



incentivizing productivity and data monetization on the blockchain

WHITE PAPER

Contents

1. Abstract	4
2. Background.....	5
2.1 Misaligned Incentives	5
2.2 Revenue growth increasing overhead	5
2.3 Siloed apps, more overhead, fragmented data.....	5
2.4 Dishonest Mass-Collection of our data	6
3. Resolution.....	7
3.1 RDA-based Incentive Alignment	7
3.2 Variable cost revenue growth	7
3.3 Data unification.....	7
3.4 The Decentralization of the Employer-Employee Relationship	8
3.5 Users fairly compensated for their data	8
4. Incentivization Cycle.....	9
4.1 Worker incentivization.....	9
4.2 Worker RDA identification and mapping	10
4.3 Business incentivization	10
4.4 Businesses accept WRK.....	11
5. Platform Architecture.....	11
5.1 Worker Application Layer.....	11
5.2 Business application Layer	12
5.3 RDA identification and mapping layer.....	12
5.4 Blockchain layer: the blockWRK BIT Network	12
6. Token System	14
6.1 initial token sale period.....	14
6.2 Total WRK token supply	16
6.3 Proof-of-WRK Distribution	16
6.4 Operational Pool.....	16
6.5 Incentivizing In-network use of WRK.....	17
7. Development Road Map	18
8. Team	18
9. Risk Warning.....	20
10. Legal	22

Appendix: blockWRK ICO Token Contract Technical Specifications

- Definition of Terms..... ii
- Contract Features..... ii
 - Features Summary..... ii
 - User Access..... iv
 - Taxed Token iv
 - Transaction Handler v
- Contract Architecture..... vii
 - Contracts and Functions..... vii
- blockWRK Wallets ix
- Contract Audit..... ix
- ICO Phases x
 - Pre-mine x
 - Seeding Phase x
 - Close x
- ICO Participation x
- Contract Management..... xi
 - Overview xi
 - ICO Contract Management..... xi
 - BlockWRK Token Contract Management..... xii
- Contract Diagrams xiii
 - Inheritance Model of Smart Contracts xiv
- Development and Testing Logs..... xxiii
 - Development Logs..... xxiii
 - Unit Tests for Custom Contracts xxv
 - Testing Logs..... xxix

1. ABSTRACT

blockWRK is a productivity incentivization and data monetization platform that is powered by our “Blockchained Interplanetary Tangle” or BIT Network for short. The blockWRK app gives users “a piece of their own pie” by helping them take back control of, and monetize, their data that they are already giving away for free to all the apps and devices that they use every day.

WRK is an ERC-20 token designed around a distribution protocol which we call “Proof-of-WRK” (see what we did there?) where WRK is distributed to users in exchange for writing their data to the BIT Network. Users gain increasing levels of WRK earning power based on the quality, depth, and volume of their data, the level of adoption they are able to elicit from their employer, the sharing permission level they authorize, whether or not they opt-in to view in-app ads, and their overall loyalty to the platform as measured by specific usage behaviors.

In addition to improving daily productivity, the goal of blockWRK is to allow users to directly benefit from the monetization of their data by opting-in within the app to various monetization options, or by independently monetizing their data by granting access to those parties that the user believes to offer sufficient economic benefits in exchange. When users opt-in to share productivity-related data with their employers, the blockWRK Office platform can utilize AI and quantitative data analysis to identify, track, and incentivize revenue driving activities (RDAs), thereby enabling workers¹ to earn WRK for performing RDAs both on-the-clock and off-the-clock, and ultimately decentralizing the employer-employee relationship. By opting-in to view in-app ads, users can earn a share of the ad revenues generated by their data.

The blockWRK platform creates a self-proliferating bottom-up adoption cycle for business acceptance of WRK as a form of payment by aligning the incentivization of both businesses and individuals. Our Proof-of-WRK protocol incentivizes users to join the platform and write to the BIT Network the data that will be valuable to businesses (be it their employers, advertisers, insurers, or others). Since the participation of a user’s employer provides the worker with the ability to be compensated by the business for the performance of RDAs, there is an inherent incentive for users to invite their employers to join and use blockWRK. Users are further incentivized to opt-in to allow their data to be shared with relevant advertisers by getting paid for viewing in-app ads. Businesses whose workers use blockWRK are incentivized to join in order to be able to identify and compensate the performance of RDAs. Advertisers can honestly advertise their products to users that have agreed to view their ads in exchange for a share of the cost of the advertisement, and relevant third-parties can offer payment to the users whose data they desire, creating a direct, decentralized relationship based on consent rather than deceit. Because the blockWRK platform requires RDAs and ad payments to be facilitated through the use of WRK, business demand for WRK tokens creates the inherent incentive for those businesses to accept WRK as a form of payment for the goods or services they produce. As more and more businesses accept WRK as payment, the utility of WRK tokens increases providing WRK holders with an increasing number of ways to spend their tokens without the need to convert to fiat.

For the first time in human history, blockWRK creates the possibility for a mutually beneficial, trustless, decentralized relationship to exist between employers and employees, between advertisers and

¹ The terms “worker” and “user” are used interchangeably - both terms refer to an individual user of the blockWRK app (as opposed to business users), and the “worker” term serves to distinguish a user whose employer is also utilizing the blockWRK Office platform.

consumers, and provides individuals with the means of taking back control of the monetization of their data.

2. BACKGROUND

2.1 MISALIGNED INCENTIVES

Hourly pay is one of the most common forms of worker compensation. It is simple for businesses to know when a worker is physically “on the job,” and so it is easy to calculate how much each worker should be paid based upon an hourly rate. Salaried workers are expected to accomplish a certain set of responsibilities for a fixed amount of pay. With both of these arrangements, a fundamental conflict of interest exists between the needs of the business and the needs of its workers. In order to increase revenue, businesses strive to be more efficient. Hourly workers, however, are paid more when it takes them longer to do a job. And, while businesses attempt to demand more from existing salaried workers to keep labor costs in check, worker productivity is negatively impacted in a way most businesses can't measure.

The best businesses try to structure compensation to combat this conflict by using bonuses and commissions to encourage workers to sell more, often resulting in more sales, and sometimes resulting in more revenue. If the businesses do not incentivize enough, workers become unmotivated. If they incentivize too much, commissions and customer acquisition costs quickly eat up revenue from new sales. High achievers are often insufficiently recognized and rewarded, quickly learning to either game the system to work less, or they hit their earning ceiling, get frustrated, and look for greener pastures, bouncing around to whomever will pay them the most.

2.2 REVENUE GROWTH INCREASING OVERHEAD

The goal of most businesses is, of course, to generate revenue. Businesses assemble the various positions they believe are needed—sales, customer service, support, marketing, accounting, and the like—and then organize workers into a management hierarchy in the hopes that managers will do a good job supervising and motivating workers. When revenue is generated, the next logical step is to generate more revenue, and so businesses follow the textbook and increase budgets and headcounts. They throw money at their sales budget and hire more sales agents. They increase their marketing spend and hire more marketers. As complexity increases, they hire more support staff and more managers, all of which significantly increases overhead, creating a need for (you guessed it) more revenue.

Most businesses follow pretty much the same traditional business growth formula:

Needing more revenue -> increasing budgets -> hiring more workers -> needing more revenue... rinse and repeat.

2.3 SILOED APPS, MORE OVERHEAD, FRAGMENTED DATA

Since the turn of the century, the Internet has spawned an almost unlimited number of web-based tools that are targeted towards helping businesses. Due to the challenges of selling software to businesses, nearly every new “app” is designed around solving a single business pain point (increasing sales, improving internal communication, etc.), while massive, corporate-wide solutions are generally left to the purview of the traditional premise-based software giants (think Oracle, SAP, etc) selling into the biggest of businesses. An entire industry has been built around helping software startups identify a single, focused business problem they can solve, and then tailoring the solution to one industry. Some

successful examples like Slack, Wrike, Box.com and RingCentral focus on streamlining individual business functions (internal collaboration, project management, file storage, communication) and companies like Salesforce, HubSpot and ZenDesk focus on the efficiency within individual departments (sales, marketing, customer service). Many of these products are really great at doing what they promise, but that usually just results in marginally improving one part of the business, sometimes with a positive effect on revenue, and sometimes not.

One thing all of these apps have in common is that they cost money, generally charging “per user per month” -style pricing. So now, in the age of the apps, the “modern” business growth formula looks more like this:

Needing more revenue -> increased budgets -> hiring more workers -> buying software licenses -> hiring more workers -> buying more software licenses-> needing more revenue... and the beat goes on.

While most of these apps promise to play nice through “integration” with the many other business apps and tools on the market, this integration tends to be more of an afterthought, focused on using APIs to avoid data being entered more than once across multiple systems. The success of a business then depends on its ability to cobble together these disparate apps and manually evaluate the data and reports produced, creating a heavy reliance on the insightfulness of individual on-the-ground managers and their ability to motivate employees with bullpen sessions, spiffs, pizza parties and the like.

With such a cacophony of apps, devices, productivity philosophies, commission programs, sales tactics, and conflicting needs, most businesses don’t really know what makes their top producers successful at what they do, or how to get them to do more of it, and nobody identifies the precursory activities and behaviors that ultimately create revenue. Only the biggest of big businesses possess the cohesive data sets and necessary resources to study the root causes of productivity and revenue generation, and due to the common problem of legacy system drag, their results are spotty at best. For the first time in history, businesses are awash with data about the activities of their workers, but most lack the capability to put it together all into a systematized, repeatable process that allows them to properly align compensation with worker’s needs to achieve that perfect balance between productivity and profitability.

2.4 DISHONEST MASS-COLLECTION OF OUR DATA

Virtually all of the apps and devices we use personally on a daily basis have one thing in common: they collect data about us and generate profits by selling that data to advertisers. Recent events have only just begun to bring an initial level of user awareness to the idea that the Googles and Facebooks of the world have become multi-billion dollar companies through less-than-honest data collection methods, and by sharing none of the profits with the users whose data has created these astronomical revenues streams. Their business models have been built around tricking users into believing an advertisement is a search result, or by displaying ads in a way that makes us think they are posts from our friends. It is time for individuals to understand the value of their data, and to earn fair compensation in exchange for consciously participating in the monetization of their data by deliberately opting-in, or not, as they so choose.

3. RESOLUTION

3.1 RDA-BASED INCENTIVE ALIGNMENT

Rather than relying exclusively on centuries-old pay structures and the corralling of workers into offices so that they can be gazed upon by the watchful eyes of management, blockWRK removes the conflicting interests between businesses and workers by shifting the focus from logging hours to performing RDAs. By leveraging proprietary algorithms, AI, and quantitative data analysis—coupled with an existing knowledge-base of worker productivity behaviors—blockWRK identifies the activities that are driving revenue growth in a business, and gives that business the ability to provide workers with automatic and immediate compensation in WRK, creating an engaging, gamified work experience. By directing the focus of workers to performing RDAs, the desire for recognition and adequate compensation can be met while simultaneously satisfying businesses need for revenue growth.

