Artificial Superintelligence (ASI) Alliance Vision Paper

Building Decentralized Artificial Superintelligence

SingularityNET, Fetch.ai, Ocean Protocol - Apr 2024

Contents

Executive Summary **2**
Introduction **3**

=== Section A. Pillars of Focus === **6**
A.1. Introducing Three Pillars **6**
A.2. First Pillar: Build ASI **7**
A.2.1 Introduction & Context 7
A.2.2 Stream I: Large Language Models 8
A.2.3 Stream II: Neural-Symbolic Evolutionary Approach 9
A.2.4 Stream III: World-World Models 10
A.2.5 Stream IV: Emergent AI from Agent Networks 11
A.2.6 Toward Beneficial ASI 11
A.3. Second Pillar: Show Apps, Unify Stack **12**
A.3.1 Introduction 12
A.3.2 Audit of Existing Platform Capabilities 13
A.3.3 Low-hanging Fruit 14
A.3.4 Towards a Baseline Decentralized-AI Stack 14
A.4. Third Pillar: Scale Decentralized Compute **16**
A.4.1 Introduction 16
A.4.2 Algorithms & Incentives 16
A.4.3 Address Silicon Needs 16
A.4.4 Address Energy Needs 18

=== Section B. ASI Governance === **18**
B.1 Introduction **18**
B.2 Formal Corporate Structure **19**
B.3 Network Wide Participatory Governance **20**
B.4 Alliance Member Governance **20**
B.5 Self-organized Subnetwork Governance **23**
B.6. Grant Programs Supporting the Ecosystem **23**
B.6.1 Introduction 23
B.6.2 SingularityNET Deep Funding 23
B.6.3 Potential of Deep Funding for ASI 24

=== Section C. Tokenomics === **25**
C.1 Proposed Merger Timeline **25**
C.2. ASI Tokenomics **27**
C.2.1 Introduction 27
C.2.2 Token Conversion Ratios 27
C.2.3 Token Conversion Process 28
Appendix
Disclaimer 35

Executive Summary

SingularityNET, the world's first decentralized Artificial Intelligence (AI) network, Fetch.AI, a new AI economy Web3 platform, and Ocean Protocol, a decentralized data exchange platform for data protection have proposed to merge their tokenomic networks into the Artificial Superintelligence Alliance (ASI). This will create the world's largest open source, independent AI research and development foundation – with a unique focus to create decentralized Artificial Superintelligence.

Founders Ben Goertzel of SingularityNET, Humayun Sheikh of Fetch.AI, and Trent McConaghy and Bruce Pon of Ocean Protocol all feel that the immediate future will see AI breakthroughs even more dramatic than the LLM breakthroughs that have held the world's attention since early 2023. They believe that within three to eight years we will see Artificial General Intelligence (AGI) systems which can understand, learn and apply knowledge with the same generality and flexibility as humans, with ASI or Artificial Superintelligence (smarter than the smartest humans) emerging a few years after that.

These epochal developments hold great potential but also great risk. One of the greatest risks is that emerging AGI and ASI will be controlled by centralized parties with special interests not aligned with global well-being. Another major risk is that AGI & ASI are centralized in the hands of Big Tech and the military. To counter this, the three-way tokenomic merger creates a well-resourced and well-organized push toward accelerating decentralized AGI then ASI.

This landmark Superintelligence Alliance to push forward the boundaries of Open Source AI is subject to approval by the Fetch.ai (FET) and SingularityNET (AGIX) communities of token holders. The Fetch community will vote during the interval 2nd April to 13th April and the AGIX community will vote during the interval 4th April to 16th April.

The merged token aligns incentives of the three projects to move faster and with more scale. There are three pillars of focus:

- Artificial Superintelligence research, development and deployment
- Immediate practical AI application development, and building towards a unified stack
- Scale up decentralized AI, AGI and ASI compute

After the merger is approved, the Fetch.AI Foundation ("Fetch.ai"), Ocean Protocol Foundation ("Ocean") and SingularityNET Foundation ("SNET") will continue to operate as autonomous

organizations and guide development of their signature software platforms. These platforms will all use the common $ASI token and there will be a new focus among the ASI Alliance members on shared synergetic development.

SingularityNET, founded and led by “Father of AGI” Dr. Ben Goertzel, is a blockchain-based marketplace and framework for AI services, with a mission to create decentralized, democratic, inclusive and beneficial AGI. Through the SNET platform, companies, organizations and developers can trade algorithms at scale with no central controller, low costs and low barriers to entry. SNET has been a key contributor to the OpenCog Hyperon neural-symbolic-evolutionary AGI platform, which is designed to leverage the SingularityNET ecosystem decentralized tools toward emergent superintelligence.

Fetch.AI is building a decentralized machine learning network that allows users to access secure datasets, and execute tasks with autonomous AI agents, empowering consumers to create and deploy broadly capable AIs for any tasks. Fetch.ai technology stack includes a Cosmos-based Layer 1 network customized for AI and a world class multi-agent framework to enable rapid deployment of commercial AI applications.

Ocean Protocol is a secure, privacy-preserving platform allowing businesses and individuals to trade tokenized data assets seamlessly, creating a system to manage data throughout the AI model lifecycle. Its powerful and scalable tooling is currently demonstrated at scale through the Predictoor framework for crowdfunded predictions, which achieved impressive traction in the crypto-finance community.

The merged $ASI tokenomic network will operate in a decentralized manner driven by the combined communities historically associated with the Fetch.ai, SingularityNET and Ocean platforms, united by the shared aspiration to foster emergence of beneficial decentralized Artificial Superintelligence.

Introduction

Artificial General Intelligence – when an AI system can perform all human tasks at minimally a human level of competence – looms near. It seems clear the acceleration will continue past AGI, straight to Artificial Superintelligence when AI systems perform at far-beyond human levels of capability.

These developments were foreseen by technology visionaries since the middle of the 20th century and before. The AI field was formally founded in the late 1950s, building on groundwork laid earlier by visionaries such as Norbert Wiener in his 1948 book *Cybernetics: Or Control and Communication in the Animals and Machine*. More recently, Ray Kurzweil’s 2005 book *The Singularity is Near* launched the term “Singularity” into mass consciousness, and presented thorough evidence suggesting human-level AGI might emerge around 2029. His core method was extrapolating exponential trends seen in numerous technologies, including computational power and memory, brain imaging resolution and nanotechnology devices. Kurzweil projected 2045 as the date for the Singularity – where AGI gives way to ASI.

Today, Kurzweil's predictions seem remarkably accurate. His extrapolations have not tracked exactly, but more and more people are convinced – as various lines of evidence emerge – that the 2029 date for human-level AGi is roughly correct.

One line of evidence is the capabilities of ChatGPT and other Large Language Models (LLMs). These systems have awakened the popular imagination. Experts and non-experts are infected with the idea that, while core aspects of human intelligence are still lacking, significant pieces of the puzzle are solved and human-level AGI may not be that far off.

Another line is progress in the deeper reaches of AGI research. Alternative AGI approaches like the OpenCog Hyperon system and the NARS reasoning system are advancing faster than ever. It is increasingly likely these systems will experience their own breakthroughs in the coming years, similar to the mainstream adoption of LLMs and other deep neural net technologies.

Kurzweil predicted 16 years between human-level AGI in 2029 and superhuman-level ASI in 2045, but many now wonder if this was too conservative. LLMs can already write code based on rough ideas and specifications. It is natural to assume that future human-level AGI will do that and more, allowing it to rapidly master AI programming and develop ASI. The gap between human-level AGI and ASI might be much less than 16 years. The exponential curves in Kurzweil's extrapolations are all based on human-driven progress, and may be outpaced once AGI takes the research reins.

This brings us to the purpose and import of the tokenomic merger proposed here: given the pace and power of recent developments in the AI field, and the likely acceleration of further progress in the near-term, it is imperative for humanity to take action to ensure Artificial Superintelligence is developed under popular control. We need to open data, compute and AI capabilities to all – so as to ensure the diverse insights, judgments and capabilities available from across global human society are brought to bear on the unprecedented problems of crafting AGI and ASI.

We at Fetch, Ocean and SingularityNET have worked tirelessly for years to decentralize AI, each in our own complementary ways. We had stimulating collaborations and built mutual respect. We are moving quickly to build decentralized AI – and we have chalked up numerous successes on many fronts..

Yet centralized AI has become bigger and moved faster. Decentralized AI needs to compete. It needs to get *bigger* and *faster* – and it needs to do this right now.

This merger brings decentralized AI to a scale never seen before. Bigger incentives. Faster progress. The merger will unify the incentives across the three projects and allow them to draw on each others' respective strengths, scale up compute and energy, and race together towards *decentralized* Artificial Superintelligence.

Centralized vs. Decentralized Future

We are in a race to AGI and ASI. Either centralized Leviathans – Big Tech and the military – will win the day, or an open network will take the prize. Centralized versus Decentralized. Which future do you prefer? Our mission is to scale up our research and development engine to get decentralized ASI in the race for the sake of humanity.

How? First of all, we *merge* our tokens: AGIX, FET and OCEAN. We convert existing AGIX, FET and OCEAN tokens into the new $ASI. The total supply of $ASI will then be 2,630,547,141 tokens, composed of 866,700,367 allocated to AGIX tokens, 1,152,997,575 allocated to FET tokens and 610,849,199 to OCEAN tokens.

This Alliance needs to show the public that decentralized AI can be applied today in ways that make a real-world impact, and walk them down the path towards decentralized AGI and decentralized ASI with a procession of continuously improving applications. This is exactly what Fetch, SNET and Ocean have been doing for years: practical decentralized AI applications and the infrastructure to make it all possible.

