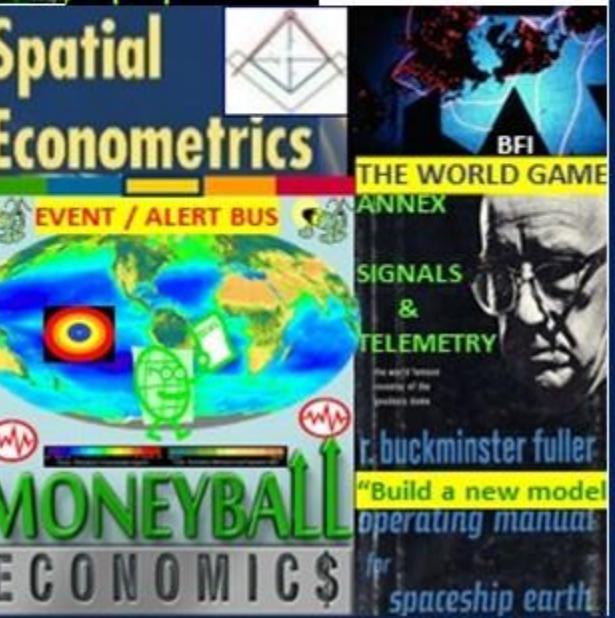


SIMPLE ALWAYS WINS... WHEN STANDING ON THE SHOULDERS OF GIANTS

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





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

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

CHECKLIST: TRADE FEDERATION ECONOMIC FRAMEWORK EX:

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



e^x

exponential

PCWORLD: Growing inequality in supercomputing power

SPECULATE



Speculation

BitCoin economy

MYRIAD MEMES



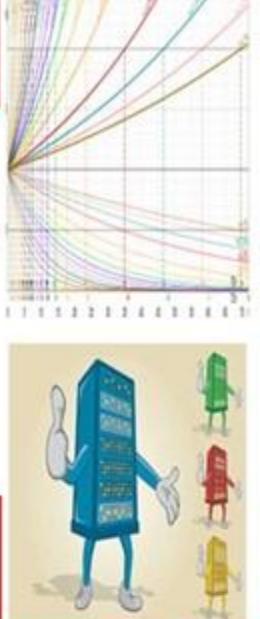
ScienceDaily®

<https://sciencedaily.com/releases/2007/04/070402214841.htm>

Date: April 3, 2007 Source: University of California - Davis

Summary: A new theory shows how wealth, in different forms, can stick to some but not to others. The findings have implications ranging from the design of the Internet to economics.

BLOCKCHAIN FARMS = MILLIONS OF ASIC CHIPS
= SUPER COMPUTERS.. FIGURE THE ODDS ASIC CHIP FARMS OWNED BY THE SAME MAIN FRAME OWNERS...



Day trading Currencies



EXPONENTIALLY GREATER TRADE PAIRS



Humanitarian Assistance Networked Donor System

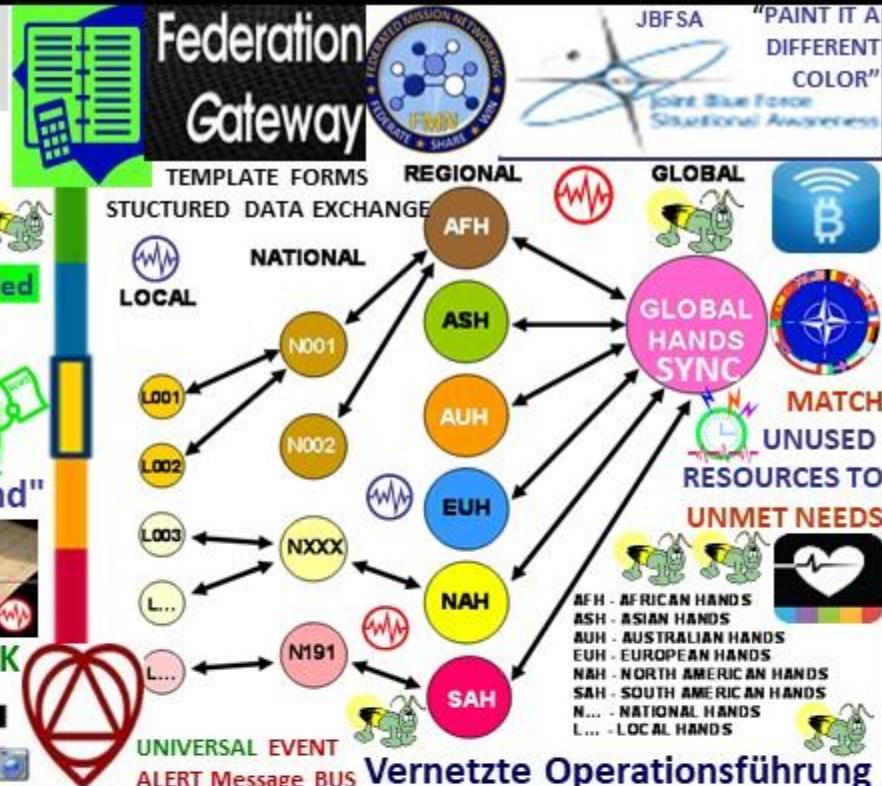
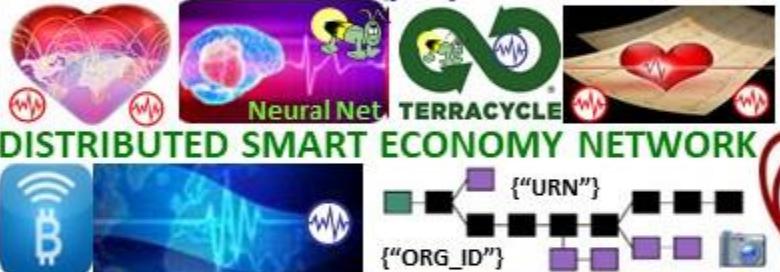
H.A.N.D.S: "Based on the need to speed up the processes of influencing an adversary, new concepts result in the adaptation of military doctrine, organization, training, material, infrastructure, interagency interaction, leadership, personnel and facilities" ... German Bundeswehr : concepts of "Network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



<https://neo.org>



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



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

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

Spatial Econometrics



Beacon Communities

Vernetzte Operationsführung

Proximity Beacons

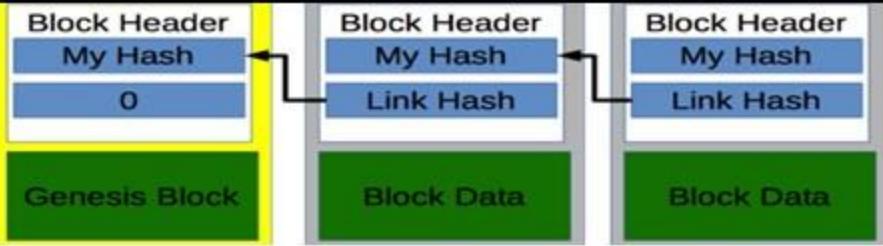
JAEGER



JBDSA
PAINT IT A DIFFERENT COLOR

Joint Blue Force Situational Awareness

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



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

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

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

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

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

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

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

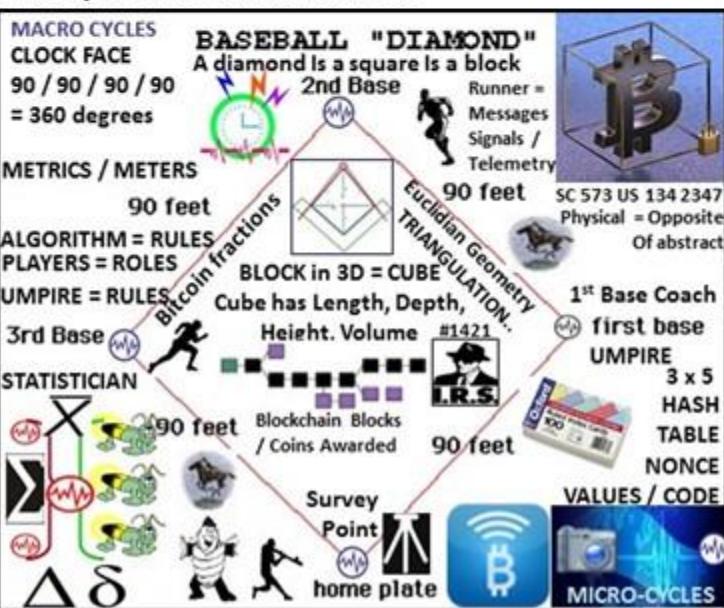
Consensus: distributed ledger blockchain nodes strategy determines chain's correctness
Consensus strategies: "proof of work," "proof of stake," and "delegated proof of stake"

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

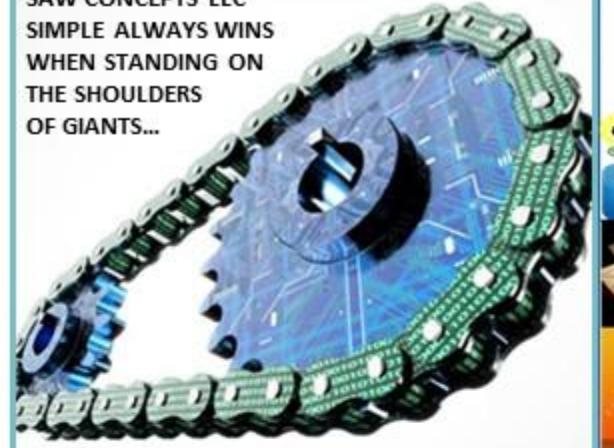
Proof of stake (PoS)— A consensus strategy that relies on nodes which hold collateral to participate in contributing blocks to the chain.

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

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



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



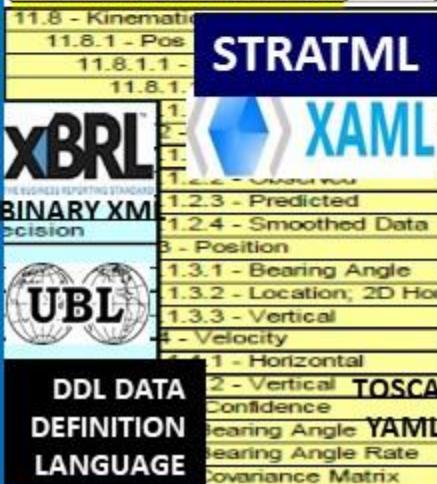


Structured
Data
Exchange

ALPHA NUMERIC
SYMBOL SETS

Coder's Guide

lexicon:



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



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

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



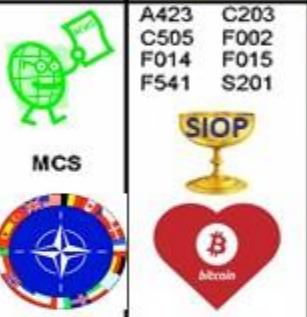
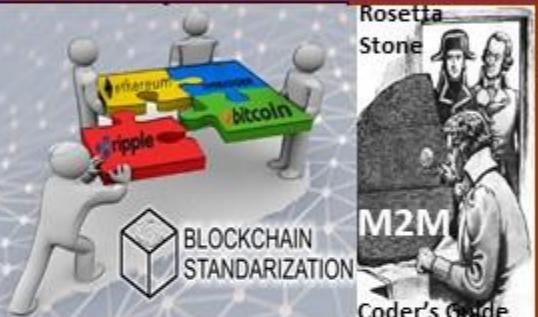
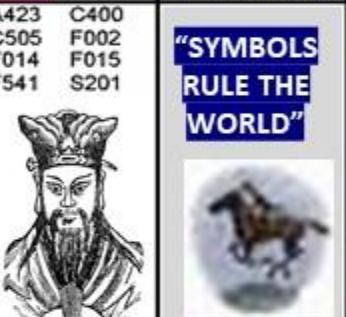
SYMBOLS	Friend	Neutral	Hostile	DICAL EVAC & HOSPITALISATION
	Partner		Competitor	- MILITARY OPERATIONS

NUMBERS ARE THE UNIVERSAL LANGUAGE / Symbols Rule the World"



FILTERS INFOCON
5 4 3 2 1
INFORMATION CONDITION



FROM	GCCS-A	ALPHA-Numeric BREVITY CODES			CODE GUIDE	
ASAS	C002 C203 F002 F014 F015 F541 S201 S309	C002 C203	C002 C203	C002	ATDS	MCS
		USMTF / XML MTF FORMATTED MESSAGE CATALOG = 300 + messages info exchange sets using common, CONSENSUS Message Text Formats MTFs. MTFs specify </CONTENT> / info agreed by group consensus presenting information in a logical, well specified unambiguous layout resulting in a highly efficient info payload to overhead ratio	C002 F014 F541 S305 S309	C002 C203 E400 F002 F014 F015 F541 S201 S309 S507	F002 F015 S201	C203 C400 D630 E500 F002 F014
		A423 C203 C505 F002 F014 F015 F541 S201		Rosetta Stone M2M Coder's Guide	A423 C400 C505 F002 F014 F015 F541 S201	INFOCON 5 4 3 2 1 INFORMATION CONDITION
						"SYMBOLS RULE THE WORLD"
						HEARTBEAT MESSAGE = K00.99

MESSAGE CATALOG 300 + Use Cases

Data Elements: entity, attribute, relationship equivalents

Information Categories and Examples							
Object Categories	Examples	Location	Movement	Identify	Status	Activity	Intent
OOB	SYNTAX LEXICON	STRUCTURED DATA lat/long	EXCHANGE Message spd/hdg	country / alliance, type/class	Sets readiness	targeting, reconning	COA {"Java JS"}
Infrastructure	Comm, power, transportation, water/sewer	Machine Trust Language MTI network, grid	Machine Trust Language MTI throughput, flow rates,	name, part-of relationships	BDA, op levels	repair, broadcasts	YAML expansion plans
Sociological	Culture, religion, economic, ethnic, government, history, languages	temples, historic structures	ER Model	Class Diagram	Relational Database	Object DBMS	XML DTD / Schema
Geophysical	Terrain, weather, climatology, oceanography, astrometry	feature lat/long, alt/dpth	Entity	Class	Table	Class	Element
			Attribute	Attribute	Field / Column	Attribute	Child Element or Element Attribute
			Domain Value	PURCHASE CODES	Instance, Value		DPI FFN / FUDN
							FEDERATE DUI FUD

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

FFUDN: Field Format Unit Designator #

FFIRN Field Format Index Reference #

Structured military messaging ID's messages, message sets, data element, symbol fields
BY Form Field Position & NUMBER



PROCESS MESSAGE BY PRECEDENCE
UNIVERSAL EVENT / ALERT MESSAGE BUS

OPERATIONAL NODES / ACTIVITIES

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

NAMED DATA NETWORKING

<CONTENT> CENTRIC NETWORKING



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

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

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

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

STRUCTURED MILITARY MESSAGING FORMS: FIELD TYPES, FILTERS, TAGS

PARSED, PROCESSED, COMPILED TELEMETRY SIGNALING STANDARDIZATION

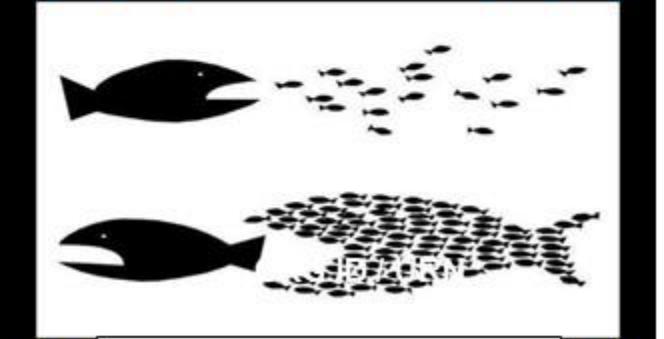
USMTF / XML MTF FORMATTED MESSAGE CATALOG

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

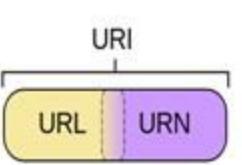
</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU

Don't Panic



FEDERATE



ARIN
American Registry for Internet Numbers

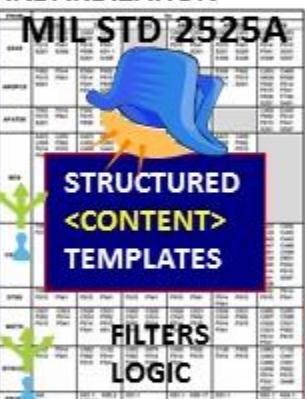
Uniform Resource Names (URNs): A Uniform Resource Identifier (URI). Both URNs (names) and URLs (locators) are URIs, and a particular URI may be a name & locator. Each plays a specific role:

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



SITUATION AWARENESS

NEWSCAST



DISTANCE ESTIMATE SERVICE

IDMaps
SonarHOPS

K00.99
Heartbeat Message

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

BY <TAG_TYPES>
Ledgers
Contracts
Trade SLA
Agreements



CrowdSourcing

TRIANGULATION

TELCO MESH FABRIC

vector

CROWD SOURCING / FUNDING



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

PARTIDO X:
Distributed
Democratic
Participation

ETHEREUM:
Decentralized
Autonomous
Organizations



Identity Provider

- Mapping
- Protocol

VOTE ON BLOCKCHAIN

PARTIDOS DEL FUTURO
FEDERATED ID



INTERNET FORMED BY:

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

"In the beginning"

"The Word"

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

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

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

Gideon Greenspan Beware the impossible smart contract



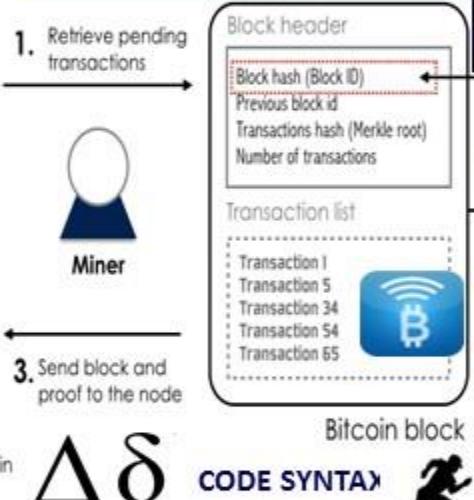
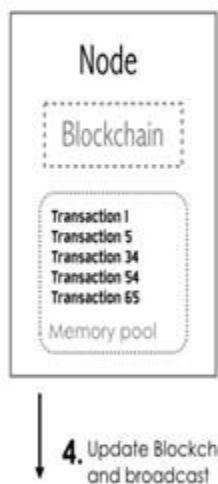
"Blockchain consortiums are working less on distributed ledgers and more on Contract Description Languages CDL., DAML Digital Asset Modeling Language"

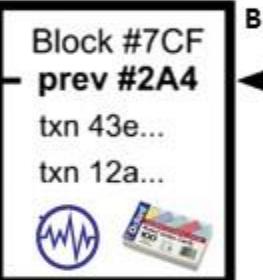
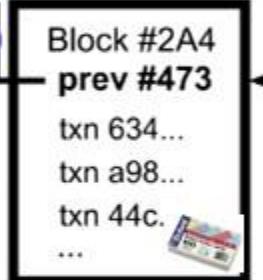
XBRL / CDL / DAML	
STOCK MIC CODES	
STRUCTURED	
MILITARY MESSAGE TEMPLATE FORMS	
LOGIC / FILTERS	
BREVITY CODES	
{URN}/{URN}/{URN}	
SYNTAX / SYMBOL	
LEXICON LIBRARY	



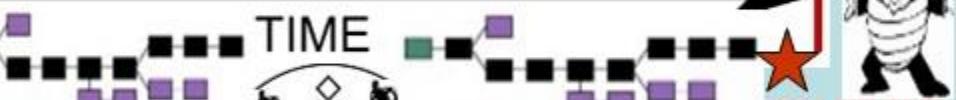


Alice Corp. v. CLS Bank International, 573 U.S. __, 134 S. Ct. 2347 (2014),[1] was a 2014 decision of the United States Supreme Court about patentable subject matter (patent eligibility).[2] The issue in the case was whether certain claims about a computer-implemented, electronic escrow service for facilitating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


