



Introduction and Proposal

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Proposal for: Factom Authority Set

Proposal by: Roba Realty



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1. Introduction

Roba Investment and Real Estate Corporation (Roba) is pleased to submit our campaign proposal for consideration into the Factom Authority Set. This proposal is intended to be a straight-forward, fact-based assessment of our capabilities and approach to being part of the entities responsible for running the decentralized network. We have defined concrete plans and commitments in this proposal, focusing on the tangible benefits to Factom and plans for furthering the protocol. As a current provider of a federated server within the Factom community testnet environment, we have gained valuable insight into and understanding of the requirements for running a server. More importantly, we have demonstrated our ability to provide node reliability, support of the protocol, full compliance with node technical specifications, and node location diversity. Roba's relationship with the Factom test net community has been very positive and a responsibility we have taken seriously. We have shown our commitment to serving as a reliable, forward thinking and growth-oriented part of the community. Roba plans to expand this relationship by being a technically proficient, marketing and adoption-driven oriented member of the entities that run servers as part of the Authority Set.

2. Corporate Overview

Roba is a small dynamic business incorporated in 2012 with headquarters located in Falls Church, Virginia. Roba's core services include professional, brokerage and real estate services, and information technology consulting for state and federal government agencies. Our multi-industry focus enables us to leverage corporate expertise to promote the Factom protocol to a wide audience, with credibility and expertise across a variety of subject matter domains. Roba's core expertise comes from both its senior management team and corporate resources. Our senior management team is comprised of individuals who have strong expertise in the areas of real estate, information technology, state and federal government, and commercial construction projects. It is this senior management team that has successfully managed and operated the authority server within the Factom community test net. Full biographical descriptions of the Roba management team are provided below. Roba has also formed key strategic partnerships to help promote the Factom protocol to the widest audience possible. We have partnered with DGC international, an international company that provides services in logistics, transportation, construction, training, education and research. DGC International is a leading U.S. prime government contractor who has been awarded over 200 million dollars in contracts throughout the last several years and was ranked 20 on INC. Magazine's 5000's list of 2017 fastest growing companies. Roba also has consulting agreements in place with experts in the areas of healthcare, cybersecurity and marketing. We will leverage these consulting agreements to pursue specific opportunities in these areas, using this expertise on an ad-hoc basis when needed to minimize overall costs and maximize the value of our consultants' time.



3. Management Team

Ferdous Hakim, President

Mr. Ferdous Hakim is a seasoned software developer with a BS degree in Information Systems Management, as well as an MBA from Johns Hopkins University and a post graduate degree in Senior Executive Leadership from Georgetown University. Furthermore, Mr. Ferdous Hakim is a certified Oracle Database Administrator. Mr. Hakim has over 15 years of real estate experience, has an active real estate and broker license and is very familiar with the role of technology in the industry. Mr. Hakim provides management and technical oversight for Roba's federated server in the Factom test net environment. Before becoming President of Roba, Mr. Hakim was a former executive director at DGC, where he gained years of construction management experience, including overseeing the design and construction of the various sports complexes for the U.S. Department of State in Jalalabad and Mazar-e-Sharif, Afghanistan. Mr. Hakim is also the Division Director for Physical Resources and Information Technology Planning for Fairfax County, Virginia where he directs the division's daily operations, information technology, business processes, fiscal management and strategic objectives. In this role, he also oversees activities of a 25-member multi-functional team of IT systems administrators, business analysts, facilities managers, supervisors, and lease managers.

Eqbal Hakim, VP of Technology

Mr. Eqbal Hakim is a highly skilled network and systems engineer with over 20 years of experience supporting the Federal government and the American Red Cross. Mr. Hakim has worked for the Federal government for the past 17 years, providing IT services in diverse locations around the world. During his career, Mr. Hakim has developed expertise in IT systems, networks and communications systems. Mr. Hakim holds a Master's Degree in Public Administration (MPA) and is certified as a Microsoft Certified System Engineer (MCSE), Microsoft Certified System Administrator (MCSA), and holds Microsoft Certified Professionals (MCP), A+, Network+ and Security+ certifications. Mr. Hakim has returned to the Washington D.C. area, and provides expert-level technical advice to senior Federal IT leadership concerning IT capabilities and cybersecurity. In this role, Mr. Hakim has gained insight into the IT and cybersecurity needs of Federal Agencies. This insight provides him with unique capabilities to understand the potential role of blockchain technology and Factom's protocol in the Federal Government IT infrastructure. Mr. Hakim currently provides the network and systems support for Roba's federated server in the Factom community testnet under discord username EQHM.

