EUROPEAN COMMISSION

DG CONNECT

SEVENTH FRAMEWORK PROGRAMME

INFORMATION AND COMMUNICATION TECHNOLOGIES

COORDINATION AND SUPPORT ACTION

FOT-Net Data

FIELD OPERATIONAL TEST NETWORKING AND DATA SHARING SUPPORT

D6.9 Project Newsletter 5

Deliverable no.	D6.9 Project Newsletter 5
Dissemination level	Public
Work Package no.	WP6
Main author(s)	Davide Brizzolara (ERTICO – ITS Europe)
Co-author(s)	
Status (F: final, D: draft)	F
Version number	1.0
Date	24 March 2016
Project Start Date and Duration	January 2014, 36 months

www.fot-net.eu

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 610453

Document Control Sheet

Main author(s) or editor(s): Davide Brizzolara (ERTICO – ITS Europe)

Work area: WP6

Document title: D6.9 Project Newsletter 5

Version history:

Version number	Date	Main author	Summary of changes
0.1	05.03.2016	Davide Brizzolara (ERTICO)	First complete version
1.0	24.03.2016	Sami Koskinen	Submitted version

Review:

Name	**Date**
Sami Koskinen	24.03.2016

Circulation:

Recipient	Date of submission
EC	24.03.2016
FOT-Net Data consortium	24.03.2016

Introduction

The FOT-Net Data Newsletter, issue 5, March 2016, has been published. It presents an update on the work packages, the stakeholder workshops, news from other FOT projects and news in general.

The newsletter addresses the four target groups of the project: decision makers, technical experts involved in FOTs, managers and owners of data, and the research community. It also considers the needs of the experts in automation pilots that will be launched in the next years.

It provides information about FOT-Net activities and about the aims, approaches, events and results of national, European, and international FOT projects. The newsletter does not only look back on the past, it is also an instrument for innovation.

The aim of the newsletter is to ensure a regular flow of information on the project to all interested stakeholders in order to maintain awareness. It also promotes the FOT concept to a wider audience by warming up new sectors or industries to the potential offered by FOTs.

Newsletter 5 contains the following sections:

1. Editorial, signed by the Project Officer
2. FOT-Net Data Updates
    - o Piloting the Data Sharing Framework
    - o Invitation to make entries to FOT-Net Data Catalogue
    - o Trilateral Impact Assessment Subgroup for Automation in Road Transportation
3. FOTs in the Spotlight
    - o SCOOP@F ITS
4. Data Sharing in Practice
    - o Large re-use of the SHRP2 naturalistic data 4
    - o Utilization of Probe Data in Japan
5. News from Other Projects
    - o PEGASUS, BigDataEurope , UDRIVE, cloud-LSVA
6. Upcoming Events
    - o FOT-Net Data Stakeholders Meeting in Brussels
    - o FOT-Net Data presentation at TRA 2016
    - o FND in ITS Congresses & ITS World Congress
7. Past Events
    - o FOT-Net Data International Workshop on ITS and Connected Vehicle Data

- FOT-Net Data Workshop: A common methodology for road automation FOTs and pilots

8. Associated Partners
    - Additional info
    - Contact us
    - News service & news about your FOT

FOT-Net Data project partners had an active contribution to the content of the newsletter; several partners made contributions.

Newsletter distribution

The newsletter is circulated electronically via the FOT-Net contact database. Additionally, 600 printed copies will be distributed via partners at relevant events and are also made available for the EC Project Officer for further distribution.

The newsletter is available on the FOT-Net Data website (Library): http://fot-net.eu/Documents/fot-net-data-newsletter-no-5/

FOT-NET DATA

www.fot-net.eu

NEWSletter

Issue 5 – March 2016

Editorial

The ***Data Sharing Framework***[1] developed by FOT-Net Data will help new projects on vehicle automation to address the data management requirements of recent H2020 calls. This - along with the use of the Data Catalogue to advertise new datasets – may already represent a big step forward for new projects. This newsletter reflects the latest FOT-Net Data efforts to support data sharing and re-use within the new EU Framework Programme for Research and Innovation.

