Ecosystem Human Interoperability Metadata Standards

Collective Sensemaking

Contributors: lloydduhon@gmail.com Ben O'Hanlon

Invited to contribute: *Rupert Whitehead* *Tamara Haasen* *mercy@wada.org* *balumeboaz@gmail.com* *ziblimseidu99@gmail.com* *lodjatsa@gmail.com* *celiwengwenya3@gmail.com* *Ivan Irakoze* *richmondsabah09@gmail.com* *kitwillow91@gmail.com* *afia@wada.org* *safonanakwadwo2a1@gmail.com* *andreas.sosilo@gmail.com* *Nori Nishigaya*

CPS:

Abstract

Cardano's ecosystem faces a human interoperability challenge. The community struggles to see beyond immediate networks. This proximity bias hinders full self-understanding. People use similar terms but mean different things, leading to confusion about roles, relationships, and sectors. In a constantly changing environment, it's hard to track what's happening, who to work with, and where opportunities lie. The community can't fully know itself, impacting self-governance. Each person knows only a part, like the blind men and the elephant. This affects value creation, cooperation, and network effects.

Does the community really know itself? Because if it doesn't, it's a problem.

Preamble

A potential DRep faces a key challenge: How do they connect with people they don't know exist? Parts of the community are invisible to them. They can't engage or build relationships with these hidden groups. How can they represent people they've never met or heard of? This blindspot isn't just a DRep issue—it affects everyone in Cardano. It limits collaboration, slows growth, and complicates decision-making.

The context: Cardano's founding pioneers have burned the genesis keys, paving the way for full community self-governance. Within this new system, a nascent role has emerged: the "DRep" or

delegated representative. DReps act as the community's spokespersons, voting on governance actions and advocating for collective interests.

We've identified two key issues:

1. Much of the initial discussion has focused on the "delegated" aspect of DReps—the technical requirements. This is akin to learning to drive a car: where to put the oil, how to turn the key, when to change the timing belt. However, there's a significant gap in understanding how DReps will truly be representative.
2. In Cardano, we've seen many individuals—stake pool operators, for example—striving to be heard to gain value. This approach often leads to excessive competition and noise.

For DReps to succeed, they must be genuinely representative. This means ensuring that community members are SEEN so they can be HEARD, enabling the community to better understand itself and create VALUE. We need cooperation and coordination driven by enlightened self-interest, rather than unenlightened competition that leads to value extraction instead of creation.

Problem Statement

Cardano's ecosystem faces a human interoperability challenge as it transitions to full self-governance. The core issue: How can community members, especially potential Decentralized Representatives (DReps), effectively represent and contribute to a community they can't fully see or understand?

Cardano's ecosystem lacks a standardized metadata format and common definitions for roles, relationships, sectors, and value chains. This fundamental gap creates several interconnected issues:

Key problems include:

1. Limited visibility: DReps struggle to engage with unknown community members
2. Representation dilemma: Difficulty in representing an incompletely understood community
3. Proximity bias: DReps' understanding is often restricted to their immediate networks
4. Role ambiguity: Unclear delineation of DRep responsibilities within the ecosystem

Additional challenges:

1. Lack of standardized metadata formats and common definitions across the ecosystem
2. Fragmented resources and inconsistent language between projects
3. Rapid ecosystem evolution outpacing community understanding
4. Consensus on obstacles to coordination and maximizing network effects

5. Duplication of efforts due to limited awareness
6. Absence of blockchain-based standard metadata for ecosystem components
7. Limited blockchain querying capabilities for ecosystem-wide analysis
8. Difficulty in maintaining up-to-date ecosystem data amidst rapid changes
9. Lack of a communication model or structure for DReps and Delegators.

These issues collectively hinder effective self-governance, slow ecosystem growth, and complicate decision-making in Cardano's evolving landscape.

