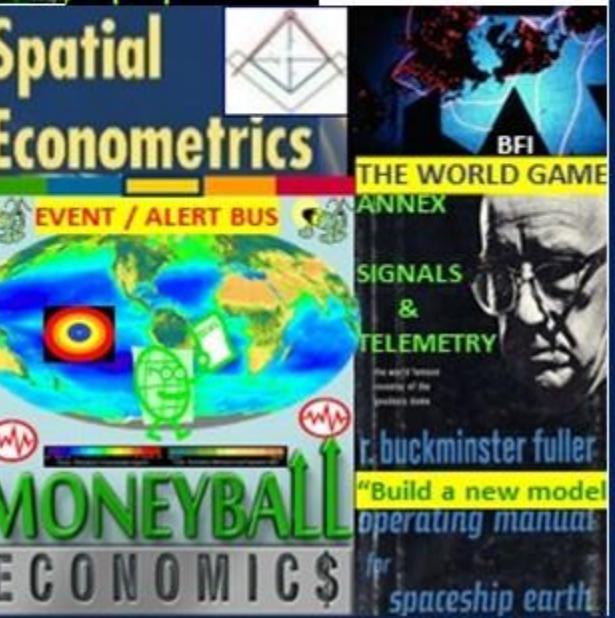


SIMPLE ALWAYS WINS... WHEN STANDING ON THE SHOULDERS OF GIANTS

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





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

DAO's in FEDERATIONS AGREE TO USE COMMON COMPONENTS, SHARED PROCESSES, METHODS, SIGNALING - TELEMETRY SCHEDULE & METRICS IN SMART CONTRACTS, SERVICE LEVEL AGREEMENTS

CHECKLIST: TRADE FEDERATION ECONOMIC FRAMEWORK EX:

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



Humanitarian Assistance Networked Donor System

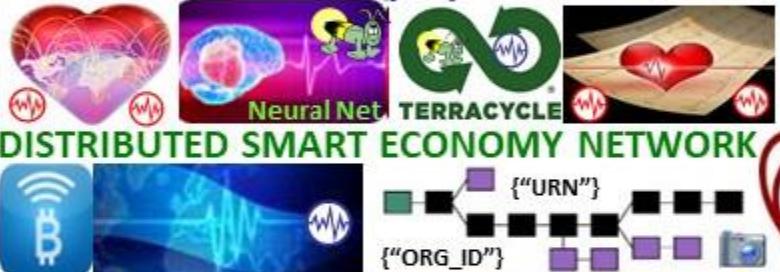
H.A.N.D.S: "Based on the need to speed up the processes of influencing an adversary, new concepts result in the adaptation of military doctrine, organization, training, material, infrastructure, interagency interaction, leadership, personnel and facilities" ... German Bundeswehr : concepts of "Network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



<https://neo.org>



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



Federation Gateway



TEMPLATE FORMS

STRUCTURED DATA EXCHANGE

REGIONAL

NATIONAL

LOCAL

GLOBAL

MATCH

UNUSED

RESOURCES TO

UNMET NEEDS

AFH - AFRICAN HANDS

ASH - ASIAN HANDS

AUH - AUSTRALIAN HANDS

EUH - EUROPEAN HANDS

NAH - NORTH AMERICAN HANDS

SAH - SOUTH AMERICAN HANDS

N... - NATIONAL HANDS

L... - LOCAL HANDS

GLOBAL HANDS SYNC

UNIVERSAL EVENT ALERT Message BUS

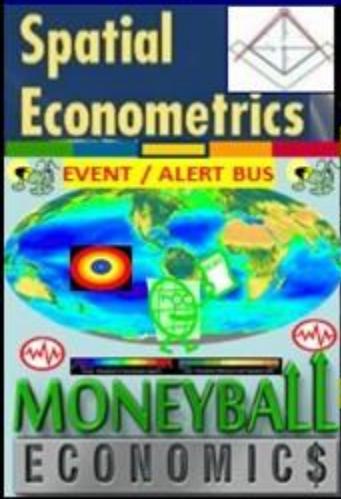
Vernetzte Operationsführung

REUSE OF A PENTAGON ACAT-1A SITUATION

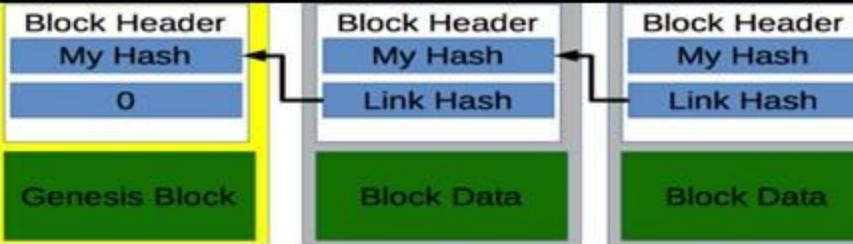
AWARENESS PROGRAM SWORDS TO PLOWSHARES

PROPOSED BY GERMAN MILITARY CIRCA 2003

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



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



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

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

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

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

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

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

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

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

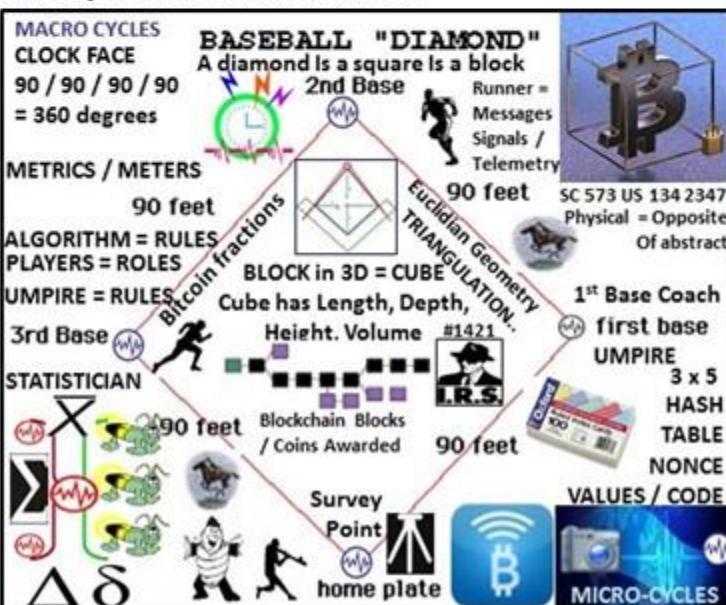
Consensus strategies: "proof of work," "proof of stake," and "delegated proof of stake"

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

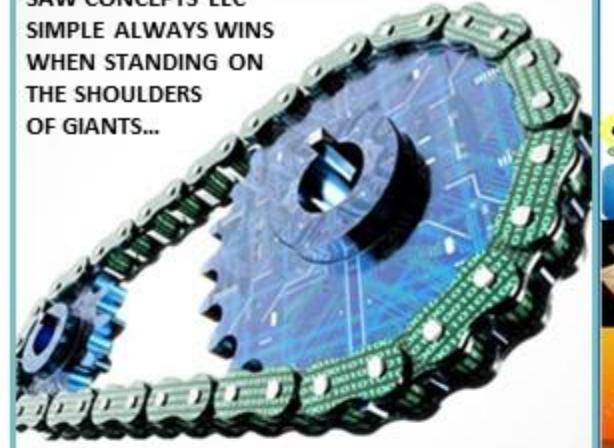
Proof of stake (PoS)—A consensus strategy that relies on nodes which hold collateral to participate in contributing blocks to the chain.

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

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



SAW CONCEPTS LLC
SIMPLE ALWAYS WINS
WHEN STANDING ON
THE SHOULDERS
OF GIANTS...



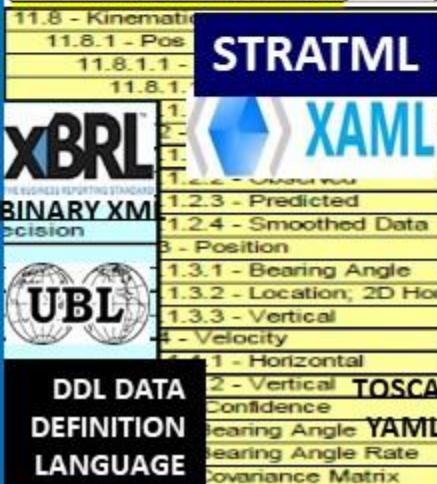


Structured
Data
Exchange

ALPHA NUMERIC
SYMBOL SETS

Coder's Guide

lexicon:



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



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

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



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

NUMBERS ARE THE UNIVERSAL LANGUAGE / Symbols Rule the World"



FILTERS INFOCON
5 4 3 2 1
INFORMATION CONDITION



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

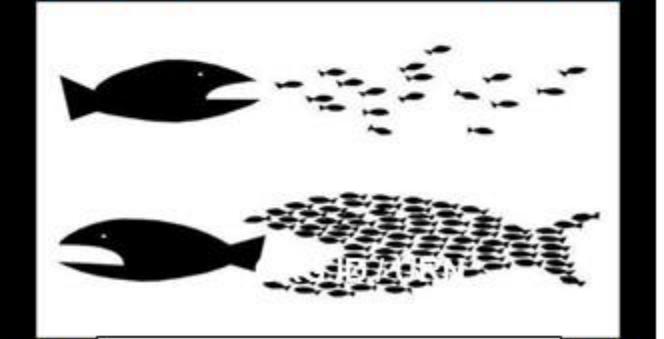
USMTF / XML MTF FORMATTED MESSAGE CATALOG

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

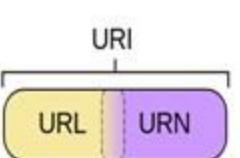
</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU

Don't Panic



FEDERATE



ARIN
American Registry for Internet Numbers

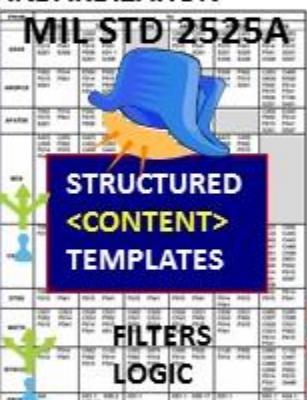
Uniform Resource Names (URNs): A Uniform Resource Identifier (URI). Both URNs (names) and URLs (locators) are URIs, and a particular URI may be a name & locator. Each plays a specific role:

- 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



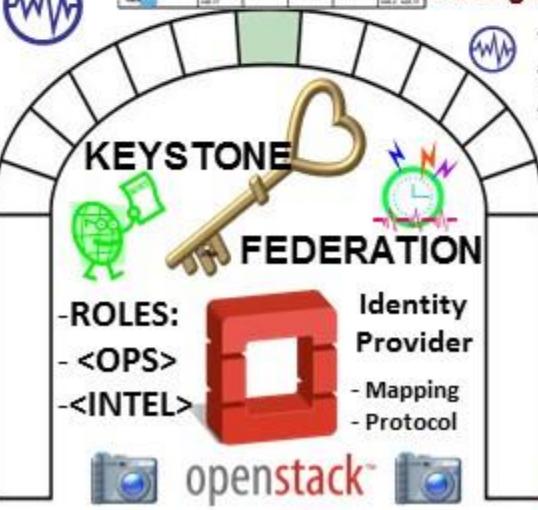
TRIANGULATION
TELCO MESH FABRIC
vector

CROWD SOURCING / FUNDING

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

PARTIDO X:
Distributed
Democratic
Participation

DAO
ETHEREUM:
Decentralized
Autonomous
Organizations



Identity Provider

- Mapping
- Protocol



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 MIC CODES		
STRUCTURED MILITARY MESSAGE TEMPLATE FORMS		
LOGIC / FILTERS		
BREVITY CODES		
{URN}{URN}{URN}		
SYNTAX / SYMBOL LEXICON LIBRARY		



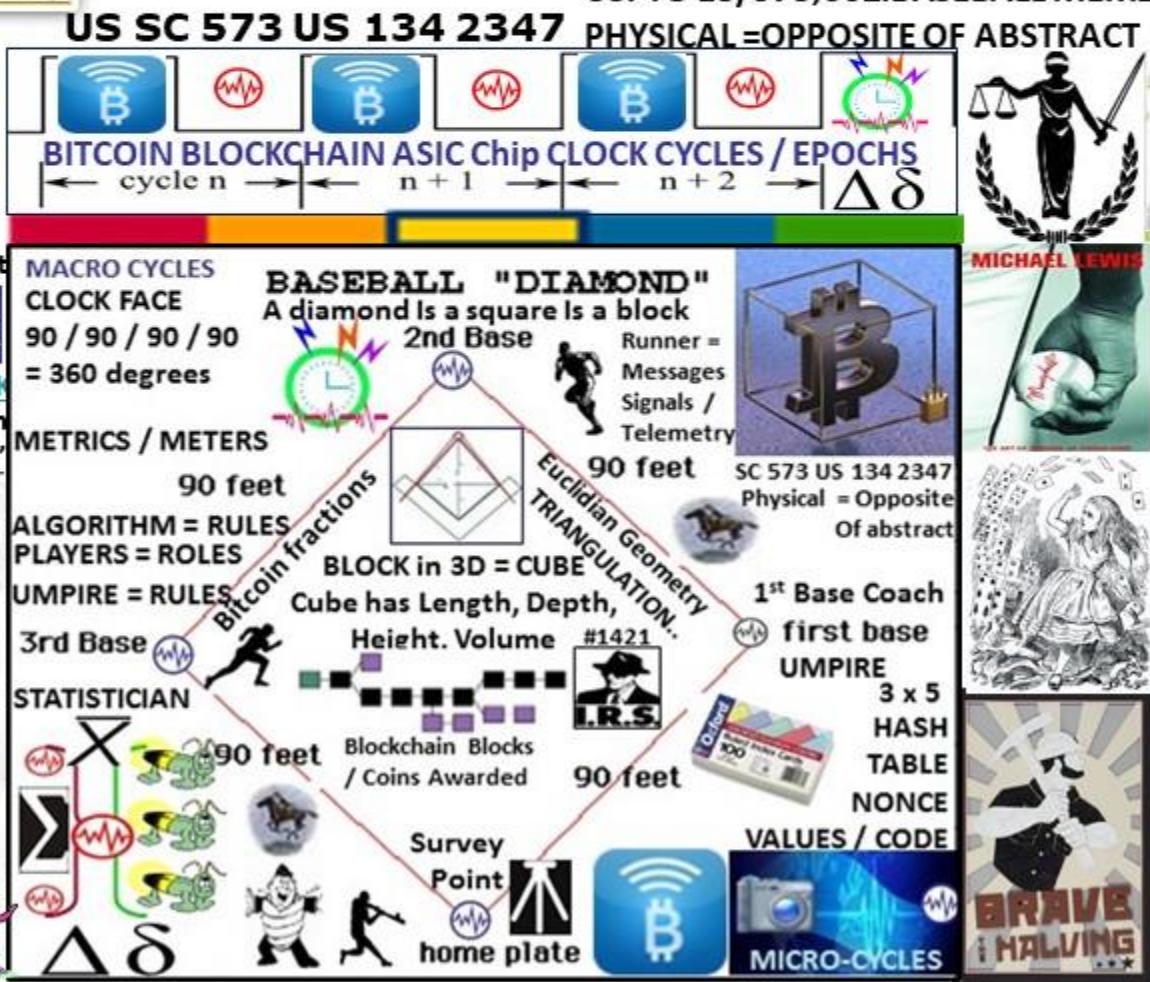
BITCOIN BLOCKCHAIN BLOCKS, AGENTS, MOTES, BOTS, PACKETS, FRAMES, HEARTBEAT, PINGS, HOPS, BEACONS = METAPHORS/MEMES

US SUPREME COURT Alice Corp Vs CLS

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



USPTO 13/573,002:BASEBALL MEME



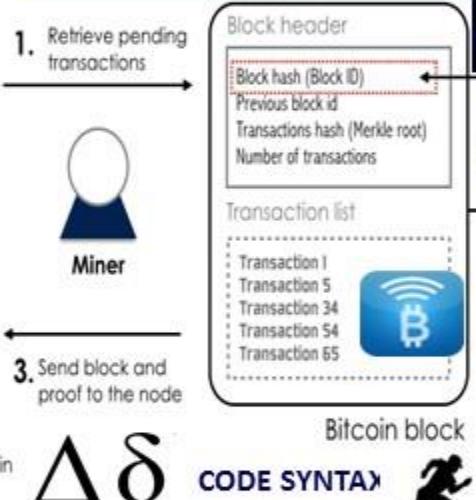
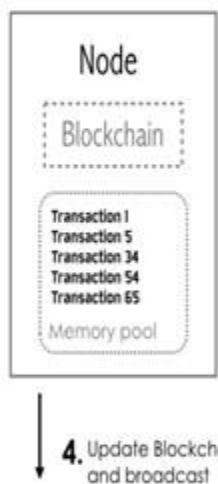
MICHAEL LEWIS



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.



CODE SYNTAX

CODE RUNNER

TIME EPOCH CYCLES

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



$\Delta\delta$

**TIME
EPOCH
CYCLES**

05:08:53

ATOMIC CLOCK

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



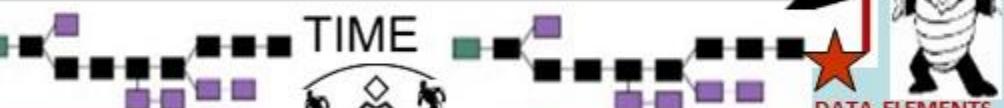
WIRED

*BITCOIN MAKES MONEY PROGRAMMABLE.
MONEY IS SIMPLY DATA"

"BITCOIN'S VALUE IS TIME ITSELF"



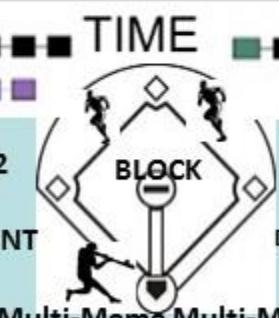
BLOCKCHAIN = TIME / SYNTAX



USPTO 13/573,002
PHYSICAL MEME
MAIN EMBODIMENT

RULES
Metrics

$\Delta\delta$



ID'd by Alpha-Numerics	
State Meta	Data Snapshots
ROLES	Meters
XBRL / CDL / DAML STOCK MIC CODES	STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS

SYNTAX
LEXICON LIBRARY





Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



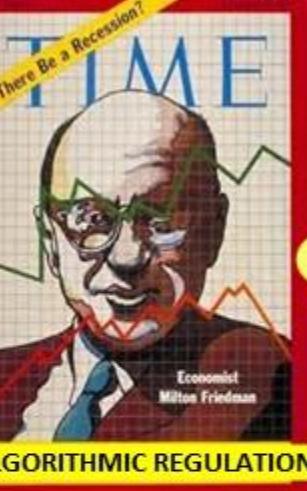
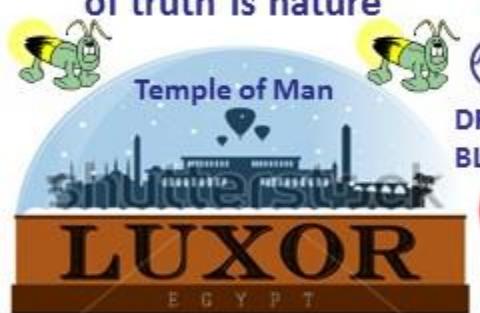
TERRACYCLE



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

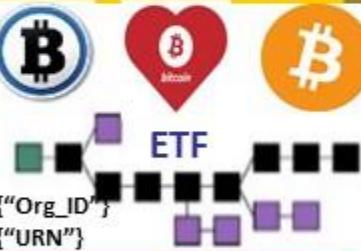
STAT MEAN VALUE INDEX



Price Indexes in Time and Space

Methods and Practices

FRIEDMAN's K% RULE



The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind Coordinated Universal Time (UTC).

