HEALTH SPACE

VIA Marketplace

A Distributed Inspection & Audit Network to Connect Government and Private Industry

Abstract

The Verification, Inspection and Audit (VIA) Marketplace proposes a robust mechanism for the simple transmission, sharing and access of data between government and private industry for the furtherance of health and safety. This is accomplished by allowing private industry to have direct access into the regulatory inspections performed against them and subsequently sharing their own audits for self reporting, similar to the way an IRS tax filing works. While governments and private industry alike are determining how they can apply blockchain solutions in the future, the VIA Marketplace brings a newfound approach to the ability of regulators, software providers and private organizations to share data with easy-to-use toolkits and interfaces, all on a singular protocol within a distributed network. This supplants data curation systems of old, such as Carfax, by supplying information straight from the source for direct consumption by a broader audience. By doing so, inefficiencies are removed, transparency and governance is improved, and speed of commerce is increased by facilitating the ease of access to both regulatory and private sector data. All of this results in healthier and safer establishments which increases consumer confidence and builds better public trust.

Community Draft, Version 1.0 - Subject to Change

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1 Preface

While the VIA Marketplace has many applicable verticals, such as cannabis, hospitality and agriculture, this paper will primarily discuss the use case of the VIA Marketplace as it relates to food safety. This approach is designed to provide clarity and examples for the purpose of applying the marketplace's use to real world scenarios.

2 Introduction

There is a wise admonishment in corporate management that states "inspect what you expect". Inspections, and the inspection process, are vital. They tell a person or organization what is going on. Inspections put hard data and science to processes and methodology. They help create patterns and influence behavior. Inspections can validate or invalidate theories and processes. Simply put, if you do not inspect something you cannot expect it to improve, let alone expect it to be something personnel or employees consider important.

When it comes to environmental health and safety, an inspection, in its simplest form, is a checklist of items to be reviewed by a regulatory person. These items are checked as either being "in" or "out" of compliance, where "out" indicates a standard was not met for ensuring proper health or safety. Once the inspection is complete a result is issued, whether that be a score or grade, denoting whether it was of a passing or failing nature. Public health departments are responsible for the vast majority of inspections that are essential for maintaining standards and safeguards in businesses.

In the food service industry, for example, inspections ensure that safe food handling procedures are used to protect against contamination in order to prevent foodborne illness. These inspections, conducted by inspectors working for the health department, serve to provide accountability to the food service establishment. The data collected is oft stored in a database, or filing cabinet, back at the health department. Certain jurisdictions post the inspection results online, but it is done through disparate mechanisms and is difficult to amalgamate data from different geographic regions into one cohesive set. There are a plethora of applications and sectors that can benefit from sharing in this inspection and audit data, such as the food traceability industry which is expected to reach $14 Billion by 2019 [2].

In addition to health inspections, businesses also perform independent audits, hereafter referred to as "self-inspections", which are modeled after public health inspections, but are carried out by a company itself or by a third party entity. These self-inspections track quality, health and a host of other items critical to maintaining the health and safety of a facility as well as the quality of product produced.

However, since self-inspections are not carried out by a government agency, they cannot be considered a health inspection or used as such. Consequently, this information is siloed and unavailable to regulators as well as the general public, both of whom would benefit from having access to the information. This constitutes a vast amount of data that is left untapped, with very little data sharing, reuse or transparency, which leads to several problems and gaps:

1. **Data Reuse.** Auditors regularly check the quality of other audits for verification and comparison, but this information is not extensively used by public health departments or private companies. Data is not readily available for broad spectrum comparisons.
2. **Data Transparency.** Although public health inspection data is made publically available through websites, it is on a county by county or state by state basis, and there are no mechanisms or services that would allow agencies to make their data transparent with the wider community. Further, the self-inspections are only available to the company who performed them and are not shared elsewhere. This lack of transparency can inhibit safe practices and behavior.
3. **Application Integration.** To enable data sharing and transparency, producers need to be able to seamlessly interface their inspection and audit data, and consumer facing systems need to be able to retrieve data in a simple way.
4. **Auditor Motivation.** An incentive scheme is needed that allows auditors to perform high quality evaluation and validation of independent audits so that data can be automatically rated and provided to government and private entities for use. The incentive is needed to ensure the audits are being done in a thorough manner. The inverse is also needed whereby those auditors who do not participate in good faith are penalized for providing inaccurate or biased information.

Why Self-Inspections Are Needed

Inspections serve a multi purpose need ranging from accountability to education. Inspections aim to keep the persons responsible for ensuring health and safety in an establishment knowledgeable of what is going on or, more importantly, what is going wrong. They serve as a reminder of what needs to be constantly monitored, checked and safe guarded.

However, the most critical element of all inspections is the human element. Ensuring someone is handling an item without contaminating it comes down to knowledge and care. Often this knowledge and its importance, such as cross contamination, proper storage, etc is not widely understood. The repetitive and routine nature of inspections helps bring about that understanding by having those who work at an establishment consistently check, re-check and ensure everything is in safe and healthy condition. To influence and change behavior at a human level, one needs constant reminders before that behavior turns into habit.

Unfortunately, as is the case of the food-service industry, regulators only inspect establishments on an infrequent basis, sometimes as little as once a year [3][4]. This data is still invaluable because it provides an unbiased and regulated insight as to what is going

on in a food-service establishment. It also instills a healthy level of accountability for the establishment.

