EUROPEAN COMMISSION
DG INFORMATION SOCIETY & MEDIA

SEVENTH FRAMEWORK PROGRAMME
INFORMATION AND COMMUNICATION TECHNOLOGIES
Coordination and Support Action – Grant Agreement Number 224088

FOT-Net
Field Operational Tests Networking and Implementation

MINUTES SECOND INTERNATIONAL WORKSHOP

Stockholm, 21 September 2009

Deliverable no.	D2.3
Dissemination level	Public
Work Package no.	WP2
Author(s)	Irina Silva, Maxime Flament
Co-author(s)	
Status (F: final, D: draft)	F
File Name	FOT-Net WP2 v0.1 IS - Second International workshop minutes.docx
Project Start Date and Duration	01 June 2008, 27 months

Document Control Sheet

Main author(s) or editor(s): Irina Silva, Maxime Flament
Work area: WP2
Document title: Minutes Second International Workshop

Version history:

Version number	Date	Main author	Summary of changes
0.1	21/09/09	Irina Silva	First draft
0.2			
0.3			

Approval:

	Name	Date
Prepared	Irina Silva	
Reviewed	Maxime Flament	
Authorized	Maxime Flament	

Circulation:

Recipient	Date of submission
EC	

Table of Contents

Introduction

FOT-Net has successfully established a strategic networking platform in order to address common issues related to the practical organisation, set up and follow-up of FOTs results. As part of the different cooperation platforms offered by the project, the Stakeholders meetings and International workshops aim:

- To contribute to FOT-Net's WP2 report on the FOT roll-out plans and how FOT results should be used to accelerate the roll-out of tested technologies.

- To inform periodically the stakeholders about FOT progress at European, national and international levels.

- To identify stakeholders' needs and how FOT activities can support the network.

- To present key contributions that will stimulate the discussion on FOTs.

The first International workshop took place on 20 November 2008 in New York during the ITS World Congress. The workshops aimed to bring international FOT stakeholders together to discuss common working items and possible cooperation. The common working items included Methodology, Data handling and analysis and Deployment issues.

The Second International Workshop which took place on 21 September in Stockholm at the occasion of the 16th ITS World Congress and Exhibition had has objectives to:

- Contribute to the establishment of a global FOT network in order to exchange knowledge, best practices and foster cooperation for FOT activities.

- Identify concrete issues which should be addressed by the international FOT network.

- Strengthen the cooperation between FOT activities and their stakeholders leading to faster and effective take up of Intelligent Transport Systems and Services.

1 Welcome: Achievements of the FOT Network Platform

FOT-Net has established and operated since 2008 a networking platform for FOT activities including all stakeholders from public and private sectors. It has set up an FOT discussion platform open to all stakeholders and has promoted exchange of knowledge, best practices and fostered cooperation for all FOT activities at the national, European and International levels.

During its first year of establishment FOT-Net took steps to **create a FOT community**:

- More than 600 experts or stakeholders are in the FOT-Net Forum

- Strong extension to international FOT community which uses FOT-Net as a contact point for FOT activities in Europe

- Set-up of formal process for becoming Associated Partner (11 partners at present)

FOT-Net has also setup an **information platform** by developing and using a range of communication means to achieve visibility of FOT-Net and FOT activities. The **FOT Wiki** is one of these communication means, it centralises in one place information about past and current FOT activities as well as it maintains the FOT glossary initiated by FESTA and euroFOT.

In addition FOT-Net has also **promoted the FESTA methodology** by developing solutions that can be used for training, education and promotion of the FESTA methodology.

2 Session 1: FOT accomplishments and challenges in Europe, Japan and US

2.1 euroFOT, John-Fredrik Grönvall, Volvo Cars

Volvo will continue in the future to do data collection, beyond the euroFOT project. FOTs allow gathering information before an accident occurs, which is just as important as the information about the accident itself. In euroFOT Volvo is interested not only in accidents but also in minor incidents.

The main challenges for Volvo in euroFOT are:

- The logistics of obtaining and running large fleet in a FOT since Volvo will have 100 cars and 50 trucks involved in the FOT.

- The analysis of a large amount of data.