The Superintelligence Alliance will enable dramatic synergies beyond what could be achieved by the three projects working side-by-side in a loose partnership. These ASI Alliance synergies have multiple dimensions that will be explored in later sections of this Vision Paper, but at the most simplistic level:

- Fetch.ai brings a mature framework for delivering commercial solutions based on decentralized agent systems and an AI-customized Layer 1 chain, proven via a host of real-world applications
- Ocean brings a decentralized network for secure and ethical data management, designed for the data requirements of large-scale AI systems and demonstrated in the highly successful Predictoor framework
- SingularityNET brings a concrete technical path to AGI and ASI, going beyond what Big Tech R&D teams are doing, integrated with a decentralized tech stack including an agents framework, a ledgerless blockchain (HyperCycle with HYPC token) and a decentralized compute fabric (NuNet with NTX token)

AGI cognitive architecture + scalable secure ethical data management + robust commercialization, rolled out on a high-speed, low-cost decentralized network, equals an unparalleled strategy for decentralized ASI success.

This Vision Paper sketches an outline of how we plan to leverage these and other synergies to move forwards to win the AGI race, and bring the mainstream along with us. The Vision Paper is organized as follows:

- **Section A** presents the three pillars of focus of the ASI Alliance: build decentralized ASI, show practical decentralized AI applications today, and secure decentralized compute
- **Section B** describes the governance principles and practices for the ASI Alliance, its network and subnetworks
- **Section C** reviews key aspects of $ASI tokenomics, including particulars of the token merge and grant funding initiatives

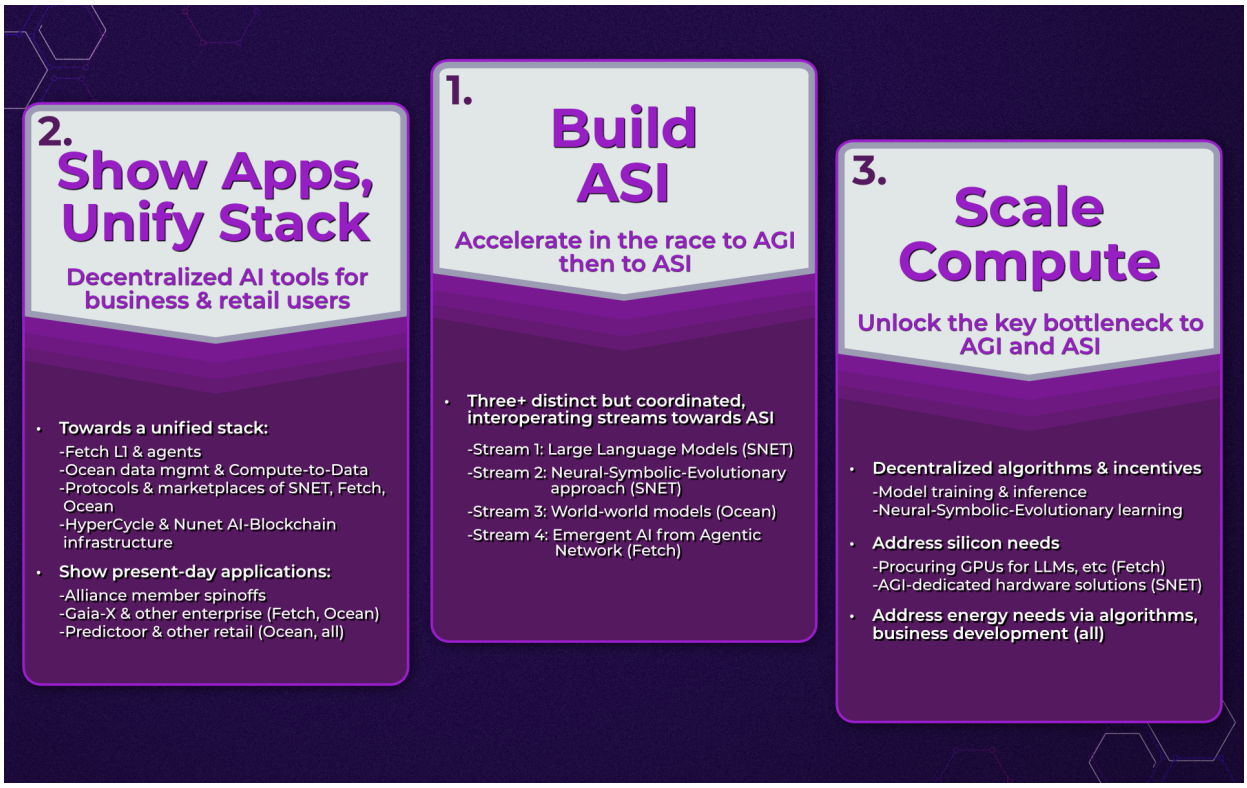
=== Section A. Pillars of Focus ===

A.1. Introducing Three Pillars

The ASI Alliance efforts as a merged organization composed of three hubs and an associated decentralized community is based on three pillars:

1. **Build ASI.** First and foremost, we will build decentralized Artificial Superintelligence for humanity and for the future
2. **Show apps, unify stack.** We will show the public the applications of decentralized AI that can make an impact today, for applications in business and retail use cases, and use the applications as the driver towards a unified decentralized AI stack
3. **Scale (decentralized) compute.** AI, AGI and ASI need compute at massive scale. We intend to use the scale of $ASI to aggressively grow compute for decentralized AI.

The following sections elaborate on the Three Pillar approach.



A.2. First Pillar: Build ASI

A.2.1 Introduction & Context

The bulk of the recent advances in the AI field are led by U.S. Big Tech companies, based mostly on algorithmic innovations coming out of academia. So far, Chinese counterparts predominantly copy, refine and scale Western AI innovations. The domination of the AI field by large centralized Internet companies has significantly impacted the array of AI algorithms that are developed. In particular, attention is placed on techniques that pass huge amounts of data through massive centralized server farms, as Big Tech companies have more of these resources than anybody else.

But things change fast in tech. Just as Microsoft and Apple rapidly dethroned IBM and Honeywell back in the day, and Wikipedia buried Microsoft Encarta, it is eminently possible for centralized tech giants to lose the AGI race to decentralized upstarts. If this were to happen, it could have a major beneficial impact on the way the AGI revolution plays out – making the transition to AGI and then ASI a more democratic, open, decentralized and *broadly* beneficial process than would be the case under Big Tech domination.

This is where the three projects of this Vision Paper – SingularityNET, Fetch.AI and Ocean – play a critical role. One cannot develop an AGI centrally and later decide to roll it out on a decentralized platform. Developing decentralized AGI starts with architecting AGI systems in a manner oriented toward decentralized infrastructure. For this, one needs to know what decentralized AGI infrastructure looks like. Fortunately there are a handful of projects doing serious work in this direction for a number of years – and SNET, Fetch.ai and Ocean are the leaders among them.

Given that no one has built AGI yet, let alone ASI, uncertainty is unavoidable.To maximize the chance of winning the ASI race, the Alliance will drive forward on four distinct but coordinated, interoperating streams:

- Stream I: Large Language Models
- Stream II: Neural Symbolic evolutionary approach (OpenCog Hyperon)
- Stream III: World-world models (Predictoor)
- Stream IV: Emergent AI from agent networks

This is the current configuration. However, we will make space in our strategy for the emergence of other potential AGI/ASI streams as the AI field and our R&D unfold.

The following four subsections elaborate on each approach.

A.2.2 Stream I: Large Language Models

Large Language Models (LLMs) have come to dominate the AI scene in a dramatic way over the last year. Examples include OpenAI's GPT-4, in addition to an array of increasingly powerful open-source systems based on the underlying Transformer neural net model pioneered at Google Brain. They comprise a genuine black swan event in the AI world, in the overall economy and for our culture. LLMs have demonstrated a wide range of capabilities significantly beyond any previous AI systems. Some of these capabilities have clear economic and human value, and some defy the predictions of experts who said that their capabilities could be accomplished by an AGI, such as writing computer code from rough specifications, or passing tests given to law students.

The success of these systems is such that some researchers have declared a dramatic milestone on the path to human-level AGI. Other researchers with highly relevant expertise loudly disagree with these optimistic assessments about the relationship between LLMs and AGI. For instance, Yann LeCun, one of the pioneers of deep neural networks (the broad category of AI systems of which Transformer neural nets and GPT are examples) declared that "On the road to AGI, Large Language Models are an off-ramp." The leaders of the decentralized AI projects involved in the ASI Alliance tend to hold views somewhere in between, holding that LLMs comprise meaningful progress toward AGI in some respects but not others. On a practical level LLMs may ultimately be one *component* of multi-component AGI systems.

Tools for training and inference of LLMs and other deep neural networks, and management of the data used for training these models as well as deployment of products using these models, are under development and usage for some time within the Alliance's ecosystems for various purposes. Recent computer science progress makes it more and more feasible to handle these AI models on decentralized networks. For instance, a year ago there were no feasible approaches to training LLMs or other large neural models across decentralized processor networks, but new techniques such as 1-bit LLMs bring this closer to reality.

SingularityNET has grown a sizable team of AI developers focused specifically on Transformer neural nets since 2018. Augmenting this team with relevant experts from the Fetch.ai and Ocean teams bring the ASI Alliance a powerful core of LLM wizardry. Rather than emulating the precise work of Big Tech's neural net R&D groups, the ASI Alliance can instead focus on taking larger leaps such as:

- Neural-symbolic LLMs that minimize hallucinations using data-driven reasoning
- Tools for neural net training and inference across decentralized networks with heterogeneous compute nodes
- LLMs and other deep neural nets that keep track of what data they used for each inference, to allow proper attribution and compensation of data sources

These approaches taken together have strong potential to yield LLMs and other DNNs that are more intelligent, less expensive, and more ethical in data handling.

