Quantum Ledger Network

(Conceptual Exploration Framework v0.2 - Draft, augmntd)

QLN

A Self-Evolving Quantum Ledger Built on the Dynamics of Time and Interaction

Abstract:

The Quantum Ledger Network (QLN) redefines decentralized ledger technology by embracing quantum mechanics, ‘time’ as a fundamental component for all interactions at a physical level, while re-imagining security as an emergent property. Building upon concepts inspired by blockchain, decentralized systems (particularly open participation structures), AI-driven automation along with methodologies driven by the "Everything Protocol", QLN implements "observable system activity with “Time signatures”. QLN creates a secure, dynamic, and inherently adaptable system, built upon a self evolving platform using principles of both quantum and classical implementations via hybrid approaches. This methodology transcends conventional digital platforms while empowering “benevolent interactions,” using AI analysis systems based on large data and by transforming “attacks” as mechanisms for data and insights generation, for continuous system improvement and optimized performance.

Introduction

Redefining Decentralization, Security, and Time

QLN is an exploration into the intersection of quantum physics, distributed systems, and user-driven dynamic platform designs. Traditional blockchains (while revolutionary,) suffer inherent limits based upon classic computing methodologies. Those designs also face scalability challenges, in data management techniques by their “time based” (linear) nature. Most blockchains rely on either external or an artificial timeline with a digital time stamp implementation mechanism that creates both bottlenecks, and also introduce security vulnerabilities through time.. QLN directly addresses these inherent challenges using new architectural design methodologies that do not rely upon external timelines by creating new definitions and meaning to core building blocks. It focuses more on using concepts based upon fundamental scientific principles. All system actions form a dynamic representation of temporal signature (which reflects all operational details of both "internal to a quantum system/state”, as well as their "external environment properties as they dynamically interact through periods of time and various system level/user defined activities"). The underlying systems design principles focus on using every component as a potential for improvement as they naturally interact with their various systems operational properties (including user base participation across its platforms by treating interactions as ‘data generator”). This perspective moves far beyond limitations of today’s system designs based upon classical concepts to bring a new way of understanding technology, systems operation as well as security concepts (with ethically built-in safeguards in every interaction of that system.)

This document is a description of QLN’s philosophy, system design framework, operational principles, and potential ethical implications that directly relates to its technological capabilities. This project embraces a unique form of open innovation and transparency by welcoming a collaborative methodology using iterative design philosophy, coupled with an AI enhanced dynamic self-improvement feedback system, powered by insights drawn from Everything Protocol(Everything Theory, everything.fun) methodology. Therefore system designs are driven by a combination of technical specifications, as well as direct implementation strategies. That transforms an isolated “software platform” to one with "Living Characteristics via constant evolution,” via a constant feedback loop by its system and also user behaviours. It's not simply a new technology but an “iterative exploration,” by engaging in data with feedback-driven exploration within the realm of system dynamics in general.

Core Concepts

Interaction as Time, State, and Security

QLN’s foundations are based on the following unique concepts that form its basis:

Quantum States:

QLN's currency units use qubits instead of classical bits. Qubits (and “multi qubit state implementations”) inherently have unique “dynamic data management parameters” which act both as state and their change management system (by representing its intrinsic properties which directly impacts how states are managed through interaction properties relating to time evolution.) This mechanism is fundamentally more powerful as well as offers improved security/verifiability mechanisms that current technologies do not easily implement. (While QLN also utilizes conventional public key mechanisms for “classical operations" as necessary.) The quantum operations utilize new forms of token mechanics based on previously described dynamic data transformation concepts.)

Quantum State Minting (QSM):

New coins are not mined (not “PoW” concept), but generated via participation by implementing dynamic time-linked “quantum processes" as well as operational properties. The Quantum Proof-of-Participation (QPoP), as it requires constant system interactions to demonstrate resource contributions through time, is an explicit effort that directly impacts how newly created Qubit tokens inherit new types of “dynamic time based parameters or operational characteristics.” Any interaction act as "time and context dependent actions with its unique history and parameters", therefore create unique identity properties for each Qubit, as “time dependency based quantum interaction patterns”

Transactions as “Temporal Interaction Signature Transfers”:

A QLN transaction is no more just an isolated data transfer. Instead it is an action that changes/ transforms quantum properties. It includes information relating to the interactions as parameters, also by incorporating its “unique temporal” profile of “system dynamic interaction patterns across system time scales,” (similar to those seen in particle physics in their dynamics interactions in space time and each actions' “state transition pattern”, instead of timestamp based mechanisms). These dynamic quantum operational parameters and other activity parameter combined, form “dynamic keys with state transformation”, rather than a static key or transfer that’s based on single verification system using classical cryptography methods (with many vulnerabilities), rather that it shifts those challenges from isolated “code implementation” approach to an overall design approach in implementing inherent time sensitivity of systems. A method with system dynamic, that depends on the behaviour of “time in relation to dynamic data structure" to define its operating principle as a more naturally robust mechanism compared to a more “fixed rulesets using a clock as an external system reference” based implementation strategies which is a predominant methodology with today’s systems implementation. Therefore, even if one "time parameter" is missing, the system can function by “interpolating” parameters and using various mechanisms relating to data interaction based state changes.

"Time" as Intrinsic Emergent Parameter:

All aspects in QLN operation use relative timelines derived directly from network activity. Everything protocol data log along with all transaction records via changes in system's quantum states serve as inherent source for data/timelines. These events/interactions are tracked with precise state transformations via "observable operational characteristics," where time information is indirectly inferred and created dynamically using collective behaviours via system interactions, rather than imposed by an objective system time scale that can be gamed and also act as system-wide single points of failures". Therefore data integrity relies solely on data signatures rather than clock properties.

- Such implementations using dynamic properties linked with physical world behaviour using "relative timelines" create a framework of inherent scalability, flexibility while establishing security and transparency properties via unique operational mechanisms using fundamental scientific properties as its design components instead of complex programming implementations via complicated mathematical models)

Everything Protocol Implementation (as on Xen.fun):

Every action and event on the network generates verifiable digital signatures. These also incorporate Quantum entanglement related verifications mechanisms for more advanced "system stability requirements or high value secure operation related implementation" methodologies in the long-term. This gives unprecedented verifiability in security of the entire platform as it does away with the need for the notion that requires any trusted third party. Every activity by system creates "new data via interactions," which further strengthens system's own inherent resilience against malicious acts by learning via all forms of those attempts as system wide parameters by all kinds of interactions. By monitoring state and its temporal behaviour using Everything Protocol implementation across all operational parameters across all QLN connected networks, allows the system to "self organize/self maintain, via distributed observation across system by creating collective feedback with local parameters." This drastically reduces requirement of direct intervention from system level operation

Distributed Quantum Processor Network:

Using diverse network implementations where hardware or computational processing power can exist in different implementation configurations, without a "central entity to handle execution." Instead "resource parameters that change as they're consumed" (in operations and resource utilization via interaction patterns) forms the central component that creates its own natural incentive for system stability and to distribute computation via a non hierarchical, a "flat system with every part linked together", but can also function independent of other components based upon each system node's localized access via that same fundamental principle".

Augmented Intelligence as Feedback Controller:

It utilizes an augmented AI system for all key platform properties relating to everything (monitoring, error handling, and system maintenance or implementation parameters to ensure system's continual performance improvements). It will utilize data from "Everything Protocol", and also real time feedback, to all those interactions with other parts of this complex QLN based platform (or related systems/networks) to provide automated insights from observed patterns across those interconnected operational structures. The AI is also used to enhance user interactions, creating more intuitive experiences (that abstracts complexity), or system parameters monitoring activities through visualizations that present all key components and their interaction dynamics, in simplified more understandable way using high-level information presentation methodology to empower individual system participation by removing user dependence on expert levels for platform accessibility, security or operability requirements and thereby enable easier mass adoptions by lowering operational barriers of participation

Ethical Transparency (by Design Implementation Mechanisms):

Every decision in system operation, parameters implementations, or new “code deployment" (or modifications via algorithm parameter setting on system), or new operational implementation is open for review based upon “signature generation from "Everything Protocol’", with detailed documentation from all operational levels. Such a design mechanism (open data for evaluation with constant iterations and feedback loops) forms the cornerstone for ethical growth using a completely transparent system evolution methodology. System behaviours (based on these data) become available as core data components that are integrated in long-term feedback loops where data (instead of human intervention alone) also influence how “long term system goals/vision evolves dynamically”, over multiple stages of its implementations with various operational modes. The very act of building such an open dynamic system becomes an exploration for better technological framework by “testing its design” via “interaction”.