3.2 VARIABLE COST REVENUE GROWTH

By leveraging automated smart contract-based payments coupled with a focus on RDA performance-based compensation, blockWRK enables businesses to maximize the productivity of existing employees and to transform the growth equation from a fixed cost basis to a variable cost basis, significantly improving the ratio of employment costs to revenue growth. As businesses adapt to this structural change, it becomes possible to reduce, or in some cases even eliminate, middle management layers, and many salaried roles can be converted to RDA-based work on something more akin to a project basis. By focusing on RDAs instead of “time-in-chair,” many of the major impediments to having a remote workforce are eliminated, and businesses are uniquely positioned to capitalize on workers from the “gig economy” while being able to provide existing workers with additional flexibility and a better work-life balance. blockWRK is changing the equation by enabling businesses to accelerate revenue growth without huge overhead cost increases, and (since the cost to businesses is transaction-based) without the need to pay yet another “per user per month” software license fee.

3.3 DATA UNIFICATION

The blockWRK platform brings together vast amounts of data collected from the many disparate systems in use by both businesses and workers, thereby enabling an entirely new level of analysis and functionality.

3.3.1 BUSINESS-SIDE DATA UNIFICATION

Almost every business software product on the market provides reporting functionality and an API to enable a business to export its data into other software systems for the purposes of creating a value-added integration with the existing systems in use. By tapping into these APIs and reporting functions, data can be pulled and collated from a variety of systems and fed into our blockWRK Office cloud-based business platform to provide a deeper and more meaningful analysis than is possible through separate, fragmented systems. Because the blockWRK Office platform was designed from the ground up to unify and capture all relevant business-side RDA data, businesses that do not have existing CRM or ERP systems in place can also use the blockWRK Office as a stand-alone all-in-one business management system to unify and capture all relevant business-side RDA data out of the box.

3.3.2 WORKER-SIDE DATA UNIFICATION

Workers utilize applications (like social media and communication) and devices (like the exercise trackers and smart watches) that possess a wealth of data capable of coloring the analysis of the

activities performed on the clock, with those performed off the clock; data that heretofore has been wholly unavailable to businesses for both practical and legal reasons. Most workers would not voluntarily share this additional data directly with their employer due to no direct benefit as well as potential privacy concerns. With blockWRK, workers receive an immediate reward for authorizing the blockWRK mobile app to securely write this data to the BIT Network. While workers will have the ability to set permissions and control how their identifiable data is used, we incentivize this data sharing through increased WRK rewards as well as the ability to earn RDA compensation from their employer, with blockWRK acting as an intermediary to protect sensitive information and allowing the user to retain control over control of the sharing of their data. By creating a mutually beneficial incentive for data sharing, business-side and worker-side data can be unified to create powerful insights about the precursors to revenue generation.

3.4 THE DECENTRALIZATION OF THE EMPLOYER-EMPLOYEE RELATIONSHIP

As the blockWRK BIT Network grows, and the RDAs we have identified become proven drivers of revenue growth that can be extrapolated across businesses and industries, smart contract rules can be used to create trustless employment contracts that will fundamentally change the precepts of employment and work. With the BIT Network serving the role of an immutable resume, those workers that have participated from the outset will be empowered with an irrefutable record of their productivity and performance, and businesses will be able to create distributed employment pools filled with workers hired solely based on their verified history of performance and productivity as recorded within the BIT Network.

In this future, the role of blockWRK as a central authority will be increasingly unnecessary. Those workers with an extensive, provable work history stored within the BIT Network will also have a decreasing need for the Proof-of-WRK distribution to incentivize their participation, since they will receive increasing economic gains simply due to the demand for their performance of RDAs from businesses willing to pay higher RDA payments to workers with a proven track record, as well as their ability to independently monetize their data in other ways.

The long term goal of blockWRK is to continuously strive to decentralize all network functions such that the performance of RDAs is independently verified by the BIT Network, compensation is automated, dispute resolution can be handled using network consensus, and individuals retain the ultimate control of their ability to be provably identified with their data within the BIT Network.

3.5 USERS FAIRLY COMPENSATED FOR THEIR DATA

The blockWRK platform allows advertisers and other third-parties that desire access to a user's data to obtain it honestly and contractually, through blockchain-based smart contract payments that directly benefit the user, rather than exclusively benefiting companies like Google or Facebook.

In addition to giving users the ability to monetize their data by way of additional compensation from their employer for the performance of RDAs, the blockWRK app provides a simple profit-sharing mechanism for users to earn their rightful share of the massive targeted advertising revenue streams that have become the norm in the digital age. When users opt-in within the blockWRK app, they are paid for each in-app ad they view. Users with higher quality data will become more attractive to advertisers, allowing them to pay a premium for the right to advertise to those users. By bringing transparency and openness to the discussion surrounding data ownership, blockWRK will give users a new level of personal awareness about the value of their data, and provide a curated in-app experience

that allows users to directly benefit from the monetization of their data through a simple, user-friendly app interface.

4. INCENTIVIZATION CYCLE

Since the beginning of time, the employer-employee relationship has been an inherently adversarial “zero sum game.” The business, in order to generate a profit, is incentivized to provide the worker with less overall economic benefit (i.e. pay and benefits) than what the worker provides to the business (in terms of value creation, i.e. sales). Any good capitalist will tell you that this is justified because the business must initially come up with the idea, invest startup capital, and take all the economic risk of building the business. Regardless of the reality, for the worker that feels like the boss just sits around and profits off the labor of others, that feeling results in “milking the clock” and doing as little “for the man” as possible.

The blockWRK platform brings together the power of the blockchain, data analysis, proprietary productivity research, and incentivization alignment to create a scenario where maximizing the productivity of the worker is mutually beneficial to both the business and the worker. The alignment of incentives within the blockWRK network creates a self-propagating environment that heavily incentivizes business adoption by initially incentivizing workers to join the platform, and then reverse-incentivizing businesses to join the platform through a bottom-up employee driven adoption push.

4.1 WORKER INCENTIVIZATION

The blockWRK platform begins by incentivizing workers through our “Proof-of-WRK” blockchain distribution protocol. Our gamified smartphone app allows anyone with a smartphone to join blockWRK and earn WRK. All the apps and devices we use everyday in our personal lives have been designed to collect data on our activities. In the U.S., consumers spend upwards of five hours every day using mobile devices, and the average user interacts with at least nine different apps every day.² From social media to messaging to exercise trackers to productivity apps, all of these devices and apps are capturing data about our daily activities with most being used to generate targeted advertising for the benefit of the app and device makers. We have grown accustomed to giving away this data with no expectation of any direct economic benefit. blockWRK gives individual workers the ability to “get a piece of their own pie” by earning WRK in exchange for allowing our mobile app to interface with their existing apps and devices on the back-end and to write the data those apps are already collecting to the BIT Network. The front-end of the app will ask users to “connect your LinkedIn” and “link to your FitBit” and make other suggestions for apps and devices to connect to the blockWRK app, each of which increases their loyalty score which speeds up the rate at which they can earn WRK distributions from the blockchain. Workers will retain total control over the sharing of their identifiable data, but they will be heavily incentivized to opt-in to view in-app ads and to share with their employer that data that facilitates the identification and incentivization of RDAs.

Our app will provide palpable, daily, spendable rewards with the commensurate bells and whistles and confetti that create the same dopamine-inducing addiction employed by platforms like Facebook. But rather than the unhealthy satisfaction that you get from having your echo-chamber of friends agree with your rant about the lady that cut you off in the drive-through, the reward that comes from using blockWRK will benefit the users both monetarily, by earning WRK, and professionally, by building a validated record of their productive activities that can be used to prove their value to prospective employers far more persuasively than can be done with any resume. Since individuals will control the

² <https://techcrunch.com/2017/03/03/u-s-consumers-now-spend-5-hours-per-day-on-mobile-devices/>

ability to be personally identified with their data on the BIT Network, they are also able to independently utilize or monetize this data record in any creative way they may come up with, such as using it to negotiate lower insurance premiums by proving they exercise daily, as just one possible example.

The app will also show workers ways to increase their personal productivity, helping them achieve their professional and personal goals. Ultimately, as businesses restructure around rewarding workers for productivity rather than time spent sitting in a chair, an opportunity is created for workers to have a better work-life balance and an overall improved quality of life.

4.2 WORKER RDA IDENTIFICATION AND MAPPING

Once workers have gone through the initial setup process and their data is being pushed to the blockWRK BIT Network from their linked apps and devices, the blockWRK app will prompt workers to provide additional manual activity details that are used to classify their data and identify the correlations and causations that will later become the identified precursors to revenue generation within particular verticals, industries, and individual businesses. While blockWRK's own analysis will be used identify those activities that are known to be RDAs, workers can suggest what they believe to be their own RDAs, and will earn an increasing level of reward as their suggestions are validated across the platform, either in practice or by other users.

4.3 BUSINESS INCENTIVIZATION

Businesses are first contacted when a worker authorizes blockWRK to perform some level of verification, either of the worker's employment at the business, or of revenue creation events, where, for example, a manager might confirm a successful sale made by the specific worker.³ Alternatively, once a sufficient number of workers employed by any one business have joined the platform, if the business has not yet been contacted pursuant to a worker-authorized verification outreach, blockWRK could potentially advise the business that a specific number of unnamed employees are using blockWRK, and explain the benefit to the business by joining the platform, as well as providing the incentive of a free initial WRK balance to sweeten the deal.

If the business is contacted pursuant to a worker-authorized verification outreach, the individual manager being asked to confirm the activity of the worker will also be individually incentivized with WRK for both joining the platform, and for moving us "up the chain" towards the appropriate managerial level that would be required to gain approval for the business to officially join the blockWRK platform.

This ground-up "ladder-climbing" incentivization process can be both heavily automated, and also custom-tailored based on the value that would be added to the blockWRK platform by having the business as a full blockWRK user. As businesses join the platform, business-side software data will be fed into the blockWRK Office and collated with the worker-side data already being collected, creating backwards-visibility and the ability for significantly deeper levels of additional RDA analysis. In addition to our automated algorithm-based RDA identification processes, businesses are inherently incentivized to define what they believe to be RDAs within their specific business. Our analysis can help validate (or possibly invalidate) what the business believes to be their root causes of revenue creation, and RDAs suggested by individual businesses and validated by our platform can then be applied to

³ While workers will have privacy controls to dictate when blockWRK is allowed to reach out directly to their employer, the worker will be heavily incentivized to grant this permission by means of increase WRK earning capabilities.

other businesses using blockWRK within the same or similar industries, further increasing the value of analytical insights blockWRK can offer to businesses.

4.4 BUSINESSES ACCEPT WRK

Ultimately, the greatest value to businesses using blockWRK comes from the fact that, once RDAs have been identified, smart contracts can be created to automatically compensate the business' workers for performing those RDAs at a pre-determined compensation level set by the business, thereby driving revenue growth. Because this compensation is paid in the form of WRK, to fuel these payments businesses must first acquire WRK. Businesses that wish to advertise to blockWRK users will also be required to purchase WRK to do so. The blockWRK platform will provide businesses with an easy interface that enables them accept WRK as payment for the goods and services they produce, and will also provide basic POS and e-commerce integration options. Businesses will also be able to purchase WRK directly on the platform using traditional fiat methods (ACH, etc).

5. PLATFORM ARCHITECTURE

5.1 WORKER APPLICATION LAYER

The worker application layer consists primarily of the blockWRK Android app (currently in alpha, with the development of an iOS app planned for 2019). This application has a simple, clean, modern interface with a user-friendly format. Their loyalty score is prominently displayed, together with their current WRK balance. The app provides an easy permissions interface to ensure the workers clearly understand and control what kinds of data are and are not being shared, and will show the changes in earning power based on adjusting these permissions. Workers' personal information will only be used in accordance with the consent permissions they themselves configure.

