoin is better described as a global cryptoCAP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

WIRE

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

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





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

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

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



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

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

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

NEWS EVENT BUS FIREFLY HEARTBEAT ALGO EVENT BUS

DAO Distributed Autonomous Organization SOFTWARE POOLS

All Market Orders Search

Collateral Notional Expiry

Heartbeat Flash Messages Precedence Processing

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

UTZ TIME SYNC

INVESTOR POOL WORLD COMPUTER DFINITY

FINANCIAL
NOSTRADAMUS
REGGIE MIDDLETON



ECONOMIC HEARTBEAT
STATISTICAL MEAN VALUE INDEX PULSE



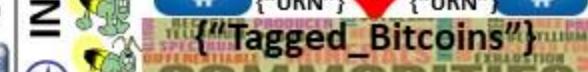
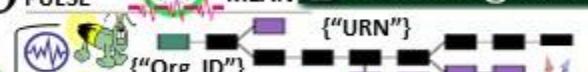
AETERNITY / DFINITY NEURAL NET

ALGORITHMIC REGULATION



SHELLING POINT TRUTH

CONTRIBUTIONS TO STATISTICS

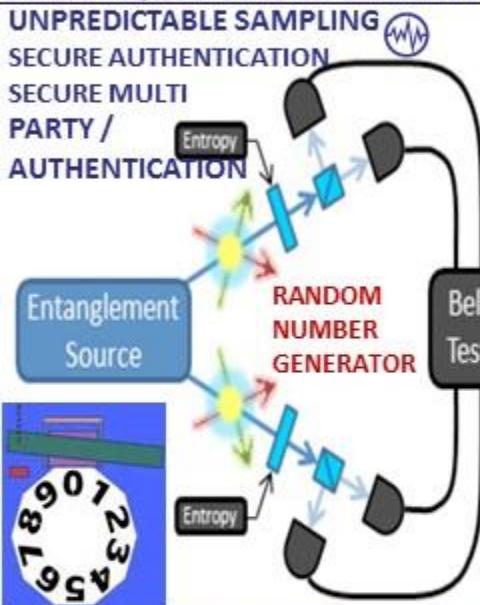


Tagged_Bitcoins

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



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors



NDN
</Interest>
</Distance>

SURVEY METHODS + TRIANGULATION
