SAFE-UP

PROACTIVE SAFETY SYSTEMS AND TOOLS FOR A CONSTANTLY UPGRADING ROAD ENVIRONMENT

SAFE-UP is a 3-year European H2020 Research & Innovation project launched in June 2020.

Progress on reducing road fatalities in Europe has slowed in recent years. The EU's mission to halve the number of road deaths by 2030 could be in jeopardy if this trend is not reversed.

More than **90% of road accidents are related to human factors.** Connected and automated vehicles **(CAVs)** could significantly reduce the number of serious injuries and fatalities. But for that to happen, we need to develop robust and holistic solutions that ensure the effective integration of safety measures targeting all road users: drivers, vehicle occupants, and of course our most Vulnerable Road Users **(VRUs)**, pedestrians, cyclists and motorcyclists.

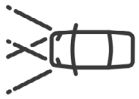
SAFE-UP is proactively making future mobility safer for all road participants.

On the Road to Future Mobility we will see an evolving mix of automated **(AV)**, conventional and new micro-mobility vehicles. With the coming changes to transport modes and vehicle behaviour, new risks will emerge from the novel interactions among all road users - 4-wheeled vehicles and VRUs. SAFEUP studies these impending road safety challenges to create holistic solutions aimed to maximise the expected safety benefits of automation and connectivity.

By integrating existing accident data with future traffic conditions and applying a new toolkit of safety metrics and sub-microscopic simulations of vehicle-to-vehicle and vehicle-to-VRU interactions, SAFE-UP will proactively identify future safety-critical scenarios among different road users, environments and vehicles, to prioritise the development of **active and passive safety system prototypes integrated into demonstrator vehicles.**

One passive safety system for **non-urban safety-critical scenarios** of which **60% of fatalities are car occupants**

DEMO 1 Occupant MONITORING combined with ADAPTIVE RESTRAINT system for **new seating positions.**



DEMO 2 In-vehicle system for enhanced VRU DETECTION in **bad weather conditions.**

Three active safety interventions for **urban safety-critical scenarios** in which **71% of fatalities are VRUs**

- 40% Pedestrians
- 19% Motorcyclists, scooterists
- 12% Cyclists

DEMO 3 Vehicle integrated BRAKING & STEERING FUNCTIONS to **avoid collisions with other vehicles and VRUs.**

DEMO 4 REAL-TIME SAFETY WARNINGS to VRUs' smart devices via **enhanced communication** among vehicles, infrastructure and a dedicated **APP.**

SAFE-UP IS HOLISTIC

Rounding out this holistic approach, SAFE-UP will produce targeted **education, training and awareness** schemes for fostering the safe integration of automated driving functions, including new traffic participation behaviours, correct use of safety technology, adoption of connected functions for VRUs, and hazard perception in future safety-critical scenarios. Dedicated training programmes will be developed for drivers, riders, cyclists and pedestrians.

SAFE-UP IS AMBITIOUS

To validate and prove the overall benefits of SAFE-UP's innovative technologies, novel safety assessment methods will be developed, including new virtual and physical tools. All together, SAFE-UP's innovative solutions will mitigate road incidents for total reductions by 2030 of up to:

5244 fatalities (33%)* **173,273 serious injuries (69%)***

**Predicted reductions from European Road Safety Observatory 2016 figures.*

MISSION

To ensure the safe integration of new AV and CAV technology in a constantly evolving mixed-traffic environment, meeting the EU goal of at least 10% reduction (from 2016 figures) in injuries and fatalities due to road incidents.

VISION

To proactively create holistic safety solutions with the combined potential to mitigate 64% of future fatal road incidents.

PARTNERS

The SAFE-UP consortium brings together the diverse expertise of researchers, leading OEMs and industry suppliers in automotive engineering, connected and automation technology, and experts in road user safety and training, all with established track records in EU road safety and innovation initiatives.

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www.safe-up.eu