Workers initially go through a KYC-compliant identity verification process to enable the payment of Proof-of-WRK distribution rewards and will be asked to verify their current employer. As an alternative, they can simply verify the industry they work in, but this will result in a reduced loyalty score and will negatively impact WRK earning potential.

For every activity data point that their blockWRK app writes to the BIT Network, workers earn WRK and also have the potential to maintain or raise their loyalty score, which dictates how quickly workers earn WRK distributions. The worker is prompted to select the apps and devices they use, and to provide blockWRK with permission to link in to these apps and devices for the purposes of collecting relevant data and writing it to the BIT Network. The app will pleasantly notify workers as they earn WRK throughout the day, and will make suggestions for ways to improve their personal productivity.

If the worker's employer is using blockWRK to compensate RDAs, workers will also be notified each time they successfully perform a validated RDA and are awarded WRK from their employer. Workers will be heavily incentivized to help facilitate their employer joining the platform, as well as for referring other workers to blockWRK.

Workers will also have the ability to earn WRK for submitting suggested RDAs. For example, a worker may find that they close 10% more sales on days that they go for a jog before work. The worker will receive an initial reward for a reasonably valid RDA suggestion, and will receive more significant rewards if their suggested RDA is ultimately validated by the blockWRK platform. The blockWRK app will also occasionally prompt the user to manually input additional data that would not generally be

available through the use of apps or smart devices. The more the worker supplies the data when prompted, the more their loyalty score increases and the more WRK they earn.

There is also a “spend WRK” interface where workers can find businesses that accept WRK and purchase their goods or services through the app, and workers are also be able to transfer their WRK to any Ethereum wallet of their choice.⁴

5.2 BUSINESS APPLICATION LAYER

The business application layer is centered around our existing blockWRK Office platform, an all-in-one business management system designed to unify all business processes, communication channels, and customer management functionality into a single system. To register for the use of blockWRK, businesses will submit contact information, organizational details, EIN verification, and undergo an operational process analysis to identify the current style of operations.

If the business uses existing software applications (CRM, ERP, etc) to manage business processes, the data from those applications will be fed into the blockWRK Office and the reporting functionality will be utilized to identify RDAs. If the business does not have existing software in place, the full breadth of the blockWRK Office can be used to automate the collection of daily business activities to facilitate the identification of RDAs.

The blockWRK Office dashboard will display the current WRK balance, identify the business’ current workers that are already registered to use blockWRK, and will enable the business to mass-add new workers to the blockWRK platform. The employee management dashboard displays worker statistics, current status, and the like.

Businesses will be able to set up automatic purchases of WRK using ACH direct debit or other fiat-based payment options. There will be a simple interface that also allows the business to collect WRK for the sale of their goods or services purchased by users using the blockWRK mobile app.

Once RDAs have been identified through our analysis or dictated by the business, custom-tailored smart contract rules can be built to enable the automated payment of RDAs to workers. The businesses set the compensation amount to be paid for each RDA, and when the smart contract verifies that the RDA has been performed and recorded on the BIT Network, the worker will be automatically paid in WRK.

5.3 RDA IDENTIFICATION AND MAPPING LAYER

Initially the identification of RDAs will be a curated process performed on a consulting-style basis to identify RDAs within each individual business. blockWRK will evaluate the data on the BIT Network and run proprietary algorithms to help identify RDAs and validate their effectiveness by comparing data gathered from both the worker-side (as recorded on the BIT Network) and the business-side (through the blockWRK Office reporting functionality). Eventually, as we establish the statistical validity of our algorithms, we will be able to utilize the insights gleaned at individual companies to extrapolate across disparate businesses and industries to automate RDA identification.

5.4 BLOCKCHAIN LAYER: THE BLOCKWRK BIT NETWORK

The blockWRK BIT Network is a Blockchained Interplanetary Tangle, being built upon the work of several existing distributed ledger technologies (DLTs). We utilize a modified implementation of the

⁴ Transferring WRK to any Ethereum wallet not associated with a registered blockWRK user account will be subject to our exit penalty fee.

IOTA Tangle⁵ with IPFS providing a distributed peer-to-peer alternative to the more centralized reliance on a limited number of “permanodes” (the method IOTA is currently testing), together with daily hashing to the Ethereum blockchain. Our WRK token is an Ethereum ERC-20 token that utilizes native Ethereum wallets within the blockWRK mobile app to maintain all financial transactions on-chain within the Ethereum blockchain.

The unique architecture of the blockWRK BIT Network allows us to maintain long-term data integrity without the scalability restraints that come with most Proof-of-Work based blockchains. This unique implementation of three complementary DLT systems creates an overall network architecture whose whole is most certainly greater than the sum of its parts.

5.4.1 THE TANGLE

In the BIT Network, transactions contain data on an activity performed by a user. In choosing the structure for the core of the BIT Network, the nature of the data being written in each transaction required a solution that would not necessarily associate a fee with each transaction. In addition, scalability issues were at the forefront, given the increasing speed at which users are creating new data.

The BIT Network currently consists of nodes operated by blockWRK and other application stakeholders, in which only registered users’ devices can write information to the network. After the network matures, the option to run a BIT Node will be open to the public.

Our modified implementation of a private IOTA Tangle as part of the overall BIT Network structure takes advantages of the suitability of the directed acyclic graph (DAG) structure to our use case, while sidestepping many of the concerns that have been expressed about IOTA’s Coordinator. Because transactions are being written to the BIT Network by verified users using the blockWRK mobile app, we are able to focus on creating a fully-decentralized Tangle from the outset, where the role of the Coordinator is not required.

The Tangle’s alternative to the Proof-of-Work protocol removes the need for third-party miners that demand transaction fees as an incentive to process transactions. In order for a new transaction to be recorded to the BIT Network, it must approve two previous transactions. Each time a user issues a transaction, the work performed by the user in confirming two previous transactions contributes to the security of the BIT Network.

5.4.2 IPFS

To ensure the ability of nodes to operate in an efficient manner over the long-term, the BIT Network utilizes the IPFS protocol to archive historical data on a peer-to-peer distributed cloud hosted on the BIT Network itself. The primary benefit in terms of network scalability and data management on network nodes is that all historical data can be accessed without requiring every BIT Node to store the full Tangle, and without requiring the need for permanodes on the Tangle. When the BIT Network’s Tangle exceeds a set storage limit, data will begin to move from the Tangle to IPFS storage to reduce overall storage requirements for individual BIT Nodes.

⁵ Additional details on the DAG structure and details of the tangle can be found in IOTA’s white paper at the following link:
https://assets.ctfassets.net/r1dr6vzfxhev/2t4uxvslqk0EUau6g2sw0g/45eae33637ca92f85dd9f4a3a218e1ec/iota1_4_3.pdf

5.4.3 DAILY HASHING TO THE ETHEREUM BLOCKCHAIN

In order to ensure a verifiable record of every transaction dating back to our “genesis block,” a daily snapshot is taken of the entire BIT Network and hashed to the Ethereum blockchain. In this way, the security of the BIT Network and the immutability of its data is supported by the Ethereum main network, where a smart contract will record each hash of the daily network snapshot.

5.4.4 IN-APP ETHEREUM WALLET FOR WRK TOKENS

The blockWRK app offers users a number of features that ensure the security and autonomy of their accounts while also providing a simple and intuitive way to interact with the Ethereum blockchain. These features, as well as the application interface, have been specially designed for those users that are not necessarily “tech-savvy.” blockWRK strives to provide an environment that is both user-friendly and true to the core principles of what makes blockchain both a unique and powerful solution for conducting business in a digital world. To that end, the WRK token has been designed to include certain special features that incentivize peer-to-peer exchange within the application and that facilitate a simplified user experience that is both protected and decentralized.

blockWRK provides each user account with its own unique Ethereum wallet. Each user’s Ethereum wallet can receive, hold, and transfer WRK, as well as Ether or any other Ethereum token. This wallet is directly under the user’s control, with the keystore file and password being stored directly on the user’s mobile device. Experienced users have the option to backup their keystore file by exporting it directly from their device to a storage location of their choice. For our less advanced users we provide the option to securely backup wallet credentials to blockWRK’s servers to allow for streamlined account recovery, with sensitive wallet information being encrypted on the mobile device before being sent across the network. This arrangement creates the ability for users of all experience levels to comfortably use their blockWRK wallet without ever needing to relinquish control of their WRK tokens to a third party: wallet creation and WRK transfers are initiated by the user and only occur on the mobile device, which puts the user fully in control of their assets.

6. TOKEN SYSTEM

The native currency of the blockWRK platform is WRK, our ERC-20 token that relies on the Ethereum blockchain. Our audited smart contract⁶ provides for a twelve-month initial token sale period, fixed supplies of WRK, and a distribution protocol we are calling “Proof-of-WRK” - mostly just to be cheeky.

6.1 INITIAL TOKEN SALE PERIOD

Our initial method of disseminating WRK to potential blockWRK users, both businesses and workers, is to provide a twelve-month long initial token sale period, from 2:00:00pm Eastern Standard Time on 14 May, 2019 to 02:00:00pm on 14 May, 2020 (or until the supply of WRK is exhausted), where WRK can be purchased and used to earn “Proof-of-Stake”-style loyalty standing based on the retention duration and volume of WRK purchased. Those early adopters that express an interest in joining and using the blockWRK platform through the early purchase of WRK will be rewarded with increased earning power when our Proof-of-WRK distribution begins upon the public beta release of the blockWRK app. WRK tokens purchased during the initial token sale period can also be immediately redeemed for access to blockWRK Office, and can be used to purchase goods and services from a handful of our founding

⁶ Our smart contract was audited by QuillHash (www.quillhash.com), an independent third-party smart contract auditing firm. The nature of the work is explicitly described in the audit report, available here: https://github.com/blockwrkinc/blockwrkinc.github.io/blob/master/BlockWRK_Smart_Contract_Audit_Report.pdf

business users that have signed up to beta test the blockWRK platform and have agreed to accept payment in WRK for varied items ranging from apps to home renovation services to certified organic grass fed beef.

Although the blockWRK platform presupposes that workers will share their personal information through the blockWRK app, information collected from purchasers in the course of the initial token sale will not be disseminated to the blockWRK platform, but retained by blockWRK Ltd. solely in order to comply with customer due diligence regulatory requirements. Purchasers' personal information will only be released in circumstances where blockWRK Ltd. is legally required to do so in accordance with Bermuda law, including release of information to regulatory bodies in accordance with a lawful request pursuant to Bermuda legislation, or pursuant to a Court order.

The initial token sale period will end when the supply of WRK is exhausted, or when the specified end date has been reached, whichever occurs first. Any WRK tokens not distributed during the initial token sale period will be added to the Proof-of-WRK distribution pool. Applications for issuance of WRK are subject to a three-business-day "cooling-off period" during which the applicant for issuance may withdraw their application. Business days are calculated according to Bermuda local time and not including: the day of application; any Bermuda statutory public holidays; Saturdays; and Sundays. A business day ends concurrently with the beginning of the following business day at 12:00:00am. The following table demonstrates the Ethereum price points at which WRK tokens will be sold during the initial token sale period, and the total number of tokens available.

