FOT-Net kick-starts 2013 with this newsletter, but many more interesting events and activities lie ahead. The seminar on “Tools for gathering and analysing data, especially in FOTs of cooperative systems” which will take place in Berlin on 25 April is one of them. FOT-Net will of course also be present at the ITS European Congress in Dublin and the ITS World Congress in Tokyo.

Many FOT projects have come to an end, while others are just starting or gaining momentum. The TeleFOT final event took place on 27-28 November 2012 in Brussels and it is in the spotlight. The outcomes of a four-year study with almost 3,000 drivers in eight European countries. The project tested driver support functions provided by different intelligent transport systems. According to the users, the main benefits of the functions were convenience, comfort, cost-effectiveness and efficiency. You can read more about the outcomes of the project in the dedicated article in this newsletter. As usual, you will find an interview with a FOT expert: this time the project coordinator of the DRIVE C2X project, Matthias Schulze, is in the spotlight. A new project is also featured in this newsletter: UDRIVE, the first large-scale European Naturalistic Driving Study on cars, trucks and powered two-wheelers.

The FOT community is actively preparing for the two most important events of the ITS calendar in 2013 – the ITS European Congress, which will take place in Dublin from 4 to 7 June, and the ITS World Congress, which will take place in Tokyo from 14 to 18 October. A special session will be organised in Dublin to explore synergies between Naturalistic Driving Studies and FOTs. FOT-Net will continue to support the networking and sharing of results between the various FOT projects and will keep you regularly informed through the FOT-Net newsletters and website, the FOT-Net Wiki, as well as with the seminars and events.

Have a pleasant reading!

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

DRIVE C2X: Towards a common European C2X system for improved traffic safety and efficiency

DRIVE C2X ambitions to lead to the deployment of a commonly agreed, interoperable pan-European C2X (cooperative) system that will dramatically improve traffic safety and efficiency on our roads. To reach its goal, the EC co-funded project that started in 2011 will come up with system, hardware and software specifications, as well as applications that will be evaluated on 6 European test sites.

“Our reference system has been functionally verified already and it is now implemented within the test sites, which have therefore launched the piloting phase,” explains the project coordinator Matthias Schulze. Over the course of 7 months, the cities of Tampere (Finland), Yvelines (France), Frankfurt (Germany), Brennerro (Italy), Gothenburg (Sweden) and Vigo (Spain) will collect huge amounts of data from 210 vehicles. The data will thereafter be analysed by the different project partners: this will allow DRIVE C2X to validate the impact of the evaluated applications on traffic safety and efficiency.

One of the constraints of such a system is that it should be fully interoperable across European borders. “Several national initiatives have already been launched in the past, but they will only lead to ‘island’ solutions,” says Schulze. “Our aim is to come up with a solution that works all over Europe.” For this purpose, a close cooperation with ETSI has been ongoing, and all the contributions produced by the DRIVE C2X Consortium have directly fed the standardisation process of the organisation.

The functions for cooperative systems that are being tested are related to traffic flow, traffic management, local danger alert, driving assistance, Internet access and local information services. The Car 2 Car Communication Consortium is ready to sign a letter of Intent, and the Amsterdam Group – representing road operators – will sign a Memorandum of Understanding shortly. According to Schulze “it is realistic to think that C2X communication will be effectively introduced around 2015.”

Matthias Schulze considers deployment on European roads is near and therefore, it is essential that people be aware of this technology and its potential to increase traffic safety and efficiency. For this purpose, since its start, DRIVE C2X has been organising yearly test site event. This year the Swedish test site will be in the spotlight on the occasion of a two-day conference and demonstration: 13 June will be reserved for experts, whilst 14 June will be open to the public. “Attendees will be able to test DRIVE C2X functions, such as traffic jam warning, broken down vehicle warning, and many more,” continues Schulze. “All these applications are implemented in the Gothenburg test site, and participants will have the opportunity to drive around and be informed about potential hazards, thus experiencing C2X communication – between vehicles and with the road infrastructure.”
FOT-net services

Stakeholder Needs Analysis: Current Status

The contribution to policy goals and market deployment are common objectives of large-scale FOTs. Nevertheless, there is a lack of systematic studies investigating whether those goals are reached and which aspects contribute to successful deployment. Within FOT-Net, a stakeholder needs analysis is therefore being performed to evaluate how previous FOTs have met stakeholder needs. The results will inform a deployment strategy for the future.

