

$\Delta\delta$ - Swords To Plowshare Re-Use of Battlefield Digitization - Net Enabled Operations

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



The Heart Beacon Cycle and Time – Space Meter

CODE MONKEY



SAVE WORLD

www.codemonkeycomix.com



Humanitarian Assistance Networked Donor System

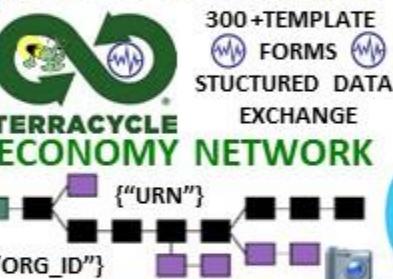
H.A.N.D.S: "Based on the need to speed up the processes of influencing an adversary, new concepts result in the adaptation of military doctrine, organization, training, material, infrastructure, interagency interaction, leadership, personnel and facilities" ... German Bundeswehr : concepts of "Network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



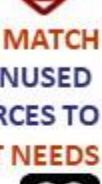
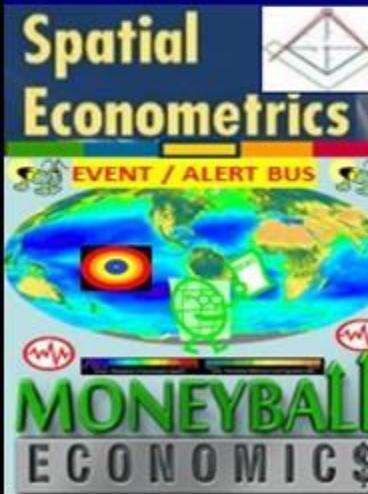
Federation Gateway

"Federation Gateway"



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

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





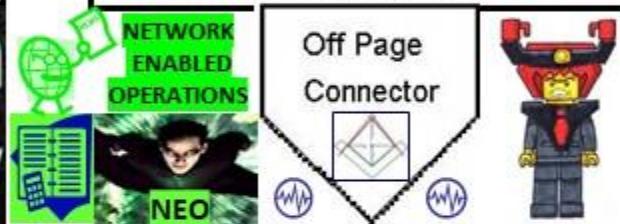
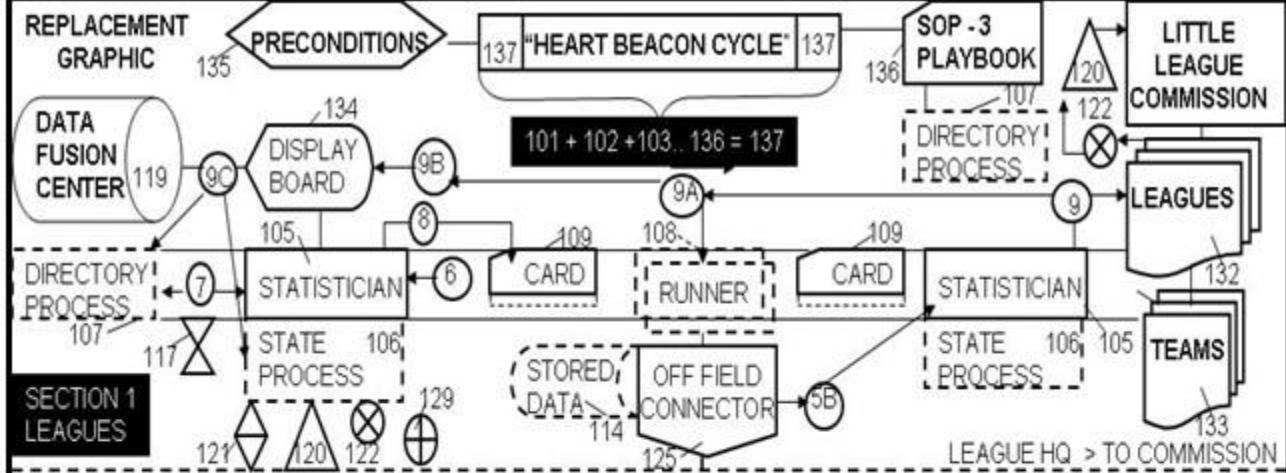
MINIMUM LIST OF COMPONENTS / BUILDING BLOCKS, PROCESSES, PROCEDURES... AGREED ON BY TRADE FEDERATIONS TO ACHIEVE DAO DISTRIBUTED AUTONOMOUS ORGANIZATIONS CONSENSUS

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:

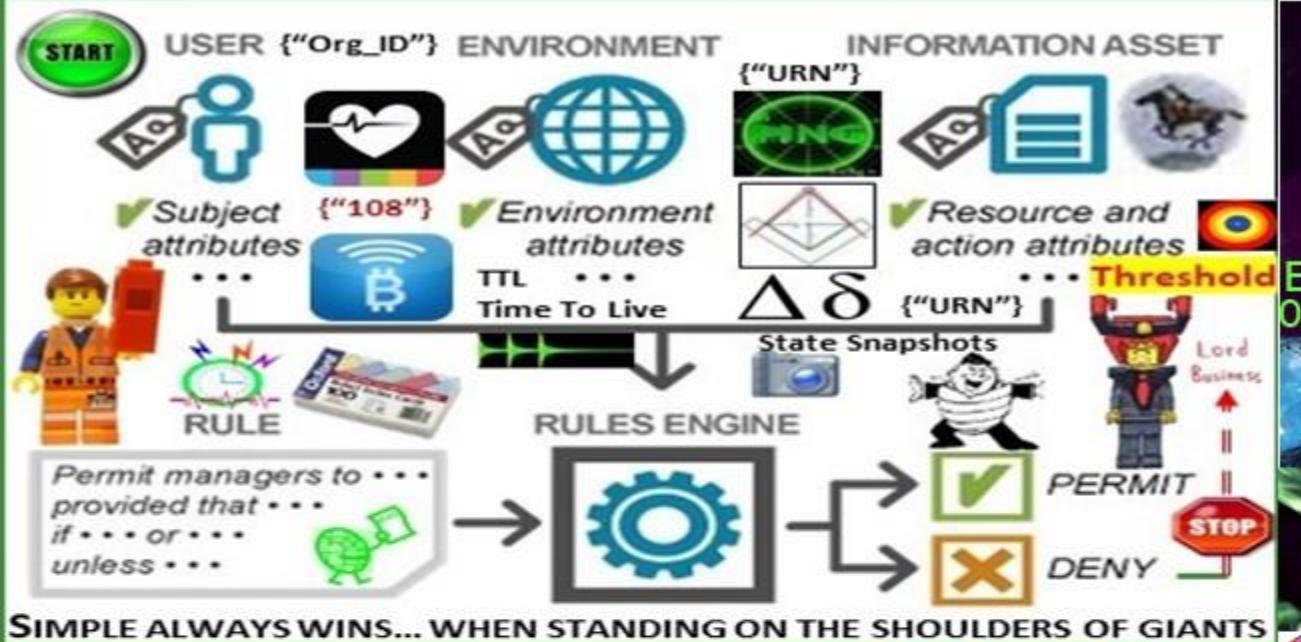
- 1) Organize by assigning Organization Identifiers {"Org_ID"}
- 2) Track Resources by Uniform Resource Name </URN>
- 3) Take State Meta Data heartbeat snapshots @ 15 / N min
- 4) Honor Satoshi's intent for Bitcoin to be paired w markets
- 5) Use NIST Quantum Random Non-Repudiation Beacon
- 6) Earth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





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



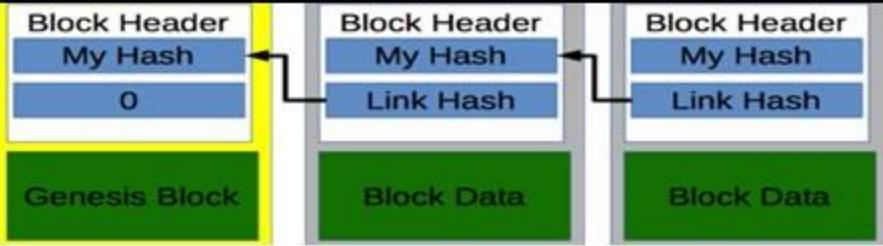


SIMPLE ALWAYS WINS... WHEN STANDING ON THE SHOULDERS OF GIANTS

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



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.

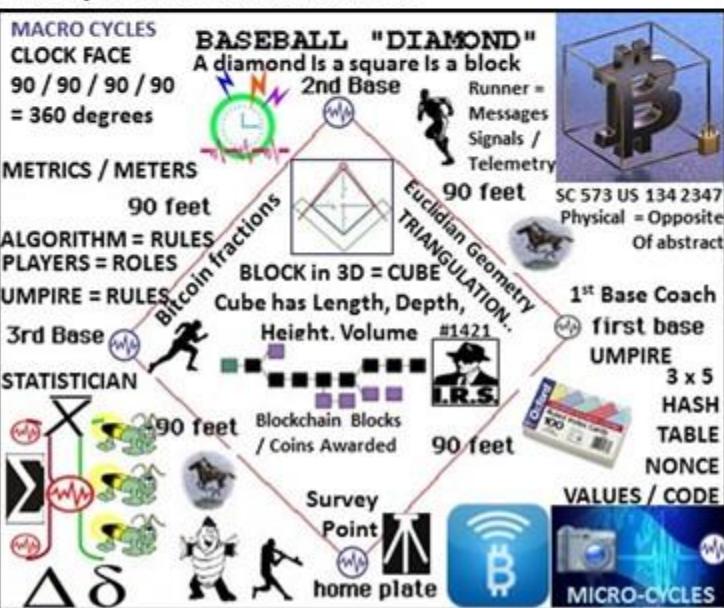
Consensus: distributed ledger blockchain nodes strategy determines chain's correctness
Consensus strategies: "proof of work," "proof of stake," and "delegated proof of stake"

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

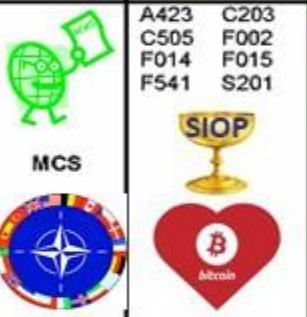
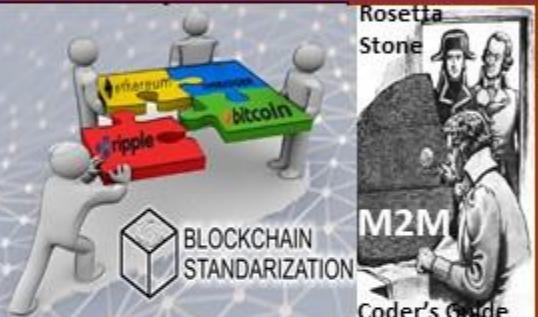
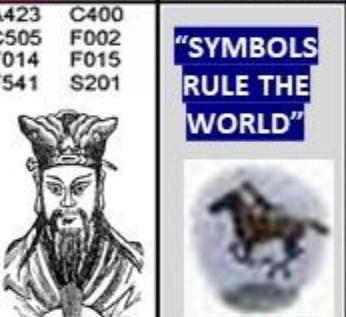
Proof of stake (PoS)— A consensus strategy that relies on nodes which hold collateral to participate in contributing blocks to the chain.

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.





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"}
		Machine Trust Language MTI		CDL Contract Description Language			
Infrastructure	Comm, power, transportation, water/sewer	network, grid	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
			Entity	Class	Table	Class	Element
Geophysical	Terrain, weather, climatology, oceanography, astrometry	feature lat/long, alt/dpth	Attribute	Attribute	Field / Column	Attribute	Child Element or Element Attribute
			Domain Value	PURCHASE CODES	Instance, Value		DPI FFIRN / FFN / FUDN
							FEDERATE

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



FILTERS

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



PROCESS MESSAGE BY PRECEDENCE
UNIVERSAL EVENT / ALERT MESSAGE BUS

OPERATIONAL NODES / ACTIVITIES

DATA	SYSTEM FUNCTIONS	PERFORMANCE
11.4 - Classification		11.8 - Kinematics
11.4.1 - Category		11.8.1 - Pos / Vel / Acc (PVA)
11.4.1.1 - Confidence Level		11.8.1.1 - Acceleration
11.4.1.2 - Estimate Type		11.8.1.1.1 - Angular
11.4.1.2.1 - Alternative		11.1.2 - Linear
11.4.1.2.2 - Evaluated D		11.2 - Estimate Type
11.4.1.3 - Value		1.2.1 - Estimated
	PURCHASE CODES	1.2.2 - Observed
		1.2.3 - Predicted
		1.2.4 - Smoothed Data
SYMBOL	Friend	Neutral
2525C	Partner	
		
		
		

NAMED DATA NETWORKING

<CONTENT> CENTRIC NETWORKING



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

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

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

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

STRUCTURED MILITARY MESSAGING FORMS: FIELD TYPES, FILTERS, TAGS

PARSED, PROCESSED, COMPILED TELEMETRY SIGNALING STANDARDIZATION

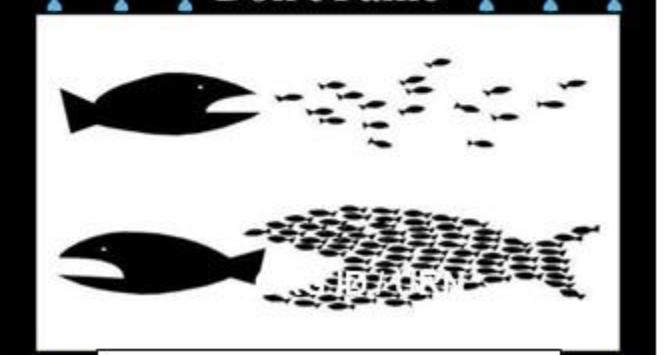
USMTF / XML MTF FORMATTED MESSAGE CATALOG

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

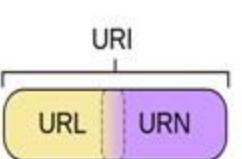
</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU

Don't Panic



FEDERATE



ARIN
American Registry for Internet Numbers

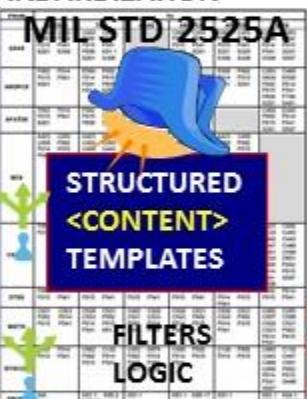
Uniform Resource Names (URNs): A Uniform Resource Identifier (URI). Both URNs (names) and URLs (locators) are URIs, and a particular URI may be a name & locator. Each plays a specific role:

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



SITUATION AWARENESS

NEWSCAST



DISTANCE ESTIMATE SERVICE

IDMaps
SonarHOPS

K00.99
Heartbeat Message

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

BY <TAG_TYPES>
Ledgers
Contracts
Trade SLA
Agreements



TRIANGULATION
TELCO MESH FABRIC
vector

CROWD SOURCING / FUNDING



Identity Provider
- Mapping
- Protocol

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

PARTIDO X:
Distributed
Democratic
Participation

ETHEREUM:
Decentralized
Autonomous
Organizations



VOTE ON BLOCKCHAIN

PARTIDOS DEL FUTURO
FEDERATED ID



INTERNET FORMED BY:

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

"In the beginning"

"The Word"

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

"A blockchain is a consensus-based system. It only works if all nodes reach an identical state"

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

Gideon Greenspan Beware the impossible smart contract



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

	XBRL	CDL	DAML	STOCK MICS	CODES
STRUCTURED					
MILITARY MESSAGE					
TEMPLATE FORMS					
LOGIC / FILTERS					
BREVITY CODES					
URN	URN	URN	URN		
SYNTAX / SYMBOL					
LEXICON LIBRARY					



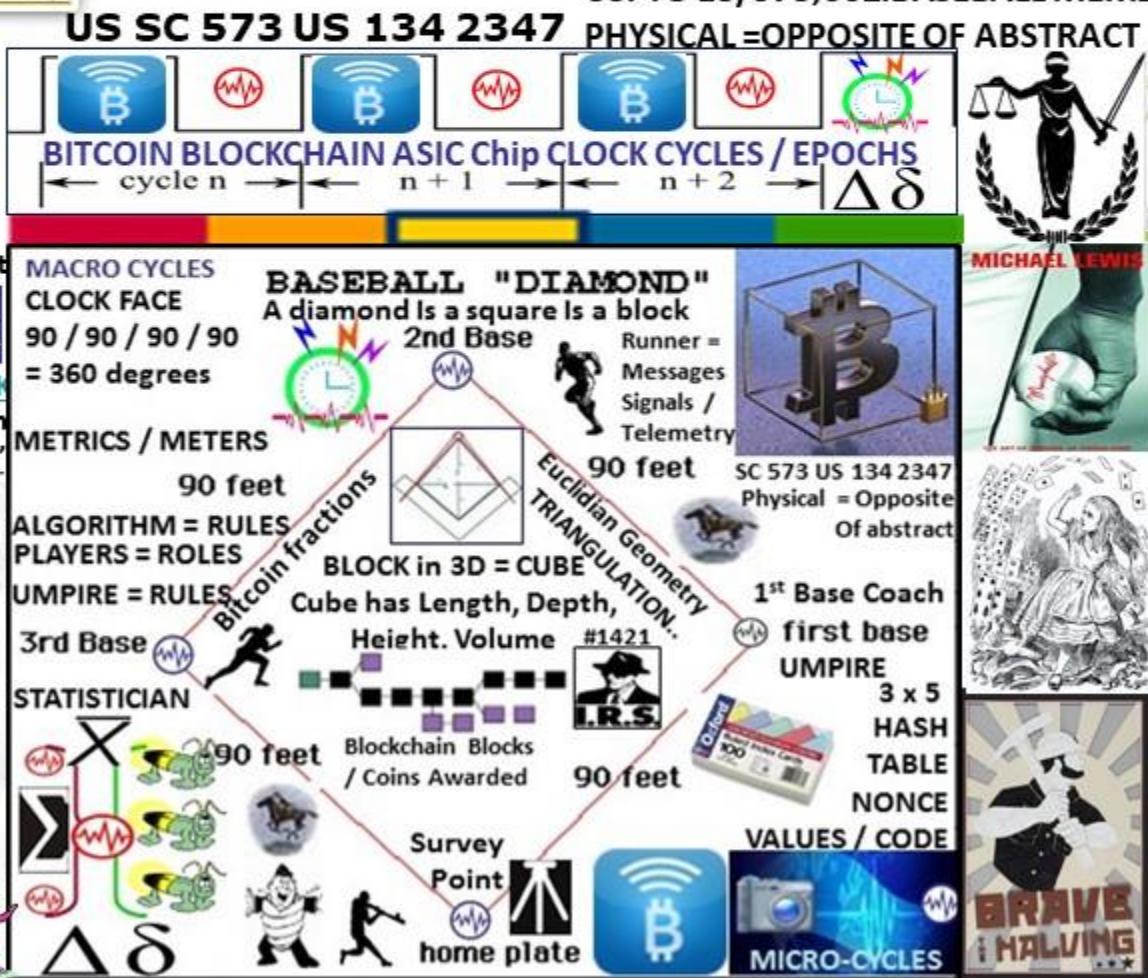
BITCOIN BLOCKCHAIN BLOCKS, AGENTS, MOTES, BOTS, PACKETS, FRAMES, HEARTBEAT, PINGS, HOPS, BEACONS = METAPHORS/MEMES

US SUPREME COURT Alice Corp Vs CLS

Bank "claims may not be directed towards an abstract idea"



USPTO 13/573,002:BASEBALL MEME



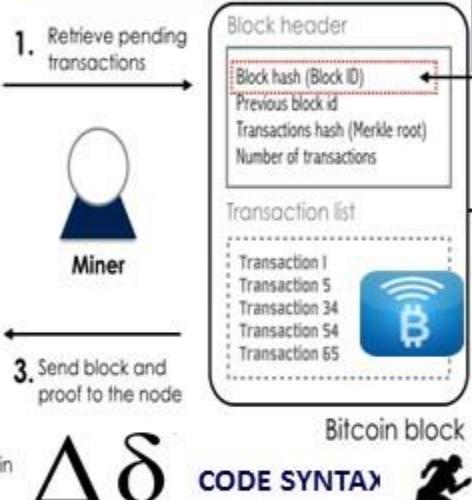
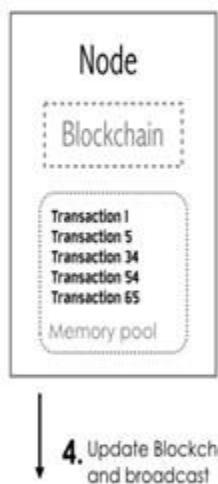
MICHAEL LEWIS