 $\Delta\delta$
CODE SYNTAX

CODE RUNNER
 $\Delta\delta$


BLOCKCHAIN = TIME / SYNTAX

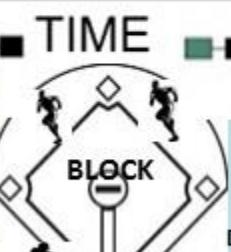

DATA ELEMENTS
ID'd by Alpha-Numerics

USPTO 13/573,002
PHYSICAL MEME
MAIN EMBODIMENT

RULES
Metrics

 $\Delta\delta$

Multi-Meme Multi-Meter

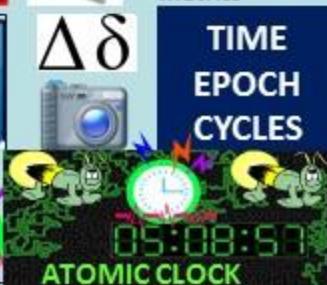


State Meta Data Snapshots	XBRL / CDL / DAML STOCK MIC CODES
ROLES Meters	STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS



TIME EPOCHS



ATOMIC CLOCK



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



Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



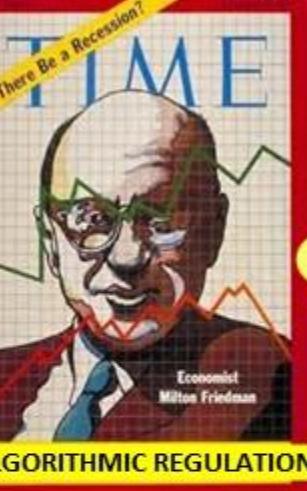
TERRACYCLE



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

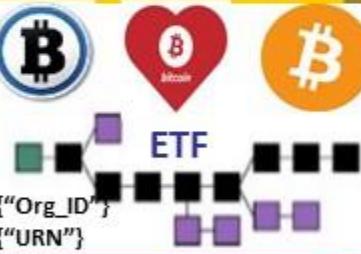
STAT MEAN VALUE INDEX



Price Indexes in Time and Space

Methods and Practices

FRIEDMAN's K% RULE

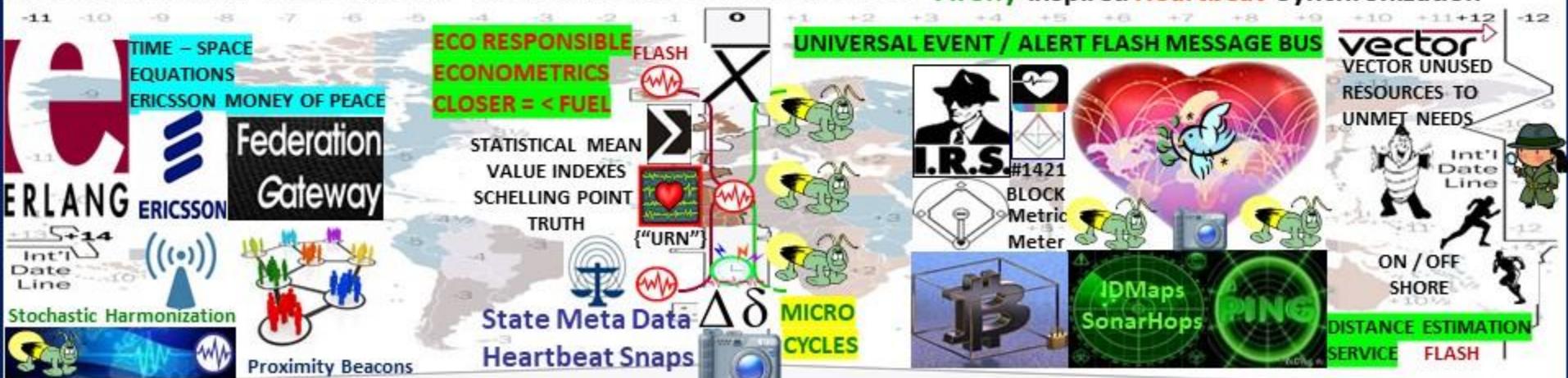


"Heartbeat Synchronization nodes in a distributed system generate periodic local heartbeat events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. No rule governs the length of a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



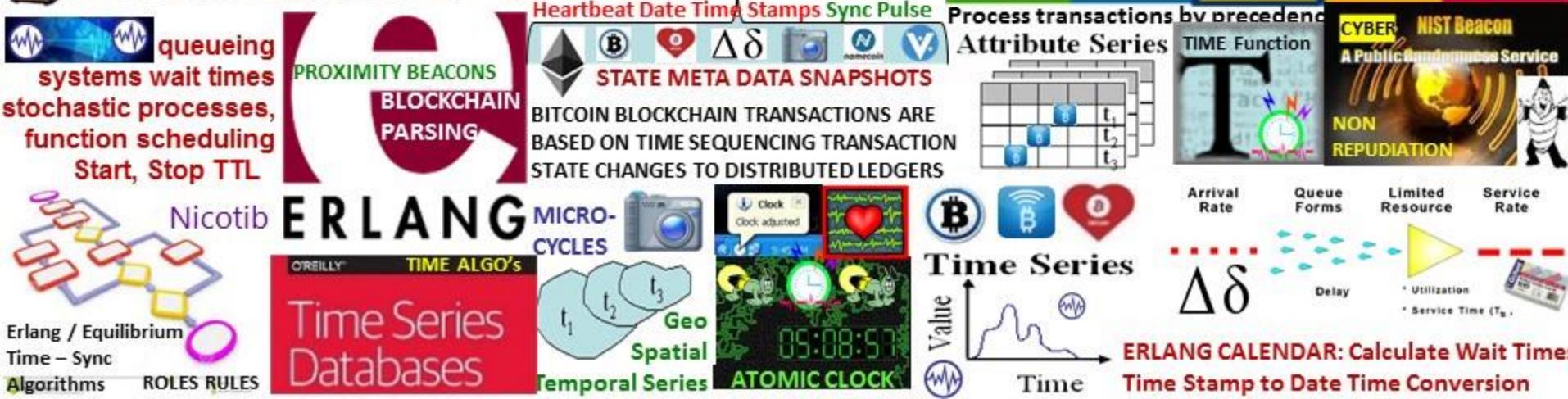


The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



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

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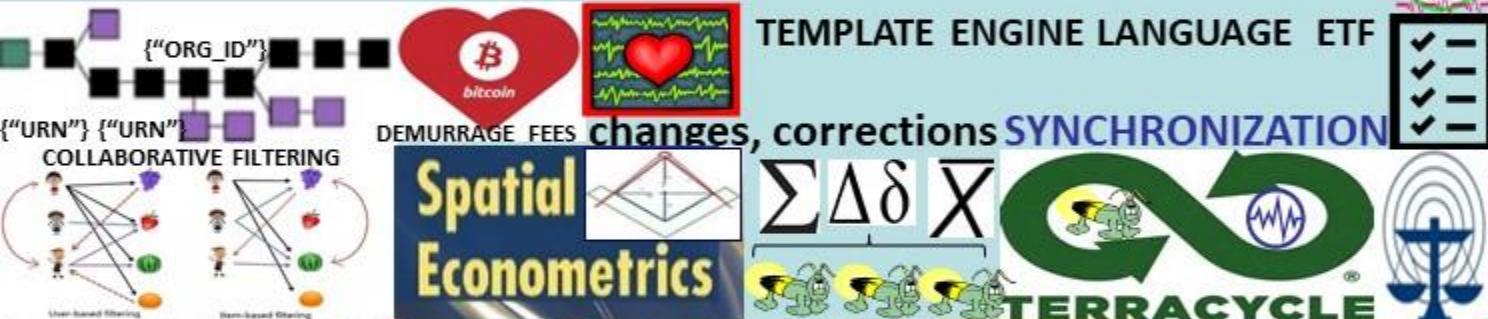




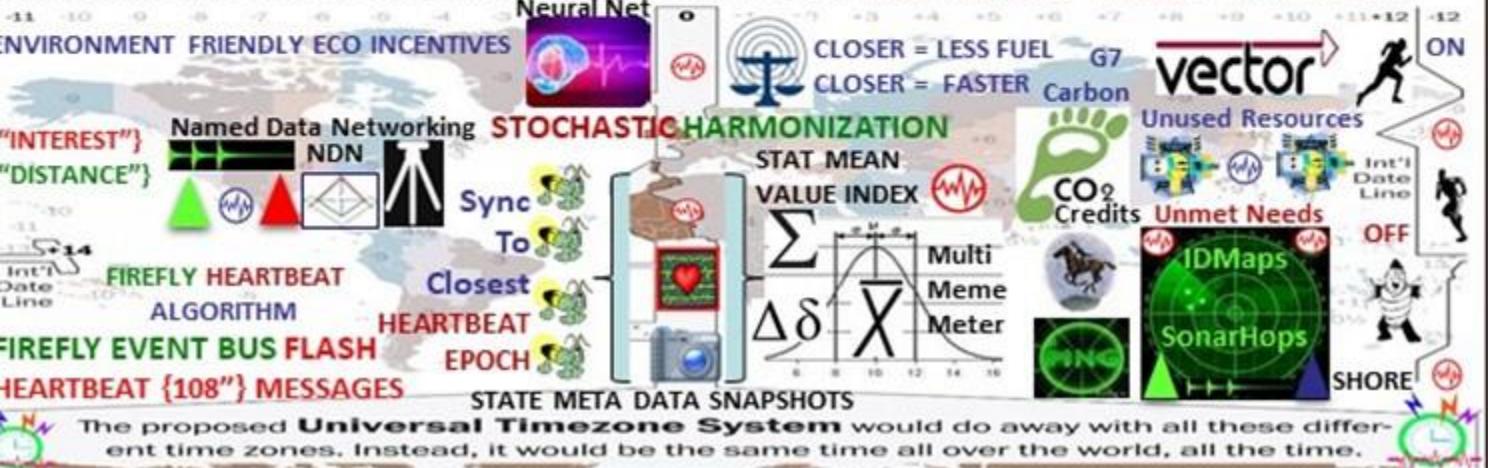
eGaaS: international blockchain platform for organizing economic, state, social activities of citizens, communities on the basis of smart law, smart contract system. eGaaS offers a comprehensive solution needed for state and business management on the blockchain platform.

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	ERLANG	Time Series Databases				

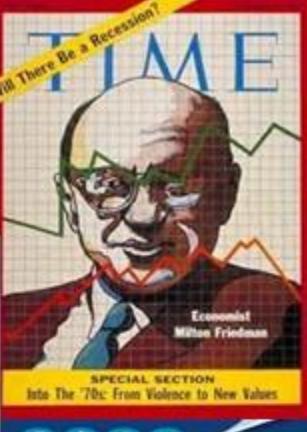






THE TERRA (TRC)®

Trade Reference Currency



ECONOMIC HEARTBEAT
FEDCOIN / WORLDCOIN

FIX {"108"}



UNUSED RESOURCES / UNMET NEEDS

Friedman's K % Rule ALGORITHMIC REGULATION



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

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



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



French newspaper "Le Féderiste"
"L'Europa monnaie de la paix"
Money of peace" Born Jan 1st 1933 \$\$\$

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. **UNIVERSAL TIME ZONE UTZ**
STOCHASTIC HARMONIZATION **UNIVERSAL MESSAGE EVENT BUS**

STOCHASTIC HARMONIZATION

UNIVERSAL MESSAGE EVENT BUFFER



ZEPPELIN

ZEPPELIN OPEN, GLOBAL ECONOMY

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



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



ZEPPELIN / zeppelinOS Common Functionality:

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

Create and customize your own ERC20 Token.

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



Contract development

Dapp

Dapp

Dapp

Dapp

Contract interaction

Kernel libraries

Scheduler

Marketplace

State channels

zeppelinOS

EVM

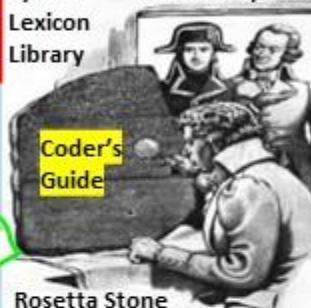
Blockchain

Off chain tools



Syntax
Lexicon
Library

300+ Templates



Rosetta Stone

STRUCTURED DATA EXCHANGE

LOGIC / FILTERS
ALPHA-NUMERIC
BREVITY CODES



STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics

PAUSABLE
START
STOP
TIME TO LIVE
INSTRUCTIONS

FLASH MESSAGE BUS

TIME CYCLES
SYNTAX

ERLANG

Erlang
Time Equations
Function calls

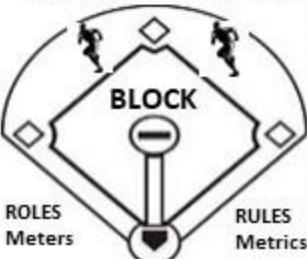
FLASH
HEARTBEAT

MESSAGE BUS

STATE
META
DATA
SNAPSHOTS



UNIVERSAL MEME



Blockchain Parsing

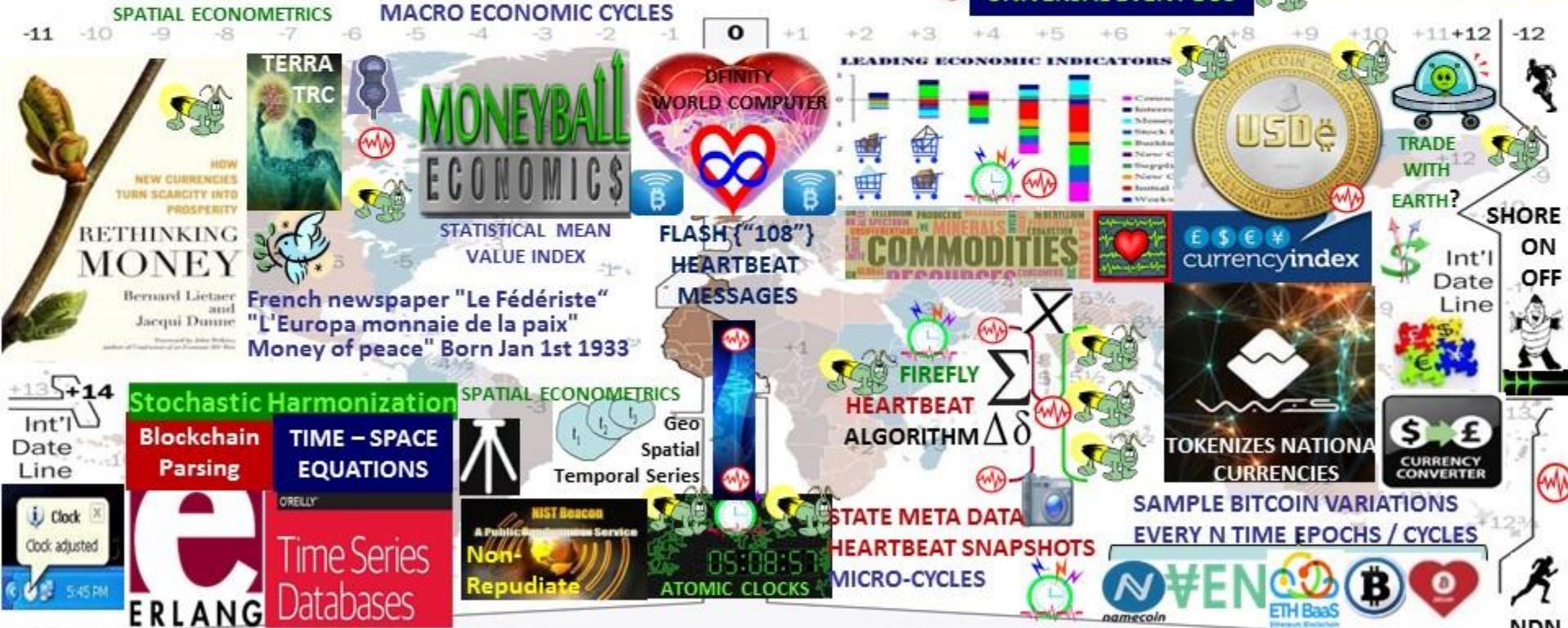
Micro Cycle State Snaps







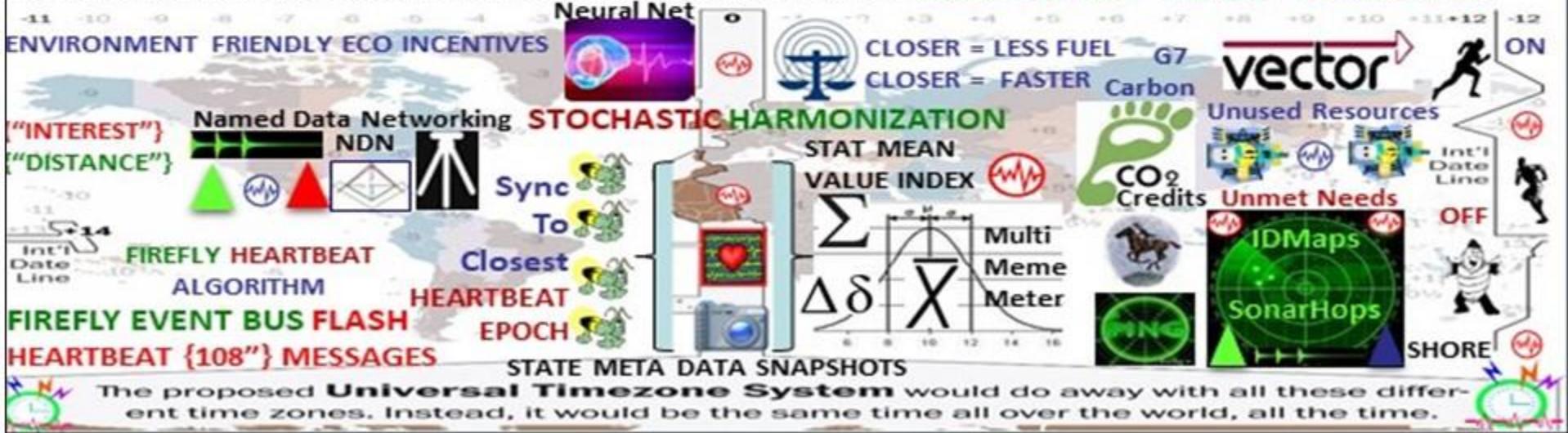
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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



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



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





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

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

Server on/off floor adjust

IDMaps SonarHop

Time-Space

Meters

Metrics

EQUILIBRIUM CONSTANT

NASH Equilibrium Algorithms

Nash Game Theory Algorithms

Int'l Date Line

Equilibrium @[OnlineTreats.com](#)

$\Delta\delta$

P

Δ

δ

$\Delta\delta$

P

Δ

δ

("EVENT")

On Shore / Off Shore

Int'l Date Line

NIST TIME BEACON

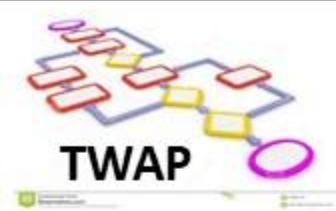
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TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

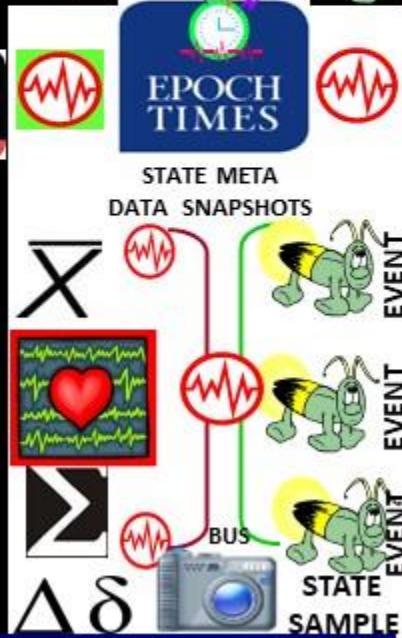
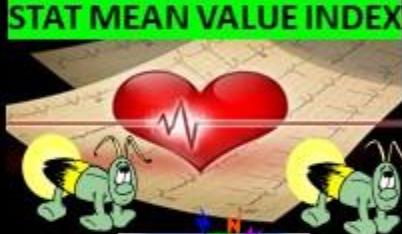


TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX

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



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



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

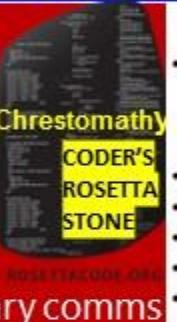
Firefly Heartbeat Sync nodes strive to sync in a distributed system. Nodes emit periodic "heartbeat" events at approximately the same time. There is no need to sync during a cycle as long as the cycle length is bounded & nodes eventually agree. HBC's improvement is stipulating a clock cycle value e.g.,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



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



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



Functional Sequential Erlang

- Data types:

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

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

SORTING ALGO'S

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

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



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



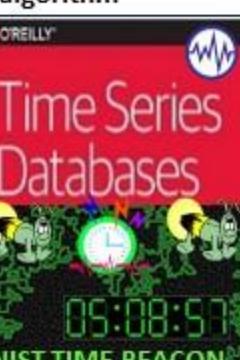
distributed "noSQL" database, embedded right into Erlang,
supports indexing, replication, transactions, and fail-over

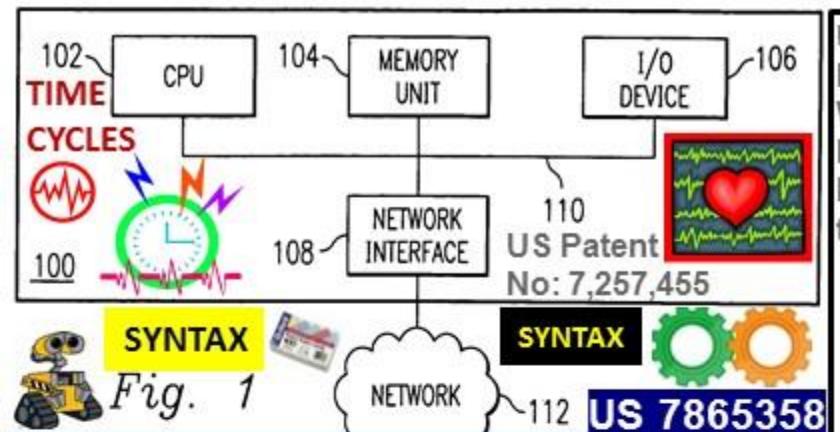
Fast ETS in-memory, and DETS persistent on-disk database

Mnesia database ("Organization_ID")

Global name resolution

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



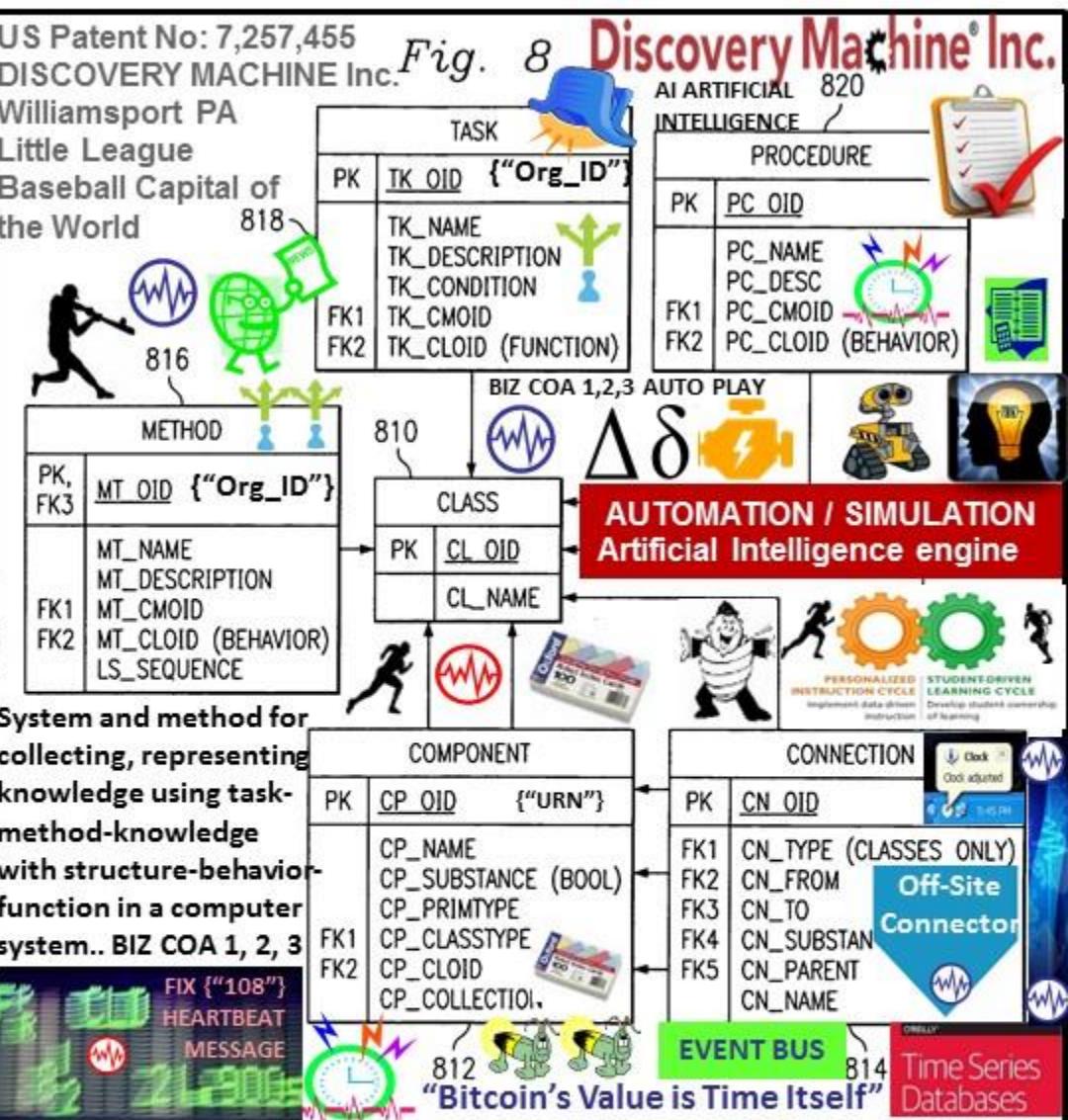
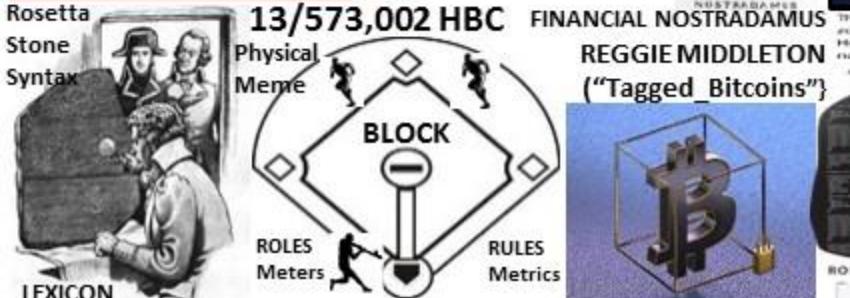


Machine-based system for transforming data from a source form to a target form, a tool is provided for sharing information established in developing a transformation model. The shared information may relate to rules for mapping source collection terms to standardized terms, rules for ordering or **SYNTAX**,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

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

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

ORACLE Veritaseum



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



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



HASH TABLES
NONCE VALUES

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



Bitcoin Unlimited: absence of a hard-coded block-size limit. Users manually set limits on their own nodes; Consensus on a limit expected to emerge naturally at Schelling focal point. Unlimited introduces a level of democracy into development, management of the implementation, the community votes on changes.



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

AZURE: Core/Kernel/Universal Protocol

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

Unspent Transaction Output protocols UTXO

Crypto Tokenized Assets Digital Bearer Bonds
unique identity for owned artifacts

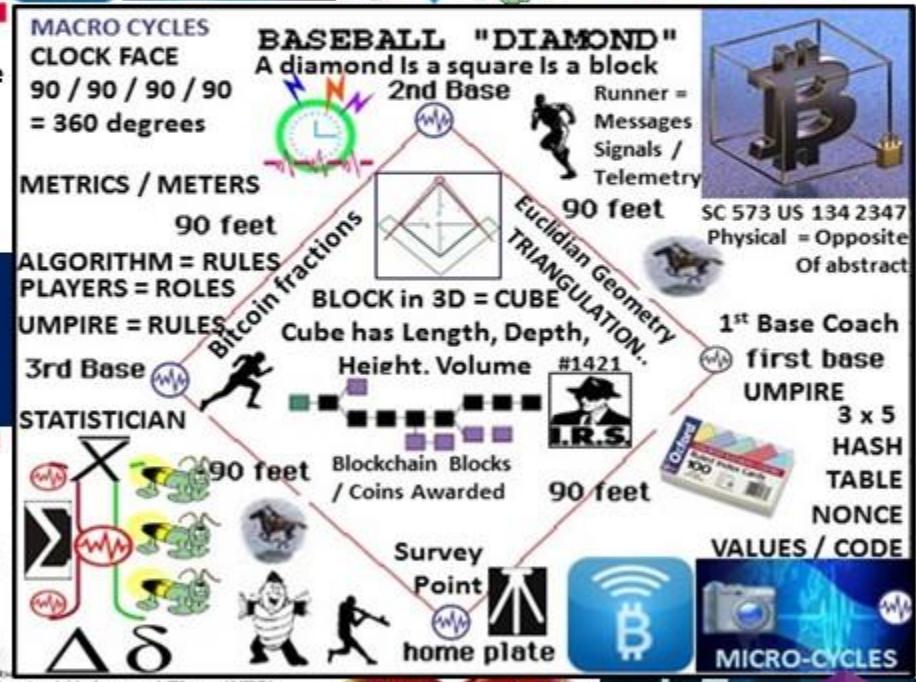
Utility Cryptlets encryption, time & date events, external data access, authentication “CryptoDelegate” / adapter

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

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

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





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

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

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

Provides information about total costs of the transaction



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

pull model



Bitcoin Address Shortener

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

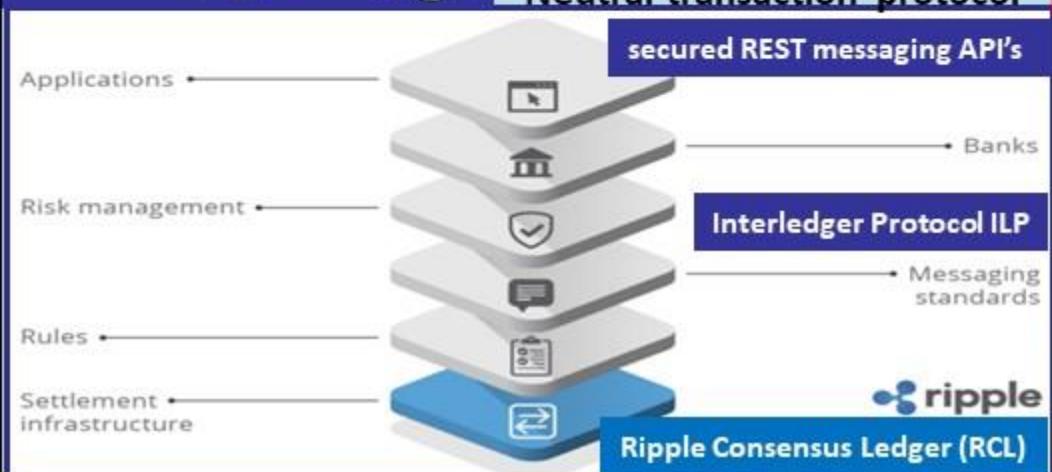
ALPHA NUMERIC BREVITY CODES

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

A.I

Clock Clock adjusted

Neutral transaction protocol



SchellingPoint



EVENT

	CODER'S GUIDE
	SYNTAX LEXICON
	ALPHA NUMERIC BREVITY CODES
	Multi-Meme Multi-Meter
	TIME-SPACE EQUATIONS ALGORITHMS BLOCKCHAIN PARSING

ERLANG

EVENT BUS

LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED

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

MATCH EVENT REPORTS TO CLOSEST HEARTBEAT CYCLE

FLASH HEARTBEAT MESSAGES {"108"}

Sync to Closest Heartbeat

X Δδ

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

ROLES RULES

BLOCK

CLOCK

90 / 90 / 90 = 360

CLOCK

TIME-SPACE EQUATIONS ALGORITHMS BLOCKCHAIN PARSING

ERLANG

INFOCON

5 4 3 2 1

INFORMATION CONDITION

DFINITY

RANDOM # BEACON

NIST Beacon
A Public Randomness Service

QUANTUM RANDOM #

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

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

FIREFLY-HEARTBEAT FLASH Msg EVENT BUS

GROUP Signature is random number

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

- BLS signature scheme

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

HYPER GEOMETRIC PROBABILITY CALCULATOR

CONSENSUS / RANDOM BEACON

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

Each process has mining identity

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

Threshold Relay Chain techniques

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

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

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

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

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

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

METRICS / METERS
90 feet
Euclidian Geometry TRIANGULATION:
90 feet

ALGORITHM = RULES
PLAYERS = ROLES
UMPIRE = RULES

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

3rd Base
Blockchain Blocks / Coins Awarded

STATISTICIAN

90 feet

Survey Point

home plate

SC 573 US 134 2347
Physical = Opposite Of abstract

1st Base Coach

first base

UMPIRE

3×5

HASH TABLE

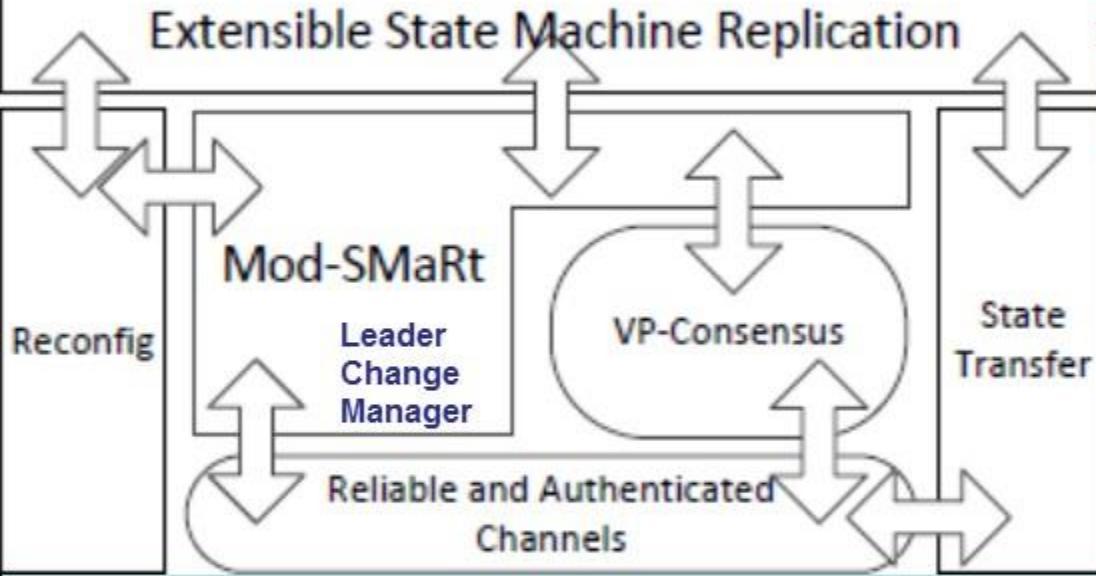
NONCE

VALUES / CODE

MICRO-CYCLES

Byzantine Fault-Tolerant State Machine Replication

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



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

BFT-SMART needs an eventually synchronous system

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

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

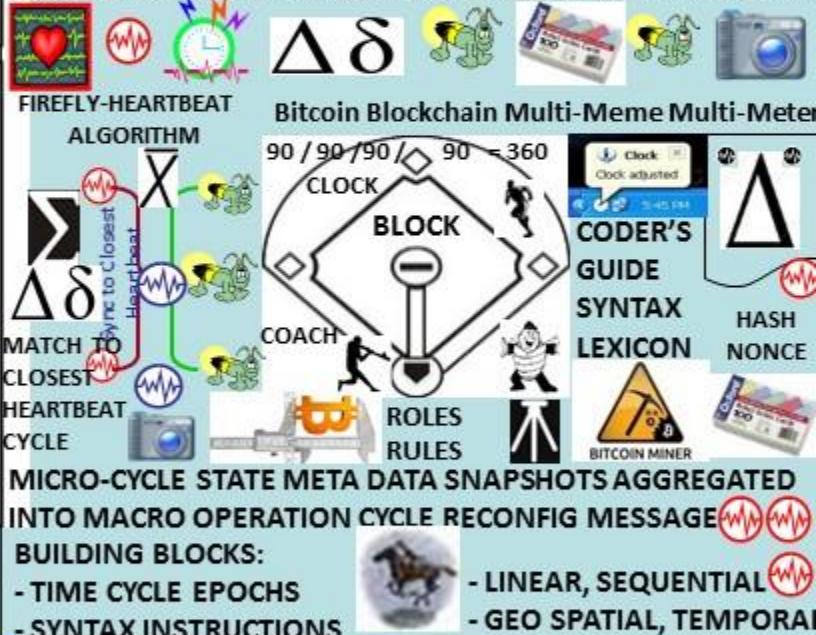
USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT



DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS
FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"}
ADDS, JOINS, DROPS, MOVES TO / FROM DAO
CHANGES IN STATE VIEWED IN "APPLIQUE" OVERLAY VIEWS

KOO.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOT



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

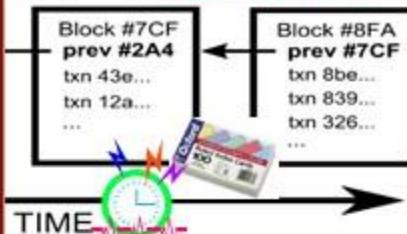
HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$ Shared Ledger



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



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

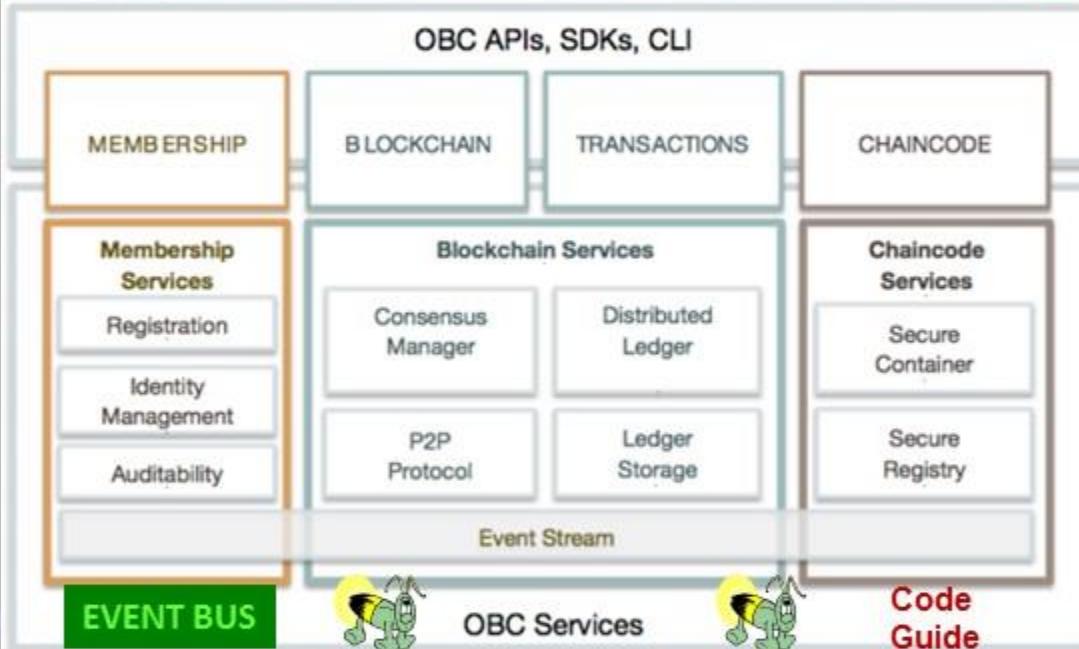
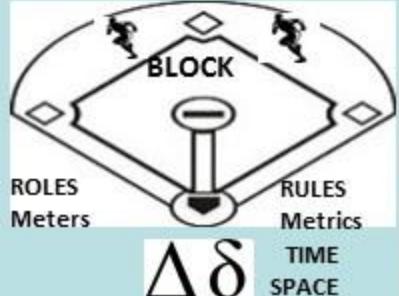
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



BLOCK TIME ARBITRAGE



ROSETTA STONE



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

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

e.g. Derivatives

e.g. Trade Finance

e.g. KYC / AML

App

App

App

App

App

App

App

App

App

Concord Platform Services

CorDapp Store

Notaries

Network Map Service

Trusted Digital Backbone Network

Regulatory Reporting

Oracles

Service Provider Gateways

Bank-Internal Gateways

Concord Vault Interoperability

Asset Registry

Trade Registry

Cash

Identity Vault

Concord Operations Centre

Business Monitoring

Technical Alerting

Management Information

Compliance Audit



Δδ

Inter-Network Adapters

FEDWIRE

CHIPS

DTCC

CLS

Corda Core Node Services

Agreement States

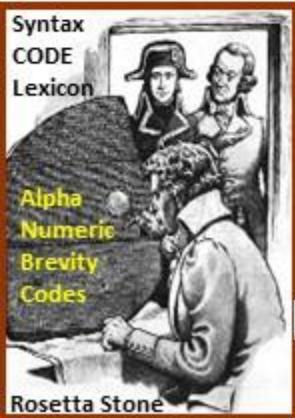
Transactions

Sandbox

Digital Signing

Interaction Protocols

Contract Verification



UNIVERSAL EVENT BUS



Syntax CODE Lexicon

STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

XBRL / CDL / DAML STOCK MIC CODES



300+ Use Case Templates



PROOF OF WORK



PROOF OF STAKE

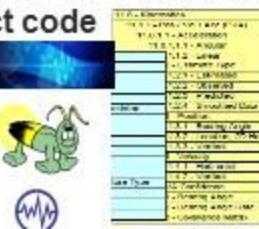


STATE CHANNELS



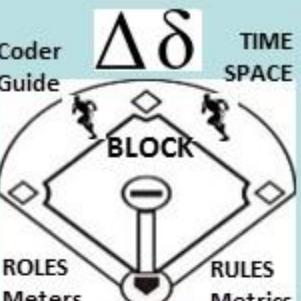
BITCOIN NEXGEN LIGHTNING / DASH..

