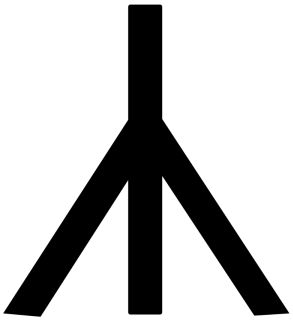
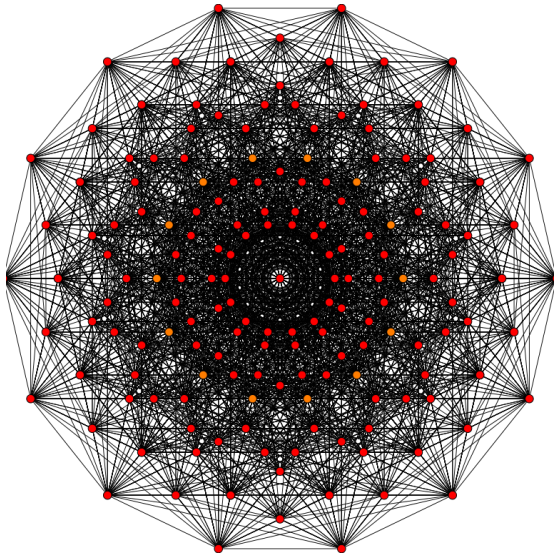
MotusDAO: A Universal Health Coverage System Service Network & Governing Council



The universal healthcare system



Motus•DAO

Whitepaper

Vision
To build a trusted, decentralized and high quality Universal Health Coverage service.

Mission
We are dedicated to bringing you an open and inclusive health care service system around the world that empowers you.

Where you have an interdisciplinary and universal system powered by physical/digital communities.

Where you can receive high quality health care coverage, work, earn, spend, create value and do real changes.

Where you know that everything can happen in one same physical and online place.

Where this health service system is available to us all.

Hello inclusiveness.

Motus•DAO

Abstract

Modern humans are still evolving. Throughout history we have attempted to organize complexity, but our system of thinking used to understand the world is not enough to explain it, change it, nor develop it. We propose the proper conditions for humans to thrive and cope with the new economic paradigm. MotusDAO brings these revolutionary insights into how to adapt to a complex nature, as part of an *E8 system cluster*, where we can redistribute, regenerate and design a *globally interconnected and interdependent society*. We offer to build a system that can evolve and adapt rapidly in a fundamental shift of perspective and economic transformation, while taking down global inequalities with the use of blockchain technologies and new self-sustainable business models along with complementary currencies and open source design. Hence, we bring you the Theory of Everything applied to *Doughnut Economics* in *scales* from the human mind to complex human networks and their constant interaction with the planet, in order to avoid overshooting the *social and planetary boundaries* and define concrete *solutions to social, economical and ecological crises* with health as a starting point.

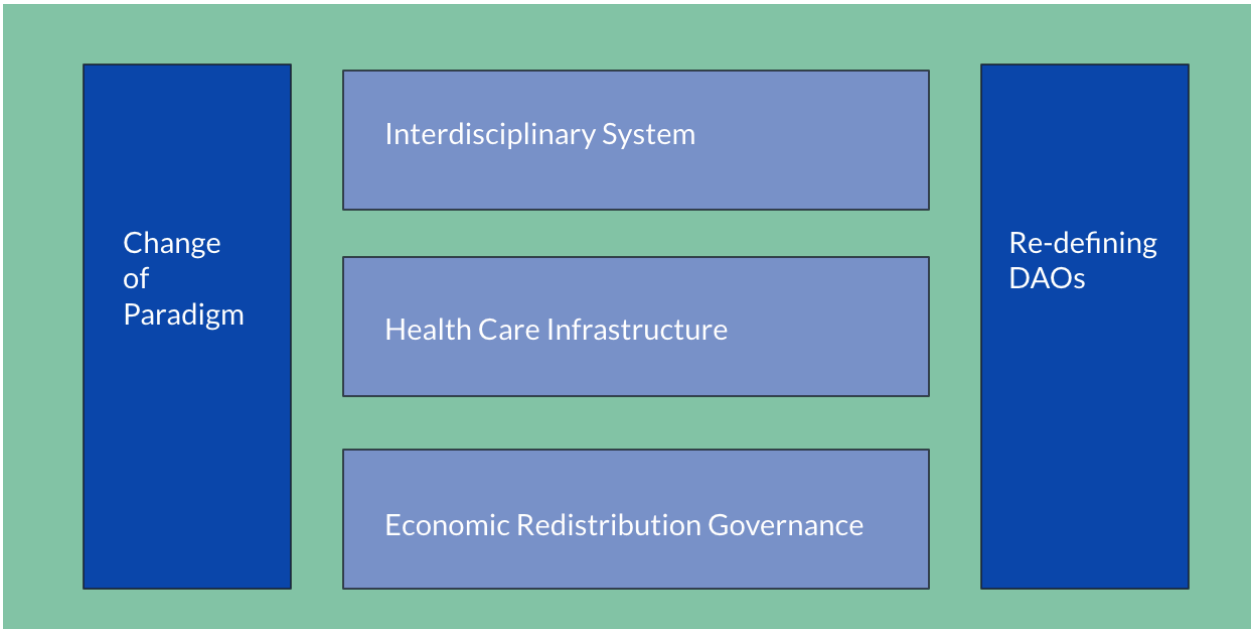
Theory of Everything, Doughnut Economics, blockchain technologies, scales, redefining social, economical, and ecological crises.

Executive Summary

Distributed ledger technologies (DLT) has been disrupting and transforming different markets and industries such as Decentralized Finances (DEFI) and NFTs. However, in our opinion this technology should also be taken as a science of human behavior and have the potential to create new opportunities that will help us supply a plentiful revenue of subsistence for people, in such a way, to enable them to provide such a subsistence for themselves. In this paper we will examine these 5 possibilities and discuss why MotusDAO is a *subsystem* well- suited to support a vast array of applications and become the world's first decentralized, mass-adopted Universal Health Coverage (UHC).

1. **Change of Paradigm -** By adopting technologies and creating new frameworks for more equitable distribution of humanity's resources to help balance our complex planetary household through large scale cooperation in societies all around the globe.
2. **Interdisciplinary system -** Recognizing the importance of teamwork, through *collaborative networks* to provide a decentralized, interoperable and effective service worldwide.
3. **Health Care Infrastructure -** Open and inclusive, all-in-one Health Care Service. From pyramid structured institutions to web network organizations, from pinnacle to user in a new framework.
4. **Economic Redistribution Governance -** Creating a new way to socially capture economic value and innovate economics in humanity. Introducing a new monetary system; market and price mechanisms, ratio schemed payments, and creating a fully deployable network to create human capital and "Financial Health".

5. **Re-defining DAOs -** As part of a bigger picture, DAOs should be sub-ecosystem services that help monitor and manage complex networks.



What is required to provide an inclusive Universal Health Coverage?

A change of paradigm, a deeper change of consciousness to care and act. Redistribution of wealth and equitable access to quality health services that are integrated, safe and people centered across the care continuum. Instead of financial hardship, provide financial inclusion.

Introducing MotusDAO - Universal Health Coverage (UHC) and decentralized governing body designed to address the needs of human beings.

A platform that provides a combination of high quality, trusted, equitative economic governance distribution, interconnected and interoperable frameworks with inclusive networks to ensure the platform's scalability and reliability that provide the tools to enable cooperative and healthy interdependent societies. Only then, we think DLT ecosystems will become platforms to make a real impact.

Motus•DAO

Introducing the first decentralized UHC - the new ability to provide undisrupted health and financial services. The full spectrum of essential tools to address the health needs of all individuals and communities.

MotusDAO will be governed by a council of Distributed Living Networks (DLN), meaning, by the user itself, across multiple specialized blockchains and DAOs to communicate with each other in a secure, trust-free environment. Its vision is to enable MentalHealthCare cyberspace accessible to all, by relying on "trust-free" consensus protocols to distribute infrastructure, without having to develop physical infrastructure all over the world to ensure an inclusive and secure UHC, without the need of centralized parties. Its framework and governance model protects users by eliminating financial hardship and lack of access to Universal Health Coverage. Platform governance will be decentralized through the DLNs.

MotusDAO is a distributed ledger platform that resolves the factors that constrain adoption of UHC by the mainstream.

1. **Change of paradigm -** In order to avoid overshooting the social and planetary boundaries, we need to ensure a massive collective cooperation, converge new supporting systems, and new ways to capture economic value to redistribute by design. We will further discuss key insights and tools needed to develop and advance a system mindset for dealing with complex problem solving and state transition to a new mental framework.

2. **Interdisciplinary system -** Not only does MotusDao wants to achieve the gold standard for UHC as an interdisciplinary approach for caring and full prevention framework, it also aims to provide financial inclusion with a fully deployable platform, and integrate Web3.0 technology. This way, we will be able to accommodate DLNs that serve specific functions, with interoperable meta-protocols that allow users to create a Human Non Fungible Token (HNFT) which will allow patients to save their clinical history using DLTs. Allowing easier communication between professionals and easier history tracking for any interdisciplinary team to work and treat a larger number of users. The DLN will be divided as follows;

    -Research and Development: We need to innovate and deliver high quality products and services, not only that, they have to be cost-effective, socially and planetary fit, and then address our current and future needs.

    -Essential Health Services: The main sources of health-related issues have been identified by working bodies such as the UN and DCP-3, but we need to map them in real time, this is what MotusDAO offers. We need to be able to provide interdisciplinary services, ranging from education, prevention, treatments, rehabilitation, and a new framework to treat mental health, within the same platform that provides a solution for

health care givers and takers, allowing real-time data input by the users and professionals while helping the semantic web to evolve.

-Economic proportions: Every program must have a proportional body sized to its intervention. In other words, it must have financial aid and market mechanisms to be able to cover the cost of entire operations. That's why the network offers an advanced suite of economic governance tools and the use of the Web distributed ledger technology assembly standard as a "meta-protocol". This way DLNs can autonomously deploy network upgrades in a common language. MotusDAO adapts to the growing needs of the communities without the risks of financial hardship.

3. **Healthcare Infrastructure -** Global, national and regional network partners, to enhance access to information, continuum education, medicine, prevention and treatment of health conditions through professional-collaborative communities and interoperable meta-protocols. Within all the wide range of Essential Health Services we can name, we would like to make two simple divisions; *the mind and the body* as part of a single interconnected state. In order to introduce the study of the mind into formal matters to undertake and address substantive topics to complete a new framework of the mind and provide strong theoretical foundations for a new paradigm that will connect with the Theory of Everything and understand how different scales of reality influence our lives.

