



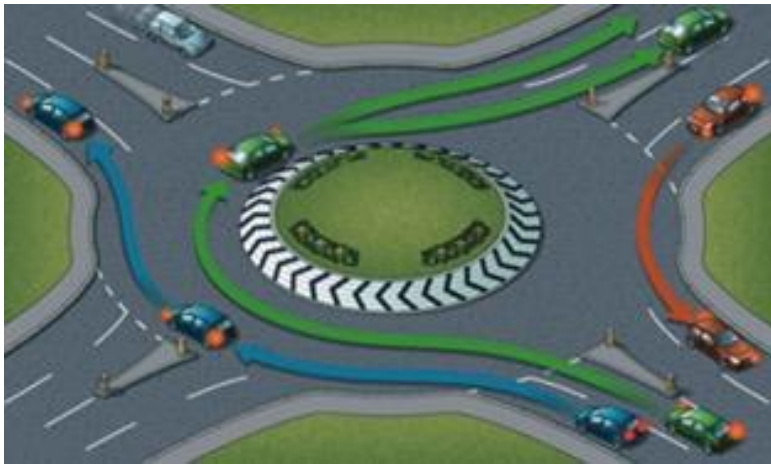
Wallenberg Autonomous Research Arenas (WARA)

WARA Director Gunnar Bark



What is WARAs?

Capabilities for you to **test, improve and demonstrate** your research in realistic environment, in collaboration with industries and other WASP researchers.



Why WARA? (Message from the sponsors)

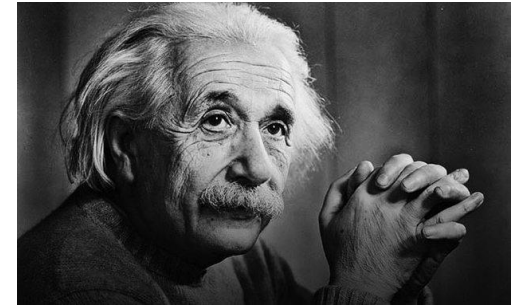
- From the WASP application 2015:
 - *“The vision of WASP is to produce cutting edge methodology and technology for autonomous systems and software development, where the usefulness of the methods will be illustrated in practical demonstrators of industrial interest.”*

But, what's in it for you?



1. It is very fun for you to see your research contributions to work in real life

2. Your research papers will be better and more cited



3. You will be a more attractive PhD to be hired by the industry

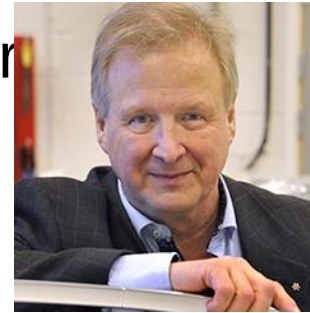


Agenda for morning session

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WARA-PS: Search & Rescue

Scenario:

- Coastal Security Center receives alarms of people in the water
- Locate area for accident
- Navigate resources to the area and plan search patterns
- Deploy all resources and delegate tasks
- Search sea and land for distressed
- Identify, position and track all distressed
- Positions of survivors sent to sea rescue organizations
- Land UAVs and return to base

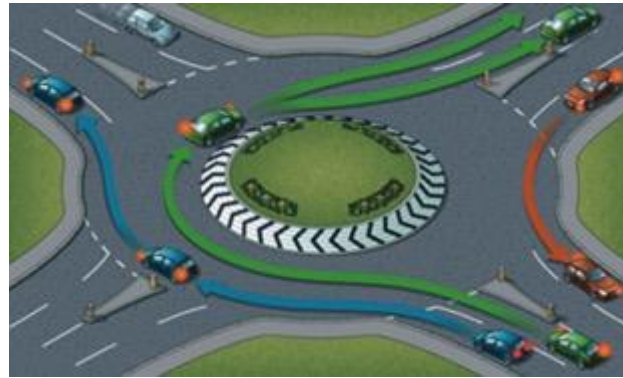


WARA PS PhD Research topics

- Command and control of UAV/USV, **Martin Pallin**
- Coordinated motion planning, Sense & avoid, **Kristoffer Bergman**
- Augmented reality to improve operator situation Awareness, **Mårten Lager**
- Positioning without GPS, **Bertil Grelsson**
- Semantic Image Segmentation, **Emil Brissman**
- Control of UAVs using sensor/planning information, **Per Boström**
- Identify objects in video stream, **Gustav Häger**
- Search using saliency map, **Olov Andersson**
- Semantic structure from motion, **David Gillsjö**
- Resource management over large networks, **Alexandre Martins**
- Unsupervised learning of spatio-temporal models, **Mattias Tiger**
- Motion Planning, **Oskar Ljungqvist**
- Optimal Rendezvous Control for UAV, **Linnea Persson**
- Cloud based sensor fusion with high demand in latency and availability, **Per Skarin,**

