



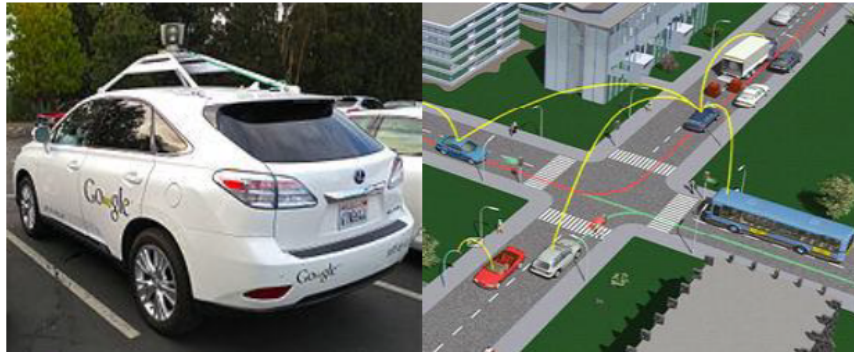
# Architecture and Safety workshop!



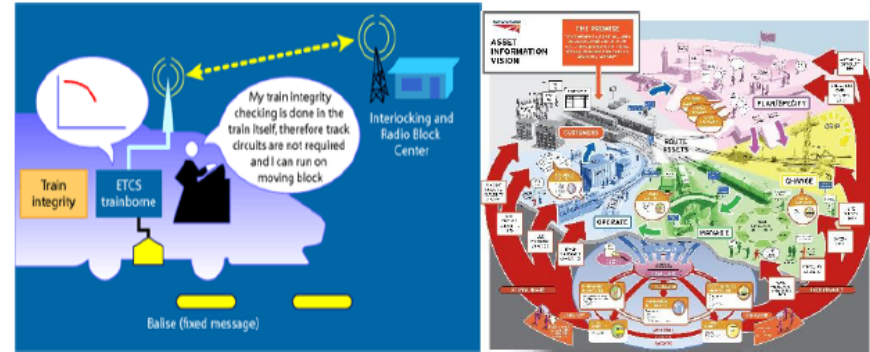
- Scandinavian Conference on System & Software Safety,  
Stockholm, May 23<sup>rd</sup> 2017

Organized by the **ARCHER** (FFI/Vinnova) project, 2015-2018  
Chaired by Martin Törngren (KTH) and Viktor Kaznov (Scania)

# Trends in transportation



Autonomous Cars  
Optimised Traffic Flow  
Health Monitoring



Autonomous Trains – ERTMS  
Optimised Operations  
Health Monitoring



Autonomous Aircraft  
SESAR – 4D Traffic Management  
Health Monitoring

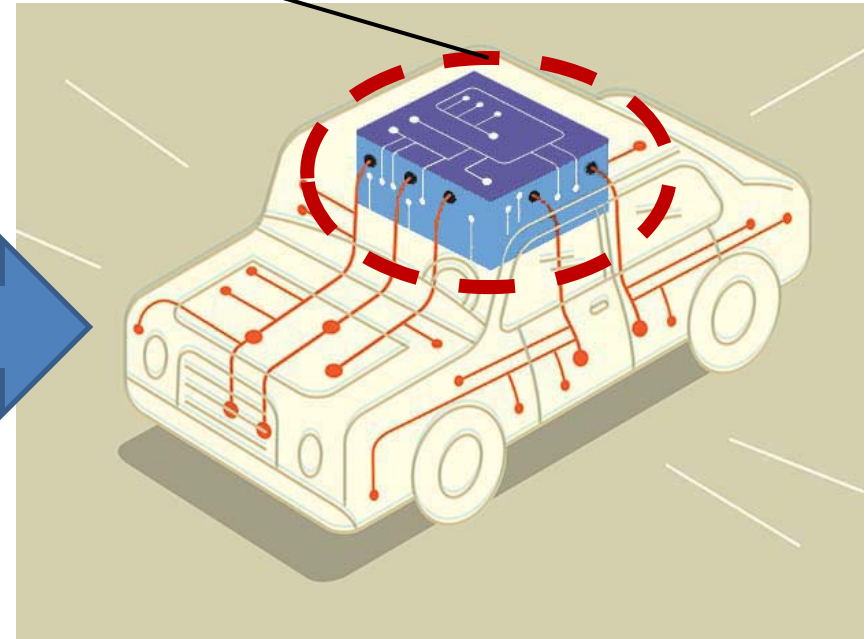
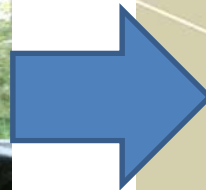


