[Issue #35](): Proposal for RFP: Private Credential Standard

I.   Contact Information

1. Team Lead (Main Contact Person):

- **Name:** Cao Linh Nhật
- **Position/Role:** Tech Lead at SmartOSC
- **Email:** nhatcl@smartosc.com
- **GitHub Username:** nhatcl-smartosc
- **Mina Recipient Address (for potential funding):** TBD

2. Team Members:

1. **Member 1:**
   - **Name:** Cao Linh Nhật
   - **Role:** Solution Architect, Back-end & Blockchain Developer
   - **Relevant Experience/Previous Work (with links):** 7+ year experience in Blockchain Development
2. **Member 2:**
   - **Name:** Lê Việt Dũng
   - **Role:** Front-end & Blockchain Developer
   - **Relevant Experience/Previous Work (with links):** 3+ years experience in Blockchain Development, FE & SC fields
3. **Member 3:**
   - **Name:** Lê Hồng Vọ
   - **Role:** Back-end & Blockchain Developer
   - **Relevant Experience/Previous Work (with links):** 3+ years experience in Blockchain Development, BE & SC fields
4. **Member 4:**
   - **Name:** Lê Việt Cường
   - **Role:** Back-end & Blockchain Developer
   - **Relevant Experience/Previous Work (with links):** 4+ years experience in Blockchain Development, BE field
5. **Member 5:**
   - **Name:** Cao Hoàng Sơn
   - **Role:** Business Analytic
   - **Relevant Experience/Previous Work (with links):** 2+ years experience in Business Analytics. 1+ year experience in Blockchain business
6. **Member 6:**
   - **Name:** Phùng Thị Hải Yến
   - **Role:** Quality Control
   - **Relevant Experience/Previous Work (with links):** 3+ years experience in Blockchain Testing, both UI & API

3. Team Overview

Pioneering the pursuit of blockchain technology from its inception, our team is composed of highly experienced professionals in the blockchain industry. Drawn to the blockchain technology due to one of the most amazing features of blockchain - high security, we are confident of our deep-rooted knowledge in security and data privacy. We also have extensive experience in wallet development, accumulated through various projects, ranging from traditional crypto wallet (EOAs) to the new future of wallet - Account Abstraction concept. With that foundation, we deliver high-end product

development with quality, security and scalability

II. Proposed Solution

1. Proposed Solution Description:
Our proposed solution aims to introduce a **flexible expansion** using Mina wallet's Adapter api that ensures **no exposure of private data** by leveraging **isolated environments** and strict **data validation** processes. This API will allow users to prove various data types while combining local and remote proofs, enhancing composable privacy. To maintain integrity and security, we will implement mechanisms to prevent **replay attacks** and enforce proof expiration through the use of nullifiers and expiration support.

Additionally, third-party privacy providers will be incorporated to supply proof data from external sources. Once validated and combined with local data, the final proof will be directly returned to the data request endpoint for seamless verification of the user's claims.

Moreover, we will provide comprehensive integration guides for Wallet and zkApp Developers to facilitate the understanding and use of this solution within their products.

2. Step-by-Step Plan

1. **Develop Architecture (+UML):** 1 week
   - Create the overall architecture and UML diagrams for the project, ensuring a clear and structured plan for implementation.
   - Create work environment & source base for the Adapter and the zkApp
2. **Implement Local Proof:** 4 weeks
   - Develop the core library integrating with the Mina blockchain, providing a robust public API for attestations.
   - Integrate the core library with the Mina blockchain, ensuring seamless interaction and availability of the public API.
   - Define and implement the domain-specific language (DSL), including the parser and interpreter, and integrate it with the core library.
3. **Integrate Library with 3rd Party KYC Provider:** 2 weeks
   - Integrate the developed library with a third-party KYC provider to enhance functionality and compliance.
4. **Implement integrate with Wallet:** 2 weeks
   - Integrate the developed library with a Wallet like Auro Wallet or AirGap…
5. **Example zkApps:** 2 weeks
   - Implement a zkApp example to demonstrate the API usage.
6. **Implement Integration Tests and Unit Tests:** 1 week
   - Develop comprehensive integration and unit tests to ensure the reliability and accuracy of the implemented features.
7. **Performance Tests and UAT:** 4 weeks
   - Develop comprehensive integration and unit tests to ensure the reliability and accuracy of the implemented features.
8. **Audit:** 2 weeks
   - Process the Audit by 3rd parties
9. **Develop Test and Demo zkApps to Interact with the Provider API:** 2 weeks
   - Create test and demo zkApps to showcase the functionality and interaction with the Provider API, facilitating user understanding and adoption.
10. **Provide Documentation:** 2 weeks
    - Produce detailed documentation for the API and its usage, including guides and examples to support developers.
    - Other project's documentations like Test Report, Demo Guide or launch

checklist

3. **Milestones:**
   ● Initial & Scoping
   ● Solution complete
   ● Development complete
   ● Document complete
   ● Integration Test-TestCase
   ● Integration Test-Execute
   ● Performance Test-TestCase
   ● Performance Test-Execute
   ● Demonstration
   ● UAT
   ● Launch
   ● Hypercare

III.   Additional Support and Funding

1. **Support Requirements:**
   ● Connection support from the Mina Foundation for integrating with Mina wallets(Auro, AirCrap, Cla.io, Metamask…)
2. **Grant Funding:**
   ● Development Breakdown:
      ○ Develop Architecture (Base + UML): $5,440
      ○ Implement Local Proof: $10,560
      ○ Integrate Library with 3rd Party KYC Provider: $640
      ○ Implement integrate with Wallet: $1,280
      ○ Example zkApps: $3,360
      ○ Integration Tests: $10,656
      ○ Test and Demo zkApps: $4,262
      ○ Documentation: $3,520
      ○ Project coordination: $9,009
   ● **Total:** $48,728

IV.   Community Engagement

1. **Engagement with Mina Community:**
We are connected to a network of nearly a thousand of Mina builders through community development activities in Vietnam. Currently, we are actively consulting and responding to their feedback to complete the proposal. We will also reach out to Mina users all over the world through Mina official community channels in order to align our solution with the expectation of the majority of users currently on the Mina blockchain.

2. **Engagement with Mina Ecosystem:**
We are planning to choose a wallet team(Auro or AirGap or Clor.io) whose product has been launched on the Mina blockchain with a large number of active users for a collaboration to test out and gather feedback from real user experiences. We believe that those responses are invaluable for our proposal to be completed soon and to contribute to the Mina blockchain ecosystem.