Euclidian Geometry

Geodesic System Routing Info Base RIB

ACCOUNT BELONGS TO </Org_ID>

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

DEVICE / SENSORS <UUID><UUID>

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



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

Stochastic Harmonization



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

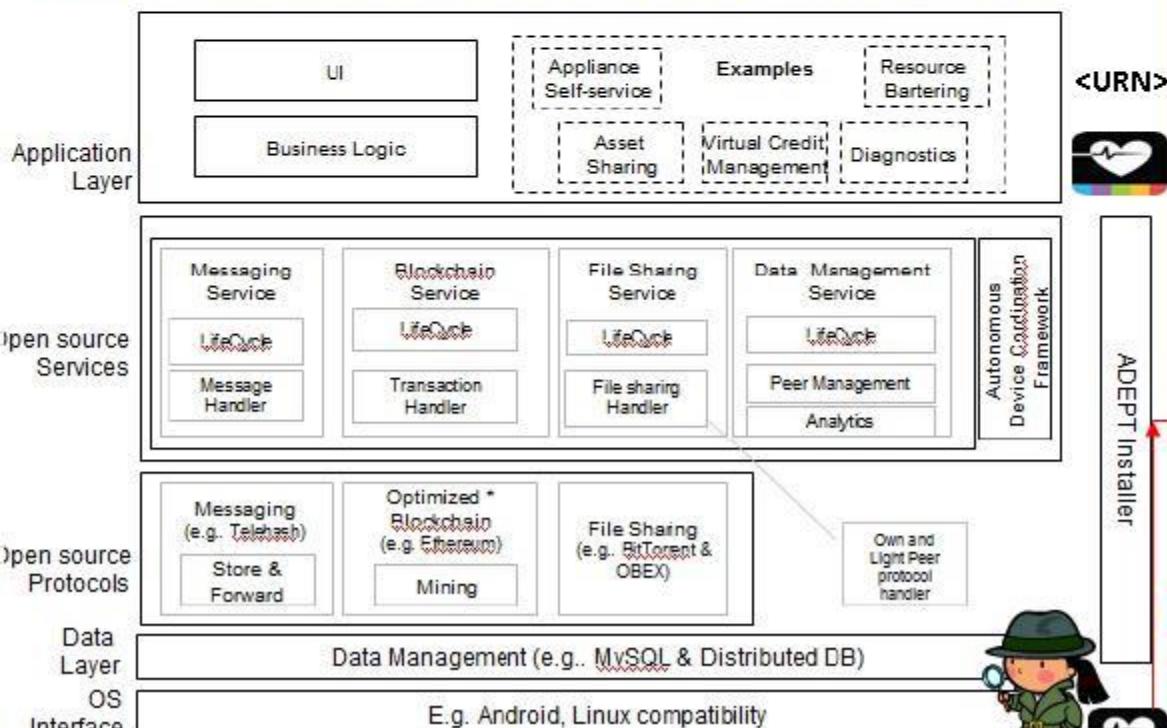
Payments

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



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



ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML_Wf>

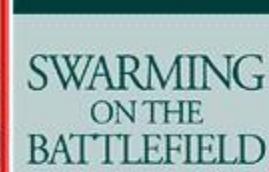
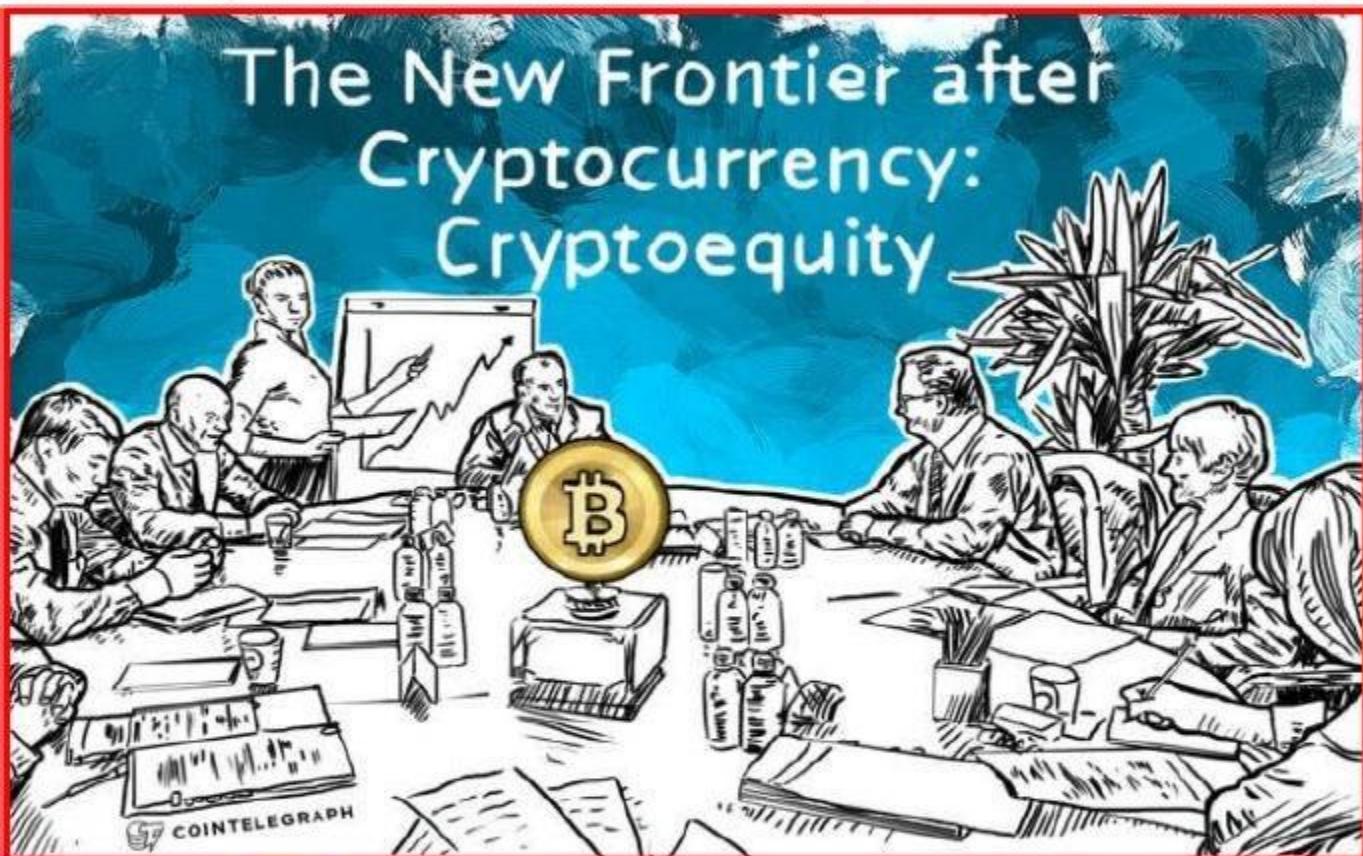
FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH



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

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

One Leader

Research Directorate

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



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

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

<https://twitter.com/TheBitcoinArmy>



ERIS: GODDESS OF DISCORD
DISRUPTIVE TECHNOLOGIES:

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



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

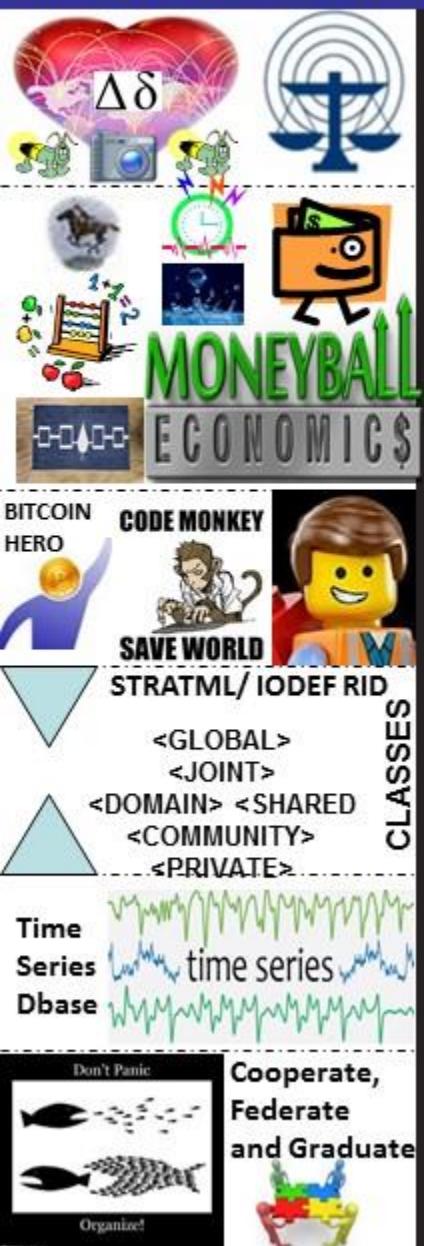
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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



