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# **Executive Summary**

TrustaBit is a state of the art software solution that will give airlines the opportunity to automatically issue vouchers to passengers when their flights are canceled or delayed. The total passenger rights market is estimated to be \$3.3 billion annually. Since 2013, AirHelp has collected \$85 million in total compensation from passengers who have had their flights delayed. AirHelp functions as a middleman; the passenger provides information about their flight to AirHelp, who then works directly with the airline to get compensation on the customer's behalf. To date, a total of 1.3 million passengers have used this service and they have paid AirHelp a fee of 25% of the total amount collected. These numbers show that passengers are willing to pay extra for a trust worthy digital service that will give them what they are owed.

In the European Union they have established EU261 which states that airlines have to pay a compensation to the passenger in the range of \$261-\$626 depending on the time and distance of the flight. In the United States there is no specific law to help with delayed flights unless you have an international itinerary, then the Montreal Convention will apply. Many US carriers still choose to compensate passengers for the inconvenience of those delays and cancelations.

Your airline can increase its return on investment for passenger compensation by directly offering their customers a more efficient and convenient way to receive their vouchers. Our smart contracts will allow your customer service agents to focus more on "the tricky" situations while leaving the mundane and repetitive work to our system. Long waiting times, subpar customer service and excessive administrative procedures are among the current pain points for passengers who attempt to collect vouchers directly from an airline." When you implement our blockchain solution you can increase your customer loyalty and take advantage of this new market segment. According to a J.D. Power study, "When passengers choose an airline based on reputation or experience — as opposed to cost or schedule- satisfaction and brand loyalty increases."





# **Project Overview**

#### The Problem

"Airline customer loyalty driven by service, not price"

Currently, when a passenger's flight is delayed, there is no seamless way for them to get a voucher. The passenger has to explain what happened to a call center or through a form, wait for the customer service rep to decide whether they will receive a voucher and for what amount, then continue to wait for the voucher to be emailed or mailed to them. Then the passenger has to wait again for the voucher to either be emailed or mailed to them. By the time the voucher reaches the passenger the customer loyalty has already decreased. The frustration from this customer's experience can impact the airline's reputation and future sales in a number of ways, as disgruntled customers may post negative social media posts, share poor reviews online and offline, and bring their future business to a competitor."

### How does it work?



#### The Solution

By using our software, we want to nurture back the travelers emotional connection to your airline. When you deploy TrustaBit into your environment, users can be compensated immediately based on set business criteria. The vouchers will be sent to their email address immediately when their flights are delayed or cancelled without the need for them to call into a call center or to fill out a form. This will allow you to make things right with the passenger the first time to increase brand loyalty.

Why would an airline want TrustaBit? Because it could mean the difference between losing an existing customer and gaining new ones through their referral. It could be the reason someone chooses to sign up for their loyalty program over another or the reason they fly with their airline other another. It's also much more costly for a company to gain a new customer than to maintain an existing one. TrustaBit delivers consistency by immediately reimbursing passengers when the airline makes errors. It's something the industry has never seen and critically needs.



#### **Market Share**

Several intermediary companies such as AirHelp have come on to the market to help passengers get compensation for delayed or canceled flights. These companies charge a service fee in the range of 25%-29% to the end user to use their services. When your flight is cancelled or delayed you can go to their platform, fill out information about your flight and only pay the service fee when the company receives money from the airline on your behalf. AirHelp and its competitors entered the market in 2013 and have amassed \$83 million in sales. This is a small portion of the total passenger rights market, which is valued at \$3.3 billion dollars annually. We believe that this is a new addressable market that the airlines could break into. By not having your passengers go to an intermediary to get the funds that are owed to them, you could use our system to automatically issue the vouchers.

### 1-Airhelp.com



1.3 Million Passengers have used this service to date



\$85 million in sales since 2013



Passenger rights market \$3.3 billion annually

### 2-Refund me



30,000 claims per year



\$3 million in revenue per year



Passenger rights market \$3.3 billion annually



### **Token Utility**

We are building an ecosystem where a user who has an expiring voucher can trade that voucher for TABs. TABs are a proprietary "currency" of sorts which be used in a similar way to an online gift card or voucher, except that it is more elastic and secure. The days the user receives a voucher is when it holds the most value in TABs as the voucher ages it becomes less liquid. We are fully aware that not all airlines offer transferable vouchers. Some rules state that the user you are transferring the voucher to has to be booked on the same flight as the original voucher holder or must have the same last name as the original voucher holder. Some airlines like Qantas have fully transferable vouchers. We intend to keep running ledger of all flight voucher rules that will be made visible to our community of users.