As a first step, a number of stakeholders involved in FOTs on a European level as well as non-involved stakeholder groups were identified and asked to complete a standardized questionnaire. So far, answers from 41 involved and 14 non-involved stakeholders from relevant organizations from 12 countries have been received. Quantitative and qualitative analyses are currently being conducted.

Preliminary results based on the involved group show that 54% (23) of the respondents report that participation of their organization in the European FOTs has met the original expectations, while 22% (9) report that this was partly the case. Only 5% (2) of these respondents reported that their organization did not participate in the European FOTs.

The working groups of FOT-Net (Data Analysis, Legal and Ethical Issues, Definition of Incidents and Events, Impact Assessment and Scaling up and Data Sharing) are working on enhancing and revising the FESTA methodology for FOTs and Naturalistic Driving Studies. The working groups are currently focusing on producing their reports, which will be placed on the FOT-Net website as soon as they become available. In the meantime, registrations are now open on www.drive-c2x.eu.

WORKING GROUP ACTIVITIES

For an extensive report from the workshop, see: http://www.fot-net.eu/en/services/International_workshops/FOT-Net_4th_international_workshop.htm

For the updated workplans of the groups, please go to: http://www.fot-net.eu/en/services/working_groups

For a quick look at the Wiki, visit: http://www.fot-net.eu/en/catalogue/

WORKING GROUP ON LEGAL AND ETHICAL ISSUES INTERIM REPORT

The evaluation of the legal questionnaire developed in the FOT-Net project and the compilation of the intermediate report of the Legal and Ethical Issues Working Group showed that – despite several common findings which are applicable for all EU Member States considered therein – there are still remarkable peculiarities concerning the legal framework relevant for FOTs at national level. These peculiarities may on the one hand follow from the historical development of the legal systems in the different EU Member States – not all of the national regulations have been harmonized so far, of course. On the other hand, these peculiarities are caused by the fact that – even as far as law has been harmonised – the Law is applied at national level. Often national courts decide how a certain law should be interpreted which will not necessarily be homogeneous throughout the EU. That is why it will remain highly advisable to seek further support on legal and ethical issues within the concrete FOT – which is also due to the fact that the Law is not a static matter but it evolves and develops, like many other disciplines do.

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

Share your FOT knowledge with the FOT community!

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

FOR MORE INFORMATION, PLEASE CONTACT:

Daimler AG; John-Frederick Grinvald (VCC).

SYNERGY BETWEEN NATURALISTIC DRIVING STUDIES AND FIELD OPERATIONAL TESTS

Special Session on Cooperative Systems at ITS World Congress 2012, Vienna

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 brought together national FOT activities in five European Member States with the aim to present their achievements as well as their underlying deployment and exploitation plans. The lessons learned, main challenges and key factors for a successful deployment will also be discussed. As the representative for the strategic networking platform dedicated to the promotion of FOTs, FOT-Net chaired the plenary session held on Tuesday 25 October on the occasion of the 19th ITS World Congress, Vienna. The session was moderated by Maxima Plamert (Ericsson) and the panellists were: Francisco Sanchez (CTAG); Gérard Segarra (Renault); Christian Weiss (Daimler AG); John-Frederick Grinvald (VCC).