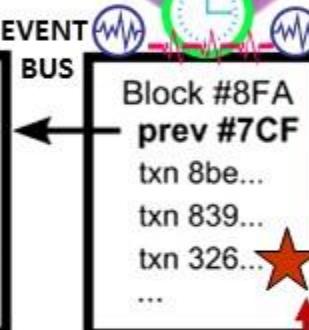
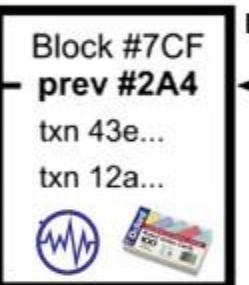
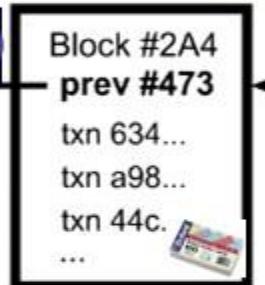


FUTURE MEMES DOT COM



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

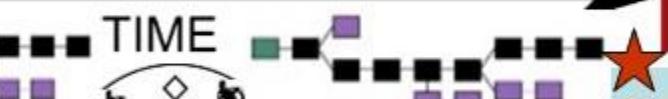

 $\Delta\delta$
CODE SYNTAX

CODE RUNNER
 $\Delta\delta$


"BITCOIN'S VALUE IS TIME ITSELF"


DATA ELEMENTS

BLOCKCHAIN = TIME / SYNTAX


ID'd by Alpha-Numerics


XBRL / CDL / DAML STOCK MIC CODES
State Meta Data Snapshots
ROLES Meters
STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

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



USPTO 13/573,002 PHYSICAL MEME MAIN EMBODIMENT

RULES Metrics
 $\Delta\delta$
Multi-Meme Multi-Meter

TIME EPOCH CYCLES

05:08:53
ATOMIC CLOCK



SYNTAX LEXICON LIBRARY



Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



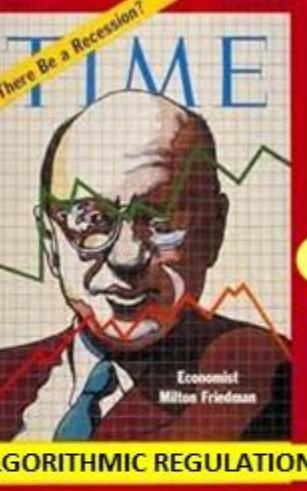
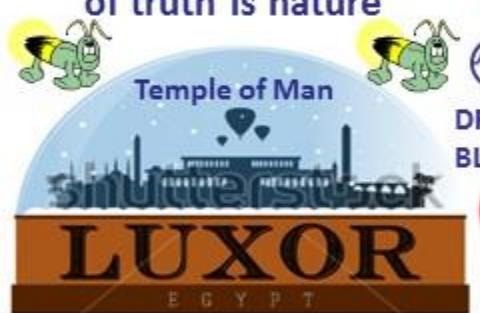
TERRACYCLE



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

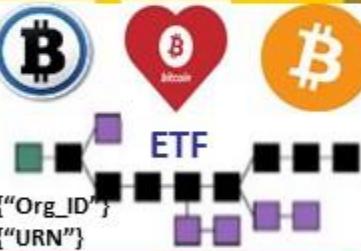
STAT MEAN VALUE INDEX



Price Indexes in Time and Space

Methods and Practices

FRIEDMAN's K% RULE



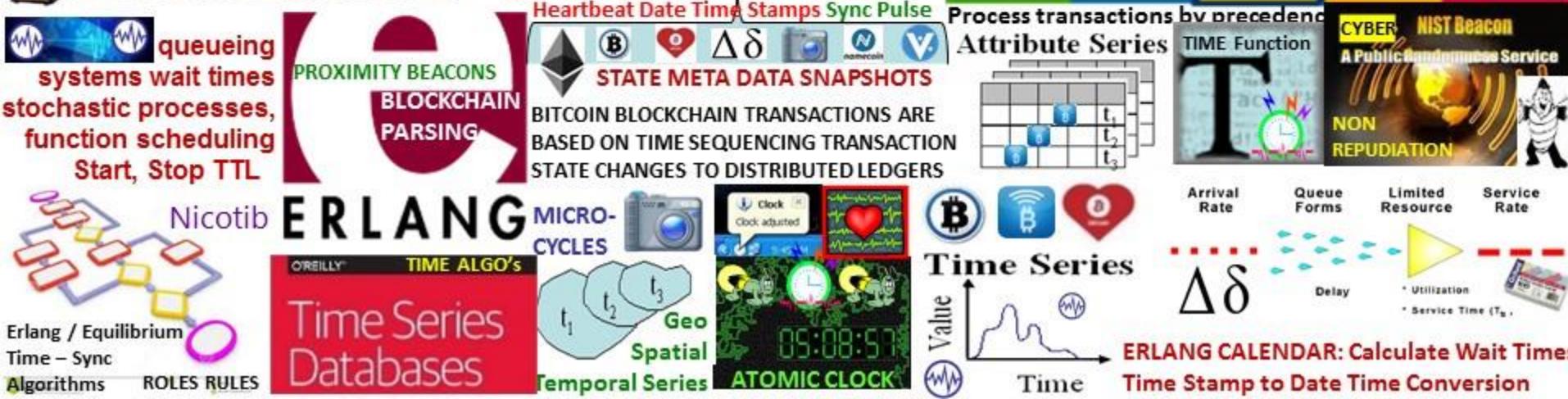
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.

"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.

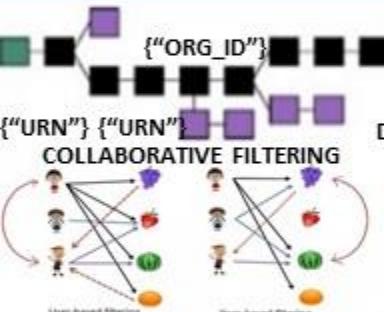




eGaaS: international blockchain platform for organizing economic, state, social activities of citizens , communities on the basis of smart law, smart contract system. eGaaS offers a comprehensive solution needed for state and business management on the blockchain platform.

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**

Neural Net

Neural Net -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 -13

ENVIRONMENT FRIENDLY ECO INCENTIVES CLOSER = LESS FUEL ON

ENVIRONMENT FRIENDLY ECO INCENTIVES CLOSER = LESS FUEL G7 vector ON

CLOSER = FASTER Carbon Vector

Named Data Networking: STOCHASTIC HARMONIZATION

Named Data Networking STOCHASTIC HARMONIZATION
"INTEREST" NDN NDN 2.0 STATE MAPPING

“DISTANCE” NDN STAT MEAN Int'l Date

Sync VALUE INDEX CO₂ Impact Need Line

Credits Unmet Needs OFF

14

A horizontal collage of various meme images. From left to right, it includes: a close-up of a firefly's head; a red heart icon on a green grid; a black cat sitting on a windowsill; and a green radar screen with concentric circles and a small white icon.

Line ALGORITHM HEARTBEAT Meter

FIREFLY EVENT BUS FLASH HEARTBEAT FROGGER METER SonarHops

WIRELESS ENERGY BOOSTER
HEARTBEAT [100%] MESSAGES EPOCH 3

HEARTBEAT {108'} MESSAGES STATE META DATA SNAPSHOT

The proposed **Universal Timezone System** would do away with all these differ-

ent time zones. Instead, it would be the same time all over the world, all the time.









"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.

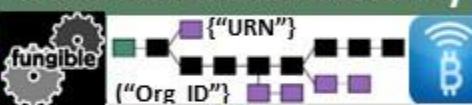


The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



THE TERRA (TRC)

Trade Reference Currency



\$0.49 USD
0.001076 BTC

MICRO PAYMENTS
Bitcoin
Need Bitcoin?



Demurrage Fees



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

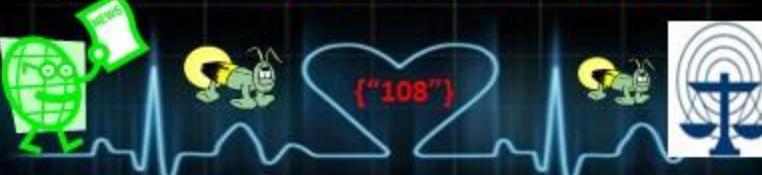


Contract interaction



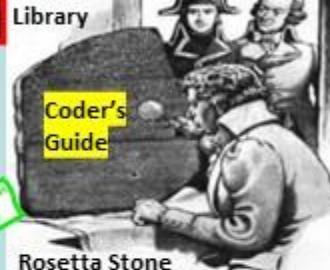
Off chain tools

WORLD ECONOMIC HEARTBEAT



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

Syntax Lexicon Library 300+ Templates STRUCTURED DATA EXCHANGE



Rosetta Stone

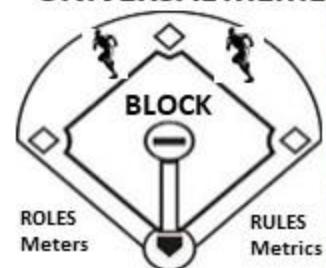


LOGIC / FILTERS
ALPHA-NUMERIC
BREVITY CODES

STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



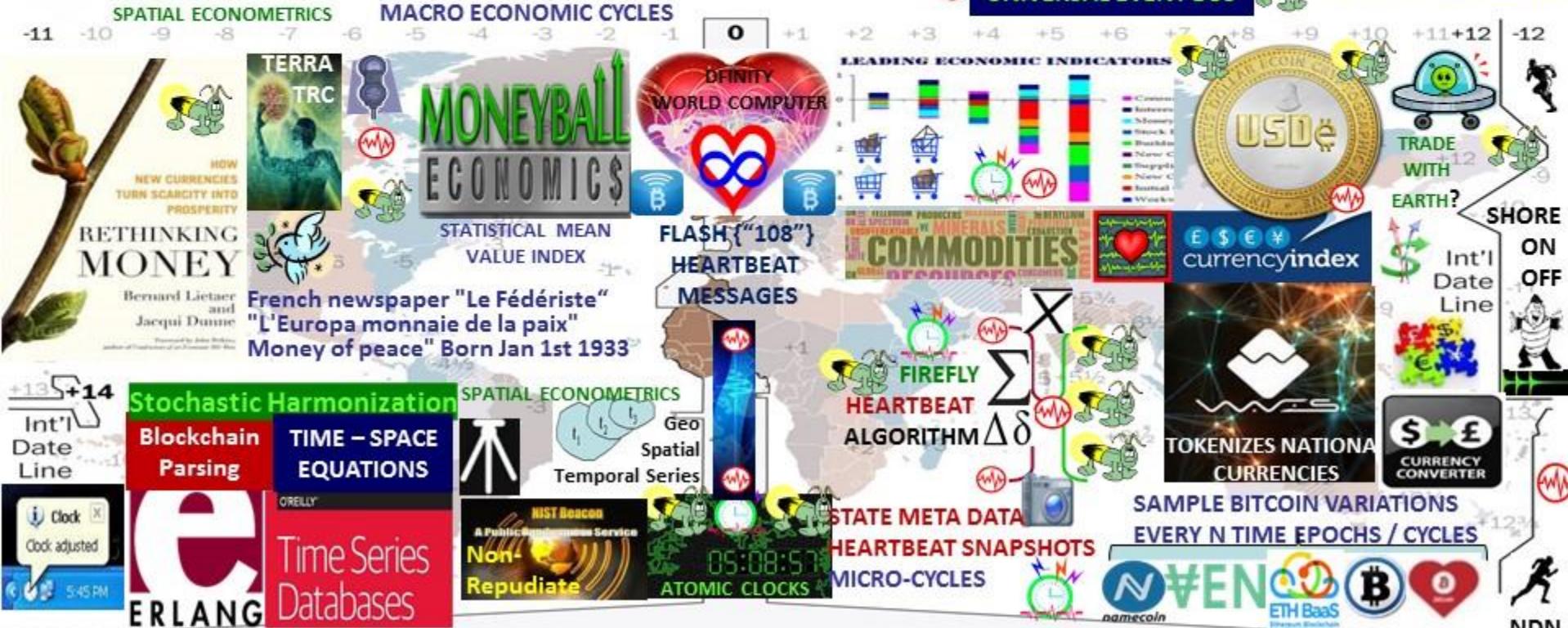
UNIVERSAL MEME







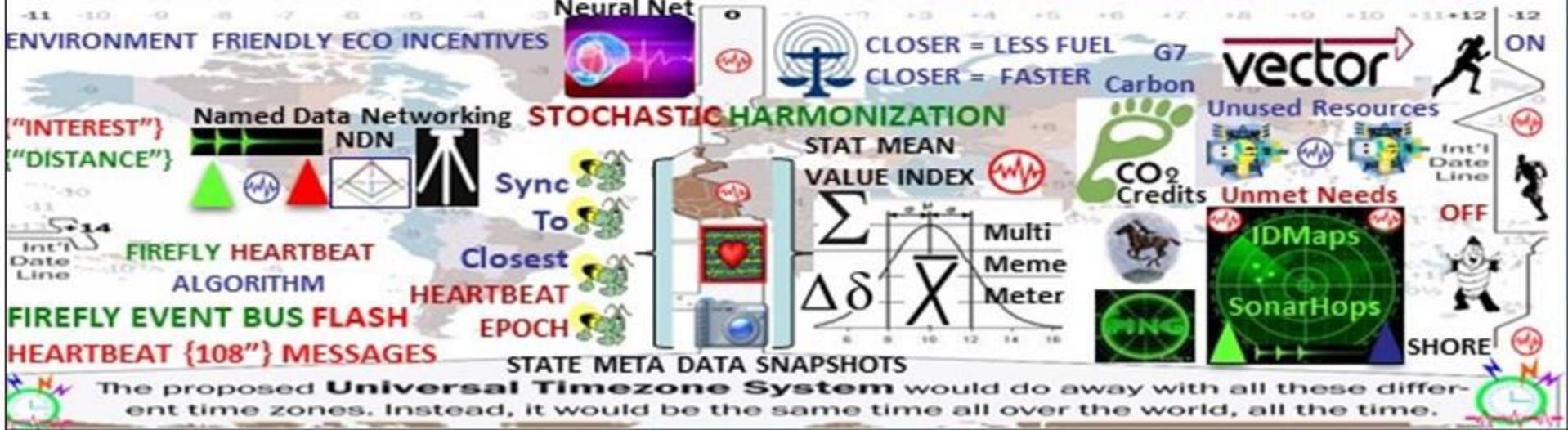
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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

ALGORITHMIC SAMPLING PRICE, RATE, SPEED, TRANSACTION RATE PARITY ACROSS TIME ZONES UTZ

Server on/off floor adjust

IDMaps SonarHop

EQUILIBRIUM CONSTANT

NASH Equilibrium Algorithms

Time-Space Meters Metrics

("EVENT")

On Shore / Off Shore

Int'l Date Line

Nash Game Theory Algorithms

Subgame perfect NE

1

2(1)

L

K

U

3; 1

1; 3

2; 1

0; 0

(K,K) (K,U) (U,U) (U,K)

3.1 3.1 1.3 1.3

2.1 2.1 0.0 0.0

HB CYCLE

STATE META

DATA SNAPS

Match Event to closest

MASTER CONTROLLER

Master process ID NNNN, send QUIT signal

STOP

START

</108>

DARK POOLS

SCOTT PATTERSON

Author of the New York Times Bestseller *The Quants*

NGINX

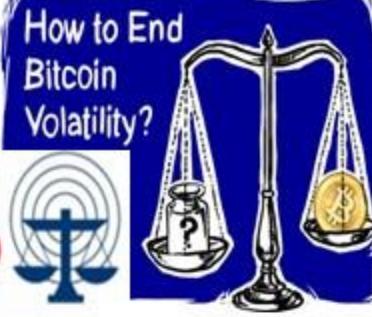
Send signal to Master process ID ##### - new config / Worker process checks new config syntax

05:08:57

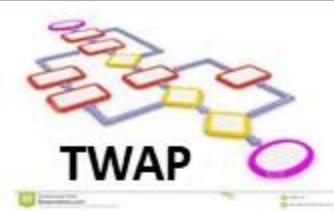
NIST TIME BEACON

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

TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

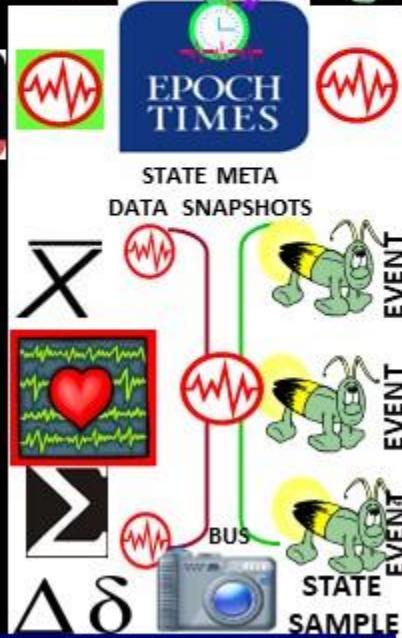
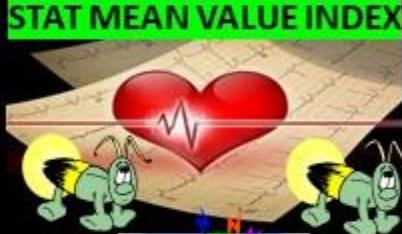


TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX

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



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



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

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

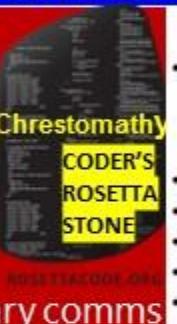




Erlang programming language / mini OS
massively scalable high availability, real-time Erlang's runtime system built-in concurrency distribution, fault tolerance



- coordinate 1000's of virtual machines
- ...distributed Dbases RIAK, CouchDB
- ...real time data dashboards
- ...service oriented software architectures
- .. server, API endpoints . RabbitMQ
- ..distributed, multi-node architecture.
- protocol-aware load-balancer, stateful binary comms



Functional Sequential Erlang

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

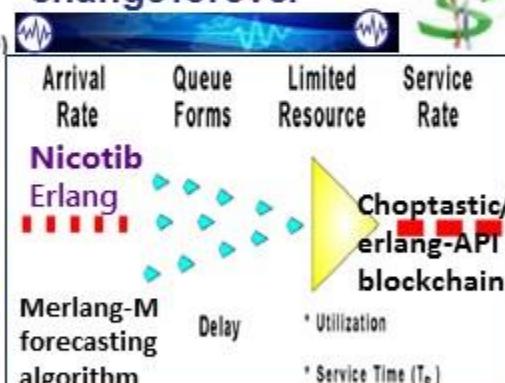


Ericsson Open Money
For Society Patent App



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

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



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

queueing systems
stochastic processes, function
scheduling Start, Stop TTL

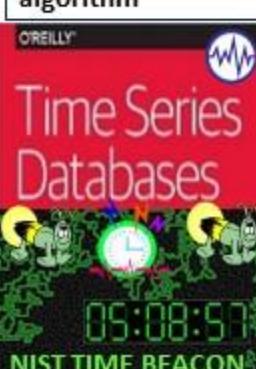


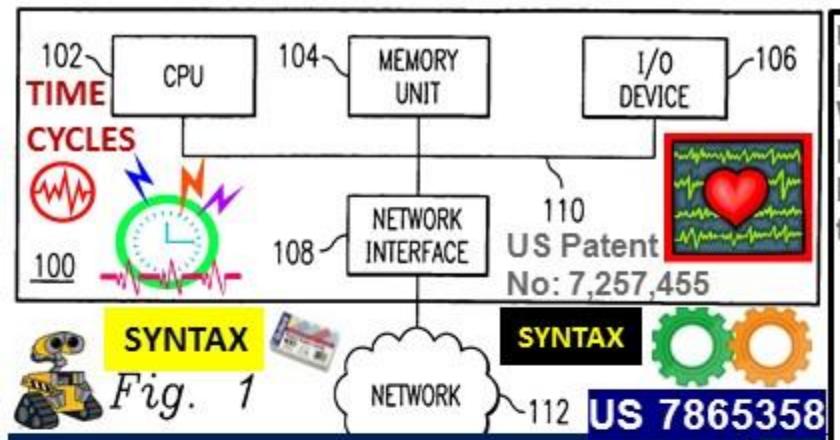
distributed "noSQL" database, embedded right into Erlang,
supports indexing, replication, transactions, and fail-over
Fast ETS in-memory, and DETS persistent on-disk database