Federation Gateway



KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



MVP



EVENT BUS

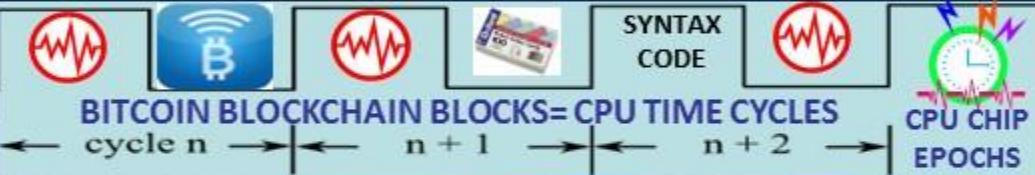
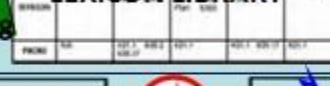
MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



NDN

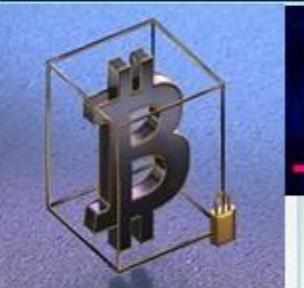
WITH SYNTAX LEXICON LIBRARY



long exponential intervals (10 min)



COMMAND SYNTAX
RESTFUL State Transfer



Subjective Time to Prune

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



short deterministic intervals (10 sec)



MICRO-CYCLES



FROM	NEEDLE	THIN	ASKE	AMPC	AFATR	WIR
ARMADA	P001	P002	P003	P004	P005	P006
ARMADA	P007	P008	P009	P010	P011	P012
ARMADA	P013	P014	P015	P016	P017	P018
ARMADA	P019	P020	P021	P022	P023	P024
ARMADA	P025	P026	P027	P028	P029	P030
ARMADA	P031	P032	P033	P034	P035	P036
ARMADA	P037	P038	P039	P040	P041	P042
ARMADA	P043	P044	P045	P046	P047	P048
ARMADA	P049	P050	P051	P052	P053	P054
ARMADA	P055	P056	P057	P058	P059	P060
ARMADA	P061	P062	P063	P064	P065	P066
ARMADA	P067	P068	P069	P070	P071	P072
ARMADA	P073	P074	P075	P076	P077	P078
ARMADA	P079	P080	P081	P082	P083	P084
ARMADA	P085	P086	P087	P088	P089	P090
ARMADA	P091	P092	P093	P094	P095	P096
ARMADA	P097	P098	P099	P100	P101	P102
ARMADA	P103	P104	P105	P106	P107	P108
ARMADA	P109	P110	P111	P112	P113	P114
ARMADA	P115	P116	P117	P118	P119	P120
ARMADA	P121	P122	P123	P124	P125	P126
ARMADA	P127	P128	P129	P130	P131	P132
ARMADA	P133	P134	P135	P136	P137	P138
ARMADA	P139	P140	P141	P142	P143	P144
ARMADA	P145	P146	P147	P148	P149	P150
ARMADA	P151	P152	P153	P154	P155	P156
ARMADA	P157	P158	P159	P160	P161	P162
ARMADA	P163	P164	P165	P166	P167	P168
ARMADA	P169	P170	P171	P172	P173	P174
ARMADA	P175	P176	P177	P178	P179	P180
ARMADA	P181	P182	P183	P184	P185	P186
ARMADA	P187	P188	P189	P190	P191	P192
ARMADA	P193	P194	P195	P196	P197	P198
ARMADA	P199	P200	P201	P202	P203	P204
ARMADA	P205	P206	P207	P208	P209	P210
ARMADA	P211	P212	P213	P214	P215	P216
ARMADA	P217	P218	P219	P220	P221	P222
ARMADA	P223	P224	P225	P226	P227	P228
ARMADA	P229	P230	P231	P232	P233	P234
ARMADA	P235	P236	P237	P238	P239	P240
ARMADA	P241	P242	P243	P244	P245	P246
ARMADA	P247	P248	P249	P250	P251	P252
ARMADA	P253	P254	P255	P256	P257	P258
ARMADA	P259	P260	P261	P262	P263	P264
ARMADA	P265	P266	P267	P268	P269	P270
ARMADA	P271	P272	P273	P274	P275	P276
ARMADA	P277	P278	P279	P280	P281	P282
ARMADA	P283	P284	P285	P286	P287	P288
ARMADA	P289	P290	P291	P292	P293	P294
ARMADA	P295	P296	P297	P298	P299	P300
ARMADA	P301	P302	P303	P304	P305	P306
ARMADA	P307	P308	P309	P310	P311	P312
ARMADA	P313	P314	P315	P316	P317	P318
ARMADA	P319	P320	P321	P322	P323	P324
ARMADA	P325	P326	P327	P328	P329	P330
ARMADA	P331	P332	P333	P334	P335	P336
ARMADA	P337	P338	P339	P340	P341	P342
ARMADA	P343	P344	P345	P346	P347	P348
ARMADA	P349	P350	P351	P352	P353	P354
ARMADA	P355	P356	P357	P358	P359	P360
ARMADA	P361	P362	P363	P364	P365	P366
ARMADA	P367	P368	P369	P370	P371	P372
ARMADA	P373	P374	P375	P376	P377	P378
ARMADA	P379	P380	P381	P382	P383	P384
ARMADA	P385	P386	P387	P388	P389	P390
ARMADA	P391	P392	P393	P394	P395	P396
ARMADA	P397	P398	P399	P400	P401	P402
ARMADA	P403	P404	P405	P406	P407	P408
ARMADA	P409	P410	P411	P412	P413	P414
ARMADA	P415	P416	P417	P418	P419	P420
ARMADA	P421	P422	P423	P424	P425	P426
ARMADA	P427	P428	P429	P430	P431	P432
ARMADA	P433	P434	P435	P436	P437	P438
ARMADA	P439	P440	P441	P442	P443	P444
ARMADA	P445	P446	P447	P448	P449	P450
ARMADA	P451	P452	P453	P454	P455	P456
ARMADA	P457	P458	P459	P460	P461	P462
ARMADA	P463	P464	P465	P466	P467	P468
ARMADA	P469	P470	P471	P472	P473	P474
ARMADA	P475	P476	P477	P478	P479	P480
ARMADA	P481	P482	P483	P484	P485	P486
ARMADA	P487	P488	P489	P490	P491	P492
ARMADA	P493	P494	P495	P496	P497	P498
ARMADA	P499	P500	P501	P502	P503	P504
ARMADA	P505	P506	P507	P508	P509	P510
ARMADA	P511	P512	P513	P514	P515	P516
ARMADA	P517	P518	P519	P520	P521	P522
ARMADA	P523	P524	P525	P526	P527	P528
ARMADA	P529	P530	P531	P532	P533	P534
ARMADA	P535	P536	P537	P538	P539	P540
ARMADA	P541	P542	P543	P544	P545	P546
ARMADA	P547	P548	P549	P550	P551	P552
ARMADA	P553	P554	P555	P556	P557	P558
ARMADA	P559	P560	P561	P562	P563	P564
ARMADA	P565	P566	P567	P568	P569	P570
ARMADA	P571	P572	P573	P574	P575	P576
ARMADA	P577	P578	P579	P580	P581	P582
ARMADA	P583	P584	P585	P586	P587	P588
ARMADA	P589	P590	P591	P592	P593	P594
ARMADA	P595	P596	P597	P598	P599	P600
ARMADA	P601	P602	P603	P604	P605	P606
ARMADA	P607	P608	P609	P610	P611	P612
ARMADA	P613	P614	P615	P616	P617	P618
ARMADA	P619	P620	P621	P622	P623	P624
ARMADA	P625	P626	P627	P628	P629	P630
ARMADA	P631	P632	P633	P634	P635	P636
ARMADA	P637	P638	P639	P640	P641	P642
ARMADA	P643	P644	P645	P646	P647	P648
ARMADA	P649	P650	P651	P652	P653	P654
ARMADA	P655	P656	P657	P658	P659	P660
ARMADA	P661	P662	P663	P664	P665	P666
ARMADA	P667	P668	P669	P670	P671	P672
ARMADA	P673	P674	P675	P676	P677	P678
ARMADA	P679	P680	P681	P682	P683	P684
ARMADA	P685	P686	P687	P688	P689	P690
ARMADA	P691	P692	P693	P694	P695	P696
ARMADA	P697	P698	P699	P700	P701	P702
ARMADA	P703	P704	P705	P706	P707	P708
ARMADA	P709	P710	P711	P712	P713	P714
ARMADA	P715	P716	P717	P718	P719	P720
ARMADA	P721	P722	P723	P724	P725	P726
ARMADA	P727	P728	P729	P730	P731	P732
ARMADA	P733	P734	P735	P736	P737	P738
ARMADA	P739	P740	P741	P742	P743	P744
ARMADA	P745	P746	P747	P748	P749	P750
ARMADA	P751	P752	P753	P754	P755	P756
ARMADA	P757	P758	P759	P760	P761	P762
ARMADA	P763	P764	P765	P766	P767	P768
ARMADA	P769	P770	P771	P772	P773	P774
ARMADA	P775	P776	P777	P778	P779	P780
ARMADA	P781	P782	P783	P784	P785	P786
ARMADA	P787	P788	P789	P790	P791	P792
ARMADA	P793	P794	P795	P796	P797	P798
ARMADA	P799	P800	P801	P802	P803	P804
ARMADA	P805	P806	P807	P808	P809	P810
ARMADA	P811	P812	P813	P814	P815	P816
ARMADA	P817	P818	P819	P820	P821	P822
ARMADA	P823	P824	P825	P826	P827	P828
ARMADA	P829	P830	P831	P832	P833	P834
ARMADA	P835	P836	P837	P838	P839	P840
ARMADA	P841	P842	P843	P844	P845	P846
ARMADA	P847	P848	P849	P850	P851	P852
ARMADA	P853	P854	P855	P856	P857	P858
ARMADA	P859	P860	P861	P862	P863	P864
ARMADA	P865	P866	P867	P868	P869	P870
ARMADA	P871	P872	P873	P874	P875	P876
ARMADA	P877	P878	P879	P880	P881	P882
ARMADA	P883	P884	P885	P886	P887	P888
ARMADA	P889	P890	P891	P892	P893	P894
ARMADA	P895	P896	P897	P898	P899	P900
ARMADA	P901	P902	P903	P904	P905	P906
ARMADA	P907	P908	P909	P910	P911	P912
ARMADA	P913	P914	P915	P916	P917	P918
ARMADA	P919	P920	P921	P922	P923	P924
ARMADA	P925	P926	P927	P928	P929	P930
ARMADA	P931	P932	P933	P934	P935	P936
ARMADA	P937	P938	P939	P940	P941	P942
ARMADA	P943	P944	P945	P946	P947	P948
ARMADA	P949	P950	P951	P952	P953	P954
ARMADA	P955	P956	P957	P958	P959	P960
ARMADA	P961	P962	P963	P964	P965	P966
ARMADA	P967	P968	P969	P970	P971	P972
ARMADA	P973	P974	P975	P976	P977	P978
ARMADA	P979	P980	P981	P982	P983	P984
ARMADA	P985	P986	P987	P988	P989	P990
ARMADA	P991	P992	P993	P994	P995	P996
ARMADA	P997	P998	P999	P1000	P1001	P1002

XBRIL / CDL / DAML
STOCK MIC CODES

STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS

LOGIC / FILTERS

CPU CHIP
EPOCHS

MICRO-CYCLES



ETHER: Compensate Resource Contribution

Gas: price to
Run contract
transactions

ethereum

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



Ether hedged against other
crypto / FIAT currencies
price changes

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

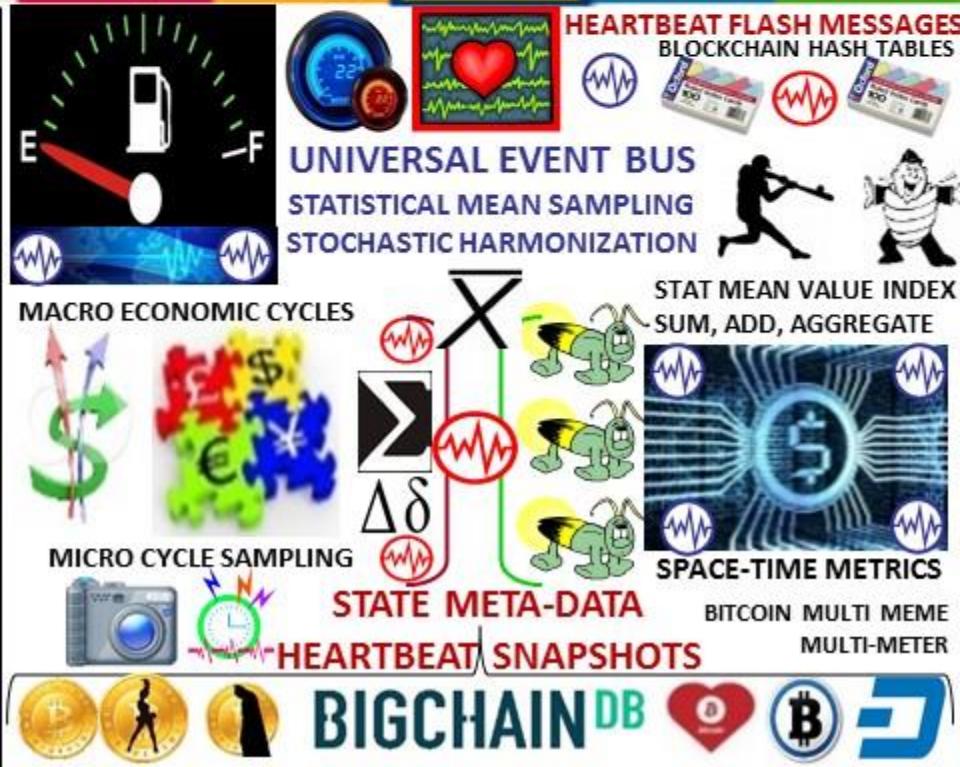
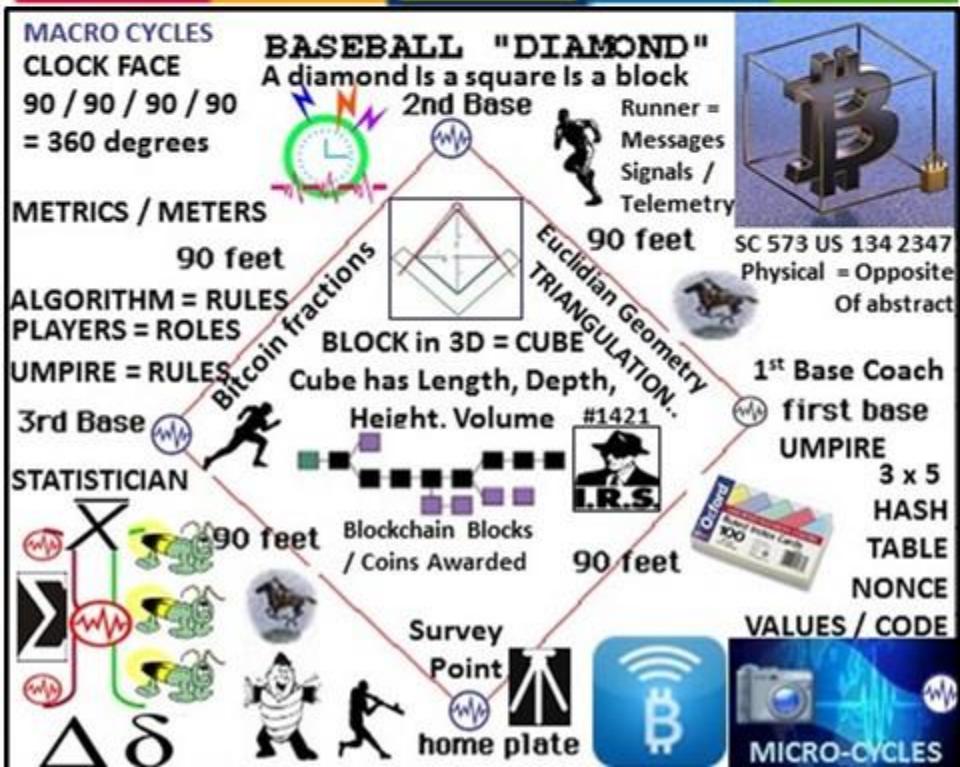
EVENTUALLY

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

SWARM
(storage)

WHISPER
(messaging)

EVM
(consensus)



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

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

X

90 feet

Blockchain Blocks / Coins Awarded

90 feet

Survey Point

home plate

$\Delta \delta$

TRANSACTIONS

PER CYCLE

METRICS

cycle n

COMPUTER CHIP EPOCHS

n + 1

n + 2

SPATIAL

TEMPORAL Series

t₁ t₂ t₃

PROOF-OF-STAKE

UXTO

Mined Bitcoins

Unmined Bitcoins

Survey Methods

Proximity Beacons

MICRO-CYCLES

CALENDAR

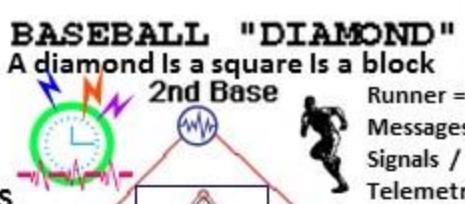
Unmined Bitcoins

Radar

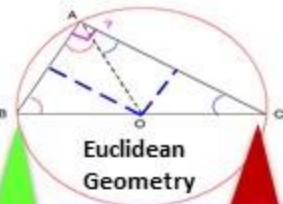
UTXO: unspent transaction output'. bitcoins sent somewhere

but not yet spent. Unspent transaction output set= latest

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



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



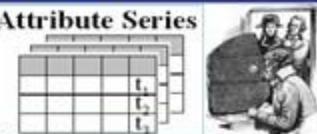
NAMED DATA NETWORKING

Time Series

Value ↑ Time

time ↑ FIX {"108"} distance →

NDN



Digital Asset Modeling Language DAML

Contract Description Language CDL



STRUCTURED {"CONTENT"} TEMPLATES

SYNTAX, SYMBOLS LEXICON LIBRARY

LOGIC - FILTERS CODE SEQUENCE

ROLES / RULES

- 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

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

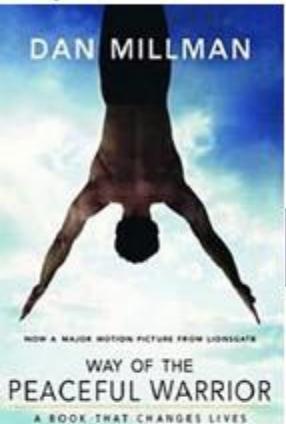
Voting Based Selection: stake size & block generators selected by votes





