



AUTONOMOUS DRIVING A REAL PERSPECTIVE

44TH ASECAP STUDY & INFORMATION DAYS

The path towards an integrated & sustainable mobility in Europe

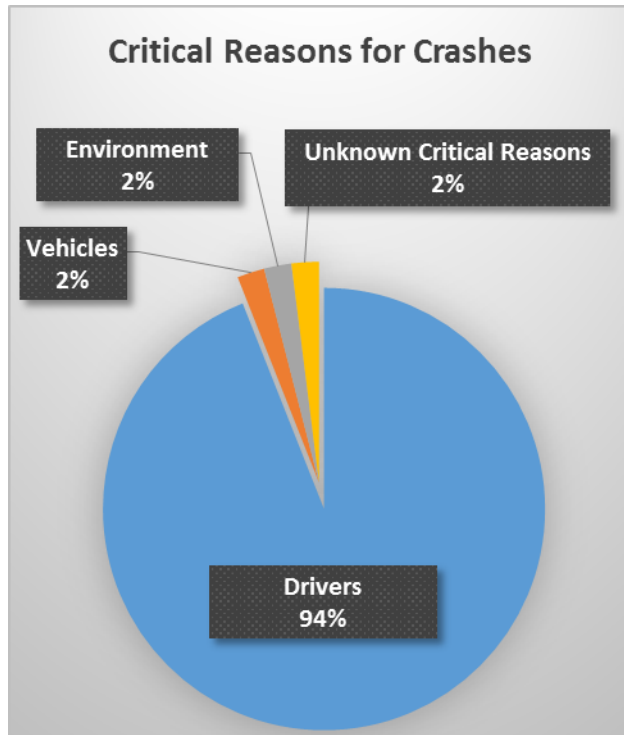
24/05/2016

- 1. Introduction**
- 2. Background**
- 3. Present & Future**
- 4. CTAG & AD**
- 5. Conclusions**

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1.Introduccion. Motivation

- The automated car has huge potential to improve security, fluidity and efficiency of road traffic, providing greater comfort and possibilities of use of time.

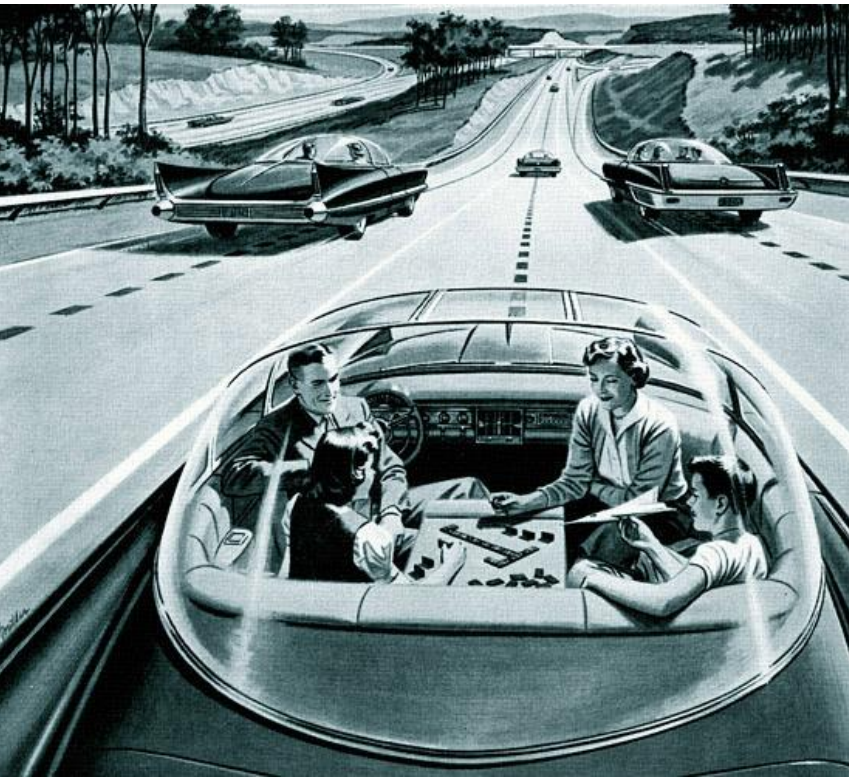


Source. NHTSA. National Motor Vehicle Crash Causation Survey. DOT HS 812 115. February 2015