FOT-Net Data, as a networking platform, gives high importance to events in which FOT stakeholders work hand by hand. In this sense, the International Workshop held before the ITS World Congress in Bordeaux on 4 October 2015 facilitated a fruitful exchange of information on FOTs between the EU, the US and Japan. It focused on challenges and opportunities regarding operational data management, now as connected vehicle programs are moving from research towards deployment.

FESTA has also been in the spotlight of the latest FOT-Net Data meetings. This testing methodology, which has become the backbone of large-scale user tests in projects such as Compass4D and UDRIVE, could be further extended to offer tailored support for conducting user tests on automated driving. The discussions on the workshop held in February in Leeds proved that some of the new aspects that road automation brings to FOTs will be similar to public transport studies, considering e.g. demography of people living in an area and feeding public transport lines. In this final year of FOT-Net Data, FESTA will receive many updates, mainly regarding data sharing, but already considering vehicle automation research.

I would also like to draw your attention to the FOT-Net Data activities at upcoming ITS Congresses. At the European ITS Congress to be held in June in Glasgow, a special interest session will explore the way “towards a methodology for Field Operational Tests (FOTs) for automated vehicles”. In October, data sharing and connected vehicle debates will be fostered in Melbourne, where FOT-Net Data will organise an International Workshop together with USDOT. There will also be a special interest session on “Automated vehicle pilots: challenges for data collection and sharing”. We count to have input from many of you!

Last, but not least, we are looking forward to receiving your contributions to the FOT, Data and Tool Catalogues – the three axes of the FOT-Net Wiki. With your involvement, we can activate the gears of a ‘circular economy’ for FOT data.

Enjoy your reading!

Myriam Coulon-Cantuer,
FOT-Net Data Project Officer,
European Commission –
DG Connect – UNIT H5

Contents

[1] http://fot-net.eu/Documents/data-sharing-framework/

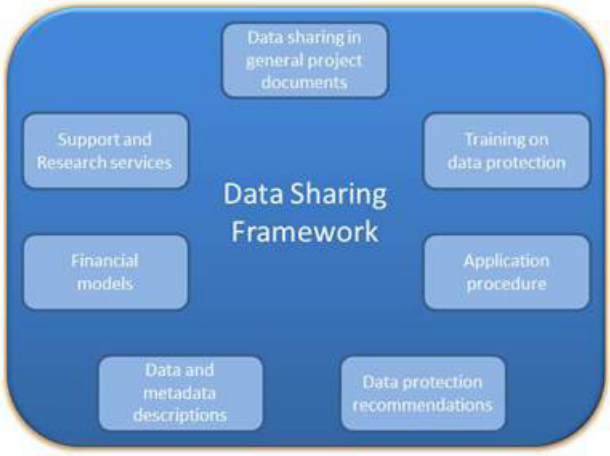
This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 610453.

FOT-NET DATA Updates

Piloting the Data Sharing Framework

http://fot-net.eu/Documents/data-sharing-framework/

The Data Sharing Framework was developed to facilitate data sharing focusing on seven main topics. It was finalized and uploaded to the FOT-Net website for download and additional comments in September 2015. The goal of the framework is to be endorsed by many organizations, which would like to follow the recommendations in part or fully in their next projects.



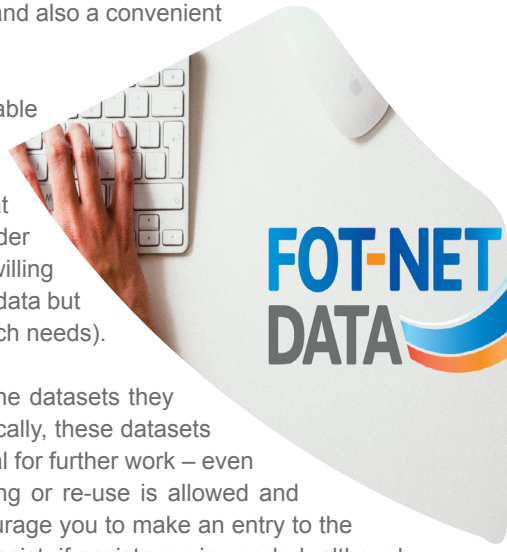
We are now using two strategies to test the applicability of the Data Sharing Framework. One way is by asking some 15 stakeholders with previous experience in FOTs to read the documents and review the recommendations based on their experiences to see if it has what is needed to fit different stakeholders´ needs. This comes in addition to the general comments received via the website. Another way is a more hands-on approach, where we take a dataset and examines what is needed to make this dataset available based on the recommendations set forth in the framework.

