



Editorial

by Ugo Galvanetto

Dear Partners of the MYMOSA network and other interested readers, the second issue of the MYMOSA newsletter is out two years and a few months into the 4-year project. I am very pleased with the progress that we are making. At the moment 12 people are employed in the MYMOSA project and a few more will be in the near future. This newsletter does not only provide an exchange of information within the network but also a way for us to present our activities to other parties interested in motorbike safety.

The general objective of the MYMOSA project is to improve Power Two Wheelers (PTW) safety and riders' safety leading to a significant reduction of injuries and fatalities of motorcyclists. This objective will be reached by co-operation of researchers from universities, research institutes and companies. Generation of multi-disciplinary know-how (accident-tology, accident dynamics, biomechanics), development of simulation tools, predictive models and new protective equipment concepts and a new safety vision through the implementation of integrated safety (new devices, sensors, control systems) are all outcomes expected from the MYMOSA activities. The research project itself trains Early Stage Researchers (ESR's) and is used as a tool for transfer of knowledge. More information on the project can be found at:

www.mymosa.eu/

Workpackage 5: Network Trainings activities by Marco Pierini

The aim of this workpackage is the training and education of the Early Stage Researchers (ESR's) and Experienced Researchers (ER's) employed by the network. At local level, training activities are introducing the ESR's and ER's into innovative activities of existing research teams. On the network level, training courses, seminars and workshops provide know-how and skills for relevant PTW safety research areas.

In September 2007 the first course was held in London (United Kingdom). Advanced information was provided about biomechanics (human-vehicle interaction, human body), motorcycle accident simulation, presentation skills and technology innovation process in industry. Also information was shared about "Intellectual Property Rights" (IPR).

The 2nd course was held on January 23-25, 2008, organized at the DEKRA Crash Test Center, Neumünster in Germany. The focus was on accident reconstruction and accident dynamics: main topics were the basis of driving dynamics, pre-crash, crash and post crash phases kinematic analyses, paying attention to PTWs and riders' reaction behaviour. On the spot, a real-world accident scenario was tackled, taking the environmental influences into account.

The 3rd course on PTW design was organized in Florence by the University of Firenze in Italy, on October 1-2, 2008. Besides theoretical courses on PTW evolution, suspension, brake and transmission system design, two visits to Piaggio in Pontedera and Ducati in Bologna were organized, providing the students the opportunity to get an insight in the PTW productive reality.



Marco Pierini
Associate Professor
University of Firenze

The next course will, most likely take place in April 2009. The network discussed and approved the organization of a "**Safe riding**" course. This will be with the support of an advanced/safety driving institute close to TNO-Helmond (The Netherlands). The training program will foresee the teaching of technical background on ideal riding approaches in various situations (dynamically dangerous and emergency). More information on this course is mentioned further in this newsletter.

Other courses being organized are the Stochastic mechanics course organised by the University of West Bohemia and the Optimisation course organised by LMS International. More information on both courses can be found in this newsletter.



(Barely) Legal Alien: „A Portuguese man in Eindhoven“

By Filipe Fraga

O meu nome é Filipe Fraga. No, that's not some strange Slavic language there, that's just Portuguese. "Ah come on, enough with that, who cares about some sibling sounds that are spoken – no, whispered, or better yet, monotonically exhaled – by "about 10 million people" in some remote country"? Well actually, you should care: it's the 5th biggest language worldwide in terms of native speakers, and the fastest growing one after Mandarin and Hindi. The truth should be told though, it does have a noticeable visigothic substrate.



As for those amongst you who are wondering what sort of dementia was manifested in the title above (so about 3/5 of a person out of the 2 who are still reading this, and I'm not sure about the second), think Gordon Sumner, aka Sting. "And where did HE get it from?" Well, Shakespeare's "Sonnet 130", which incidentally is all about mocking irksome writing conventions... does that makes sense?

Now may be the time to ask, or rather demand, where exactly I'm going with this. Fair enough. In fact, I'd like you to ponder just for a minute upon a hypothetical (and I'm sure most will agree, desirable) Europe-wide target: the carving of a "European identity" by tearing down language barriers and raising linguistic standards to uniform excellence. So now I wonder... would we really achieve this communication nirvana by generating a "common" language and imposing it on everyone? Or rather by instilling in each one of us the understanding and interest of other tongues to the level where we can have their users (and their perception of our message) in mind when we deploy our communication? Similarly, if one were to raise knowledge of the arts as vehicles of mutual understanding, should we see disruptive (for the current "zeitgeist") manifestations of the former as unproven, futile displays of immaturity and misalignment? Or rather realise that a few mere decades separated the mocking and the enshrining of Shakespeare?

