



LOKI

Request for Proposal

Loki Project

30th May, 2019

**The Loki Foundation
LAG Foundation Ltd
Level 1, 452 Flinders Street
Melbourne, Victoria, 3000**

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INTRODUCTION

This RFP document is an invitation to public individuals and companies to submit proposals for a project to carry out the software development and project management in accordance with the Loki Projects goals. Proposals may be submitted in part or whole in relation to the required tasks.

The intent is to obtain proposals and vendors' background information for the selection of one or more service providers to participate in this project. Through this process, LAG Foundation Ltd seeks to develop operational relationships with outsourcing development vendors that can support the development required to fulfil the goals of the project.

All questions and inquiries regarding this request for proposal should be directed to:

Christopher Pavlesic
Company Secretary
LAG Foundation Ltd

Email: secretary@loki.foundation

1. SCHEDULE OF EVENTS

Request for proposal released - <01/06/2019>

Notification of intent to bid - <07/06/19>

Deadline for questions - <14/06/19>

Q&A webinar session - <TBD>

Follow up to questions - <20/06/19>

Deadline for proposals - <21/06/19>

Finalists notified - <27/06/19>

Interview with the finalists - <28/06/19>

Notification about the selected candidate(s) - <01/07/19>

2. TERMS & CONDITIONS

2.1 *Payment Terms*

Payments will be made in accordance to the type of service provided, ongoing or milestone services. All invoices will be paid in Australian Dollars via bank transfer within seven (7) days of receipt, unless otherwise arranged with approval by Loki Foundation.

2.2 *Ownership of Deliverables*

- 2.2.1 The Loki Project involves a variety of intellectual property, including the Loki brand, the Loki codebase, trade secrets, and other know how. The Loki Foundation will grant the Service Provider a licence to use the Loki brand and Loki trademark while acting as a Service provider, provided the usage of these intellectual property is in the interests of the Loki Project, and in the capacities as specified by the Service Providers obligations.
- 2.2.2 The Service Provider agrees to adhere to Intellectual Property clauses as outlined in the final Services Agreement.

2.3 *Non-Disclosure of Confidential Information*

- 2.3.1 During the course of this contract, Loki Foundation and the Service Provider will share information regarding the Loki Project, some of which will be sensitive in nature.
- 2.3.2 The Service Provider(s) will agree to any non-disclosure clauses as outlined in the final Services Agreement.

3. GENERAL INFORMATION

3.1 Definitions

3.1.1 RFP - Request for Proposal

3.1.2 References to the “Loki Foundation” refer to the company LAG Foundation LTD

3.2 Purpose of this Request

The purpose of this RFP is to request proposals from software development and other service providers to meet certain requirements and project goals predefined by Loki Foundation. The intent is to obtain proposals (bids) and vendors’ background information for the selection of one or more service providers to enter a contracting phase to define the final pricing and specify the scope of work.

3.3 Company Background

The Loki Foundation is a not-for-profit entity created to promote and develop secure communication and transaction technologies for the benefit of the general public.

Our primary project is the Loki Project, a blockchain enforced onion routing network that allows users to securely transmit and receive data and cryptographic tokens without malicious actors having insight into user activity or data.

3.4 General Information About Loki Network

The Loki Project is a hybrid proof of work/proof of service system that offers a unique way to financially incentivise the operation of full nodes. Loki leverages these incentivised nodes to create a secondary private routing layer. Minimum node functionality on the second layer is monitored and enforced. Loki is based off a modified version of the Monero source code, assuring that all transactions achieve a high degree of privacy.

In addition to this, the network also operates a novel onion routing network called Lokinet, and a private messaging service that leverages the decentralised storage system, end to end encryption, and Lokinet to achieve an unparalleled amount of privacy in a real time chat app.

3.5 Contract Term

The term of the contract that will be awarded at the end of this request process will commence upon Loki Foundation’s execution of the contract and will extend no longer than the duration of the project required to complete the designated

deliverables, or a termination date which will be specified in the contract itself. Upon the acceptance of the final deliverable, the contract will be deemed satisfied, pending any warranty claims within the specified claim period. Loki Foundation makes no commitment to follow-on work following this process. Subsequent contract grants will be at Loki Foundation's discretion and based upon the quality of the work performed on this project.

