

# 81st GRRF session

## French views on ACSF

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**Pierre Bazzucchi**

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# Options for a specific regulation approach on combined systems

## A combined system approach ?

Overarching the « longitudinal » + « lateral » + « field of vision » + other UN-ECE regulations involved

## Based on **use cases** ?

Addressing relevant speed + infrastructure operating environments (park, low speed during eg traffic jam, high speed on motorway)

Based on a reference taxonomy of drivers' attitudes (link to SAE levels) ?

Allowing **tests of critical failures**, based on a reference risk analysis / matrix

**Independent of technologies** (on vision + location + communication)

But, possibly, based on a reference indicative level of data quality / precision

# ACSF Terms of Reference

The informal group shall review the requirements and limitations associated with Automatically Commanded Steering Function technology (ACSF) **as defined in Regulation No. 79**. It shall prepare a draft regulatory proposal regarding advances in control system technology and the transport opportunities provided by the Vienna and Geneva Conventions.

# Definition ACSF

- "Automatically commanded steering function" means the function within a complex electronic control system where **actuation of the steering system** can result from automatic evaluation of signals initiated on-board the vehicle, possibly in conjunction with passive infrastructure features, to generate **continuous control action** in order **to assist the driver** ~~in following a particular path, in low speed manoeuvring or parking operations.~~

# Reminder

- The group will focus on systems for vehicles of categories N and M (See ToR)
- REG 130 (LDWS) and REG 131 (AEBS) currently apply to N2-N3 and M2-M3 categories
- REG 46 and REG 125 deal with forward and rearward indirect vision and currently apply to N and M categories

# French proposal ACSF-04-03 (1)

- Modify REG 79 only to authorise **activation of the steering system** through **continuous control action** for the management of the sole **lateral** movement of the vehicle in:
  - Category A ACSF means, a function that operates at a speed no greater than 10 km/h to assist the driver, on demand, in low speed **lateral** manoeuvring ~~or parking operations~~.
  - Category B ACSF means a function which is initiated/activated by the driver and which keeps the vehicle within its lane by influencing the **lateral** movement of the vehicle.
  - Category C ACSF means, a function which can perform a single **lateral** manoeuvre (e.g. lane change) when commanded by the driver.

# French proposal ACSF-04-03 (2)

## Other **single** functions than lateral

- Include in REG 131 provisions for AEBS, [ACC], needed for forward longitudinal management
- Include in REG 125 and REG 46 provisions for forward and rearward indirect vision
- Include in REG 48 provisions for automated activation of lighting devices
- Etc...

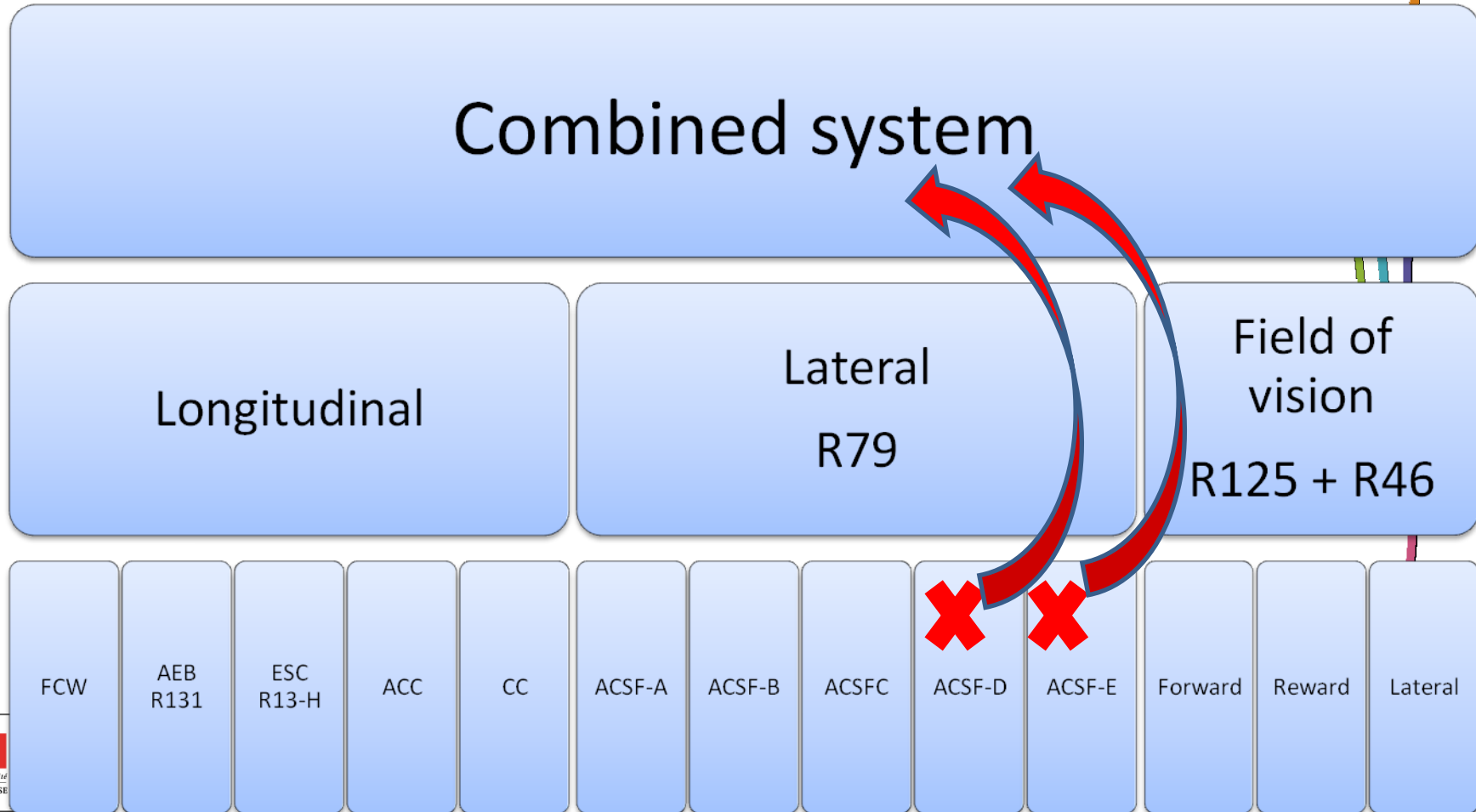
# French proposal ACSF-04-03 (3)

