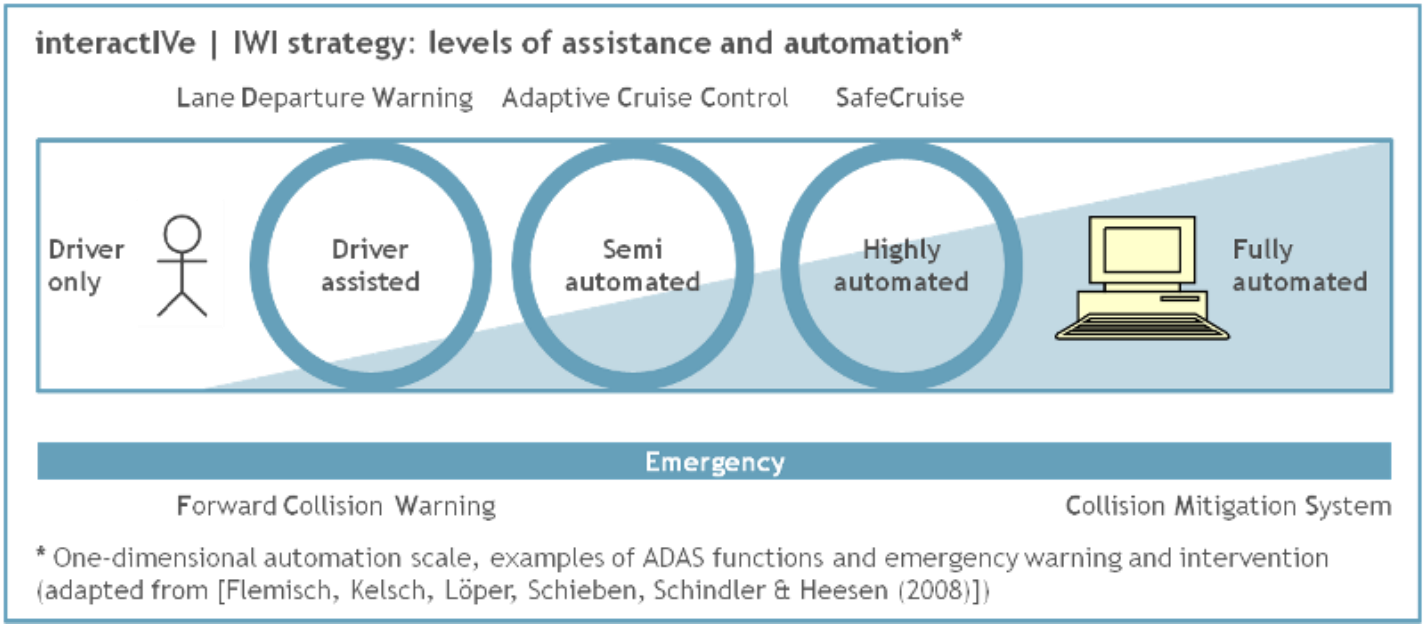
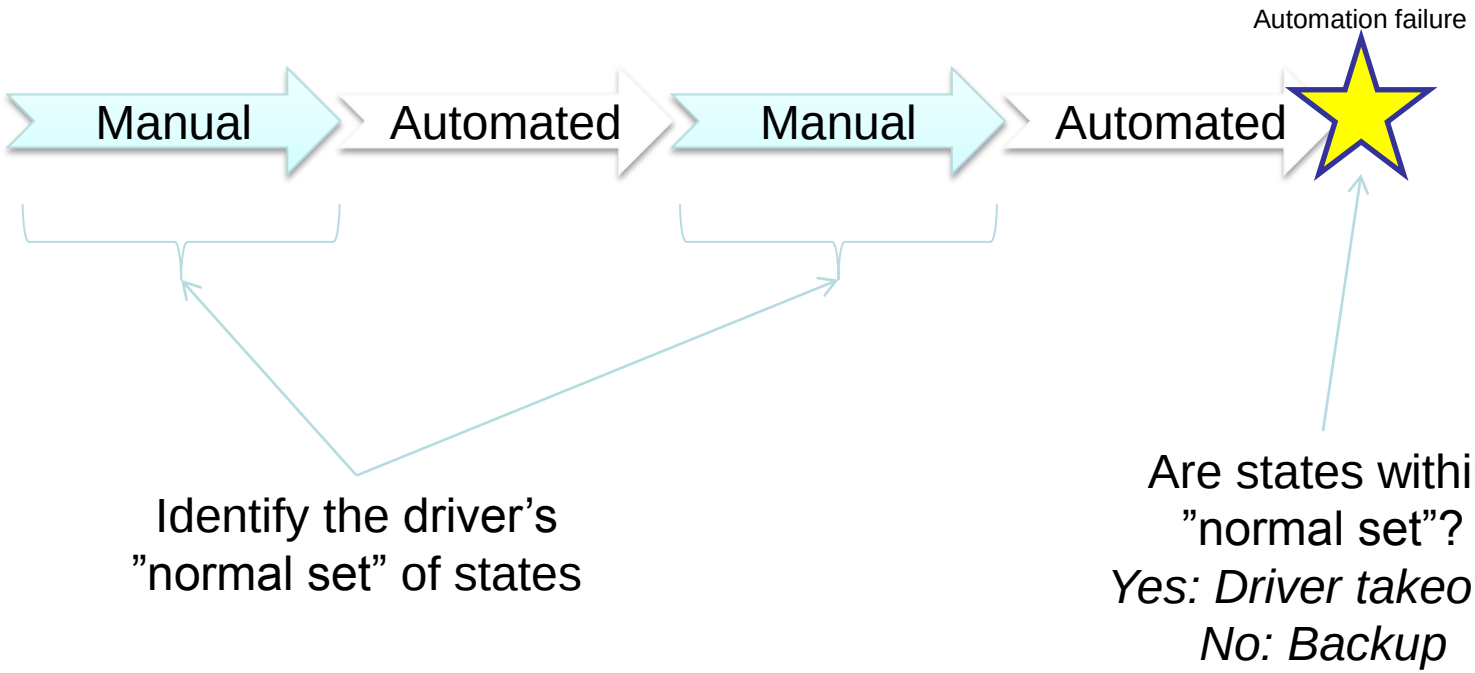
Panel: Human Interactive Autonomous Driving – *Future trends*

