



*"Send forth its cheering ray
to the storm beaten
mariner..."*

– Federal Officer, Aug. 1861

Ticket Number 0974572

The giant oak is an acorn that held its ground.
www.greatdreams.com/72.htm

"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



THE HEART BEACON CYCLE

Tagged Bitcoins • Flash Heartbeat Messages • Federation Gateway

SAW Concepts LLC
PO Box 28 Oceanport, NJ 07757
Cell: 732-768-5440 <http://sawconcepts.com/index.html>

EARTH DAY EVERYDAY ON THE BITCOIN BLOCKCHAIN

TERRACYCLE Spatial Econometrics



FEDERATION: Latin: *foedus, foederis, 1. covenant, union of partially self-governing states under a central government 2. League or confederacy. People, groups retain autonomy 3. A federated body formed by a number of nations, states, societies, unions retaining control of own internal affairs*





PROCEDURAL TEMPLATE

Checklist Items refers to detailed treatises

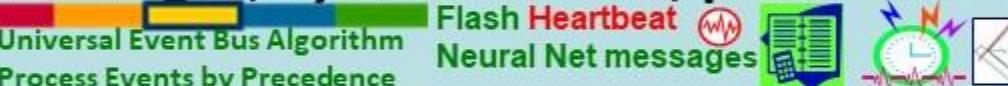


Series of systemic actions to achieve goals ex: form, maintain ECO sustainable

Trade Federations i.e., closer = < fuel, \$\$



A continuous action, operation, or series of changes, sync deltas i.e., price indexes



Sync geo-spatial temporal Eco econometrics across time-space



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

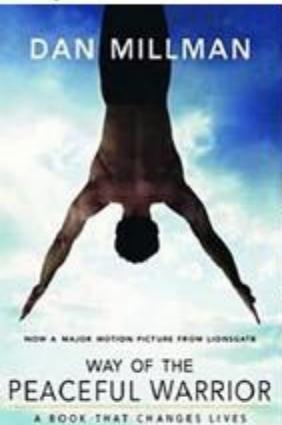


CHECKLIST: TRADE FEDERATION ECONOMIC FRAMEWORK EX:

- 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 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.

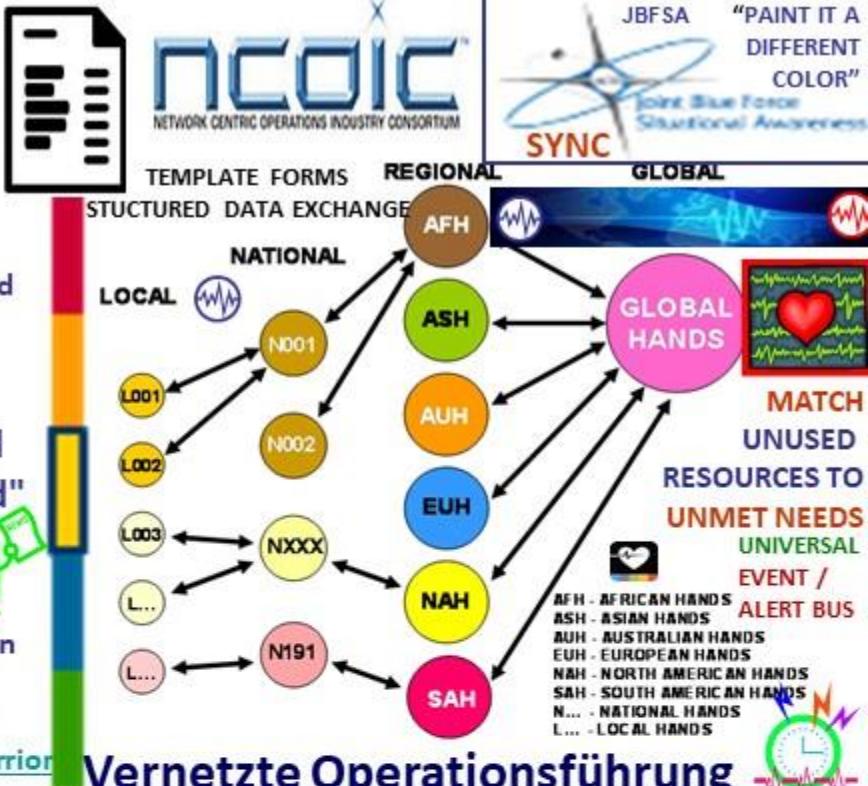


Heart Beacon Sculpture

Oregon
USA

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.

[LINK](#)



Vernetzte Operationsführung

REUSE OF A PENTAGON ACAT-1A SITUATION

AWARENESS PROGRAMS WORDS TO PLOWSHARES

PROPOSED BY GERMAN MILITARY CIRCA 2003

FEDERATION



Beacon Communities

Explore recent program news

Learn more >

JAEGER

OFF SHORE
OUTER
BANKS

KAIJU



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"

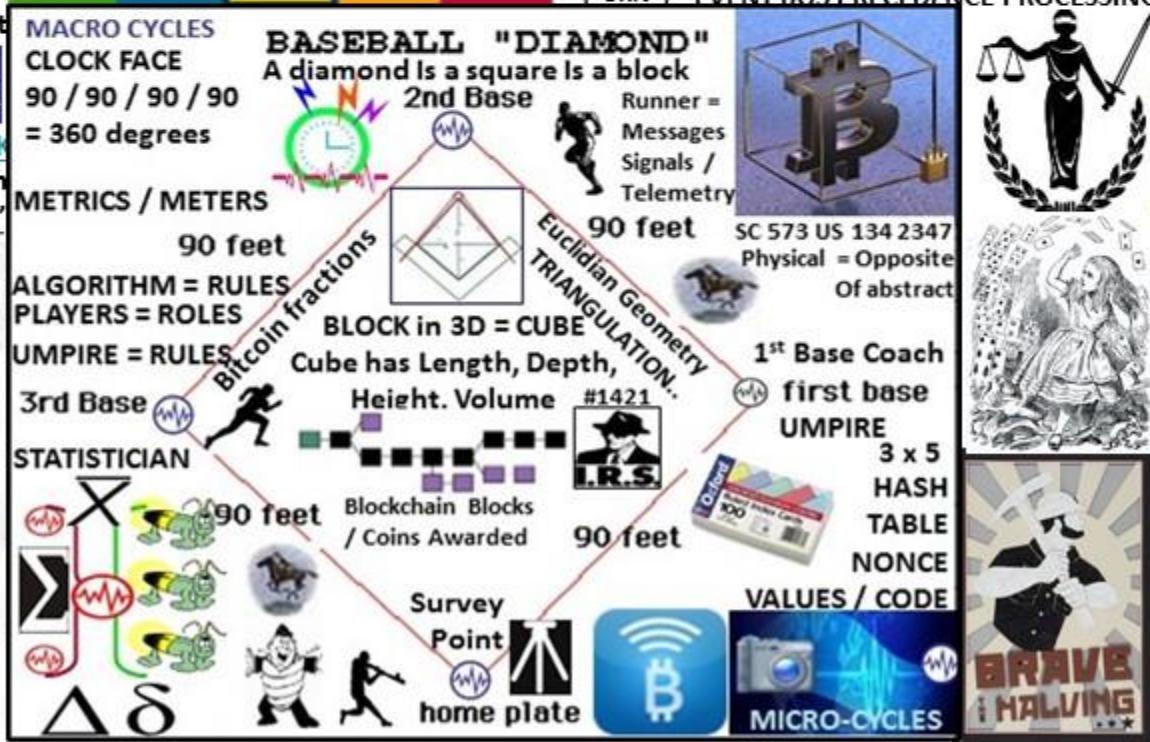
XBRL / CDL / DAML	
STOCK MIC CODES	
STRUCTURED	
MILITARY MESSAGE TEMPLATE FORMS	
LOGIC / FILTERS	
BREVITY CODES	
{URN}{URN}{URN}	
SYNTAX / SYMBOL	
LEXICON LIBRARY	



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

SC 573 US 134 2347

EU: "FEW UNDERSTAND" Impossible to Regulate PHYSICAL = OPPOSITE OF ABSTRACT DAO



FUTURE MEMES DOT COM



Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



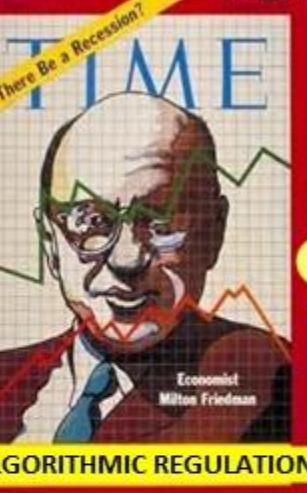
TERRACYCLE



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

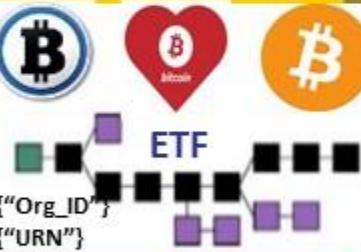
STAT MEAN VALUE INDEX



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



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.

Spatial Econometrics



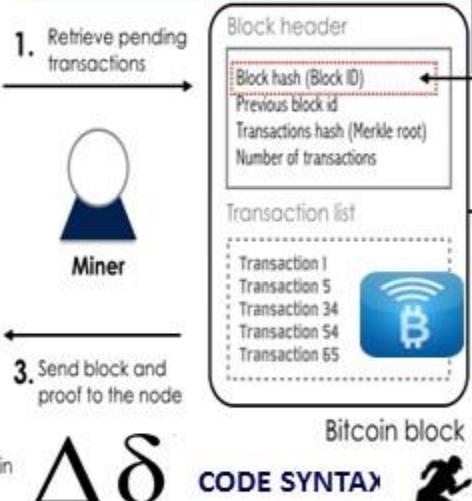
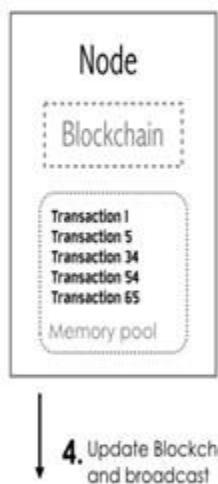
STATE
META
DATA
SNAP
SHOTS

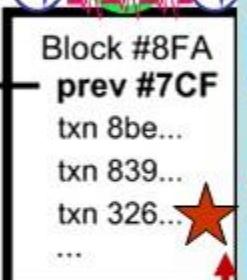
#EN
IDMaps
SonarHops
MICRO-ECONOMIC CYCLES





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.

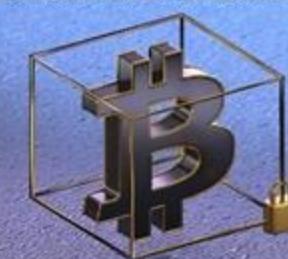

 $\Delta\delta$
CODE SYNTAX

CODE RUNNER
 $\Delta\delta$

EVENT BUS
BLOCKCHAIN = TIME / SYNTAX

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


ASIC CHIP CLOCK CYCLES TIME EPOCHS

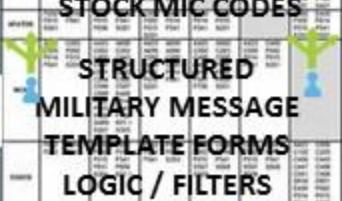
 $\leftarrow \text{cycle } n \rightarrow \leftarrow n+1 \rightarrow \leftarrow n+2 \rightarrow$
 $\Delta\delta$
TIME EPOCH CYCLES

 05:08:53
ATOMIC CLOCK

USPTO 13/573,002 PHYSICAL MEME MAIN EMBODIMENT
RULES Metrics
 $\Delta\delta$

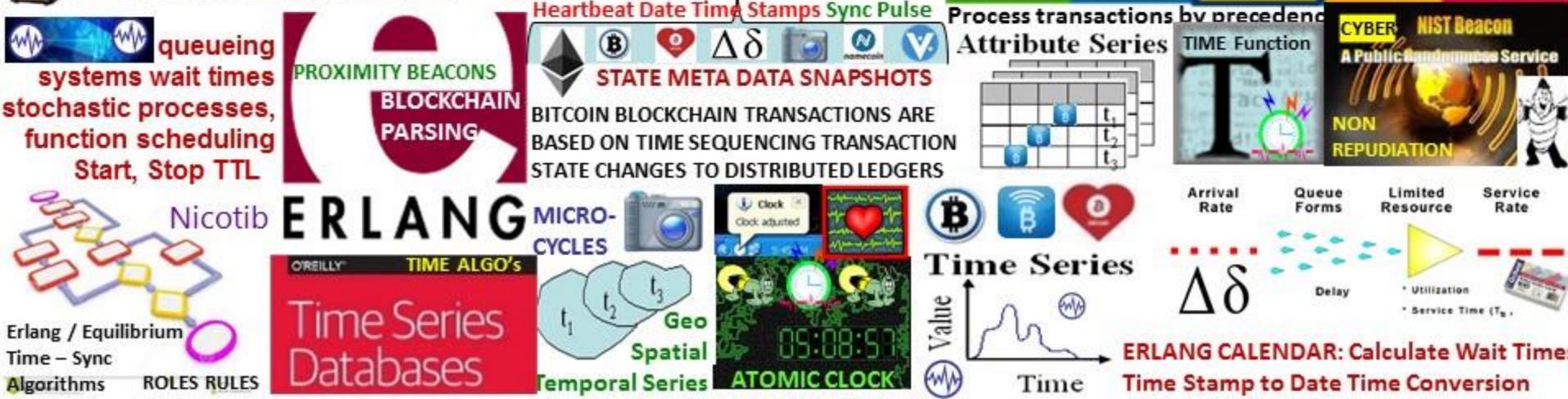
Multi-Meme Multi-Meter

ROLES Meters

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



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

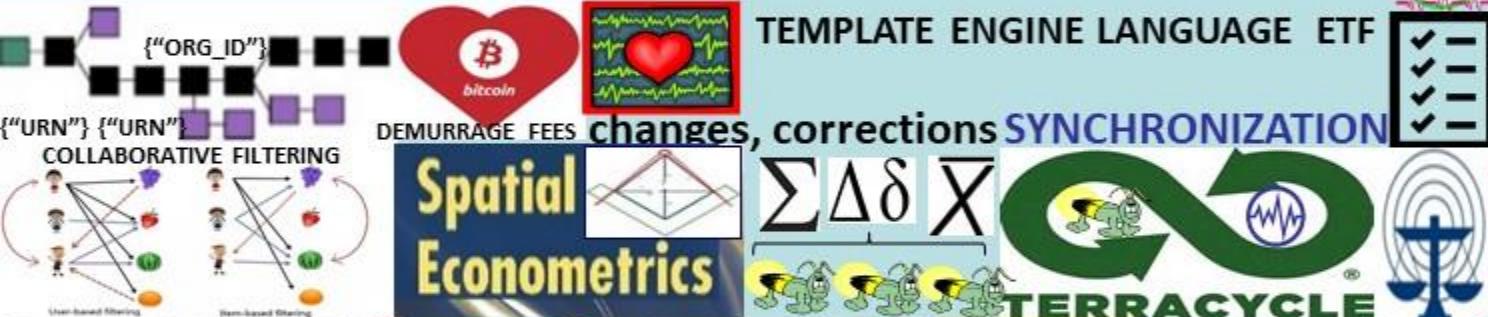




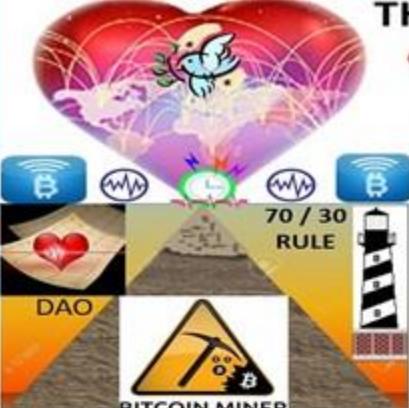
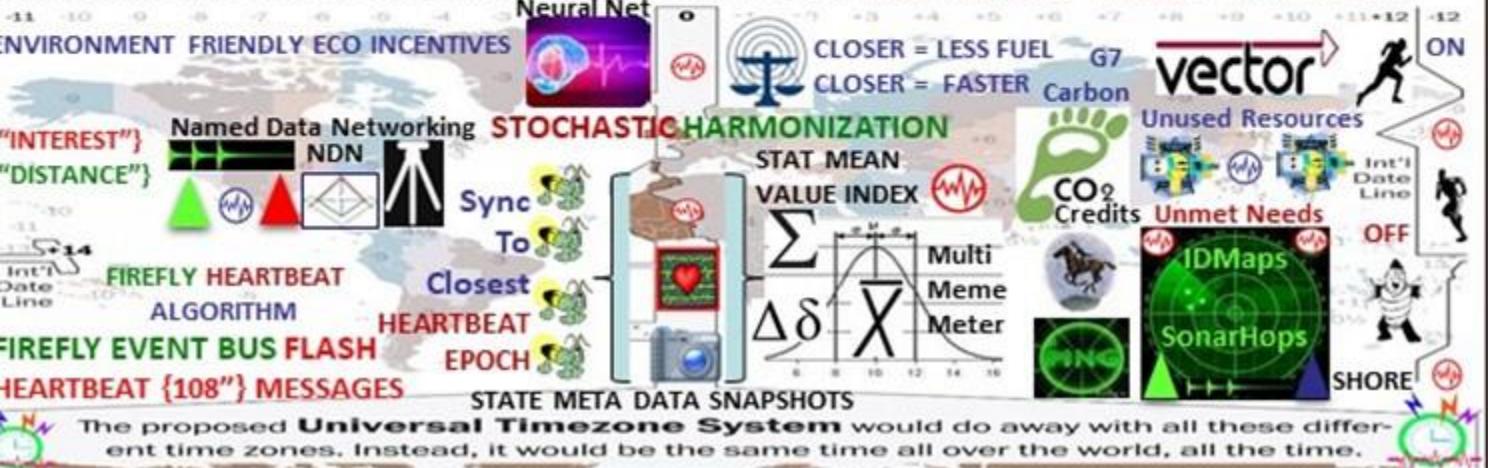
eGaaS: international blockchain platform for organizing economic, state, social activities of citizens, communities on the basis of smart law, smart contract system. eGaaS offers a comprehensive solution needed for state and business management on the blockchain platform.