Mnesia database ("Organization_ID")

Global name resolution

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



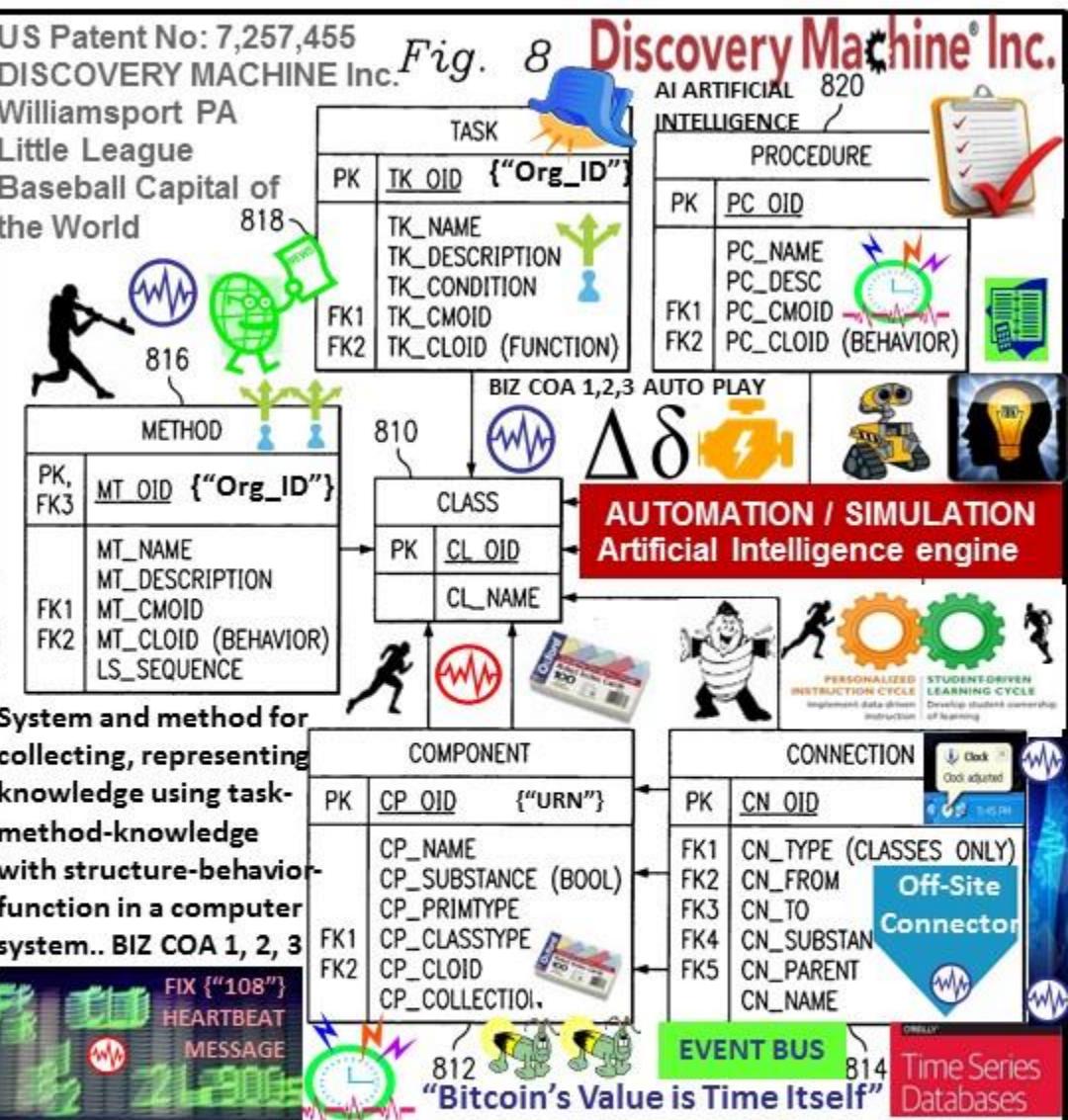
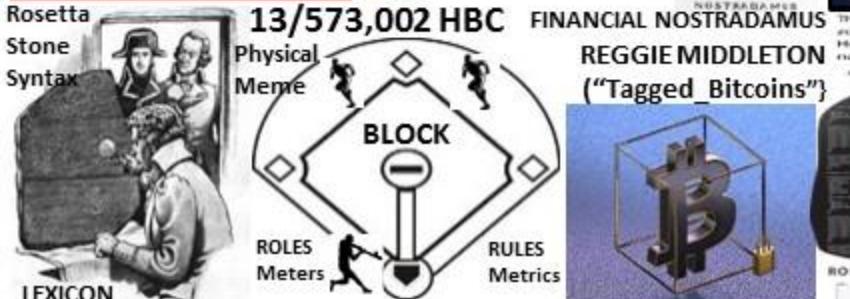


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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

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

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

ORACLE Veritaseum



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



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



HASH TABLES
NONCE VALUES

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

Unspent Transaction Output protocols UTXO

Crypto Tokenized Assets Digital Bearer Bonds unique identity for owned artifacts

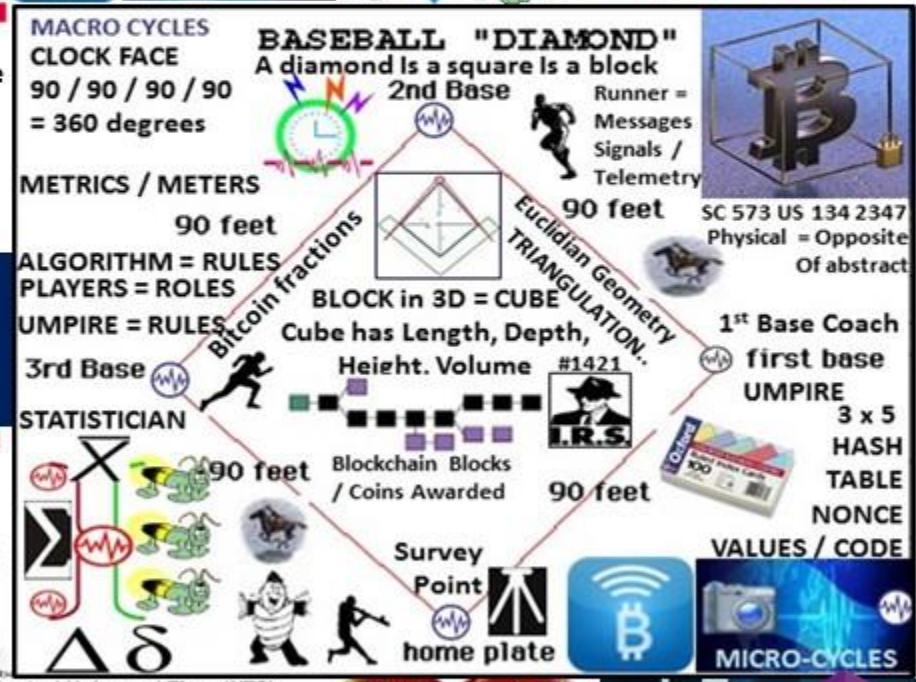
Utility Cryptlets encryption, time & date events, external data access, authentication “CryptoDelegate” / adapter

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

Blockchain Fabric: Blockchain Gateway Services [Interledger](#) like services to allow for SmartContracts and tokenized objects to be passed between different ledger systems.

Data Services - key data services like distributed file systems (IPFS, Storj, etc) of off-chain data referenced by public keys. 
Auditing, Advanced Analytics, Machine Learning, Dashboarding services for SmartContracts, Blockchains, Consortia, Regulators

Utility and Contract. Developers can discover and enlist Cryptlets into their SmartContracts to create more robust and trusted transactions. Contract Cryptlets are full delegation engines that act as SmartContract surrogates off the chain. Cryptlets provide execution logic and securely store data in the Smart Contract





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](#).

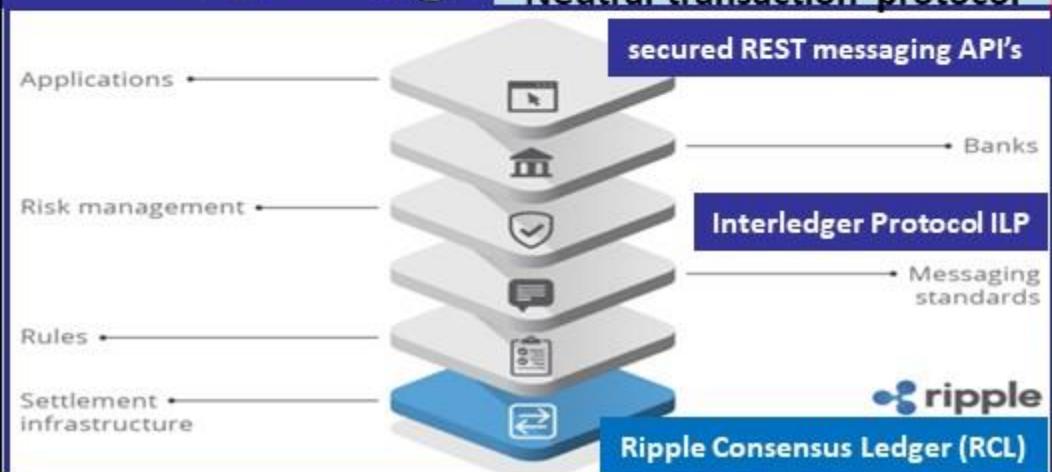
ALPHA NUMERIC BREVITY CODES

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

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"}

HASH NONCE

FIREFLY-HEARTBEAT ALGORITHM

MICRO-CYCLE STATE META DATA SNAPSHOTS

AGGREGATE INTO MACRO ECONOMIC CYCLE MESSAGE

World Economic Heartbeat
ALGORITHMIC REGULATION



["108"]

BLOCK TIME ARBITRAGE System of Systems Sync

Stochastic Harmonization
Telco Mesh Fabrics
Wide Area Sync

FIREFLY EVENTS
FLASH MESSAGES

EVENT

COACH

BLOCK

CLOCK

TIME-SPACE

EQUATIONS

ALGORITHMS

BLOCKCHAIN

PARSING

ERLANG

EVENT BUS

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FIREFLY-HEARTBEAT ALGORITHM

MICRO-CYCLE STATE META DATA SNAPSHOTS

AGGREGATE INTO MACRO ECONOMIC CYCLE MESSAGE

WORLD ECONOMIC HEARTBEAT

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

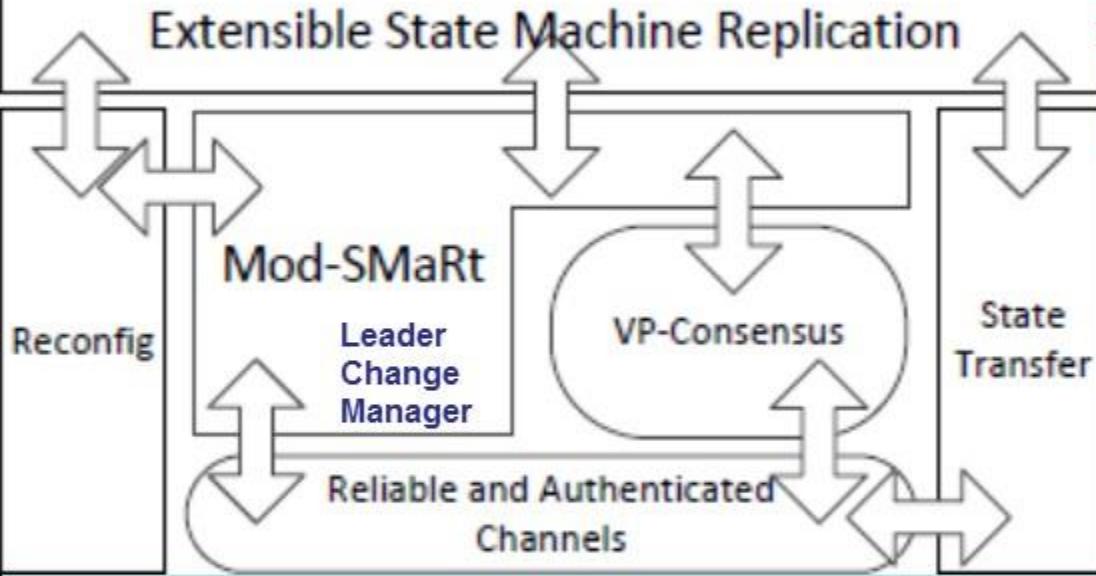
NONCE

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 METER

USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT

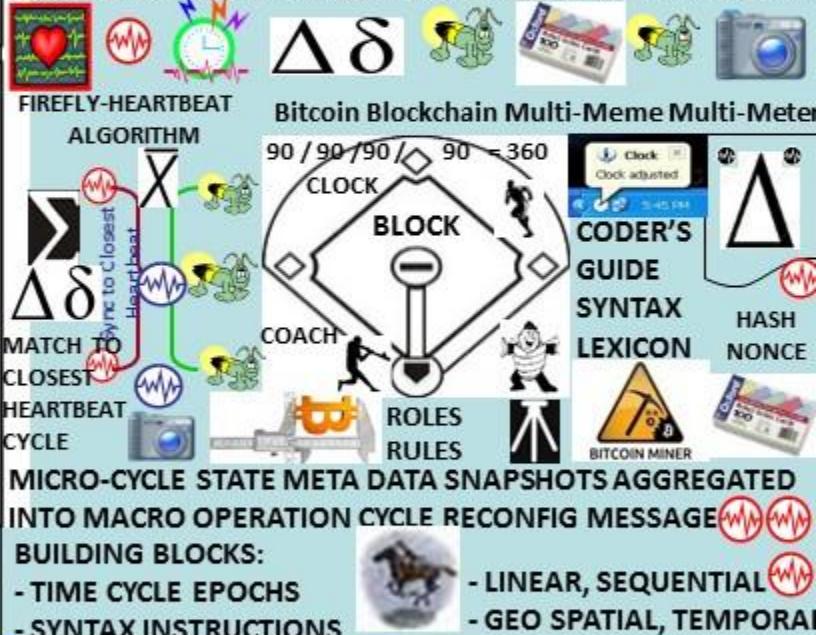


DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"}

**ADDS, JOINS, DROPS, MOVES TO / FROM DAO
CHANGES IN STATE VIEWED IN "APPLIQUE" OVERLAY VIEWS**

K00.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOT



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

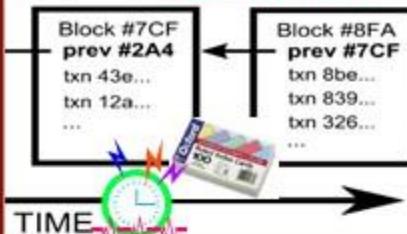
HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$ Shared Ledger



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



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

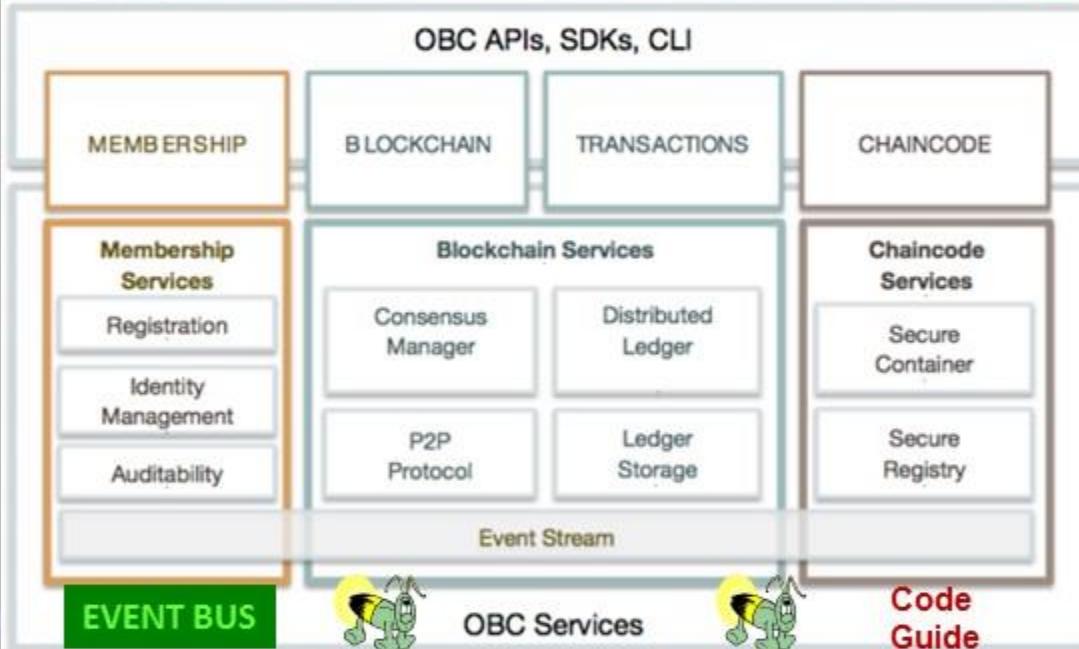
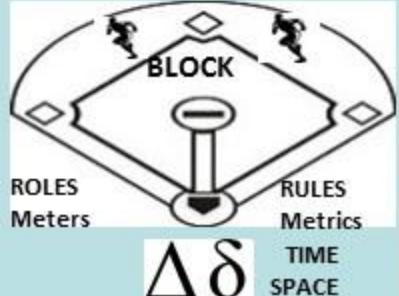
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



BLOCK TIME ARBITRAGE



ROSETTA STONE



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



FFIRNS
FFUDNS

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

Alpha-Numerics

e.g. Derivatives

e.g. Trade Finance

e.g. KYC / AML

App

App

App

App

App

App

App

App

App

Concord Platform Services

CorDapp Store

Notaries

Network Map Service

Trusted Digital Backbone Network

Regulatory Reporting

Oracles

Service Provider Gateways

Bank-Internal Gateways

Concord Vault Interoperability

Asset Registry

Trade Registry

Cash

Identity Vault

Concord Operations Centre

Business Monitoring

Technical Alerting

Management Information

Compliance Audit



Δδ

Inter-Network Adapters

FEDWIRE

CHIPS

DTCC

CLS

Corda Core Node Services

Agreement States

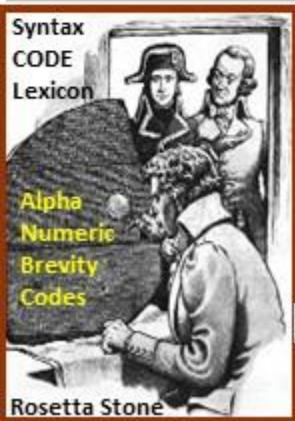
Transactions

Sandbox

Digital Signing

Interaction Protocols

Contract Verification



UNIVERSAL EVENT BUS



Syntax CODE Lexicon

STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

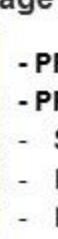
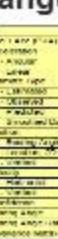
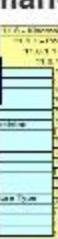
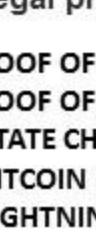
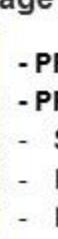
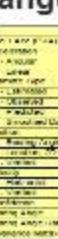
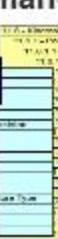
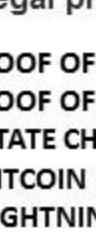
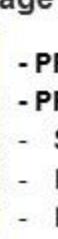
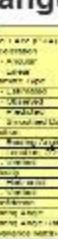
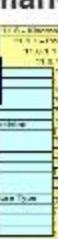
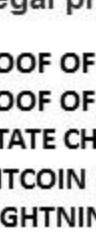
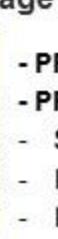
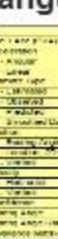
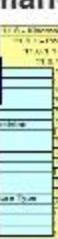
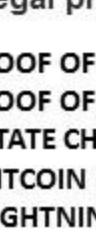
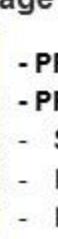