This is now underway using a smaller dataset to pinpoint both the applicability of the framework to the specific dataset and also to examine if the document is understandable and easy to implement. The lessons learned are documented and the plan is then to apply it to a larger dataset, to see the full potential of the framework and examine the effort involved in implementing it. The results of these two activities together with comments collected during the year will be incorporated into the final deliverable of the Data Sharing Framework, ready by the end of 2016.

Invitation to make entries to FOT-Net Data Catalogue

http://wiki.fot-net.eu/index.php/Data_Catalogue

FOT-Net Data project introduced last summer a new FOT Data Catalogue that complements the FOT and Tools Catalogues in FOT-Net Wiki (***wiki.fot-net.eu***). The new catalogue describes the datasets collected in FOTs, naturalistic driving studies and other field trials.
It will be an important tool for promoting these datasets and also a convenient way of searching for suitable ones.



The datasets included in the catalogue should be available for further research
work and described in reasonable detail for potential re-users. Thus, only those datasets are targeted that the data owner is either willing to share (e.g. openly, under NDA or with contract) or with which the data owner is willing to provide analysis support services (i.e. does not share data but provides tailored analysis suitable for customer's research needs).

We would like the FOT-Net Community to go through the datasets they have collected in previous and on-going field trials. Typically, these datasets have not been fully analysed and there could be potential for further work – even in study related to another discipline. If the data sharing or re-use is allowed and there might be potential for such, we would like to encourage you to make an entry to the Data Catalogue. FOT-Net Data partners are happy to assist, if assistance is needed, although creating an entry with the new form is not at all time consuming.

A wiki is a product of the whole FOT-Net community. Therefore, we invite all to take a look at the new wiki, to create new entries to all three catalogues, to complement the old entries, and to use the wiki to find information, datasets, tools and new cooperation possibilities. All feedback on wiki is welcome.

Trilateral Impact Assessment Subgroup for Automation in Road Transportation

The Trilateral (EU-US-JPN) Automation in Road Transportation Working group (ART WG) formed a new subgroup for Impact Assessment (IA) last spring. The aim of this subgroup is to create a harmonized high-level evaluation framework for assessing the impacts of automation in road transportation internationally.

Potential impacts of automation are far reaching and complex. As automated driving tests are still limited for the time being, it is important to collaborate in the evaluations. Thus, the motivation to create a common evaluation framework is to harmonise the test design and experimental procedures to enable meta-analysis. With harmonised approaches, we can maximize the insight obtained and be able to arrange complementary evaluation across the world. FOT-Net's FESTA handbook together with US DOT's Automated Vehicle Benefits Framework act as baselines for creation of the harmonised framework.

The experts in Impact Assessment subgroup also share best practices and results. Currently, the subgroup is collecting information on impact assessment methodologies applied in current and past automated driving and cooperative ITS studies.

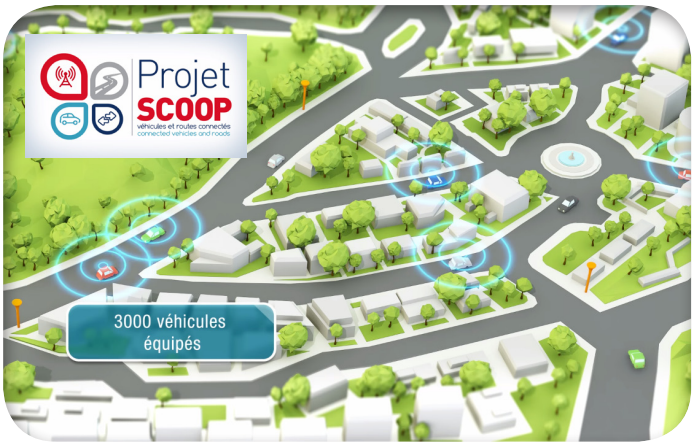
The subgroup is co-chaired by Satu Innamaa (VTT), Scott Smith (US DOT) and Nobuyuki Uchida (Japan Automobile Research Institute).