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

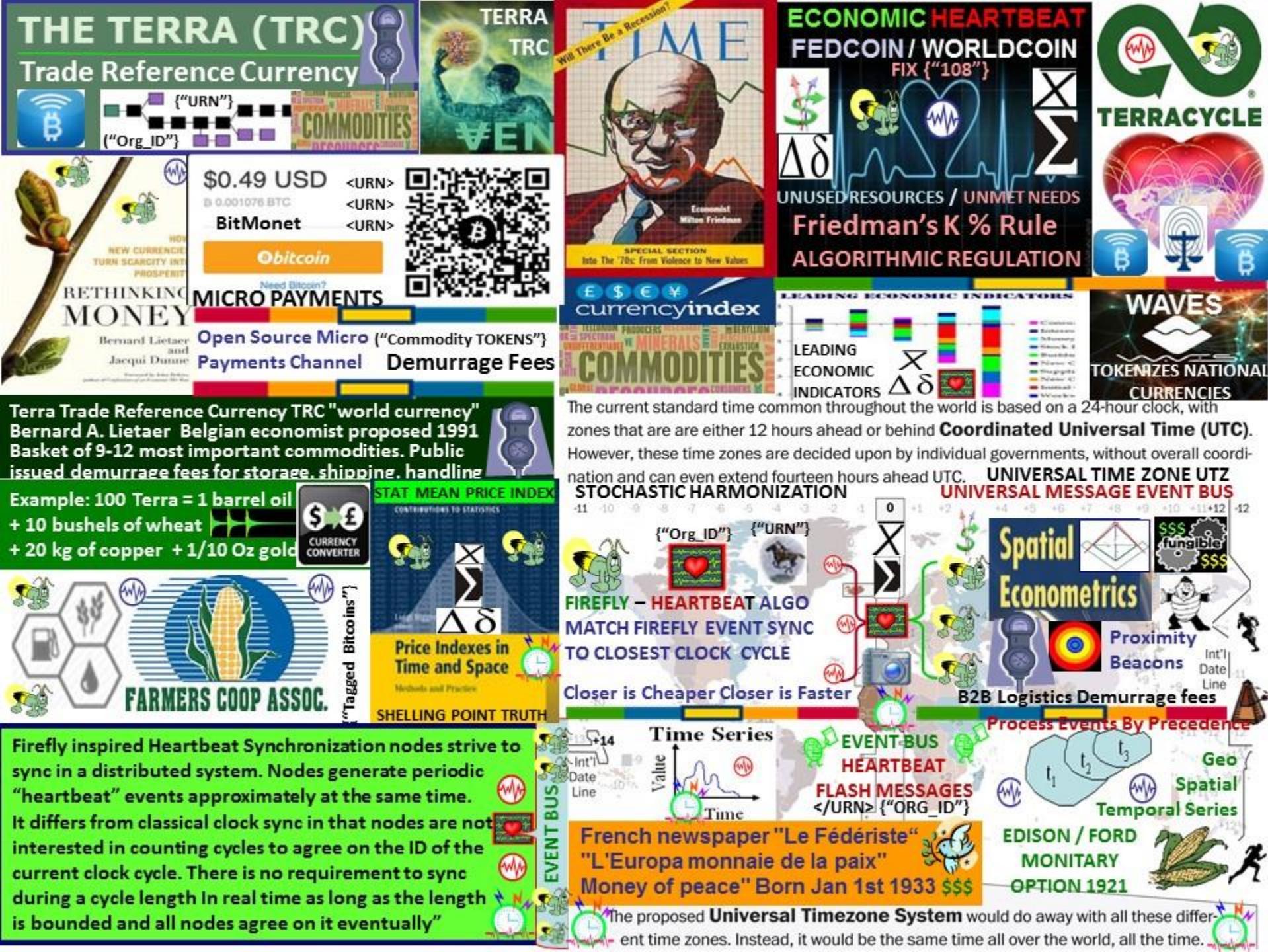


FROM	TO	TYPE	NAME	VERSION	SIZE	FORMAT	LAST UPD.
API	UI	SYNTAX / SYMBOL LEXICON LIBRARY					
API	UI	STRUCTURED DATA EXCHANGE					
API	UI	300 + TEMPLATE FORMS					
API	UI	LOGIC / FILTERS					
API	UI	ALPHA-NUMERIC BREVITY CODES					
API	UI	Time Series Databases					
API	UI	ERLANG					





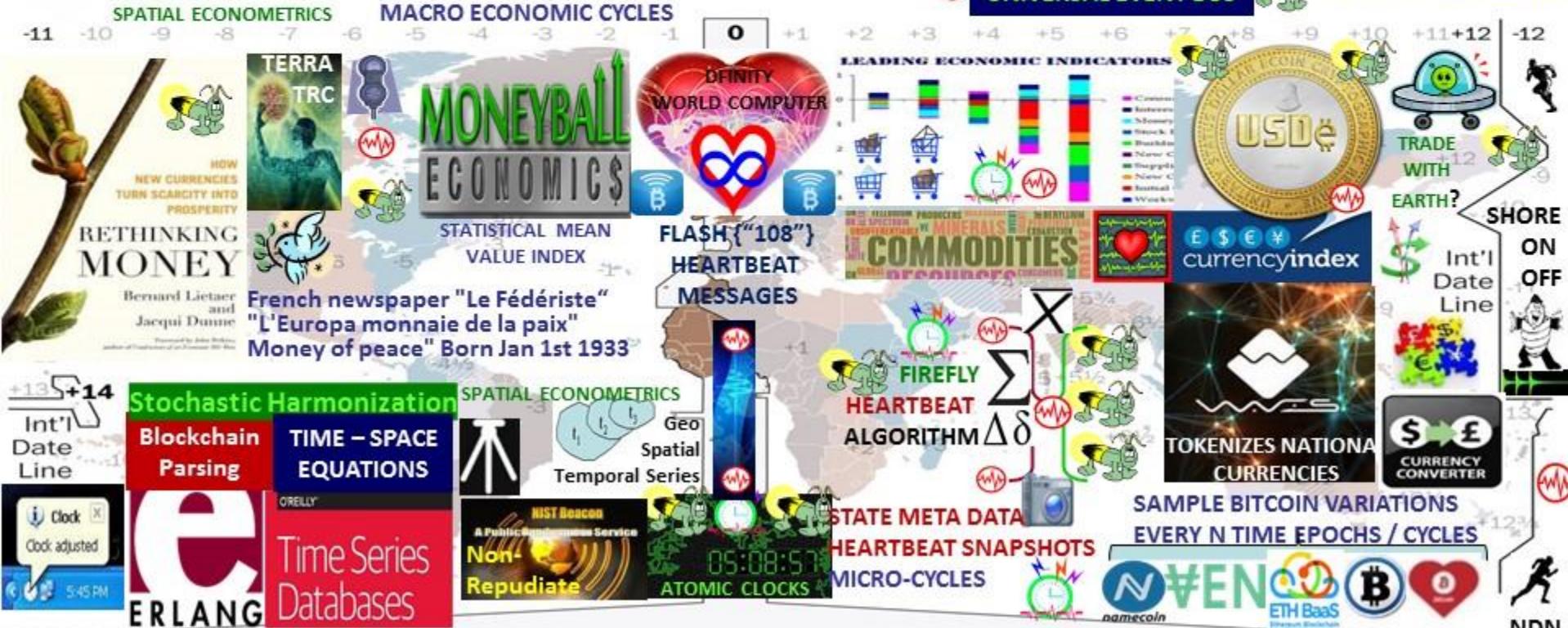








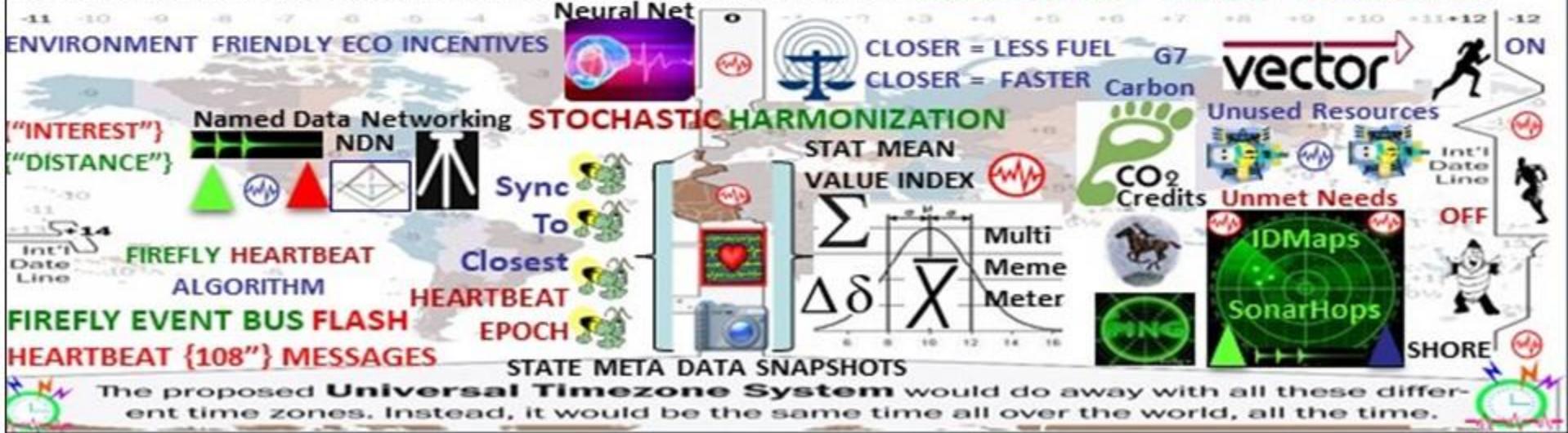
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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

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

Nash Game Theory Algorithms

Int'l Date Line

HB Cycle

STATE META

DATA SNAPS

Match Event to closest

SCOTT PATTERSON

Author of the New York Times Bestseller The Quants

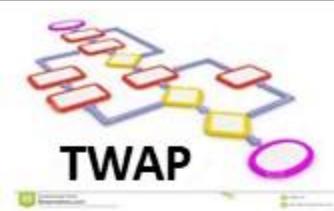
The proposed **Universal Timezone System** would do away with all these different time zones. Instead, it would be the same time all over the world, all the time.



TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

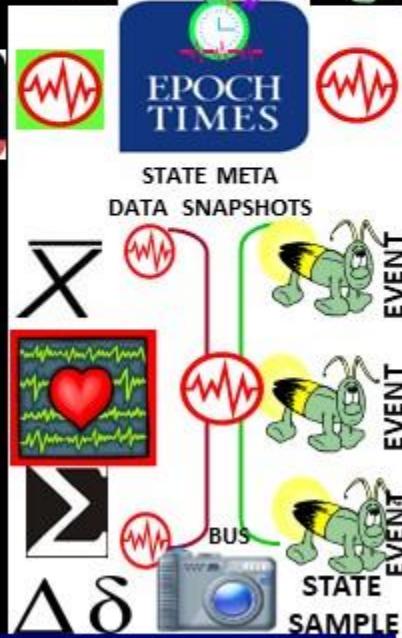
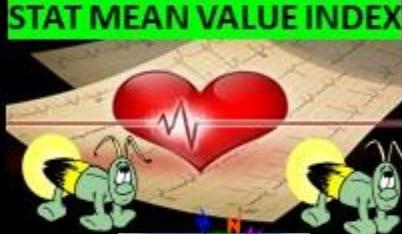


TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX

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



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



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

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

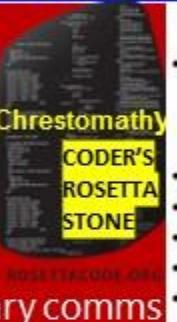




Erlang programming language / mini OS
massively scalable high availability, real-time Erlang's runtime system built-in concurrency distribution, fault tolerance



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



Functional Sequential Erlang

- Data types:

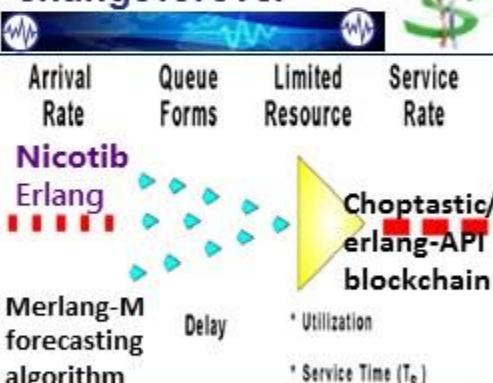
 - Integers (incl. BigNums), floats, atoms
 - tuples/records, lists/plists, binaries, funs
 - Maps (added in R17)

- single assignment
- pattern matching & guards
- closures (anonymous function data type)
- list comprehensions
- bit-syntax & binary comprehensions
- tail recursion & tail call optimization (TCO)

SORTING ALGO'S

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

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



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

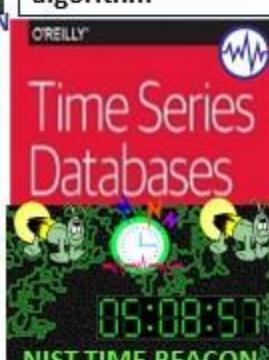


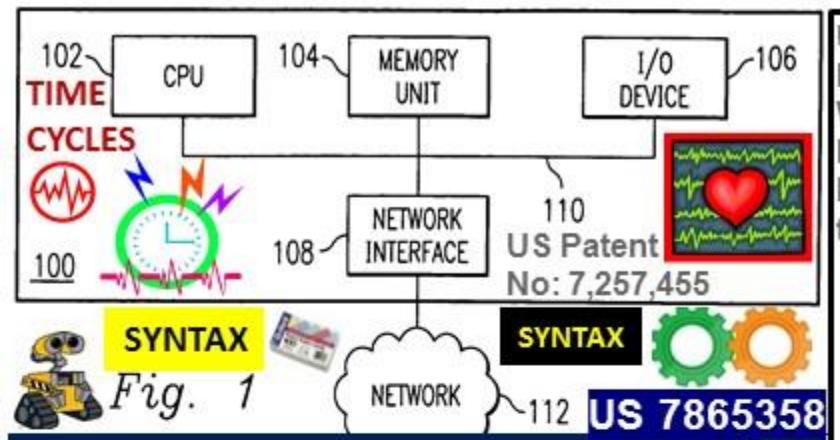
distributed "noSQL" database, embedded right into Erlang,
supports indexing, replication, transactions, and fail-over
Fast ETS in-memory, and DETS persistent on-disk database

Mnesia database ("Organization_ID")

Global name resolution

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



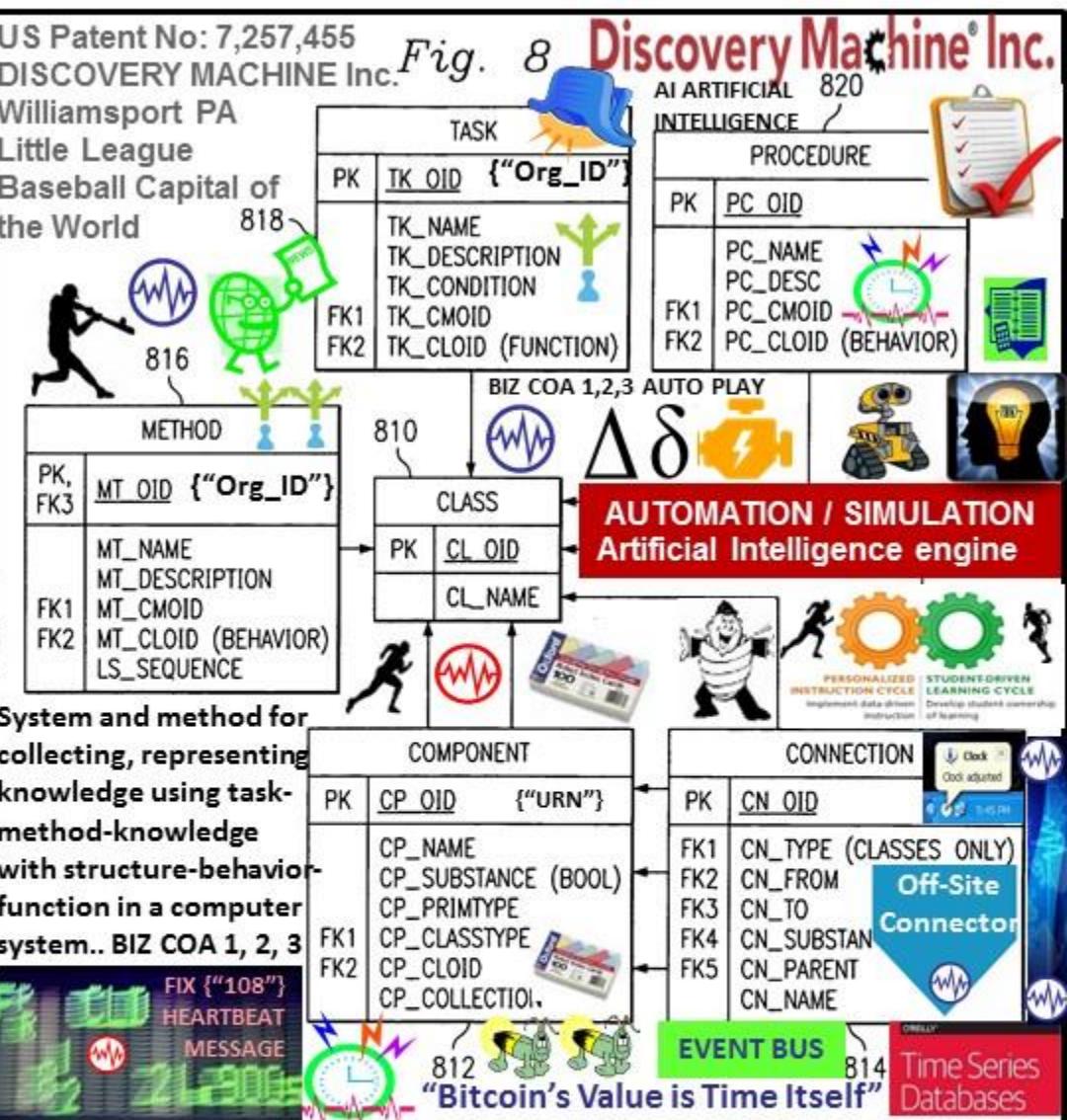
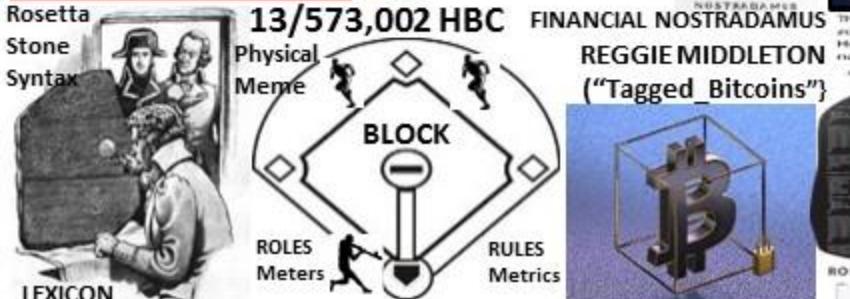


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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



MVP

Price Indexes in Time and Space

SchellingPoint

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

AZURE: Core/Kernel/Universal Protocol

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

Unspent Transaction Output protocols UTXO

Crypto Tokenized Assets Digital Bearer Bonds
unique identity for owned artifacts

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

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

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

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

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

Rosetta Stone Syntax



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

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

FIREFLY EVENTS
FLASH MESSAGES
SYNC TO CLOSEST
HEARTBEAT EPOCH

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

MYRIAD MEMES MEDIATION
BLOCKCHAIN

MULTI-MEME MULTI-METER

Microsoft AZURE BLETCHLEY

Blockchain Startups

Top Blockchain startups disrupting non-financial markets



{"URN"}
{"Org_ID"}



OFF-SITE
OFF-PAGE
CONNECTOR



{"URN"}
{"Org_ID"}



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

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

Runner =
Messages
Signals /
Telemetry

90 feet

Euclidian Geometry

TRIANGULATION

SC 573 US 134 2347

Physical = Opposite
Of abstract

1st Base Coach

first base

UMPIRE

3 x 5

HASH TABLE

NONCE

VALUES / CODE

MICRO-CYCLES

IoT

Microsoft Orleans

TIME-SPACE

EQUATIONS

ALGORITHMS

BLOCKCHAIN

PARSING

ERLANG



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

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

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

Provides information about total costs of the transaction



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

pull model



Bitcoin Address Shortener

Bitcoin Address Shortener is an Android app that you can use to shorten those lengthy bitcoin addresses! Simply enter a long Bitcoin address to have it transformed into a short one, and vice-versa!

