

EE/CprE/SE 491 WEEKLY REPORT 2

2/20/23 – 3/4/23

Group number: SDMAY23-14

Project title: Mobile Vehicle Security Bus

Client &/Advisor: John Potter &/ Joseph Zambreno

Team Members/Role:

- 1. Campbell, Ryan / Lead Developer**
- 2. Jansen, Levi / Developer**
- 3. Lawson, Riley / Developer**
- 4. Ridgeway, Drake / Developer**
- 5. Scehovic, Ryan / Lead Developer**
- 6. Stricker, Cody / Developer**
- 7. Torres, Josue (Josh) / Developer**

(All the above information should be there in each weekly report. The format/color scheme etc need not be the same. However, please remove everything that is in a bracket from your final submission. These are just part of the template and need not be a part of the report.)

- **Weekly Summary** (Short summary about what the group did for the week. This should be about a paragraph in length. These are just a few questions to help you get started. What was the overall objective for the week? In general, what tasks were completed? Were there any changes made to the project?)

This week we had a couple meetings regarding group reform and discussed the future outcomes of the project. This was a topic we knew we needed to address for the long term success of the project. We also made progress sending CAN FD frames using python and SocketCAN as well as converting our CMAC code into python.

- **Past week accomplishments** (Please describe/summarize as to what was done, by whom, when and, collectively as a group. This should be about a paragraph or two in length. Bulleted points are acceptable as well. Please keep only your technical details related to your project. Figures, schematics, flow diagrams, pseudocode, and project related results are acceptable, but please ensure that they are legible (clear enough to read) and to provide an explanation. If researching a topic, please add a few details about what was learned and how it is relevant to the project. If two or more people worked on a single task, be sure to distinguish how each member contributed to the task. Specific details relating to the assistance provided to other members may be included here. **Do not include classwork, such as individual reflection assignments, and group meetings as part of your duties.**)

- Drake Ridgeway: Researched SocketCAN, worked on SendFDFrame.py by providing input

and writing some code in SendFDFrame.py, attended the weekly meetings, and arranged a meeting with Joseph Zambreno.

- Riley Lawson: Worked and successfully completed the msg_processor to process the CAN FD frames, switched to python and worked on sendFDFrame.py, as well as cmac.py. Researched SocketCAN.

- Cody Stricker: Conducted team meeting, researched and provided input and wrote code for sendFDFrame.py and cmac.py.

- Levi Jansen: Updated sendFrame2.py to support sending frames longer than 8 bytes long. Attended all team meetings. Helped catch other team members up on SocketCAN.

- Ryan Scehovic: Researched the library and which functions would help in our implementation of sending CAN FD frames, then wrote all the code (except for CMAC tag stuff) and debugged sendFDframe.py except for the last error that the group figured out together in a team meeting.

Ryan Campbell - Attended team meetings, got CMAC integrated into the CAN FD frame (4 bytes), tested with candump and verified that the output is repeatable (to verify the hash function is running correctly).

- Josue Torres: Helped drive the development of the CAN FD processing code (in C). Set up a linux virtual machine that would allow the use of SocketCAN. Spent time learning how to use Python, as well as learn more about the current code that has been written.

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

- Drake Ridgeway: Last week was busy, team had a meeting about better workflow and environment.

- Josue Torres: Code development did not go as planned because of virtual machine issues. Currently, my virtual machine is almost unusable due to sluggish performance. Working on a way to improve performance so as to not impede project progress.

- Levi Jansen: This was a busy week for many of us with exams and interviews. Not exactly an unexpected complication, but it still led to slower progress in some areas.

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- **Individual contributions** *(Creating this section is optional, but it is **Required to include the "Hours Worked for the Week" and their "Total Cumulative Hours" for the project for each member somewhere relevant in your report. Your individual weekly hours should be at a minimum of 6-8 hours for this course. So please manage your time well. Also, ensure that individual contributions support your claim to the weekly hours. Be honest with the reports.***)

<u>NAME</u>	<u>Individual Contributions</u> (Quick list of contributions. This should be short.)	<u>Hours this week</u>	<u>HOURS cumulative</u>
Campbell, Ryan	SendFDFrame.py - got CMAC incorporated into the data frame.	6	56
Jansen, Levi	Applied our client's resources to our code to help with sending and receiving CAN FD frames, group meetings	10	30
Lawson, Riley	Understand SendFDFrame.py along with including content that was within cmac.py, cmac.py, SocketCAN, learning python, meeting	6	32
Ridgeway, Drake	Understanding and helping with SendFDFrame.py, SocketCAN Research, meeting with team	7	30
Scehovic, Ryan	Researched and wrote the code messaging combining and sending in sendFDframe.py	10	60
Stricker, Cody	SendFDFrame.py, cmac.py, group meeting	10	30
Torres, Josue (Josh)	Learned more about the code, SocketCAN, and Python. Wrote C code to process CAN FD frames.	10	25

○ **Comments and extended discussion** (Optional)

Some members on the team came forward with some problems they had with the team. We all got together Monday morning and talked for about an hour on the state of the team, our problems with it, where we could improve, and where we want to go from here. Since then, I believe we have found our fire again, started working more as a team, and solved some coding problems we've been having for a while.

○ **Plans for the upcoming week** (Please describe duties for the upcoming week for each member. What is(are) the task(s)? Who will contribute to it? Be as concise as possible.) •

Drake Ridgeway: Work on receiving the CanFD frames in a new Python file and helping the team with CMAC if needed. Continue on familiarizing myself with Python syntax.

- Riley Lawson: Plan to continue to work on both the cmac.py and the sendFDFrame.py along with the monotonic counter. Continue to gain knowledge on python and how it works.

- Josue Torres: Going to incorporate the monotonic counter in the CAN FD frames, and ensure proper operation of said counter. I'm also going to try to develop code that processes CAN frames on the receiving end.
- Cody Stricker: I plan to continue working on the FDFrame sending and receiving as well as incorporating the cmac code into this.
- Levi Jansen: I plan to help set up a CAN FD message receiver that reads our CAN FD messages off of the bus that get send from sendFDFrame.py. I also plan to look more into the CMAC side of our code to get a better feel for what's going on on that end.
- Ryan Campbell: I plan on getting the receiving end and verifying the data with a hash / monotonic counter so we can get closer to our end goal.
- Ryan Scehovic: I plan to work on the ability for the bridge to send/receive messages going both ways along the bus. Now that we have it working going one way, we want both functionalities on both sides so I will help the team build towards accomplishing that.

○ **Summary of weekly advisor meeting** *(If applicable/optional)*

In our meeting, we discussed the state of the team and where to go from here. We questioned what can help adjust us from switching from C to Python. The main point of his advice was to regain the big idea of our project. To do that, we should create diagrams of all the parts that lead to the big idea and the goal of this entire project at the end of the semester. As a team, we plan to continue our work and take our advisor's advice and regain the big idea.

Grading criteria

Each weekly report is worth 10 points. Scores will be awarded as follows:

- **8 – 10:** Progress for your project seems to be suitable. Documentation and hours reported by team members are adequate.
- **6 – 8:** There is scope of improvement both in your report and your project progress. Can consult with instructor/TA after class for further inputs.
- **< 6:** Please talk to instructors/TA after class hours about any difficulties that you/your team is facing.

Each weekly report should be unique in that they have a unique set of supporting details for your contributions. So please do not just copy your reports from the previous week. In addition, please avoid any personal pronouns (he, she, I, you). Try to keep your reports as neat as possible.