OPEN POSITION AT UNISTRA IN THE FIELD OF SAFER MOTORCYCLING

MOTORIST (Motorcycle Rider Integrated Safety) is an **Initial Training Network (ITN)** Nr. 608092, funded under the FP7 Marie Curie programme of the Commission. **Duration:** Feb. 1, 2014 - Jan. 31, 2018.

BACKGROUND: The aim of the research activities within the project MOTORIST is to make the use of Powered Two Wheelers (PTWs) safer such that fewer accidents occur and if an accident is unavoidable the consequences for the rider to sustain injuries are minimal. The project is divided in three work packages (WPs) with three separate but related goals. The first work package aims to improve the rider's skills with training strategies that are derived from in-depth accident data and from a quantification of rider behaviour in critical situations. The second work package aims at developing advanced safety systems that improve the interaction between the rider and the PTW by modelling the rider, also based on the in WP1 quantified rider behaviour. The third work package considers the cases where the crash is unavoidable and will develop personal protective equipment to protect the riders, given the input conditions from WP2 at the moment right before impact. The end result of this project will be a set of rider training guidelines that are proven to be effective, safety system concepts implemented on PTWs and improved personal protective equipment and accompanying standards. These can be used by PTW industry partners in product development processes and by stakeholders to educate riders. This will ultimately improve the safety of PTWs and moreover the perceived safety, which will make more people decide to use a PTW as a good alternative to other means of transport.

CONSORTIUM: MOTORIST is formed by a group of participating hosts, combining leading education and research institutions as well as industrial enterprises in 6 countries of the EC. Thus the researchers will participate in both the scientific research work and the practical application of new methods for testing and simulation. They will profit from extended international knowledge after their academic education when starting to work in the industry.

COORDINATOR: The project is coordinated by **UNIFI** (Università degli Studi di Firenze), Firenze (I). The MOTORIST Project Coordinator is **Prof. Marco Pierini**, marco.pierini@unifi.it

OBJECTIVES: The research of MOTORIST ITN will focus on making PTW use safer, through a clear strategy that will be pursued according to the following specific objectives:

- Firstly an improvement of PTW safety will be achieved by improving methods for rider training, with special attention to young riders (the most exposed to be involved into an accident) and elderly riders (because of the increasing mean age in Europe). In fact a fundamental actor of the road safety improvement is the rider who significantly influences the probability of accidents to happen with their risk assessment, decision making and control skills.
- Secondly the safety improvement will be achieved by developing active safety systems that improve the interaction between the rider and the PTW, with particular attention to the urban environment (where PTW use is expected to increase and where traffic scenarios are complex)
- Thirdly, for cases where crashes are unavoidable, personal protective equipment will be developed that protects the rider, helped by information from the event prior to the impact.

MOTORIST will use a multidisciplinary approach of rider behaviour, training, active safety and passive safety. The resulting expertise, training methods, and PTW innovations will be of high interest to stakeholders, some important also involved as MOTORIST Associated Partners, on rider training and for fundamental links to the EU Motorcycle Industry and moreover to the PTW or components industry since design improvements to PTW related products are foreseen.

UNIVERSITÉ DE STRASBOURG

MOTOR-AST

Marie Curie Actions
Human resources and mobility

MARIE CURIE ELIGIBILITY CRITERIA – in short:

- **Early-Stage Researcher (ESR):** holds an MSc degree in Mechanics and has less than 4 years of experience and has not yet been awarded a doctoral degree[1].

  Or

- **Experienced Researcher (ER):** researchers having at least 4 years of research experience (full time equivalent) or researchers already in possession of a doctoral degree, independently of the time taken to acquire it[1]

PARTNER UNISTRA is looking for an ESR - Duration 36 months focusing on helmet optimization and helmet standard.
Main topic will be the modelling of motorcycle helmet coupled to the human head model under impact. Human soft tissue as well as composite and foam material will be addressed. The first task will be the optimization of helmet mechanical properties against biomechanical injury criteria under linear and tangential impact conditions. A second task will focus on the development of new helmet test methods in collaboration with other partners. The candidate will benefit of a specific training program in soft tissue and composite material modelling as well as methodology in real world accident simulation.

CANDIDATE PROFILE: The research is highly multidisciplinary. The candidate should have an Engineering or Physics or Mechanics degree and an adequate mathematical and computational background.

- Finite element methods
- Dynamic characterization of material constitutive laws
- Candidates who have the proper qualifications may get the opportunity to perform this work as part of a PhD study.
- All members of the network are equal opportunity employers, both female and male candidates are invited to apply.

The research activities will mainly be carried out at UNISTRA located in (Strasbourg, France), possible combined with research visits and/or short-term secondments to other members of the network.

APPLY NOW!

Application Deadline: july 2014

Targeted Start Date: September 2014.

APPLICATION: To apply, please send a **detailed CV** together with a **letter of motivation** and **names of reference(s)** to

Prof. Remy Willinger
remy.willinger@unistra.fr
UNISTRA-IMFS, 2, rue Boussingault, 67000 Strasbourg, France

The remuneration will be in line with the EC rules for Marie Curie grant holders and consists of a salary augmented by a net mobility allowance. http://cordis.europa.eu/fp7.

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[1] The research experience includes the period since gaining a university degree giving the candidate access to doctoral studies (the degree must entitle the holder to embark on doctoral studies, without having to acquire any further qualifications). Among others, following criteria apply for eligibility:

- the researcher shall not be a national of the State in which the hosting partner's research team is located
- at the time of appointment, the researcher may not have resided or carried out her/his main activity in the country of the hosting partner for more than 12 months in the 3 years immediately prior to her/his appointment
- women are especially encouraged to apply.