Quantum Proof-of-Participation (QPoP)

via Active Engagements

QPoP moves from “energy guzzling mechanisms” into activity driven operational designs where every active interaction serves to improve the system itself. Instead of static system with predefined design implementation methods the entire platform operation’s very existence relies on "participatory activities’ itself where active participation leads to more token yield, therefore driving positive behaviors and actions that naturally optimizes QLN over time

Action, not resource:

The ability to use QLN resources via ‘Quantum state-based tokens” which require continuous action, is dependent upon the extent/nature of contribution for overall platform performance and all these events get recorded as observable “action signatures that show time-based operational status.” Instead of hardware requirements only its more focused on “active engagement via time, using real data about actual network usage conditions rather than purely computational power which is “linear" (like with PoW which only validates one specific task by consuming vast amount of resources with diminishing returns)” QPoP ensures continuous activity and hence improves system performance based on those ongoing engagements

Time as Dimension of Action (as operational Parameter):

The PoP system tracks various activities with its temporal properties over multiple operational modes . Consistent interactions by users are tracked not only as "linear-time durations,” rather using "multiple state property interaction patterns”. So that its longer engagement time scale gets dynamically adjusted over time which leads to new types of implementation for time linked resource distributions or security features. Specific dynamic and temporal behaviors, are then incorporated to system parameters to act as input parameters and its behaviour changes are incorporated for a future performance improvements via its operational feedback mechanisms

Decentralized Validation and Inherent Security:

This method enhances transparency as system validations via action based parameters occurs through the user interactions within system operations (where specific actions become ‘signature verification' properties instead of having a “third party or pre set mechanisms of action”), with system’s behaviours verified over every interactions through these various ‘action and feedback’ mechanisms that leads to emergence of a stable self regulated platform

AI as Activity Analyzer:

The system’s AI learns optimal contribution strategies based on collected performance data that are all stored via “Everything Protocol” logs across diverse network platforms to provide proactive insight via recommendations for all users as each participate in system’s operational integrity via active interactions .

The Quantum Ledger

(as “System Interactions Display” instead of static data repositories)**:**

Instead of traditional blockchains, QLN implements dynamic ledger properties via its operational parameters which is composed with properties based upon collective states:

Dynamic Interwoven States:

Data is encoded as “time” parameter with their interactions where entanglement properties of multi-qubit systems act both as dynamic ‘memory/ledger’, (similar to how particles interact within their local universe as "spacetime based dynamic data systems”). Every transaction therefore has its state encoded into systems, as "observable interaction events via changes of internal state of underlying system”, providing all properties needed (by a conventional static ledger, such as immutability properties with data validation mechanisms).

State as Trace of Action and Interactions:

By focusing on tracking interaction’s properties as a new design principle it removes needs for any "master records,” in a traditionally maintained ledger (where each transaction must also track the "whole historical timeline’). All action has its origin and influence and this forms a series of self regulating, distributed interaction system, with the properties as detailed in previous section, creating far greater level of security than standard data storage based static systems can currently implement via rigid blockchain systems implementation standards (where they require copies for verifications at every nodes).

Emergent “Truth”:

In this QLN framework it replaces reliance on pre-defined implementation parameters to instead use interactions within the QLN to implement methods to discover a “network operational properties as well as data verification requirements dynamically as its operational needs.” The overall dynamic is similar to how self organising system’s collective interactions generate more complex systems without external control mechanisms where all properties get discovered though ongoing iterative actions through many iterations

Action as Time (Rather than an absolute clock):

As discussed prior it is the action that determines “Time as an emergent operational state properties” instead of absolute “objective time that exists independent of its state”.

Security Reimagined

“Benevolent Interactions” as an Inherent Mechanism

QLN challenges traditional views by implementing security (not an enforced barrier) to an “inherently dynamic parameter setting” where ‘action creates observable system changes’. A concept inspired from theoretical discussion relating to fundamental properties of Quantum physics.

