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Research Area 1: **Safe & Inclusive Transport** Idea Number: **06**

Collaborative, Context-Aware and Intelligent Driving Risk Assessment

Trucks and heavy goods vehicles (HGVs) are at the forefront of trade and commerce in Europe. As a result, there are great efforts by researchers, governments and transport companies to reduce the road safety risks associated with them. With the abundance of sensors installed in vehicles that constantly gather data about drivers' actions, vehicle characteristics and environmental conditions, advanced computational and artificial intelligence (AI) methods are now being explored to automatically characterise the manner by which drivers operate vehicle controls and assess their impact on road safety. However, commercial driving is affected by the synergy and interaction between drivers' driving styles, drivers' physical and mental states, technologies and external factors, which are not considered in current intelligent driving assessment systems. Information about the synergy and interactions of these factors on driving is required to produce comprehensive and reliable driving risk assessments. To overcome the aforementioned challenges and limitations in assessing commercial driving risk, this multidisciplinary research aims at collaborating with crucial stakeholders in the driving sector to capture and evaluate the impact of contextual factors on commercial driving for the development of more reliable, intelligent driving risk assessment systems. To achieve this aim, a hierarchical fuzzy expert system is explored to capture and embed collaborative insights from stakeholders into the decision-support system. It is expected that the proposed system will provide timely and reliable support to road users, assist in the development of trustworthy monitoring and feedback in-vehicle technologies, and ultimately, support safe driving.