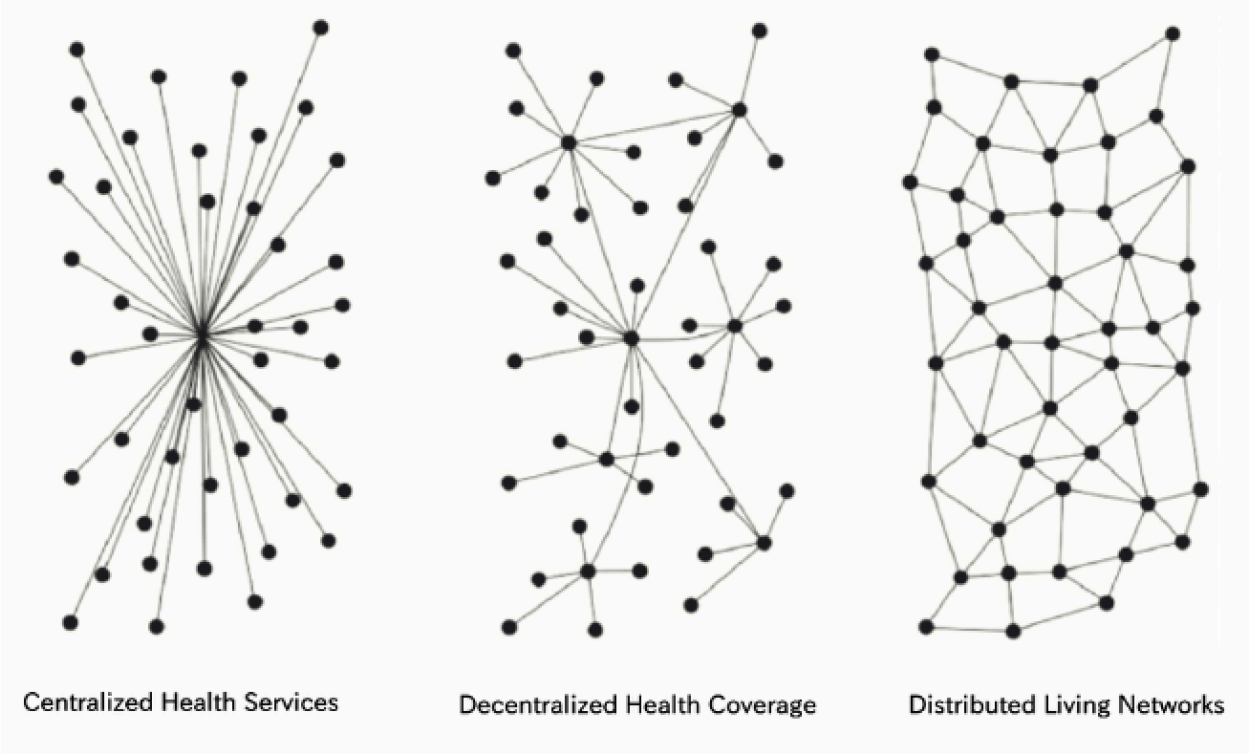
4. **Economic Redistribution Governance -** Creating new ways to capture economic value and redistribute by design. "Decentralized currencies require a solution to decentralized consensus." (Buterin, 2013) So we follow the main roadblock established by crypto currency protocols, while they had plenty of research on creating secure Byzantine-fault-tolerant multi party consensus systems. We introduce new *Mechanic Liquidity Pools* (MLP), based on the Proof of Stake (PoS) model. Liquidity Pools will be available in; MOT-BTC, MOT-USD, MOT-ETH as a back up value. Each DLN will be able to create new token pairs, using the MOT factory contract. The factory serves as a public, open and transparent treasury, used to fuel operations using MOTs and ratio schemed payments to present a new form of stable coins. The innovation provided by MotusDAO is to converge Satoshi's idea of combining a very simple decentralized consensus protocol. We base the same idea applied on living (human) nodes introducing data into a "block" or in this case a HNFT, creating an ever-growing blockchain of health interventions, in real time, with a Proof of Work (PoW) as a mechanism through which nodes gain the right to participate in the system. We will explain in further detail how we plan to rescue the concept of PoW from its negative ecological impact connotations, as it serves a foundational part of a decentralized web, where users control their data and are not limited by trust bounds within the network.

5. **Re-defining DAOs -** DAOs as we know them are still raw. They offer new structures to put governance into code and become trustless by establishing a code based smart contract. So far, it has the best mix to allow organized collectives with the same cause. As it is a new concept with emerging technology, we propose a solid framework on how DAOs should turn to Distributed Living Networks within a *E8 System Cluster* as a practice that achieves a inter-complementary blending between the computer code and human behavior. To be able to re-define DAOs we need a new paradigm, interdisciplinary systems, new infrastructures that fit the social and planetary needs and new economic systems to be able to create alternative wealth and help communities self-provide. Only then will we re-define DAOs, where structure in chaos creates a place where people feel supported and therefore inspired to do their best.

Part 1
An introduction to MotusDAO

The Motus data structure and consensus algorithm provides a new framework for Distributed Living Networks. This introduction gives an overview of how MotusDAO works and what it has to offer to the ecosystem.

The goal of our DAO consensus algorithm is to allow Distributed Living Networks (communities of users) to contribute with data within Web 3.0 protocols in order to gain the right to participate as a node and contribute to common goals. With Governance technology and Complex Human Structure we achieve a strong social framework culture that is created to redistribute by design, providing insights into solutions to make fundamental changes.

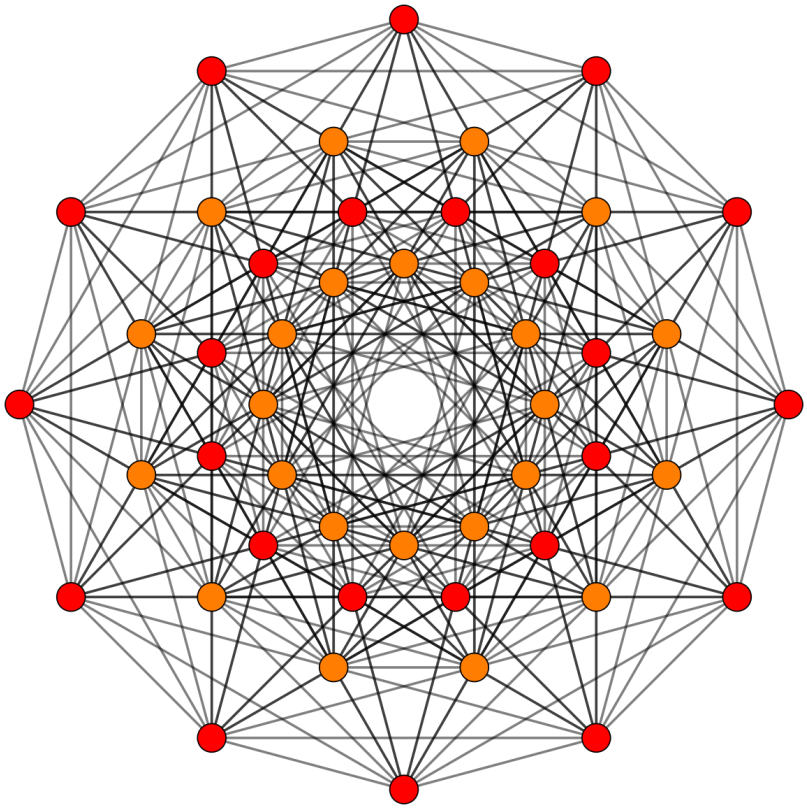


A blockchain is like a neural network that is continuously growing and expanding - This expansion is inevitable and in order to keep the networks growing in a homeostatic way, we must co-create new solutions over time and adapt the proper language, frameworks and infrastructures to a non-stop evolving reality. This way, DLT becomes a foundational basis for a *E8 system cluster* designed to interconnect networks and create *Behavioral Ledgers*, allowing to store basic personal information (Clinical history, Working history, DeFi data, Etc.) as a *Human Non Fungible Token* (HNFT), gaining the right to participate as a node and be part of a living network and have access to UHC.

Each *Behavioral Ledger* will become part of a *Social Ledger* that gathers bigger blocks of information and enables larger scales of cooperation. The whole structure is made to create a

sense of culture to take care of society and the planet. This way a SL becomes a DLN with a specific role that is aligned with the greater cause such as social and planetary justice, transparency, and education.

As more networks, more complexity. Therefore, in order to understand the problems we are dealing with we must change our level of abstraction for multiple solutions to show up. We think that the problems we are currently dealing with are multi-dimensionally woven into reality. To explain this, we offer a new theoretical symmetric construct to study the structure of mathematical groups, the mind, societies across the globe and our interaction with the planet in different scales. Introducing a physics model called Quasicrystalline Spin Network (QSN) and its mapping to E8. Enabling a new possibility to understand the "atomic structure" of a social group. With atomic structure we mean that of what the *Social Ledgers* (SL) are made of: *Behavioral Ledgers* (BL). BLs can be understood as data input that a single node or user uploads through a simplified PoW protocol, which feeds a gigantic network of information that has to be categorized into groups, according to purpose and functionality, resulting in SLs. Social Ledgers will then start the function of assigning through binary systems as follows; *service receivers and service providers*.

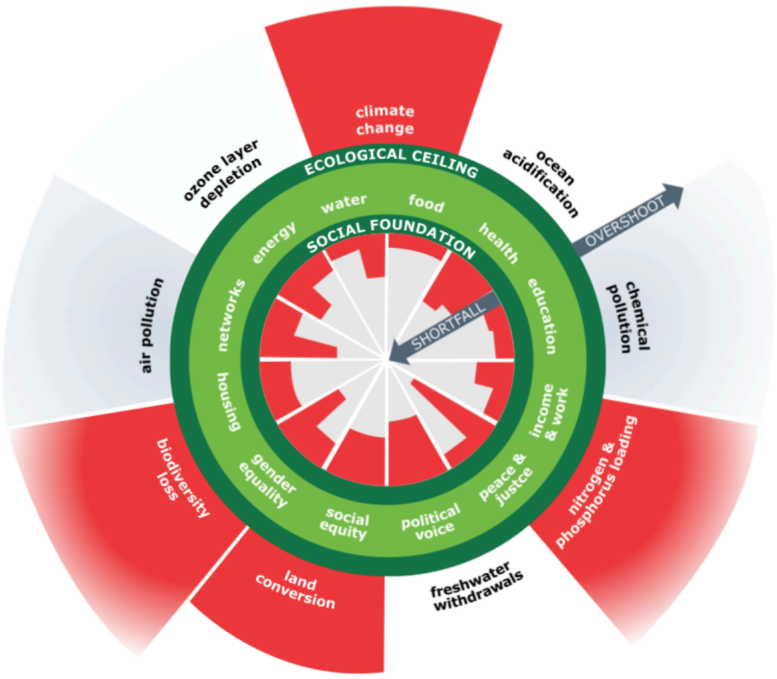


72 vertices of 1_{22} represent the root vectors of the E6 Lie group (red dots are service providers and the orange dots are the service receivers).

Motus•DAO

To understand the proposed connection between QSN, E8, DLTs and UHC, we must explain the Root System, as it plays a major role in algebra and geometry, while we add new psychological and economic concepts to the equation creating a new type of E8 lattice as the whole of the Data/Blockchain architecture.

MotusDAO's root system is based on The Doughnut of social and planetary boundaries, proposed by economist Kate Raworth in 2017 and inspired by the UNSDGs.

