Cirus Foundation
Empowering the Ownership Economy

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Abstract

The Cirus Foundation is a multi-layered ecosystem designed to accelerate the ownership economy by leveraging the latest advancements in hardware, software and a tokenized economy. Enabling individuals to enter this new era by owning, managing and monetizing their largest digital commodity, Data.

Cirus addresses three main paradigm shifts: Accessibility in the Digital Era, BigData and the key to Ownership, Decentralization and WEB3

The Cirus Device is a revolutionary solution, designed to address the accessibility challenge by serving as a replacement for a standard home internet router. Plugging it in gives the user instant access to a cryptocurrency wallet, as well as the ability to leverage the Cirus Network for control and monetization of their data. This dual approach acts as a one-step entry point to the Ownership Economy.

The Cirus Core Platform is a mix of modern Ad-Tech and Blockchain technology, giving users the keys to their own data. This is the building block to a novel form of ownership and the pathway to a dNFT - a data NFT - developed over time with user profiled data. This platform collects, organizes and profiles user data from the Cirus device, while leaving absolute control over data privacy in the hands of the user. Once the user shares their data with the platform from the Data Key Wallet, it is processed by deep learning algorithms within a Data Management Platform ("DMP"), before being monetized through multiple channels. providing control as well as granularity of data, and ultimately enabling remittance of funds to individual users.

The Cirus Confluence Network is the value generating layer of the ecosystem, establishing a robust decentralized network to support the hardware and software components. The network serves 4 main blockchain functions: identification, security, fractionalization, and remittance for data assets. The CIRUS Token provides authentication to the Cirus Device, serves as a settlement currency, and acts as a bridge for value flowing in and out of the ecosystem.

The Network will be supported by virtual validator nodes at first, then by the routers themselves validating the network. Validators will be rewarded with the Cirus Token.

The Cirus Foundation has partnered with Cubera Technologies, with Cubera functioning as the commercial arm and deploying the device into households. As of April 2021, over

4,000 units have been deployed and are currently conducting sandbox testing. The Device has 47 intellectual patents processing, and further development is currently underway. Cubera has been contracted to fulfill rollouts with major internet service providers.

Cirus will enable the ownership economy and serve as the conduit for access into the digital realm, with big data as the ticket. This enables paradigm shifts in accessibility, relinquishing power to the owner and in decentralized ecosystems.

1 Introduction

The Cirus Foundation is the not-for-profit core contributor to the Cirus Ecosystem, comprising of: - The Cirus Device, Cirus Core Platform and The Cirus Confluence Network. All three components interlink, forming a robust system that accomplishes three major paradigm shifts in the way people connect to, earn from, and contribute to the ownership economy. Each paradigm shift will utilize Big Data as the key to transcend the current Web 2.0 economy.

1.1 The Ownership Economy

The ownership economy in its present form is an evolution of the shared economy. This new economy builds on economic rewards from user participation, network effects, computing resources, community and access to financial freedoms debased from traditional models. The ownership economy gives people rights, sharing freedoms, monetization streams and access through protocols to truly determine how they wish to participate, rather than a rigid form set by centralized systems. It means that the owner –

the user - will determine how novel rewards, platform governance, or new forms of social capital will shape the future of user generated value.

1.2   Big Data & The Next Generation of the Ownership Economy

In the digital economy, Big Data has surfaced as the largest commodity which, in its purest form, can be fractionalized, identified, secured, traded and monetized in the most diverse ways. Blockchain enables all four of these avenues and activates the power of the ownership economy, pushing toward its next destination: Mainstream Adoption.

As individuals develop a sense of ownership, so does their demand to create fair and equitable relationships. Data is a commodity that is most proprietary to the owner, yet they have hardly identified, much less been able to monetize it to date.

2   Paradigm Shifts in The Ownership Economy

In this whitepaper, the core thesis will be focused on the following three paradigm shifts and how Big Data is the key to enabling such shifts.

2.1   Paradigm 1: Accessibility in the Digital Era Shifting Learned Behaviour

One of the key advantages of blockchain technology is the removal of intermediaries and supporting financial freedoms for individuals. While many advances have been made toward that end, without ease of access, mass adoption cannot occur. Accessibility has remained the greatest barrier to cryptocurrency adoption and the advancement of a true decentralized marketplace.

There has yet to be a natural on-ramp that clears the accessibility hurdle, while gradually evolving learned behaviour to adopt cryptocurrency. Making the Digital Economy accessible and eliminating current barriers to entry that impede mass-market adoption. Cirus will create an accessible onramp to the ownership economy that stimulates a natural change in learned behaviour and accelerates adoption.

2.2   Paradigm 2: Big Data, The Key to Ownership

The advent of the digital era has brought with it an unprecedented generation of new value. New assets and commodities have generated incredible wealth for those able to

create, extract, store and trade them. The most substantial commodity to emerge from this era is Big Data.

As it stands though, the largest players in Big Data are intermediaries, adding friction to ecosystems while often treating individuals solely as resources to be exploited. Custodianship of user data has remained with the companies that collect it. For the most part, individuals are being ignored when the value their data generates is distributed - they've been mostly removed from the upside of this digital commodity. The key to individual participation in the Digital Economy will be ownership and control of their own Data. Changing the current approach to Big Data from monopolization to decentralization and releasing value to the user.

Cirus will create a high-quality Data-Asset and relinquish value of that asset to its owner: The User. This asset may be their first digital asset in the cryptoverse.

2.3 Paradigm 3: Decentralization & WEB3

As the world works through this age of digital transformation, a massive shift in trajectory is also upon us. Since the start of the global pandemic, society has undergone a rapid acceleration in the adoption of all things digital. For the vast majority of the population though, the ability to transact in a digital form, without intermediaries or price gouging, has not occurred. Even as users claim ownership of their previously untapped value, they still lack the ability to monetize that value through digital gateways and close the loop of direct value exchange. Facilitating a frictionless ecosystem that empowers the users to participate in the Ownership Economy and transact in ways never seen before

Cirus will create a trust-less, secure and decentralized network for people to easily transact with others across the world using their Digital Key(s), supported by a dynamic NFT.

