



## SAFER SUCCESS STORY: Boundary Conditions for Automation (ARV)

*“The ARV project has provided a creative arena for cross-brand collaboration around vehicle automation.”*

Christian Grante

Volvo Group Technical Specialist Preventive Safety and Automation

Volvo Group Trucks Technology (GTT)

- Collaboration arena for Swedish industry and academia giving a context to on-going and new projects
- Inspiring SAFER partners to “think outside the box” through seminars and workshops
- White paper on Swedish areas of strength concerning automated driving
- Gained and disseminated knowledge on state-of-the-art
- Introduced the notion of “boundary conditions for automation,” particularly regarding traffic safety

In 2012 FFI had identified a need for a collaborative platform regarding the quickly emerging issue automated driving. SAFER offered to use the existing SAFER structure and was granted a project in 2013 named Boundary conditions for Automation (ARV). ARV support the target that Sweden should be in a lead position in the area of vehicle automation. Focus is to identify and explore the non-competitive prerequisites for the introduction of Automated Vehicles (AVs) in regular traffic.

### Benefit to the project partners and impact on society:

- An arena for creative collaboration in non-competitive areas in automated driving
- A cross-brand dialogue to find major implementation obstacles - beyond technology
- Shared competence in the most critical areas in cooperation with institutes and academia
- A common understanding of key areas where Sweden can take a lead position
- Found and analysed experiences gained in non-automotive areas- where automation is more established
- Keep SAFER partners informed on state-of-the-art and current focus areas for research
- Find ways of promoting AVs for increased safety and reduced carbon footprint

### Think outside the box:

The approach from start, trying to identify the true challenges in the introduction of AVs, has been to “think outside the box”. Initially the project worked with Mines ParisTech using a 3-step method (KCP) for idea generation. Building on the results from this Chalmers (MORE) was involved to refine four ideas generated at the workshops. The project core team developed a comprehensive mind-map covering all areas of interest and this is used continuously to find new areas to explore in workshops and pre-studies. Another approach has been to look at potential opportunities and benefits of AVs from other angles – e.g. the assumption is that we can read or work while “driving” – but what about motion sickness?

### Measurable results:

- Numerous pre-studies, workshops and inspiration days for SAFER partners
- Numerous presentations to FFI and SAFER
- Scientific paper accepted and presented at FISITA 2014 World Automotive Congress
- State-of-the-art report on global activities within the area of vehicle automation
- White paper on the grounds and purposes for the ARV collaboration platform
- On-going pre-study with Luftfartsverket (LFV) for increased safety on airports

**Funding:** 3,5 MSEK external (cash and inkind)

**Partners:** SAFER (the partners that are not FFI partners), AB Volvo, Autoliv, Scania, Swedish Transport Administration, Volvo Cars (CPAC Systems (Volvo)), LFV, Saab AB - non SAFER partners)

**Funders:** FFI

**Period:** 2013 – ongoing