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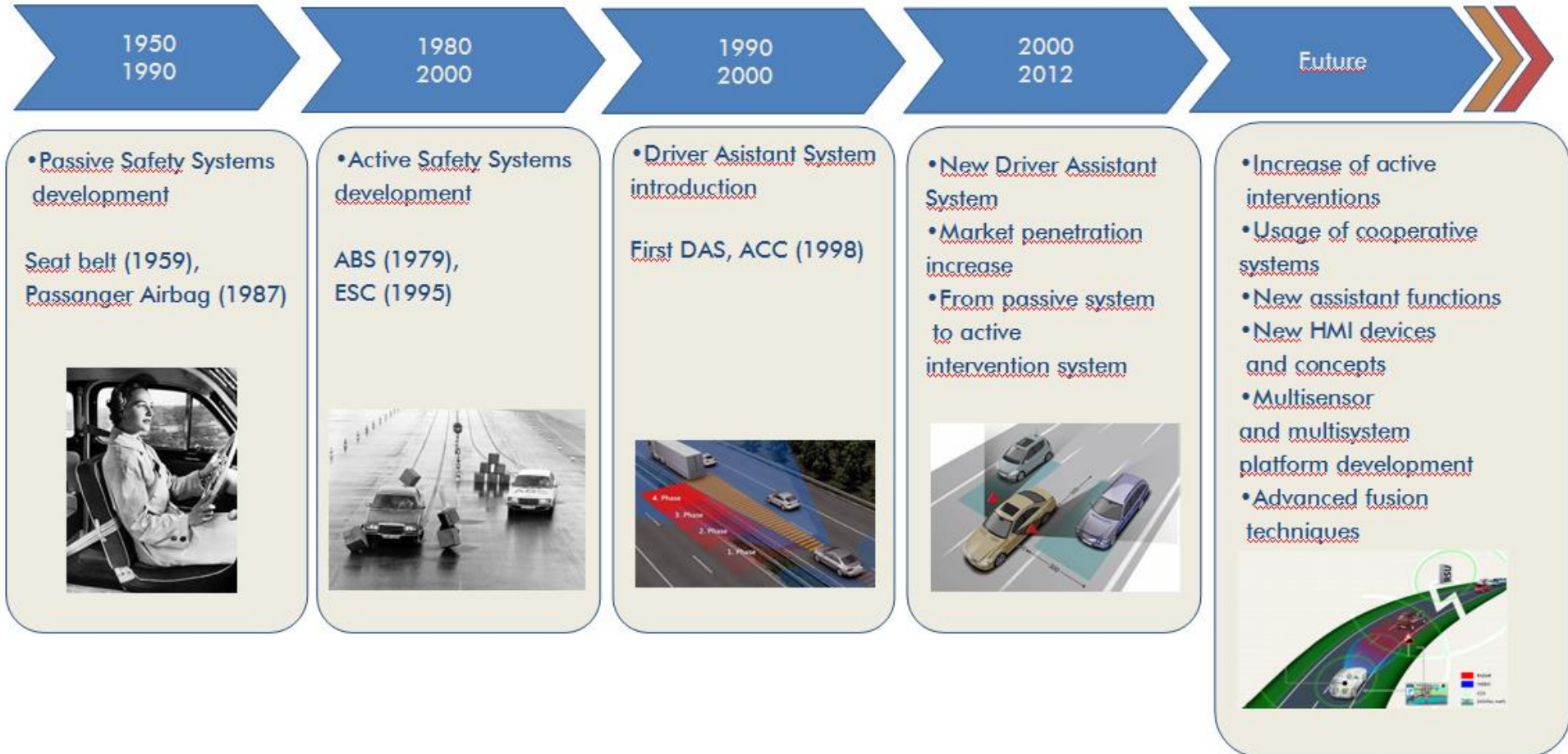
2. Background. The dream of Automated Driving



