

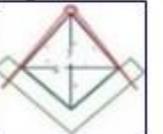
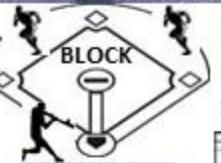


The Heart Beacon Cycle

Time – Space Meter

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

UNIVERSAL
MEME /
METAPHOR



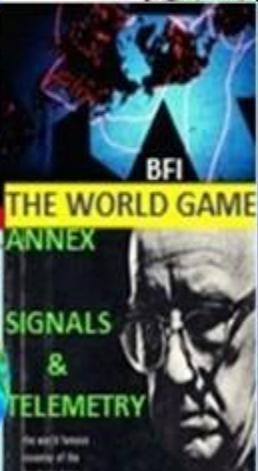
Open
Source
Coder's Guide



ΣX
SAVE WORLD



**Spatial
Econometrics**



Vernetzte Operationsführung

OOTW: Operations Other Than War



JAEGER



OFF SHORE

OUTER
BANKS



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

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

CHECKLIST: TRADE FEDERATION ECONOMIC FRAMEWORK EX:

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



Humanitarian Assistance Networked Donor System

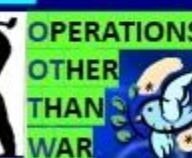
H.A.N.D.S: "Based on the need to speed up the processes of influencing an adversary, new concepts result in the adaptation of military doctrine, organization, training, material, infrastructure, interagency interaction, leadership, personnel and facilities" ... German Bundeswehr : concepts of "Network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



<https://neo.org>



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



Beacon Communities

JAEGERS



Vernetzte Operationsführung

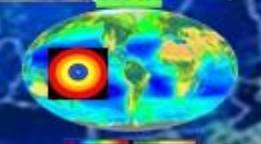
Proximity Beacons



FIREFLY
HEARTBEAT
ALGORITHM

EVENT / ALERT Flash Heartbeat Message Bus

Closer < \$\$\$ < FUEL



RNG

OFF SHORE
OUTER BANKS



Federation Gateway



AFH - AFRICAN HANDS
ASH - ASIAN HANDS
AUH - AUSTRALIAN HANDS
EUH - EUROPEAN HANDS
NAH - NORTH AMERICAN HANDS
SAH - SOUTH AMERICAN HANDS
N... - NATIONAL HANDS
L... - LOCAL HANDS



a global movement to end all wars



DOD SITUATION AWARENESS PROGRAM

SWORDS TO PLOWSHARES OOTW IDEA

BY GERMAN MILITARY CIRCA 2003



OFF SHORE
OUTER BANKS





Firefly - Heartbeat Algo

University of Bologna Italy / Hungary



THE HEART BEACON CYCLE

{"108"}



K%



X

USDe



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

TERRACYCLE

ECONOMIC MACRO CYCLES

ECONOMIC HEARTBEAT

K% GDP ECONOMIC PULSE

FEDCOIN WORLDCOIN



Luxor Temple Egypt:
"The shortest road towards knowledge of truth is nature"



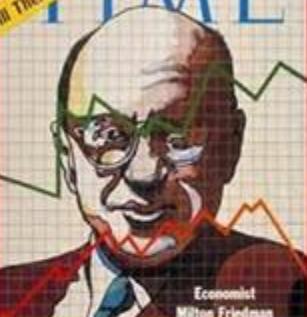
LUXOR
EGYPT

HEARTBEAT FLASH MESSAGE EVENT BUS
PRECEDENCE ETHEREUM THRESHOLD
PROCESSING GAS METRICS



TERRA
TRC

TIME
Will There Be a Recession?



Economist
Milton Friedman

FRIEDMAN'S K% RULE

STAT MEAN VALUE INDEX
SCHELLING POINT TRUTH



Price Indexes in Time and Space
Methods and Practices

$\Delta\delta$

ALGORITHMIC REGULATION
ASSET TOKENIZATION



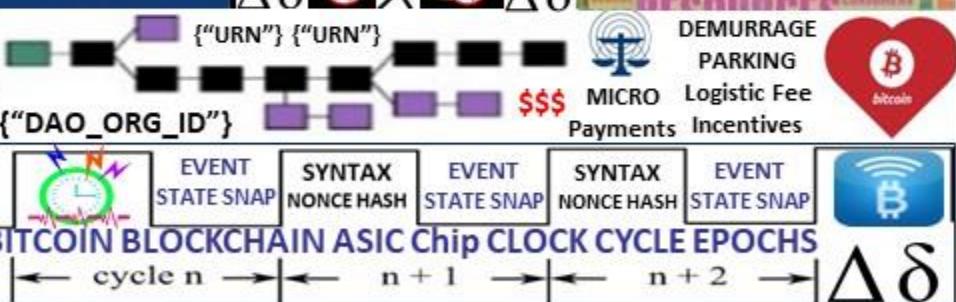
DEMURRAGE
PARKING
MICRO Payments
Logistic Fee Incentives

$\Delta\delta$



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

UTZ TIME ZONE SYNC {"108"}



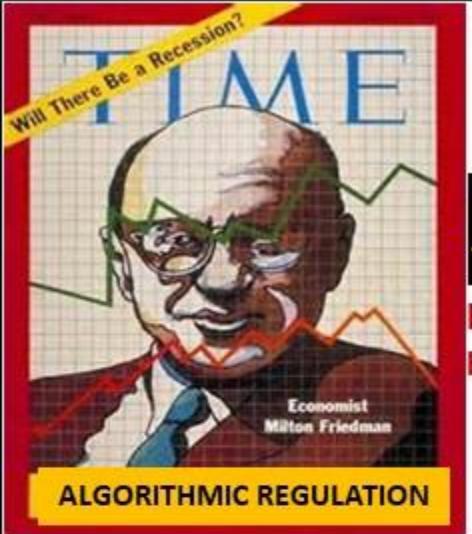
"Heartbeat Synchronization nodes in a distributed system generate periodic local heartbeat events approximately at the same time. It differs from classical clock sync in that nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. No rule governs the length of a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

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

$\Delta\delta$







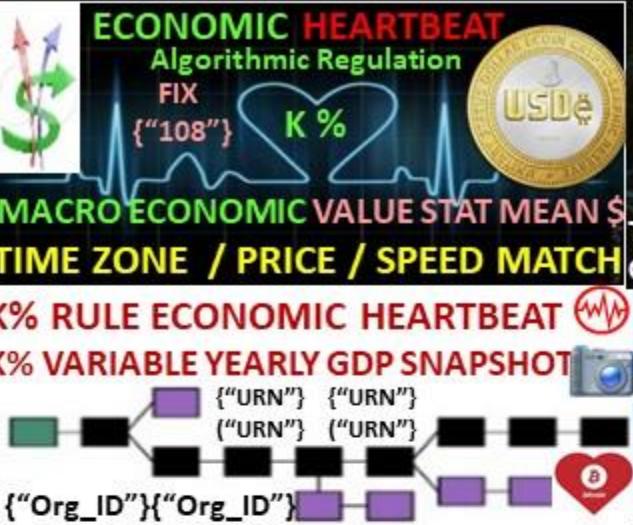
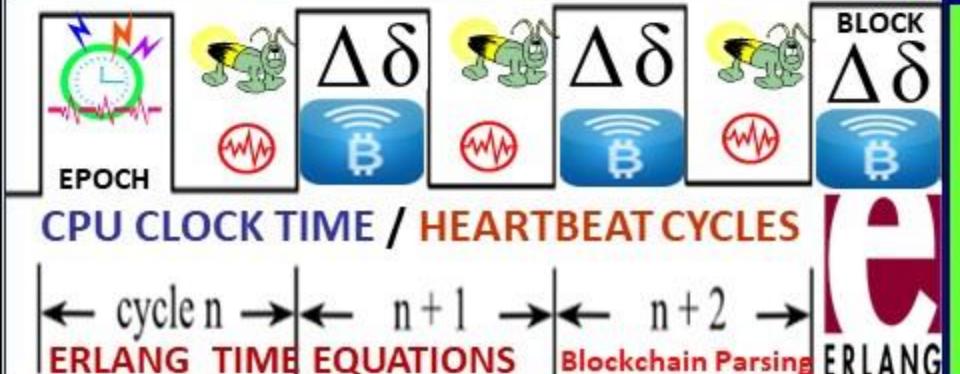
ALGORITHMIC REGULATION

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.

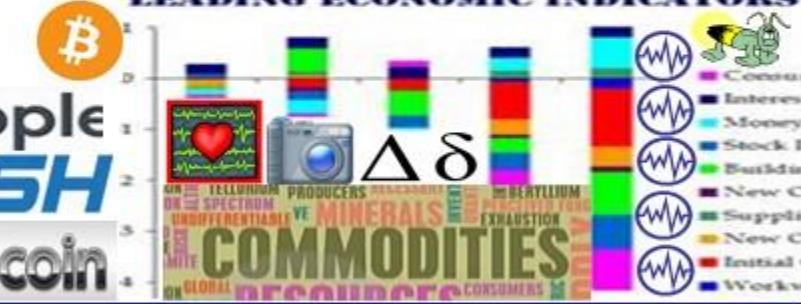
FIREFLY - HEARTBEAT ALGO



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.



'K-Percent Rule Macro economic money-supply automatically adjust money supply by a set amount ("K" variable) regardless of the cyclical state of the economy e.g., set growth variable at rate = to real yearly % GDP $\Delta\delta$

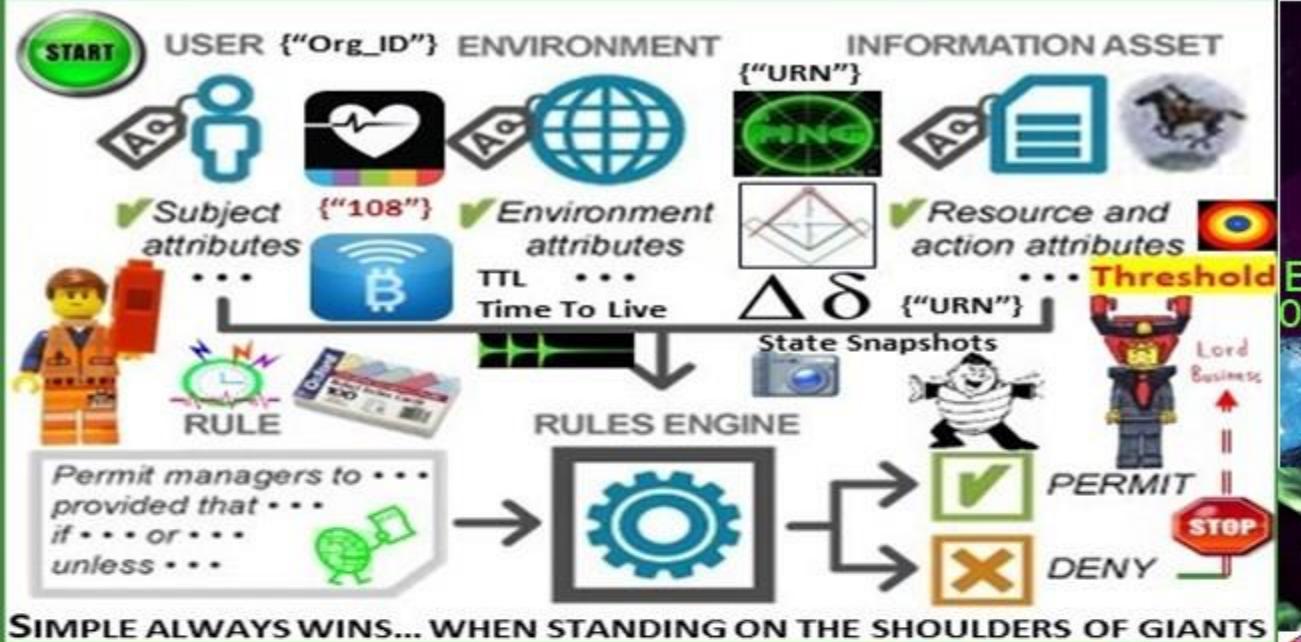


"Heartbeat Synchronization strives to have nodes in a distributed system generate periodic local "heartbeat" events approximately at the same time. It differs from classical clock sync in that Nodes are not interested in counting cycles and agreeing on the ID of the current clock cycle. There is no requirement regarding 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. **UTZ TIME ZONE SYNC STOCHASTIC HARMONIZATION**

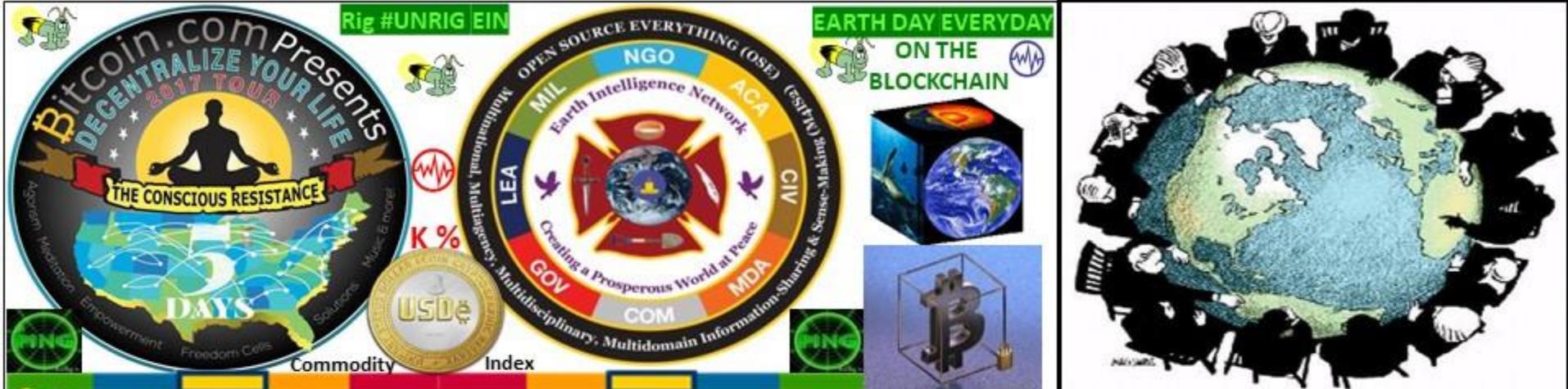




SIMPLE ALWAYS WINS... WHEN STANDING ON THE SHOULDERS OF GIANTS

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





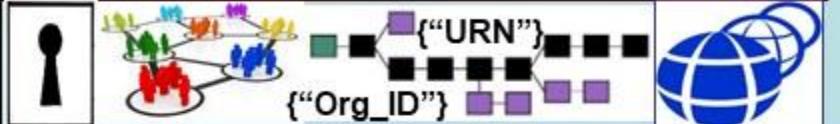
MINIMUM LIST OF COMPONENTS, BUILDING BLOCKS, PROCESSES, PROCEDURES AGREED ON BY TRADE FEDERATIONS TO ACHIEVE DISTRIBUTED AUTONOMOUS ORGANIZATION DAO CONSENSUS





Heart Beacon Cycle

Trade Federation on Bitcoin Blockchain



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

Net joins, drops, splits, merges, moves

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

Federation
Gateway



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



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

Bitcoin Mining Pools
MEME / METAPHOR MEDIATION



DISTRIBUTED AUTONOMOUS ORGANIZATION = DAO RAND Corp

term coined circa 1991 now in use by Blockchain tech corporations

Uniform_Resource_Name



IoT DEVICE / PLATFORM



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

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

STOCK EXCHANGE

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

MIC MARKET IDENTIFIER

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

CODES / BREVITY CODES



{"DUNS #"} {"Org_ID"} Heartbeat Snaps
QR CODE
{"URN"} {"URN"} {"URN"}



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

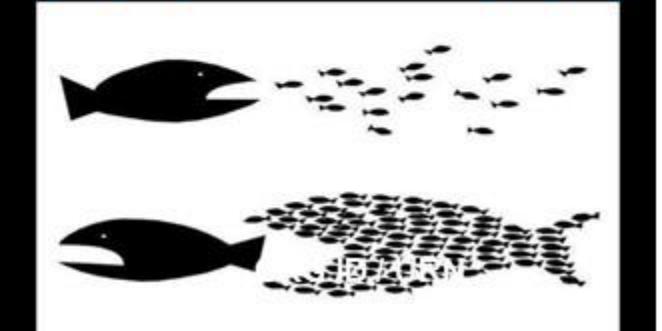
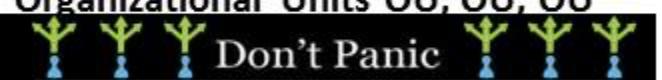
PARSED, PROCESSED, COMPILED TELEMETRY SIGNALING STANDARDIZATION

USMTF / XML MTF FORMATTED MESSAGE CATALOG

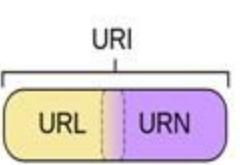
Catalog has over 300 messages to choose from have a wide number of information exchange requirements using common, CONSENSUS Message Text Formats MTFs. MTFs specify <CONTENT> / information agreed by group consensus presenting information in a logical, well specified and unambiguous layout resulting in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

</Organizational_Identifier_Org_ID>

Organizational Units OU, OU, OU



FEDERATE



ARIN
American Registry for Internet Numbers

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

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



SITUATION AWARENESS

NEWSCAST



DISTANCE ESTIMATE SERVICE

IDMaps
SonarHOPS

K00.99
Heartbeat Message

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

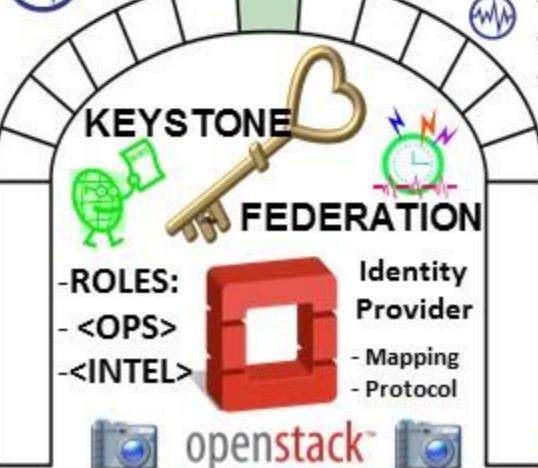
BY <TAG_TYPES>
Ledgers
Contracts
Trade SLA
Agreements



TRIANGULATION
TELCO MESH FABRIC

vector

CROWD SOURCING / FUNDING



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

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

PARTIDO X:
Distributed
Democratic
Participation

ETHEREUM:
Decentralized
Autonomous
Organizations



VOTE ON BLOCKCHAIN



PARTIDOS DEL FUTURO
FEDERATED ID



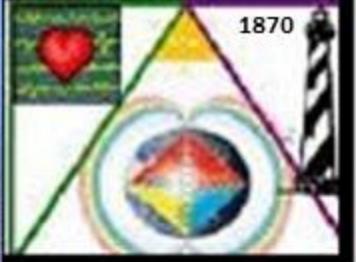
Satoshi Nakamoto Bitcoin Paper

What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party e.g., a bank.



Satoshi

Nakamoto

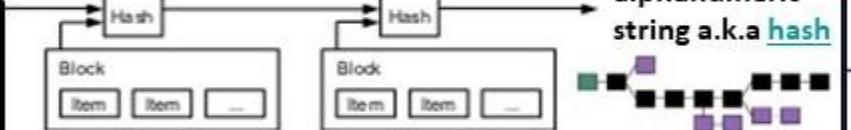
Craig WRIGHT a.k.a.
Satoshi NakamotoPHYSICAL =
OPPOSITE
OF ABSTRACTWright Brother's 1st Flight
Cape Hatteras Outer Banks

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

3. Timestamp Server

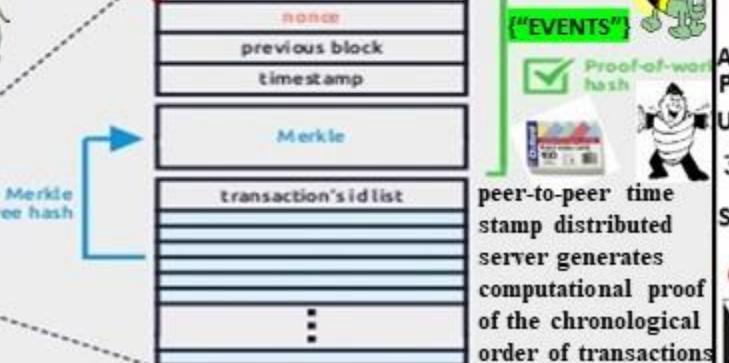
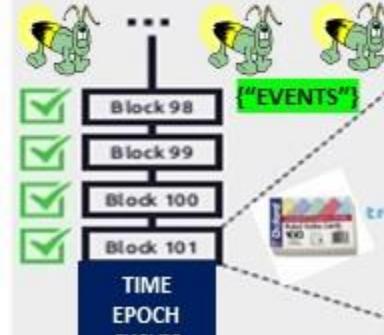
The solution we propose begins with a timestamp server. A timestamp server works by taking a hash of a block of items to be timestamped and widely publishing the hash, such as in a newspaper or Usenet post [2-5]. The timestamp proves that the data must have existed at the time, obviously, in order to get into the hash. Each timestamp includes the previous timestamp in its hash, forming a chain, with each additional timestamp reinforcing the ones before it.

**Bitcoin Protocol
for Dummies**
Part 4 Timestamp
Server



JapanNet Crypto Time Authentication Service (Timestamp Service)

Alice Corp V CLS Bank
Physical = opposite
of Abstract



MERKLE: Summary built from block's transaction ID's

Header - Contains service information (version info, nonce, previous block id and timestamp).

Merkle - A summary built from the block's transaction identifiers.

Transaction's id list - list of transaction's identification numbers that was included into the block's merkle tree.

