Editorial

2012 is a landmark year for the FOT community, with two of the European FOT projects coming to an end – euroFOT and TeleFOT.

The euroFOT final event in June concluded the project and revealed exciting results from a four-year study focusing on the impact of driver assistance systems in Europe. If widely deployed across the EU, the systems studied by euroFOT should reduce accidents and save resources. The two-day final event gave the floor to around 30 speakers and was very well attended with almost 300 participants.

We are now looking forward to the final event of TeleFOT. It will take place on 27 and 28 November in Brussels, and I am confident that it will be a big success as well. This issue of the newsletter presents a good opportunity to learn more about the achievements of the project, the results and findings after 4 years of hard work. The report on the project’s achievements has been complemented by an interview with TeleFOT’s project coordinator, Petri Mononen, in the spotlight of the newsletter.

The FOT community is already anticipating and preparing for one of the most widely attended events, the ITS World Congress, which this year is going to take place in Vienna from 22 to 26 October. In addition to the Congress, where the FOTNet 5th International Workshop will be held, the results from FOT-related projects and insights from the FESTA methodology will be promoted at the 4th FOT-Net Seminar which will explore how to compare results from different FOTs and re-use data. The seminar will be organised in conjunction with the TeleFOT final event in order to create synergies between both events in terms of participants and discussion content.

Finally, this issue of the newsletter will open up more widely to international activities and will present, together with the European initiatives, some highlights from the US “Safety Pilot”.

With all this in mind, I am persuaded that FOT-Net will continue to make a good job in supporting the networking and information exchange within the FOT community and between the different FOTs by means of seminars and events, the FOT Wiki, newsletters and a dedicated website. I am also confident that these efforts will deliver promising results.

I wish you a pleasant and inspiring reading.

Myriam Coulon-Cantuer, FOT-Net Project Officer DG CONNECT, European Commission

In the spotlight

TeleFOT: In-Vehicle Aftermarket and Nomadic Devices for Safe, Smart and Clean Mobility in Europe

In November 2012, the Field Operational Test of Aftermarket and Nomadic Devices in Vehicles – TeleFOT – will come to an end and unveil its results, with the aim of enhancing the well-being of Europeans by working towards a safe, smart and clean mobility. TeleFOT’s project coordinator Petri Mononen walks us through the evolution of this Integrated Project, and gives us a preview of what will be showcased at the TeleFOT Final Event.

What does TeleFOT stand for?

Petri Mononen: TeleFOT stands for “Field Operational Test of Aftermarket and Nomadic Devices in Vehicles” and is an Integrated Project under the EC FP7 that aims at assessing the impact of nomadic devices on road transportation and mobility by use of the Field Operational Test methodology. TeleFOT is the first European large scale FOT to have carried out an in-depth research on the support that nomadic devices offer in increasing driver safety, fostering greener mobility and reducing traffic congestion. The project has been running since June 2008 and will be drawing to a close this November.

What is the added-value of carrying out such a study?

P. Mononen: We all can acknowledge that nomadic devices such as portable navigators and smartphones have well and truly penetrated the market during the last decade or so. For example, hundreds of millions of smartphones that can handle GPS navigation software are sold worldwide on a yearly basis. Simultaneously, the same has also happened to thousands of services that are provided through these nomadic devices – including services directed to drivers and travellers. Even though both the device and services usually go through a thorough testing cycle in their design and production phases, up to now there still have been surprisingly small amounts of transparent unbiased scientific information available on the effects of those services on the driving task in terms of safety, efficiency and mobility. TeleFOT will eventually shed some light on these issues, based on real-life subjective and objective data – data that has been collected on millions of kilometres driven by thousands of everyday users who interacted with services such as navigation, green driving support, real-time traffic information and speed limit information.

What is the expected outcome of TeleFOT?

P. Mononen: First of all, TeleFOT’s findings and recommendations will help steer policy making and investment toward increased cost-effectiveness. On the other hand, it will help the industry design better and more attractive products. Ultimately, the project outcomes will help enhance the well-being of Europe in general by working towards a smarter and more cooperative transport system. This has been the main objective of TeleFOT since the beginning, and I am proud to say that, upon closure, TeleFOT will have met its set objectives.
Are the results already available?