After 2011, most of the major airlines changed their policy so that vouchers were no longer transferable. Vouchers are historically susceptible to security risks including internal and external fraud. Through the implementation of blockchain technology, TrustaBit will allow major airlines to track issued vouchers so that a secure chain of transfer can be generated which will provide the encrypted details needed to track the senders and recipients of funds.



# **Blockchain technology**

## Hyperledger Fabric

For enterprise use cases we found that it is more feasible to use a private blockchain rather than a public blockchain. Before we look at the differences of the two, let us analyze what they have in common.

- They both are decentralized peer to peer networks where each participant maintains a copy of the distributed ledger of digitally signed transactions.
- Changing data on the blockchain is extremely difficult, if not impossible. This is an added benefit to keeping an immutable ledger of transactions.

## What makes them different?

The big difference is who is allowed to participate in the network and who performs the consensus protocol. In a public blockchain, anyone can participate, perform the consensus protocol, and maintain a copy of the ledger. These are huge drawbacks for an enterprise that wants to implement a blockchain solution into their environment. A private blockchain network requires an invitation to be sent out to all network participants so that the business knows who is performing the consensus protocol and who has a copy of the ledger. Fabric has been designed by IBM, is hosted by the Linux Foundation, and is catered to enterprise requirements. It establishes trust, transparency, accountability and it does not require mining or expensive computations to assure transactions. This is why the TrustaBit framework will be built with Hyperledger Fabric.

### Figure A

| How is Hyperledger Fabric different from other blockchain implementations? |               |                                     |                        |
|--|---------------|-------------------------------------|------------------------|
|  | Bitcoin       | Ethereum                            | Hyperledger Fabric     |
| Cryptocurrency required  | bitcoin       | ether,user-created cryptocurrencies | none                   |
| Network  | public        | public of permissioned              | permissioned           |
| Transactions   | anonymous     | anonymous or private                | public of confidential |
| Consensus  | proof of work | proof of work                       | PBFT                   |
| Smart contract<br>(bussines logic)   | none          | yes (Solidity,Serpent,LLL)          | yes (chaincode)        |
| Language   | C++           | Golang,C++,Python                   | Golang, Java           |



### Benefits of Hyperledger Fabric

Fabric is beneficial to our project as we can take advantage of the smart contracts and the ability to create channels. The concept of smart contracts was first introduced by Nick Szabo in 1996. He wrote about how it would be possible to connect contract law and business practices through the design of electronic commerce protocols between strangers on the internet. In essence, smart contracts are self-executing agreements stored on a specific blockchain which no one controls and therefore everyone can trust. In Hyperledger Fabric, smart contracts are referred to as chaincode. They are written in Go and will soon support other programming languages such as Java. Chaincodes allow organizations to introduce business logic into the blockchain. In our use case, we will be using smart contracts to define business logic around issuing vouchers to passengers when their flights are delayed or cancelled. The smart contract will be triggered by an external event such as the cancellation or delay of a flight. The smart contract will give companies the opportunity to reduce risk, increase operational efficiency, and automate the execution of business logic across the network without a central party. Companies like TIBCO are creating products where those with intermediate programming knowledge can write smart contracts and easily deploy them inside of a network. There are some challenges with smart contracts that each organization will have to thoroughly examine and they include:

- Programming errors;
- Required collaboration;
- Supporting infrastructure needs;
- Legal implications;
- Lack of standards.

You have the ability to create channels which allow participants to create a separate ledger of transactions. For example, Company A and Company B may both be participants in your network, but you may you may not want Company A to know a special price you are offering to Company B. The parties can then form a channel where those participants have copies of the ledgers and no one else. The Hyperledger project is backed by the Linux foundation and has many projects in incubation that are directly related to Hyperledger Fabric. Hyperledger Fabric v1.0 allows the use of a NoSQL database (CouchDB) which allows you to model assets as JSON so that you can perform complex rich queries against the chaincode data values. Other benefits of Hyperledger Fabric include:

- 1. Permissioned membership;
- 2. Performance, scalability, and levels of trust;
- 3. Rich queries over an immutable distributed ledger;
- 4. Modular architecture supporting plug-in components;
- 5. Protection of digital keys and sensitive data.
- 6. Smart Contracts



