

# WELL White Paper

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# Abstract

**WELL blockchain and app allow its users generate cryptocurrency through proof of “walk” and other wellness behaviour. All that is required is a smart phone with an internal step counter and commitment to be healthy by walking. Users earn cryptocurrency by walking, biking and other activities. Additionally users can connect various devices to the app. Beta version of the app is available in both Google Play and Apple App Store. Earned cryptocurrency can be exchanged for rewards and discounts in WELL marketplace that will include products and services from various consumer facing brands and insurance companies.**

**WELL also helps consumers get recognized and paid for their data and healthy behavior. WELL developed a proprietary protocol focused on wellness and is in discussions with several potential partners to join its blockchain to motivate and reward partner constituents including employees and patients for their healthy behavior.**

**WELL branded bracelet, watch and weight scales are available at affordable prices while providing cutting edge functionality such as ECG, sleep quality, step counter, calorie counter, heart rate, BMI, fat %, etc. WELL app is also compatible with many third party fitness and medical devices and is finalizing integration with Fitbit and Apple watch to allow everyone to mine and get paid for staying active by joining WELL.**

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# Problem

## Wellness is neither recorded nor recognized

**Hundreds of millions of people generate economic value through wellness every single day, ... but it's neither recorded nor recognized anywhere. WELL enables people to be both rewarded for and safely record their wellness data.**

## Rise of Wellness tools in an Increasingly Digital World

Wearables are experiencing unprecedented growth expected to triple in the next two years. But the wellness data is scattered between participants and providers or concentrated and owned by behemoths like Apple and Google.

# Solution

## WELL Data Platform, App and Devices

Beta version of the app is available in both [Google Play](#) and [Apple App Store](#). Earned cryptocurrency can be exchanged for rewards and discounts in WELL marketplace that will include products and services from various consumer facing brands and insurance companies.

WELL also helps consumers get recognized and paid for their data and healthy behavior. WELL is in discussions with several potential partners to join its blockchain to motivate and reward partner constituents including employees and patients for their healthy behavior.

WELL branded watch, bracelet and weight scales are available at affordable prices while providing cutting edge functionality such as ECG, tracking of blood pressure, sleep quality, step counter, calorie counter, heart rate, BMI, fat %, etc.

WELL app is also compatible with many third party fitness and medical devices and is finalizing integration with Fitbit and Apple watch to allow everyone to mine and get paid for staying active by joining WELL.

Apple Inc. has recently debuted a feature on its Health app that allows users to review their personal medical information from various institutions on their mobile devices. Additionally, the release of the Health Records API will enable developers and researchers to create an ecosystem of apps that can utilize health record data to improve the management of medications, nutrition plans, diagnosed diseases,

etc. In the past, medical records were held in multiple locations, which required patients to log into each individual care provider's website and piece together the information to view the full picture of their health profile. Apple took a more consumer-friendly approach by creating Health Records based on FHIR (Fast Healthcare Interoperability Resources), a standard for transferring electronic medical records. This update allows consumers to have medical information from various institutions organized into one view and for the first time ever, allow consumers to share medical records from multiple hospitals with other apps to help them improve their overall health<sup>[1],[2]</sup>.

Health Records data is encrypted on the user's mobile device and protected with their passcode. When the user chooses to share their health record data with other apps, the data flows directly from HealthKit to the third-party app and is not sent to Apple's servers. Additionally, developers building health apps can individualize experiences, with the user's permission<sup>4,5</sup>.

WELL will allow the users of the Apple Health app to integrate with our platform in order to monetize and protect their data. The WELL platform, leveraging the underlying application protocol, will take the concept applied by Apple and further expand upon the opportunity to provide a more interoperable framework and open data sharing environment. The cryptoeconomics of the WELL platform will both remunerate patients in the native token for granting levels of access to their data as well as incentivize healthcare providers and organizations to participate in the WELL ecosystem and distributed data marketplace. WELL will utilize advanced encryption methods that underpin many cryptocurrency transaction mechanics to maintain HIPAA-compliant patient privacy as well as providing verifiable authenticity and integrity of information immutably stored on the blockchain.

Rather than relying on interoperability between healthcare systems and medical records, WELL establishes an open and secure data pool that functions as a single repository for patients and providers to interact with each other, driven by the WELL token. Increased participation and integration from healthcare providers and patients will forge greater network effects of the WELL platform, accelerate the growth of the incentive system, and contribute to a vast, universal data marketplace.