However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen hours ahead UTC.

UTZ TIME ZONE SYNC

UNIVERSAL EVENT / ALERT BUS
STOCHASTIC HARMONIZATION



{"ORG_ID"} {"URN"}
SYNC FIREFLY EVENTS
To Closest HEARTBEAT CYCLE



MICRO-ECONOMIC CYCLES



€ \$ € ¥ currencyindex

COMMODITIES

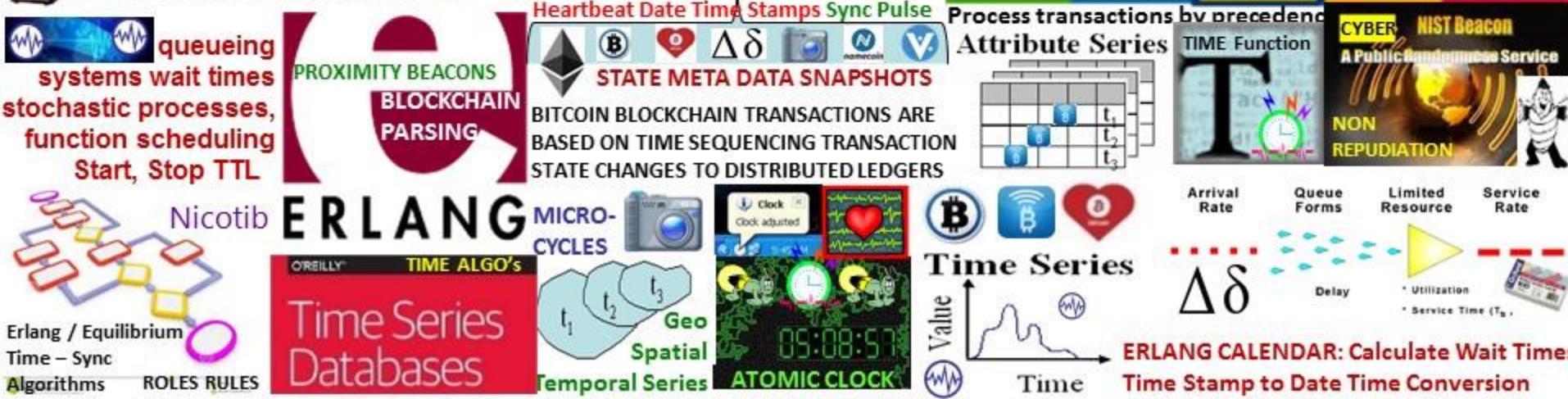
"Heartbeat Synchronization nodes in a distributed system generate periodic local heartbeat events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. No rule governs the length of a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

The 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.

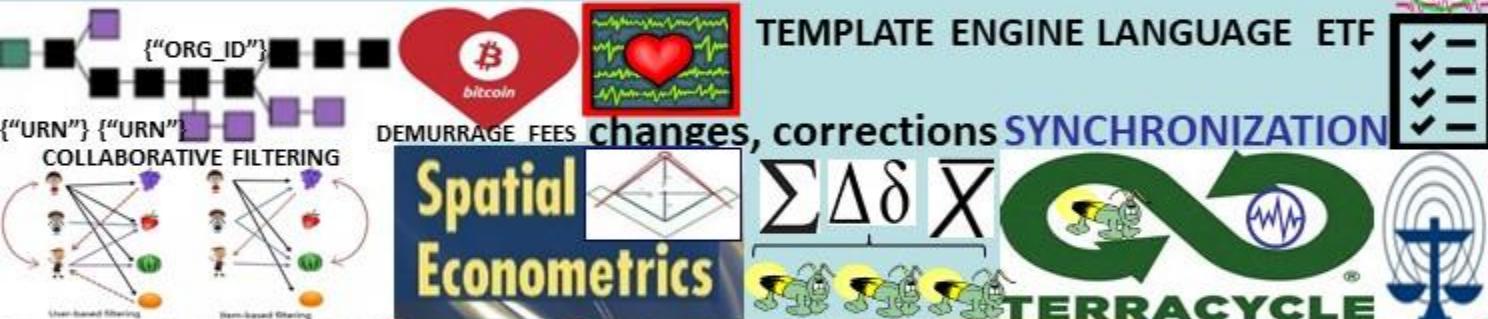




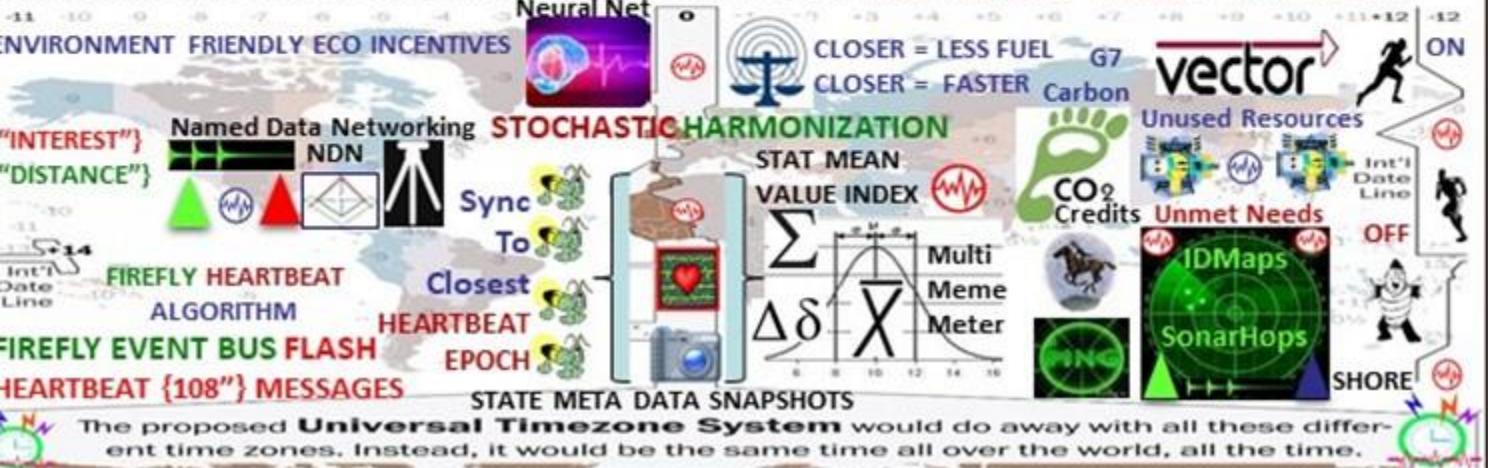
eGaaS: international blockchain platform for organizing economic, state, social activities of citizens, communities on the basis of smart law, smart contract system. eGaaS offers a comprehensive solution needed for state and business management on the blockchain platform.

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

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



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

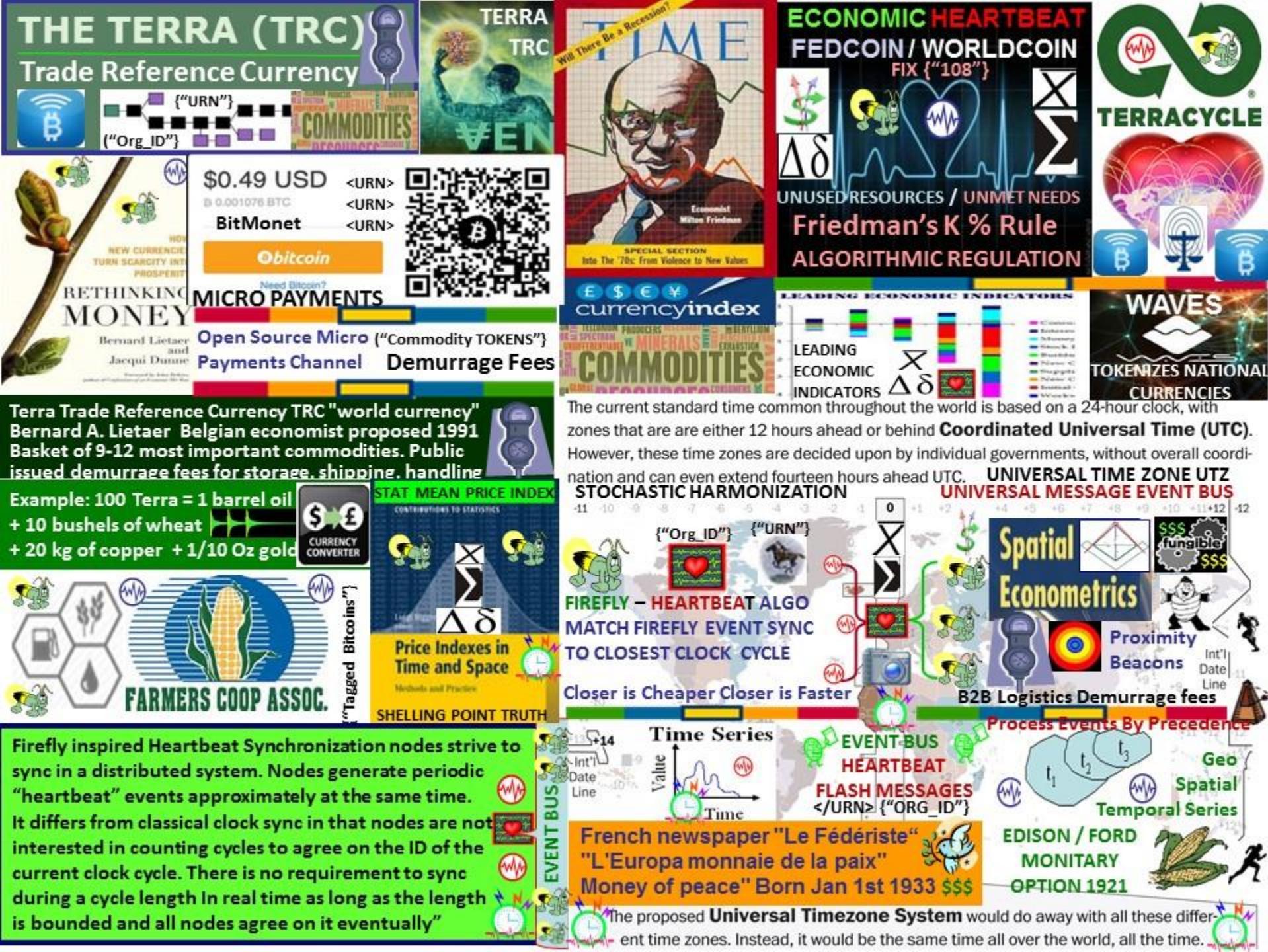


FROM	TO	TYPE	NAME	VERSION	SIZE	FORMAT	LAST UPD.
API	UI	SYNTAX / SYMBOL LEXICON LIBRARY					
API	UI	STRUCTURED DATA EXCHANGE					
API	UI	300 + TEMPLATE FORMS					
API	UI	LOGIC / FILTERS					
API	UI	ALPHA-NUMERIC BREVITY CODES					
API	UI	Time Series Databases					
API	UI	ERLANG					











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

Futarchy PREDICTION MARKETS GnosisAMA

Gnosis trading interface alpha
WIZ token fee payment
INFORMATION ARBITRAGE ECONOMICS



TERRACYCLE

Price Oracle

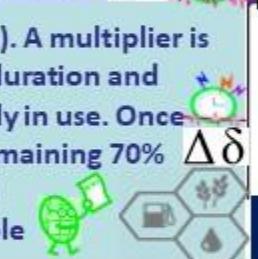
Gnosis Wisdom (WIZ) pay platform fees in Services layer, Wiz subsidize other participants fees, provide initial subsidies for markets, or market trading.



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

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

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



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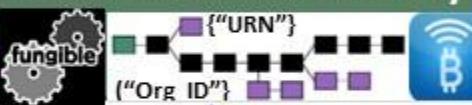


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THE TERRA (TRC)

Trade Reference Currency



\$0.49 USD
0.001076 BTC

MICRO PAYMENTS
Bitcoin
Need Bitcoin?



Demurrage Fees

UNIVERSAL METER

SLA - SLO



Geo-Spatial Temporal Econometrics meters



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

ZEPPELIN

ZEPPELIN OPEN, GLOBAL ECONOMY

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



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



ZEPPELIN / zeppelinOS Common Functionality:

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

Create and customize your own ERC20 Token.

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



Contract development

Dapp

Dapp

Dapp

Dapp

Contract interaction

Kernel libraries

Scheduler

Marketplace

State channels

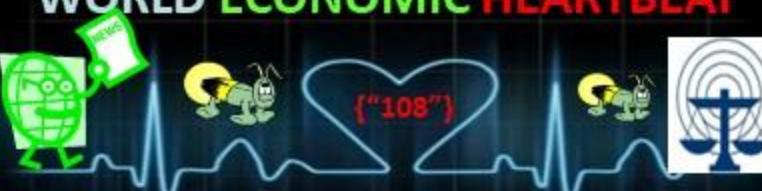
zeppelinOS

EVM

Blockchain

Off chain tools

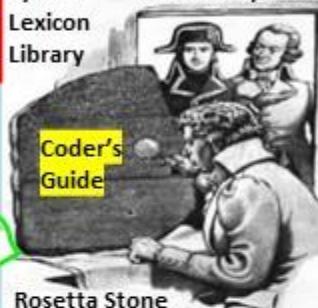
WORLD ECONOMIC HEARTBEAT



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

Syntax
Lexicon
Library

300+ Templates



STRUCTURED DATA EXCHANGE

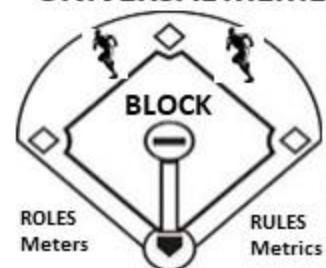


LOGIC / FILTERS
ALPHA-NUMERIC
BREVITY CODES

STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics



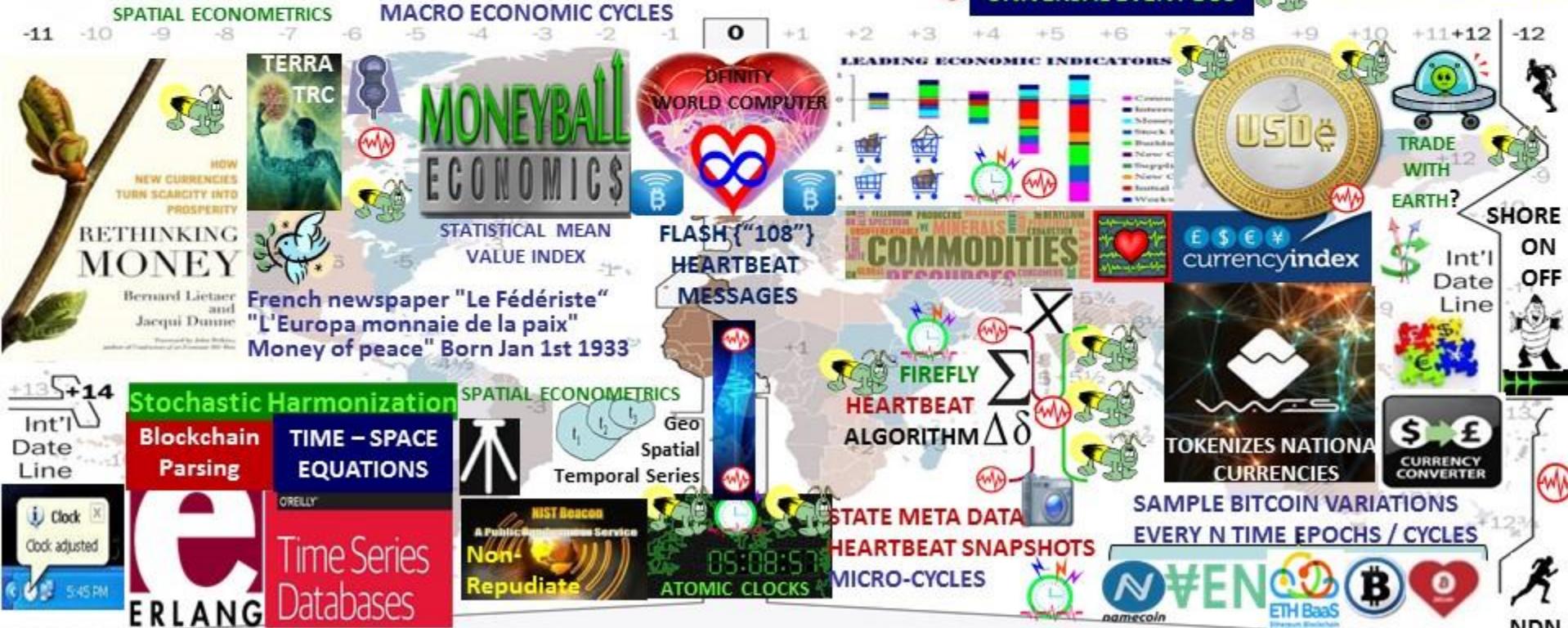
UNIVERSAL MEME







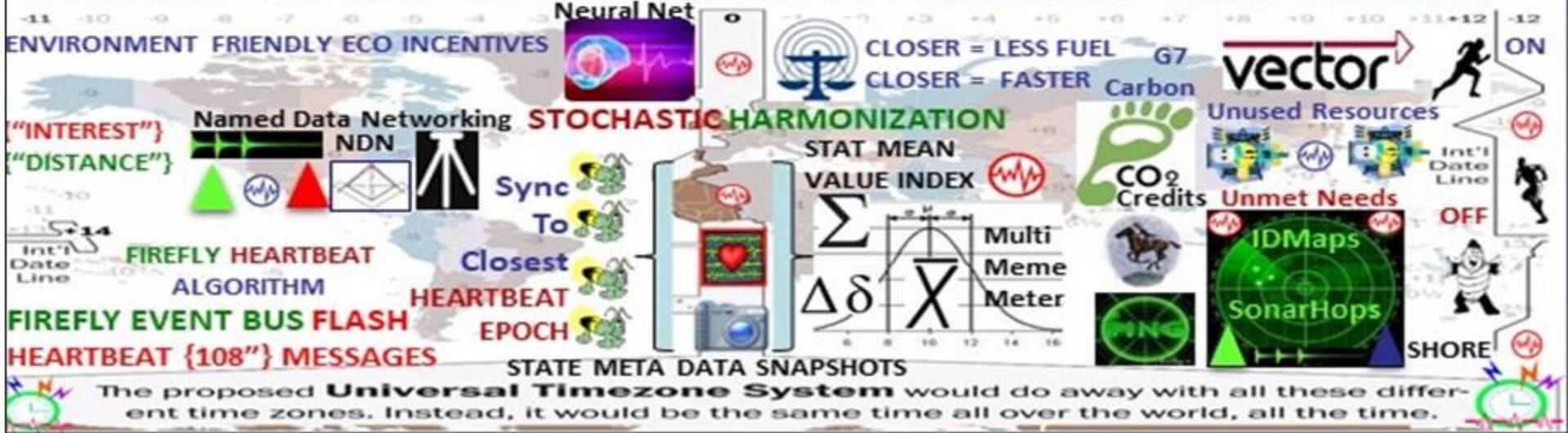
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



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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.