Autonomous Ships – Rolls-Royce  
Traffic Management  
Health Monitoring/Surveillance

Slide source: Haydn Thomson

# Safety and architecture related challenges and solutions for autonomous driving

## ADI – Autonomous Driving Intelligence



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# Architecture and Safety workshop

## - program

13.00 – 14.10: Short presentations (10 mins.) per speaker; chair: Viktor Kaznov

- General workshop introduction, Martin Törngren (KTH) and Viktor Kaznov (Scania)
- Open issues for monitoring architectures, Jeremie Guiochet, LAAS
- Architecting autonomous vehicles, Naveen Mohan, KTH
- Safety Considerations when preparing for autonomy in the automotive domain, Masoumeh Parseh, KTH
- Safety Assurance Argument Strategies for Vehicle Autonomy, John Birch, HORIBA MIRA

14.10-14.30: Break

14.30-16.15: World café sessions with 4 themes (Chair: Martin Törngren)

- ~ 25 min. per theme and table with full rotation – Themes and chairs:
  - **Safety analysis** (chair: Sofia Cassel)
  - **Supervisor architectures** (chairs: Jeremie Guoichet/Lola Masson)
  - **Architecting autonomous vehicles** (chair: Naveen Mohan)
  - **Safety assurance** (chair: John Birch)

16.15-17.00: Short summaries and wrap up

- Summaries per table (by Table chair)
- Wrap-up

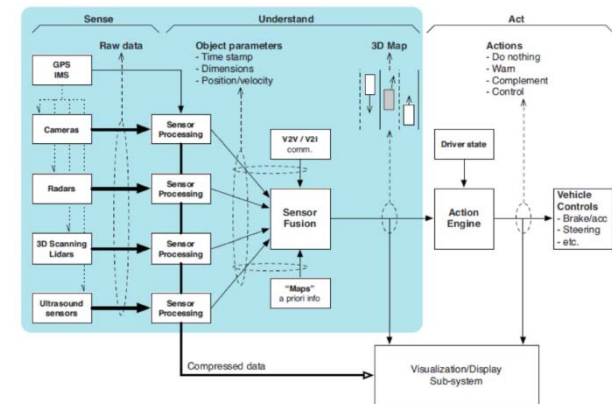


# ARCHER research project

- FFI/Vinnova, 2015-2018

Focus: "Safe" highly automated heavy trucks

- **Architectures**
  - Supervisor architectures
  - Architecting methodology
- **Safety analysis**
  - Gaps: Safety standards – Autonomy
  - Gaps: Standards and their adoption
  - Organizational readiness
  - Methods for safety analysis
- **Verification**
  - Modeling and simulation environments



# Architecture and Safety workshop - program (2017-05-23; update!)

13.00 – 14.10: Short presentations (10 mins.) per speaker; chair: Viktor Kaznov

- General workshop introduction, Martin Törngren (KTH) and Viktor Kaznov (Scania)
- Open issues for monitoring architectures, Jeremie Guiochet, LAAS
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14.20-16.15: World café sessions with 4 themes, 25 mins/theme (Chair: Martin Törngren)

- 14.25-14.50: First session!

- 14.50-15.05: Break!

- **Safety analysis** (chair: Sofia Cassel)
- **Supervisor architectures** (chairs: Jeremie Guiochet/Lola Masson)
- **Architecting autonomous vehicles** (chair: Naveen Mohan)
- **Safety assurance** (chair: John Birch)

- 16.20-17.00: Short summaries and wrap up

- Summaries per table (by Table chair)
- Wrap-up

# World cafe format

- 4 themes and corresponding tables!
  - Dividing into 4 groups! ~7 persons per table
    - **Safety analysis** (Sofia Cassel)
    - **Supervisor architectures** (Jeremie Guiochet/Lola Masson)
    - **Architecting autonomous vehicles** (Naveen Mohan)
    - **Safety assurance** (John Birch)
- 4 sessions, each 25 minutes!
  - Each 25 minutes, rotation clock-wise to next table
- Question-driven discussion at the Tables!
- The table chair structures the discussion and will provide a short summary for the plenary