## Subscription Model – Wellness Kit



- ✓ ECG + PPG
- ✓ Blood pressure monitor
- ✓ Water proof
- ✓ Activity, distance, calories
- ✓ Sleep



- ✓ 12 data points: BMI, % Body fat, Bone Weight, Muscle weight, Water %, etc
- ✓ Syncing with cloud
- ✓ Track historical results
- ✓ Generate reward coin by regular weight data & achieving your goals



- 3 Colors for Option
- USB Charger
- 0.96 inch TFT Full Touch Screen
- ♥ Precise 24H Real Time Heart Rate Monitor
- ♥ Five Heart Rate Training Zones
- ♥ Abnormal Heart Rate Alert
- 🏃 Steps/Distance/Calories
- 📱 Activity Tracking
- 🌙 Smart Auto Sleep Tracking
- 📞 Calls And Message Alarm

**Additionally, WELL is offering its users ability to get an entire wellness kit of weight scales and two wearable devices with an affordable subscription model of \$15/month or upfront annual payment of \$190. Under such subscription plan, WELL users will be able to earn additional rewards and earn more WELL tokens through activity mining.**

WELL hardware strategy is to OEM with established factories and device apps add value with AI software and blockchain integration.

## WELL Blockchain

### Proof of Authority Blockchain

WELL developed a Proof of Authority blockchain anchored to Ethereum as the base protocol of the platform. The POA blockchain affords efficiency and high-throughput capacity that will execute in a computational secure Trusted Execution Environment (TEE).

#### Benefits of POA Blockchain

The POA blockchain is a straightforward and efficient form of modified Proof of Stake with known validators and a governance-based penalty system where validators' identities perform the role of staking.

The POA node validators are incentivized through reputation and the system is predicated on implicit trust that all nodes are running the same software and validating blocks in the same way. With this implicit trust between validators comes great speed and efficiency across the network, allowing for a powerful framework to integrate with the distributed storage layer and data marketplace. Further, the POA blockchain model helps to mitigate against spam attacks as seen on Ethereum's Ropsten Testnet<sup>[3]</sup>.

The WELL blockchain has no inflation, with low fees for users who are leveraging the protocol. WELL will initially build and launch the POA blockchain through a permissioned and controlled environment before migrating to a trustless system.

## Protocol Design

The network utilizes a form of consensus known as "Proof-of-Authority" or "PoA". There is no mining involved to secure the network with PoA, and the network relies on trusted 'Validators' to ensure that valid transactions are added to blocks, processed and executed by the Ethereum Virtual Machine (EVM) accurately. The WELL network is currently supported by 6 validator nodes, which can be expanded to up 16-18 nodes. The identity of these validators is known and they are under legal obligations to duly perform their duties. Each validator is pre-selected. The chain has to be signed off by the majority of validators, in which case it becomes a part of the permanent record.

The protocol is running on Parity Ethereum, which has been described as fastest, lightest, and most secure Ethereum client. AuRa is consensus algorithm used in WELL blockchain. AuRa is capable of tolerating up to 50% of malicious nodes with chain reorganizations possible up to a limited depth and is dependent on the number of validators. An important feature that this consensus requires a set of validators to be specified, which determines the list of blockchain addresses which participate in the consensus at each height. Sealing a block is the act of collecting transactions and attaching a header to produce a block, which acts as an important security feature.

The WELL protocol is built using solidity programming language and supports smart contracts, just like they are used on Ethereum, and various DApps that can be built upon it. Additionally, bridges exist to enable interoperability between Ethereum and other blockchain projects.

## Advantages

WELL blockchain and its underlying architecture has the following benefits:

- More secure - since an attacker with unwanted connection or hacked authority cannot overwhelm a network potentially reverting all transactions. Validators have legal repercussions and reputational risks for malicious behavior which does not exist in other forms of consensus and acts as a deterrent against collusion of validators
- Less expensive & computationally intensive - Proof of Work consensus requires lots of computation
- More performant - Parity Aura consensus provides lower transaction acceptance latency
- Faster & more predictable - blocks are issued at steady time intervals, which could be set to 4-5 seconds and was tested long term on Kovan testnet. For WELL testnet it currently is set for every 40 seconds.
- More deliberate network improvement through hard forks as legal responsibility of validators ensures fiduciary duty over future of the network

- Public chain with benefits of blockchain explorer like (etherscan.io) or can be private

## History of PoA Consensus

A group of blockchain companies formed a public Ethereum testnet on March 6, 2017, which was named Kovan, for a metro station in Singapore, where companies who founded the network are located. In the table below we show stats for Main (Homestead) and Test (Kovan) Ethereum networks.

