

BIOENGINEERING AND MEDICAL-SURGICAL SCIENCES

Occupants' safety in the era of autonomous vehicle

Funded By	CENTRO RICERCHE FIAT [P.iva/CF:07084560015] Ministero dell'Università e della Ricerca - MUR [P.iva/CF:96446770586]
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Context of the research activity	The research topic concerns the redefinition of restraint systems and occupant protection performance of current vehicles on the market in relation to self-driving cars, also known as autonomous vehicles.
Objectives	<p>The development and mass production of self-driving cars, also known as autonomous vehicles, has the potential to revolutionize transportation mobility and safety. Currently, motor vehicle operating laws, impaired driving laws, insurance laws and most other laws addressing the operation of vehicles in every state are premised on a significant assumption—that a human is in front of the steering wheel, operating the vehicle seated in a well-defined position. Industry and research organization around the world are now facing the new challenge to define standard, tools and methodologies to guarantee to the final user the same level of passive safety protection with vehicles that will offer new traveling positions and new cars interiors. Virtual simulation, component and system level testing, main driver for the development of the restraints systems and occupant protection performance, will have to be completely redefined and adapted to a brand-new challenge for the automotive industry.</p> <p>Candidate will work in south Europe Stellantis Safety center (Orbassano, Torino) in direct contact with the Biomechanics, Occupant Protection and Restraints System Integration (BOP/RSI) team operating with external data, passive safety simulation tools and crash-test facilities.</p> <p>In a brand-new scenario for the passive safety occupant protection the target of this research program is:</p> <ul style="list-style-type: none">- Evaluation and collection of different standards currently in development in worldwide research centers for passive safety in AV vehicles- Evaluation and definition of future in car occupant position standard- Collection and assessment of current restraints system proposal for self-driving solution by major worldwide supplier

- Development of virtual simulation models with selected load cases, restraints system and occupant position
- Sled Testing methodology development and validation

Skills and competencies for the development of the activity

The candidate for this role is requested to have:

EDUCATION

- Biomedical/Mechanical master degree

LANGUAGE SKILLS

- Fluent written/spoken English

ADDITIONAL

- Good skill in team working and problem solving
- Good skill in time management
- Availability for software and testing training
- Interest in automotive industry