Omar Hakim, Technology Specialist

Mr. Omar Hakim has been immersed in the blockchain technology world and has a solid understanding of the technology and Factom's protocol. Mr. Hakim holds a Master's degree from Johns Hopkins University in security studies, and has experience in B2B sales, business development and Federal contracts and procurements. Mr. Hakim is currently a security consultant for the Federal government, providing analysis and research into international, political, social and technology trends and threats. Prior to this, Mr. Hakim worked on a contract for the US Department of Homeland Security (DHS), focusing on identifying physical threats to the general public, and security threats to critical infrastructure and systems. Mr. Hakim serves as Roba's technology specialist and is highly active in the Factom community under discord username ohakim89 and reddit username chance_taker. Mr. Hakim provides guidance and support to Roba's team and federated server by staying abreast of all developing and new requirements.



Mustafa Zamani, Principal Consultant

DGC International is a strong proponent of the value of blockchain technology and will help expand and promote the Factom protocol. Mr. Zamani, founder and CEO of DGC, has managed international projects and has a global footprint in multiple countries including the U.S., Afghanistan, Pakistan, Iraq, Jordan, UAE, Djibouti, Peru, and Honduras. Mr. Zamani is a strong proponent of blockchain technology who has agreed to be an advisor to Roba Realty by helping identify collaborative opportunities and help expand and promote the Factom protocol. Mr. Zamani is a serial entrepreneur who graduated from Virginia Tech with an executive MBA and founded DGC International. He has built an impressive company that has grown exponentially throughout the years.

<http://www.robarealty.com>

<http://www.dgci.com>

4. Campaign Factors

Roba is ideally situated to continue our support of the Factom protocol and presents the following responses to the Factom campaign document:

4.1 Campaign Factor 1 – Node Reliability

Roba Realty has been committed to supporting the Factom protocol as it approaches M3 and decentralization and has demonstrated its ability and willingness to do so by taking part in the Factom community test net. Roba has run an authority server for over 50 days as a member of the Factom community testnet, demonstrating our ability to reliably run a server in support of the protocol. We have monitored our Authority node consistently and on a daily basis via Factom community resources and monitoring systems such as factoid.org, Telegram and control panels. We have monitored the health of our Authority node by activating system alerts on storage and memory usage, and paying attention to a variety of factors such as block height. Roba Realty has made the strategic decision to host our server on Amazon Web Services. We strongly believe Amazon Web Services gives us higher reliability and scalability than any one individual privately set up server can. Our cloud services with Amazon allows us to increase capacity, memory and storage within minutes, and in most cases, without the need to bring the server down. We have maintained over 99.9% uptime through AWS and have unparalleled technical support, backup, disaster recovery and hot-site fail over capabilities through our contract with AWS. While Mr. Eqbal Hakim will be our in-house server administrator, we have also contracted with a very reliable and reputable 3rd party vendor who will provide 24/7 network, server support and maintenance services. The combination of in-house, as well as, third party server support will ensure experienced and knowledgeable staff are available around the clock to not only monitor our server's uptime and performance, but also ensure timely ad-hoc and scheduled updates, patches, and upgrades are coordinated. Roba Realty will have 3 POC's available for contact, with two in house personnel capable of handling network issues as they arise. We have a system in place that we believe will allow us to respond to any issues within 45 minutes, and we will actively work to reduce this response time. Within one month, we intend to reach a state in which all core members of Roba are able to handle network management issues. We believe this, in conjunction with our third-party support and access to AWS technical staff will ensure optimal node reliability.



Working with AWS and our technical leadership team, we will limit the impact of planned maintenance of our authority server so that we attain even better levels of reliability than we have experienced in the test net environment.