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

Server on/off floor adjust

IDMaps SonarHop

Time-Space Metrics

EQUILIBRIUM CONSTANT

NASH Equilibrium Algorithms

On Shore / Off Shore

Int'l Date Line

Nash Game Theory Algorithms

Subgame perfect NE

HB Cycle

STATE META

DATA SNAPS

Match Event to closest

HB Cycle

STATE META

DATA SNAPS

05:08:57

NIST TIME BEACON

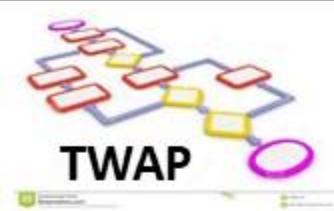
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TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

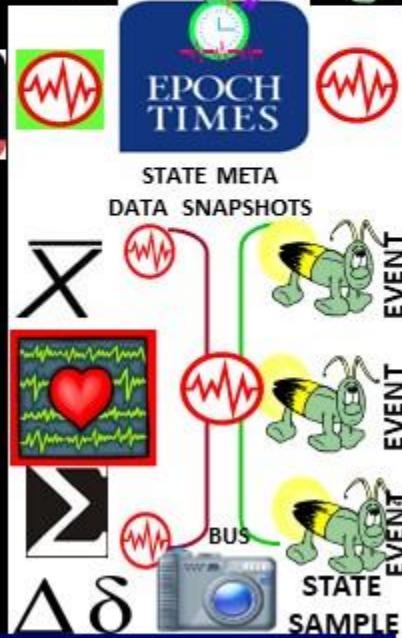
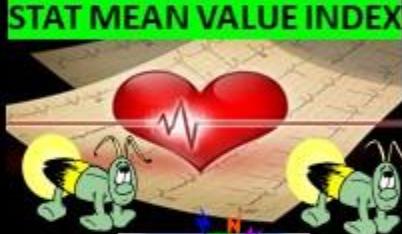


TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX

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



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



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

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



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



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



Functional Sequential Erlang

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

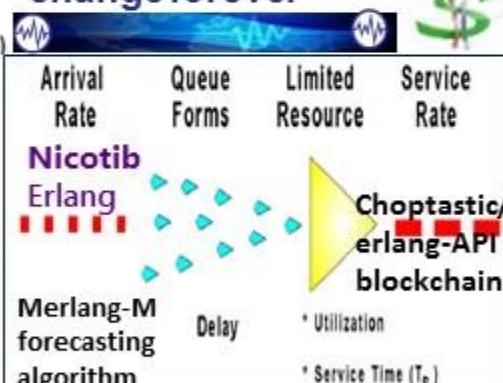


Ericsson Open Money
For Society Patent App



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

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



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



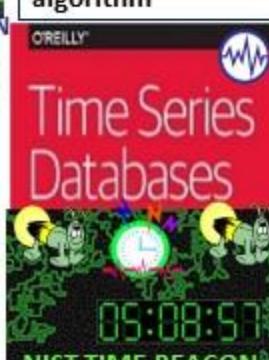
distributed "noSQL" database, embedded right into Erlang,
supports indexing, replication, transactions, and fail-over

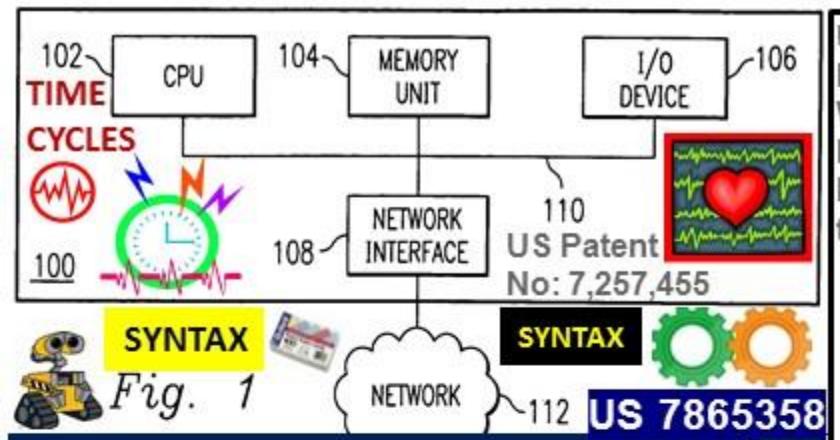
Fast ETS in-memory, and DETS persistent on-disk database

Mnesia database ("Organization_ID")

Global name resolution

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



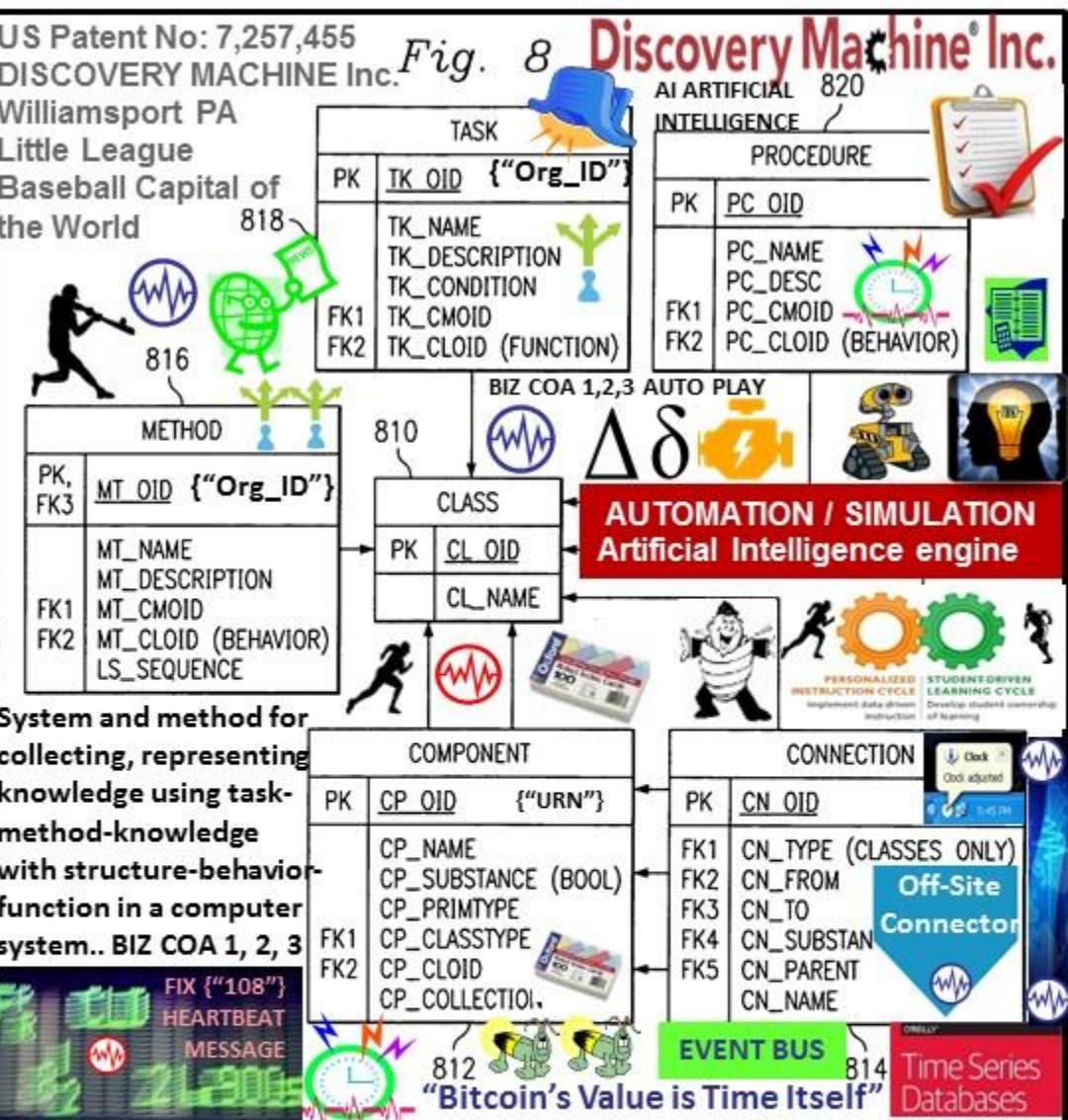
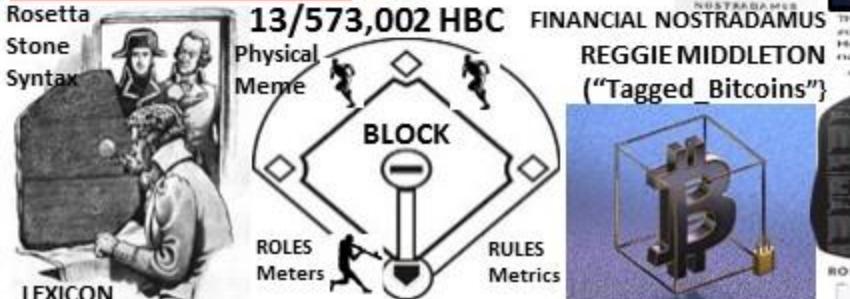


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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





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

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

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

Provides information about total costs of the transaction



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

pull model



Bitcoin Address Shortener

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

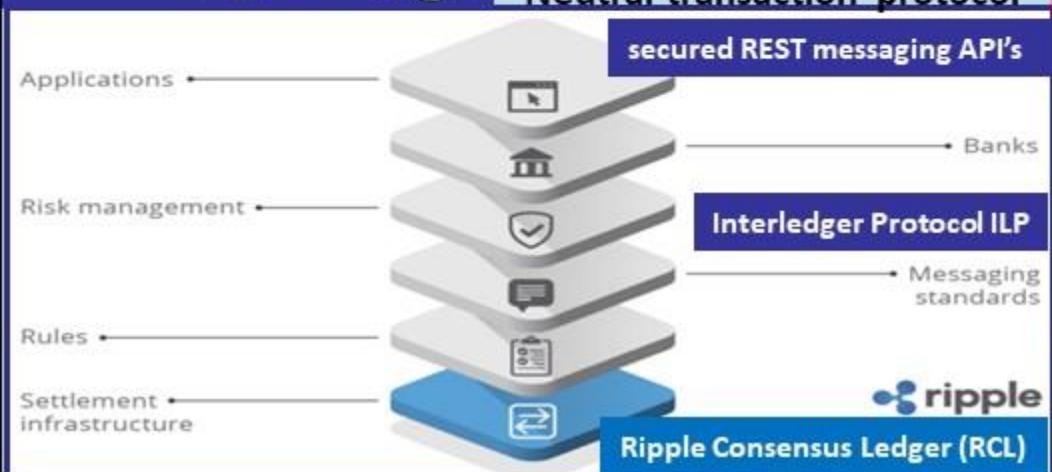
ALPHA NUMERIC BREVITY CODES

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

A.I

Clock Clock adjusted

Neutral transaction protocol



SchellingPoint



EVENT EVENT

ROLES RULES COACH

BLOCK CLOCK

TIME-SPACE

EQUATIONS

ALGORITHMS

BLOCKCHAIN

PARSING

ERLANG

EVENT BUS

LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED

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

MATCH EVENT REPORTS TO CLOSEST HEARTBEAT CYCLE

FLASH HEARTBEAT MESSAGES {"108"}

Sync to Closest Heartbeat

X Δδ

INFOCON

5 4 3 2 1

INFORMATION CONDITION

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 EVENT

DFINITY

RANDOM # BEACON

NIST Beacon
A Public Randomness Service

QUANTUM RANDOM #

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

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

FIREFLY-HEARTBEAT FLASH Msg EVENT BUS

GROUP Signature is random number

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

- BLS signature scheme

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

HYPER GEOMETRIC PROBABILITY CALCULATOR

CONSENSUS / RANDOM BEACON

Threshold relay chain generates randomness, records network metadata & validation tree "state root". State 3×5 and updates to state stored on shards... State transitions passed to Validation Tree

Each process has mining identity

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

Threshold Relay Chain techniques

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

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

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

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

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

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

METRICS / METERS
90 feet
Euclidian Geometry TRIANGULATION:
90 feet

ALGORITHM = RULES
PLAYERS = ROLES
UMPIRE = RULES

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

3rd Base
Blockchain Blocks / Coins Awarded

STATISTICIAN

90 feet

Survey Point

home plate

SC 573 US 134 2347
Physical = Opposite Of abstract

1st Base Coach

first base

UMPIRE

3×5

HASH TABLE

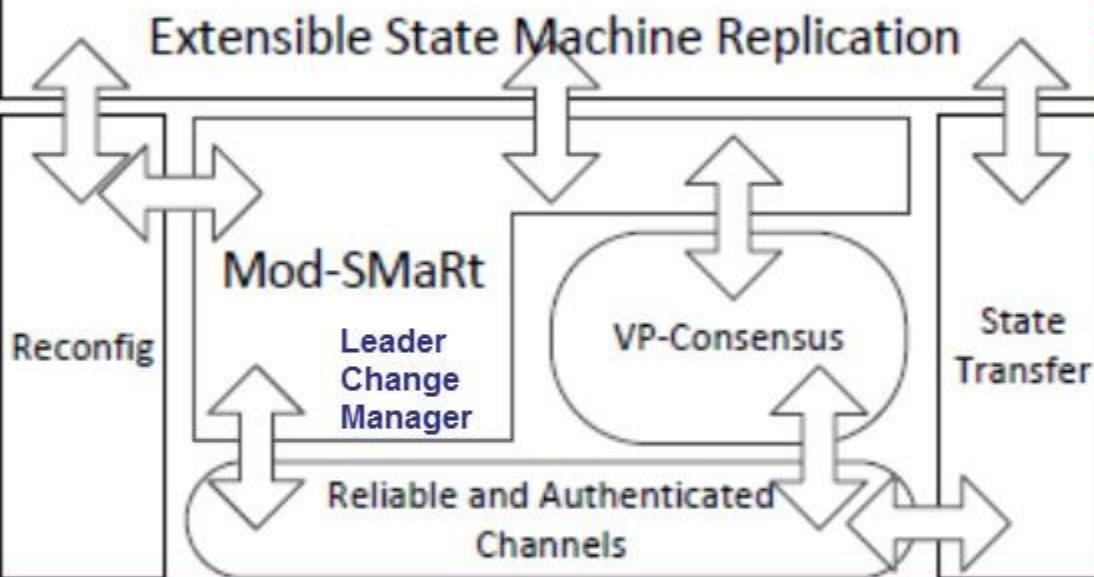
NONCE

VALUES / CODE

MICRO-CYCLES

Byzantine Fault-Tolerant State Machine Replication

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



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

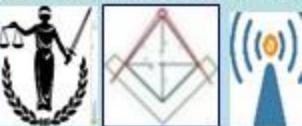
BFT-SMaRt needs an eventually synchronous system

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

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

USCt ALICE CORP V CLS BANK

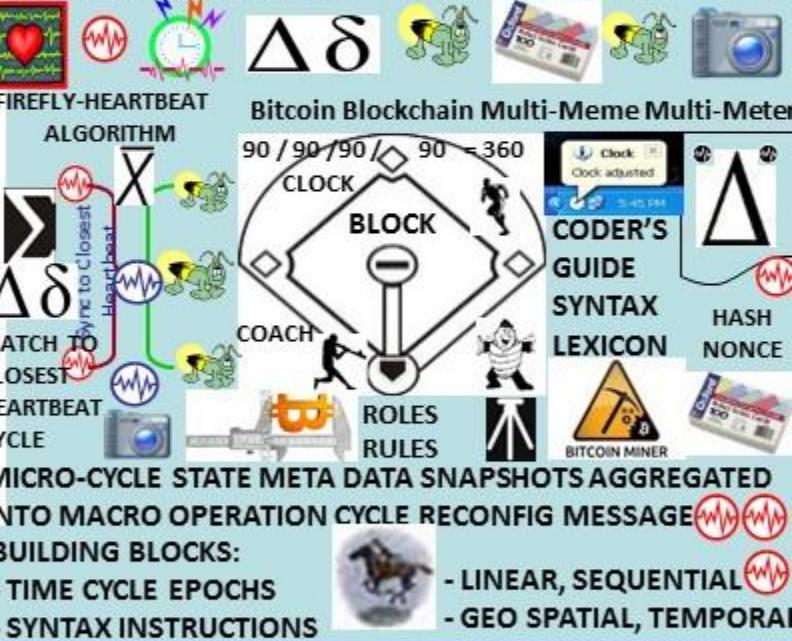
PHYSICAL = OPPOSITE OF ABSTRACT



DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"} ADDS, JOINS, DROPS, MOVES TO / FROM DAO CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

K00.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOT



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

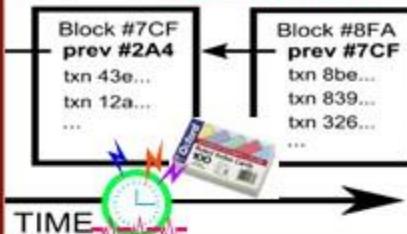
HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$ Shared Ledger