Above: Scoop@F interactions with the driver

FOTs in the spotlight:

SCOOP@F ITS

SCOOP@F is a pilot cooperative Intelligent Telecommunication System deployment project that will connect 2000 passenger cars with 2000 kilometres of different types of roads, and 1000 road service vehicles. The overarching goal is to improve safety, traffic management and multimodality. The expected outcomes include a technical validation of the system and the study of its impact on road safety.



SCOOP@F displays road safety messages to the driver based on information provided by other equipped cars and Road Side Units. The event can be detected automatically by the vehicles (e.g. hard braking) or manually reported by the driver (e.g. animal on the road). The Human Machine Interface (HMI) will be completely integrated in the cars' own multimedia systems.

During 2 years, 1000 Renault cars and 1000 PSA equipped cars will be driving in 5 different areas of France. As a research laboratory of French car manufacturers on road safety, LAB is interested in evaluating the impact of SCOOP@F in terms of accident mitigation and driver behaviour.

For this study, 30 Renault and 30 PSA vehicles will be equipped with a Data Acquisition System (DAS). CEESAR will instrument and monitor this specific fleet and will also be responsible for data collection and pre-processing. The DAS includes CAN recordings (vehicle internal network), GPS position, and a front smart camera. This smart camera provides contextual measurement such as Time to Collision, position in the lane or pedestrian/ obstacle detection.

The SCOOP@F ITS interactions with the driver (messages displayed/ sent by the driver) are also logged in the DAS and recorded synchronously with other data. The driver behaviour will be evaluated by tracking significant differences in driving parameters with and without SCOOP@F messages. By assessing the link between efficiency of the system and actual accident analysis data, LAB will provide an estimation of real benefits of this system in terms of road safety.

As of now, SCOOP@F system is under development at Renault and PSA. The first validation tests are planned in May 2016 and fully equipped cars should be on the roads end of 2016 when recordings of driver behaviour can start!

SHRP2
STRATEGIC HIGHWAY RESEARCH PROGRAM

Data Sharing in Practice

Large re-use of the SHRP2 naturalistic data

Naturalistic data sets are being collected worldwide to better understand issues of transportation safety, mobility, and environmental impact. The costs for these collections are high, and reusing data sets is one key to making effective use of the money spent. One project that focused from conception on data reuse is the Second Strategic Highway Research Program (SHRP2) Naturalistic Driving Study (NDS). Since SHRP2 was finalized in the spring of 2015 and the data made available, many different stakeholders have begun to mine the data to explore questions in a variety of research areas.

The SHRP2 database contains continuous driving data from over 3,500 drivers recruited from six locations in the United States, more than 5 million trips, and more than 30 million vehicle-miles. Data include video, sensor, vehicle network, and participant assessment data, as well as summary data related to events and trips. Roadway elements from overlapping roadway segments can be obtained from the Roadway Information Database (RID). The SHRP2 data are managed by the Virginia Tech Transportation Institute (VTTI) under a four-year contract with the Transportation Research Board (TRB).

Thus far, the primary interests in the SHRP2 data have focused on understanding and further developing safety performance measures and on developing data analysis tools and methods that make the data easier to use.

The full scope of SHRP2 usage, however, covers a number of research topics such as driver distraction, infrastructure analysis, driver age-related issues, driver fatigue and impairment, roadway lighting, fuel economy, and pedestrian/vehicle conflicts. The breadth of use underscores the importance of making naturalistic data sets widely known so that researchers can figure out how data sets collected globally can be used in their respective research areas.

The users of the SHRP2 data are from different parts of the world, the majority being from the United States. The data can be accessed either via a website or through research-specific requests for data. Approximately 80% of the website users come from the U.S., 10% from Europe, and 10% from the rest of the world. The typical user requesting a data license is a U.S. university with partners (70%). Ten percent of users are original equipment manufacturers (OEMs), 10% are private firms excluding OEMs, and 10% are public health organizations, federal laboratories, and overseas universities. The requestors have levels of expertise ranging from undergraduate students to noted researchers.
To accommodate such large interest, the SHRP2 NDS has had to thoroughly address the seven topics constituting the FOT-Net Data Sharing Framework. These include project agreements, data description, data protection, training, support services, financial models, and applications procedures.

