
ELISA
Enabling Linux in
Safety Applications
WORKSHOP
Lund Workshop
May 7-9, 2025

Thank you to our host:

Welcome

- Organizational Overview
  - Antitrust Policy
  - Licensing of Workshop Results
  - Code of Conduct
  - Round Table Introductions
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  - More in AmA session

Organizational Notes

LF Antitrust Policy Notice

ELISA Project meetings involve participation by industry competitors, and it is the intention of the Linux Foundation to conduct all of its activities in accordance with applicable antitrust and competition laws. It is therefore extremely important that attendees adhere to meeting agendas, and be aware of, and not participate in, any activities that are prohibited under applicable US state, federal, or foreign antitrust and competition laws.

Examples of types of actions that are prohibited at ELISA Project meetings and in connection with Linux Foundation activities are described in the Linux Foundation Antitrust Policy available at http://www.linuxfoundation.org/antitrust-policy. If you have questions about these matters, please contact your company counsel, or if you are a member of the Linux Foundation, feel free to contact Andrew Updegrove of the firm of Gesmer Updegrove LLP, which provides legal counsel to the Linux Foundation.

Licensing of Workshop Results

All work created during the workshop is licensed under *Creative Commons Attribution 4.0 International (CC-BY-4.0)* [https://creativecommons.org/licenses/by/4.0/] by default, or under another suitable open-source license, e.g., GPL-2.0 for kernel code contributions.

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No additional restrictions — You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

Presentation & Recordings

Based on the licensing of the workshop we will share the recordings of the presentations along with the presentation material in public after the workshop unless otherwise requested.

This includes for example:

- Sharing live with virtual attendees.
- Distribution on ELISA YouTube channel after the event
- Storing on Google Drive and ELISA Directory (GitHub)
- Sharing information on Social media (e.g. LinkedIn)

Code of Conduct

All participants are expected to behave in accordance with professional standards, with both the Linux Foundation Code of Conduct as well as their respective employer's policies governing appropriate workplace behavior, and applicable laws.
https://www.linuxfoundation.org/code-of-conduct/

Chatham House Rule

Always indicate if you want to run a specific session under Chatham House Rule

- In the past we were asking whether waiving Chatham house rule or not, but this always caused confusion.
- Unless you inform the organizers, the recording of the session and slides will be posted after the event.

Under the **Chatham House Rule**, anyone who comes to a meeting is free to use information from the discussion, but is not allowed to reveal who made any particular comment. It is designed to increase openness of discussion. The rule is a system for holding debates and discussion panels on controversial topics, named after the London headquarters of the Chatham House, where the rule originated in June 1927.

https://en.wikipedia.org/wiki/Chatham_House_Rule

Round Table Introductions

Please briefly share:

- Name
- Affiliation
- What made you come to this workshop

Session Schedule

Day 1 - Wednesday 7th - Afternoon

13:00 **Welcome & Introductions** (*Philipp Ahmann, Kate Stewart, Robert Fekete*)

13:30 **Ask Me Anything** (*Philipp Ahmann, Gabriele Paoloni*)

14:30 Fika

15:00 **Arduino Portenta X8 as community hardware for safe systems** (*David Cuartielles*)

15:15 **Example System within ELISA as Cross Community Effort** (*Philipp Ahmann, Yuichi Kusakabe*)

16:30 Fika

16:45 **Interaction between ELISA and Adjacent Communities** (*Kate Stewart, Philipp Ahmann*)