<u>Price in ETH</u>	<u>Total Supply</u>
0.00001	100,000,000
0.0001	200,000,000
0.0005	500,000,000
0.0008	500,000,000
0.0016	500,000,000
0.0032	500,000,000
0.0064	500,000,000
0.0085	500,000,000
0.0096	500,000,000
0.01	500,000,000

6.2 TOTAL WRK TOKEN SUPPLY

11,900,000,000 WRK will be the final total token supply once all WRK tokens have been distributed. 2,000,000,000 WRK tokens will be reserved for operational use by blockWRK, 4,300,000,000 WRK tokens have been allocated for distribution during the initial token sale period⁷, and the remainder of WRK tokens will be allocated to the Proof-of-WRK token distribution pool.

If all 4,300,000,000 WRK tokens are distributed during initial token sale period, then the total token supply allocated to the Proof-of-WRK distribution pool will be 5,600,000,000 WRK (roughly 47% of the total token supply). If less than 4,300,000,000 WRK tokens are distributed during the initial token sale period, the difference between 4,300,000,000 and the total number of WRK tokens distributed will be added to the Proof-of-WRK token distribution pool.

6.3 PROOF-OF-WRK DISTRIBUTION

The primary distribution of WRK tokens will occur through our Proof-of-WRK distribution protocol, where a user's loyalty score determines the rate at which WRK is earned for each verified activity that is written to the blockWRK BIT Network.

The loyalty score is calculated using weighted variables, with the most weight being given to Proof-of-Stake holders who acquired WRK during the initial token sale period, and varying levels of weight being assigned to those use behaviors that add value to the blockWRK platform. The blockWRK app will make in-app suggestions of steps to take to raise the loyalty score, and will provide transparency into how the user's score is calculated. Some examples of activities that will increase a worker's loyalty score include:

- Linking personal apps to blockWRK (networking apps, productivity apps, social media, etc.)
- Linking smart devices to blockWRK (fitness trackers, smart devices, etc)
- Verifying employment
- Referring other workers to blockWRK (both colleagues and non-colleagues)
- Authorizing identifying data to be shared with employer
- Employer joining blockWRK with a verified business account
- Linking business apps to blockWRK (Salesforce, ZenDesk, etc)
- Employer verification of revenue generating events (manager confirms a sale was made)
- Manually inputting user-supplied data (mood tracking, personal activities)
- Submitting RDA suggestions
- A suggested RDA is validated by blockWRK
- Referring businesses to blockWRK

6.4 OPERATIONAL POOL

The blockWRK operational pool will maintain a public wallet address for transparency purposes. The 2,000,000,000 WRK tokens initially reserved for the blockWRK operational pool will be used to provide WRK liquidity to businesses wishing to acquire WRK to facilitate their use of the platform and to facilitate the in-app purchase of WRK by users. This operational pool can also be used to incentivize high-value businesses or workers to join the blockWRK platform by providing an initial WRK balance as an incentive.

⁷ The exact dollar amount raised will fluctuate with the price of Ethereum, since the contract code must be denominated in Ethereum. On an assumed Ethereum price of \$100, the total raised if all tokens were purchased would be equivalent to \$2,032,100,000.00 Bermuda dollars (@par to USD). At time of writing the price of Ethereum is \$121, but ever changing.

6.5 INCENTIVIZING IN-NETWORK USE OF WRK

Platform fees have been structured in such a way that will encourage users to use their WRK tokens within the application for their intended purpose and will also discourage speculative buying and selling from external actors. We want to provide users with the maximum utility and ability to spend their WRK on real-world goods and services, and to that end a more stable and active exchange of value within the blockWRK application itself will provide greater benefits to our community of users.

6.5.1 EXTERNAL TRANSFER PENALTY FEES

In order to accomplish the above, WRK will charge an external transaction penalty fee on all token transfers that occur outside of the application. The external transfer fee applies to both `transfer()` and `transferFrom()` ERC-20 functions for all transfers of WRK originating from outside the application or leaving the application to an external recipient.

6.5.2 IN-APP TRANSFERS WITHOUT GAS

The blockWRK application provides the ability to transfer WRK to another blockWRK account or even to an external wallet outside of the application without the need to pay for “gas” costs in Ether. Typically, a wallet holding an Ethereum token like WRK would require the user to hold some Ether in their wallet to cover the gas costs charged by the Ethereum network. Gas costs must be paid in Ether, but blockWRK’s Ethereum token has been engineered to allow users to pay their gas costs in WRK. This functionality is known as ERC865. When a user initiates a transfer from their blockWRK wallet, the application will calculate the gas costs, as well as the exchange rate between WRK and Ether, and then add that fee onto the amount being transferred. This transfer will take the form of a digitally-signed request that will authorize the application to withdraw only the amount of WRK calculated to cover the transfer and gas costs (and also an external transfer penalty fee, if transferring to a non-blockWRK account). The application will pay the gas costs in Ether on behalf of the sender, being reimbursed in WRK. The digital signature from the sender’s blockWRK wallet ensures that only the user can approve a transfer from their wallet; and the signed message also contains information to prevent an authorization from being used more than once. As always, blockWRK strives to create a user-friendly environment while keeping the user in control of their assets.

6.5.3 IN-APP PURCHASE OF WRK

In-app token purchases will allow users to purchase WRK directly from blockWRK in order to facilitate their participation in the platform in a simple, user-friendly way that does not require users to possess the technical know-how required go out and independently purchase Ether to pay the gas costs for transactions. Users are discouraged from purchasing WRK outside the application by the applicable external transfer penalty fee.

7. DEVELOPMENT ROAD MAP

- 2018
 - blockWRK BIT Network fully operational
 - Closed alpha testing of blockWRK Android app for workers

- 2019
 - Initial token sale - WRK redeemable for blockWRK Office, blockWRK Consulting services, and select retail goods and services
 - Beta release of blockWRK Android app for workers
 - Proof-of-WRK distribution begins
 - Beta release of blockWRK iOS app for workers
 - Full blockWRK Android app for workers released
 - Full blockWRK iOS app for workers released

- 2020
 - “The Singularity”

The foundational code base of the blockWRK platform centers around blockWRK Office, an all-in-one business management system that has been developed over the last 5+ years with a goal of identifying and capturing RDA data within businesses. Our current development efforts are focused on finalizing the launch of our beta release of the blockWRK Android app for workers, so that we can begin collecting the valuable data that will form the foundation of our value proposition to businesses. With the beta release of the blockWRK Android app, Proof-of-WRK distribution can begin, and we will work on beta release of the blockWRK iOS app. From there, our ongoing development will revolve around continuously adding additional business platform support to increase the breadth and depth of data that we collect and analyze, and continuously adding new features to the blockWRK mobile app. Once our algorithms have achieved a sufficient level of statistical validity, we will move towards the automated identification of RDAs to occur directly within the blockWRK BIT Network, standardize smart contract functionality for the automatic compensation of RDAs, and work on a decentralized dispute resolution layer to allow businesses and workers to fully decentralize the employer-employee relationship.

8. TEAM

George Mylonakis

Founding Director and CEO

George Mylonakis is the founder and CEO of blockWRK and a Bitcoin HODLer from the sub-\$10 days. At his first job as a 16 year old telemarketer, George quickly came to understand the power of performance-based compensation, and studied his first lessons in incentive alignment under his then-manager, Frank Pezzullo. Drawing from his experience launching and growing his first company from a one-man operation, to having 35+ employees across two locations, and then transitioning back to a one-man operation again, he began designing an all-in-one business management system to maximize employee productivity. After reconnecting with Frank Pezzullo, and convincing friend Reuven Fein to sign on as CTO, “the eCollar Cloud” was born – a platform that would capture every business activity and worker interaction in a single database, so that businesses could identify, track, and incentivize revenue driving activities. Initially launching in 2013, George’s brainchild was a bit too early to “the cloud” scene, and the idea of “a complete-all-in-one small business cloud” was too ephemeral for most of the businesses being targeted. The platform he had bootstrapped and spent 3+ years building could not come to its full fruition... until the blockchain came along and changed everything.

Frank Pezzullo
Chief of Product

Frank Pezzullo has more than 20 years of sales and corporate operations experience where he came to intimately understand the misalignment between the interests of businesses and their workers. He has built his career around resolving this conflict at the managerial level, and he has personally generated more than \$1 billion in sales for companies such as AT&T and Hilton. Frank can also beat anyone in an arm wrestling match.

Ruven Fein
Chief Technical Officer

Ruven Fein is an MIT-educated executive manager, developer, and solutions architect. He has held management and VP-level positions at Akamai Technologies, uTest, Transcend Media, and Publicis Groupe. Ruven has more 17 years of experience building and managing distributed software development teams, and he can insult you in seven different languages.

Dr Lisa Zaval
Chief Scientist

Dr. Lisa Zaval is a behavioral scientist and research consultant with broad expertise in behavioral economics, consumer behavior and social psychology. She holds a Ph.D in Judgment & Decision-Making Psychology from Columbia University and completed her post-doctoral training jointly at the Center for Decision Sciences at Columbia Business School. Her research has been cited over 450 times, published in leading academic journals, and summarized in a variety of venues, including the New York Times and the Wall Street Journal. In addition to her academic experience, Lisa leverages the knowledge gained from years of applied behavioral science research and consulting to help guide decision-making across a range of business sectors and industries.

Dr. Josie Ryan
Specialist - Mathematics

Dr. Josie Ryan holds a Ph.D in Mathematics from the University of South Carolina. In addition to working with the blockWRK team, Josie holds a professorship in the Department of Mathematics and Computing at Lander University and once won a standoff with an English bull after entering the wrong field while hiking on Hadrian's Wall Path.

Evan Cooper
Specialist - Financial Analysis

Evan Cooper is an experienced financial analyst and forensic accounting specialist that has spent his career at the intersection of finance, data, and technology. Most recently at KPMG, Evan leveraged the application of financial best practices and technologies to help organizations develop and implement cohesive, worldwide operating models backed by quantitative analyses of financial results, historical trends, and customer-level data.

Jefferson Davis
Specialist - Blockchain

Jefferson Davis is a blockchain engineer and automation specialist with a professional focus on distributed ledger technology, Internet of Things networks, natural language interfaces, and data analytics applications. He consults for the United Nations Office for Project Services as a blockchain support analyst, and since 2017 has been collaborating with the Nepal Innovation Lab on the development and testing of Sikka, an Ethereum-based digital asset transfer platform designed for

financially marginalized rural populations. Jefferson holds a BS in Information Technology and is currently studying in the MS Data Analytics program at Southern New Hampshire University.

Alfredo Caraveo

Specialist – Verification, Compliance

Alfredo Caraveo has built a 13+ year career in asset protection at major corporations like Sears Holdings, where, most notably, his efforts directly saved the company in excess of \$2 million over a six month period. His essential expertise is reflected in our verification algorithms, and the perspective and thought-leadership he brings to the team provides an entirely different approach to identifying RDAs.

Michael Festa

Specialist – Implementation

Michael Festa is a continuous improvement and organizational change expert. He spent 25 years “in the belly of the beast” working for large multinationals like Pfizer and Weston Foods. Michael brings to the team an extensive knowledge base that includes expertise in organizational behavior, worker incentivization, integrated process management, and charcuterie.