FOT-Net 5th International Workshop at 19th ITS World Congress

On 21 October 2012, 50 people attended FOT-Net’s 5th International Workshop. A series of round tables were organised addressing issues that have been identified as of high priority to the FOT community, namely data analysis, impact assessment, data sharing and event definition. An international panel of experts was invited to debate at each round table, whilst other experts and stakeholders were participating as observers. During the afternoon session, conclusions from the round tables were presented and discussion was open to the audience who validated them. The recommendations given at each round table will be taken into account by the FOT-Net Working Groups during the course of 2013. The WG’s recommendations will be integrated into a new version of the FESTA handbook to be released during the second semester of 2013.

The workshop report and all presentations are available at http://www.fot-net.eu/en/news_events/events/past_fot_events.htm

STAKEHOLDER MEETINGS

SPECIAL SESSION ON COOPERATIVE SYSTEMS AT ITS WORLD CONGRESS 2012, VIENNA

For further information, please contact:

Daimler AG; John-Frederick Grinvald (VCC).

For the updated workplans of the groups, please go to:
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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
Upcoming FOT-Net Seminar: ‘Tools for gathering and analysing data, especially in FOTs of Cooperative Systems’

The next FOT-Net seminar will be organised in Berlin on 25 April, one day before the 3rd VSimRTI Workshop 2013 on large scale assessment of mobile applications. The recent conclusion of several FOTs has shown the FESTA methodology is widely accepted and used. In the course of these FOTs different kinds of data were recorded, stored and analysed. Today, there are numerous ongoing FOTs for cooperative systems. Data collection, data transfer and management, as well as data analysis are challenges in the FOTs for cooperative systems because different participants need to collect data at the same place and point of time, and match this data in the analysis process.

The seminar on tools for data gathering and data analysis will provide a setting to share experience on tools for data collection from different data sources (CAN data as in euroFOT, driver data as in TeleFOT, cooperative data as in DRIVE C2X, and data from vehicle independent logging tools as in UDRIVE). Tools for test execution and test design will be presented with a focus on cooperative systems. In terms of data analysis, experiences from different projects will be presented (e.g. FOTsis, DRIVEC2X) and data analysis issues will be discussed. Finally recommendations will be derived and discussed.

The seminar will consist of an active and interactive event with presentations, discussions, and small group exercises.

Two European FOTs on ADAS (euroFOT) and nomenclature devices (TeleFOT) have ended, and there are several European (DRIVE C2X and FOTsis) and national cooperative FOTs currently running. In the concept of a cooperative FOT itself lies the concept of data sharing. These two facts formed the background for the FOT-Net seminar “Complementarity of different FOTs and re-use of Data”, held in Brussels on 26 November 2012.

The University of Loughborough gave an extensive presentation on the comparison of the euroFOT and TeleFOT projects, from setting the framework through collection to analysis. The presentation revealed that there are lessons to be learned from earlier FOTs regardless of FOT focus but also that there are many FOT specific questions that need to be addressed in each new FOT. A connected exercise also showed some of the pitfalls to be aware of when comparing different studies. An extensive list of conclusions from the discussion that followed was presented. Five different cooperative FOTs were presented with a focus on complementarity and re-use in the FOTs for cooperative systems. The discussion revealed several common concerns.

The EC’s position on the need for more data re-use and sharing was presented and formed the basis for the last discussion. Its focus was on which data is interesting, what could be achieved by data sharing, and finally how data sets could be financed for continued accessibility after the project ends. The many interesting ideas coming from the discussions were documented in the detailed report.

Outcomes of the FOT-Net Seminar: ‘How to Compare Results from Different FOTs and Re-use of Data?’

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

News from FOT projects

TeleFOT Project Concluded: Intelligent Transport Systems Bring Positive Changes to Driver Behaviour

The achievements of the research project were shared during the final event of the project which took place in Brussels on 27-28 November 2012. With a budget of EUR 15 million, the four-year TeleFOT project, coordinated by VTT Technical Research Centre of Finland, is one of the biggest traffic ICT projects in Europe and is co-funded by the EU. The recently completed field operational tests produced a unique set of data, based on a comprehensive assessment of driver behaviour and the safety, efficiency, quality, robustness and user-friendliness of interactive in-vehicle traffic systems and services. Many intelligent transport services provided by nomenclature devices are already part of the daily lives of road users, but information about their actual impacts on road safety, for example, has not previously been available. TeleFOT Consortium presented the outcome of the four-year study at the final event which focused on assessing the impacts of driver support functions provided by smartphones, navigators and other in-vehicle mobile applications.