3.6 Presentations, Demonstrations & Pre-Proposal Q&A

Potential Service Providers may elect to schedule a personal meeting or conference call with Loki Foundation to gain further understanding of the proposal and required skills to carry out the tasks.

Potential Service Providers may also field questions to Loki Foundation in order to better prepare themselves for a proposal. This will generally be handled via email prior to any face to face or conference call meeting.

4. FUNCTIONAL OVERVIEW

4.1 Strategic Context

Loki Foundation is striving to develop a network that will allow for secure communication and transaction of value that will ultimately benefit the general public, regardless of jurisdiction.

Engaging with external Service Providers will allow the Loki Foundation to engage with qualified software developers and service providers in order to achieve this mission. Outsourcing this work to such Service Providers will mean that we can leverage existing expertise in the field to sufficiently carry out this work and ensure a high standard of work in a timely manner.

5. SPECIFICATIONS

5.1 Deliverable Overview and Specification

All technical deliverables will be expected to conform to the standard format that the Loki Project currently adhere to.

At a minimum, any one or more of the following deliverables will be required as part of the ensuing contract.

Ongoing Services - *general in nature and provided on a continual basis:*

- Ongoing Representative Services
 - Handling of all public, commercial and government enquiries, dealings and negotiations on behalf of the Loki Project.

- Acting as a public representative for the Loki Project, unless otherwise specified by Loki Foundation, to action appropriate measures to manage these dealings in the best interest of the Loki Project.
- Negotiation with potential business partners and other organisations in the best interest of the Loki Project.
- Advise Loki Foundation on any matter regarding the Loki Project and related subjects and fields of expertise.
- Ongoing Marketing Services
 - Management of all social media, websites, and other digital platforms of the Loki Project, excluding the Loki Foundation's website.
 - Support to all users of the Loki Project and responding to all reasonable enquiries of the public in a timely and helpful manner.
 - Liaison with any press relations or other marketing agencies that Loki Foundation engages, and act as the representative of the Loki Project, and provide these agencies with content and directions that will further the interests of the Loki Project, including responding to bylines, interviews, campaigns or other offerings by these agencies.
 - Create a base level of content to be posted on the Loki Project's social media and digital media platforms, such as regular development updates, relevant news and announcements and any critical information relating to Loki software.
 - Devise larger marketing campaigns which may form future Milestone Services.
- Ongoing Development Services
 - Maintenance of the Loki Project Github and GitLab accounts, CI integrations, and other version control matters, including responding to valid issues, maintaining upstream changes where possible, and ensuring stable builds can be accessed by the public as much as possible.
 - Maintenance and securing of 'seed' nodes and critical test networks for the Loki Project.
 - Provide Loki Foundation with information regarding the technical state of any of the Loki Project software and notify Loki Foundation of any critical issues discovered.
 - Develop research papers which expound novel solutions for problems facing the Loki Project now and in the future
- Ongoing Documentation Services
 - Maintenance of the Loki Project's 'Loki Docs' website with as much information as is available to provide a quality resource for users of the Loki Project.

- Updating documentation as new features and bugs arise.
- Continuing the delivery of weekly development updates to the public

Milestone Services - specific in nature and provided on a fixed budget, with specific costs and timeframes for completion:

- Payment ID Depreciation
 - Unencrypted Payment ID's depreciate the privacy of transactions by leaking identifiable metadata. Loki will need to design or use an existing scheme to remove the use of unencrypted payment ID's and migrate to a more secure scheme using either Subaddresses or Encrypted Payment ID's
- Client Side Service Node testing
 - Users must be prevented at the client side from running Service Nodes with inadequate bandwidth, storage or CPU capacity.
 - This means designing tests that can be run when a Service Node is starting up that assess the machines ability to download through Lokinet, store an amount of data (Loki Messenger Storage) and assess that the node has adequate memory and CPU power to perform the above tasks.
- Loki Messenger (mobile clients)
 - Develop both Loki Messenger Android and iOS applications that mirror the functionality of the already existing Loki Messenger Desktop application. Applications should be interoperable, i.e. Desktop Loki messenger can communicate with the Loki Messenger android application.
- Loki Messenger UI
 - Currently the Loki messenger UI is a fork of Signal's UI with minimal changes, Additional work should be put into designing a UI that differentiates Loki messenger from Signal and also provides a unique privacy focused UI elements that Signal does not.
- Lokinet Wire Protocol
 - Lokinet is currently using μ TP as its wire protocol, there is a need to move to a custom wire protocol which better suits a Lokinet specific function, documentation of proposed design can be found here, this must be implemented in Lokinet
<https://github.com/loki-project/loki-network/blob/master/docs/wire-protocol.txt>
- Lokinet Onion Key Rotation

