

Session Human Factors

Sharing roles between driver and vehicle system

■Moderator

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■Speaker

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Levels of Automated Driving

SAE	No Automation (Level 0)	Driver Assistance (Level 1)	Partial Automation (Level 2)	Conditional Automation (Level 3)	High Automation (Level 4)	Full Automation (Level 5)
<u>BASt</u>	Driver Only	Assisted	Partly Automated	Highly Automated	Fully Automated	(not addressed)
NHTSA	No Automation (Level 0)	Function Specific Automation (Level 1)	Combined Function Automation (Level 2)	Limited Self-Driving Automation (Level 3)	Full Self-Driving Automation (Level 4)	

(Source) SAE J3016 - Surface Vehicle Information Report, 2014-01



Level 2 - Partial Automation

- System performs longitudinal and lateral control.
- Driver must **monitor the system** at all times, and must be **prepared to take over control** at any time.

human supervisory control

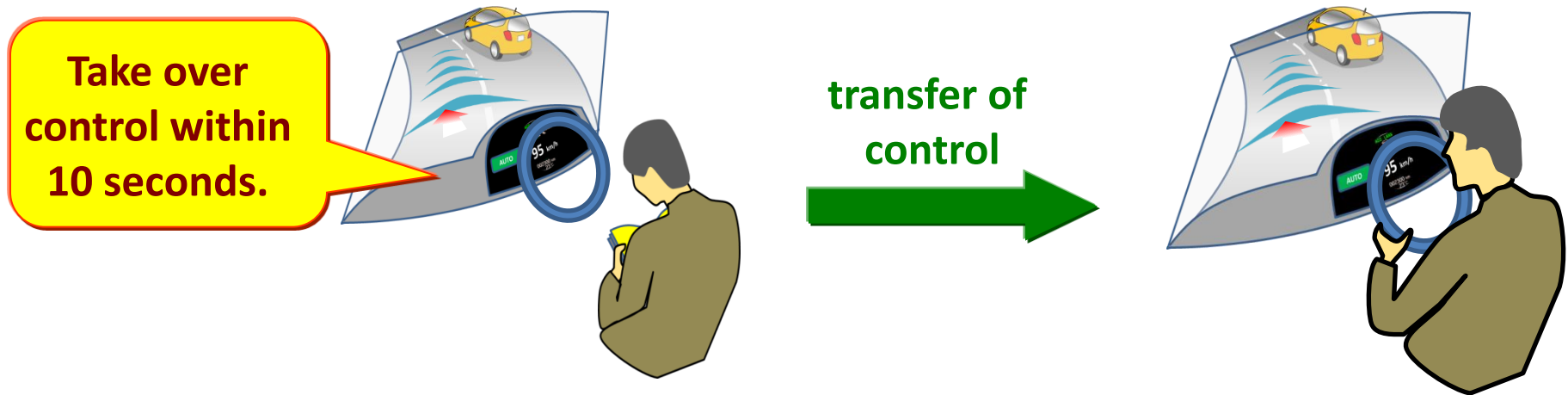


- Loss of situation awareness
- Loss of system awareness (mode error, automation surprises)
- Over-trust and over-reliance (or complacency)
- Skill degradation
- Behavioral adaptation



Level 3 - Conditional Automation

- System performs longitudinal and lateral control.
- Driver must **no longer permanently monitor** the system nor the driving environment.
- Driver must **resume control by a take-over request** from the system with a certain time buffer.



- How long or how short should be the time buffer?
- What if no response by the driver?