Each of these challenges; Accessibility, Ownership and Decentralization will require a change in established norms before they can be fully realized. The solution requires a multi-faceted approach, combining Hardware, Traditional Software, Blockchain Technology and a Tokenized Ecosystem - This is the Cirus approach. The Cirus Foundation will be on the bleeding edge, extracting data asset from the new digital economy and relinquishing it to the user. Ultimately, this data asset will be a frictionless entry point for the masses to engage with cryptocurrencies.

3   The Cirus

Paradigm shift 1: Accessibility in the Digital Era - Shifting Learned Behaviour

Shifting learned behaviour is an involved process and requires a solid connection to existing concepts. Hardware is one of the most familiar concepts to date as the internet, connectivity, and transactions all contain a physical element.

Fig.1: The Comprehensive In-Home Gateway to the Ownership Economy

3.1   Overview

The Cirus device, powered by Cubera Technologies ("CT"), is a state-of-the-art solution housing an IoT sensory hub, blockchain validator node, internet router and collection tool

to power the data platform. In development since 2018, it was created to unlock the user's most valuable digital asset - Data. The Cirus device serves as a replacement for a standard home internet router, while enabling interaction with the Cirus Core Platform and Confluence Network.

Starting with the familiar - plug and play - the user simply replaces their traditional router with the Cirus and connects to the internet. Through the user's Data Key Wallet, the Cirus device then allows users to set permissions and pass-throughs for data collection. The data collected is rich and granular in nature and serves the Cirus Core platform. Through this platform, the data is passed through a unique filtration process before it is composited into a monetizable data asset. The data asset will flow through the Cirus Network enabling the user to monetize their asset in unprecedented ways through traditional and decentralized avenues.

With the Cirus device, no significant change of behaviour is required from the user. They simply connect to the internet and are automatically empowered. This is the first step in unlocking their data asset.
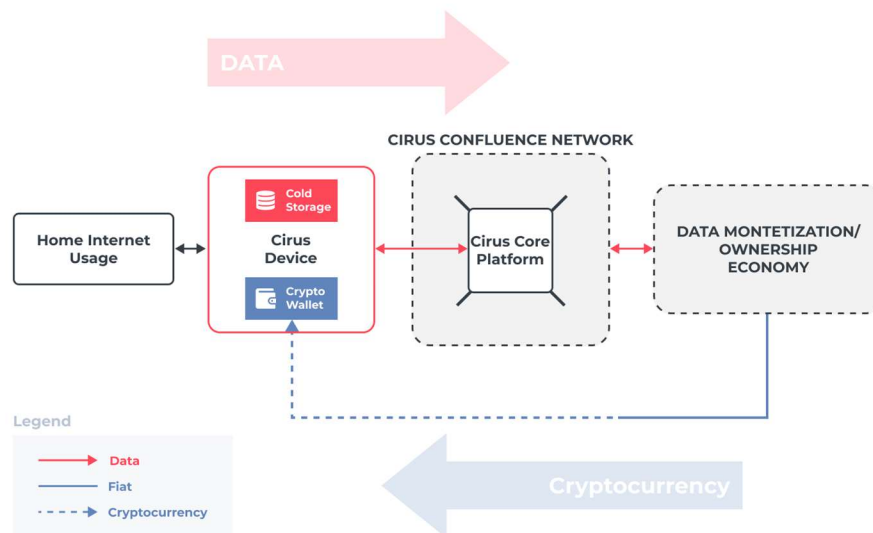
Fig. 2: Cirus Device Data Flow

3.2 Hardware Specifications

The Cirus device currently has 47 international patents pending, powering a robust and expanding feature set, with capabilities far above and beyond a standard internet router, including the following:

- Cold Storage capability
- Node Mining capability
- Ease of use and configurability through mobile app/web app/cloud backup
- Advanced parental control, guest networks, media monitoring
- Smart SSID based Bandwidth Controls - Usage alerts / limits for Improved productivity & efficiency
- Integrated IoT platform
- Power back-up. Up to 4 hours per module
- Provisions to facilitate OTT (Over-the-top) features that ISP's may want to offer.
- Integrated Smart Storage accessible from connected devices with optional remote access
- Integrated Data Analytics for contextual sessions, pre-allocation of bandwidth and bandwidth throttling
- Smart Bandwidth controls

A full breakdown of the Cirus device feature set and technical Specifications can be found in Appendix A.

3.3 Current Device Deployments

Version 1 of the Cirus device has already been deployed into over four thousand homes for sandbox testing, where it is collecting key data. These insights will lead to improved functionality and support ongoing development of the deep learning algorithms.

4 Cirus Core Platform

Paradigm Shift 2: Big Data, the Key to Ownership

The Cirus Core Platform is the key to coalescing users' data into a valuable asset while allowing user control over how that commodity is collected, shared and monetized.

4.1 Traditional Data Asset

Insights generated from clean, reliably sourced data are the holy grail of the big-data ecosystem and as such, the data that fuels these insights are incredibly valuable.

In the current landscape of extraction, there are multiple data quality issues like incomplete data, tainted data, stale data, niche-only data and others. In the context of this limited data extraction, the true potential of Cirus is the ability to connect with the user and provide the richest first-party data asset. In the current framework, Data Consumers (Marketers, Advertisers, Market Research, Analytics Companies, AI etc) source Data from a complex network of first, second and third party data sources. The current data landscape has either:

1. First party data-sources providing data on a narrow range of verticals / dimensions with limited quality, timeliness and auditability.

2. Second or third party sources offering a wider portfolio where the granularity is lost and where timeliness and auditability are even lower.

3. Platform companies like Google and Facebook that help locate the right audience, but are expensive and share very minimal data and insights.

4.2 High Quality Data Asset

Once the Cirus device is installed, opt-in permission is received from the user by signing an End User License Agreement ("EULA") transparently outlining the terms of use of any data. Users will also have control over what data is collected, how it is used and can make changes as desired. Cirus will organize approved data at the home-level from all browsers, smart devices and IoT devices and encapsulate it into a "HQ Data Asset" - more readily monetizable.

Cirus organizes user opt-in data, first at the router level and then at the application level (Core Platform). From the router, all websites and subsites that the user visits contribute to building a First Party Data Profile (FPDP). Furthermore, with universal cookies, the FPDP will contain the data from browsing activity which is equivalent to what the user is searching for and what inputs they are providing on the page. The FPDP also contains the relevant app data, which ISPs are currently unable to use.