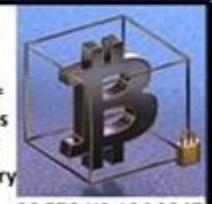
US Sct 573 US 134 2347 USPTO 13/573,002

"All things internet, Internet of money
are formed using time epoch cycles to
process, parse, syntax, instruction code"



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

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



SC 573 US 134 2347
Physical = Opposite
Of abstract

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

Blockchain Blocks / Coins Awarded

Survey Point

home plate

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

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

VALUES / CODE

NONCE

VALUES / CODE

NONCE

VALUES / CODE

MICRO-CYCLES

Net / Net of \$\$\$ formed: Time Epoch Cycles {"Syntax"} Instructions

"In the beginning"

"The Word"

"All things internet, Internet of money are formed using time epoch cycles to process, parse, syntax as instructions"

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

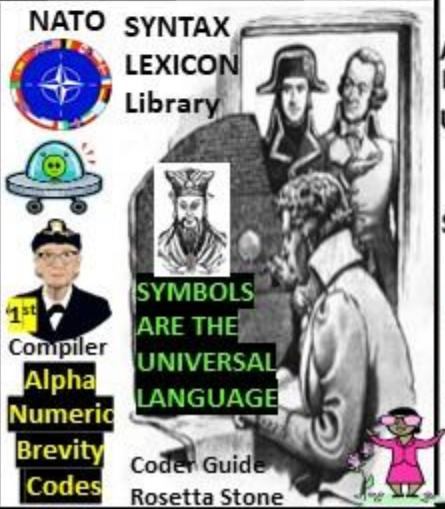
"A smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction reads / writes data in the blockchain's Dbase"

Gideon Greenspan "Beware the impossible smart contract"



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

XBRL / CDL / DAML
STRUCTURED DATA EXCHANGE
TEMPLATE FORMS
300+ USE CASES
LOGIC / FILTERS
SYNTAX / SYMBOL LEXICON LIBRARY



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

ALICE CORP VS CLS BANK

"claims may not be directed towards an abstract idea"

US SC 573 US 134 2347

FUTURE MEMES DOT COM

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

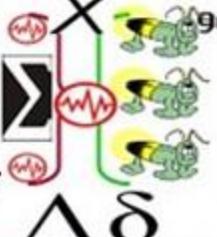


MACRO CYCLES
CLOCK FACE
90 / 90 / 90 / 90
= 360 degrees

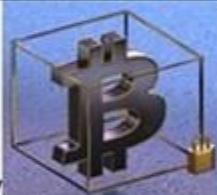
METRICS / METERS

ALGORITHM = RULES
PLAYERS = ROLES
UMPIRE = RULES

STATISTICIAN



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



SC 573 US 134 2347
Physical = Opposite Of abstract



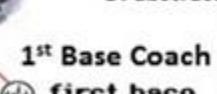
90 feet



90 feet



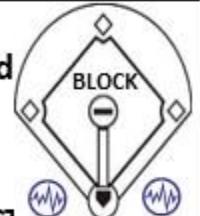
home plate



1st Base Coach
first base
UMPIRE



3 x 5 HASH TABLE NONCE VALUES / CODE



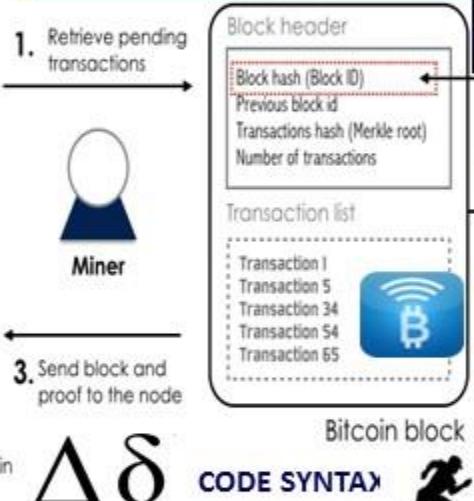
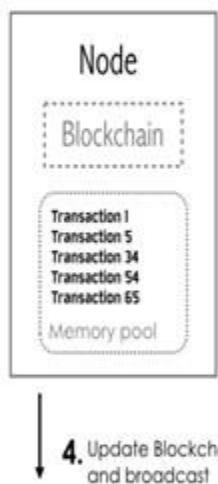
MICHAEL LEWIS



BRAVE HALVING



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


BLOCKCHAIN = TIME / SYNTAX

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



**TIME
EPOCH
CYCLES**

05:08:53
ATOMIC CLOCK



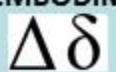
← cycle n → ← n + 1 → ← n + 2 →



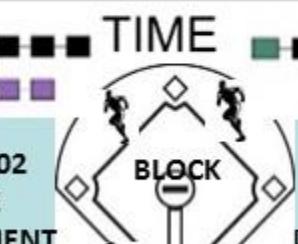
ATOMIC CLOCK

**USPTO 13/573,002
PHYSICAL MEME
MAIN EMBODIMENT**

RULES



Metrics



State Meta Data Snapshots

ROLES

Meters

**XBRL / CDL / DAML
STOCK MIC CODES**

**STRUCTURED
MILITARY MESSAGE
TEMPLATE FORMS
LOGIC / FILTERS**

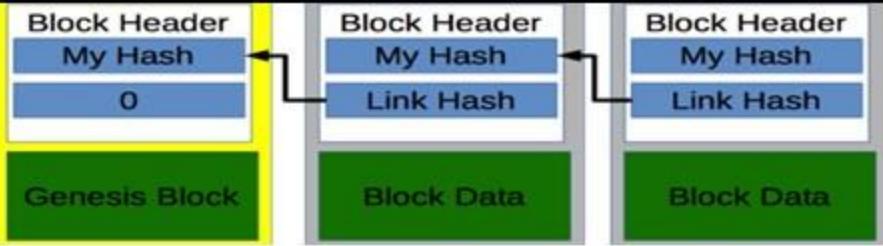
**SYNTAX
LEXICON LIBRARY**



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



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.

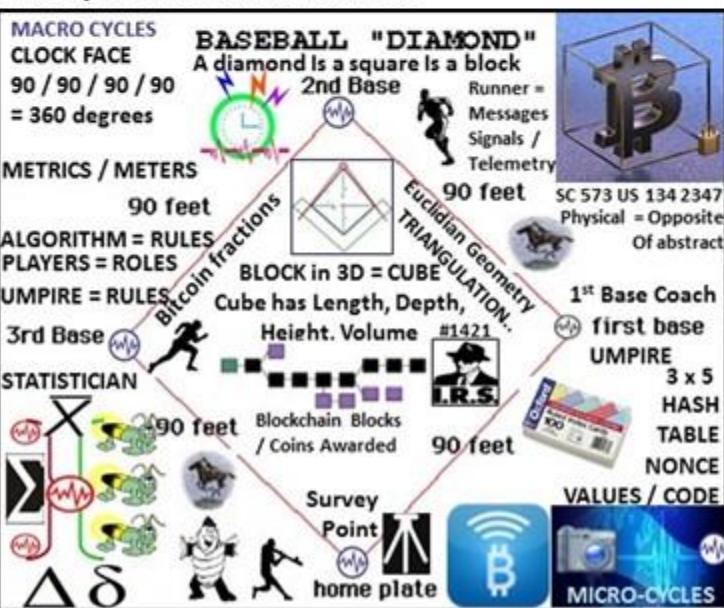
Consensus: distributed ledger blockchain nodes strategy determines chain's correctness
Consensus strategies: "proof of work," "proof of stake," and "delegated proof of stake"

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...



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 smart contract is a piece of code stored on a blockchain, triggered by blockchain transaction ready / writes on the blockchain's Dbase

BNC.com BRCY.NET CoinDesk
Blockchain consortiums are working on distributed ledgers and more on Contractless

STRUCTURED - MILITARY MESSAGE TEMPLATE FORMS LOGIC / PATTERN BEHAVIOR CODES

SYNTHETIC SYNTAX SYMBOLS SECOND LAYER

Microsoft Blockchain modular framework: choose combination of technologies best fits biz domain

AZURE: Core, KeyVault, Universal Protocol

Fabric Tier consortium mode CryptoDelegate in VM or UTXO Adapter, Azure, AzureStack, AWS, Unspent Transaction Output protocols UTXO

Crypto Tokenized Assets Digital Asset Bonds unique for owner of unique artifacts

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

Blockchain management identity and operations, compliance, data intelligence services like machine learning, new middleware work 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 Stores - key data services like distributed file systems (IPFS, S3, etc) of off-chain data referenced by public keys, auditing, Advanced Analytics, Machine Learning, Dashboarding, Regulators for SmartContracts, Blockchains, Consensus, Regulators

Utility and Contract Developers can remove and edit Cryptos into their Contracts to make them robust and transparent

Contract Cryptos are full delegation engines that act as a proxy for the smart contract, Cryptos provide remote execution logic and securely store data in the Smart Contract

Alpha Numerics ABSY COIN SYMBOLS COOKIES EVENT BUS STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / SEQUENCING

FLASH-MESSAGES SWIPE TO CLOSE HELLO/GOODBYE CYCLE

EVIL FRANCE



BITCOIN BLOCKCHAIN ASIC CHIP CLOCK CYCLES / EPOCHS

90 / 90 / 90 / 90 = 360 degrees

METRIC / METERS

ALGORITHM = RULES PLAYERS = ROLES

UMPIRE = RULES

3rd Base STATISTICIAN

STRUCTURED - MILITARY MESSAGE TEMPLATE FORMS LOGIC / PATTERN BEHAVIOR CODES

SYNTHETIC SYNTAX SYMBOLS SECOND LAYER

Microsoft Blockchain modular framework: choose combination of technologies best fits biz domain

AZURE: Core, KeyVault, Universal Protocol

Fabric Tier consortium mode CryptoDelegate in VM or UTXO Adapter, Azure, AzureStack, AWS, Unspent Transaction Output protocols UTXO

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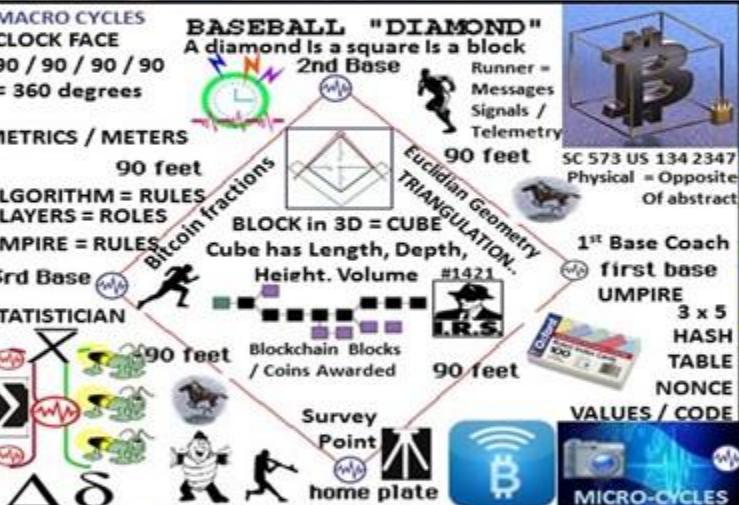
FLASH-MESSAGES SWIPE TO CLOSE HELLO/GOODBYE CYCLE

EVIL FRANCE

EVIL FRANCE

EVIL FRANCE

EVIL FRANCE

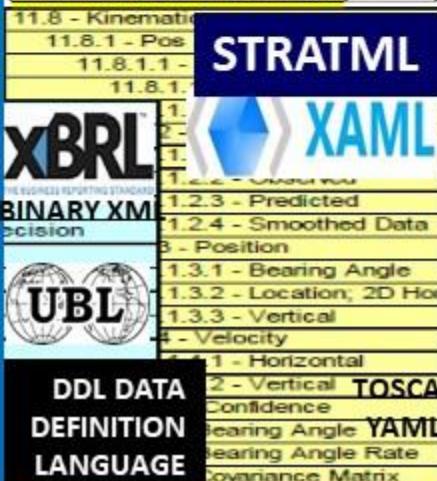


Structured
Data
Exchange

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.

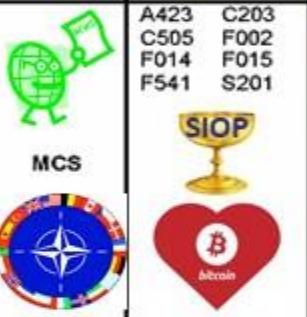
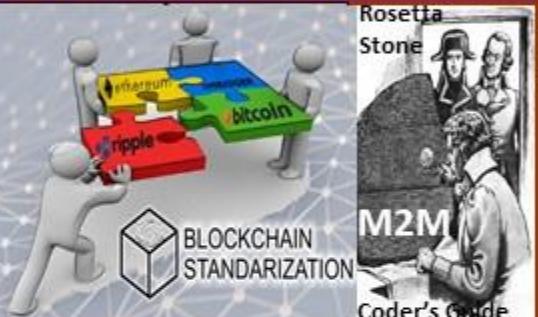
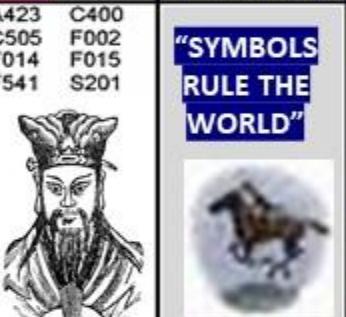
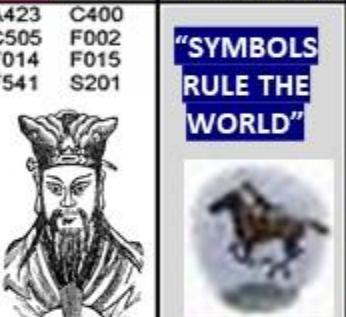


SYMBOLS	Friend	Neutral	Hostile	DICAL EVAC & HOSPITALISATION
	Partner		Competitor	- MILITARY OPERATIONS
1 - Horizontal				
2 - Vertical				
Confidence				
Bearing Angle				
Bearing Angle Rate				
Governance Matrix				

NUMBERS ARE THE UNIVERSAL LANGUAGE / Symbols Rule the World"



INFOCON
5 4 3 2 1
INFORMATION CONDITION

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

MESSAGE CATALOG 300 + Use Cases

Data Elements: entity, attribute, relationship equivalents

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

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

FFUDN: Field Format Unit Designator #

FFIRN Field Format Index Reference #

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



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 - Alternative	1.2.1 - Estimated
11.4.1.2.2 - Evaluated D	11.8.1.1.1.4 - Evaluated D	1.2.2 - Observed
11.4.1.3 - Value	11.8.1.1.1.5 - Value	1.2.3 - Predicted
	CODES	1.2.4 - Smoothed Data
SYMBOL	Friend	Neutral
2525C	Partner	
11.4.1.3.5 - Surface		4 - Velocity
11.4.2 - Platform / Point / Feature Type		1.4.1 - Horizontal
11.4.3 - Specific Type		1.4.2 - Vertical
11.4.4 - Type Modifier		VA Confidence
11.4.5 - Unit		1 - Bearing Angle
		2 - Bearing Angle Rate
		3 - Covariance Matrix





Syntax Lexicon Library

Rosetta Stone

TOOLSET: Kickstarter, UpWork, GitHub, Slack, Jira, Google Docs, Dropbox, ICO...

KICK STARTER

Upwork™

GitHub

JIRA

OPEN SOURCE SOFTWARE

slack

ICO
Initial Coin Offering

Dropbox

CODER'S GUIDE

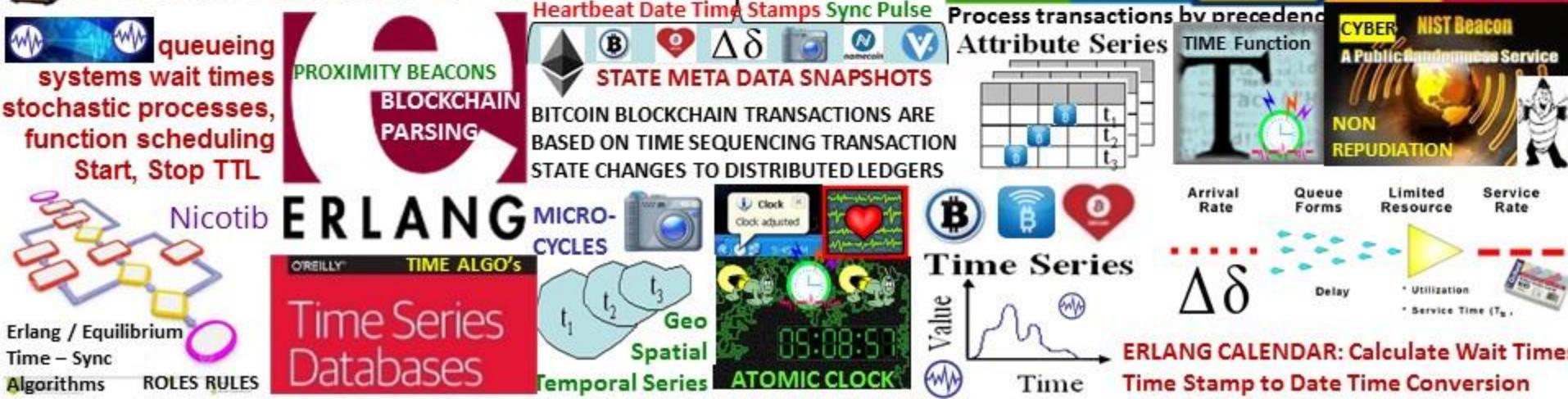
NATO

STRUCTURED DATA EXCHANGE

300+ TEMPLATES

PROJECT HBCnet: build artificial intelligence neural network supporting #UNRIG's Earth Intelligence Network EIN with Signals, Telemetry Mesh

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

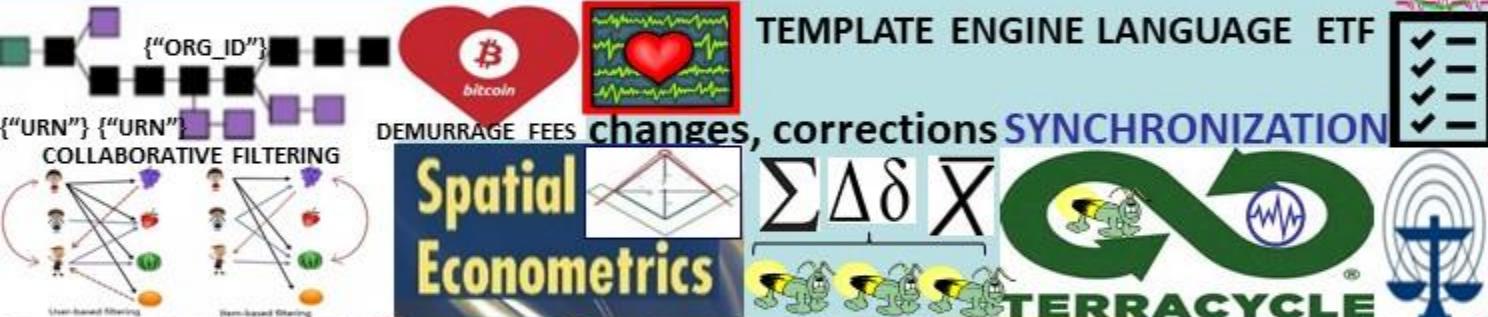




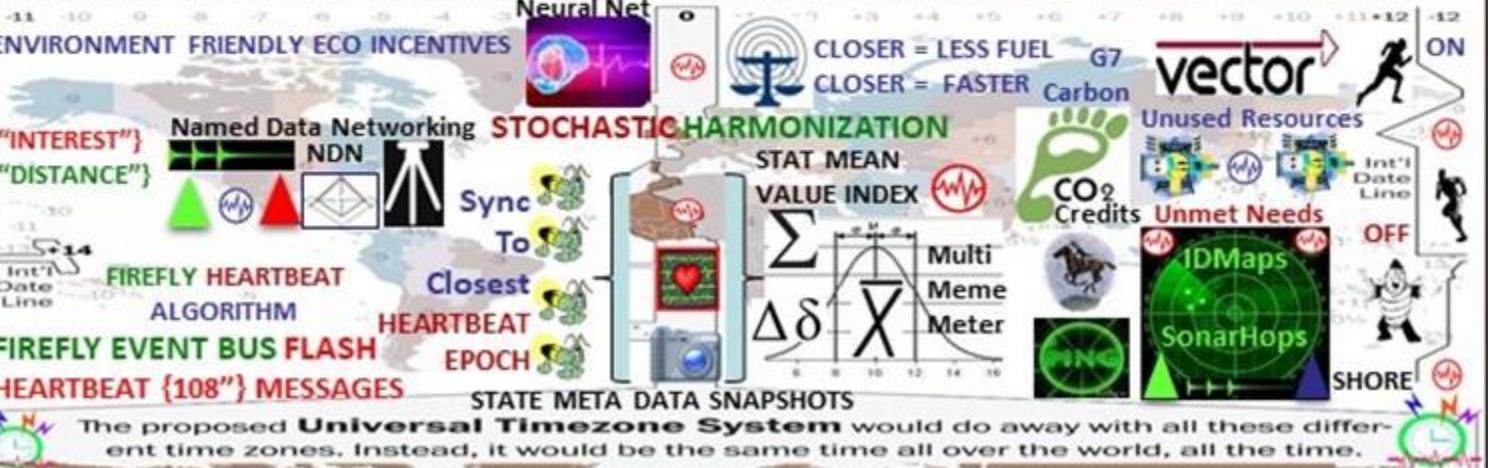
eGaaS: international blockchain platform for organizing economic, state, social activities of citizens, communities on the basis of smart law, smart contract system. eGaaS offers a comprehensive solution needed for state and business management on the blockchain platform.

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

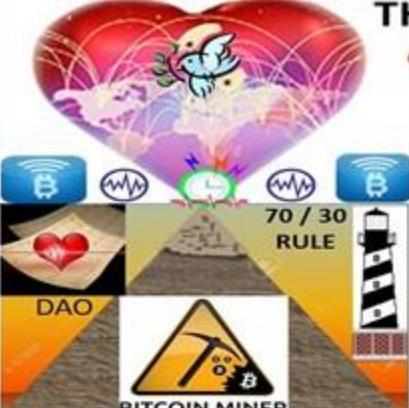
Distributed digital asset registries were the first projects that used blockchain systems such as databases designed for secure storage of records on real estate property, stocks, copyright and so on. It is assumed hosting any document on the blockchain is equivalent to notarization of its content at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



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



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.



FROM	TO	TYPE	NAME	VERSION	SIZE	FORMAT	LAST UPD.
API	API	SYNTAX / SYMBOL	LEXICON LIBRARY	1.0	100 MB	JSON	2023-01-01
API	API	STRUCTURED	DATA EXCHANGE	1.0	100 MB	JSON	2023-01-01
API	API	300 +	TEMPLATE FORMS	1.0	100 MB	JSON	2023-01-01
API	API	LOGIC / FILTERS		1.0	100 MB	JSON	2023-01-01
API	API	ALPHA-NUMERIC	BREVITY CODES	1.0	100 MB	JSON	2023-01-01
API	API	ERLANG	Time Series Databases	1.0	100 MB	JSON	2023-01-01







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

Futarchy PREDICTION MARKETS GnosisAMA

Gnosis trading interface alpha
WIZ token fee payment
INFORMATION ARBITRAGE ECONOMICS



TERRACYCLE

Price Oracle

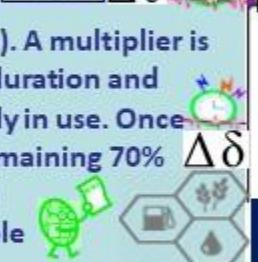
Gnosis Wisdom (WIZ) pay platform fees in Services layer, Wiz subsidize other participants fees, provide initial subsidies for markets, or market trading.