P. Mononen: As I mentioned before, TeleFOT will end in November. However preliminary results are already available and published, and have been presented at various congresses worldwide. For instance, we can already state that certain types of green driving solutions for professional fleets have a permanent effect on both fuel consumption (hence on the environment) and on traffic safety. This is just an isolated example, but we can already imagine this single solution will affect future national and European policies. As for the final results, there will be a sneak preview at the upcoming 18th ITS World Congress, in Vienna, with technical and scientific presentations, as well as an overview of the general project outcome and main results in a Special Interest Session (SIS 67). Most importantly however, the TeleFOT Final event will present a very detailed walkthrough of both the final results and recommendations – including the numerous lessons learned from carrying out a major FOT. Not to forget that TeleFOT has contributed to enhancing the FOT methodology itself.

Can you tell us more about the TeleFOT Final Event?

P. Mononen: The TeleFOT Final Event will take place on 27-28 November, at Autoworld Museum (Brussels). Apart from the results and lessons learned, the event will showcase selected elements of the project, and give a sneak preview of coming out a large scale FOT. This event will be of interest to policy makers, human factor experts, ICT industry engineers and technicians involved in the development of nomadic products, automotive industry engineers and vehicle manufacturers, road infrastructure operators and authorities, traffic safety experts, transport economists, and nomadic device service developers. All of these groups will benefit from the TeleFOT results and be able to make more informed – hence better – decisions in the future with regard to the deployment of services for nomadic and aftermarket devices. So I hope you will join us, and I look forward to seeing you there!

FOT-Net services

FOT-Net Stakeholder survey

FOT-Net is currently carrying out a Stakeholder Consultation. Stakeholders are people and organisations that are involved in, or connected to FOTS, for example by giving support to FOTS or benefiting from their results. Through this consultation, FOT-Net would like to learn more about stakeholders’ experiences, opinions and attitudes towards FOTS. As part of this consultation a survey has been prepared to collect the stakeholders’ views. The end goal is to evaluate how FOTS have met the stakeholders’ needs and issue recommendations towards the deployment of ICT solutions towards smarter, safer and cleaner mobility.

To take part in this survey contact info@fot-net.eu

WG activities

The working groups of FOTNet are working on enhancing and revising the FESTA methodology for FOTS. The working group on Data Analysis is currently consulting experts on a wide range of issues dealing with experimental design, data collection and storage, data processing and analysis. The first set of recommendations will become available before the end of the year. The group working on the Definition of Incidents and Events is working together with European and international experts to produce a report with improved definitions. The group on Legal and Ethical issues has produced an extensive report, comparing the legal framework for FOTS in France, Italy, Spain and the Netherlands, in addition to the more German perspective taken in the FESTA handbook. It turns out that the legal framework is quite similar throughout the states, but there are also certain national peculiarities. The group on Impact Assessment and Scaling up has developed a questionnaire based on an inventory of topics of interest, such as approaches and methods, and use of models and tools. This questionnaire is the basis for one-to-one interviews which are being carried out by working group members. In the beginning of 2013 a document with initial insights on best practices, issues, gaps in knowledge, lessons learned, and recommendations will be produced. Finally the group on Data Sharing is working on defining the principles of sharing.

Save the Date!

Coordination Day for Cooperative Systems FOTs

The aim of the Coordination Day for Cooperative Systems FOTs, held on 25 May, was to provide a forum for discussion for EC-funded projects working in this domain. The workshop was not restricted to FOTs. Other EC-funded projects, for instance CIP Pilots, were encouraged to attend this workshop. More specifically, the objectives were to build stronger cooperation between the projects, harmonise activities, discuss joint testing opportunities and map future cooperation.

Four key areas were identified for discussion:

- Interoperability of Cooperative Systems and feedback to standards
- Data Sharing
- Dissemination of Cooperative Systems
- Benefits through cooperation between FOTs at EU and international level
- Deployment prospects

Stakeholder meetings

Special session cooperative systems at ITS World Congress

SIS48 - Cooperative ITS Field Operational Tests in Europe, Thursday 25 October 2012, 09.00-10.30

Over the last few years, a number of European countries have invested in the assessment of FOTS on Cooperative ITS involving public and private stakeholders. This special session will bring together national FOT activities in five European member states. The aim is to present their achievements as well as their underlying deployment and exploitation plans.

FOTNet provided support to the EC - DG CONNECT in the organisation of this workshop and served as rapporteur.

FOTNet will chair the session as it represents the strategic networking platform dedicated to the promotion of FOTs.