However, it does not happen frequently enough to lead to a reinforcement of behavior and leaves a lot to be desired. The need for self-inspecting, and the resulting data that comes from those self-inspections, is needed on a regular and routine basis; monthly, weekly, perhaps even daily in some cases. Government agencies are already overly burdened when it comes to ensuring food is served safely. Even with their valiant efforts, much slips through the cracks which is apparent with the egregious amount of people sickened by contaminated food every year.

Conventional wisdom states that true change happens from within, not from without. Self-inspections would greatly help curb foodborne illness by instilling constant reminders of how things should be approached, handled and done. Sharing the results of these self-inspections ensures they are done with integrity and without bias. This is what will ultimately lead to a change in behavior and habits which is what is needed in accomplishing the ultimate goal of eliminating foodborne illness caused by improper handling and procedure.

3 Background

HealthSpace is an enterprise software provider headquartered in Vancouver, BC Canada with offices in Charlotte, NC USA. It has been on the leading edge of providing software innovations to government for nearly two decades. It provides web and mobile integrated solutions that support a range of users, from inspectors and auditors in the field, to managers and executives in the office to help them oversee company operations.

HealthSpace was the first the company to deliver a health inspection system for cruise ships which provided the ability to report on-board gastrointestinal disease outbreaks via satellite while still at sea, in real-time. HealthSpace developed world's first publicly-accessible website for restaurant health inspection data in the State of Virginia. It acquired iGov Data Solutions which developed the first mobile app for public health inspections on iPad and Android tablets. All of these innovations have enabled regulators to provide safer, more reliable environmental health.

HealthSpace's software is used to help verify the health and safety of restaurants, schools, tattoo parlours and much more. Now, with the expansion of legalized cannabis, HealthSpace is on the leading edge of tools to be used in the retail and agricultural aspects of cannabis distribution. HealthSpace's mobile and cloud solutions are second to none and a preferable choice for environmental health regulators across North America. These same solutions are also offered for internal use by the establishments, such as restaurants, who are inspected and regulated by the environmental health departments.

Yet, these solutions, while advanced and robust, are only deployed in singular jurisdictions on a one-off basis. There is no solution available that encompasses all markets, from public to private sector, in a cohesive way to ensure that the health and safety of consumers is verified in everything from what they consume to where they choose to dine. It is for that reason HealthSpace is taking on a bold new initiative to create an open-sourced network, built atop the blockchain, for the purpose of furthering health and safety across all elements of food safety, food safety and agriculture. This is what will become the VIA Marketplace.

4 Use Cases

4.1 Food Safety

Food safety issues, such as foodborne illness, are a critical and a widespread problem world-wide. In the US alone, more than 48 million people become ill due to contaminated food. This constitutes a dire problem which costs an estimated $77.7 Billion a year in economic burden [1]. Inspections and audits are paramount in addressing these problems and reducing these figures. However, the solutions in play today are inadequate to fully address the needs in a digital age where information needs to be shared rapidly, transparently and without any single administrative point of data control.

4.2 Cannabis

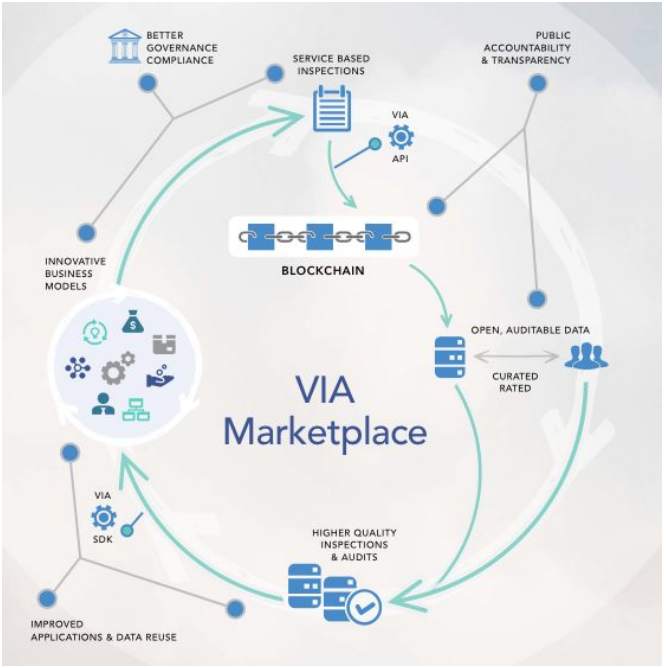
The legalization of cannabis in parts of North America, both medical and recreational, has led to a significant increase in the number of growers and dispensaries offering their products across a wider landscape. However, as is the case in the food service industry, many of those selling the products do not fully understand how to go about providing safe and healthy products. Further, regulatory agencies across state lines do not follow a common standard when it comes to regulating the products from a health and safety perspective. This is exemplified by the varying departments who are responsible in different jurisdictions; from the Liquor Control Board in Washington State to the Department of Commerce in Ohio [5][6].

Recalls have become more frequent, but generally, they are reactionary in nature [7][8]. With the growing potential for black mold and harmful seepage into products, it is increasingly important that regulatory inspections and internal audits take place [9][10]. There is a significant potential for illness outbreaks to multiply as legalization expands. The level of financial burden created by such outbreaks could go well beyond the liabilities faced by the food industry, if steps are not taken now to proactively address problems before they become recalls or, worse, a public health crisis.

5 Approach

HealthSpace building upon its rich history and experience of innovations, has begun development using Ethereum test network to create a shared ledger of transactions using smart contracts, along with a proprietary hashing mechanism for interfacing with external decentralized file storage systems for cohesive cache of complex data. This initial phase includes adding regulatory inspection reports alongside self-inspections from partners within private industry. HealthSpace will seek out partners within industry, focusing on large retail and food service chains, as well as providers in the cannabis industry. These partners, working in concert with regulators, will help the launch the initiative, providing a public relations and government regulation overhaul.