The Cirus FPDP is far superior to the current offerings which are stitched together from limited first, second and third-party data sources collected by aggregators and packaged as the expensive ad targeting that companies like Google and Facebook offer.

The Cirus FPDP offers:

- Real-time device-level data granularity per home and per household member
- Universal cookies offering deeper browsing insights
- Multiple SSID identifiable to each family member
- Location details of the home
- IoT data from the home
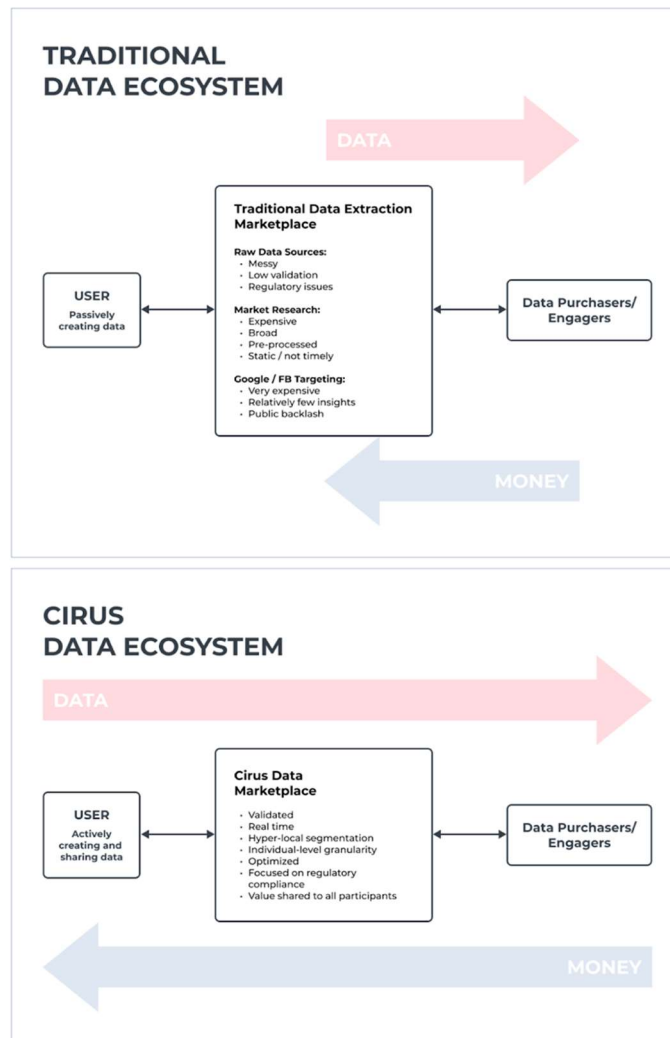
Fig. 3: Traditional Vs. Cirus Data Ecosystem

Cirus data is comprehensive and first party. It is the confluence of all internet activities inside the home and completely in alignment with privacy policies and regulations. It provides insights from different dimensions and diverse sources in real-time, providing the richest first party data source for the most powerful Insights & Analytics across the data-ecosystem.

This model is the next big leap in data monetization. A gold-standard of data that is unprecedented and new to the market, A new high-quality digital asset.

Sourcing the richest first-party data is the second step in the model and sets the stage for tokenization, which enables true ownership of the data-asset, granting access to novel economic rewards, platform governance and new forms of social capital within the ownership economy.

4.3   Cirus Core Platform Architecture
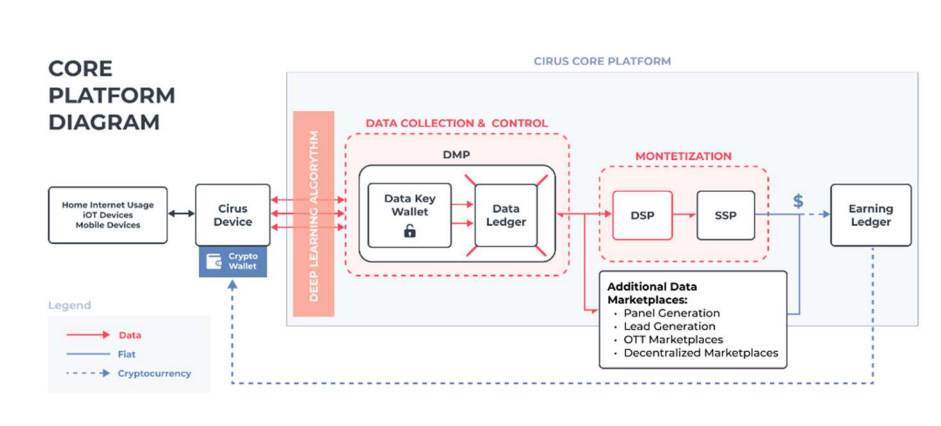
Fig. 4: Data Monetization Flow

4.3.1   DMP/DSP

Data organized through the Cirus device is securely handled and managed by the hybrid DMP – DSP platform (Data Management Platform - Demand Side Platform) which together form the Cirus Core Platform working synergistically to continuously monetize the data asset through multiple channels.

The Cirus Core Platform is a unique hybrid, which offers an industry-leading Data Management Platform ("DMP"). The DMP processes user permissions, privacy, transparency and data optimization, the results of which feed a Demand Side Platform ("DSP"). The DSP is powered by deep-learning algorithms to optimally organize data and maximize accuracy of insights as well as connect to "real-time bidding" with existing advertiser Sell Side Platforms ("SSP") and other External Markets. The DSP will also form the base for Cirus Insights which shall leverage this superior dataset to market to engagers, including consumer packaged goods companies (CPG), telecom services, financial services, market research firms and consulting companies.