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



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

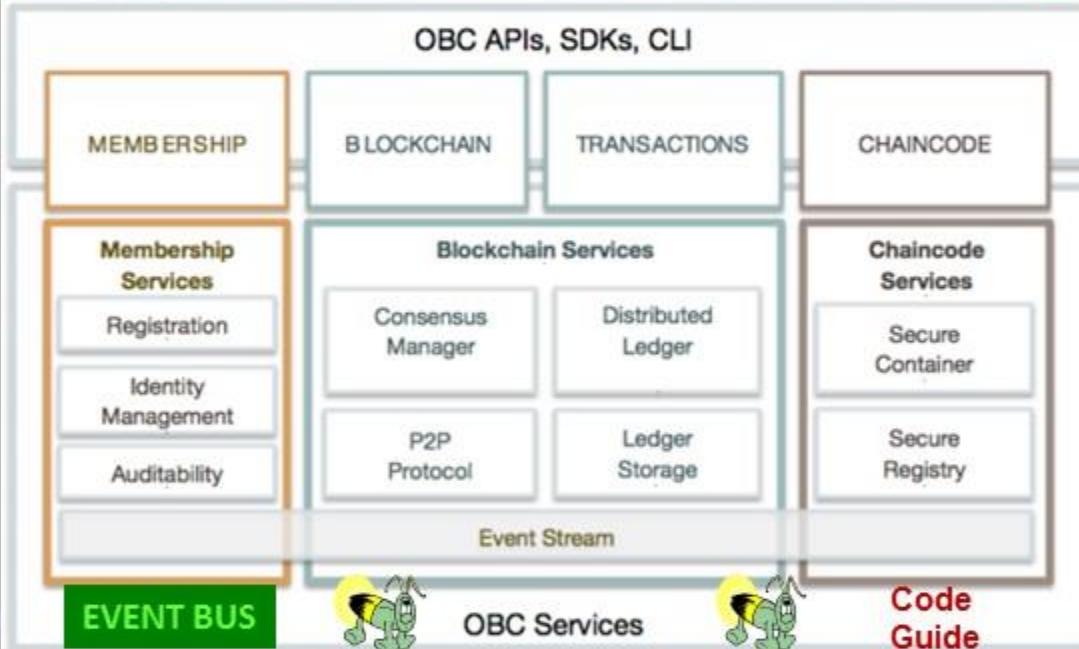
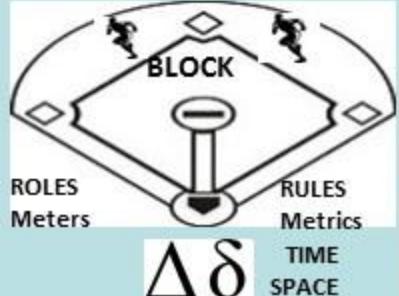
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



BLOCK TIME ARBITRAGE



ROSETTA STONE



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



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

e.g. Derivatives

e.g. Trade Finance

e.g. KYC / AML

App

App

App

App

App

App

App

App

App

Concord Platform Services

CorDapp Store

Notaries

Network Map Service

Trusted Digital Backbone Network

Regulatory Reporting

Oracles

Service Provider Gateways

Bank-Internal Gateways

Concord Vault Interoperability

Asset Registry

Trade Registry

Cash

Identity Vault

Concord Operations Centre

Business Monitoring

Technical Alerting

Management Information

Compliance Audit



Δδ

Inter-Network Adapters

FEDWIRE

CHIPS

DTCC

CLS

Corda Core Node Services

Agreement States

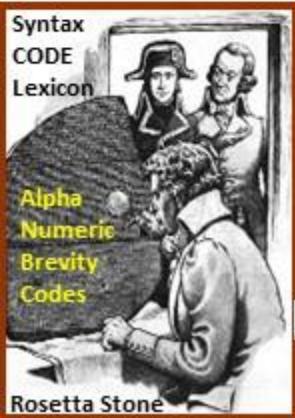
Transactions

Sandbox

Digital Signing

Interaction Protocols

Contract Verification



UNIVERSAL EVENT BUS



Syntax CODE Lexicon



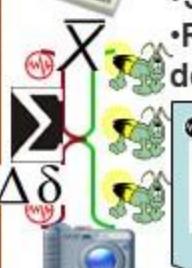
- Choreographing workflow between firms without a central controller
- Supports inclusion of regulatory & supervisory observer nodes
- Validating transactions solely between parties to the transaction
- Supporting a variety of consensus mechanisms
- Recording explicit links between human-language legal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



XBRL / CDL / DAML STOCK MIC CODES

STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

300+ Use Case Templates



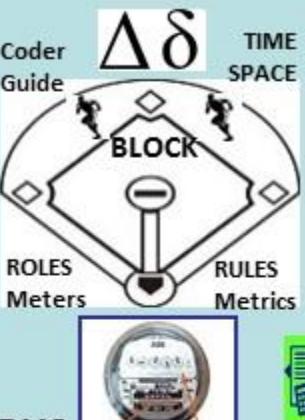
Federation Gateway



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

KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



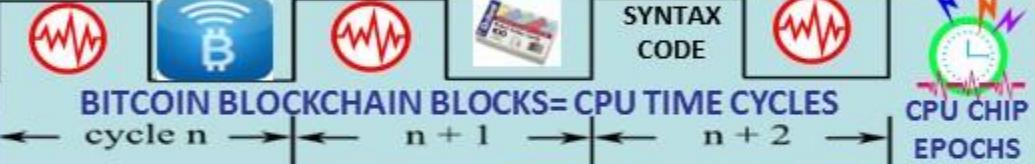
MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



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

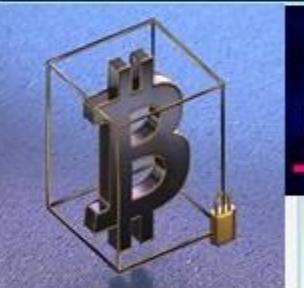
EVENT BUS



long exponential intervals (10 min)



COMMAND SYNTAX
RESTFUL State Transfer



Subjective Time to Prune

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

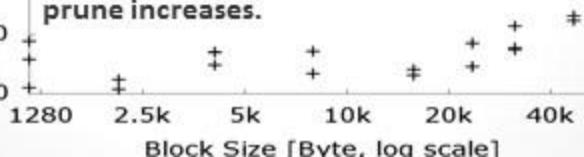
MACRO - CYCLES



Time to Prune [sec]

short deterministic intervals (10 sec)

MICRO-CYCLES





ETHER: Compensate Resource Contribution

Gas: price to
Run contract
transactions

ethereum

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



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...

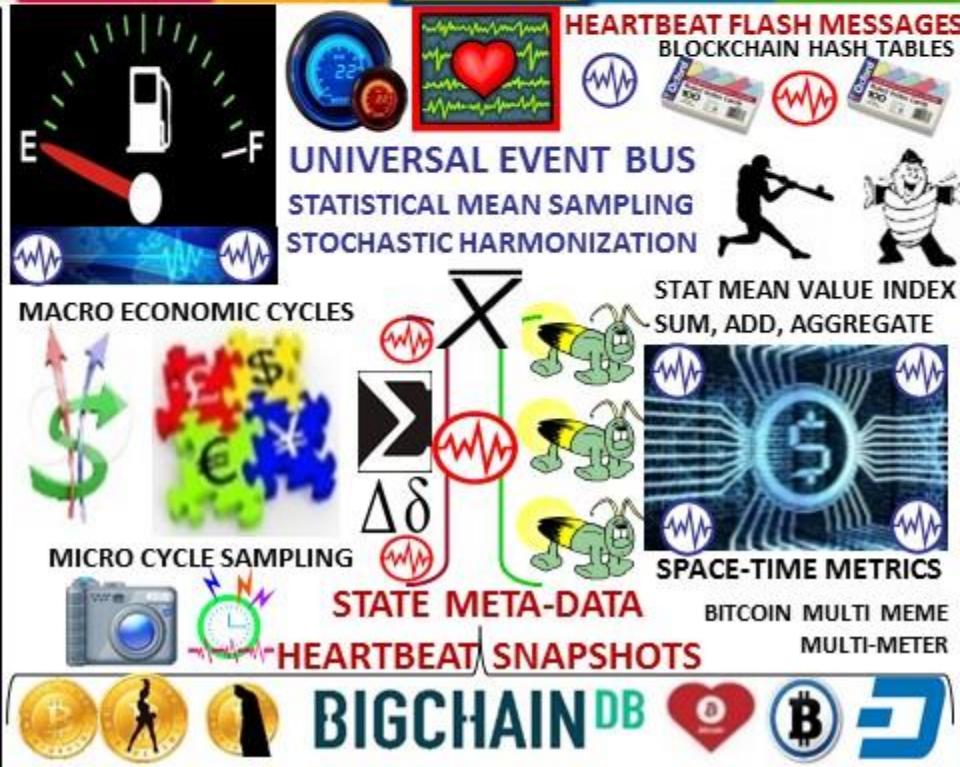
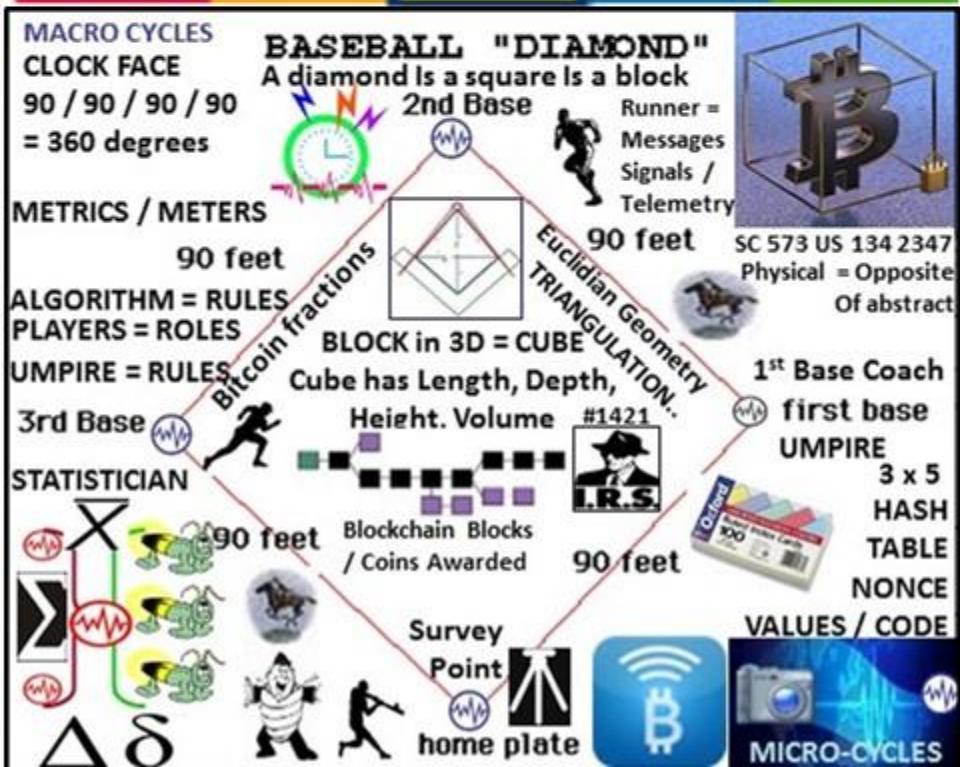
EVENTUALLY

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)

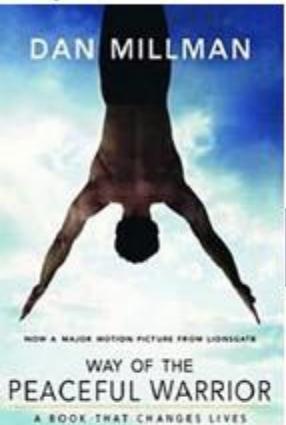
EVM
(consensus)





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"

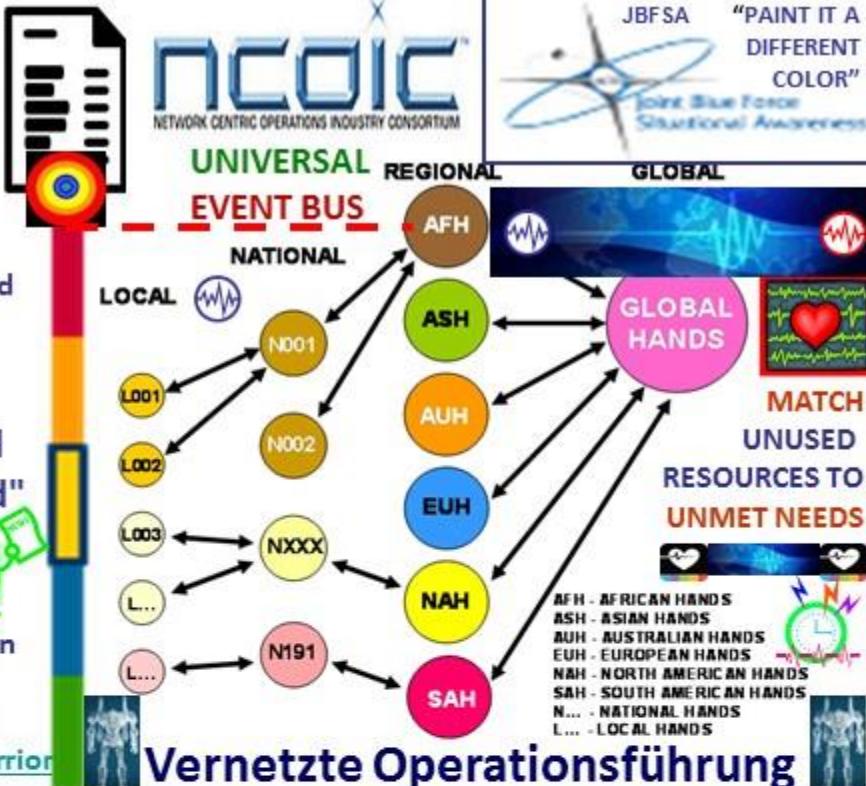


"The secret of change is to focus all of your energy, not on fighting the old, but on building the new." Dan Millman
Way of the Peaceful Warrior A Book That Changes Lives
http://en.wikipedia.org/wiki/Way_of_the_Peaceful_Warrior

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.

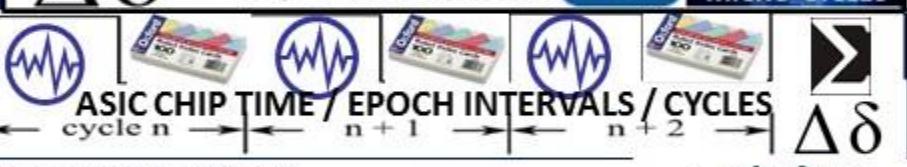
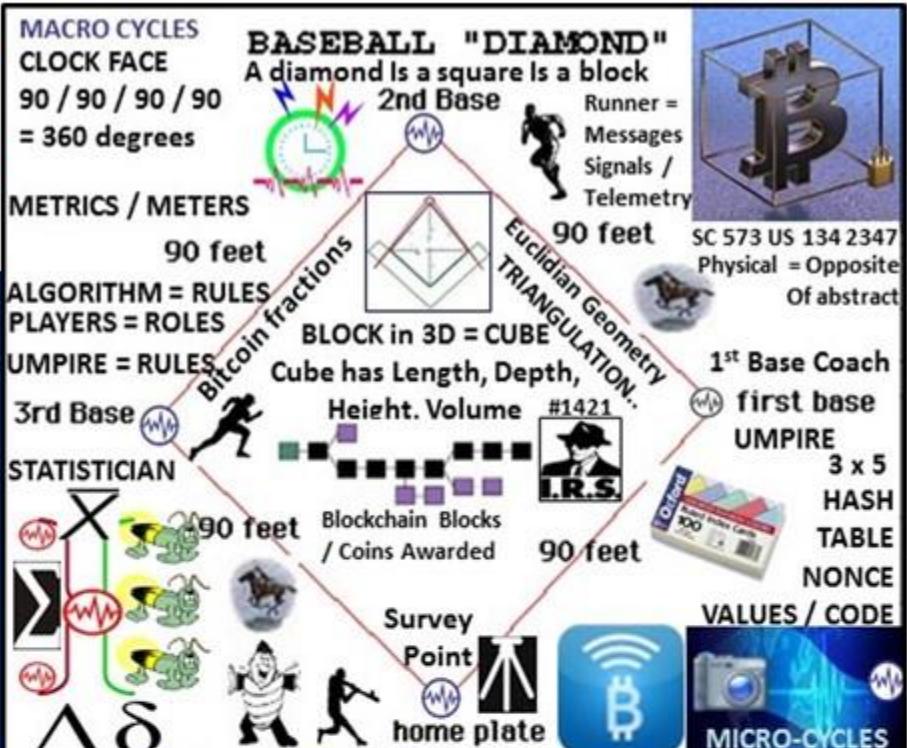
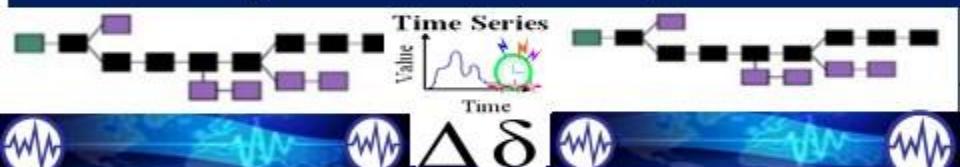


1. Part of the blockchain state is locked via multisignature or some sort of smart contract, so that a specific set of participants must completely agree with each other to update it.

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

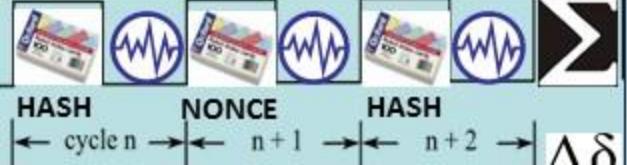


THROTTLE equivalent to difficulty. State
•target = maximum value of 8 bytes
Snap
(2^{64}) divided by the difficulty.

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



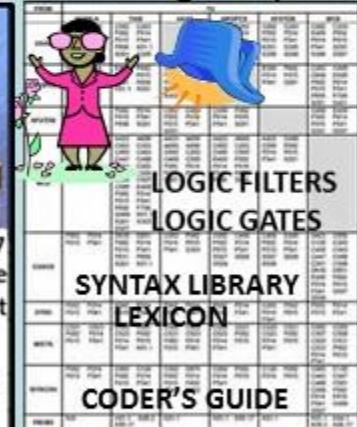
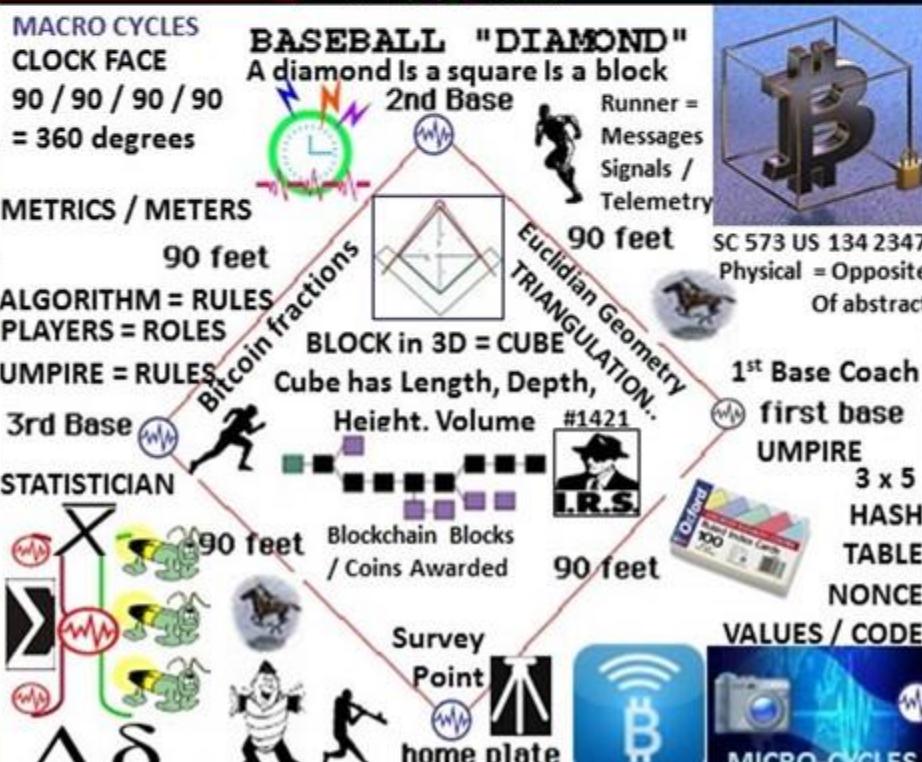
GUESS stores the guess
Effectively, it begins at infinity.