The solution will be a generational leap forward for inspection and audit data based applications, namely the **Verification, Inspection and Audit *(VIA) Marketplace***. VIA Marketplace directly addresses these aforementioned problems and will allow, for the first time, regulatory agencies and private sector organizations to decentralize their inspection and audit data cohesively together using the VIA Marketplace. Further, the business logic that coincides with inspections and audits can be automated by implementing smart contracts.



Once launched, the VIA Marketplace will be the first distributed network to have active participants from government agencies across international borders. This would constitute a major shift in how government entities treat information, because they traditionally do not like their data to leave their borders. By them willingly participating in a decentralized network, it would bring about a disruptive evolution for data and SaaS models moving forward. Additionally, it will be the first of its kind to chain the regulatory data to private sector data using a verification system to tie together self-inspections and regulatory inspections. By changing the underlying strategy and processes that have been used in the past, both public and private sector organizations with inspection and audit processes will be able to move from their traditional service-based model to a data centric culture using a common distributed ledger.

This constitutes a transformational change where data becomes a first class citizen. The VIA Marketplace disrupts the current model by empowering data quality and reuse, through the independent collection, curation, auditing and rating of data, which will lead to new and

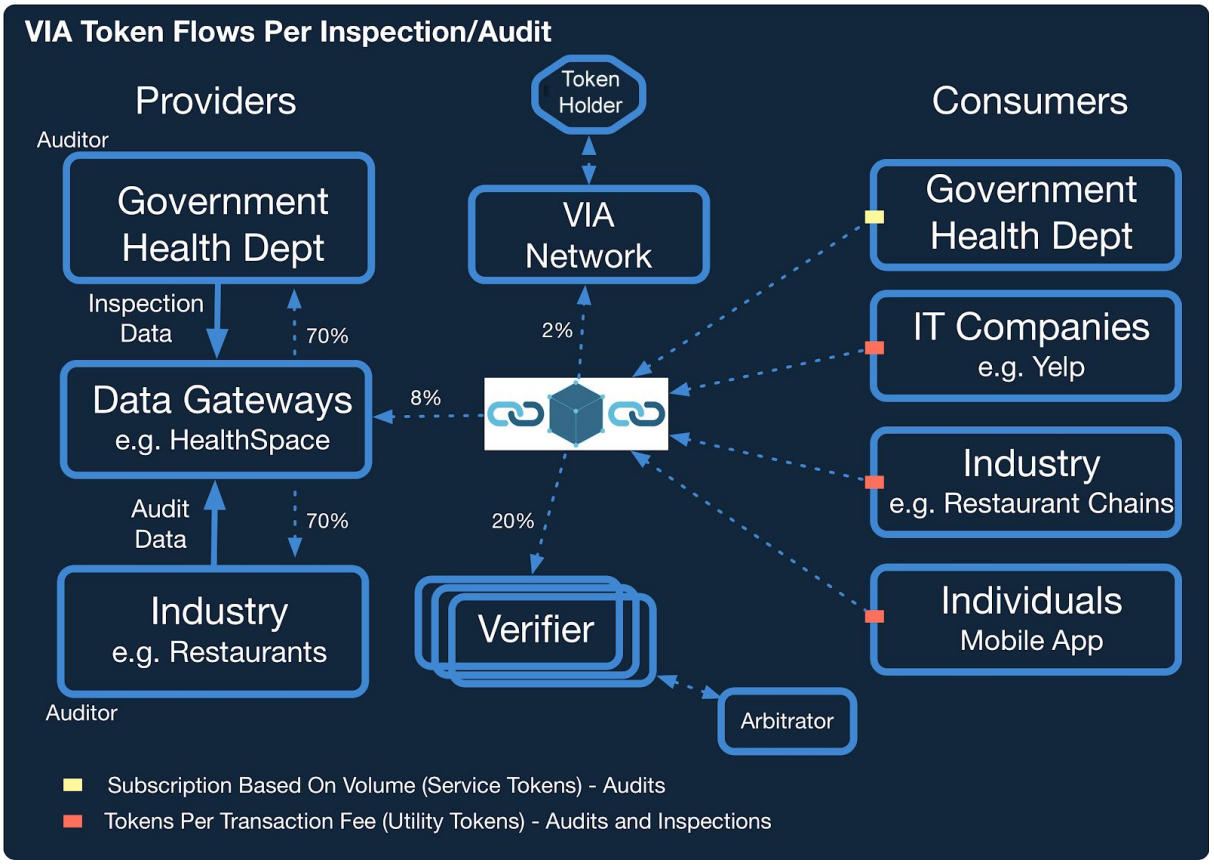
innovative business models for the inspection/audit data consumption. The VIA Marketplace addresses the above problem using the following solutions:

1. **Data Reuse Solution:** To implement a *verification* model where auditors across a decentralized blockchain ledger can collectively review and rate audits in order to create government approved inspection reports, saving time and money to help reduce the burden on public health departments. Verified audits then form the basis of the token model, described in the next section.
2. **Data Transparency Solution:** Using an independent blockchain approach, inspection reports and independently validated self-inspections, may be released on a non repudiable decentralized ledger. This enables the decentralization of inspection data, meaning the inspection data is owned by the object (e.g. Food Source, Restaurant Location, Marijuana seed), moderated by the masses and thus cannot be modified by any single entity. This will further safety and traceability of all kinds, especially as it relates to government accountability and private industry responsibility.
3. **Application Integration Solution:** The VIA toolkit will provide an all encompassing one stop Inspections/audit API and corresponding SDKs for the blockchain to enable a next generation set of third party inspection/audit applications across a number of verticals in both business and government with the capability of connecting the data between the two.
4. **Auditor Motivation Solution:** To provide a blockchain-based ecosystem for audit and inspection, where the masses can transact in the VIA Marketplace using tokens e.g. generate, curate, rate, consume or sell inspection/audit data. The value of data is directly derived from its quality which is independently verified and moderated. This ensures auditor motivation is inline with providing the most trustful and accurate inspections possible.