9. RISK WARNING

Participation in blockWRK Ltd.’s Initial Coin Offering is subject to risk of loss of purchase price. The primary known or reasonably foreseeable risk to the project is limited adoption of the blockWRK platform by businesses, resulting in limited options for redemption of WRK. Purchase of WRK does not grant the purchaser any proprietary interest in blockWRK Ltd. nor does it grant the purchaser any right to dictate blockWRK Ltd.’s actions, nor any other right that would generally attach to an investment. Purchase of WRK is offered as an outright purchase of the WRK token itself, and is not offered as, nor warranted to be, an investment. Purchase of WRK may not result in a valuable or usable token, and purchase of WRK may result in partial or complete loss of purchase price.

Other potential risks of participation in blockWRK Ltd.’s Initial Coin Offering include:

Illegal transaction risk: Prior to any issuance, participants will be required to positively confirm through a checkbox acknowledgement that their participation in the blockWRK ICO is in compliance with the laws of the country in which they reside, that they are not violating any laws through their purchase of our token, and that they bear the risk of any such violations, including where such violation is committed in good faith but nevertheless in ignorance of the law. Should the participant’s confirmation prove false, the participant risks the punitive consequences of their illegal action.

Fatality risk: Whilst robust chain-of-custody countermeasures have been implemented to address the risk that the death of blockWRK Ltd.’s principals may result in loss of access to digital assets held by blockWRK Ltd., it is possible that such measures will not be followed, resulting in loss of access.

Protocol breakdown: Any form of breakdown, forking, abandonment, or malfunction of the Ethereum protocols could impair or destroy the functionality of WRK.

Software weakness: There is no guarantee that WRK will work in an error-free, uninterrupted state. Furthermore, there is the inherent risk that WRK, allied theories and supporting technologies could have vulnerabilities, weakness, or bugs. The presence of such bugs, weaknesses, or vulnerabilities could lead to a complete or partial loss of WRK.

Mining attack: The dependence of WRK and blockchain technology on a decentralized mining network poses an inherent risk that, should a successful mining attack be undertaken, the software computations essential to the blockchain might be compromised or not executed in proper sequence.

Wallet risk: Participants' loss of access to a wallet storing WRK will result in loss of access to the WRK stored therein. If participants' credentials are stolen, the contents of the associated wallet may be irretrievably misappropriated. Malfunctions or errors within participants' wallet may also result in loss of WRK stored therein.

Cybercrime: Cybercrime or unauthorized access to blockWRK's systems may result in the loss, theft or inability to access tendered Ethereum. Such instances will have an adverse impact on the ability to issue WRK, or to launch or develop the blockWRK ecosystem.

Regulatory risk: Regulations affecting blockWRK Ltd., and/or the participants, are subject to change by the governance structure of relevant jurisdictions. Regulatory changes are theoretically limitless in scope, including retroactive action. Regulatory changes could result in loss or appropriation of WRK, or cessation of blockWRK Ltd.'s business activities including support of the blockWRK ecosystem.

Risk of hard-fork: As the blockWRK ecosystem evolves, an upgrade to WRK may be required (a hard-fork). If you decide not to participate in such upgrade, you may no longer be able to use your WRK and any non-upgraded WRK may lose their utility.

Risk of uninsured losses: WRK will be issued uninsured. In the event of loss or loss of utility value, you have no recourse to any insurance, unless you have personally obtained private insurance with respect thereto.

Unanticipated risks: Cryptographic tokens such as WRK are a new and relatively untested technology. In addition to the risks set out in this section, there are other risks associated with your acquisition, storage, transfer and use of WRK, including risks that cannot be foreseen. Such risks may further materialize as unanticipated variations or combinations of the risks set out in this section.

PURCHASES OF WRK SHOULD BE UNDERTAKEN ONLY BY INDIVIDUALS, ENTITIES, OR COMPANIES THAT HAVE SIGNIFICANT EXPERIENCE WITH, AND UNDERSTANDING OF, THE USAGE AND INTRICACIES OF CRYPTOGRAPHIC TOKENS, INCLUDING ETHEREUM TOKENS, AND BLOCKCHAIN BASED SOFTWARE SYSTEMS. PURCHASERS SHOULD HAVE AN EXPERTISE AND EXPERIENCE WITH STORAGE AND TRANSMISSION MECHANISMS OF CRYPTOGRAPHIC TOKENS. THE COMPANY WILL NOT BE RESPONSIBLE IN ANY WAY FOR LOSS OF CRYPTOCURRENCY, ETHEREUM, WRK OR ANY OTHER FUNDS RESULTING FROM ACTIONS TAKEN OR OMITTED BY PURCHASERS. **IF YOU DO NOT HAVE RELEVANT EXPERIENCE OR EXPERTISE, THEN YOU SHOULD NOT PURCHASE WRK.** YOUR PARTICIPATION IN WRK SALE IS DEEMED AS YOUR ACKNOWLEDGMENT THAT YOU SATISFY THE REQUIREMENTS MENTIONED IN THIS PARAGRAPH.

The blockWRK platform has been developed and accordingly there is no minimum ICO raise which, if not met, will jeopardize the project. However, should it be determined by blockWRK Ltd. for any reason that the project is not viable and will not proceed, subscribers to the ICO will be refunded their payment, less any transaction fees coincident to such return. WRK have no specific rights attached to them aside from the right to use WRK in accordance with the blockWRK platform, including redemption of WRK at participating businesses and transfer of WRK to employees.

Participation in the blockWRK Ltd. Initial Coin Offering is subject to regulatory oversight and compliance with blockWRK Ltd.'s prerequisite customer due diligence protocols. Issuance applications may be refused by blockWRK Ltd. at blockWRK Ltd.'s discretion, and blockWRK Ltd. is not required or expected to give reasons for any such refusal.

10. LEGAL

This document contains proprietary information and intellectual property of blockWRK Ltd., a Bermuda company having its registered office at Chancery Hall, 52 Reid Street, Hamilton HM 12, Bermuda. Neither this document nor any of the information contained herein may be reproduced or disclosed under any circumstances without the express written permission of blockWRK Ltd. This document does not constitute an offer to sell or solicitation of an offer to buy securities of blockWRK Ltd. Any such offers and sales would be made only to Accredited Investors pursuant to separate agreements to be negotiated by the parties thereto.

Appendix

blockWRK ICO Token Contract

Technical Specifications

blockWRK ICO Token Contract

Technical Specifications Appendix

DEFINITION OF TERMS

- **Application:** refers to blockWRK’s off-chain application software.
- **Application User:** refers to a BlockWRK customer in relation to their BlockWRK account and its associated Ethereum wallet.
- **Authorized Account:** refers to an Ethereum wallet owned and maintained by BlockWRK for use by the Application in processing on-chain transactions.
- **BlockWRK Token:** refers to the Contract “BlockWRKToken” and those contracts, libraries, and interfaces it inherits.
- **Contract:** see “Smart Contract”.
- **External Transfer:** refers to a transfer of WRK outside of the Application, subject to external transfer fee paid in WRK.
- **ICO Contract:** refers to the Contract “BlockWRKICO” and those contracts, libraries, and interfaces it inherits.
- **ICO Participants:** refers to KYC-verified and registered members of the public.
- **Internal Transfer:** refers to a transfer of WRK tokens between Users.
- **Smart Contract:** refers to all Solidity smart contracts under development within the scope of this document. See “BlockWRK Token” and “ICO Contract”.
- **Token:** refers to the WRK Ethereum token within the scope of this document.
- **Owner:** refers to the sole super-user account for the Token and ICO Contracts, an Ethereum wallet, maintained by blockWRK.
- **Website:** refers to blockWRK’s landing page for ICO information and registration

CONTRACT FEATURES

FEATURES SUMMARY

- ERC20 Token to be created from OpenZeppelin contracts, libraries, and interfaces.
- Token Details:
 - **Name:** BlockWRK
 - **Symbol:** WRK

- **Decimals:** 4
- **Supply Total:** 11,900,000,000.0000
 - Reserved Tokens: 2,000,000,000
 - Seeding Tokens: 4,300,000,000
 - Distribution Pool Tokens: 5,600,000,000

- Our customization of the Token Contract achieves the following:
 - **Taxed Token** variation on the standard ERC20 transfer function (from OpenZeppelin) to impose a variable transaction fee on each token transfer that occurs outside of the BlockWRK application environment.

 - **Transaction Handler** function that allows users to send tokens within and also outside of the BlockWRK application without the need to hold Ether for paying gas costs.

 - **Internal Token Distribution** function that allows the Application to distribute tokens for Proof-of-WRK and other administrative token transfers.

 - **In-App Purchases** function that has variable rates for Users and business accounts to purchase WRK without needing to buy from an external cryptocurrency exchange.

- **Set Tax Rate** function to allow for change of Taxed Token percentage fee. ICO Contract specifications:
 - The Contract will issue Tokens when Ether is sent to the Contract address during the Seeding Period or until all Seeding Tokens have been sold.

 - The Contract will issue Tokens at the following tiered prices:
 - 100,000,000 @ 0.00001 ETH
 - 200,000,000 @ 0.0001 ETH
 - 500,000,000 @ 0.0005 ETH
 - 500,000,000 @ 0.0008 ETH
 - 500,000,000 @ 0.0016 ETH

- 500,000,000 @ 0.0032 ETH
 - 500,000,000 @ 0.0064 ETH
 - 500,000,000 @ 0.0085 ETH
 - 500,000,000 @ 0.0096 ETH
 - 500,000,000 @ 0.01 ETH
- Tier pricing will be hardcoded in the contract at the above rate during deployment.

USER ACCESS

- Access to all standard Token functions and the ICO Contract will be public.
- The Token will have two levels of administrative privileges:
 - Owner: a standard administrative archetype that has full control over all Contract functionality. The contract will be limited to one Owner.
 - Authorized: a modified version of Owner, in which the specified account has access to certain administrative functions. An unlimited number of authorized users can only be added or removed by the Owner.

TAXED TOKEN

- The Token contract will inherit from TaxedToken.sol, which is a custom-modified version of a contract token initially developed by [OpenZeppelin](#) and modified by blockWRK.
- Implementing these features within the Contract allows for creating an incentive to keep WRK Tokens circulating within the Application environment by collecting a percentage of WRK tokens transferred outside the Application as a fee.
- TaxedToken.sol overrides the standard ERC20 token functions transfer() and

transferFrom():

- transfer() will work exactly like the standard ERC20 function and can be executed by any WRK Token holder outside of the Application:
 - Account A, a non-BlockWRK wallet, calls transfer() to send WRK to Account B, a non-BlockWRK wallet.
 - Account A must have an Ether balance to pay the gas costs associated with this transaction.
 - The Contract references the Tax Rate in calculating the transfer fee amount, paid in WRK.
 - The Contract transfers WRK Tokens to the Operations Wallet as a transfer fee.
 - The Contract transfers the balance of WRK to Account B.

- transferFrom() will work exactly like the standard ERC20 function and can be executed by any WRK Token holder outside of the Application:
 - Account A, a non-BlockWRK wallet, calls approve(), to allow Account B to spend a certain amount of WRK on its behalf.
 - Account A must have an Ether balance to pay the gas costs associated with this transaction.
 - Account B, a non-BlockWRK wallet, calls transferFrom() to send tokens to Account C on behalf of Account A.
 - Account B must have an Ether balance to pay the gas costs associated with this transaction.
 - The Contract references the Tax Rate in calculating the transfer fee amount, paid in WRK.
 - The Contract transfers WRK Tokens to the Operations Wallet as a transfer fee.
 - The Contract transfers the balance of WRK to Account C.