A.2.3 Stream II: Neural-Symbolic Evolutionary Approach

Deep neural nets (DNNs) are one among multiple AI paradigms under development and refinement since the middle of the last century. Others, such as logic-based and evolutionary AI and sparse distributed memory, have equally rich histories and different strengths and weaknesses. It is highly likely that, as available data and processing power increases, many other historical AI approaches will begin to demonstrate dramatically greater practical achievements just as has recently happened with DNNs.

It also seems likely that the fastest progress toward AGI will be achieved by hybridizing multiple AI methods from multiple paradigms. In fact, modern top-performing LLMs like GPT4 are already hybrid systems, leveraging plug-ins like DALL-E for images, Wolfram Alpha for mathematical reasoning, etc. Decentralized networks provide a richer set of tooling for combining multiple diverse AI tools into combined subnetworks to carry out a variety of useful functions.

The OpenCog AGI framework poses one way to construct such hybrid systems, which comes with a cognitive architecture called PRIMUS, but can be used to implement alternate cognitive architectures (e.g. experimentation with the NARS non-axiomatic inference framework). A major

thrust of SNET's AI development is OpenCog's new Hyperon version, and the connection of Hyperon instances with LLMs and other DNNs to carry out various practical functions, such as biological or financial analytics, or controlling robots or avatars.

The Hyperon design is centered on a distributed, decentralized meta-representational fabric in the form of a weighted, typed metagraph called the Atomspace. Multiple cognitive algorithms work together to solve problems and achieve system goals, referencing and updating the Atomspace and assisting each other as needed; the cognitive algorithms are themselves implemented as networks of Atoms (nodes/links). The algorithms utilized include attractor neural nets for attention spreading, probabilistic logical reasoning, evolutionary program learning, concept blending and others. Hyperon includes a novel AGI-oriented programming language, MeTTa, which can be interpreted or compiled directly into Atoms living in Atomspaces.

A major SingularityNET initiative for 2024 involved creation of a Hyperon node leveraging SNET, NuNet and HyperCycle platforms, designed for flexible and efficient interaction within decentralized networks. In the context of the ASI Alliance the function of the Hyperon node will be extended to encompass interoperation with Fetch.ai and Ocean networks.

A.2.4 Stream III: World-World Models

Summary. Prediction is intelligence. Starting with Ocean Predictoor, the ASI Alliance will use aggressive blockchain incentives to create the world's ultimate time-series prediction machine: one of world dynamics – a "world-world model". The resulting machine will be an ASI in its own right, it just will not have human-shaped intelligence.

Background. In Ocean Predictoor, people run AI-powered prediction bots or trading bots on crypto price feeds to earn rewards. The "earn rewards" part is a key to foster usage.

Predictoor involves two groups:

- **Predictoors:** data scientists use AI models to predict the price of ETH, BTC, and other such assets 5 (or 60) minutes into the future. The scientists run bots that submit these predictions onto the chain every five minutes. Predictoors earn rewards based on sales of feeds, including sales from Ocean's Data Farming incentives program
- **Traders:** run bots that input Predictoors' aggregated predictions for use as alpha in trading. It is another edge for collecting rewards while trading
- Predictoor is built using the Ocean stack and runs on Oasis Sapphire, an Ocean partner

Predictoor has highly promising traction: starting from zero volume on mainnet launch in October 2023 volume has grown to > $30M / day and > $900M / month (as of April 2, 2024).

These numbers are on only 20 DeFi feeds, and a relatively small incentive program (37,500 OCEAN / week). OCEAN is going to grow this to 20,000 DeFi feeds, add some weather feeds

(precipitation, temperature, pressure), then grow it to *millions* of weather feeds. Ocean will layer in ancillary feeds too, such as energy and logistics..

This will take us to **world-world models**. As the weather feeds relate to each other in spatial dimensions, there will be gains in accuracy and cost to train a *single* model across feeds. **This model will continually ingest the physics of the world to predict its next state.** It will be a world model on ground-truth physics. Ocean will give it all the training data that current LLMs take. The net result will be a model with vastly more data than current LLMs, and ground-truth physics in all that additional data. Prediction is intelligence. This is Predictoor's endgame; fittingly, it is one of the "build ASI streams".

A.2.5 Stream IV: Emergent AI from Agent Networks

Alongside efforts to engineer AGI via multiple paradigms, decentralized networks such as the ASI network are ideally suited to serve as the infrastructure for the emergence of general intelligence capabilities via complex self-organizing dynamics among simple agents, each carrying out autonomous actions in pursuit of their objectives.

The Fetch.ai and SingularityNET agent platforms are both designed from the start with this aim in mind. Often in the context of commercial end-user applications, AI agents carry out practical tasks, refer to each other for assistance, and collaborate to achieve shared goals in a "whole is greater than the sum of the parts" synergetic fashion. This can be relatively simple, e.g. a document summary agent getting help from a video summary agent to process an embedded video or a medical analytics agent and a machine translation agent working together to translate a medical document. It can also be more complex, involving large swarms of agents collaborating to solve difficult problems beyond the scope of any one of them.

Alongside a pure emergentist approach in which individual agents created for separate purposes cooperate to generate unforeseen levels of collective intelligence, there is great potential in combining emergentist AI with AI architected according to other paradigms. Ocean's Predictoor product manifests this to an extent: the intelligence of the overall network of prediction and trading agent exceeds that of any individual agent and may have properties not discernible from looking at the agents in isolation. The OpenCog Hyperon toolkit is used for neural, logical and evolutionary computing and for experiments in "algorithmic chemistry", wherein the knowledge bases of multiple interacting Hyperon agents transform and modify each other catalytically in the manner of chemical reactions.

A.2.6 Toward *Beneficial* ASI

These powerful tools, deployed across a flexible decentralized network, have strong potential to generate tremendous economic value and unprecedented good for humans and other sentient

beings. It is important to remember the orientation of this decentralized network in a beneficial direction depends on a number of factors including:

- The nature of the applications to which the network is applied – expected to ultimately span all aspects of the world economy, but critically includes compassionate and beneficial applications such as education, healthcare, mental health assistants, creative arts and basic scientific and mathematical discovery
- The underlying AI systems must have capability for moral reflection and deep understanding of themselves and others. OpenCog Hyperon is designed with this in mind, and similar measures can be taken within other sorts of AI architectures
- The governance and guidance of the AI networks must be democratic and participatory, in form and actual practical function, which requires concerted activity and a measure of intelligence and wisdom on the part of the overall ASI community

All these topics and other related ones were considered at the Beneficial AGI Summit in February 2024, organized and sponsored by SingularityNET. Further, such events and other similar initiatives will continue under the aegis of the Superintelligence Alliance.

The founders and active developers of Fetch, SingularityNET and Ocean are excited to have the opportunity to work with the broader community to address all these aspects in a coordinated way and bring the best possible Artificial Superintelligence into reality.

A.3. Second Pillar: Show Apps, Unify Stack

A.3.1 Introduction

All three Foundations have built world-class tooling and apps, and have ecosystems of users with even more applications around them. The ASI Alliance will continue to show the public applications of decentralized AI that can make an impact today. This will help to prepare the mainstream for the future while keeping ASI efforts grounded. We will continue to nurture these ecosystems, and over time evolve core technologies towards a unified stack.

A core tenet is "do the right thing" with our users and ecosystem collaborators. It would be counterproductive to aggressively integrate everything at once. Nor is it necessary.

Here is a better way to think about it. There are three organizations, three stacks and three ecosystems. There is some integration across the stack now:

- Worst-case is that all stacks, organizations, and ecosystems remain as-is. This reflects the status quo, pre-token merge.

- Now, because of the unified token, all three organizations are strongly incentivized to work together. There are opportunities to integrate at both the technology-stack level and the business level.

A.3.2 Audit of Existing Platform Capabilities

Let's do a high-level review of the existing platforms and their capabilities.

Fetch. Fetch provides a decentralized AI agent architecture, designed specifically for commercial applications, with significant tooling appropriate for connecting decentralized AI agents to software processes involved in enterprise or SME software systems or end-user interfaces.

Ocean has smart contracts and middleware to tokenize data assets and REST APIs. Above it are libraries and applications to publish, buy/sell, and use/consume AI agents. Compute-to-Data allows local compute, and decentralized federated learning.

SingularityNET provides a decentralized network of AI agents, with a connectivity protocol and associated formalisms and languages enabling agents to assemble into collectives suitable to solve cognitive, mathematical or application problems. The OpenCog Hyperon neural symbolic evolutionary AI framework is designed for use on the back end of applied AI services and as the core of powerful AGI and ASI. Below are the HyperCycle AI-customized ledgerless blockchain, and the NuNet decentralized compute fabric.

Each of the three networks involves a number of additional facilities beyond these core functions, for instance;

- Fetch has a customized, efficient GPU compute layer, and its own Layer 1 blockchain optimized for delivery of commercial AI agents.
- SingularityNET has developed a unique neural-symbolic AGI approach called OpenCog Hyperon, designed for decentralized deployment, the NuNet framework for incentivization of decentralized compute power, and partnered with the TODA ecosystem to create a unique ledgerless blockchain customized for scalable AI
- Ocean Predictoor is a DApp and stack for crowd-sourced time-series prediction. In its initial DeFi use case, it has already reached >$900M monthly volume.

Each network has fostered a number of application projects applying its native tools to diverse vertical markets, spanning medicine, finance, automotive, IoT, music, robotics, and many other sectors.