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

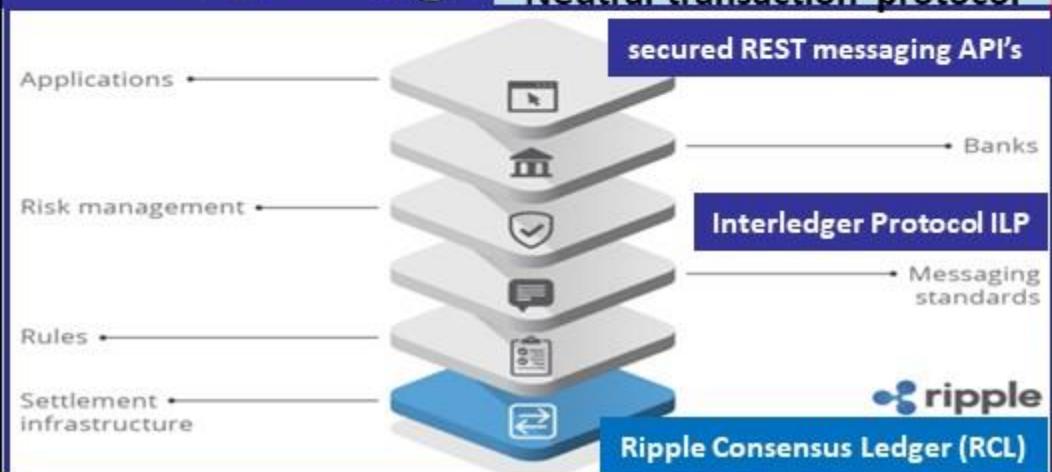
ALPHA NUMERIC BREVITY CODES

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

A.I

Clock Clock adjusted

Neutral transaction protocol



SchellingPoint



EVENT

ROLES RULES

COACH

BLOCK

CLOCK

= 360

TIME-SPACE EQUATIONS

ALGORITHMS BLOCKCHAIN PARSING

ERLANG

EVENT BUS

LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED

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

MATCH EVENT REPORTS TO CLOSEST HEARTBEAT CYCLE

FLASH HEARTBEAT MESSAGES {"108"} Δδ

HASH NONCE FIREFLY-HEARTBEAT ALGORITHM

MICRO-CYCLE STATE META DATA SNAPSHOTS

AGGREGATE INTO MACRO ECONOMIC CYCLE MESSAGE

World Economic Heartbeat ALGORITHMIC REGULATION ("108")



BLOCK TIME ARBITRAGE System of Systems Sync

Stochastic Harmonization Telco Mesh Fabrics Wide Area Sync

FIREFLY EVENTS FLASH MESSAGES

EVENT

COACH

BLOCK

CLOCK

= 360

TIME-SPACE EQUATIONS

ALGORITHMS BLOCKCHAIN PARSING

ERLANG

EVENT BUS

LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED

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

MATCH EVENT REPORTS TO CLOSEST HEARTBEAT CYCLE

FLASH HEARTBEAT MESSAGES {"108"} Δδ

HASH NONCE FIREFLY-HEARTBEAT ALGORITHM

MICRO-CYCLE STATE META DATA SNAPSHOTS

AGGREGATE INTO MACRO ECONOMIC CYCLE MESSAGE

World Economic Heartbeat ALGORITHMIC REGULATION ("108")

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

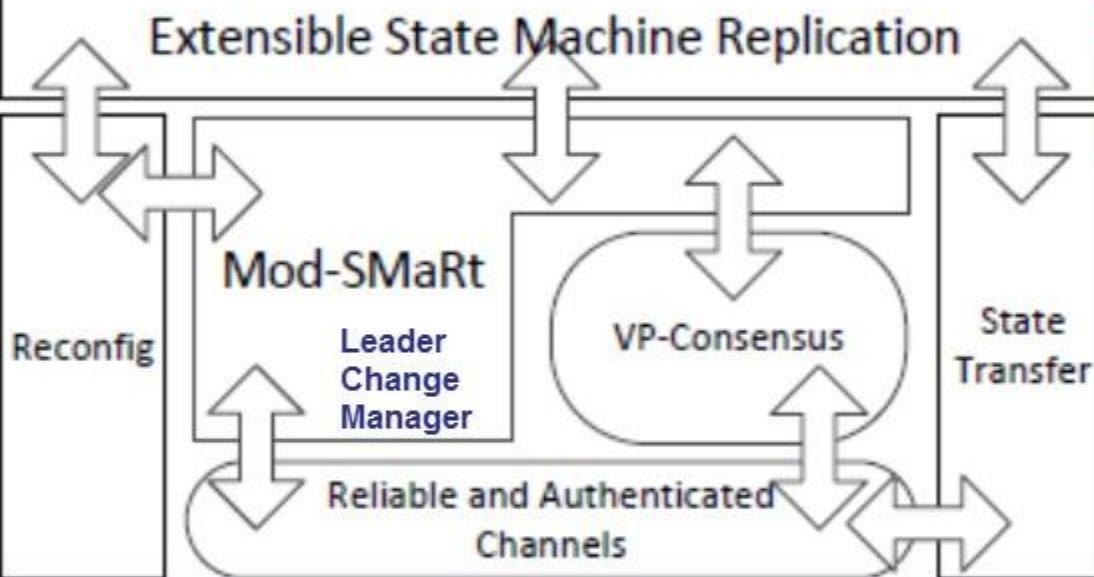
1st Base Coach
first base
UMPIRE
 3×5
HASH TABLE
NONCE

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

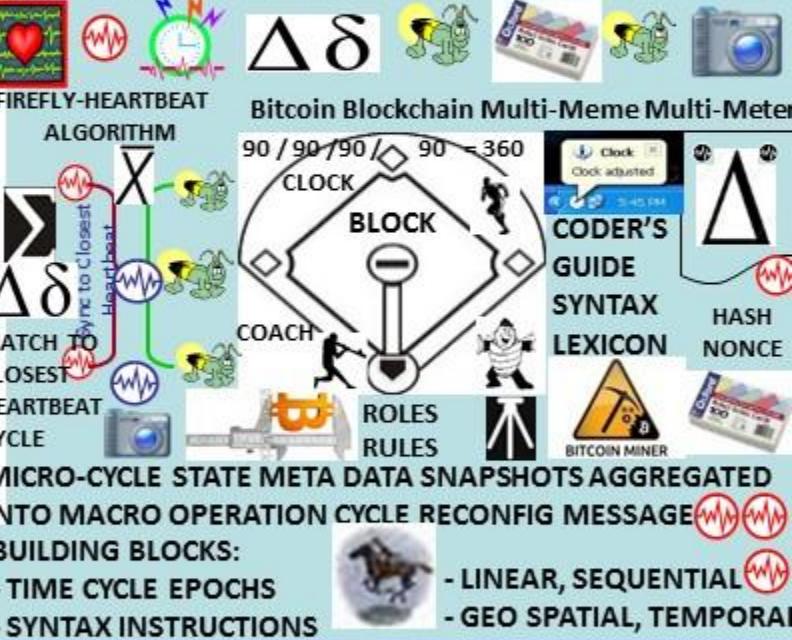


DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

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"

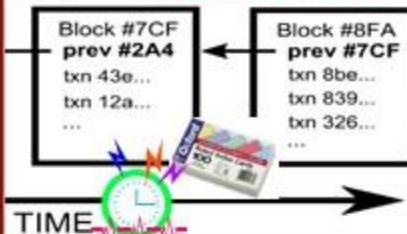
HYPER LEDGER OPEN SOURCE BLOCKCHAIN

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

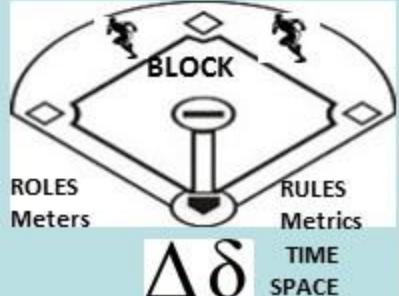
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



BLOCK TIME ARBITRAGE



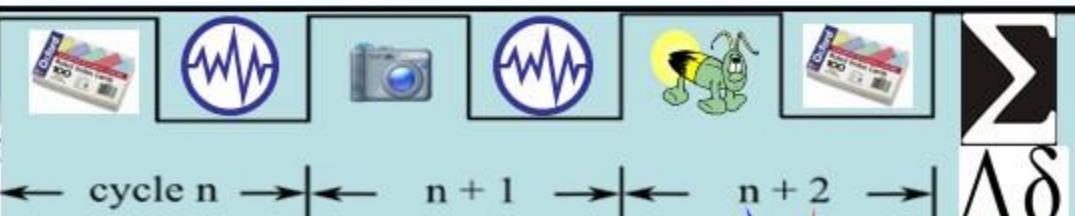
OBC APIs, SDKs, CLI



ROSETTA STONE



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



MICRO-MACRO CYCLE SCHEDULE

FFIRNS
FFUDNS

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

e.g. Derivatives

e.g. Trade Finance

e.g. KYC / AML

App

App

App

App

App

App

App

App

App

Concord Platform Services

CorDapp Store

Notaries

Network Map Service

Trusted Digital Backbone Network

Regulatory Reporting

Oracles

Service Provider Gateways

Bank-Internal Gateways

Concord Vault Interoperability

Asset Registry

Trade Registry

Cash

Identity Vault

Concord Operations Centre

Business Monitoring

Technical Alerting

Management Information

Compliance Audit



Δδ

Inter-Network Adapters

FEDWIRE

CHIPS

DTCC

CLS

Corda Core Node Services

Agreement States

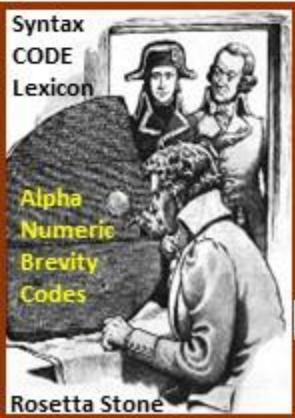
Transactions

Sandbox

Digital Signing

Interaction Protocols

Contract Verification



UNIVERSAL EVENT BUS



Syntax CODE Lexicon

VALIDATING TRANSACTIONS SOLELY BETWEEN PARTIES TO THE TRANSACTION

• Supporting a variety of consensus mechanisms

• Recording explicit links between human-language legal prose documents and smart contract code

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



XBRL / CDL / DAML STOCK MIC CODES

STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

300+ Use Case Templates

300+

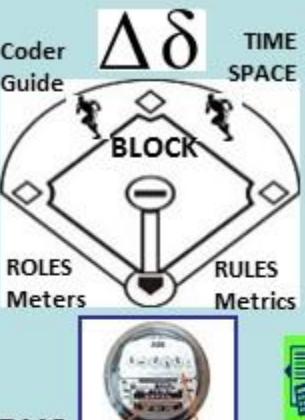
Use Case Templates

Federation Gateway



KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



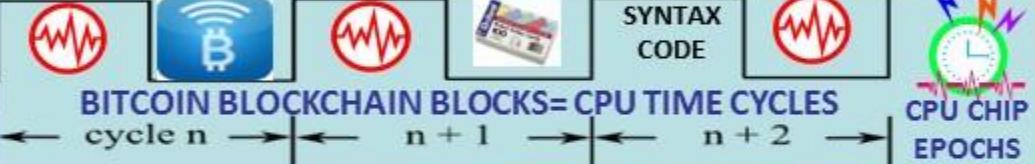
MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



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

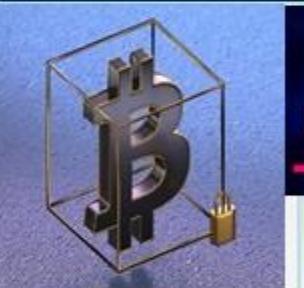
EVENT BUS



long exponential intervals (10 min)

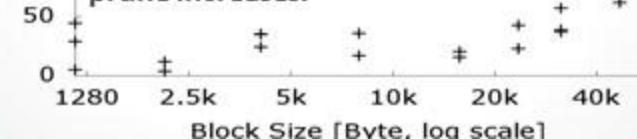


COMMAND SYNTAX
RESTFUL State Transfer



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).



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...

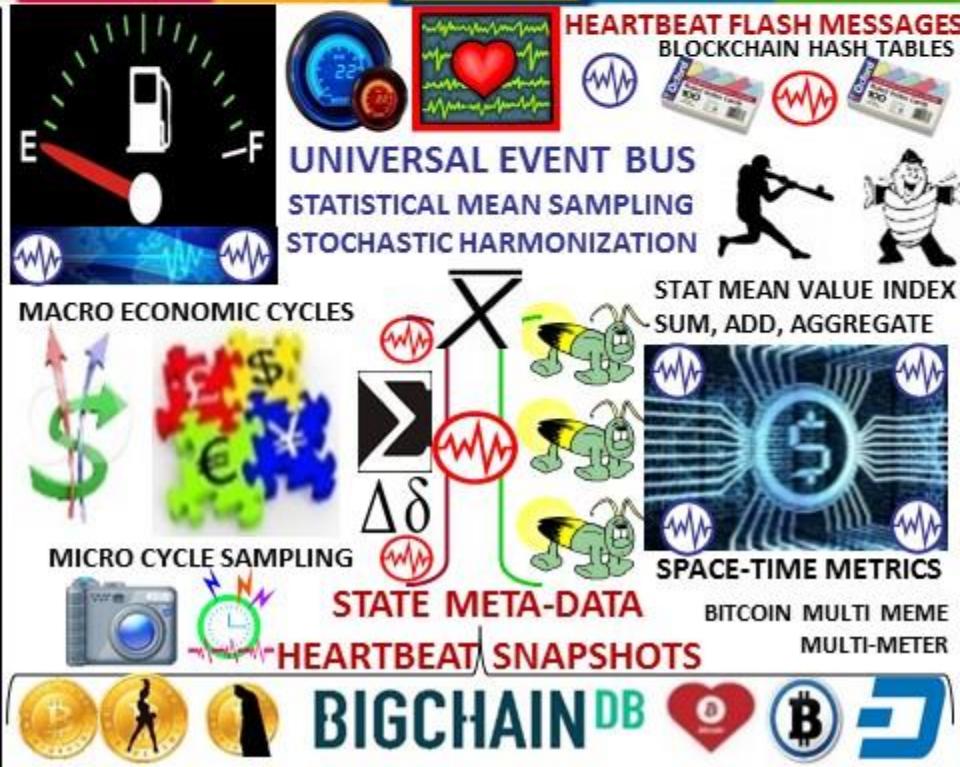
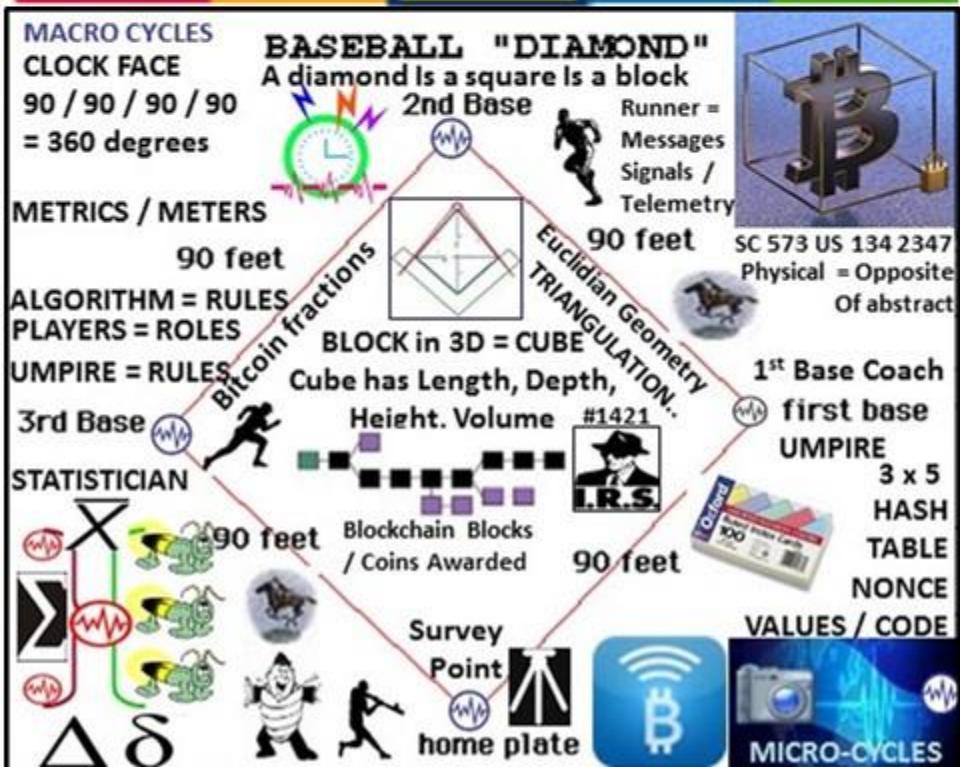
EVENTUALLY

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

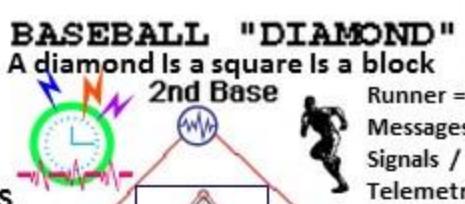
Unmined Bitcoins

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



SC 573 US 134 2347
Physical = Opposite Of abstract

1st Base Coach

first base

UMPIRE

3 x 5

HASH

TABLE

NONCE

VALUES / CODE

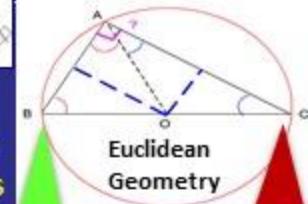
MICRO-CYCLES

LOGIC – FILTERS

CODE SEQUENCE

ROLES / RULES

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

Digital Asset

Contract Description

DAML Language CDL

{"INTEREST"} "DISTANCE"

FBI

IDMaps SonarHops

NDN

1: prove coin ownership <Org_ID> Coin Issuer

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

3: NIST Random # Beacon Non-Repudiation

4. Issuing {"Org_ID"} adjudicates w buyers

Firefly – Heartbeat Event Bus

cycle n

n + 1

n + 2

FIREFLY-HEARTBEAT ALGORITHM EVENT BUS

O'REILLY

Time Series Databases

CALENDAR

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

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

Randomized block selection randomization predicts following generator

by using a formula that looks for the lowest hash value stake size

Voting based selection Instead of only using the stake size, the block

generators can be selected by votes ex: League MVP

Voting Based Selection: stake size &

block generators selected by votes

VOTE

Little League BIG LEGACY

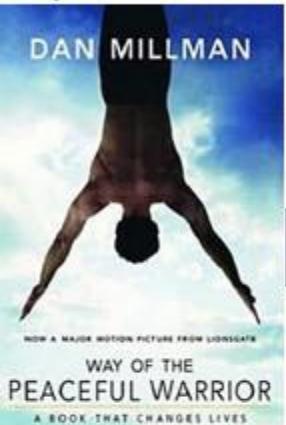
75





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"

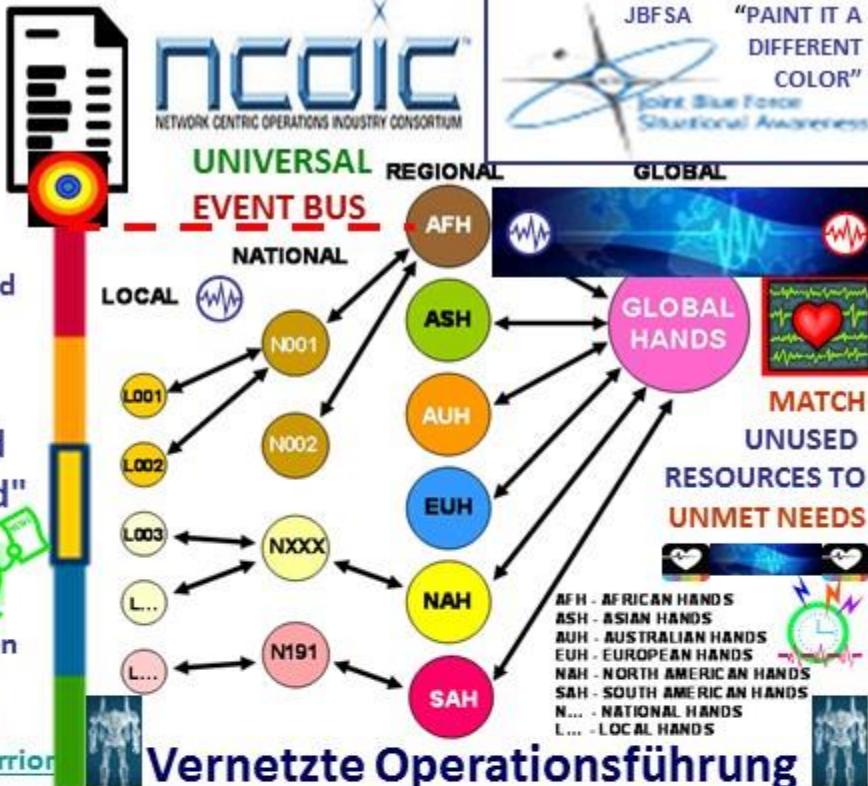


"The secret of change is to focus all of your energy, not on fighting the old, but on building the new." Dan Millman
Way of the Peaceful Warrior A Book That Changes Lives
http://en.wikipedia.org/wiki/Way_of_the_Peaceful_Warrior

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.



