

EE/CprE/SE 491 WEEKLY REPORT

2/27/2020 – 3/12/2020

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

○ **Weekly Summary**

Configure blockchain to use two separate chaincodes, initialize sdmay-fabric-wrapper, resolved import errors for sdmay-fabric-wrapper, resolved blockchain start failures, ui debug page organized into tabs, ui calling RegisterUser, ReadMetric, DeleteMetric, CreateMetric, and UpdateMetric, implemented Create and Update on API (with some issues in smart contract error handling), and initialized publisher. Worked on developing the presentation and recording video and audio for peer evaluations.

○ **Past week accomplishments**

- Anthony Cosimo:
 - Creating UI tests, and worked with Jacob on PCAP data
- Jacob Dawson:
 - Attended a meeting with Grant and Katie for UI prototyping. Worked on initializing a component for publishing PCAP data and initializing sdmay-fabric-wrapper, reviewed merge requests.
- Keegan Bloedel:
 - Working on decoding the PCAP data with Jacob and Anthony. Worked on initializing sdmay-fabric-wrapper with Jacob.
- Katherine Ringgenberg:

- Made a script to resolve API-UI VM memory issues. Implemented UI api calls for all existing components and fixed existing tests. Assigned Anthony Cosimo testing the api calls.
 - Steven Rein:
 - Worked on making blockchain start-up more consistent, initializing two separate chaincodes for different organizations to fit use cases.
 - Dakota Moore:
 - Worked on making our first deliverable this semester, a peer evaluation presentation, ready for class presentations. Researched into various cybersecurity-focused VMs that can be used in the testing phase as well.
- **Pending issues** *(If applicable: Were there any unexpected complications? Please elaborate.)*
- Anthony Cosimo: No unique issues.
 - Jacob Dawson: Not able to create or update car records on BC. To resolve this we will implement our own smart contracts and troubleshoot from there.
 - Keegan Bloedel: No issues.
 - Katherine Ringgenberg: none
 - Steven Rein: No issues.
 - Dakota Moore: While prototyping with ways to configure the multiple VMs at once, I realized that no software solution I found is going to be able to be implemented that would save more, if not just as much, disc space.

○ **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u> <i>(Quick list of contributions. This should be short)</i>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Anthony Cosimo	VMs, Api testing	12	35
Jacob Dawson	Discussed above	20	56
Keegan Bloedel	Discussed above	10	38
Katherine Ringgenberg	Discussed above	20	46
Steven Rein	Researched and reconfigured blockchain network.	37	134
Dakota Moore	Peer Evaluation presentation, research	12	34

○ **Comments and extended discussion**

- Dakota Moore - Last week I found out the results of an MRI I took previously, which showed that I had another disc herniation in my spinal cord that's pinching the sciatic nerve, causing nerve pain and uncomfortableness (like tingles when your leg falls asleep) almost constantly throughout the day. Between the pain, more difficult travel, and the medications I'm on, my contributions will probably shadow that of the other members of the group. I am currently figuring out when I'm going to schedule my back surgery to fix it, which will put me on bedrest for at least a couple weeks.

○ **Plans for the upcoming week**

- Anthony Cosimo: Complete UI tests
- Jacob Dawson: Work on implementing publisher for publishing pcap data to blockchain. Work on smart contracts for creating and querying that data. Work on API endpoints for querying that data.
- Keegan Bloedel: Work on API endpoints for querying data. Work on smart contracts and being able to decode the PCAP data correctly.
- Katherine Ringgenberg: start designing/implementing a dashboard, will make a list of what data is needed/desired from the smart contracts and blockchain for the dashboard, keep an eye on api calls/results implemented in the UI to make sure error handling remains functional
- Steven Rein: Create use-case specific chaincode for both Utility and Monitoring organizations.
- Dakota Moore: Finish the peer-eval presentation as well as record the video and audio of it. I also plan on doing more research into possible ways to test the cyber security of the project.

○ **Summary of weekly advisor meeting**

Friday 3/6: Updated everyone on current progress. Discussed possibilities of finishing the project by the end of the month, or at least majority done. The current goal is to complete the project by April first week with testing being implemented by the 15th, so that we have adequate time for class deliverables. The current mindset should be focusing on crossing the finish line. Start to think about what features are absolutely necessary so that the maximum time can be spent on the important functions of the project and testing. Showing a demo of project progress is still scheduled for next friday.