In terms of underlying blockchain operations at the present time:

- Fetch’s AI agent system runs on its own native chain, which leverages the Cosmos framework

- SingularityNET's AI agent system currently runs on Ethereum network, but ports to Cardano and HyperCycle are underway and substantially complete
- Ocean core stack runs on several EVM chains: Ethereum mainnet, Polygon, Oasis Sapphire, Optimism, BNB Smart Chain, Moonriver, Energy Web Chain

With this audit in place, we can ask two key questions. First, what is the low-hanging fruit? Then, what is an appropriate baseline decentralized-AI stack that we can move towards? In the next section we explore each.

A.3.3 Low-hanging Fruit

Here are some examples of low-hanging fruit.

Gaia-X. Both Fetch and Ocean are deeply engaged with Gaia-X, and several spokes. We have strong ecosystem collaborators in deltaDAO, Bosch, and more. Unifying our efforts here reduces friction and amplifies benefits.

SingularityNET Spin-offs. SNET has produced several spin-offs, already with tokens. Some would gain immediate benefit in using Ocean's Compute-to-Data technology to keep data private and on-premise while still monetizing it. Others could use the Fetch Compute network alongside HyperCycle, NuNet and other tools to amp up computation power.

Decentralized Agents in Predictoor. SNET / Fetch agents running in Predictoor doing prediction and trading, providing greater diversity in the Predictoor agent system's intelligence, and creating a richer ecosystem to support passive staking on predictors and traders. The merged ASI ecosystem will provide a diversity of new incentives to drive the usage of SNET and Fetch tools within Predictoor.

Expand Predictoor Scope. Add more feeds beyond DeFi, for SNET and Fetch customers. Energy demand, energy price, weather. Food prices in the developing world. Measures of progress toward the Singularity. The decentralized intelligence of the ASI community may be valuable in suggesting appropriate and impactful targets for the collective intelligence of the Predictoor emergent agent system.

This is a minimal sampling. There are many more examples to be fleshed out as we proceed with our collective development toward ASI.

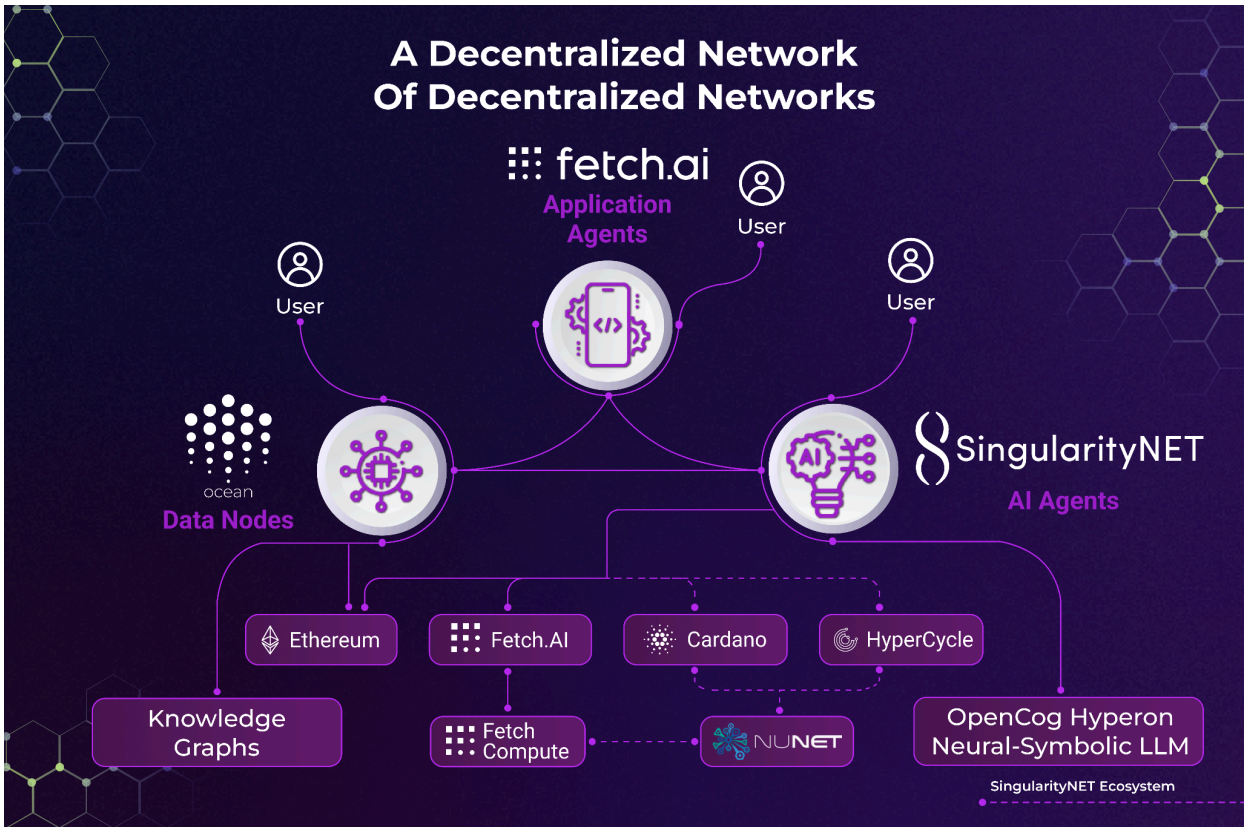
A.3.4 Towards a Baseline Decentralized-AI Stack

The ASI Alliance platform engineering teams are currently collaborating on a development plan to use components from the three ecosystems to create a shared decentralized AI framework. Due to the modular software design principles followed by each project, it is possible to achieve deep and efficient integration without disrupting the functionalities that users of the individual networks currently rely on.

This is how these work together as a baseline:

- Ocean's middleware for data management can be integrated into Fetch blockchain nodes, and relevant data management libraries and apps running on top.
- Smart contracts for SingularityNET AI services can be ported to run on Fetch L1, alongside SNET AI services running on HyperCycle, Ethereum, Cardano and other chains as appropriate.
- Marketplaces by Ocean and SingularityNET can be ported as appropriate.

We expect the result to be a "default" stack integrating tools from across the ASI ecosystem according to their strengths. Realistically legacy stacks will be used by some collaborators over longer periods of time and we must continue to maintain those. We will work closely with our ecosystem collaborators to ensure that the ongoing work makes sense.



A.4. Third Pillar: Scale Decentralized Compute

A.4.1 Introduction

This section dovetails with the "build ASI" section, focused on serving compute needs.

AI, AGI and ASI want and need compute, specifically the silicon and energy to power the compute. The ASI Alliance intends to use the scale of $ASI to move more aggressively in securing compute for AI, decentralized-style.

This is addressed on three different planes: algorithms, silicon and energy.

A.4.2 Algorithms & Incentives

It is one thing to build centralized AGI or ASI. It is another thing entirely to do it decentralized, where no single entity owns or controls any layers of the stack. One might see this as making the problem harder. However, blockchain networks offer a superpower: incentives. It is no accident that Bitcoin is the largest compute network in the world: the network rewards people with BTC if they run compute to help secure the network.

This generalizes: *you can get people to do stuff by rewarding them with tokens*.

For AI, this means you can get people to contribute to train a model. You can get them to contribute to run inference on a model. You can get people to run agents. You can get them to contribute or curate training data. You can get people to crowd-source predictions.

In fact, SingularityNET, Fetch and Ocean have all been doing AI-focused token engineering all along. Now, the three organizations' complementary efforts can become more tightly aligned, manifesting dramatic synergies at the level needed to propel the decentralized AI ecosystem ahead of its centralized competition.

A.4.3 Address Silicon Needs

At the core, participants in the decentralized network bring their own silicon. It is critical they can be rewarded to participate, and the long-term game is sustainable for the network. Silicon (typically GPU) cost matters. Therefore, silicon needs to be cheap enough and used effectively so that ROI > 1.

In *theory*, decentralized learning and inference can be structured such that no serious AI compute power is needed in-house. NuNet, for example, is a SNET ecosystem project designed to achieve this. In *practice*, given the current state of things, having serious AI compute in-house can make a huge difference in project velocity.

There are two reasons why:

- AI researchers can run benchmarks and tune parameters more quickly
- They can supply compute resources to *seed* the network as lead actors on the network. Incentives grow the network beyond its seed. This is an "eating your own dogfood" action that helps continually improve the incentive design

At the current stage of hardware and software development, it works better in practice for a heterogeneous network of relatively weak processors to serve as an additional support network for a collection of interconnected highly powerful server farms. This sort of network can still fulfill the “decentralization” requirement of having no single nor small number of central owners or controllers.

Fetch has already secured $100M of GPUs. This is not the scale of a Facebook or a Microsoft, and it is not meant to be. It is a foundation to drive velocity and seed a broader decentralized network, for the reasons given above. Beyond that, incentives take over, which is where the true scale emerges.

Together with partners TrueAGI and Simuli, SNET is taking actions on custom silicon designs to make symbolic and evolutionary AGI efficient. Application-specific integrated circuits (ASICs) often bring efficiencies of 10x-100x. Additionally, SNET is proposing an adjustment to its previously proposed token release schedule to enable application of additional resources toward decentralized compute infrastructure at this critical juncture.

A.4.3.1 Accelerated SingularityNET Token Release

To accelerate progress in the merged ASI Alliance ecosystem, a modification to the AGIX tokenomics agreed in the 2021 SNET Phase 2 process is proposed (but must be approved by the SNET community before it is enacted). This is an optional addition to the 3-way merger, which is not necessary for the ASI Alliance to succeed in its goals, but has potential to provide further acceleration toward ASI Alliance advances.