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





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

Phase 2: Shared file stores data for 5 tags:

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

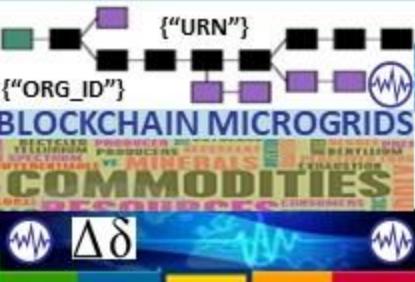
TAG	vector	ENERGY TOKENS ExDesc / COMMODITIES	digitalset
{"Org_ID"} ActiveID		[UFO2_ACTIVEID]	
IF1_Heartbeat (IF-Node1)		[UFO2_HEARTBEAT:#]	
IF2_Heartbeat (IF-Node2)		[UFO2_HEARTBEAT:#]	
{"UUID"} IF1_DeviceStatus (IF-Node1)		[UFO2_DEVICESTAT:#]	
{"UUID"} IF2_DeviceStatus (IF-Node2)		[UFO2_DEVICESTAT:#]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



TOKENIZED ECONOMY



Paul Revere = Linear, Sequential meme



$\Delta\delta$



Geo Spatial

Temporal Series

Water Drop Meme

Geospatial Radius

WATER DROP

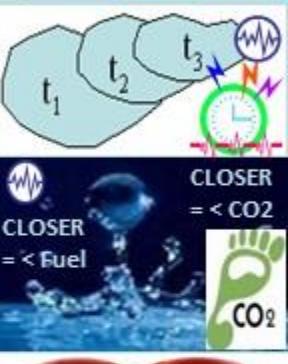
MEME= RADIUS

DISTANCE FROM

ENERGY SOURCE

Micro Payments

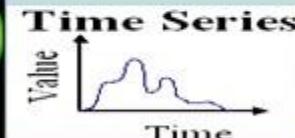
Demurrage Fees



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



Spatial
Econometrics

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

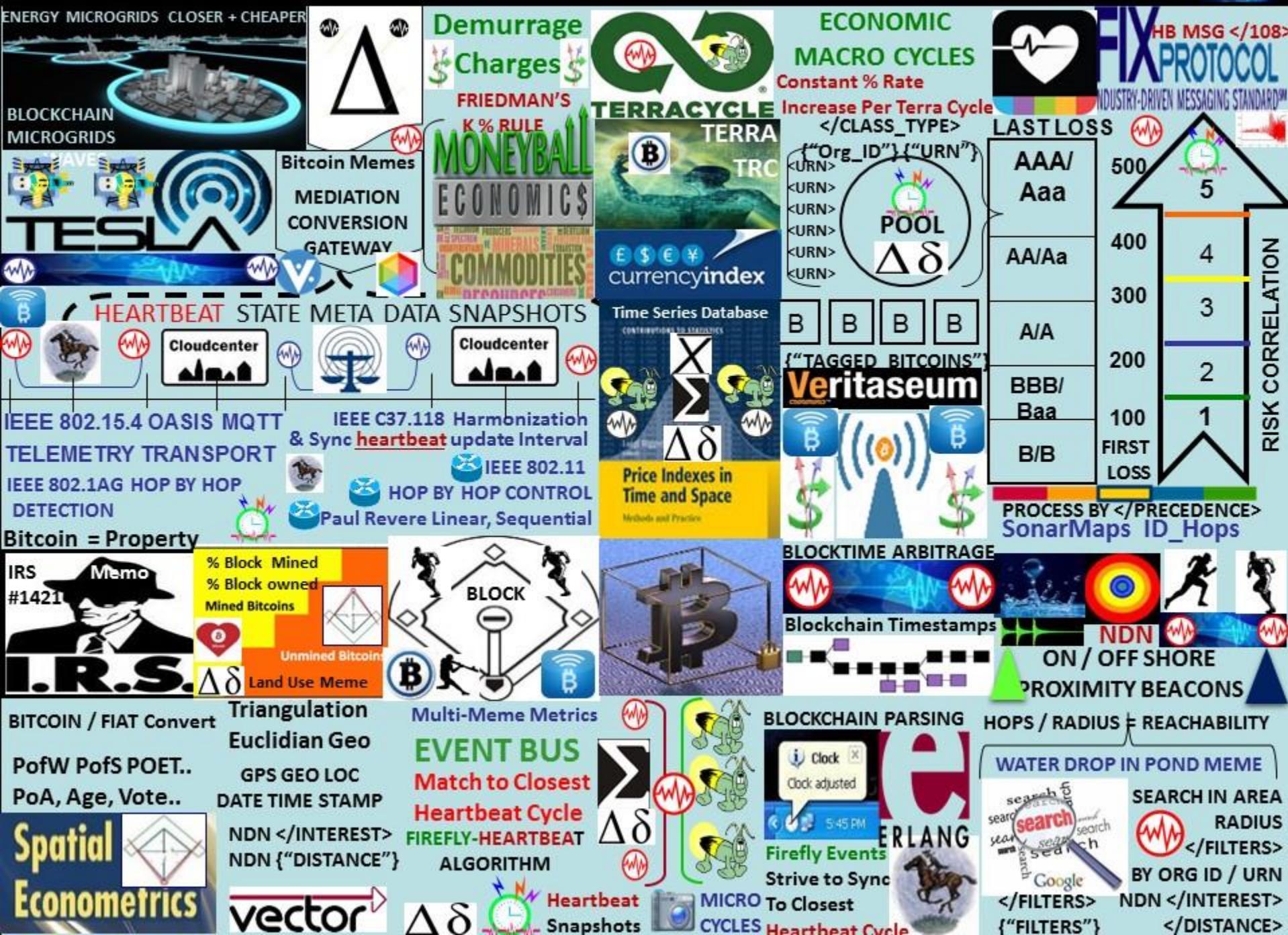


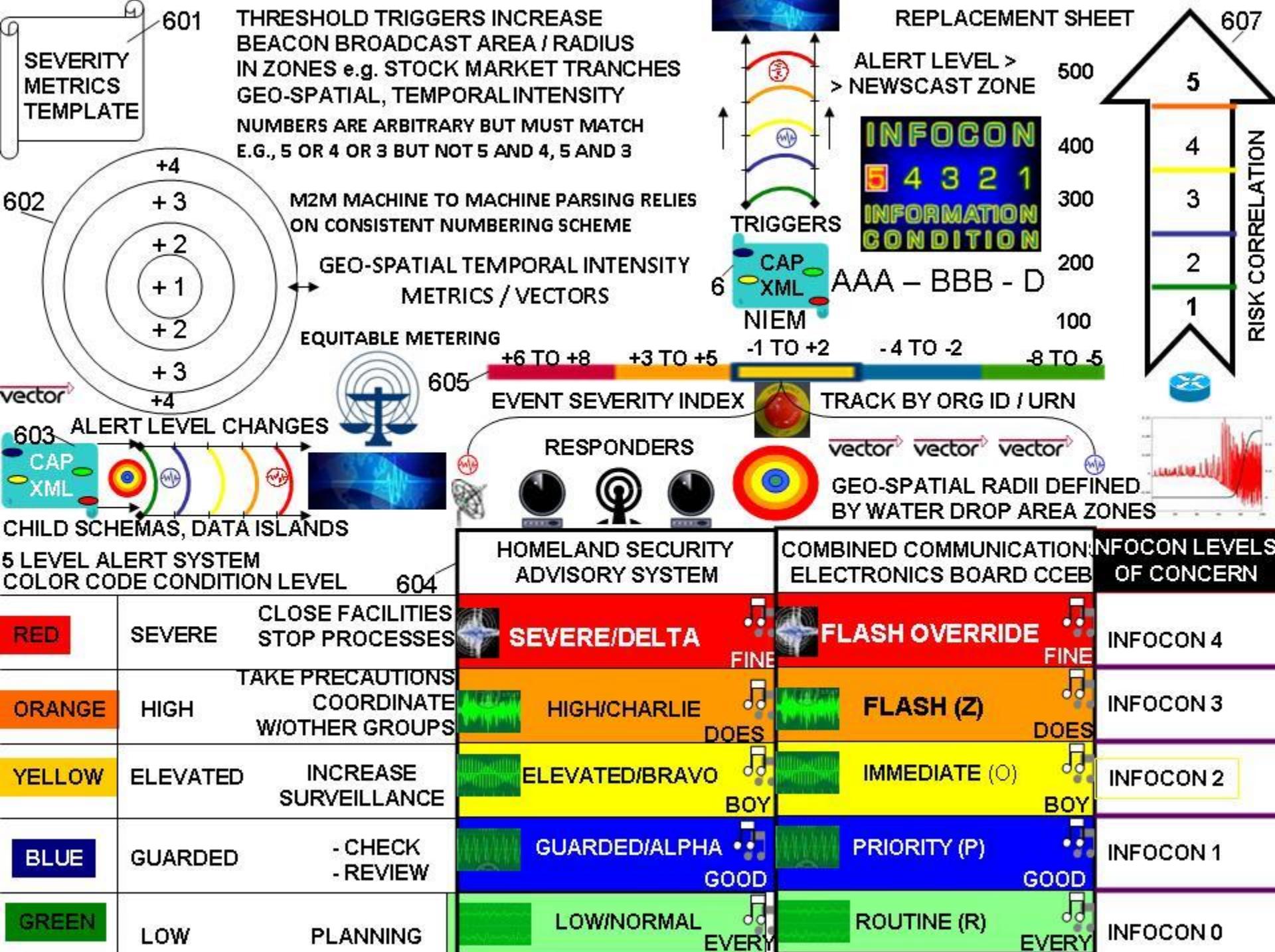
FIREFLY-HEARTBEAT ALGO EVENT MESSAGE BUS