17:45 **Day 1 wrap-up** (*Philipp Ahmann, Kate Stewart)*

18:00 Day 1 ends

19:00 **Dinner Offsite at stäket**

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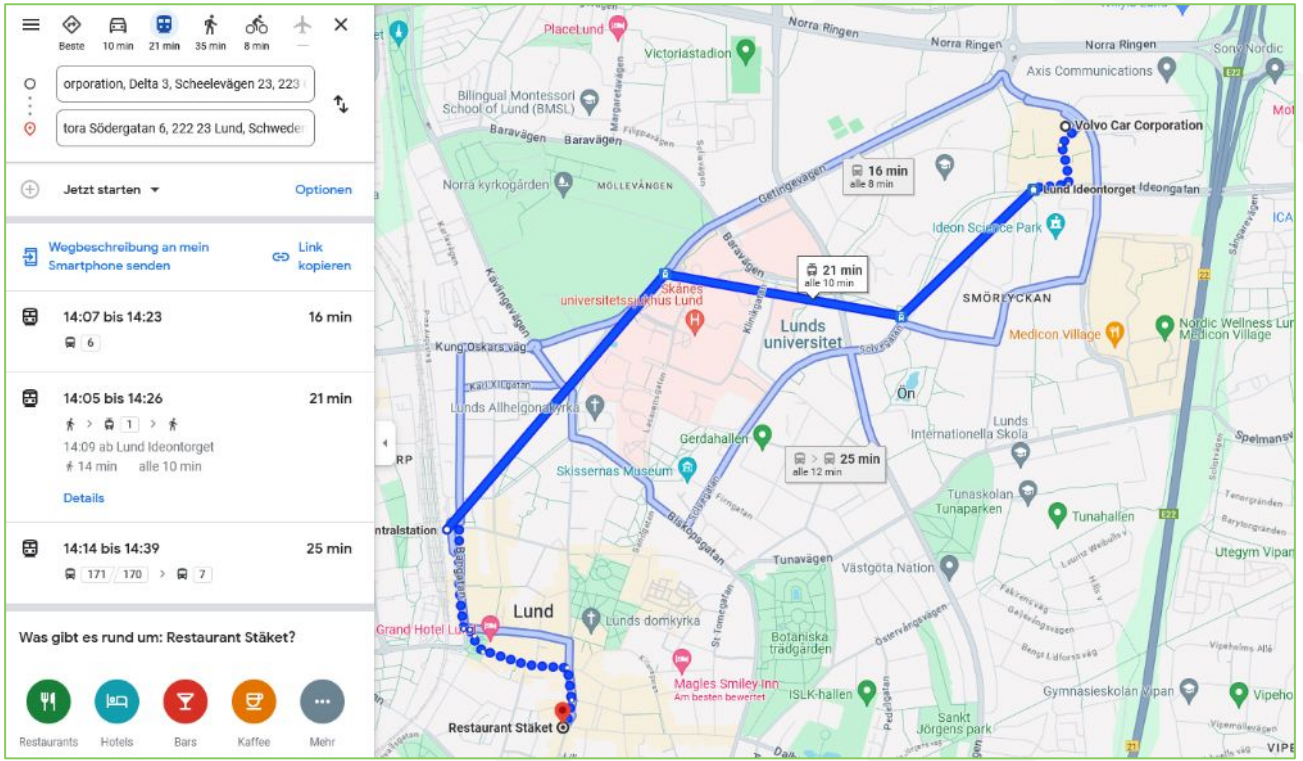
Dinner Location: Restaurant Stäket

Restaurant Stäket,
Stora Södergatan 6, 222
23 Lund, Schweden

https://maps.app.goo.gl
/foVWMuzciEic7pLR8



Day 2 - Thursday 8th - Morning

8:30	Coffee and Warm-up
09:00	**Safety Linux vs Safe(ty) Linux** (Philipp Ahmann, *Paul Albertella*)
10:30	Fika
10:45	**How far do we go at the hardware level?** **An analysis of current state of kernel and integration** (*Olivier Charrier, Alessandro Carminati*)
12:00	Lunch

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Day 2 - Thursday 8th - Afternoon

13:00	Special topic: **PX4Space** *(Pedro Roque)*
13:30	Special topic: **SPDX Safety Profile**, *(Nicole Pappler)*
14:00	Special topic: **Safe Continuous Deployment** (*Håkan Sivencrona)*
14:30	Special topic: **Resilient Safety Analysis and Qualification** (*Igor Stoppa)*
15:00	Fika
15:15	**KernelCI, BASIL & Testing** (*Luigi Pellecchia, Gustavo Padovan*)
16:30	**Requirements Traceability** (*Kate Stewart, Gabriele Paoloni*)
17:45	**Day 2 wrap-up** (*Philipp Ahmann, Kate Stewart)*
18:00	Day 1 ends
18:00	**Pizza party on-site**

Day 3 - Friday 9th - Morning

8:30	Coffee and Warm-up
09:00	**Trustable Software Framework** (*Paul Albertella, Daniel Krippner*)
10:15	**Review Role of Rust in Safety Critical Applications and Explore Potential Implication for ELISA** (*Paul Albertella, Daniel Krippner*)
	incl Fika
10:45	**Best Practices Standard** (*Philipp Ahmann, Gabriele Paoloni, Olivier Charrier*)
12:00	**Workshop wrap-up**
12:30	End of Workshop

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Project Orientation

ELISA Project

- Enabling **Safety-critical applications** with **Linux** (beyond Security)
- Increase **dependability & reliability** for whole Linux ecosystem
- **Various use cases**: Aerospace, Automotive, Medical & Industrial
- Supported by major **industrial grade Linux distributors** known for mission critical operation and various industries representatives
- Close community collaboration with **Xen, Zephyr, SPDX, Yocto & AGL** projects
- **Reproducible system** creation from specification to testing
- SW **elements**, engineering **processes**, development **tools**