Humanitarian Assistance Networked Donor System

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



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

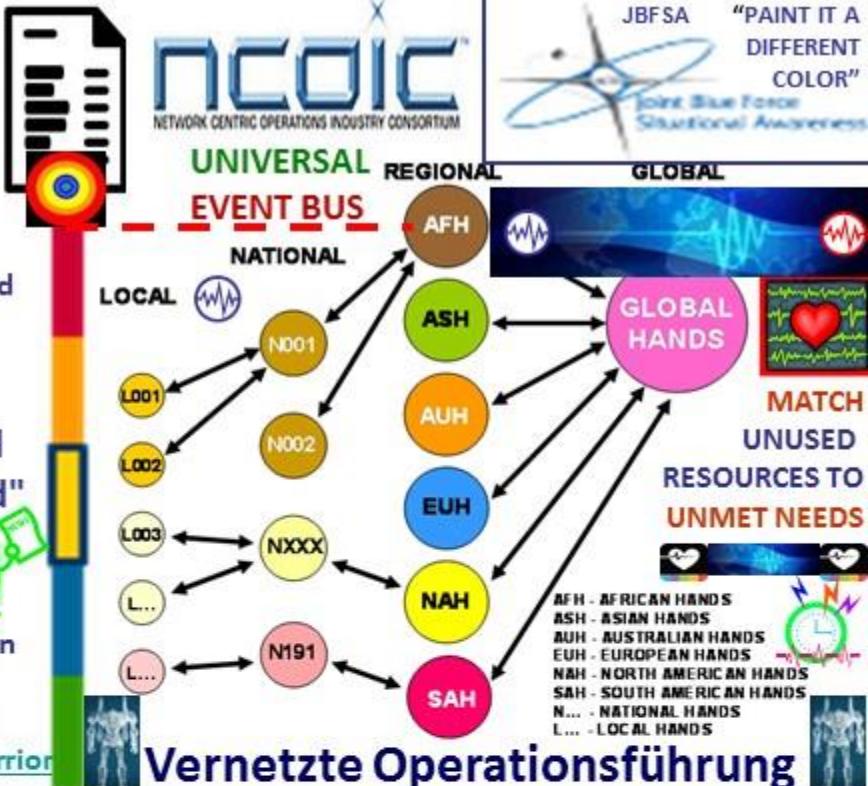


"The secret of change is to focus all of your energy, not on fighting the old, but on building the new." Dan Millman
Way of the Peaceful Warrior A Book That Changes Lives
http://en.wikipedia.org/wiki/Way_of_the_Peaceful_Warrior

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



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



Vernetzte Operationsführung

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

FEDERATION



STATE: stored data at a given instant in time

STATE CHANNELS: blockchain interactions

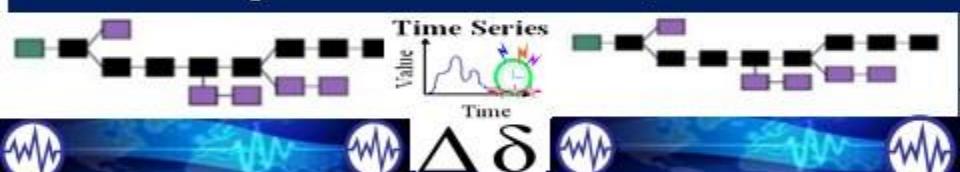
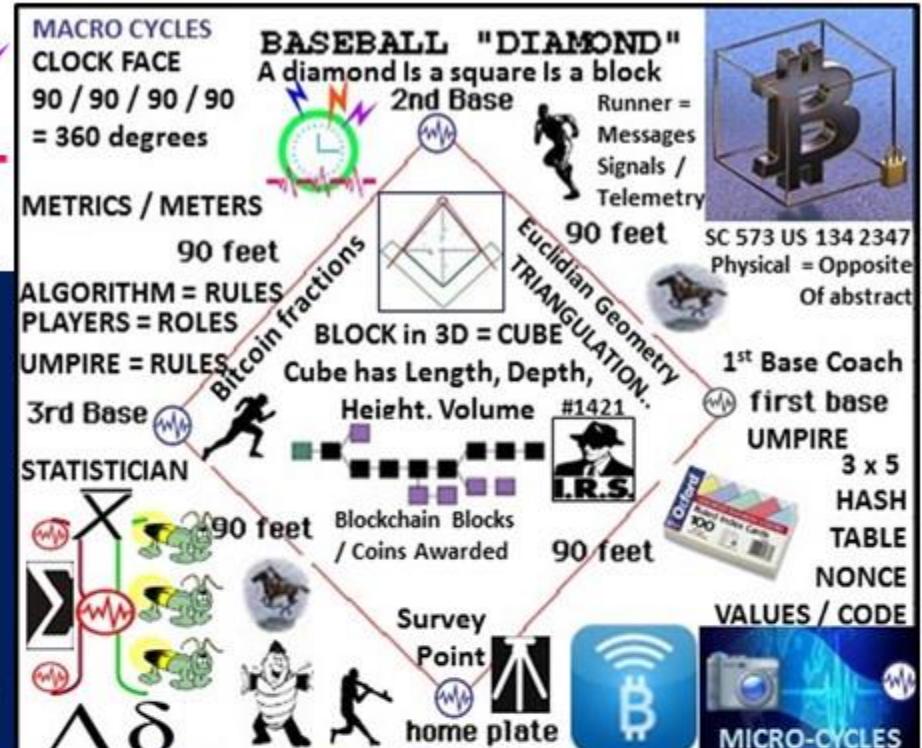
which could occur on the blockchain, but instead get conducted off of the blockchain, without significantly increasing the risk of any participant.



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

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

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



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

LINK: <http://jeffcoleman.ca/state-channels/>



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



PROOF-OF-WORK



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



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



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

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



GUESS stores the guess
Effectively, it begins at infinity.



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

OREILLY Time Series Databases



FIREFLY-HEARTBEAT ALGORITHM STOCHASTIC HARMONY ACROSS TIME ZONES



- MESSAGE ex:
 - Hashing string
 - Hash Table

300+Message Templates



LOGIC FILTERS
LOGIC GATES

SYNTAX LIBRARY
LEXICON

CODER'S GUIDE

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

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



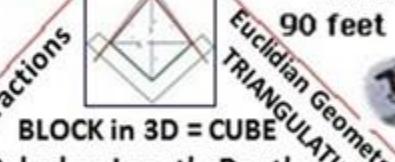
Runner =
Messages
Signals /
Telemetry

SC 573 US 134 2347
Physical = Opposite
Of abstract

METRICS / METERS

90 feet

ALGORITHM = RULES
PLAYERS = ROLES



Euclidian Geometry
TRIANGULATION
BLOCK in 3D = CUBE

UMPIRE = RULES

Cube has Length, Depth,
Height. Volume

#1421

3rd Base

I.R.S.

1st Base Coach

STATISTICIAN

first base

UMPIRE

X

3 x 5

HASH

Σ

TABLE

NONCE

Blockchain Blocks / Coins Awarded

NONCE

VALUES / CODE

90 feet

Survey Point

MICRO-CYCLES

90 feet

home plate

Micro-Cycles

Σ

Micro-Cycles

Micro-Cycles

Δ

Micro-Cycles

Micro-Cycles





ETHER: Compensate Resource Contribution

Gas: price to
Run contract
transactions

ethereum

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



Ether hedged against other
crypto / FIAT currencies
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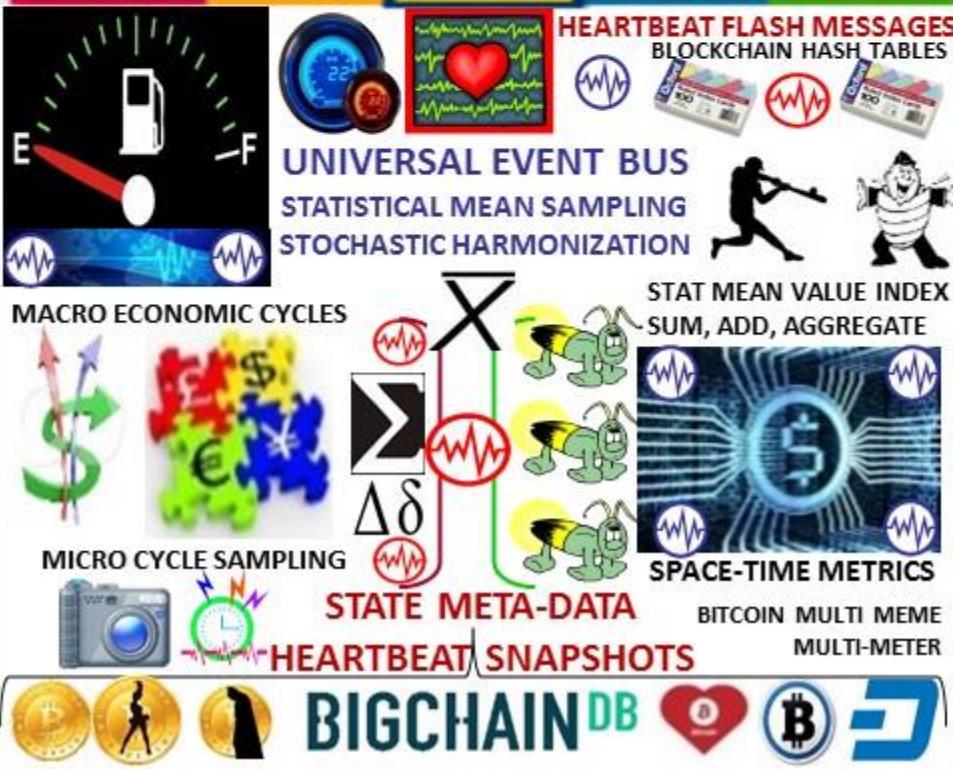
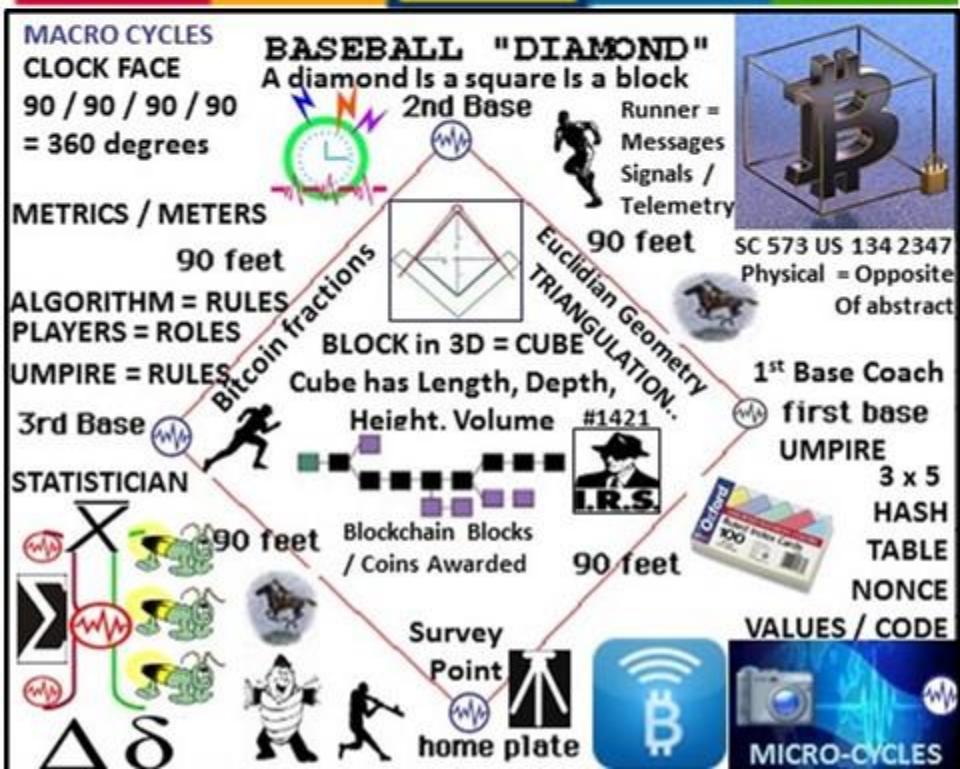
EVENTUALLY

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)

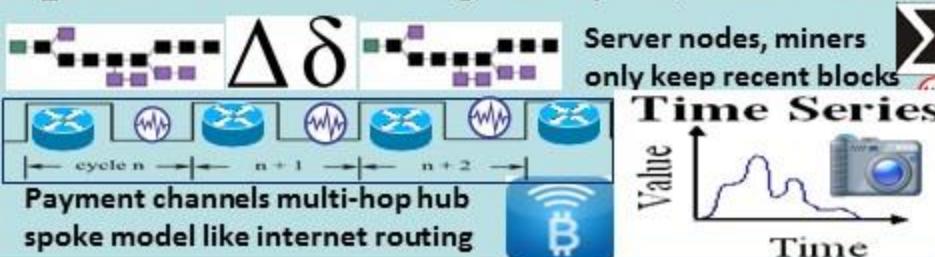


PROJECT LIGHTING



Hashed TIME LOCK contracts component for global consensus

OP_CHECKLOCKTIMEVERIFY During Macro Cycle w/Random # BEACON



EVENT REPORTING ACROSS TIME-SPACE



SEGREGATED WITNESS SegWit



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

ALGORITHM = RULES
PLAYERS = ROLES
UMPIRE = RULES

3rd Base

STATISTICIAN

90 feet

Blockchain Blocks / Coins Awarded

Survey Point

home plate

Euclidian Geometry

TRIANGULATION.

Height, Volume #1421

1st Base Coach

first base

UMPIRE

3 x 5 HAS TABLE NONC

VALUES / COD

Bitcoin fractions

SC 573 US 134 234
Physical = Opposite
Of abstract

MICRO-CYCLES

tness = Separated

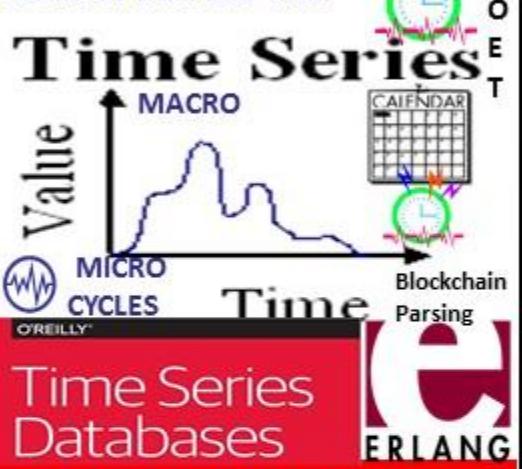
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signatures are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a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

SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

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



PROOF OF ELAPSED TIME



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

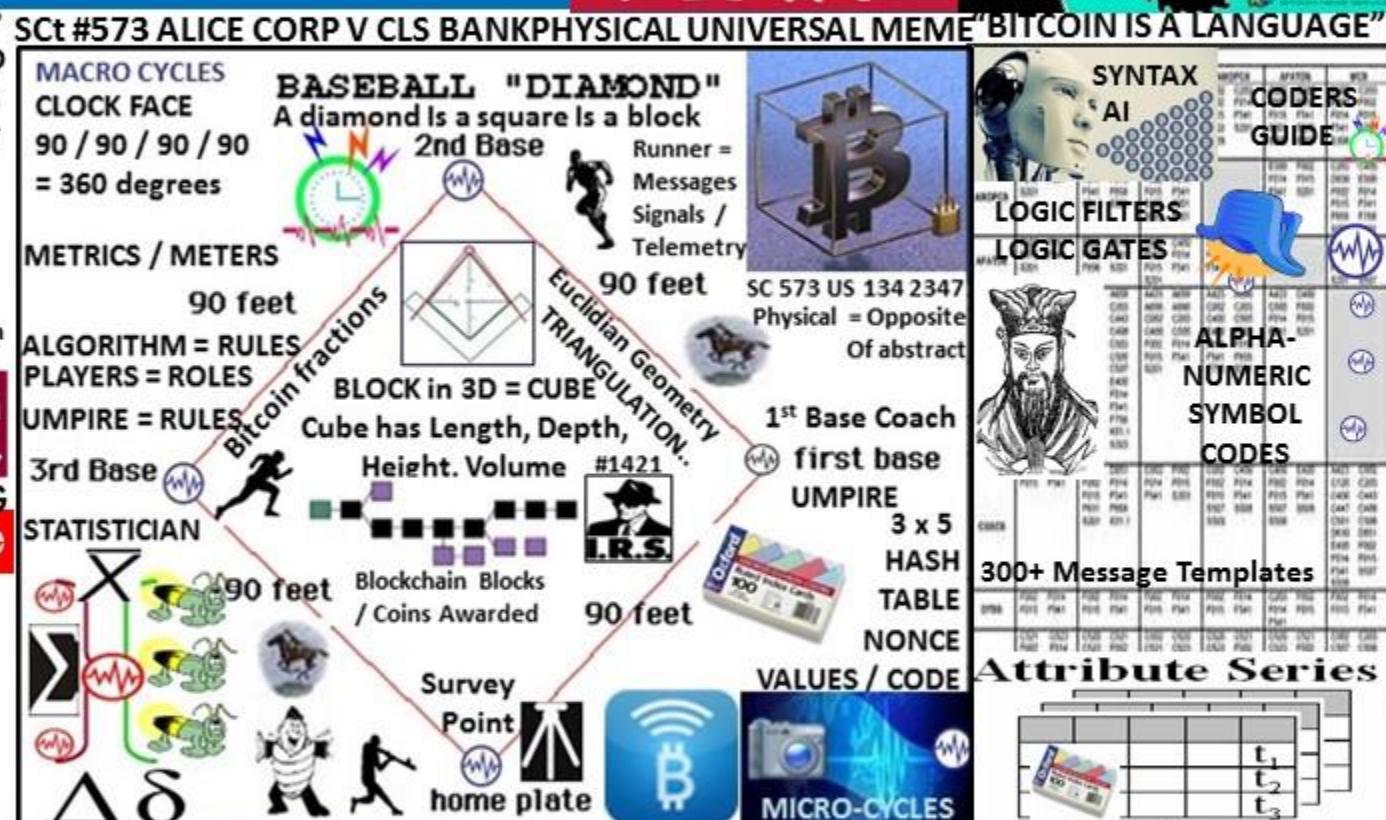
Voting based selection Instead of only using the stake size, the block generators can be selected by votes
ex: League MVP

MVP



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

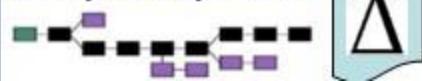
TOURNAMENT LEAGUE BOARD



FIREFLY-HEARTBEAT FLASH MESSAGES UNIVERSAL EVENT BUS



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



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

Key Features:

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



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

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

All rates time-stamped in UTC.



Ability to look up by time-stamp.

Ability to look up by block-height.