4.3.2   Data Management Platform (DMP)

The Data Management Platform ("DMP") will collect user-specific insights across different data sources and filter through an extract, transform and loading process (depicted in the diagram below). Once this data is filtered, training weights may be applied by Federated Machine Learning customized to form shareable user behaviour patterns and user-specific interests. These patterns and insights create the data asset model. The user's data will be accessed, and relevant data connected to this data asset model will then be segmented, stored and issued a hash (data key) that represents the user generated data cryptographically stored. The DMP offers a location for marketers to access and manage data to create target segments and help build an audience for digital advertising and engagement campaigns. It employs deep machine learning algorithms to identify and perform auto-segmentation of the audience.
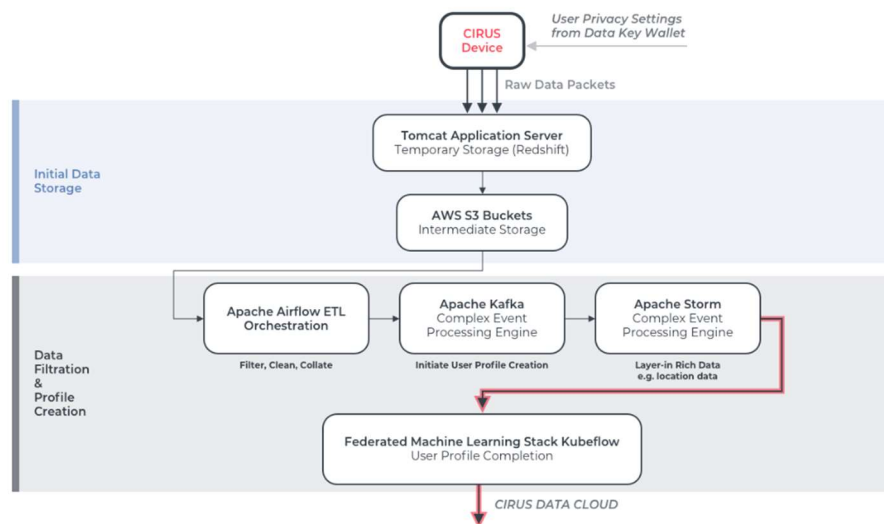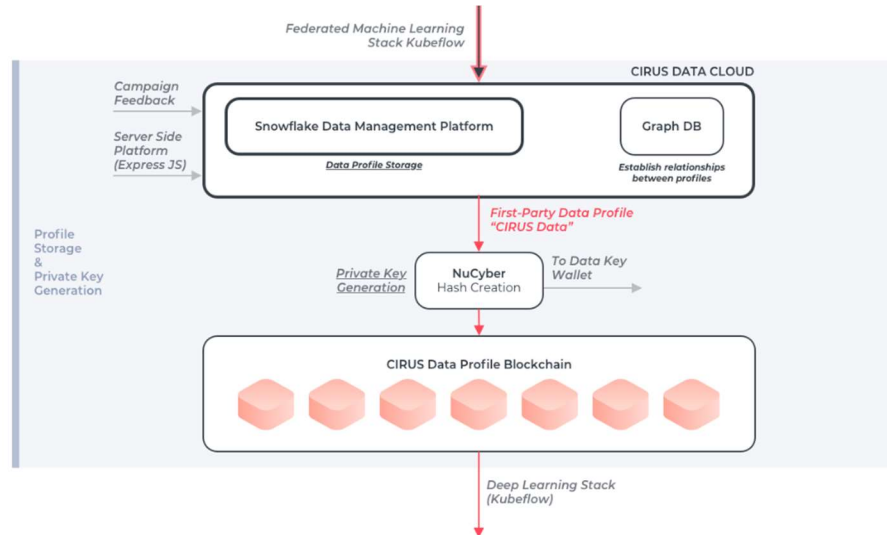
Fig.5: DMP Architectural Overview

4.3.3   Data Ledger

A major component within the DMP is the Data Ledger. This ledger creates an audit trail, enabling Cirus to track and determine how each specific block of data has been used. The privacy settings chosen by the Cirus device users are captured in the ledger enabling the level of granularity, auditability and traceability that makes Cirus generated data unique. This functionality also enables fractionalization of Ad revenues to specific users once data has been monetized.

4.3.4   Deep Learning

Deep Learning is generally considered to be an essential ingredient when doing any data analysis or modelling. By using advanced deep learning techniques with our new set of algorithms for relationship, location, age correlations and IoT data, we are able to create an unprecedented way for Engagers and Users to connect in a trusted, transparent and valuable manner.

With the Cirus platform it is possible to gain insights of previously inaccessible nuances of engaged User behavior. This deeper understanding of a user's hidden structures like buying patterns, decision making patterns, primary influencers and socio-physiological influences enables effective targeting for Engagers and ensures relevant content for users, resulting in a win-win for both parties.
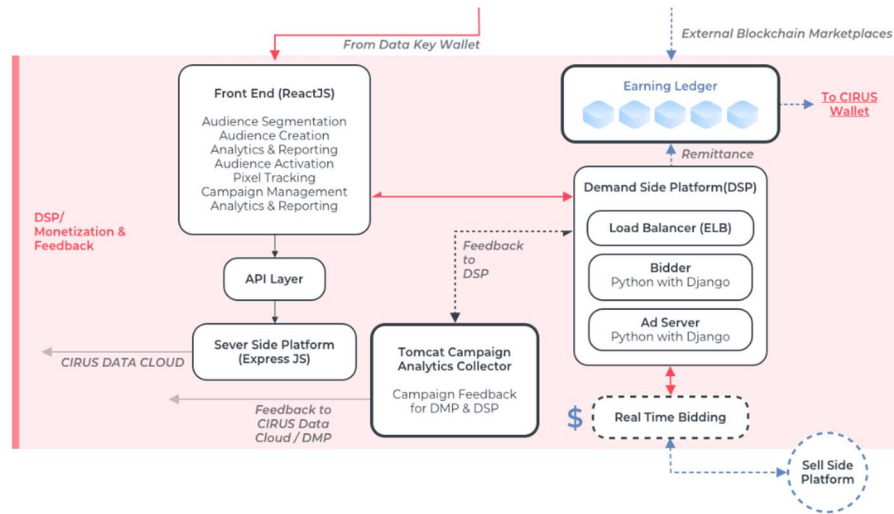
4.3.5   Data Key Wallet

The Data Key Wallet is the access point for user privacy, control and customization. It gives the user the ability to interact with the Data Ledger and stores the hashes for all data captured by the platform. Users can customize the amount and type of data to be made available for analysis and monetization through the Core Platform. Through this platform, the user is granted true control of their Data Asset, with the ability to share and monetize as much, or as little of their own data as desired.