- Fully automated systems
  - Longitudinal and lateral control
- Cooperative systems (platoons)
- Systems that adapt to the driver

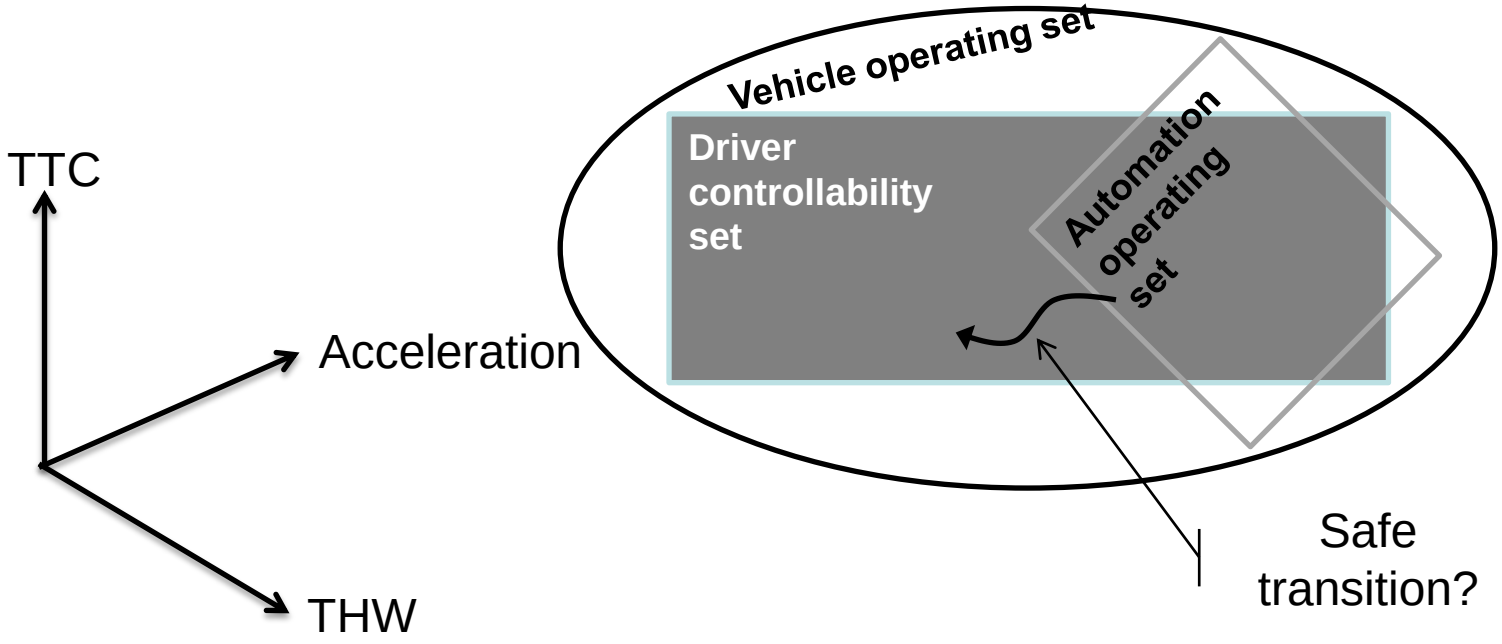


Panel: Human Interactive Autonomous Driving – *Resilience Challenges*



Panel: Human Interactive Autonomous Driving – *Resilience Challenges*

- Safe transitions from automated to manual driving?
  - Disable automated control may not be safe!
  - How should the driver be included in the loop when system fails?
    - Driver cannot take over in all situations ➔ Back-up needed?
  - What can the system do before including the driver?



Panel: Human Interactive Autonomous Driving – *Research Perspectives*

- Cooperation needed between different research areas
  - Main goal of the SHADES project
  - E.g. Human behavior science, Control theory and Dependable systems

- Drivers can behave differently depending on level of automation
  - We have this spring carried out a driving simulator study (with brake failures) comparing longitudinal control (ACC) with longitudinal and lateral control (Traffic Jam Assist, TJA)
  - Preliminary simulator results show that going from ACC to TJA leads to worse performance when longitudinal automation fails