Data access is organized based on the level of detail requested and the need for personally identifying information (PII). A subset of the non-PII and summary data is housed on the InSight website (***https://insight.shrp2nds.us***) for exploration. Subsets of the SHRP2 NDS data can be requested via a data use license (DUL), which generally incurs costs for most requests. The DUL provides a limited period of use for the requested data for a specific research project. There are four DUL forms, depending on the requested data access, ranging from InSight-viewable data to coding PII data such as face video and Global Positioning System (GPS) data within a secure data enclave housed at VTTI. There are currently 93 active DULs for SHRP2 data, and between 30 and 40 requests per month for Qualified Researcher status (the highest level of access for the data website).

https://insight.shrp2nds.us

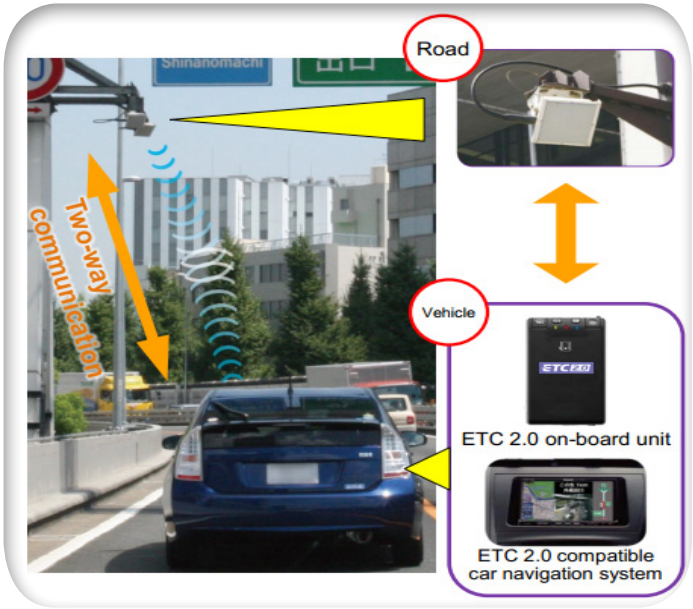
As mentioned, the SHRP2 data were intended for reuse from the beginning of the study. Therefore, the project agreements included prerequisites for data sharing, means of reuse, protection of personal data, and the eventual deletion of the data after 40 years. Use of the original SHRP2 NDS data must be carefully tracked for 40 years. Each DUL includes a time limitation on the data use, and each data request is provided with a persistent digital object identifier (DOI) that uniquely identifies the subset of data used in analyses. The DOI can be cited, and, with the original requestor's permission, other researchers can then obtain the same data set (for replication or for new analyses).

Several tools for handling data are under development, financed by the Federal Highway Administration (FHWA), to facilitate data sharing and reuse of the data. Two of the more interesting tools focus on anonymizing personal data in videos while still retaining the data essential for research. Another is developing feature extraction from video, which could later be shared widely. This effort is proceeding in conjunction with another project investigating which features should be extracted.

The SHRP2 NDS data and analyses are already providing new insights into driver behaviors, both during safety-critical events such as crashes and during normal driving. The variety of researchers reusing the SHRP2 data points out the potential value still to be explored in naturalistic data sets worldwide.

Utilization of Probe Data in Japan

Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has taken a leading role to enhance the scientific approach to road management. ETC has already been widely spread in Japan; about 90% of expressway users pay the toll by ETC. Moreover, the project name of "ETC2.0", one of the major initiatives in Japan's ITS and a unique approach using vehicle to infrastructure two-way communication, has been currently promoted. The collection and utilization of probe data is one of the key components.



The ETC2.0 probe data, combination of time and position record, is firstly generated in the on-board units, then transmitted to the center server at the roadside units with V2I communication. The OBU is capable to handle the data equivalent to maximum 80km length. Successfully, on expressways and major national highways, sufficient substantial data is collected to realize various applications.

Currently, as for periodic nationwide travel speed survey on expressways, data collection has been renewed by the use of ETC2.0 probe data since last year. Also MLIT is now planning to utilize vehicles' extraordinary behavior data (i.e. sudden brake record) contained in ETC2.0 probe data at the planning phase of traffic safety countermeasures in residential areas as one of the indicators representing hazardous situation.