6 Token Model

6.1 Overview

The premise and motivation behind the VIA token model is the following. A self-inspection is carried out by an independent entity (in many cases the company itself) and as such, it is not officially recognized by government organizations or used to any large extent by third parties. However, such inspections contain almost identical information to government audits (i.e. inspections) so by devising a model whereby the information can be verified as valid, then such inspections have value, represented using tokens. Consequently, the VIA Marketplace will offer a token based ecosystem that verifies the quality of audit data provided by industry so that reward can be given according to a flexible resale pipeline where providers can monetize services that provide access to their data. The Figure below conceptualizes this token model by showing the flows of tokens from consumers into the network, then along to their corresponding data gateways and finally to data providers.



In this model, we have the following stakeholders:

Roles	Providers	Consumers
• Auditors • Verifier • Arbitrator	• Government Health Departments	• Government Health Departments • Industry

● VIA Network	● Facilities Managed by Industry ● Data Gateways	● IT Companies ● Individuals

Using the token model, stakeholder participate in the VIA audit and inspection data marketplace. **Auditors** perform audits on facilities and generate reports. A **Verifier** has the job of verifying audits that have been selected to prove the integrity of their data. When two verifiers disagree, an **Arbitrator** arbitrates the process of resolving this conflict, as described below. The **VIA network** then provides the backbone for supporting the infrastructure.

Government Health Departments already perform inspections and make their data public. Facilities managed by industry e.g. restaurants, also collect independent audit data and both of these entities can offer services that give other users access to the data through the marketplace in exchange for a portion of the audit token value. Such entities can also provide data to data gateways, such as HealthSpace, who act as a bridge collecting data on their behalf. HealthSpace, and others, essentially act as brokers in the ecosystem, finding consumers for data producers and finding data producers for consumers. Private industry can also opt to sell their audit data entirely, thus transferring the data ownership and residual commission to the new owner.

For data consumption, Government health departments would like to incorporate audit data into their portfolio for verification and cost savings purposes but such entities would only do so using a service subscription basis rather than a fee per transaction. Industry would like access to their own data through convenient services and GUI interfaces to customize their reporting and risk assessment procedures. IT Companies can use inspection and audit data to create innovative applications e.g. reporting, planning, etc., which provide more enhanced functionality to their B2B customers. Finally, individuals would make use of the data by obtaining better quality information on facilities that they visit, perhaps using an App developed by an IT company e.g. a customer could check a restaurant's kitchen passes all of the regulatory guidelines set out by their county and state.

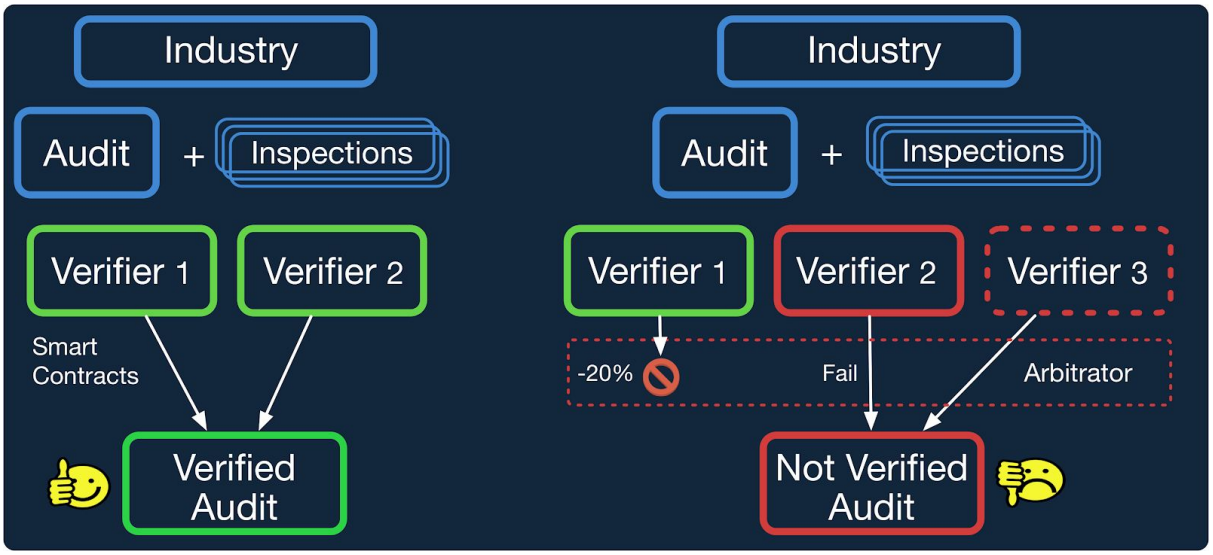
6.2 Audit Integrity

A distributed ledger system designed to facilitate trustful and transparent data sharing is only as good as the data contributed to it. It is because of this the VIA Marketplace is built with mechanisms in place to incentivize honesty and penalize dishonesty. To facilitate this, the model incorporates a reputation system that has the ability to penalize contributors for providing false or inaccurate information.

