

RustIEC: second user group meeting

Slides will be available at <https://en.rustiec.be/2023-03-27-user-committee.html> and <https://nl.rustiec.be/2023-03-27-gebruikersgroep.html> with the following credentials:

rustiec
RustIsAwesome!

Attendance:

Lieven Hollevoet (Quicksand), Jamy Declercq (Quicksand), Anton De Poot (GemOne), Colas De Leersnijder (GemOne), Stijn Volckaert (KU Leuven), Alicia Andries (KU Leuven), Jorn Lapon (KU Leuven), Devon Kerkhove (Ausy), Lotfi Boukeroucha (Ausy), Thomas Stroobants (Ausy), Stein Heselmans (OTN Systems), Michael Allwright (Allwright), Ludo Cuypers (COMmeto), Ulrich Seldeslachts (LSEC), Luca Gattobigio (LSEC), Robrecht Dewaele (Verhaert Digital), Ruben De Smet (VUB), Thibaut Vandervelden (VUB), Diana Deac (VUB), Kris Steenhaut (VUB).

Agenda

- 12:00 Project progress overview (Ruben De Smet)
- 12:05 C to Rust and making unsafe code safe (Alicia Andries)
- 12:20 A TCP/IP stack in Rust: smoltcp (Thibaut Vandervelden)
- 12:40 Discussion of use cases and workshops (moderated by Ruben De Smet)
- 12:45 Drinks and bites

Progress overview (Ruben De Smet)

The second user committee meeting took place after a first succesful Rust beginners workshop. The materials of the workshop are available at <https://101.rustiec.be/>, with the same username and password as for the slides (see above). Meanwhile, the same workshop has been taught to a second group, the day after the user committee meeting. Both workshops were appreciated, and a short questionnaire will be sent to the participants for feedback and possible improvements.

Migrating from unsafe languages to Rust (Alicia Andries)

Alicia presented several tools and techniques relating to automatic conversion of C code into Rust. Select topics could be subject of an advanced workshop; see below.

An introduction to smoltcp (Thibaut Vandervelden)

Smoltcp is a crate meant to provide a full TCP/IP stack on embedded devices. Smoltcp could be subject of an advanced workshop; see below.

Discussion of use cases and workshops

After the first beginners workshop, we will start preparing an advanced workshop. The question was raised which topics the committee would find most interesting. The general theme was

embedded programming. During the meeting, these topics were proposed for an advanced workshop:

- Multithreading, concurrency and asynchronous programming
- Asynchronous programming on embedded hardware using Embassy
- How to gradually migrate C code to Rust and C-interopability
- Integration testing and advanced testing
- Backend code (e.g. using Actix)
- IoT protocols such as MQTT/CoAP/TLS/Thread/... on embedded hardware
- Remote debugging (referring to embedded programming)

We request from the user committee to send additional proposals to Ruben on rubedesm@vub.be. VUB will then aggregate the proposals for advanced workshops, and inquire the committee to make a final decision.