

Networking for Field Operational Tests

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Editorial

2012 will be a very exciting year for the FOT community with the results of two major European projects becoming available as well as a high level of activity within many other FOT projects. I am looking forward to the final events of both euroFOT and TeleFOT and hope you will join in what promises to become an exciting programme of presentations, discussions and demonstrations. Indeed, the focus of this FOT-Net newsletter is euroFOT. It includes an interview with the euroFOT coordinator. Mr Aria Etemad (Ford), and an overview of the current euroFOT activities deeper down in this issue.

2012 also promises to be a busy year for FOT-Net, the platform set up in 2008 to support the networking of the FOT projects. The FESTA methodology will be at the centre of the activities with a seminar on FESTA for newcomers to be held in Pisa in May and the launch of a number of new working groups focusing on different aspects of FESTA in view of consolidating and extending important methodology. experiences of projects such as euroFOT and TeleFOT will no doubt enrich this process with very interesting insights and results.

In addition to facilitating the networking of the FOT community, FOT-Net will continue to widely promote the progress of the FOT projects and their results, as they become available. The ITS World Congress in Vienna in October will offer an excellent opportunity to showcase the FOT projects. FOT-Net will also pursue its efforts to bring the main FOT stakeholders around the table.

Have a good read.

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

In the spotlight

euroFOT: Bringing Intelligent Vehicles to the Road

In June 2012 the first large-scale European Field Operational Test of active safety systems – euroFOT – will come to a close and unveil unprecedented results. For twelve months, 1200 drivers travelled European roads in 1000 vehicles equipped with eight safety and fuel efficiency features. Aria Etemad, euroFOT Project Coordinator, explains how euroFOT results will impact traffic safety and efficiency, and invites us to take part in a unique experience at the euroFOT Final Event.



What does euroFOT stand for?

Aria Etemad: euroFOT stands for European Field Operational Test: it is the very first large-scale Field Operational Test (FOT) in Europe that assesses the benefits of active safety systems on traffic safety and efficiency. For 12 months, 1000 cars and trucks equipped with active safety systems (8 functions were tested, one of them focusing on fuel efficiency) travelled European roads. During that period of time, over 100 terabytes of data were collected, which we are now analysing.

What is the added-value of carrying out such studies?

A. Etemad: When active safety systems are developed, the testing is usually done considering the system itself, whereas a FOT allows you to study how ordinary drivers interact with these systems in real traffic conditions. Therefore, through sound scientific studies, not only can we assess the impact of the systems per se, but also their impact on users and their behaviour.

What is the expected outcome of euroFOT?

A. Etemad: Carrying out this study will help us measure the benefits of the tested systems on traffic safety and efficiency.

Furthermore, we will be able to assess driver acceptance of these functions. Some preliminary results are already available in this regard: for instance, we have used a 'time-based' questionnaire for drivers to report whether they think the system is helping them in their driving task and whether they feel it has an impact on their safety. The questionnaire was issued 3 times: at the beginning of the study, after a few months, and finally after the 12 month period for which the test was running. We consequently noticed that, if at first users didn't think the systems to be helpful, after 12 months of using them, over 70% reported that they believe the tested functions increased their safety. What's more, results have shown that there are positive secondary impacts to using active safety systems: Adaptive Cruise Control (ACC), for instance, proved to help reduce fuel consumption by 7% overall - the added value of the system thus extends beyond traffic safety.

When will the final results of the study be available?

A. Etemad: The project will come to a close in June this year. Therefore the results will be presented for the first time at the euroFOT Final Event that will be held at the Autoworld Museum, in Brussels, on 26-27 June 2012.



In the spotlight (cont...)

What can the public expect to discover?