- The legal and ethical issues. The driver needs to be convinced that the data will be used in a secure way. If not successful in this task, it could be problematic to use euroFOT's data. The customers have to believe that the data will be used well, and in addition care should be taken that the media does not give a bad spin to potential legal and ethical issues.

After euroFOT has been completed, what may come next is:

- Organising FOTs with larger fleets?

- Having broader hypotheses?

- Developing more advanced analysis packages

- Automatic image processing

In what regards future cooperation John-Fredrik Grönvall stressed that the markets closer to Europe should not be forgotten. In this respect customers may be different but the vehicles used are the same, and there is need to analyse how they drive.

2.2 Smartway, Koichi Sakai, National Institute for Land and Infrastructure Management

The NILIM is attached to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

Smartway looked into New Cooperative Road-Vehicle Systems using 5.8 GHz (dedicated short range communications). With Smartway services a variety of functions are integrated in a single ITS on-board unit to provide multiple services that were previously based on individual on-board units such as car navigation systems, VICS, and ETC.

FOTs were already conducted in 2007 (Tokyo Metropolitan Expressway) and in 2008 (three major areas and other areas).

In addition to the tests a questionnaire survey was also performed. Users were asked how they felt when they received the driver assistance information. Many subjects replied "it made them slow down". Through this survey you find that the drivers' mind changed with the use of these services.

The ITS OBU was rated among 500 people. The results from the survey will be available from 2010 as will be the nationwide deployment of the Smartway services.

2.3 AOS FOT, Paul Potters, Connekt/ITS Netherlands

2400 trucks were equipped in the AOS FOT. Trucks were chosen as the target of this FOT because it was found that when trucks get involved in accidents they provoke longer delays on the roads.

The results of this FOT will be publicly available. The results showed that the drivers appreciate the support systems, and would like to continue using them after the test was completed.

At the beginning of the FOT 60 to 90 accidents were expected but in the end there were 5 accidents, where the driver didn't have the system in his truck. Where the systems were available there were no accidents at all.

The FOT revealed that the behaviour was changed, so there were less accidents and better traffic flow.

2.4 SHRP2 Naturalistic Driving Study, Shane McLaughlin, Virginia Tech

SHRP2 is a naturalistic driving study involving approximately 3100 total participants (recruitment is done through VirginiaTech, through a central call center). There are 6 data collection sites across the US and the study will include passenger cars, vans, SUVs and pickup trucks.

The study has as objectives that the data gathered must be usable today and in 20 years, that the data must be as flexible as possible (no information away should be thrown away) and that the data access is available for a large range of users with varied capabilities and interests since different data and resolution is required for different groups.

Data will be collected on driver assessment, DAS variables and crash investigation.

2.5 US ITS evaluation program, Jane Lappin, US Department of Transportation

Volpe National Transportation Systems Center is part of the U.S. Department of Transportation's Research and Innovative Technology Administration (RITA) with the mission to improve the country's transportation system.

Jane Lappin's presentation served to clarify the institutional structure of the US ITS evaluation program, instead of looking specifically at one FOT. The US Department of Transport has 9 administrations. Direction comes directly from Congress legislation and from the President. Each agency and each program has to align itself with this direction. The ITS program is multimodal. All the decisions about the ITS programme come from legislation following a top-down approach. It is very different from the European approach as the European Commission approaches the stakeholders for their input. The US Congress identifies the issues, and how they think these should be solved.

The FOT term is used generically, it is used interchangeably with demonstration, field test. There are two types of evaluations, one which is vehicle based and the other is transit (road) based. Vehicle safety also looks into the human factors.

Among the evaluation challenges:
- Structural issues in evaluation. Often the demonstrations are not designed with evaluation in mind.
- Procurement affects the deployment and influences the evaluation opportunities.
- Difficult to keep comparable data.

The Volpe Center communicates the impact of its work through many sources such as its website, webinars, publications, workshops, courses and outreach programmes.

2.6 Discussion

Stakeholders involvement in FOTs

Maxime Flament stated that often it is forgotten for whom the results of the FOTs are being provided to. Jane Lappin showed a set of ways to promote the results. However who is actually looking at these results? Who are the different stakeholders and how can we answer to their needs? The US DOT was referred as a stakeholder to whom the results are being provided to and it has a number or expectations. But from John-Fredrik Grönvall's presentation it was shown how OEMs are also interested in this data.