According to the current AGIX tokenomics, as of 1 June 2024 there will be 589,207,230 AGIX tokens yet to be minted, divided among a number of wallets (e.g. Foundation Wallet, Deep Fund Wallet, Supervisory Council Wallet.) via fixed proportions (see the Tokenomic Deep-Dive section below) and released at an exponentially decreasing schedule, with 8,838,108 tokens in June 2024 and then 1.5% fewer each month onwards.

This exponentially decreasing schedule was chosen for sound reasons, however, the situation in the AI market is significantly different now from 2021. Big Tech has made major strides, and for the decentralized ecosystem to keep up, it will be optimal to release tokens at a somewhat faster schedule than proposed in 2021.

SNET proposes to release 100 million of the 294,603,615 remaining Foundation Wallet AGIX tokens in June 2024, with a specific mandate to use these to fund incorporation of large-scale GPU and CPU compute resources into the SNET network (as a subnetwork of the broader ASI network). These compute resources will be entrained in the ASI Alliance’s decentralized infrastructure, but for practical reasons will largely be situated in a number of high-performance server farms in multiple locations. Conversations have begun with crypto

mining farm operators in multiple jurisdictions about upgrading their facilities to support advanced AI computation, to provide massive hardware support for the global decentralized ASI network. There is a cost to purchasing and configuring hardware and the proposed accelerated SNET token release will enable exactly this.

The remaining 194,603,615 AGIX tokens would be released at an exponentially decreasing schedule as in the existing tokenomics, with a modified amount: so, 2,919,054 in July 2024 and then with an amount decreasing by 1.5% per month as per Phase 2 SingularityNET Whitepaper. For technical reasons, all remaining AGIX tokens will be physically minted pre-merger but locked in smart contracts to be automatically released according to schedule.

A.4.4 Address Energy Needs

Like Bitcoin ASICs, modern AI chips (notably GPUs) are extremely energy-intensive. As mentioned above, it is critical that network participants be rewarded. Therefore access to cheap energy is critical.

There are several complementary approaches to get cheaper energy:

- Algorithms that find efficiencies at all layers of the stack
- Leveraging AI algorithms for energy price prediction to identify low-demand times for energy purchases, leading to more efficient model training
- Business development that procures cheap energy
- Leverage Predictoor in the domain of energy prediction, with aid of intelligent agent systems deployed on SingularityNET and Fetch.ai platforms alongside Ocean

We have explored, and will continue to explore, all these strategies and more.

=== Section B. ASI Governance ===

B.1 Introduction

The emerging ASI ecosystem will be more powerful than the current SingularityNET, Fetch.ai and Ocean ecosystems, and more decentralized in its composition. This is due to three strong but separate organizations sharing the same tokenomics, token utility and software framework, underpinned by a more diverse, shared community. The primary causal force to guide the growth of the ASI Network, however, is the large community of participants, including all $ASI token holders, in particular those who currently operate nodes of various types across the ASI Network.

Governance of the ASI network occurs on multiple layers:

- **Formal corporate structure:** Formal legal governance related to the $ASI Token will be carried out via an Artificial Superintelligence Council where the three Foundations come together to form a consensus and execute a shared vision as well as ensure that the wishes of the community are incorporated.
- **Network-wide participatory governance:** Decentralized governance will be front row center in the $ASI Token framework that takes into account the decentralized culture and history of all the Foundations. As such, the Alliance is committed to an ongoing and evolving decentralization process that allows the larger $ASI community to voice their opinions, concerns and vision.
- **Alliance member-specific governance**: Governance will take into consideration the unique aspects of specific $ASI Token pools under management of individual member organizations of the Alliance, such as the Ocean Data Rewards pool, SingularityNET's Deep Funding pool and other token pools.
- **Self-organized subnetwork governance**: Governance of ASI subnetworks which, as part of their constitution, include their own native governance mechanisms will be maintained and adapted within the new framework.

The above comprises a mix of centralized and decentralized governance mechanisms. This is a mixture born of practicality, and is viewed as a step along the path toward increasingly robust decentralized governance. This is close to the hearts and minds of each member Foundation, all of which have striven to roll out their own form of decentralization within their unique governance process. One lesson from this experience is that decentralized governance of smart contract regulated networks composed of human and software agents is at an evolutionary stage and yet to be perfected.

For instance, in the SNET community, the current Supervisory Council body is mandated to produce a Decentralization Blueprint specifying a series of governance experiments to better understand what path is desirable to take toward more fully decentralized regulation of AI networks. Once the merger has been approved and executed, the Supervisory Council will provide their report to the new Alliance and their communities – with appropriate alterations in accordance with the nature of the Alliance.

B.2 Formal Corporate Structure

Upon approval of this proposal, an Artificial Superintelligence Council will be formally created to monitor and guide operations of the combined decentralized community of the newly merged token network. This Alliance will work closely with the existing Foundations of SingularityNET, Fetch.ai and Ocean, and will facilitate the ability of the different foundations to work on developing AI applications, AGI and ASI. This Council will be initially led by Dr. Goertzel, supported by one other representative from the SNET ecosystem, and two representatives from each of the Fetch and Ocean ecosystems.

The Superintelligence Alliance Foundation will be incorporated in the jurisdiction of Singapore. All three Foundations have operated in Singapore for many years, and are comfortable with the current regulatory framework. The Foundations as they exist will continue to control their own

operations and activities within their respective jurisdictions. In future phases of this merger, the operations of Foundations may merge as the organizations look to consolidate existing tech and commercial synergies.

The primary function of the ASI governing council will be to coordinate $ASI Token releases, and serve needed critical legal roles related to the ASI token. The Superintelligence Alliance Foundation may optionally at times take on other roles as well such as coordinated marketing across the ASI ecosystem, or other functions.

B.3 Network Wide Participatory Governance

Whatever the final form that decentralized governance of ASI takes, participatory governance remains an important staple within the process. As such, $ASI token holders will be asked from time to time to vote on important decisions on the future course of the Alliance as well as the manner in which the $ASI token is handled.

To add new projects to the Alliance (or otherwise expand the $ASI token supply), or to make changes to the Constitution of the Alliance Council, what is required is:

A) 2/3 vote of the council
B) Voting approval of the $ASI token holders

At its discretion, in unusual cases the ASI governance council may opt to put other major matters to the vote of the token holders as well. The council may potentially choose at some point to add new items to the above list of event-types requiring token holder vote.

B.4 Alliance Member Governance

Ocean Protocol and SingularityNET both have specific pools of tokens, which post-merge would become $ASI tokens that can be earmarked for specific purposes related to the Ocean and SNET networks. The utilization of these tokens would not fundamentally change after a merge. In the case of the SingularityNET pools, particulars of some pools would need to be different post-merge as detailed below.

B.4.1 Ocean Incentives Programs

Ocean Protocol Foundation has around 700M OCEAN tokens in Multisigs and vesting contracts designed for community incentives. Post-merge, those rewards will still be utilized for upcoming incentives programs. List of programs may include interactivity with Ocean-nodes, Predictoor and integrations with SNET or Fetch.ai technology. If so this potential will be implemented step by step as it becomes clear which interoperations are most valuable to incentivize.

B.4.2 SingularityNET Token Pools

SingularityNET has a number of token pools into which new tokens will be released monthly at a decreasing rate until the final tokens are released in the year 2112.

These pools include:

- SingularityNET Foundation
- Deep Funding (decentralized token grants program)
- Liquidity
- Loyalty Rewards
- Reputation
- Staking Rewards
- SophiaDAO
- Supervisory Council

Though these pools will be converted to $ASI tokens post merger, the usage of the tokens will remain essentially as in the SingularityNET Phase Two Whitepaper.

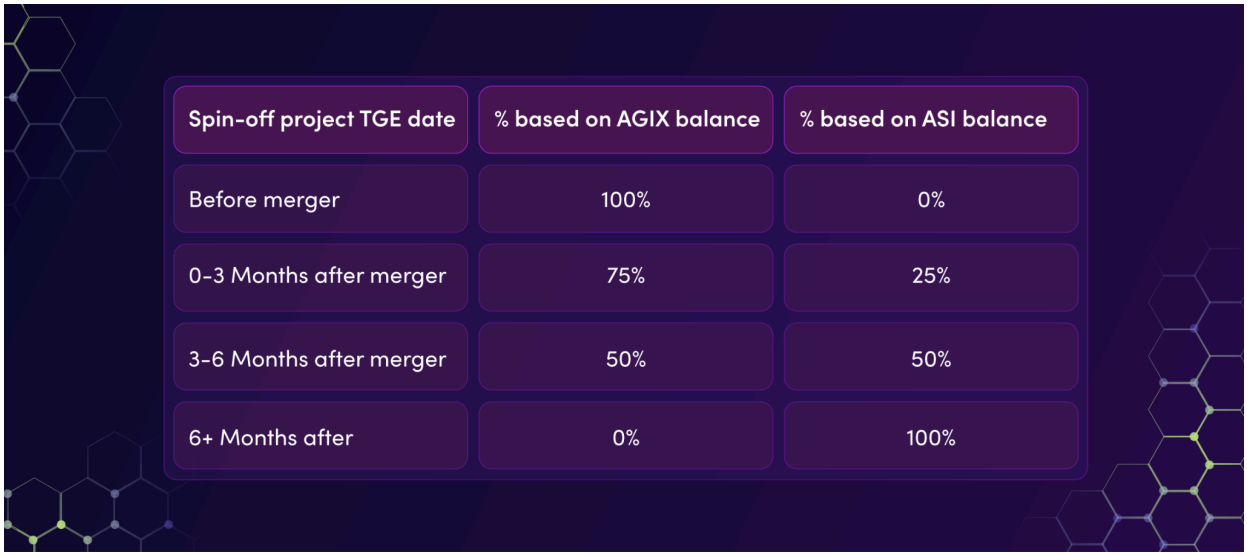
- **Deep Funding:** Used to incentivize development of SNET (as an ASI subnetwork) and associated tools like OpenCog Hyperon. In addition, interoperation of SNET with Ocean and Fetch.ai technologies could fall within Deep Funding scope
- **Liquidity:** Used to provide needed liquidity for processes running on SingularityNET.
- **Loyalty Rewards:** Used to reward AGI token holders (based on the AGIX hardfork snapshot of May 2021), this allocation can be changed via democratic vote
- **Reputation:** Used to incentivize reputable activity and accurate reputation rating, centrally on SingularityNET's ASI subnetwork
- **Staking Rewards:** Used to reward the staking of $ASI tokens, where staked tokens may be used to support SingularityNET development
- **SophiaDAO:** This spin-off project to make AI agents sentient and support an AI Human Hive Mind leverages SNET, collaborates closely with the SophiaVerse Web3 Metaverse project, and can leverage Ocean and Fetch where appropriate
- **Supervisory Council:** A function of SNET governance, this pool is focused on decentralized governance and beneficial AGI with participatory governance

The concept of "weighted liquid rank reputation" has been researched and prototyped by SNET over the years. The system can be applied to different participants in a network such as AI services / Agents, nodes or human actors. It includes an arbitrarily long array of weighted attributes and factors in the ranking of a referrer when offering feedback or recommendations.