A. Etemad: Our intent for this event is twofold: first of all we wish to discuss the lessons learnt and the technical achievements with regard to analysing and assessing huge amounts of data; second of all we will show the benefits of active safety systems through cost-benefit analyses and therefore promote these systems. We can already state - based on our experience within the project - that these systems clearly increase traffic safety. All of this will be presented to the public - alongside technical experts, decisionmakers, industry representatives, etc. - in a two-day conference and exhibition that will guide them through every step of the study - from the definition of use-cases to the analysis of data and the execution of the FOT. Simulators and cars will even be available for attendees to test some of the functions that were evaluated within the project. As I said before, euroFOT is the very first large-scale European FOT on active safety systems, and it is also the first time that stakeholders will be able to discover and experience the scientific results of a European Field Operational Test which will help bring intelligent vehicles to the road.



Register for the euroFOT Final Event and discover the results of a unique study

The euroFOT Final Event will take place at the Autoworld Museum in Brussels, on 26-27 June 2012. On this occasion, the project results will be unveiled to an audience of approximately 300 stakeholders (decision makers, industry representatives, experts, OEMs, dealers, etc.) who will have the opportunity to discover and discuss the conclusions of the first large-scale FOT of active safety systems in Europe.

euroFOT's findings will be showcased in a two-day final event. We invite you to participate in a conference and exhibition where the benefits of active safety systems will be demonstrated: this event represents a unique opportunity for you to discover the project's technical achievements and results, as well as to experience them by getting behind the wheel of vehicles equipped with the systems tested within euroFOT. Save the date and look out for the latest updates on www.euroFOT-ip.eu.

FOT-Net services

FOT-Net Working Groups Kick-Off

Following the revision of the FESTA handbook, FOT-Net has now kickedoff the working groups that will extend the FESTA methodology framework with consolidated states of practice and adapt the methodology to the different cases of use and to the different typologies of applications.

These groups will specifically define the research questions to which each type of applications should respond and then specify the processes and the related tools that are needed to give consistent replies to the defined research questions.

The following working groups have been established:

- 1. Data Analysis (chaired by IKA)
- 2. Events and incident definition (chaired by SAFER)
- 3. Legal and ethical issues (chaired by BASt)
- 4. Impact assessment and scaling up (chaired by TNO)
- 5. Data sharing (chaired by VCC and SAFER)



The plans of these working groups are now available online. If you are interested in one of these working groups, please contact: info@fot-net.eu

FOT-Net webinars

To further promote the newly revised FESTA, three webinars were organised on different perspectives of the FESTA methodology:

- FESTA Methodology from the perspective of Naturalistic Driving Studies, 25 October 2011
- FESTA Methodology from the perspective of Nomadic Devices FOTs, 31 October 2011
- FESTA Methodology from the perspective of Cooperative Systems, 10 November 2011

During the webinars FOT-Net experts (from the consortium and Associated Partnership) presented in an interactive way, the contents of the revised Handbook from different perspectives, providing examples of how the Handbook may be used. They provided a hands-on experience of how the newly revised FESTA Handbook can be applied as a methodology for the testing of different typologies of applications.

To see and listen to the presentations given at the webinars please visit the FOT-Net website.



Stakeholder meetings

4th FOT-Net International **Cooperation Workshop** in Orlando

A series of Round Tables were organised at FOT-Net's Fourth International Workshop addressing FOT issues that were identified as of high priority to the FOT community. An international panel of FOT experts were invited to debate in each round table. Other experts and stakeholders also participated in the round tables as observers. During the afternoon session, conclusions from the round tables were presented and validated by the FOT community. Held on 16 October the workshop gathered over 60 people. Last year's round tables focused on:

- · Cooperative Systems FOTs across the globe - What should be harmonised at this stage and what not?, chaired by Tom Alkim, RWS
- · Actions linking to Deployment, chaired by Teresina Herb, BASt
- · Tools for FOTs, chaired by Adrian Zlocki, IKA
- priorities Large Scale Setting for Naturalistic Driving observations, chaired by Nicole van Nes, SWOV

In addition, high level officials from the EU, US and Japan were present to provide an update on their regions' FOT activities. Europe was represented by Emilio Davila-Gonzalez (DG INFSO, European Commission), the US was represented by Mike Schagrin, (ITS Safety, US Department of Transportation) and Japan was represented by Koichi Sakai (Ministry of Land, Infrastructure Transport and Tourism).