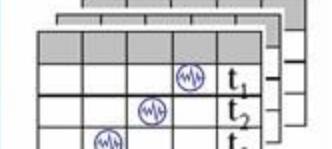
Proof-of-Work: users perform some form of work to participate. Work must be difficult for the client but easy for the server/network to verify. POW determines the approximate time between blocks = rate that new bitcoins are created. Work is submitted as a message/timestamp payload with a nonce value.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



300+Message Templates



POW PAYLOAD :
COMBINATIONS OF
ENCRYPTED SYNTAX
Attribute Series





PROJECT LIGHTING

FIREFLY - HEARTBEAT ALGORITHM

FIREFLY - HEARTBEAT

ERLANG

Time Series Databases

UTZ UNIVERSAL TIME ZONE SYNC

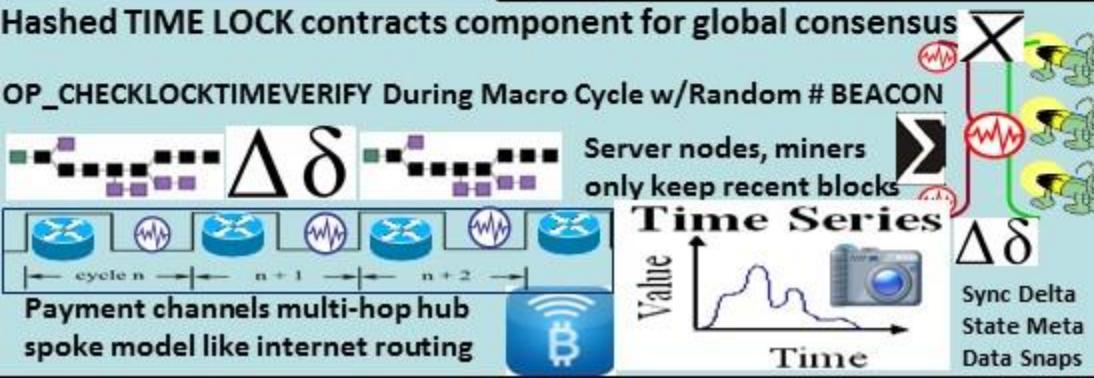
OP_CHECKLOCKTIMEVERIFY During Macro Cycle w/ Random # BEACON

Payment channels multi-hop hub spoke model like internet routing

transactions sent over off blockchain micropayment channels

OREILLY

Stochastic Harmonization



Segregated witness = Separated signatures

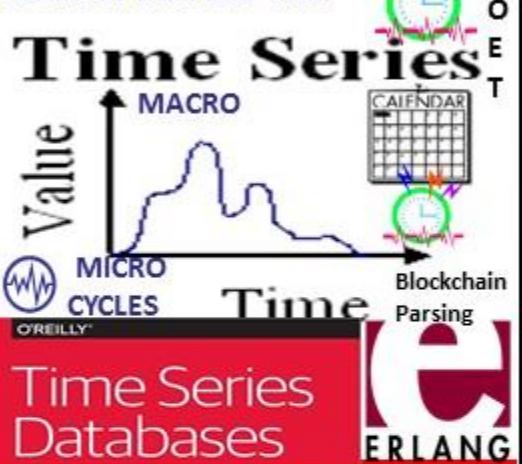
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signature are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a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

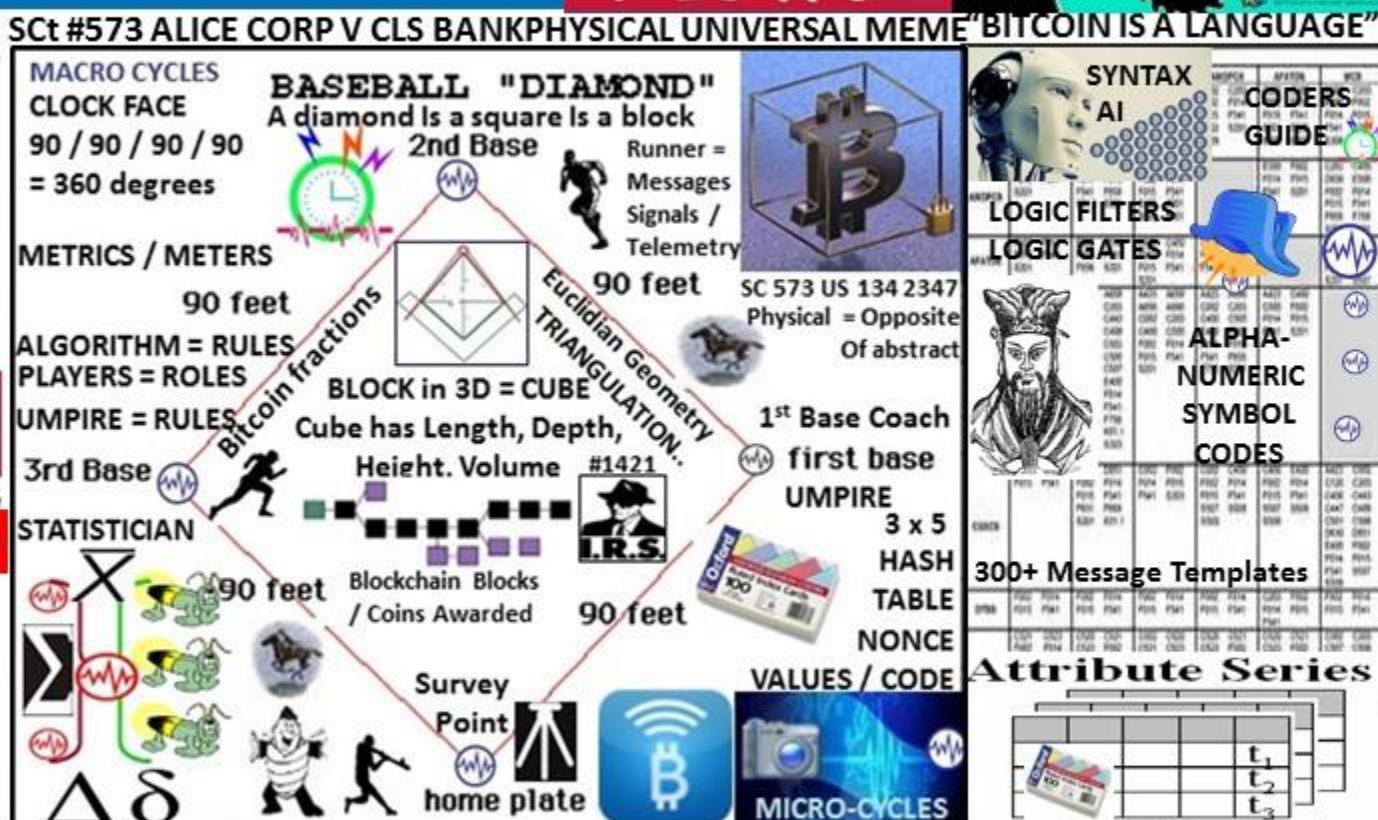
Voting based selection Instead of only using the stake size, the block generators can be selected by votes
ex: League MVP

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

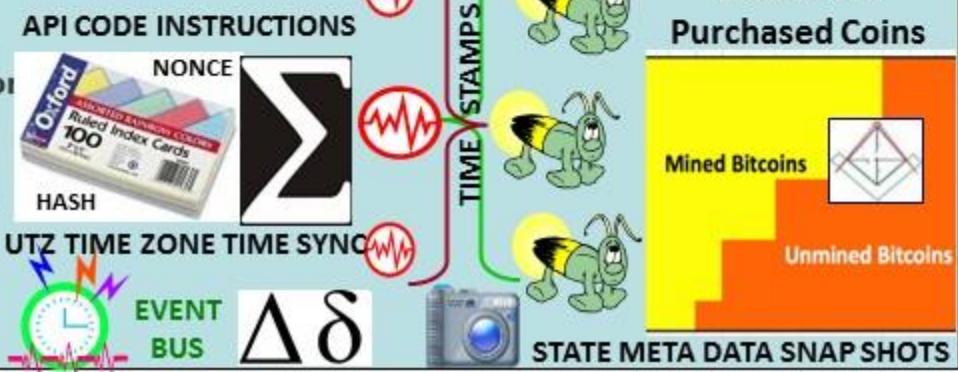
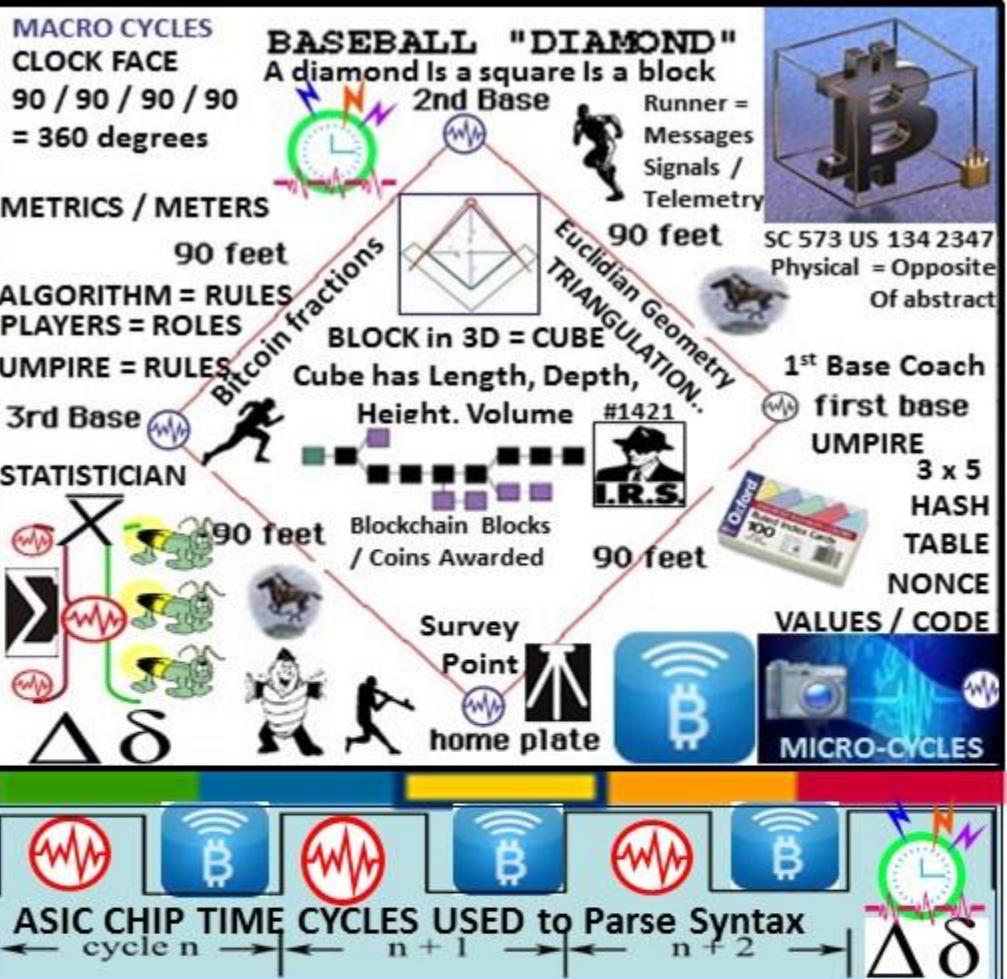
Transaction ID, Block ID, time-stamp, BWAP per block, Value in USD. BTC per transaction, bitcoin transaction fees per transaction

• 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'



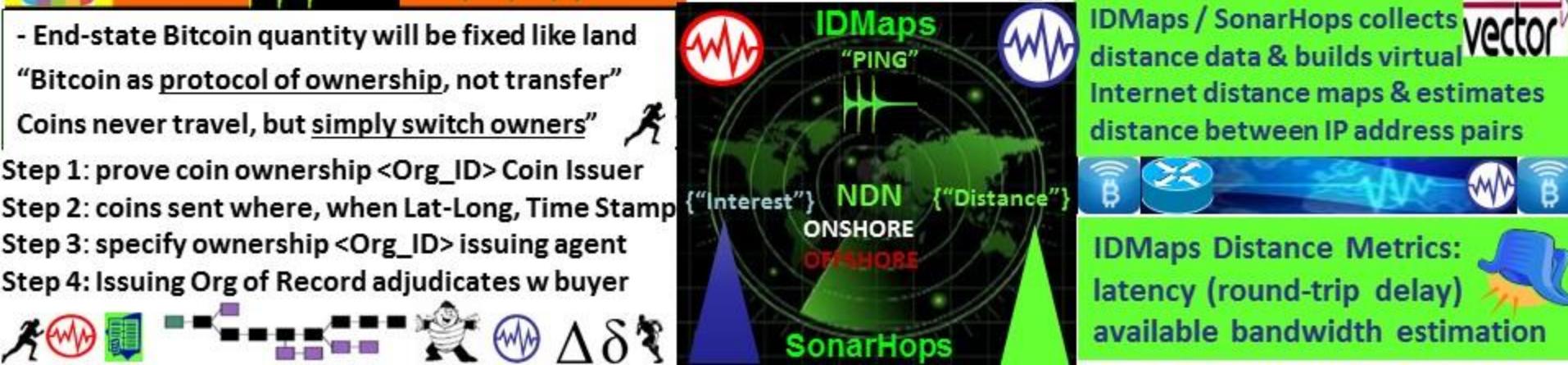
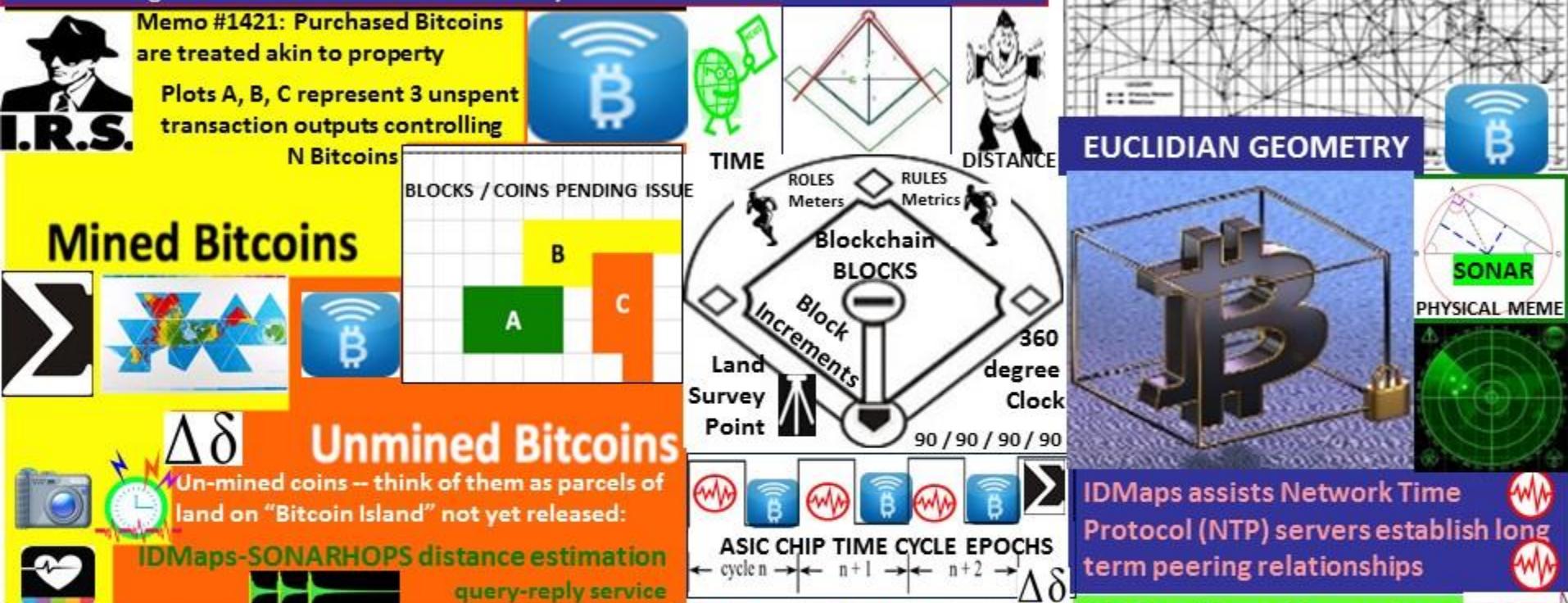
What happens if we think about Bitcoin through the lens of *land*?