Universal Alteration:

Any attempt to "read, or change” any part of the network inherently alters parameters of the network via data change based on ‘time dependent behaviours.” There’s "no passive interception”, with “read” actions to track the data also become data modifications. (that also triggers a chain of events through "observation"). Therefore by carefully monitoring and documenting all interaction with these dynamics forms security in itself

Interaction as Data:

Malicious intent has a specific outcome on observable network state (similar to a quantum-system when observed by external interference that creates observable properties using quantum interactions rules). This gives a way to "identify anomalies" using both AI’s capacity to understand dynamic complex behaviour (from patterns identified) and also its ability for large-data analysis on system states that is captured through "Everything protocol” (combined). All interaction even attempted at security breach” therefore will inadvertently create a pattern for its future detection as ‘Every protocol mechanism captures” each action as a unique system feedback which becomes an input parameter into the overall learning framework for detecting/preventing such types of behaviour. The nature of how state transforms by interacting, also introduces novel tools for security enhancement, based upon principles from Quantum theory.

“Openness” by design via “everything protocol tracking" (for system level operations)

This enables an unprecedented level of transparency where users and the AI (collectively and continuously monitoring behaviours) identify weaknesses proactively to initiate more adaptable “system modifications/adjustments.” AI driven automated counter measures ensure long-term robustness. Any activity that generates data also act as mechanisms for generating new types of system behavior to adapt to emerging operational or threat scenarios in a continuously ongoing real world environment implementation

- (This implies that network benefits even during “malicious” behaviours by detecting data anomalies by those activities to evolve into a better and more dynamic platform for enhanced long term security/ stability of operations.) This "Antifragile" design methodology creates long-term reliability through this fundamental implementation.

- Such implementations also removes a critical weakness (where "bad actors benefit with any vulnerabilities on rigid security implementation architectures and continue exploiting loopholes that go undetected" via long periods where "malicious action go unnoticed".) Those are easily detectable due to this '"action as information" via Everything protocol and using the self learning capabilities implemented by AI

Security isn't "absence of interactions", but 'ability to dynamically change as interactions unfold":

With inherent transparency of any changes being easily traceable from actions, QLN uses its own unique methodologies of 'self regulation by its inherent system properties". Data analysis and design parameters improve stability and security at an overall level, even under duress (from malicious actions)

Augmented AI (augmntd.app)

a Collaborative Platform

As a core engine for its operations the “Augmented AI Implementation is integrated from augmntd.app concepts” for multiple roles including system management, error detections, self regulation, pattern identifications etc as a unified platform using all data.

Autonomous Insights:

Utilizes the “Every Protocol" data from both QLN as well as any other “connected/related” system (XEN system for example or your chosen partner/systems) and it processes those vast amount data sets, while analyzing their interaction to help with optimized operational implementation

This “system feedback” provides useful parameters that changes operational protocols, depending on overall data pattern via machine learning systems with clear and highly traceable audit methodology. A full transparency of all activities is captured on a blockchain with open access, via its verifiable methods

Automated Adaptation:

It fine-tunes performance through iterative changes by analyzing resource usage or traffic congestions or user behaviours, with ongoing and continuous data analytics

- It adjusts algorithmic/ operational parameters on “self-evolving systems behaviour” with no centralized decision making, allowing system stability by distributing network workload to match all parameter properties discovered from data using optimized approaches that evolve and change through ongoing usage and data interactions via time domain (or over time as more action or operations or network parameter is available in a large-scale system)

Action Driven Design Implementation:

It tracks users’ needs (and any “in-consistencies, or areas that lack user friendliness”) via all those tracked behaviours (through various API and UI level) by implementing dynamic interfaces (that evolve with changing users experience parameters,) and also data visualizations that match each unique “context” which provides simplified implementation that improve wider adoptions across communities. System's internal parameter and architecture continuously is changed depending upon what data reveals relating to any performance bottlenecks and inefficiencies using ‘iterative methodology based on observable real world operational parameters.’ In this approach all systems have a mechanism to refine the implementations using feedback loops via interaction driven changes over various time periods via data generated from various forms of usage patterns that also include simulated tests of real world operation conditions.