The seminar on tools for data gathering and data analysis will provide a setting to share experience on tools for data collection from different data sources (CAN data as in euroFOT, driver data as in TeleFOT, cooperative data as in DRIVE C2X, and data from vehicle independent logging tools as in UDRIVE). Tools for test execution and test design will be presented with a focus on cooperative systems. In terms of data analysis, experiences from different projects will be presented (e.g. FOTsis, DRIVEC2X) and data analysis issues will be discussed. Finally recommendations will be derived and discussed.

Ongoing TeleFOT research explored a range of topics, including the influence of nomenclature devices on road safety, fuel consumption and traffic jams. Fuel costs also dropped. Green driving advisory systems were implemented in the TeleFOT mobile applications, and it was seen that they improved fuel efficiency, traffic flow and reduced fuel consumption and emissions.

UDRIVE Kick-off Meeting: The First Large-Scale Naturalistic Driving Study off the Starting Blocks

On 4 October, the UDRIVE project – the first large-scale European Naturalistic Driving Study on cars, trucks and powered two-wheelers – kicked off with a two-day meeting. The 19 partners (industry, national organisations, research institutes, etc. from different EU regions) gathered together to start their work for the next 48 months.

Road transport is indispensable for the movement of goods and persons, but has negative consequences among others related to road safety and the environment. In order to identify the next generation of measures that will enable us to effectively reduce the number of crashes and emission levels, an in-depth understanding of actual road user behaviour is needed.

The UDRIVE project will contribute to developing this in-depth knowledge by conducting the first large-scale European Naturalistic Driving Study. UDRIVE will collect information from several hundreds of vehicles, including passenger cars, trucks, and powered two-wheelers. All data – including video data showing the forward view and the view of the driver, as well as GIS data – will be collected continuously to create new knowledge on the various research areas.

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The extensive research material reveals that the intelligent transport systems (ITS) that were tested allowed drivers to find quicker and less congested routes, and prevented them from speeding accidentally. Up to 45% of participants, particularly those in large cities, reported that the traffic information function helped them to avoid travel delays and traffic jams. Fuel costs also dropped. Green driving advisory systems were implemented in the TeleFOT mobile applications, and it was seen that they improved fuel efficiency, traffic flow and reduced fuel consumption and emissions.

UDRIVE Kick-off Meeting.

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More information on the project can be found at www.udrive.eu
FOTsIs: New Pilot Tests and More

During the last six months, FOTsIs has steadily progressed towards the main objectives of the project. The main efforts have focused on finishing the tests of the communications’ architecture and on configuring the test sites to allow the service of FOTsIs to begin operation.

In particular, new tests were conducted last October-November in order to further validate the FOTsIs communications’ architecture. After the first validation tests carried out May-June 2012 – which included standard communications technology for the short-range link – these new pilot tests included communications technology based on new IEEE 802.11p to ensure that all the available technological advantages were taken into account.

What’s more, the driver recruitment strategy has been finalised with the actual recruitment in full swing, which will see the setting up of specific sites for each of the countries where recruitment will take place.

DRIVEC2X Piloting

DRIVE C2X is a European wide Field Operation Test (FOT) project aiming at testing and accelerating the deployment of various cooperative driving applications in traffic safety, efficiency and services. After defining the functions to be tested and creating a reference system for the validation and interoperability proof in the system test site in Helmond, the Netherlands, the project was ready to take the functions to be adapted to six test sites across Europe all the way from Spain to Finland. The adaptation had been completed, piloting could start in late 2012. Piloting is a process of several months showing first that the defined functions work on each test site as planned, then gradually turning to testing the whole FOT procedure. The last phase of piloting involves implementing the DRIVE C2X testing methodology on each last site and ensuring that the test design is functional in all respects of testing such as subject selection, instructions to test drives, data logging and analysis of pilot data. The feedback received from piloting ensures that the actual FOT can start in March 2013 following a harmonised testing methodology.