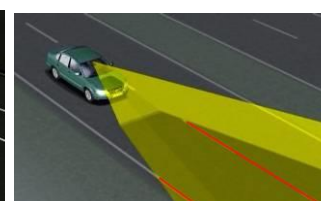
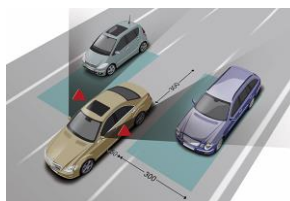
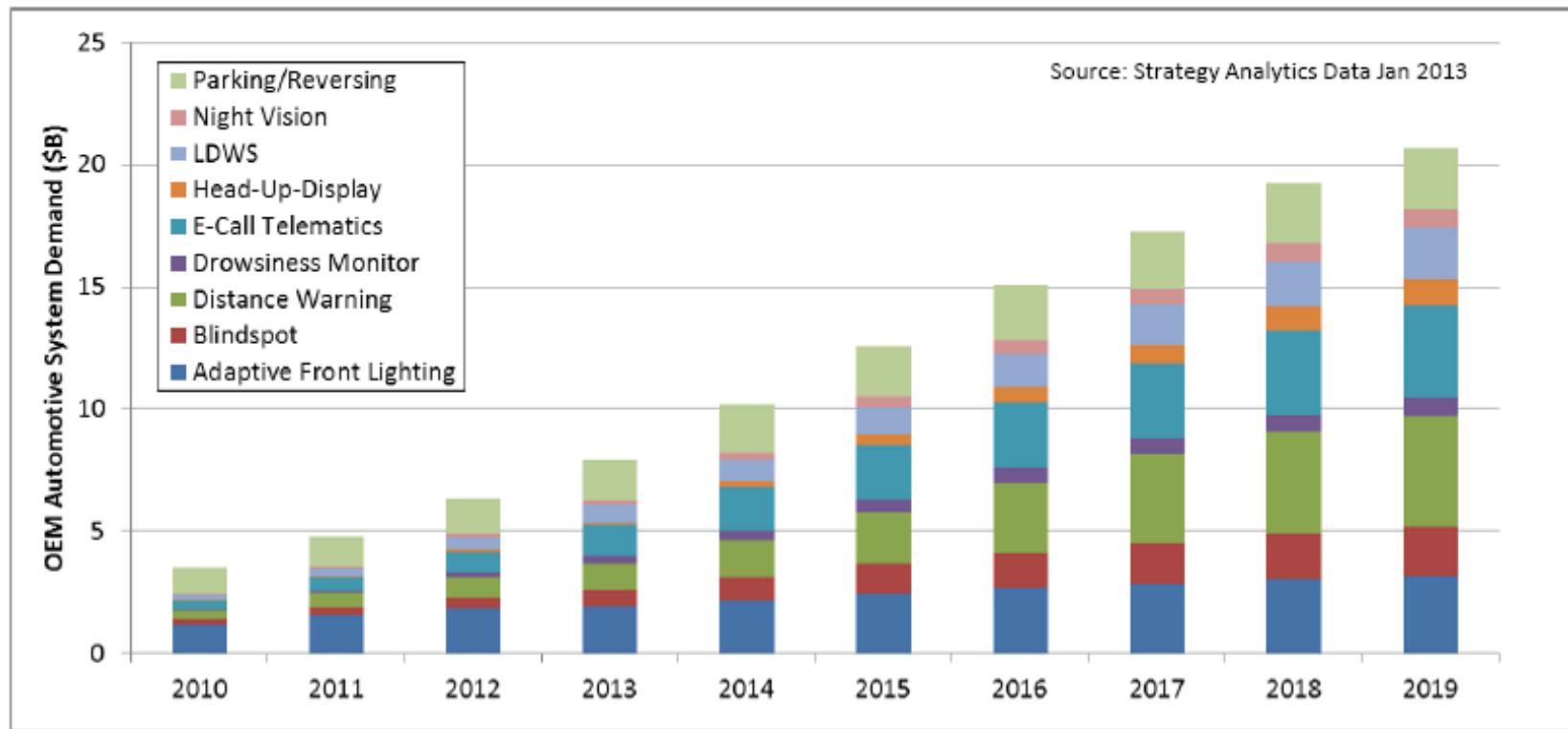
1950s.
The vision of automated Driving

1950s. Autonomous Highway System Tests. GM y RCA developed automated driving prototypes with a radio controller for speed and steering.