Impact

Addressing these challenges through the implementation of a standardized Ecosystem Mapping Metadata Standard would have significant positive impacts:

1. **Enhanced Collaboration**: A common metadata standard would facilitate better communication and collaboration between different projects and stakeholders within the Cardano ecosystem.
2. **Improved Ecosystem Understanding**: Standardized metadata would enable more accurate and comprehensive mapping of the ecosystem, leading to better insights into its structure and dynamics.
3. **Efficient Resource Allocation**: With a clearer understanding of the ecosystem, resources can be more effectively allocated to areas of need or opportunity.
4. **Accelerated Innovation**: A well-mapped ecosystem can highlight gaps and synergies, potentially spurring new innovations and collaborations.
5. **Better Onboarding**: New participants in the Cardano ecosystem would have an easier time understanding the landscape and finding their place within it.
6. **Data-Driven Decision Making**: Standardized metadata would enable more robust analytics, supporting data-driven decision-making at both the individual project and ecosystem-wide levels.
7. **Participatory Self-Sovereignty**: Decentralized reporting standard for ecosystem mapping empowers individuals and organizations by ensuring the self-sovereignty of their data. By leveraging decentralized self-reporting, such a standard allows participants to retain full ownership and control over their information and contributions, preventing central authorities from monopolizing or exploiting this information. A decentralized framework aligns with the principles of fair and impartial participation, enabling diverse stakeholders to collaborate without fear of censorship, bias, or data mismanagement, ultimately creating a resilient and inclusive ecosystem.

By establishing a standardized Ecosystem Mapping Metadata Standard, we can address these challenges and unlock the full potential of the Cardano ecosystem, fostering growth, innovation, and collaboration.

Use cases

1. DReps form a human sensory network to share perspectives and collectively map the ecosystem's needs, challenges, and success metrics.
2. A group of DReps using the ecosystem map to plot strategic initiatives and track their impact over time.
3. Intersect leveraging the ecosystem map as a rich source of content for their platform, helping to showcase Cardano's diversity and dynamism.
4. Community members using various ecosystem maps to navigate Cardano more effectively, finding relevant projects, DReps, and opportunities.
5. Projects and organizations using the ecosystem mapping data to segment their membership and tailor their offerings.
6. A new developer using the map to understand where their skills fit and which DReps align with their interests.
7. An ecosystem analyst tracking the evolution of relationships between DReps, projects, and community segments.
8. A community member using the map to identify relevant DReps and projects for a new initiative they want to propose.

Goals

1. Create a standardized metadata format for representing ecosystem components, roles, and relationships.
2. Enable DReps to form an effective human sensory network for ecosystem understanding.
3. Improve ecosystem-wide visibility and navigation for all community members.
4. Enhance collaboration and reduce duplication of efforts across the ecosystem.
5. Support more effective self-governance through better ecosystem comprehension.
6. Provide a foundation for creating multiple, purpose-specific ecosystem maps.
7. Generate valuable content for platforms like Intersect to showcase Cardano's diversity.
8. Enable data-driven decision-making at both project and ecosystem-wide levels.
9. Foster value creation over value extraction by improving understanding of ecosystem dynamics.

Open Questions

1. How can we design a metadata standard flexible enough to represent the diverse and evolving Cardano ecosystem?
2. What incentives can encourage DReps and other community members to contribute to and maintain the ecosystem mapping data?
3. How do we balance standardization with the need for project-specific or sector-specific variations?
4. What mechanisms can help overcome proximity bias in a decentralized ecosystem?

5. How can we ensure the privacy and security of individuals and projects while providing useful ecosystem data?
6. What metrics should we use to measure the effectiveness of this standard in improving human interoperability?
7. How can we make the ecosystem maps accessible and useful for both technical and non-technical users?
8. What governance structures might be needed to manage and evolve the metadata standard over time?
9. Can this metadata support a “Now” movement? https://nownownow.com/about Allow people and organizations to list what they are currently doing and enable connections and collaborations based on living “now” data

Blind Men and the Elephant

In the parable of The *Blind Men and the Elephant* six blind men visit the palace of the Rajah and encounter an elephant for the first time. As each touches the animal with his hands, he announces his discoveries.

The first blind man put out his hand and touched the side of the elephant. "How smooth! An elephant is like a wall." The second blind man put out his hand and touched the trunk of the elephant. "How round! An elephant is like a snake." The third blind man put out his hand and touched the tusk of the elephant. "How sharp! An elephant is like a spear." The fourth blind man put out his hand and touched the leg of the elephant. "How tall! An elephant is like a tree." The fifth blind man reached out his hand and touched the ear of the elephant. "How wide! An elephant is like a fan." The sixth blind man put out his hand and touched the tail of the elephant. "How thin! An elephant is like a rope."[1]

An argument ensued, each blind man thinking his own perception of the elephant was the correct one. The Rajah, awakened by the commotion, called out from the balcony. "The elephant is a big animal," he said. "Each man touched only one part. You must put all the parts together to find out what an elephant is like."