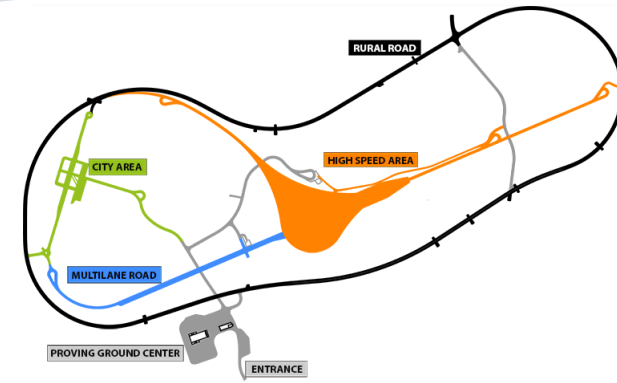
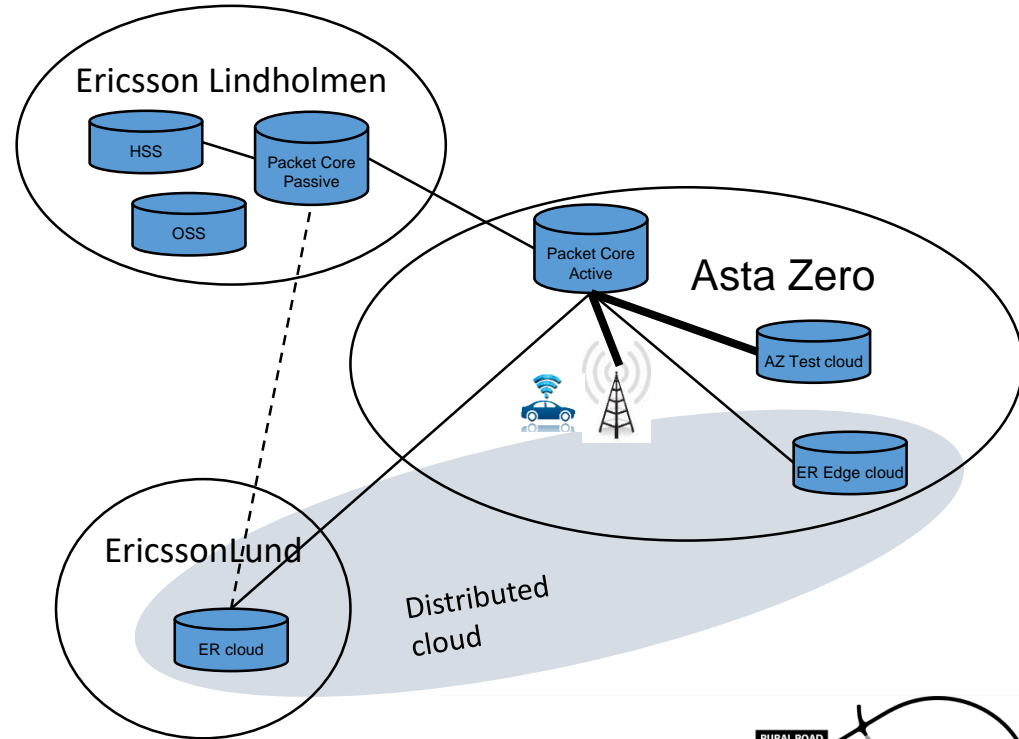
WARA-CAT provides...

- State of the art test vehicles, sensors, infrastructure, test tracks...
- Support for test setup and integration of research results
- Data collection for creation of useful data sets
- Possibilities for test and demonstration in realistic traffic scenarios



Resources supporting the research

- Vehicles (full actuation)
- Sensors
- Data logging
- Pre-5G network
- Distributed edge cloud
- Data sets
- Balloon vehicles
- Test tracks & public roads
- Research engineers



Finally...

... we in WARA would like to serve you!

And discuss with you later today, in order to fulfil:

“The vision of WASP is to produce cutting edge methodology and technology for autonomous systems and software development, where the usefulness of the methods will be illustrated in practical demonstrators of industrial interest.”