2. Background. ADAS Starting as Technological Base




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3. Present & Future: Scenarios & Functions

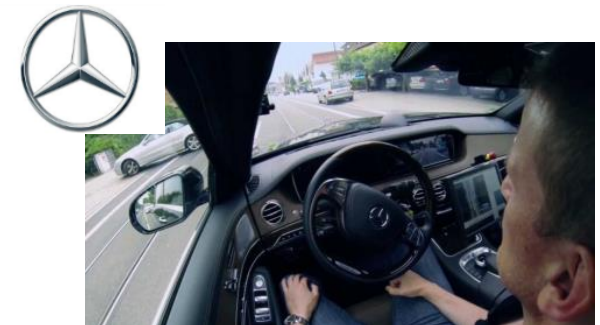
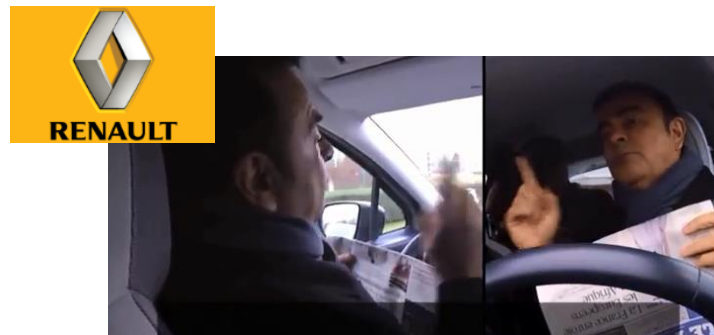
Scenario	HAD Functions
Highway 	<ul style="list-style-type: none">- Emergency Stop Assistant- Automated Lane Keeping- Cooperative Traffic Jam Assistant- Road Works Assistant- Cooperative Advance ACC- Platooning by CACC- Cooperative Merge Assistant- Cooperative Overtake Assistant- Collision Avoidance- ...

Scenario	HAD Functions
Rural 	<ul style="list-style-type: none">- Cooperative Advance ACC- Overtake Assistance- Intersection Assistance- Emergency Braking for VRUs- Emergency Stop Assistant- Collision Avoidance- ...

Scenario	HAD Functions
Urban 	<ul style="list-style-type: none">- Emergency Braking for VRUs- Automated Parking- Lane Keeping- Cooperative low speed ACC- Intersection Assistant- Platooning by CACC- Automatic Manuevers at Bus Stops- Collision Avoidance- ...

Scenario	HAD Functions
Dedicated Environment 	<ul style="list-style-type: none">- Dedicated lanes for buses- Dedicated lanes for Platooning- ...

