

Ericsson Trace Compass update

Matthew Khouzam

Agenda

- Recap of Ericsson's involvement with the project
- The team
- The tracing ecosystem
 - Trace Compass
 - VSCode Extension
 - CDT-Cloud!
- How do we fit into Ericsson?
- Future work
 - Roadmap
 - Where can you help?
- Thank you
- Cool story, time permitting.



No Change!



The goal of this talk is **STILL** to explain where we are coming from to explain our decision making process

Ericsson has been an industrial partner in the research project for over 15 years

We develop and use tools such as LTTng and Trace Compass in the company to solve timing issues and hard to debug problems

Ericsson contributes to and maintains Trace Compass

The Montreal Team has been closely collaborating with the academic and industrial partners. Including US (Texas) and Sweden)

We are working towards having the entire team working at their peak efficiency.

About The Team (May 2024) No Change



Bernd Hufmann – Technical Lead

Patrick Tasse – Employee (Internal Lead)

Marc Dumais - Devops

Elena Giovannetti – Director

Georges Bourret – Line Manager

Jakub Biernacki – Strategic Product Manager

Matthew Khouzam – Product Owner

Austin +Sweden teams – Developing internal use cases in open-source way

The Ericsson Tracing Ecosystem (no change)



- At Ericsson we have very intricate products offered to the public
- At a high level we trace many individual components
- One of the goals of Trace Compass is to provide a unified troubleshooting experience
- *Certain services are now using the members of the tracing team for help, not just the product.*
- **This did not change much, there are just more users and more use cases.**

Traces

- LTTng
- Other Linux Tracers
- CTF Hardware
- Chromium style
- Open Telemetry

Logs

- HTTPD
- SSH
- Java (GC)
- IntelPT (To be discussed)

Trace Compass



- 10.0, 10.1 Released, 10.2 Soon to be Released
- More instrumentation / performance work
- CTF: support mappings, leb128, varints...
- ISegmentAspect#getDataType() for ML
- Minor fixes
- Removed many APIs while maintaining functionality



Trace Compass Incubator

- **Execution Comparison!**
- Server enhancements
 - Customizable Analyses
 - Versioning strategy of TSP
 - Bookmark management
- JIFA, java GC logs
- **DPDK work**
- **ROS 2 enhancements**
- ufrace enhancements

Soon:

- ~~Thapi?~~
- ~~Perf.data?~~
- IntelPT?



Eclipse CDT Cloud (repeat)



- Place where contributions are welcome:
 - Full tracing example, like tracevizlab but for an IDE.
 - Expected flow for [CDT Cloud Blueprint](#):
 - Write code
 - Launch with tracing
 - Visualize trace
- PS: for new members, have you done tracevizlab's tutorials? 100% worth it!

<https://github.com/dorsal-lab/Tracevizlab>

TC Cloud Frontend



- Most improvements are UX related as VSCode or Theia is a UI shim over Trace Compass's core logic.
- Highlights:
 - Progressive loading of trace data
 - Work towards customization
 - Gantt chart filtering
 - Filterable and manageable analyses
 - (Soon) Filterable traces
 - Docker examples
 - Improved typing support
- Github templates: PRs and Bugs have never been easier.

The screenshot shows the GitHub issue creation page for the 'TC Cloud Frontend' repository. On the left, there are four issue templates: 'Bug Report (except security vulnerabilities)', 'Feature Request', 'Question', and 'Report a security vulnerability'. Each template has a 'Get started' button. Below these templates is a link: 'Don't see your issue here? [Open a blank issue.](#)'. On the right, the 'Bug Report (except security vulnerabilities)' template is selected. It shows a 'Title' field and an 'Add a description' section. The description field has a rich text editor with a toolbar (H, B, I, list, link, code, etc.) and a template for a bug report. The template includes instructions on how to report a bug, a note about security vulnerabilities, and a section for steps to reproduce the bug.

Bug Report (except security vulnerabilities)
Create a report to help us improve

Feature Request
Propose an idea for the project

Question
Ask a question related to the content of this repository

Report a security vulnerability
Please review our [security policy](#) for more details.

Don't see your issue here? [Open a blank issue.](#)

Issue: Bug Report (except security vulnerabilities)
Create a report to help us improve. If this doesn't look right, [choose a different type.](#)

Add a title

Title

Add a description

Write Preview

`<!-- Please provide a detailed description of the bug. -->`
`<!-- Note: This template is not meant for security vulnerabilities disclosure -->`
`<!-- Any such issue, created in this repo, will be deleted on sight -->`
`<!-- Instead please report vulnerabilities to the Eclipse Foundation's security team -->`
`<!-- For more details, please read SECURITY.md in the repository root -->`
Bug Description:

`<!-- Please provide clear steps to reproduce the bug. -->`
Steps to Reproduce:

- 1.
- 2.
- 3.