Further, the transparent nature of the system itself disincentivizes fraudulent reporting since any discrepancies found are traced directly back to the person or business reporting. Consequently, VIA will come with automated integrity checks to flag potential anomalies when data is contributed, in which case ***Verifiers*** are then assigned audits to manually review potential fraudulent reporting. Since the VIA Marketplace's participation is largely at-will participation, it is unlikely participants will contribute data that is known to be

inaccurate because misleading information can damage their business's brand and harm their economic standing. The VIA Marketplace encourages honest and active participation to increase trust between a business and regulators and the business and their customers.

To this end, the VIA Marketplace will offer a mechanism for improving the quality of audit data provided by industry by using a *Self Organizing Verification* model, where **Verifiers** collectively organize themselves to verify other auditors work. In this model, whenever a business submits a new audit, this event gets propagated to interested auditors and for selected audits, VIA engages two **Verifiers** initially, then engages a third and an ***Arbitrator***, only if the first two disagree. The following figure provides an illustration of how this works.



Initially, VIA selects two **Verifiers** who receive the audit data, anonymized and encrypted using their public key. If both **Verifiers** (see left) approve the audit then the audit gets verified and a smart contract is initiated make a record of this transaction on the blockchain. However, if one approves and the other rejects it, the third **Verifier** is recruited to verify the audit, along with an Audit **Arbitrator** who oversees the process. Now, in this example, if the 3rd **Verifier** does not approve the audit, then the audit is rejected by the ***Arbitrator*** and the **Verifier** that approved the audit gets penalized by receiving no portion of the audit token value for this audit and also VIA reduces their future portion by 20%. A **Verifier** can win back his/her commision rates by being more accurate in the future, albeit at a slower rate. The same scheme is also used with the opposite conclusion i.e. if the third **Verifier** accepts the audit then the one rejecting it gets penalised.

When an audit report gets approved, the group of approved **Verifiers** and the ***Arbitrator*** (if relevant) receive their indicated proportional reward for their work. Using this process, there are economic incentives that add a layer of trust on to the blockchain, making the audit reports valuable for reuse and monetization. As audits are downvoted, there is no rebuttal process except to take on comments for the down votes and do better next time; their motivation being that VIA can offer value, using the token, for better data. However, since the original auditor/inspector does all the work, there is a risk that the two **Verifiers** may just

check it off as okay for easy tokens. To combat this issue, VIA will request the **Arbitrator** to also check random audits and the **Verifier's** decisions as a deterrent.

Using a self organizing model like this that employs the use of an **Arbitrator** allows the system to scale because **Arbitrator** only get involved in the case of conflicts and since this will only be a small percentage of the time, one **Arbitrator** will be able to manage hundreds of concurrent verifications, in a self organizing manner.

Who Are Verifiers

Verifiers would be marketplace participants with knowledge in one or more relevant areas, such as food safety. In addition to marketplace contributors, such as government inspectors, HealthSpace would solicit efforts from registered sanitarians, working with organizations such as the National Environmental Health Association (NEHA) [11]. This would provide the largest pool of unbiased and highly trained professionals.

7 Infrastructure for Next Generation Inspections

HealthSpace current tools include an enterprise cloud platform named HSCloud and HSTouch which is an iPad/tablet based app. Both are currently available to government employees and third party auditors to create inspections or audits, respectively, on facilities e.g. restaurants. The VIA Marketplace expands HealthSpace's suite of applications by providing seamless access to a distributed ledger for supporting general inspection timelines across a variety of business verticals.

At the heart of this system, the VIA API will allow data from any application to be transacted and stored using the underlying blockchain and associated storage infrastructure. For this effort, HealthSpace is partnering with SIMBA Chain Inc., who will use its expertise and experience in blockchain, to design, guide and develop the system, described here.

7.1 Blockchain Infrastructure

Using blockchain enables a decentralized mechanism for ratifying data transactions – this moves away from the traditional model, where centralized companies or authorities manage data, to a model where no one entity has control. The writing of data is only achieved through distributed consensus and the removal or editing of information is not permitted. This makes it impossible for data to be tampered within once written to the network and effectively transfers the ownership of the data transactions to the data itself rather than a single entity.

The VIA Marketplace is designed to allow data owners beyond HealthSpace's current clients to contribute data. By doing so, multiple providers can provide data for consumption by other users and receive compensation through the Healthspace coin ecosystem. The collected data is stored, along with corresponding transactions, using the blockchain infrastructure, through the use of the VIA SDK and API. For implementation, VIA is planning on using Ethereum[1], which is network of nodes connected to one another to form an "Ethereum Virtual Machine" (EVM). On an EVM, new tokens (ERC223) can be created and transactions are computed using smart contracts (written in solidity) that specify a series of instructions (steps) on how this should take place. Dapps (decentralized applications) can be created to provide Web-based front ends that interact with smart contracts to write onto the blockchain.