Enlightened by the Rajah's wisdom, the blind men reached agreement. "Each one of us knows only a part. To find out the whole truth we must put all the parts together."

CIP

Abstract

This proposal defines an Ecosystem Mapping Metadata Standard for representing roles, relationships, and sectors within the Cardano ecosystem. It aims to provide a standardized format for mapping and analyzing the structure and dynamics of the Cardano ecosystem using on-chain metadata.

Motivation: why is this CIP necessary?

The Cardano ecosystem is rapidly growing and diversifying, encompassing a wide range of roles, relationships, and sectors. However, there is currently no standardized way to represent and map these ecosystem components within the Cardano blockchain. This lack of standardization leads to:

1. Fragmented and inconsistent data representation
2. Challenges in ecosystem analysis and visualization
3. Difficulties in discovering and understanding ecosystem components
4. Inefficiencies in data exchange and integration between projects
5. Scalability issues as the ecosystem continues to grow

By establishing a standardized metadata format for ecosystem mapping, we can address these challenges and unlock the full potential of the Cardano ecosystem, fostering growth, innovation, and collaboration.

Specification

This is the proposed structure for the Ecosystem Mapping Metadata Standard:

```
{
  "XXX": {
    "<policy_id>": {
      "<asset_name>": {
        "name": "<string>",
        "description": "<string>",
        "image": "<uri>",
        "type": "<string: Role | Relationship | Sector>",
        "properties": {
          "role": {
            "title": "<string>",
            "responsibilities": ["<string>"],
            "skills": ["<string>"]
          },
          "relationship": {
            "type": "<string>",
            "parties": ["<string>"],
            "strength": "<integer: 1-5>"
          },
          "sector": {
            "name": "<string>",
            "subsectors": ["<string>"],
```

```
            "keyPlayers": ["<string>"]
          }
        },
        "metadata": {
          "createdAt": "<timestamp>",
          "updatedAt": "<timestamp>",
          "version": "<string>"
        }
      }
    },
    "version": "1"
  }
}
```

Field Descriptions

- `XXX`: The registered transaction metadata label for this standard.
- `<policy_id>`: The policy ID under which the asset is minted.
- `<asset_name>`: The name of the specific asset (role, relationship, or sector).
- `name`: A human-readable name for the asset.
- `description`: A brief description of the asset.
- `image`: A URI pointing to an image representing the asset (if applicable).
- `type`: Specifies whether the asset is a Role, Relationship, or Sector.
- `properties`: Contains specific properties based on the asset type:
    - `role`: Properties specific to ecosystem roles.
    - `relationship`: Properties specific to relationships between ecosystem components.
    - `sector`: Properties specific to ecosystem sectors or industries.
- `metadata`: Contains metadata about the asset itself, including creation and update timestamps, and version information.
- `version`: The version of this metadata standard (at the root level).

Rationale: how does this CIP achieve its goals?

This CIP achieves its goals by:

1. Providing a flexible yet standardized structure for representing diverse ecosystem components.
2. Enabling consistent and interoperable data representation across different projects and initiatives.

3. Facilitating easier discovery and analysis of ecosystem components through standardized fields.
4. Allowing for future extensibility through the version field and flexible property structures.
5. Leveraging existing Cardano metadata standards (label XXX) for compatibility with current systems.

Backwards Compatibility

This CIP introduces a new metadata standard and does not affect existing functionalities. It is designed to be compatible with existing Cardano metadata practices, using the established XXX label.

Path to Active

Acceptance Criteria

- Implementation of this standard in at least three significant Cardano ecosystem projects or tools.
- Development of at least one ecosystem mapping or visualization tool that utilizes this metadata standard.
- Positive feedback and adoption from the Cardano community, including developers and project leaders.

Implementation Plan

1. Finalize the CIP through community discussion and feedback.
2. Develop reference implementations and tools to create and validate metadata conforming to this standard.
3. Engage with existing Cardano projects to encourage adoption of the standard.
4. Create educational materials and guides to assist in the implementation of the standard.
5. Monitor adoption and gather feedback for potential future improvements or extensions to the standard.

Copyright