Jane Lappin mentioned that the Volpe Center has partnerships with the private sector and promote public/private dialogue. Much of the research has to do with how the consumers use the technologies. As a governmental agency it also relies on ITS America partners.

John-Fredrik Grönvall agreed that it is possible to have cooperation between the industry and public authorities. Volvo is willing to share information on how to collect data. In euroFOT this has been discussed.

Koichi Sakai explained that the Japanese research follows a public/private approach. In Smartway the private sector develops the OBU, the public sector implements it. The next focus will be on deployment.

Shane McLaughlin explained that in SHRP2 the stakeholders involved come from the safety domain, civil engineering, vehicle engineering, sociologists looking at travel behaviour and policy makers. Each group brings their own applications and paradigms. OEMs will also be able to access the data.

Naturalistic Driving Studies

Maxime Flament inquired why in terms of international cooperation there isn't a SHRP2 initiative in Europe. Would there be interest in using the same structure from SHRP2 in Europe?

Paul Potters was of the opinion that public and private research cooperation works but each region works differently in terms of deployment. Europe would need to have the same transnational way of working.

John-Fredrik Grönvall stated that it would be natural that the next step would be to lead large naturalistic FOTS and to this in coordination with the US in order to compare data. The idea of 6 sites in SHRP2 is similar with what is being done in euroFOT, for a naturalistic driving study the number of the vehicles would have to be increased.

Koichi Sakai mentioned that in Japan this year data from FOTs from each project in ITS Safety 2010 is being shared. Maybe this data could also be shared with Europe and US.

FOT Results

John-Fredrik Grönvall stated that as an OEM they respect that some of the results may not be positive. The systems are mature, effective and they have been tested. They can be low-effective but not negative, and if they are we will respect that.

Koichi Sakai explained that before installing in the field, negative impacts were tested in the test course. In the field, it may happen that the effectiveness is not high. Sometimes we find less-effective impacts but we may also find other positive effects such as impact on the environment.

Shane McLaughlin added that they want their results to be disseminated however it is hard to get the results out in real time.

3   Session 2: Methodology and data handling

3.1   SKY project, Masao Fukushima, Nissan

A large amount of good data and positive results were obtained from the SKY FOT. Over 20 000 data were logged and 2 000 test vehicles were involved in the FOTs. The FOT involved a large number of ordinary participants who are not conscious of the test in their everyday car-life thus they had a neutral concern about the test contents. Participants agreed to participate not because of the test purpose but because of the incentives provided (free car navigation map database up-date, free 3 media VICS beacon antenna and pre-paid cards).

At long term it is expected that the participants' behaviour reaction might change as time passes, with vehicle speed decreasing gradually with time.

3.2   euroFOT, Karsten Heinig, Volvo Technology Corporation

The main challenges identified regarding data handling concern:

Technical side
- DAS - difficult to find auitable data acquisition system in time and on budget. euroFOT discussed with VTTI about this matter. The DAS integration into vehicles: need to follow OEMs EMC regulations. And also need to modify customer vehicles into test vehicles.
- data management – data management is specific to the each Vehicle Management Center (VMC), will it have an impact on data analysis? Another issue to have in mind is the protection of proprietary information.

Methodological side
- data analysis:
  - amount of data - an online upload is only possible for small amounts of data. The only way of getting the data is by exchanging hard drives. The quality needs to be verified.
  - scenarios, situations, incidents: validation

Organisational side
- driver/ vehicle recruitment
- data protection

3.3   SafeMiles and Canadian Naturalistic Driving Survey, Vittoria Battista, Transport for Canada

SafeMiles was designed for rewarding safe driving modelled after the Dutch Belonitor FOT. The question was "can we influence speed choice by rewarding drivers instead of

using punishment?". Two driving behaviours were monitored: speed and following distance. The on-board equipment includes an integrated display, digital speed map, GPS receiver, a vehicle diagnostic instrument, a wireless transmitter, SD memory card, connection to OBDII, and radar. Regarding the data collection four questionnaires were administered: for recruitment, end of baseline, end of feedback/reward, end of post-baseline/equipment removal.