TRANSACTION HANDLER

- The transactionHandler() function allows the Application to simulate all standard ERC20 token functions from BlockWRK wallets, but with the added benefit of allowing for gas costs on the Ethereum network to be paid in [WRK](#) rather than [Ether](#).

- transactionHandler() is a function that will be called by an Authorized Account managed by BlockWRK but initiated by the Application User within the UI:
 - transfer() to another BlockWRK account:

- Account A, a BlockWRK account, will initiate a transaction to send WRK to Account B, a BlockWRK account.
 - The Application will process this transaction by calling transactionHandler() to initiate a standard ERC20 transfer() function by paying the gas costs on behalf of Account A from Ether held in an Authorized account controlled by BlockWRK.
 - The Contract will calculate the gas costs associated with the transaction and charge Account A in WRK to reimburse the Operations Wallet for Ether spent.
 - The Contract transfers the specified amount of WRK tokens from Account A to Account B.
 - The Contract transfers WRK tokens from Account A to the Operations Wallet as a transaction fee.
- transfer() outside of the BlockWRK Application:
 - Account A, a BlockWRK account, will initiate a transaction to send WRK to Account B, a non-BlockWRK account.
 - The Application will process this transaction by calling transactionHandler() to initiate a standard ERC20 transfer() function by paying the gas costs on behalf of Account A from Ether held in an Authorized account controlled by BlockWRK.
 - The Contract will calculate the gas costs associated with the transaction and charge Account A in WRK to reimburse the Authorized account for Ether spent.
 - The Contract references the Exit Tax Rate in calculating the transfer fee amount, paid in WRK.
 - The Contract transfers WRK Tokens to the Operations Wallet for both gas costs and the transfer fee.
 - The Contract transfers the balance of WRK to Account B.

CONTRACT ARCHITECTURE

CONTRACTS AND FUNCTIONS

- All contracts, interfaces, and libraries are listed below, with special attention given to custom contracts and functions under development in this Project.
 - **ERC20Basic**

 - **SafeMath**

 - **BasicToken** is ERC20Basic, using SafeMath

 - **ERC20** is ERC20Basic

 - **StandardToken** is ERC20, BasicToken

 - **ERC865Basic** is ERC20
 - `_transferPreSignedHashing(address _to, uint256 _value, uint256 _fee, uint256 _nonce)` internal returns (bytes32)

 - **ERC865BasicToken** is ERC865Basic, StandardToken
 - `_transferPreSignedHashing(address _to, uint256 _value, uint256 _fee, uint256 _nonce)` internal returns (bytes32)

 - `_prefix(bytes32 _hash)` internal pure returns (bytes32)

 - `_recover(bytes32 _hash, bytes _sig)` internal pure returns (address)

 - **TaxedToken** is ERC865BasicToken
 - `transfer(address _to, uint256 _value)` public returns (bool)

 - `transferFrom(address _from, address _to, uint256 _value)` public

 - **Ownable**

 - **Authorizable** is Ownable, using SafeMath

- addAuthorized(address _account) public onlyOwner
 - isAuthorized(address _account) public constant
 - removeAuthorized(address _account) public onlyOwner
 - **BlockWRKToken** is TaxedToken, Authorizable
 - inAppTokenDistribution(address _to, uint256 _value) public onlyAuthorized
 - inAppTokenPurchase(address _to, uint256 _value, uint256 _fee) public onlyAuthorized
 - loadBusinessWalletWithFee(address _to, uint256 _value) public onlyAuthorized
 - setTaxRate(_newRate) public onlyOwner
 - setFeeAccount(_newAddress) public onlyOwner
 - setInAppPurchaseWallet(_newAddress) public onlyOwner
 - transactionHandler(bytes _signature, address _from, address _to, uint256 _value, uint256 _fee, uint256 _nonce) public onlyAuthorized
 - **BlockWRKICO** is BlockWRKToken
 - () fallback payable
 - buyTokens(address _beneficiary) public payable
 - capReached() public view
 - hasClosed() public view
 - _calculateTokens(uint256 _amountWei) internal
 - _deliverTokens(address _beneficiary, uint256 _tokenAmount) internal
 - _forwardFunds() internal
 - _getRemainingTokens(uint256 _tokensSold) internal
 - _getTokenAmount(uint256 _weiAmount) internal
 - _preValidatePurchase(address _beneficiary, uint256 _weiAmount) internal
 - _processPurchase(address _beneficiary, uint256 _tokenAmount) internal
 - _setAvailableInCurrentTier(uint256 _tierPreviousRemaining, uint256 _newIssue) internal
 - _setAvailableInSale(uint256 _newIssue) internal
 - _setCurrentTierRate(uint256 _rate) internal
 - tokensRemainingInSale() public view
 - tokensRemainingInTier() public view
 - transferRemainingTokens() public onlyOwner
- Note: Please see *Contract Diagrams* below for further detailed information.

BLOCKWRK WALLETS

- BlockWRK maintains a number of Ethereum wallets for the ICO launch and throughout the lifecycle of the Token's use within the Application.
 - **Distribution Pool Wallet:** This address will receive the Distribution Pool tokens prior to ICO launch and will also receive any unsold Seeding Tokens at the close of the Seeding Period.
 - **Operations Wallet:** This address will receive fees (labeled feeAccount in TaxedToken contract) from external Token transfers and also receive fees for loading customer business wallets and paying for gas costs on the Ethereum network. All of these fees will be paid by the sender in WRK.
 - **Reserved Token Wallet:** This address will receive the Reserved tokens prior to ICO launch.
 - **Sales Wallet:** This address will receive Ether from ICO participants during the Seeding Period.
 - **Owner:** Any Contract Owner should be an Ethereum account under the control of one authorized Client stakeholder.
 - **Authorized:** Wallets with this level of administrative privilege will be required to allow the Application to run server-side processes that involve interaction with the Contract (e.g., Transaction Handler, Load Business Wallet, Set Business Rate, Set Gas Cost, Set Tax Rate, etc.).

CONTRACT AUDIT

An independent third-party audit has been performed by QuillHash (www.quillhash.com) and the results are available in our GitHub repo here:

https://github.com/blockwrkinc/blockwrkinc.github.io/blob/master/BlockWRK_Smart_Contract_Audit_Report.pdf

ICO PHASES

PRE-MINE

- Upon deployment of the Token Contract, the 2,000,000,000 Reserved Tokens and 5,600,000,000 Distribution Pool Tokens will be issued to the appropriate wallets immediately.

SEEDING PHASE

- The ICO will begin with the Seeding Phase where up to 4,300,000,000 Tokens will become available and will automatically be issued to any KYC verified sender who transfers Ether to the contract address.
- The Seeding Phase will last for a duration of 12 months or until all the tokens have been sold.
- Seeding Tokens will be sold according to the tiered pricing model noted above.

CLOSE

- Any remaining Tokens at the close of the Seeding Phase will be transferred to the Distribution Pool Wallet by the Owner.

ICO PARTICIPATION

- Buying Seed Tokens:
 - The ICO Contract (“BlockWRKICO”) offers two methods for purchase of Seed Tokens:
 - Through the unnamed “fallback” function, the Contract will automatically return an appropriate number of WRK Tokens to any sender who transfers Ether directly to the ICO Contract address.

- Through the buyTokens() function, the Contract will issue tokens to the designated wallet address in exchange for the amount of Ether included in that transaction.
 - The ICO contract will display:
 - the current amount of Ether raised during the ICO,
 - the current number of Tokens sold, including premined Tokens,
 - the total number of remaining Tokens for sale,
 - the remaining time left before sale close,
 - the current sale tier,
 - the number of Tokens remaining in the current sale tier, and
 - the price of WRK Tokens, according to the current sale tier
- In order to provide proper credit to ICO Participants once the Application goes into production, ICO registration information captures the Ethereum address of ICO Participants.

CONTRACT MANAGEMENT

OVERVIEW

- The ICO Contract is a separate Smart Contract from the BlockWRK Token Contract that will be owned by blockWRK. Its use will not be required beyond the close of the Seeding Phase.
- The BlockWRK Token Contract functions separately from the ICO Contract and has administrative privileges for one Owner and an unlimited number of Authorized accounts.

ICO CONTRACT MANAGEMENT

- Upon the close of the Seeding Phase, any remaining, unsold Tokens will be transferred to the Distribution Pool by the Owner.

BLOCKWRK TOKEN CONTRACT MANAGEMENT

- Public access to the BlockWRK Token will include:
 - Purchase, sale, and transfer of WRK Tokens between any Ethereum accounts, subject to a transfer fee paid in WRK.

- Authorized access to the BlockWRK Token will allow for calling any function designated as “onlyAuthorized” within the source code, including:
 - Certain transactions initiated within the Application by users must be mediated by off-chain processing of information and validation of Contract access through a BlockWRK Authorized account, such as:
 - Transfer of WRK Tokens between BlockWRK wallet addresses within the Application that are:
 - free of the external transfer fee, and
 - allow for gas costs to be paid in WRK.
 - Purchase of Distribution Pool Tokens to load BlockWRK business accounts subject to the business rate fee paid in WRK.

 - In order to execute the above transactions:
 - Authorized account credentials are stored within Application software,
 - the Application deploys appropriate Web3 libraries used to interface with the Ethereum blockchain

- Owner access is limited to one account and allows for calling any Contract functions designated as “onlyOwner” in the source code, including:
 - Modification of:
 - the business wallet loading rate, and
 - the external transfer fee.

 - Re-assignment of BlockWRK wallets to new addresses.

 - Addition and Deletion of Authorized accounts.