- Exposed Keys can be collected and cracked over time, exposed lokinet keys should be rotated every N period of time, functionality for this must be added into the Lokinet client
- Lokinet (mobile clients)
 - A wrapper should be developed on top of the existing C++ code for Lokinet this should allow Lokinet to be used on both iOS and Android
 - This Lokinet wrapper should integrate with the native VPN API's provided by both iOS and Android
- In Browser Loki Wallet
 - An in browser Loki wallet that allows users to send and receive Loki coins should be created as a Firefox or Chrome extension, this depends on the ultimate choice of browser chosen for Loki Browser.
- Hardware Wallet Integration
 - The necessary upstream merges to support the Ledger and Trezor hardware wallets have been made, some modification on both the Hardware wallet side and the Loki side will need to be made to ensure proper functionality between Loki clients and hardware wallets.
- Blink
 - Blink as specified in the Loki whitepaper is a Service which allows select transaction key images to be locked by Service Nodes instantly confirming the transactions. This service should be easier to implement with recent additions on infinite staking which allow the network to lock the key images of staking transactions.
- Service Node Testing
 - To ensure correct functionality of the onion routing network and auxiliary services like Loki Messenger, Service Nodes need to enforce minimum standards on the network
 - This means effective tests must be designed to detect Service Nodes that neglect to route a minimum of data, fail to store Loki Messenger messages, do not keep a copy of the Loki blockchain or fail to meet the minimum bandwidth requirements.
 - The results of these tests should be able to be used to deregister Loki Service Nodes that do not meet the high standards expected by the Loki network
- Lokinet Exit Functionality

- Exit nodes can already be manually specified in Lokinet, however features must be designed so that Service Nodes can flag whether they would like to be a relay or an exit node and default exit policies must also be decided.
- Loki Name System
 - The Loki name system allows for arbitrary mapping of names to .loki addresses or public keys, it is specified [here](#). Implementation will require modifications both to the Loki core protocol to allow transactions which burn Loki and specify names and Lokinet, allowing Service Nodes to map those names present on the blockchain.
- Service Node Funding System
 - The Service Node funding system allows for the Service Nodes to be delegated a portion of the block reward, the Service Node operators vote monthly to distribute this reward to projects who request funding. This would require changes to the core Loki protocol and a user interface would need to be built for Service Node operators to easily submit votes.
- Loki Browser
 - The Loki browser would allow users to easily browse the internet using Lokinet seamlessly, it would also provide fingerprint protection alongside wallet integration allowing users to easily buy goods or services in Loki. Forking the Tor browser for firefox or Brave browser for chromium would be the most clear path to developing a finished product

5.2 Warranty

Service Providers will be required to provide a Warranty for 30 days following completion of the final technical deliverable, in regards to each individual project. During this period, defects discovered in the code can be returned for correction and retesting. The Warranty will be considered a single deliverable and will be billed at the end of the warranty period for the agreed-upon fixed price.

Service Providers will be required to offer technical support for 90 days following completion of the final technical deliverable, in regards to each individual project. This may take the form of written documentation, answering enquiries, both written and spoken and any other type of support deemed appropriate and reasonable.

6. HIGH-LEVEL PROJECT REQUIREMENTS

6.1 Standards and Conventions

6.1.1 The Loki Project is an open source project, meaning that all code is publicly available to study, change and distribute. Any changes to licences in existing codebases and selection of licenses in new codebases must be agreed upon between the service provider and the Loki Foundation.

6.2 Project Management & Governance

6.2.1. Project Management in relation to day to day development is to be handled by the Service Provider and their team. It is at the Service Providers discretion as to which tools they use to best manage the Loki Project tasks.

6.2.2. The Service Provider must present a formal report on progress and accomplishments every bi-month.

6.2.3. The bi-monthly progress report shall include, at a minimum, the following information:

- Project schedule fidelity
- Project progress
- Major accomplishments of the past bi-month
- Plan for the following bi-month
- Summary of risks and mitigation activities
- Summary of issues and impacts

6.2.4. Discovery of any risk documented/undocumented in the project plan shall be escalated to the above-mentioned Loki Foundation contact within one (1) day.