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

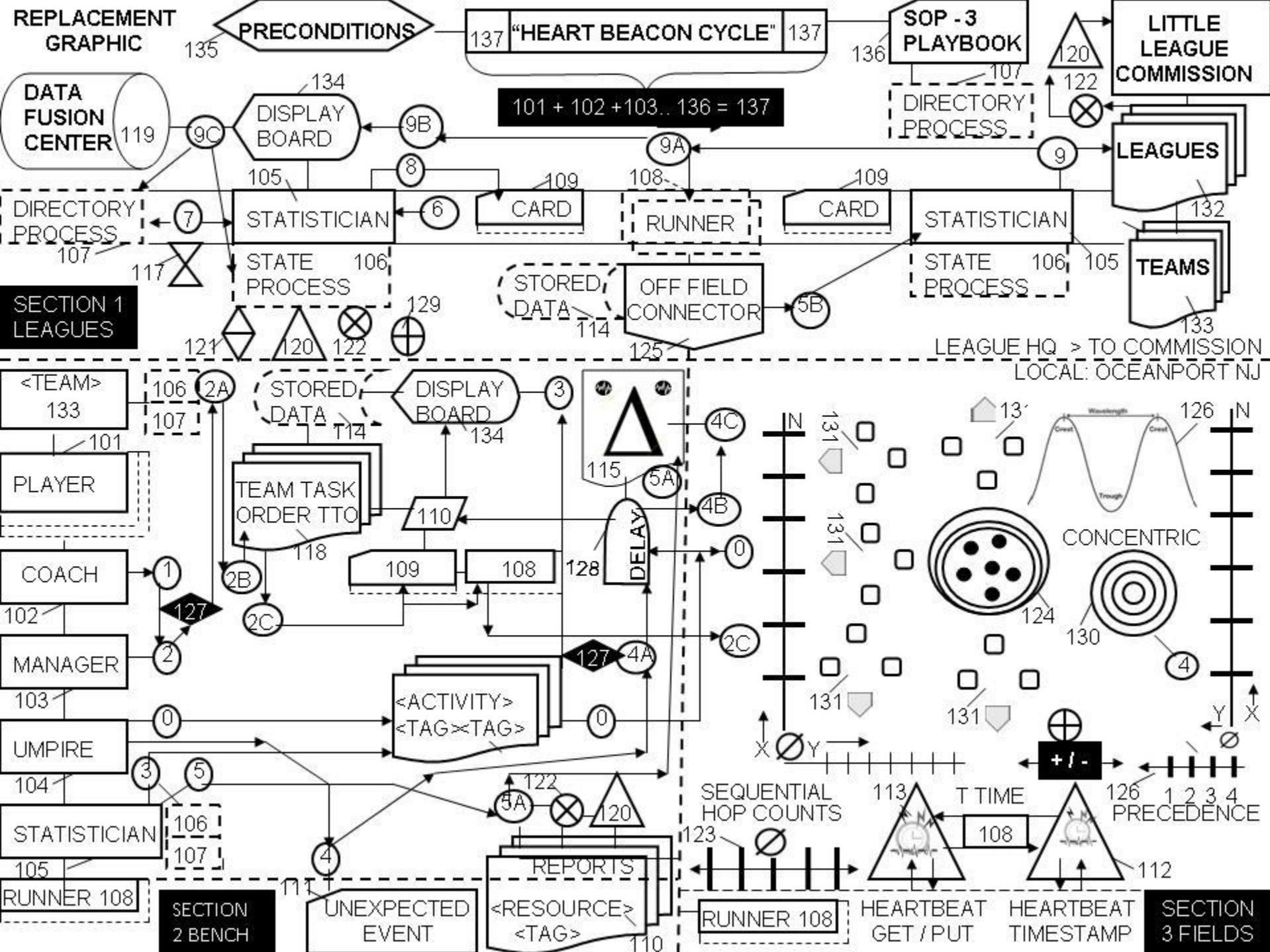
Heartbeat
State meta
Data snapshots

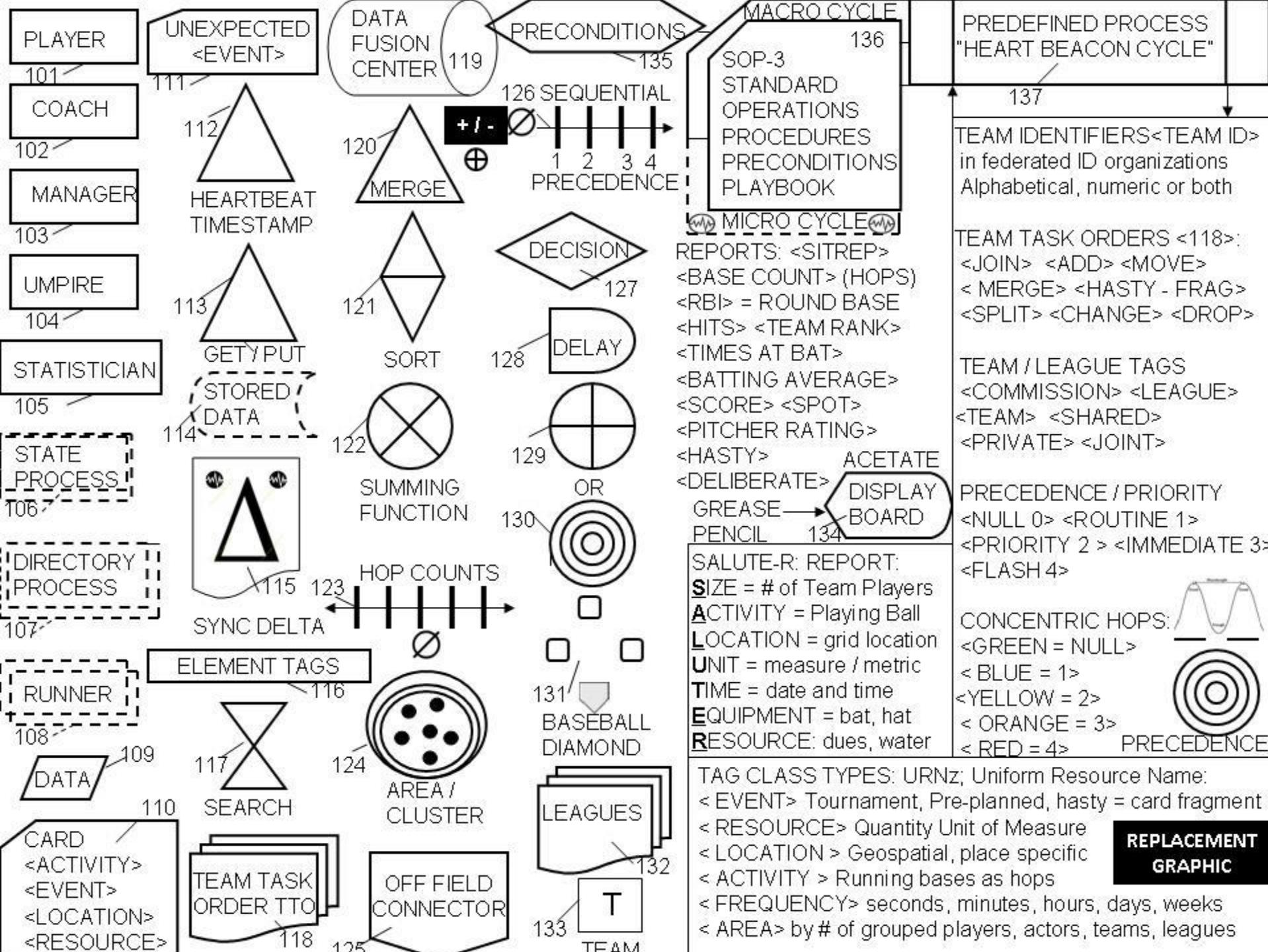




Interface Name	HEARTBEAT Administration Interface [SCOP]		
Documentation URL	http://scop.sourceforge.net/ http://linuxvirtualserver.org/software/index.html		