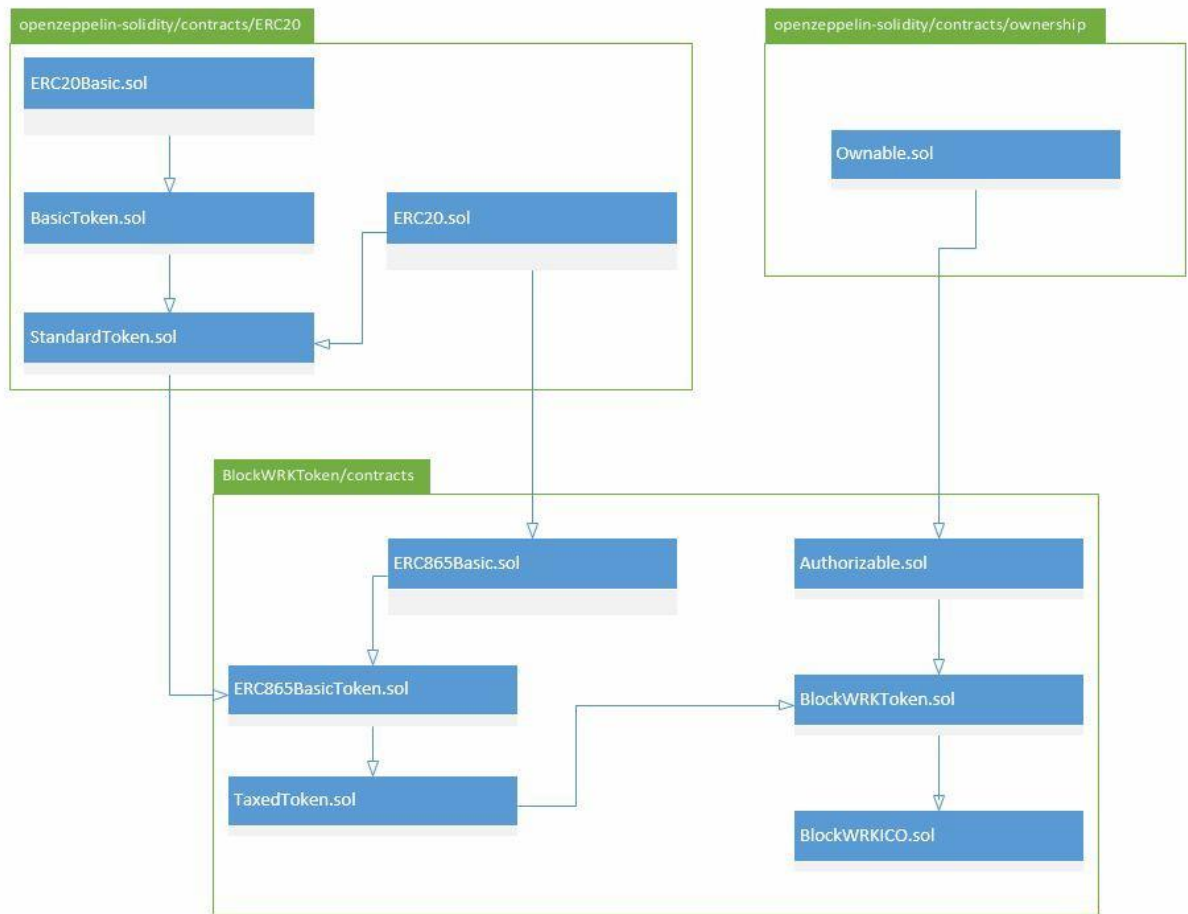
CONTRACT DIAGRAMS

- Packages included:
 - openzeppelin-solidity/contracts/token/ERC20
 - openzeppelin-solidity/contracts/ownership
 - openzeppelin-solidity/contracts/math
 - BlockWRKToken/contracts

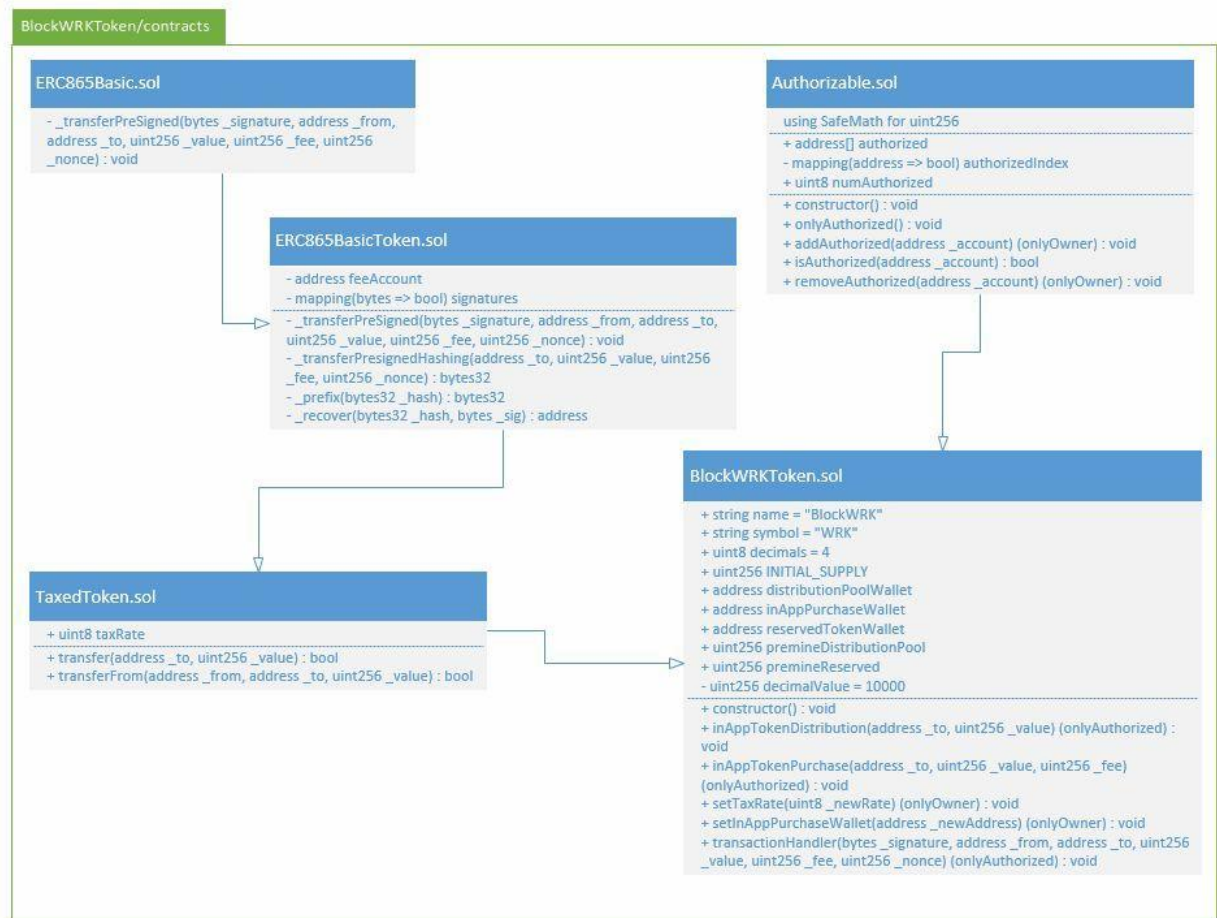
- Contracts to be deployed:
 - BlockWRKICO.sol

- Contracts custom-designed for BlockWRK:
 - Authorizable.sol
 - BlockWRKICO.sol
 - BlockWRKToken.sol
 - ERC865Basic.sol
 - ERC865BasicToken.sol
 - TaxedToken.sol

INHERITANCE MODEL OF SMART CONTRACTS



BlockWRKToken/contracts Detail



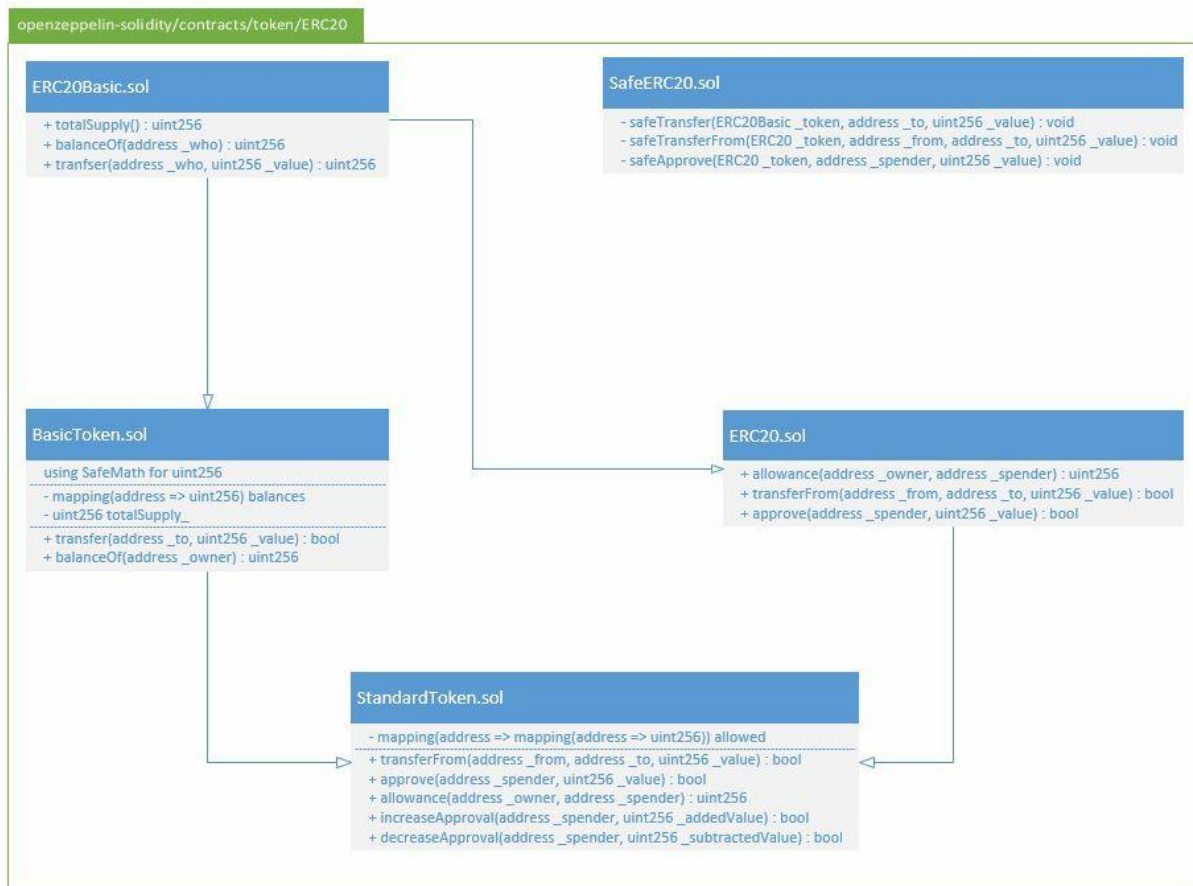
BlockWRKToken/contracts Detail (con't)

BlockWRKToken/contracts (con't)

BlockWRKICO.sol

```
+ address salesWallet
+ uint256 cap
+ uint256 closingTime
+ uint256 currentTierRate
+ uint256 openingTime
+ uint256 weiRaised
- availableInCurrentTier
- availableInSale
- totalSaleVolume
- totalTokenVolume
-----
constructor() : void
+ () fallback : void
+ buyTokens(address _beneficiary) : void
+ capReached() : bool
+ hasClosed() : bool
- _calculateTokens(uint256 _amountWei) : uint256
- _deliverTokens(address _beneficiary, uint256 _tokenAmount) : void
- _forwardFunds() : void
- _getRemainingTokens(uint256 _tokensSold) : uint256
- _getTokenAmount(uint256 _weiAmount) : uint256
- _prevalidatePurchase(address _beneficiary, uint256 _weiAmount) : void
- _processPurchase(address _beneficiary, uint256 _tokenAmount) : void
- _setAvailableInCurrentTier(uint256 _tierPreviousRemaining, uint256 _newIssue) : void
- _setAvailableInSale(uint256 _newIssue) : void
- _setCurrentTierRate(uint256 _rate) : void
+ tokensRemainingInSale() : uint256
+ tokensRemainingInTier() : uint256
+ transferRemainingTokens() (onlyOwner) : void
```

Open Zeppelin contracts Detail



Open Zeppelin contracts Details (con't)

openzeppelin-solidity/contracts/ownership

Ownable.sol

```
+ address owner
+ constructor() : void
+ onlyOwner() : void
+ renounceOwnership() (onlyOwner) : void
+ transferOwnership(address _newOwner) (onlyOwner) : void
- _transferOwnership(address _newOwner) : void
```

openzeppelin-solidity/contracts/math

SafeMath.sol

```
- mul(uint256 _a, uint256 _b) : uint256
- div(uint256 _a, uint256 _b) : uint256
- sub(uint256 _a, uint256 _b) : uint256
- add(uint256 _a, uint256 _b) : uint256
```


User Stories

Epic	User Story	Requirements	Process Steps
As a potential ICO participant, I want to participate in the BlockWRK ICO.	As an potential ICO participant, I want to register for the BlockWRK ICO	The Potential ICO participant is: 1) able to navigate to the ICO Website.	1) The potential ICO participant navigates to the BlockWRK ICO Website; 2) The potential ICO participant enters requested personal information; 3) The potential ICO participant passes KYC verification.
	As a registered ICO participant, I want to purchase WRK tokens during the Seed Phase.	The ICO participant is: 1) registered as an ICO participant; 2) able to find the BlockWRK contract on Etherscan; 3) familiar with the steps required to complete the purchase of WRK.	1) The ICO participant receives the ICO Contract address after KYC verification; 2) The ICO participant sends Ether to the ICO Contract address corresponding to the amount of WRK desired.

