*EE/CprE/SE 491 WEEKLY REPORT*

*3/12/2020 – 4/02/2020*

*Group number:* 12

*Project title:* Applying Blockchain to Energy Delivery Systems

*Client &/Advisor:* Grant Johnson (Client), Manimaran Govindarasu (Advisor)

*Team Members/Role:*
Anthony Cosimo: Test Engineer
Jacob Dawson: Project Manager
Keegan Bloedel: API Architect
Katherine Ringgenberg: UI Architect
Steven Rein: Blockchain Architect
Dakota Moore: Cybersecurity Manager

o **Weekly Summary**

Completed decoding PCAP data to mock PDC data. Continued work on configuration and automation of a "publisher" for publishing PDC data to the blockchain network. Re-designed blockchain chaincode to create keys to allow querying on specific organizations and ranges of timestamps. Got full interaction working from publishing of data -> blockchain storage -> api querying blockchain -> when requested by the user interface.

o **Past week accomplishments**
- Anthony Cosimo:
  - Working on creating automated tests for publisher
- Jacob Dawson:
  - Worked on decoding pcap data in Publisher, allowing Publisher to serve, and sdmay-fabric-wrapper hotfixes.
- Keegan Bloedel:
  - Working on rewriting Publisher to decode the pcap data with Steven. Re-writing tests for our new updated code for Publisher with Anthony.
- Katherine Ringgenberg:

- ○ Designed/implemented a dashboard (graphs, status board) for the UI that uses from a temporary JSON file, worked with Jacob on making edits/tests for the Publisher and decoding the pcap data
- Steven Rein:
  - ○ Worked on decoding PDC data for the publisher. Implemented chaincode for making organization and timestamp specific queries.
- Dakota Moore:
  - ○ Due to medical problems, I only worked on the responses to the peer evaluation. Please see the "comments and extended discussion section for more detail.

○ **Pending issues** *(If applicable: Were there any unexpected complications? Please elaborate.)*

- Anthony Cosimo: No unique issues.
- Jacob Dawson: Did notice while working on decoding PCAP data that some packets' data might be overflowing into other packets. We have decided to use a different PCAP file.
- Keegan Bloedel: No issues.
- Katherine Ringgenberg: none
- Steven Rein: Keys in the database of Hyperledger Fabric (CouchDB) are strings, therefore the timestamp converted to string must be padded with zeros, took a while to figure this out.
- Dakota Moore: None.

○ **Individual contributions**

| NAME | Individual Contributions *(Quick list of contributions. This should be short)* | Hours this week | HOURS cumulative |
|---|---|---|---|
| Anthony Cosimo | Discussed above | 12 | 47 |
| Jacob Dawson | Discussed above | 20 | 76 |
| Keegan Bloedel | Discussed above | 10 | 48 |
| Katherine Ringgenberg | Discussed above | 20 | 66 |
| Steven Rein | Discussed above | 42 | 176 |
| Dakota Moore | Discussed above | 2 | 36 |

- o **Comments and extended discussion**
  - Dakota Moore - I had an infected tooth causing immense pain that needed an emergency dentist appointment to get it pulled right after coming back from break, and then this was followed up immediately by getting sick showing several Covid19 symptoms on top of my back problems worsening.

- o **Plans for the upcoming week**
  - Anthony Cosimo: get full automated tests going for a good chunk if not all of publisher
  - Jacob Dawson: Work on API endpoints for querying BC performance statistics, cleanup Publisher.
  - Keegan Bloedel: Continue to help with API. Add more tests for Publisher.
  - Katherine Ringgenberg: make dashboard components (graphs/status board) communicating with api, keep an eye on api calls/results implemented in the UI to make sure error handling remains functional
  - Steven Rein: Work on UI for graphing PDC data. Work on creating a publisher that can be started and stopped easily.
  - Dakota Moore: Finish the work on the peer evaluations, start work on the final deliverables such as the poster and final presentation.

- o **Summary of weekly advisor meeting**

Friday 3/13: Demoed project and discussed possible improvements and work left to be done.

Friday 3/27: Discussed work left to complete, updated on progress, and discussed possibility of using live PDC data in the "publisher".