ROSCon FR&DE 2025

WORKSHOPS

Workshop Title	KOMPASS - building event-driven, GPU powered and robust navigation stacks
Name of principal instructor	Maria Kabtoul (Automatika Robotics - Inria)
Number of supplementary instructors	0
Maximum of participants	30
Language	English
Workshop duration	2h
Required material	No required material. Demo will be run on the presenter’ s laptop. Instructions for installing the software will be shared with the audience ahead of the workshop so they can follow along during the session.
Skills required for participants	Intermediate The workshop is suitable for anyone working on mobile robot navigation. The audience does not necessarily need to be experienced in using ROS. This is because, although Kompass is built on ROS2, it has a very institutive easy to use interface that makes it suitable even for beginners in ROS.

Brief description	This workshop presents Kompass, a new open-source event-driven navigation framework. Kompass works with ROS2 and is built for ease of use, reliability, and simplified customizability. It includes highly optimized, GPU powered, versions of the most cutting-edge navigation algorithms in C++ that make full use of available hardware resources. It supports multi-threaded execution on CPUs and can run on ANY GPU (Nvidia, AMD, etc.) without vendor lock-in. The workshop presents the features and underlying architecture of the stack, and how to run and build your own navigation system with Kompass. - Source Code: https://github.com/automatika-robotics/kompass - Documentation: https://automatika-robotics.github.io/kompass