

Automated Driving – WP29 Activities

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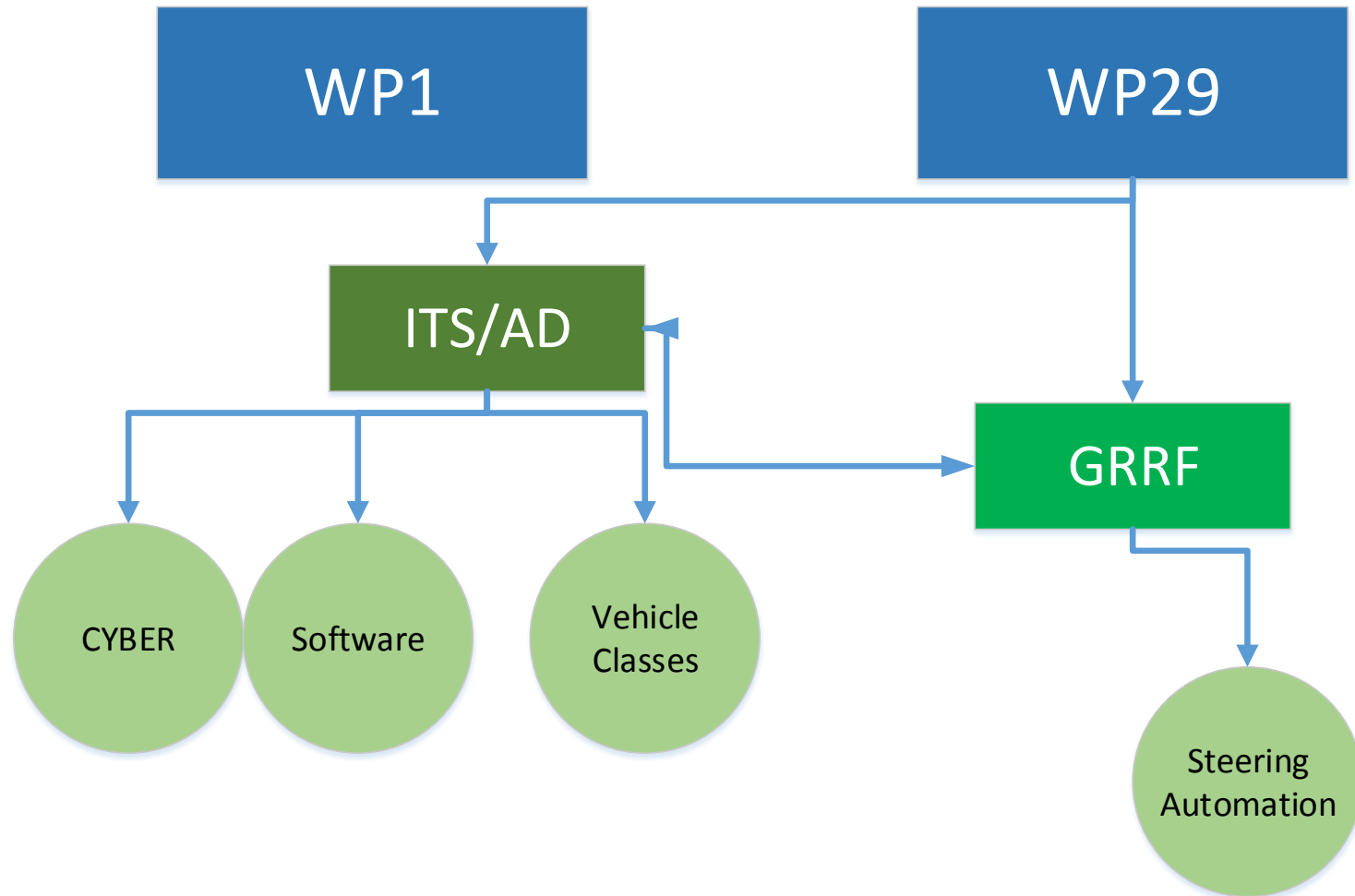
World Forum for Harmonization (WP29)



Two principle operating groups:

1. WP29 Informal Group to provide strategic direction for automated technology.
(Intelligent Transport Systems/Automated Driving Group(ITS/AD))
2. Developing the UN Regulation concerning vehicle steering systems to permit certain levels of autonomy.
(GRRF and the GRRF Informal Working Group)

Working Party 29 Activities



SAE Levels of Automation



SAE Levels of Automation				
Level	Name	Steering, Acceleration & Deceleration	Monitoring of Driving Environment	Fall-back Performance of Dynamic Driving Task
Zero	No automation	Human	Human	Human
One	Driver Assistance	Human & System	Human	Human
Two	Partial Automation	System	Human	Human
Three	Conditional Automation	System	System	Human
Four	High Automation	System	System	System
Five	Full Automation	System	System	System

SAE International and J3016

Functional Categories of Automated Function

Classifications Automated Functions	
Category A	Operates at a speed no greater than 10 km/h to assist the driver, on demand, in low speed or parking manoeuvring.
Category B1	Assists the driver in keeping the vehicle within the chosen lane, by influencing the lateral movement of the vehicle."
Category B2	Initiated/activated by the driver and which keeps the vehicle within its lane by influencing the lateral movement of the vehicle for extended periods without further driver command/confirmation
Category C	Initiated/activated by the driver and which can perform a single lateral manoeuvre (e.g. lane change) when commanded by the driver.
Category D	Initiated/activated by the driver and which can indicate the possibility of a single lateral manoeuvre (e.g. lane change) but performs that function only following a confirmation by the driver.
Category E	Initiated/activated by the driver and which can continuously determine the possibility of a manoeuvre (e.g. lane change) and complete these manoeuvres for extended periods without further driver command/confirmation."

Current Progress

- Category A and Category B1 – proposals agreed by WP29 for application from April 2018.
- Category C (combined with B1)
 - Target to bring proposals to WP29 in Spring 2018

Ongoing Discussion

- Categories B2, D & E to be discussed
 - Parallels with SAE level 3 and 4 capability.
- Cyber and Software recommendations for Spring 2018
- Data: Vehicle and system-status:
 - What should be stored?
 - Who should have access to it?

Some Challenges

- What can a vehicle really “see”?
- Can a vehicle really know where it is?
- Can a driver resume control in an emergency.
- What controls are necessary to manage software.
- Can the vehicle be resilient to cyber attack?

These challenges (and others) are being addressed

Thank You

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