- Choreographing workflow between firms without a central controller
- Supports inclusion of regulatory & supervisory observer nodes
- Validating transactions solely between parties to the transaction
- Supporting a variety of consensus mechanisms
- Recording explicit links between human-language legal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



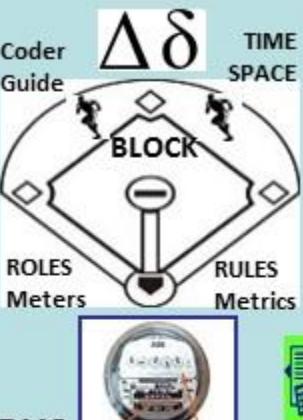
XBRL / CDL / DAML STOCK MIC CODES



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000


KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



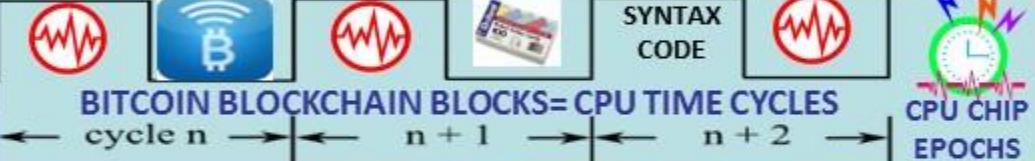
MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



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

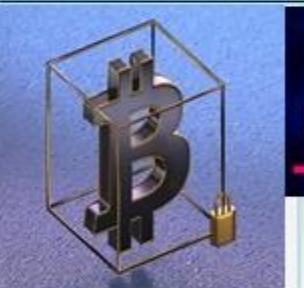
EVENT BUS



long exponential intervals (10 min)

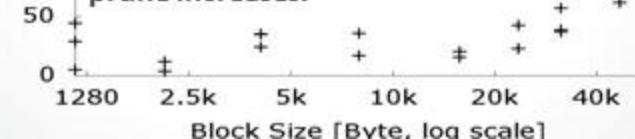


COMMAND SYNTAX
RESTFUL State Transfer



Subjective Time to Prune

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



short deterministic intervals (10 sec)



MICRO-CYCLES



ETHER: Compensate Resource Contribution

Gas: price to
Run contract
transactions

ethereum

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



Ether hedged against other
crypto / FIAT currencies
price changes

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

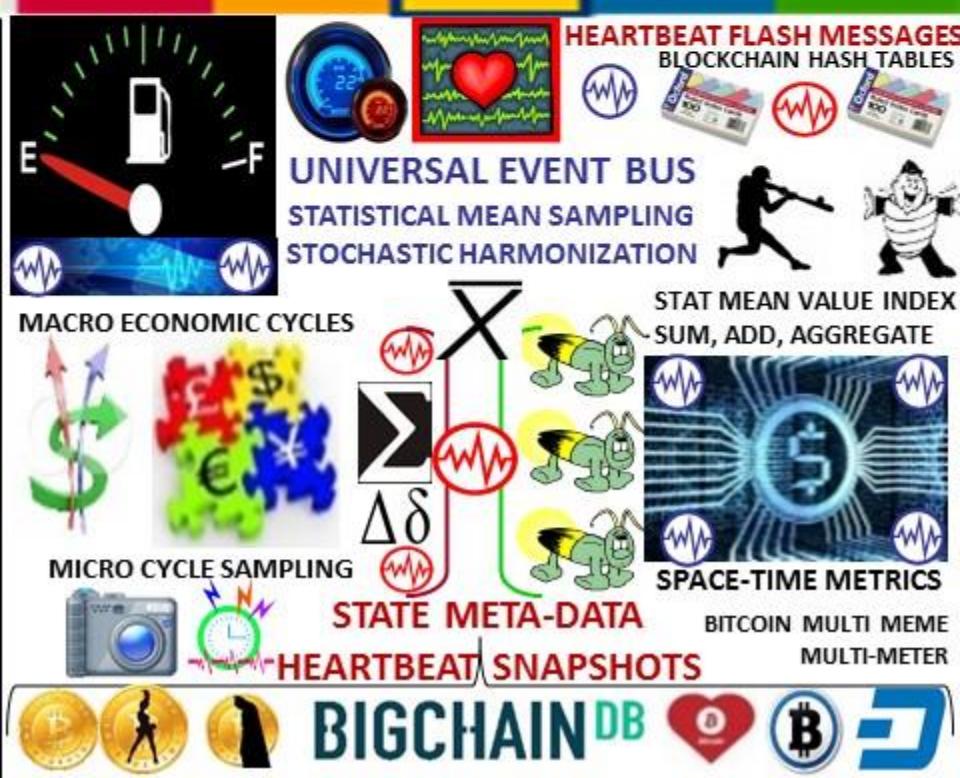
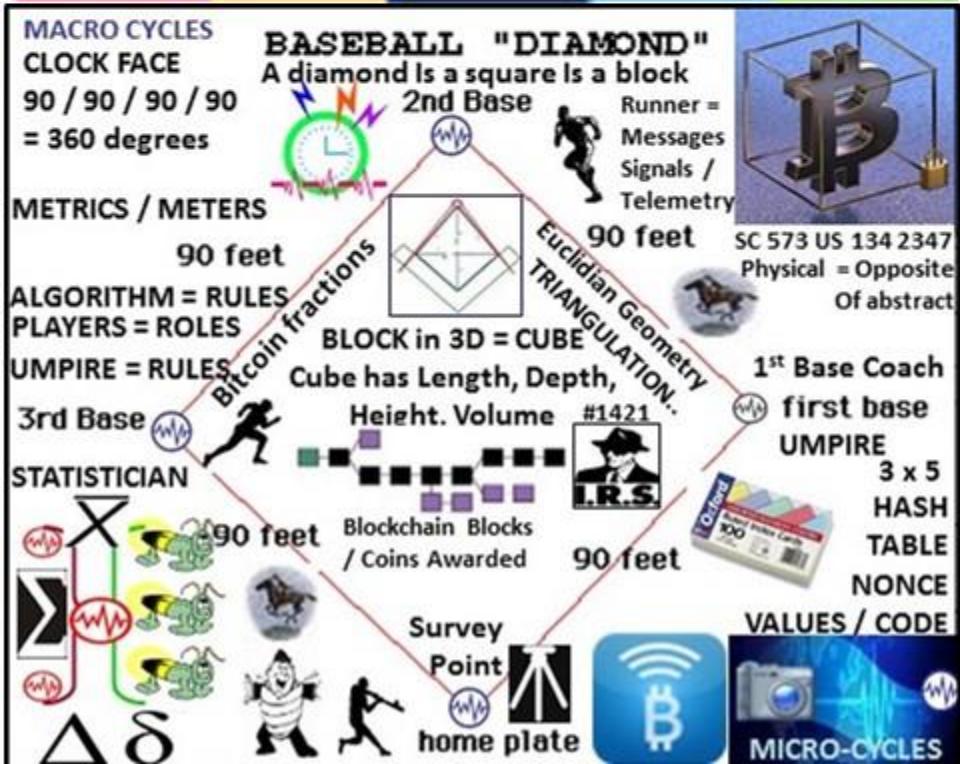
EVENTUALLY

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

SWARM
(storage)

WHISPER
(messaging)

EVM
(consensus)



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

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

X

90 feet

Blockchain Blocks / Coins Awarded

90 feet

Survey Point

home plate

$\Delta \delta$

TRANSACTIONS

PER CYCLE

METRICS

cycle n

COMPUTER CHIP EPOCHS

n + 1

n + 2

SPATIAL

TEMPORAL Series

t₁ t₂ t₃

PROOF-OF-STAKE

UXTO

Mined Bitcoins

Unmined Bitcoins

Survey Methods

Proximity Beacons

MICRO-CYCLES

CALENDAR

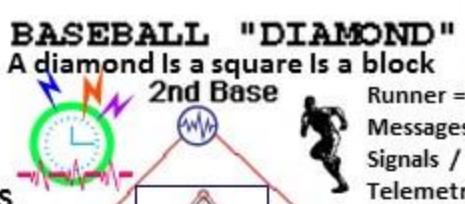
Unmined Bitcoins

Radar

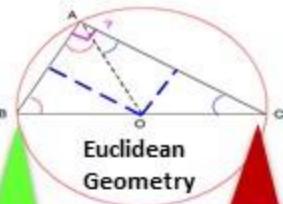
UTXO: unspent transaction output'. bitcoins sent somewhere

but not yet spent. Unspent transaction output set= latest

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

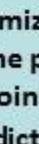
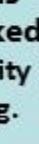
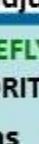
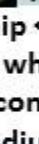


A BASEBALL DIAMOND IS A SQUARE. HBC USES A BASEBALL METAPHOR TO DESCRIBE METRICS, METERS. ROUNDING BASES FORM A BLOCK. METRICS, METERS & SURVEY METHODS MEASURE COIN MINING COMPLETION % AWARDS



STRUCTURED {"CONTENT"} TEMPLATES

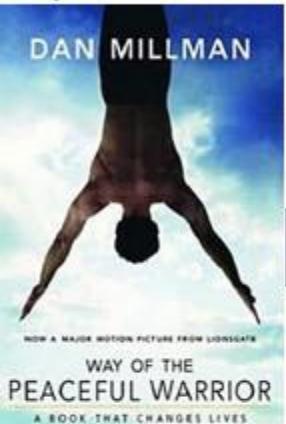
Attribute Series





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"

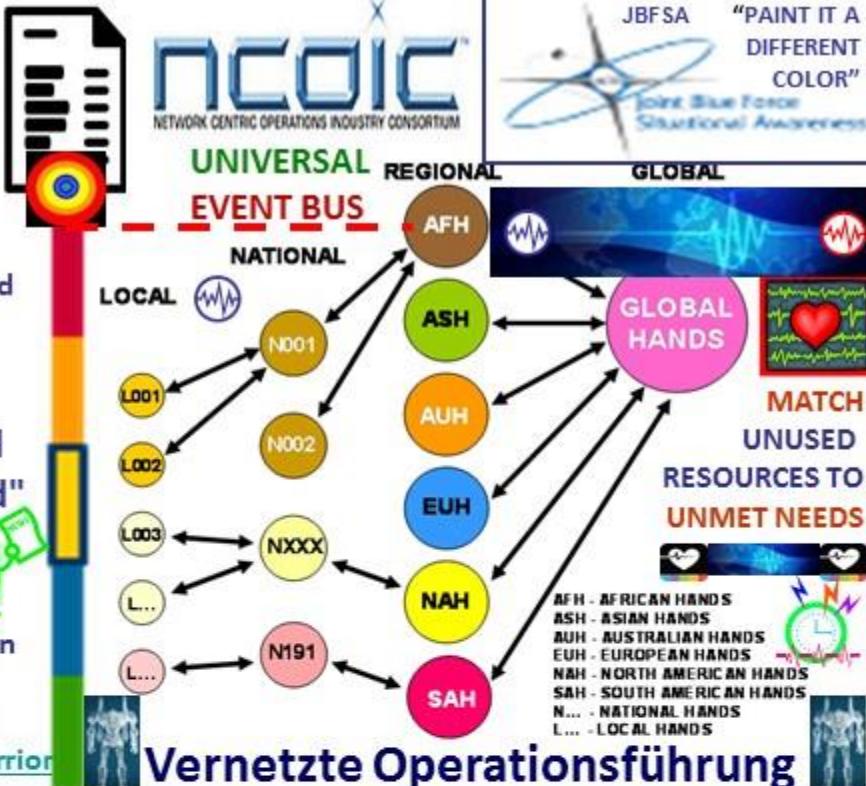


"The secret of change is to focus all of your energy, not on fighting the old, but on building the new." Dan Millman
Way of the Peaceful Warrior A Book That Changes Lives
http://en.wikipedia.org/wiki/Way_of_the_Peaceful_Warrior

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

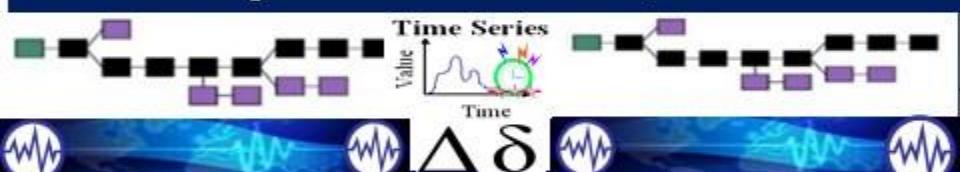
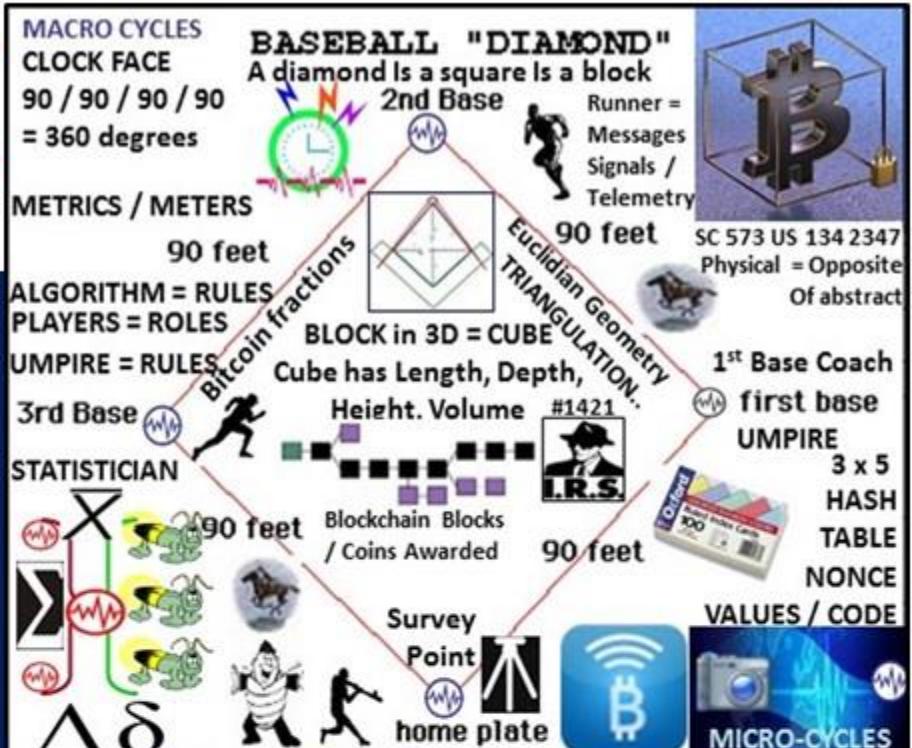
which could occur on the blockchain, but instead get conducted off of the blockchain, without significantly increasing the risk of any participant.



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/)





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.



FIREFLY-HEARTBEAT ALGORITHM **STOCHASTIC HARMONY ACROSS TIME ZONES**



MESSAGE ex:
•Hashing string
•Hash Table

300+Message Templates

	LOGIC FILTERS LOGIC GATES
	SYNTAX LIBRARY LEXICON
	CODER'S GUIDE

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

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



Runner =
Messages
Signals /
Telemetry

SC 573 US 134 2347
Physical = Opposite
Of abstract

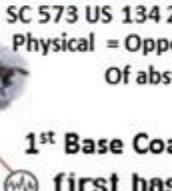
METRICS / METERS

90 feet

ALGORITHM = RULES
PLAYERS = ROLES



Euclidian Geometry
TRIANGULATION...
BLOCK in 3D = CUBE



1st Base Coach
first base
UMPIRE

UMPIRE = RULES
3rd Base



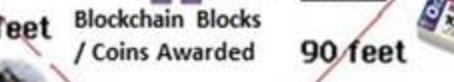
3 x 5
HASH
TABLE

STATISTICIAN



NONCE

90 feet



VALUES / CODE

Blockchain Blocks / Coins Awarded



MICRO-CYCLES

Survey Point



home plate

POW PAYLOAD :
COMBINATIONS OF
ENCRYPTED SYNTAX
Attribute Series





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...

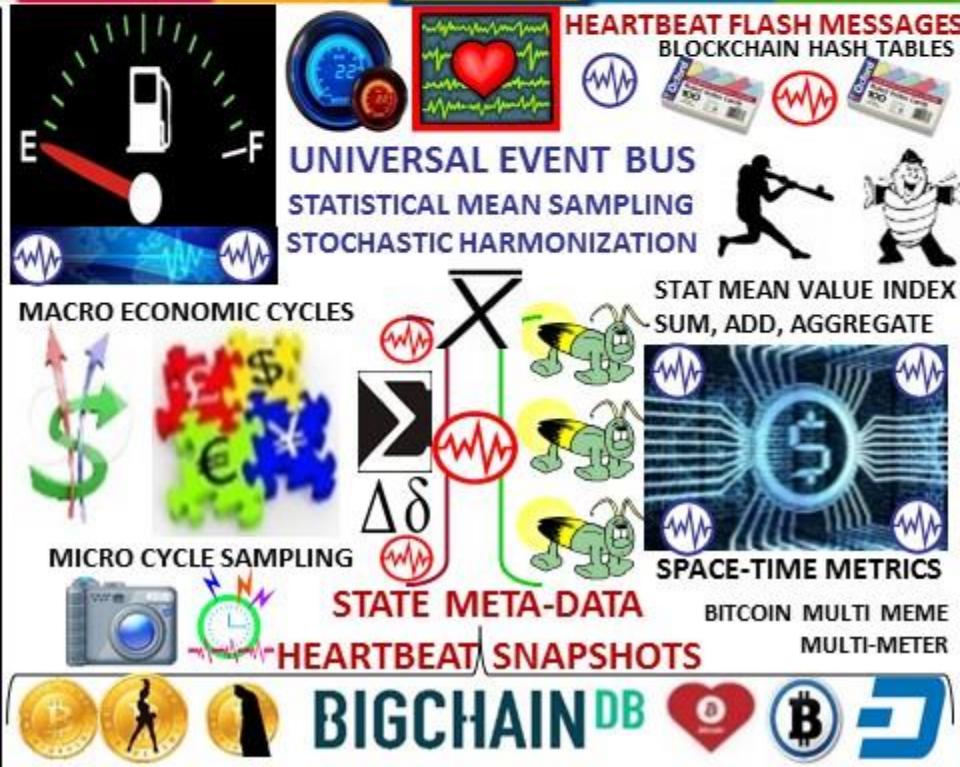
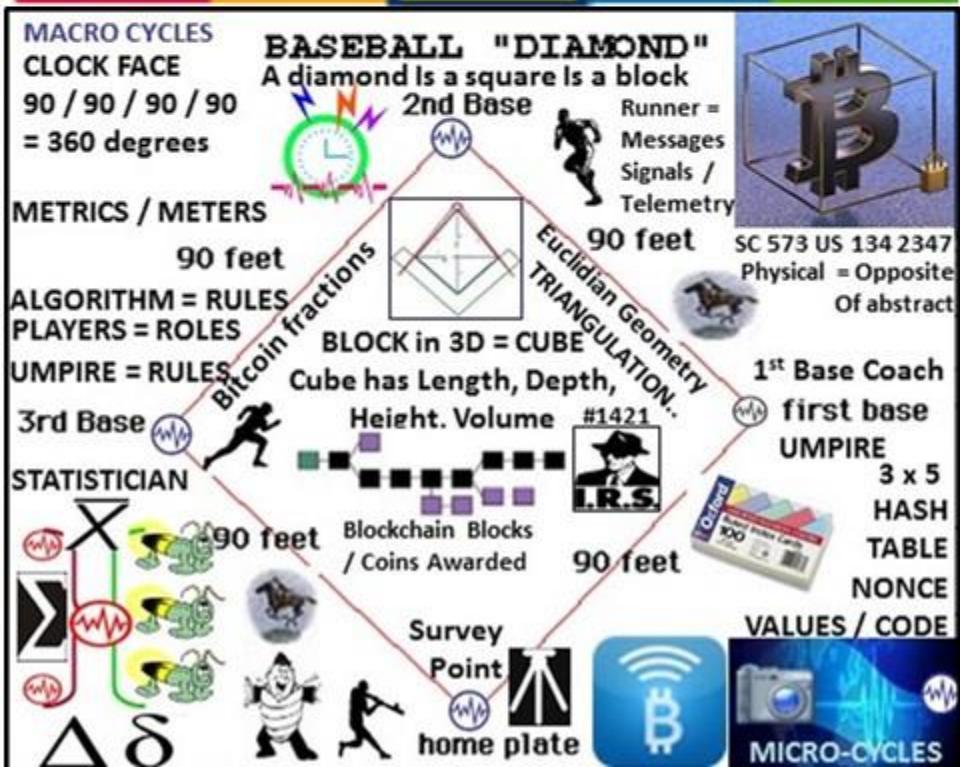
EVENTUALLY