HEART BEACON CYCLE
USPTO 13/573,002

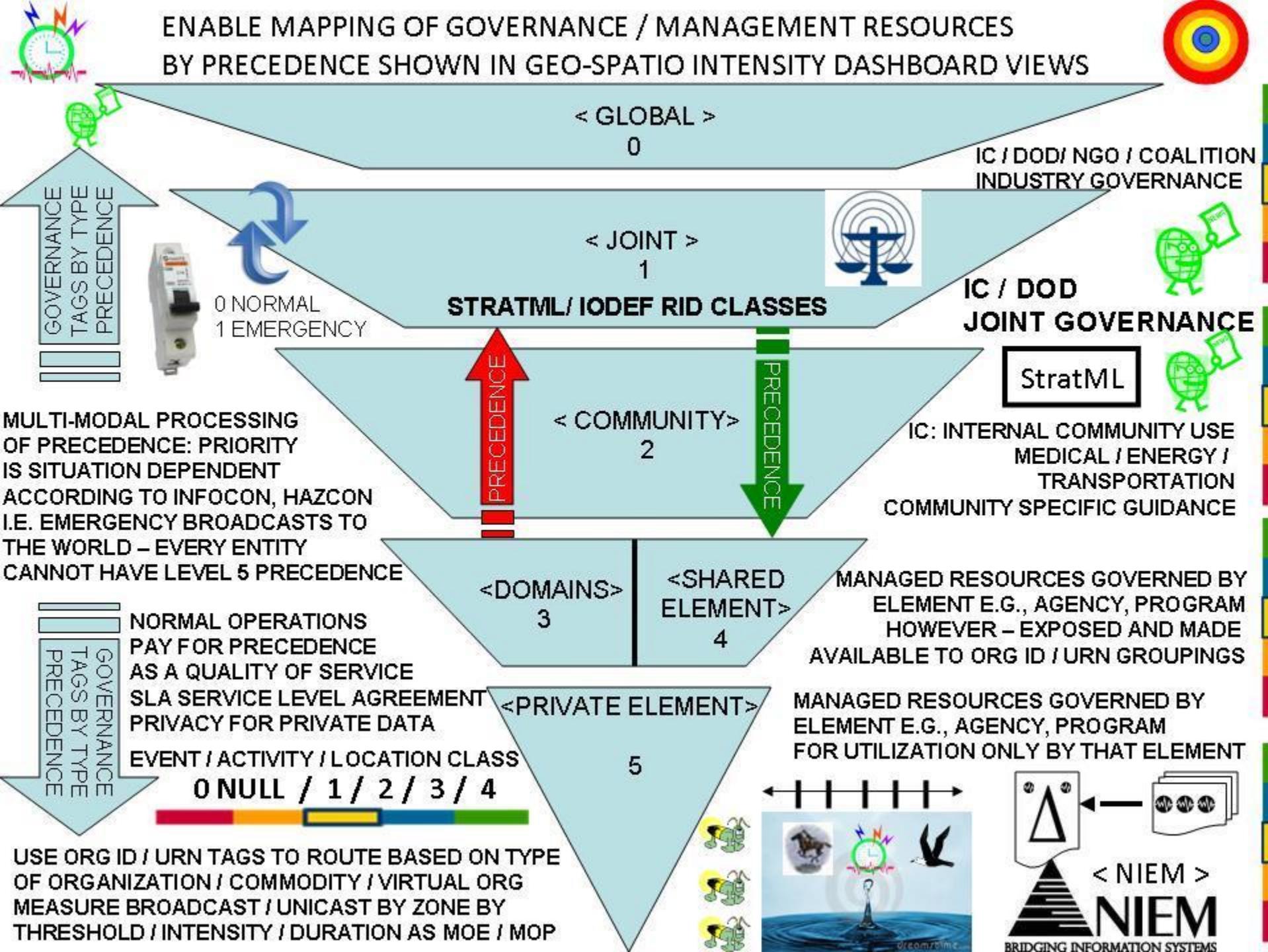
SURVEY METHODS

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.



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/>



ICS-ISAC



Industrial Control System
Information Sharing and
Analysis Center

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

<ELEMENTS>

STRATEGIC
MARKUP

StratML

LANGUAGE

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

INVENTORY: Uniform Resource Name <URN>

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



vector

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

GEO-SPATIAL TEMPORAL INTENSITY METRICS

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

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

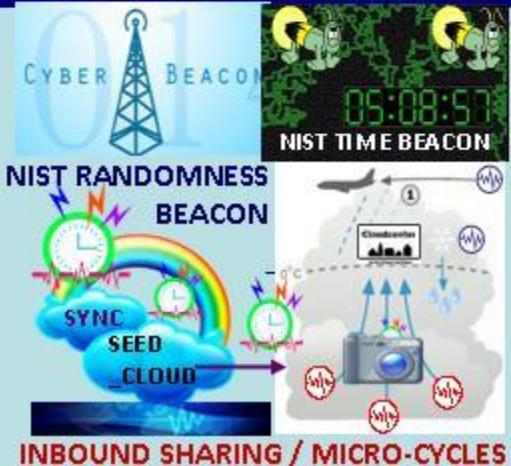
MIL-STD 2525A
STRUCTURED <CONTENT> TEMPLATES



NAMED DATA
NETWORKING
<Content> Centric

USMTF / XML MTF FORMATTED MESSAGE CATALOG
Catalog has over 300 messages to choose from have a
wide number of information exchange requirements
using common, CONSENSUS Message Text Formats
MTFs. MTFs specify <CONTENT> / information agreed
by group consensus presenting information in a logically
well specified and unambiguous layout i.e., templates

<TAG>
LIBRARY



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

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

Heartbeat Snaps
MICRO-CYCLES

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

EVENT BUS





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



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

OPENBAZAAR.ORG
BLOCKCHAIN ARBITRAGE



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

PROJECT PHILOSOPHY: *MAKE TRADE FREE*

Mission: *shift trade to a decentralized platform*



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



Free and open markets:

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



HASH Values
Nonce Values

SCT Alice V Cls Bank



Federation

Gateway



• Privacy

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

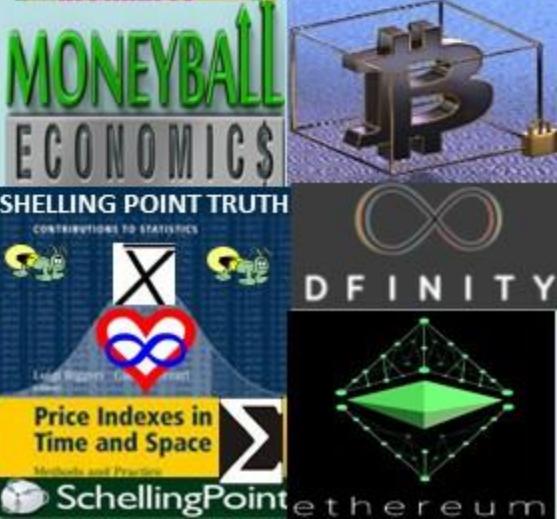
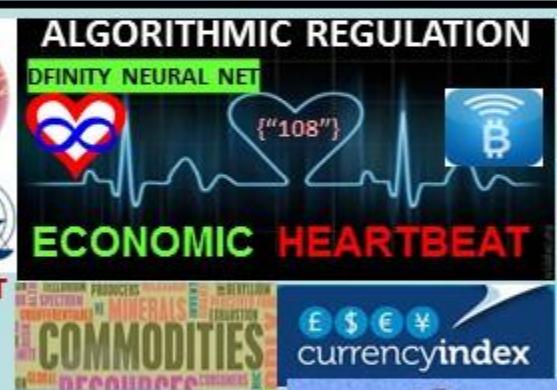
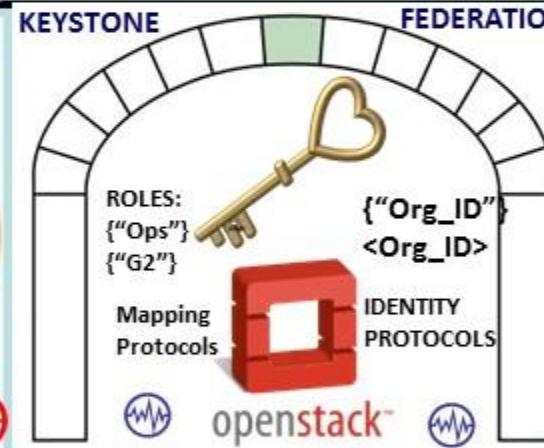
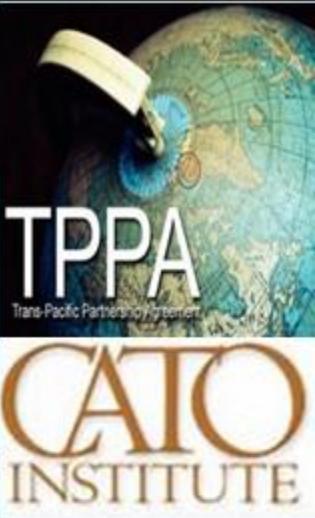
Bitcoin: OpenBazaar transactional currency





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



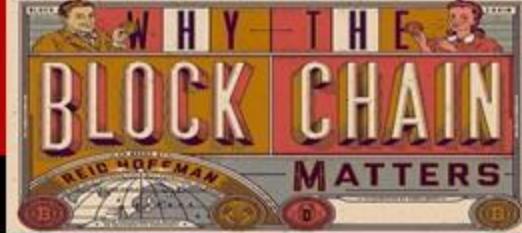
HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX



TradeNet

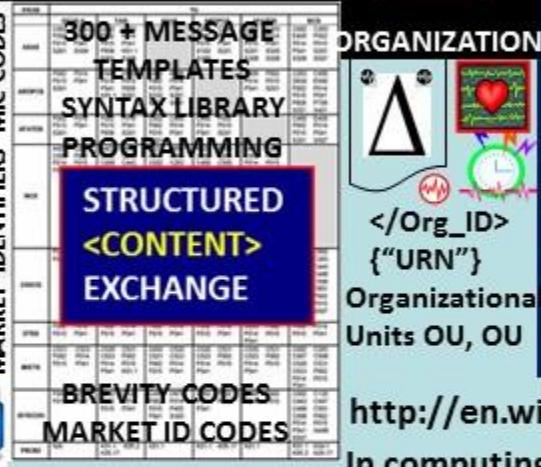
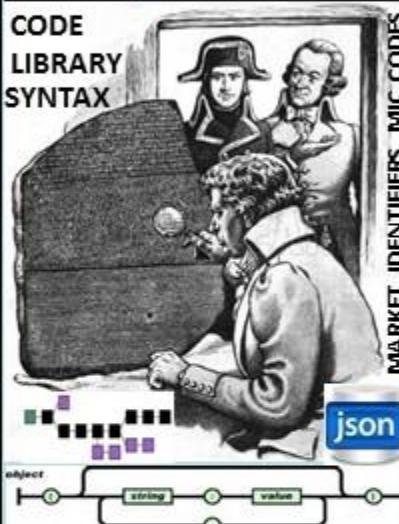


Programmable Money \$\$\$



RIED HOFFMAN 15 May 2015 [LINK](#)

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

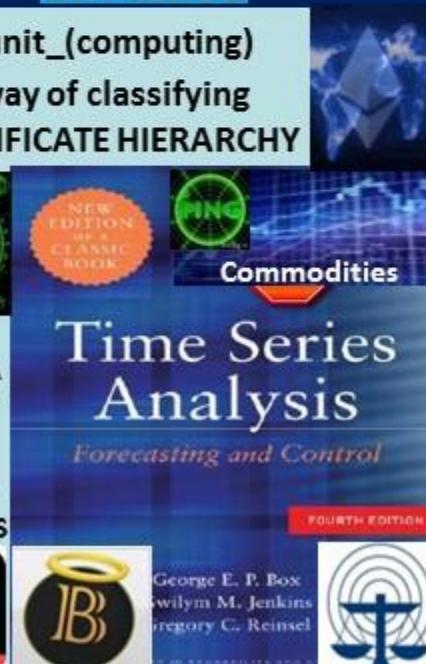


Bitcoin and the blockchain function as a medium of exchange, a store of value, a unit of account. Bitcoin adds digital, cryptographic, distributed server functions to currencies. Because it functions simultaneously as a currency, an asset and a platform, Bitcoin is better described as a global cryptoCAP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

The diagram illustrates the interconnected nature of the system. It features a central interface for placing market orders, with sections for Collateral, Notional, and Expiry. To the right, there's a detailed section on Heartbeat Flash Messages Precedence Processing, stating: "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." The interface also includes sections for All Market Orders and Search.

FINANCIAL
NOSTRADAMUS
REGGIE MIDDLETON



ECONOMIC HEARTBEAT
STATISTICAL MEAN VALUE INDEX PULSE



ALGORITHMIC REGULATION



SHELLING POINT TRUTH
CONTRIBUTIONS TO STATISTICS

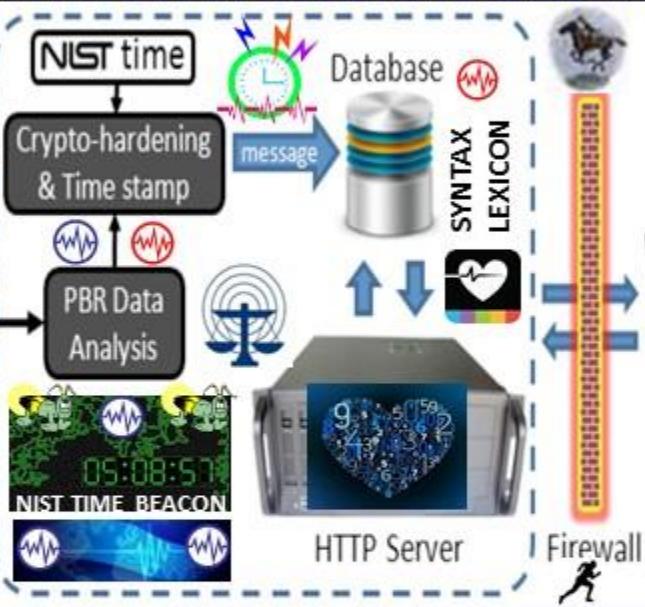
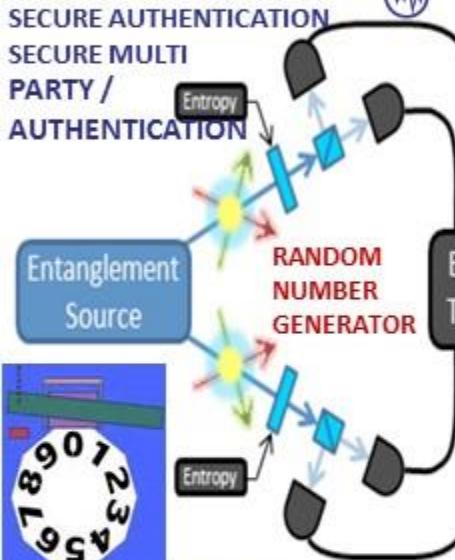


NIST RANDOMNESS BEACON: broadcast full-entropy bit-strings in blocks of 512 bits every 60 seconds. Each value is time-stamped, signed, & includes hash of previous value to chain sequence of values together. This prevents all, even the source, from retroactively changing an output packet without being 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>
Higher-level services collect distance
data to build virtual distance map State
of Internet & estimates distance
between any IP address pair

Time / Distance Metrics



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

Firefly-Heartbeat Algorithm UNIVERSALTIME ZONE SYNC UTC

Sync Events to
Closest HBC

AGGREGATE, SUM
STAT MEAN VALUE INDEX

EVENT BUS



The proposed Universal Timezone System would do away with all these different time zones and instead use a single universal time zone for the entire world.



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



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](#)

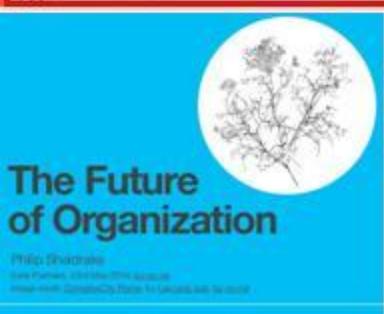


RAND
Monograph
Report

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/>

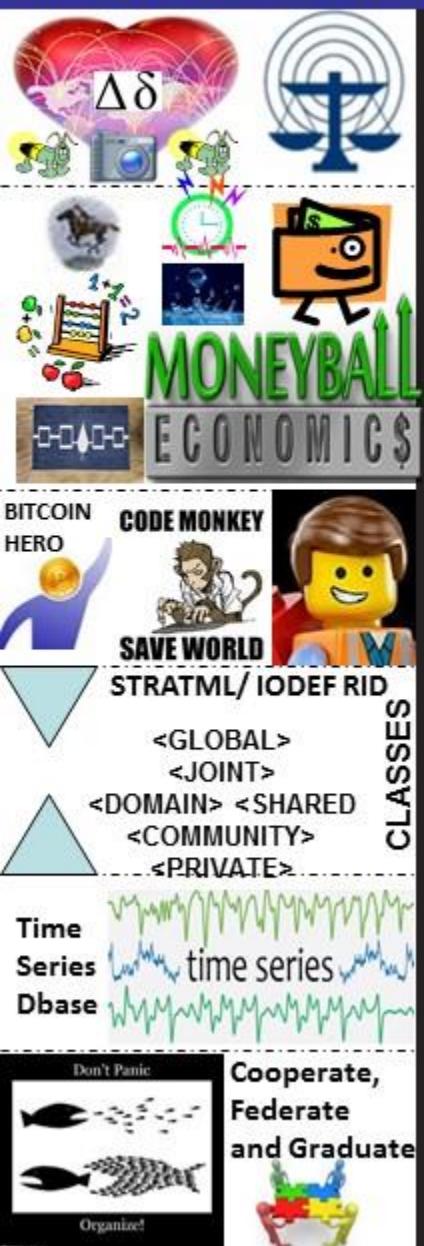
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

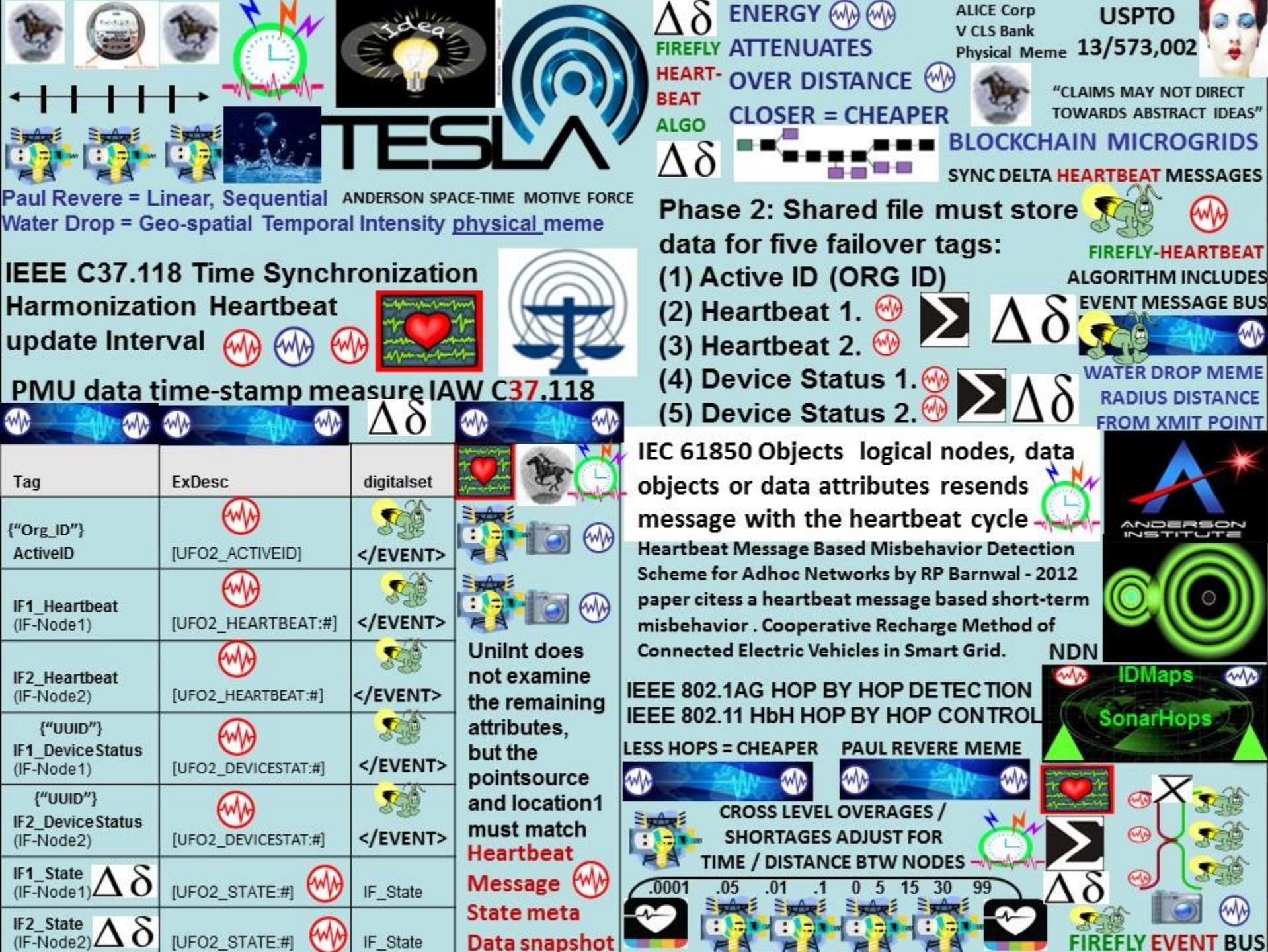
$$MV=PQ \text{ Money} \times \text{Velocity} = \text{Price} \times \text{Quantity}$$

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.