ELISA : Architecture Processes Features Tools Systems

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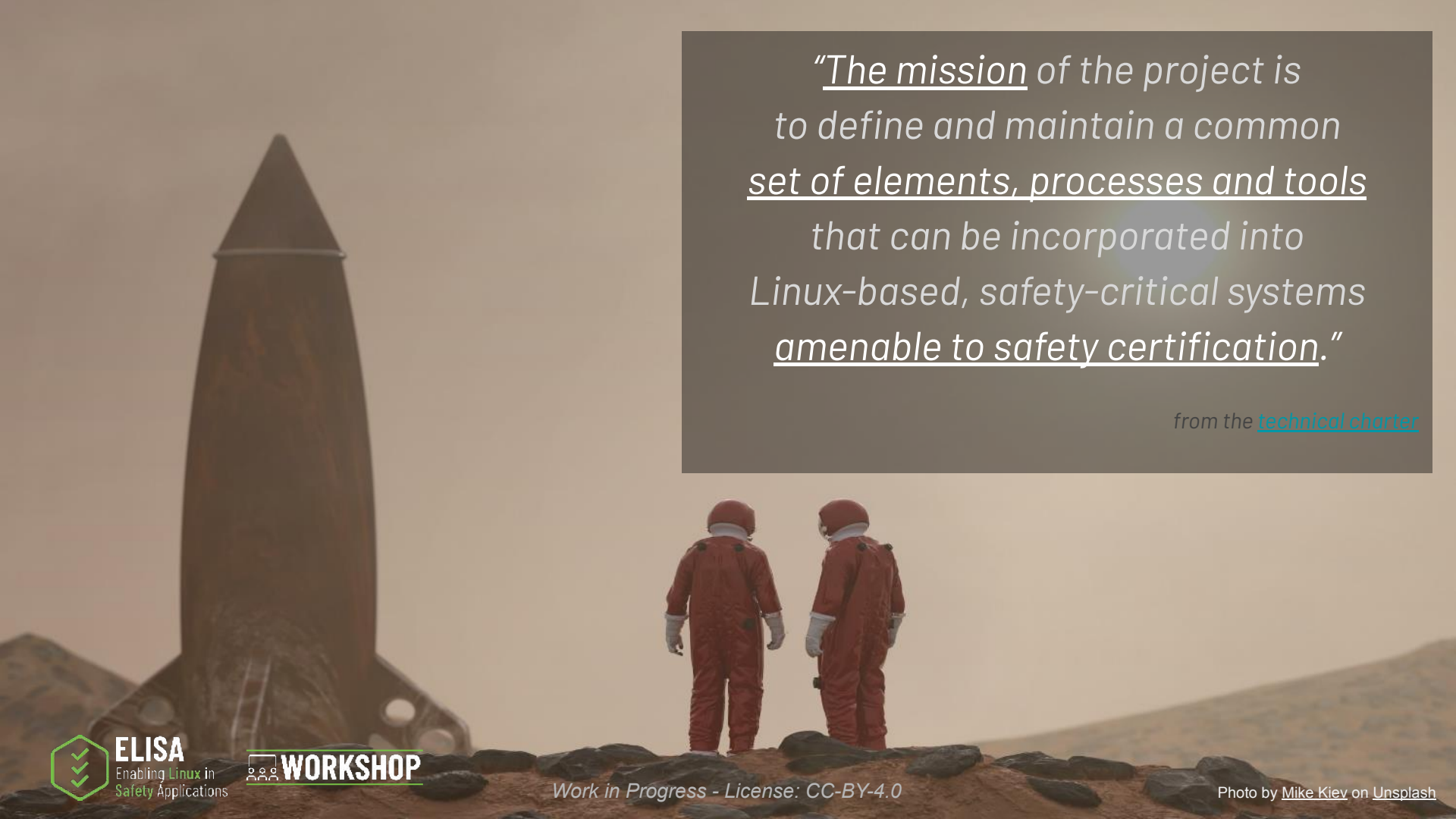

"The mission of the project is to define and maintain a common set of elements, processes and tools that can be incorporated into Linux-based, safety-critical systems amenable to safety certification."

from the technical charter

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Linux in Safety Critical Systems

"Assessing whether a system is safe, requires understanding the system sufficiently."

- Understand Linux within that system context and how Linux is used in that system.
- Select Linux components and features that can be evaluated for safety.
- Identify gaps that exist where more work is needed to evaluate safety sufficiently.

STOP - Limitations! The collaboration ...

- *cannot* engineer your system to be safe.
- *cannot* ensure that you know how to apply the described process and methods.
- *cannot* create an out-of-tree Linux kernel for safety-critical applications.
  (continuous process improvement argument!)
- *cannot* relieve you from your responsibilities, legal obligations and liabilities.

But...

ELISA provides a path forward and peers to collaborate with!

Premier Members

BOEING

Red Hat

General Members

AISIN

arm

BOSCH

Canonical

CodeThink

Elektrobit

EMQ

HONDA
The Power of Dreams

HUAWEI

LINUTRONIX
LINUX FOR INDUSTRY

LYNX
SOFTWARE TECHNOLOGIES

NISSAN
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KernelCI

OTH OSTBAYERISCHE TECHNISCHE HOCHSCHULE REGENSBURG

Industry Support

CIVIL INFRASTRUCTURE PLATFORM

OSADL
Open Source Automation Development Lab eG

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Put on your thinking hats and get to work!

Photo by Annie Spratt on Unsplash

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