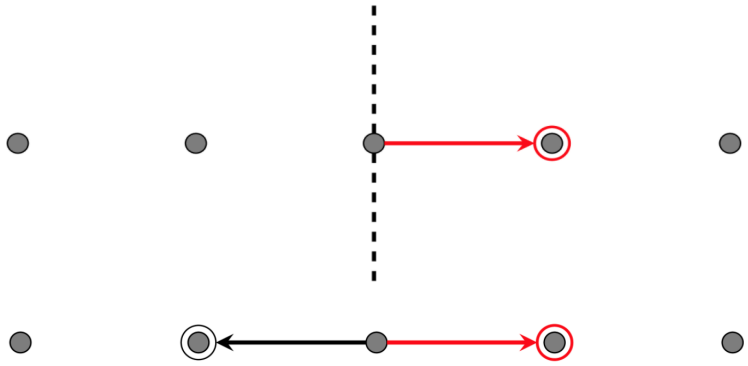


Us humans face the challenge to meet the (9) planetary and (12) social needs in order to avoid a shortfall and overshoot the planetary and social boundaries. This is why MotusDAO is a subsystem interwoven in a larger clustered system called E8 Lattice. In mathematics, a root system is a configuration of vectors in a Euclidean space in the theory of Lie groups and Lie algebras, in order to explain the next concept and relate it to MotusDAO's theory of the mind, the next article will be used: All About Root Systems, A visual introduction. Written by Ben Nasmith, 2020.

Roots are vectors in a real vector space (with an inner product) with some special properties and a root system is a collection of roots. Hence, we may call this first vector "the human", since it also creates an inner product but in order to understand the product we must understand its interactions with higher dimensions.



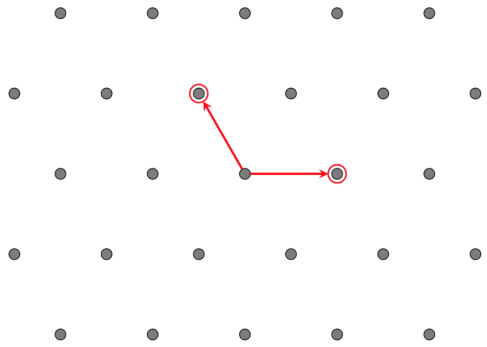
This first vector has special properties as it has to do with reflections -both mathematical and psychological (relating the mathematical inner product with the unconsciousness)- and this root generates a lattice. As shown previously, the red vector is a one-dimensional root system called A1 Human Mind root system (A1HM). Beginning with a simple root to form a basis for that vector space. So we need exactly *n* simple roots to construct a root system in *n* dimensions. In one dimension, we only have one simple root. Every root defines a plane perpendicular to it, called a reflection plane.



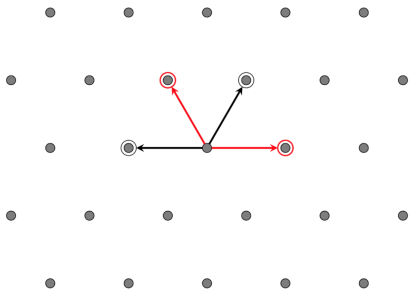
Each root defines a root reflection - a reflection through the plane perpendicular to that root. In this case, there is only one root and it is reflected through the plane orthogonal to it.This also can be expressed as the human mind's reflection of reality itself, defined by this root -the consciousness sends it to its opposite root - the unconsciousness. This way the human reflects the outer world into his mind and projects its inner world out to reality, while creating an inner product for itself.

This way we have constructed the A1 root system based on the human mind (A1HM), with the objective to create an E8 lattice representing reality in 8D as a point set representing the densest packing of DLNs in 8D. Higher forces that influence our reality which still we are not able to grasp, but if we don't find an efficient way to map reality and organize it, we might face our extinction as a species sooner than supposed. That's why we attempt to organize complexity with complex systems that influence us in such a way that allows us to connect the smallest particles of the universe and find a symmetry with the human, social and planetary experience. *"The basic cell of the E8 lattice, the Gosset polytope, has 240 vertices and accurately corresponds to all particles and forces in our (3D) reality and their interactions, specifically the way they can all transform from one to another through a process called gauge symmetry transformation"* (Quantum Gravity Research, 2021). To start the architecture of this *E8 system cluster Blockchain*, designed to change the current paradigm and take humanity and the planet to the "green safe zone" of the economic doughnut, we are using two opposite vectors of equal length to express the human conscious and unconscious mind. Why is this a root system? Because the reflection defined by each black and red vector (conscious and unconscious mind C/Um) sends each root to another root. Both roots here define the same reflection plane, and the reflections simply swap them (human interaction). Mathematically, these vectors are closed under root reflection, meaning that each vector defines a reflection symmetry of set vectors (culture). The other grey dots (other human minds) on the diagrams are roots that have a corresponding root lattice as well (genetics and environment). This allows us to construct the root lattice by taking all the sums and differences of root vectors creating human

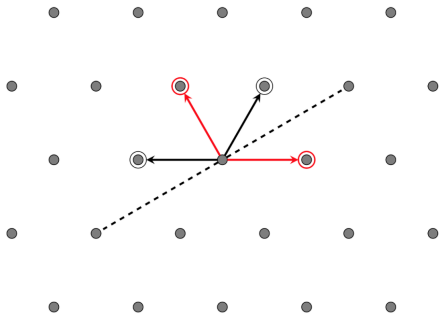
sets. In this case, the A1HM root system lattice can be an infinite set of points at equal distances along a line. Mathematically speaking, this creates a recognizable pattern in a way that the psyche can express a symmetry as a repeated shape across the plane, this expression can also be taken to an infinite matrix as long as the symmetry fulfills basic principles. This pattern in fact, the A1HM root lattice is a scaled version of individuals, groups, societies, culture, planet, universe, cosmos, *Everything*.

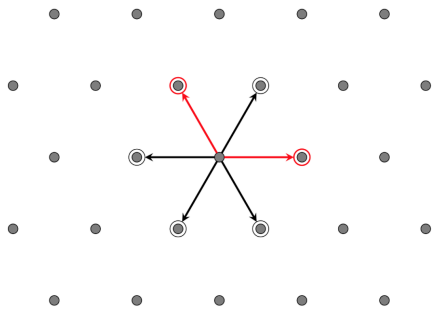


In order to continue the explanation, we must move up to two dimensions. Now we are working in the real plane and therefore we need two simple roots (humans) to get started. There are a few choices available, since there are more than one root system in two dimensions. We will use Nasmith's example and turn it into the A2 Social Foundation (A2SF) root system, which begins with a pair of simple roots at 120 degrees (image above). If we choose simple roots each pair is either orthogonal or at an obtuse angle, then define a reflection that adds two more roots in the orthogonal plane to each simple root (image below), and we will have the C/Um interacting with other root systems, creating a social interaction on a hypothetical mathematical plane.



To obtain even more roots we define the reflection plane orthogonal to the second simple root as follows.





The result of this is a *collective consciousness* and a *collective unconsciousness*, because there are conscious minds interacting with their own unconsciousness and then these minds interact with other C/U minds.

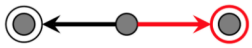
It doesn't matter which of the six roots we choose, the corresponding reflection always sends roots to roots. This completes our construction of the A2 Social system, although this lattice is spanned by six roots, in order to connect it with the "Doughnut" the root lattice must be spanned by 12 (social) and 9 (planetary) vectors. We only need to take sums and differences of the two (red) simple roots to get to any point on the lattice.

To handle human root systems in higher dimensions, we must understand the complexity of human interaction and human life's supporting systems. Hence, the 12 social boundaries (inside the 9 planetary boundaries) proposed by Raworth and inspired by the 17 SDGs developed by the UN as an attempt to "provide a shared blueprint for peace and prosperity for people and the planet".

In order to plot these roots in the way we've done before (previous images), we'll have to use the Coxeter-Dynkin diagrams. "In a Coxeter-Dynkin diagram, each node (or vertex) represents a simple root. When two simple roots form an angle of 120 degrees, we place an edge between them. If they form an angle of 90 degrees, we do not place an edge between them. Once we have defined the simple roots of a root system, we can recover the full set of roots using reflections in the same way that we did above".

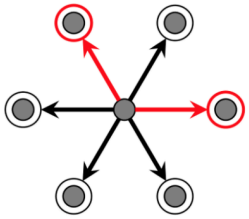
For example, the A1 root system has just one simple root and the Coxeter-Dynkin diagram is just a single node.

A_1 ($\bullet$) root system:

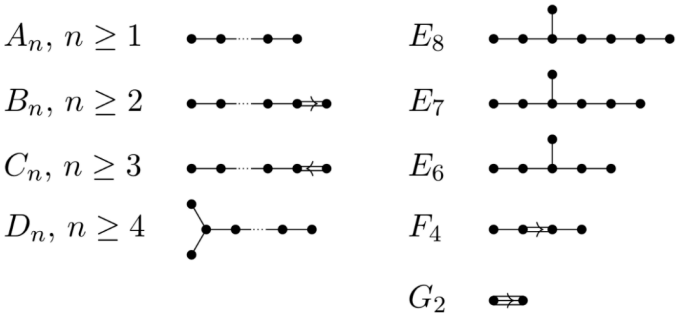


The A2 root system has two simple roots at 120 degrees. So the Coxeter-Dynkin diagram is two nodes connected by an edge.

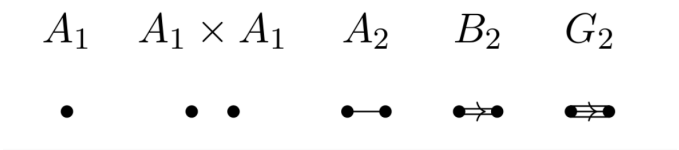
A_2 ($\bullet\!-\!\bullet$) root system:



To follow the theory of root systems we quote; “To recover the full root system we begin with the simple roots given by the Coxeter-Dynkin diagram and carry out root reflections until we do not obtain any new roots. We say that a root system is **indecomposable** when there is no way to partition the roots into two mutually orthogonal sets. The indecomposable root systems are *fully classified*. We can list them all using this short list of Coxeter-Dynkin diagrams:” The doughnut economics represents an indecomposable root system for social and planetary foundations, since it's trying to systematically reduce human and planetary problems.

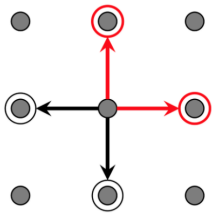


In this classification we have the classical root systems on the left, composed of four infinite groups. On the right, we have the exceptional root system and its five exceptions. We want to start representing 8D in one and two dimensions, so the full list of root systems is given by the following Coxeter-Dynkin diagrams:



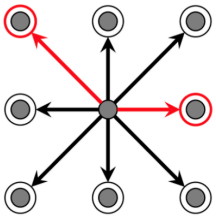
The A1 x A1 case begins with two orthogonal simple roots and gives us a square grid lattice.