13/573,002 HEART BEACON CYCLE

The four dimensions of Big Data

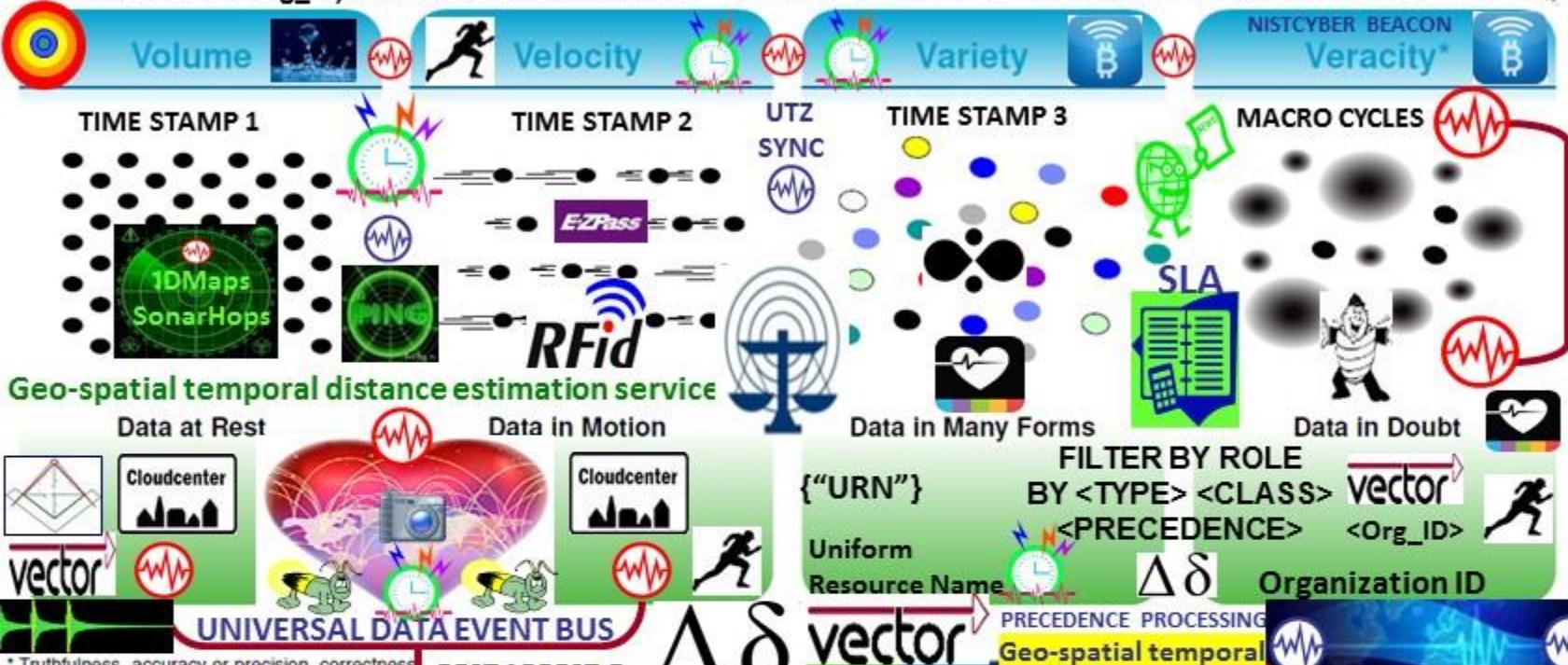
TIME STAMP BY Org_ID, URN Before FUSION CENTER

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



B1: BUILDING BLOCK: TCP/IP HEARTBEAT TIME STAMP & DATA GET / PUT OF <ORG_ID> / <URN> DURING MICRO CYCLES PRIOR TO DATA FUSION CENTER INSERTION



BUILDING

BLOCKS

IEEE 1588 PTP

TASK MICRO CYCLES
ON / OFF .0001

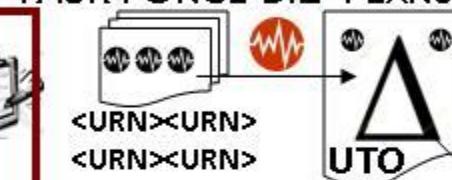
#BIG_DATA

FEDERATED GROUP JOINS, MERGE, ADDS, DROPS

B2: BUILDING BLOCK: ADAPTIVE, CYCLIC, ITERATIVE PROCEDURAL TEMPLATES: XML ARTIFACTS i.e., <ORG_ID> TASK ORDER & K00.99 HEARTBEAT SYNC DELTA MESSAGES / STATE META DATA SNAPSHOTS IN NETWORK EXECUTION MANAGEMENT / NEO NET ENABLED OPERATIONS, MISSION AWARE NETOPS

TASK FORCE BIZ PLANS

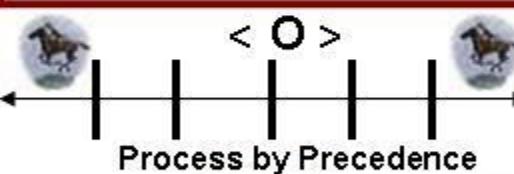
<ORG_ID>



ADHOC / AGILE FEDERATED <ORG_ID> GROUPS VS LEADER'S INTENT DECISIONS JOIN, MERGE, ADD, DROP, SPLIT, MOVE SUBNETS BUSINESS COURSE OF ACTIONS <ORG_ID1><ORG_ID2>

B3: BUILDING BLOCK: PAUL REVERE LINEAR, SEQUENTIAL HOP COUNT MEME

CLOUD, ENERGY NODE HOP COUNT METRICS, METERS SLA CLAUSES MOE, MOP METER IN TAX CODES, TRANCHE CLASSES / EVENT, ALERT TRIGGERS



vector
TIME / DISTANCE,
VECTORS, THRESHOLD,
INTENSITY, DURATION

SEARCH BY <UUID><ORG_ID><URN>,
REAL TIME AUCTION, CROWD SOURCING INVITES NEWSCASTS
APPLIQUE' OVERLAYS

B4: BUILDING BLOCK: WATER DROP IN POND RADIUS MEME, GEO-SPATIAL TEMPORAL INTENSITY

#IeT / IoT

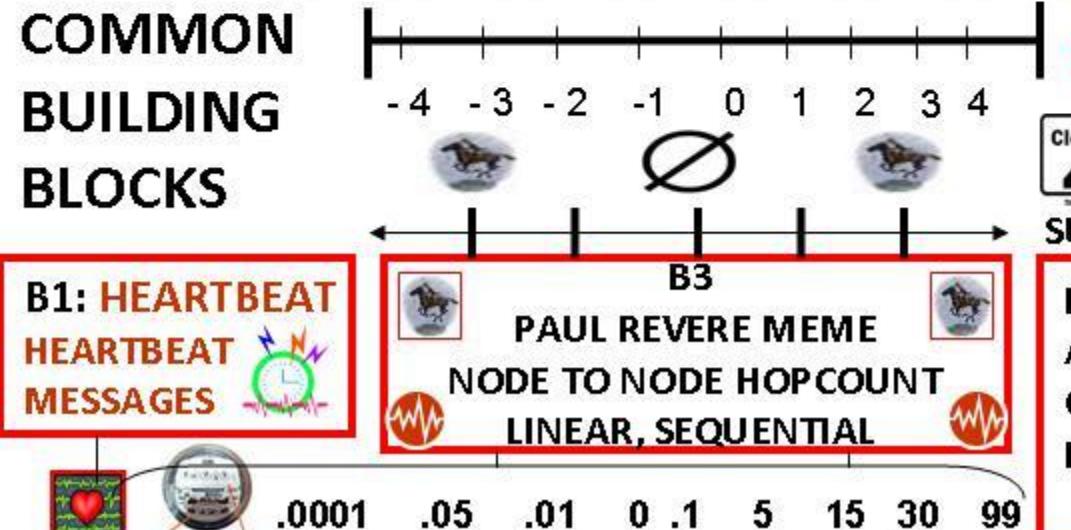
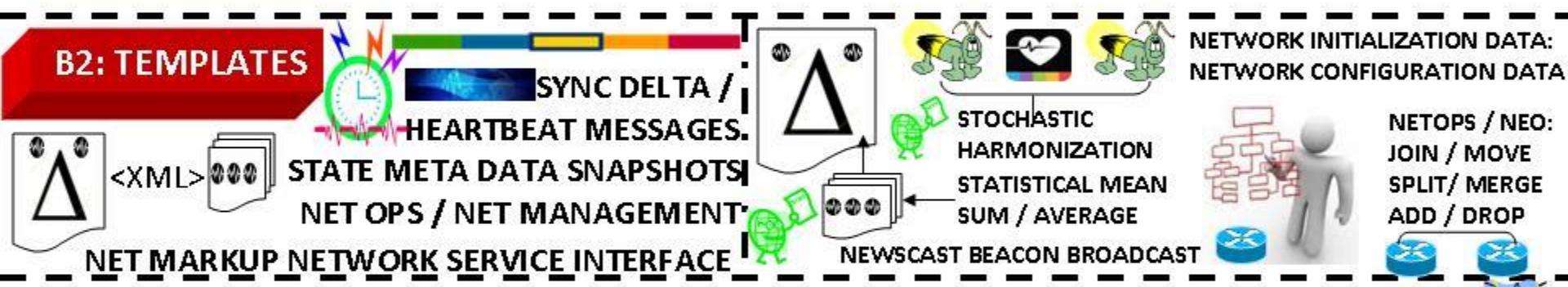
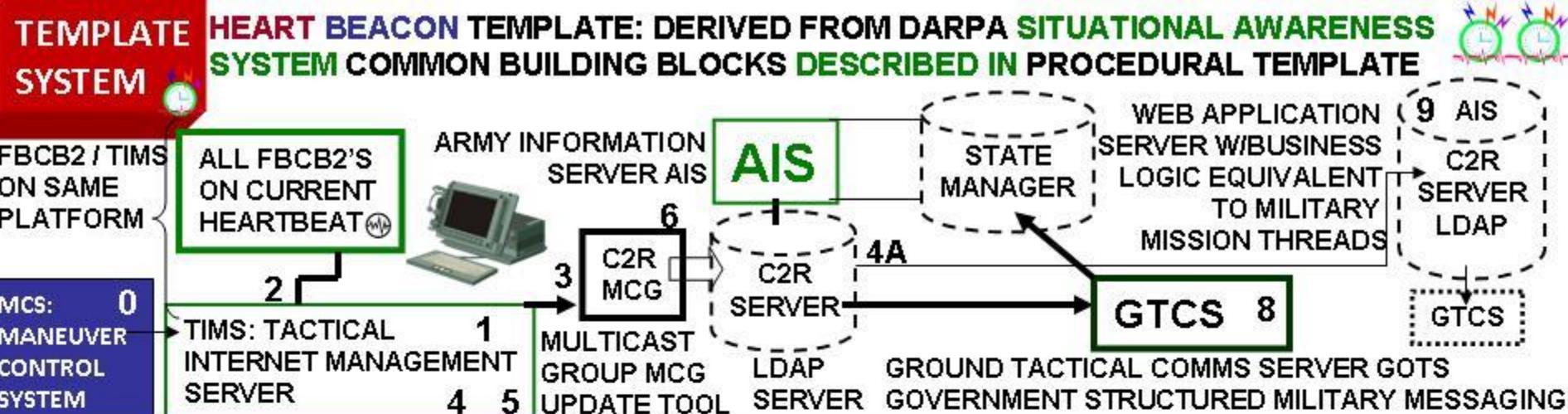
MICRO-CYCLE STATE META DATA CYCLIC SNAPSHOTS

SENSOR NETS

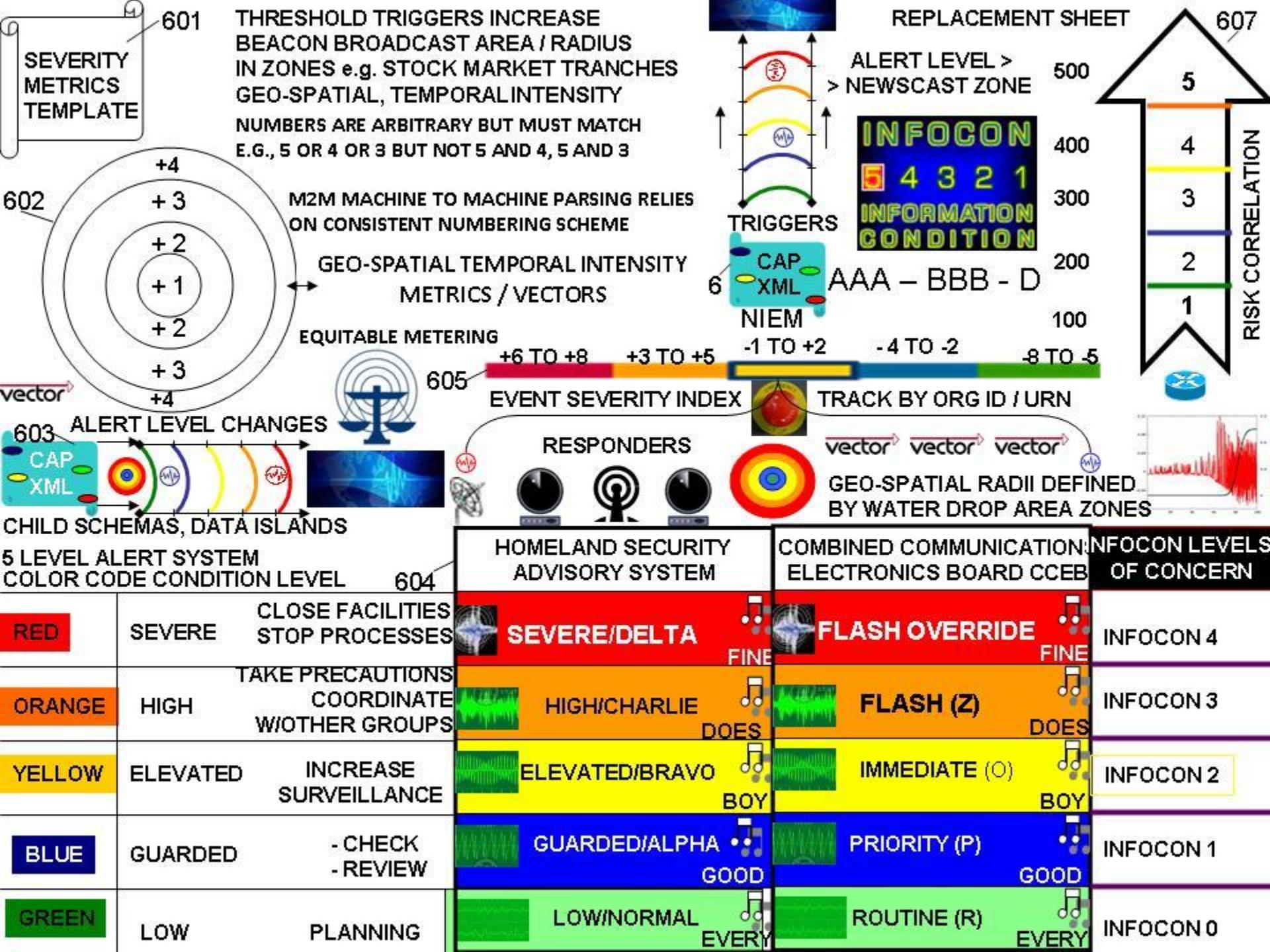
BEACON BROADCAST, NEWSCAST

MAP VIEWS GEO-LOCATION SPECIFIC SHOW <URN> RESOURCES BY <ORG_ID> <GROUP> / RESOURCE TYPE, EVENT, ALERT / NEWSCAST BY TRANCHE <CLASSES>