Asset Classes: Digital Currencies

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

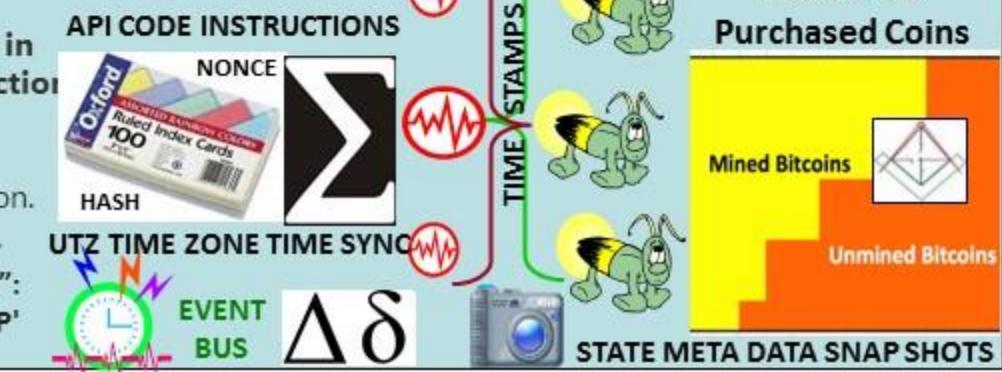
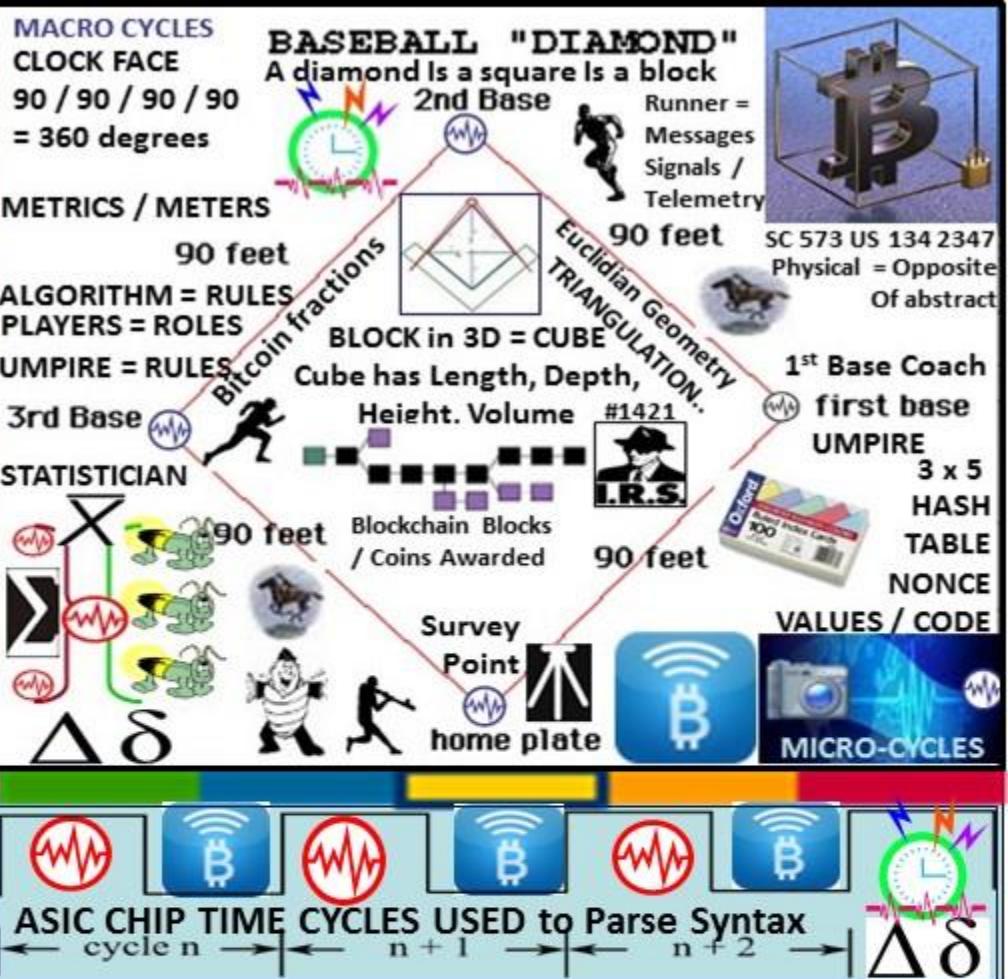
Transaction ID, Block ID, time-stamp, BWAP per block, Value in USD. BTC per transaction, bitcoin transaction fees per transaction

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

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

BRAVE NEW COIN.
Digital Currency Insights

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



DASH



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

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

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

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

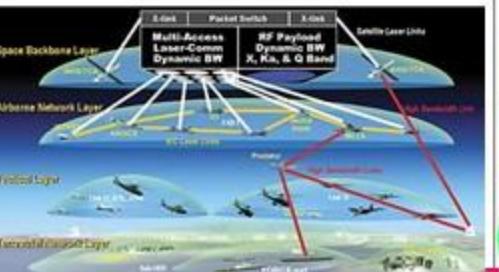
"Its makeup is thus: the block reward is divvied up in three parts. The first 45 percent goes to [Dash's miners](#). Another 45 percent goes to its Masternodes. And 10 percent is set aside to fund whatever other jobs or expenditures the Dash network deems necessary"

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

Masternodes receive payments for their service to the network.

DAO: RAND THINK TANK TERM COINED + / - 2001

NETWORK CENTRIC WARFARE
Developing and improving information superiority



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

METRICS / METERS

90 feet

ALGORITHM = RULES
PLAYERS = ROLES

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3rd Base

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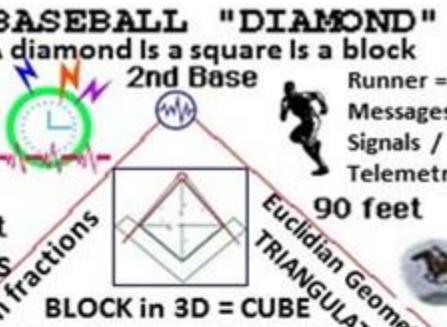
90 feet

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*?

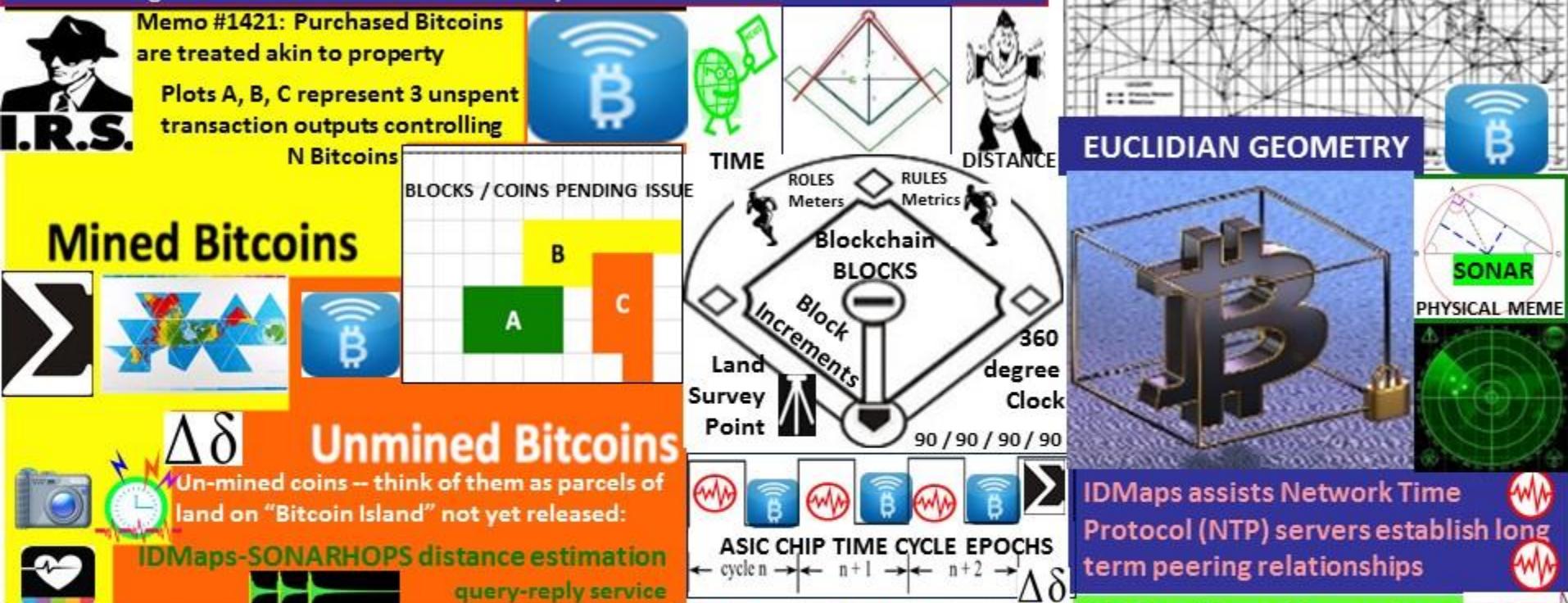
HEART BEACON CYCLE

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.



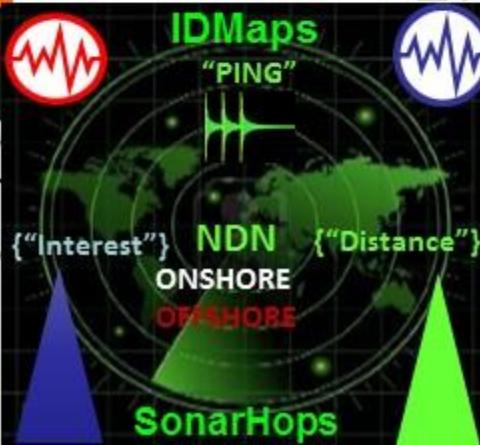
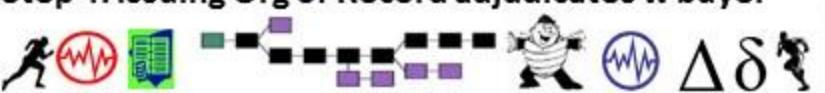
- End-state Bitcoin quantity will be fixed like land
"Bitcoin as protocol of ownership, not transfer"
Coins never travel, but simply switch owners"

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



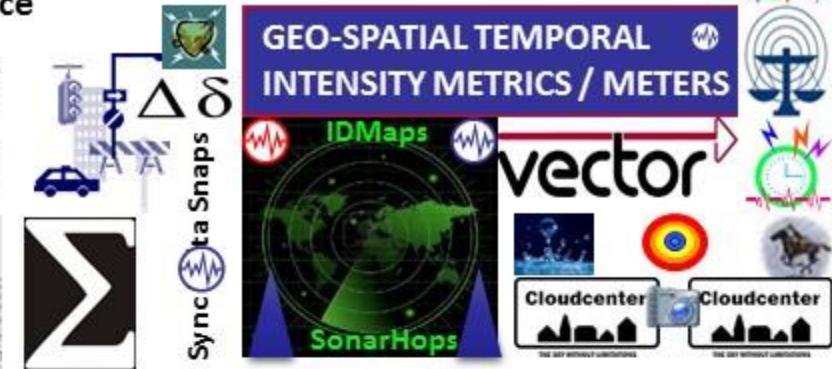
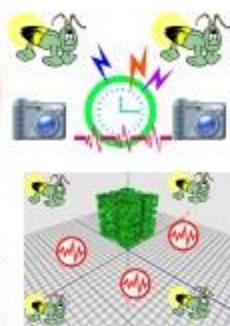
IDMaps Distance Metrics: latency (round-trip delay) available bandwidth estimation



IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



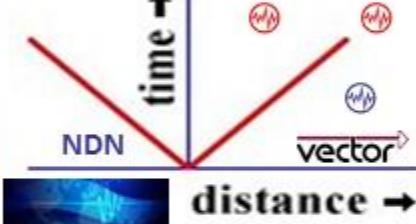
HOP COUNTS



REACHABILITY



/localhost/nfd/fib/add-nexthop



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

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

Name Prefix
<Org_ID> Trie (NPT)



NDN NAMES

NDN NAMED DATA NETWORK RIB /
FIB Datasets event notification

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

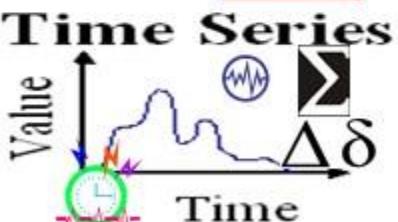


NDN RIB

NDN INTEREST LENGTH
= DISTANCE BY HOPS

NDN
INTEREST

IS DATA
FRESH ?



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

Datasets and Event Notification

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



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



MICRO-CYCLES

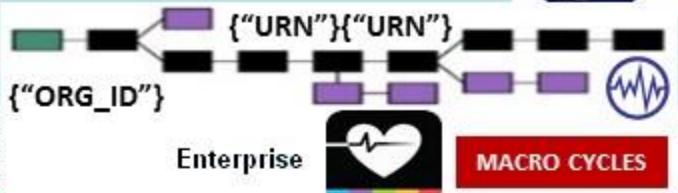


NDN INTEREST LIFETIME = TTL Time To Live

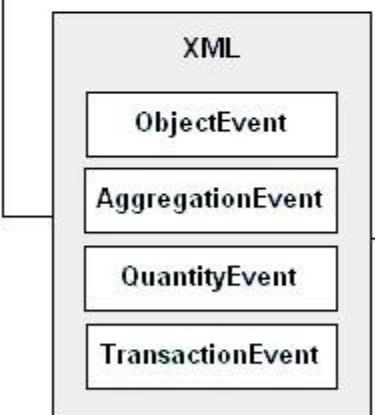
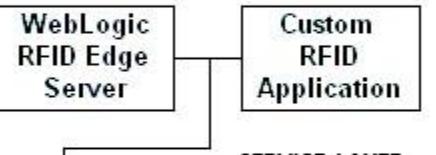
HEARTBEAT STATE META DATASNAP SHOTS

Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data



EPCIS DATA MODEL



Core Business Vocabulary (CBV)

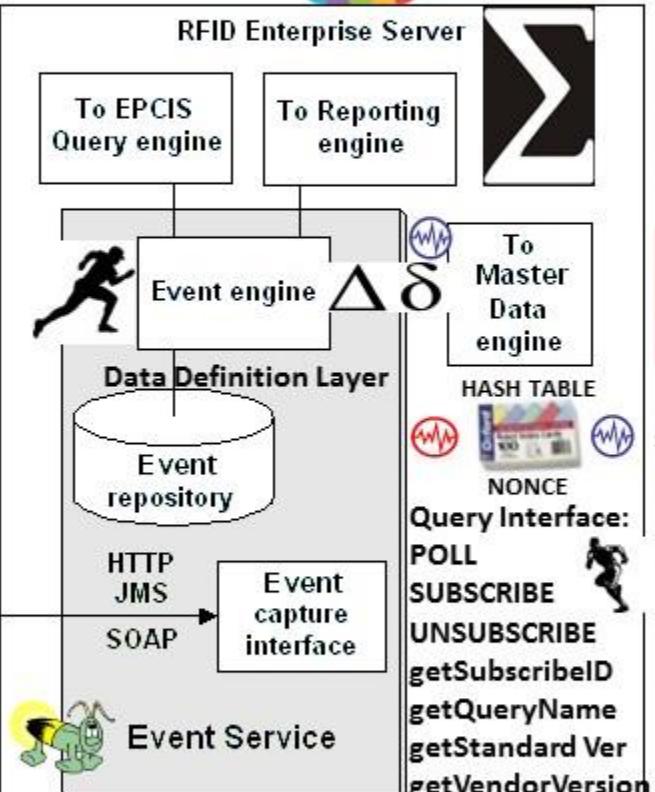
What identifiers of object(s) or entities / subject of the event

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

Where location identifier where event occurred, identifier of

location where object(s) are expected to be following the

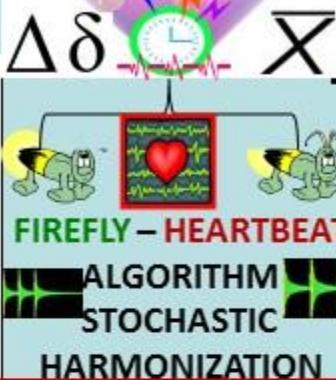
Why Information about the business context, including:
a Identifier that indicates the business step taking place



CLOSER IS CHEAPER
CLOSER IS FASTER



MICRO CYCLES



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

RFID Configuration TCP/IP heartbeat message

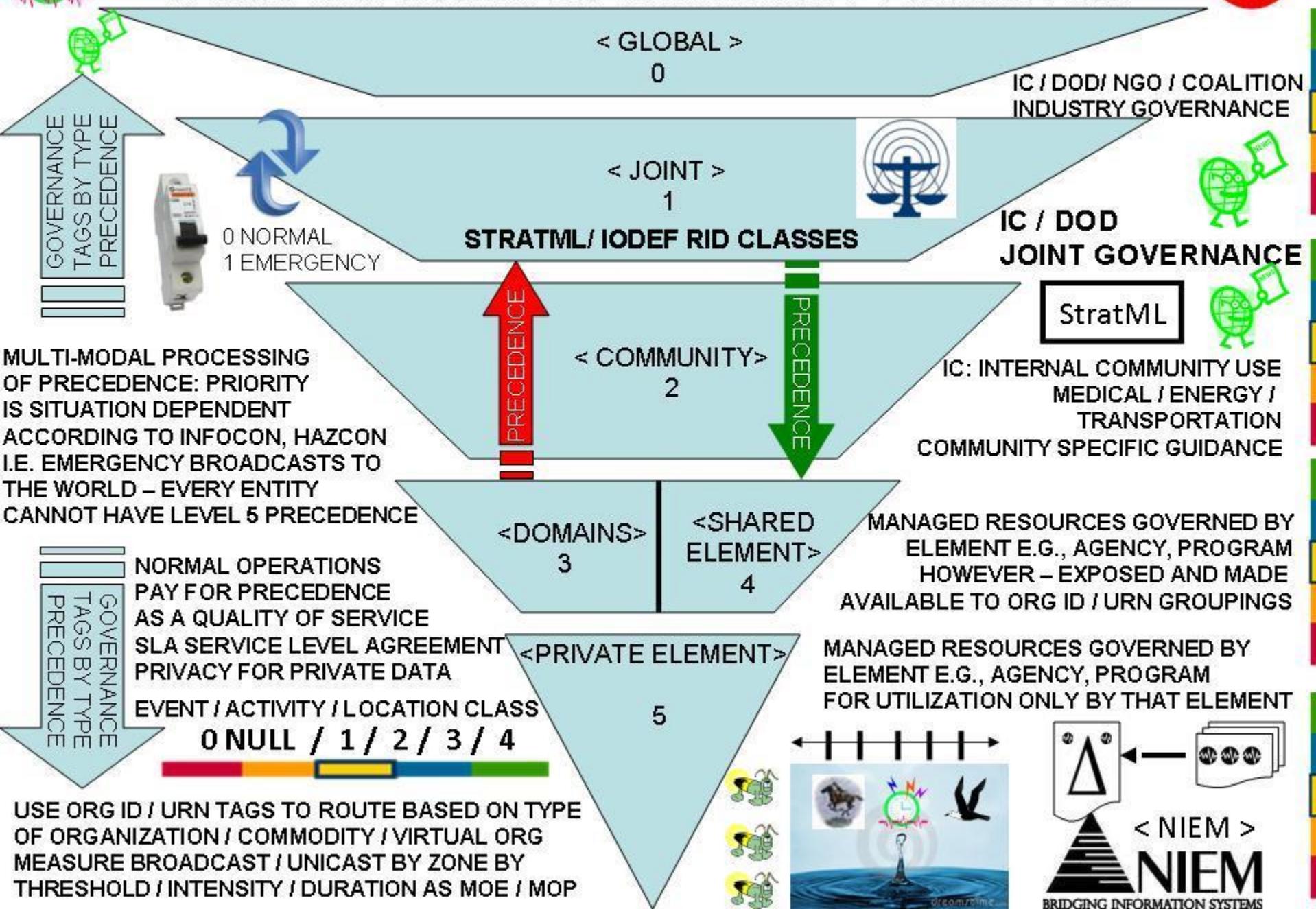
STRUCTURED DATA EXCHANGE / STRUCTURED MILITARY MESSAGES

BIZ USE CASES ALPHA NUMERIC BREVITY CODES





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



Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

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



Industrial Control System
Information Sharing and
Analysis Center

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

<ELEMENTS>

STRATEGIC
MARKUP

StratML

LANGUAGE

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

INVENTORY: Uniform Resource Name <URN>

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



vector

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

GEO-SPATIAL TEMPORAL INTENSITY METRICS

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

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

CONTENT LEXICON
ROSETTA STONE

NDN

<GEO_LOC_GPS><STATUS>



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



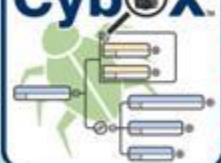
NDN

<INTEREST>



NDN

<INTEREST>



AVALANCHE

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

NIST CYBER SECURITY FRAMEWORK

CYBER SECURITY CONTENT
LEXICON ROSETTA STONE

MIL-STD 2525A
STRUCTURED <CONTENT> TEMPLATES

<TAG> LIBRARY
USMTF / XML MTF FORMATTED MESSAGE CATALOG

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



Heart Beacon Cycle

Trade Federation on Bitcoin Blockchain



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

Net joins, drops, splits, merges, moves

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

Federation Gateway



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

Bitcoin Mining Pools MEME / METAPHOR MEDIATION



Office 365 Groups



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

Circa 1991 now in use by Blockchain tech corporations..