$A_1 \times A_1$ (• •) root system:



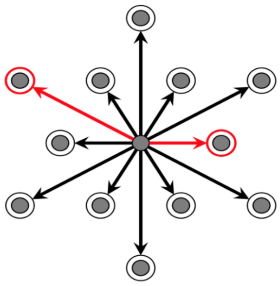
The B2 case has the *same lattice* but begins with two simple roots at 145 degrees instead. This means that B2 has an A1 x A1 subsystem of roots.

B_2 (•⇾•) root system:

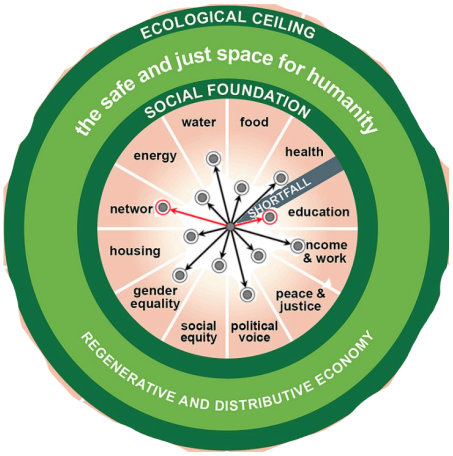


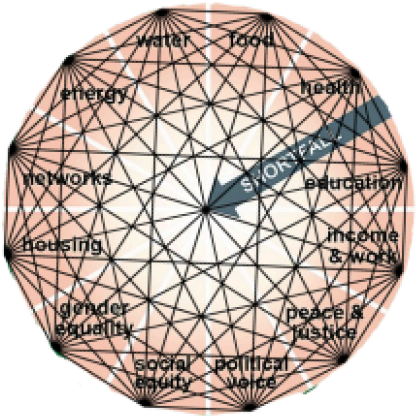
Finally, the G2 case shares the same lattice as A2 but begins with two simple roots at 150 degrees. This means that G2 has A2 as a subsystem of roots.

G_2 (•⇛•) root system:

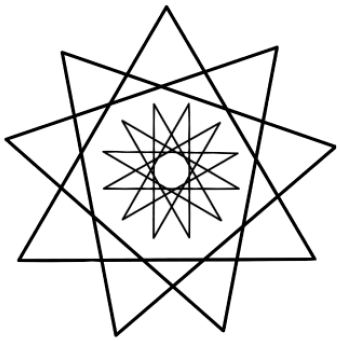


This way we take combinatorics even further, introducing never used before root systems, based on not only algebra and geometry but on social and planetary complexity. The result is this continuous symmetry, analogous to rotations in higher dimensions related to the QSN. Therefore, we may say that humans create conscious-unconscious social interaction, and these interactions create multidimensional needs. So we can take the initial vectors (human minds) and get this complex social root system (Social Foundation). This root problem is first expressed within humans, and as we expand our existence, we start to realize other bigger and harder to grasp root problems (planetary needs). This root G2 root system can now be turned to an E6 Lie group and is expressed as follows:



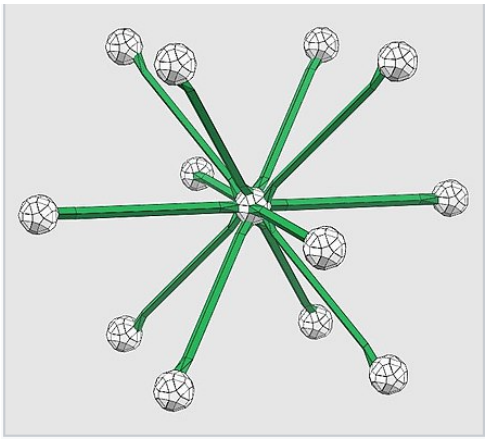


From root system vectors, we are able to connect a simply-laced diagram, and then acquire a progression of “A,D,E” patterns using Coxeter-Dynkin diagrams that lack any double or triple edges. These patterns are also related to a structure known as the star-closed line systems, “A line system is a set of lines where each pair is either orthogonal or forms an angle of 60 degrees. A star is a set of three lines in a plane, each pair at 60 degrees. To visualize a star, just imagine the three lines through the pairs of opposite A2 roots. We can recover a star from any two of its lines, and a star-closed line system is a system of lines in which we supply any missing third lines of the star defined by each non-orthogonal pair. Finally, a star-closed line system is indecomposable when there is no partition of the lines into mutually orthogonal sets” (Nasmith, 2020). So now we are also able to symbolize this root system as follows:



Planetary and social boundaries visualized as stars (enneagon outside and dodecagon inside)

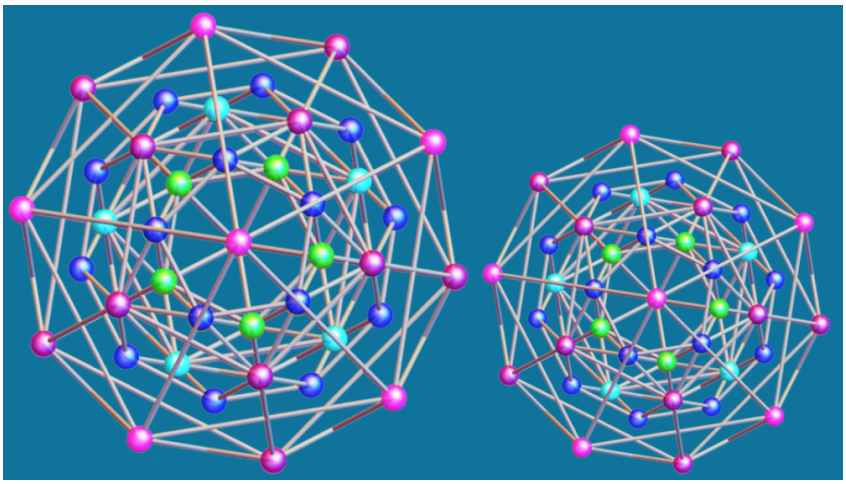
As far as we have been able to decompose human’s needs, we are able to name these root systems, never-the-less, as we said before it's more complex than that. There are elementary consequences of the root system axioms, as we suppose a dual root system in order to get the root systems of the planetary boundaries in higher dimensions. In the classification described above, the root systems of type A_n and D_n along with the exceptional root systems E6, E7, E8, F4, G2 are self dual, meaning that the dual root system is isomorphic to the original root system.

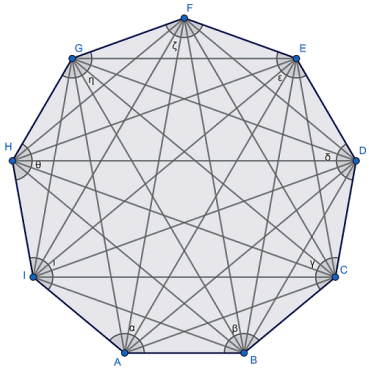


3D representation of the A3 root system

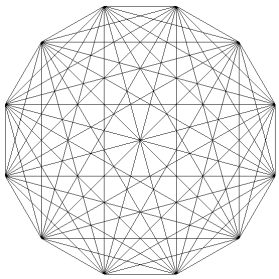
The next operation is to map an E8 lattice with the QSN model and project a slice of it to 4D through one of two processes: cut-and-project, or Hopf mapping. Both give as a result a

4-dimensional quasicrystal called the Elder-Sloane quasicrystal. “When the E8’s basic cell, the Gosset polytope, is projected to 4D, it creates two identical, 4D shapes of different sizes. The ratio of their sizes is the *golden ratio.* Each of these shapes is constructed of 600 *3-dimensional tetrahedra* rotated from one another by a golden ratio based angle. We refer to this 4D shape as the “600-Cell.” The 600-Cells interact in specific ways (they intersect in 7 golden ratio related ways and “kiss” in one particular way) to form the 4D quasicrystal. This is a representation of the two 600-Cells that make up the 4D quasicrystal” (Quantum Gravity Research, 2021).





Planetary boundaries represented with a enneagon



Social boundaries represented with a dodecagon

Since we are talking about a dual root system, If Φ is a root system in *E*, the **coroot** $\alpha^\vee$ of a root α is defined by

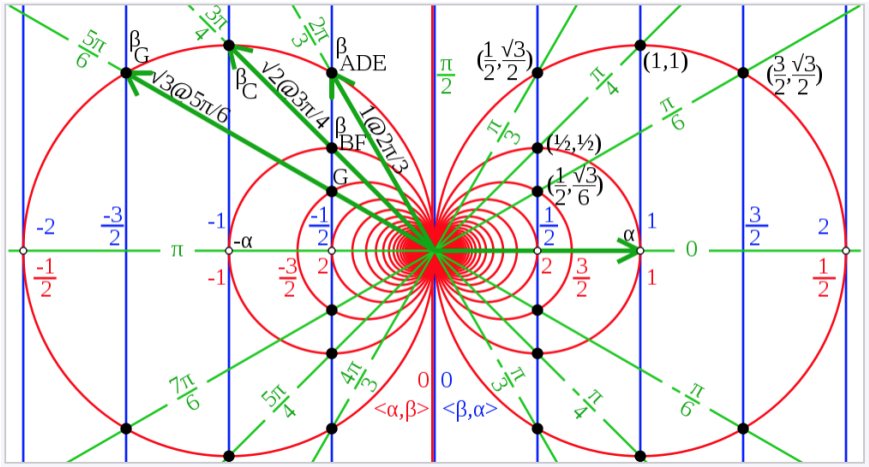
$$\alpha^\vee = \frac{2}{(\alpha, \alpha)}\,\alpha.$$

The set of coroots also forms a root system $\Phi^\vee$ in *E*, called the **dual root system** (or sometimes *inverse root system*). By definition, $\alpha^{\vee\,\vee} = \alpha$, so that Φ is the dual root system of $\Phi^\vee$. The lattice in *E* spanned by $\Phi^\vee$ is called the *coroot lattice*. Both Φ and $\Phi^\vee$ have the same Weyl group *W* and, for *s* in *W*,

$$(s\alpha)^\vee = s(\alpha^\vee).$$

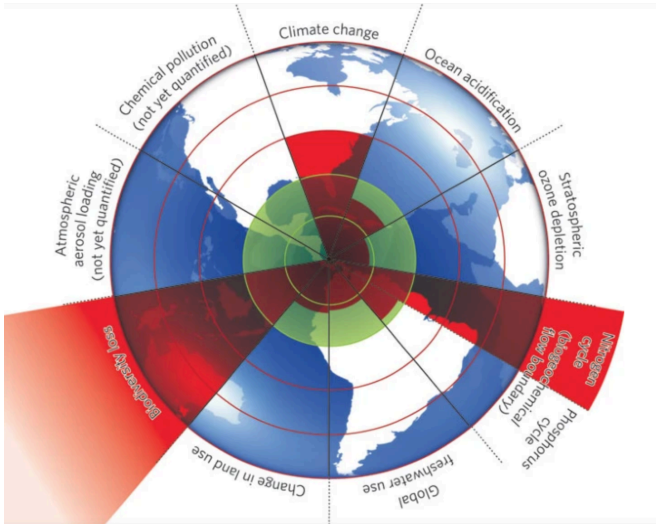
The cosine of the angle between two roots is constrained to be one-half of the square root of a positive integer. This is because $\langle\beta,\alpha\rangle$ and $\langle\alpha,\beta\rangle$ are both integers.