The integrated Data Ledger and Data Key Wallet bring auditability, provenance, user control, and storage of the data keys (hashes) to access one's library of data clustered on the DMP. Over time, this forms the basis to tie the data ledger directly to a user's profile and gives rise to a novel concept called, dNFT (Ref. section 5).

4.4   Demand Side Platform (DSP)

The Data Management Platform will pass authorized audience segment data to the Demand Side Platform ("DSP") for Ad targeting, then pull in performance results of the campaigns for those segments. It will also analyze which audiences are providing more, or less value and feed that information back to the DMP for further processing. The DSP will also use this information to optimize ongoing campaign bidding and targeting. The analytics on publishing data is captured in the DSP. User-specific data earnings are synthesized from the total earnings generated at this layer and stored in the Earning Ledger.

Fig. 6: DSP Platform Overview

4.4.1   Earning Ledger

The Earning Ledger records all revenues earned through monetization activities and links them to specific pieces of Data made available to the platform through the Data Ledger / Data Key Wallet. Each bit of revenue will therefore be linked to the users generating it and will ultimately be deposited into the user's Crypto Wallet (Cirus Wallet).

5   Data Non-Fungible Token (dNFT)

A dNFT is a dynamic NFT that has two core functions: 1) Compound Data, represents the master key to the Data Wallet, which contains the collection of keys to data assets compounded over a period of time. 2) User Contextual Data, maps user profiling data and the basis for identifying value generation. This may serve to create value driven privileges in different ecosystems, a form of novel economic reward.

5.1   Compound Data

The Data Key Wallet stores hashes (keys) that represent blocks of data compiled over time and stored on the DMP, this data is considered filtered and useful data built by the training algorithms. At times, this block of data may transport to the DSP-SSP to generate real-world value, however in some cases it may be only useful after a period of time or at a future event. Considering the inconsequential nature of the data, the user may find

purpose or have a unique value creation event at a different time based on compounding datasets. The NFT in this case acts as the access card to open the user's data library of valuable information that may be shared, and monetized in many ways, not currently available through traditional ad-tech platforms.

5.2 User Contextual Data

A user's contextual data creates a valuable profile of the user and their attributes within an ecosystem. The major constraint thus far, is that this type of generated data is not necessarily transferable to another company or ecosystem and may take months or years to regenerate there.

An NFT that maps a specific user behaviour in one ecosystem (an 'Ecosystem Credit') and can transfer this to another ecosystem provides a multitude of benefits not currently available in traditional platforms. An NFT would be the ideal asset class that stores Unique Contextual User Data (UCUD) and creates the ability to flow through to an entirely new ecosystem as a Unique Valued Ecosystem Participant (UVEP).

Through the accumulation of more user data over time, the value of the NFT would increase vastly as a more detailed user profile is compiled. This increase in value over time rewards user participation in the ecosystem and encourages long-term engagement, rather than short term value extraction. This could form the basis of social capital and novel economic rewards in the future.

6 Data Markets

The primary monetization avenue for Cirus Data will be through the traditional data marketplaces. Additional marketplaces will be utilized, including decentralized markets, creating constantly expanding venues for users to monetize their data. A piece of data can be used simultaneously, through multiple channels at a time, greatly expanding its revenue generating potential.

6.1 Traditional Markets

The Primary make-up of traditional markets would include Ad-Tech Sell-Side Platforms ("SSP"), Lead Generation and Panel Generation

6.1.1 Lead Generation

The Cirus Core Platform captures purchase patterns of users and can identify when a user goes to the web with an interest in buying a specific product or service. This data is then qualified, verified and added as a "Lead" to a Leads Database categorized by product

segment. All uploaded leads are protected by privacy guidelines. Businesses can register their interests with the platform, allowing the matching algorithm to match the lead to businesses in real-time. Businesses can then acquire the lead by paying Cirus for the qualified data. Cirus will then remit a portion of the data back to the user's wallet.

6.1.2   Panel Generation

Cirus curates the user data and forms cohorts based on the demographics, culture, sex, financial status, health status and allows marketing agencies to make panels based on these factors. Marketing agencies need access to a diversified pool of individuals with a variety of attributes and create panels using various sampling techniques. Cirus offers a platform for constructing panel pools by helping create the panel and running surveys and campaigns on behalf of the marketing agencies. The Marketing Agencies pay Cirus for the user engagement.

6.2   Decentralized Data Markets

As the store of data is already inscribed on a decentralized ledger, the ability to transact in this form opens gateways to other blockchain-enabled marketplaces. The interaction between these marketplaces allows for direct interchange and adds additional layers of monetization regardless of whether a piece of data is already being monetized through the traditional channels. Oceans Protocol or Big Data Protocol are such marketplaces that may enable direct exchange of data assets with the Cirus Network. Additionally, Blockchain-based browsers may enact ways to support user sharing of data via a direct monetized strategy, separate from ad-revenue collection.
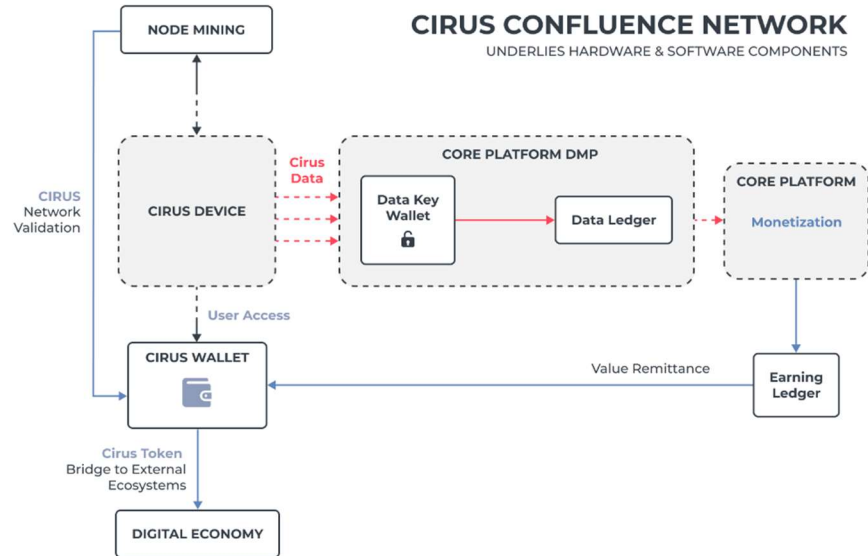
7   Cirus Confluence Network

Paradigm 3: Decentralization & WEB3

Confluence means a flowing-together. In a literal sense, it's about rivers, but it more often signifies a coming together of components. If Big Data is the Oil - The Cirus Confluence Network is the pipe system. Now that the User is on-board and owns their Data Asset, they require a trust-less, secure and frictionless network to engage with the Ownership Economy.