4.2 Campaign Factor 2 – Support of Protocol

Roba Realty understands that in this early stage, dedicated authority servers who are committed to the adoption of the protocol are integral to the success of the entire project and ecosystem. We want to ensure that we do our part in funding the token pool, and to ensure that a healthy balance of capital is available for protocol support grants. Roba Realty pledges to defer a minimum of 50% of its token share into the token pool by specifying a 0.128 reward per block. We plan on periodically assessing this percentage and anticipate increasing the deferment amount as the protocol gains adoption and grows in value. Furthermore, Roba Realty intends to be an active participant in this system and submit grant proposals with the ultimate goal of driving adoption. Roba also understands the community's volume and liquidity concerns and has worked to find ways to alleviate some of these pressure points. First and foremost, we have access to 50k USD that is available for use, should we feel the market is incapable of absorbing the number of factoids sold. Secondly, we have found and reached out to a reputable OTC provider and confirmed that they support FCT transactions. This solution will allow us to offload large amounts of factoids without negatively affecting the market price. Roba intends on liquidating only an amount that's necessary for promotion/development activities and salaries, leaving the rest in a Roba factoid address to be used as needed.

4.3 Campaign Factor 3 – Node Technical Specification

Roba has carefully looked at the technical requirements, and after consulting with our in-house expert and AWS technical support team, believe we have come up with a setup that ensures optimal running and security conditions. Both our servers would include an m4.2xlarge instance that includes 4 virtual cores, and 8 vCPUs resulting in high network performance. Both servers will be running on 2.4 GHz Intel Xeon E5-2676 v3 (Haswell) processors. Roba plans on going well above the minimum recommended 8GB of memory, by including 32GB with each server with scalability options that will ultimately allow up to 256GB per server. Roba understands protocol usage can increase exponentially and plans to always have an abundance of memory to accommodate unforeseen circumstances. Currently Roba is running AWS Elastic Block Store (EBS) with a general purpose SSD (gp2) volume. For our potential main net servers, we intend to configure them with provisioned IOPS SSD (io1) volumes that will ensure the highest performance volume for mission critical low latency or high throughput workloads. Our potential servers would each include 200 GB of dedicated disk space, with scalability options that would allow up to several Terabytes (TB) of storage. Our servers will also be partitioned in order to store system data separate from the Factom database. On average our uplink speed on our test net Authority node is over 580 Mbps and provides a reliable connection. We intend to ensure our servers on the main net are able to reach speeds of up to 10 GB. Roba plans on setting up a second server in the community test net, in order to replicate our main net environment and test various actions such as brain swaps. We have been following the technical discussions on discord very closely and have become familiar with the concept of guard nodes as a way to protect authority nodes from malicious actor DDoS attacks. We understand there is still some community discussions



concerning implementation, but we are ready to move and implement this potential solution as guidance develops.

4.4 Campaign Factor 4 – Location

Roba Realty is currently using AWS EC2 (Elastic Compute Cloud) with our test net server located in the Ohio region. Should Roba be chosen to run two servers on the main net, we intend to set up our servers in the Oregon and Northern California regions. Each region is designed to be completely independent in the event that one region goes down; the others continue operating. EC2 has several availability zones (AZ) within each region that are isolated. Oregon and Northern California each have 3 AZ's and Roba intends to implement load balancing with several high availability zones within and across each region, so that if one instance fails, another instance will be able to handle the requests with no interruption in service.