API Information	     #Big_Data		
#IeT	Functionality Areas	Cloud Interface Management, configuration, start, stop cloud services, edit configuration (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>		

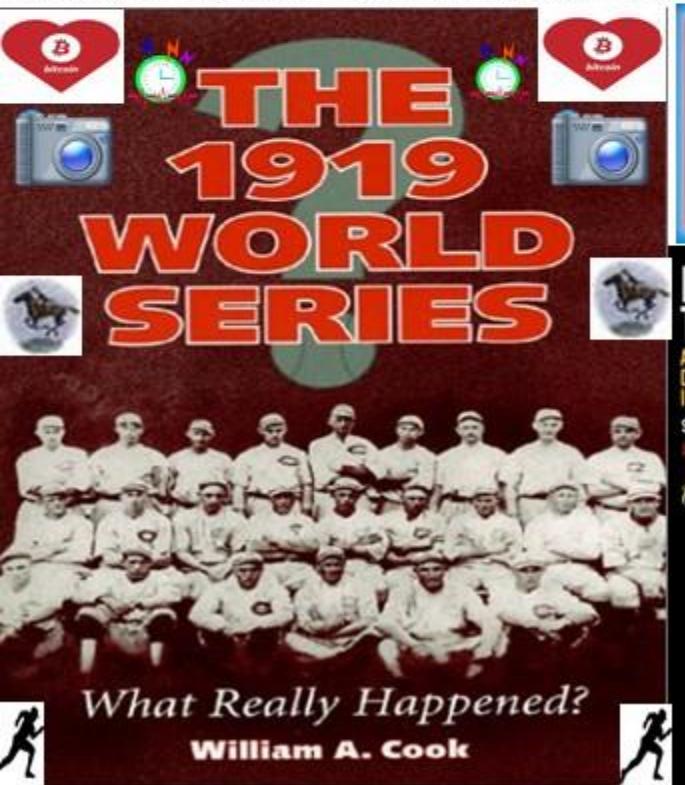








SAW Concepts LLC Owner's Father is from Blackfoot First Nation Native American Indian



