CARNEGIE MELLON UNIVERSITY AFRICA

Minutes of the CSSR4Africa Team Meeting

Date and Time: 20th January 2025, at 10:00 am
Venue: Room No. C210.
Status: Draft.

Participants
Adedayo Akinade
Birhanu Shimelis Girma
David Vernon, Chairman
Eyerusalem Birhan
Ibrahim Jimoh
Muhammed Danso
Muhirwa Richard
Tsegazeab Tefferi
Yohannes Haile

1. Approval of the minutes of the last meeting

The participants reviewed the minutes of the previous meeting held on 13th January 2025 and approved them as a true and accurate record of the meeting.

2. Matters arising from the minutes

Agenda item 8: Any Other Business
Progress Reports
It was pointed out that the reports should be more informative, and attention paid to detail.

Knowledge Base
Following the adjournment of this point in the last meeting, this was discussed under item 8 on the meeting agenda, see the minutes below.

Afretec Conference Attendance
Yohannes Haile is attending the conference and presenting the work on behalf of the team.

Update to the task allocations
This was done by Professor David Vernon in the previous week and validated by the team. There will be another update required as discussed under item 9 on the agenda, see the minutes below.

3. Robot Mission Interpreter: scriptInterpreter vs behaviorConroller

The team unanimously agreed to keep the task name as it currently is (D5.4.3 Robot Mission Interpreter) while having the node name as **behaviorController**. Tsegazeab Tefferi agreed to update the D5.4.3 Robot Mission Interpreter report, while Professor David Vernon agreed to update the work plan and D3.1 System Architecture to reflect this decision.

4. Support for the Pepper simulator

The pros and cons of having support for the simulator were evaluated. While it is nice to provide support for the simulator, it was pointed out by Professor David Vernon that it will be a significant amount of extra work to get to this point, as the major challenge is the availability of sensors on the simulator. Also, the IEEE Robotics and Automation Practice paper would not have much benefit from the simulator support, as compared to the physical Pepper robot. Thus, the team agreed to drop the support for the simulator, while Professor David Vernon agreed to update the work plan to reflect this.

5. Computer hardware configuration

Yohannes Haile explained the current problem to the team (as he had previously outlined in the email dated 15th January 2025). The configuration settled for was the **Nvidia Jetson Nano + n-Native Ubuntu 20.04 Laptops running a ROS network**. Thus, there arises a need to have a system configurator and update to D3.3. Software installation manual to outline the mapping of the software architecture and nodes to the hardware configuration. A decision on this is made in item 9 on the agenda (RA load balancing). One suggestion is to get the faceDetection

node running on the Nvidia Jetson and other nodes running on the native Ubuntu laptops. In a case where GPU is needed for the speechEvent node, an extra Jetson will be purchased by Professor Vernon and picked up in Ireland during the week of March 7th. Clifford Onyonka will verify if GPU is needed to run the speechEvent node and how much latency is experienced on a CPU laptop.

6. Camera configuration

Yohannes Haile explained the current problem to the team (as he had previously outlined in the email dated 15th January 2025). It was agreed that the RealSense camera setup, based on the configuration agreed in item 5 on the agenda, should be completed for image acquisition. The major task here is the registration of the color and depth images.

7. Driver for D4.2.1 and D4.2.2

Yohannes Haile explained the current problem to the team (as he had previously outlined in the email dated 15th January 2025). It was agreed that the drivers should use short-length video files to publish the data required, instead of using rosbag (which can be potentially large in size). This will allow the software to be self-contained, without the need to have files in different storage locations. Adedayo Akinade therefore agreed to investigate the file size requirements for pushing, pulling, and cloning repositories on GitHub. It was also pointed out that it is necessary to provide dual functionality, where necessary, in unit tests for using the platform sensors or drivers. This will ensure the software can use the drivers or the actual sensors on the robot.