FIREFLY FLASH
HEARTBEAT MESSAGES



Uniform_Resource_Name

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

QR / PURCHASE CODE



iET DEVICE / PLATFORM
IoT SENSOR DEVICE

{"Asset_Type"}



STOCK EXCHANGE



MIC MARKET IDENTIFIER
CODES / BREVITY CODES

FEDERATED ID
Org Unit OU, OU, OU

Heartbeat Snaps

MICRO-CYCLES

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

EVENT BUS



Signalizing, Telemetry





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



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

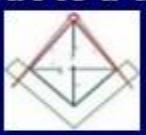
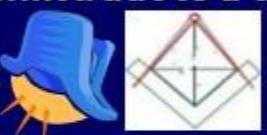
OPENBAZAAR.ORG
BLOCKCHAIN ARBITRAGE



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

PROJECT PHILOSOPHY: *MAKE TRADE FREE*

Mission: *shift trade to a decentralized platform*



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



Free and open markets:

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



HASH Values
Nonce Values

SCT Alice V Cls Bank



Federation

Gateway



• Privacy

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

HASH Values
Nonce Values

SCT Alice V Cls Bank



Federation

Gateway



Bitcoin: OpenBazaar transactional currency



Federation

Gateway



Cryptographic Security

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



Federation

Gateway



NIST Beacon
A Public Randomness Service
Non-
Repudiation



Federation

Gateway



Price Indexes in Time and Space

Methods and Practice

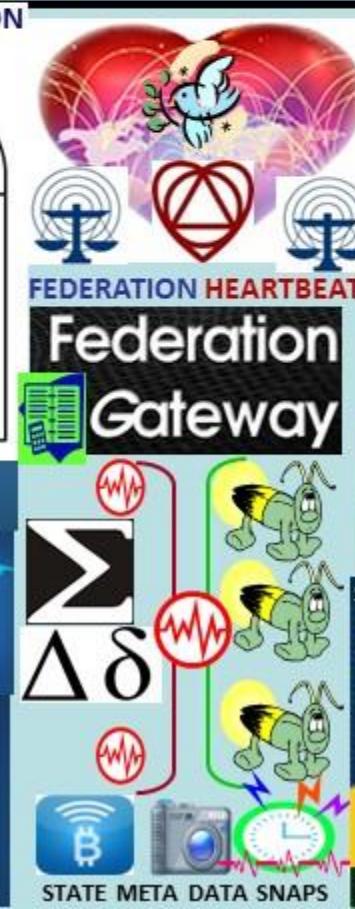
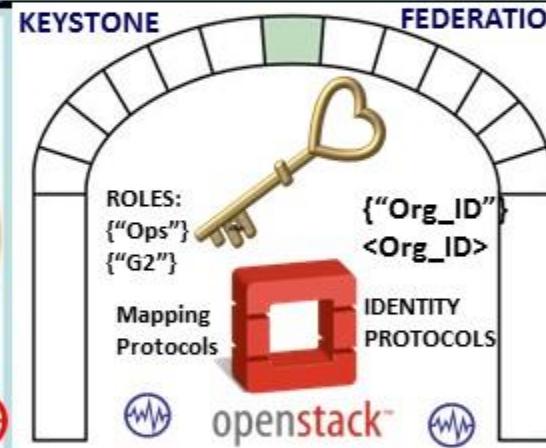
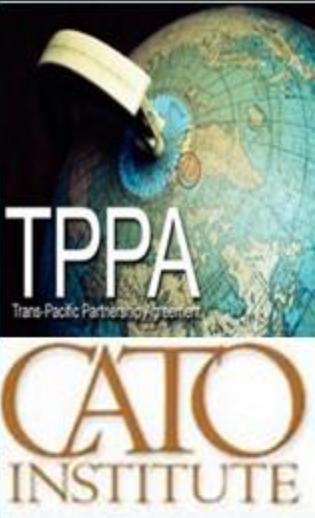


SchellingPoint



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

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





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

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

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

VERITAS TOKENS = KEYS TO P2P Capital Market! Proprietary P2P smart contracts combined with the transformational power of blockchain, allow the entire world to participate in the reimagining of global capital markets.
Purchasing Veritas tokens is analogous to purchasing keys to the internet of money – the most monumental paradigm shift since the advent of the net

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

FINANCIAL
NOSTRADAMUS
REGGIE MIDDLETON



ECONOMIC HEARTBEAT
STATISTICAL MEAN VALUE INDEX PULSE



AETERNITY / DFINITY NEURAL NET
ALGORITHMIC REGULATION



SHELLING POINT TRUTH
CONTRIBUTIONS TO STATISTICS



Price Indexes in Time and Space



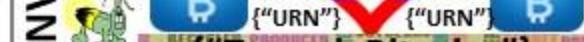
SchellingPoint



UTZ Stochastic Harmonization



DFINITY



COMMODITIES





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

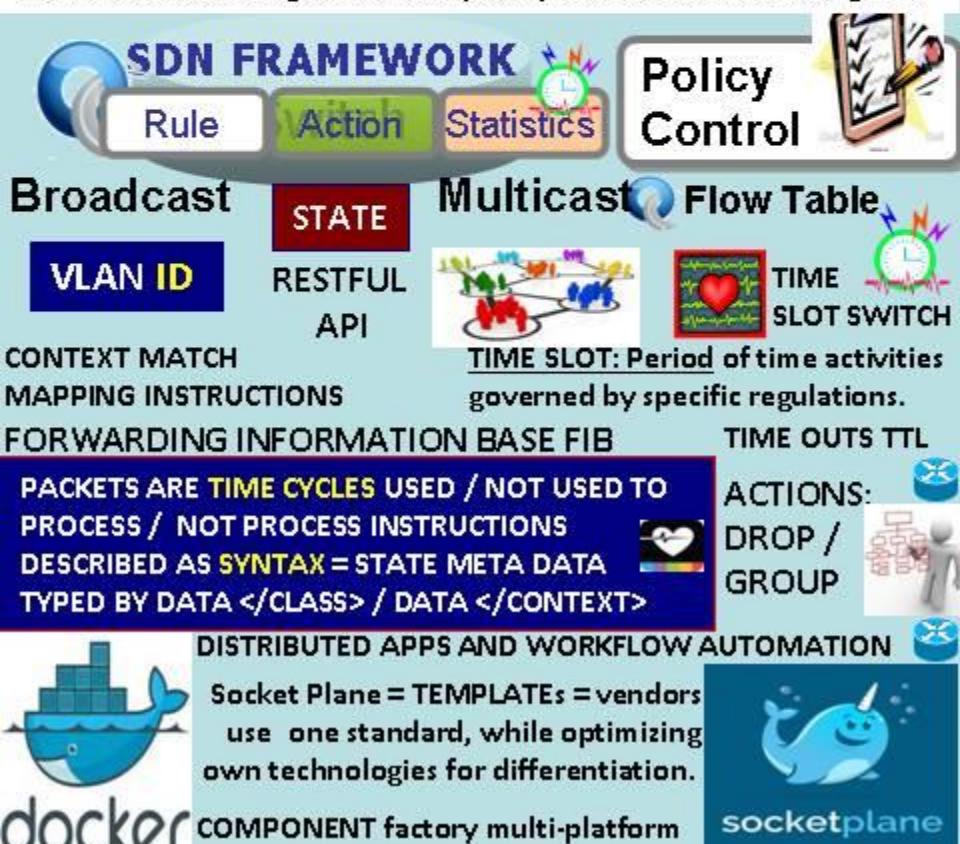
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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





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

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



Autonomous Device Coordination Framework



Registration

Authentication

Proximity based rules

Consensus based rules

FEDERATION AGREEMENTS

PROCEDURAL TEMPLATE

Contracts

Checklists

FEDERATION

<UUID><ORG_ID><URN>

LDAP DIRECTORY

Physical proximity

Social proximity

Temporal proximity

Agreements

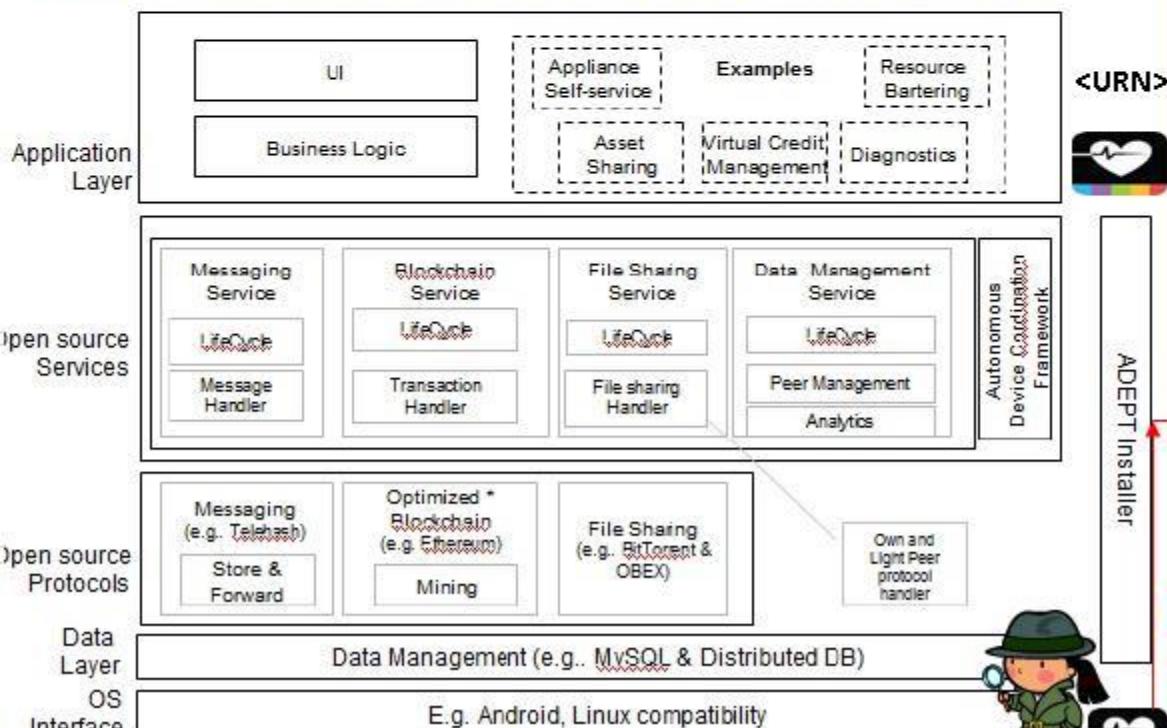
Payments

Barter



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

ADEPT Standard Peer Architecture – Logical View



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



ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML_Wf>

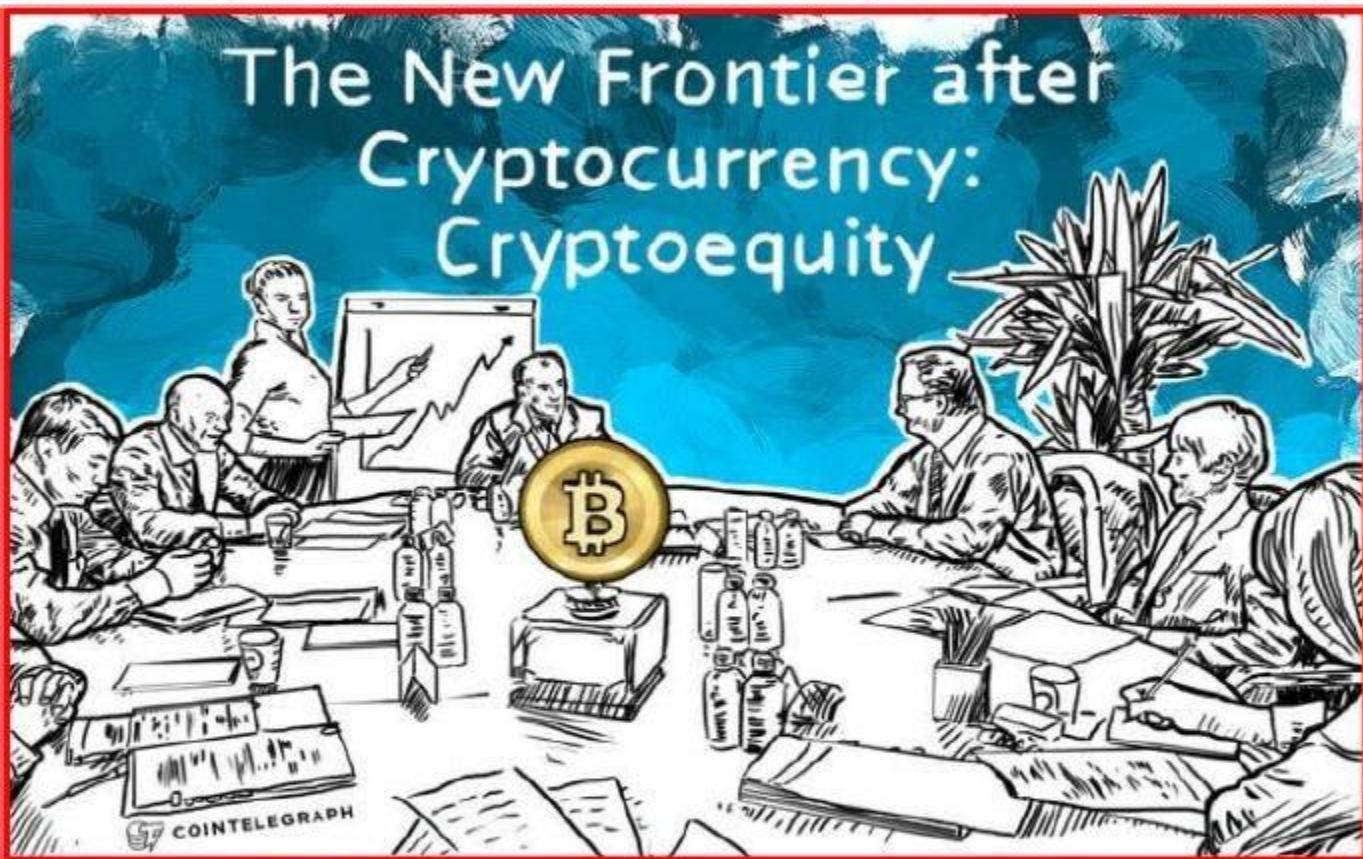
FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH



OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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

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

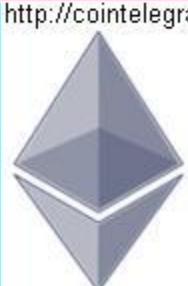


RAND
Monograph
Report

THE
ADVENT
Of NETWAR

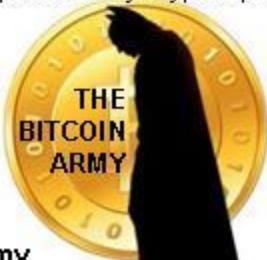


Eris -- The Dawn of Distributed Autonomous Organizations and The Future of Governance



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

<https://twitter.com/TheBitcoinArmy>



ERIS: GODDESS OF DISCORD
DISRUPTIVE TECHNOLOGIES:

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



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

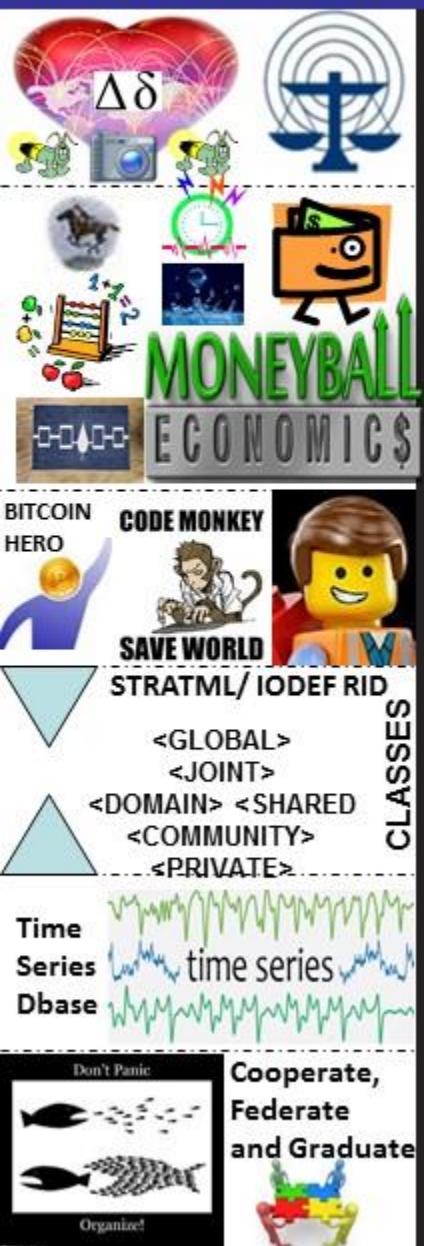
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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



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



HOW GAMIFICATION WORKS:

5 COMMON MECHANICS

POINTS



Measure a user's achievements in relation to others
Can double as currency to exchange for rewards