On the other hand, MLIT has now initiated a new system on heavy vehicle management in trial basis. At present, oversized vehicles are required to obtain route permission for all their possible road sections in advance when they desire to pass through public roadway. To simplify this application process, comprehensive application system which obtains permission on multiple routes at once is planned. Instead of this, checking whether they pass through as the permission is important and ETC2.0 probe data is used for this purpose.

In addition to the cases mentioned above but also various other application are now being studied.

News from Other Projects

PEGASUS project to develop standard validation framework for automated cars

More information at:
www.pegasus-projekt.info

While automation gains prominence in the automotive scene, there is a growing demand for common quality criteria, validation methods and software to assess the new driverless prototypes. This is not surprising, as the release of highly automated car functions is subject to the highest requirements in terms of quality and safety. In order to meet these, new process models and test approaches are necessary.

Audi, BMW, Daimler, Opel, Volkswagen, Bosch and Continental as well as various SMEs are working together under the framework of PEGASUS to develop generally accepted methods and tools for testing highly automated car functions. PEGASUS stands for “Project for establishing generally accepted quality criteria, tools and methods as well as scenarios and situations for the release of highly automated driving functions” and is funded by the German Federal Ministry of Economic Affairs and Energy.

The first step for PEGASUS partners will be to assess the performance level of automated-driving functions. This implies the definition of an “average driver” as a standard of comparison from which quality criteria can be derived. Based on this, the project aims to develop test methods, test catalogues and test instruments for simulation-based, lab-based and field-based approaches.

Big Data Europe

www.big-data-europe.eu

After a great workshop last year in Bordeaux and a handful of exciting webinars that helped us understand the requirements and needs of the community, the BigDataEurope project is now ready to step out into real life with a pilot implementation.

The ***BigDataEurope*** project launched in 2015 with the aim of utilizing the power of data in tackling the seven societal challenges defined by the H2020 program: Climate, Energy, Food, Health, Transport, Security, and Social Sciences. The Transport challenge has chosen to design and deploy its big data aggregator platform pilot in the city of Thessaloniki with the help of the ***CERTH*** (Centre for Research and Technology Hellas).

We will keep you updated on the details, with plans for several webinars and a workshop after the summer to show off how far we’ve come. Until then stay tuned on our ***website*** and ***W3C group*** or sign up for the ***newsletter*** to find out what we’re up to!

UDRIVE

www.udrive.eu

The UDRIVE Operation Sites are working full swing and collecting valuable data that will allow partners to analyse the behaviour of people behind the steering wheel and formulate policy recommendations to improve road safety in Europe.

The coming year will be an intense period in which stakeholders will have plenty of opportunities to learn about the Naturalistic Driving Study methodology which is at the core of UDRIVE. Instrumented cars will be showcased at TRA2016 in April in Warsaw and in the Humanist Conference in late June in the UK. Come by and let us show you how it all works in practice!

Cloud-LSVA

The Cloud-LSVA project launched with its first meeting held in late January in Dublin with an enthusiastic consortium in an ever-friendly city.

The project presents a research plan to advance technology and performance in the key automotive industry by employing Semi-Automated Video Annotation, Scene Recognition, Object Recognition and Deep Learning, in conjunction with vehicle sensor data, on a petabyte scale leveraging the elasticity of computing resources offered by Cloud Computing.

The aim of this project is to develop a software platform for efficient and collaborative semiautomatic labelling and exploitation of large-scale video data. The platform aims to solve existing needs for ADAS and Digital Cartography industries.

Cloud LSVA will organise its first workshop in the coming months to pinpoint the specifications, requirements and architecture needs of the community. More details coming soon!

Upcoming Events

FOT-Net Data Stakeholders Meeting in Brussels

8 March 2016, Brussels (Belgium)

In this meeting we will discuss issues on data sharing and data re-use, highlighting the current opportunities available for all parties involved in FOTs.

FOT-Net Data presentation at TRA 2016

18-21 April 2016, Warsaw (Poland)

The article "Methodology for Field Operational Tests of Automated Vehicles" will be presented by the FOT-NET Data Consortium. The paper investigates how the current FOT methodology may be adapted or changed. Special attention is given to the type of data that is needed for baselines and for answering research and impact questions.

FND in ITS Congresses

6-9 June 2016, Glasgow (UK)

FOT-NET Data will support a Stakeholder Workshop on the topic "Towards a methodology for Field Operational Tests (FOTs) for automated vehicles".