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)





PROJECT LIGHTING

FIREFLY - HEARTBEAT ALGORITHM

FIREFLY - HEARTBEAT

ERLANG

Time Series Databases

UTZ UNIVERSAL TIME ZONE SYNC

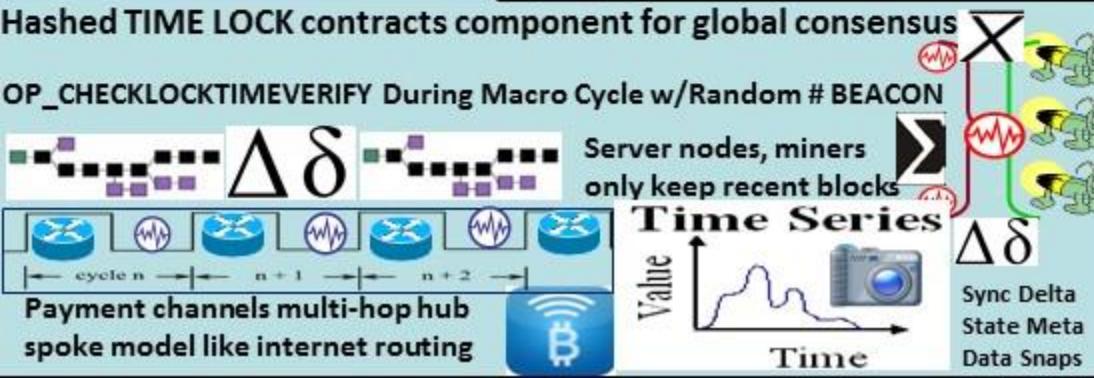
OP_CHECKLOCKTIMEVERIFY During Macro Cycle w/ Random # BEACON

Payment channels multi-hop hub spoke model like internet routing

transactions sent over off blockchain micropayment channels

OREILLY

Stochastic Harmonization



Segregated witness = Separated signatures

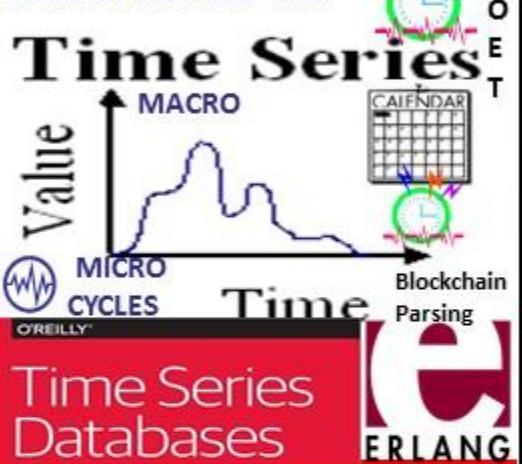
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signature are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a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



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

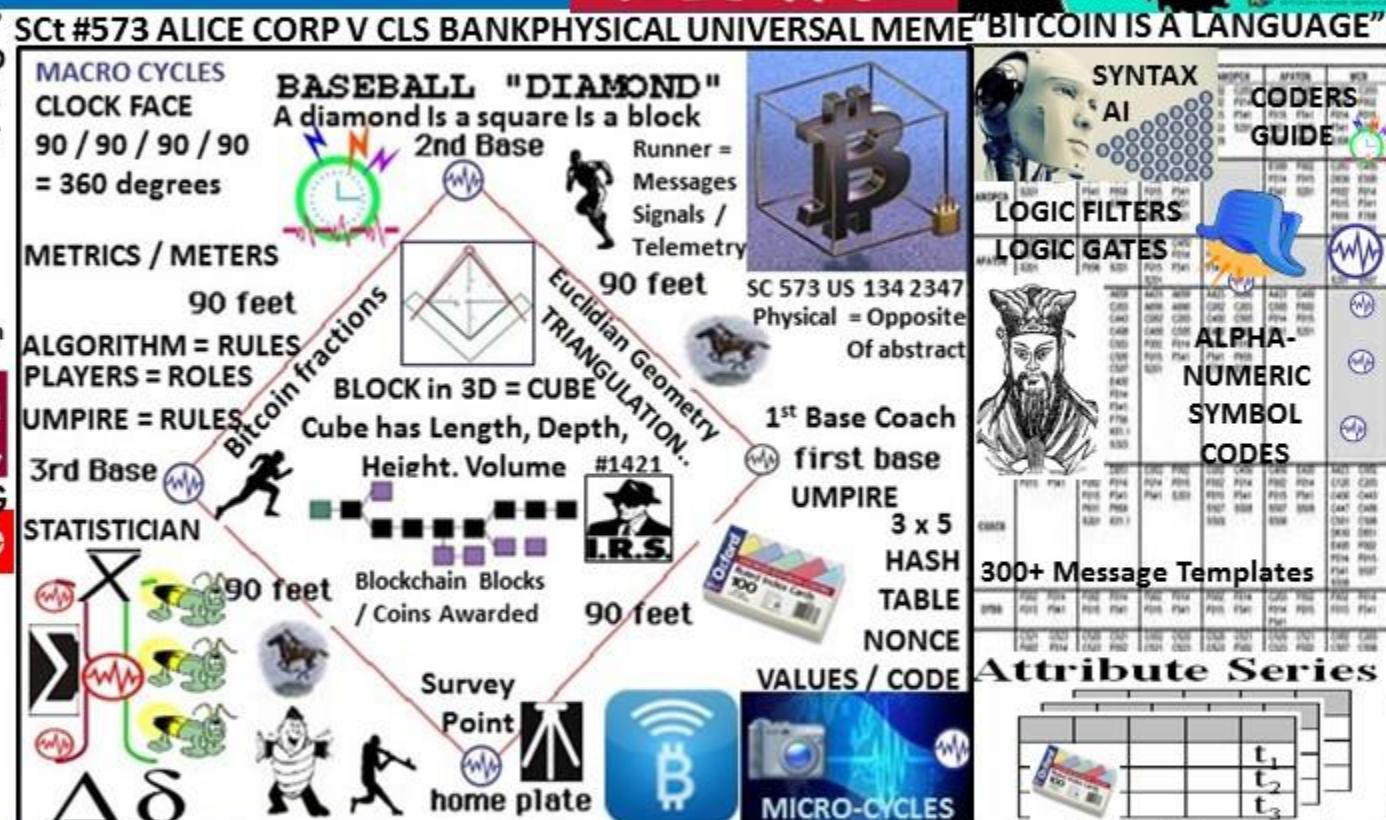
Voting based selection Instead of only using the stake size, the block generators can be selected by votes
ex: League MVP

MVP



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

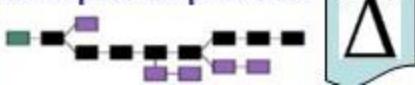
TOURNAMENT LEAGUE BOARD



FIREFLY-HEARTBEAT FLASH MESSAGES UNIVERSAL EVENT BUS



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



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

Key Features:

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



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

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

All rates time-stamped in UTC.



Ability to look up by time-stamp.

Ability to look up by block-height.

Asset Classes: Digital Currencies

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

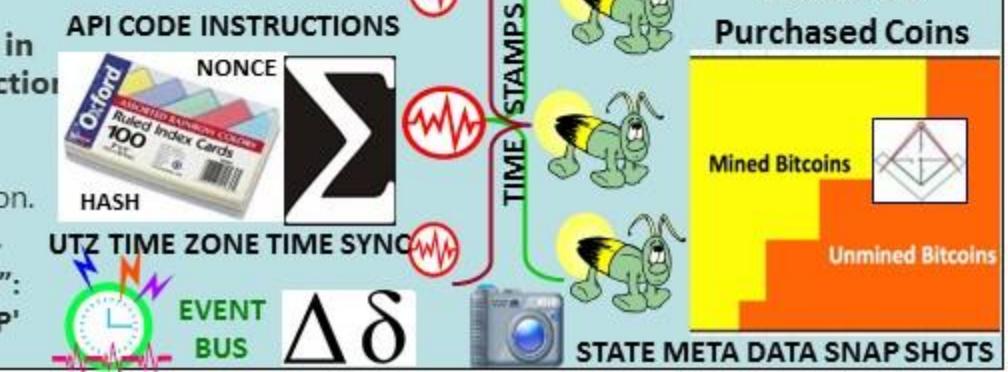
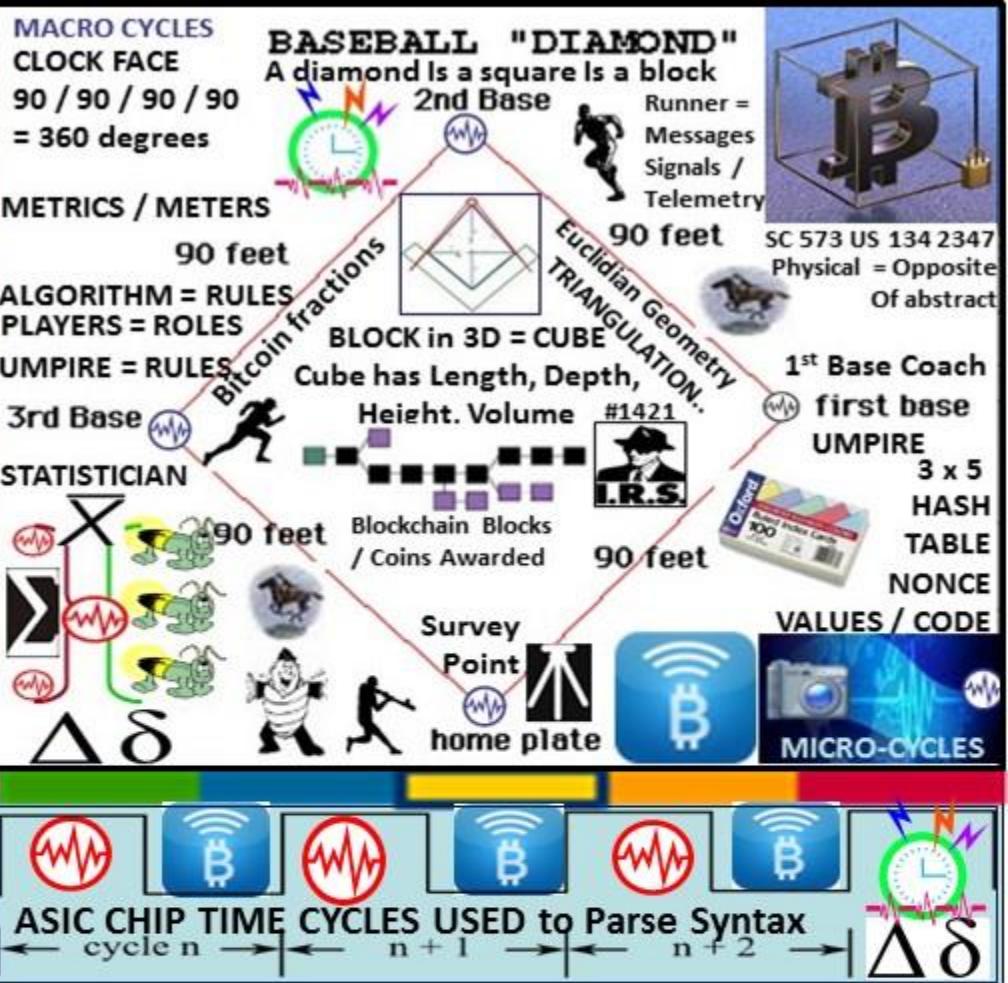
Transaction ID, Block ID, time-stamp, BWAP per block, Value in USD. BTC per transaction, bitcoin transaction fees per transaction

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

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

BRAVE NEW COIN.
Digital Currency Insights

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



DASH



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

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

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

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

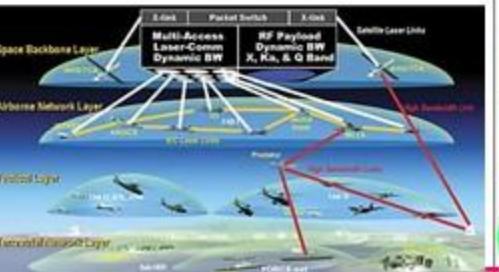
"Its makeup is thus: the block reward is divvied up in three parts. The first 45 percent goes to [Dash's miners](#). Another 45 percent goes to its Masternodes. And 10 percent is set aside to fund whatever other jobs or expenditures the Dash network deems necessary"

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

Masternodes receive payments for their service to the network.

DAO: RAND THINK TANK TERM COINED + / - 2001

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

Blockchain Blocks / Coins Awarded

Survey Point

home plate

$\Delta\delta$

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



Euclidian Geometry TRIANGULATION..

1st Base Coach first base UMPIRE

3 x 5 HASH TABLE

NONCE

VALUES / CODE

MICRO-CYCLES



STOCHASTIC HARMONIZATION FIREFLY-HEARTBEAT EVENT BUS

HEART BEACON CYCLE = IMPROVEMENT TO NETWORK CENTRIC WARFARE



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



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

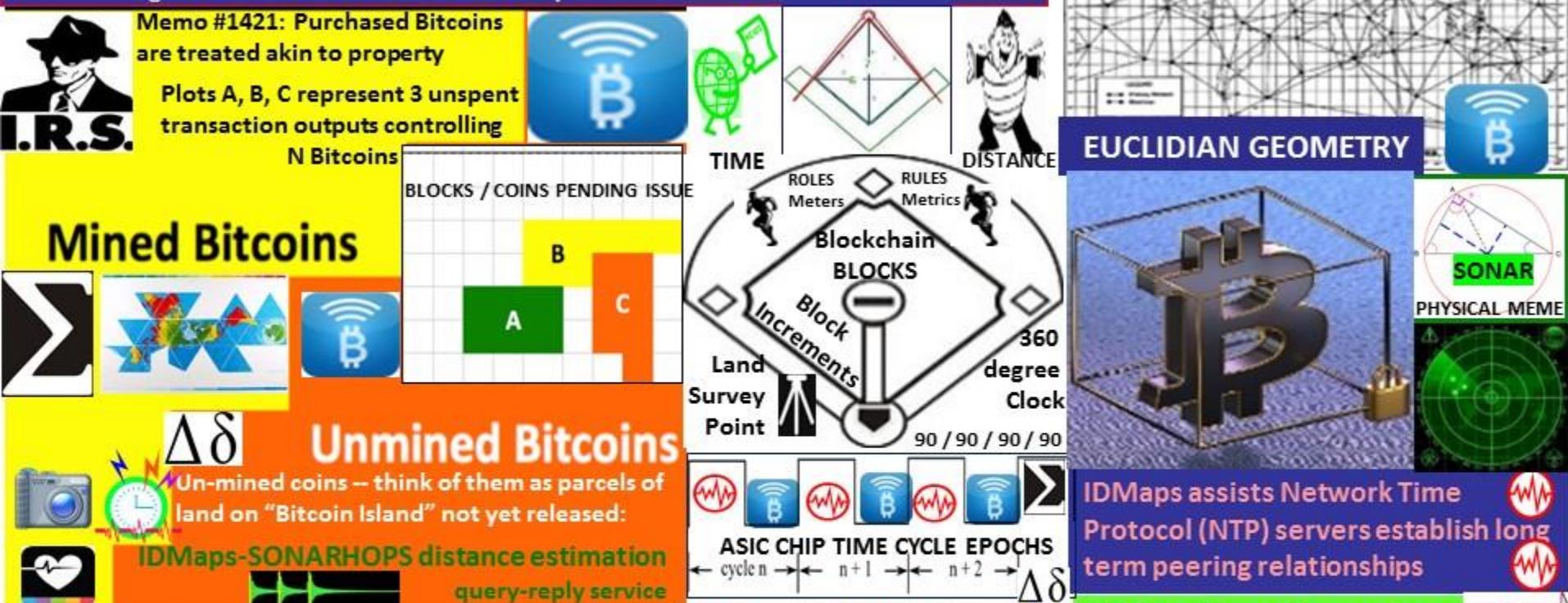
HEART BEACON CYCLE

USPTO 13/573,002

SURVEY METHODS

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

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



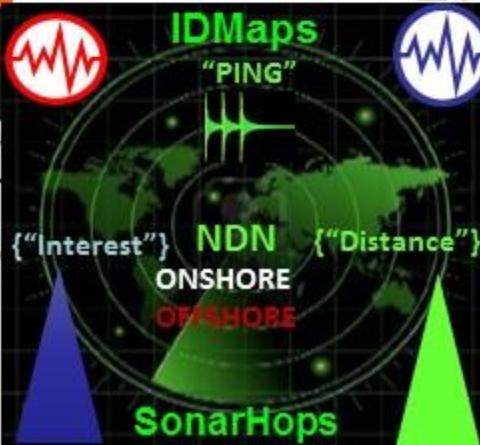
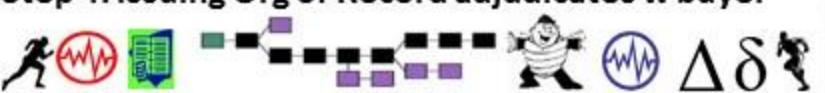
- End-state Bitcoin quantity will be fixed like land
"Bitcoin as protocol of ownership, not transfer"
Coins never travel, but simply switch owners"

Step 1: prove coin ownership <Org_ID> Coin Issuer

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

Step 3: specify ownership <Org_ID> issuing agent

Step 4: Issuing Org of Record adjudicates w buyer

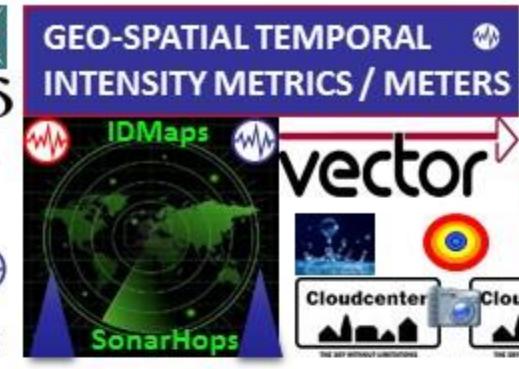
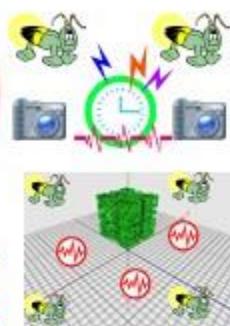




IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



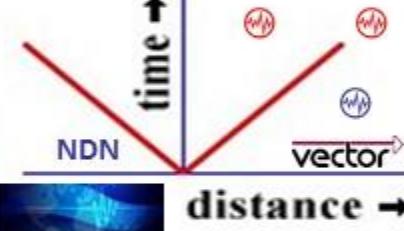
HOP COUNTS



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

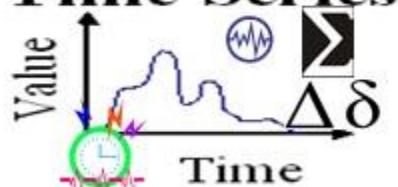
TRIANGULATION



NDN
INTEREST

IS DATA
FRESH ?

