ECLIPSE TRACE COMPASS

PROGRESS REPORT

ERICSSON & POLYTECHNIQUE MONTREAL PARTNERSHIP

Matthew Khouzam | Ericsson Canada | February 2026

PROJECT MILESTONES

Research excellence through collaboration

2024

- Low-overhead GPU trace collection
- Virtualized GPU performance analysis
- Microservice tracing (Vnode)

Note: GPU tracing techniques apply to Ericsson's internal hardware accelerators

2023

- Distributed critical path computation
- DPDK performance analysis
- ROS 2 message flow analysis

2022

- CPU-GPU visualization
- Anomaly detection with NLP
- Execution trace-based verification

2021

- DDoS detection
- Integrated modeling tools
- Distributed + kernel tracing combination

2020 AND EARLIER

- Multi-level IoT intrusion detection
- VM execution flow analysis
- Lock contention analysis

Full publication list:
dorsal.polymtl.ca/fr/publications/

PARTNERSHIP VALUE

Ericsson is grateful for all the great contributions from Polytechnique Montreal and the DORSAL lab.

- **ROI:** For every $1 invested, Ericsson receives over **10x return** in research value
- World-class research publications
- Cutting-edge tracing technology development
- Academic-industry collaboration model

CURRENT WORK ITEMS

- ✅ **CTF2** - Just delivered!
- 🔄 **Power-aware tracing** - In progress
- 🔄 **Critical path in VS Code frontend** - In progress
- 🔄 **SQLite Trace Support** - In progress

RECENT DELIVERABLES
CTF2 FORMAT SUPPORT (36% OF COMMITS)

- Data types: floats, doubles, strings, arrays, structs, blobs
- Enhanced alignment parser and integer declarations
- Variant support with integer selectors and tags
- Alias cache for auto-expanding CTF2 aliases
- Improved CTF1 parsing with additional unit tests

ERICSSON

RECENT DELIVERABLES

UI & ANALYSIS IMPROVEMENTS

- AbstractSelectTreeViewer3 with column-aware filtering
- MultiTreePatternFilter2 for enhanced pattern filtering
- Callstack markers for nestable events
- Segment store data density provider
- Enhanced profiling analysis

ERICSSON

RECENT DELIVERABLES

RELEASE ENGINEERING & DOCUMENTATION

- Version 11.2.0 release preparation
- Updated to Eclipse 2025-12 platform (e4.38)
- Fixed broken links in user guide (HTTPS)
- Updated dependencies and baseline configurations

CODERABBIT INTEGRATION

Free AI-powered code reviews for FOSS projects

- Accelerating review process
- Tightening feedback loop with patches
- **For students:** Commit early and get free advice
- Automated code quality insights

TEAM UPDATE

Significant changes to the team structure

TEAM TRANSITIONS

- **Bernd Hufmann** - Assigned to other projects
- **Patrick Tasse** - Assigned to other projects
- **Marc Dumais** - Assigned to other projects
- **Georges Bourret** - Took package, left Ericsson
- **Elena Giovanetti** - Took package, left Ericsson
- **An internal Trace Compass offering** - Sunset

TEAM TRANSITIONS

ERICSSON

- **Matthew Khouzam** - No longer PO, Principal Researcher
- **Another internal project** - Asked for support with Trace Compass

CURRENT STATE

ERICSSON TEAM

- **Matthew Khouzam**
- Nominated as project lead
- Only remaining team member

CURRENT STATE

NEW SUPPORT

A new player has entered the chat

- **Renesas** will be helping out
- We are grateful for their contribution

CRITICAL NEED

We **NEED** contributions from students for the survival and thriving of this project.

- Project continuity depends on student involvement
- Research opportunities available
- Real-world impact on production systems
- Open source contribution experience

MOVING FORWARD

- Seeking active student contributors
- Maintaining research excellence
- Continuing the partnership legacy
- Building the next generation of tracing tools

Together we can ensure the project thrives.

QUESTIONS?

Discussion and feedback welcome

https://tracecompass.org Our Youtube channel
https://www.youtube.com/@EclipseTraceCompass

Contact: matthew.khouzam<at>ericsson<dot>com

REPOSITORY LINKS

TRACE COMPASS CORE + TMLL

github.com/eclipse-
tracecompass/org.eclipse.tracecompass

REPOSITORY LINKS

INCUBATOR

github.com/eclipse-tracecompass-incubator/org.eclipse.tracecompass.incubator/

REPOSITORY LINKS

VIEWER + TSP

github.com/eclipse-cdt-cloud/vscode-trace-extension