ITS World Congress

10-14 October 2016, Melbourne (Australia)

FOT-NET Data will support a Special Interest Session on the topic: "Automated vehicle pilots: challenges for data collection and sharing".

Save The Dates!

- Symposium on The Future Networked Car 2016, 3 March 2016, Geneva (Switzerland)
- ecoDriver project Final Event, 16-17 March 2016, Stuttgart (Germany)
- 6th European Transport Research Conference (TRA2016), 18-21 April 2016, Warsaw (Poland)
- 11th ITS European Congress, 6-9 June 2016, Glasgow (UK)
- Intelligent Vehicles Symposium IV16, 19-22 June 2016, Gothenburg (Sweden)
- 5th International Symposium on Naturalistic Driving Research, 30 August – 1 September 2016, Virginia (USA)
- IEEE 19th Intelligent Transportation Systems Conference, 2-5 October 2016, Rio de Janeiro (Brazil)

For more information on upcoming events visit: ***fot-net.eu/events/***

Past Events

FOT-Net Data International Workshop on ITS and Connected Vehicle Data

5 October 2015, Bordeaux (France)

In order to exchange information on FOTs and data sharing, the FOT-Net Data project held an International Workshop right before the opening ceremony of the ITS World Congress 2015.

The workshop was organised in collaboration with the U.S. Department of Transportation (DOT). Representatives from MLIT and Nagoya University (Japan), the European Commission, as well as different industry and research organisations, made it possible to address data sharing opportunities and challenges from different angles.

The focus was on the data generated in FOTs related to ITS in general and connected vehicles trials in particular. Panellists and attendees discussed together how lessons learned from FOTs concerning data ownership, personal data and anonymisation could be used in the deployment phase.

FOT-Net Data Workshop: A common methodology for road automation FOTs and pilots

3 February 2016, Leeds (UK)

The objective of this workshop was to discuss the current FESTA methodology focusing on how it could be adapted to automation pilots that will be launched in the coming years, or whether a new methodology would be needed. Five major areas have been addressed: (1) societal scenarios and research questions, (2) study design, (3) data collection and analysis, (4) impact and socio-economic cost-benefit analysis and (5) data sharing.

It was highlighted that challenges on automation pilots are very different from those of cooperative or driver support systems FOTs. To start with, there is a whole new range of research questions that need to be addressed. Moreover, the environment in which automation pilots will take place is much broader (e.g. apart from the vehicle, they will have to consider other road-users). The seminar provided both plenary presentations and small group discussions. Participants were very engaged and interested in the topic as several projects will be launched in the future to evaluate automated means of transport. In this regard, the PEGASUS project was presented as an example.

US representatives presented some interesting initiatives, such as the Research Data Exchange (RDE) whose main purpose is to provide access to FOT data and a variety of data-related services that support the development, testing, and demonstration of multi-modal transportation mobility, weather, and environmental applications.

Finally, an update on the activities carried out by the tri-lateral EU-US-Japan sub-group in terms of impact assessment of automated driving was also provided.

The presentations of all FOT-Net Data events are available on the ***fot-net.eu/library/***

About FOT-Net Data

FOT-Net Data, Field Operational Test Networking and Data Sharing Support, is a 3-year support action project to

- Support the efficient sharing and re-use of available Field Operational Tests (FOTs) datasets
- Develop and promote a framework for data sharing and data re-use
- Build a detailed catalogue of available data and tools and
- Operate an international networking platform for FOT activities.

FOT-Net Supports:

- Networking Platform
- Data Sharing Framework
- Catalogue of Data and tools
- FESTA Methodology

Project Partners

Join us!

Become an **associated partner** and learn:

- How to design and execute future FOTs
- How to re-use existing FOT data to answer new questions
- How to prepare your data collection, storage and documents so that they can be re-used later

You can also send your information on FOT-projects to ***info@fot-net.com***

Stay in the loop with FOT-Net Data news and events. Subscribe to the news service through our website *www.fot-net.eu* or here:

Contact us

info@fot-net.eu

Project coordinator:

Sami Koskinen, VTT
sami.koskinen@vtt.fi

All info is available on:

www.fot-net.eu

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 610453.