SNET will develop a version of this system for SNET-specific governance purposes. The pre-merger AGIX balances (as represented by the historic governance snapshots) will have a high weight in the system but decrease over time. Other potential attributes, such as $ASI token

holding patterns, activity in relevant social media channels, developer contributions and Deep Funding engagement, will gain in weight over time and may be applied flexibly based on the type of topic to be voted upon.

A related issue is distribution of spin-off tokens to AGIX token-holders described in SNET Phase II Whitepaper. For spin-offs incubated during the pre-ASI period, recipients of spin-off tokens will continue to be based on historic governance snapshots. For newer spin-offs incubated post-ASI, other reputation attributes will be factored in, including $ASI token balance. Over time, the weight of the historic governance snapshot will decrease to zero, according to the below weights:



Spin-off project TGE date	% based on AGIX balance	% based on ASI balance
Before merger	100%	0%
0-3 Months after merger	75%	25%
3-6 Months after merger	50%	50%
6+ Months after	0%	100%

B.5 Self-organized Subnetwork Governance

As an evolving decentralized network, it is appropriate the ASI network may entail multiple layers of governance mechanisms applicable to different subnetworks, and not be limited to subnetworks associated with individual member organizations of the Alliance.

A major example of self-organized governance of an ASI subnetwork not uniquely associated with any Alliance member organization, currently under active development, is the “Beneficial Global Brain Network” (likely renamed as things progress), whose practical execution was a core topic at the Beneficial General Intelligence Summit in Panama City in February 2024. In this potential ASI subnetwork processing resources and data would be pooled by subnetwork members and their usage for beneficial ASI projects would be determined collectively by members via a one-person / one-vote mechanism.

Several of the SNET spinoff projects can be viewed, in part, as ASI subnetwork governance mechanisms. For instance, apps created by Rejuve, Jam Galaxy, SophiaVerse and Mindplex

will leverage $ASI tokens on the back end along with the native tokens of these projects. The native governance mechanisms of these projects guide usage of the $ASI tokens within these projects. The details are not necessary for this Vision Paper, but it is worth understanding this layer of governance exists, as it illustrates multiple layers of participation.

B.6. Grant Programs Supporting the Ecosystem

B.6.1 Introduction

Grant programs have proven a broadly effective way of stimulating development in decentralized ecosystems. The evolution of the ASI Alliance may involve emergence of new grant programs over time, but the Alliance will benefit from grant programs already in existence within the member networks.

B.6.2 SingularityNET Deep Funding

SNET's Deep Funding program will continue to operate as usual, and move forward in the execution of existing plans. Deep Funding particularly values the opinions of engaged and valued community members, and welcomes fresh insights from Fetch and Ocean community members as the ASI Alliance progresses.

Deep Funding has experimented from the start with processes aimed at offering balance between tokens, engagement and expertise. This becomes more relevant with the prospect of a larger community of token holders with a varied history, but a shared mission and vision of driving a decentralized, beneficial AI.

Deep Funding will continue to:

- Develop a "contribution rating'' system that rates participants on engagement and contributions, and progressively change the balance of the voting weight from token holding towards contribution rating.
- Work on optimizing the voting process, taking into account token balance, other metrics such as strength of opinion, "group-think" patterns, contribution ratings and other criteria.
- Apply and evolve the Request For Proposal (RFP) process where specification is decoupled from development, so the community is encouraged to contribute early on in ideation and specification, rather than just casting a final vote.

B.6.3 Potential of Deep Funding for ASI

Deep Funding is well-positioned to support all parties in this token merger, and is already developing co-funded pools and RFPs with third party projects. Following this template, Deep

Funding has multiple routes to broaden the strategic focus from “Helping the SNET Decentralized AI Platform grow” to “Helping the ASI solution stack grow.”

- Projects uniquely funded by Deep Funding will continue to focus on the SNET AI platform and OpenCog Hyperon.
- Projects bridging SNET with Fetch or Ocean capabilities will be in scope
- RFPs that are (co)funded by one or multiple partners can drive the development of the wider ASI solution portfolio.
- By making the RFP process less dependent on regular Deep Funding Rounds, there can be a quicker response to emerging needs and wider community participation.
- Deep Funding Pools (co)funded with one or multiple partners will enable all community members to propose and develop their ideas with fewer restrictions and less direction as is the case with RFPs.

=== Section C. Tokenomics ===

C.1 Proposed Merger Timeline

Key Milestones

Vote & Preparation

27 Mar 2024	Community Announcement of Merger Proposal
02 Apr 2024	FET Community Votes (3) Launch
03 Apr 2024	Vision Paper Published & Community AMA(s)
04 Apr 2024	AGIX Community Votes Launched – Merger Proposal & Accelerated Minting of 100M Tokens
04 Apr 2024	Snapshots Taken for AGIX/ FET/ OCEAN Holders Communities
13 Apr 2024	FET Community Votes (3) Close
14 Apr 2024	FET Community Votes (3) Result Announcement
16 Apr 2024	ASI Council Governance & Constitution Finalized
16 Apr 2024	AGIX Votes Close
17 Apr 2024	AGIX Community Votes Result Announcement

Post Vote

30 Apr 2024	ASI Technology & Product Integration – Initial Roadmap
May 2024	ASI Website Launch
May 2024	ASI Token Launch
May 2024	AGIX/FET/OCEAN -> ASI Token Migration – Commence
May 2024	ASI Staking Ready on FET/ASI Network
May 2024	ASI Staking Ready on Cardano
May 2024	ASI Staking Ready on ETH
May - Aug 2024	ASI Cross-chain Solutions Deployment
May 2024 Onwards	Ongoing Product & Technical Integration

C.2. ASI Tokenomics

C.2.1 Introduction

In this proposal to be approved by the Fetch.ai and SingularityNET communities to take effect, the existing AGIX, FET and OCEAN tokens would be converted into $ASI tokens at a specified ratio, creating a single decentralized-AI utility token that can be utilized within all three platforms, as well as within new ASI software to be created collaboratively post-merger.

Fusing the tokens will provide an economic basis to incentivize and drive tech integration of the three platforms, creating a platform of unprecedented power to work toward beneficial decentralized AGI.

C.2.2 Token Conversion Ratios

The conversion ratios between AGIX, FET, OCEAN and $ASI tokens are set at:

- $FET tokens migrate to $ASI, at a conversion rate of 1:1
- $AGIX tokens migrate to $ASI, at a conversion rate of 0.433350:1
- $OCEAN tokens migrate to $ASI, at a conversion rate of 0.433226:1

The token merger is a highly complex operation, unprecedented in several ways, and in resolving the details fairness among projects and respective communities is a top priority. As such the following was considered:

- Fully Diluted Valuation based on Maximum Supply is identified as the best like-for-like valuation metric in weighting the three tokens for the purpose of merger

- Daily spot prices are highly volatile, which could create unfair price fixing, so use of the daily average over a certain period of time

- The average is calculated on daily averages. ((Daily High + Daily Low)/2) to normalize intraday volatility

It was agreed to use a 15 days average that reflects:

- Recent market valuation of each project
- A long enough time period to mitigate single day price volatility

The price of each token was fixed before announcement of the merger to avoid the valuation being impacted by sudden post-announcement market activity.

C.2.3 Token Conversion Process

The mechanical process of executing the token conversion is planned as follows.

First, Fetch as an existing Layer-1 will hard-fork to adopt the name “ASI”, with increased maximum supply sufficient to accommodate the new supply necessary to convert all original FET, AGIX, OCEAN tokens:

The $ASI token will, post-merger, support the following blockchains:

- FetchChain (Cosmos)
    - This will be a new ASI Native Token
- Ethereum
    - AGIX/OCEAN/FET will migrate to a new ASI contract as ERC20 tokens
- Cardano
    - A new Native Asset named ASI will be created and Cardano AGIX Native Assets will be migrated to this
- BNB Chain
    - ASI will be deployed on BNB Chain to enable FET Migration
- Matic Chain
    - ASI will be deployed on Matic Chain to enable OCEAN Migration

Additional blockchains may be added later on post-merger, for instance the previous plans to create AGIX versions on HyperCycle, Dfinity and Vechain networks may be executed in the context of ASI instead.