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

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

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



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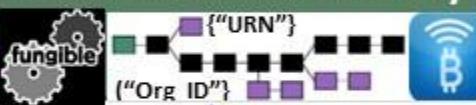


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THE TERRA (TRC)

Trade Reference Currency



\$0.49 USD
0.001076 BTC

MICRO PAYMENTS
Bitcoin
Need Bitcoin?



Demurrage Fees

UNIVERSAL METER

Geo-Spatial Temporal Econometrics meters



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

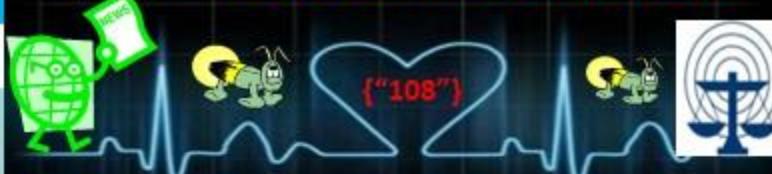
ZEPPELIN



ZEPPELIN OPEN, GLOBAL ECONOMY

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

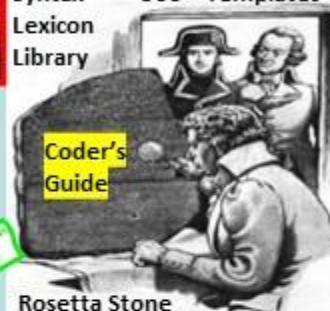
WORLD ECONOMIC HEARTBEAT



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

Syntax
Lexicon
Library

300+ Templates



STRUCTURED DATA EXCHANGE



LOGIC / FILTERS
ALPHA-NUMERIC
BREVITY CODES



STOCHASTIC HARMONIZATION for TELCO Mesh Fabrics

HASH / NONCE



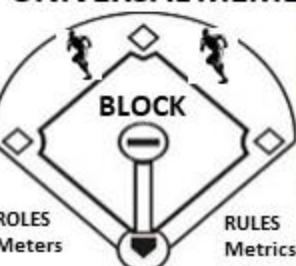
PAUSABLE
START
STOP
TIME TO LIVE
INSTRUCTIONS



Erlang
Time Equations
Function calls



UNIVERSAL MEME



Micro Cycle State Snaps



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, nspired by [OpenZeppelin Libraries](#)

Create and customize your own ERC20 Token.

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



Contract development



Contract interaction



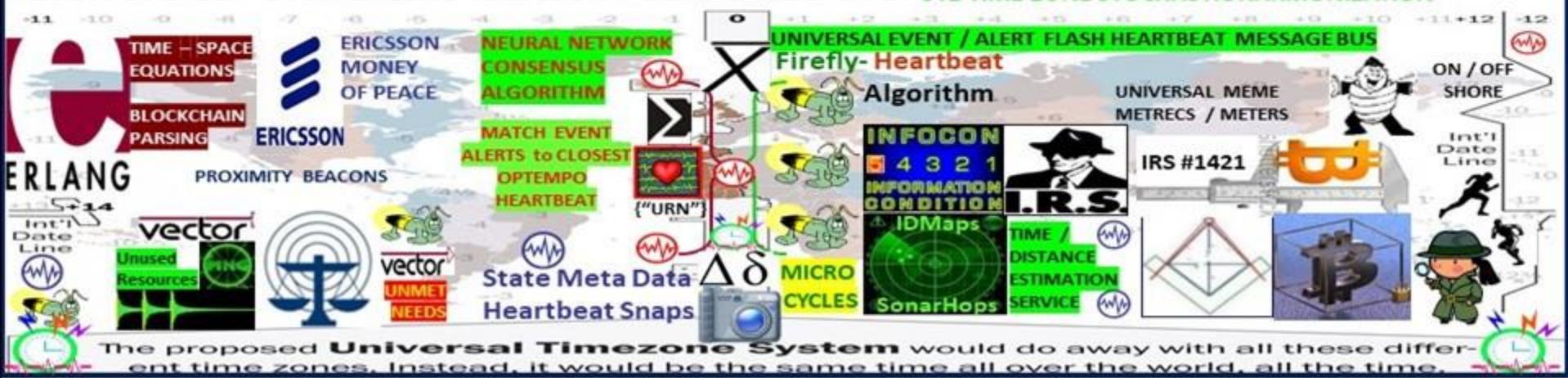
EVM



Off chain tools



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



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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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

OnlineTrade.com

$\Delta\delta$

P

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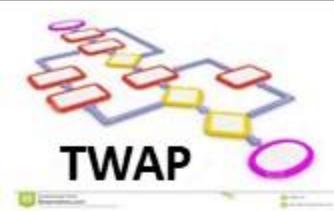
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TWAP Algorithm Manages Bitcoin Price Volatility Algorithm

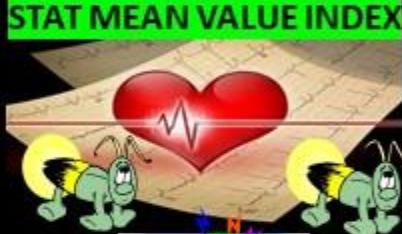


TWAP GOAL: provide a Time Weighted Average Price Benchmark



FIREFLY HEARTBEAT ALGO
STAT MEAN VALUE INDEX

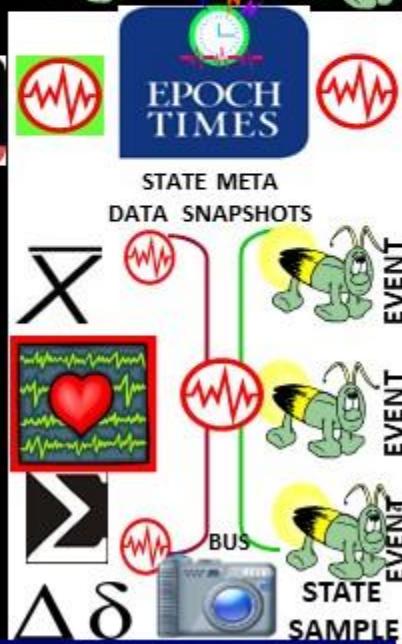
TWAP Works To gauge trading performance, many traders in different asset classes (equity, fixed income, currency) often use average price as a benchmark. The two common ways to calculate an average are a time-weighted average price (TWAP) and a volume-weighted average price (VWAP). TWAP is the average 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 $\frac{\text{Arrival Rate } \Delta \delta}{\text{Service Rate per unit time}}$

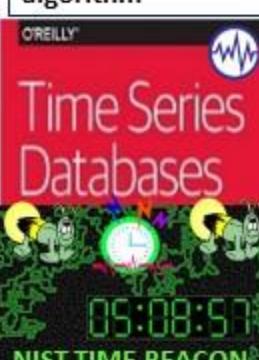


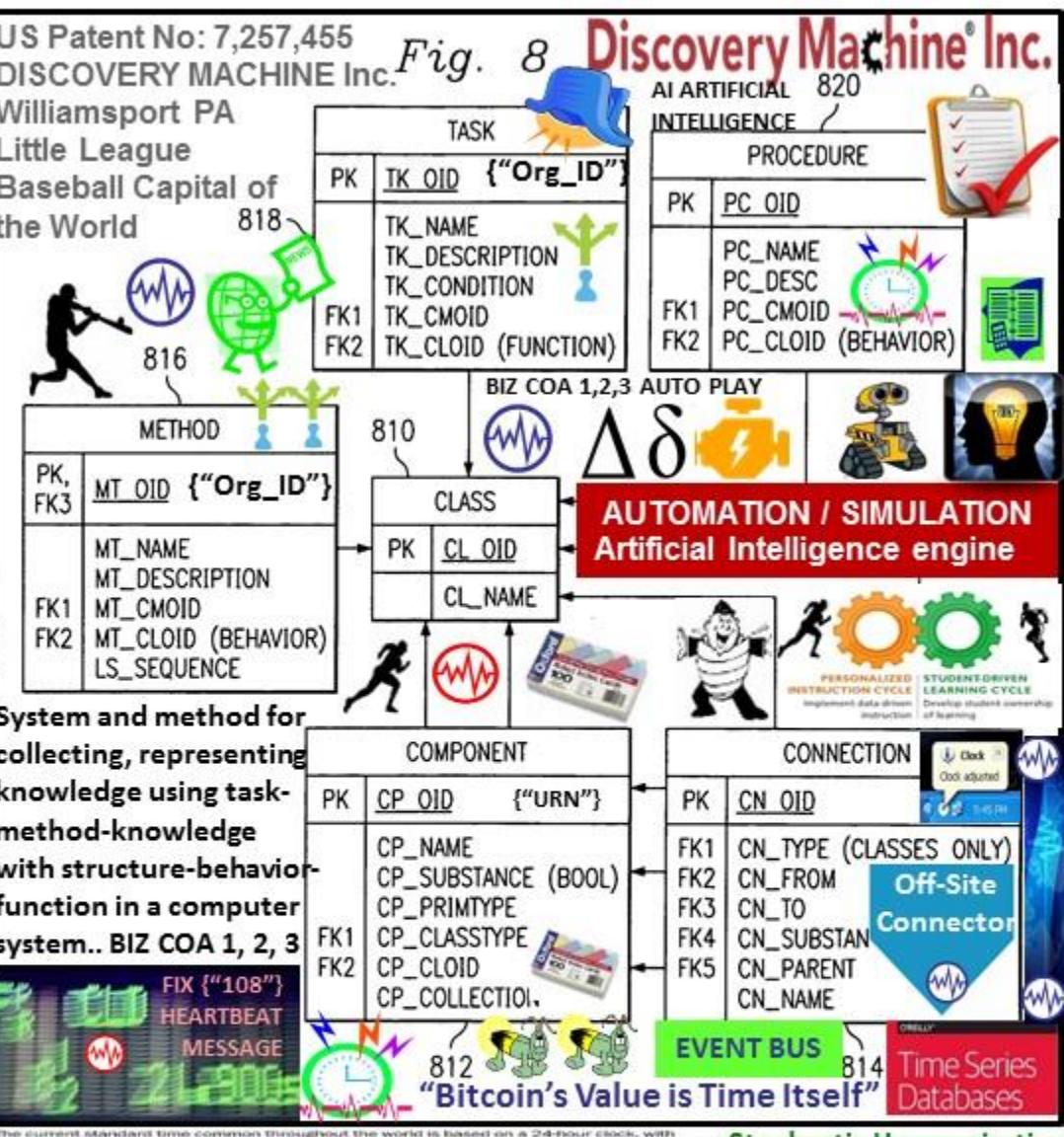
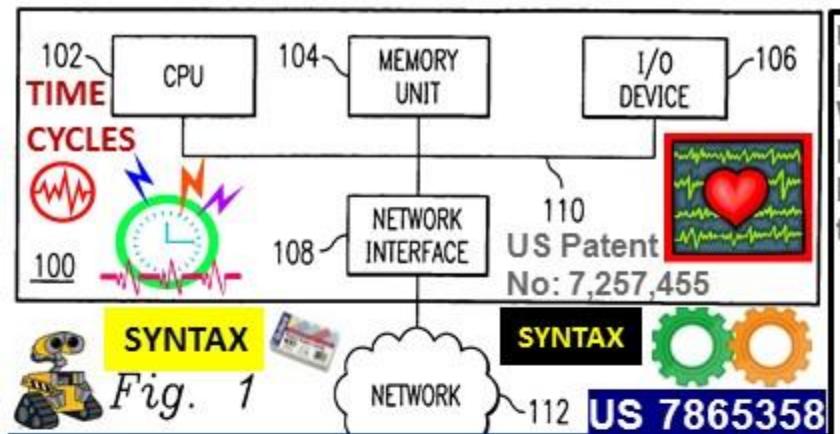
distributed "noSQL" database, embedded right into Erlang,
supports indexing, replication, transactions, and fail-over
Fast ETS in-memory, and DETS persistent on-disk database

Mnesia database ("Organization_ID")

Global name resolution

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





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



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



HASH TABLES
NONCE VALUES

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



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



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

AZURE: Core/Kernel/Universal Protocol

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

Unspent Transaction Output protocols UTXO

Crypto Tokenized Assets Digital Bearer Bonds
unique identity for owned artifacts

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

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

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

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

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

Rosetta Stone Syntax



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

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

FIREFLY EVENTS
FLASH MESSAGES
SYNC TO CLOSEST
HEARTBEAT EPOCH

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

MYRIAD MEMES MEDIATION
BLOCKCHAIN

MULTI-MEME MULTI-METER

Microsoft AZURE BLETCHLEY

Blockchain Startups

Top Blockchain startups disrupting non-financial markets



{"URN"}
{"Org_ID"}



OFF-SITE
OFF-PAGE
CONNECTOR



{"URN"}
{"Org_ID"}



MACRO CYCLES

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

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

90 feet

Blockchain Blocks / Coins Awarded

Survey Point

home plate

90 feet

Blockchain in 3D = CUBE

Cube has Length, Depth, Height. Volume #1421

Euclidian Geometry TRIANGULATION.

1st Base Coach

first base UMPIRE

3 x 5 HASH TABLE NONCE VALUES / CODE

BASEBALL "DIAMOND"

A diamond Is a square Is a block

2nd Base Runner = Messages Signals / Telemetry

90 feet

SC 573 US 134 2347 Physical = Opposite Of abstract

1st Base Coach first base UMPIRE

3 x 5 HASH TABLE NONCE VALUES / CODE

MICRO-CYCLES

IoT Microsoft Orleans

TIME-SPACE EQUATIONS ALGORITHMS BLOCKCHAIN PARSING

ERLANG



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

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

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

Provides information about total costs of the transaction



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

pull model



Bitcoin Address Shortener

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

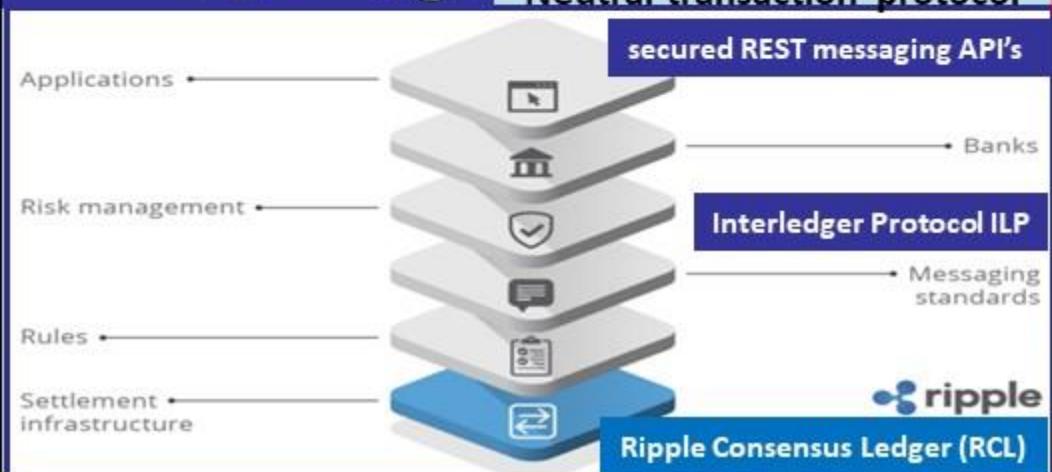
ALPHA NUMERIC BREVITY CODES

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

A.I

Clock Clock adjusted

Neutral transaction protocol



SchellingPoint



EVENT EVENT

ROLES RULES COACH CLOCK

TIME-SPACE EQUATIONS ALGORITHMS BLOCKCHAIN PARSING

ERLANG EVENT BUS

LOCKED QUOTED ACCEPT / DENY In Progress SUCCEEDED

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

MATCH EVENT REPORTS TO CLOSEST HEARTBEAT CYCLE

FLASH HEARTBEAT MESSAGES {"108"} Sync to Closest Heartbeat

HASH NONCE FIREFLY-HEARTBEAT ALGORITHM

MICRO-CYCLE STATE META DATA SNAPSHOTS

AGGREGATE INTO MACRO ECONOMIC CYCLE MESSAGE

World Economic Heartbeat
ALGORITHMIC REGULATION



BLOCK TIME ARBITRAGE System of Systems Sync

Stochastic Harmonization Telco Mesh Fabrics Wide Area Sync

FIREFLY EVENTS FLASH MESSAGES

EVENT EVENT

COACH CLOCK

TIME-SPACE EQUATIONS ALGORITHMS BLOCKCHAIN PARSING

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DFINITY

RANDOM # BEACON

NIST Beacon
A Public Randomness Service

QUANTUM RANDOM #

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

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

FIREFLY-HEARTBEAT FLASH Msg EVENT BUS

GROUP Signature is random number

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

- BLS signature scheme

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

HYPER GEOMETRIC PROBABILITY CALCULATOR

CONSENSUS / RANDOM BEACON

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

Each process has mining identity

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

Threshold Relay Chain techniques

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

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

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

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

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

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

METRICS / METERS
90 feet
Euclidian Geometry TRIANGULATION:
90 feet

ALGORITHM = RULES
PLAYERS = ROLES
UMPIRE = RULES

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

3rd Base
Blockchain Blocks / Coins Awarded

STATISTICIAN

90 feet

Survey Point

home plate

SC 573 US 134 2347
Physical = Opposite Of abstract

1st Base Coach

first base

UMPIRE

3×5

HASH TABLE

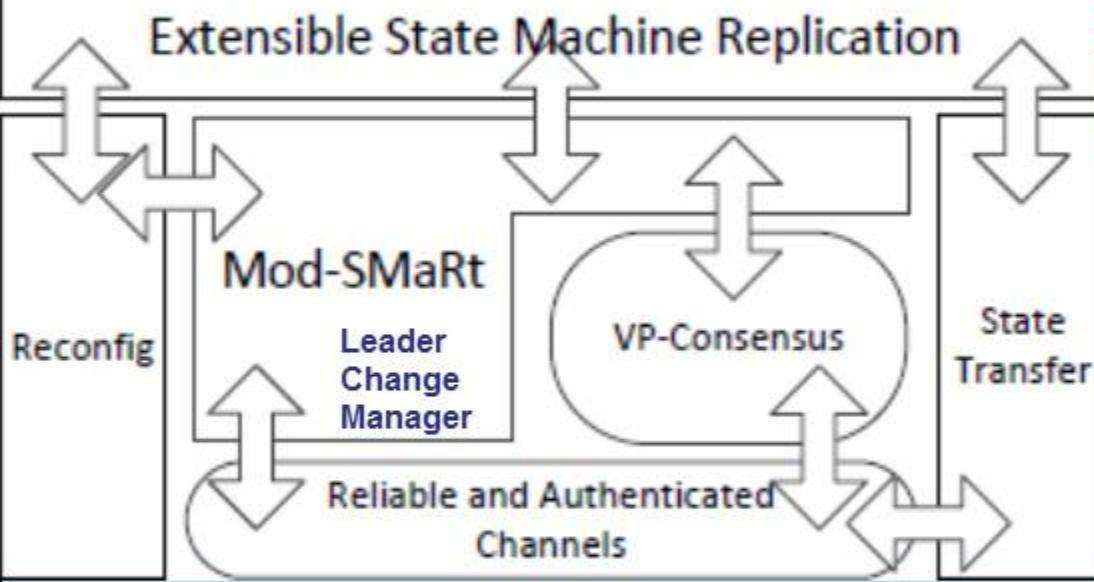
NONCE

VALUES / CODE

MICRO-CYCLES

Byzantine Fault-Tolerant State Machine Replication

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



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

BFT-SMaRt needs an eventually synchronous system

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

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

USCt ALICE CORP V CLS BANK

PHYSICAL = OPPOSITE OF ABSTRACT

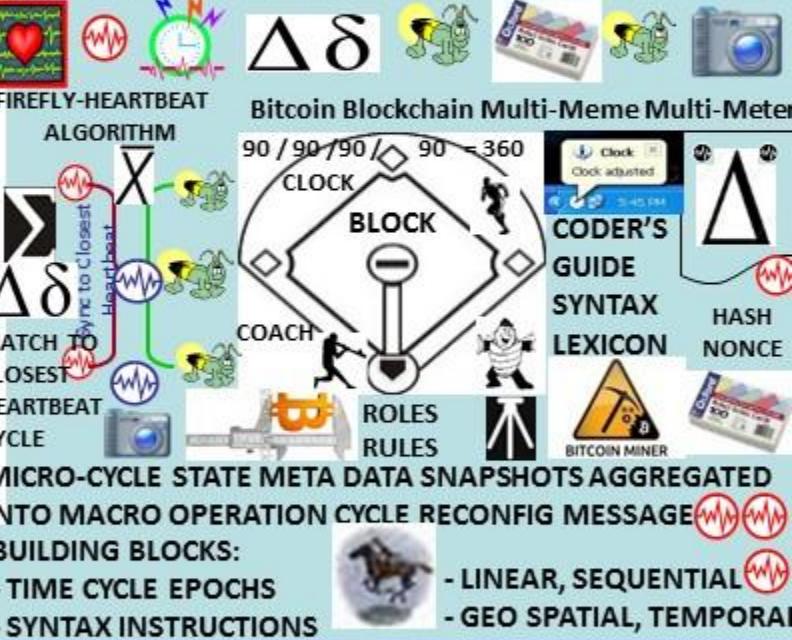


DERIVED FROM BATTLEFIELD DIGITIZATION DISTRIBUTED AUTONOMOUS ORGANIZATION DAO SYSTEM OF SYSTEMS

FEDERATED ID / ORGANIZATIONAL IDENTIFIER {"ORG_ID"} ADDS, JOINS, DROPS, MOVES TO / FROM DAO

CHANGES IN STATE VIEWED IN "APPLIQUE' OVERLAY VIEWS

K00.99 HEARTBEAT SYNC DELTA STATE META DATA SNAPSHOT



Firefly inspired Heartbeat Synchronization nodes strive to sync in a distributed system. Nodes generate periodic "heartbeat" events approximately at the same time.

