CARNEGIE MELLON UNIVERSITY AFRICA

Minutes of the CSSR4Africa Team Meeting

Date and Time: 1st December 2025, at 10:00 am
Venue: Room No. C210.
Status: Final.

Participants
Clifford Onyonka, Chairman
Assane Gueye
Deogratius Kigude
Birhanu Shimelis Girma
Muhirwa Richard
Tsegazeab Tefferi
Yohannes Haile

Guests
David Vernon

Apologies
Muhammed Danso
Ibrahim Jimoh

Clifford Onyonka welcomed the participants to the meeting and the Committee members then discussed all the items of the meeting agenda. Birhanu took the minutes. The discussions of the meeting are summarized below.

1.   Approval of the minutes of the last meeting
The participants reviewed the minutes of the previous meeting held on 24th November 2025 and approved them as a true and accurate record of the meeting.

2.   Matters arising from the minutes
Action item 1: Individual Node Demo.
Action: Done
Action item 2: Update the Software Installation Manual and Software Installation script.
Action: Done
Action item 3: Give team access to the CMU IoT network.
Action: Not finished yet. See Action item 1.
Action item 4: Developing a single launch code for all the ROS Nodes.
Action: Not finished yet. See Action item 2.
Action item 5: Visit by Gashora Girls Students.
Action: Done

3.   Matters arising Progress reports
There were no matters arising from the progress reports.

4.   Status of tasks, deliverables, and software

Yohannes mentioned creating GitHub repository branches: a development branch for demo purposes, a main branch for software that has completely passed quality assurance, and a feature/action_behavior_controller branch for the ROS action-based behavior controller code. Prof. Assane added that there should be a dedicated demo branch that is ready at any time.

Prof. Vernon added that the external demo should be the complete one, which is on the main branch. However, for internal demos that are for testing software features, the development branch can be used. Based on the team's decision, there will be a service-based ROS 1 lab tour demo on Tuesday, December 9, 2025.

5.   Status of milestones

Clifford has been assigned an action item to remove the "Functional ROS2 software for all nodes" milestone from the document, since CSSR4Africa will finish the project in ROS 1. All ROS 2 related development will now be handled by the DEC team (Yohannes and Danso).

For the "Draft paper for 18th International Conference on Social Robotics" milestone, Clifford has been assigned an action item to update the date to December 15, 2025. There will be three papers for the conference: one on speech and gesture synchronization being done by Clifford, another on culturally sensitive social navigation being done by Birhanu, and another on overt attention being done by Yohannes and Danso. Other team members are also part of the papers.

6.   CSSR4Africa demo synchronization (using ROS actions vs using ROS services)

Clifford talked about the synchronization of speech, gesture, and TTS using ROS services and ROS actions. Tsegazeab was asked to explain how he could achieve synchronization using ROS services, and he proposed the usage of time. However, Clifford mentioned that time-based synchronization will fail due to the variable amount of text being generated by the LLM. Tsegazeab proposed measuring the length of the audio dynamically and arranging the scenarios in the behavior controller. Prof. Assane mentioned that streaming is difficult if we use time-based synchronization.

Richard mentioned that it is possible to measure the length of the audio, but he is using ROS actions on two threads: one for generating the 15-second audio and one for sending the audio to the robot. He proposed parallel execution using the concept of blocking.

Prof. Vernon mentioned the use of inter-process communication to use any available options to measure the completion of the TTS. He also agreed on the use of ROS actions. Tsegazeab was assigned an action item to figure out how to achieve the synchronization.

7.   Text-to-speech chunking process (delay when sending audio chunks to the robot)

Richard is testing another new model to get rid of the delay. He mentioned he is having a resource limitation. There is also a delay he cannot control from the LLM. Clifford mentioned that the current TTS node is using CPU even on the GPU laptop. Prof. Assane mentioned that the node should utilize the GPU resource and run the test directly on the GPU, which will result in better latency.

8.   CSSR4Africa project and DEC robotics project (the projects have diverged and therefore are being treated separately)

Yohannes explained the issues in ROS 1, including the robot heating up, the Pepper robot head not being smooth, the limitations in CSSR4Africa, and why they ended up choosing ROS 2 for the DEC project. He clarified the divergence of the system architecture and software between the DEC and

CSSR4Africa projects. Clifford mentioned that from now on the CSSR4Africa team will not port the ROS 1 code to ROS 2 at the moment, and the project will be completed based on ROS 1.

Prof. Vernon mentioned the need to focus on CSSR4Africa and finish the scenarios and complete the use case evaluations. He also mentioned that by the end of the project the code will deprecate, but the DEC is the future. The team agreed on the suggestions.

9. Failure handling document reviews

Tsegazeab mentioned that he has received some comments from team members, but not all team members have given feedback. He will be expecting more feedback.

10. Any Other Business

Prof. Vernon mentioned a comment by Lenah on multispeaker. He clarified that the speaker has to speak into the microphone rather than expecting the robot to identify the speaker. Prof. Assane mentioned that there is also a noise challenge when the microphone is close to the robot head due to the fan in the head.

Regarding the demo on Tuesday, Prof. Vernon suggested that the issues should be listed and communicated during the demo, explaining which issues are resolved and which are remaining, rather than pushing the demo date. He also mentioned that DEC is going well, but raised a concern that CSSR4Africa is not moving as fast as DEC. Both Prof. Assane and Prof. Vernon mentioned having two demo versions: one minimal demo that works with a single push of a button, and another standard one that has everything integrated.

11. Date and Time of Next Meeting

The next meeting will be held on December 8, 2025, at 10:00 a.m. in Room C210.

End of the Meeting

There being no other business, the Chairman thanked the participants for their contributions and closed the meeting at 11:00 am.

Action items following the meeting of the CSSR4Africa project

Action	Action description	Responsible	Completion date
1	Give team access to the CMU IoT network	Lenah	08 December, 2025
2	Developing a single launch code for all the ROS Nodes.	Tsegazeab, Muhammed, and Ibrahim	08 December, 2025
3	Remove the Functional ROS2 software for all nodes milestone from the CSSR4Africa document.	Clifford	05 December, 2025
4	Update the Draft paper for 18th International Conference on Social Robotics milestone to December 15th.	Clifford	05 December, 2025
5	Figure out how to achieve the ROS service based synchronization	Tsegazeab	05 December, 2025

Table 1: Action Items