Associated initiatives

Naturalistic Cycling Studies: Final Results from BikeSAFE and BikeSAFER to be Presented in a Workshop

The projects BikeSAFE and BikeSAFER (sponsored by Trafficverket and Vinnova) collected about two terabytes of naturalistic cycling data in Gothenburg during the autumn of 2012. Naturalistic cycling data was recorded from cameras, inertial measurement units, GPS, as well as brake force sensors. Subjective data from interviews, diaries, and questionnaires was also collected. This data set is unique in the world, and promises new insights into cyclist behaviour and bicycle accident causation. Several critical events including a few crashes were collected and are now under analysis. Preliminary results from these projects point to intersections and road users’ interaction as the scenarios with more opportunities for intelligent countermeasures. For instance, the project BikeCOM at Chalmers used this naturalistic cycling data set to develop a cooperative application where two road users (for example a car and a bicycle approaching an intersection) can both be warned in case of imminent collision using wireless communication. The final results from BikeSAFE and BikeSAFER will be presented on the 3 September 2013 in Gothenburg, Sweden in the workshop Naturalistic Cycling Analysis, a satellite event of the Driver Distraction and Interruption Conference (September 4-6, 2013, Gothenburg). The workshop is free of charge but requires registration. To register, please visit the conference website (http://www.chalmers.se/hosted/ddi2013/en/ workshops).

Score@f

Score@f is a project on road-based cooperative systems that started in September 2010, with a lifetime of 37 months. It is the French component of the C-ITS experiments, currently being conducted over six European locations within DRIVEC2X.

The French consortium involves 21 partners that represent the full range of stakeholders. It shares with its European counterparts the same aims and methodology. The goal is to test cooperative systems in near-market conditions (PESTA methodology) in order to assess their technical and non-technical features. Some of the questions which the projects seek to answer are: Is the whole communication chain robust? Do drivers accept the systems? To what extent are drivers’ behaviours impacted?

Early experiments involving users have been carried out in 2012: the acceptability of the various C-ITS functionalities has been pre-tested thanks to two studies on a dynamic driving simulator, while logistics have been put to the test through a small-scale FOT on highways (A10, A13 will be dedicated to full-scale system assessment through two FOTS, in Yvelines (CG78) and Isère (FOT3Is)). In March, a first group of customer vehicles will be equipped to test the system over a period of one month and a half, without instructions. This protocol will be repeated until the end of June. Finally, naturalistic data will be supplemented by controlled tests.

Results will be presented on the closing day of the project, 24 September 2013.

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

FOT-Net seminar 5 “Tools for Gathering and Analysing Data, Especially in FOTs of Cooperative Systems”
25 April 2013, Berlin

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

9th ITS European Congress
4-7 June 2013, Dublin

FOT-Net 9th Stakeholders Workshop “Speed Alert: from research to deployment”
4 June 2013, Dublin

Special Session: “Synergy between Naturalistic Driving Studies and Field Operational Tests”
5 June 2013, Dublin

Special Session: “Raising awareness of ICT systems for efficient and sustainable mobility”
6 June 2013, Dublin

3rd International Conference on Driver Distraction and Inattention
4-6 September 2013, Gothenburg

FOT-Net Seminar 6 “Best Practices in FOTs”
25 September, Versailles (TBC)

20th ITS World Congress
14-18 October 2013, Tokyo

FOT-Net International Workshop
14 October, Tokyo

Special Session “Analysing the outcomes of Field Operational Tests”
15-18 Oct, Tokyo (exact date TBC)

FOT-Net Revised Leaflet
Find the updated leaflet guiding though FOT-Net online at

Contact us
Coordinator
Yvonne Barnard, ERTICO – ITS Europe, y.barnard@mail.ertico.com

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