Almost everyone involved in Marie Curie projects is working internationally to some extent, even if based in one's own country. Managing and, in some cases, embracing that environment already provides most of us with the vision, perspective, approaches and tools to

acknowledge, integrate and leverage the implications of the national (and regional) contexts which form the landscape where demanding targets are to be defined and, ultimately, met.

So all in all, I realise, we're on the right track to actually improve PTW-related safety at the European level as long as we remember that optimising a complex of "status quos" is only as effective as our understanding of the individual "status". So basically, as long as we brush up on our Portuguese and remember our Shakespeare. And think, approach and implement boldly, not just in scientific terms.

As a final note, I'd like to point out that the absence of research-related points in this text is not a result of my chaotic writing style and laziness. Those features are unquestionably present, but they had no bearing on editorial choices. Instead, I just figured we show, discuss and write about our work often enough and devote little to no time to those other issues that are key "enablers" for the former.

Interpersonal interaction is, after all, the fabric society is made off, and science is somewhat pointless when not measurable in terms of societal impact. Then, if all else fails, let's just call it extra motivation (through researcher "personalisation") to actually follow the network's research, pay attention to presentations and read papers and reports.

(I know, I know, it's not needed because everyone carefully reviews everyone else's work, but still... please indulge me. The world at large will thank each and every one of us for it)

From London

By Mazdak Ghajari



As a graduate with a few years of engineering experience, I've found MYMOSA a network where scientific research serves the society. I got my BSc and

MSc degrees in solid mechanics and worked for almost 4 years for two different industries: Automotive and Petrochemical. I was always wondering where and how academia and industry could come together for a common purpose. Nonetheless, I was inclined to have a career in academia. That's why I applied for the PhD position at Imperial College London regarding safety helmet standards. Since my arrival in London from Iran, September 2007, I've found myself in the right place: a network where universities, institutes and companies are



MYMOSA Towards Integrated Safety for Powered Two – wheelers

Issue 2 – February 2009

gathered to improve the safety of Motorcycles and Motorcyclists (an urgent social need).

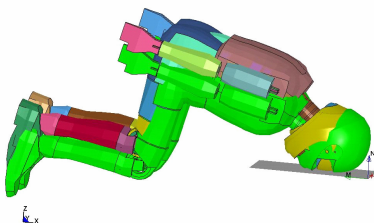


Speaking about my research subject, I am investigating the possible measures to improve the helmet standards in order to further mitigate injuries in motorcycle accidents. Since the function of the helmet is to protect the head, I studied some sources on the head impact biomechanics. Meanwhile, I learnt how to use one of the most popular softwares for finite element analysis of impact phenomena, LS-DYNA. I spent three months at University Louis Pasteur (Strasbourg, France) with Professor Remy Willinger and his research team. It was a great time when I learnt about their human head FE model. Add to this the spectacular nature of Strasbourg in spring. Now I am investigating the effect of body on injury metrics in motorcycle accidents.

I believe that doing the PhD within the framework of the MYMOSA training network has several advantages. First of all it acquaints me with the research teams who are working on different aspects of motorcycle accidents. Moreover, I have the opportunity to present my work to the experts of the field during six-monthly network meetings and benefit from their feedback. Each meeting is organized and hosted by a different partner, so it gives the possibility to visit beautiful European cities at low cost. In fact, for me who come from a non-European country, it is another exceptional experience that I call "the taste of Europe". Secondment at other universities, institutions or companies is also a fruitful network activity which facilitates the transfer of knowledge.

I am honoured to work as a MYMOSA early stage researcher. I am sure it will become a core in my career. Hereby, I'd like to thank the people who have chosen me for having given me this opportunity.

LS-DYNA KEYWORD DECK BY LS-PRE 950mlrg



Virtual impact test of a helmet using the Hybrid III dummy

Recruitment – Employment status

At the moment 9 Early Stage Researchers (ESR's) are employed in the network. On the 1st of May 2008 the first experienced researcher started in Mymosa at

ALTAIR Development France. His name is Milan Toma and he will work within work package 1 ensuring the transfer of knowledge within WP1. Topics are Finite Element modelling of dummies/vehicles and extend this knowledge to other WP's where FE models are needed. We welcome Milan and the two other experienced researchers Kimmo Kuavo at Ibeo and Michal Manka at LMS and wish them a fruitful and interesting time within the MYMOSA project.