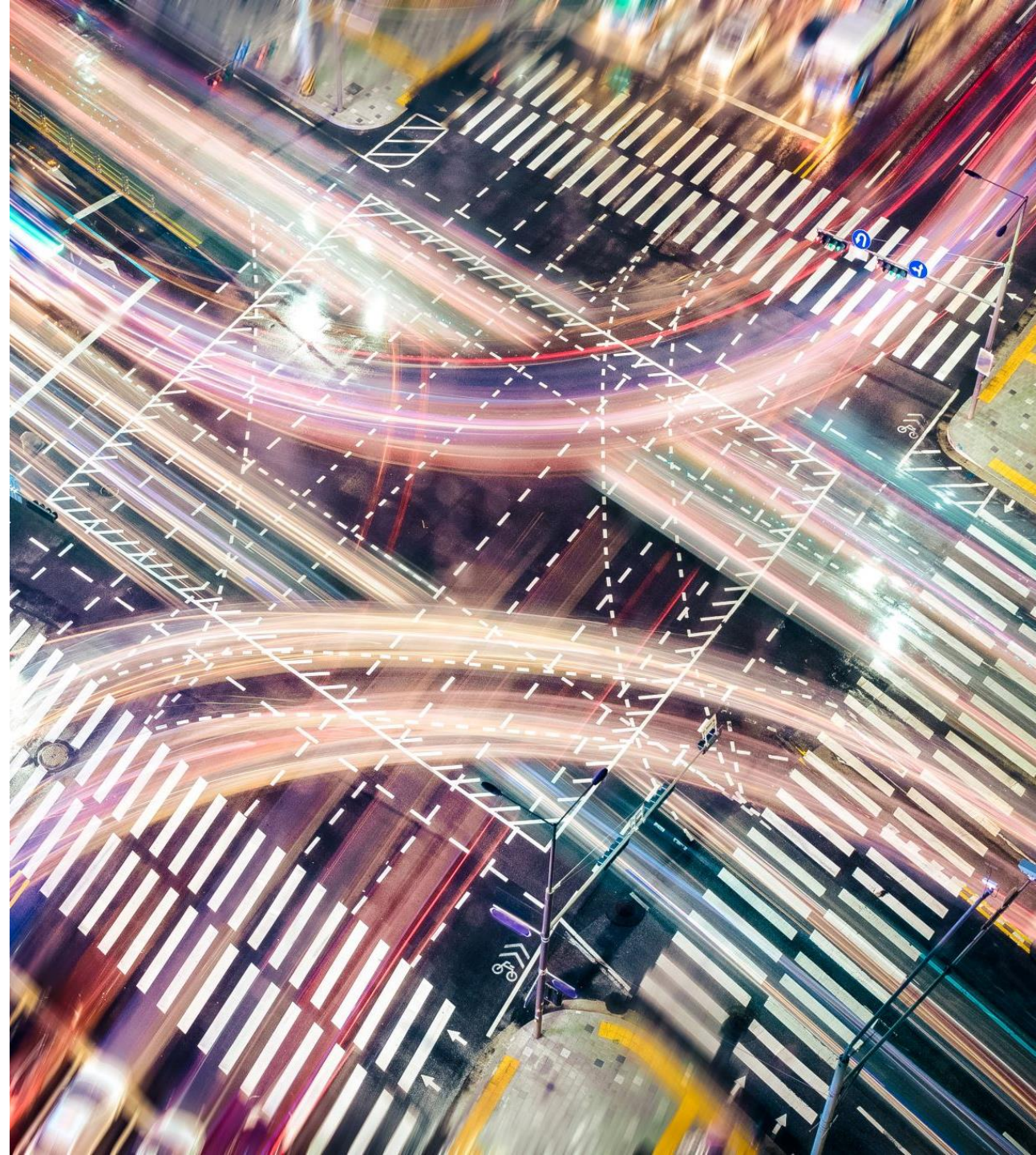
`<!-- Please provide any additional information available. -->`
`<!-- Additional information can be in the form of logs, screenshots, screencasts. -->`
Additional Information

Where do we fit into Ericsson?

- We make a tool that's used by tools to support developers and users.
- Most of our users don't know what trace compass is.
- 3 main use cases:
 - Antenna
 - Software layer (Many KPI and aggregates)
 - Hardware layer (Gantt charts)
 - Backplane: Trace Compass with LTTng
 - Support: Trace Compass with custom logs



Future Work



VSCode extension

- Customization (In progress)
- Support for reports
 - Generic XY
 - Flame Graph
 - Pie Charts
 - Roofline Models
- Hardware specific views?
- Special plots:
 - Bubble
 - Sankey
- Collaborative investigations when tech is there
 - Check out OpenCollab tools



Road Map



Be a good Ericsson
Citizen – Ongoing

Software Compliance –
We want to use FOSS
in Ericsson!