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

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

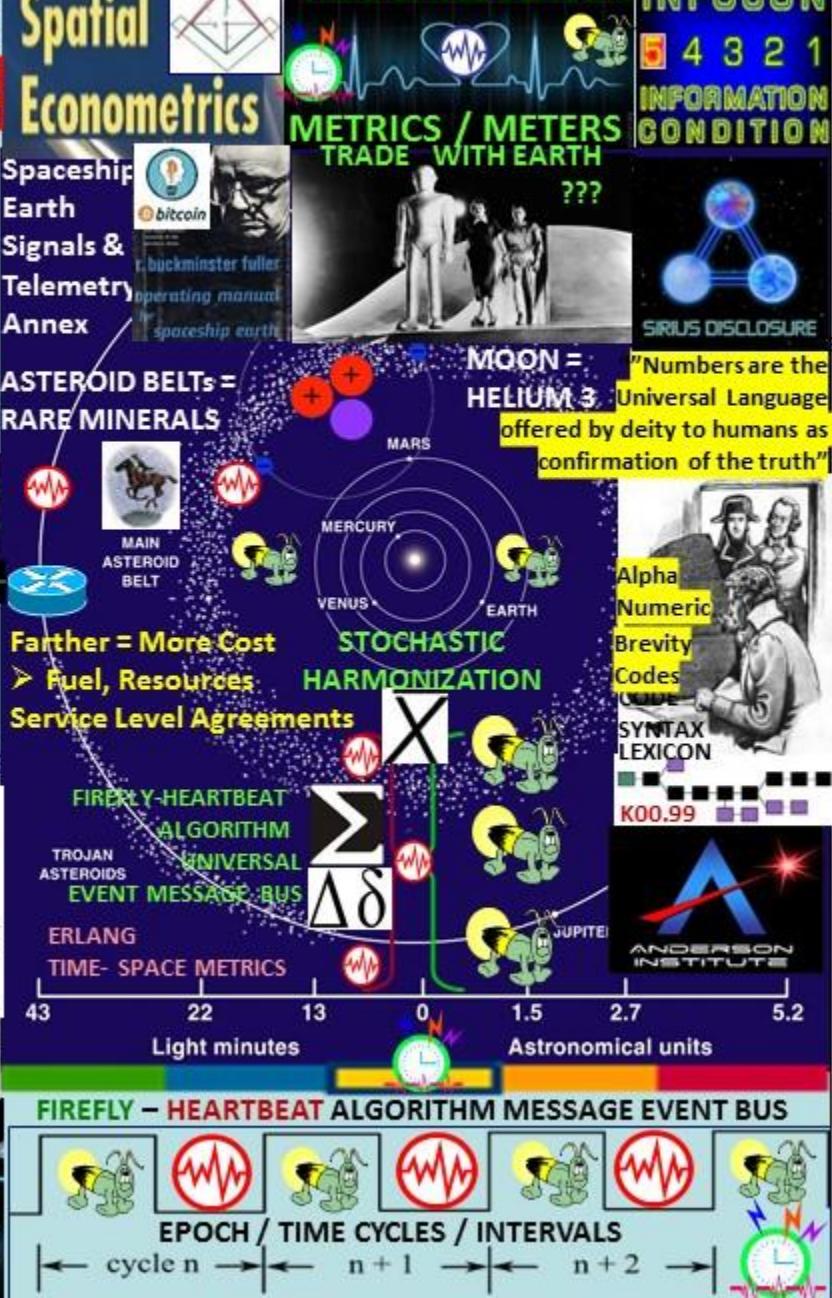
Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

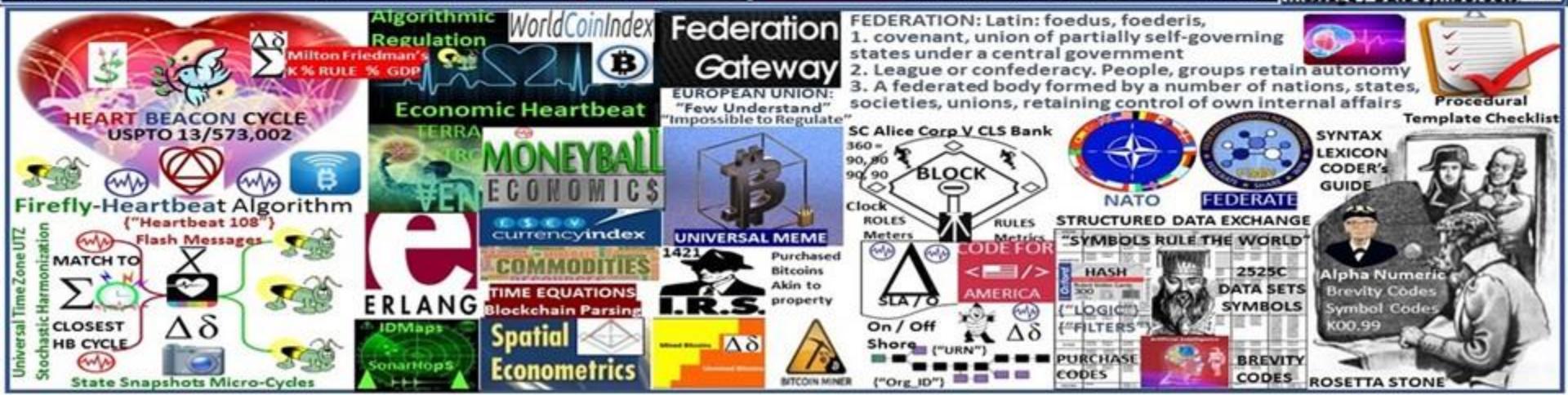
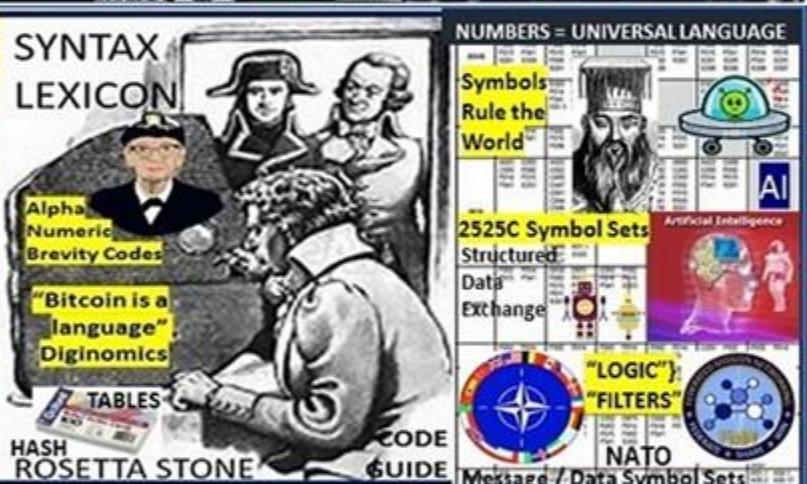
Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Attribute Series
INTEREST
DISTANCE
Temporal Series
Geo Spatial
Paul Revere
LINEAR, SEQUENTIAL
602
603
NULL
+1
+2
RADIUS
WATER DROP IN POND MEME