# Market Overview

| Regulation |  |
|------------|--|
|            |  |

In the European Union, regulation EU 261/2004 went into effect in 2005. It is designed to protect your rights as a passenger and determine the airlines obligations for compensation. The guidelines are as follows:

- If your flight leaves from a country in the EU, your destination is in a county inside of the EU and you flew on an airline that is a member of the EU, then you must be compensated.
- If your flight departs from a EU member country, you flew on an airline from a EU member country, and your final destination is <u>not</u> in an EU member country, then you must be compensated.
- If your flight does <u>not</u> depart from a EU member country, you flew on an airline from a EU member country, and your final destination is in an EU member country, then you must be compensated.
- If your flight does <u>not</u> depart from a EU member country, you flew on an airline from a EU member country, and your final destination is <u>not</u> in the EU member country and your final destination flight is delayed more than 3 hours, then you must be compensated.
- If your flight does <u>not</u> depart from an EU member country, the airline is <u>not</u> from an EU member country, and your final destination is in the EU member country then you are <u>not</u> entitled to compensation.

In the US, there are no laws or regulations set up for canceling or delaying passengers' flights like their EU counterparts. However, there are US regulations set up for passenger rights regarding luggage and denied boarding. In the US, it is the airlines' discretion as to how they compensate or do not compensate passengers in regards to flight delays. There is one exception and it relates to tarmac delays. It states that if the flight is on the ground at a US airport then, water, access to toilets, and food must be given within two hours of the start of the delay with status updates every 30 minutes. After three hours, four for international flights, the plane must return to the gate and let them off of the flight. US passengers may be eligible under the Montreal Convention if their flight includes a stop in an EU member country.



### **Competitive Landscape**

We have identified one direct competitor that uses a model similar to ours. Below, we show how TrustaBit differs and offers more to our customers.

Travacoin - "Travacoin is a Blockchain based crypto-currency that will use "Smart Contracts" to enable airlines to compensate and refund passengers. The payment will be designed in such a way as to incentivize passengers to reinvest in new flights and/or ancillary services. Passengers will also be facilitated in making donations to charities."

How we differ- Travacoin issues payment to the passenger when their flight is delayed or canceled. But they issue payment in their cryptocurrency token Travacoin. We feel that issuing the payment in an altcoin is tying the value of the cancellation or delay to whatever the market price for the token is. TrustaBit will allow for the flexibility of the passengers to either accept the voucher or get the fiat equivalent instead.

For instance, if a passenger is set to receive \$600 USD or even a voucher, Travacoin will instead issue the equivalent to their tokens. As we know, cryptocurrencies are highly volatile currencies so passengers should not be subjected to only getting their payment in Travacoins. This is also assuming that the passengers know how to open an account on an exchange that Travacoin is listed and trade their Travacoins on the market to get the equivalent in fiat. Travacoin would be a new token that is currently not trading on any of the major cryptocurrency exchanges.



## Roadmap and growth strategy

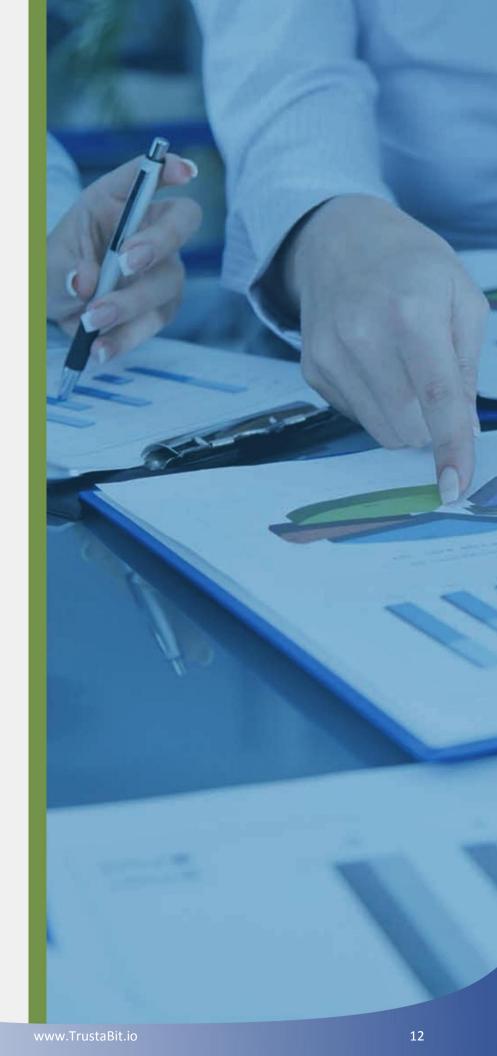
Our roadmap currently reflects planned activities surrounding the TrustaBit project in order to achieve our desired goals both currently and the next few years.