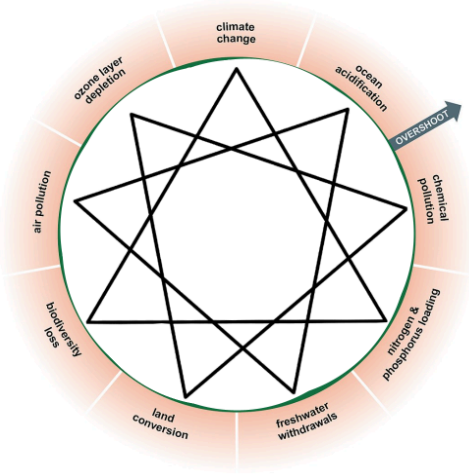
$$\begin{aligned}\langle\beta,\alpha\rangle\langle\alpha,\beta\rangle &= 2\frac{(\alpha,\beta)}{(\alpha,\alpha)}\cdot 2\frac{(\alpha,\beta)}{(\beta,\beta)}\\ &= 4\frac{(\alpha,\beta)^2}{|\alpha|^2|\beta|^2}\\ &= 4\cos^2(\theta) = (2\cos(\theta))^2 \in \mathbb{Z}.\end{aligned}$$



Elementary consequences of the root system axioms

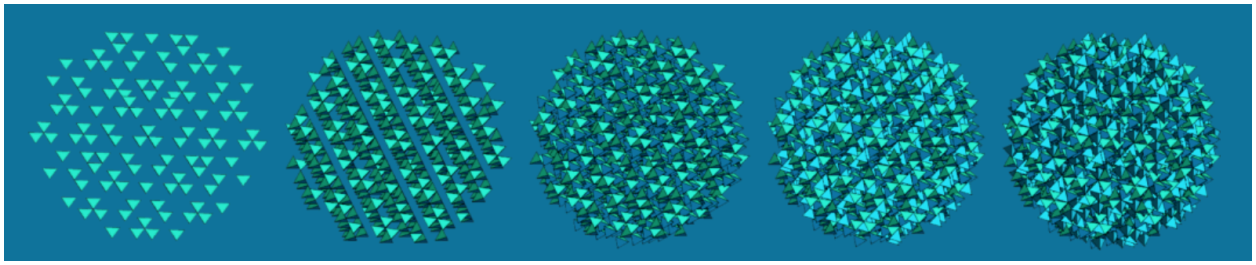
Given this isomorphic dual root system that is original to the root system, we are able to structure and preserve the mapping between two structures of the same type that can be reversed by an inverse mapping. We say both social and planetary boundary structures are isomorphic since we support the idea that social roots lay on the human's C/Um as we previously explained, while at the same time, the planetary ceilings lay on social foundations as the result of an unhealthy interaction with the planet that starts with the degradation of Earth's systems.





This framework first proposed by Rockstorm Et al, based on the “planetary boundaries” define the safe operating space for humanity with respect to the Earth system and are associated with the planet’s biophysical subsystems. Given the isomorphism between human’s experience and the planet's changing pressures we are able to map both mathematically and topologically a complex structure that can help us manage and monitor complex systems: *E8 lattice Blockchain architecture*.

Now that we have the dual root systems, we are able to define how to map the DLNs within this E8 group. For this, we will jump back to the QSN physics model. We will then take five subspaces, or *tetragrid,* of this 4D quasicrystal (one subspace being all tetrahedra that oriented in the same direction) and then rotate them from one another by 15.522 degrees, we come up with a 3D quasicrystal that can be seen as a representation of the 4D, Elser-Sloane quasicrystal previously obtained. This is called the “Compound Quasicrystal” (CQC).

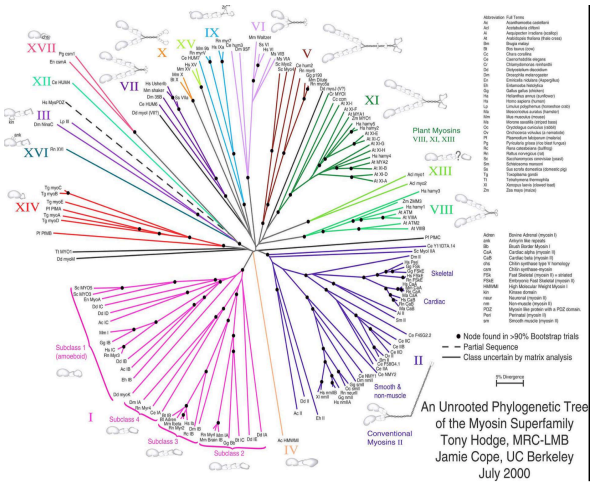


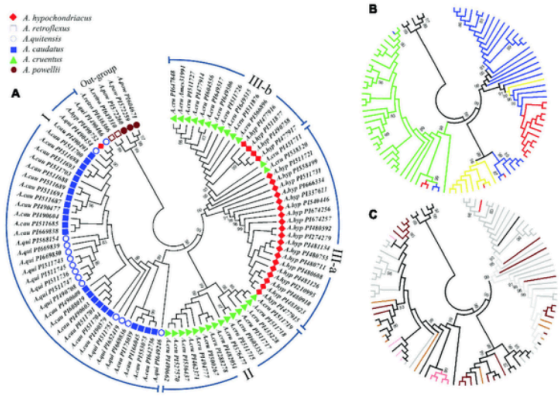
Representation of five subspaces - the image on the left is one subspace, the second has a second subspace layered onto it and so on. The fifth image is the CQC.

Why are we using specifically the concept of Compound Quasicrystal? It is important because of its relationship to the QSN, as it is the densest possible (under certain constraints) 3D network of point-sharing Fibonacci chains and is the most computationally efficient point space in 3D, in a way, **it shows us a possible way we can accommodate a representation of humanity as behavioral ledgers and all their data within the blockchain.** “Similarly, the QSN is a 3D grid of Planck scale, tetrahedron-shaped “pixels” that, via the rules of a binary, geometric language/code, exist at each “frame” of reality as either on or off, and if on, then rotated left or right. These pixels populate the QSN, and their states change from one frame to the next, at a “universal frame rate” of 10^44 frames per second (the “Planck time”). Over many of these frames patterns emerge on this 3D quasicrystal. These patterns become more and more meaningful and sophisticated with time. After a while, particles begin to form on the quasicrystal. With time, these particles take on more and more complex forms, and eventually the reality we all know, love and play video games in, emerges” (Quantum Gravity Research, 2021).

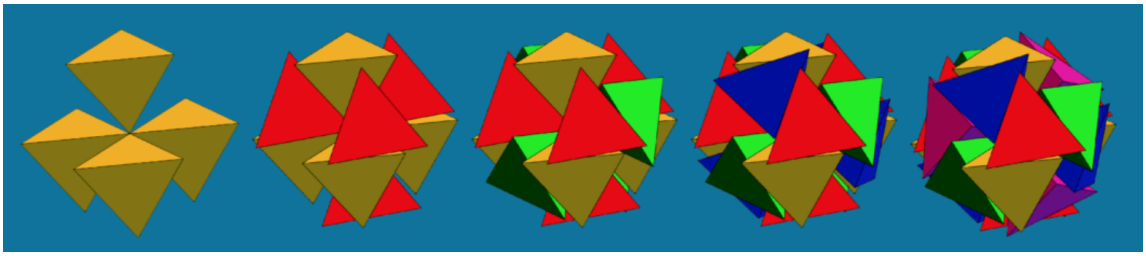
The same way, we are trying to find the most efficient way to accommodate DLNs in the densest space of our 3D reality of point-sharing data in blockchains full of SLs and BLs, in order to allow large scale cooperation between DAOs in an organized and decentralized way in a platform designed to enhance social and planetary change. Since we are talking about billions of people, millions of groups, thousands of cultures, hundreds of religions, one humanity and even more complex, millions of other living life forms which we can’t fully grasp (plants, fungi, animals, etc.),

which also includes a living planet with a complex system by itself that we have been trying to explain all along our evolution. We bring up a basic concept in creation known as *fractal branching*, to organize and respond to the *economic doughnut's* needs. We have established the dual root systems over 12 and 9 vectors based on the social and planetary boundaries, now we have to define how to tackle each one of them. For each root system there shall be one major branching and its expressions according to evolution (adaptation, cooperation and interconnectedness). By expressions we mean graph families (DLNs) that can be defined by their automorphism and can be expressed as follows:

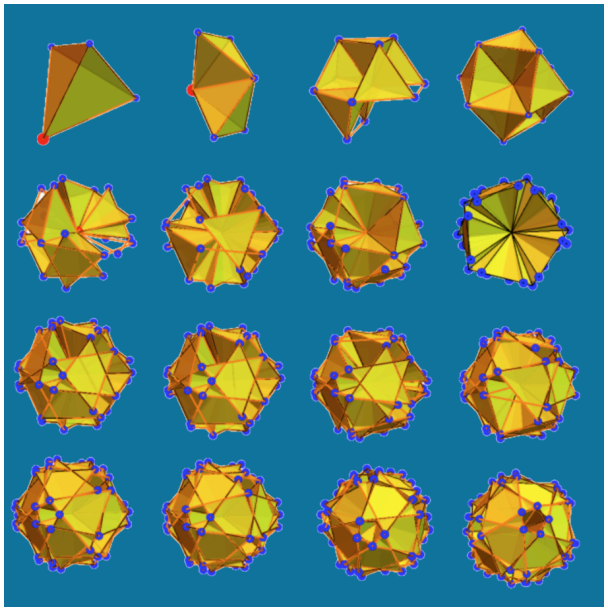




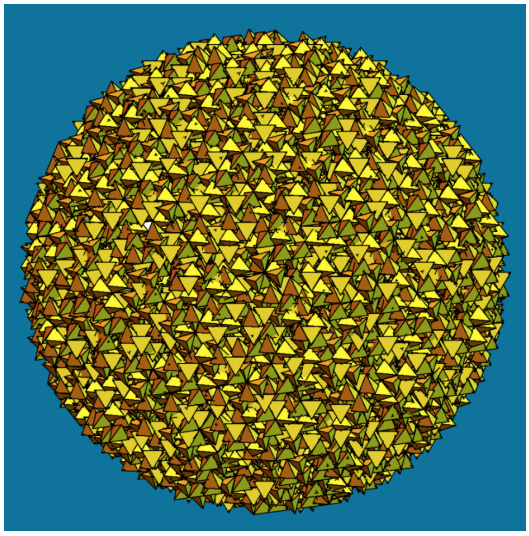
"Any attempt to describe nature at the foundational level must reproduce these successful theories (General relativity and Quantum field theory), and the most sensible course towards unification is to extend them with as little new mathematical machinery as necessary" (Lisi, 2007). So we present a simple but complex structure, mental and physical DNLs and will have smaller DNLs to cover the entire function. "Nevertheless we find that the traditional methods used to study Lie algebras must be modified for our purposes" (Wangberg, 2007). So we follow this attempt and take this *connection with everything* in an 8D machine that projects reality, while we input new building blocks (SLs, BLs & DLN) on which this combines into a massive structure called QSN and follows the mathematical ideal that social and environmental problems are connected to higher dimensions. Not only that but we can find solutions in a bigger structure and add new ways to organize and fit massive information and activities into one single 8D machine that will create a language that becomes a finite set of geometric letters. So DLNs and DAOs are able to write down "rules" on how you can arrange those letters, which brings freedom within those rules which allows to express or encode information in a geometric version of 1's and 0's. So this 3D quasicrystal is essentially a geometric code composed of symbols which express meaning and this meaning is reality itself expressed in different scales of existence; like particles, and gravity, but now we take it to a formal study of: the mind, social behaviors, interaction with other living life forms, new economic frameworks for equal distribution of resources, etc.



