**Implement Client Side Security for Climate SIG Fabric Application**

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Implement Client Side Security for Climate SIG Fabric Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>COMPLETED</td>
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<tr>
<td>Difficulty</td>
<td>HIGH</td>
</tr>
</tbody>
</table>

**Description**

The Carbon Accounting and Certification Working Group is developing an Operating System for Climate Action, where there is a Hyperledger Fabric Utility Emissions Channel Project with utility data. Currently, the security certificates for accessing Fabric are held server side. A client application authenticates the user through standard username/password authentication and then access the Fabric chain code on behalf of the user.

We would like to explore a client driven authentication for the Fabric application, similar to how Metamask is used with Ethereum dApps such as the Emissions Tokens Network Project. In such a use case, the user would sign into a web portal, enter and upload their information, and then sign the transaction with a local security key or a dApp wallet such as Metamask.

**Additional Information**

For background, see the Carbon Accounting and Certification Working Group wiki page.

To check out the code, see [https://github.com/hyperledger-labs/blockchain-carbon-accounting](https://github.com/hyperledger-labs/blockchain-carbon-accounting), specifically `utility-emissions-channel/README.md` for more details on the Hyperledger Fabric utility emissions channel.

There is currently a task for testing offline signing.

We have also started looking at TrustId and have a pull request for integrating with it. Maria from TrustId also made a presentation during our peer programming call.

**Learning Objectives**

As part of this project, you will learn about

- Hyperledger Fabric chain code development
- REST APIs
- dApp security and wallets
- Open source development and project management

**Expected Outcome**

Implementation of an application with client side authentication for Hyperledger Fabric utility emissions data channel. Documentation and tutorials showing how this is done.

**Relation to Hyperledger**

This project is part of the Hyperledger Labs blockchain-carbon-accounting project and the Climate Action SIG. It will work with Hyperledger Fabric and Cactus as the main technologies and main involve Besu as well.

TrustId is also a Hyperledger Labs project.

**Education Level**

**Skills**

Familiarity with Hyperledger Fabric, Node.js, web and dApp security frameworks.
Future plans

After the conclusion of the project, you can join us for more development in the Climate Action SIG as well as get involved in production climate blockchains that drive climate action that include tokens and DAO's.

Preferred Hours and Length of Internship

Full time or part time. Three months.

Mentor(s) Names and Contact Info

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Mentee

Bertrand Rioux

Results

https://wiki.hyperledger.org/display/INTERN/Project+Plan+-+Implement+Client+Side+Security+for+Climate+SIG+Fabric+Application

Final Report

https://wiki.hyperledger.org/display/INTERN/Project+Plan+-+Implement+Client+Side+Security+for+Climate+SIG+Fabric+Application