Removing friction from the data asset can enhance its liquidity and increase its perceived value. Creating a data token which represents the user's encrypted data asset along with remittance layers to settle the revenue creation to the user is the final step in a complex value-driven ecosystem.

The Cirus Confluence Network adds immense functionality to the platform through a Tokenized Ecosystem. Bringing massive amounts of leverage to the Hardware and Traditional Software components, the Confluence Network ultimately nets more than the sum of the individual parts.

Fig. 7: Cirus Confluence Network Overview

7.1   Blockchain Based Functions

The Network serves as the underlaying protocol for the platform and enables the following enhancements:

7.1.1   Identification

Identity management allows authenticity and traceability (provenance) of the data clusters (blocks) to the specific user within the Data Ledger. The identification and sorting of the packets of data also act as an anti-spam measurement, ensuring that the nature of Data is traceable to a source creator and not a spam system attempting to flood the network.

7.1.2   Storage

Each cluster of data is securely optimized and stored in a cloud-based platform. Issuing a hash for each block ensures the integrity of the data as it will be tamper-proof and immutable. Each hash is created via NuCypher and in later stages of development, we will further investigate the use of decentralized data storage solutions.

7.1.3   Fractionalization

Each cluster of Data that is stored on the blockchain will pinpoint its exact ownership source with the highest level of granularity. More importantly, it will designate the exact amount of value that was created from each dataset being sold, based on the pro-rata amount of data contributed by each user. Each amount will be ledgered against the specific blockchain addresses on the Earning Ledger and paid to the user through the CirusWallet.

7.1.4   Payments

Each segment of generated revenue is fractionalized and designated to specific user wallets based on contribution. Remittance will take the form of a micro-payment sent via a cryptocurrency. This transaction will happen instantaneously, with little to no loss in value and without clunky backend supportive software, book-keeping or fiat transmission routes.

Additionally, users may engage in real-time compensation feeds not currently available with traditional infrastructure. Real-time compensation feeds may be sparked from lead or content generation events promoted directly to the user through the network. This is a novel way to engage with and compensate the User or publisher based on a demand driven event.

7.1.5   Security

Node validation on the network confirms the data transactions are accurate and supports transparency of how the network is deriving value. The node serves to maintain the blockchain record, create a transparent auditing system and allows users to participate in supporting this layer. The validators will be incentivized based on specific node performance metrics.

7.2   Network Selection

Initially the network protocol will be built on Ethereum Layer2 standards.
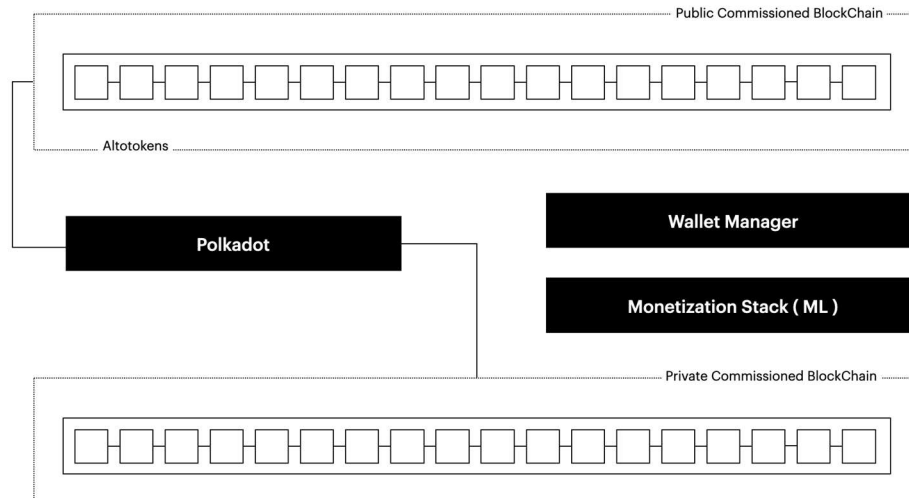
Fig. 8: Cirus Confluence Network System Design

8   Token Dynamics

The CIRUS Token, will be the native currency of the Network and external platform interactions.

8.1   CIRUS Token Utility

Token Utility is divided into the following three main categories:

8.1.1   Authentication

25 CIRUS Tokens will be required to activate each Cirus device and its subsequent capabilities, such as node validation. This is part of an anti-spam mechanism, ensuring activated devices are connected to an active household and user account. Once activation occurs, 50% of these tokens are removed from open-market circulation and locked to the respective device. The other 50% is then added to a liquidity pool for node rewards, essentially acting as a performance bonus to the nodes supporting the network. Every 12 months, a

halving event will occur for the number of tokens required to activate a Cirus Device.

The total value of tokens required to activate the Cirus device will be capped at USD $25.00, so devices will be activated by either a maximum number of tokens, or maximum value of tokens. The dollar value limit does not change with the 12-month halving event.

8.1.2   Remittance

Value transmitted on the Cirus Network may be in the form of the CIRUS token serving as the settlement currency for data revenues. The system may be agnostic to other forms of crypto remittance such as stable currencies.

8.1.3   Bridge & Transactions

CIRUS will be the export token for all internal value generation layers, acting as a bridge to external payment rails. All value entering or exiting the ecosystem will be subject to a nominal transaction fee, paid in CIRUS.