Time Series



INTEREST in <URNs>

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

Datasets and Event Notification

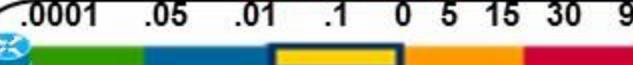
IDMaps assists Network Time Protocol (NTP) servers establish long term peering relationships



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

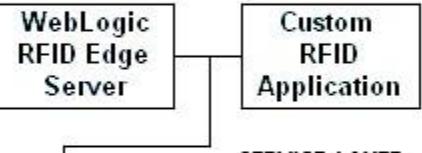
Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data

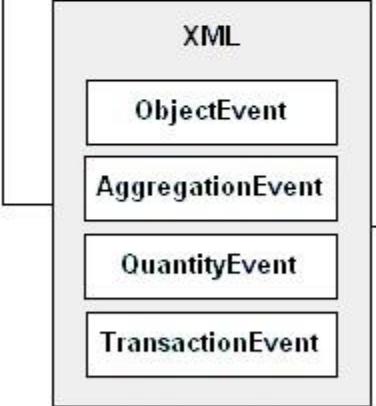


epcis

EPCIS DATA MODEL



SERVICE LAYER



Core Business Vocabulary (CBV)

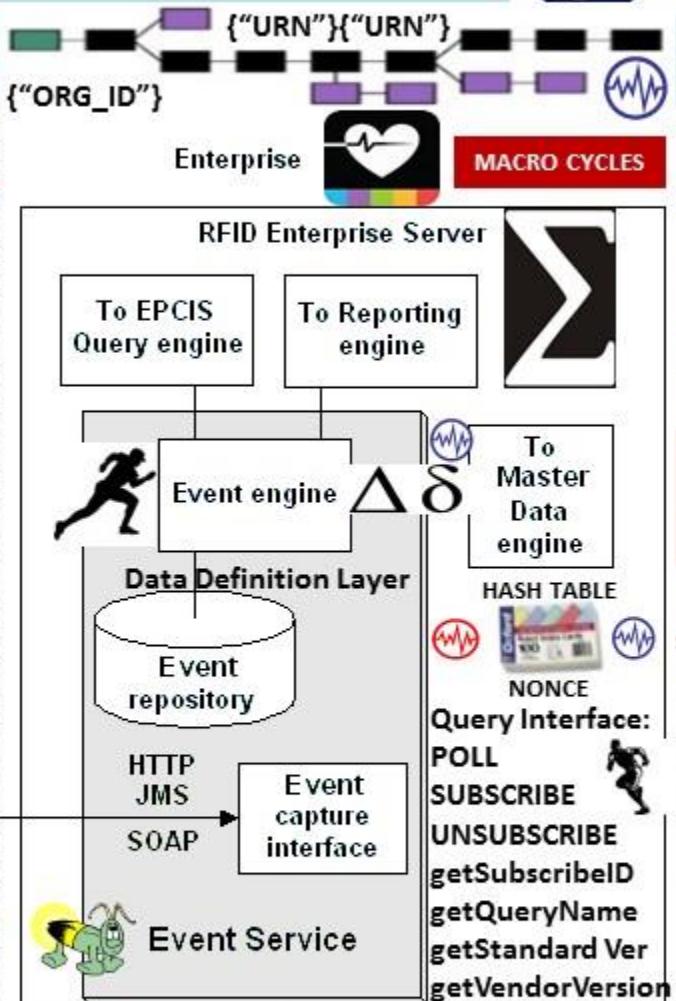
What identifiers of object(s) or entities / subject of the event

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

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

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

MICRO CYCLES



CLOSER IS CHEAPER
CLOSER IS FASTER

$\Delta\delta$



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

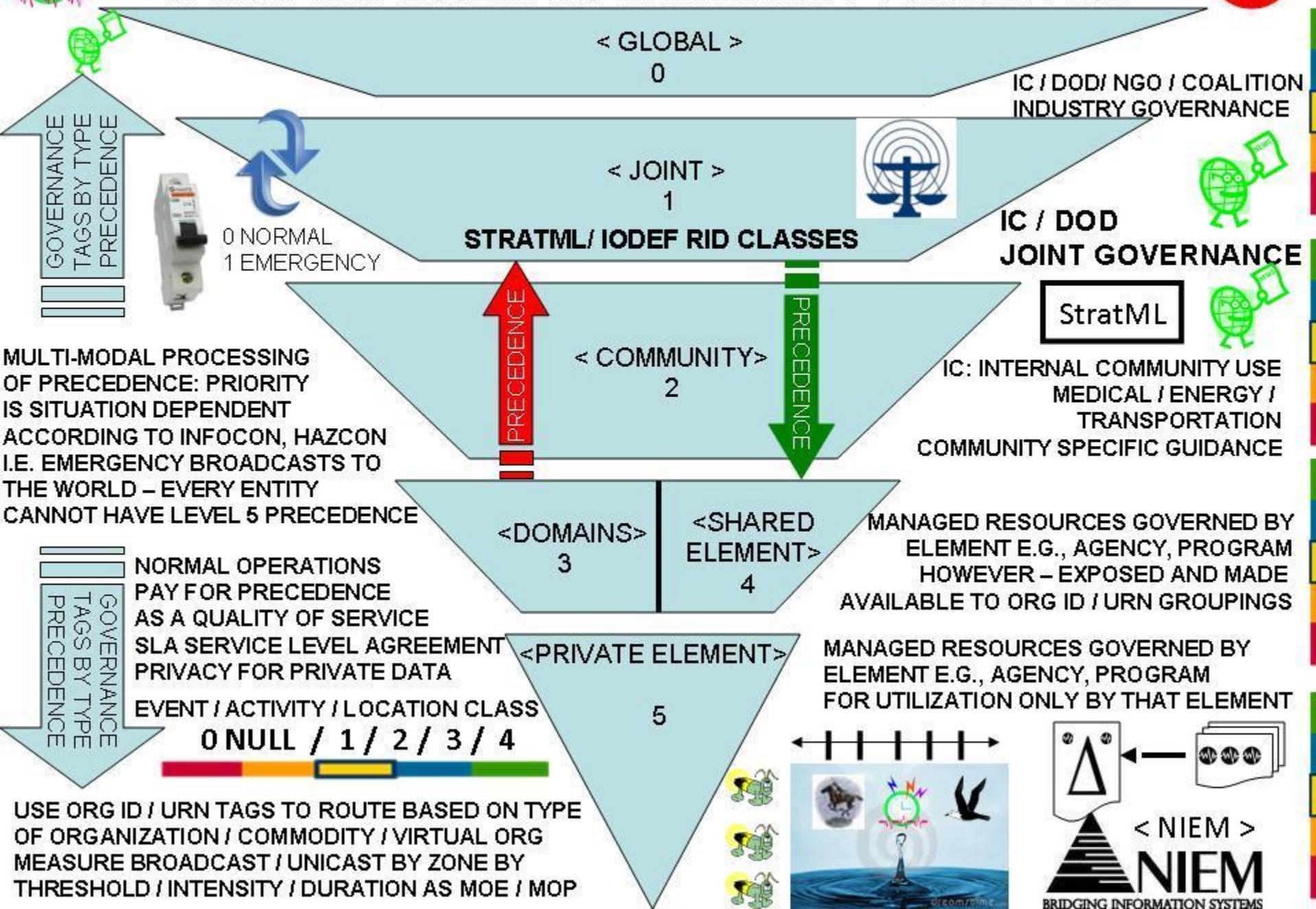
RFID Configuration TCP/IP heartbeat message

STRUCTURED DATA EXCHANGE /
STRUCTURED MILITARY MESSAGES

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



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



Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

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



Industrial Control System
Information Sharing and
Analysis Center

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

<ELEMENTS>

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

STRATEGIC
MARKUP

StratML

LANGUAGE

IODEF

Analysis Center

INVENTORY: Uniform Resource Name <URN>

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



vector

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

GEO-SPATIAL TEMPORAL INTENSITY METRICS

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

GEO-SPATIAL TEMPORAL
INTENSITY METRICS / METERS



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

CONTENT LEXICON
ROSETTA STONE

NDN

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

SHARING:

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



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



NIEM
DEFINING INFORMATION EXCHANGES

NAMED DATA
NETWORKING
<Content> Centric

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>
```

QR / PURCHASE CODE



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
MICRO-CYCLES

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



{"DUNS #"} {"Org_ID"}
{"URN"} {"URN"} {"URN"}



EVENT BUS



Signalizing, Telemetry





**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 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

- VALUES:**

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

- **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

Cryptographic Security

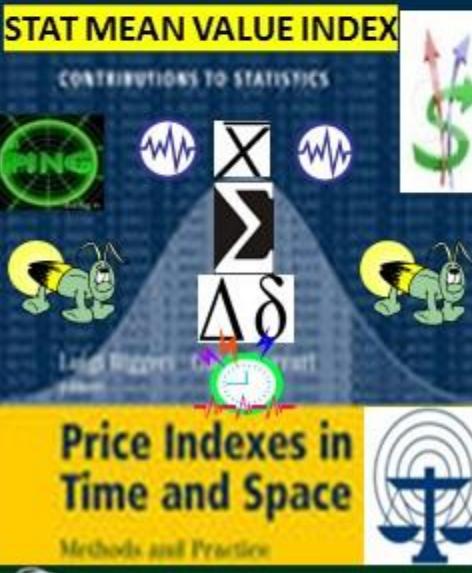
- tamper-proof agreements
 - 1) minimize potential disputes
 - 2) fast-track dispute resolution



HASH Values
Nonce Values



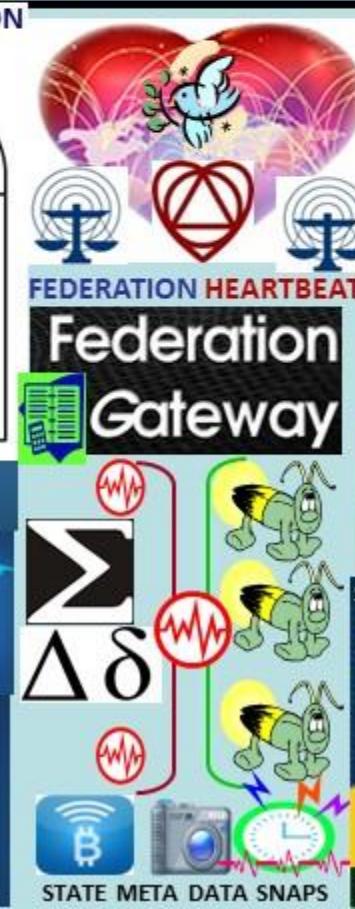
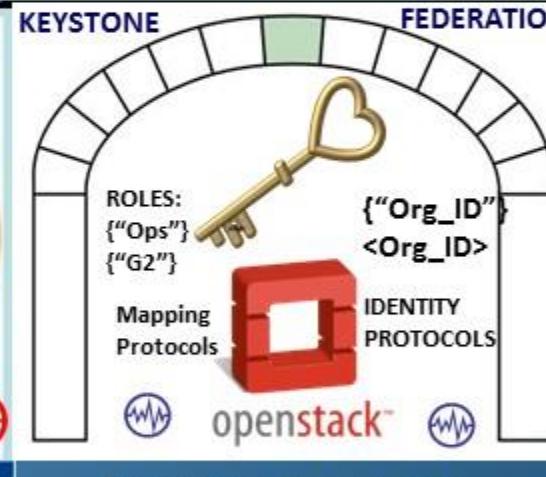
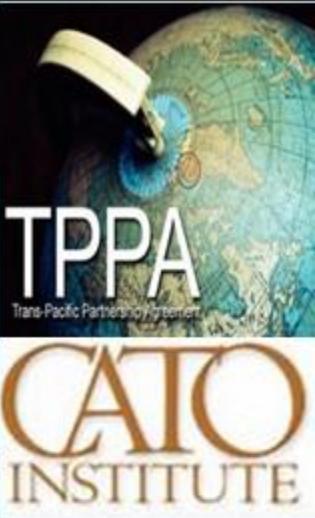
Federation
RG
ID Gateway





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



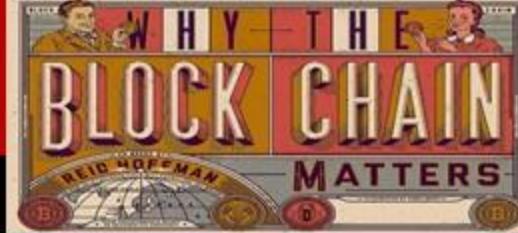
HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX



TradeNet

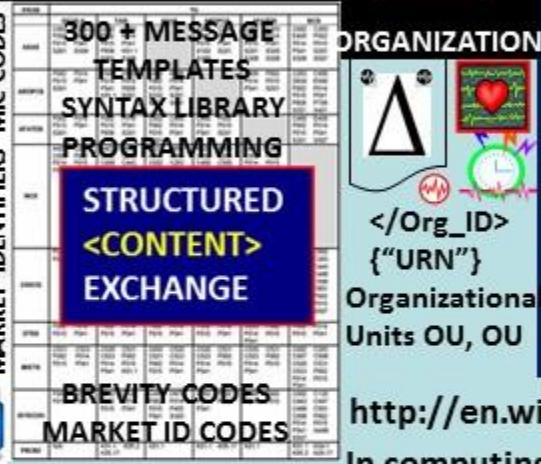
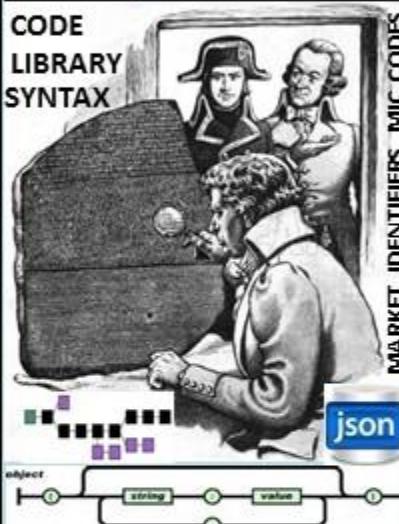


Programmable Money \$\$\$



RIED HOFFMAN 15 May 2015 [LINK](#)

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

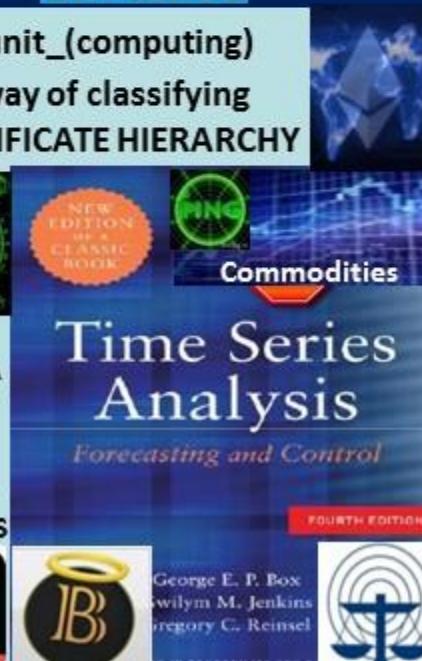
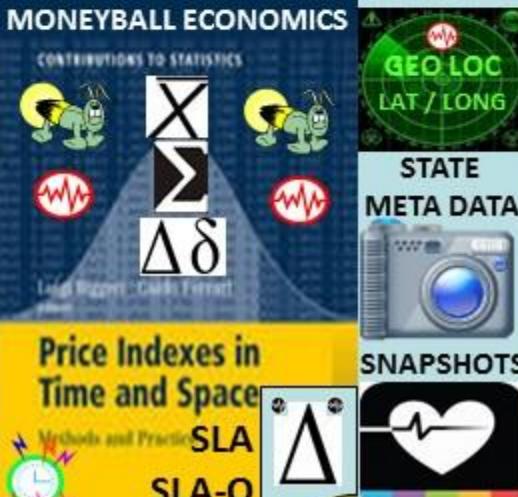


Bitcoin and the blockchain function as a medium of exchange, a store of value, a unit of account. Bitcoin adds digital, cryptographic, distributed server functions to currencies. Because it functions simultaneously as a currency, an asset and a platform, Bitcoin is better described as a global cryptoCAP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

UTZ Stochastic Harmonization

FINANCIAL
NOSTRADAMUS
REGGIE MIDDLETON



ECONOMIC HEARTBEAT
STATISTICAL MEAN VALUE INDEX PULSE



SHELLING POINT TRUTH



Price Indexes in Time and Space



STAT MEAN



INVESTOR POOL



WORLD COMPUTER



DFINITY



COMMODITIES

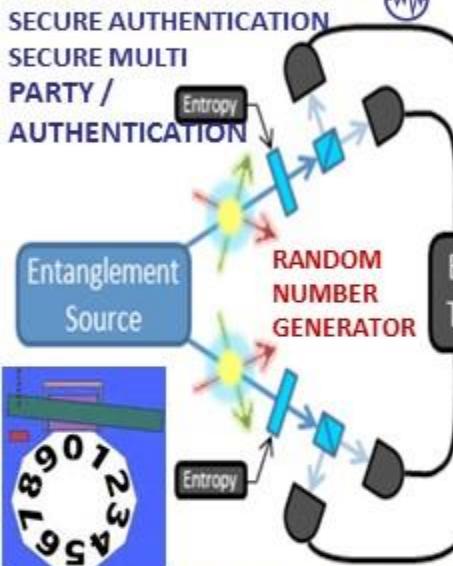


NIST RANDOMNESS BEACON: broadcast full-entropy bit-strings in blocks of 512 bits every 60 seconds. Each value is time-stamped, signed, & includes hash of previous value to chain sequence of values together. This prevents all, even the source, from retroactively changing an output packet without being detected. The beacon keeps all output packets and makes them available online. 1st, Beacon-generated numbers cannot be predicted before they are published. 2nd, public, Beacon's time-bound, authenticated nature of the Beacon proves true random numbers not known before a certain point in time. 3rd, this proof can be presented offline at any point in the future



NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

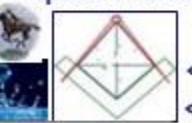
UNPREDICTABLE SAMPLING



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors

NAMED DATA NETWORKING



NDN
</Interest>
</Distance>

SURVEY METHODS + TRIANGULATION
Euclidian Geometry

Geodesic System Routing Info Base RIB

ACCOUNT BELONGS TO </Org_ID>

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

DEVICE / SENSORS <UUID><UUID>

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

Time / Distance Metrics
PROXIMITY
OFFSHORE BEACONS
ONSHORE
NDN
</interest></distance>

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

Stochastic Harmonization



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



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

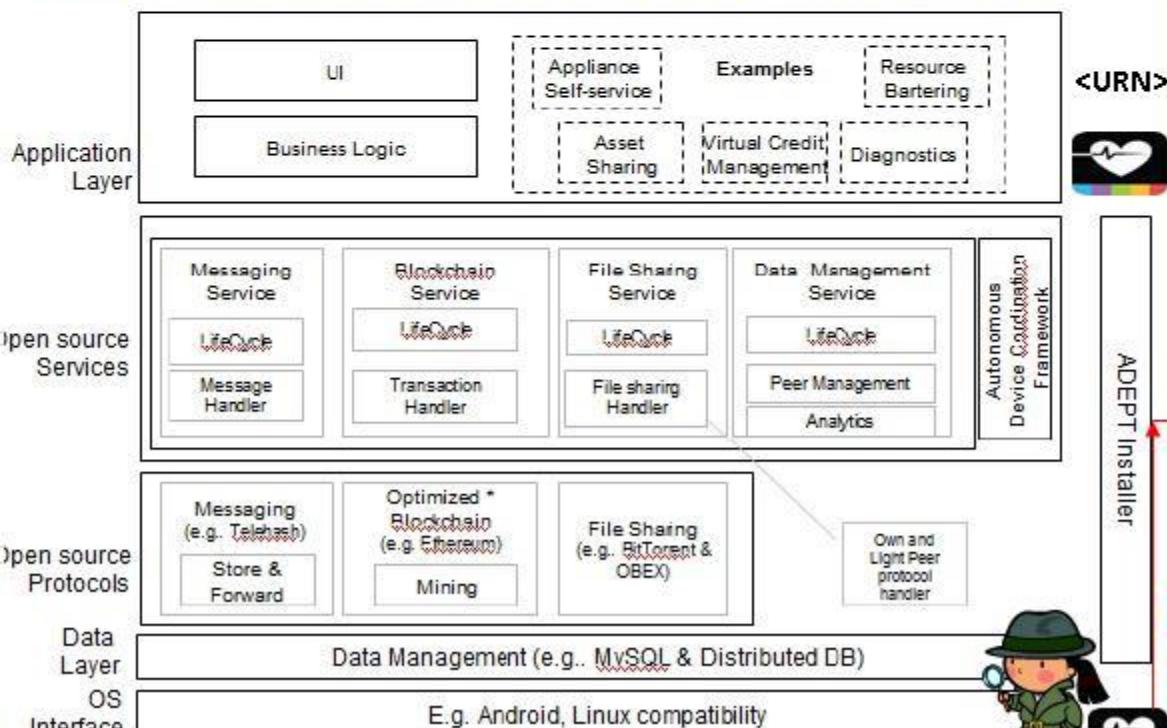
Payments

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



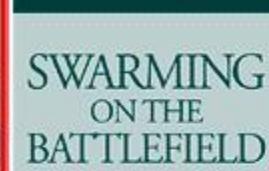
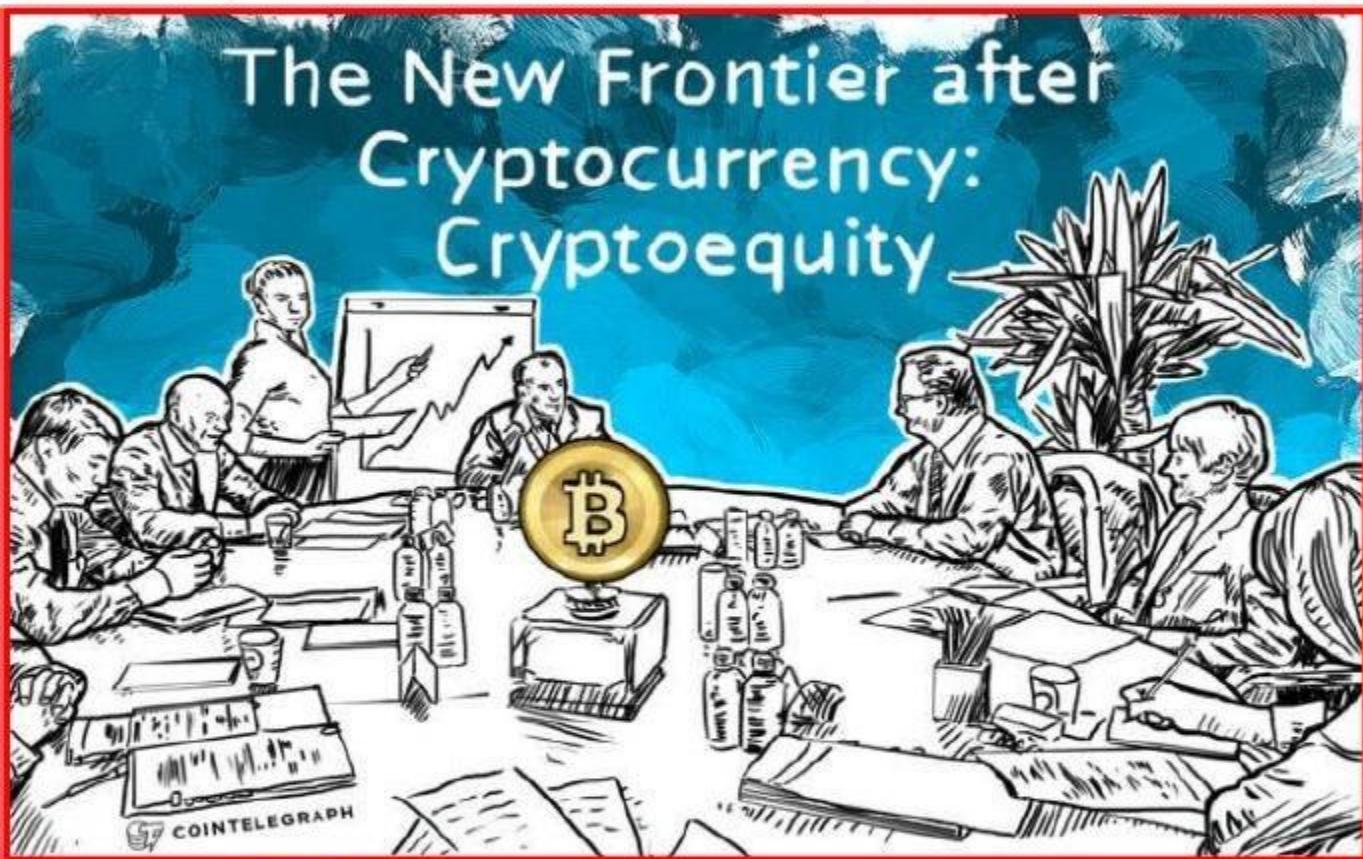
OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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



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



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

<https://twitter.com/TheBitcoinArmy>



ERIS: GODDESS OF DISCORD
DISRUPTIVE TECHNOLOGIES:

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



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

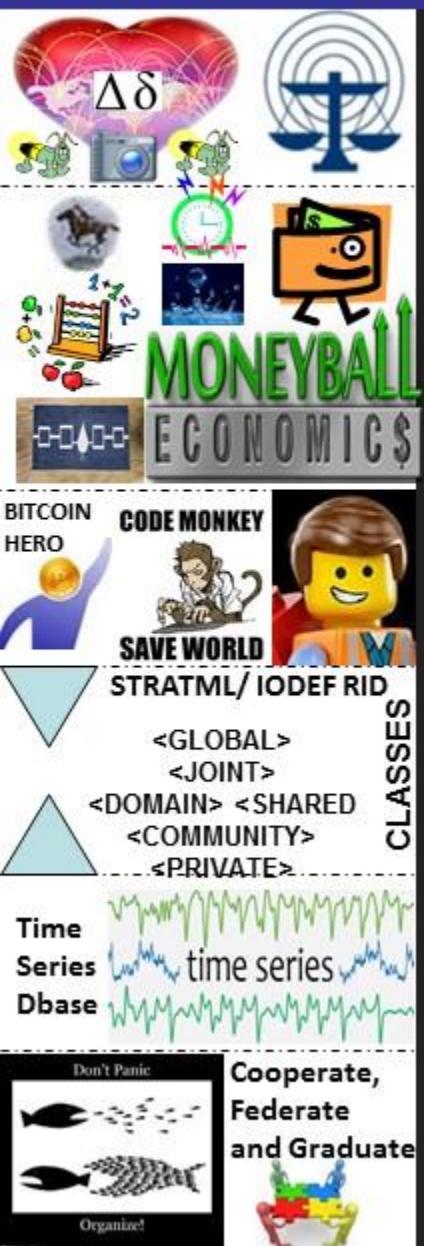
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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



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





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

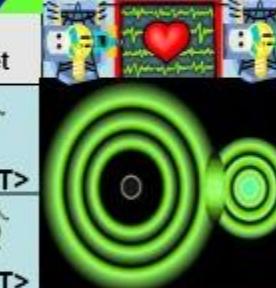
Phase 2: Shared file stores data for 5 tags:

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

TAG	vector	ENERGY TOKENS ExDesc / COMMODITIES	digitalset
{"Org_ID"} ActiveID		[UFO2_ACTIVEID]	
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)	$\Delta\delta$	[UFO2_STATE:#]	
IF2_State (IF-Node2)	$\Delta\delta$	[UFO2_STATE:#]	

