OPEN POSITION AT UNIVERSITY OF FIRENZE 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) addressing three separate but related goals. The first work package aims to improve the rider's skills by training strategies that are derived from in-depth accident data analysis and from a quantification of rider behaviour in critical riding 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 according to the quantification of riders behaviour carried out on. 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 in-depth accident data analysis at the moment right before impact. The end result of this project will be a set of effective rider training guidelines, safety system concepts implemented on PTWs and improved personal protective equipment and accompanying standards. These results can be used by PTW industry partners in product development processes and by stakeholders to educate riders. The latter aspect will definitely improve the PTWs safety and moreover the perception of safety as well, which will make more people prefer the use a PTW as 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** (University of Firenze), Florence (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 enhancing and optimizing the 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 the riders are a fundamental actor of the road safety improvement is and they significantly influence the probability of accidents to happen with their risk assessment, decision making and control riding 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 the PTW use is more prevalent and where traffic scenarios are more complex)
- Thirdly, addressing unavoidable crashes, personal protective equipment for the rider will be developed, supported by the information collected 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 of them are also involved as MOTORIST Associated Partners, on rider training) and they will bring fundamental links to the EU Motorcycle Industry and moreover to the PTW or components industry since design improvements to PTW related products are foreseen.

UNIVERSITÀ DEGLI STUDI FIRENZE

MOTOR-AST

Marie Curie Actions
Human resources and mobility

MARIE CURIE ELIGIBILITY CRITERIA – in short:

- **Early-Stage Researcher (ESR):** She/he holds an MSc degree and has less than 4 years of experience and has not yet been awarded a Doctoral degree[1].
- **Experienced Researcher (ER):** Researcher having at least 4 years of research experience (full time equivalent) or researcher who already hold a Doctoral degree, independently of the time taken to acquire it[1]

University of Firenze (Florence, Italy) is looking for one Early Stage Researcher (ESR2.5) to work, for 36 months in the *"PTW safety system"*

ESR 2.5 will develop the safety systems that are based on the real-time PTW implemented rider state estimator.
She/he will develop an avoidance and mitigation safety systems from automotive and PTW perspective and will develop a new safety system concepts. ESR2.5 will implement the sensors necessary for the activity on PTW, in collaboration with other ESRs. She/he will develop innovative safety system concepts taking into account the rider model requirements and she/he will perform urban scenario riding tests with instrumented PTW. Eventually, ESR2.5 will asses the benefit of new safety systems, integrated with real-time rider models and environmental perception.

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

- 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 the University of Firenze, (Florence, Italy), **combined with research visits and/or short-term secondments** to other members of the network.

APPLY NOW!

Application Deadline: 15 May 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. Marco Pierini - marco.pierini@unifi.it
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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:

- 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