MACRO CYCLES

CLOCK FACE

90 / 90 / 90 / 90

= 360 degrees

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

X

Σ

Δδ

Time Series

Value

Time

ASIC CHIP TIME / EPOCH INTERVALS / CYCLES

cycle n

n + 1

n + 2

FLASH HEARTBEAT MESSAGES

HEARTBEAT STATE META-DATA

SNAPSHOTS EVERY

10, N MIN MICRO TO

MACRO ECON CYCLE

HASH TABLES

STATE SNAPS

SYNTAX

TIME SERIES

Value

Time

Geo Spatial Temporal Series Attribute Series

t₁ t₂ t₃

HB CYCLE

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

BASEBALL "DIAMOND"

A diamond Is a square Is a block

2nd Base

Runner = Messages Signals / Telemetry

90 feet

Euclidian Geometry

TRIANGULATION

BLOCK in 3D = CUBE

Cube has Length, Depth,

Height, Volume #1421

Blockchain Blocks / Coins Awarded

90 feet

Survey Point

home plate

MICRO-CYCLES



SC 573 US 134 2347
Physical = Opposite Of abstract

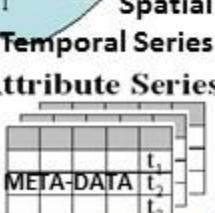
1st Base Coach first base UMPIRE 3 x 5 HASH TABLE NONCE



VALUES / CODE



Geo Spatial Temporal Series Attribute Series



META-DATA t₁ t₂ t₃

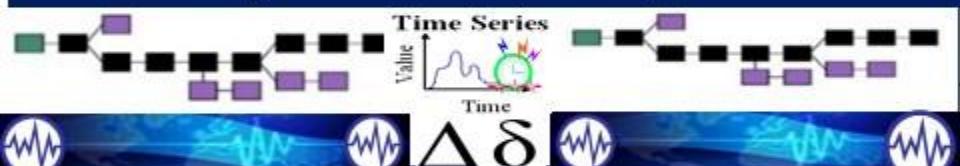
HB CYCLE

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.

OREILLY Time Series Databases



FIREFLY-HEARTBEAT ALGORITHM STOCHASTIC HARMONY ACROSS TIME ZONES



- MESSAGE ex:
 - Hashing string
 - Hash Table

300+Message Templates



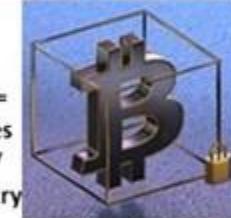
LOGIC FILTERS
LOGIC GATES

SYNTAX LIBRARY
LEXICON

CODER'S GUIDE

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

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

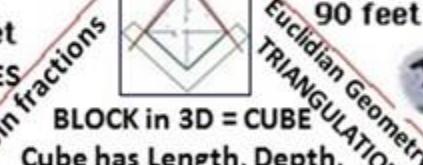


SC 573 US 134 2347
Physical = Opposite Of abstract

METRICS / METERS

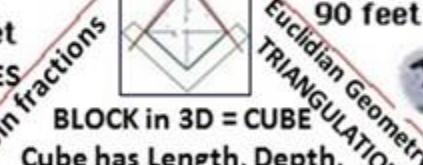
90 feet

ALGORITHM = RULES
PLAYERS = ROLES



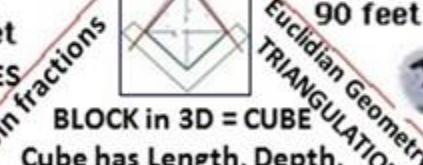
90 feet

UMPIRE = RULES



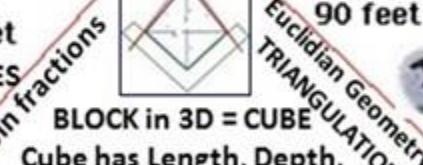
90 feet

3rd Base



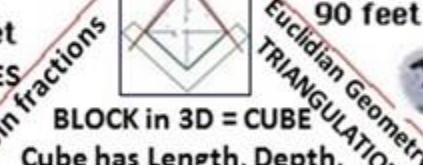
1st Base Coach

STATISTICIAN



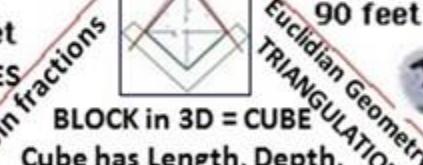
3 x 5 HASH TABLE

X



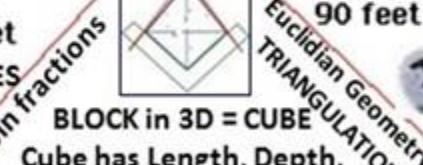
NONCE

Σ



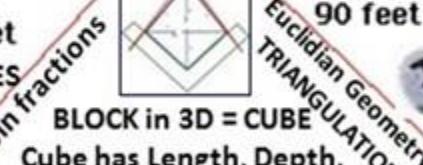
VALUES / CODE

90 feet



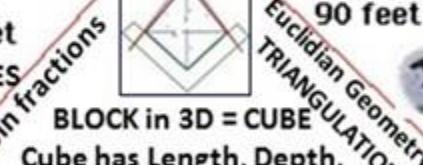
Survey Point

Σ



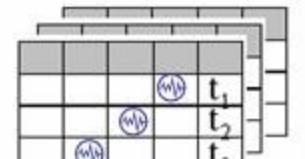
home plate

Δδ



MICRO-CYCLES

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...

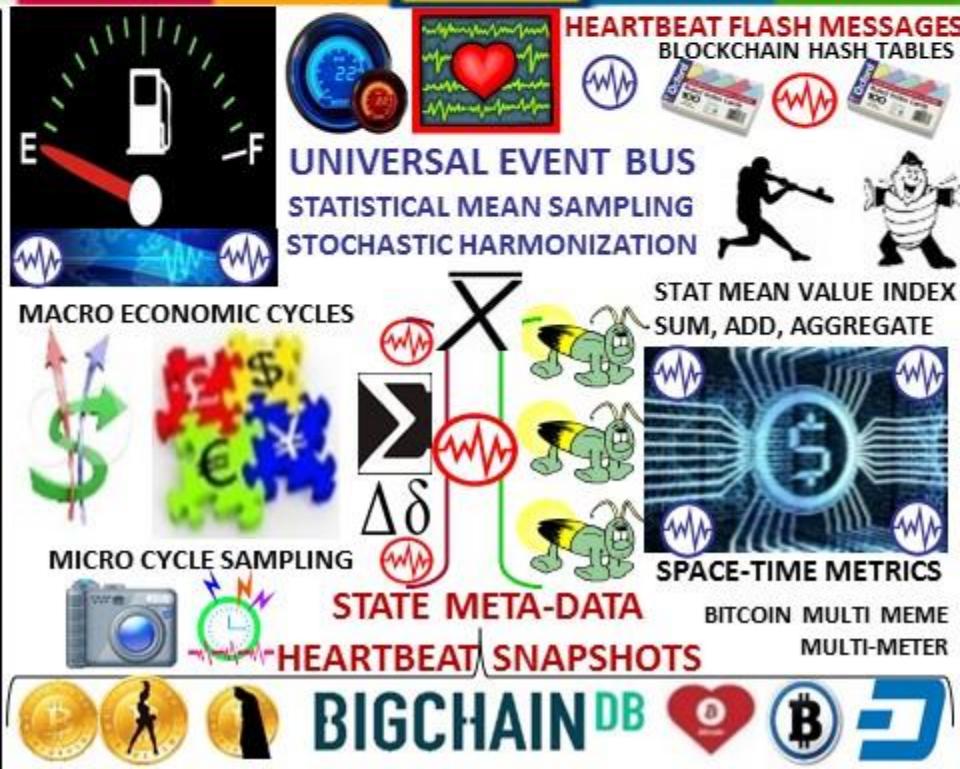
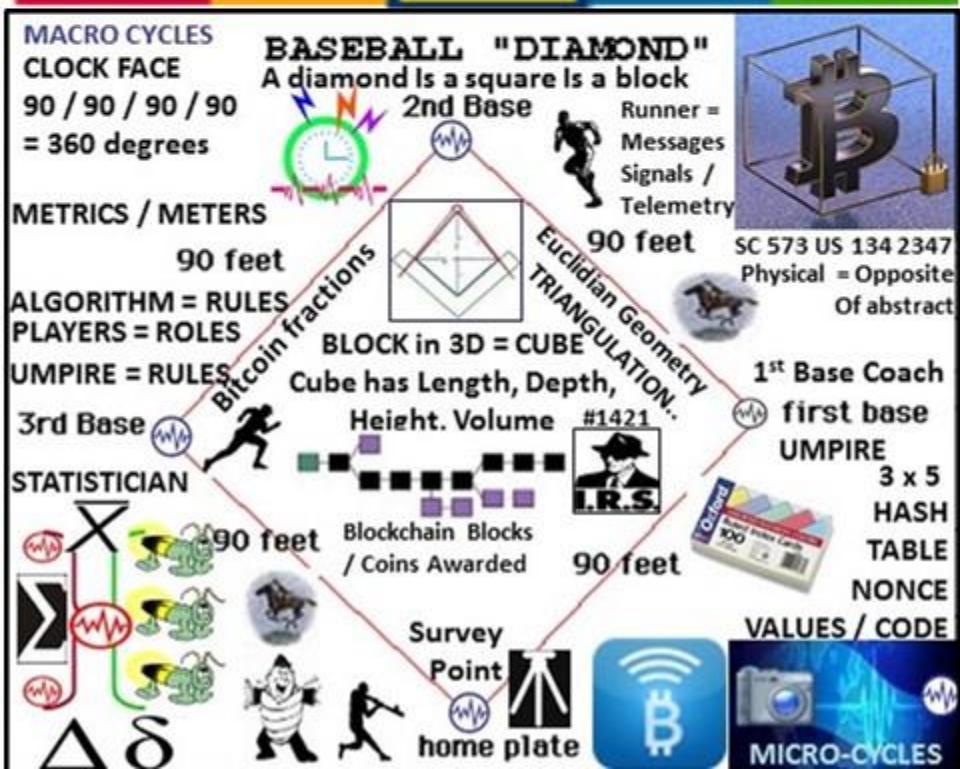
EVENTUALLY

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

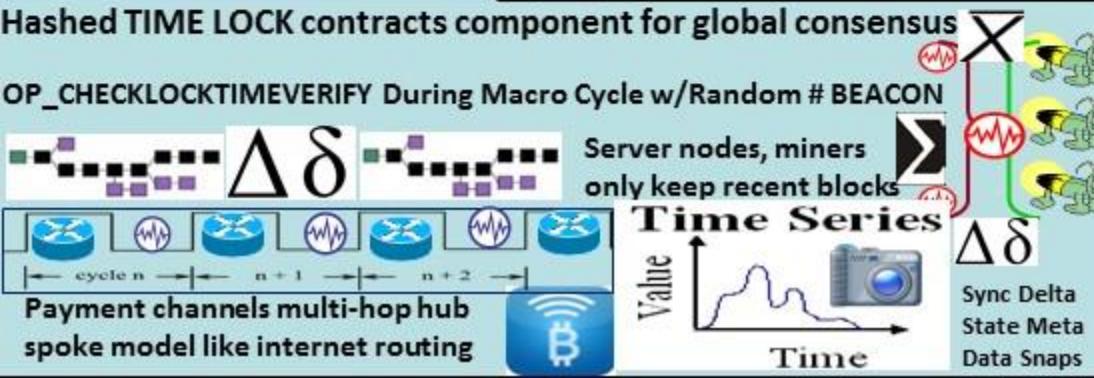
OP_CHECKLOCKTIMEVERIFY During Macro Cycle w/ Random # BEACON

Payment channels multi-hop hub spoke model like internet routing

transactions sent over off blockchain micropayment channels

OREILLY

Stochastic Harmonization



Segregated witness = Separated signatures

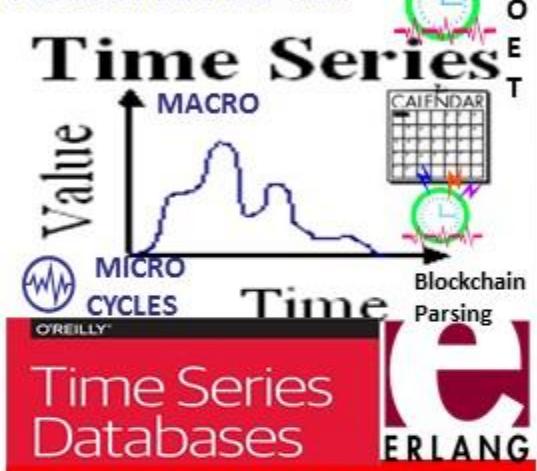
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signature are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a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



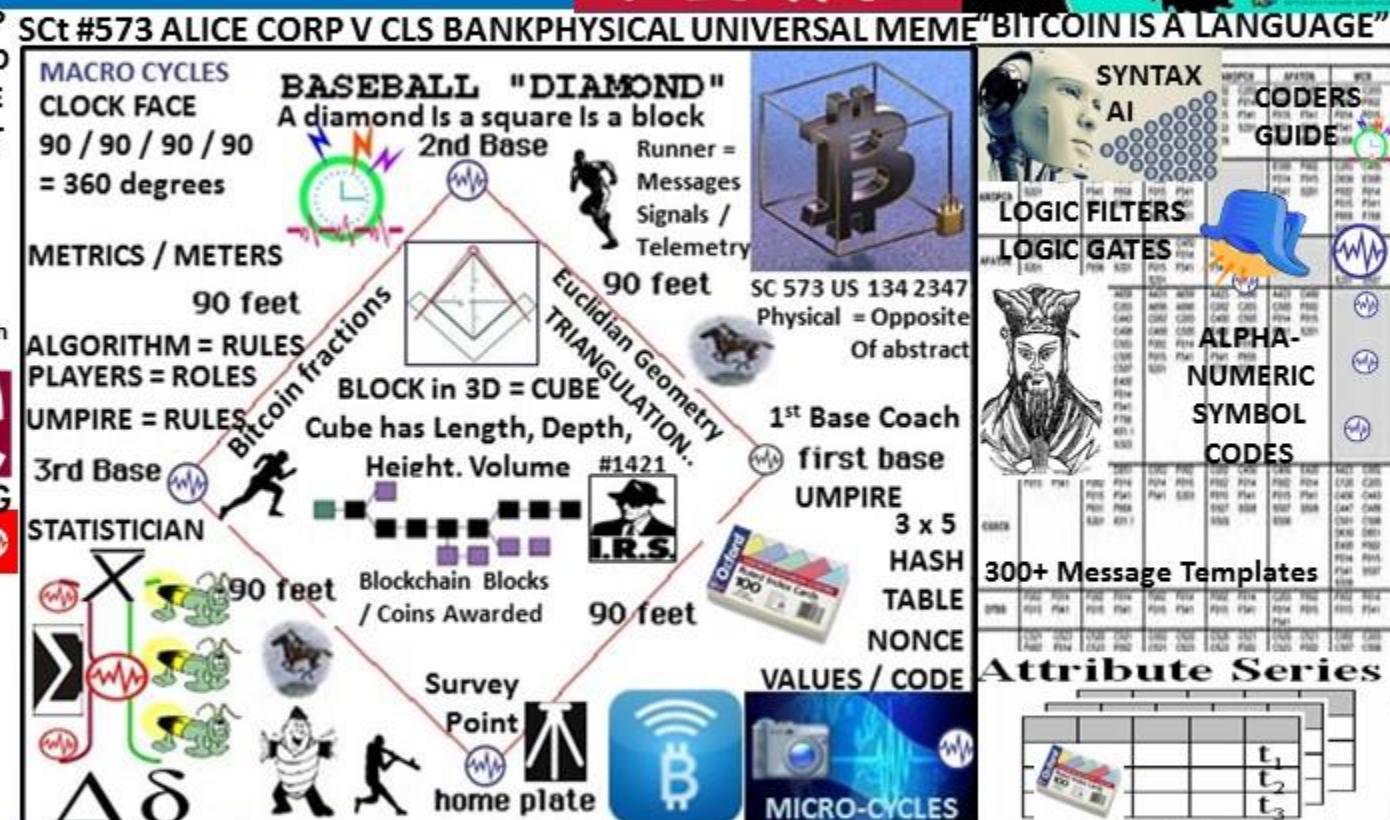
Voting Based Selection: stake size & block generators selected by votes

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



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

TOURNAMENT LEAGUE BOARD



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



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

Key Features:

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



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

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

All rates time-stamped in UTC.



Ability to look up by time-stamp.

Ability to look up by block-height.