Organisers: Irina Silva, Project Manager, ERTICO – ITS Europe

Moderator: Dr. Maxime Flament, Head of Sector SafetyMobility, ERTICO – ITS Europe

Speakers:

- Francisco Sanchez, Electronics & ITS Director, CTIAG, Spain
- Gérard Segarra, Engineering division, Cooperative ITS Innovations PILOT, Renault, France
- Dr. Christian Weiss, Project leader simTD, Daimler AG, Germany
- John-Fredrik Grönlund, Manager Traffic Accident Research VCC, Sweden

To know more about the other FOT related sessions visit: http://fot-net.eu/en/news_events/sessions

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International Workshop in Vienna

There is a need for the different global regions (Europe, Asia-Pacific and North America) to cooperate on common FOTS issues, such as data handling and sharing, methods and deployment. With successful events organised at the ITS Congresses in New York, Stockholm, Busan, and Orlando, FOT-Net has established an international network of FOT operators aiming to tackle common working issues and foster cross-regional cooperation.

The next international workshop will offer round tables targeting issues related to data analysis, impact assessment & scaling up, data sharing in the context of cooperative systems FOTS and naturalistic driving studies - events & incidents definition.

Date and time: Sunday, 21 October 2012. Round tables start at 08.00. Plenary session starts at 12:00 with lunch and concludes at 15:30.

Place: Hotel Courtyard by Marriott Wien Messe

The workshop is free of charge.

For more information, contact: Irina Silva, Project Manager, ERTICO – ITS Europe, info@fot-net.eu

The Workshop report is available online: http://fot-net.eu/en/news_events/sessions
FESTA seminars

FOT-Net seminar ‘How to compare results from different FOTs and re-use of data?’

The next FOT-Net seminar will be organised in Brussels on 26 November, the day before the TeleFOT project final event (27-28 November) - two good reasons to join us in Brussels.

As the FOT-Net wiki (www.fot-net.org/en/catalogue) shows, a large number of Field Operational Tests (FOTs) have been performed or are on-going. FOTs aim to assess the efficiency, quality, robustness and acceptance of ICT solutions used for smarter, safer, cleaner and more comfortable transport solutions. These ambitions cannot be fulfilled completely by just one FOT, so in order to know more about the impact of these systems it would be a great step forward if we could use the complementary results of different FOTs to make the right choices for future transport. Two large European FOTs have either finished (euroFOT) or will finish soon (TeleFOT in November), and we look forward to learning about their outcomes. Although the first preliminary results are not yet addressed Advanced Driver Support Systems and the second project tested Nomadic Devices, it will be very interesting to discuss how they could complement each other, both in terms of results and methods used.

The FOTs on cooperative systems are ongoing, but a major issue for these cooperative projects is how their combined results may answer questions about the future impact and deployment of communication between vehicles and infrastructure, and between vehicles.

FOTs generate a huge amount of data, and do not have the resources to fully analyse it. How to re-use this data, including by people other than the project partners, and to share it within the FOT community is the second topic to be addressed in the seminar. Which data could be shared on which terms, and how you would and understand the data and what are the obligations of those providing the data? These are some of the questions currently being discussed in the FOT community and will be addressed at the seminar.

The seminar will consist of presentations, discussions, and small group exercises. We look forward to an active and interactive event. If you have questions, please let us know. The agenda may be found on the website, where you can also register.

Registration and more information: http://www.fot-net.eu/en/our_services/seminars/

News from FOT projects

FOT projects around the world represent an invaluable source of scientific data. FOT-Net promotes and facilitates the exchange of knowledge. In this section we report regularly on the objectives and results of ongoing FOTs.

euroFOT

The study demonstrates how driver assistance systems can increase safety and fuel efficiency across Europe. On 26 June 2012, the euroFOT consortium published the findings of a four-year study focused on the impact of driver assistance systems in Europe: the study revealed the links between these systems and improvements in driver behaviour, fuel efficiency and traffic safety, as well as overall cost savings.

For over twelve months, one thousand cars and trucks equipped with advanced driver assistance systems travelled European roads, and, for most of them, at each turn, acceleration, and lane change, their movements were tracked and recorded. The Field Operational Test focused on eight distinct vehicle functions: Adaptive Cruise Control (ACC), Forward Collision Warning (FCW), Speed Regulation System (SRS), Blind Spot Information System (BLIS), Lane Departure Warning (LDW), Curve Speed Warning (CSW), Adaptive Cruise Control (ACC) and Dynamic Route Guidance System (DRGS). Cars equipped with both systems could have reduced by 20% the injury accidents on motorways, affecting up to 15% percent of these accidents. Additionally, the study revealed the link between these systems and improvements in driver behaviour, fuel efficiency and traffic safety, as well as overall cost savings.