8.1.4   Network Validation

CIRUS will be the reward token granted to users supporting the CIRUS Confluence Network by activating and running a Virtual Data Node (initially), or mining with the Cirus Device itself. Rewards for Validator Nodes will be deposited into a Mining Liquidity Pool and shared among the participating nodes. Total node rewards will be halved every 12 months (not including the bonus rewards from Cirus Device activations).

8.2   Token Ecosystem

To reiterate the utility functions, the token model works as follows:

Remittances to user wallets are performed using CIRUS as a bridge. A nominal transaction fee will be collected when funds are remitted. Exchanging CIRUS for external tokens will also incur the same nominal fee.

Initially, whenever a new Cirus device is deployed, up to 25 CIRUS tokens will be required to activate the device. Every 12 months, a halving event will occur for the maximum number of tokens required to activate a Cirus Device.

50% of the tokens required for device activation will be sourced from the open market and locked indefinitely. The second 50% will be moved from the Cirus Ecosystem Development Fund to initially validate the router, then after a period of time, made available as a mining reward for users supporting the network by running nodes.
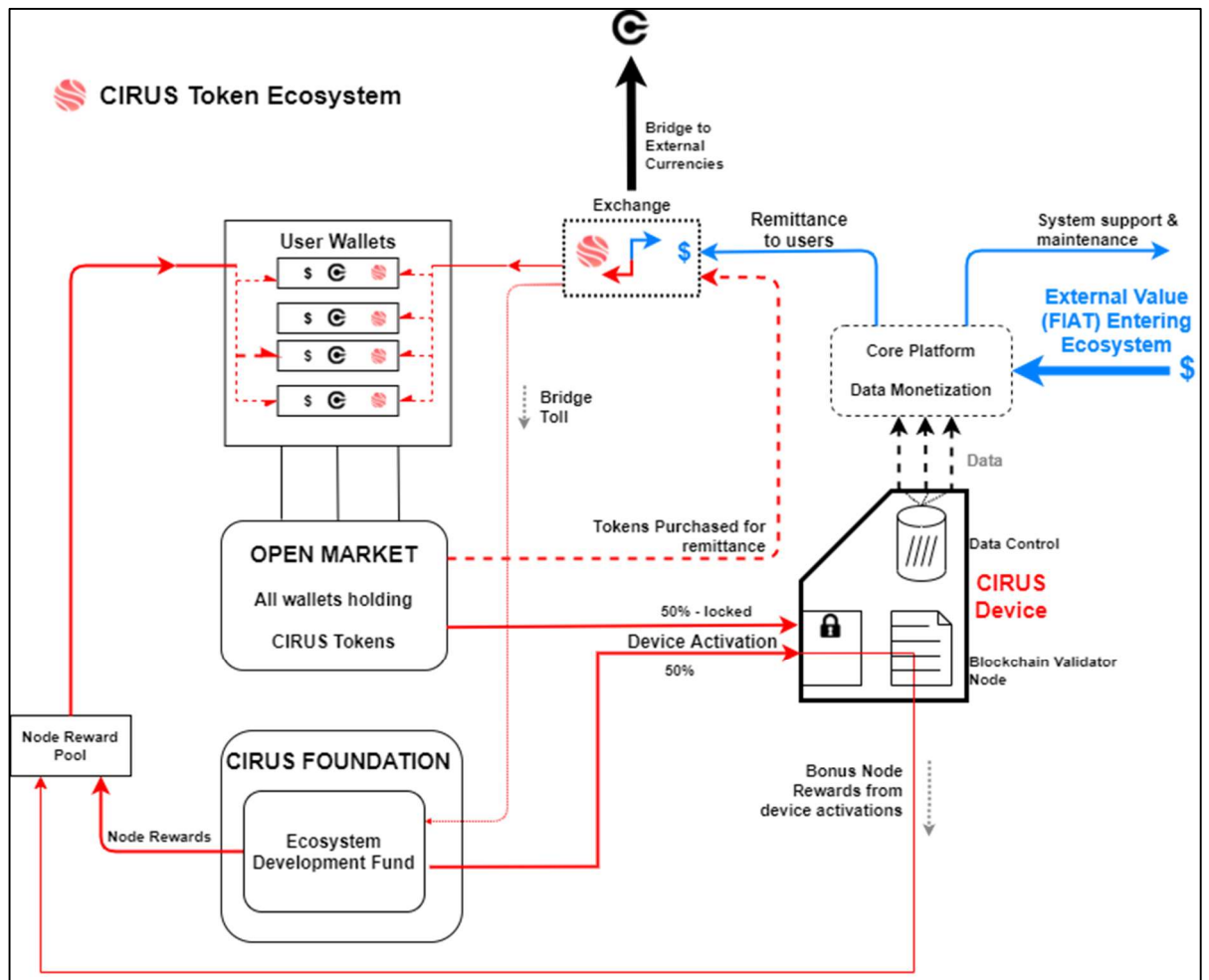

Fig. 9: Token model Ecosystem Flow

8.3   Token Metrics

Total Fixed Supply of the CIRUS token is 250,000,000 and is broken down as follows:

Category	Amount	Percentage
Ecosystem Development	124,886,753	50
Team, Advisors, Operations	61,250,000	24.5
Token Sale	37,863,247	15
Partnerships & Grants	6,250,000	2.5
Liquidity / Reserve	19,750,000	8

Fig. 10: Token Metrics Breakdown

9   Conclusion

The Cirus Foundation addresses the complex solutions faced in today's world - commoditization of digital assets, transfer and trading. As the Digital Era Emerges, Big Data may be the first asset class that draws the masses into crypto without having to change learned behaviour. The Cirus Device, Core Platform and Confluence Network work in synergy to provide a robust 3-prong solution in connecting the owner to their data asset in ways never seen before. This emerging technology will empower the ownership economy and give people their rightful place in the free-flow of the world's most valuable digital asset - Data.

Appendix

Appendix A: Cirus Device Specifications

Cirus Device 'gen1' is a mining router with real hash rate calculation ability by its 4x CPUs. It is equipped with a top-class Qualcomm four-core special network processor chip, three gigabit wired network access interfaces and a 1200Mbps dual-band wireless network to support 802.11ac wave2 which have a faster speed and lower latency network experience. It adopts Mesh technology independently, realizing a distributed router and really achieving whole house coverage.