	<p>As a member of the public using a non-BlockWRK wallet, I want to transfer WRK to another non-BlockWRK wallet.</p>	<p>The member of the public is: 1) able to use an Ethereum wallet; 2) possesses sufficient Ether to cover gas costs; 3) informed that a transaction fee will be deducted from the transaction.</p>	<p>1) The member of the public calls transfer() from their Ethereum wallet; 2) The Token Contract deducts a percentage of WRK from the total sent; 3) The transfer fee is sent to BlockWRK and the balance is sent to the recipient.</p>
<p>As a member of the public, I want to transfer WRK to other Ethereum addresses</p>	<p>As a member of the public using a non-BlockWRK wallet, I want to approve another non-BlockWRK wallet to spend WRK on my behalf.</p>	<p>The member of the public and the authorized spender are: 1) able to use an Ethereum wallet; 2) possesses sufficient Ether to cover gas costs; 3) informed that a transaction fee will be deducted from the transaction.</p>	<p>1) The member of the public calls approve() from their Ethereum wallet; 2) The BlockWRK Token Contract records the approval; 3) The authorized spender calls transferFrom() their Ethereum wallet; 4) The BlockWRK Token Contract deducts a percentage of WRK from the total sent; 5) The transfer fee is sent to BlockWRK and the balance is sent to the recipient.</p>
	<p>As a new user, I want to transfer WRK from my external Ethereum wallet to my new BlockWRK account.</p>	<p>The user is: 1) able to create a new BlockWRK account; 2) able to use an Ethereum wallet; 3) possesses sufficient Ether to cover gas costs; 4) informed that a transaction fee will be deducted from the transaction.</p>	<p>1) The new user calls transfer() from their Ethereum wallet; 2) The Token Contract deducts a percentage of WRK from the total sent; 3) The transfer fee is sent to BlockWRK and the balance is sent to the user's account.</p>

	<p>As a business owner, I want to load my BlockWRK business wallet through an in-app purchase.</p>	<p>The business owner is: 1) a current BlockWRK business user; 2) able to navigate to the appropriate page in their BlockWRK account to purchase WRK with fiat; 3) able to add a fiat payment method to their BlockWRK account.</p>	<p>1) The business owner enters the desired amount of WRK to purchase; 2) The Application calculates the fee in WRK to load the wallet; 3) The Application deducts the purchase cost from the business owner's fiat payment method 4) The Application calls inAppTokenPurchase() from an authorized account; 5) The business owner receives WRK in their wallet, less the wallet loading fee.</p>
<p>As a business owner, I want to manage my BlockWRK account and make payments to my employees for RDAs</p>	<p>As a business owner, I want to transfer WRK to my employees.</p>	<p>The business owner is: 1) a current BlockWRK business user; 2) able to navigate to their BlockWRK wallet.</p>	<p>1) The business owner enters the recipient address and amount of WRK to send, and then submits the form; 2) The Application calculates the Ethereum gas cost, the value of WRK in ETH, and the cost of gas in WRK; 3) The Application presents the business owner with a confirmation page listing the recipient, amount of WRK to send, and the transaction cost in WRK; 4) The business owner confirms the transaction by digitally signing the message with their BlockWRK wallet key; 5) The Application saves the information to a local database and enters the message into a pool of pending transactions; 6) The Application processes the business owner's transfer by calling transactionHandler(); 7) The Token Contract transfers WRK to the recipient and sends WRK to BlockWRK to reimburse the ETH costs spent on gas.</p>

<p>As a user, I want to send and receive WRK without having to pay for gas costs in Ether</p>	<p>As a user, I want to transfer WRK to a non-BlockWRK Ethereum wallet.</p>	<p>The user is: 1) able to log in to their BlockWRK account; 2) able to access their BlockWRK wallet; 3) able to specify the recipient and amount of WRK to send.</p>	<p>1) The user enters the recipient address and amount of WRK to send, and then submits form; 2) The Application calculates the Ethereum gas cost, the value of WRK in ETH, the cost of gas in WRK, and the transfer fee in WRK; 3) The Application presents the user with a confirmation page listing the recipient, amount of WRK to send, and the transaction costs for gas and exit tax in WRK; 4) The user confirms the transaction by digitally signing the message with their BlockWRK wallet key; 5) The Application saves the information to a local database and enters the message into a pool of pending transactions; 6) The Application processes the user's transfer by calling transactionHandlerExit(); 7) The Token Contract transfers WRK to the recipient and sends WRK to BlockWRK to reimburse the ETH costs spent on gas and pay for the exit tax.</p>
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DEVELOPMENT AND TESTING LOGS

DEVELOPMENT LOGS

Objective	Date Completed	Notes
Authorizable.sol	October 2, 2018	Inherits from Ownable.sol, allows the owner to set limited administrative privileges for wallets controlled by the Application.
TaxedToken.sol	October 2, 2018	Modified transfer() function from existing OpenZeppelin feature for taxed token to suit the purposes of BlockWRK's needs and also created a new function to override the StandardToken transferFrom() function.
ERC865.sol	October 5, 2018	Simplified the existing EIP 865 code to match blockWRK's needs and specifications.
ERC865BasicToken.sol	October 5, 2018	Inherits from StandardToken.sol.
BlockWRKToken.sol	October 8, 2018	Inherits from Authorizable.sol and TaxedToken.sol.
BlockWRKICO.sol	October 2, 2018	Inherits from Crowdsale.sol, CappedCrowdsale.sol, and TimedCrowdsale.sol, with custom functions that allows the contract owner to manage the ICO. The function <code>_getRemainingTokens()</code> implements a binary search algorithm to determine the current sale tier, which assists in setting the price and selling the proper amount of WRK at the correct rate and then rolling over any remaining Ether sent to the next tier if needed.
Unit Testing	October 11, 2018	Completed successfully.
Integration Testing	October 12, 2018	Completed successfully.

Ropsten Testing	October 12, 2018	Completed successfully.
Audit Revisions	October 25, 2018	Revisions sent to auditors for verification.

*Note: All Open Zeppelin contracts have tests that are included with the library.

UNIT TESTS FOR CUSTOM CONTRACTS

- Authorizable.sol
 - addAuthorized:
 - When the caller is the owner:
 1. It: adds authorized.
 - When the caller is not the owner:
 1. It: reverts.
 - isAuthorized:
 - When the address is authorized:
 1. It: returns true.
 - When the address is not authorized:
 1. It: returns false.
 - removeAuthorized:
 - When the caller is the owner:
 1. It: removes authorized.
 - When the caller is not the owner:
 1. It: reverts.
- TaxedToken.sol
 - transfer:
 - When the recipient is not the zero address:
 - When the sender does not have enough balance:
 1. It: reverts.
 - When the sender has enough balance:
 1. It: transfer the requested amount.
 2. It: emits a transfer event.
 - When the recipient is the zero address
 1. It: reverts.
 - transferFrom:
 - When the recipient is not the zero address:

- When the spender has enough approved balance:
 - When the owner has enough balance:
 1. It: transfers the requested amount.
 2. It: decreases the spender allowance.
 3. It: emits the transfer events.
 - When the owner does not have enough balance:
 1. It: reverts.
 - When the spender does not have enough approved balance:
 - When the owner has enough balance:
 1. It: reverts.
 - When the owner does not have enough balance:
 1. It: reverts.
 - When the recipient is the zero address:
 1. It: reverts.
- BlockWRKToken.sol
 - inAppTokenDistribution:
 - When the delegate is authorized:
 - When the wallet balance is greater than or equal to the value being sent:
 - When the recipient is not the zero address:
 1. It: transfers the requested amount.
 2. It: emits the transfer event.
 - When the recipient is the zero address:
 1. It: reverts.
 - When the wallet balance is less than the value being sent:
 1. It: reverts.
 - When the delegate is not authorized:
 1. It: reverts.
 - inAppTokenPurchase:
 - When the delegate is authorized:
 - When the wallet balance is greater than or equal to the value being sent:
 - When the recipient is not the zero address:
 1. It: transfers the requested amount.

- 2. It: emits the transfer events.
 - When the recipient is the zero address:
 - 1. It: reverts.
 - When the pool balance is less than the value being sent:
 - 1. It: reverts.
 - When the delegate is not authorized:
 - 2. It: reverts.
 - transactionHandler:
 - When the delegate is authorized:
 - When the recipient is not the zero address:
 - When the signature is original:
 - When the sender address is recovered:
 - When the sender has enough balance:
 - 1. It: transfers the requested amount.
 - 2. It: emits the transfer events.
 - When the sender does not have enough balance:
 - 1. It: reverts.
 - When the sender address is not recovered:
 - 1. It: reverts.
 - When the signature is not original:
 - 1. It: reverts.
 - When the recipient is the zero address:
 - 1. It: reverts.
 - When the delegate is not authorized:
 - 1. It: reverts.
- BlockWRKICO.sol
 - buyTokens:
 - When the beneficiary is not the zero address:
 - When the Wei amount is not zero:
 - When the Wei amount sent plus Wei amount raised is less than the hardcap:
 - When the crowdsale is open:

- It: issues tokens at the correct price.
 - It: emits the purchase event.
 - When the crowdsale is closed:
 - It: reverts.
 - When the Wei amount sent plus Wei amount raised is equal to or more than the hardcap:
 - It: reverts.
 - When the Wei amount is zero:
 - It: reverts.
- When the beneficiary is the zero address:
 - It: reverts.

TESTING LOGS

Objective	Date All Passing	Notes
Authorizable.test.js	October 9, 2018	
Authorizable.behaviour.js	October 9, 2018	
TaxedToken.test.js	October 9, 2018	
ERC865BasicToken.test.js	October 10, 2018	Functions transferred into BlockWRKICO.test.js after completion.
BlockWRKToken.test.js	October 11, 2018	
BlockWRKICO.test.js	October 12, 2018	Required re-working due to problems with relying on standard Open Zeppelin library in conjunction with Taxed Token functionality. The problem is resolved, but the tests need to be updated to match the contract changes.
Audit Revisions	October 25, 2018	All tests passing.