For **combined** systems including lateral and longitudinal management, discernment of the environment, monitoring of driver availability, create new regulations with different requirement levels based on use cases :

- Park Assist or Valet Parking
- Traffic Jam Assist or Traffic Jam Pilot
- Highway Assist or Highway Pilot



# Principle



# Park assist #1

## Single Function (ACSF-A)

The vehicle has delegation to steer. The driver must continue to discern the environment, accelerate, shift gears and brake

Longitudinal

Lateral

Field of vision  
R125 + R46

FCW

AEB  
R131

ESC  
R13-H

ACC

CC

ACSF-A  
R79

ACSF-B  
R79

ACSFC  
R79

ACSF-D

ACSF-E

Forward

Reward

Lateral

# Lane Keeping Assist

## Single Function (ACSF-B)

The vehicle has delegation to maintain in lane  
The driver must continue to accelerate, shift gears and brake

Longitudinal

Lateral

Field of vision  
R125 + R46

FCW

AEB  
R131

ESC  
R13-H

ACC

CC

ACSF-A  
R79

ACSF-B  
R79

ACSF-C  
R79

ACSF-D

ACSF-E

Forward

Reward

Lateral

# Lane Change Assist

## Single Function (ACSF-C)

The vehicle has delegation to steer. The driver must continue to discern the environment, accelerate, shift gears and brake

Longitudinal

Lateral

Field of vision  
R125 + R46

FCW

AEB  
R131

ESC  
R13-H

ACC

CC

ACSF-A  
R79

ACSF-B  
R79

ACSF-C  
R79

ACSF-D

ACSF-E

Forward

Reward

Lateral

# Park assist #2

## Combined Function

The vehicle has delegation to discern the environment, steer, accelerate, shift gears and brake

Longitudinal

Lateral

Field of vision

R125 + R46

FCW

AEB  
R131

ESC  
R13-H

ACC

CC

ACSF-A  
R79

ACSF-B  
R79

ACSF-C  
R79

ACSF-D

ACSF-E

Forward

Reward

Lateral



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# Traffic Jam Assist

## Combined Function

The vehicle has delegation to discern the environment, maintain in lane, change lane, accelerate, shift gears and brake

Longitudinal

Lateral

Field of vision  
R125 + R46

FCW

AEB  
R131

ESC  
R13-H

ACC

CC

ACSF-A  
R79

ACSF-B  
R79

ACSF-C  
R79

ACSF-D

ACSF-E

Forward

Reward

Lateral

# Highway Assist

## Combined Function

The vehicle has delegation to discern the environment, steer, accelerate, shift gears and brake

Longitudinal

Lateral

Field of vision  
R125 + R46

FCW

AEB  
R131

ESC  
R13-H

ACC

CC

ACSF-A  
R79

ACSF-B  
R79

ACSF-C  
R79

ACSF-D

ACSF-E

Forward

Reward

Lateral

Thanks  
for your attention