6.2.5. If required, Loki Foundation may request a meeting, either in person or with the use of technology, to further discuss progress.

6.4 Testing

All software provided by the vendor must be of high quality, developers should always ensure that code is as bug free as possible, especially when dealing with code that will be operating on or with the Loki cryptocurrency.

There are currently a number of open source testing tools that can be used to ensure code is bug free on Loki core and other Loki related projects.

6.4.1. Loki core

- Excluding emergency releases all loki core, unit and performance and tests should be passing, on any major release
<https://github.com/loki-project/loki/tree/master/tests>
- Excluding emergency releases all Loki core integration tests should be passing <https://github.com/Doy-lee/loki-integration-testing>
- New Loki core and integration tests should be written when any major bug is found to avoid the same bug from occurring more than once
- New Loki core and integration tests should be written for each new major feature that is added to Loki.

6.4.2. Lokinet

- Lokinet has a suite of tests available here
<https://github.com/loki-project/loki-network/tree/master/test>
- Excluding emergency releases, pre releases and alpha releases All Lokinet tests should pass when any release is published and tagged
- Major new features or refactorization of code should incorporate comprehensive tests when written

6.4.3. Loki Messenger

- Loki messenger has a suite of tests available some written by the original signal developers and some new tests that have been added with extended functionality, they can be found here
<https://github.com/loki-project/loki-messenger/tree/development/test>
- Excluding emergency releases, pre releases and alpha releases all Lokinet tests should pass when any release is published and tagged
- New tests should be written for any major feature that is added to Loki messenger

6.4.4. Other projects or Auxiliary tools

Other projects have different requirements for testing, if there is a handoff between vendors they should consult with each other to find out the specific requirements for testing on each project

7. VENDOR INFORMATION

This section specifies the requirements that submitting companies must address to participate in the vendor's competition and receive work associated with this request for proposal. Provide a complete and accurate response to each relevant requirement. If necessary, supporting documents can be attached as an appendix.

7.1 Organisation

- 7.1.1 Provide an overview of your company, including date of incorporation, operating locations, number of employees, area(s) of specialty and number of successful projects with global customers.
- 7.1.2 Provide information about the specification of the project organizations with which you have experience (e.g., onshore, offshore, onshore PM, offshore dedicated development team, etc.).
- 7.1.3 Describe how you screen and hire staff. What level of skill must they have? How do you evaluate their experience and performance? What was your staff turnover rate throughout the preceding year?

7.2 Relevant Experience in Similar Projects

- 7.2.1 Have you ever worked on projects within the Blockchain/Cryptocurrency industry or with similar functionality? Please provide a brief description of the project, project scope, size of the team, duration of the project and project management model.
- 7.2.2 What was the service and what was your role in the creation/deployment of the solution?

7.3 Project Management

- 7.3.1 Describe your experience levels with project management. How do you ordinarily scope, estimate, assign resources and measure progress?
- 7.3.2 Which software development lifecycle model would you choose for this project and why?

7.4 Technical Experience

- 7.4.1 Describe your experience with Blockchain technology. How many trained developers do you have? What are their skill levels? What is the number of successful projects you have worked on or completed using Blockchain technology? Do you have experience in onion routing networks? Do you have experience with encrypted messaging applications?
- 7.4.2 Describe your testing methodology and QA approach. Which testing tools and instruments do you use? Which methodologies do you use? What standard documentation do you produce during the development process?

7.5 Representative Services

- 7.5.1 Describe your experience in relation to representative services. Have you previously undertaken services such as this for other software projects? What tasks were you asked to handle and how did you manage this?

7.6 Marketing Experience

- 7.6.1 Describe your experience level in relation to marketing exposure. Do you have the necessary staffing and experience to successfully market the Loki Project to the relevant audience?

7.7 Development Experience

- 7.7.1 Describe your experience level in relation to Development. Do you have the required development staffing, including but not limited to, software engineers, researchers, designers, architects? What are their current skills and shortcomings? How do you plan to ensure continual development is achieved?

7.8 Documentation Experience

- 7.8.1 Describe your experience level in relation to documentation. Do you have the scope within your team to accurately describe the Loki Project in high level detail to a broad range of users, including but not limited to, community developers & average users? What are examples of past work that demonstrates your capabilities to document?