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



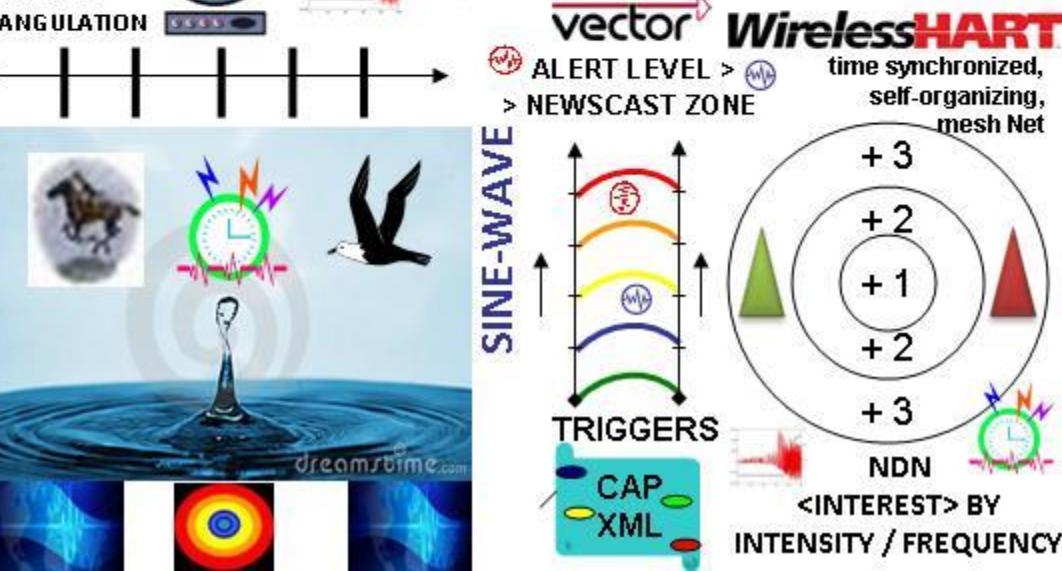
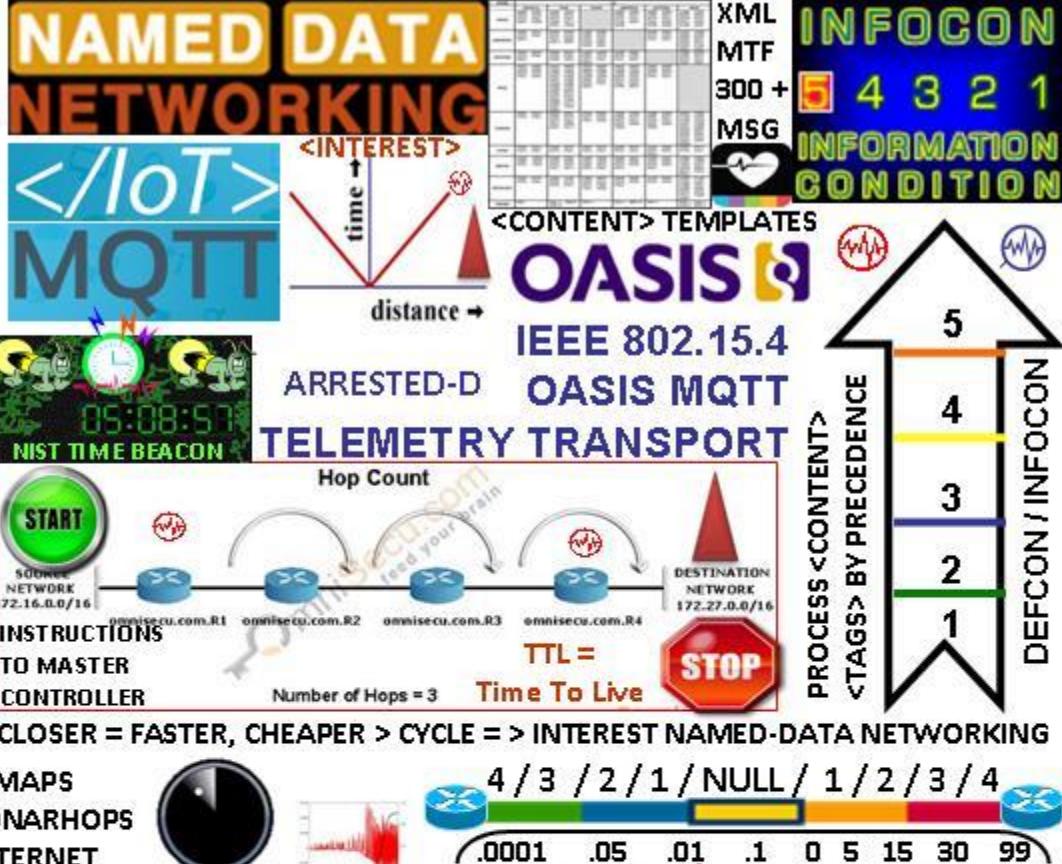
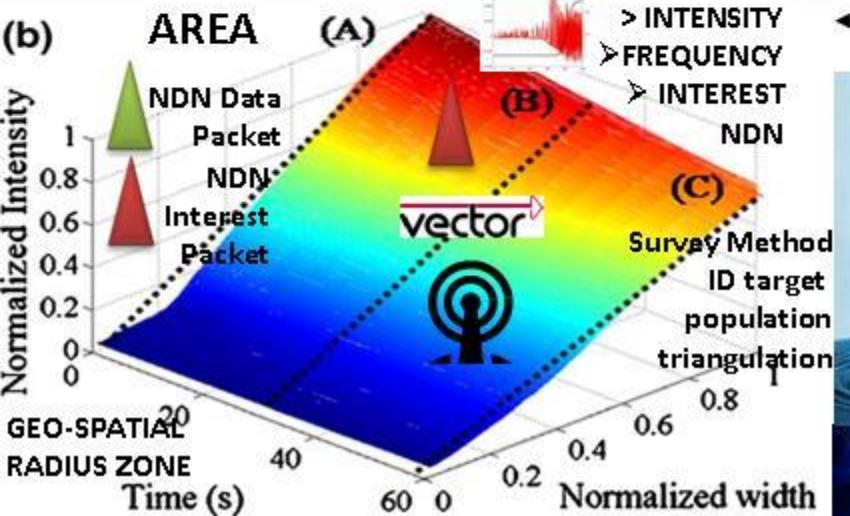
Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:



Paul Revere = linear, sequential

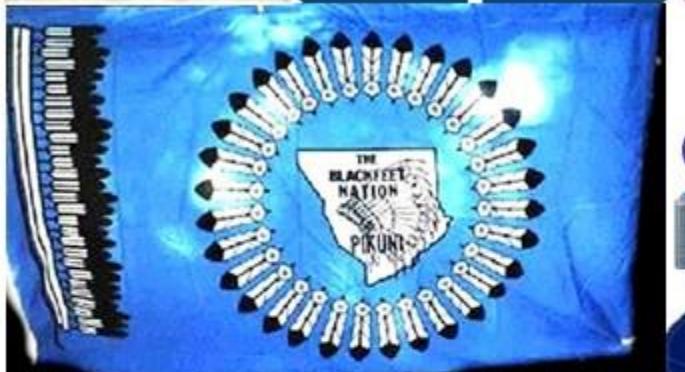
TCP/IP hop by hop counts, by hop controls

Water Drop = AREA / INTENSITY Cyclic Frequency

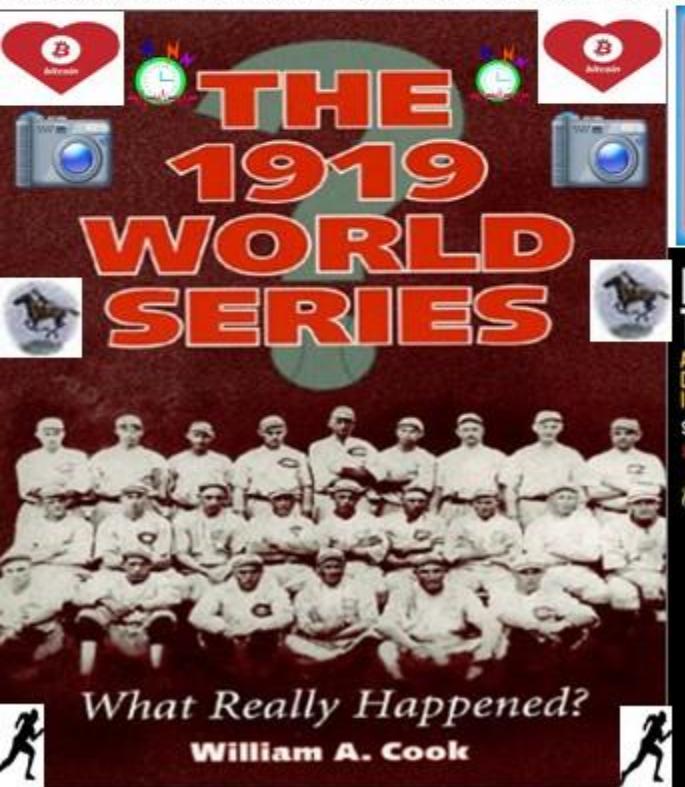


Interface Name	HEARTBEAT Administration Interface [SCOP]		
Documentation URL	http://scop.sourceforge.net/ http://linuxvirtualserver.org/software/index.html		
API Information	      		
#Big_Data	Functionality Areas	Cloud Interface Management, configuration, start, stop cloud services, edit configuration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

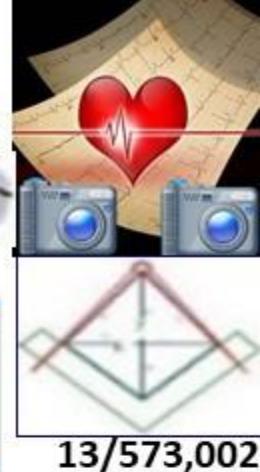




SAW Concepts LLC Owner's Father is from Blackfoot First Nation Native American Indian



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

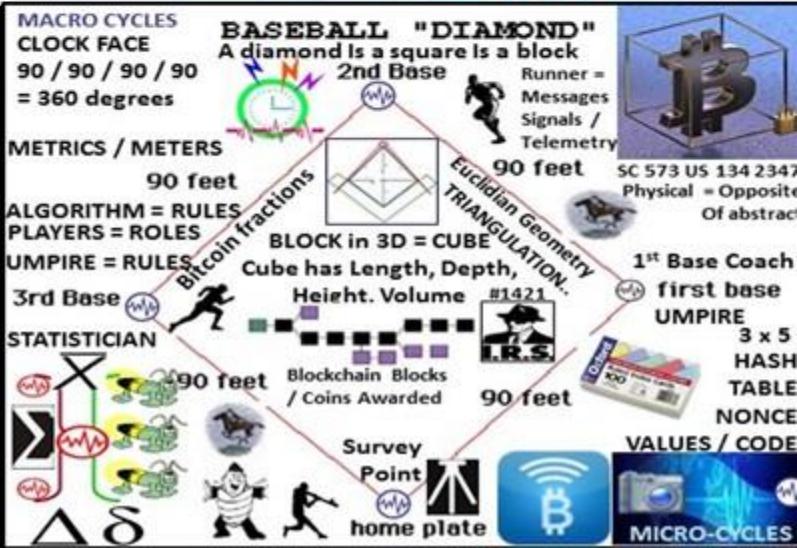


13/573,002



USPTO SCREEN CAPTURES SUSPENDED PAIR RULES

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











Heart Beacon is an interactive enclosure of light, color and sound that senses and artistically displays the heartbeats of visitors who lay their hands on the piece. This highly interactive sculpture takes the literal and metaphoric ‘pulse’ of the Portland community. The sculpture takes inspiration from the life-saving mission of the Emergency Coordination Center.

WEB PAGE
<http://www.jbpublicart.com/portfolio/heart-beacon-2> [LINK](#)

Dimensions: 9' x 9' x 18'
Materials: stainless steel, acrylic, LED lighting, electronics, sound transducers,
HEARTBEAT SENSORS

Location: Emergency Coordination Center, Portland, OR

Commissioning Agency:
City of Portland

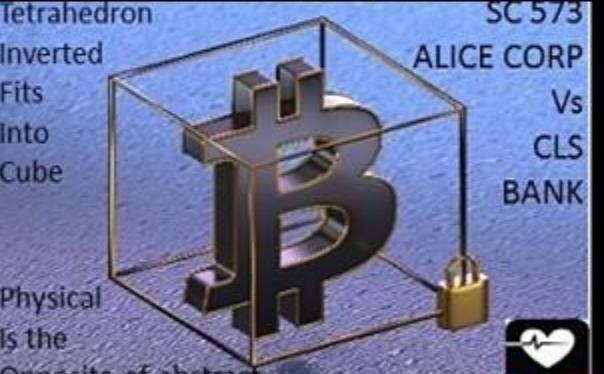
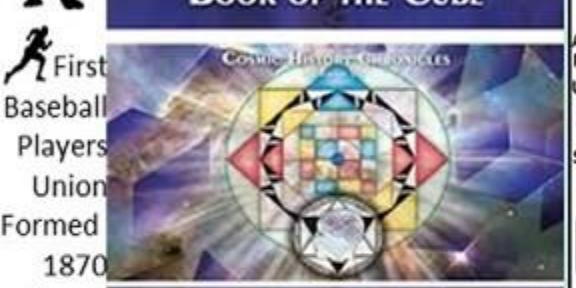
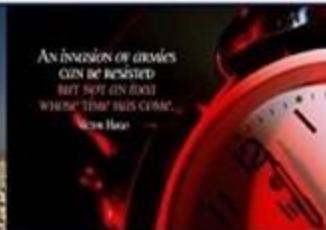
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

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

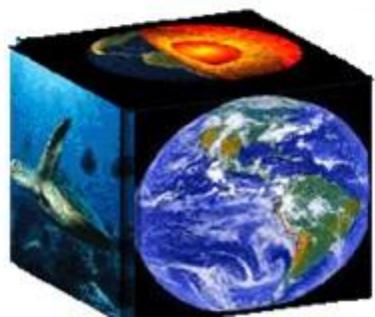
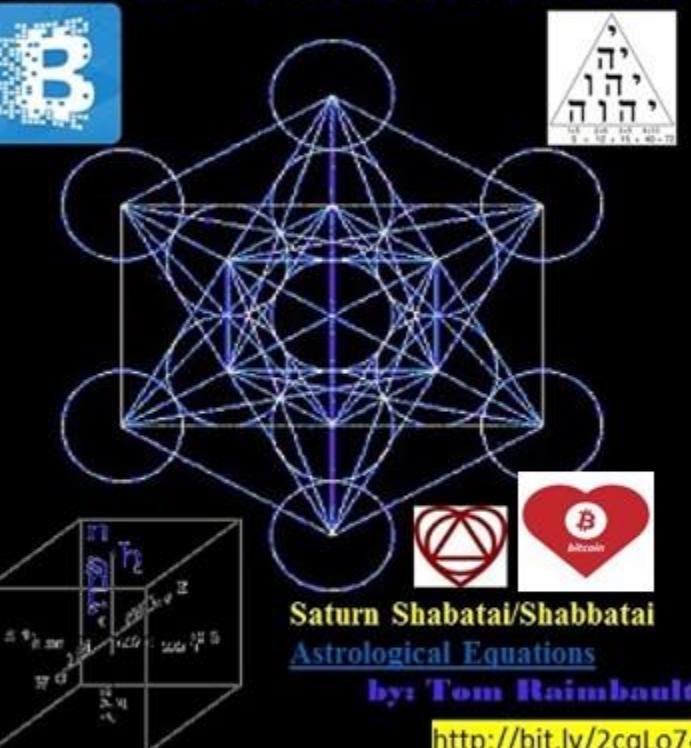
$$1 + 3 + 5 + 7 + 3 + 2 = 21 \quad 21 \text{ squared} = 441$$

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



Physical Is the Opposite of abstract

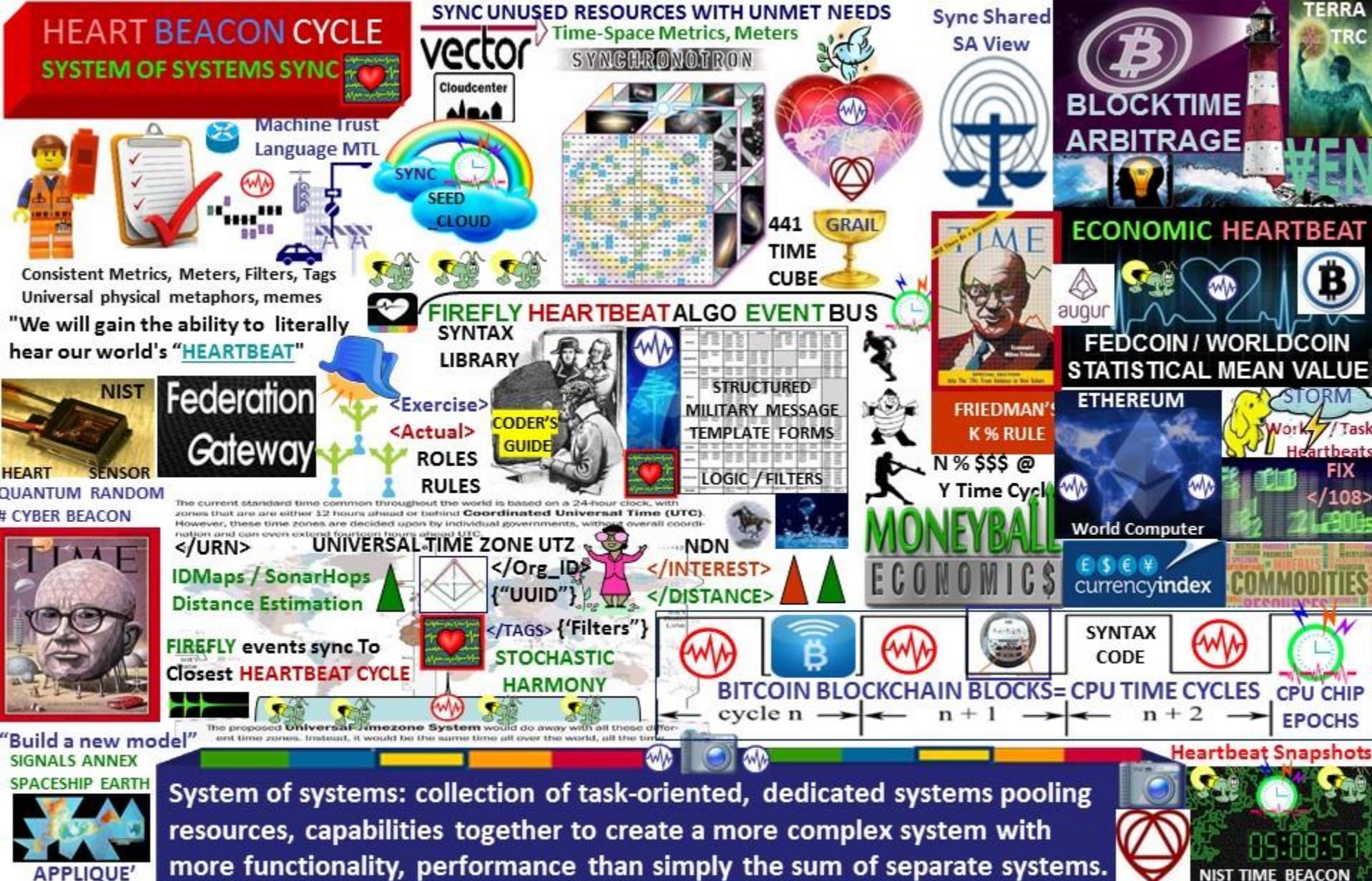
Metatron's Cube and the Platonic Solids



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<https://www.heartmath.org>





"May the heart of Earth flow to the heart of heaven through my heart and through all hearts together. May our hearts be the heart of every being in all the starry sky, May the heart of the heavens flow to the heart of the earth through my heart and though all of our hearts together. And, may our hearts be the heart of every earthly creature". Chichicastenango Guatemala from "Stargate 2012: Surfing the tides of the Milky Way as drawn from ancient Mayan prophecies.