It differs from classical clock sync in that nodes are not interested in counting cycles to agree on the ID of the current clock cycle. There is no requirement to sync during a cycle length in real time as long as the length is bounded and all nodes AGREE ON IT EVENTUALLY"

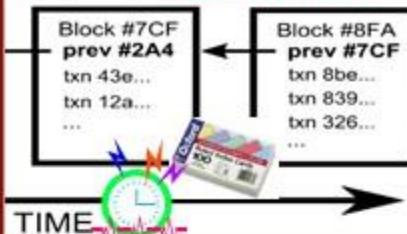
HYPER LEDGER OPEN SOURCE BLOCKCHAIN

Core APIs, & SDKs

$\Delta\delta$ Shared Ledger



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



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

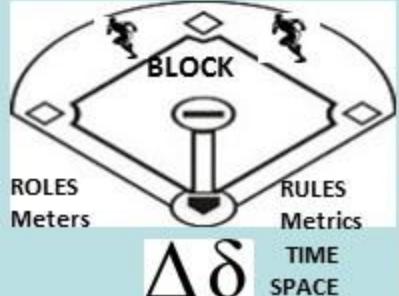
FEDERATION
Federation Gateway

METRICS ("Organization ID")
METERS

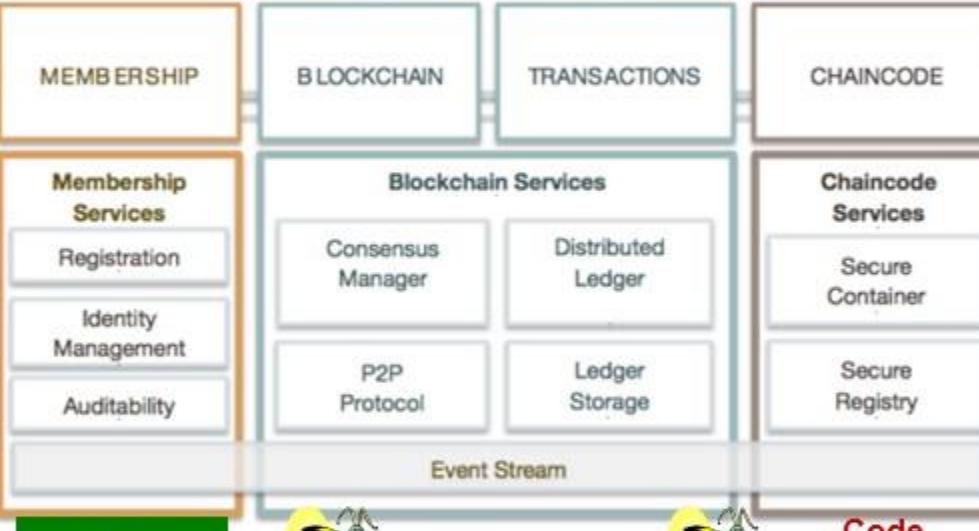
RESTFUL SYNC DELTA
CHANGE MANAGEMENT
MICRO-MACRO CYCLE



BLOCK TIME ARBITRAGE



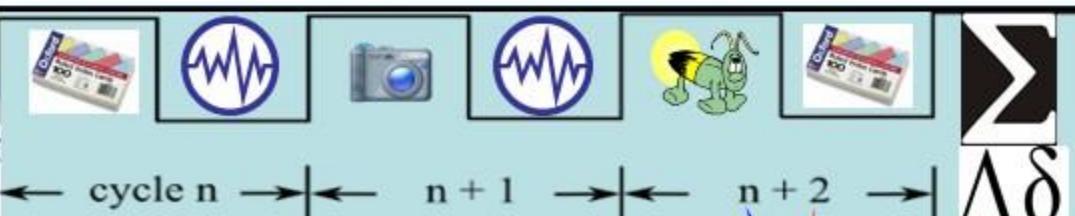
OBC APIs, SDKs, CLI



ROSETTA STONE



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



MICRO-MACRO CYCLE SCHEDULE

FFIRNS
FFUDNS

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



e.g. Derivatives

e.g. Trade Finance

e.g. KYC / AML

App

App

App

App

App

App

App

App

App

Concord Platform Services

CorDapp Store

Notaries

Network Map Service

Trusted Digital Backbone Network

Regulatory Reporting

Oracles

Service Provider Gateways

Bank-Internal Gateways

Concord Vault Interoperability

Asset Registry

Trade Registry

Cash

Identity Vault

Concord Operations Centre

Business Monitoring

Technical Alerting

Management Information

Compliance Audit



Δδ

Inter-Network Adapters

FEDWIRE

CHIPS

DTCC

CLS

Corda Core Node Services

Agreement States

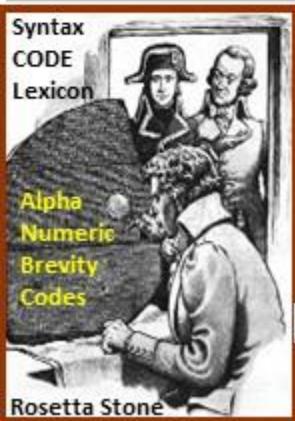
Transactions

Sandbox

Digital Signing

Interaction Protocols

Contract Verification



UNIVERSAL EVENT BUS



Syntax CODE Lexicon



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



XBRL / CDL / DAML STOCK MIC CODES

STRUCTURED MILITARY MESSAGE TEMPLATE FORMS LOGIC / FILTERS

300+ Use Case Templates



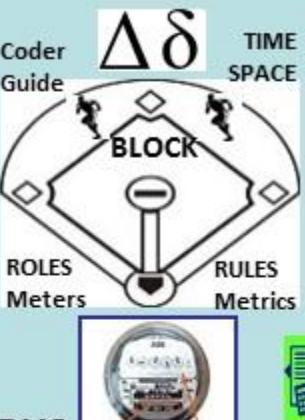
Federation Gateway



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

KEY BLOCKS:

- NO CONTENT = NULL
- LEADER ELECTION



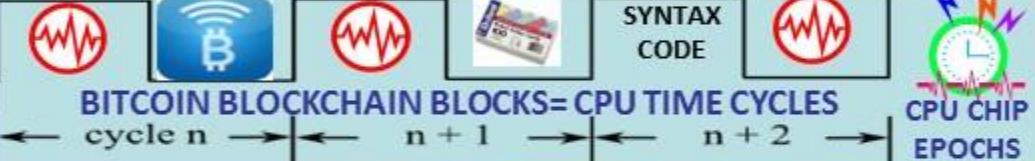
MICRO BLOCKS:

- ONLY CONTENT
- NO CONTENTION



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

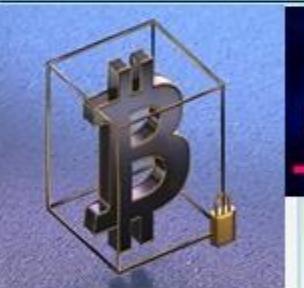
EVENT BUS



long exponential intervals (10 min)

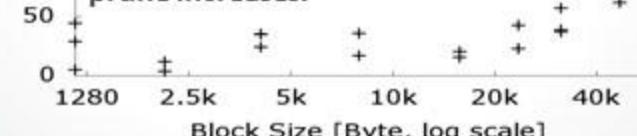


COMMAND SYNTAX
RESTFUL State Transfer



Subjective Time to Prune

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



short deterministic intervals (10 sec)



MICRO-CYCLES



ETHER: Compensate Resource Contribution

Gas: price to
Run contract
transactions

ethereum

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



Ether hedged against other
crypto / FIAT currencies
price changes

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

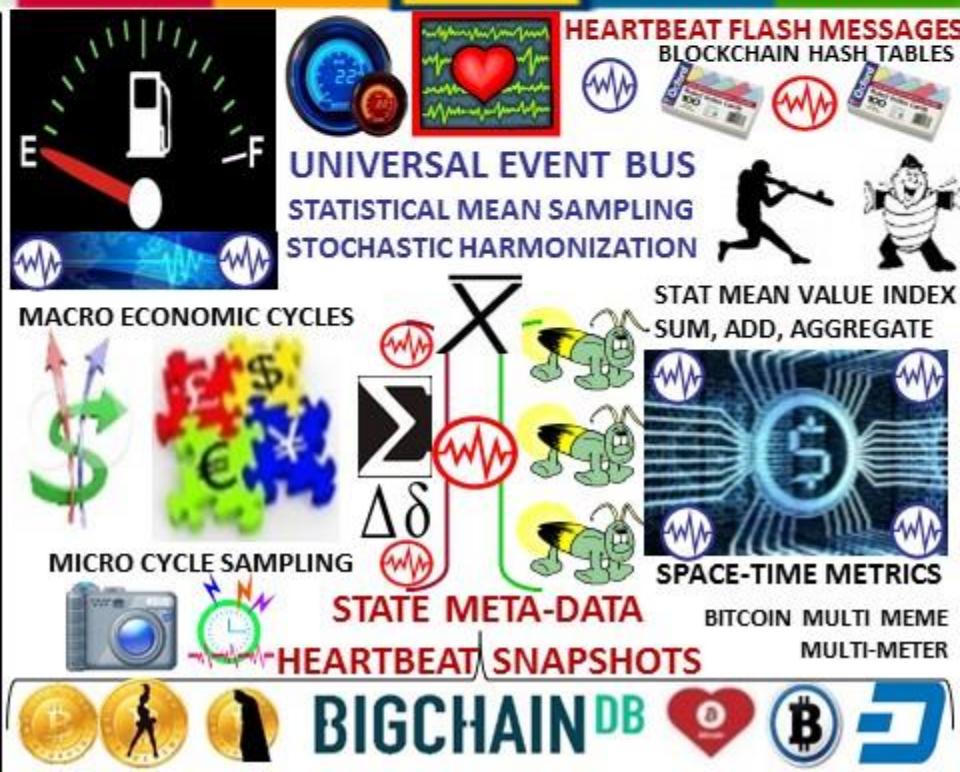
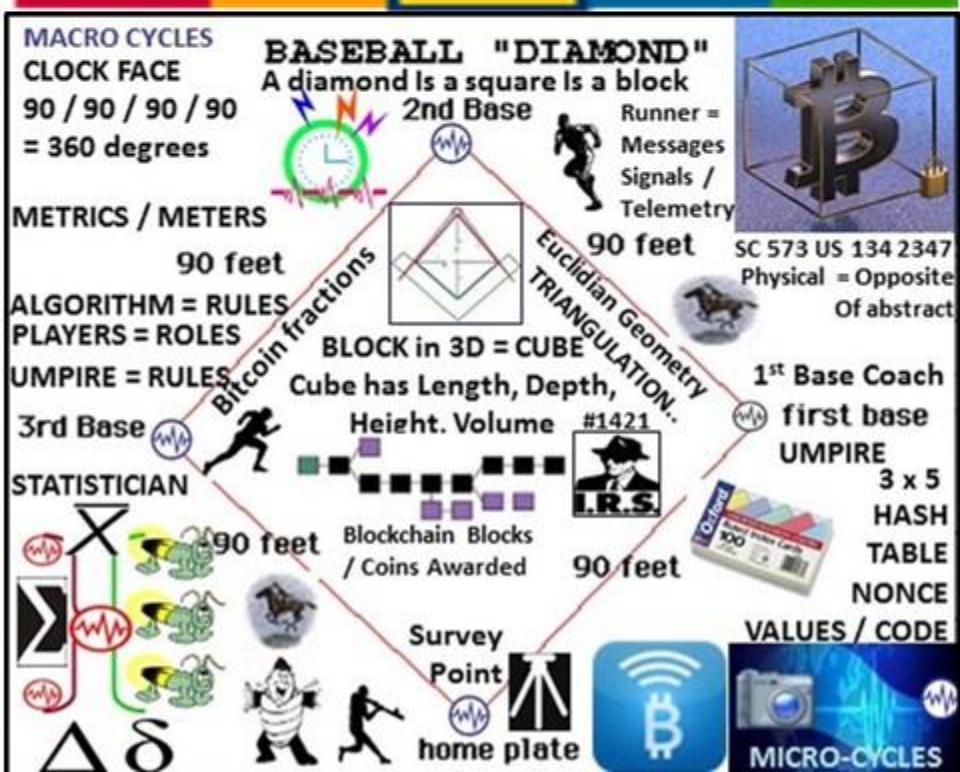
EVENTUALLY

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

SWARM
(storage)

WHISPER
(messaging)

EVM
(consensus)



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

METRICS / METERS

90 feet

ALGORITHM = RULES

PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

X

90 feet

Blockchain Blocks / Coins Awarded

90 feet

Survey Point

home plate

$\Delta \delta$

TRANSACTIONS

PER CYCLE

METRICS

cycle n

COMPUTER CHIP EPOCHS

n + 1

n + 2

SPATIAL

TEMPORAL Series

t₁ t₂ t₃

PROOF-OF-STAKE

UXTO

Mined Bitcoins

Unmined Bitcoins

Survey Methods

Proximity Beacons

MICRO-CYCLES

CALENDAR

Unmined Bitcoins

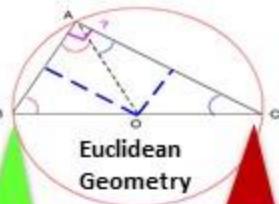
Radar

UTXO: unspent transaction output'. bitcoins sent somewhere but not yet spent. Unspent transaction output set= latest STATE of every Bitcoins ever mined" % Block Mined / % Block owned

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



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



90 feet
Euclidian Geometry TRIANGULATION
BLOCK in 3D = CUBE
Cube has Length, Depth, Height. Volume #1421
Blockchain Blocks / Coins Awarded
90 feet
Survey Point home plate

SC 573 US 134 2347 Physical = Opposite Of abstract
1st Base Coach first base UMPIRE 3 x 5 HASH TABLE NONCE VALUES / CODE MICRO-CYCLES

STRUCTURED {"CONTENT"} TEMPLATES Attribute Series
SYNTAX, SYMBOLS LEXICON LIBRARY Contract Description DAML ("INTEREST") "DISTANCE"
LOGIC - FILTERS CODE SEQUENCE FBI IDMaps SonarHops
ROLES / RULES

Digital Asset Modeling Language DAML ("INTEREST") "DISTANCE"
Time Series Value Time FIX {"108"}
NDN time distance

- 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 ALGORITHM EVENT BUS

Stake-Time algorithm favors both # of coins held & how often, frequently coins are staked Velocity based selection PoSV encourages velocity i.e. coin movement between people Vs hoarding.

Coin Age proof-of-stake system combines randomization with the concept of "coin age," a number derived from the product of the number of coins times the number of days the coins have been held. Randomized block selection randomization predicts following generator by using a formula that looks for the lowest hash value stake size

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

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

Time Series Databases

CALENDAR

Little League BIG LEGACY 75



STATE: stored data at a given instant in time

STATE CHANNELS: blockchain interactions

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

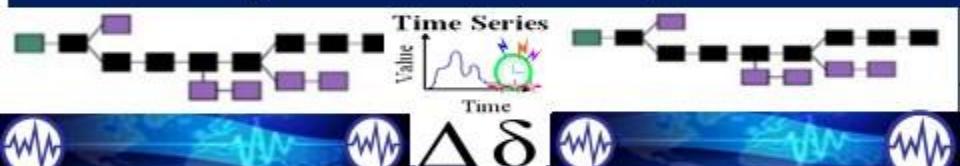


1. Part of the blockchain state is locked via multisignature or some sort of smart contract, so that a specific set of participants must completely agree with each other to update it.

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



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



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

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

MACRO CYCLES

CLOCK FACE

90 / 90 / 90 / 90
= 360 degrees

BASEBALL "DIAMOND"

A diamond Is a square Is a block
2nd Base

Runner =
Messages
Signals /
Telemetry
90 feet



METRICS / METERS

90 feet

ALGORITHM = RULES

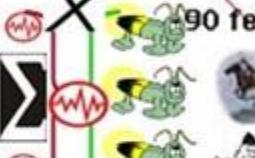
PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

X



90 feet

Blockchain Blocks / Coins Awarded

Survey Point

home plate

Euclidian Geometry TRIANGULATION

BLOCK in 3D = CUBE

Cube has Length, Depth,

Height, Volume #1421

1st Base Coach first base UMPIRE 3 x 5 HASH TABLE NONCE VALUES / CODE MICRO-CYCLES



SC 573 US 134 2347 Physical = Opposite Of abstract

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FLASH HEARTBEAT MESSAGES

HEARTBEAT STATE META-DATA

SNAPSHOTS EVERY

10, N MIN MICRO TO

MACRO ECON CYCLE

HASH TABLES

STATE SNAPS

(camera icon)

(red heart rate monitor icon)

Time Series

Value

Time

SYNTAX

(stack of cards icon)

META-DATA

t₁

t₂

t₃

Geo Spatial

Temporal Series

Attribute Series

(grid icon)

t₁

t₂

t₃

META-DATA

t₁

t₂

t₃

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

(heart icon)

(clock icon)



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

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SC 573 US 134 2347
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1st Base Coach
first base
UMPIRE

Blockchain Blocks / Coins Awarded

3 x 5 HASH TABLE

Survey Point

NONCE

home plate

VALUES / CODE

Micro-Cycles

$\Delta \delta$

t_1

t_2

t_3

t_4

t_5

t_6

t_7



ETHER: Compensate Resource Contribution

Gas: price to
Run contract
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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).



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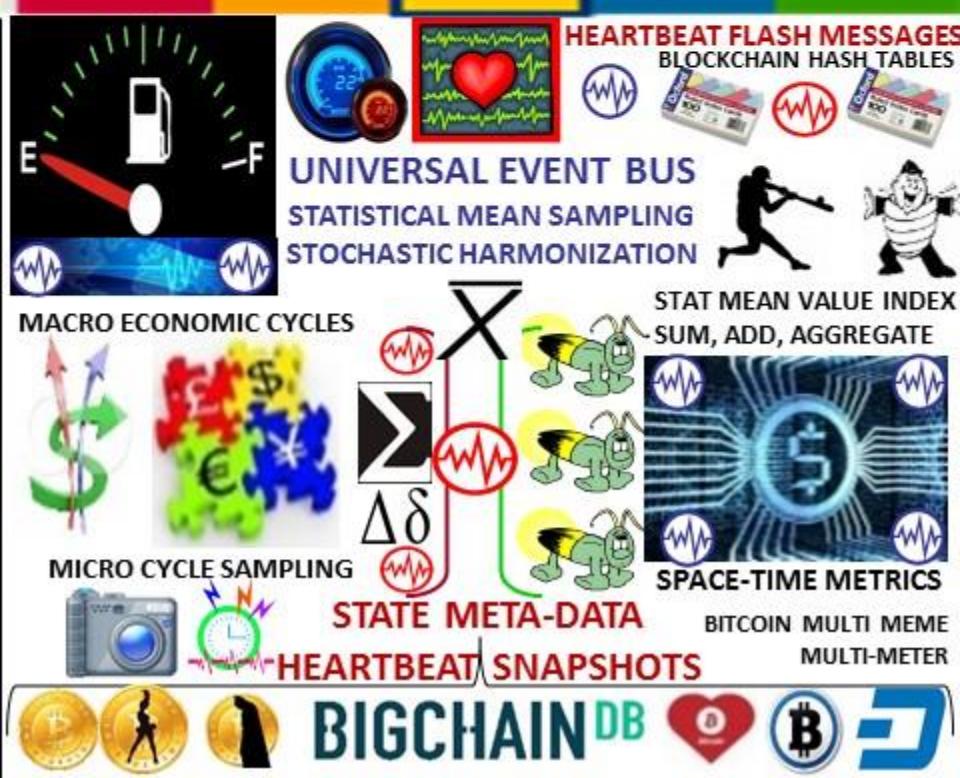
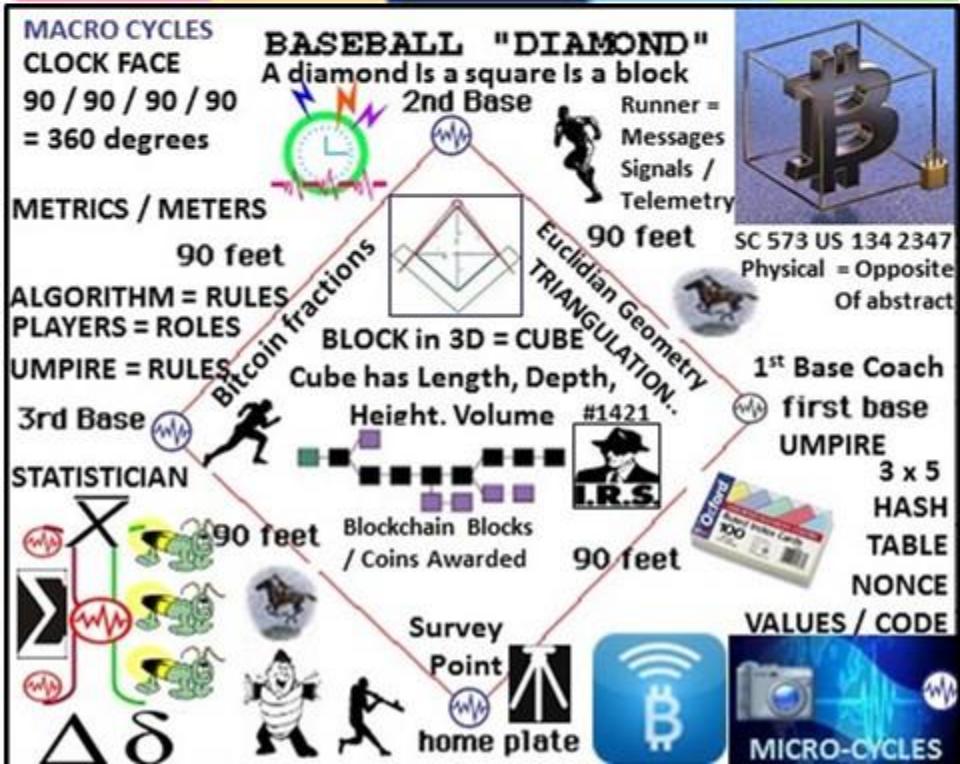
EVENTUALLY

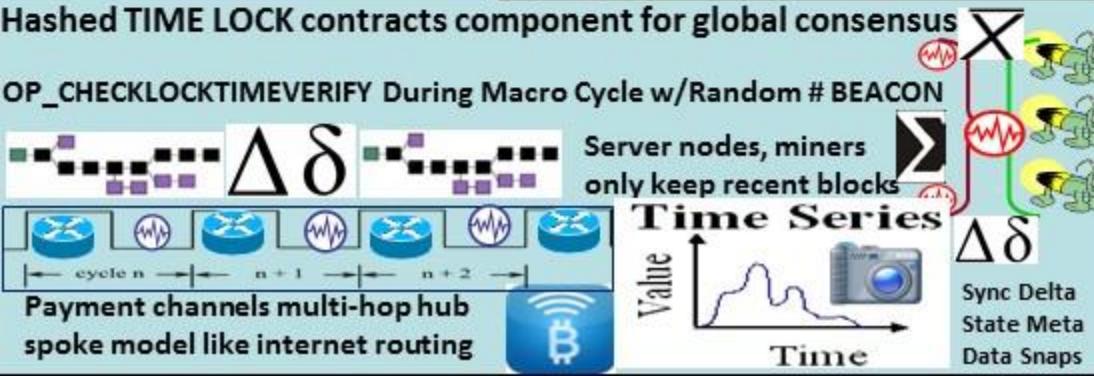
Txs	State transition:	Txs	State transition:	Txs	State transition:
0cb4	123: 400	5581	905: 560	7ce6	123: 440
9f12	8723: 0	2fc3	1141: 8021	1141:	7981
	42: 15776		42: 15775		