Clones of tetrahedra in one subspace share a vertex. The last object is called a 20-group.



Examples of other vertex types, as we are complex organisms in interaction, we must study movements, shapes, and formations of DLNs.



This is the QSN

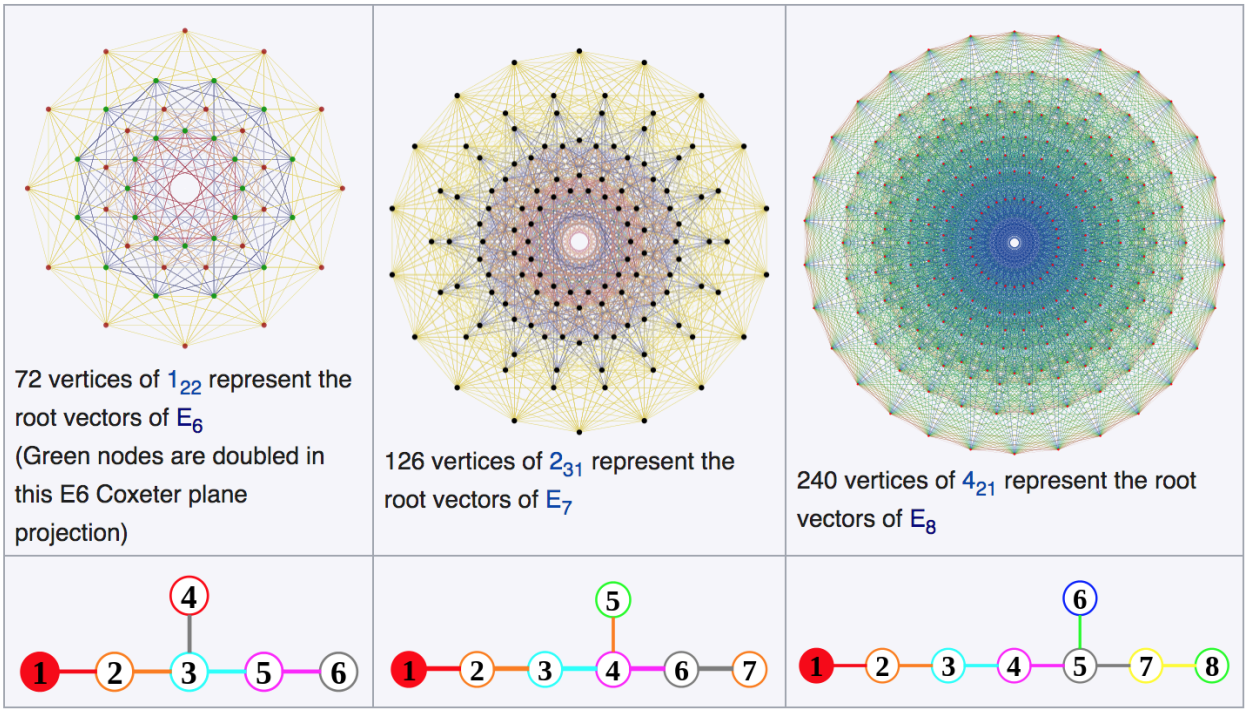
So now that we have defined the root systems and their groups, we are able to map an E8 system cluster to answer the pressuring needs of humans and the planet. **This is why**

Motus•DAO

MotusDAO is only a *subsystem* embedded in a more complex system and everything is interconnected in a E8 lattice, so by working on one root system, we are indirectly helping other root systems (health brings jobs, then money, etc.).

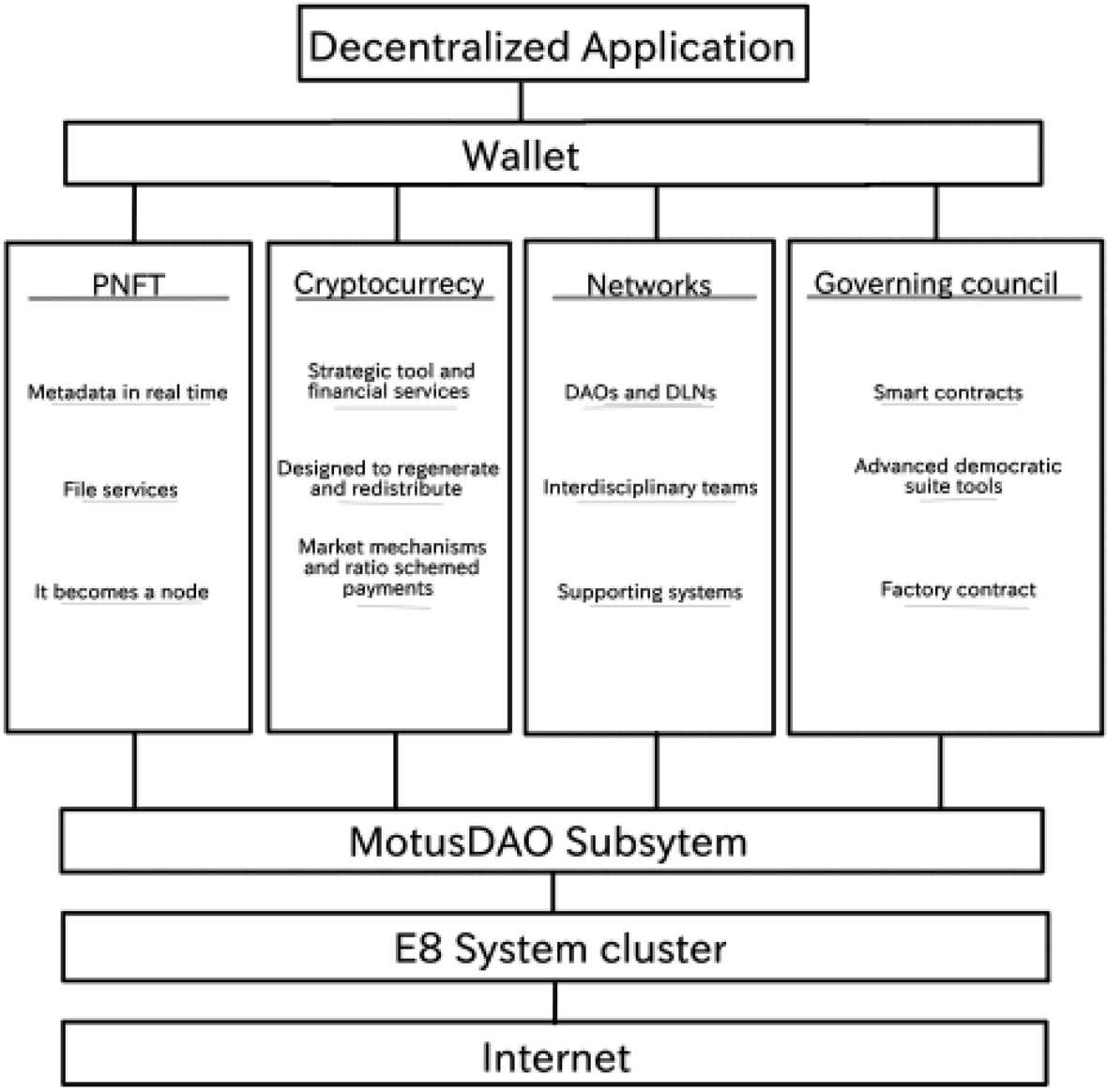
The subsystems can be thought of as slices of the 8 Dimensions E8 lattice, another way to visualize the DLNs and DAOs in order to move humanity and the planet into the “safe zone” of the economic doughnut.

The E8 system cluster and subsystems are expressed as follows:



2D representation of groups E6, E7, E8 and their Coxeter-Dynkin diagrams

Part 2
Architecture


Decentralized Application
Wallet
PNFT
Metadata in real time
File services
It becomes a node
Cryptocurrecy
Strategic tool and financial services
Designed to regenerate and redistribute
Market mechanisms and ratio schemed payments
Networks
DAOs and DLNs
Interdisciplinary teams
Supporting systems
Governing council
Smart contracts
Advanced democratic suite tools
Factory contract
MotusDAO Subsytem
E8 System cluster
Internet

Internet layer

The MotusDAO network nodes (Behavioral Ledgers) are all users with cell phones on the internet, uploading data in a protected way to the app. This is the natural evolution of the internet enhancing the Semantic web. Providing a new language code that can be the most computationally efficient point in a multi-dimensional space to represent a semantically structured knowledge. To forward secrecy, the nodes will be encrypted by hash functions and data will be interconnected and distributed in a decentralized way. We follow the cypherpunk manifesto.

MotusDAO consensus layer

The nodes are inputs of personal data from users each becoming a Human Non Fungible Token. They are shared in a encrypted blockchain as Behavioral Ledgers and then become Social Ledgers once it reaches a certain number of users. These Social Ledgers are formed by subsets according to their characteristics (country, culture, ideologies, religions, thoughts, ambitions, goals, similar tastes, sickness real time update, etc.), once they are organized, an algorithmic reduction based on Sociometrics will allow the data to be reconstructed as a machine-processable and interpretable metadata in a navigable space. With the use of smart contracts the SLs will become Distributed Living Networks once they are organized and aligned to the greater cause. This will allow the DLNs to share a common framework, methodology and benefits in comparison to a regular DAO, encouraging the DAOs to become DLNs (interconnected communities in a E8 system cluster with shared goals). We are breaking a frontier of knowledge that can help us solve all sorts of problems if we look at them from different levels or dimensions. Anyone should be able to help and contribute to humanity. *So we are able to map a microverse within a macroverse while creating a sense of belonging to a larger network.*