7.2 Interfaces and Tools

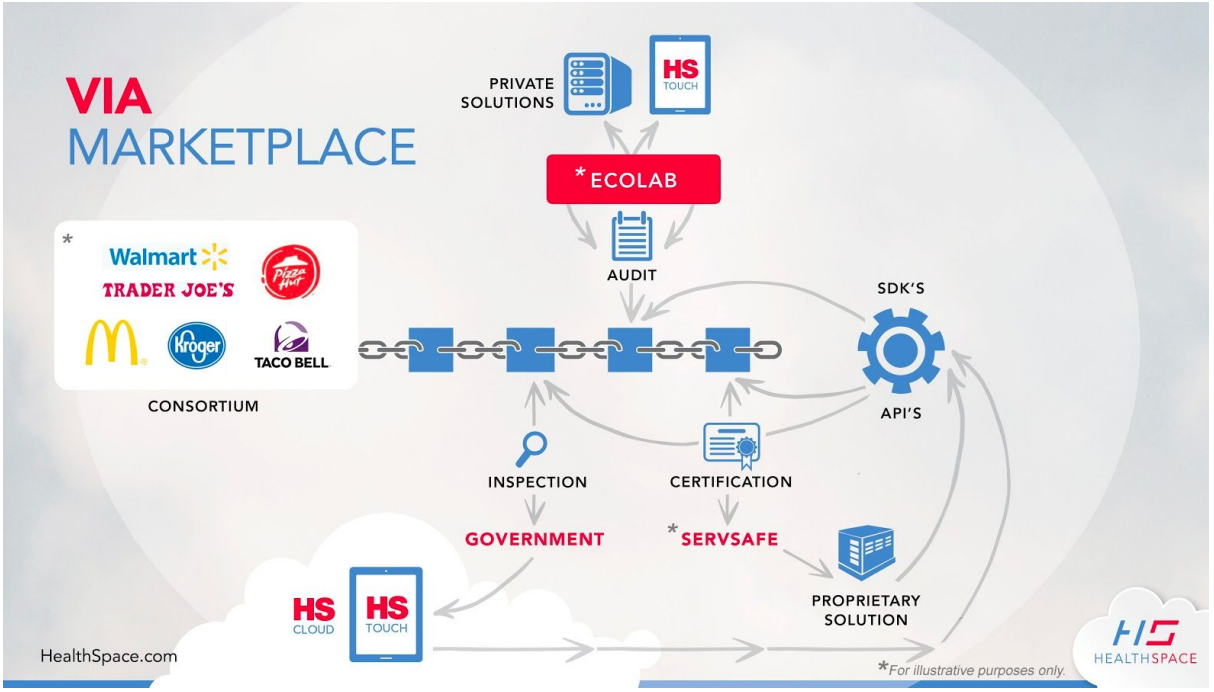
In order for rapid adoption of any technology to take place, one needs ease of access and simple tools in order to participate. Because of this, the VIA Marketplace will come with a host of simplistic toolkits familiar to today's technologies. Primarily this will come in two forms, namely the VIA API (Application Programming Interface) and the VIA SDK (Software

[1] At the time of writing, Ethereum is the more appropriate public blockchain solution for the implementation of VIA. However, this may be subject to change if technology shifts or cost of adoption greatly increases.

Development Kit). The VIA API will allow for simple connections via web platforms while the VIA SDK will give software developers the ability to create additional logic and apps beyond basic data participation.

The VIA API will be fully integrated with both the existing audit and inspection workflows. This means the Healthspace HSTouch app, the first to implement the API, will provide a fully decentralized audit trail for numerous existing HealthSpace inspections, e.g. for restaurants, pools, health spas, tattoo parlours, etc on both the governmental regulation side as well as the private industry side . The API and supplemental SDK will also be the launching point for extending the platform to provide decentralized inspections and audit trails for a myriad of industries including agriculture and the rapidly expanding cannabis industry.

Beyond participation from HealthSpace and its current product offerings, the VIA API will be offered to other food service providers and third party audit organizations for the purpose of furthering market participation from private industry. This will include building additional relationships in the enterprise software space as it relates to providers working with large food producers. Further, it means creating a new suite of technologies, built atop the VIA Marketplace, to support additional data providers such as certification and lab testing organizations. This is shown in the following diagram, showing how an organization, such as Ecolab, could be integrated into the platform.



Using simple web hooks posted to the VIA API, users will also be able to use HSTouch or other custom solution, from providers such as Ecolab or UL, to provide audit data to the distributed blockchain ledger. Once the audit data has been independently validated by a consensus of 3rd party auditors, it can then be used by government entities as inspection data and viewed using The VIA Marketplace. ServSafe and other companies that provide training courses and exams, can record the resulting certifications through the VIA API for independent viewing and verification of a facility's standards. In the future, all of this information can be used by customers who wish to use a particular facility e.g. restaurant, because they will be able to view all inspection reports for each facility and view certifications that have be attained by the staff of that facility, resulting in a more independent and transparent view of the facility and how it is run.

7.3 Inspection/Audit Data Storage

HealthSpace Inspection and audit data is collected from walkthroughs or oversight events directly connected to a date/time, specific location and, possibly, a specific entity (i.e. batch). They have a one-to-many relationship to N number of items that are "checked" during the inspection. The data can become large and therefore we will utilize smart contracts to store the bulk of inspection data *off-chain*; with only the hash-based pointers to the inspection data being stored on-chain. Therefore, the underlying blockchain network defines the logic, value transfer, and governance while the external similar storage system stores the data used by the HealthSpace Inspections platform. By merging the two systems, we overcome the storage and latency limitations of a blockchain using off-chain access while incorporating the immutable logic attributes of blockchain smart contracts.