The main issues encountered had to do with:

- Vehicles excluded because of requirement for MAF for fuel consumption calculations (major)

- Also excluded vehicles with passivated windshields (passivated glass refers to chemically coated glass that filters the sun's rays) since it interfered with GPS reception (minor)

- Problems still discovered during installations (vehicles with no MAF, hardware compatibility)

- Errors in digital map

The Canadian naturalistic driving study will capture detailed unobtrusive data on driving behaviour and the interaction of driver, vehicle & environment over an extended period of time. Primary focus will be on rural driving environments (55% of fatalities occur on rural roads in Canada). The study is Associated with the Strategic Highway Research Program (SHRP 2) program in the US, the same methods and data acquisition system will be used. The study will include two Canadian sites of 150 instrumented vehicles over an 18 month period.

3.4 TeleFOT, Stig Franzen, Chalmers University of Technology

The issues encountered in TeleFOT in what concerns methodology and data handling have to do with:

- Functions (per FOT) were not defined and specified at an early stage
- The timing of different FOTs has been difficult to foresee
- Local stakeholder interests influence often the degrees of freedom for study design

It is also foreseen that there will be issues concerning:

- How to handle "Combination of functions" still to be further clarified
- Pilot FOTs will meet "reality" (if designed in a proper way). How to handle experiences and related needs to "modify"?
- Local evaluation teams to be organised. What should be their qualifications and duties?

TeleFOT has identified the following issues still to be discussed:

- How to share information with other projects
    - Direct contacts
    - Written material
    - Personal "involvement"
- Common impact areas
    - Compare hypotheses
    - Compare performance indicators
    - Compare measures
    - Compare "sensors" (hard and soft)

- How to tackle the European dimension
    - A European FOT Handbook

3.5 Discussion

Jane Lappin asked how TeleFOT is managing the comparability of the travel diaries among the languages in the different sites.

Stig Franzen explained that TeleFOT tried to create a template in English, which is the project working language, then these will be professionally translated. The travel diaries are used in a minor scale.

Karsten Heinig explained that in euroFOT the same issues are being faced. An English version is being developed and which will then be translated.

Andras Kovacs (BroadBit) asked about the definition of incidents. What is the core issue in the definition of an incident?

Karsten Heinig replied that you may have something you identify as a forward incident but then the driver steers to the left and has a lateral incident. If you only concentrate on the lateral incident, then you may ignore a main part of the incident, the forward incident.

The incident is dependent on driver pattern.

Maxime Flament asked about improvements to the FESTA methodology.

Stig Franzen replied that in TeleFOT, experiences are being gathered from all the FOTS. TeleFOT will be able to contribute to the improvement of the FESTA methodology and other FOTs, allowing to put FESTA into a new context. In the case of US and Canada as there working more on naturalistic driving studies, this area in particular could be of interest for FESTA.

John –Fredrik Grönvall asked the panel about their opinion in the choice of systems to be subject to FOTs.

Karsten Heinig mentioned that it depended since for example in the case of cooperative systems a market penetration is needed in order to test the systems.

Stig Franzen explained that in TeleFOT they will be testing mature systems, systems which people are used to. It will be covering an area that has not been in focus in the past.

Vittoria Battista explained that in the Canadian FOTs they are looking more into mature systems in order to see how safety regulations can be shifted having in mind these technologies.

4 Session 3: Examples of international FOT cooperation

4.1 TeleFOT International Cooperation, Petri Mononen

TeleFOTinco is a concrete example of FOT cooperation. The general objective is to create an international network of projects addressing issues related to In-vehicle Information Systems using vehicle positioning, nomadic & aftermarket and other in-vehicle devices for driver support. Other objectives include:

- Organise meetings and workshops to address the area of driver information systems.
- Define areas of cooperation and exchange.
- Discuss and agree on most feasible methodology and methods to be applied in the problem area defined above.
- Exchange information and knowledge on FOTs.
- Discuss possibilities of deeper international cooperation in FOTs and IVIS