The workshop helped to reinforce the global FOT network in order to exchange knowledge, best practices and foster cooperation for FOT activities. The next workshop is already scheduled to take place in Vienna on Sunday, 21 October before the opening of the ITS World Congress. All presentations and conclusions are available online: http://www.fot-net.eu/ en/our services/international workshops/ fot-net 4th international workshop orlando usa - presentations available.htm

6th Stakeholders workshop, 28 November 2011, **Brussels**

The Sixth Stakeholder Workshop on 28 November in Brussels was organised on the theme of "Exploitation of FOT results". FOTs are a product in their own right but they are also a resource and a tool that can be used by stakeholders that are not directly involved in the execution of the FOT. FOT results can be used by policy makers to support their policy decisions and by industry players to make informed decisions about market introduction. The perspective of the public sector was presented by the Swedish MP Lars Tysklind, Gerbrand Klijn of the Noord Brabant province and Jo van Hoef, Chief of Helmond Fire Brigade. The pan-European FOTs - euroFOT, TeleFOT, DRIVE C2X and FOTsis - presented and discussed their exploitation plans.

FOT-Net also cooperated with the new EU project SATIE (Support Action for Transport - ICT European large scale action) for the organisation of one of the sessions on the concept of innovation incubators and more specifically how test beds can be used as an environment to evaluate ITS applications and also as a multi-stakeholders meeting point to explore new ITS solutions.



The participants appreciated the FOT-Net webinars as they are an easy way to learn and retrieve information about FOT activities. FOT-Net is planning to organise more webinars in 2012. Do you have suggestions for webinar topics? Then contact us at info@fot-net.eu.

FOT-Net dissemination guide for FOT projects

One of the main objectives of FOT-Net dissemination activities is to promote the progress, findings and results of various Field Operational Tests carried out at European and national level. FOT-Net has developed a range of dissemination tools and services which the FOT projects can use to increase the visibility of their FOT results at European level. These services and tools are presented in the FOT-Net guide to dissemination for FOT projects in Europe. This guide provides an overview of the main FOT-Net dissemination tools, including the website, newsletter, Wiki and brochure, as well as some tips on the types of events that can be of interest to FOTs for dissemination purposes. The guide explains how and why the FOTs should make use of the FOT-Net tools and services.







FESTA seminars



Next FOT-Net seminar: The FESTA methodology for newcomers

A special seminar for people who are new to Field Operational Tests

On 9-10 May 2012, a FOT-Net seminar will be organised in Pisa, in collaboration with the Istituto di Tecnologie della Comunicazione dell'Informazione e della Percezione (TeCIP). This seminar targets people who are not familiar with the FESTA methodology for conducting Field Operational Test, for example researchers and technicians who have recently started to work on a FOT, or who would like to start one in the future, or people who have heard about FESTA and would like to know what it is all about.

The two-day seminar will explain and discuss the different steps in the methodology, starting from the context, function selection and use cases. A practical exercise on developing research questions, hypotheses and performance indicators will be organised, for an interactive session in small groups. How to design the study

is the next topic. Also practical advice will be given on how to use the renewed FESTA handbook. Ethical and legal issues in preparing and conducting a FOT will be addressed. A technical session will be held on data gathering and data analysis. In an interactive way, we will learn how to analyse and interpret the results. The last topic will be the socio-economic impact of the FOT outcomes. There will be plenty of room for interaction, discussion, questions and stories from existing FOTs. FOT-Net seminars have a pleasant and informal atmosphere, a common dinner and lunch breaks will provide opportunities for networking. In addition, a visit to the TeCIP facilities is planned.