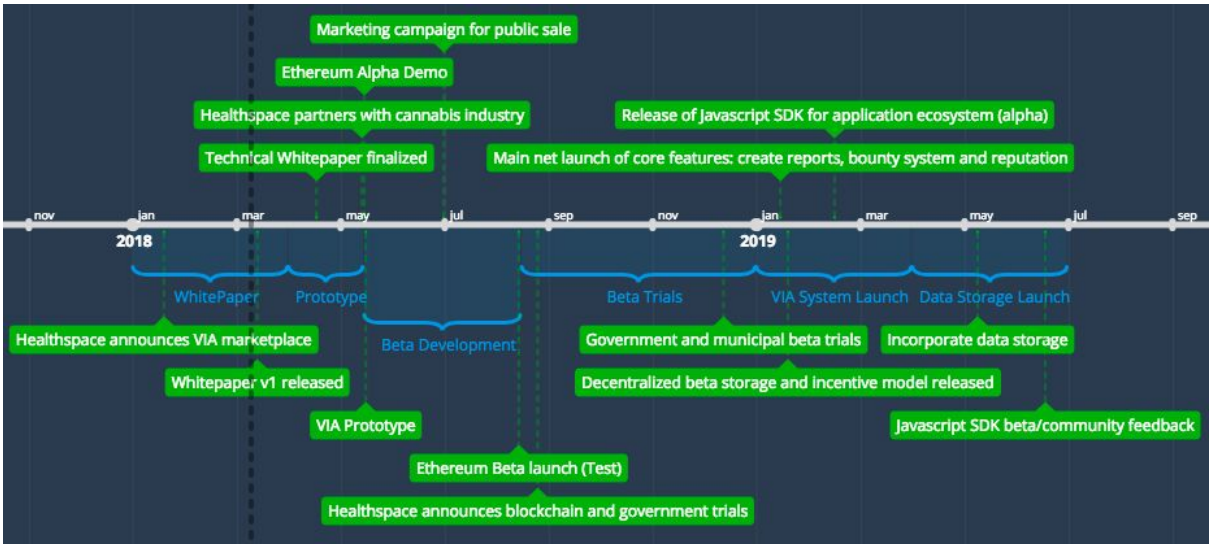
For *off-chain* storage, we are evaluating different decentralized data platforms to store inspections without centralizing all the data at one point. One such solution is offered by IPFS (the InterPlanetary File System) [12], which is a new Web-based decentralized system for asset storing and file sharing. Each file and all of the blocks within it are given a unique fingerprint called a cryptographic hash, which can be stored on-chain with the data being stored off-chain in IPFS. For fault tolerance other systems, such as IPFS cluster [13], are needed to offer collective data pinning and composition for replicating data. Shortcomings of IPFS center around the lack of support for search, and the system does not provide an authentication or authorization layer, which makes the use of IPFS for HealthSpace limited in preserving data ownership, authorization access or searching prior records. In attempting to address such shortcomings we are also investigating a solution that is based around the Gaian lightweight distributed overlay [14] for federating multiple sources of data.

Gaian is an open source proven dynamic distributed federated database product from IBM, which supports authentication, authorization, a sophisticated decentralized search and the pinning of data using subqueries to maintain availability and integrity. It is similar to IPFS in that it stores data locally and allows querying from anywhere in the network. The Gaian DB has a small footprint (5 MB) and uses the Apache Derby as its default datastore, but it supports multiple other sources, from SQL and NoSQL databases, to text or flat files like

Excel from document repositories. The GaianDB scales by using a preferential attachment connection strategy resulting in a scale-free decentralized network topology that will scale alongside the blockchain.

8 VIA Marketplace Timeline: From White Paper to Software Launch

On March 21st 2018, Healthspace announced the blockchain-based verification, inspection and audit platform, with this white paper describing the approach in detail. Following the white paper, they will launch an alpha demo version on Ethereum test network, adding inspection reports and a bounty system for third party audits. Shortly after the VIA Website will be finalized, which will initiate a marketing campaign. In Q3, HealthSpace will finalize the white paper, providing a full technical roadmap for development. Alongside this development, Healthspace will find partners within industry, focused on large retail and restaurant chains in the food industry and key players in the cannabis industry, and launch the VIA Marketplace,. HealthSpace will then start the marketing campaign for community development, sponsorships and events.



In Q4 the beta software will be launched including the reputation system on Ethereum test network, with community feedback welcomed. Healthspace will then announce blockchain and government trials. In Q1 2019, Healthspace will secure government and municipal trials of the public beta and we'll release a beta of the decentralized storage and incentive model. This will begin to provide a public relations and government regulation overhaul. Later in 2019, HealthSpace will launch the core system that will include the core features for create reports, bounty system and reputation. Shortly following this release, an alpha version of the Javascript SDK for application integration will be released. In Q3, HealthSpace will add the decentralized data storage and release the Javascript SDK beta and community feedback program

9 Team

Silas Garrison

Mr. Garrison is a seasoned tech leader and development expert in a number of programming languages and techniques. He designed and built the industry-first iPad and Android environmental health inspection apps which were subsequently acquired by HealthSpace. An entrepreneur by nature, Mr. Garrison has consulted and worked with a variety of enterprise organizations, ranging from Fortune 500 banks to sports and media conglomerates. He is an investor and advisor in a number of startups in addition to being active in the startup community in his home city of Charlotte, NC. He is the Chief Technology Officer at HealthSpace leading the design and development of HealthSpace's suite of software technologies, while also pioneering a new approach to regulatory data through a decentralized solution.