The project will last for 32 months from October 2009 to May 2012. It is co-funded by the EC with 200 000 €. The EC funding will be used to arrange events for all in Europe and also attend events in Europe, USA and Korea. The corresponding resource from the partner projects will also be used to arrange and attend events in the three continents. These events will serve to:

- Get together, discuss methodological issues, exchange views on testing, services and business models and
- Find a common methodological basis in order improve comparability of tests

TeleFOTinco is composed of:

- TeleFOT (EC/FP7)
- SafeTrip21
  - o University of California PATH & NAVTEQ
- VMC – Vehicle Multi-hop Communication
  - o ETRI (Korea, Daejon)

- Ubiquitous Transportation Systems
    - KOTI (Korea, Seoul)

The discussions regarding TeleFOTinco started in 2008 in New York. As the funding was limited TeleFOT selected a few of its partners to be part of the international cooperation project. TeleFOT INCO will run until the end of the TeleFOT project.

Maxime Flament underlined that these events will be organised in cooperation with FOT-Net in order to avoid overlap. The use of webinars could be a complementary tool to explore in what regards international cooperation events in order to minimise the travel.

5   Session 4: Wrap-up of discussions

Maxime Flament, Oliver Carsten and Yvonne Barnard wrapped up the discussion by stating that:

- There are several FOT activities ongoing around the world and that more international cooperation is needed in terms of setting up of FOTs. An approach to sharing this kind of information could be through development of "Harvard-syle" best practices. In addition webinars could be a tool to be further developed for further international cooperation.

- From the Japanese experience we can see that FOTS are very much based on infrastructure. From the US experience we saw that there are many tests focusing on mobility. It could be envisaged to see how the US methodology could support the methodology in Europe.

- There is a lot of variety in FOTs and knowledge resulting from the FOTs. It could be useful to move to a knowledge management strategy. One of the issues related is that the FOTs are managed by people who do not attend FOT-Net meetings. These people need to be met directly in order to gather the knowledge. Secondly we need to develop tools to handle the knowledge that is being gathered. The FOT wiki is a first good idea but we may now need to develop communities of practices.

Maxime Flament adjourned the meeting thanking the European Commission and all the participants for having attended the meeting.

Annexes

Annex 1 – Final Agenda

Second International Workshop
When? Monday, 21 September 2009, 08:30 – 14:00
Where? Meeting Room K16/17, ITS World Congress venue, Stockholmsmässan,
Stockholm
FINAL AGENDA

Workshop objectives:

- Contribute to the establishment of a global FOT network in order to exchange knowledge, best practices and foster cooperation for FOT activities.

- Identify concrete issues which should be addressed by the international FOT network.

- Strengthen the cooperation between FOT activities and their stakeholders leading to faster and effective take up of Intelligent Transport Systems and Services.

	08:30	**Registrations and Coffee**
	09:00	**Welcome: Achievements of the FOT Network platform and meeting objectives** *Maxime Flament, ERTICO – ITS Europe*
SESSION 1	09:15	**Session 1: FOT accomplishments and challenges in Europe, Japan and US** *Moderator: Maxime Flament, ERTICO – ITS Europe* *Short presentations on completed and ongoing FOTs will introduce the main international activities:* - **euroFOT**, *John-Fredrik Grönvall, Volvo Cars* - **Smartway**, *Koichi Sakai, National Institute for Land and Infrastructure Management* - **AOS FOT**, *Paul Potters, Connekt/ITS Netherlands* - **US ITS evaluation program**, *Jane Lappin, US Department of Transportation* *This session will focus on the accomplishments and challenges met by FOTs in the various regions namely:* - *In which context are FOTs organised? What are the different stakeholders' expectations? Are there other stakeholders who could profit from the results? Could their expectations be answered?* - *What were the challenges and how were they dealt with?* - *The FOT has been completed, what comes next?* - *How to foster future cooperation aiming at broader knowledge exchange and formation of a FOT expert network?*