- It uses Qualcomm professional wireless chip to offer full wireless coverage by its 5dBi omnidirectional high gain antenna and easily setup wireless environment in a large house.
- anti-interference and ant-jamming technique
- Enterprise-level software platform, creating a secure home network;
- The intelligent bandwidth allocation technology provides you with excellent Internet experience;
- Real hash rate of script algorithm ability up to 10.12MH/S;
- Ultra-low power consumption
- Supports Mesh technology to offer a distributed routing;ν
- Supports two gigabit wired LAN ports and one gigabit wired WAN port;νν
- Supports 2.4G and 5G dual-band wireless LAN;ν
- Supports Web configuration page;ν
- Supports on-key factory reset;ν
- Support 10/100/1000Mbps wired ports;ν
- Supports static routing setup;
- Supports traffic service and can limit rate according to the interface;
- Supports the dynamic domain name (DDNS) and port forwarding;
- Supports multiple wifi SSIDs;
- Supports multiple wireless encryption modes;
- Supports mode switching and SIM message display;
- Supports remote upgrade and remote monitoring;
- Supports blacklist and whitelist for access control;
- Supports IP rate limit and MAC rate limit;

- Supports the built-in firewall, preventing attack, Wi-Fi squatter, cracking and virus

Hardware Specification of Product		
Item		**Description**
Product Name	CUBERA ORACLE GEN1	Blockchain Router
Wired Port	Wired WAN port	WAN * 1
	Wired LAN port	LAN * 2
	Port rate	10/100/1000Mbps，Auto MDI/MDIX
WIFI	WIFI WLAN	Support 802.11a/b/g/n/ac
	Antenna	Built-in 5dBi antenna * 4
	Frequency range	802.11a/n/ac:5.035GHz-5.825GHz
	Modulation technique	OFDM:BPSK@6/9Mbps QPSK@12/18Mbps 16-QAM@24/36Mbps 64-QAM@48/54Mbps DSSS:DBPSK@1Mbps DQPSK@2Mbps CCK@5.5/11Mbps MIMO-OFDM：BPSK,QPSK,16QAM、64QAM、128QAM、256QAM
	Transmitting power	5.8GHz：20dB 2.4GHz：23dB
	Coverage range	200m in open field
Hash rate board	Chip	Four ASIC professional mining chip
	Hash rate	10.12MHP/S
	Algorithm	SCRYPT
	Power consumption	10W
	Heat dissipation	Fan

buttons	Reset	One-key factory reset
	WPS	One-key encryption connection
	Power button	Turn on and off power supply
Indicator	Status indicator	Indicator lamp: product status indicator lamp
Dimensions	Dimensions	342*252*90mm
Temperature	Operating temperature	-0℃~ +45℃
	Storage temperature	-40℃~ +70℃
Humidity	Operating humidity	10%~90%
	Storage humidity	5%~90%
Power supply	Supply voltage	DC12V/4.0A
Others	Product certification	N/A

Software Specification of Product		
Function		Description
Routing Mode	AP	LAN, WAN and WiFi bridge modes
	ROUTER	NAT mode
	CLIENT	LAN and WAN bridge modes, wherein WiFi is connected to AP as STA
	REPEATER	WiFi is connected to AP as STA, LAN, WAN and WiFi are simultaneously used as bridge modes
WAN access	pppoe dial-up access mode	Supported
	DHCP mode	Supported
	Static address	Supported
	MAC address cloning	Supported
	Access Concentrator	Supported
	Service Name	Supported
	network monitoring	Supported
	MTU	Supported
	Custom DNS	Supported
	Supporting QOS	Intelligent QOS function, divide dynamic adjusting strategy by priority

	Supporting upnp	Supported
	Supporting dynamic DNS	Supported
Wireless functions	Wireless switch	Supported
	Wireless SSID	Supported
	Wireless channel	Supporting 1~14,36~48 and 149~165
	Wireless transmitting power adjustment	Supported
	Multi-SSID	Supported
	CLIENT mode	WiFi is used as STA
	AP mode	Supported
	Ad-Hoc mode	Supported
	Monitor mode	Supported
	AP(WDS) mode	Supported
	CLIENT(WDS) mode	Supported
	Hidden SSID function	Supported
	WMM wireless multimedia mode	Supported
	Wireless encryption mode	NONE, WEP OPEN, WEP SHARE, WPA-PSK, WPA2-PSK, WPA-PSK/WPA2-PSK modes, supporting CCMP, TKIP, CCMP/TKIP mixed mode
	Wireless MAC address filtering	Supported
	Supporting 802.11bgn/ac	Supported
	HT20/40/80	Supported
	Wireless fragment threshold	Supported
	RTS/CTS threshold	Supported
Setting on LAN port	DHCP server	Supported
	DHCP initial address	Supported
	DHCP address pool	Supported
	DHCP lease time	Supported
	Supporting VLAN division	Supported
	Supporting static routing	Supported
	Supporting DHCP client list	Supported
	DNS redirection	Supported

Firewall functions	firewall	Restrain source-address attack, port attack, syn-flood, etc.
	MAC filtering	Supported
	IP filtering	Supported
	port filtering	Supported
	port trigger function	Supported
	special application trigger function	Supported
	virtual server function	Supported
System functions	WEB management page	New WEB management, realizing one-key setting
	Device information	Device model, operating time, software version, hardware version, memory usage and other information
	NTP client，NTP server	Supported
	Supporting time zone	Supported
	Administrator account password	Supported
	SSH, TELNET	Optionally support SSH and TELNET. Default to Turned them off
	System log	System log and kernel log
	Process management function	Provide advanced functions of view and process closing
	System load	CPU, wired network, wireless network real-time load
	System language	Support Chinese/English Support Chinese and English adaptation, various languages can be customized
	GPIO configuration	NA
	software upgrading	Supported
	configuration backup and update	Supported
	Factory reset	Supported
	Reboot	Supported
GPIO functions	Key factory reset	Supported
	Key reboot	Supported
	Key WPS	Supported
Storage	Samba server	N/A
	ftp server	N/A
	Mining switch	Supported

Mining functions	Access address	Supported
	Username	Supported
	Password	Supported
	Status inquiry	Supported

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