8. D5.4.3 software integration

Tsegazeab Tefferi explained the current problem to the team (as he had previously outlined in the email dated 17th January 2025). It was initially agreed that the knowledge base software be delivered as a ROS node as outlined in the software architecture. Eyerusalem Birhan then agreed to validate the data and message types assumed for the knowledge base in the D5.4.3 Robot Mission Interpreter deliverable report submitted by Tsegazeab Tefferi (and uploaded on the website) if it is a much more flexible protocol for delivering the software according to the work plan and system architecture. Tsegazeab Tefferi agreed to modify the deliverable report D5.4.3 based on feedback from Eyerusalem Birhan. Tsegezeab Tefferi will also propose techniques for handling fallbacks and share them with Professor David Vernon and the entire team for validation before including them in the D5.4.3 Robot Mission Interpreter report. It was concluded that the deliverable D5.4.3 Robot Mission Interpreter is an incomplete document, requiring modifications as mentioned in items 3 and 8 on the agenda.

9. RA load balancing.

The brief of the D3.3 Software Installation Manual will be expanded to include the hardware configuration. Mohammed Danso agreed to take over this new task (D3.3 Software Installation Manual), which will be added to the task allocation by Professor David Vernon, given that he (Mohammed) has submitted the D5.3 Attention Subsystem software for integration. Also, the camera configuration sub-task is added to the faceDetection task currently handled by Yohannes Haile.

10. Any Other Business

Professor Ranchod Visit

Professor David Vernon noted that Professor Ranchod, of the University of Witwatersrand (Co-PI of the CSSR4Africa project) will be visiting the CMU-Africa campus on Wednesday 22nd January 2025 and will be at the Laboratory at about 2:00 pm. An update on the status of work done at the University of Witwatersrand was provided which included the isiZuluTTS and the challenge in getting the Pepper robot. It was noted that the work done was not on the Pepper robot but using an external microphone for audio capturing.

Faculty Seminar

Professor David Vernon mentioned the upcoming Faculty Candidate Research Seminar by Prasenjit Mitra campus on Wednesday 22nd January 2025 at 1:00 pm. While Research associates didn't get the invitation email, Professor David Vernon will be forwarding this email to the RAs, who are encouraged to attend.

College of Engineering Staff Awards

Professor David Vernon mentioned the only CMU-Africa staff to have received the staff awards in 10 years, Mika Inamahoro. Professor David Vernon will forward this email also, as RAs didn't receive the email.

Visualization in D1.2 Cultural Knowledge
The need to add the visualization into D1.2 Cultural Knowledge was raised by Eyerusalem Birhan, and it was agreed to add this into the deliverable. This requires the work plan to be updated by Eyerusalem Birhan to reflect this. This update will be done after Professor David Vernon receives the working document of the work plan from Yohannes Haile and sends it to Eyerusalem Birhan.

IROS 2024 Poster
Muhirwa Richard raised the concern about his name missing on the IROS 2024 Poster. Professor David Vernon will fix this and reupload it on the CSSR4Africa website).

10. Date and Time of Next Meeting
Monday 27th January at 12:00 pm

End of the Meeting
There being no other business, the Chairman thanked the participants for their contributions and closed the meeting at 12:17 pm.

Action items following the meeting of the CSSR4Africa project

Action	Action description	Responsible	Completion date
1	Validate the data and message types assumed in the D5.4.3 Robot Mission Interpreter report for the knowledge base submitted by Tsegazeab Tefferi (and uploaded on the website)	E. Birhan	24 January 2025
2	Update the work plan to include the visualizations of D1.2 Rwandan Cultural Knowledge	E. Birhan	24 January 2025
3	Update D5.4.3 Robot Mission Interpreter report to reflect the agreed node name **behaviorController** and the proposed fallbacks	T. Tefferi	24 January 2025
4	Update the task allocations to add new task D3.3 Software Installation Manual	D. Vernon	22 January 2025
5	Update the work plan and D3.1 System Architecture to remove support for simulator	D. Vernon	22 January 2025
6	Update the IROS Poster on Cultural Knowledge to include Muhirwa Richard's name	D. Vernon	22 January 2025
7	Forward emails about the faculty research seminar and College of Engineering staff awards	D. Vernon	20 January 2025
8	Update the D3.3 Software Installation Manual to include the hardware configuration and map the software architecture to the hardware architecture	M. Danso	24 January 2025
9	Verify if GPU is needed to run the speechEvent node	C. Onyonka	24 January 2025
10	Complete RealSense camera setup based on the agreed hardware configuration	Y. Haile	24 January 2025
11	Investigate the file size requirements for pushing, pulling, and cloning repositories on GitHub	A. Akinade	24 January 2025

Table 1: Action Items