RSS3: The Open Information Layer

Natural Selection Labs

***Abstract*—Inspired by the original RSS Standard, this paper presents RSS3, Open Information Layer for the Open Web. The paper serves as an enhanced version of our initial whitepaper titled "RSS3: A Next-Generation Feed Standard." Following the release of our initial whitepaper, we have adhered to its proposed architecture to conduct experiments and advance the development of the RSS3 Network. The Network has transformed into what is now known as the Open Information Layer, reflecting the evolving dynamics of the Open Web. This paper summarizes our research and development progress since then, providing insights into RSS3's vision and its decentralization architecture.**

I. Introduction

II. Open Information Layer

The Open Information Layer (OIL) is a conceptual layer that is formed by two sub-layers: the Data Sub-layer (DSL) and the Value Sub-layer (VSL). Information from permissonless data sources on the OIL flows openly without any restrictions.

III. Data Sub-layer

The DSL is responsible for information life cycle management, which includes indexing, transformation, storage, dissemination, and consumption [1].

A. Unified Metadata Schemas

Open Information, indexed from multiple data sources, is structured into the Unified Metadata Schemas (UMS) format for interoperability.

Decentralized data sources use different data structures, within a DDS, there might be multiple products, services and protocols that leverage a different data structure to suit their needs. This means limited interoperability, and developers need to look into each and every data structure, when it comes to building. This lack of standardization means developers must investigate each unique structure individually when building applications, which is not scalable.

The UMS addresses this issue by offering a unified set of data structures that serve as an abstraction. This abstraction simplifies the integration process, making it more manageable and scalable for developers to work with data across various data sources.

For the complete set of the UMS, refer to https://docs.rss3.io/docs/unified-metadata-schemas.

1) Global Indexer:

2) Serving Node:

IV. Value Sub-layer

V. Incentive

A. Incentivization

The RSS3 Network, on the other hand, will be rewarding network participants with the profit of the network generated from advertising, value-added services, social economic activities, etc.

B. Staking and Slashing

C. Incentive Pool

1) Operator Pool:

2) Reward Pool:

VI. Scalability

VII. Conclusion

At the heart of Natural Selection Labs, we firmly believe in the freedom of information distribution: No organizations or authorities shall prohibit the free exercise of the right of people to create, store, and distribute their information.

References

[1] National Institute of Standards and Technology. Information life cycle. https://csrc.nist.gov/glossary/term/information_life_cycle, 2016.