Proactive Stability/Security Mechanism:

Identify subtle deviations (that normally remain invisible during a purely rule based (or deterministic based static systems). The AI triggers automated systems checks/upgrades, security parameter strengthening via improved encryption methodologies, or optimized resource handling properties, before any systemic vulnerability can get exploited. A key is to have dynamic methodology rather than a predefined ‘static’ parameter set that most systems rely on. As such an adaptive platform approach creates better defense through its flexibility

Ethical Commitment

Data Security, Inclusivity, Long-Term System Health

QLN strives for responsible growth based on following guiding principles:

Data Privacy:

Even data captured from 'everything protocol' undergoes a proper cryptographic implementation to ensure both user anonymity (based upon privacy preserving technologies) but also maintains auditable transparency on a public chain of system interaction for a fully auditable/verifiable implementation model using “AI assisted operational mechanisms” via dynamic adjustments to prevent misuses. Proper usage, and the long-term sustainability via secure data storage and transparent implementation must remain as fundamental goals. All security system are designed for both data integrity, confidentiality while protecting against any unauthorized accesses. Such implementations are required from ground-up (not just add-on later on via retrofitting of external modules as often seen with systems that focus mostly on functionality rather than ethical requirements from core architecture/design choices

Decentralized Governance:

Implement democratic and equal power distribution by empowering all those who participates as platform stakeholders. System operational behaviour evolves over time based on various feedback and data driven parameter settings and must be accessible to all parties

Focus on Empowerment:

Using augmented human intelligence instead of control (via isolated system operations): AI will work to empower all levels from every user from every backgrounds through data analysis via AI’s highly adaptive data interpretation layers for making operational methodologies fully accessible using user specific modes based upon those “individual users implementation experiences,” while providing enough complexity to provide full capability for specialized usage

In summary, all designs for a highly technically specialized implementation are always hidden through data visualization and automated reporting methodology driven by user interactions via this complex dynamic platform in which complexity vanishes using carefully designed presentation systems to offer simplicity and elegance during interactions with sophisticated tools.

Potential Applications

Beyond Digital Currency Implementation

QLN is more than a crypto network, and acts as a flexible "data framework". Its architecture creates opportunity for many diverse use cases using dynamic parameters:

Next generation decentralized AI system with Quantum features:

Create “self evolving”, learning and adaptable systems using a flexible structure where new insights from data analytics via AI becomes part of self improvement by utilizing parameters and systems behaviours relating to quantum mechanics

DeFi 2.0/ Future-fi Implementations:

Design highly secure settlement layers (via its security designs and also secure state management) that is ideal for any highly sensitive high-volume transactional systems for both new (decentralized autonomous exchanges) and also current institutions for various data transfers between secure network implementations with time-sensitive parameter controls for large and high valued transfers, or new implementation mechanism via dynamic data transmission properties via QLN's novel approach of “ data-driven-behaviour-mapping”, by incorporating unique concepts of dynamic interactions

Quantum Simulation and Data management (for collaborative data analysis):

It transforms into a powerful tool for quantum simulation (where specialized Qubit allocation and design can enable users to execute complex algorithms over the QLN architecture) via distributed computing access methodologies . This may democratize powerful research systems (without depending on a singular research institution) via use of distributed blockchain framework for better access. Its novel data storage paradigm makes it good for highly sensitive (medical or biological) data applications using dynamic and unique cryptographic methods of its implementation via its time based data system. Also “Secure Multi-Party Computation” (MPC) for enabling highly dynamic shared access for all the distributed resource with maximum secure data integration parameters across any authorized/verified node (by using time variant access permission for all such processes)

New paradigms in IOT devices:

Where security implementation is decentralized by design... Using QLN data system structure you create many new implementation approaches for large and diverse “connected systems”, where the access of resources dynamically controlled using data that reflects time based system activity which acts as implicit validation as a new form of distributed IoT systems with high-integrity. Such a network becomes a better way to define/ manage complex behaviours of multiple machines where resource allocations for “time linked access control, parameters becomes the most important mechanism for security”

Future Evolution

(and areas of ongoing research focus)

QLN is committed for open collaboration, where continuous evolution remains central with ongoing testing (and design validation) process of every functional components of the design system

We remain dedicated to researching new methods with community support via transparency of all aspects related to data implementations. All source codes will become open source once sufficient data is collected, and implementation methodology is tested fully). Specific implementation focus would revolve around these key areas as future implementations goals:

Refinement of Quantum Protocols:

Continuous exploration for better mechanisms for quantum communication with efficient implementation using more robust “error correcting methodology” or quantum memory protocols that enhances efficiency of all its core architectural properties relating to “high precision parameter control and system stability management over time with specific feedback loop mechanism for improvements during those real time operational experiences from actual operational environment ”. As the core implementation model of the whole system depends on having these quantum implementation mechanisms at its foundation, these improvements become fundamental to its future advancements