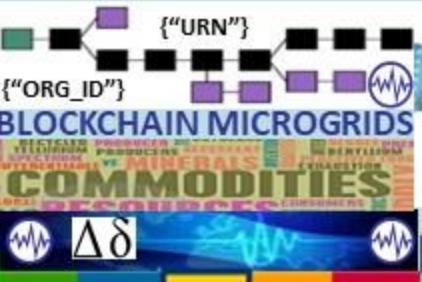


TOKENIZED ECONOMY



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

Heartbeat
State meta
Data snapshots



$\Delta\delta$



$\Delta\delta$



$\Delta\delta$

Geo Spatial

Temporal Series

Water Drop Meme

Geospatial Radius

WATER DROP

MEME= RADIUS

DISTANCE FROM

ENERGY SOURCE

Micro Payments

Demurrage Fees

t_1 t_2 t_3

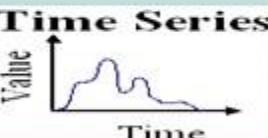
N

CLOSER = < CO2

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



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



Spatial Econometrics



IEEE 802.1AG HOP BY HOP DETECTION

IEEE 802.11 HbH HOP BY HOP CONTROL

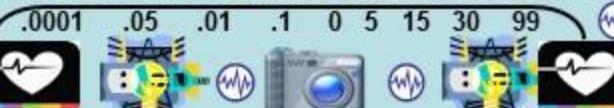
< HOPS = CHEAPER Sync Delta Heartbeat Messages

CROSS LEVEL OVERAGES / SHORTAGES ADJUST FOR

TIME / DISTANCE BETWEEN NETWORK NODES



FIREFLY-HEARTBEAT ALGO EVENT MESSAGE BUS



K %

SYNC DELTA

HEART BEAT Match

events to Closest HBC

$\Delta\delta$

FIREFLY EVENT BUS

Distance Estimation Service

IDMaps SonarHops

$</INTEREST>$

NDN

NDN

{"DISTANCE"}

13/573,002 HEART BEACON CYCLE

The four dimensions of Big Data

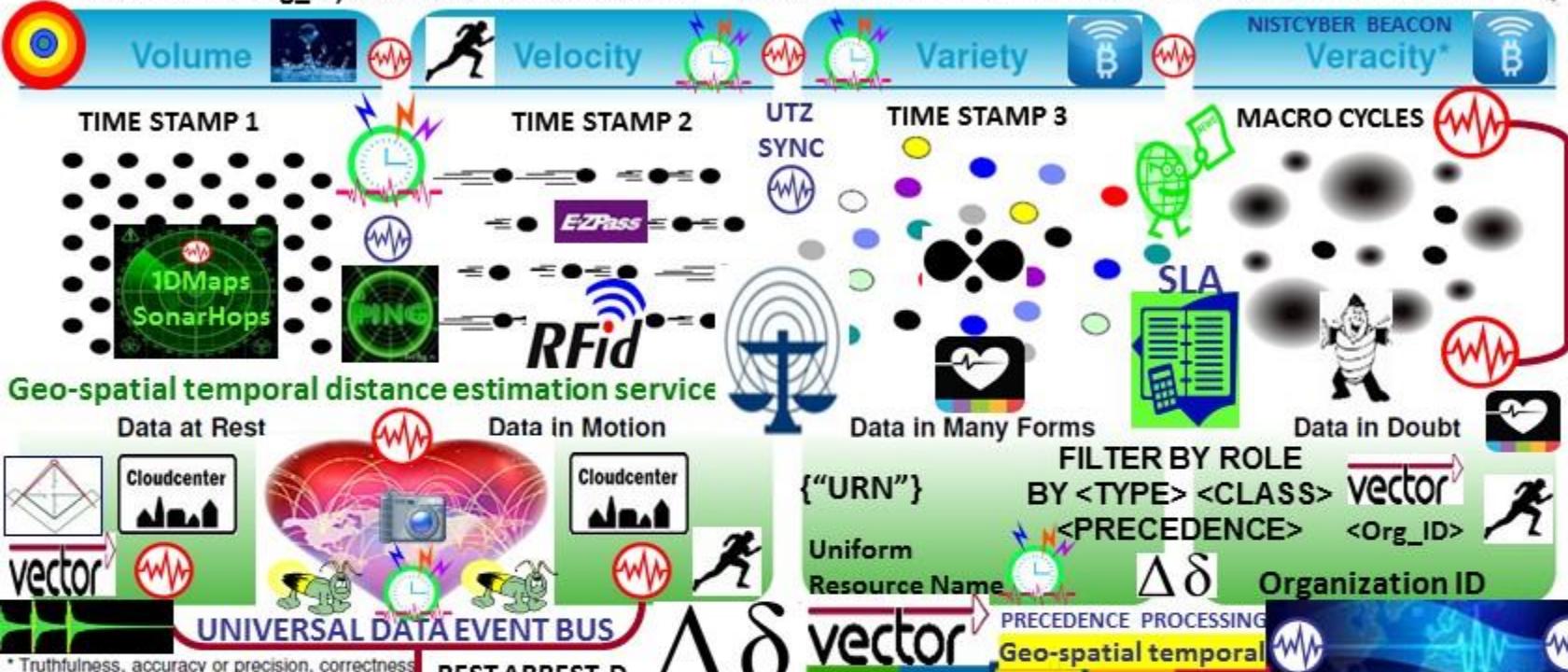
TIME STAMP BY Org_ID, URN Before FUSION CENTER

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

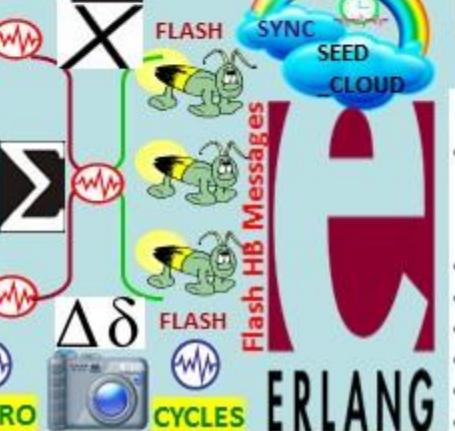


INFOCON
5 4 3 2 1
INFORMATION CONDITION

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



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



• Data types:
 - Integers (incl. BigNums), floats, atoms
 - tuples/records, lists/plists, binaries, funs
 - Maps (added in R17)

• single assignment

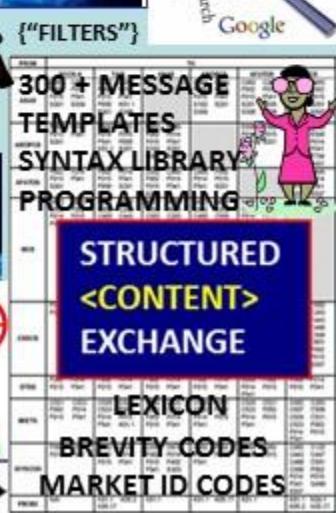
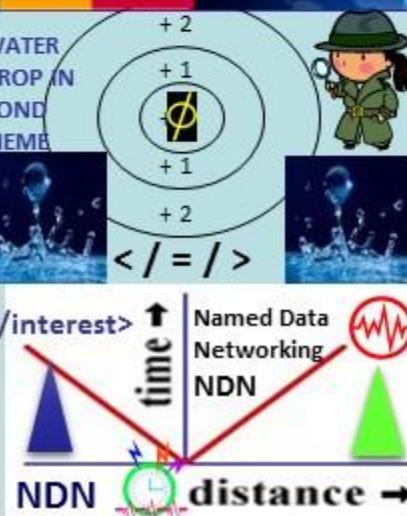
• pattern matching & guards

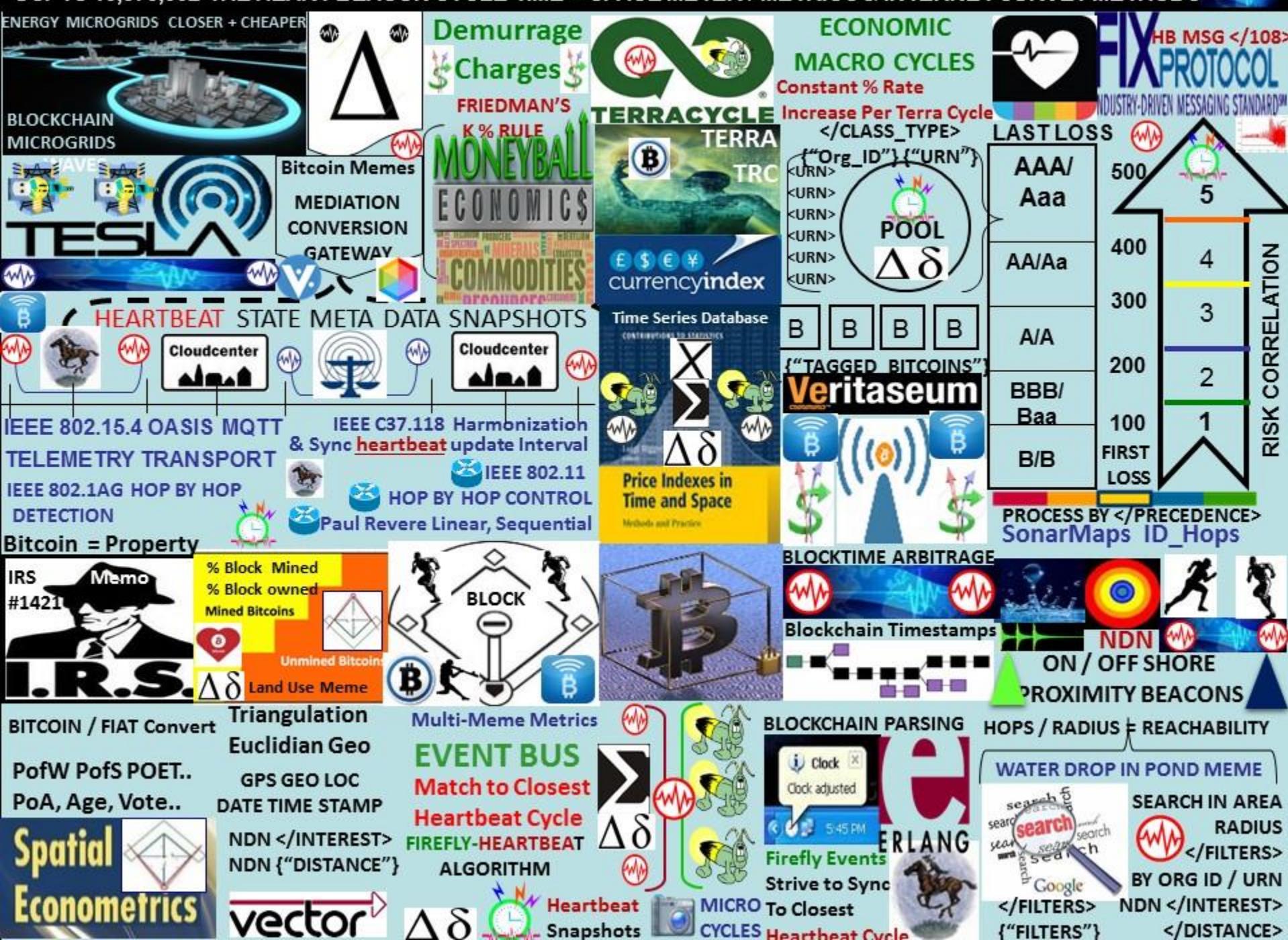
• closures (anonymous function data type)

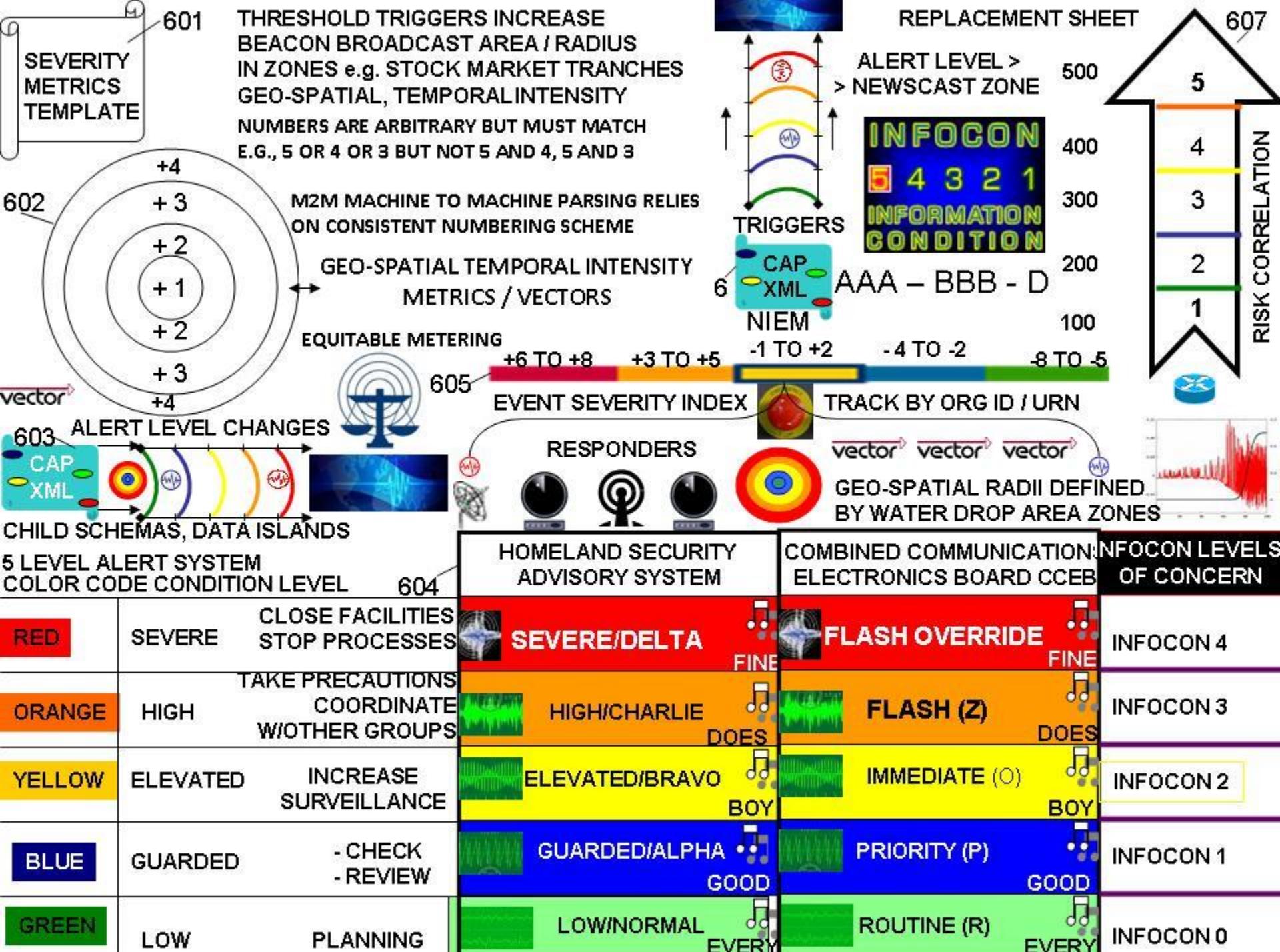
• list comprehensions

• bit-syntax & binary comprehensions

• tail recursion & tail call optimization (TCO)







GEO-SPATIAL TEMPORAL INTENSITY METRICS, METERS, VECTORS



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



Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:



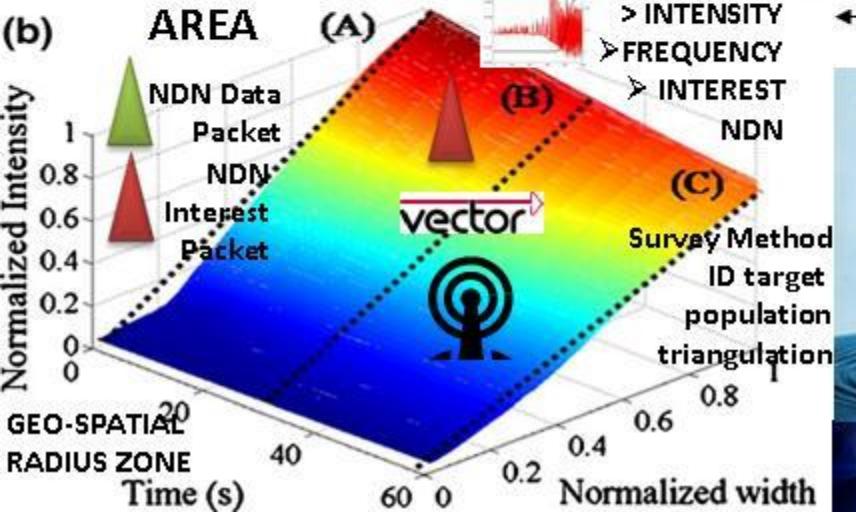
Paul Revere = linear, sequential



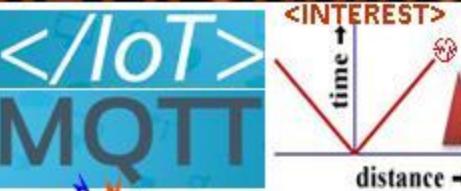
TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY Cyclic Frequency



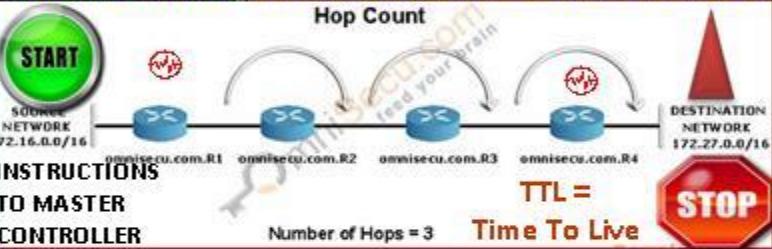
NAMED DATA NETWORKING



NIST TIME BEACON

05:08:57

ARRESTED-D IEEE 802.15.4
OASIS MQTT
TELEMETRY TRANSPORT

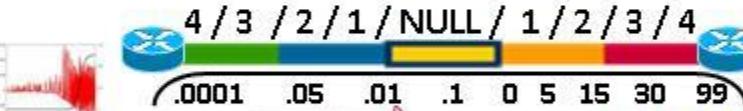


CLOSER = FASTER, CHEAPER > CYCLE => INTEREST NAMED-DATA NETWORKING

IDMAPS
SONARHOPS
INTERNET
TRIANGULATION



vector



vector WirelessHART

time synchronized, self-organizing, mesh Net

ALERT LEVEL > NEWSCAST ZONE

vector

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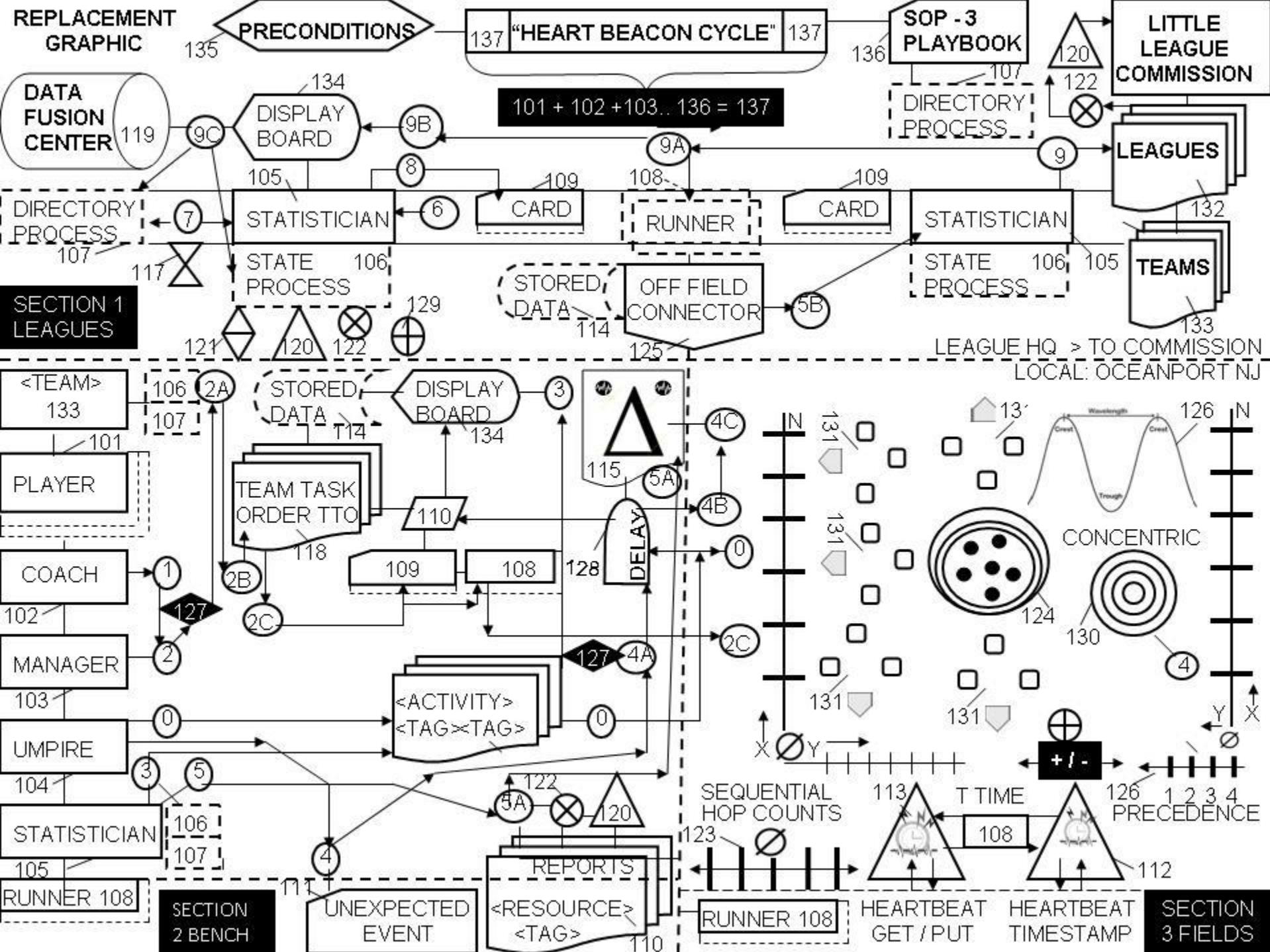
time synchronized, self-organizing, mesh Net

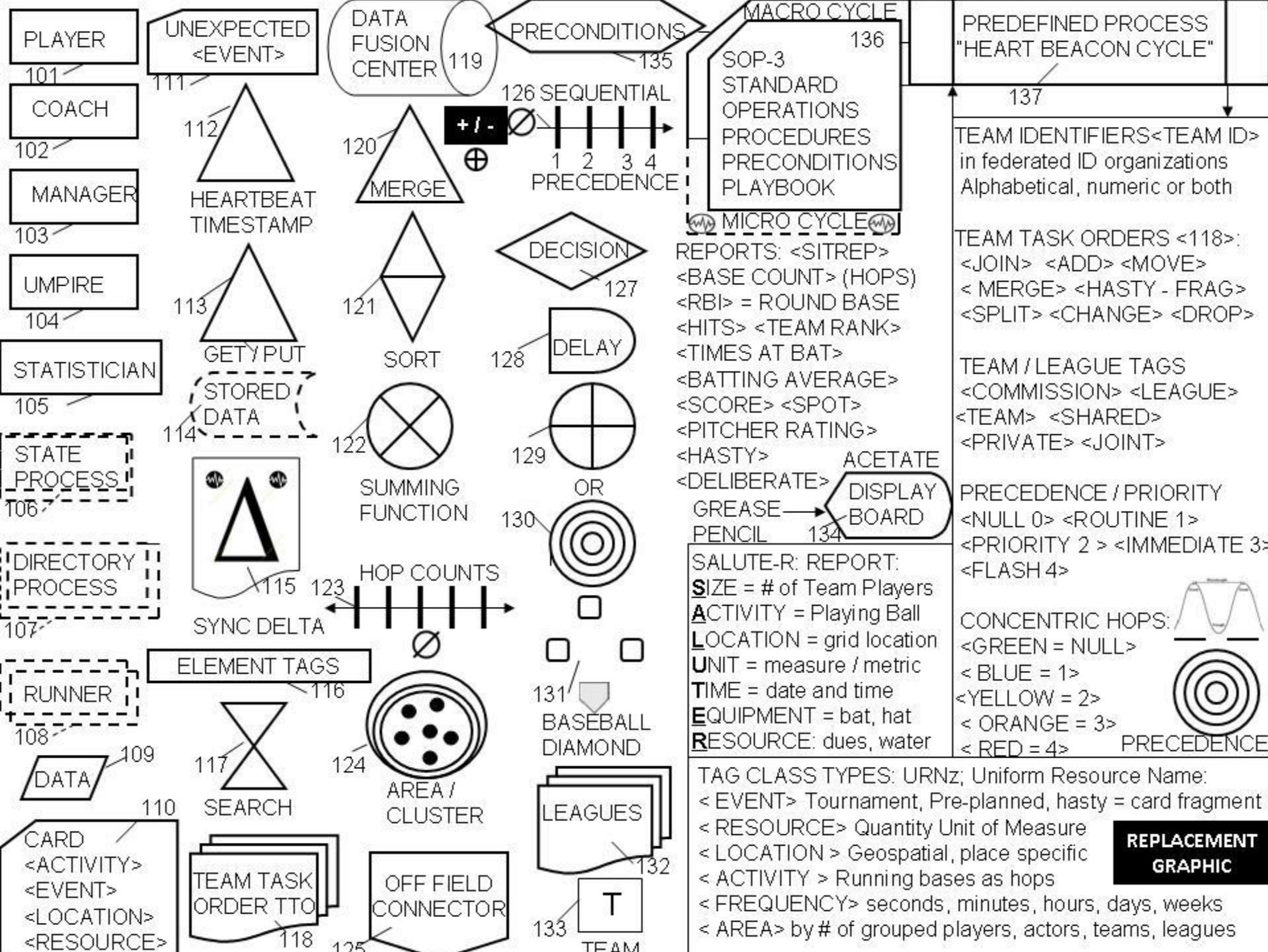
ALERT level > NEWSCAST ZONE

vector</

Interface Name	HEARTBEAT Administration Interface [SCOP]		
Documentation URL	http://scop.sourceforge.net/ http://linuxvirtualserver.org/software/index.html		
API Information	      		
#Big_Data	Functionality Areas	Cloud Interface Management, configuration, start, stop cloud services, edit configuration (heartbeat messages)	
	API Operation Count		
	Web service access type	Web application, front end to [network, device, system] heartbeat	
	LANGUAGE / PLATFORM BINDINGS	PHP	 
Interface Characteristics	<p>SCOP is a web application, PHP based, that is a front-end to heartbeat, IP Virtual Server ipvs and Idirectord [check interval e.g., every 5 seconds] software. With SCOP you can start/stop services, view/ edit configuration files e.g., heartbeat message state management snapshots, make backups, take a server online/offline, add/ remove virtual/real servers, etc.</p>		

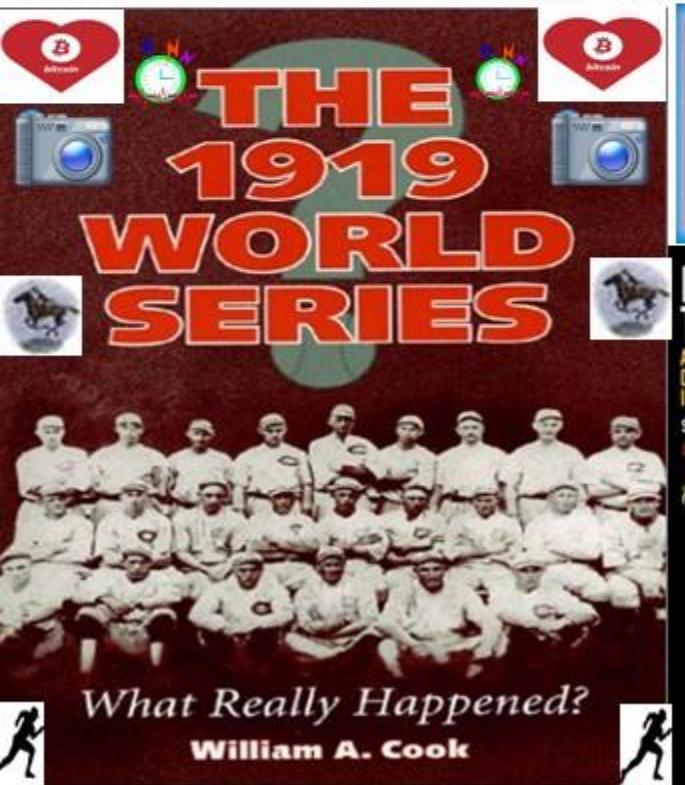






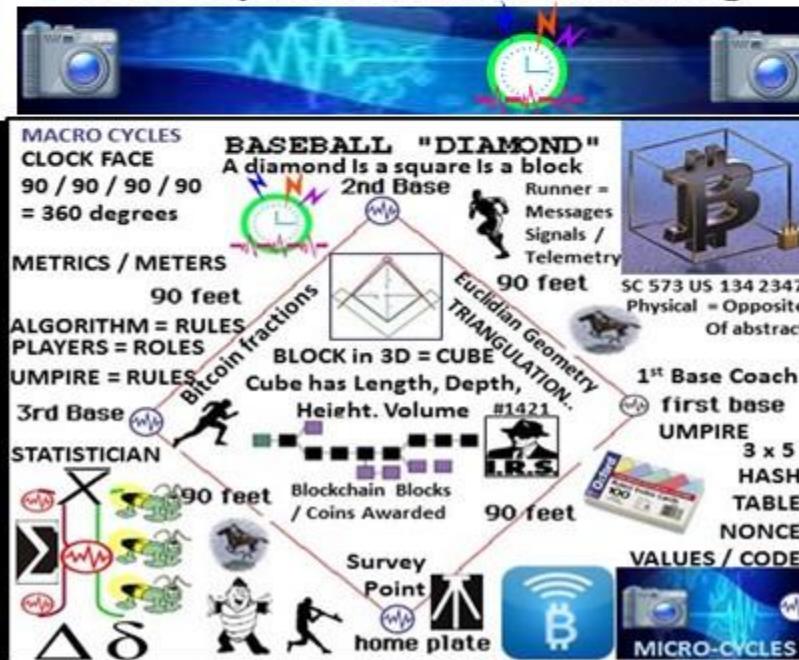


SAW Concepts LLC Owner's Father is from Blackfoot First Nation Native American Indian



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

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RADIUS

WATER DROP IN POND MEME

Attribute Series

INTEREST

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Temporal Series

Geo Spatial

Paul Revere

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Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

<p



SIGNALS
Telemetry
ANNEX

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



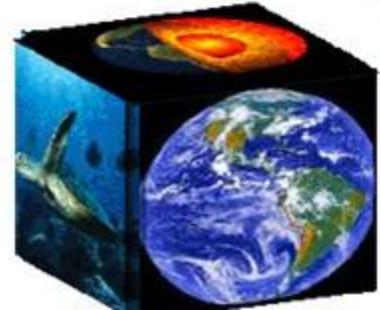
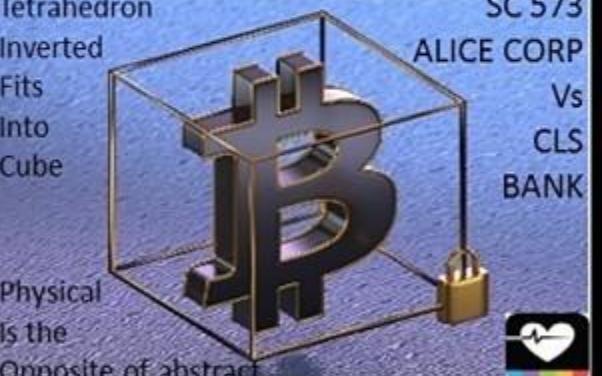
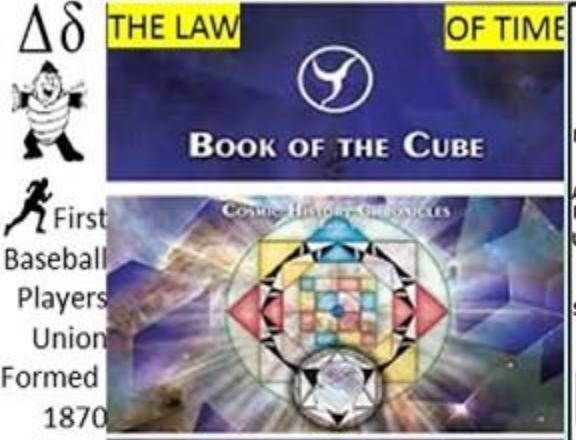
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

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

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

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



INSTITUTE OF HEARTMATH®

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

<https://www.heartmath.org>