SWARM
(storage)

WHISPER
(messaging)

EVM
(consensus)





Segregated witness = Separated signatures

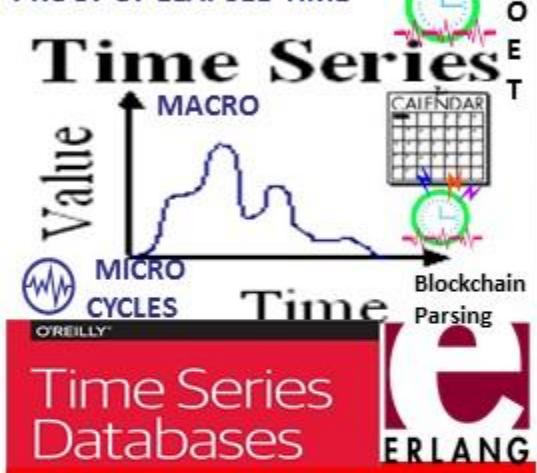
- signatures are cryptographic proofs also known as witnesses
 - moving signatures out of transactions
 - keeping a separate repository of the signatures
 - making them optional in propagation and storage
 - signature are the biggest part of transactions
 - can be implemented as a **soft-fork** vs a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

SAWTOOTH LAKE POETIC CONSENSUS PROOF OF ELAPSED TIME: POET

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



PROOF OF ELAPSED TIME



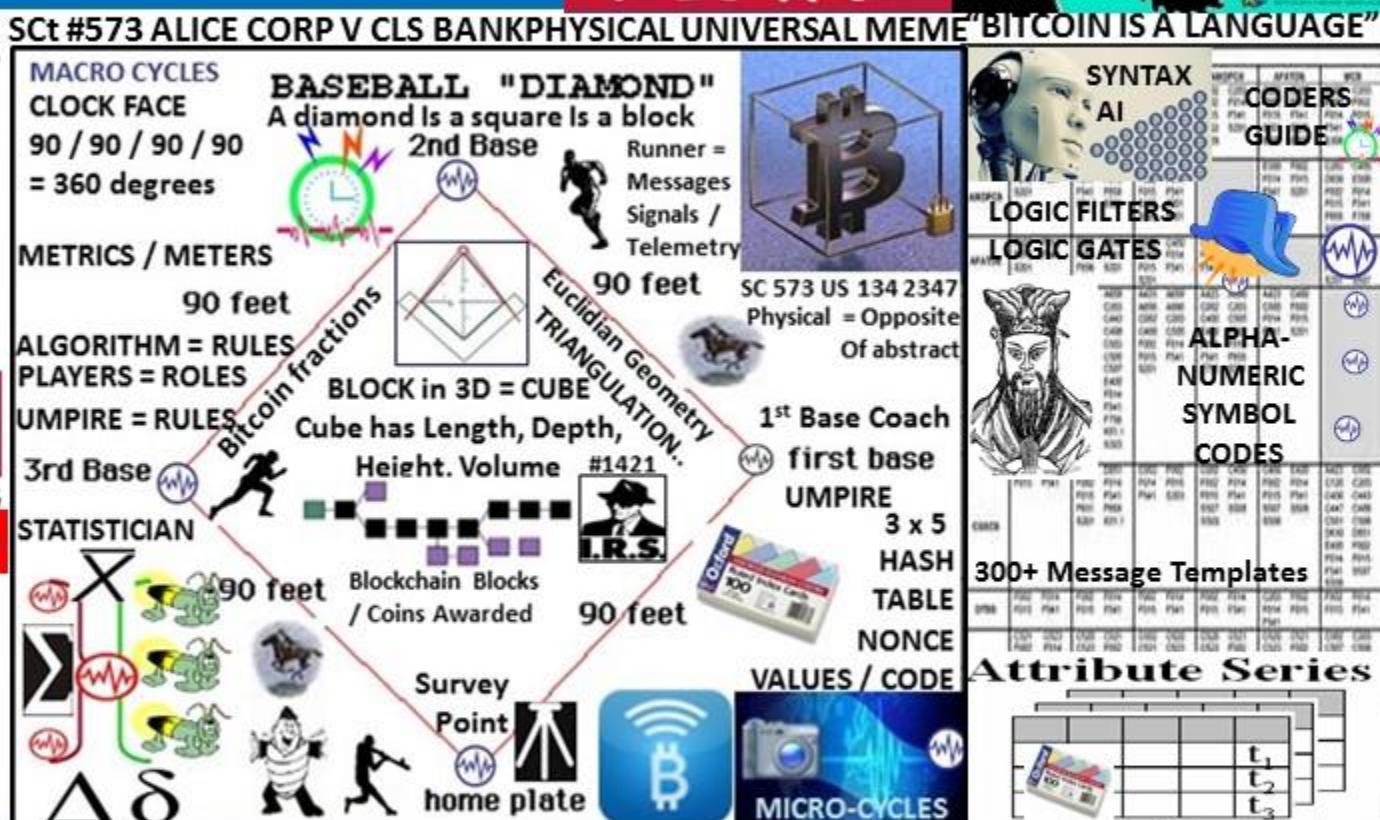
Voting Based Selection: stake size & block generators selected by votes

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



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

TOURNAMENT LEAGUE BOARD



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



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

Key Features:

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



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

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

All rates time-stamped in UTC.



Ability to look up by time-stamp.

Ability to look up by block-height.

Asset Classes: Digital Currencies

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

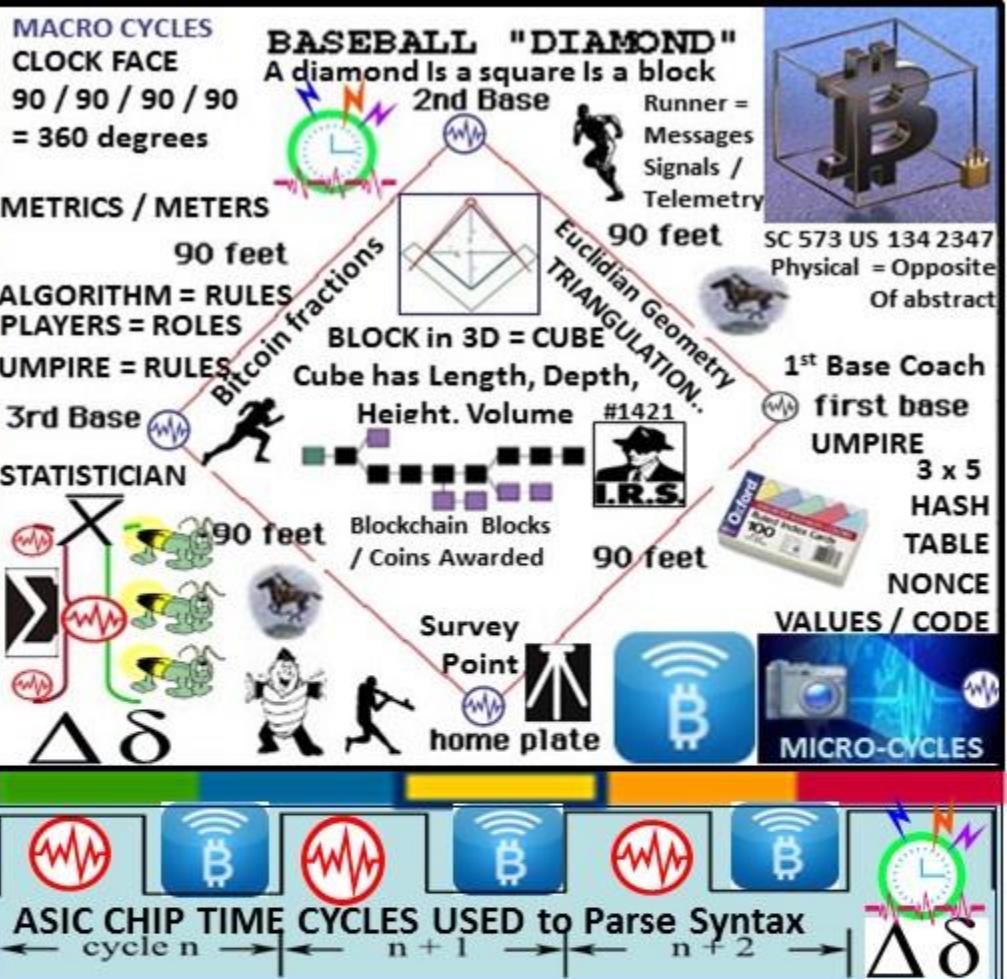
Transaction ID, Block ID, time-stamp, BWAP per block, Value in USD. BTC per transaction, bitcoin transaction fees per transaction

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

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

BRAVE NEW COIN.
Digital Currency Insights

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



FIREFLY – HEARTBEAT ALGORITHM UNIVERSAL EVENT BUS

MATCH EVENTS TO CLOSEST HBC

IRS #1421

Purchased Coins

Mined Bitcoins



Unmined Bitcoins

API CODE INSTRUCTIONS



NONCE

HASH

UTZ TIME ZONE TIME SYNC

EVENT BUS

TIME STAMPS

STATE META DATA SNAP SHOTS

$\Delta\delta$

STATE META DATA SNAP SHOTS

DASH



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

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

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

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

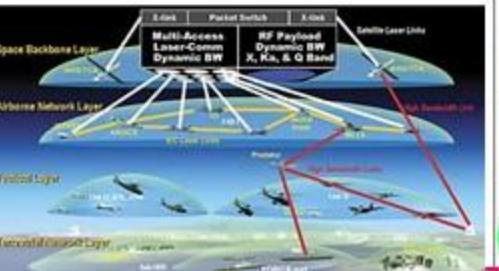
"Its makeup is thus: the block reward is divvied up in three parts. The first 45 percent goes to [Dash's miners](#). Another 45 percent goes to its Masternodes. And 10 percent is set aside to fund whatever other jobs or expenditures the Dash network deems necessary"

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

Masternodes receive payments for their service to the network.

DAO: RAND THINK TANK TERM COINED + / - 2001

NETWORK CENTRIC WARFARE
Developing and improving information superiority



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

METRICS / METERS

90 feet

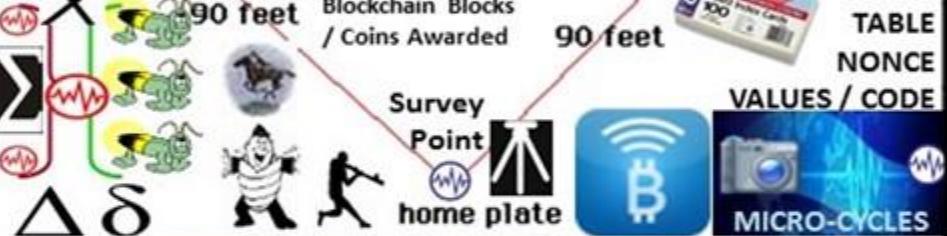
ALGORITHM = RULES
PLAYERS = ROLES

UMPIRE = RULES

3rd Base

STATISTICIAN

90 feet



STOCHASTIC HARMONIZATION FIREFLY-HEARTBEAT EVENT BUS

HEART BEACON CYCLE = IMPROVEMENT TO NETWORK CENTRIC WARFARE



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



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

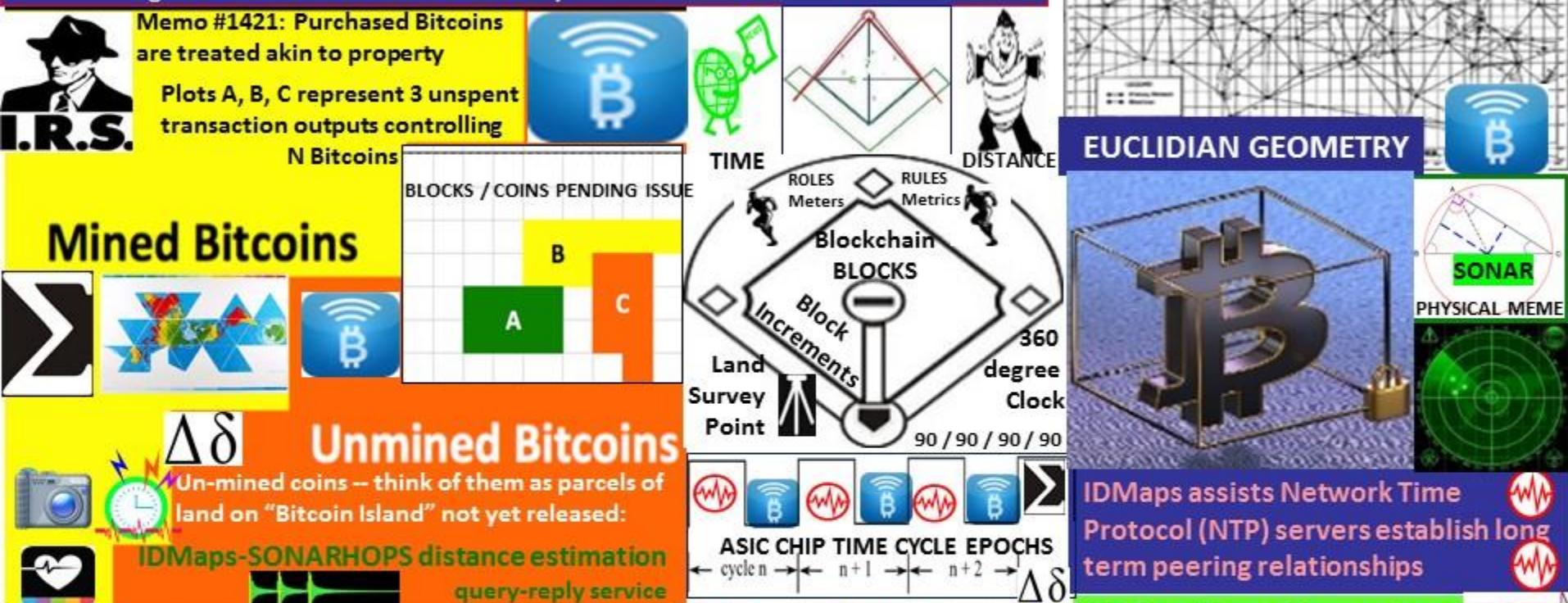
HEART BEACON CYCLE

USPTO 13/573,002

SURVEY METHODS

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

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



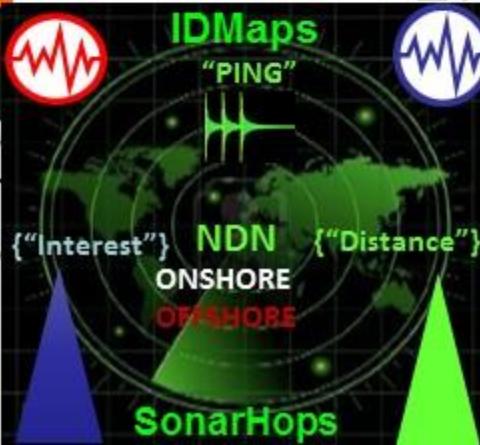
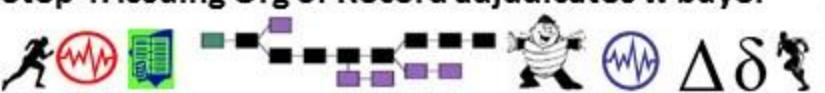
- End-state Bitcoin quantity will be fixed like land
"Bitcoin as protocol of ownership, not transfer"
Coins never travel, but simply switch owners"

Step 1: prove coin ownership <Org_ID> Coin Issuer

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

Step 3: specify ownership <Org_ID> issuing agent

Step 4: Issuing Org of Record adjudicates w buyer



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

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



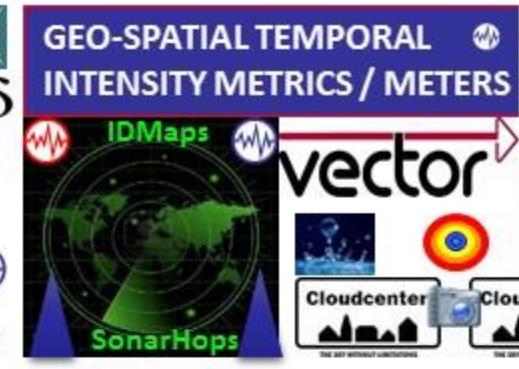
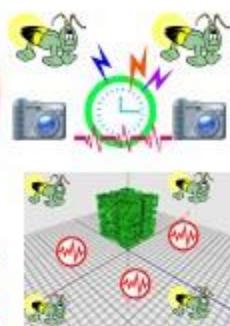
IDMaps Distance Metrics: latency (round-trip delay) available bandwidth estimation



IDMaps: Global Internet Host Distance Estimation Service



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



IDMaps scalable Internet-wide architecture measures, disseminates distance information



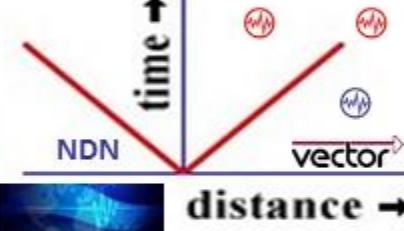
HOP COUNTS



REACHABILITY



/localhost/nfd/fib/add-nexthop



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

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

Name Prefix
<Org_ID> Trie (NPT)



NDN NAMES

NDN NAMED DATA NETWORK RIB /
FIB Datasets event notification

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



NDN RIB



NDN INTEREST LENGTH
= DISTANCE BY HOPS

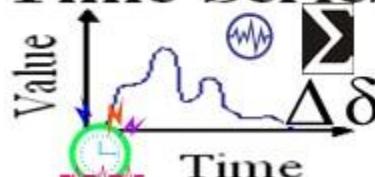
TRIANGULATION



NDN
INTEREST

IS DATA
FRESH ?

Time Series



INTEREST in <URNs>

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

Datasets and Event Notification

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



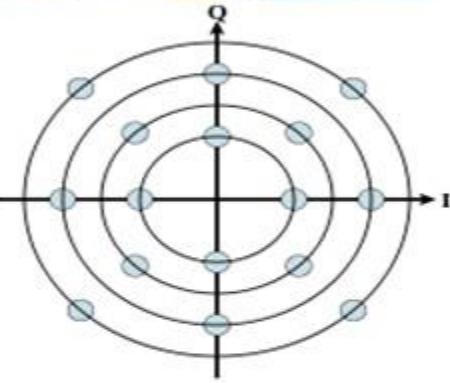
Distance Metrics: latency (e.g., round-trip delay) and, where possible, bandwidth.



MICRO-CYCLES

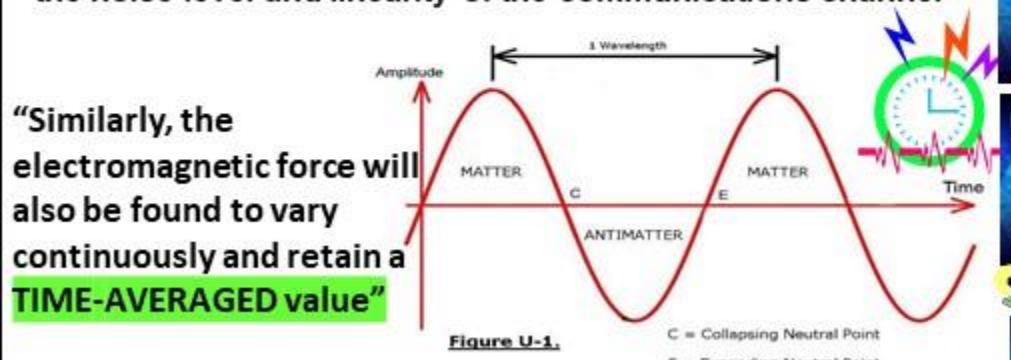


NDN INTEREST LIFETIME = TTL Time To Live
HEARTBEAT STATE META DATASNAP SHOTS

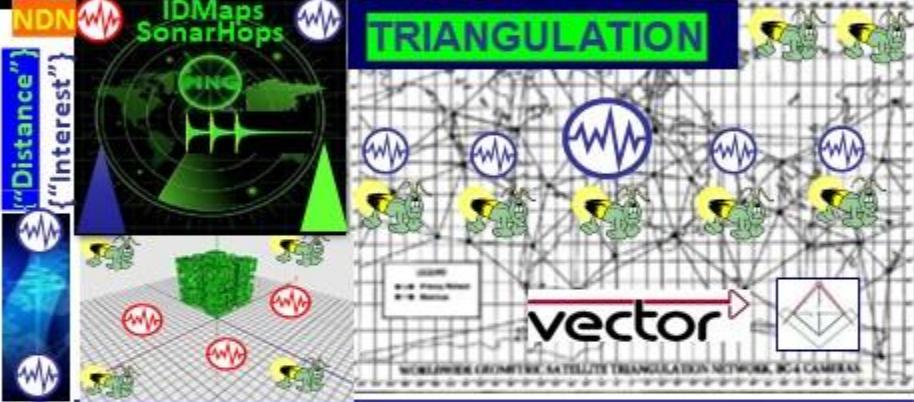


Quadrature amplitude modulation

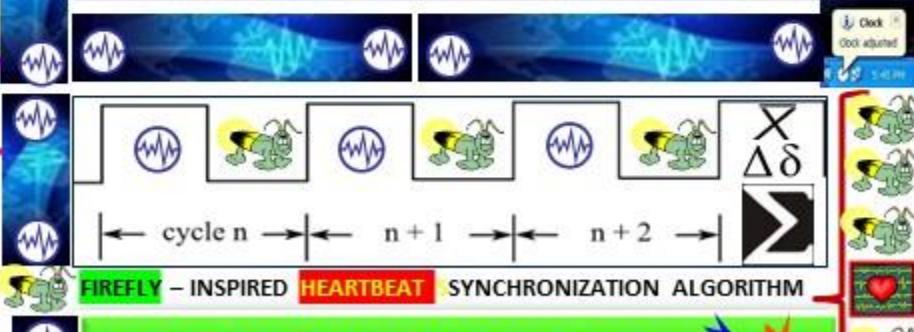
QAM by setting a suitable constellation size, limited only by the noise level and linearity of the communications channel