7.9 References

- 7.9.1 Provide references to whom products or services similar in scope to the requirements of this RFP have been provided, in the following form: the name of the person who may be contacted, position, email address and phone number.
- 7.9.2 Provide a selection of the CVs, GitHub account or similar of the developers you anticipate assigning to this project.

8. VENDOR PROPOSAL

All vendors shall develop a proposal response to this RFP which addresses either the full scope of work identified in the request or parts to which they wish to make a proposal for. The following sections outline the mandatory elements of the proposal. In their proposal, bidders may include additional elements which are not specifically called out in this request, if they believe that such data is necessary for Loki Foundation to properly understand and evaluate the offering.

8.1 Project Approach

Describe the approach you are taking towards this project. How do you propose to initiate, maintain and close out the project? Include specific references to the project methodology and the desired relationship between Loki Foundation and your company.

8.2 Staffing Proposal

Describe the skill sets, numbers and locations of the individuals you propose to staff this project. Briefly provide an overview of the contributions you would expect each unique skill set to provide to the project.

8.3 Project Timing Proposal

Based on the approach and staffing outlined above, provide a project timeline that commences with a contract award date of 01/07/19. This timeline should identify all major project milestones and indicate the dates associated with the project deliverables.

Describe your estimating methodology and the methods you employed to determine the effort associated with this project. Provide sample data from your estimating process to illustrate this methodology.

Provide the total number of hours associated with the following tasks/resources:

- Total Project Hours
- Project Management
- Software Engineering/Development
- Testing & QA
- Software Warranty
- Infrastructure Management

8.4 Project Cost Proposal

Provide a cost proposal which includes the total cost to be charged as well as the cost broken down by the following categories:

- Ongoing Services
 - Ongoing Representative Services
 - Ongoing Marketing Services
 - Ongoing Development Services
 - Ongoing Documentation Services
- Milestone Services
 - Payment ID Depreciation
 - Service Node Testing Suite
 - Loki Messenger (mobile clients)

- o Lokinet (mobile clients)
- o In Browser Loki Wallet
- o Hardware Wallet Integration
- o Blink
- o Enforced Service Node Testing
- o Lokinet Exit Functionality
- o Loki Name System
- o Friend to Friend Bridge Routing
- o Service Node Funding System
- o Loki Browser

8.5 Proposal Assumptions

List any assumptions you have made regarding how you will execute the project or regarding the activities of Loki Foundation in executing this project, or any other assumptions you may have made.

8.6 Proposal Risks and Mitigations

List any risks you have identified associated with this project. Indicate your best assessment of the likelihood and impact (High, Medium, Low). Identify the proposed response to those risks:

- Accept the risk
- Mitigate the risk with appropriate mitigation details

8.7 Loki Foundation Time and Support

Provide any requirements for Loki Foundation’s time and resources that will be required to support the project effort. Be clear about the skill sets and types of interaction required from Loki Foundation.

8.8 Sample Contract

Provide a Contract for the type of work being proposed in this request. This contract should reflect the types of conditions, stipulations and terms that would be expected for this type of contract. Loki Foundation may provide a contract sample if required.

9. METHOD OF EVALUATIONS AND AWARD

All proposals received will be logged and accepted into the process. Only those proposals conforming to the required standards will be considered for evaluation. All non-conforming proposals will be indicated as “Disqualified”.

9.1 Evaluation Criteria

An evaluation team composed of Loki Foundation employees and other stakeholders will review the proposals. The following criteria will be used to

evaluate the proposals for the purpose of ranking them in a relative position based on how fully each proposal meets the requirements of this RFP.

For example:

<u>Evaluation Criteria</u>	<u>Points</u>
Vendor's Location in Australia	1
Methodology/Approach	6
Pricing	4
Relevant Qualifications/Experience	5
Quality of Proposal	3

TOTAL POSSIBLE POINTS <19>

9.2 *Discussions and Best and Final Offers*

Loki Foundation may, at its sole option, either accept a vendor's initial proposal by award of a contract or enter into discussions with vendors whose proposals are deemed reasonably susceptible of being considered for an award. After discussions are concluded, vendors may be allowed to submit a "Best and Final Offer" for consideration.

Appendices and Supporting Materials

Appendix A

- Loki Project Whitepaper <https://loki.network/whitepaper>

Appendix B

- Loki Project GitHub <https://github.com/loki-project>