Network	Type	Blocks mined	Tx created	Contract created	Accounts created
Kovan	Testnet	3,417,527	2,859,549	54,384	18,082
Homestead	Mainnet	4,203,319	50,374,359	1,488,072	4,957,479

Large number of smart contracts, transactions and accounts demonstrate adoption, scalability, and use case for this system. Many other public blockchain project adopted PoA consensus and as well as a large number of enterprise deployments, which value speed, reliability, and security that PoA can offer.

The dashboard showing performance of WELL Protocol can be found here: <http://212.83.131.8:3001/> Blockchain solutions for complex industries like healthcare require a balance between decentralization and centralization. WELL protocol and PoA is an optimal solution for this.

## Connecting User Data with Sponsors

With Apple, Google, Facebook, and Tencent increasingly controlling the mobile OS and application layer, there is a huge need for privacy and ownership (including monetization) of users' personal health data on health apps and devices. In turn, device manufacturers, app developers, employers and data consumers need an independent, intermediary platform. WELL blockchain protocol fills this need with its Proof Of Authority protocol.

WELL Protocol creates a connection between data from sensor/wearable devices and users. By utilizing WELL tokens, WELL incentivizes and compensates for the development and launch of wellness applications and devices on its protocol. Corporates, employers, clinics, and insurance companies (sponsors) can also participate in monetization of such applications and devices by investing in their development to receive a percentage of future earnings from these devices and applications both in cryptocurrencies, fiat currencies, and WELL tokens.

**WELL Platform Users:** Can earn WELL tokens from selling their data that can also be staked or converted into WELL tokens.

**Data Consumers:** Can purchase user data by buying WELL tokens on the market and converting them into WELL tokens through WELL bridge.

**Employers, Healthcare Organizations, and Other B2B Users:** Can participate in the WELL platform through purchasing WELL tokens (WELL tokens will be frozen for a period of 12 months in the process).

**Authorized Validators:** Provide computing and storage to validate blocks and earn Credit tokens. They are required to stake their WELL for a period of one month to a year and earn correspondingly, WELL and WELL tokens.

## Well Tokens

The fundamental unit of value within the WELL system is the WELL Coin token (“token”). Tokens provide inflationary-resistant digital value within the WELL system. The WELL token will be derived from a standard Ethereum ERC20 token and will be tradable on exchanges.

## Token Features

The WELL token is used for multiple features within the WELL platform:

### Form of Payment

WELL tokens will serve as the main means of payment within the system, although we will accept and use other types of fiat and/or cryptocurrencies.

### Currency Exchange

WELL tokens will support price determination for WELL services. The system will take a fee in WELL tokens and some premium features will be available only by using WELL tokens.

### Gamification of Wellness

The WELL platform will award WELL token holders for behaviors that lead to desirable outcomes. Patients will earn WELL tokens for achieving markers, such as improved blood pressure, cholesterol, and other health measurements, or ratings and timeliness. Clinicians will earn WELL tokens for patient achievements, lower hospital readmission rates, ratings, timeliness, and more. Corporate partners will receive bigger discounts for higher satisfaction ratings from their patients and clinicians or better adherence to smart-contract governance. Programmers will earn WELL tokens for their contributions to WELL source code based on measurable metrics, such as Github references, library usage in the WELL code base, and hackathon wins.

### Social and Gaming Functions

The WELL token also acts as an “in-game” token, and participants in the WELL ecosystem earn tokens for certain actions. Also, network members can use the token to unlock network resources such as wellness resources for patients, clinical education resources for clinicians, and data and analytics resources for enterprise clients and partners. We intend to create strong community connections between the different parties in healthcare.

### Encouragement and Rewards

WELL patients, doctors, and other users earn WELL tokens for being on time to appointments, thus reducing costs associated with schedule disruption.

### **Partnership Access**

WELL ownership will give access to advanced platform features, and special partnership programs will help in integrating big companies and institutional players into the WELL network.

### **Data Sharing**

Everytime WELL receives a payment for de-identified and anonymous patient and clinician data, the corresponding patient and clinician will earn WELL tokens. WELL respects the personal details of all clients and will never disclose any information to third parties without consent from the client.

### **Payable Access to De-identified Health Histories**

Insurance companies and other enterprises will pay tokens to access de-identified WELL health data.

## **Road Map**

The following key objectives are planned to be achieved provided there is enough financing.

- Integrations with Fitbit and other brands
- Completion of WELL protocol and integration with WELL app
- Integration of wallet into WELL app
- Key strategic partnership for WELL protocol