Sine wave of our blinking universe. The 4 fundamental forces will all be found to vary continuously when sampled at 2x the blinking frequency, per Nyquist-Shannon theory



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



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

13/573,002 HEART BEACON CYCLE

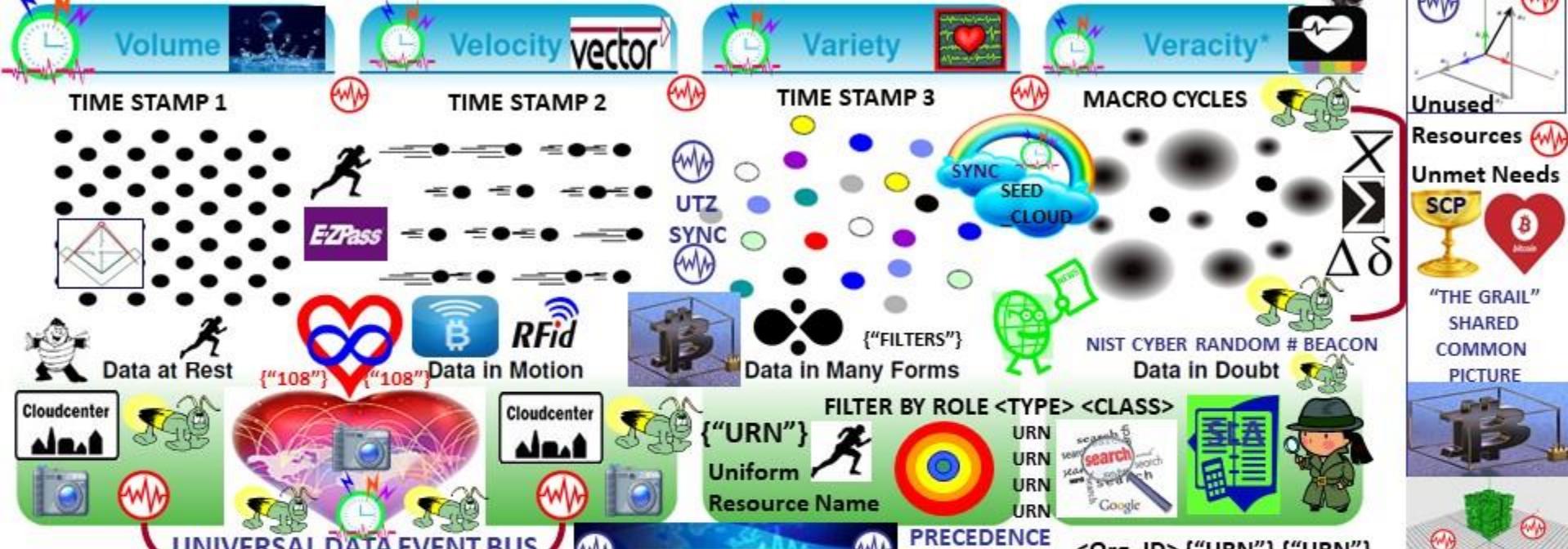
Time -Space meter, metrics / Universal data event, alert bus
Internet of Everything IET ability to hear the world's heartbeat



The four dimensions of Big Data

TIME STAMP BY Org_ID, URN Before FUSION CENTER

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

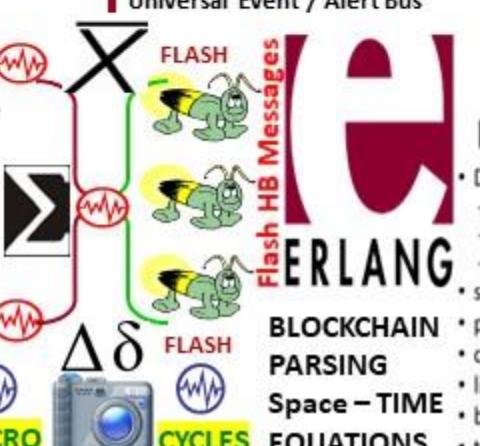


* Truthfulness, accuracy or precision, correctness

FIREFLY – HEARTBEAT {"108"}
Stochastic Harmonization

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

State Meta Data
Heartbeat Snaps



PAUL REVERE
LINEAR
SEQUENTIAL
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)



FOAM spatial protocol
Ethereum blockchain.



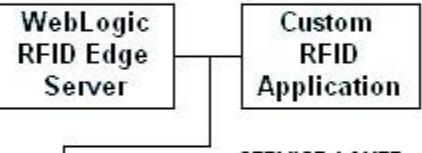
Electronic Product Code Information Services (EPCIS)

GS1 Standard for creating, sharing visibility event data

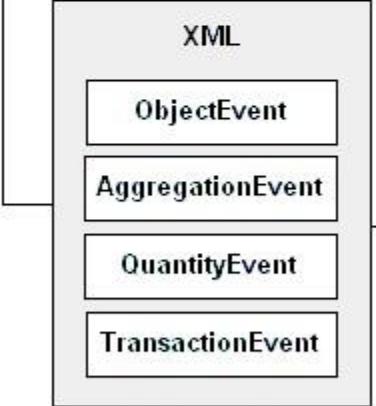


Epcis

EPCIS DATA MODEL



SERVICE LAYER



Core Business Vocabulary (CBV)

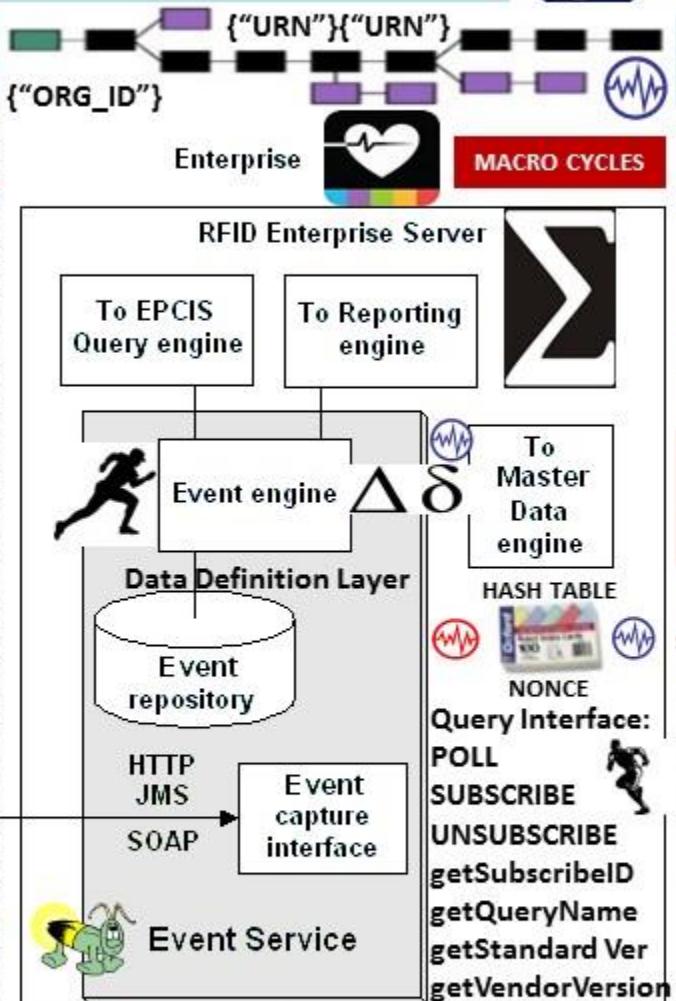
What identifiers of object(s) or entities / subject of the event

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

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

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

MICRO CYCLES



CLOSER IS CHEAPER
CLOSER IS FASTER

$\Delta\delta$



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

RFID Configuration TCP/IP heartbeat message

STRUCTURED DATA EXCHANGE /
STRUCTURED MILITARY MESSAGES

FROM	BATTLEFIELD DIGITIZATION	TO	CENTRIC WARFARE
ASIAN NETWORK	F102 F104 F106 F108	AFRICA	F102 F104 F106 F108
AMERICAS	F102 F104 F106 F108	EUROPE	F102 F104 F106 F108
AFRICA	F102 F104 F106 F108	ASIA	F102 F104 F106 F108

STRUCTURED DATA EXCHANGE /
STRUCTURED MILITARY MESSAGES

BATTLEFIELD DIGITIZATION

SYSTEM OF SYSTEMS

BEST PRACTICE

CENTRIC WARFARE

ASIAN NETWORK

EUROPE

AFRICA

AMERICAS

ASIA

STRUCTURED DATA EXCHANGE /
STRUCTURED MILITARY MESSAGES

BATTLEFIELD DIGITIZATION

SYSTEM OF SYSTEMS

BEST PRACTICE

CENTRIC WARFARE

ASIAN NETWORK

EUROPE

AFRICA

AMERICAS

ASIA



UNIVERSAL EVENT BUS



HEART BEACON CYCLE
FIREFLY – HEARTBEAT ALGO



IDMaps
ON / OFF SHORE
SonarHops
DISTANCE ESTIMATION SERVICE

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

SYNTAX LEXICON CODE GUIDE



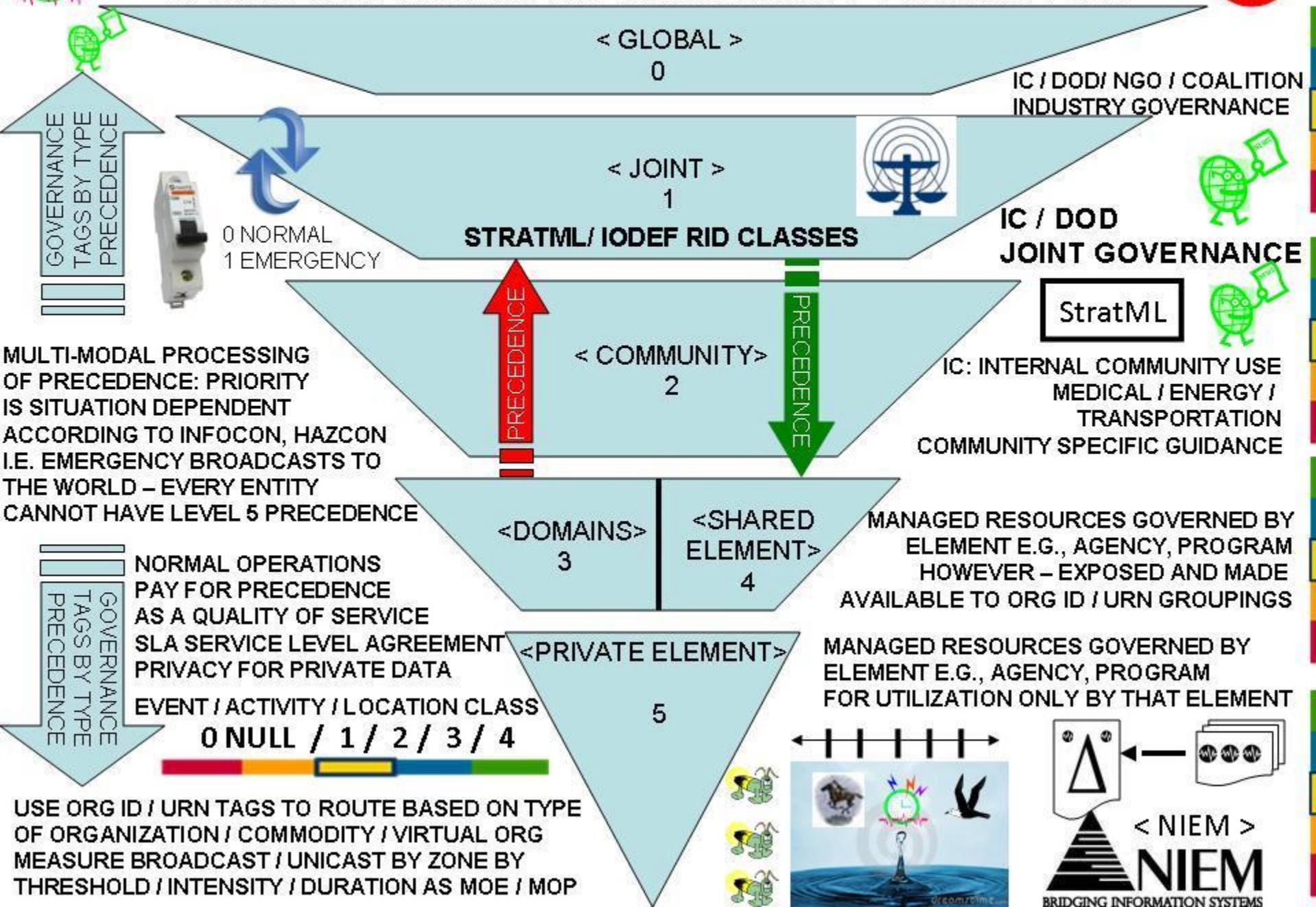
!st Compiler DESIGN Still the BEST



ROSETTA STONE



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



Situational Awareness Reference Architecture (SARA)

Identity, Inventory, Activity, and Sharing

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



Industrial Control System
Information Sharing and
Analysis Center

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

<ELEMENTS>

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

STRATEGIC
MARKUP

StratML

LANGUAGE

IODEF

Analysis Center

INVENTORY: Uniform Resource Name <URN>

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



vector

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

GEO-SPATIAL TEMPORAL INTENSITY METRICS

UNIFIED EVENT / ALERT TRIGGER / THRESHOLDS

GEO-SPATIAL TEMPORAL
INTENSITY METRICS / METERS



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

CONTENT LEXICON
ROSETTA STONE

NDN

<INTEREST>



STIX

NDN

<GEO_LOC_GPS><STATUS>



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

AVALANCHE

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

NIST CYBER SECURITY FRAMEWORK



CYBER SECURITY CONTENT
LEXICON ROSETTA STONE

Category	Sub-Category	Content
MIL-STD	2525A	STRUCTURED <CONTENT> TEMPLATES
MIL-STD	2525A	<TAG> LIBRARY
MIL-STD	2525A	STRUCTURED <CONTENT> TEMPLATES
MIL-STD	2525A	<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



NIEM
DATA
EXCHANGING INFORMATION SYSTEMS

NAMED DATA
NETWORKING
<Content> Centric



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



</DATA>
("FILTERS")

FIREFLY - HEARTBEAT ALGO
SYNC EVENTS



Bitcoin: OpenBazaar transactional currency



NIST Beacon
A Public Randomness Service

UTZ SYNC
TO CLOSEST HB CYCLE



Cryptographic Security

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



NIST Beacon
A Public Randomness Service

UTZ SYNC
TO CLOSEST HB CYCLE

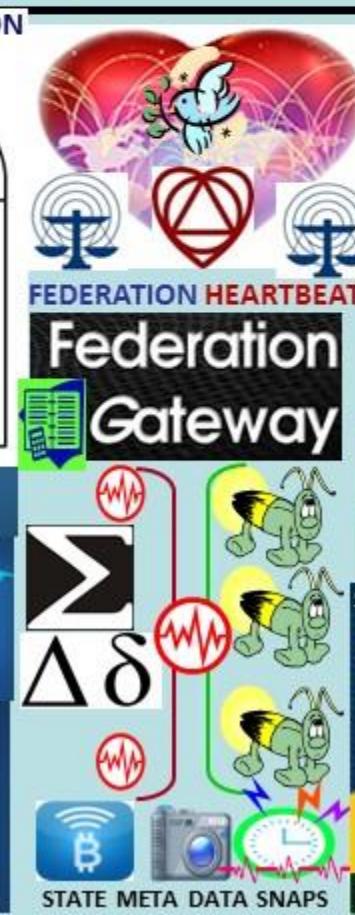
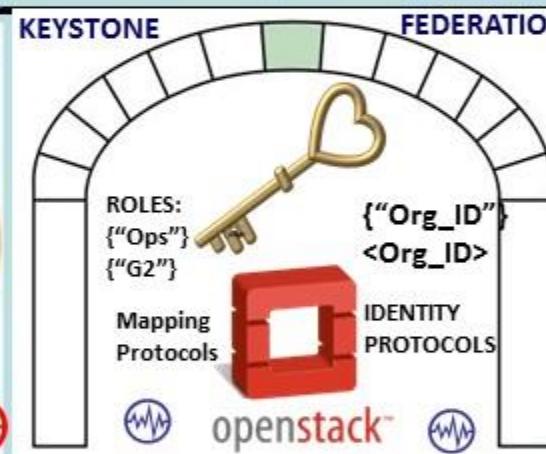
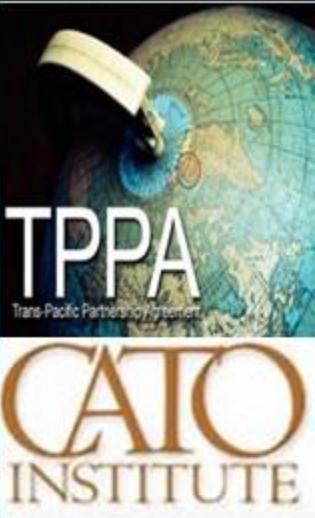


SchellingPoint



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

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



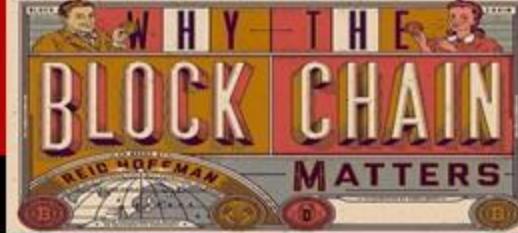
HEART BEACON CYCLE: ALL THINGS INTERNET ARE PROGRAMMED USING TIME CYCLES USED / NOT USED TO PROCESS / NOT PROCESS SYNTAX



TradeNet

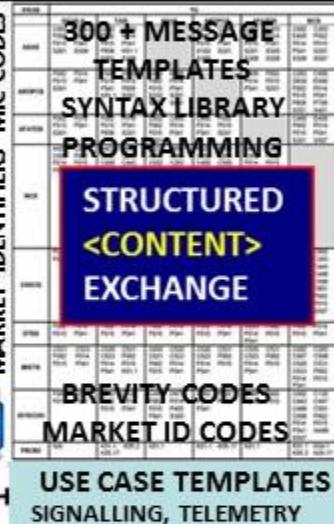
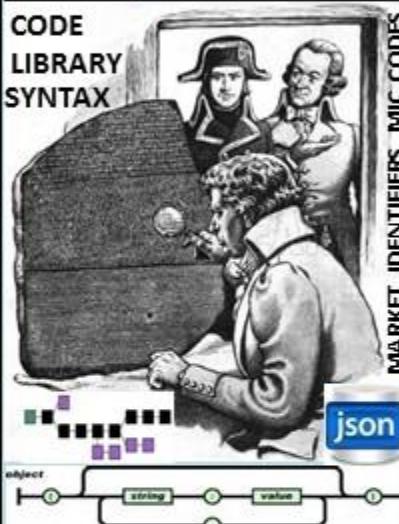


Programmable Money \$\$\$



RIED HOFFMAN 15 May 2015 [LINK](#)

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

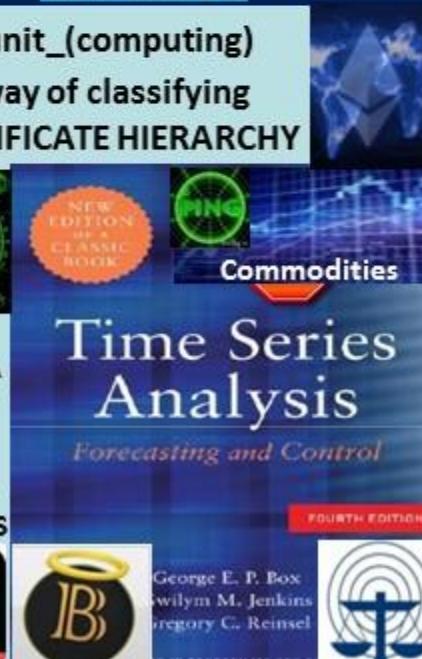


Bitcoin and the blockchain function as a medium of exchange, a store of value, a unit of account. Bitcoin adds digital, cryptographic, distributed server functions to currencies. Because it functions simultaneously as a currency, an asset and a platform, Bitcoin is better described as a global cryptoCAP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

WIRE

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

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





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

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

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

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

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

Place Order

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

NEWS EVENT BUS FIREFLY HEARTBEAT ALGO EVENT BUS

DAO Distributed Autonomous Organization SOFTWARE POOLS

All Market Orders Search

Collateral Notional Expiry

Heartbeat Flash Messages Precedence Processing

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

FINANCIAL
NOSTRADAMUS
REGGIE MIDDLETON



ECONOMIC HEARTBEAT
STATISTICAL MEAN VALUE INDEX PULSE



ALGORITHMIC REGULATION

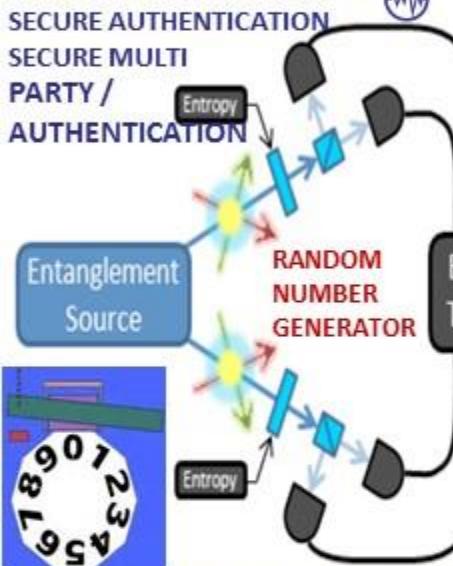


NIST RANDOMNESS BEACON: broadcast full-entropy bit-strings in blocks of 512 bits every 60 seconds. Each value is time-stamped, signed, & includes hash of previous value to chain sequence of values together. This prevents all, even the source, from retroactively changing an output packet without being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



NIST QUANTUM ENCRYPTION RANDOMIZATION BEACON

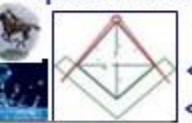
UNPREDICTABLE SAMPLING



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

Metrics and Time - Space Meter uses PHYSICAL Memes / Metaphors

NAMED DATA NETWORKING



NDN
</Interest>
</Distance>

SURVEY METHODS + TRIANGULATION
Euclidian Geometry

Geodesic System Routing Info Base RIB

ACCOUNT BELONGS TO </Org_ID>

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

DEVICE / SENSORS <UUID><UUID>

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

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

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

Stochastic Harmonization

Firefly-Heartbeat Algorithm UNIVERSALTIME ZONE SYNC UTC

Sync Events to Closest HBC

AGGREGATE, SUM STAT MEAN VALUE INDEX

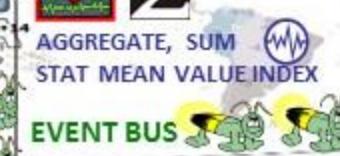
EVENT BUS

{"USER_ID"} + QRB

{"INTEREST"} {"DISTANCE"}

On Off Shore

{"Org_ID"} In clear



The proposed Universal Timezone System would do away with all these different time zones and instead use a single global time zone called UTC+0.