Micro Grids Closer - Cheaper
BLOCKCHAIN MICROGRIDS





SIGNALS
Telemetry
ANNEX

The world famous inventor of the geodesic dome
r.buckminster fuller
*operating manual
for
spaceship earth*



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

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

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



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: a vision for comprehensive planetary planning that resulted in new strategies intended to enable all of humanity to live with freedom, comfort and dignity, without negatively impacting the earth's ecosystems



Trade w
Earthlings
???
{"EVENTS"}

FIREFLY SYNC PULSE IS MATCHED TO
THE CLOSEST HEARTBEAT CYCLE



BLOCKTIME
ARBITRAGE



INFOCON
4 3 2 1
INFORMATION CONDITION



BITCOIN / Crypto Currency Micro Payments used to remunerate / Compensate logistic demurrage Fees = Eco Responsible Subsidies



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.

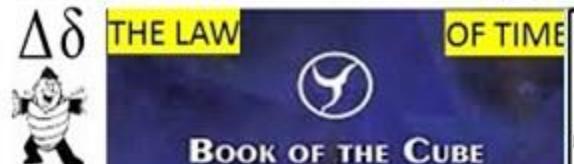
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

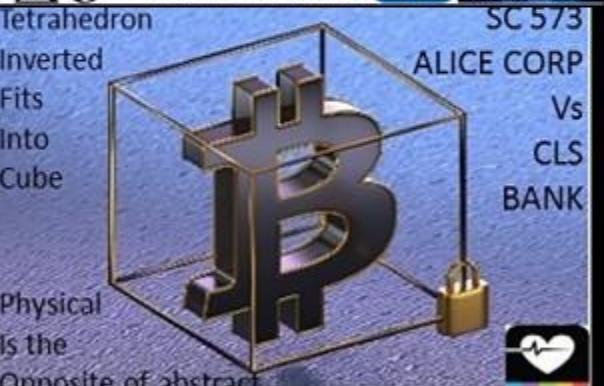
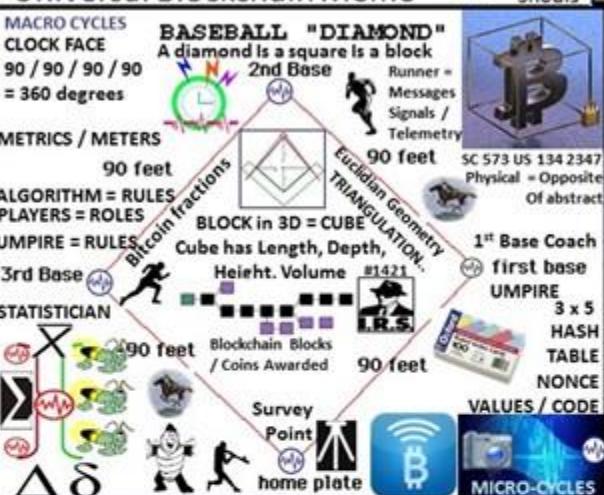
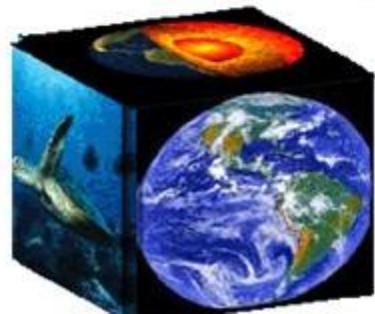
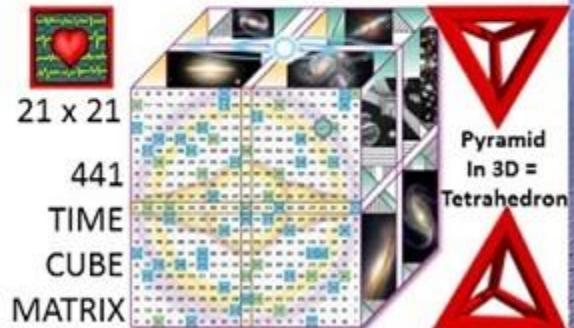
Main Embodiment: Baseball Diamond = block in 3D = cube

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

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



First
Baseball
Players
Union
Formed
1870



INSTITUTE OF HEARTMATH®

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