If you have questions, please let us know. The agenda may be found on the website, where you can also register. To register and for more information: www.fot-net.eu

FOT-Net Seminar on interpretation and presentation of results, 29 November, Aachen

On 29 November 2011, FOT-Net organised a seminar on the 'Interpretation and Presentation of Results' at IKA in Aachen, which was attended by stakeholders from Germany and other European countries. The seminar started with various presentations on the interpretation of results from University of Würzburg, TNO/IKA, University of Leeds, University of Loughborough, Chalmers University and VTT. The resulting discussions revealed the difficulties in the interpretation of results as these are not immediately obvious from the collected data. Solutions to these difficulties were proposed. These could consist of, for instance, early planning of impact, usage of pilots, critical view on collected data, intensive interactions between all partners, focus on the main findings first, usage of other FOT data for interpretation and where assumptions have to be made for interpretation, these should be made explicit.

The stakeholder's point of view was presented by the Swedish MP Lars Tysklind (Committee on Transport and Communications). From the ensuing discussion it became clear that stakeholders would like to see scientific facts (which are easy to communicate), insights to the users' behaviour and behavioural adaptations, directions for deployment, priorities in spending public funds and advice on the usage of results (e.g. for legislation and standards as well as for incentives).

Additionally several exercises on presenting negative and positive outcomes of a FOT and on and good practice on dissemination and publicity were performed. Finally a press release for a FOT was drafted in a small group exercise with advice from FOT-Net.

The presentations and the full report can be found on www.fot-net.eu.





FOT Wiki – the online catalogue of FOTs

The Wiki intends to be a resource for anyone interested in field operational their set up and their results. The Wiki is a living resource, fed by FOT stakeholders.

Share your FOT knowledge with the FOT community! Updating the Wiki is quick and easy! www.fot-net.eu/ en/catalogue/



Workshop on revised FESTA handbook

On 8 September 2011, SAFER hosted a workshop in Gothenburg on the revised FESTA Handbook. The workshop, organised by FOT-Net, was organised as a walk through the FESTA Handbook from different perspectives and was intended to stimulate discussion on the issues to be addressed in the next phases of FOT-Net.

Three different groups "navigated" the FESTA Handbook from the "Naturalistic Driving Studies", "Cooperative Systems" and "Nomadic devices" perspectives and proposed a list of critical issues. Among the critical issues, the following were then discussed:

• Scaling up of results, which is a key task in any kind of FOT and NDS.

- · Usage of simulation and controlled testing that could be an important complement to the naturalistic approach, which is always difficult to fully apply in cooperative systems FOTs.
- · When nomadic devices are used, data acquisition remains a critical issue. Built-in loggers could be an answer.

A more detailed report of the workshop can be found at: http://www.fot-net.eu/en/ our_services/workshops/fotnet_interactive_workshop on_the_revised_festa.htm.



FESTA guide now on Wiki

fourth version is now available on the FOT-Net Wiki. On the FESTA php?title=FESTA handbook) you can now download the handbook in pdf version; see the entire list of modifications that were made in the new version: and browse the handbook online directly on the Wiki, either by chapter or by section of the FESTA-V, to help direct you immediately to the information you need. The FESTA-V is an implementation chain that highlights the main activities and tasks that would normally be undertaken in successfully completing an FOT.

The online version of the handbook that is featured on the FOT-Net Wiki is extensively linked with definitions for the different FOT terminology present in the text, and references to various FOT studies and projects.

News from FOT projects

The FOT projects carried out 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 about objectives and results of ongoing FOTs.

DRIVE C2X

"Making cooperative systems cooperate" is the slogan of DRIVE C2X's test site campaign. It refers to the goal to achieve a pan-European system for cooperative mobility and to push the deployment of C2X technology. Seven test sites have united under the DRIVE C2X umbrella to achieve interoperability across regions and brands. All members strive for solutions which ensure an optimum of safety, efficiency, sustainability and convenience.

DRIVE C2X successfully launched its test site campaign at the German test site in Friedberg, Hesse. As part of the project's test sites, simTD hosted the event with 120 participants in October 2011. The campaign is designed to bring all stakeholders in the context of C2X technology together and to get commitment for the necessary investments as well as business models.

