

## CONSORTIUM

### ► Response to call H2020-DT-ART-2018-2019-2020

- Human centred design for the new driver role in highly automated vehicles
- **Coordinator:** VIF
- **Duration:** 42 Months
- **Start:** Dec 2019
- **Funding:** 8 Mio EUR



University of Ljubljana



National  
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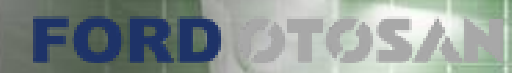


# HADRIAN

*Holistic Approach* for  
Driver Role Integration and  
Automation Allocation for  
European Mobility Needs



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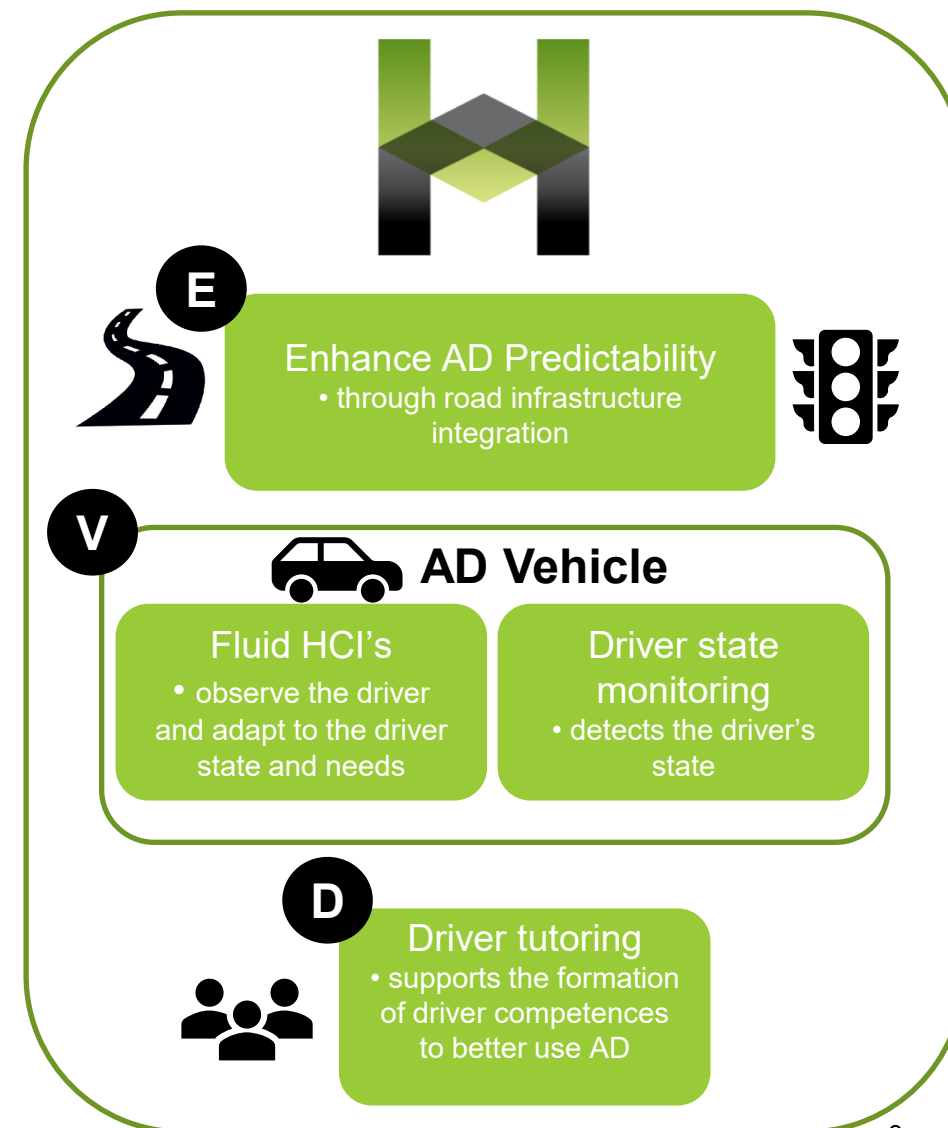
[www.hadrianproject.eu/](http://www.hadrianproject.eu/)



HADRIAN has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 875597.

