

sdmay23-15: Mobile Vehicle Cybersecurity with On-board Key Management

Week 5 Report

October 24 - October 28

Team MembersBaganesra Bhaskaran — *Gitlab Administrator*Chau Wei Lim — *Strategist*Michael Roling — *Documenter*Alexander Freiberg — *Client Liaison*Aayush Chanda — *Advisor Liaison*Brian Goode — *Team Organizer***Summary of Progress this Report**

- We were able to finalize a design for the project (Lightweight Encryption)
- The design implementation makes use of the CRC field in the CAN frame to transmit MAC and hashed key to other ECUs in the CAN network.
- We worked on the design documentation required for the Senior Design class.

Pending Issues

- Meeting with client to discuss the design
- Testing and implementation of the proposed design for the project.

Plans for Upcoming Reporting Period

- To set up a meeting with the client and probably the advisor as well
- To start implementing the design in the virtual machine where we have all the basic CAN frame simulation and CAN data
- To start testing on the hashing of keys

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Baganesra Bhaskaran	- Worked on the Design Plan documentation, Proposed the initial ideas and overview for the design of making use the CRC field for MAC and hashed key passing, Work with team to develop the proposed design and work independently to research more about how feasible the implementation is for the current project.	4	0
Chau Wei Lim	Worked on describing the functionality of our	3	

	current design after finalizing it with the team and provided a visual of our simulation in virtual environment.		
Michael Roling	Led discussion for the upcoming week's agile user stories and wrote documentation covering what has been achieved thus far on the project (CAN simulation, software setup, etc.).	3	
Alexander Freiberg	Troubleshooted virtual CAN environment issues and weighed effectiveness of design options using weighted decision matrix	3	0
Aayush Chanda	Studied the Lightweight Authentication Encryption for Vehicle CAN article, since our official design will be based on that. Then, assisted the team by adding visuals to our Proposed Design document to help in a high-level understanding of our planned design. Continuing work on diving deeper into requirements and lower level implementation ideas.	3	0
Brian Goode	Working on the proposed design document: 4.4 Technology Considerations. Reading supporting research papers and online resources.	3	0

Gitlab Activity Summary

Nothing to report.