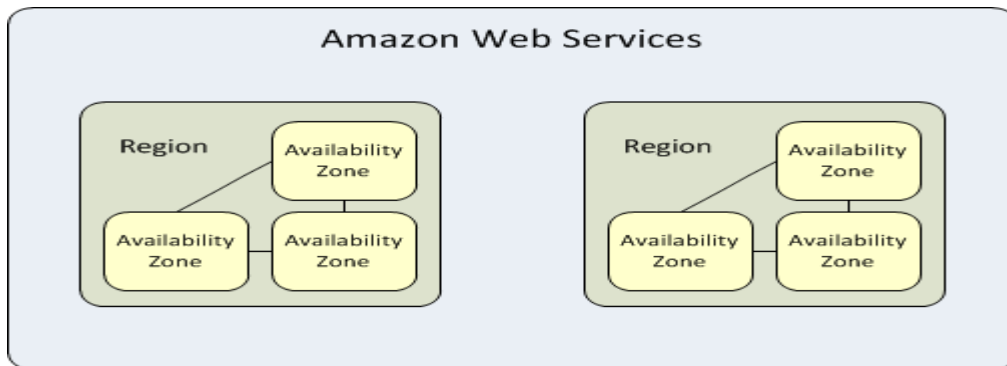


FIGURE 1 REGIONS & AZ'S

Roba Realty is located in Falls Church, Virginia, less than 10 miles from Washington D.C. In addition to providing geographic diversity, we are in a unique position to keep a pulse on some of the most recent and relevant events in emerging technology. Being at the heart of where policy is made, we are in close proximity to prominent players in the blockchain space, such as the Federal Government and the DC Chamber of Digital Commerce. We believe the Factom protocol will become a ubiquitous data integrity solution in a myriad of industries, and we believe that as it gains prominence, having a presence in the nation's capital will be a strength.

5. Opportunities for Adoption

Roba has identified several near and mid-long term opportunities that we believe will help drive adoption of the protocol and that we intend to pursue.

5.1 Real Estate

Roba Realty is an established real estate firm based in the Washington DC metro area with long standing relationships and memberships within the Northern Virginia real estate market. We are a full paying member of the Northern Virginia Association of Realtors (NVAR) which is an association of over 12,000 real estate professionals that collectively handled over \$13 billion dollars in real estate sales in 2017 alone serving a market of roughly 2,000,000 clients. Additionally, Roba Realty is a long term active member of the National Association of Realtors (NAR). By being a part of the Factom community, as well as an established real estate firm, we strongly believe that we can introduce the Factom protocol to the local, as well as the national real estate industry. Our plan is to raise significant awareness of Factom and its blockchain technology among the 12,000 members of NVAR members by continuously and strategically sponsoring monthly and quarterly promotional campaigns to spread the word and encourage our colleagues, partners, and realtors to take advantage of the blockchain revolution. Some of our activities will include:

- Enhancing our website to include information about Factom and how Roba Realty will be among the first real estate companies to offer the option of securing its clients' settlement and title documents using blockchain technology
- Running quarterly awareness ads and articles in the Realtor magazine regarding Factom and blockchain. The Realtor Magazine is mailed to all 12,000 paid members and thousands of non-members every month
- Hosting blockchain and Factom related brown bags and learning sessions for real estate agents, settlement companies, and others involved in the real estate industry
- Strategically approaching local and national property settlement companies to educate them about factomizing settlement documents in blockchain as an added service
- Leading by example, we will work to be one of the first Real Estate firms to offer a Factom based blockchain solution for all our documents



FIGURE 2 REALTOR MAGAZINE

5.2 Government Contracts & Healthcare

Our efforts will be varied and focus on areas where we have significant domain expertise. Members of Roba are intimately familiar with the Federal procurement process, and have been exposed to the entire cycle, including finding opportunities, tailoring content and writing and responding to government Requests for Proposals (RFP). Roba will focus on looking at USAID and other Federal grants that will fund Roba to take on initiatives that present opportunities for blockchain based solutions, such as pilots to Factorize land records of courthouses in Afghanistan or other countries as proof of concepts. Roba can then leverage this proof of concept and obtain USAID funding to expand this approach to additional sites and countries. Other mid to long-term strategies for blockchain adoption exist in the healthcare space, in both the Federal and commercial healthcare domains. There are significant opportunities to develop Factor protocol demonstrations and showcase them at healthcare industry events such as the annual Health Information Management Systems Society (HIMSS) conference, which is consistently attended by over 40,000 healthcare professionals, hospitals, vendors and healthcare IT decision makers.



FIGURE 3 FEDERAL PROCUREMENT WEBSITE

5.3 Afghanistan Land Records

Roba has also identified several mid to long-term opportunities to promote the Factor protocol and is actively planning approaches. A primary mid-term opportunity is promoting the Factor protocol to help modernize property and land records. Specifically, Roba has leveraged its experience and contacts in Kabul, Afghanistan to pursue applying the Factor protocol for property and land records across Afghanistan. Afghan President Ashraf Ghani recently issued an [executive order](#) directing the modernization of land and property record systems in Afghanistan.