BADGES



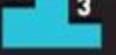
Reward achievements visually

LEVELS



Encourage users to progress and unlock new rewards

LEADERBOARDS



Organise players by rank

CHALLENGES



Encourage engagement by offering specific tasks to complete

4 MAIN WAYS TO DRIVE ENGAGEMENT

ACCELERATED FEEDBACK CYCLES

CLEAR GOALS AND RULES OF PLAY

A COMPELLING NARRATIVE

CHALLENGING BUT ACHIEVABLE TASKS





13/573,002 HEART BEACON CYCLE

The four dimensions of Big Data

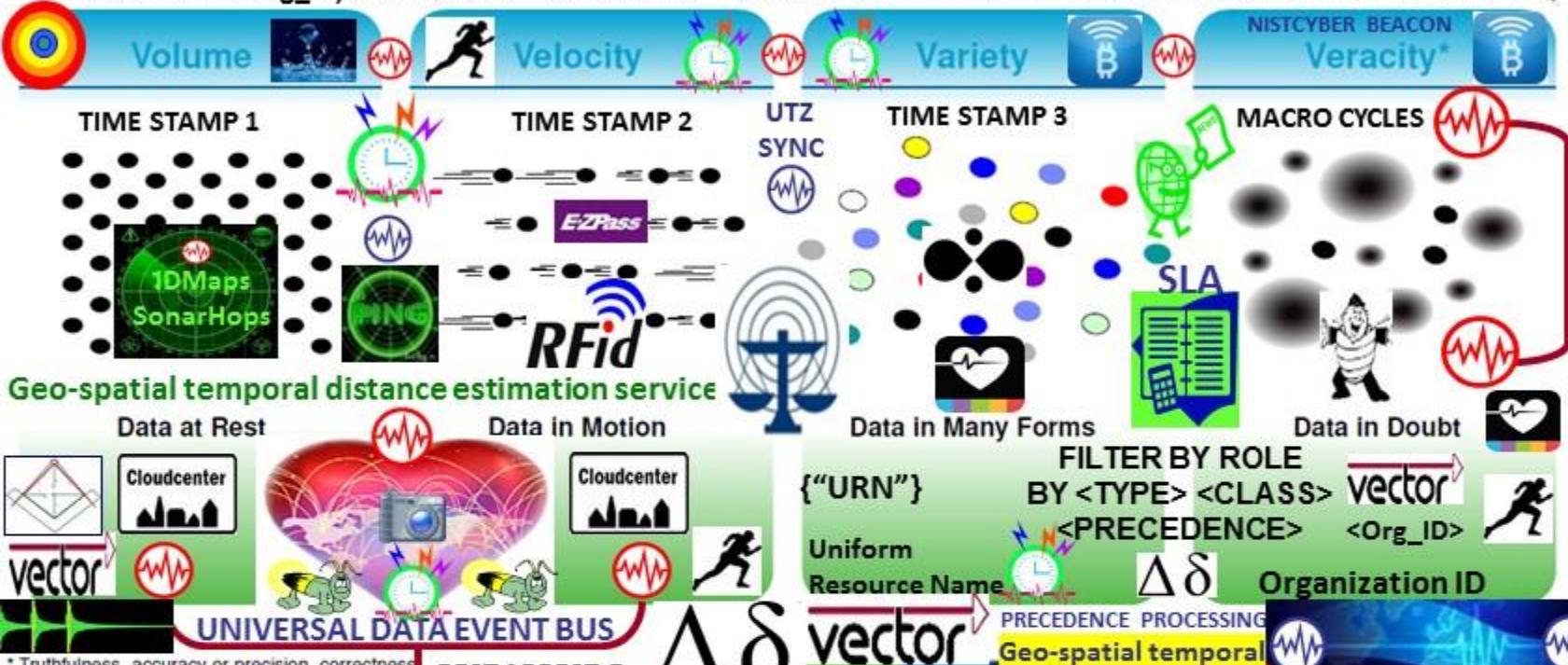
TIME STAMP BY Org_ID, URN Before FUSION CENTER

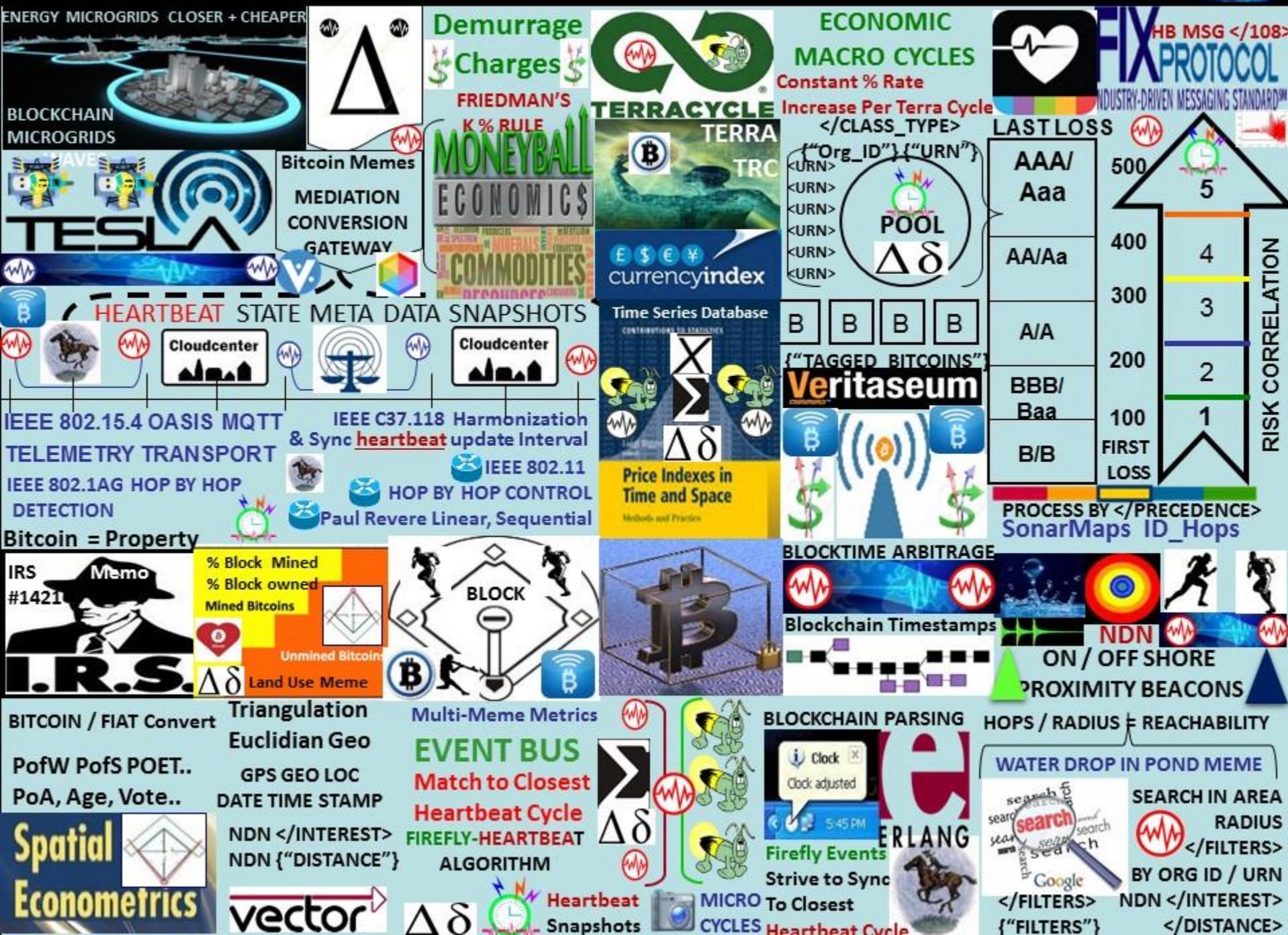
Time -Space meter, metrics / Universal data event, alert bus
Internet of Everything IET ability to hear the world's heartbeat

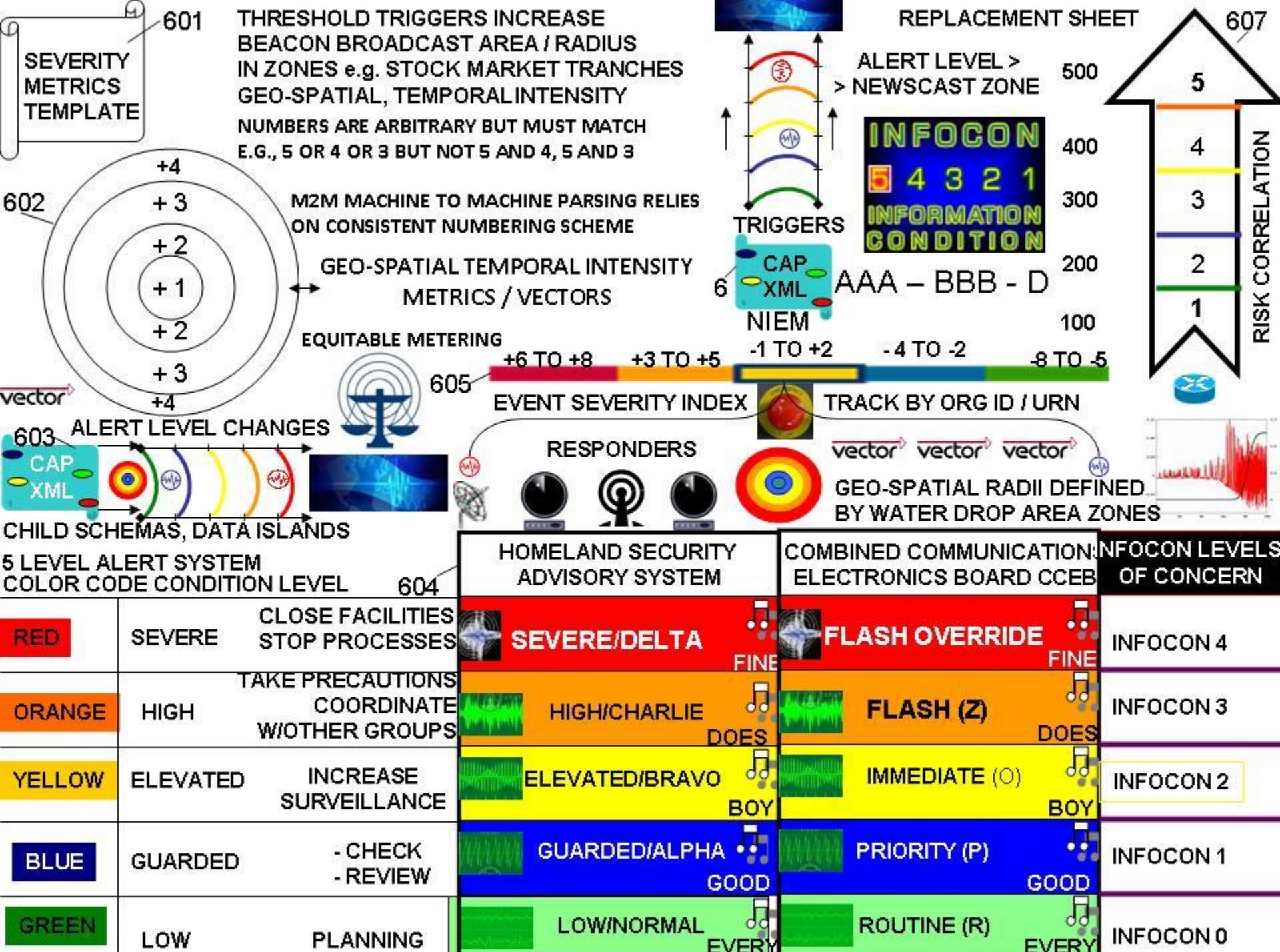


INFOCON
5 4 3 2 1
INFORMATION CONDITION

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







GEO-SPATIAL TEMPORAL INTENSITY METRICS, METERS, VECTORS



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



Geo-Spatial Temporal Intensity NOVEL METRICS / METERS:



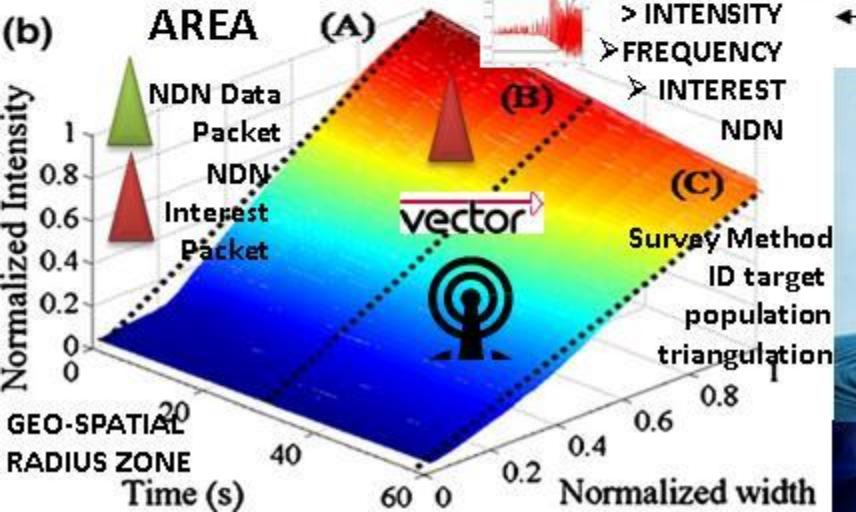
Paul Revere = linear, sequential



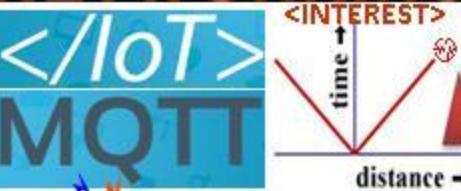
TCP/IP hop by hop counts, by hop controls



Water Drop = AREA / INTENSITY Cyclic Frequency



NAMED DATA NETWORKING



NIST TIME BEACON

05:08:57

05:08:57

ARRESTED-D

IEEE 802.15.4

OASIS MQTT

TELEMETRY TRANSPORT

Hop Count

START

SOURCE NETWORK 172.16.0.0/16

omnisecu.com.R1

omnisecu.com.R2

omnisecu.com.R3

omnisecu.com.R4

DESTINATION NETWORK 172.27.0.0/16

STOP

TTL = Time To Live

Number of Hops = 3

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

INSTRUCTIONS TO MASTER CONTROLLER

feed your brain

vector

WirelessHART

time synchronized, self-organizing, mesh Net

ALERT LEVEL > NEWSCAST ZONE

TRIGGERS

CAP XML

<INTEREST> BY INTENSITY / FREQUENCY

INFOCON
XML
MTF
300 +
MSG

5 4 3 2 1

INFORMATION CONDITION

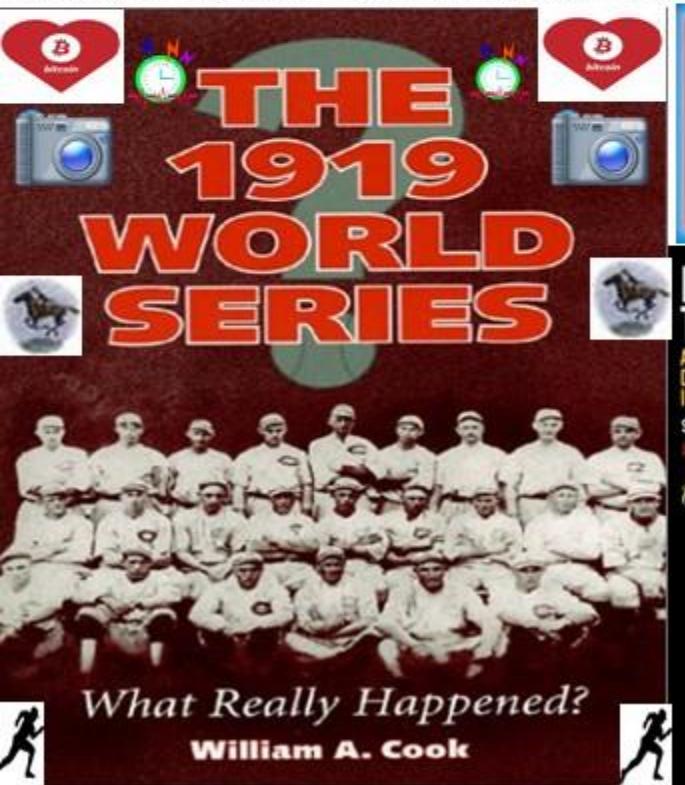
INFOCON

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





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



USPTO SCREEN CAPTURES SUSPENDED PAIR RULES

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





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

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

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



TIME / DISTANCE SERVICE LEVEL
AGREEMENT SLA / O Operations

IEEE 802.15.4 OASIS MQTT

IEEE 802.11



TELEMETRY TRANSPORT

HOP BY HOP CONTROL

IEEE 802.1AG HOP BY HOP
DETECTION

Unused Resources / Unmet Needs

/localhost/nfd/fib/add-nexthop

Geo-Spatial Temporal

Metrics, Meters

DISTANCE
INFO SERVICE

Time Series

RISK

Value

Time

WATER DROP IN POND MEME IS

SONAR NAVY METAPHOR / MEME

NDN </INTEREST>

NDN {"DISTANCE"}

NAMED DATA

NETWORKING

IEEE C37.118

Harmonization

& Sync heartbeat

update Interval

CLOSER SOURCE

CHEAPER RATE

Energy Attenuates over Distances

TCP/IP HOP BY HOP COUNT

Attribute Series

INTEREST

DISTANCE

Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

602

603

NULL

+1

+2

RADIUS

WATER DROP IN POND MEME

Attribute Series

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Temporal Series

Geo Spatial

Paul Revere

LINEAR, SEQUENTIAL

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+2

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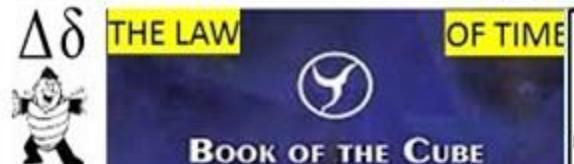
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

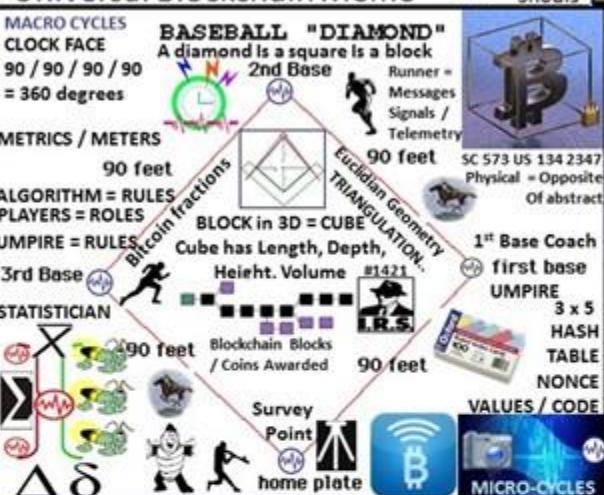
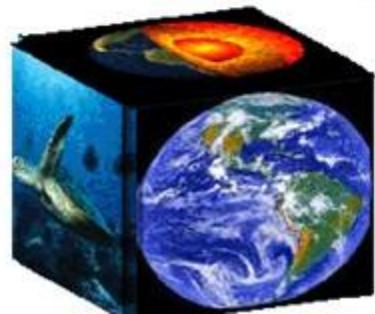
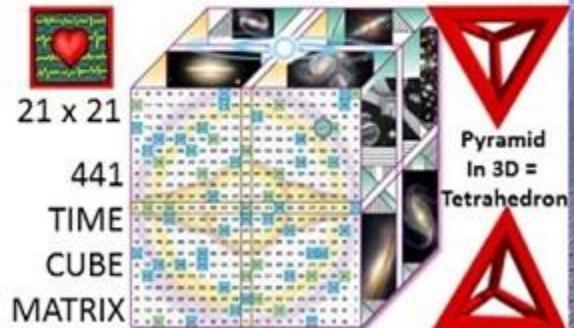
Main Embodiment: Baseball Diamond = block in 3D = cube

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

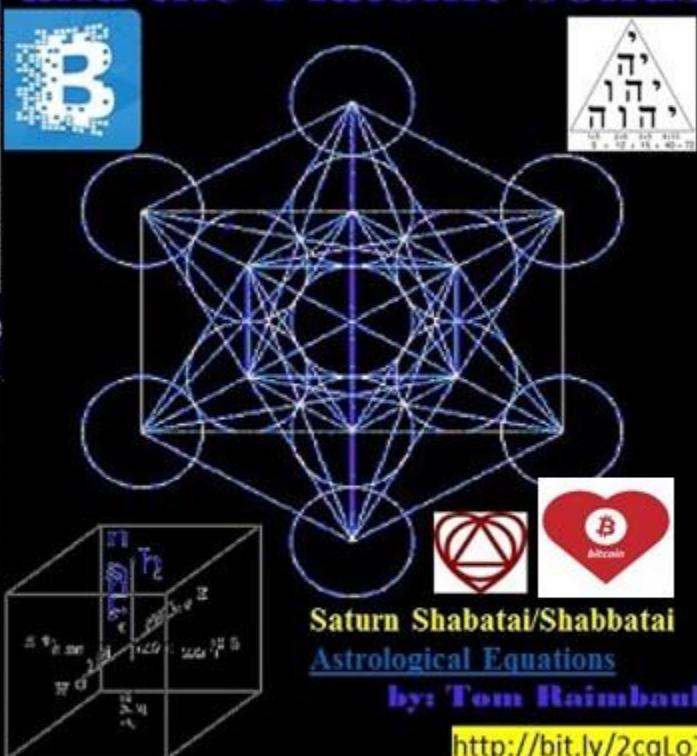
"We can synchronize ourselves in time for a common purpose" Universal Blockchain Meme



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>

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<https://www.heartmath.org>



