Request for Proposal - Decentralized Data Marketplace

Ecosystem Development Fund (EDF) - IOTA Foundation

Berlin, Germany

0.0 Summary

Data Marketplaces are a relatively recent concept. They are a multi-sided marketplace serving data producers, buyers and analytics services. They have emerged due to the massive amounts of data that are currently being captured but rarely leveraged for value creation. The lack of leverage is usually caused by the administrative overhead caused by data sharing agreements, lack of infrastructure to support trades and lack of understanding concerning data as an asset.

Many data marketplaces currently exist, with companies like Azure, Salesforce, BDEX and Oracle each operating their own data markets. These markets are focused on large datasets of various types of historical data. Data sets will often have millions of entries and sizes well in the gigabyte range. These centralised marketplaces are operated by a central actor who moderates the platform and takes a platform fee on every transaction.

Looking towards the future, an ever growing number of devices will be connected to the internet and each other. These devices will have various roles but the majority will be devoted to sensing the environment around them. The real time information will be a wealth of value not only to the owner of the device but for those who purchase the data coming from this device.

In order to ensure the seamless advertisement and sale of information the EDF is requesting proposals for applications that utilize the IOTA protocol to create a decentralised data marketplace standard, library and accompanying reference implementation.

For a better understanding of data marketplaces please see the following:

- IOTA Data Marketplace
- eCl@ss + IOTA: Standardising M2M data transfer
- DLT Data payment & transfer (USC CCI)
- Data Marketplaces for IoT
- IOTA Area Codes: Geo-tagging with IOTA

1.0 Project Description

1.1 Compatibility
- Operate on top of the IOTA protocol
- Incorporation or creation of a geo-tagging standard (ie. IAC)
- Incorporation or creation of data classification standard

1.2 Decentralization
- The marketplace should not rely on a central actor to operate
- The marketplace should utilise the IOTA token for value transfer
- The marketplace should use IOTA transactions for the advertisement of data
- The marketplace should allow for off-tangle data transfer methods (TCP, MQTT, LoRa, IPFS etc).

1.3 Standards
- Define a means to advertise the sale of data
- Define a means to query data via physical location or type of data or both.
- Define a means to negotiate the purchase of data
- Define a means to purchase advertised data
- Define a means to purchase a stream of advertised data & maintain access

1.4 Reference Application Functions
- Ability to advertise data
- Ability to query data
- Ability to purchase data
- Ability to access previously purchased data (if stored on the Tangle)

2.0 Deliverables

2.1 Documentation
- Clearly documented Github repository
- Multi-page document describing the design of data marketplace
- Flow diagrams showing advertising, payments negotiation, query, data transfer and after sale.
- Multiple update posts, on platforms such as Medium, describing the state of the project at regular time intervals

2.2 Code
- Extensive in code commenting across the whole repository
- Monorepo covering the standard, library & reference application

2.3 Application
- A GUI based application that demonstrates query & purchase of data. Preferably web-based.
- A CLI based application that allows for advertisement & sale of data.

3.0 Timeline

3.1 This RFP will support **up to 3** grant proposals. However, given the quality and cost of proposals the RFP may be withdrawn without funding a proposal.

4.0 Requirements & Submissions

4.1 All submissions must use the following template and fill out each section comprehensively. If a section is left uncompleted the grant proposal will be rejected.

4.2 All submissions must be submitted via the following form in order to be considered for approy of the project will be open-source under the MIT License. This is to ensure the funds of the grant are able to be utilised by everyone within the community.

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5.0 Contact

5.1 To ask questions about this RFP please contact Mark.Schmidt@iota.org