

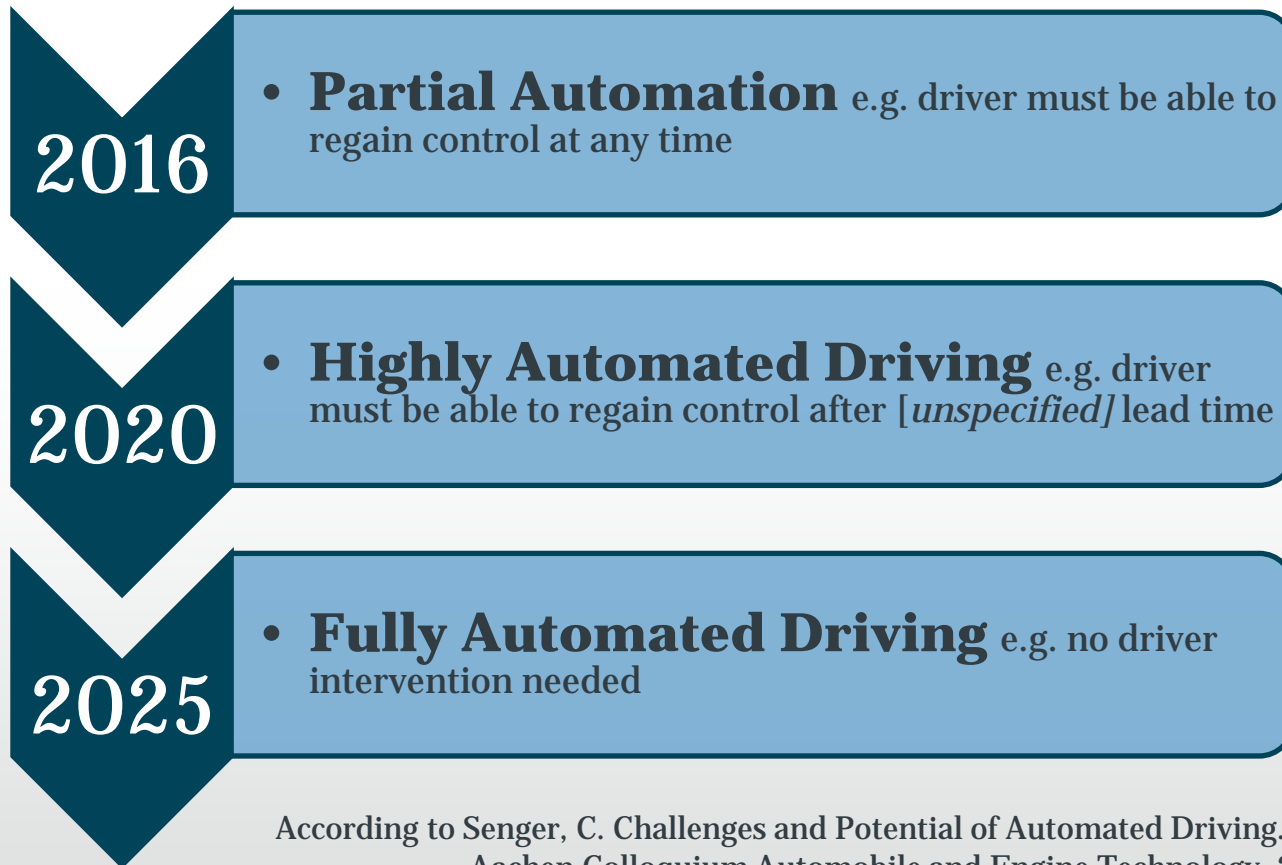
ITS and In-Vehicle Systems: A Case Study

Victoria Banks: vab106@soton.ac.uk
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Intelligent Transport Systems: (What it means to me)

- Definition incorporates sophisticated technologies that automate elements of the driving task;
 - Longitudinal control
 - Lateral control
 - Navigation or route planning
 - Decision-making in emergencies
 - Lane change
 - Parking
- Traditional role of the driver is changing
 - “Active operator” → “Passive monitor”

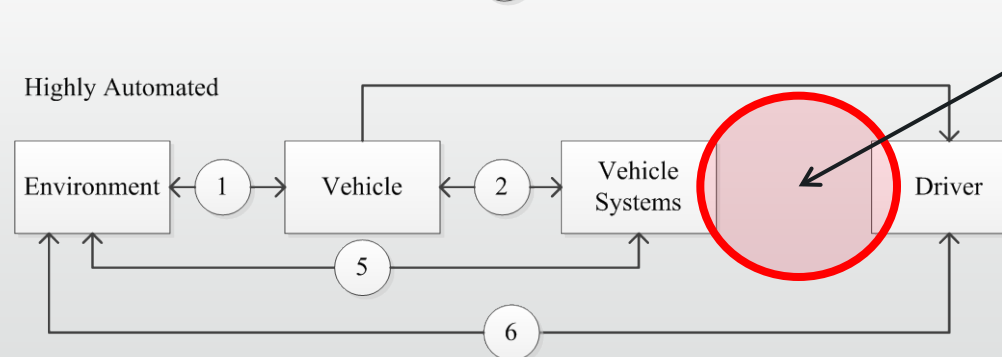
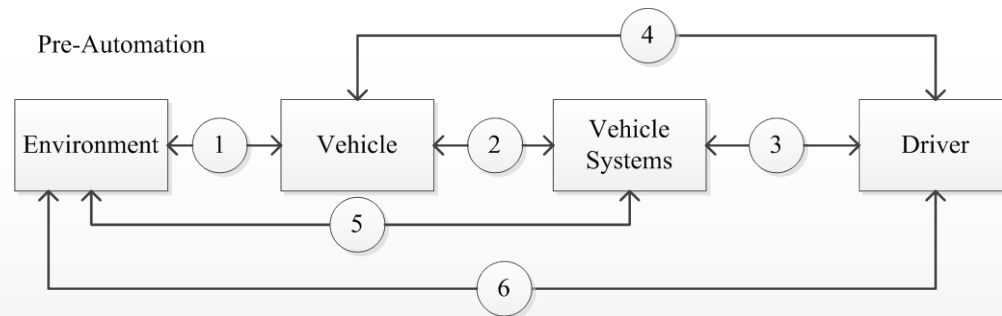
Automation Pathway (?)



According to Senger, C. Challenges and Potential of Automated Driving. 22nd Aachen Colloquium Automobile and Engine Technology, 2013.

Key Research Challenge

- Find a suitable / appropriate level of task sharing (e.g., Inagaki, 2003)
 - Driver-vehicle interaction



Disintegration or possible removal?

Is this the future?



Southampton University Driving Simulator

- Driver Behavioural Studies
 - Investigate the behavioural implications of ADAS
 - Analyse driver-vehicle-world interactions and how they may change as the level of automation increases
 - Assess the appropriateness of systems design and how it is used by the driver



Southampton University Driving Simulator

- Case Studies;



- Driver decision-making in emergencies
- Behavioural implications of varying “levels of automation”

Southampton University Driving Simulator

- Increase the awareness of Human Factors in the design of ITS / ADAS
 - Acknowledge that the role of the driver is changing
 - How
 - Why
 - Consequences
 - “Appropriateness” of ITS in the driving task

Thank You

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