Professor Ian Taylor

Mr. Taylor is a full research professor in distributed computing at Notre Dame, a professor at Cardiff University (UK) and the Chief Technology Officer and co-founder of SIMBA Chain Inc., a company that delivers software solutions for distributed blockchain applications. His research over the last 25 years has covered a broad range of distributed computing areas but he now specializes in Blockchain, Cloud computing, Web dashboards/APIs and distributed analytics workflows. He has successfully architected, managed and delivered more than 30 research and industrial projects and has published over 180 papers, 3 books, has won three Naval Research Lab (NRL) best research papers, has an h-index of 40 and has over 8000 citations.

Joel D. Neidig

Mr. Neidig is an avid technologist and entrepreneur with nearly 15 years experience in a myriad of areas including manufacturing technology, software development and iOS/mobile development. He serves as Head of Technology at ITAMCO, a large technology and manufacturing company that provides services and products for market sectors such as: Mining, Oil, Gas, Energy, Aerospace, and Defense. He sits on a number of advisory boards and speaks regularly across the country on topics ranging from technology and manufacturing to blockchain and secure messaging. Recently, he spoke at the White House by invitation of the National Economic Council in recognition of the progress that has been made by himself and ITAMCO in the areas of technology. He is the co-founder and interim-CEO of SIMBA Chain Inc. helping guide the companies initiatives in providing blockchain based solutions.

Joseph Willmott

Mr. Willmott has served as President of HealthSpace since 2007. He has 35 years of business experience that included, serving as president of Uniserve Communications Corp, a publicly traded telecom company, and partner in a business consulting firm for 15 years. Prior to that, he managed a technology transfer program for the manufacturing sector funded by the Canadian Government. He also served as chair of the organizing committee for the International Centre for Agricultural Science and Technology and Chair of the Canadian Veterinary Medical Association's animal health research fund. During Mr. Willmott's business career he has managed North American manufacturing and wholesale distribution firms. He has also acted as a high level policy advisor to elected government representatives as well as managing a large farm commodity group.

Eric Wu

Mr. Wu is a full-stack blockchain software engineer working for SIMBA Chain Inc. He has worked as a developer and/or advisor on distributed ledger projects for various sectors such as solar energy, medical drug tracking and supply chain. He has his Master's in Computer Engineering from Purdue University.

Strategy and Consultation Performed by Vanbex Group

The Vanbex Group was established in 2013 as a strategic communications organization to better tell the story of the companies in the blockchain industry and has since evolved into a professional services firm specializing in grassroots marketing, application development, communications, strategy, PR, and operations consulting. Vanbex combines deep business insight with a strong knowledge base of how blockchain technology impacts existing business models. Having developed blockchain and cryptocurrency businesses the last five years, the Vanbex team is well positioned to consult on vital elements for a successful client strategy.

10 Summary

Inspections and audits, whether they come from within (self-inspections) or from without (regulatory inspections), are a necessity when it comes to ensuring that the health and safety of consumers is verified in everything from what they consume to where they choose to dine. However, the regulatory inspections are not readily available on a large spectrum to all interested and relevant parties. Further, self-inspections are not officially recognized, or accessible, by government organizations or used by third parties.

This is where the VIA Marketplace steps in by creating a blockchain based model to verify the validity of the information and provide value to audit and inspection data. Registering audits and inspections on the blockchain in this way provides an immutable proof of both the data and the person that recorded the data. This enables VIA members to take advantage of the platform's services by making data available to others using the VIA token Marketplace. Government Health Departments, for example, can make their inspection data conveniently available while food service establishments can offer services to their self-inspection data for remuneration. This allows data, which was once siloed and private, to be accessed by both the government bodies regulating food service establishments and the general populous they serve.

Audit data gateways, such as HealthSpace, can facilitate data collection and provide audit data to the masses, enabling new innovative user apps for viewing public and private audit records quickly and seamlessly. And all such integration will be made easy through the use of the VIA API. This disruptive strategy will give third party applications seamless access to the underlying blockchain for decentralizing their current inspection/auditing operations, which will enable companies to remove any inspection controller or broker out of the picture entirely. All of this disrupts the current model by empowering data quality and reuse, through independent collection, curation, and rating, leading to new and innovative business models for the inspection/auditing data consumption.

12 References

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13 Legal Disclaimer

13.1 Forward-Looking Statements

Statements in this white paper may contain forward-looking statements. Forward-looking statements are statements that are not historical facts and are generally, but not always, identified by the words "expects", "plans", "anticipates", "believes", "intends", "estimates", "projects", "potential" and similar expressions, or that events or conditions "will", "would", "may", "could" or "should" occur. Although HealthSpace believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results may differ materially from those in forward looking statements. HealthSpace expressly disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.

13.2 Third Party Data

This white paper includes references to third party data and industry publications. HealthSpace believes that this industry data is accurate and that its estimates and assumptions are reasonable; however, there are no assurances as to the accuracy or completeness of this data. Third party sources generally state the information contained therein has been obtained from sources believed to be reliable; however, there are no assurances as to the the accuracy or completeness of included information. Although the data are believed to be reliable, HealthSpace has not independently verified any of the data from third party sources referred to in this white paper or ascertained the underlying assumptions relied upon by such sources.

13.3 Illustrative Materials

Statements and illustrative materials in this white paper may contain references to outside entities such as private corporations, government bodies or industry associations. While HealthSpace will make efforts to establish relationships with such entities for the purposes described in this white paper, it may have not done so at the time of writing nor are the mentions of such entities promises of future guarantees. Further, the use of trademarks, logos, names, and branding material of an entity does not constitute their approval, affiliation or agreement to work with HealthSpace in any manner. Use of trademarks, logos, names, and branding material is done so on an illustrative basis only.