With a fleet of about 20 cars, the participants experienced the newly developed simTD communication system. All vehicles were equipped with the same technology and were using the same HMI. An exhibition offered the







News from FOT projects (cont...)

possibility for a deep dive into the simTD system components, the test management centre and the tools for simulation and evaluation. The second part of the day was dedicated to three workshop sessions: "prepare", "operate" and "evaluate". The guiding principle was to compare the simTD approach with another national FOT and to discuss the pan-European dimension of the chosen solutions. From the discussion, it became clear that it is highly valuable to exchange knowledge and experience among the different projects throughout Europe.

DRIVE C2X is close to its key milestone "FOT system validated". The milestone marks the completion of the pan-European reference system from DRIVE C2X. The system unites approaches from several C2X projects and will serve as the basis for DRIVE C2X's seven test sites. Moreover, other C2X projects will refer to the developed system. Taking this milestone as an opportunity, the project will continue its series of events and invites the expert community to Helmond, The Netherlands. On 5 July 2012 you are invited to examine the DRIVE C2X system during a day of demonstrations, exhibitions and workshops.

Please visit the DRIVE C2X website (http://www.drive-c2x.eu/news-and-publications) to find more information and the registration.

FOTsis

"So far the FOTsis project has been running for 11 months during which time all the Work Packages of the project have started. Although the Evaluation Work Package was not planned to start this early, the FESTA Methodology has encouraged the involvement of those partners leading the impact assessments. Thus, besides the general tasks of Coordination and Dissemination, the project is carrying out tasks on Design, Execution and Evaluation

The FESTA methodology has become one of the main tools for the development of the FOTsis tasks, offering the guidelines for a proper design of the FOTs. Nevertheless, due to the gaps within FESTA concerning the infrastructure point of view for cooperative services, the procedure to obtain the appropriate outputs has been harder than expected. At this point FOTsis has defined functions, use cases, scenarios, research questions and hypothesis, and it is gathering all of them to create a full table that offers an overall picture.

FESTA was also taken as a starting point for setting out the FOTsis implementation plan, as it comprises

a well-structured list of personnel, activities and tasks, assuring the coverage of these main aspects of the FOT development.

FOTsis is also developing the architecture to be used in the tests. To that end, besides its own developments, FOTsis has had contact with other EC projects (like DRIVE C2X, ITSSV6) for the final architecture definition. The success of this task will be tested in specific architecture pilot tests to be performed in the near future. Regarding dissemination activities, the project continues to publish in different languages in order to reach the broadest audience possible, and will participate

in the most important events like the TRA in Athens (Special Session) and the ITS World Congress in Vienna (Demo).



For further information about FOTsis, please visit the website: http://www.fotsis.com/





euroFOT

Data Analysis: A Gargantuan Task

In June 2012, the results of the first large-scale European Field Operational Test on active safety systems – euroFOT – will be unveiled. With the aim of showing the public the positive impact active safety systems can bring when it comes to safety, traffic and fuel efficiency, several of the 28 euroFOT project partners are currently analysing hundreds of terabytes of data collected on European roads over the course of 12 months. And preliminary results look positive already, especially when it comes to user acceptance and traffic safety.

Although project partners faced difficulties when first recruiting drivers and vehicles, they managed to successfully reach the 1000 vehicle target – with a total number of 1200 drivers. From February 2010 to February 2011, cars and trucks equipped with active safety systems and data loggers thus travelled a total 18 million kilometres throughout Europe, gathering huge amounts of data.

The preparation (installation, data acquisition systems, extra sensors, etc. in vehicles) and data



Bringing intelligent vehicles to the road

collection phases being over, experts were able to focus on processing the data. Data quality checks, project monitoring and data analysis: for the first time 33 researchers belonging to 15 different institutions and organisations across Europe have joined forces to assess the impact and hypotheses tested in this unique FOT in Europe. With the help of software tools that were specifically produced during the project - in order to have a tool chain that not only provides specific modules for euroFOT, but also a framework that can be re-used in future FOTs -, experts are currently assessing the impact of active safety systems on traffic safety and efficiency, as well as on the environment. Driver behaviour and acceptance are two important parameters experts also have to take into account: user answers to interviews and questionnaires also need to be analysed and translated into results.