Some Key Results

Adaptive Cruise Control (ACC) and Forward Collision Warning (FCW) Cars equipped with both systems could have reduced by 20% the injury accidents on motorways, affecting up to 15% percent of these accidents. Additionally, the study revealed the link between these systems and improvements in driver behaviour, fuel efficiency and traffic safety, as well as overall cost savings.

- Speed Regulation System (SRS = Speed Limiter (SL) + Cruise Control (CC)) - It was observed that over-speeding and harsh braking events were reduced when it is in use. The effect of CC on over-speeding was a strong increase while strong jerk, critical time gap, and harsh braking occurrences were reduced.

- Curve Speed Warning (CSW) - Around 76 percent of the drivers felt that safety was increased by CSW. Some participants stated that they used CSW as an indicator for adopting a more defensive driving.

DRIVE C2X

The European reference for cooperative driving

DRIVE C2X aims to accelerate the deployment of cooperative mobility systems by creating a reference system, designing use cases and establishing a harmonised testing environment throughout Europe.

After the development and validation of the DRIVE C2X reference system, the project is entering an important phase where the system is being deployed in the test sites for piloting and eventually for field operational tests. To demonstrate the reference system in action, DRIVE C2X, jointly with DITCM and TNO, organised its second test site event in July 2012 at the DRIVE C2X test site in Hamlord. The demonstration on public roads unveiled numerous new safety and efficiency applications on a specially designed user interface. The vehicles exchanged warnings of approaching accident-prone areas, emergency vehicles, obstacles, construction sites and adverse weather conditions and received green light optimised speed advisories and in-vehicle signage. At the Test Management Centre, 150 guests observed the data processing including traffic management and real-time data logging and analysis.

The next opportunity to experience DRIVE C2X in action will arise in October at the ITS World Congress in Vienna, where DRIVE C2X was invited to exhibit at the European Commission stand, and consortium members will present project results in two special sessions and eight presentations. DRIVE C2X technology will also power the cooperative mobility demonstration organised by the CAR 2 CAR Communications Consortium and Testfield Telematik.
Bike FOT projects: Collection of naturalistic bicycling data is now ongoing

Nowadays, collection of naturalistic driving data is the most credited method to improve traffic safety. In fact, naturalistic driving data promises cutting edge insights into vehicle behavior because it is the actual behavior of real drivers. However, drivers are not the only victims of the road. For example, in Göteborg (Sweden), while the number of injured bicyclists has decreased by approximately 30% in the last five years, the number of injured bicyclists has been near constant. In the beginning of 2012, the project preBikeSAFE, leveraging on the experience at SAFER (Vehicle and Traffic Safety Center at Chalmers) from projects such as euroFOT and SemFOT, adapted and piloted the naturalistic methodology to bicycles.

Now, collection of naturalistic bicycling data is ongoing in Göteborg. Equipped bicycles are ridden by bicyclists in real-traffic during daily activities and collect data from cameras, inertial measurement units, GPS, as well as brake force and speed sensors (see Figure below). Collection starts automatically when the bicyclist begins to ride the bike and stops once the trip ends. The collected data is intended to serve several analyses addressing bicyclist behavior, bicycle accident causation, and interaction among different road users in the project BikeSAFE and BikeSAFER (sponsored by Trafikverket and Vinnova).

The target impact assessments within the project preBikeSAFE are target the results towards policy issues, and applications potentially affect journey lengths and times. Within the Environment impact assessment, data analysis within the preBikeSAFE project has found that using a green driving advisory system resulted in lower fuel consumption with initial findings suggesting a 4.1% reduction which has overall implications for efficiency as well. Within the User Uptake analysis, the initial results suggest that there was overall a perceived trust in the devices tested and that subjects were willing to pay for them on the whole.

By the end of the project, a vast amount of data will be available and this will be reported and disseminated as widely as possible.

The preBikeSAFE project has the pleasure to invite you to join the final event, where the achievements of the past four years will be shared. This will take place at the Autoworld Museum in Brussels on 27-28 November 2012.

For more information, visit http://www.prebike-safe.eu.

Associated initiatives

PRESERVE

It is generally acknowledged that security and privacy protection are two strong requirements of connected ITS. The goal of the PRESERVE project is to design, implement, and test a secure and scalable V2X Security Subsystem (VSS) for realistic deployment scenarios. To achieve this, PRESERVE will (i) integrate results from projects such as Score@F, Preciosa and EVA, (ii) produce a dedicated V2X Hardware-Security-Module ASIC, and (iii) conduct extensive field operational testing. The Hardware Security Module will provide functions like secure key storage, cryptographic acceleration, and a physically unclonable function. The testing activities consist of four phases:

- Phase 1: a small-scale internal validation test.
- Phase 2: a small-scale external test integrated in vehicles (in collaboration with the Score@F project).
- Phase 3: a large-scale external test based on a partially static testbed.