# Strategic Partnership

By forming strategic partnerships we are hoping to pool our knowledge resources, increase revenue, acquire new customers, expand our geographic reach, extend our product lines, and share resources.

- Legal- A partnership with a firm that specializes in IP matters, international law, cryptocurrency and securities would greatly benefit our organization by allowing our contracted lawyers to stay up to date on the changing laws regarding our sector.
- Auditing- Our Smart contracts will be audited by a third party company to help verify that no security hacks exist. We will periodically coordinate with auditing companies to access our vulnerability level. The results of the findings and remediation will be made available to our members to further promote transparency.
- Airline- A partnership with IATA (International Air Transport Association) will allow us to gain valuable insight into their industry and to listen to current issues and possibly find solutions to address their concerns. Having direct partnerships with the airlines would allow us to have flight cancellation data specific for each flight.





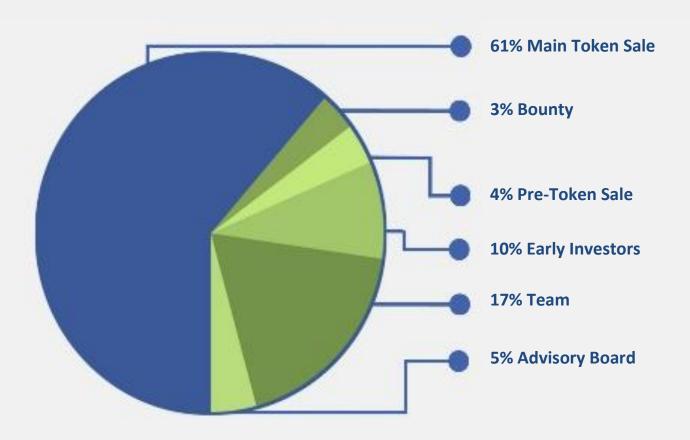
# **Token Distribution**

The initial Pre-Token sale will happen during Feb 5<sup>th</sup>-12, 2018 with the Main Token sale commencing on February 14<sup>th</sup> and ending on March 15<sup>th</sup>. The minimum crowdsale cap is set to \$3 Million USD with all funds being returned to users if the initial investment is not met. The maximum crowd sale cap is set to \$49 million USD and contributions will be in ETH only. There will be a total of 1 billion TAB tokens created and the amount of tokens one person can purchase will be set to a first come first served basis. Any unsold tokens will be burned at the end of the Main Token Sale and there will never be any more tokens minted. Buyers will receive tokens 14 days after the close of the Main Token sale. We anticipate that tokens will be listed on several major exchanges.

There will be four bonus stages in the token sale

- 20% Bonus during Pre-Token purchase
- 15% Bonus during week 1 Main Token sale
- 10% Bonus during week 2 Main Token sale
- 5% Bonus during week 3 Main Token sale

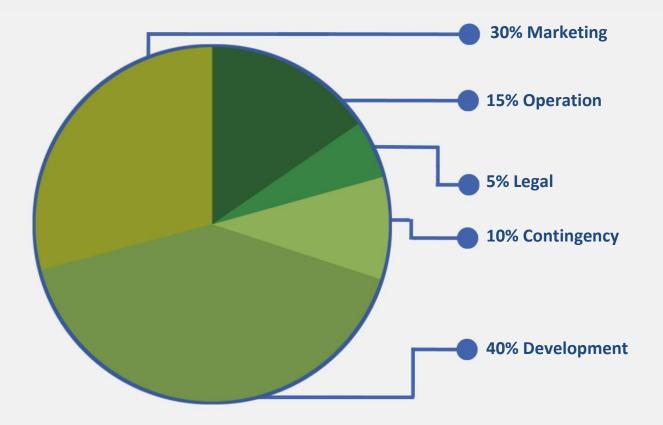
## **Token Allocation**





| Bounty          | 3% of the token distribution will be to those who participate in the social media marketing bounty campaigns.                            |
|-----------------|--|
| Pre-Token Sale  | 4% of the tokens will be allocated to users who buy TAB's during the pre-Token sale and will be sold at a discounted price.              |
| Early Investors | 10% will be allocated to early investors who will have the opportunity to buy TAB's at a discounted price prior to the pre-sale.         |
| Team            | 17% of the Tokens will be dedicated to our team and will include a vesting period *See below section for vesting*                        |
| Advisory Board  | 5% will be dedicated to our Advisory Board and will include a vesting period *See below section for vesting*                             |
| Main Token Sale | 61% of the total available tokens will be distributed during our Main Token sale event and available on a first come first served basis. |