Expand community –
Poly committers?

Expand internal
community

Open-Source Activity
and Leadership
(General) - Ongoing

Trace Compass
Releases (Eclipse) -
Ongoing

Open-Source Features
to support internal
implementation of
trace viewer (Theia) -
Ongoing

Continue to support
internal hardware team

Continue to support
internal Linux teams

Trace Compass



- Internal Support – Ongoing
- Additional tracer support:
 - CTF2 (done-ish)
 - **Perf (intel PT)**
 - SQLite DB
 - DPDK
 - Protobuf?
- Support Poly's efforts re: Partial State system / Tiling State System
- Support Poly's efforts re: DPDK
- **Performance improvement – On demand**

Cool Stories

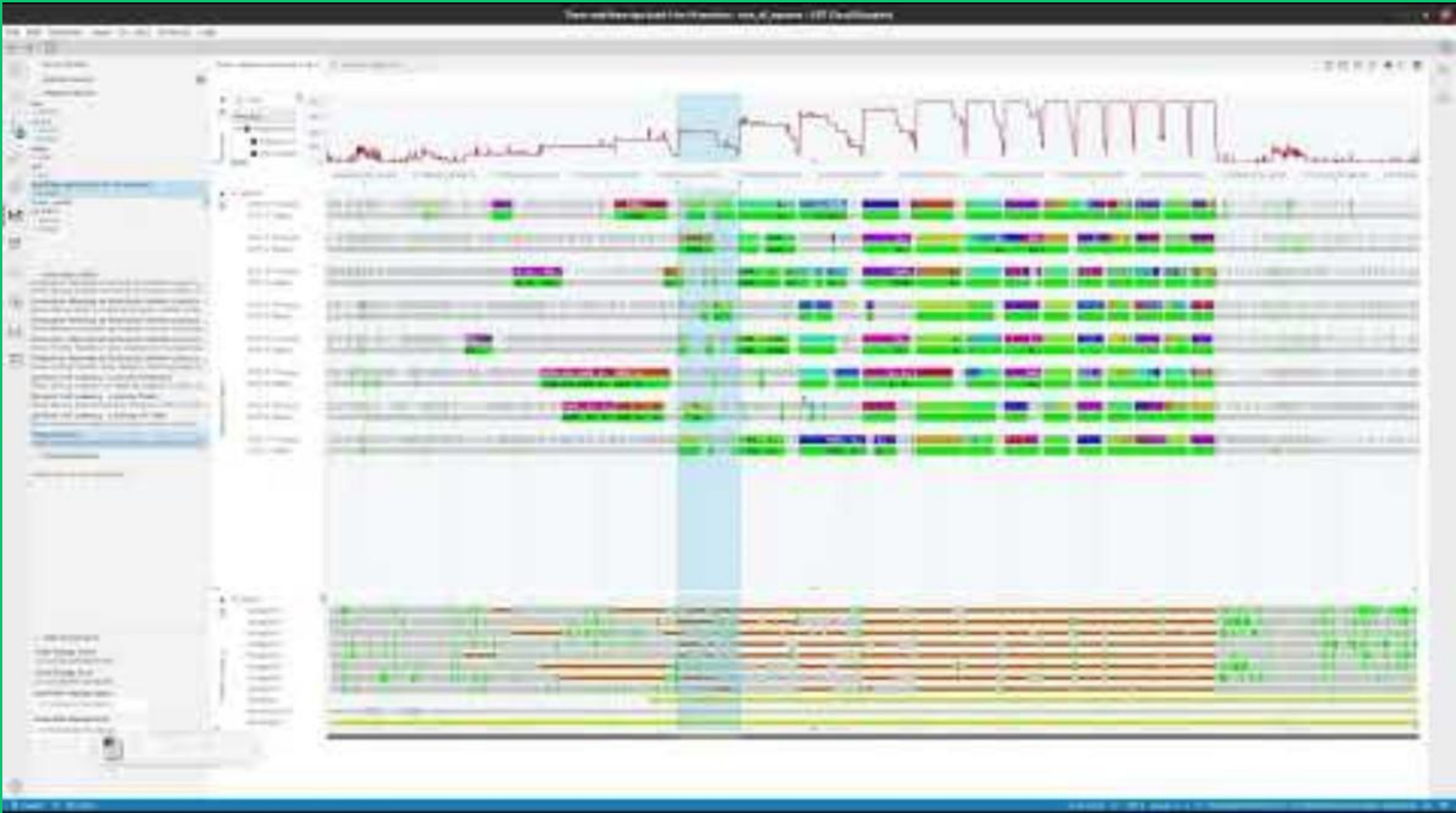


Trace Compass.ai

GenAI code verification



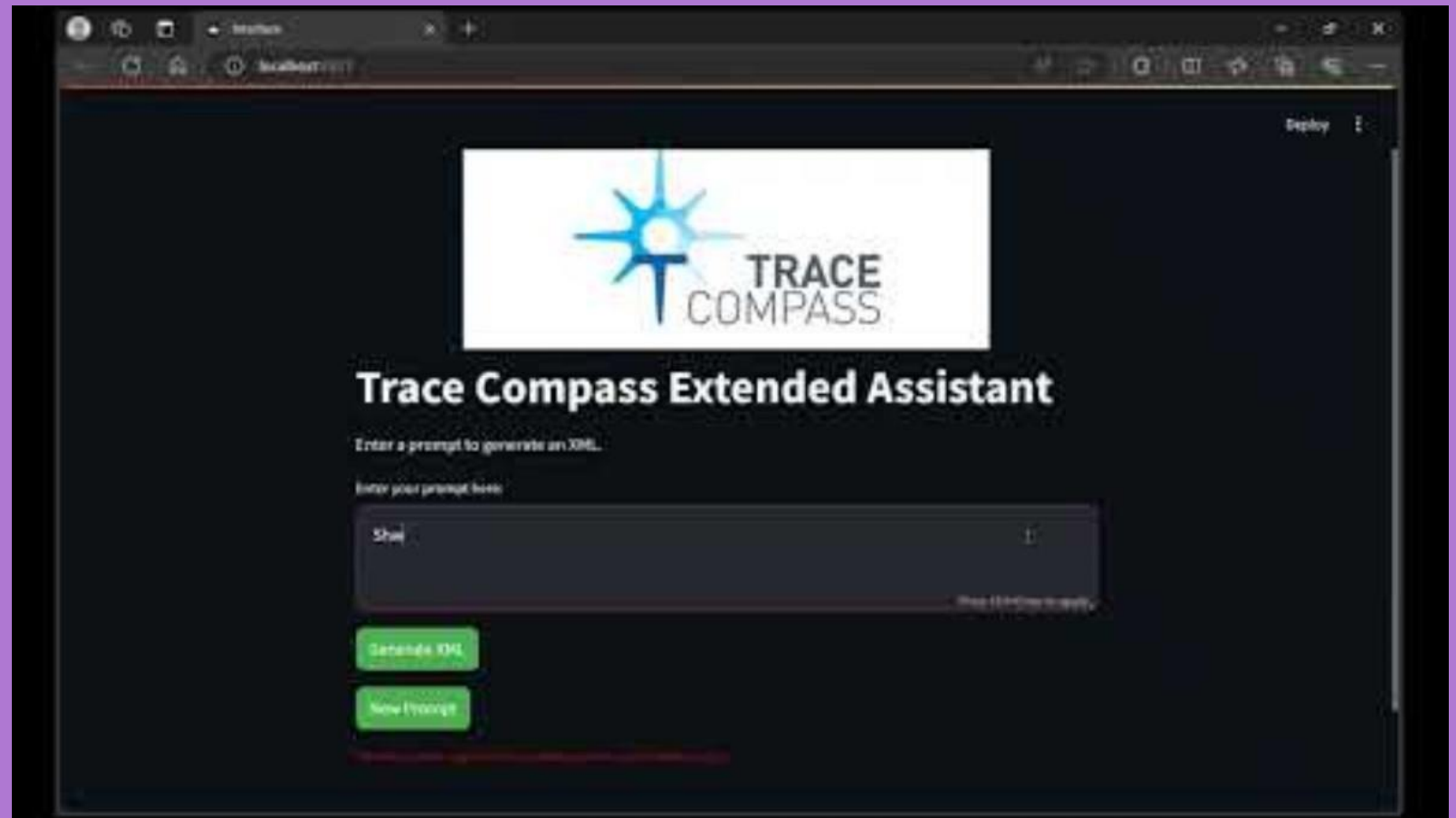
Observing Scalability



Trace Compass GenAI powered XML analyses



Pssst, can you extract
The agent and
Contribute it to theia?
It can work OOTB!



Where can you help?

Drop a review, a bug or a feature request

Fix a bug, especially if it helps you and is not in our interest

Share use cases

We have limited bandwidth, we would appreciate code contributions

Thank You



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Code Contributors

Issue Reporters

Designers

Community Maintainers

Enthusiasts

Steak Holders