Asset Classes: Digital Currencies

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

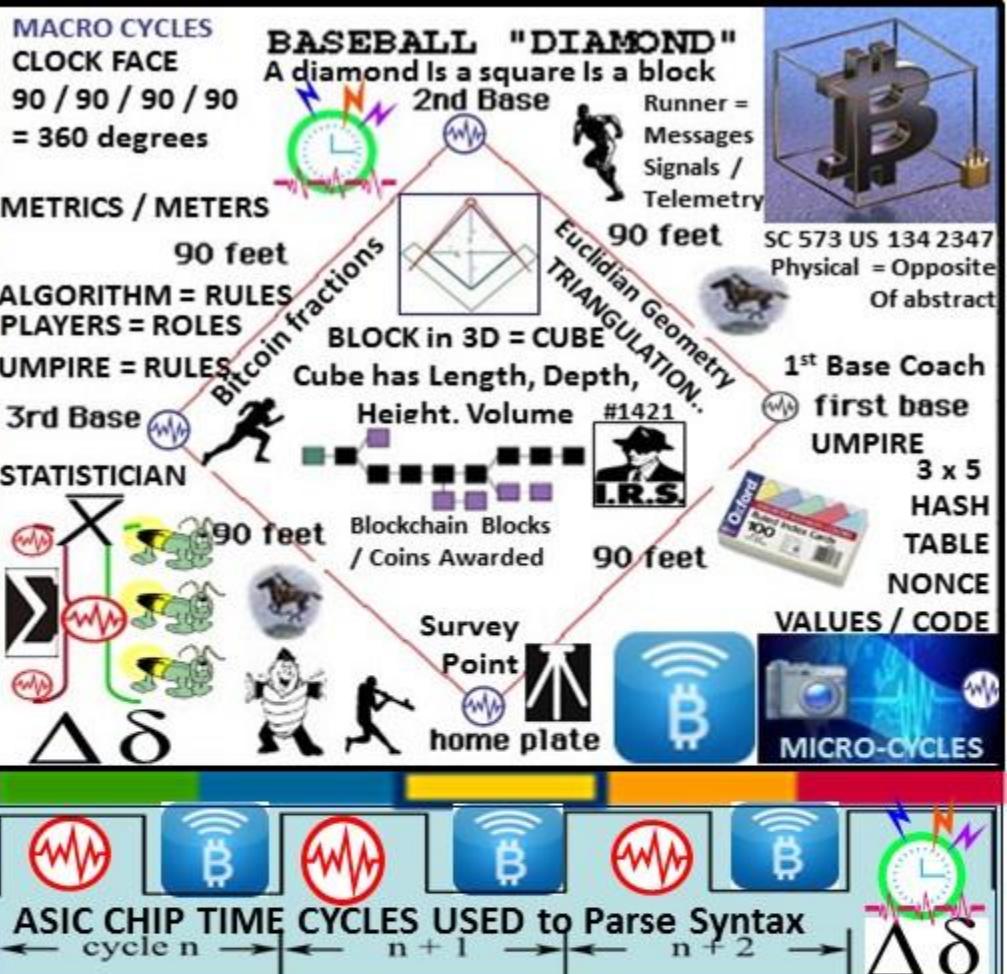
Transaction ID, Block ID, time-stamp, BWAP per block, Value in USD. BTC per transaction, bitcoin transaction fees per transaction

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

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

BRAVE NEW COIN.
Digital Currency Insights

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



API CODE INSTRUCTIONS

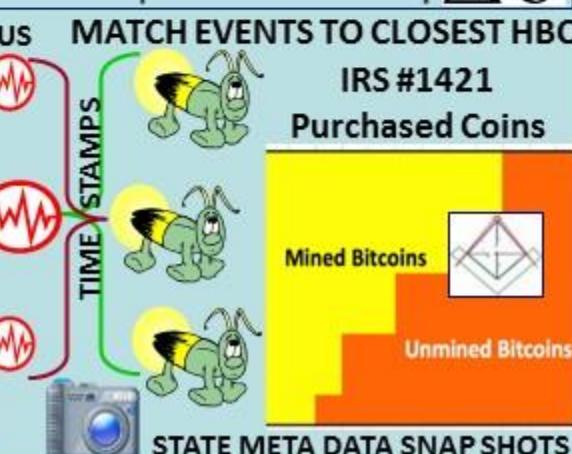


HASH



UTZ TIME ZONE TIME SYNC

EVENT BUS
 $\Delta\delta$



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/>

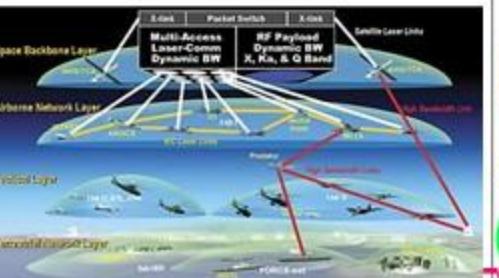
"all digital currency networks, the base layer of people generating the blockchain — "miners," "stakers," "witnesses," "validators," or "forgers" — all get paid to do so" "consensus," or an agreement upon what the rules should be; and second, the execution of said rules.

"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



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

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

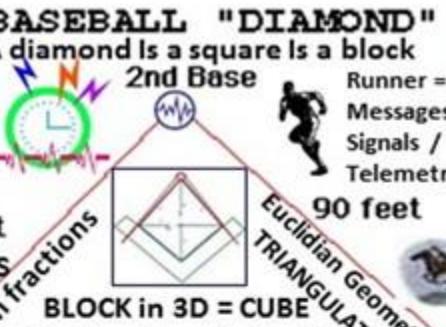
90 feet

Blockchain Blocks / Coins Awarded

Survey Point

home plate

$\Delta\delta$



STOCHASTIC HARMONIZATION FIREFLY-HEARTBEAT EVENT BUS

HEART BEACON CYCLE = IMPROVEMENT TO NETWORK CENTRIC WARFARE



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



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

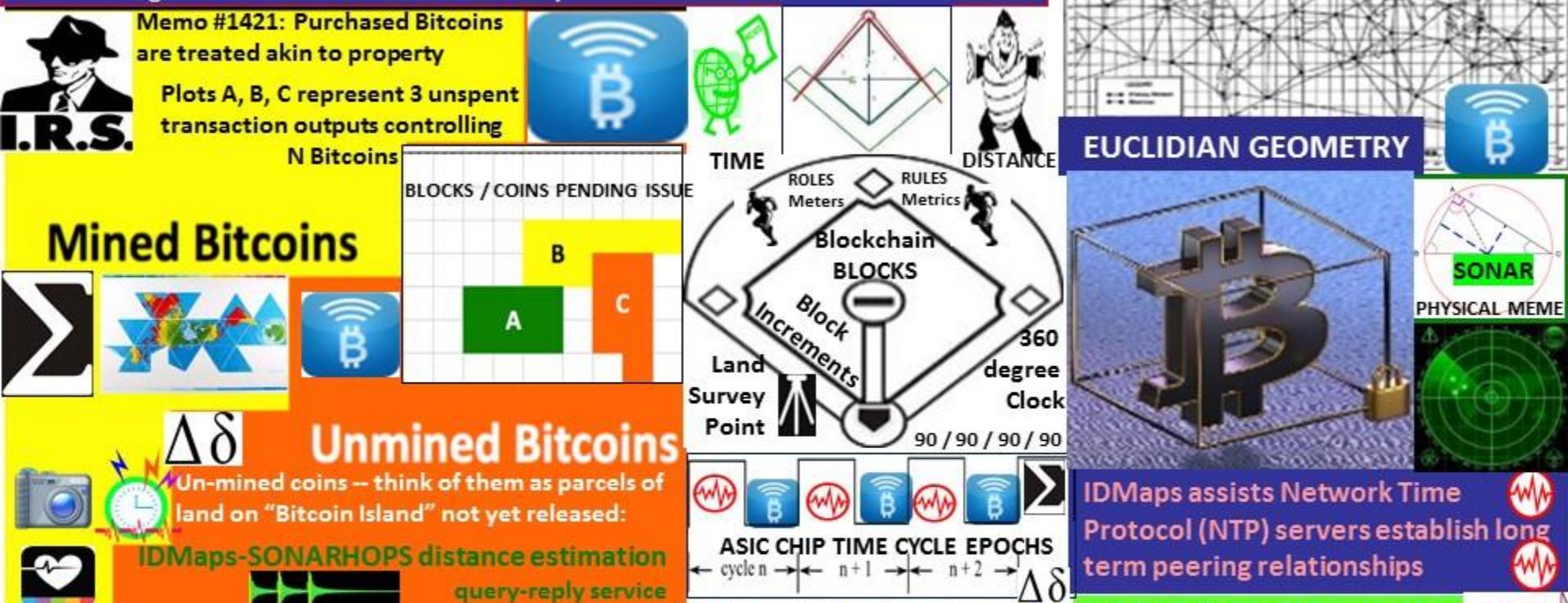
HEART BEACON CYCLE

USPTO 13/573,002

SURVEY METHODS

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

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



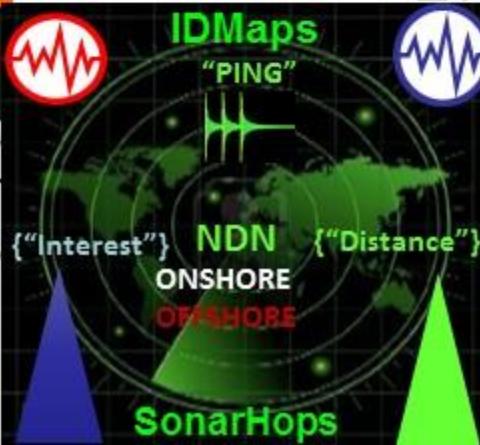
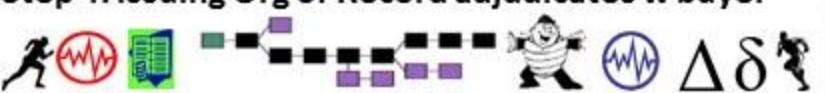
- End-state Bitcoin quantity will be fixed like land
"Bitcoin as protocol of ownership, not transfer"
Coins never travel, but simply switch owners"

Step 1: prove coin ownership <Org_ID> Coin Issuer

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

Step 3: specify ownership <Org_ID> issuing agent

Step 4: Issuing Org of Record adjudicates w buyer



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

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



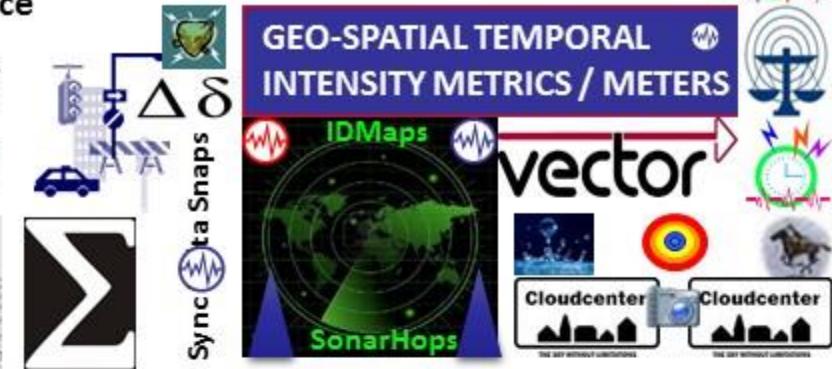
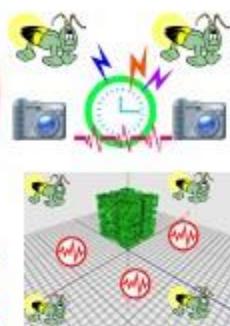
IDMaps Distance Metrics: latency (round-trip delay) available bandwidth estimation



IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



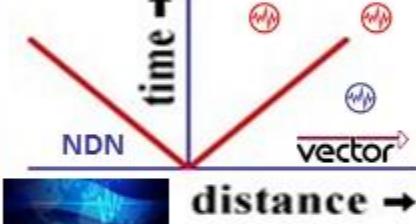
HOP COUNTS



REACHABILITY



/localhost/nfd/fib/add-nexthop



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

IDMaps provides distance information used by SONAR/HOPS query/reply service

Name Prefix
<Org_ID> Trie (NPT)



NDN NAMES

NDN NAMED DATA NETWORK RIB /
FIB Datasets event notification

Distance information adjusts to "permanent" topology changes e.g., splits, joins, adds, moves, drops, merges in lieu of formal merger / acquisition

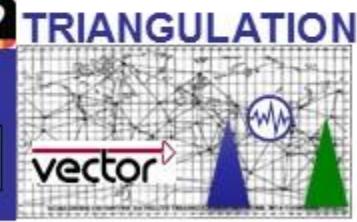


NDN RIB

NDN INTEREST LENGTH = DISTANCE BY HOPS

NDN INTEREST

IS DATA FRESH ?



Datasets and Event Notification

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

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



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



MICRO-CYCLES



NDN INTEREST LIFETIME = TTL Time To Live

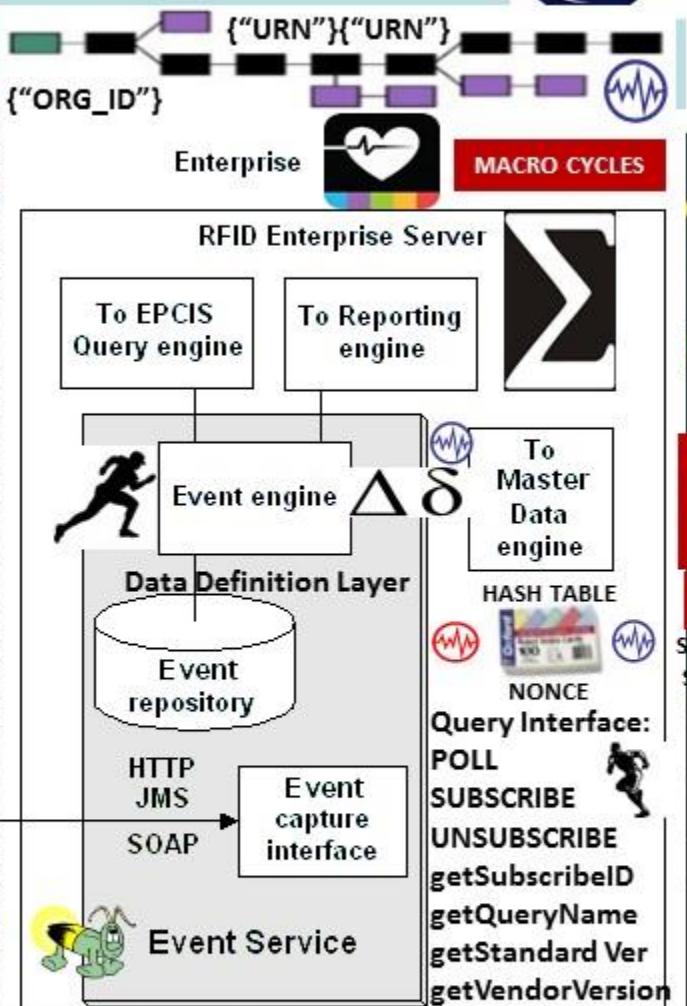
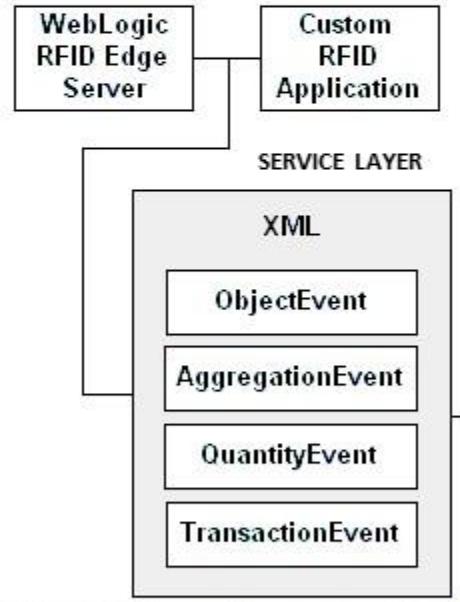
HEARTBEAT STATE META DATASNAP SHOTS

Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data

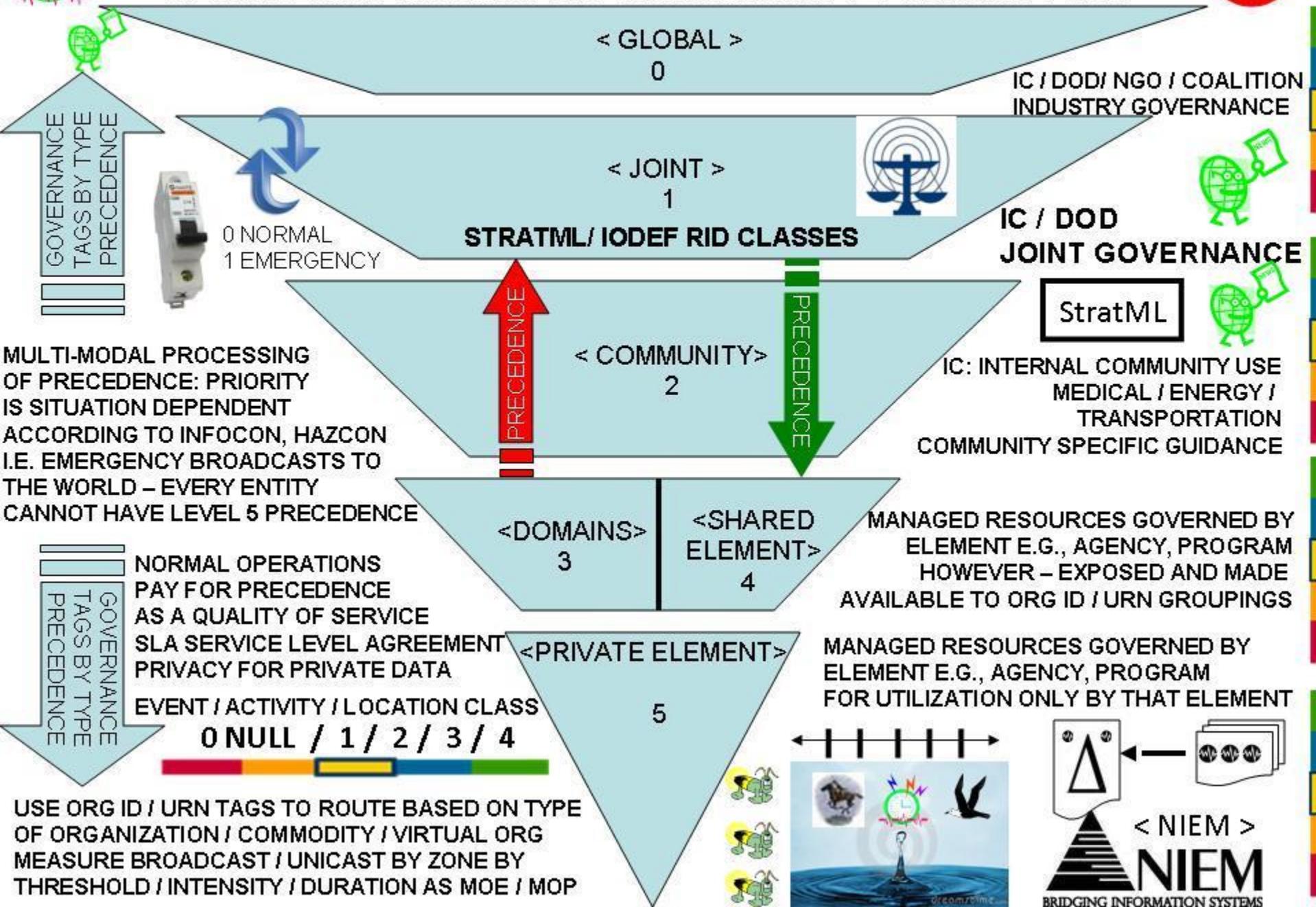


Epcis EPCIS DATA MODEL





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



Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

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



Industrial Control System
Information Sharing and
Analysis Center

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

<ELEMENTS>

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

STRATEGIC
MARKUP

StratML

LANGUAGE

IODEF

Analysis Center

INVENTORY: Uniform Resource Name <URN>

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



vector

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

GEO-SPATIAL TEMPORAL INTENSITY METRICS

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

GEO-SPATIAL TEMPORAL
INTENSITY METRICS / METERS



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

CONTENT LEXICON
ROSETTA STONE

NDN

<INTEREST>



STIX

NDN

<INTEREST>

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

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

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



NAMED DATA
NETWORKING
<Content> Centric



FROM	GCCS-A	ALPHA-NUMERIC BREVITY CODES																																																																																									
 FEDERATE 		<p>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 M2M</p>																																																																																									
		<table border="1"> <tr> <td>C400</td> <td>C443</td> <td>C002</td> <td>C203</td> <td>C400</td> <td>C505</td> <td>F014</td> </tr> <tr> <td>C447</td> <td>C488</td> <td>C400</td> <td>C505</td> <td>E400</td> <td>F002</td> <td>F541</td> </tr> <tr> <td>C501</td> <td>C503</td> <td>F002</td> <td>F014</td> <td>F014</td> <td>F015</td> <td>S201</td> </tr> <tr> <td>C504</td> <td>C505</td> <td>F015</td> <td>F541</td> <td>F541</td> <td>F658</td> <td></td> </tr> <tr> <td>C506</td> <td>C507</td> <td>S201</td> <td></td> <td>F756</td> <td>S201</td> <td></td> </tr> <tr> <td>C508</td> <td>E400</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>F002</td> <td>F014</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>F015</td> <td>F541</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>F658</td> <td>F756</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>G489</td> <td>K01.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>S201</td> <td>S303</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>S507</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		C400	C443	C002	C203	C400	C505	F014	C447	C488	C400	C505	E400	F002	F541	C501	C503	F002	F014	F014	F015	S201	C504	C505	F015	F541	F541	F658		C506	C507	S201		F756	S201		C508	E400						F002	F014						F015	F541						F658	F756						G489	K01.1						S201	S303						S507							 F002 F015 S201		 AI M2M	
C400	C443	C002	C203	C400	C505	F014																																																																																					
C447	C488	C400	C505	E400	F002	F541																																																																																					
C501	C503	F002	F014	F014	F015	S201																																																																																					
C504	C505	F015	F541	F541	F658																																																																																						
C506	C507	S201		F756	S201																																																																																						
C508	E400																																																																																										
F002	F014																																																																																										
F015	F541																																																																																										
F658	F756																																																																																										
G489	K01.1																																																																																										
S201	S303																																																																																										
S507																																																																																											
		<table border="1"> <tr> <td>C400</td> <td>E400</td> </tr> <tr> <td>F002</td> <td>F014</td> </tr> <tr> <td>F015</td> <td>F541</td> </tr> <tr> <td>S201</td> <td>S507</td> </tr> </table>		C400	E400	F002	F014	F015	F541	S201	S507			C400 E400 F002 F014 F015 F541 S201 S507																																																																													
C400	E400																																																																																										
F002	F014																																																																																										
F015	F541																																																																																										
S201	S507																																																																																										
				 INFOCON 5 4 3 2 1 INFORMATION CONDITION		STRUCTURED DATA EXCHANGE Message Sets THE LIBERTY BEACON™																																																																																					
		NUMBERS = UNIVERSAL LANGUAGE				 HEARTBEAT MESSAGE = K00.99																																																																																					
<p>Data Elements: entity, attribute, relationship equivalents</p>																																																																																											
<p>MESSAGE CATALOG 300 + Use Cases</p>																																																																																											
<table border="1"> <thead> <tr> <th colspan="8">Information Categories and Examples</th> </tr> <tr> <th>Object Categories</th> <th>Examples</th> <th>Location</th> <th>Movement</th> <th>Identify</th> <th>Status</th> <th>Activity</th> <th>Intent</th> </tr> </thead> <tbody> <tr> <td>OOB</td> <td>SYNTAX LEXICON</td> <td>lat/long</td> <td>spd/hdg</td> <td>country / alliance, type/class</td> <td>readiness</td> <td>targeting, reconning</td> <td>{"Java JS"}</td> </tr> <tr> <td>Infrastructure</td> <td>Comm, power, transportation, water/sewer</td> <td>network, grid</td> <td>throughput, flow rates,</td> <td>name, part-of relationships</td> <td>BDA, op levels</td> <td>repair, broadcasts</td> <td>YAML expansion plans</td> </tr> <tr> <td>Sociological</td> <td>Culture, religion, economic, ethnic, government, history, languages</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Geophysical</td> <td>Terrain, weather, climatology, oceanography, astrometry</td> <td>feature</td> <td>lat/long, alt/dpth</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>								Information Categories and Examples								Object Categories	Examples	Location	Movement	Identify	Status	Activity	Intent	OOB	SYNTAX LEXICON	lat/long	spd/hdg	country / alliance, type/class	readiness	targeting, reconning	{"Java JS"}	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							Geophysical	Terrain, weather, climatology, oceanography, astrometry	feature	lat/long, alt/dpth																																								
Information Categories and Examples																																																																																											
Object Categories	Examples	Location	Movement	Identify	Status	Activity	Intent																																																																																				
OOB	SYNTAX LEXICON	lat/long	spd/hdg	country / alliance, type/class	readiness	targeting, reconning	{"Java JS"}																																																																																				
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																																																																																										
Geophysical	Terrain, weather, climatology, oceanography, astrometry	feature	lat/long, alt/dpth																																																																																								
<table border="1"> <thead> <tr> <th>ER Model</th> <th>Class Diagram</th> <th>Relational Database</th> <th>Object DBMS</th> <th>XML DTD / Schema</th> <th>TADILs</th> <th>MTF</th> </tr> <tr> <th>Entity</th> <th>Class</th> <th>Table</th> <th>Class</th> <th>Element</th> <th>Message</th> <th>Message</th> </tr> </thead> <tbody> <tr> <td>Attribute</td> <td>Attribute</td> <td>Field / Column</td> <td>Attribute</td> <td>Child Element or Element Attribute</td> <td>DFT</td> <td>FFIRN / FFN / FFUDN</td> </tr> <tr> <td>Domain Value</td> <td></td> <td>Instance, Value</td> <td></td> <td></td> <td>DUI</td> <td>FUD</td> </tr> </tbody> </table>								ER Model	Class Diagram	Relational Database	Object DBMS	XML DTD / Schema	TADILs	MTF	Entity	Class	Table	Class	Element	Message	Message	Attribute	Attribute	Field / Column	Attribute	Child Element or Element Attribute	DFT	FFIRN / FFN / FFUDN	Domain Value		Instance, Value			DUI	FUD																																																								
ER Model	Class Diagram	Relational Database	Object DBMS	XML DTD / Schema	TADILs	MTF																																																																																					
Entity	Class	Table	Class	Element	Message	Message																																																																																					
Attribute	Attribute	Field / Column	Attribute	Child Element or Element Attribute	DFT	FFIRN / FFN / FFUDN																																																																																					
Domain Value		Instance, Value			DUI	FUD																																																																																					
<p>Information Elements Roles</p> <ul style="list-style-type: none"> COI Determination Org Interaction Search and Discovery Ontologies STANDARDS Taxonomies REFERENCE Metadata Attributes / Filters ("Org_ID") {"URN"} 																																																																																											
 FILTERS																																																																																											
<p>FFUDN: Field Format Unit Designator #</p>																																																																																											
<p>FFIRN Field Format Index Reference #</p>																																																																																											
<p>Structured military messaging ID's messages, message sets, data element fields BY NUMBER</p>																																																																																											
 Recognition of Equivalent / Similar Semantics																																																																																											
 NDN																																																																																											
 Firefly-Heartbeat Flash Messages																																																																																											
<p>PROCESS MESSAGE BY PRECEDENCE NDN </INTEREST> </DISTANCE> PACKETS</p>																																																																																											
<p>OPERATIONAL NODES / ACTIVITIES</p>																																																																																											
<table border="1"> <thead> <tr> <th>DATA</th> <th>SYSTEM FUNCTIONS</th> <th>PERFORMANCE</th> </tr> </thead> <tbody> <tr> <td rowspan="5"> </td> <td>"SYMBOLS"</td> <td>11.8 - Kinematics</td> </tr> <tr> <td>"RULE THE WORLD"</td> <td>11.8.1 - Pos / Vel / Acc (PVA)</td> </tr> <tr> <td>"WORLD"</td> <td>11.8.1.1 - Acceleration</td> </tr> <tr> <td>1 - Alternative</td> <td>11.8.1.1.1 - Angular</td> </tr> <tr> <td>2 - Evaluated D</td> <td>1.1.2 - Linear</td> </tr> <tr> <td>value</td> <td>2 - Estimate Type</td> </tr> <tr> <td rowspan="4"> </td> <td>PURCHASE</td> <td>1.2.1 - Estimated</td> </tr> <tr> <td>CODES</td> <td>1.2.2 - Observed</td> </tr> <tr> <td>1 - Alternative</td> <td>1.2.3 - Predicted</td> </tr> <tr> <td>2 - Evaluated D</td> <td>1.2.4 - Smoothed Data</td> </tr> </tbody> </table>								DATA	SYSTEM FUNCTIONS	PERFORMANCE		"SYMBOLS"	11.8 - Kinematics	"RULE THE WORLD"	11.8.1 - Pos / Vel / Acc (PVA)	"WORLD"	11.8.1.1 - Acceleration	1 - Alternative	11.8.1.1.1 - Angular	2 - Evaluated D	1.1.2 - Linear	value	2 - Estimate Type		PURCHASE	1.2.1 - Estimated	CODES	1.2.2 - Observed	1 - Alternative	1.2.3 - Predicted	2 - Evaluated D	1.2.4 - Smoothed Data																																																											
DATA	SYSTEM FUNCTIONS	PERFORMANCE																																																																																									
	"SYMBOLS"	11.8 - Kinematics																																																																																									
	"RULE THE WORLD"	11.8.1 - Pos / Vel / Acc (PVA)																																																																																									
	"WORLD"	11.8.1.1 - Acceleration																																																																																									
	1 - Alternative	11.8.1.1.1 - Angular																																																																																									
	2 - Evaluated D	1.1.2 - Linear																																																																																									
value	2 - Estimate Type																																																																																										
	PURCHASE	1.2.1 - Estimated																																																																																									
	CODES	1.2.2 - Observed																																																																																									
	1 - Alternative	1.2.3 - Predicted																																																																																									
	2 - Evaluated D	1.2.4 - Smoothed Data																																																																																									
<p>SYMBOL Friend Neutral Hostile</p>																																																																																											
<p>2525C Partner Competitor</p>																																																																																											
<p>11.4.1.3.5 - Surface 11.4.2 - Platform / Point / Feature Type 11.4.3 - Specific Type 11.4.4 - Type Modifier 11.4.5 - Unit</p>																																																																																											

Heart Beacon Cycle

TRADE FEDERATION Bitcoin Blockchain



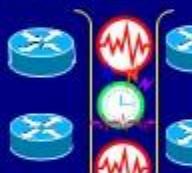
1. **FEDERATION:** Latin: *foedus, foederis, covenant, union* of partially self-governing states or regions under a central (federal) government
2. A league or confederacy. Individuals / groups retain **AUTONOMY**
3. A federated body formed by a number of nations, states, unions each retaining control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

Net joins, drops, splits, merges, moves



Office 365 Groups

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



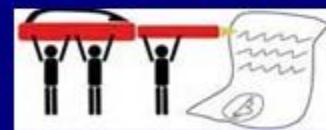
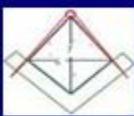
{"GROUP ID"}



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



Bitcoin Mining Pools
MEME / METAPHOR MEDIATION



Federation
Gateway

{"GLOBAL"}
{"SHARED"}
{"DOMAIN"}
{"COMMUNITY"}
{"PRIVATE"}

TERM DISTRIBUTED AUTONOMOUS ORGANIZATION DAO first used by RAND Corp

Circa 1991 now in use by Blockchain tech corporations..



PURCHASE CODE



FEDERATED ID
Org Unit OU, OU, OU



Signaling, Telemetry



FIREFLY FLASH
HEARTBEAT MESSAGES



Uniform_Resource_Name

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



FEDERATED ID
Org Unit OU, OU, OU



iET DEVICE / PLATFORM
IoT SENSOR DEVICE



STOCK EXCHANGE

MIC MARKET IDENTIFIER
CODES / BREVITY CODES

{"DUNS #"}
{"Org_ID"}



Heartbeat Snaps
MICRO-CYCLES



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

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

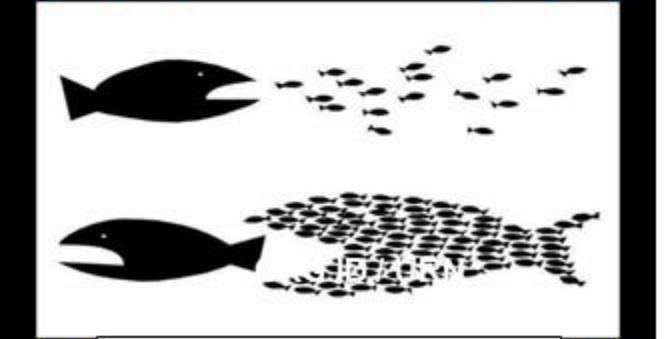
USMTF / XML MTF FORMATTED MESSAGE CATALOG

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

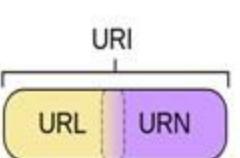
</Organizational_Identifier_Org_ID>

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



KEYSTONE
FEDERATION

- ROLES:
- <OPS>
- <INTEL>



Identity Provider
- Mapping
- Protocol

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

PARTIDO X:
Distributed
Democratic
Participation

ETHEREUM:
Decentralized
Autonomous
Organizations



VOTE ON BLOCKCHAIN

PARTIDOS DEL FUTURO
FEDERATED ID





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

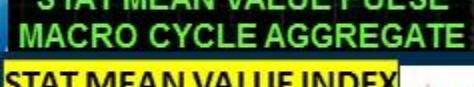
NETOPS NEO ECONOMIC HEARTBEAT



NETOPS NEO ECONOMIC HEARTBEAT



STAT MEAN VALUE PULSE
MACRO CYCLE AGGREGATE



STAT MEAN VALUE INDEX



Price Indexes in
Time and Space
Methods and Practice



SchellingPoint

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
REFERENCE CURRENCY
"Money of Peace"
Commodity / Currency Index

TERRA
TRC



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



$\Delta\delta$

Federation

Gateway

ORIG ID

FIREFLY – HEARTBEAT ALGO

SYNC EVENTS

UTZ SYNC

TO CLOSEST HB CYCLE



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



Privacy

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

Bitcoin: OpenBazaar transactional currency



</DATA>
("FILTERS")



NIST Beacon
A Public Randomness Service



Cryptographic Security

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



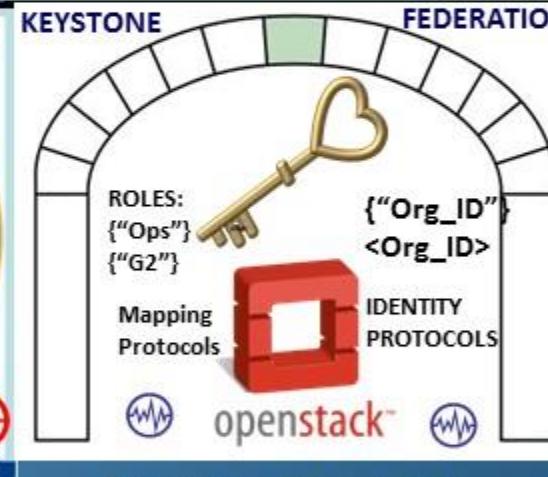
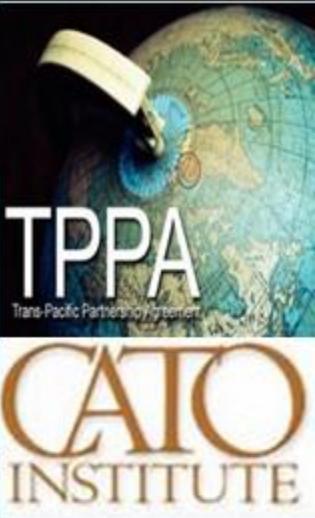
Non-
Repudiation





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

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



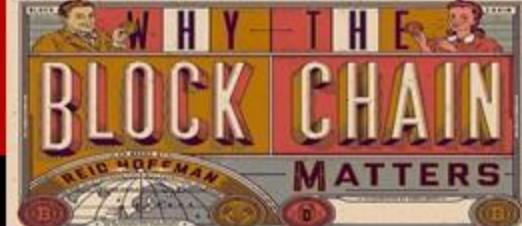
HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX



TradeNet

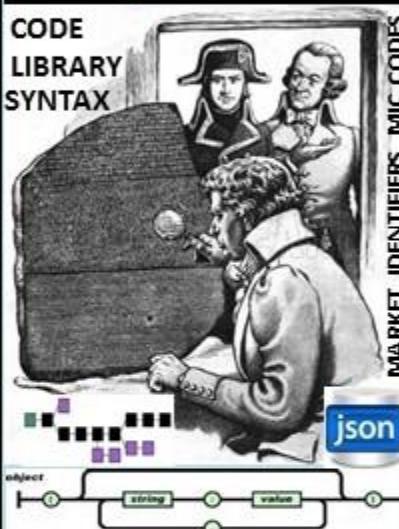


Programmable Money \$\$\$

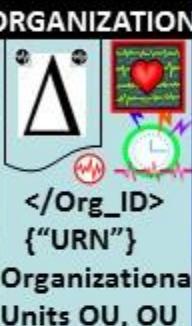


RIED HOFFMAN 15 May 2015 [LINK](#)

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



300 + MESSAGE TEMPLATES
SYNTAX LIBRARY
PROGRAMMING
STRUCTURED <CONTENT> EXCHANGE
BREVITY CODES
MARKET ID CODES
USE CASE TEMPLATES
SIGNALLING, TELEMETRY

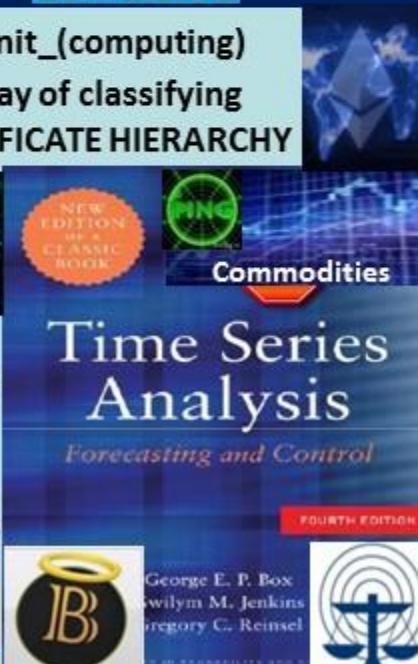


Bitcoin and the blockchain function as a medium of exchange, a store of value, a unit of account. Bitcoin adds digital, cryptographic, distributed server functions to currencies. Because it functions simultaneously as a currency, an asset and a platform, Bitcoin is better described as a global cryptoCAP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

WIRE

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

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





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

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

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



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

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

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

NEWS EVENT BUS FIREFLY HEARTBEAT ALGO EVENT BUS

DAO Distributed Autonomous Organization SOFTWARE POOLS

All Market Orders Search

Collateral Notional Expiry

Heartbeat Flash Messages Precedence Processing

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

UTZ TIME SYNC

INVESTOR POOL WORLD COMPUTER DFINITY

FINANCIAL
NOSTRADAMUS
REGGIE MIDDLETON



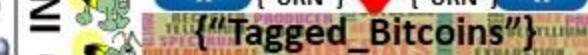
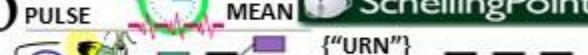
ECONOMIC HEARTBEAT
STATISTICAL MEAN VALUE INDEX PULSE



ALGORITHMIC REGULATION



SHELLING POINT TRUTH

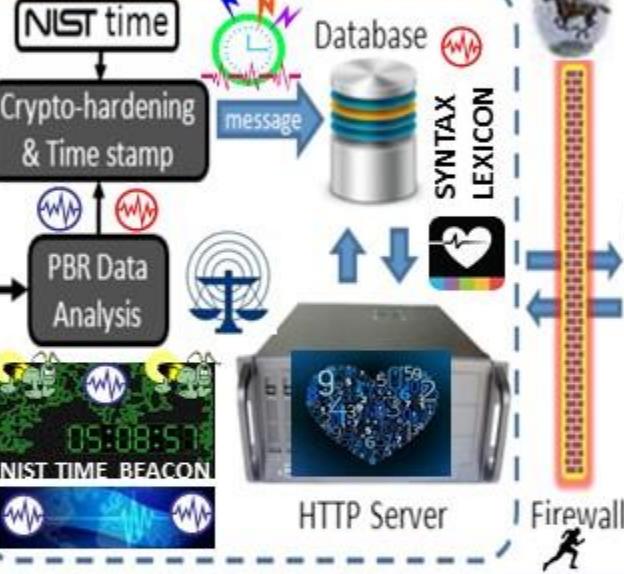
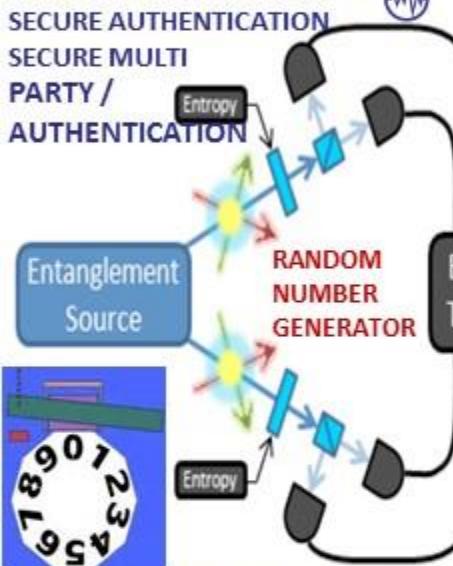