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

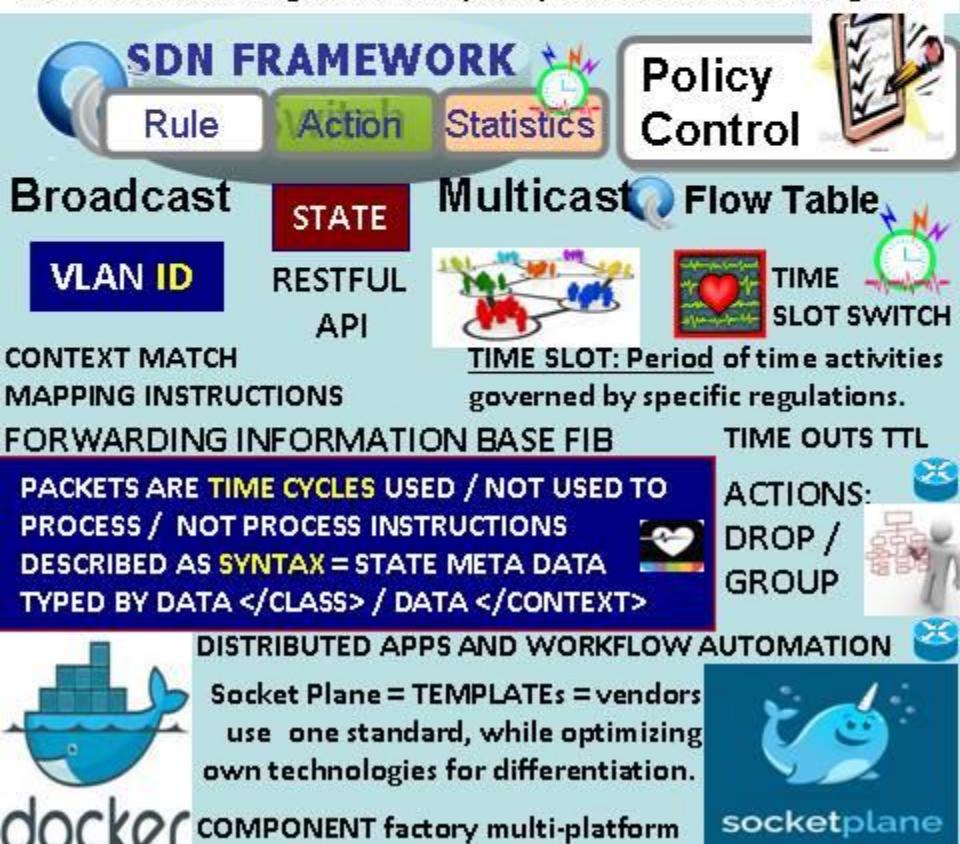
The current standard time common throughout the world is based on a 24-hour clock, with zones that are either 12 hours ahead or behind **Coordinated Universal Time (UTC)**. However, these time zones are decided upon by individual governments, without overall coordination and can even extend fourteen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





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

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



Autonomous Device Coordination Framework



Registration

Authentication

Proximity based rules

Consensus based rules

FEDERATION AGREEMENTS

PROCEDURAL TEMPLATE

Contracts

Checklists

FEDERATION

<UUID><ORG_ID><URN>

LDAP DIRECTORY

Physical proximity

Social proximity

Temporal proximity

Agreements

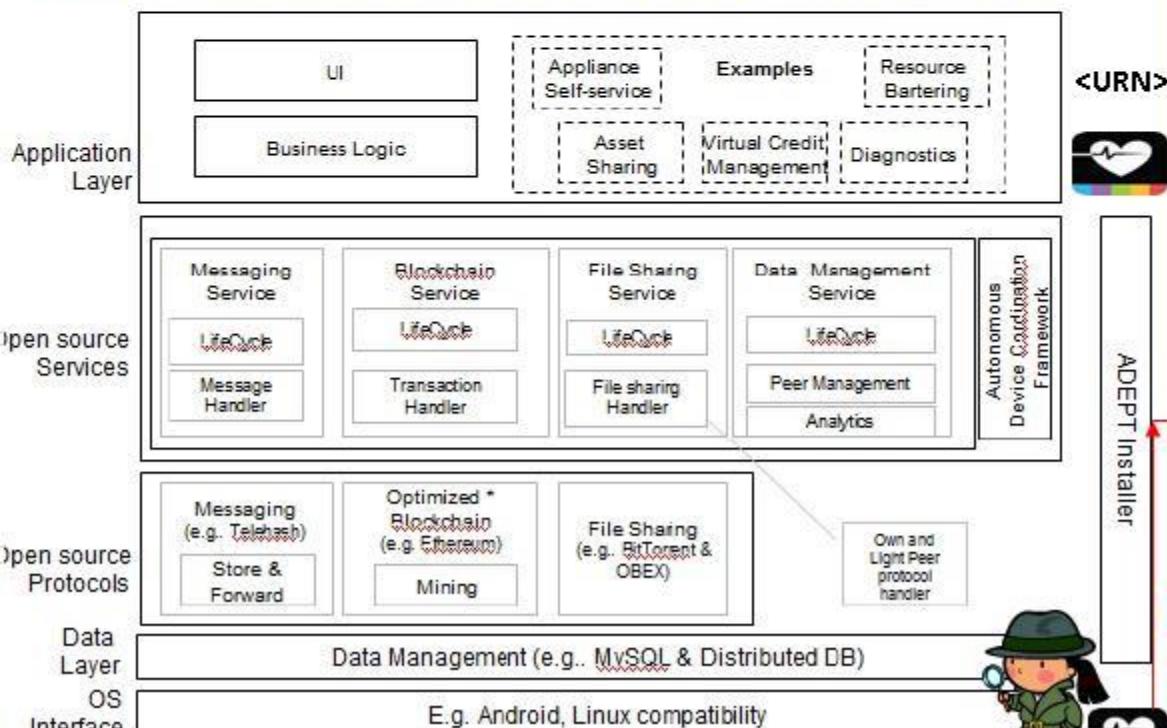
Payments

Barter



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

ADEPT Standard Peer Architecture – Logical View



<URN>



ADEPT Installer



ASSET SHARING WITHIN FEDERATION

BUSINESS LOGIC = WORKFLOW <XML_Wf>

FILE SHARING = CYCLIC SYNC DELTA LEDGER / DOCUMENT REFRESH

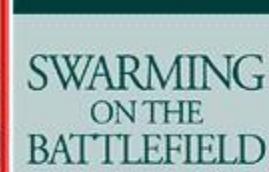
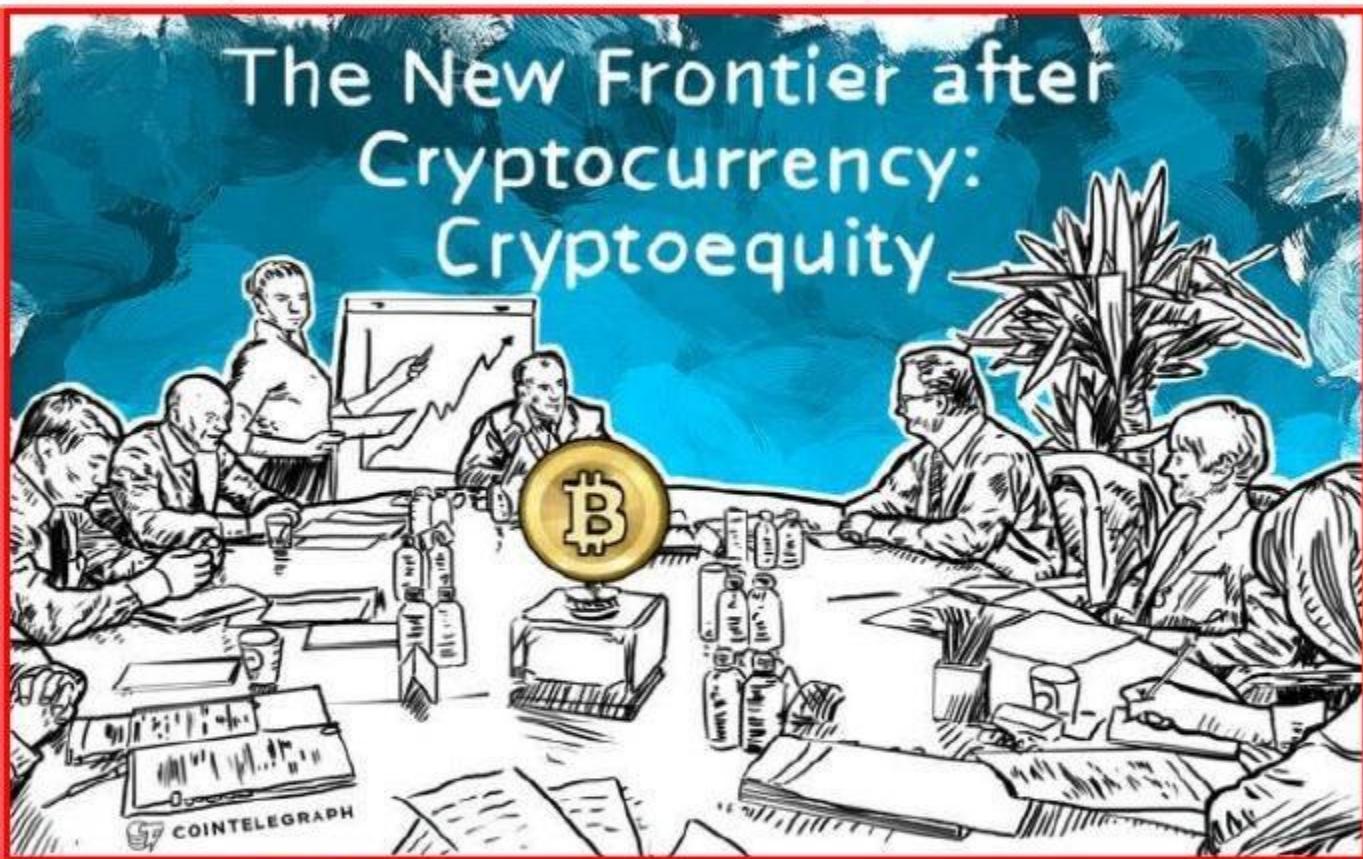


OPEN SOURCE = HBC = PROTOCOL AGNOSTIC

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

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

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



RAND
Monograph
Report

THE
ADVENT
Of NETWAR

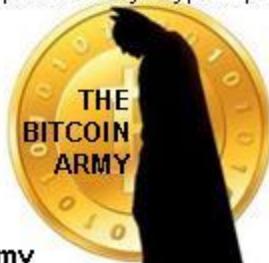


Eris -- The Dawn of Distributed Autonomous Organizations and The Future of Governance



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

<https://twitter.com/TheBitcoinArmy>



ERIS: GODDESS OF DISCORD
DISRUPTIVE TECHNOLOGIES:

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



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

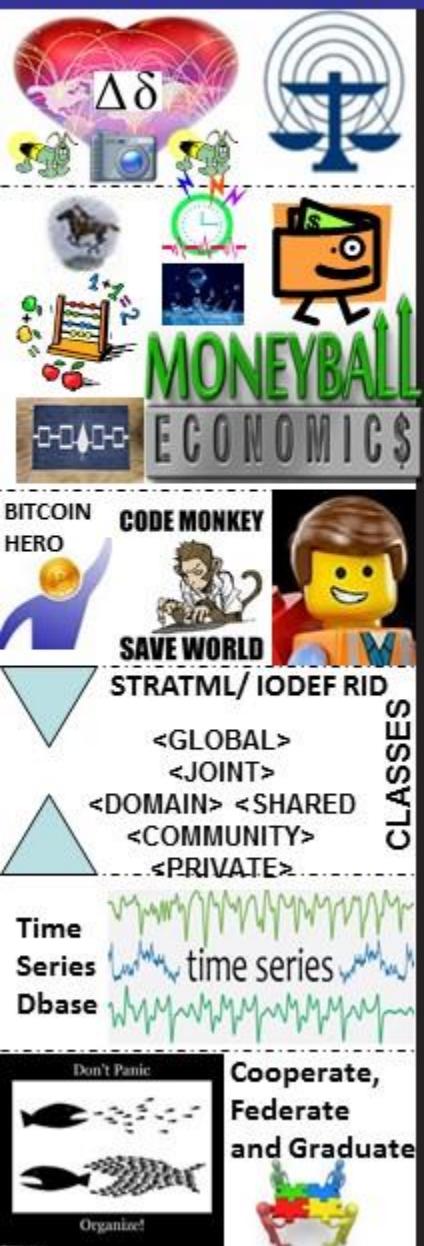
How 'Bitbanks' Could Solve Bitcoin's Volatility Problem

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

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



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





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

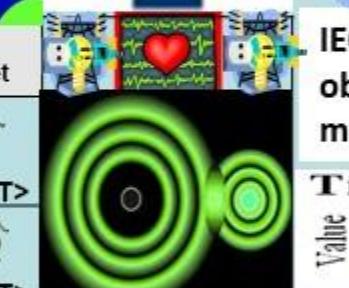
Phase 2: Shared file stores data for 5 tags:

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

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

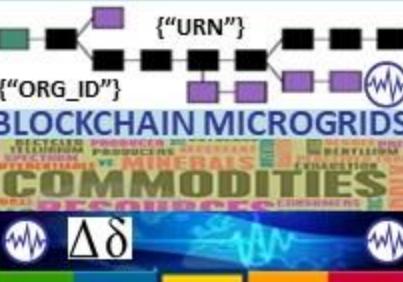


Paul Revere = Linear, Sequential meme



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

Heartbeat
State meta
Data snapshots



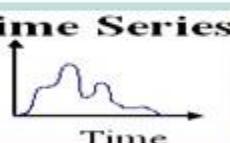
$\Delta\delta$



$\Delta\delta$



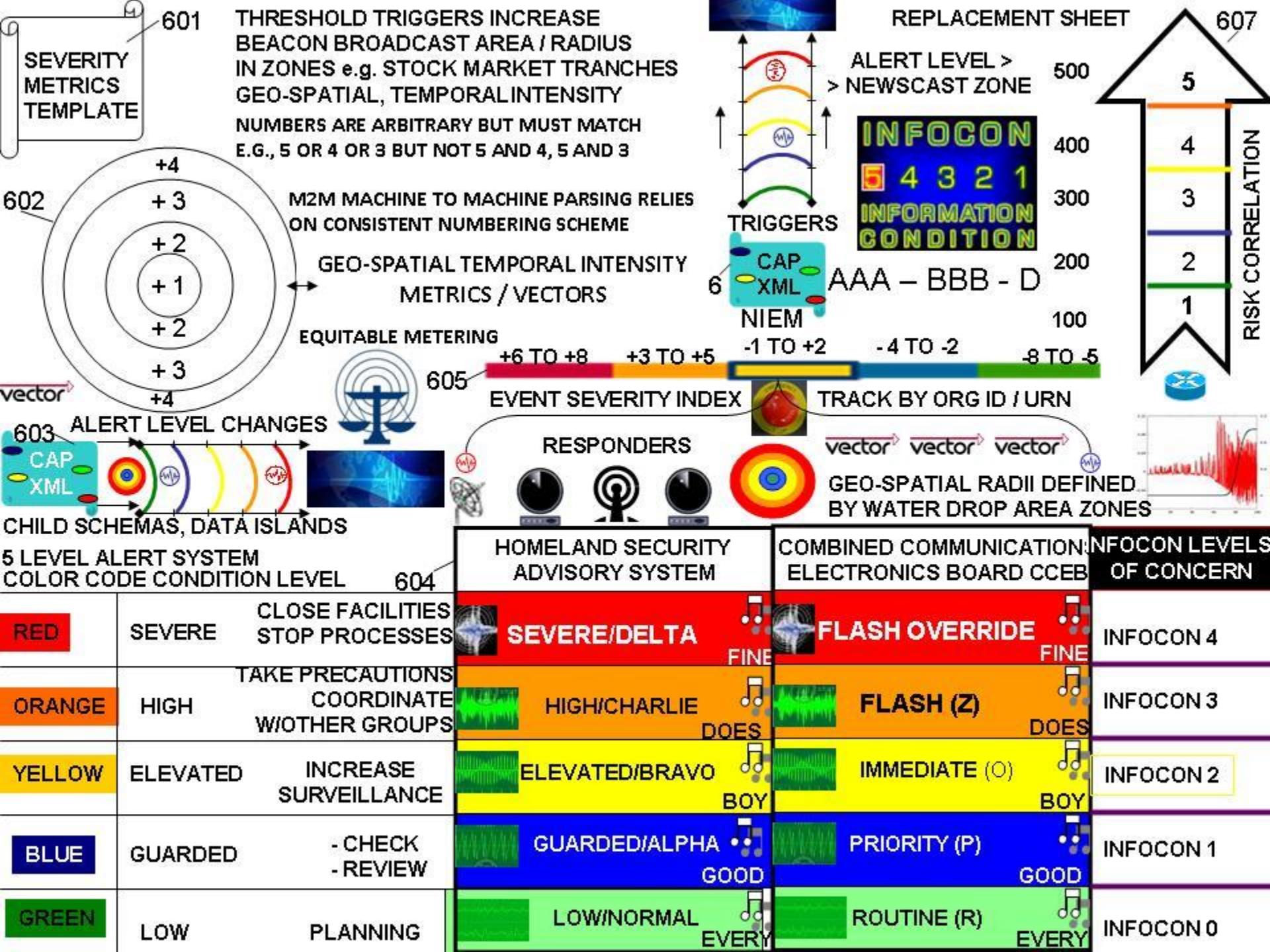
IEC 61850 Objects logical nodes, data objects or data attributes resends message with the heartbeat cycle



Spatial Econometrics







GEO-SPATIAL TEMPORAL INTENSITY METRICS, METERS, VECTORS



NAMED DATA NETWORKING

<INTEREST>
time ↑
distance →
<CONTENT>

TEMPLATES

OASIS

IEEE 802.15.4
OASIS MQTT

ARRESTED-D
TELEMETRY TRANSPORT



05:08:57

NIST TIME BEACON

Hop Count



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

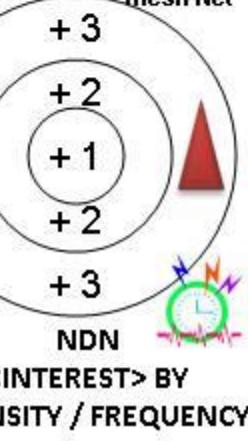
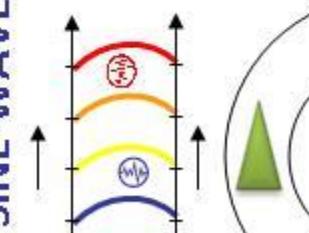
IDMAPS
SONARHOPS
INTERNET
TRIANGULATION



vector WirelessHART

time synchronized,
self-organizing,
mesh Net

ALERT LEVEL >
> NEWSCAST ZONE



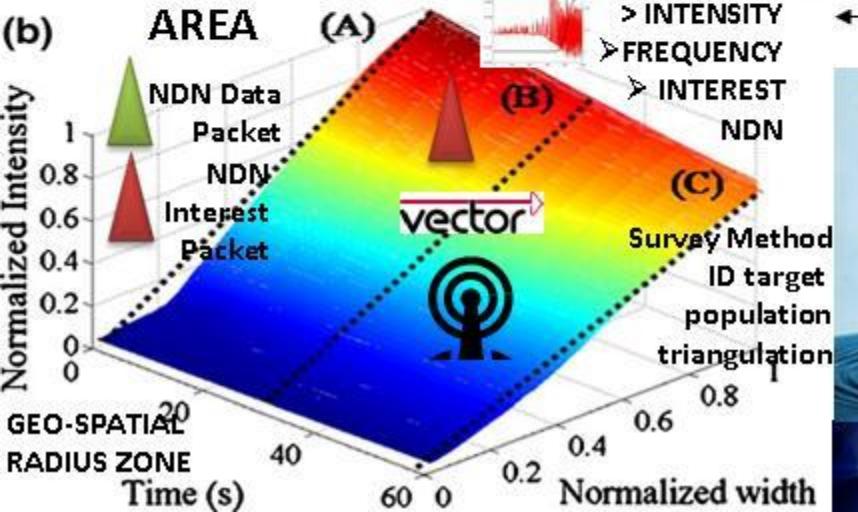
Geo-Spatial Temporal Intensity
NOVEL METRICS / METERS:



Paul Revere = linear, sequential

TCP/IP hop by hop counts, by hop controls

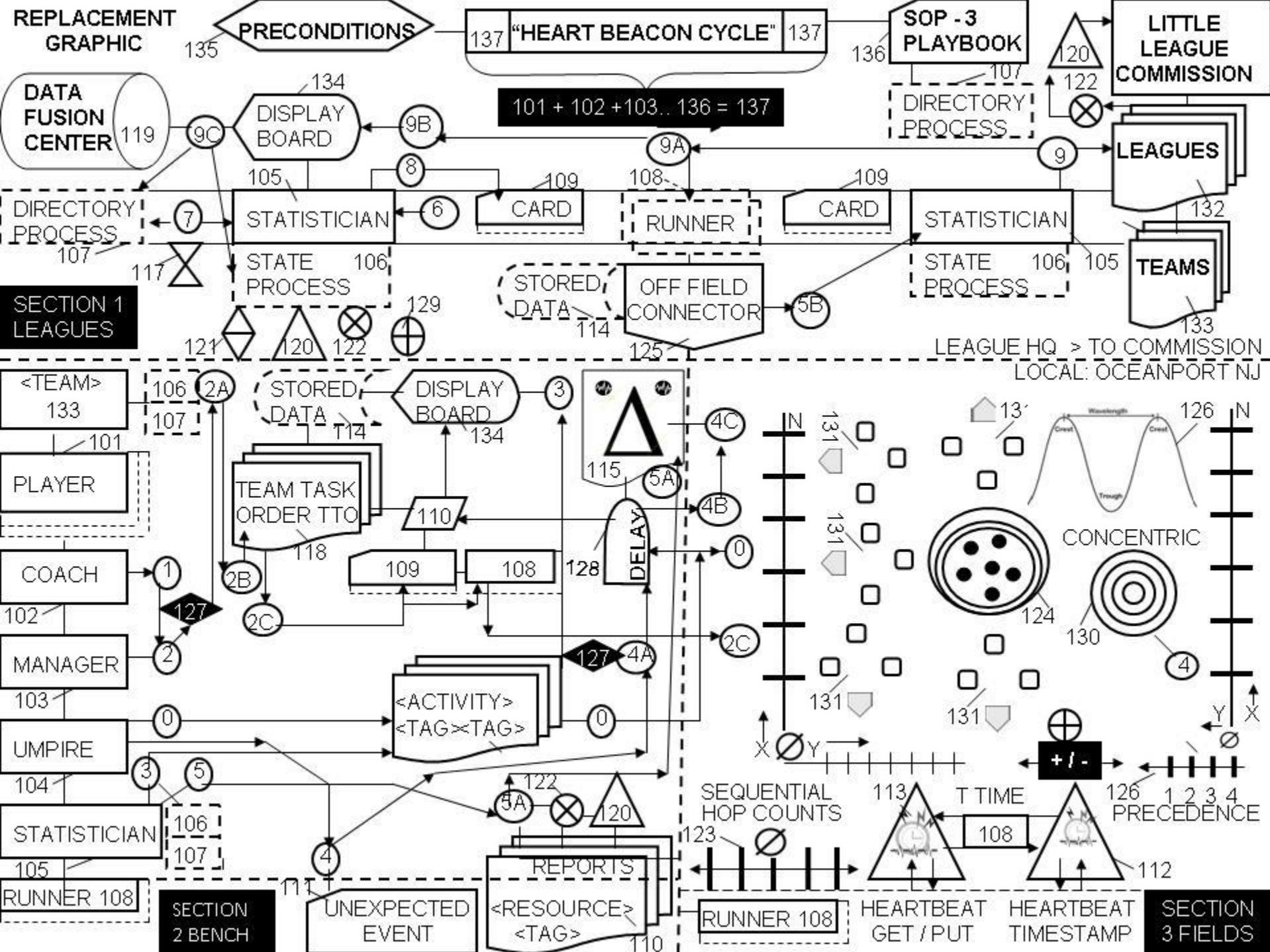
Water Drop = AREA / INTENSITY
Cyclic Frequency

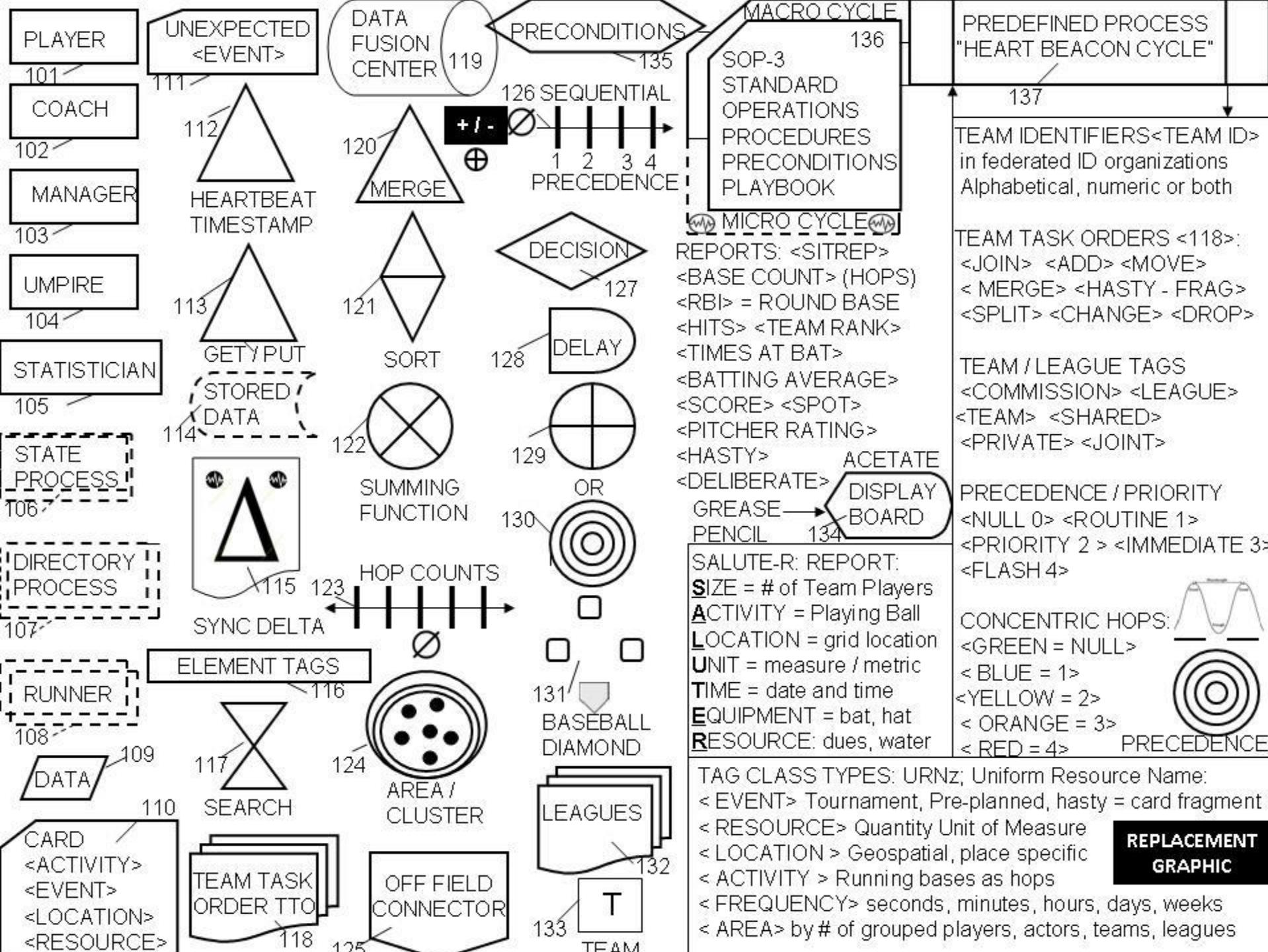


DEFCON / INFOCON

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>		

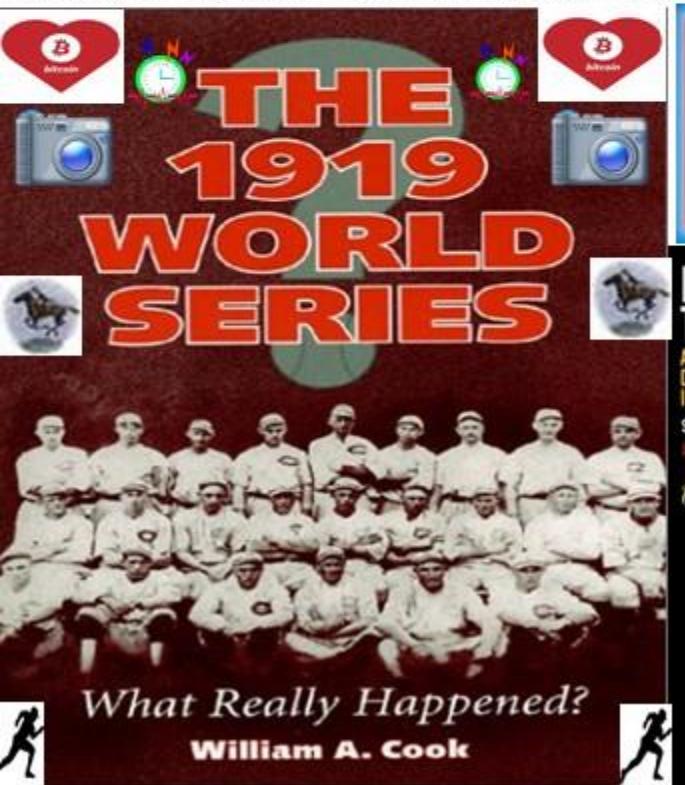








SAW Concepts LLC Owner's Father is from Blackfoot First Nation Native American Indian



USPTO SCREEN CAPTURES SUSPENDED PAIR RULES

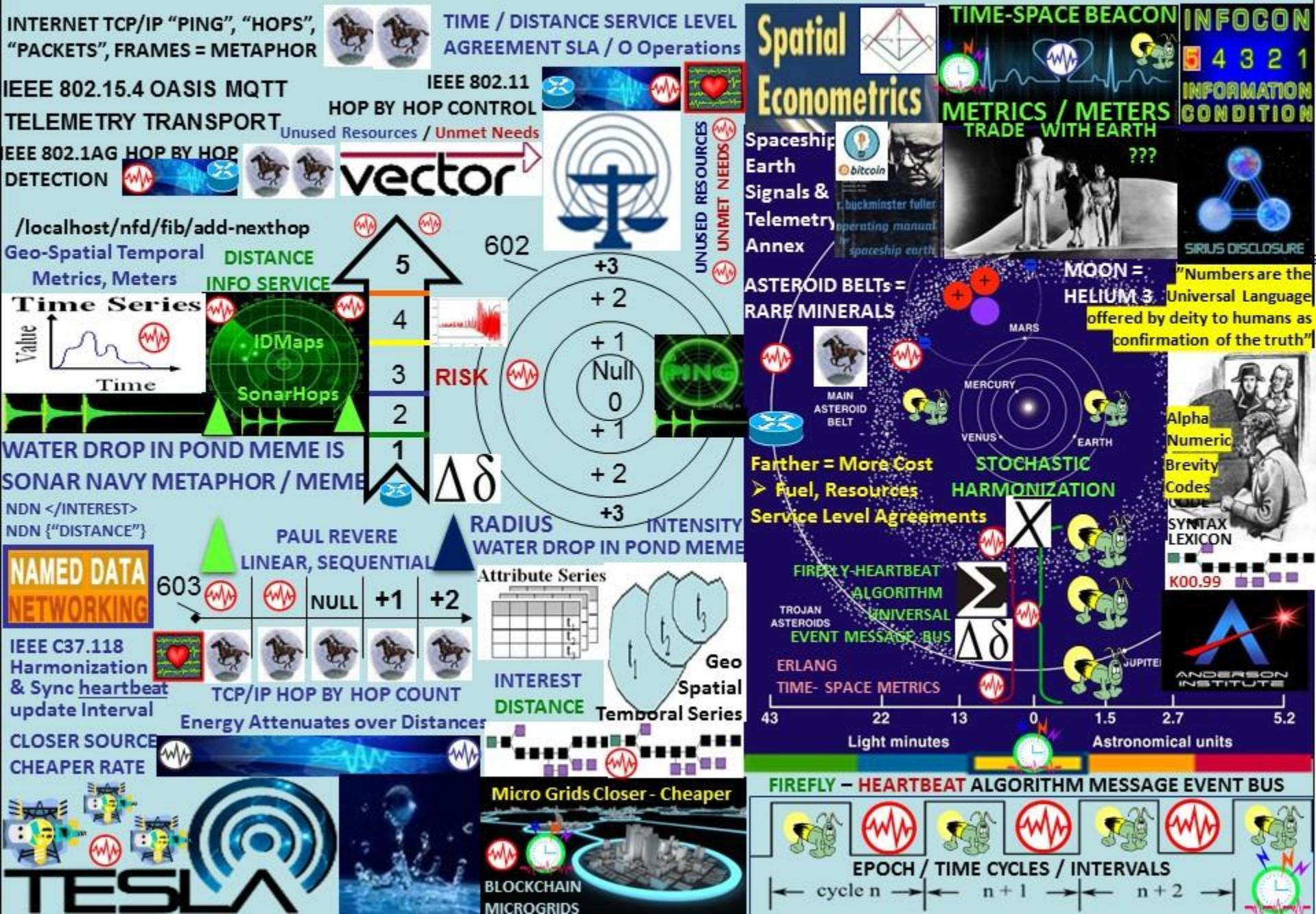
- Moved Examination outside PAIR
- No need for forms, fees, amendments
- No Time Stamps = Temporal Ambiguity
- Screen captures before / after filing

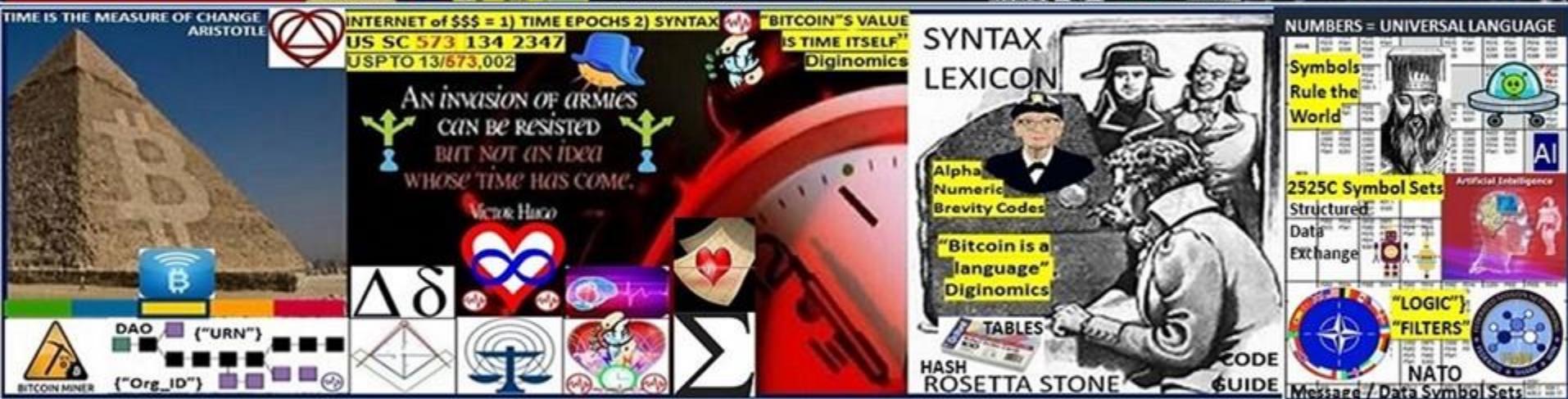




USPTO APPLICATION 13,573,002 The Heart Beacon Cycle Time – Space Meter, Applique' Overlay

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





SIGNALS
Telemetry
ANNEX



Buckminster Fuller 1968 *Operating Manual for Spaceship Earth*
"we can make all of humanity successful through science's world-engulfing industrial evolution. We have the tools"

"The Dymaxion Map reveals a One-World Island in a One-World Ocean" which helps us to view the world as one interdependent system [of systems] of relationships. This is what is most fundamentally at HEART when we speak of Spaceship Earth "The planet is a [system of] system (s)"

SPACESHIP EARTH: comprehensive planetary planning describing new strategies intended to enable all of humanity to live with freedom, comfort and dignity, without negatively impacting the earth's ecosystem's regenerative ability

INFOCON

5 4 3 2 1

INFORMATION CONDITION
The World Game

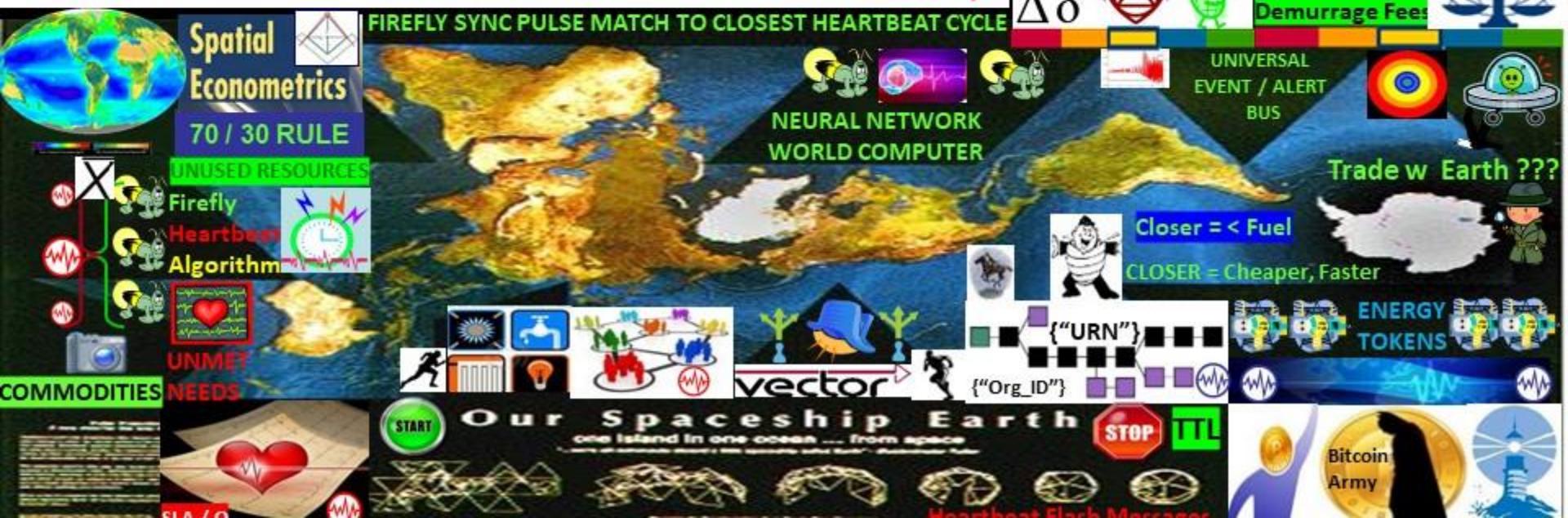


The Book Spaceship Earth relates Earth to a spaceship flying through space. Our spaceship has a finite amount of resources and cannot be resupplied.

INCENTIVIZE
SUSTAINABLE
Eco-Econometrics



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



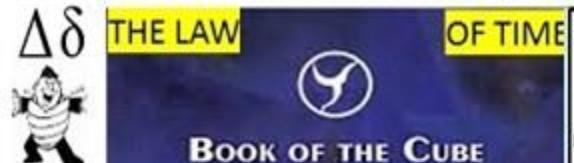
USPTO APPLICATION 13/573 002

The Heart Beacon Cycle Time-Space Meter

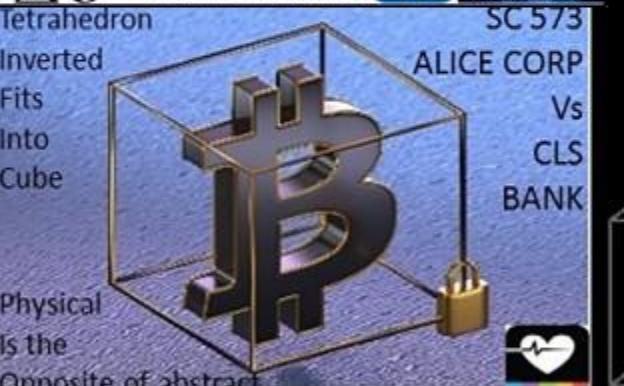
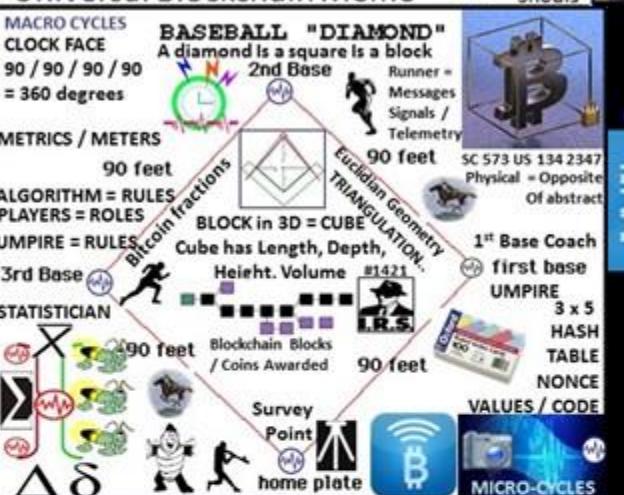
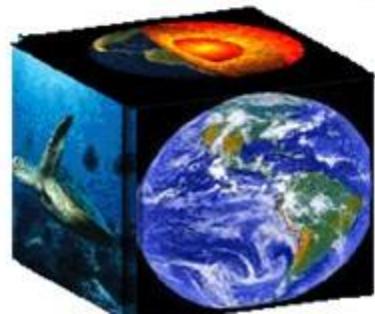
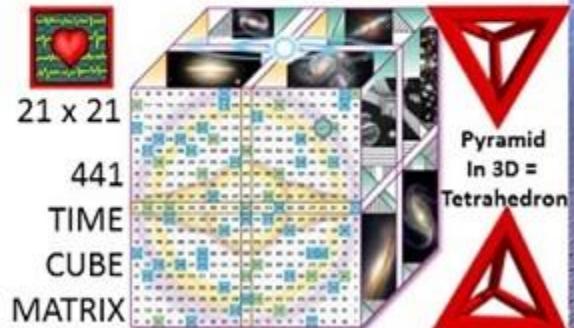
Main Embodiment: Baseball Diamond = block in 3D = cube

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

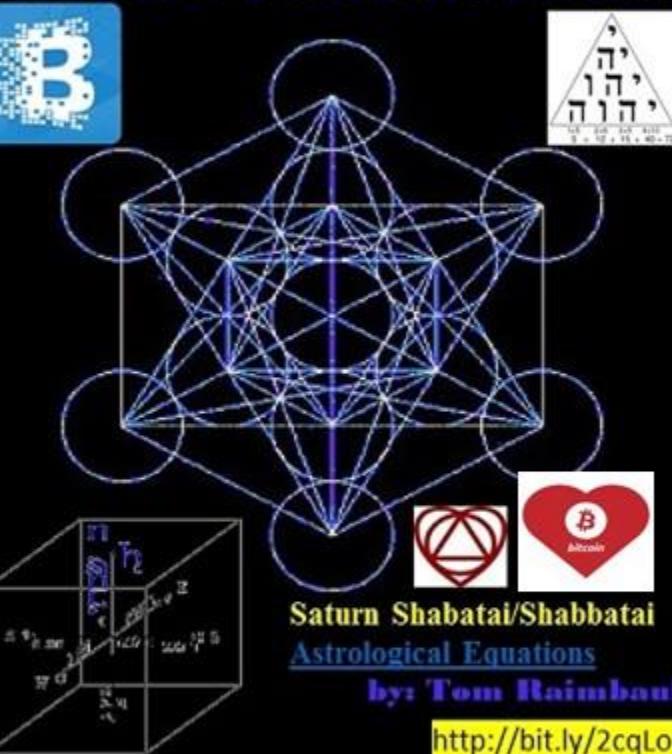
"We can synchronize ourselves in time for a common purpose" Universal Blockchain Meme



First
Baseball
Players
Union
Formed
1870



Metatron's Cube and the Platonic Solids



Saturn Shabatai/Shabbatai
Astrological Equations

by: Tom Rimbault

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

INSTITUTE OF HEARTMATH®

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