In Afghanistan, all land and property titles are created manually and physically stored in basements of local courthouses. An archaic system that has not changed in over 200 years, property titles have a unique certificate number; however, the title records are physically stored using traditional organizational methods. Records are organized by year of issue, binder number, book number and page number. One must either have the original paper title in hand to prove ownership, or know the year of issue, binder number, book number, and specific page number of the title to have the government issue a duplicate title. Each year, thousands of individuals can't prove ownership of their own property because they lost the actual paper title after years of warfare in the country and don't have the binder and book number to prove their claim.

President of Roba Ferdous Hakim is intimately familiar with this problem. Mr. Hakim's family is originally from Afghanistan and experienced first-hand what it was like to lose land due to war, and be unable to prove ownership. Two years ago, Mr. Hakim attempted to claim land that was originally his, but without the original certificate and with no recollection of the binder number, page number and city courthouse, he ran into several dead ends. He embarked on a 1 year journey, returning to Afghanistan multiple times in an attempt to track down information that would help him prove land ownership. Thanks to sheer determination and a stroke of luck, he was able to track down an individual who was in possession of his original land certificate, and paid several thousand dollars to retrieve it. The document is old, crumbled, and dated May of 1961, yet is absolutely necessary to prove land ownership today, in 2018. This story demonstrates the dire conditions Afghanistan's land records system is in, and Roba believes blockchain based solutions are desperately needed and necessary in such an environment.



FIGURE 5 MR. HAKIM'S DEED FRONT

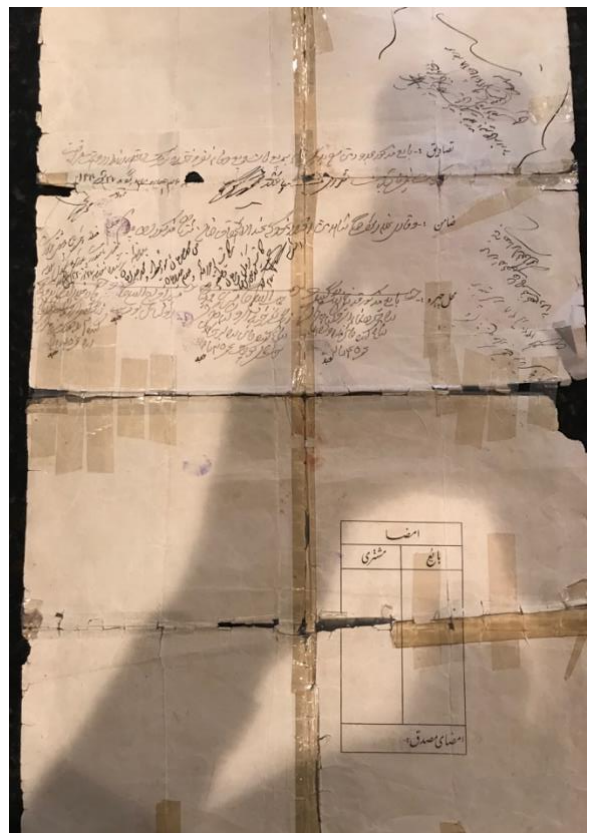


FIGURE 4 MR. HAKIM'S DEED BACK

The Afghan president's directive, along with Roba Realty's connections with high level Afghan government officials provides a golden opportunity for Factom and for the government of Afghanistan to possibly revolutionize the country's property title record system. Roba Realty, working closely with DGC International, has a two-pronged approach for the Afghanistan opportunity. First, we will utilize our relationships and connections to familiarize high level executives with Factom and blockchain, and work hard to present Factom based solutions to the



Afghan government and find possible synergies between other players in this field. Roba is well aware of Factom Inc.'s experience with land records in Honduras, and is familiar with the Desoto and Medici Ventures initiative to place the world's land records on the blockchain.

6. Conclusion

Roba Realty believes we are entering an exciting time of technological evolution, where decentralized networks will displace a variety of outdated systems. The current space is filled with companies and projects who have jumped on the hype train, without an appetite to deliver real solutions. We see Factom Inc. and their protocol as a stark exception. Factom's protocol has the potential to become a ubiquitous data integrity layer that supports a host of applications, and we are determined and committed to seeing this come to fruition. We have seen the protocol gain adoption with governments, mortgage industries and in the healthcare field, and believe this is only the beginning. Members of Roba Realty have been long term believers of what Factom can do, and are excited to join Factom on its journey to adoption and success.