# **Distribution of Funds**





| Development | 40% will be dedicated to the core development of our system and for the hiring of highly skilled individuals.  |
|-------------|--|
| Marketing   | 30% will be allocated to marketing, advertisement and PR activities to promote adoption and awareness campaigns for TrustaBit.   |
| Operations  | 15% will be used to set up key business resources to include office spaces, business equipment, and utility expenses.  |
| Legal       | 5% will be used to pay for legal support to help us stay up to date on the laws and regulations as it relates to the airline industry as well as Blockchain implementations. |
| Contingency | 10% of the funding will help with unforeseen expenses that arise while performing business operations.   |

# Vesting

| Team     | 2 years vesting with 6 months cliff (25% maturity |  |
|----------|---|--|
|          | every six months)                                 |  |
| Advisors | 6 months vesting with 3 months cliff ( 50%        |  |
|          | maturity at end of month three and the rest on    |  |
|          | month 6)  |  |

# **Keys Points of Token sale**

| Pre-Sale Start Date             | February 5 <sup>th</sup> 11:00am PST  |
|---------------------------------|---------------------------------------|
| Pre-Sale End Date               | February 12 <sup>th</sup> 11:00am PST |
| Pre-Sale Token Price            | \$0.05 USD (5 cent)                   |
| Main Token Sale Date            | February 14 <sup>th</sup> 11:00am PST |
| Main Token Sale End             | March 15 <sup>th</sup> 11:00am PST    |
| Main Token Price                | \$0.10 USD (10 cent)                  |
| Early investor Token Price      | \$0.025 USD                           |
| Minimum contribution            | .15 ETH                               |
| Date Tokens are issued          | Two weeks after main token sale       |
| Token Symbol                    | TAB                                   |
| Standard                        | ERC-223                               |
| Number of TABs available        | 1 billion                             |
| Soft cap                        | \$3 Million USD                       |
| Hard Cap                        | \$49 Million USD                      |
| Accepted currencies             | ETH                                   |
| Pre-Token Sale Bonus            | 20%                                   |
| Week 1 Main Token Sale Bonus    | 15%                                   |
| Week 2 Main Token Sale Bonus    | 10%                                   |
| Week 3 Main Token Sale Bonus    | 5%                                    |
| What happens with unsold tokens | Unsold tokens will be burned          |



# **Our Team**



Saritta Hines CEO/Founder

Holding over 13 years of experience in data analytics, Saritta Hines is a trusted leader at bridging strategic business initiatives with expert IT implementations. Saritta has successfully spearheaded projects in the tech world for industry leaders including Cymer, Allergan, Bank of Montreal, Novartis and Dow Agrosciences. Her expertise brings technical innovation and business teams together to transform the customer experience. Saritta is at the forefront of improving operational efficiency and testing new use cases through the use of blockchain technology. As the head of TrustaBit, Saritta has established a key utility for businesses to streamline the delivery of products and services to customers through smart contracts.

https://www.linkedin.com/in/sarittahines/



Blair White Chief Sales Officer

Blair White has successfully strategized the introduction of new products and services into the marketplace. Blair has ranked in the top 10% in the sales divisions of AT&T, Verizon, and Apple, to name a few. During her tenure at Apple, Blair was key in acquiring one of the highest retail sales in Apple retail history. A 2016 Verizon Winner's Circle recipient, Blair was recognized for being among the top 10% of Verizon sales employees maintaining above a 160% sales to quota. Leading the sales efforts for TrustaBit, Blair will identify and customize solutions to minimize industry pain points while delivering the best ROI through blockchain technology.

https://www.linkedin.com/in/blair-white-511252140/



Woody Means *CTO* 

Woody is an accomplished Sr. Platform Architect at Cymer where he has developed machine learning algorithms to improve part efficiency. He has a mathematical, creative, and organized mindset that drives him to find innovative solutions to complex problems. With over 15 years in software engineering he has extensive experience in developing applications in C, C++, Java, JavaScript and Python. Woody is well-suited to oversee all technical aspects of TrustaBit and to attain our company's strategic goals.