The goals of those tests are to analyse the behaviour of the VSS in different load scenarios and to assess the overhead and scalability under realistic conditions. PRESERVE collaborates with other FOT projects like Score@F, FOTsis, and DRIVE C2X to investigate and implement integration of the VSS into their systems. The PRESERVE testing approach basically follows the FIESTA methodology. However, one has to note that security testing differs significantly from regular FOTs. Security functions should not require active involvement of users. Instead, the focus is on providing security while minimising impact on regular system operation.

Safety Pilot, US

The Safety Pilot, a major U.S. research initiative managed by the U.S. Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) and the Research and Innovative Technologies Administration (RITA) launched its second phase of a two-phase program. The Safety Pilot is the largest road test or model deployment to date of connected vehicle crash warning technology. It involves thousands of cars, trucks and buses equipped with “connected” Wi-Fi technology to enable vehicles and infrastructure to “talk” to each other in real time.

For more information on DOT’s connected vehicle research, visit www.safercar.gov/connectedvehicles or www.its.dot.gov/safety_pilot/index.htm
FOT-Net Associated Partners

A number of stakeholders have responded to FOT-Net’s invitation for Associated Partnership. In this issue we introduce Ifsttar.

FOT-Net Associated Partner Profile: Ifsttar

The French institute of science and technology for transport, development and networks (Ifsttar, founded in 2011) enjoys the status of a public scientific and technological institution and is overseen by France’s Ministry of ecology, sustainable development, transport and housing on one hand and the Ministry of higher education and research on the other. Recognised as a new reference organisation in the international arena, Ifsttar conducts applied research and expert appraisals in the fields of transport, infrastructure, natural hazards and urban issues. Helped by 1200 workers, Ifsttar promotes a systemic and multidisciplinary approach that combines the engineering sciences, life sciences and humanities and social sciences; such an approach ensures that adequate attention is paid to the full array of technical, economic, social, health, energy, environmental and human aspects.

Ifsttar has therefore a clear interest in conducting research which results in more precise impact evaluation of in-vehicle embedded systems or public policies. FOTs allow for large scale data collection from probe vehicles, and this relatively new approach is complementary to the usual driving safety research based on accident databases. The multidisciplinary needs of naturalistic driving studies make Ifsttar the perfect context for researchers from different fields to collaborate within the same framework.

Ifsttar started with FOTs in 2001 with the LAVIA project (French ISA), and was involved in the development of the FESTA methodology. More recently, Ifsttar was part of euroFOT as the leader of the pilot tests, and in charge of analysing the speed limiter and cruise control systems. Ifsttar is also coordinating the INTERACTION project aiming to understand better driver interaction with in-vehicle technologies and designed a data acquisition system for the naturalistic observation of these interactions. Within the DaCoTA project, aiming to enhance road safety monitoring, Ifsttar is in charge of designing new and relevant safety performance indicators using naturalistic data. The FOT methodology is currently applied at Ifsttar in various ongoing projects (DRIVE-C2X, ecoDriver or Score@f and SVrai as national projects). In the near future, Ifsttar will be part of the UDRIVE project.

Upcoming events

FOT-Net 5th International Workshop
21 October 2012, Vienna
This workshop will target issues related to data analysis, impact assessment & scaling up, data sharing in the context of cooperative systems FOTs and naturalistic driving studies – events and incidents definition.

ITS World Congress
22-26 October 2012, Vienna
Under the theme Smarter on the way, the Congress will hold several Special Sessions such as: Cooperative ITS FOTs in Europe, From large-scale FOTs to deployment, Global deployment of Car-2-Xcommunication technology.

8th International Workshop on Vehicle Communications
27 October 2012, Vienna

5th EasyWay Annual Forum
20-22 November 2012, London

DaCoTA project conference
22-23 November 2012, Athens

FOT-Net Seminar 4 “How to compare results from different FOTs and re-use of data”
26 November 2012, Brussels

TeleFOT Final Event
27-28 November 2012, Brussels

Annual Polis Conference
29-30 November 2012, Perugia

5th IEEE International Symposium on Wireless Vehicular Communications (WiVEC)
2-3 June 2013, Dresden

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