Cross-chain bridges initially supported will be as follows:

- FetchChain <-> Ethereum
    - Existing FET bridge will be redirected to new ASI contract
- Cardano <-> Ethereum
    - Existing AGIX bridge will be redirected to new ASI contract
- --- Ethereum <-> BNB Chain
    - SingularityDAO Bridge will be enabled for all tokens
- --- Ethereum <-> Matic Chain
    - Matic Bridge will be enabled for all tokens

Token migration routes will include:

- AGIX
    - ADA-AGIX - Optional migration via ADA Bridge Update, Migration Contract to be deployed shortly for AGIX-> ASI exchange
    - ETH-AGIX – Migration Contract deployed for AGIX->ASI exchange
- FET

    - FetchChain-FET – Full Chain Hardforked to ASI – Users will need to update RPCs to new chain – No Further Action
    - ETH-FET – Migration Contract deployed for FET->ASI exchange
    - BNB-FET – Migration Contract deployed for FET->ASI exchange
- OCEAN
    - ETH-OCEAN – Migration Contract deployed for OCEAN->ASI exchange
    - MATIC-OCEAN – Migration Contract deployed for OCEAN->ASI exchange

Appendix: Evolution of Fetch.ai, Ocean Protocol and SingularityNET

This Appendix summarizes the history of the three foundations merging to form the ASI Alliance.

Evolution of SingularityNET

SNET emerged with a big ambition: to develop and democratize Artificial General Intelligence (AGI) on a decentralized network. The goal was not merely to advance technology but to ensure AGI's benefits are equitably distributed, fostering a beneficial future where AI can understand, learn, and adapt to a broad range of cognitive tasks. Here is a detailed journey of SNET from its inception in 2017 to the end of 2023.

2017: Foundational Year and Token Launch

- **Foundation:** SNET was founded to challenge the conventional AI landscape, advocating for a decentralized approach to AI and AGI that emphasizes ethical considerations and community governance.
- **Launch Success:** The immediate success of its token launch, reaching the $36 million hard cap in 66 seconds, showcased widespread support for an ethical, decentralized pathway to AGI, highlighting the community's trust in the team and vision.
- **AGI Token Introduction:** The launch of the AGI token (renamed to AGIX when it went cross-chain) was a strategic move to incentivize contributions to the ecosystem, aiming to streamline development and deployment of AI services critical for AGI research.

2018: Infrastructure and Early Adoption

- **Platform Beta Launch:** In 2018, SNET launched the beta version of its platform, enabling early users and developers to interact with its marketplace, test AI services, and contribute to the ecosystem.
- **Community Engagement Initiatives:** The team prioritized building a strong, engaged community through various initiatives, including hackathons, developer workshops, and

participation in global AI and blockchain conferences. This was aimed at fostering a collaborative environment and soliciting feedback to refine the platform.

2019: Expansion of Services and Partnerships

- **Service Diversification:** SNET significantly increased the number of AI services offered on its platform, covering areas like image recognition, natural language processing, and algorithmic data analysis. This diversification was crucial in demonstrating platform versatility and potential to contribute to AGI development.
- **Strategic Partnerships:** This year saw the formation of pivotal partnerships with corporations, academic institutions and other blockchain projects. These collaborations aimed to integrate SNET's AI services into various applications and explore new use cases for decentralized AI to broaden the platform's reach and utility.

2020: Technological Advancements and Governance

- **Platform Upgrades:** In response to community feedback and technological advancements, SNET implemented significant platform upgrades to enhance user experience, scalability, and security. These improvements were essential for supporting more complex AI services and to accommodate a growing number of transactions.
- **Launch of Decentralized Governance:** Demonstrating real movement towards democratization, SNET initiated decentralized governance. This involved introducing mechanisms for tokenholder voting on key decisions affecting the platform's development and direction, reinforcing the commitment to community leadership.
- **Focus on AGI Research Initiatives:** SNET ramped up investment in AGI research, including collaborations with leading AI researchers and institutions. These efforts were aimed at solving complex AI challenges, including a COVID-tracking use case, and core advances in machine learning, cognitive architectures, and blockchain integration for AI, laying the groundwork for future AGI capabilities.

2021: Strategic Evolution and Enhanced Partnerships

- **Embracing Phase II with Cardano:** The transition to Phase II, characterized by the strategic partnership with Cardano, bolstered the technical infrastructure necessary for AGI, enhancing scalability and interoperability. This included the fork to the cross-chain AGIX token and several initiatives to accelerate decentralized AI development, including the founding of SNET's community-funded grant program, and the initiation of the SingularityNET Ecosystem.
- **Launch of SingularityDAO & NuNet:** Introducing SingularityDAO represented a significant step towards utilizing AI in decentralized finance, showcasing the potential of AI to revolutionize various sectors, thereby advancing the AGI agenda.The launch of NuNet demonstrated the appetite for decentralized compute for AI and other applications, innovating a critical component of the decentralized AI tech stack.

2022: Diverse Ecosystem Development and Technical Refinements

- **Spin-off Support for AGI Ecosystem:** Financial, developmental, and operational backing for SingularityNET Ecosystem spin-offs across in key verticals like health, creativity, and decentralized infrastructures fostered an ecosystem conducive to human-beneficial AGI's development that promotes innovation across multiple domains.
- **Advancements in Cross-chain Functionality:** Implementing features like the ERC-20 converter bridge for AGIX tokens was crucial to create a more integrated and technically robust environment, supporting the diverse needs of an AGI-centric ecosystem.
- **Initiation of Second Generation AGI Architecture:** OpenCog Hyperon, an evolutionary leap in scalability and decentralizabilty building on the original OpenCog design, is formalized and development begun on the MeTTa AGI programming, interoperation language and the decentralized AtomSpace.

2023: Leadership Reinforcement and Breakthrough Innovations

- **Strategic Executive Hires:** The addition of key executive roles provided strong, experienced leadership on the complex, interdisciplinary path towards AGI, focusing on strategic initiatives and operational excellence.
- **Technological Milestones:** The Platform began an extensive refactoring and update to utilize and optimize for the latest blockchain and AI technologies.The Layer 3 Initiative initiates via partnerships and development to build a massive network of cross-chain opportunities to access decentralized AI systems technologies, such as MeTTa, a scalable cognitive language, and the Distributed AtomSpace, a universal ontology for AGI, marked significant progress towards laying down the cognitive and computational foundations required for the emergence of AGI.
- **Internet of Knowledge Initiative:** A design for critical tools to enable the integration of advanced LLMs with knowledge graphs and other decentralized data layers, advanced the capabilities and reach of these increasingly sought after tools, and the ability to utilize them on blockchain. These tools are a foundation for adoption of the Distributed AtomSpace and its integration into decentralized AGI via OpenCog Hyperon.
- **Decentralized Governance Next Steps:** The creation of a Decentralization Task Force to create a proposal for direct community governance over the SinguarltyNET protocol, as well as a pathway from current governance and administrative systems to a fully decentralized network operations, is critical to ensure that when AGI emerges it is wholly decentrally governed with no central ownership

For seven years, SingularityNET has labored to create a decentralized AGI platform that is accessible, beneficial for all, and ethical. Through strategic partnerships, technological advancements, and a commitment to community governance, SingularityNET aims to lead the way in realizing the transformative potential of AGI, to ensure that AGI serves the greater good of humanity.

Evolution of Fetch.AI

Fetch.ai, a pioneering artificial intelligence and blockchain project, embarked on its journey with the ambitious goal of driving the autonomy economy through the use of decentralized digital entities. Founded in 2017, Fetch.ai is focused on creating an open, tokenized, decentralized machine learning network to enable smart infrastructure built around a decentralized digital economy. Here is a closer look at the key milestones and developments of Fetch.ai from its inception to the end of 2023:

2017-2018: Founding and Vision

- **Foundation:** Fetch.ai was founded with the vision of integrating AI with blockchain technology to facilitate a decentralized digital economy, where autonomous agents can perform proactive tasks on behalf of individuals and businesses.
- **Initial Funding and Team Building:** Early stages focused on securing funding, assembling a team of experts in AI, blockchain, and economics, and laying the groundwork for the technological infrastructure.

2019: Token Launch and Early Research

- **Token Launch:** Fetch.ai launched in 2019, successfully raising funds to support its development. These early days marked a significant milestone capturing the interest of both the blockchain and AI communities.
- **Platform and Testnet Launch:** The team focused on the development of the core platform, including the launch of its testnet, which allowed for preliminary testing and refinement of the network's capabilities.
- **Layer-1 Research & Experiments:** The team researched and experimented with novel cryptographic techniques and a combination of DAG-based storage to create a new performant layer-1 blockchain network with a tps throughput in the range of 25k transactions.

2020: Mainnet Launch and Community Growth

- **AI Agents Research & Experiments:** Early versions of AI agent research resulted in the development of the Autonomous Economic Agent (AEA) framework. The AEA framework supported the creation of multi-agent systems where agents can negotiate with other AEA agents and record economic transactions on Fetch.ai's blockchain network. The AEA framework also supported the dynamic creation of agent protocols based on their objective functions. This marked a significant milestone in supporting multi-agent systems that use a blockchain as the underlying value store.
- **Mainnet Launch:** The team's primary objective was to expediently support the creation of a decentralized AI network that moved the focus from developing a performant layer-1 from the ground up to building a more modular layer-1 blockchain network. Modularity provided the flexibility to make the network more performant and apply learnings from the prior layer-1 research at a later stage. Fetch.ai team launched its mainnet using the Cosmos SDK, marking a crucial milestone in the project's development. The network's launch enabled the deployment of autonomous agents on the network, demonstrating the platform's capability to support complex AI functions. The mainnet launch was also a

key milestone in supporting other projects and protocols developed using Fetch's autonomous AI agent tech.