SESSION 2	11:00	**Session 2: Methodology and data handling** *Moderators: Oliver Carsten and Yvonne Barnard, University of Leeds* - **SKY project**, *Masao Fukushima, Nissan* - **euroFOT**, *Karsten Heinig, Volvo Technology Corporation* - **SafeMiles and Canadian Naturalistic Driving Survey,** *Vittoria Battista, Transport for Canada* - **TeleFOT**, *Stig Franzen, Chalmers University of Technology* *This session will focus on the different FOTs methodologies:* - *Methodology issues identified during the FOT-Net seminars and workshops, particularly the evaluation of FOTs.* - *How to foster cooperation on issues such as performance indicators, data acquisition, analysis & sharing.*
SESSION 3	12:00	**Session 3: Examples of international FOT cooperation** *TeleFOT International Cooperation towards US and South Korea: Illustration in practice how international cooperation can be achieved.* - *Petri Mononen, VTT*
SESSION 4	12:15	**Session 4: Wrap-up of discussions** *Moderators:* *Maxime Flament, ERTICO – ITS Europe* *Oliver Carsten and Yvonne Barnard, University of Leeds* *The wrap-up should result in the following:* - *Identification of common working items* - *Next steps for international cooperation on FOTs*
	12:30	**Adjourn** **FOT-Net Lunch**

Annex 2 – List of participants

PARTICIPANTS

Last Name	First Name	Organization
Balistreri	Amélie	ERTICO - ITS Europe
Barnard	Yvonne	Institute for Transport Studies
Battista	Vittoria	Transport Canada
Boethius	Eva	EC - DG INFSO
Carsten	Oliver	University of Leeds
Csepinszky	Andras	ERTICO - ITS Europe
Daems	Frank	NXP semiconductors
De Baets	Koen	University of Ghent

de Kievit	Martijn	TNO
De Mol	Johan	University of Ghent
Ehrlich	Jacques	LCPC-INRETS
Etemad	Aria	Ford
Fikkert	Dirk	ITURA
Flament	Maxime	ERTICO - ITS Europe
Franzen	Stig	Chalmers University of Technology
Fruttaldo	Serena	Università degli Studi di Modena e Reggio Emilia
Fukushima	Masao	Nissan
Gallagher	Brian	DENSO International America, Inc.
Giannini	Monica	Pluservice
Grill	Johann	ADAC
Grönvall	John-Fredrik	Volvo Cars
Hagleitner	Walter	ADAS_Management-Consulting
Hallström	Bengt	Vägverket
Harding	John	USDOT/NHTSA
Heinig	Karsten	Volvo Technology Corporation
Henchoz	Jean-Michel	DENSO
Hess	Soeren	Car 2 car Communication Consortium
Hoefs	Wolfgang	EC - DG INFSO
Hosaka	Akio	AHSRA
Iwakawa	Shunsuke	Cabinet Secretariat, Government of Japan
Kenis	Eric	EC - DG TREN
Kim	Kyu-Ok	Korea Transport Institute
Kovacs	Andras	BroadBit
Lappin	Jane	USDOT-RITA-Volpe center
Leinmüller	Tim	DENSO AUTOMOTIVE Deutschland GmbH
Lind	Gunnar	Movea Trafikkonsult AB
Mattern	Norman	Chemnitz University of Technology
Mc Laughlin	Shane	SHRP2
McHale	Gene	USDOT FHWA
Misener	James	University of California PATH Program
Molenschot	Toine	City of The Hague
Mononen	Petri	VTT Technical Research Centre of Finland
Morita	Hiroschi	Toyota
Muñoz	Oscar	IDIADA AUTOMOTIVE TECHNOLOGY
Ogawa	Michiya	NILIM
Pandazis	Jean-Charles	ERTICO - ITS Europe
Peters	Joseph	US Dept of Transportation
Pettitt	Phil	innovITS
Potters	Paul	ITS Netherlands / Connekt
Sakai	Koichi	NILIM

Schmidt	Robert	DENSO AUTOMOTIVE Deutschland GmbH
Schubert	Robin	Chemnitz University of Technology
Seo Oh	Hyun	ETRI
Shladover	Steven	University of California PATH Program
Silva	Irina	ERTICO - ITS Europe
Svensk	Per-Olof	Triona AB
Tatematsu	Junji	ITS Japan
van der knaap	Rien	OC Mobility Coaching
Vits	André	AV Consult
Wall	Nigel	Shadow Creek