https://www.linkedin.com/in/woody-means-3830072/





# Kelvin Ndreba Ngendo Blockchain Developer

Kelvin Ndereba Ngendo is a self motivated full stack blockchain developer venturing in Ethereum and Bitcoin platforms. Born in Kenya, he earned a bachelor's degree in Information Technology(B Sc IT) at Dedan Kimathi University of Technology, Kenya. In the course of his career, he has developed several Dapps, Desktop Applications, websites, and Smart Contracts in Ethereum. He also works perfectly with NodeJs, SQL, web3js, IoT, MongoDb, Meteorjs and Expressjs. He also has perfect knowledge in ICOs, ERC20 tokens, e-commerce, cryptocurrencies, and FinTech. He has written several white papers, research papers, blog articles, and press releases for fintech startups and cryptos. He currently works with BTM company in Malaysia. He looks to build his own coin and run a virtual company on the blockchain powered by smart contracts and IoT.





# Samuel Dare Lead Hyperledger Developer

Samuel is a Solution Architect with over 10 years of experience delivering end-to-end enterprise solutions across Blockchain, Data Science and Marketing Automation. Blockchain: Hyperledger Fabric, Hyperledger Composer, Ethereum Data Science: Natural Language Processing, Artificial Intelligence, Machine Learning Marketing Automation /CRM: Salesforce Marketing Cloud, Salesforce.com

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Hakar Sulaiman
Creative Design Engineer

Since 2011, Hakar has been an aspiring creative design engineer. Hakar will be responsible for creating visual concepts that communicate ideas that inspire, inform and captivate our customers.

www.facebook.com/HakarYoussef



# Sheletha Drew Senior Corporate Tax Analyst

Sheletha Drew is a Senior Corporate Tax Analyst and has been a Georgia licensed Certified Public Accountant (CPA) for 15 years.

She started her career with KPMG working in the domestic income tax group. She specializes in U.S. domestic income taxation and has served large U.S. corporate taxpayers in various industries including Banking, Manufacturing, Casino Gaming to name a few. Her experience entails federal and state income tax compliance for U.S. corporate and pass-thru entities. She is a blockchain technology enthusiast and is passionate about helping entrepreneurs in the technology sector meet their U.S. income tax reporting requirements.

https://www.linkedin.com/in/sheletha-drew-cpa-mtx-71240836/



# **Advisors**



Casey Gardiner

CoFounder DigiWallet

Casey offers more than 20 years of programming experience with a number of computer programming languages ( C/C++/C#, PHP with mySQL, HTML, CSS, LUA, Java, Ruby ( on rails ), and Python ). His strong knowledge of OOP concepts, XML schemas, debugging complex problems, abstract data structures/algorithms, and source control applications will be an asset to the developing and refining of our software..

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His practice primarily focuses on corporate and business transactions with a focus on regulatory compliance and contract drafting & negotiations. With over eight years of experience, Mr. Baloch has worked in highly regulated industries and uses this knowledge to advise and counsel corporations and individuals in both legal and business matters.

Prior to joining ADLI Law Group, Mr. Baloch served as outside general counsel for several small and mid-sized companies. His experience includes working on complex transactional documents, mergers and acquisitions, corporate governance and compliance with both state and federal regulations. He has also worked as an in-house attorney in the legal team of one of the top durable medical equipment providers in the United States and has worked with Attorney General's offices across the country.

https://www.linkedin.com/in/mahroze/

Nelson Petracek
CTO of TIBCO Software



Nelson Petracek brings close to 20 years of experience to his customers. A strong technology evangelist, Nelson specializes in the areas of messaging, microservices, hybrid integration, event-driven architectures, and event processing. Able to bridge the gap between business and IT, Nelson works with his customers to identify and define the appropriate use of various technologies and architectures. Prior to TIBCO, Nelson acted as a senior director within Informatica Corporation's Enterprise Technologies group, and has held consulting roles with a number of companies across various verticals – delivering solutions for the next stage of digital business.

Specialties: Hybrid integration, microservices, Fast Data, SOA, ESB, Complex Event Processing (CEP), streaming analytics, messaging, and related technologies.