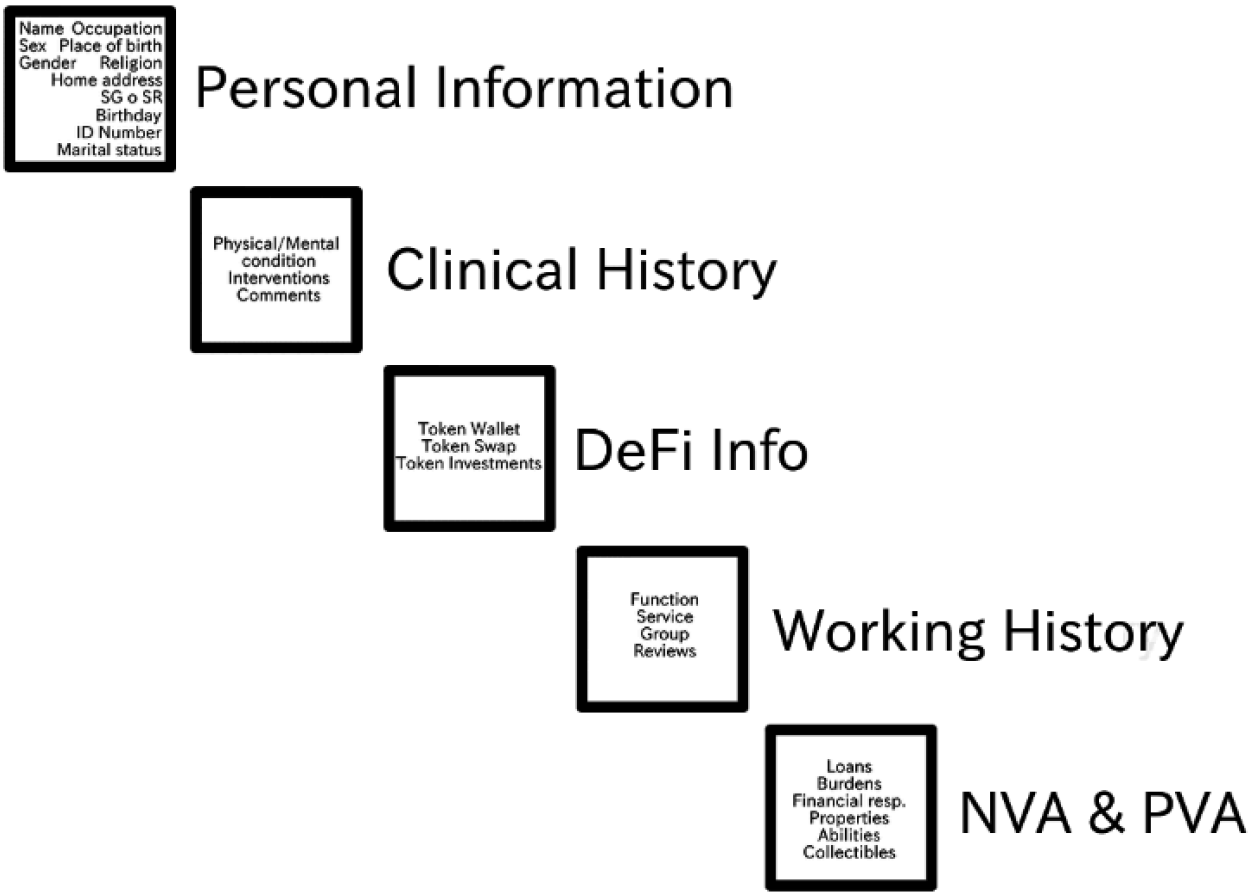
Service layers

Anybody can add to the Science of Behaviour, but there is a greater need for people to discover there's lots of opportunities here, so following Ethereum's smart contract standards, Motus (MRC & MIP) also offers a Request for Comments and an Improvement Proposal suite. This enables a vast array of opportunities within the blockchain to ensure self-development and self-sustainability, as a futureproof DAO.

HNFT

Motus introduces a Personal Non-Fungible token as a Utility Token and value contract designed to create a personal value and access UHC. We see a bigger potential for NFTs on the blockchain since it solves identity issues, enabling high quality medical service, financial inclusion and mainly it allows to create a massive decentralized *E8 system cluster* made out of real time data created to help the world. We use the NFT as a personal token based on its core principles; security, identity, trust, and user control of their own data becoming a node. The use case for HNFTs within UHC is as follows:

- **Personal information:** In order to gain access to the system, you must input your personal data; Name, Sex, Gender, Birthday, Id. number, Marital status, Occupation, Place of birth, Religion, Home address, Service Giver or Receiver. Once this step is complete, it becomes a node.
- **Clinical history:** For the node to become a Behavioral Ledger, it must go through its first medical or mental service. This will enable a new block of data that belongs to the genesis node. This block will be expanded by service providers with information regarding the user's health/condition along with the medical and mental interventions creating personal clinical records. This allows the user to be in control of their own delicate data, while only professionals will be able to add new information making interdisciplinary interventions easier and better.
- **DeFi info:** One of the many benefits this Utility Token brings you is financial inclusion, hence, personal economic value. The advanced suite of economic governance tools from the protocol design allows users and investors to increase their capital in the most easy and safe way in the cryptomarket, introducing a new form of stable coin that secures the user's wealth and eliminates volatility.
- **Working history:** MotusDAO is a place for everybody to grow and there are many things to do in order to provide a UHC. This block of information will be enabled for people who will have any function within the DLNs, and also will serve as a reputation sheet having information related to activities done to get a P2P review.
- **"Negative value" and "positive value" assets:** As part of the DeFi revolution the Negative Value Assets (NVA) can be described by specific assets such as loans, burdens and other financial responsibilities, on the other hand, Positive Value Assets (PVA) are described by what adds value like properties, abilities, collectibles, insurance, etc.



Building blocks of an Personal Non Fungible Token

Cryptocurrency

Designed as a unit of storage, account and a means to exchange, to obtain goods and services as well as to distribute wealth. Also it is used to incentivize the nodes for contributing with their real time data, rewarding the early adopters with multiple consumer benefits. Its design is made to benefit from the own success of the market while presenting the first price *semi-stable coin* that combines the best of both fiat and cryptocurrencies. This will allow a new plan for the mass adoption of digital currencies without the risk of uncertain volatility, while creating a new basis for a regenerative economy, allowing to store and create new value for communities with the use of *growth-driven tokens*. We offer new *primary market mechanisms* based on smart contracts, as they are systems which automatically move digital assets according to arbitrary pre-specified rules, introducing for the first time market price mechanisms that ensures a risk free and high ROI.

This is just an introduction to our tokenomics and we will provide more information in the following sections.

Networks

We, as humans, are in the process of learning how to work as a community and solve complex problems, so we need to become that macro community that heals the planet. We need to see humanity as part of a larger whole, where if we organize together we can create resilient communities, so we need to improve our collective capacity so that by organization and cooperation we can make things change very quickly. Evolution never stops, so the principal foundation of evolution is that through natural selection the strongest and the fittest survive but moreover, communities survive better than individuals and communities rely on cooperation. Evolution is based on the concept of mutual benefit and the extension of generosity. We need to have a paradigm shift in our consciousness. We are not individuals, we are a vast network of molecules and energies and wavelengths, the interconnectedness of being is who we are. This world of ours is always changing, so we need to keep extending these healthy networks in order for us to move to the “green safe zone” by building a macro community and restoring balance. One connection at a time.

Governing Council

Microdiversity is biodiversity. Therefore we have to enter into the microverses, but we cannot rule what we don’t know. The platform will run democratic votes within each Distributed Living Network, allowing users to make decisions according to their own needs. This governance will allow the process by which protocol changes are made, since we are talking about an all-inclusive platform service, anyone can be user or professional, so the rules are not set for who can or cannot use the platform. There is a process to propose changes to the core protocol, but since many people will depend on its stability, there is a strict protocol for this alterations, since they include social and technical processes and these changes must be secure and widely supported by the community.

Interoperable nfts with collective rewards. Buy nfts parts and collectibles (human 1st collection), then differnt parts of the body and each body part will have a awareness campains, different backgrounds and for each backgorund there is a cause that helps the donut.
Metaspaces and digital identity congress and
Certifications of motus dao for the e8

Part 3
Cryptoeconomics

Stability and adoption

The major problem for mass adopting cryptocurrencies is definitely the high volatility it has as an asset that stores value. Even though it is one of the few options so far to fight inflation, the heavy influence markets go through nowadays because of un-controlled mechanisms can be something disastrous for people and countries investing their money in such fragile market conditions, specially short and middle term. At the core of MotusDAO's monetary policy we strive forward to answer the problem of price-volatility and transit to a new regenerative and re-distributed economy by design.

Cryptocurrencies and Web 3.0 are finally here to help solve the world's problems, by innovating the way we capture social and economic value with the use of Smart Contracts, Liquidity Pools, Automated Market Makers, Personal Non Fungible Tokens, Market mechanisms and ratio schemed payments. In order to incentivize and engage users we create a fully deployable network to create social capital and increase the value of the Web3.0 ecosystem by underlying assets in a new form of derivative.

Understanding derivatives as Personal Non Fungible Tokens: Financial markets are powered by human beings and money, therefore, we must include a deeper structure of knowledge in order to move forward into a healthier transition of economic model. That's why MotusDAO helps contribute to the evolution of the human being embedded in the Semantic Web by underlying your identity as you contribute as a node. The node will be an interoperable HNFT connected to a wallet in order to receive rewards for using the platform. This way we bring a wallet with various real utilities within a platform making it easy to contribute as a patient and professional of Universal Health Care or even other metaverses. The changes in the value of the underlying asset (Personal derivative or HNFT) will depend on the contract values, each are followed by "Negative value" and "Positive value"**:** Negative Value Assets (NVA) can be described by specific assets such as loans, burdens and other financial responsibilities, on the other hand, Positive Value Assets (PVA) are described by what adds value like properties, abilities, collectibles, insurance coverage, etc. This way, we contribute to the human's welfare by introducing a new economic term "Financial Health" and the whole framework to enhance it. MotusDAO not only contributes to human's psychological and physical health, but the financial as well.

HNFTs are the founding bases of this deployable network that creates social capital, since these new digital/physical identities will interact in metaverses and real life services. In order to keep innovating economics in humanity, we must accompany these underlying assets with a *new monetary system* which include: market mechanisms, ratio schemed payments, and a new type of Proof of Work. Unlike the actual concept that requires computers to run algorithms, this PoW is fueled by the reality of human experiences and the data input they upload to track their own psychological, physical and financial profile, while receiving multiple benefits such as monetary rewards and access to the systems services such as health insurance coverage, health care services, and financial instruments. Their identity will always belong to them following the Web 3.0 protocols.

New market mechanisms:

MotusDAO adds more than just social and economic value to Web 3.0, it provides the framework for a self regenerating economy with Smart contract based protocols. We attempt to turn digital economies into a positive impact on real world economies. Bringing crypto to the real world and real use cases, as the next step of mass adoption comes, even governments and institutions will want to participate with MotusDAO due to the stability it brings.

MotusDAO's tokenomics are as follows: (MOT)Semi-stable coin, (USM) stable-coin, (GDT) Growth-Driven Token and (bMOT) pegged tokens.

-MOT will be the semi-stable coin of MotusDAO and the coin can be expressed following the fundamentals of the metric system and basic physics. Any negative expression will be considered a fee for the program to work, while the positive expressions will be issued as payments, transactions, rewards, etc.