## HOLISTIC APPROACH TO ADDRESS DRIVER ROLE FOR AD

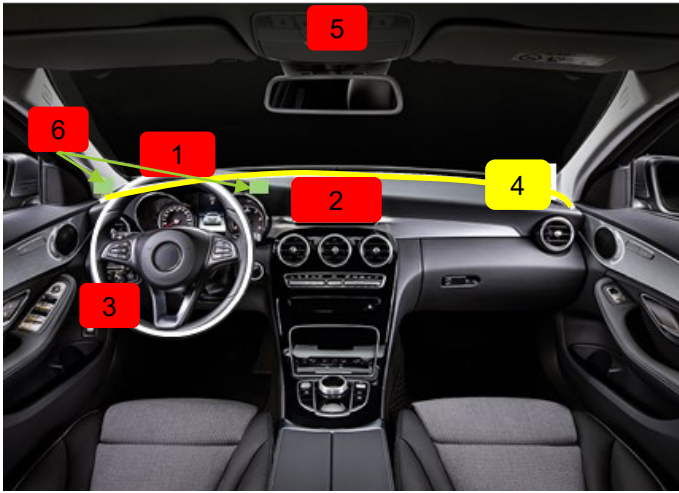
- ▶ Acceptable, safe AD driver role (E, V, D)
- ▶ Enhance AD Predictability through road infrastructure integration
  - To facilitate getting driver back in the loop
  - Allow better planning for NDRA
  - Enhance availability of RI support for increase availability and continuity
- ▶ Improve the AD Vehicle
  - Add driver monitoring to warn driver in case of incompatible driver state
    - SAE L2 monitoring, SAE L3 fallback readiness, and transition of control
  - Mutual adaptive “fluid” Human Computer Interactions
    - Reduce complexity and required knowledge for the driver
    - **Warn** only when and how needed
    - **Help** only when and how needed
- ▶ Help the AD User / Driver
  - Strengthen competences for AD usage via tutoring
    - Lessons before and reminders during and after the drive
    - Active feedback in case of inconsistent actions





# HADRIAN DEMONSTRATIONS

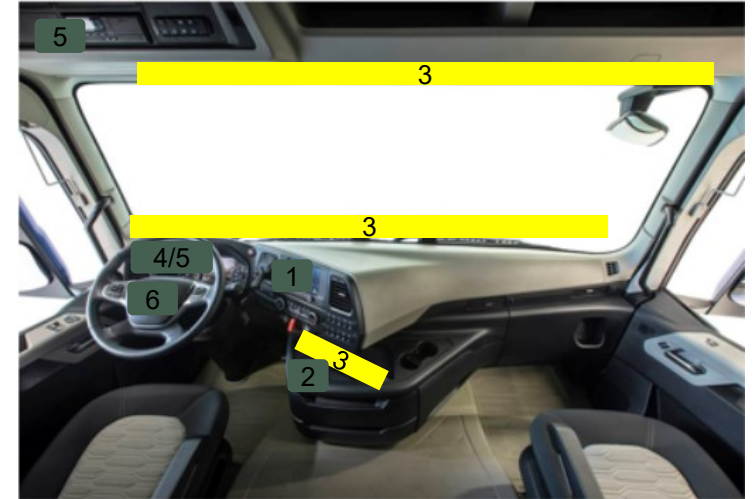
CEA : Commissariat à l'Energie Atomique  
 TEC : Tecnalía  
 TUD : Delft University  
 PLUS : Paris Lodron University of Salzburg  
 VIF : Virtual Vehicle Research Center  
 UL : University of Ljubljana  
 USR : University of Surrey



1. HUD displays time critical information for transition (UL):
2. HADRIAN AD predictability and tutoring on a tablet (VIF)
3. Steering wheel feedback (TEC)
4. Ambient lighting (PLUS)
5. Hands-on-wheel DMS camera (CEA & VIF)
6. Eye-gaze DMS cameras (CEA & VIF)
7. Auditory cues (TUD & ViF)



1. Hands-on-wheel DMS camera (CEA & TEC)
2. Ambient lighting (PLUS)
3. HADRIAN AD Display (VIF)
4. Auditory cues (TUD)
5. HUD (UL)
6. Haptic steering wheel (TEC)



1. Human-Centered f-HMI (FORD & USR)
2. Auditory Cues (TUD)
3. Ambient lighting (PLUS)
4. Truck Driver Monitoring System (FORD)
5. Basic Fit2drive App (CEA)
6. Steering wheel feedback (TEC)