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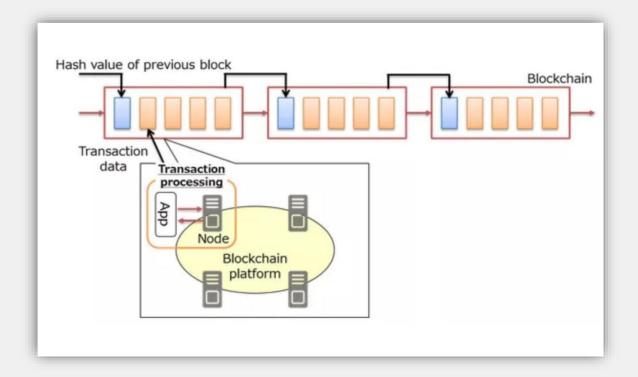


# **Exhibits**

### **Transaction processing in Hyperledger Fabric**

Fujitsu, which is a premier member of the Hyperledger Project, has been able to increase the transaction processing speeds of Hyperledger Fabric v 0.6 by 2.7 times compared to the previous method. This advancement has allowed Hyperledger Fabric to be applied to online transaction systems that require high performance

Figure B: Transactions processing on the blockchain



Fujitsu has developed two technologies to improve the transaction performance speed while reducing the number of communications between the blockchain platform and the applications.

- Differential Update State (DUS)- Fujitsu Laboratories has now developed functionality that
  executes only differential computations on the specified data in one processing action on
  the blockchain platform, and functionality that reduces the number of computations
  directly linked with the number of communications.
- Compound Request (CR)- This functionality was developed to aggregate multiple processes
  to send to the blockchain for batch execution. This process also reduces the number of
  communications. The functionality maintains accuracy by rewinding to the origin point of
  the batch execution if a partial error occurs in the aggregated processes.



This technology was implemented in Hyperledger Fabric and the previous method could handle 500 transactions per second while 1350 transactions per second were achieved by utilizing DUS and CR functionality.

Application Blockchain platform Blockchain Application Application Blockchain platform platform A by \$x A by \$x Reduce account A by \$x Increase account B by \$x B by \$x OK Previous method Previous method Previous method - DUS functionality + DUS functionality + CR functionality

Figure C: New transaction method utilizing DUS and CR functionality

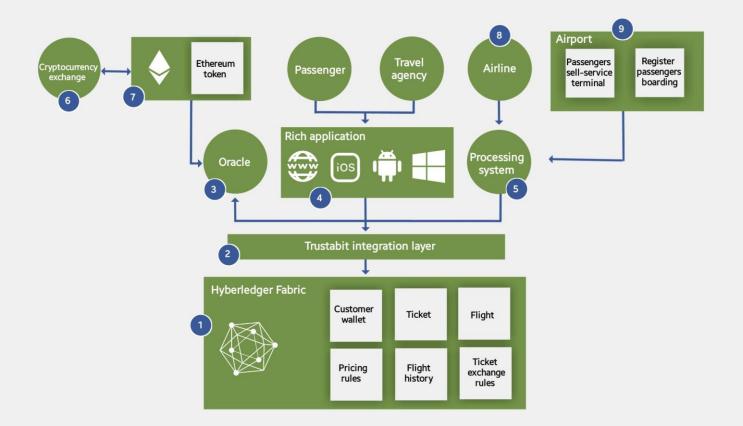
### **Consensus Algorithm**

Hyperledger Fabric v1 offers the flexibility to implement several ordering services (SOLO, Kafka, and soon PBFT). Which ConsensusType you choose depends on the client needs and should be set to either solo or kafka.

- Solo ordering service (testing): The solo ordering service is intended to be an extremely
  easy to deploy, non-production ordering service. It consists of a single process which
  serves all clients, so consensus is not required as there is a single central authority.
  There is correspondingly no high availability or scalability. This makes solo ideal for
  development and testing, but not for deployment.
- Kafka-based ordering service (production): The Kafka-based ordering service leverages
  the Kafka pub/sub system to perform the ordering, but wraps this in the familiar
  ab.proto definition so that the peer orderer client code does not need to be written
  specifically for Kafka. Kafka is currently the preferred choice for production
  deployments which demand high throughput and high availability, but do not require
  byzantine fault tolerance.
- PBFT ordering service (pending): The PBFT ordering service will use the Hyperledger Fabric PBFT implementation (currently under development) to order messages in a byzantine fault tolerant way.



## Architectural breakdown







## 1-Hyperledger Fabric DApps

Hyperledger Fabric DApps serves as a trusted party which decides on how to solve disputes between passenger and airline, implement business rules, define e-voucher workflow, store sensitive data and restrict access to it. DApps are exposed to external systems via REST services, event subscription and DB replication mechanisms. Proposed technologies: Hyperledger Fabric Composer, JavaScript or TypeScript programming language.