Symbol	Prefix	Multiplication Factor	
E	exa	10^{18}	1,000,000,000,000,000,000
P	peta	10^{15}	1,000,000,000,000,000
T	tera	10^{12}	1,000,000,000,000
G	giga	10^{9}	1,000,000,000
M	mega	10^{6}	1,000,000
k	kilo	10^{3}	1,000
h	hecto	10^{2}	100
da	deka	10^{1}	10
d	deci	10^{-1}	0.1
c	centi	10^{-2}	0.01
m	milli	10^{-3}	0.001
μ	micro	10^{-6}	0.000,001
n	nano	10^{-9}	0.000,000,001
p	pico	10^{-12}	0.000,000,000,001
f	femto	10^{-15}	0.000,000,000,000,001
a	atto	10^{-18}	0.000,000,000,000,000,001

USM will be the stable-coin for MotusDAO since it will be important to have one since, simply by existing and operating, AMMs will yield the account by fluctuations of the self, gaining from its own market movement. There will be no donors, just investors allocation their money for yields.

-Growth-Driven Token (GDT) will make the projects come true. They will be minted with a New Mechanism of Liquidity Pools (NMLP) to back up their value with stablecoins and provide "gasoline" for projects to run. Each DNL will be able to create their own GDT as long as it follows the community's approval. The users empower the network while SL secure the sustainability of MotusDAO with a locked, auto compounding USM floor and the DLN's GDTs add social value to market cap. The value will be backed by a fragment of the Market cap, following the same formula as any LP adding time vesting schedules to withdraw funds to ensure platform's stability on long term.

$$\frac{k=x*y}{t}$$

The main cause of volatility in crypto markets is the lack of regulation in the market capitalization equation, that goes as follows:

Market capitalization = Price x Circulating Supply

So far, there is no control over the Market cap, since investors are able to buy and sell their digital assets any time they want, the rest becomes a mental manipulation game that drives demand high or low. As part of a new and more healthy market mechanism, we propose that the market capitalization will now have a Locked Value over vesting cycles, bringing clear anticipation regarding prices and market cap of the coin, then the formula will include the following:

Price= Market capitalization/Circulating Supply

Market capitalization= (Sinking fund + Investor's money + vesting calendars)
Circulating supply= (expansion and contraction of the supply over periods of time)

Sinking Fund: At the beginning of the cycle, the first layer of the Market cap will be the Sunk allocation. It holds the most important role in our mechanism, since it will absorb all the losses once MOT hits a desired price and the cycle starts all over again. In order to avoid any potential loss of money from any user (patients, professionals, investors, etc.) the Sinking Fund will have to be carefully measured, in order to avoid any rugpulls once all the allocation or market cap is retrieved off the market. It is designed to absorb the losses, while it helps yield user's money. Sinking Funds are used in social projects, to reduce the financial hardship they may face, however, these funds are designed as a special type of allocation since it holds the key of a new economy, it regenerates with the use of other financial instruments that will be explained further. By design, this will provide a pegged token to its own value, that will allow the allocation to be moved to a perpetually growing endowment account following the Angel protocol idea from Terra ecosystem, this way we aim to leverage our own yield mechanisms as much as to 100%. These endowments enable the sinking fund to auto-compound over time, achieving financial sustainability.

Investor's money: Since the Circulating Supply will be a Locked Value, meaning investors can't retrieve their money whenever they want, rather they have to wait for the vesting period to get their money plus yields, the supply will run a formula based on the expansion and contraction of the supply itself, meant to create its own market condition, this will ensure the proper conditions for the market to thrive. As well, it will create a mirror market with pegged tokens that will allow the use of different instruments and increase the ROI growth over a large diversity of derivatives based on a social platform.

Following DeFi 2.0 protocols where they become simpler and simpler we provide 3 money growth possibilities at the same time, where investors don't have to worry about moving their money through different protocols, the smart contracts will do it themselves.

1) Yielding money at Market Cap: Once you buy a MOT to interact with the platform and pay services, you will buy a coin at a certain price, knowing the price can't go down until some point a smart contract will retrieve your money plus yields. When you buy it will automatically distribute the allocation according to this formula:

$$\frac{k=x*y}{t}$$

This will back up the value of MOT with the Dollar while avoiding a 1:1 ratio and allow MOT to control its own market momentum. This will become a new market capitalization mechanism that locks up its own value and gives space to back up other markets. The rewards are distributed from the slippage of the market with the use of AMM. This way MOT uses a PoS protocol and bonds bMOT and allows to move these pegged assets to the GDT markets as a backed asset.

2) GDT markets: MOT will be backed up by New Mechanism Liquidity Pools (NMLP) and GDT markets will be backed up by MOT. MOT will be the coin of the Blockchain while the GDTs will be tokens minted with the Factory contract using the PoS model. In these markets is where all the action is going to happen since smaller tokenomics allow more attractive market movements. Each Social Ledger that becomes a Distributed Living Network will be able to create their own GDT, the main function this serves is for DNLs to run on smart contracts allowing the correct distribution of the money, and multiple choices of fundraising. Each GDT will be in compliance to MOT tokenomics, but will have freedom to create the GDT with their own needs (i.e. Large supply versus small supply, inflationary or deflationary, etc.)

3) Rewards for using the system: MOTs and GDTs will be distributed or "airdropped" to both professionals and users of the app following a PoW protocol where each node gets rewarded for each block of data it uploads to the blockchain. In this particular case, the PNFTs will upload these blocks of information containing full lifetime medical and mental records of each user. These blocks can be accessed by doctors with the permission of the user. Both users and professionals are rewarded for their contribution.

Ratio schemed Payments: As part of the Rewards for using the platform, we present the RSP, which allows the protocol to create even bigger economical value to the professionals involved. Because of ethics in psychology, we cannot give a free therapy, since it has to have some type of value for the user. So, we find ways for therapies to become available even without money being able to trade goods and services. As we said before, everybody is an investor here, nobody just donates. So, the RSP helps to make expensive services universal. Let's see the next example. One Psychotherapy will be 1 dollar for example, The user pays 1 dollar, while its ratio is 1:100, so the psychologist will be getting 100 dollars per session. This is possible thanks to the expansion-contraction protocols from our MOT and USM tokenomics, previously explained.

Vesting calendars: The vesting schedules will work as an incentive program, where you will invest your money and not be able to retrieve it, but will be rewarded with GDT and/or bMOTs, until your money is unlocked. This program looks for a compound effect on the long-term contributing to the stability of the project's removing financial hardship over the years. This

intelligent money will be operated by smart contracts and secured following the roadblock of Binance: Secure Asset Fund for Users (SAFU) like protocol ensuring total security over the Market Capitalization. This calendar schedules a life cycle of the market that can be traceable and anticipatable. In other words, there will be a begging of a bull's run, once the sinking funds will be allocated, there will be timed minor pullbacks to retrieve short vesting cycles and finally, once the price reaches to a certain point, the market capitalization will be moved or "rug pulled" only to repeat the cycle again(no scam). This also makes available an old known derivative market called "Futures", this instrument can be played on our side and be added to the possibilities to make this market self- sustainable.

Circulation supply: In order to allow a regenerative economy, we must go against the current economic paradigm, which means creating a deflationary coin, however, we have seen unpractical use cases like Bitcoin's high costs (environmentally and economically) mining and Ethereum's high cost transactions. Therefore, we must create new market principles that allow a complicated reality, societies and economies to evolve with their own economic freedom. This is why we introduce "mint and burn" or Contraction-Expansion Supply (CES) mechanisms as we have seen successful use cases like Terra Luna for example. We also see new protocols like Vader that try to provide a safer and more stable market.

Part 4
Security

The main thesis of Web 3.0 is that it is supposed to give us the best of Web 1.0 and 2.0 but decentralized. However, it is shown that people don't run their own servers(Moxie.org), “having servers seems like something complicated that people are not interested in doing and that’s why they just hire a centralized party that will have servers for them.” In a way, a protocol moves slower than a platform, so when it becomes truly decentralized, requests become really difficult

to change, while companies try to figure out how to organize enormous groups of people and still move as fast as technology.

MotusDAO's DLN and Blockchain involves the principle of *direct reciprocity* among the participants, which permits management and controlled functions to be performed within the system without the presence of *trusted intermediaries* or *third-party entities*. In the blockchain system, data is recorded in real time by any of the network *nodes* within the blocks that form the chain and this data remains permanently in the blockchain. Indeed, all the nodes participating in the network can (and should) record and check the transactions and access the information contained in the blocks if authorized. The problem here is how to access the blockchain, since here it becomes a little tricky. Different ecosystems talk about distributed trust and how to seek a leaderless consensus and the frameworks it implies, but in reality users hardly ever participate in those dynamics, since everything is mainly directed to servers or validators. Blockchains are designed to be a network of peers, but not designed such that it's really possible for your mobile device or your browser to be one of those peers.

However, Distributed ledger technologies allows MotusDao to share and synchronize mata-data across multiple sites, institutions, or geographies, making it accessible by multiple people and entities. As a consequence, there is no *single concentration of power*, nor *centralization*, which controls the ledger/user. It is a Dapp that directly uploads data to the internet and participation between different subsets of the system is crucial, this will form the living network. With the MotusDao system of governance we have multiple central owners that have the copy of the resources. This eliminates the biggest problem of *single point of failure* with centralized network, power and authority. With multiple owners of those servers, if a particular central node fails, the information can still be accessed from the other nodes and the community. This is the only alternative we have to interact with the blockchain via a node that's running remotely on a server somewhere, but it works on a meta-data protocol. Instead of API access, we can run our own development suite over our own blockchain related to the Health industry.

Network Governance model proposal for Behavioral Ledgers: Distributed side chain

There is a Data Protection Authority (DPA) which controls the Data Controller (DC). The Data Processors compliance can choose to store data on-chain, or the URL (off-chain) that points to the data encrypted and signed by hash functions. This way, not even with access to a machine, can't compromise the safety of the data. This is a system with distributed nodes that cannot be controlled by the Single authority entity. Data subjects can enforce their privacy rights toward the DC and DPA. The network validates the transaction and can amend information upon legitimate request, the ledgers are accessible through privacy by layers managed by the DC. The DC acts as a trusted entity that can certify transaction and personal information in case of an accident and health care givers need to access the users data without permission. The nodes can still be distributed amongst trusted professionals that are appointed as data processors by the e-Ledger central manager, who acts as a Data Controller. Accordingly, the DC can manage distributed storage amongst nodes or other third parties appointed as data processors, granting all the security requirements of the request on the basis of DPA auditing activities. Furthermore, the reward for the nodes can still be granted for these API calls on the sidechain. This is meant to imply quick iteration on and off chain out pacing the non distributed protocols with fluid dynamics to consolidate control into platforms and avoid dark pools of data or money.

We offer a new and clear trayectory to decentralization, fundamentally changing our relationship with technologies and Web3.0 and recovering what can be recovered about our privacy as users, especially with such delicate information like health records, insurance, etc. So we design a system that can distribute trust without having to distribute infrastructure by relying more on cryptography. Nevertheless, we will work to get our own network of servers to ensure a more safe environment. This way we offer a platform designed for social and planetary use, and is made to be the most simple protocol in the whole Web3.0, not only to use, but to build value upon.