3. Present & Future: Context

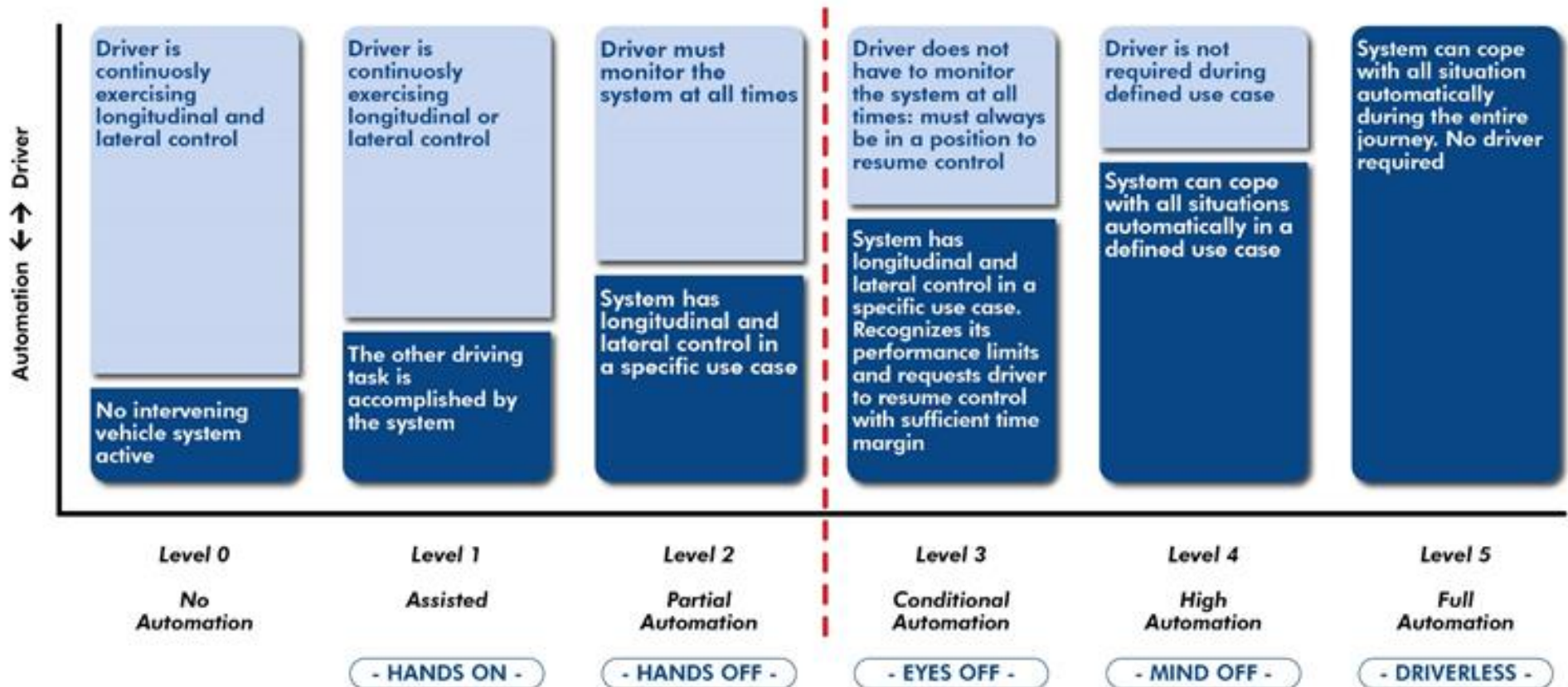


3. Present & Future. Levels of Automated Driving

Terms acc. To SAE draft J3016 [OICA]