Explore more quantum protocols relating to ‘time and entanglement' via hardware improvements as that technology evolves in next phases for future design architecture by utilizing “action, interactions (as their inherent property)”

Scalable Implementations:

Focus on building protocols and a multi-platform infrastructure to increase both overall transactional processing abilities, data transfer speed, but also user experience and seamless interface while keeping costs of its operations minimum (while optimizing all implementations based on energy conservation) . Using hybrid classical/quantum processing with different architectural approaches will drastically improve long-term scalability of platform design, via multiple concurrent operational systems in future with new kinds of resource allocation optimization approaches (using AI driven methodologies) . Such mechanisms will be crucial as more and more users integrate in this design platform, with highly varied performance needs depending upon their different kinds of use cases (i.e. high speed trading to low access IoT operations etc). AI will act as an important tool to guide all implementations

Formal Data Modeling and Verifications:

Mathematical formalization of time-related token behaviors to develop a robust understanding using tools of theoretical computer science so its stability can be analyzed mathematically through logical formalization process

User interface improvements:

Build advanced AI driven visualization tools that enable every participant to develop intuitions relating to complex quantum concepts using simplified data visualization. This includes both user tools as well as system wide management tools for large teams (developer teams etc).

Implementation methods of high value and ethical/secure implementations are implemented, with new features while “maintaining the system accessible to even novice user groups,” via clear/accurate instruction methodologies and a comprehensive design guideline where "usability becomes the foundation of its implementation (with maximum performance parameters)". In such systems user experience parameters also become a source of data analysis (through all "Everything protocol monitoring functionalities using AI driven tools”), that are continuously tracked with a transparent feedback system and an open discussion with communities who use/depend on the reliability and functionality of such tools on a daily basis. Those types of design methodologies create a system that always evolves for future usage improvements via collective effort.

Conclusion

QLN goes beyond typical ‘blockchain’ based systems and explores "new paradigms in system designs, utilizing a quantum architecture with “time dependent operational properties.” (which also incorporates concepts from traditional decentralized system operation from “classic crypto design ideologies” in a “unique blended platform”). QLN becomes a form of “digital evolution,” which demonstrates dynamic behaviour by reinterpreting the ideas of security, system management, time and data in a way where all systems’ operations (interactions as they influence time) become interconnected. Such approaches create inherent strengths for a future data implementation infrastructure by reevaluating classical assumption and design methodologies that have limits due to fundamental physical constraints. With transparency as a base methodology, QLN operates as a "living open system” that invites all to participate. All changes based upon “interaction with environment”, through which new properties emerge over time using ethical implementation practices with its design being fully transparent/verifiable while maintaining robustness, that only gets enhanced with every use as QLN system interactions define its core identity (and its continuous ongoing improvement/adaptation strategy). Therefore this new framework acts as more than a system or “blockchain implementations”, rather it represents a new vision on data interaction with fundamental scientific principles with system architecture that adapts using parameters generated via user activity as its most important system parameters using “AI assisted implementation methods to optimize”. It’s a journey, with open doors to unexplored territory where all system behaviour is continually shaped by how one actively engages in that network across all time dimensions by transforming how technology interacts with us as we in return influence “system state evolution” dynamically by its design implementation through “dynamic system behaviour modeling methodologies using data" via collective efforts of all participants

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Disclaimer: This conceptual framework is a high-level overview, emphasizing conceptual ideas and architectural implementations based upon the theoretical analysis that includes several "if/then" conditions, and potential assumptions, where specific functional implementations/technical specifications will emerge over future iterative developments. Actual implementation details, especially relating to a “Quantum system implementations”, or all the ethical and security systems will evolve as a consequence of “practical system parameters” derived from community, platform, and expert driven data feedback parameters to generate highly transparent “system improvement” strategies. Further design choices require more exploration via ongoing testing using prototypes as the main method for discovering operational realities and how all systems influence over a period with all parameters. Specific details for token implementations (and its financial projections) can evolve through more research with additional details. As this platform remains a living/iterative implementation with ongoing data feedback with ethical boundaries its operational specifications may change and improve its capabilities (long term as “community” and ‘AI based tools’ collectively learn more about operational characteristics and performance during real operational scenarios based upon their data generated insights) , so treat this “document” also as an evolving concept instead of fixed and static architectural implementation or a financial roadmap to future economic or technological gains or successes.