NIST RANDOMNESS BEACON: broadcast full-entropy bit-strings in blocks of 512 bits every 60 seconds. Each value is time-stamped, signed, & includes hash of previous value to chain sequence of values together. This prevents all, even the source, from retroactively changing an output packet without being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



NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

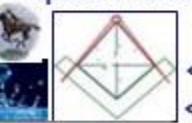
UNPREDICTABLE SAMPLING



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors

NAMED DATA NETWORKING



NDN
</Interest>
</Distance>

SURVEY METHODS + TRIANGULATION
Euclidian Geometry

Geodesic System Routing Info Base RIB

ACCOUNT BELONGS TO </Org_ID>

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

DEVICE / SENSORS <UUID><UUID>

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

NDN
</interest></distance>

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

Stochastic Harmonization



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



A decentralized exchange called BitSquare has launched a campaign on the decentralized crowd funding app [Lighthouse](#). Its campaign is simultaneously an example of how powerful decentralized crowd funding is, and how difficult running a successful campaign is... segue to the MESH ECONOMY

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





- SDN is a *framework* to allow network administrators to *automatically* and dynamically manage and control a *large number* of network devices, *services*, topology, traffic paths, and packet handling (quality of

DevOps model and tools to enable scale, programmable agility, and policy-driven automation, and provides network virtualization to mask network configuration complexity with set of networking APIs



Autonomous Device Coordination Framework



Registration

Authentication

Proximity based rules

Consensus based rules

FEDERATION AGREEMENTS

PROCEDURAL TEMPLATE

Contracts

Checklists

FEDERATION

<UUID><ORG_ID><URN>

LDAP DIRECTORY

Physical proximity

Social proximity

Temporal proximity

Agreements

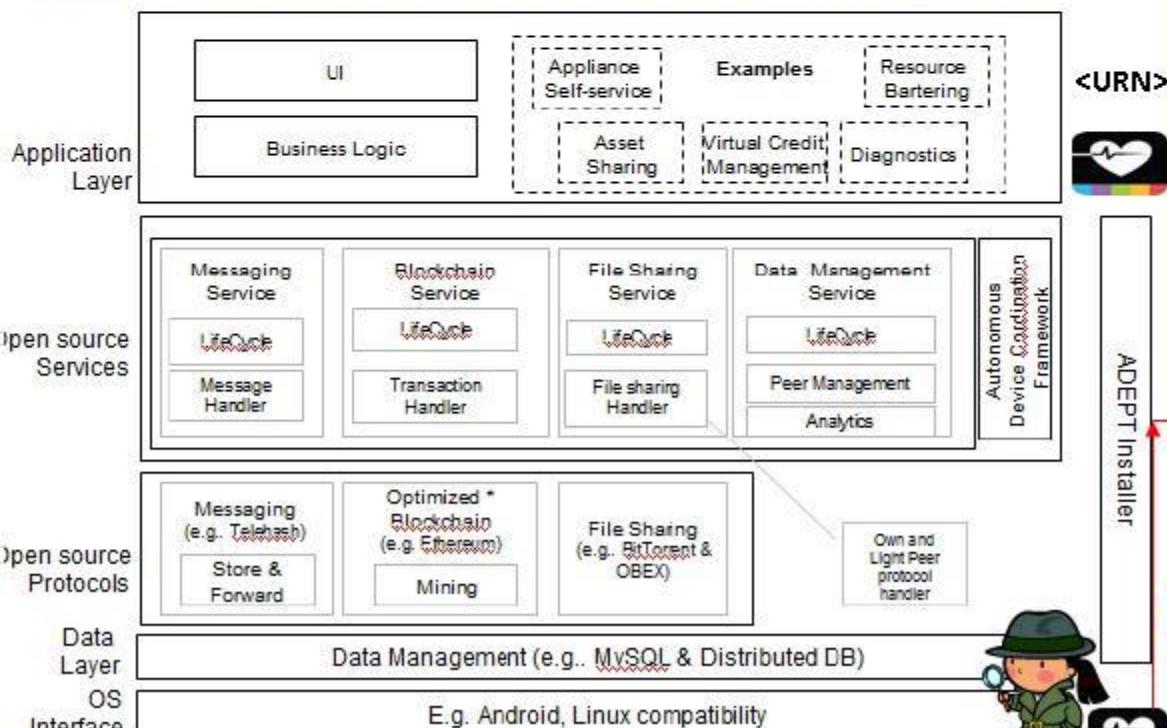
Payments

Barter



PAYMENTS BASED ON GEO-SPATIAL TEMPORAL METRICS / METERS
<URN> DESCRIBES COMMODITIES ETC BY UNIFORM RESOURCE NAME BY </INTEREST>

ADEPT Standard Peer Architecture – Logical View



<URN>



ADEPT Installer



ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML_Wf>

FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH

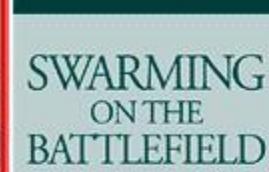
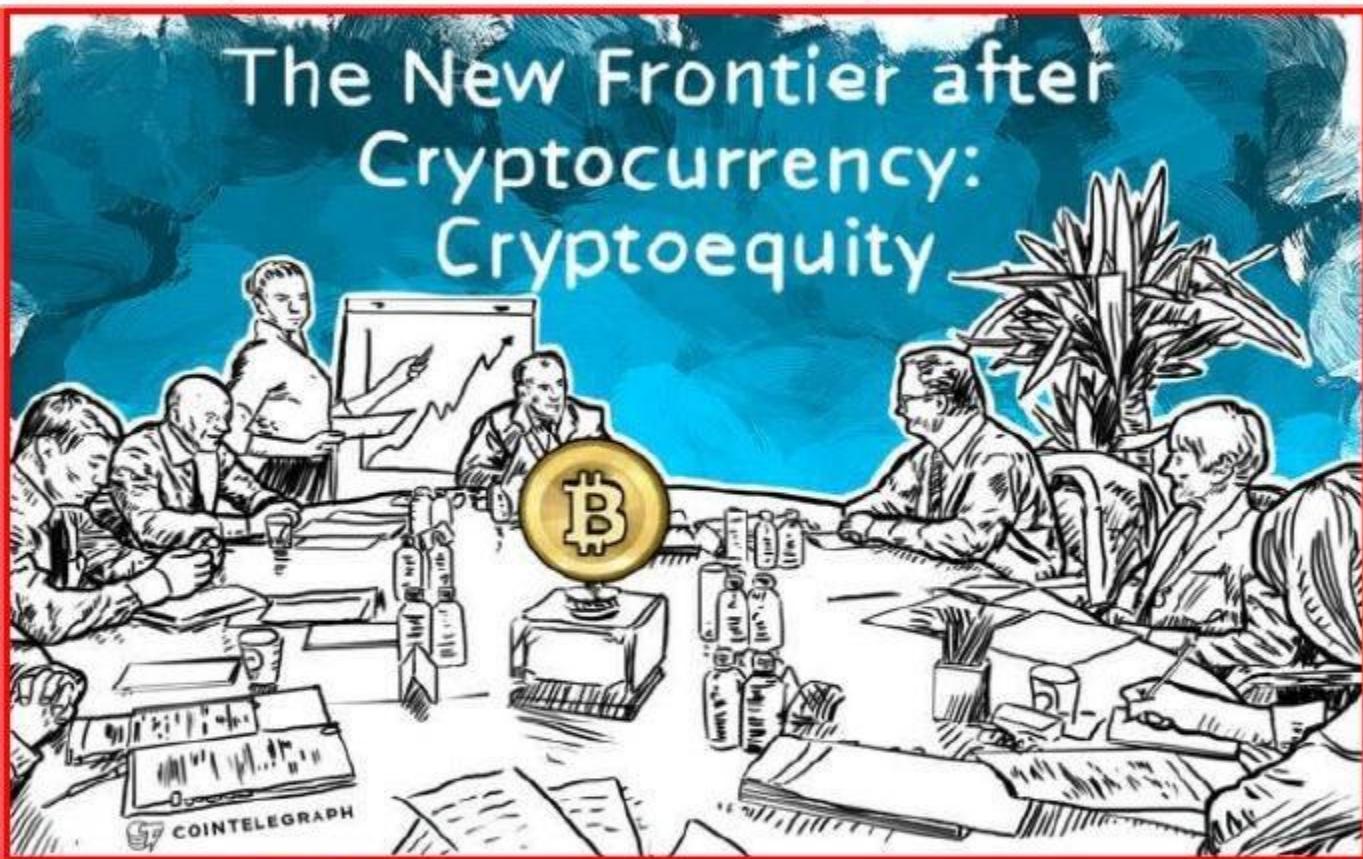


OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

DATA LAYER: STATE META DATA TIME STAMPED BY <UUID><ORG_ID><URN> & DATA PREPPED & "DATA WRANGLER PRIOR TO FUSION CENTER ENHANCED ANALYTICS / PROTECTS BANDWIDTH

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

DAO: Distributed Autonomous Organization. RAND Corporation first used in a military context in 2000 http://rand.org/pubs/documents_briefings/DB311.html
[Swarming and the Future of Conflict | RAND www.rand.org](#)



RAND
Monograph
Report

THE
ADVENT
Of NETWAR

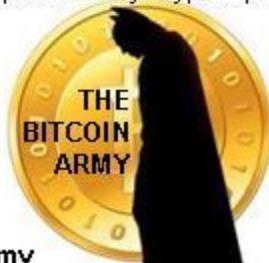


Eris -- The Dawn of Distributed Autonomous Organizations and The Future of Governance



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

<https://twitter.com/TheBitcoinArmy>



ERIS: GODDESS OF DISCORD
DISRUPTIVE TECHNOLOGIES:

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



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

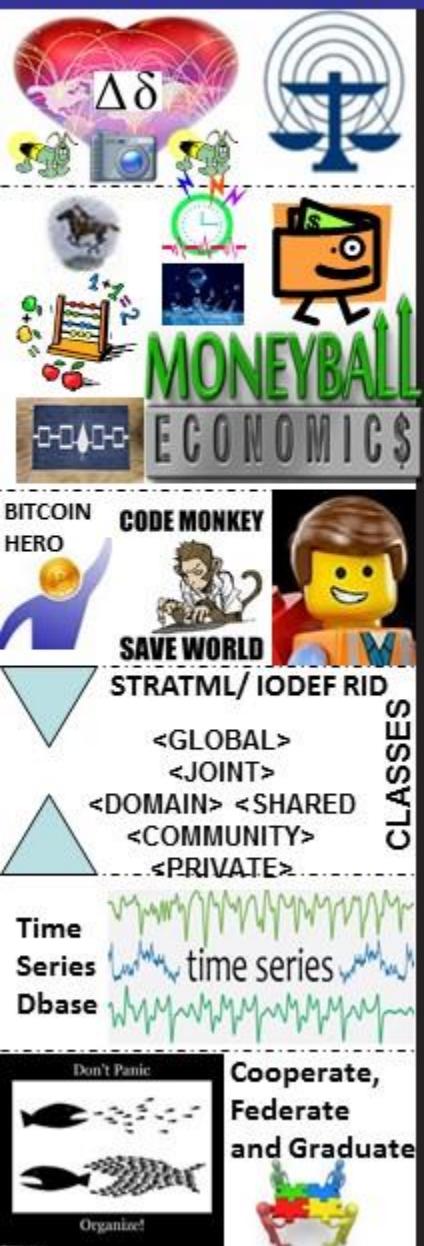
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

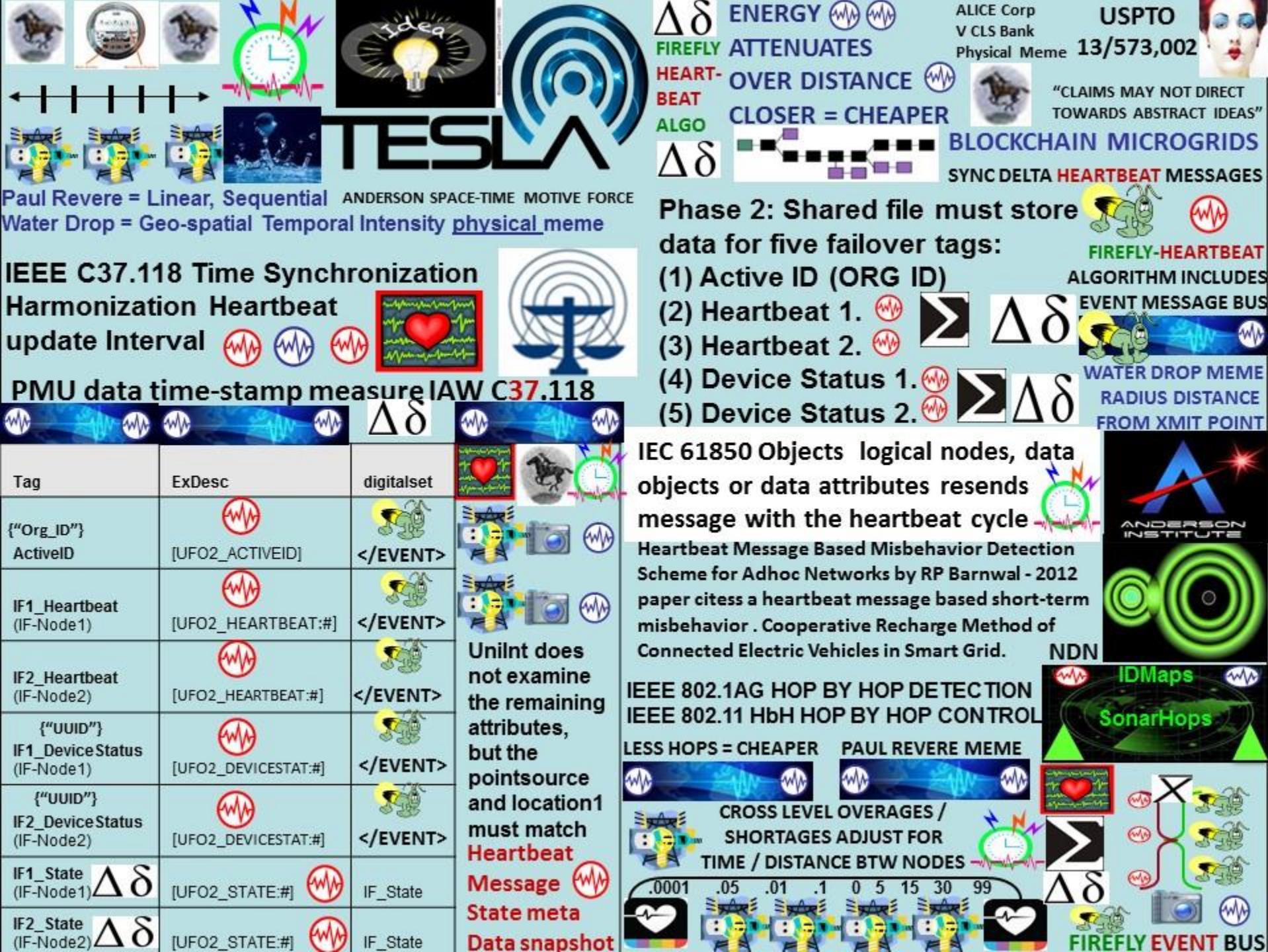
$$MV=PQ \text{ Money} \times \text{Velocity} = \text{Price} \times \text{Quantity}$$

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



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





13/573,002 HEART BEACON CYCLE

The four dimensions of Big Data

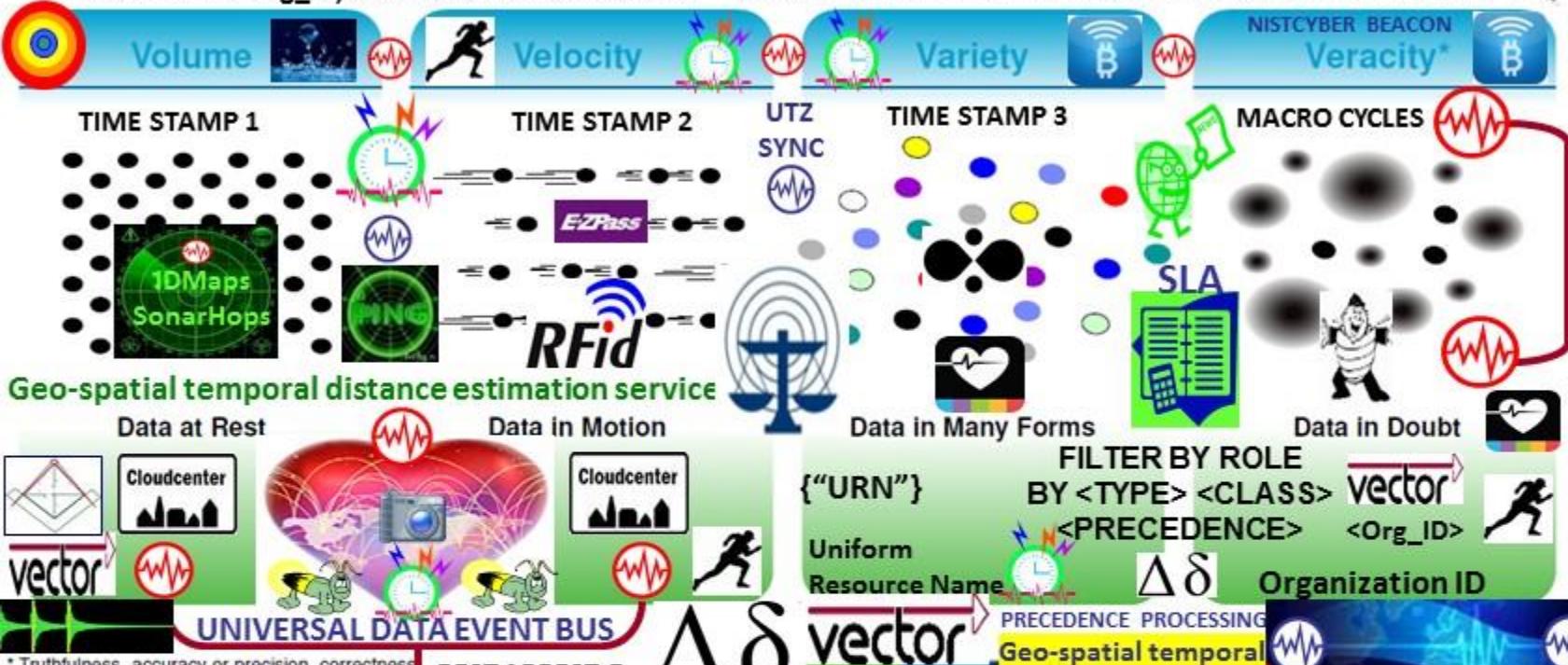
TIME STAMP BY Org_ID, URN Before FUSION CENTER