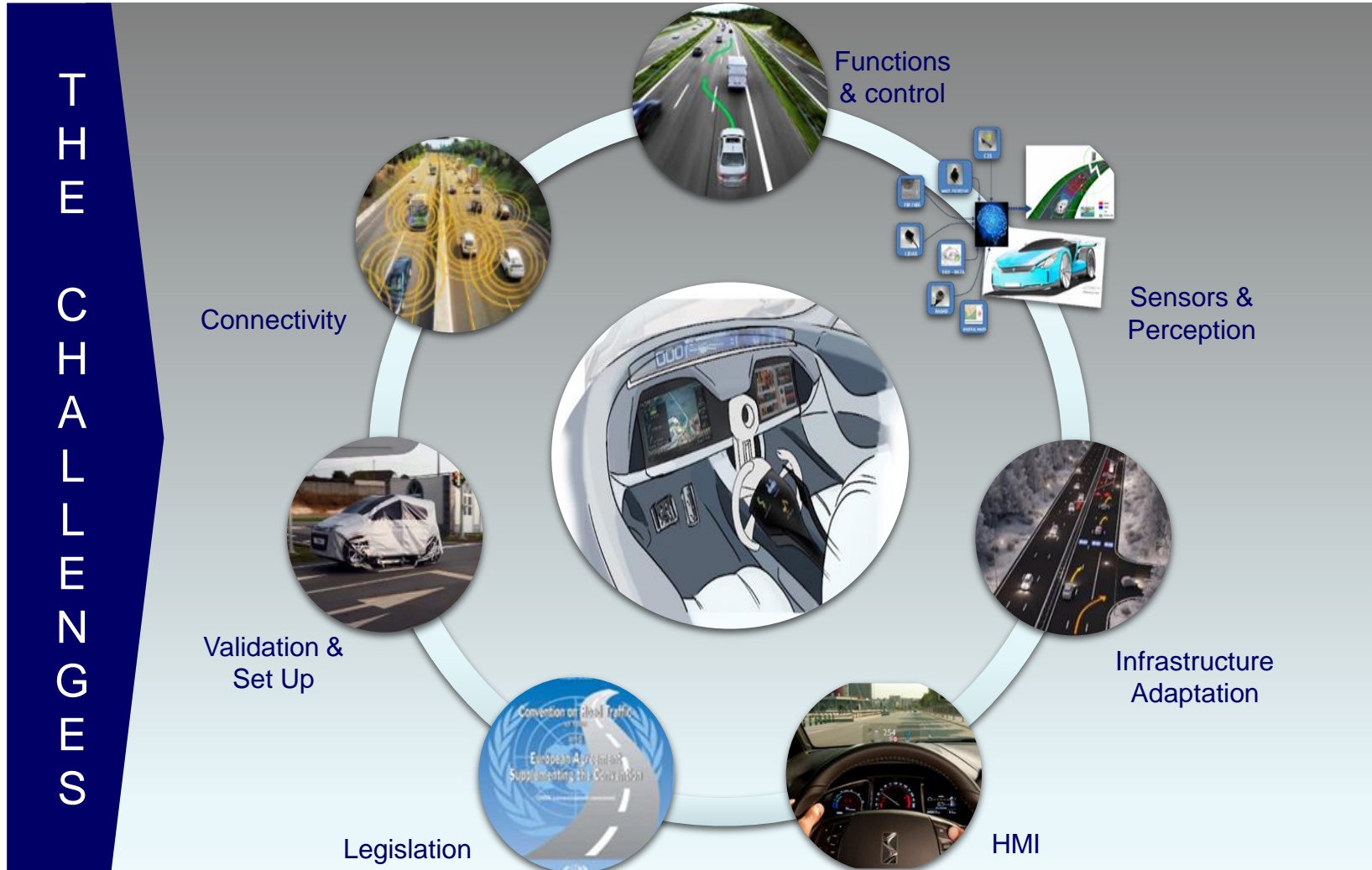


Levels of Automated Driving



3. Present & Future. The Challenges

- The introduction of new ADAS/AD systems in the vehicle is a reality.



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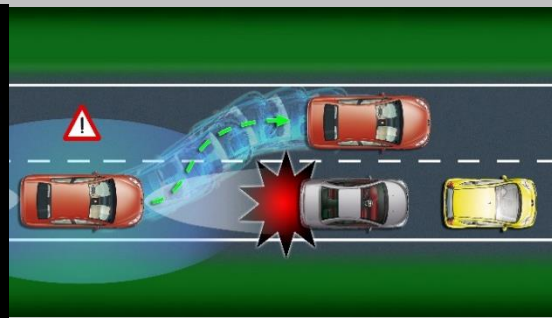
4. CTAG & AD. Examples of R&D Activities



European Projects



Internal Research Projects



Next Generation ADAS & AD



SISCOGA – Cooperative Functions

Gestual Recognition – HMI Concept

4. CTAG & AD. Example 1: Highway Autopilot (Highway Entry & Highway Overtaking)



CLICK HERE TO [WATCH](#) THE FIRST VIDEO

4. CTAG & AD. Example 2: Highway Autopilot (Cooperative Traffic Jam Chauffeur)



[CLICK HERE TO WATCH THE SECOND VIDEO](#)

4. CTAG & AD. Example 3: Urban Autopilot (Cooperative Automated GLOSA)



[CLICK HERE TO WATCH THE THIRD VIDEO](#)

4. CTAG & AD. Example 4: Urban Autopilot (Automated Overtaking)



[CLICK HERE TO WATCH THE FOURTH VIDEO](#)

4. CTAG & AD. Example 5: Urban Autopilot (Intersection Assistant)



[CLICK HERE TO WATCH THE FIFTH VIDEO](#)

4. CTAG & AD. Example 6: Urban Autopilot (Cooperative AEB)



[CLICK HERE TO WATCH THE SIXTH VIDEO](#)

4. CTAG & AD. Example 7:

AD for Buses (Traffic light priority for delayed public buses)



[CLICK HERE TO WATCH THE SEVENTH VIDEO](#)

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- **The incorporation of new ADAS / AD in the vehicle is a reality,**
- **The entry into the market will be gradual according to a number of factors:**
 - **Technology**
 - **Cost**
 - **Infrastructure**
 - **Management and Operations**
 - **Learning, trust and acceptance**
 - **Policy and Legislation**
 - **...**