## 2-Trustabit integration layer

Integration layer (IL) wraps underlined DApps and serves as an intermediary between blockchain applications and external systems. IL provides REST API, authentication and authorization services, and event and data buses. IL also provides oracles required for DApps to make external calls. With this design IL supports both synchronous and asynchronous interactions with blockchain.

Proposed technologies: composer REST server, node.js, Passport or OAuth 2.0, RabbitMQ, Apache Kafka.

### 3-Oracle

This oracle serves a synchronization role between Ethereum blockchain and Hyperledger Fabric, and keeps token balances in sync on both blockchains to prevent double spends.

Proposed technologies: node.js, Web3.

#### **4-Rich applications**

Various rich end-user applications could be developed through the use of IL interfaces. These could include passenger apps, travel agency apps, and many more. The proposed technology would depend on the airline/travel agency who is developing the app's platform.

### 5-Processing system

This represents the various airline systems that should be integrated with the blockchain DApps to send event messages.

## 6-Cryptocurrency Exchanges

Exiting exchanges may list TrustaBit token and provide liquidity.

**7-Ethereum blockchain and project's token**Trustabit token, developed as a part of ICO preparations.
Proposed technologies: Solidity, Truffle, JavaScript, testrpc, icomonitor.io.

### 8-Airline

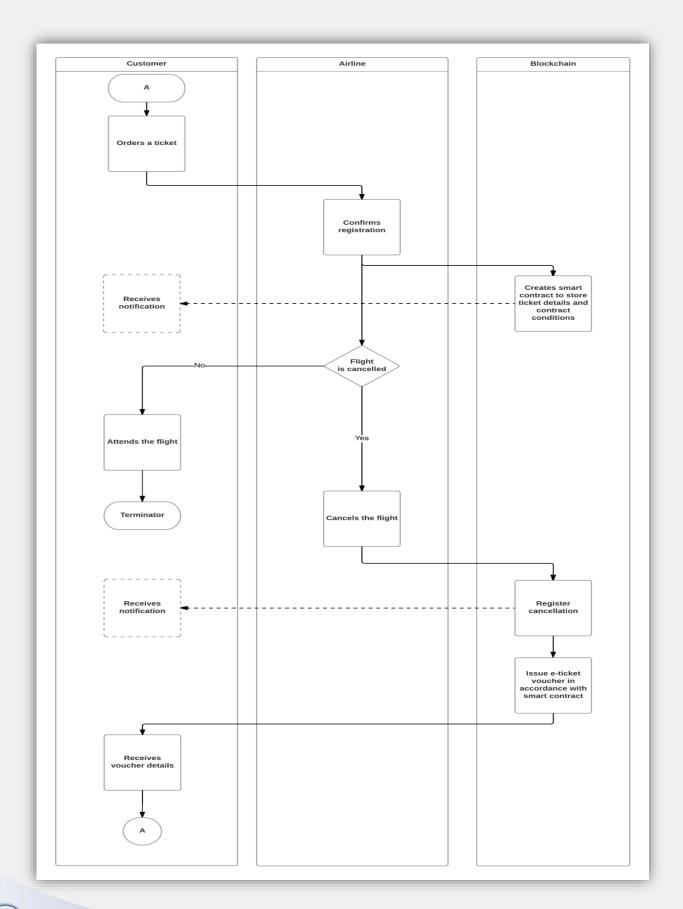
Integrate legacy airline systems with TrustaBit to obtain flight data.

## 9-Airport systems

Various existing airport systems could be integrated with the TrustaBit e-voucher lifecycle, and ... as they are used by passengers, the transactions will provide events for Dapps workflow

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## **Cancellation Flow**





### **Legal Notice and Risks**

The chain code concept, the underlying software application and software platform (i.e. the Hyperledger Fabric blockchain), is still in an early development stage and unproven. There is no warranty or assurance that the process for creating TAB Tokens will be uninterrupted or error-free and there is an inherent risk that the software could contain defects, vulnerabilities, weaknesses, bugs or viruses causing the complete loss of ETH contributions and/or TAB Tokens. Additionally, there are other risks associated with the acquisition, storage, transfer and use of TAB Tokens, including those that TrustaBit may not be able to anticipate. Such risks may further materialize as unanticipated variations or combinations of the risks.

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