Vacancies

1. TNO, the Netherlands: several short Early Stage Researcher positions on various topics. For more information contact dr. Lex van Rooij at lex.vanrooij@tno.nl



2. LMS, Belgium: Early Stage Researcher position in Motorbike Safety. This researcher will work on multi-body dynamics model of a motorcycle with driver and simulate accident dynamics with the integrated motorcycle-driver model on the road. The candidate should have a degree in engineering (preferably mechanical or electronics) and an adequate mathematical background. For more information contact dr. Jian Kang at jian.kang@lms.be

3. LMS, Belgium: Early Stage Researcher position in Motorbike Safety (ER5). This researcher will work on technology investigation and training on virtual accident dynamics. He/she will work on the most common motorbike accident dynamics, definition of the forces applied to the helmet, their direction, magnitude, etc. The candidate should have a degree in engineering (preferably mechanical or material science) and an adequate mathematical background. For more information contact dr. Jian Kang at jian.kang@lms.be

4. DAINESE, Italy: New ESR position on the development of innovative concepts in the design of motorbike helmets. For more information contact ing. A. Cernicchi at alessandro.cernicchi@mavet.it.

Advanced Motorcycle Safety Training course by Filipe Fraga

Having started out as an idea stemmed from the ESRs, the whole network discussed and supported the potential benefits and the viability of organising a "hands-on event" related to the dynamics of motorcycle driving (exact date to be confirmed).



Towards Integrated Safety for Powered Two – wheelers

Issue 2 – February 2009

With that in mind, a contact was established with Trainingscentrum Leeuw (an advanced/safety driving institute) close to the TNO offices in Helmond (the Netherlands) which offers a number of courses for cars and motorcycles. The purpose is providing real-world input and context for MYMOSA work on PTW safety. The training program will look like something along the lines of

1. Teaching some technical background on ideal riding approaches in various situations, depending on the specific purpose (road safety, road comfort, effectiveness, fun!).

2. Providing awareness of typical "dynamically dangerous" and "emergency" situations, what actions should be done to avoid and correct them, and what are the effects of those actions or the absence of them on the behaviour of the PTW.

Based on existing experience, LMU and TNO discussed the possibility of equipping the motorcycles with sensors and/or recording the motion and reactions of the participants, so that the resulting data and insights could be readily used within the project. This particular topic is not clear at the moment and will be developed further on.

Since a number of researchers were in the process of obtaining their driving licenses and the fact that the weather and temperatures are simply inadequate for motorcycle riding at the moment, the final date and details for the event will soon be fixed (April 2009). We expect it to have a very measurable impact in terms of the researchers' perception of the dynamic problem at hand, the availability of relevant data, and also... team spirit!

PMC Meeting Plzeň

By Luděk Hynčík

Plzeň will host the 4th Project Management Committee meeting on March 30, 2009. The meeting will be held at the facilities of the University of West Bohemia. Together with the PMC meeting, the Mid Term Assessment meeting will be held. The EU project officer will also participate to this important meeting. During the meeting, both administrative and technical issues will be discussed and the ESR's and ER's will present the results of their current work in different work packages and discuss it among all partners. The full one week is reserved for MYMOSA activities since just after the meeting, two scientific courses will be given to the ESR's and ER's. The first one provided by the University of West Bohemia focussed on stochastic mechanics and the

second one provided by LMS focused on optimisation. Plzeň also enables rich cultural and social background leading to informal meetings and discussions during the evenings.

Upcoming events

Project management meeting (incl. Mid Term meeting) – *Mymosa members only*

Date: 30 March 2009

Location: University of West Bohemia - Plzeň (Czech Republic). For more information please contact: mr Ugo Galvanetto at u.galvanetto@imperial.ac.uk.

Stochastic mechanics course

Date: 31 March-1 April 2009

Location: University of West Bohemia - Plzeň (Czech Republic). For more information please contact: Dr. L. Hynčík at hyncik@ntc.zcu.cz.

Optimisation course

Date: 2-3 April 2009

Location: University of West Bohemia - Plzeň (Czech Republic). For more information please contact: Dr. Jian Kang at jian.kang@lms.be.

The dynamics of motorcycle driving (a hands on event)

Date: April 2009 (exact date to be confirmed)

Location: Helmond (the Netherlands)

For more information please contact: mr Filipe Fraga at filipe.fraga@gmail.com

Colophon

This newsletter is published at least twice a year. It supports the members of the MYMOSA research training network and other interested parties in the motorcycle safety community by informing them about the work progress and related activities.

Questions or suggestions?

Please contact us!

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SIXTH FRAMEWORK PROGRAMME