- **Native Token Launch:** The native FET token, which provides the additional utility of securing the Fetch.ai network, was launched alongside the launch of the Fetch.ai mainnet.
- **Partnerships and Collaborations:** Fetch.ai began forming strategic partnerships with enterprises, startups and other blockchain projects to explore use cases ranging from supply chain management to smart cities and energy distribution.

2021: Innovation and Ecosystem Expansion

- **Decentralized AI Model Creation Research & Experiments:** The Fetch.ai team researched collective and collaborative AI model creation and fine-tuning, where blockchain-based smart contracts enabled tracking and incentivizing contributions to model improvements. Furthermore, the team experimented with privacy-preserving techniques such as proxy re-encryption (PRE) and full homomorphic encryption (FHE) to prevent model weight leaks for use cases beyond collaborative AI model creation and fine-tuning. This led to initial development of a decentralized collective learning protocol - CoLearn.
- **Ecosystem Expansion:** The project continued to expand its ecosystem, attracting developers and partners to build on its mainnet. Alongside various German enterprises and startups, Fetch.ai joined the German consortium - Catena-X in a multi-year Web3 and AI innovation demonstration project funded by the German government..
- **Innovation Demonstrators:** At the IAA Mobility 2021 event, Fetch.ai, along with its partners - Bosch, Ocean Protocol and Datarella, showcased the use of Fetch.ai's agent tech and blockchain network to demonstrate the innovative use case of deep parking.
- **Ecosystem Feedback for Future Commercialization:** The team continued to work with its ecosystem partners by getting feedback on the AEA framework and CoLearn protocols to further develop its AI Agents, collective learning and layer-1 blockchain network tech stack. This feedback was used to steer the future product roadmap.

2022: Utility and Adoption

- **Early Stages of Commercialization:** Four years of research and launching the Fetch.ai mainnet laid the foundation for moving into the commercialization stage of Fetch.ai's AI agents and decentralized AI technology.
    - **Development of MicroAgents:** The team started research to create uAgents / µAgents (aka MicroAgents) using insights and feedback received from the community on its AEA framework. The primary objective was to create a new version of AEA that would provide an easy onramp for developers to move from developing using the Web2 tech stack to developing using Fetch.ai's Agent tech stack.
    - **Development of Axim Platform:** By utilizing the CoLearn protocol research, Fetch.ai developed the Axim platform to enable companies to develop AI/ML models collaboratively. Using Axim, companies could monetize the AI/ML models

by providing inferences and leveraging blockchain smart contracts to receive attribution correlated to contributions made in fine-tuning the AI/ML models.

- **Increased Adoption & Ecosystem Growth:** Fetch.ai saw increased adoption of its technology across various sectors, showcasing the practical utility of its autonomous agents in real-world applications such as logistics, finance, and IoT. MEXC, one of the biggest centralized exchanges in Asia, launched a $150M Fetch.ai ecosystem fund that funded new Fetch.ai ecosystem projects.
- **Community Governance:** The Fetch.ai team focused on community growth, including initiatives to involve the community in governance decisions that reflected its commitment to decentralization and community engagement. Specifically, the team launched the Fetch Improvement Proposal (FIP) process that any community member can leverage to initiate discussions and changes to the development of its tech stack, where a FIP can eventually result in an on-chain (on its blockchain network) governance proposal that gets voted on by the community. Governance proposals were also tied into use of the Fetch.ai's community funds to fund new community projects based on community voting.

2023: Strategic Focus and Future Directions

- **Product Releases:**
  - **Agentverse:** The Fetch.ai team released their agent hosting and agent marketplace platform - Agentverse. Agentverse supports a hosted version of agent developed using Fetch.ai's agent library - uAgent.
  - **AI Engine, DeltaV & Agent Marketplace:** The team also released API access to their AI Engine. AI Engine uses a mix of AI/ML multiple techniques, vector databases, and foundational LLM models from companies such as OpenAI, Meta, Mistral and Anthropic.Team also released its chat interface on top of the AI Engine called DeltaV, which let's the user submit objectives in natural language and using AI Engine it dynamically chains relevant agent functions (registered with AI Engine) together to fulfill user's objective. For every agent function interaction the developer/owner of the agent will earn money. The scope of the agent function can range from a typical Web2 microservice to more complex business logic. Agent functions typically wrap APIs that deliver AI/ML inferences or other regular APIs along with any other code for the business logic it supports.
- **Showcase Demonstrators for Agentic Task Executions:** The Fetch.ai team demonstrated text interfaces such as WhatsApp and Google Calendar interacting with the user's agent that is integrated with Fetch.ai's AI Engine to deliver dynamically chained agentic task execution that fulfilled the user's natural language-based objective. Use cases for agentic task execution included planning & booking travel, planning & scheduling household services, and an agent-based DEX in the Web3/DeFi domain.
- **Research and Development:** Continued investment in research and development emphasized the project's commitment to staying at the forefront of AI and blockchain innovation. This included fine tuning of foundational LLM models to deliver more deterministic responses for real-world uses cases supported by agentic task execution.

Fetch.ai has a track record of dedication to building a decentralized digital economy powered by AI, agents and blockchain technology. It has continuously pushed technological innovation, strategic partnerships, and community engagement, Fetch.ai is established as a leading platform for autonomous economic agents, contributing to the development of a smarter, more efficient digital future.

Evolution of Ocean Protocol

Ocean Protocol emerged as a groundbreaking project aiming to revolutionize data sharing and monetization within a secure, decentralized framework. Launched in 2017, its vision was to unlock the value of data, making it accessible for individuals, startups, and large enterprises alike to foster innovation and drive the advancement of AI and machine learning technologies. Here is a detailed journey of Ocean from its inception to the end of 2023, highlighting its strategic milestones, technological advancements, and its evolving ecosystem.

2017-2018: Inception and Foundation

- **Launch and Vision:** Ocean was founded with the mission to democratize data, providing a platform that allows data owners to share and monetize data while ensuring privacy and control. This initiative aimed to address the data accessibility challenge in AI and machine learning research.
- **Building the Foundation:** The initial years were dedicated to developing the protocol's foundation, focusing on creating a secure, blockchain-based platform for data sharing. This period involved extensive research and development, community engagement, and the establishment of key partnerships.

2019: Token Launch and Early Development

- **Token Launch:** Ocean entered the market in 2019, raising capital to fuel its development and expand its reach. The token launch was a crucial step to engage the broader crypto and tech communities with its vision.
- **Protocol and Marketplace Development:** The team focused on the technical development of the Ocean platform, including the marketplace for data sharing. This phase was crucial to set up the infrastructure necessary for users to publish, discover and consume data.

2020: Mainnet Launch and Ecosystem Expansion

- **Mainnet Launch:** The launch of Ocean's mainnet was a significant milestone, marking the readiness of the platform for real-world data exchange and monetization.
- **Partnerships and Integrations:** 2020 saw Ocean expanding its ecosystem through strategic partnerships and integrations with other blockchain projects, enterprises, and data providers. These collaborations enhanced the platform's utility and drove adoption.

2021: Growth and Innovation

- **Data Tokens and Ocean Market:** The introduction of data tokens revolutionized the way data is consumed and monetized, allowing data to be tokenized and traded. The Ocean Market platform facilitated this, providing a decentralized marketplace for data services.
- **Community and Governance Initiatives:** Ocean placed a strong emphasis on community engagement and decentralized governance, implementing mechanisms that allowed token holders to participate in decision-making processes.

2022: Adoption and Use Case Expansion

- **Increased Adoption Across Industries:** By 2022, Ocean witnessed increased adoption of its platform across various sectors, including healthcare, finance, and supply chain, demonstrating platform versatility and the universal need for secure data sharing.
- **Technology Enhancements:** Continuous technological advancements were made to improve the protocol's scalability, privacy features, and user experience to ensure the platform remained at the cutting edge of blockchain and data sharing technologies.

2023: Strategic Focus and Future Directions

- **Strategic Initiatives for Growth:** Ocean continued to announce strategic initiatives focused on sustainability, data privacy, and expansion into new markets, underlining its commitment to leveraging data for societal benefits.
- **Research and Development Focus:** The project maintained a strong emphasis on research and development,enabled the project to explore new ways to enhance data liquidity, privacy-preserving technologies, and AI-driven data analysis, ensuring Ocean's platform remains innovative and responsive to user needs.

Throughout its journey, Ocean has remained steadfast in its mission to unlock the value of data. Through its platform, Ocean has facilitated secure, transparent, and decentralized data sharing and monetization, and has contributed significantly to the fields of AI, machine learning, and beyond. Ocean has not only provided a foundation for data to be shared and monetized efficiently but paved the way for a more open and equitable data economy.

Disclaimer:

This document is intended for informational purposes only and is not to be construed as financial advice, an endorsement, or a recommendation to engage in any specific transactions, including but not limited to the purchase, sale, or holding of any crypto-assets or utility tokens mentioned herein. The content provided in this document is based on information available at the time of writing and may be subject to change without notice. The crypto-assets and utility tokens discussed in this document are not to be considered as financial instruments, securities, or any form of investment product. Their issuance, trading, and potential utilities are subject to the regulatory frameworks specifically governing crypto-assets and utility tokens, which may vary by jurisdiction. Potential users should be aware that the regulatory landscape concerning crypto-assets and utility tokens is evolving, and they should conduct their own due diligence and

consult with legal, financial, and tax experts before making any decisions. The creators of this document, its affiliates, and contributors make no representations or warranties, expressed or implied, regarding the accuracy, completeness, or reliability of the information contained herein. By accessing this document, you acknowledge and agree that any reliance on or use of the information provided shall be at your sole risk. The creators of this document shall not be liable for any direct, indirect, incidental, punitive, or consequential damages of any kind whatsoever with respect to the use of this document.