The amount of data gathered within the Field Operational Test is so important - and there is so much one can learn from the project - that discussions are already ongoing on a follow-up project. But for now, and before euroFOT comes to a close, researchers have a gargantuan task at hand: they need to get the most information they can from the terabytes of data at their disposal by June 2012, when the results of this unprecedented large-scale Field Operational Test on active safety systems will be unveiled to Europe, its citizens, experts and authorities.



Associated initiatives

COMeSafety

Work package 2 of the COMeSafety 2 European Support Action aims at developing an international exchange platform for Cooperative ITS (C-ITS) FOT and Pilot communities worldwide. Through the exchange and exploitation of common results, the platform will foster the harmonisation of C-ITS deployment worldwide and facilitate the emergence of common research topics. Inter-regional cooperation will thus be reinforced and technical and non-technical results will be collected.

With the support of FOT-Net, the COMeSafety2 international exchange platform shall now be structured and populated with the first results coming mainly from European C-ITS FOTs (both at national and the European level, e.g. DRIVE C2X), as well as from the Connected Vehicle Safety Pilot currently under deployment in the USA. This platform will be open to all C-ITS stakeholders, provided that they commit to contributing to the international exchange of information, either by sharing results, analysing them and providing feedback, or by using the results in deployment/ research projects. Some guidelines will be issued to support the development of this exchange facility, which shall be ready for the collection of huge amounts of results in the course of 2012.



For more information please contact Gérard Segarra, gerard.segarra@renault.com





Assessing the CO2 impact of ITS measures: the AMITRAN project

The calculation of CO2 emissions arising from the transport sector is a challenging task. The mobility system has numerous components (driver, vehicle, infrastructure, traffic centre, operator, etc.) and stages (energy production, vehicle operation, maintenance, etc.), each with an associated carbon footprint. Adding up individual emissions requires a rigorous approach. The AMITRAN project aims to "connect the dots" by developing a reference methodology to correctly estimate well-towheel emission reductions achieved by intelligent transport systems. The AMITRAN methodology covers both passenger and

freight transport through a comprehensive well-to-wheel approach. Different modes are addressed: road, rail, and shipping.



More information can be found in the fact sheet available at www.amitran.eu





FOT-Net Associated Partners

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



If you would like to become an Associated Partner, please contact info@fot-net.eu.

FOT-Net Associated Partner Profile: Loughborough University



As an associated member of FOT-Net, the Transport Safety Research Centre at Loughborough University, UK has a historical interest in conducting research which results in reductions of road casualties. Whilst much of the work of the Centre has been focussed on

gathering data from accidents, FOTs have represented a relatively new opportunity for determining several safety-related issues by studying driver behaviour using a longitudinal approach.

Currently, the TSRC is leading the "Impact Assessment" sub-project within TelefOT and has a special interest in the "Safety" implications of drivers using nomadic and after-market devices in their vehicles. Some safety-related aspects of driving performance are relatively difficult to address through large-scale FOTs. However, these can be investigated through FOTs which are somewhat more experimental in their approach in which enhanced Data Acquisition Systems can be used. In other cases, large-scale longitudinal study designs are very useful in determining factors related to speed, exposure (in terms of time spent driving and numbers of journeys) and route choice. Research questions related to these issues can be studied very successfully

within FOTs by using a combination of objective data collection (with dataloggers) matched with subjective data derived from questionnaires, travel diaries and interviews with the drivers.

Data of such type are now becoming available within TeleFOT from all of the test-sites and the TSRC will be at the heart of the analysis activities in the coming months. Dissemination opportunities are now being finalised so please watch this space!



For more information, please contact

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Upcoming events

FOT-Net seminar: FESTA for beginners, 9-10 May 2012, Pisa

euroFOT Final Event,

26-27 June 2012, Brussels

DRIVE C2X @ DITCM test site event, Making Cooperative Systems Cooperate,

5 July 2012, Helmond

FOT-Net 5th International Workshop,

21 October, Vienna

ITS World Congress,

22-27 October 2012, Vienna

DaCoTa project conference,

22-23 November 2012, Athens

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