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

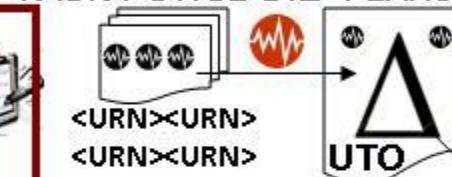
#BIG_DATA

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

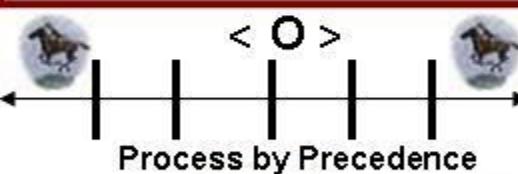
<ORG_ID>



ADHOC / AGILE FEDERATED <ORG_ID> GROUPS VS LEADER'S INTENT MERGER, ACQUISITION SUPPORT CHANNEL JOIN, MERGE, ADD, DROP, SPLIT, MOVE SUBNETS DECISIONS 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

M2M

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



TEMPLATE SYSTEM

HEART BEACON TEMPLATE: DERIVED FROM DARPA SITUATIONAL AWARENESS SYSTEM COMMON BUILDING BLOCKS DESCRIBED IN PROCEDURAL TEMPLATE

FBCB2 / TIMS ON SAME PLATFORM

ALL FBCB2'S ON CURRENT HEARTBEAT

ARMY INFORMATION SERVER AIS

AIS

STATE MANAGER

WEB APPLICATION SERVER W/BUSINESS LOGIC EQUIVALENT TO MILITARY MISSION THREADS

9 AIS

C2R SERVER LDAP

GTCS

2

3

4A

GTCS 8

TIMS: TACTICAL INTERNET MANAGEMENT SERVER

MULTICAST GROUP MCG UPDATE TOOL

LDAP SERVER

GROUND TACTICAL COMMS SERVER GOTS GOVERNMENT STRUCTURED MILITARY MESSAGING

1

4

5

0

MANEUVER CONTROL SYSTEM

B2: TEMPLATES



<XML>

SYNC DELTA / HEARTBEAT MESSAGES. STATE META DATA SNAPSHOTS NET OPS / NET MANAGEMENT



NETWORK INITIALIZATION DATA: NETWORK CONFIGURATION DATA

NETOPS / NEO: JOIN / MOVE SPLIT / MERGE ADD / DROP

STOCHASTIC HARMONIZATION STATISTICAL MEAN SUM / AVERAGE

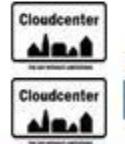


NEWSCAST BEACON BROADCAST

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



CLOSER TO SOURCE / DESTINATION = CHEAPER, FASTER DELIVERY



SURVEY REFERENCE POINT

COMMON BUILDING BLOCKS



B1: HEARTBEAT

HEARTBEAT MESSAGES



.0001

.05

.01

0.1

5

15

30

99

B3

PAUL REVERE MEME
NODE TO NODE HOPCOUNT
LINEAR, SEQUENTIAL

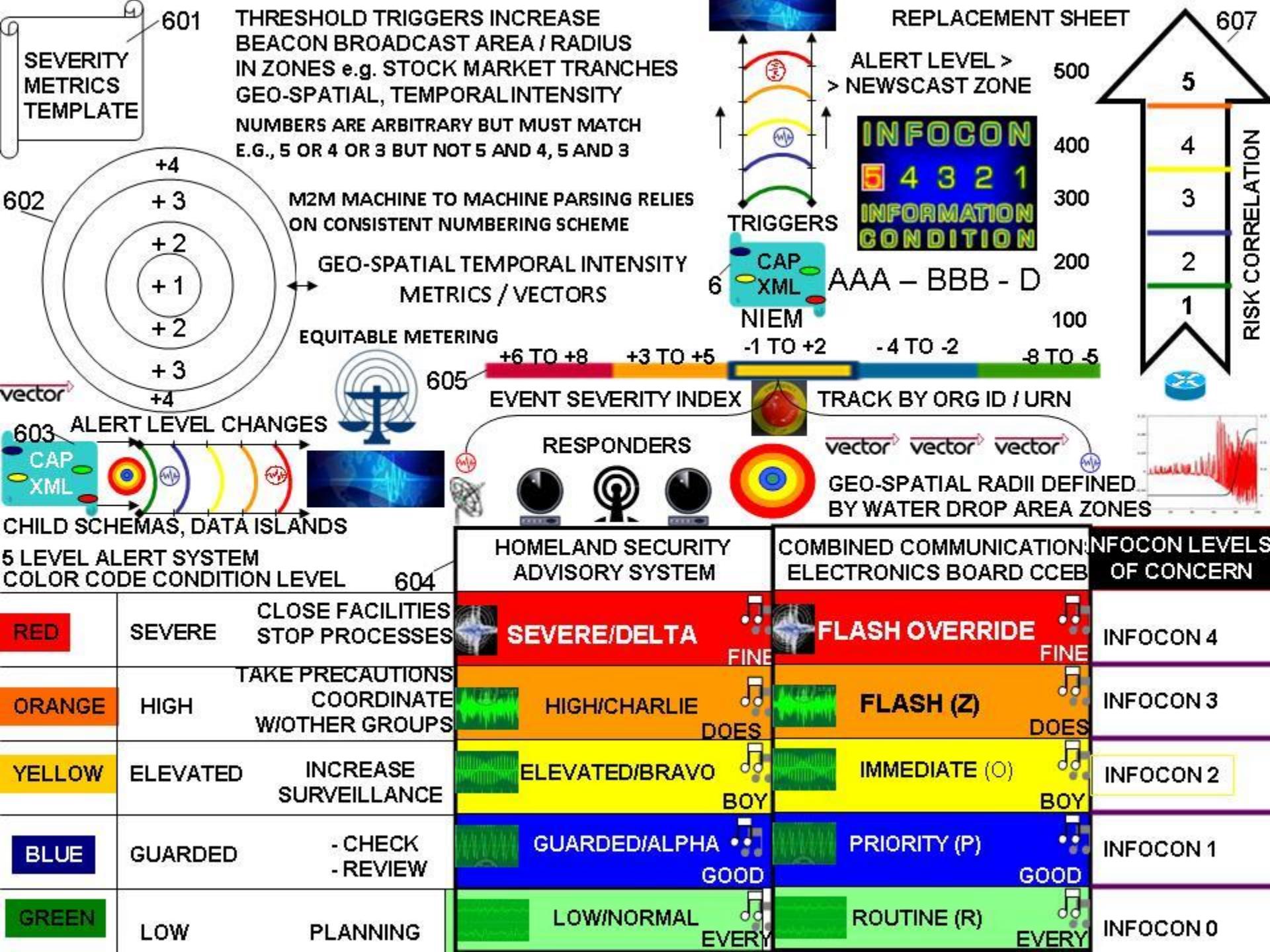


B4 WATER DROP IN POND AREA / RADIUS MEME
GEO-SPATIAL TEMPORAL INTENSITY

#IoT / IoT







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

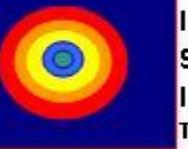


Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:

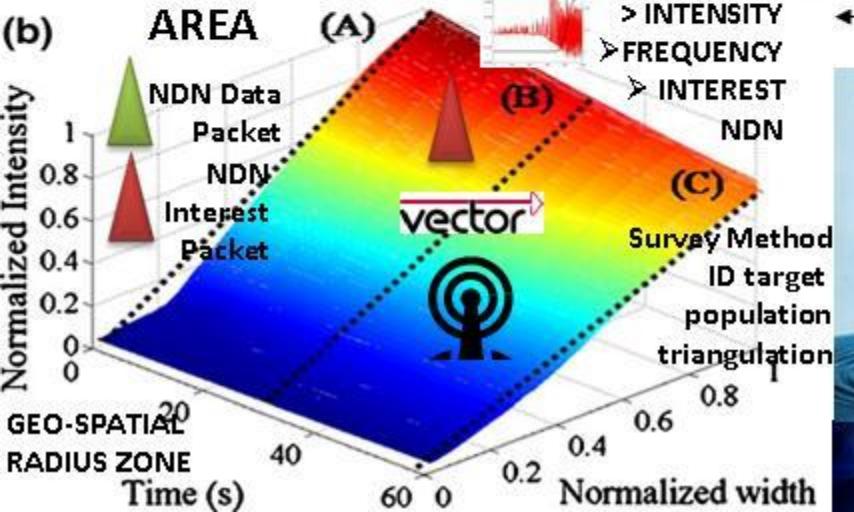


Paul Revere = linear, sequential

TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY Cyclic Frequency

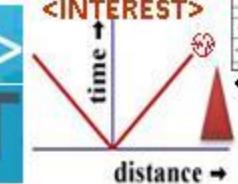


NAMED DATA NETWORKING

<INTEREST>
time ↑
distance →
<CONTENT>



NIST TIME BEACON

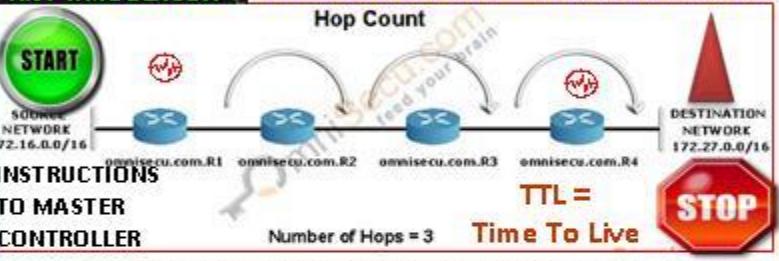


OASIS

IEEE 802.15.4
OASIS MQTT

ARRESTED-D

TELEMETRY TRANSPORT



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

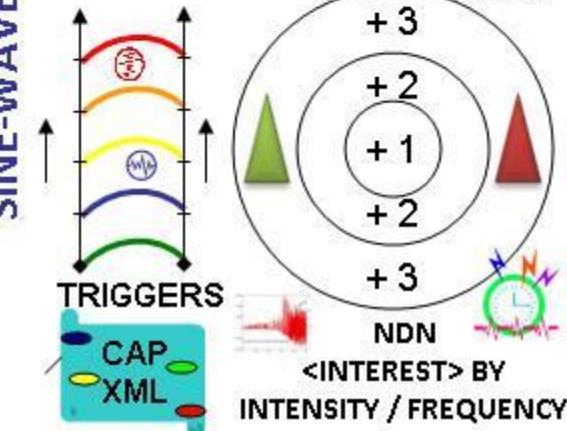
IDMAPS
SONARHOPS
INTERNET
TRIANGULATION



vector WirelessHART

ALERT LEVEL >
> NEWSCAST ZONE

time synchronized,
self-organizing,
mesh Net

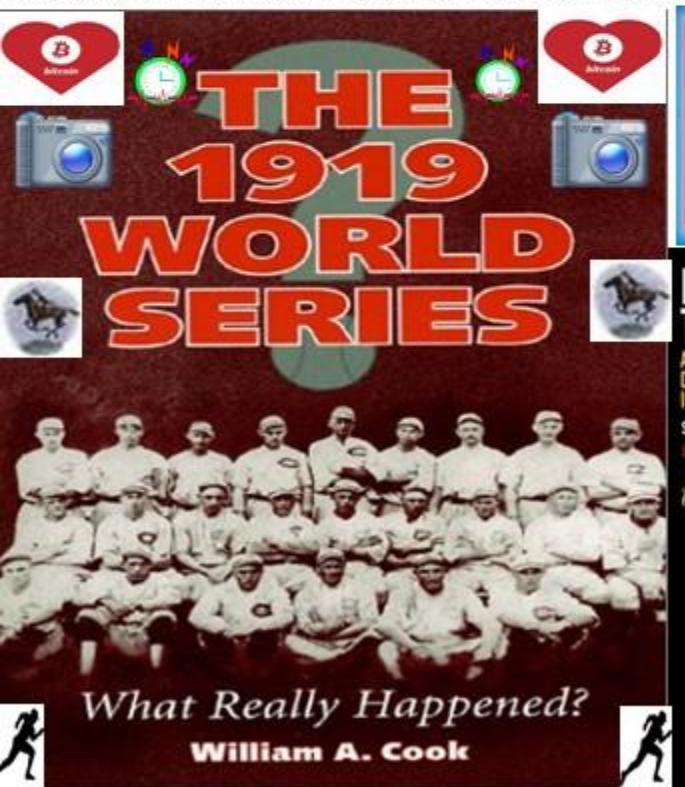


Interface Name	HEARTBEAT Administration Interface [SCOP]		
Documentation URL	http://scop.sourceforge.net/ http://linuxvirtualserver.org/software/index.html		
API Information	      		
#Big_Data	Functionality Areas	Cloud Interface Management, configuration, start, stop cloud services, edit configuration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

603

602

5

4

3

2

1

0

+1

+2

PAUL REVERE
LINEAR, SEQUENTIAL

RADIUS
WATER DROP IN POND MEME

Attribute Series

INTEREST
DISTANCE

Temporal Series

Geo Spatial

TCP/IP HOP BY HOP COUNT

Energy Attenuates over Distances

Micro Grids Closer - Cheaper

Blockchain
MICROGRIDS

TESLA



Spatial
Econometrics

Spaceship

Earth

Signals &

Telemetry

Annex

spaceship earth

ASTEROID BELTs =

RARE MINERALS

MAIN
ASTEROID
BELT

MERCURY

VENUS

EARTH

MOON =

HELIUM 3

"Numbers are the
Universal Language

offered by deity to humans as
confirmation of the truth"

Farther = More Cost

➢ Fuel, Resources

STOCHASTIC
HARMONIZATION

Service Level Agreements

FIREFLY-HEARTBEAT

ALGORITHM

UNIVERSAL

EVENT MESSAGE BUS

ERLANG

TIME- SPACE METRICS

43 22 13 0 1.5 2.7 5.2

Light minutes

Astronomical units

FIREFLY - HEARTBEAT ALGORITHM MESSAGE EVENT BUS

EPOCH / TIME CYCLES / INTERVALS

← cycle n → ← n + 1 → ← n + 2 →

TIME-SPACE BEACON

Metrics / Meters

TRADE WITH EARTH

????

INFOCON

4 3 2 1

INFORMATION
CONDITION

SIRIUS DISCLOSURE

Alpha

Numeric

Brevity

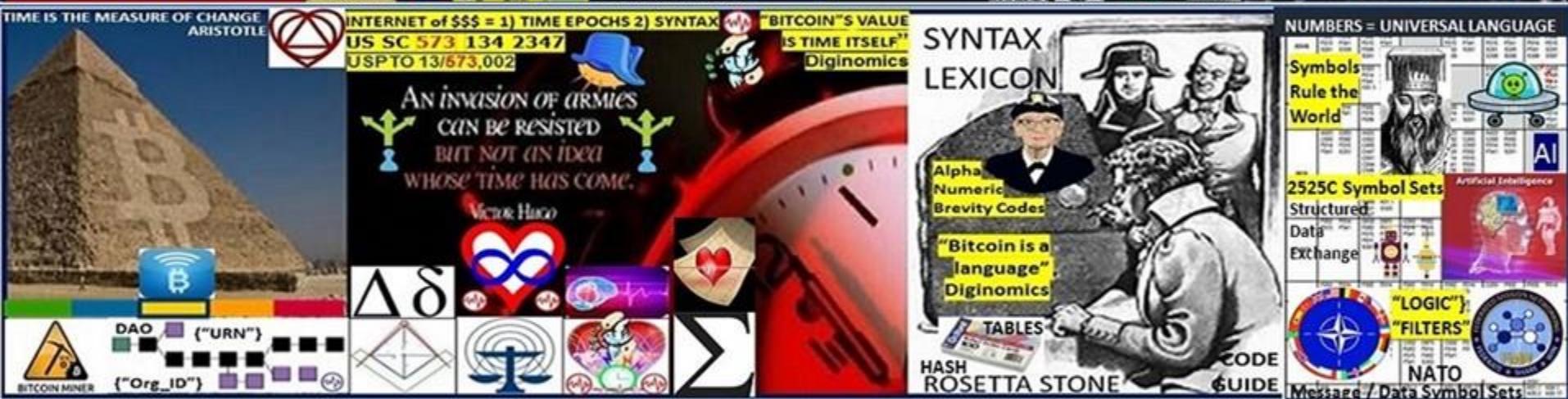
Codes

SYNTAX

LEXICON

K00.99

ANDERSON
INSTITUTE







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

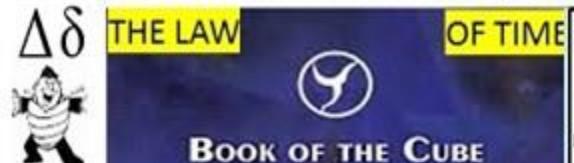
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

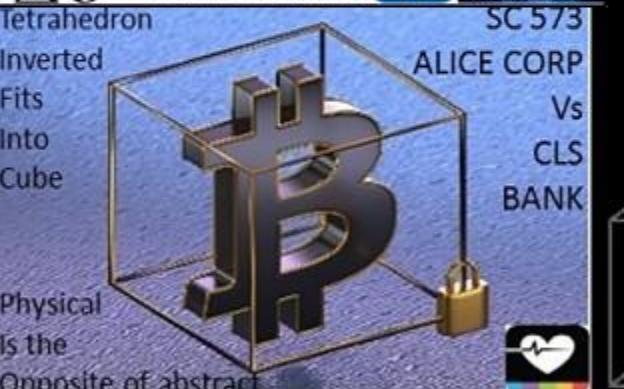
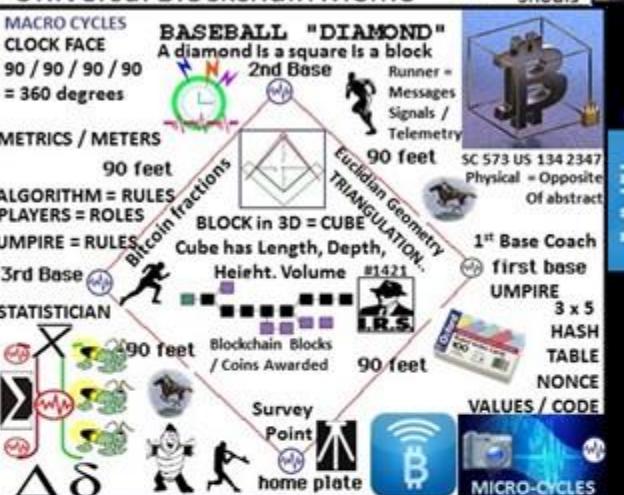
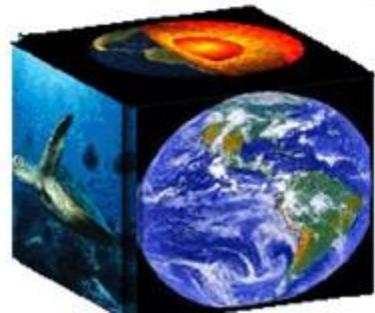
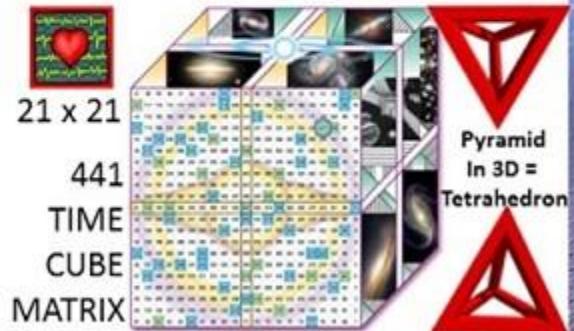
Main Embodiment: Baseball Diamond = block in 3D = cube

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

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



First
Baseball
Players
Union
Formed
1870



Metatron's Cube and the Platonic Solids



Saturn Shabatai/Shabbatai
Astrological Equations
by: Tom Rimbault

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

INSTITUTE OF HEARTMATH®

Empowering Heart-Based Living
<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.