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 THIRD STAKEHOLDERS WORSHOP

Brussels, 27 January 2010

SEVENTH FRAMEWORK PROGRAMME

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Introduction

An event open to all stakeholders, FOT-Net organised its third stakeholder workshop, on 27 January in Brussels, dedicated to Cooperative Systems FOTs. The objectives were to:

- Understand stakeholders' expectations with regards to cooperative systems FOTs.
- Review current state of the art and FOT activities on cooperative systems.
- Contribute to the networking for cooperative systems FOTs.
- Understand the stakeholders' needs for joint support actions, and how FOT-Net can support these.

At a stage when stakeholders look towards deployment and the benefits of intelligent vehicle systems, the workshop contributed to this discussion by looking into cooperative safety and mobility services for goods and people as well as cooperative mobility from the infrastructure point of view. Other topics included tools for FOTs on Cooperative Systems, as well as presentations by organisers of national cooperative systems FOTs.

The workshop came at good timing as the EC has opened a call for proposals under the heading "ICT for the Mobility of the Future" and is specifically looking for proposals on "Field Operational Tests for Integrated Safety Systems and Co-operative Systems". Projects need to take an integrated approach to safety, considering together the infrastructure, vehicles, drivers and other transport users.

Setting the scene

1.1 Achievements of the FOT Network platform and meeting objectives, Maxime Flament, ERTICO - ITS Europe

The FOT-Net achievements were presented which at this time included:

- Creation of a FOT community with more than 600 experts and stakeholders in the FOT-Net Forum
- Strong extension to international FOT community which uses FOT-Net as a contact point for FOT activities in Europe
- Formal process for becoming Associated Partner (11 organisations joined)
- Encouraging the FOT community to use the FOT-Net information and dissemination platforms (through the newsletters, meetings & seminars, FOT wiki and printed materials).
- Organisation of targeted meetings
- Promotion of the FOT Methodology via a number of seminars. The forthcoming seminar was announced: 24 March 2010 in Amsterdam, in parallel with the Cooperative Mobility Showcase.

In general the Stakeholders workshops objectives are to:

- To inform, every 6 months, stakeholders about FOT progress (national, EC, and international activities).
- Identify how FOT activities can support the needs of the stakeholders.
- Provide a forum for key speakers to present and discuss.

The specific objectives of the Third Stakeholders Workshop were:

- Understand stakeholders' expectations with regards to cooperative systems FOTs
- Review current state of the art and FOT activities on cooperative systems
- Contribute to the networking for cooperative systems FOTs
- Understand the stakeholders' needs for joint support actions.
- Four discussion topics were identified:
    - Stakeholders point of views on Cooperative Systems FOTs

- Tools for FOTs on Cooperative Systems
- National Cooperative Systems FOT initiatives
- Joint working items on Methodology and Components for cooperative systems FOT

1.2 European Commission expectations towards cooperative systems FOTs, Wolfgang Höfs, European Commission

Wolfgang Höfs explained that FOT-Net is an activity that is very high in the EC portfolio and has an important role in the development of future Cooperative Systems (CS) FOTs.

Having just returned from the TRB where there was discussion on means to assess IVSS used in Europe and US, he stated that the same discussion should take place for cooperative systems. For this the Cooperative Mobility Showcase which will occur in Amsterdam in March (demonstration and 3 days conference) will have an important role as the results of three European integrated projects will be presented at a general and detailed level.

At this stage it is needed to look deeper at the steps towards deployment and analyse the benefits. For this CS FOTs are being planned and this workshop was step on that direction.

Another important aspect is that in the past research focused on the safety aspect. This will continue but new challenges present themselves in the political agenda. Efficiency is one the main topics currently and CS have the capability to support both safety and efficiency.

The EC's Call for proposals 6 is open until 13 April with a focus on smart urban mobility and CS FOTs (with an option of FOT on intelligent vehicle systems but focusing on cooperative systems). The EC would like to have at least 2 Integrated Projects in the project portfolio. 32 million euro is available for the IPs and STREPs. He emphasised the need to focus on the general objective: FOT is for data collection, analysis, and assessment of the benefits in general. It's not just about extending existing projects.

Wolfgang Höfs thanked everyone for attending and wished all a successful workshop.

2 Stakeholders point of views on Cooperative Systems FOTs

2.1 Cooperative Safety and Mobility Services for Goods, David Rylander, Volvo Technology Corporation

In this domain it is important to look at the different actors, you need to consider fleet managers, community of services, infrastructure. The means to do that are focused on urban, corridor, hubs and intermodality.

2.2 Cooperative Safety and Mobility Services for People, Matthias Schulze, Daimler

There is no common agreement on what CS really mean but the motivation behind its development is clear: there are challenges to mobility and traffic safety and CS can improve the situation: through communications it is possible to gather communication and look ahead, so that drivers can improve their response time by foresighted driving. At the moment the communications possibilities are restricted. Other sensors are being developed and with communications you can look around curves for example, and learn what is ahead. That can be gathered with communications technology.

There are many ongoing activities with their own ideas about CS and difficult to bring all under one umbrella. In addition these projects, activities have proposed a lot of functions but important questions remain namely how to make these functions liable from an economic point of view, how should the common European system look like, will it pay off?

National peculiarities need to be considered, for example in terms of accident reasons. DAIMLER is currently coordinating two field trial activities which are ongoing: SIM-TD carried out in the greater Frankfurt area and PRE-DRIVE C2X, and EC-funded project which includes most of the OEMs also involved in SIM-TD and other European OEMs. PRE-DRIVE C2X has looked into business cases.

Applications need to be validated and done jointly with the different national test sites and should involve traffic authorities. In addition to carry out useful tests according to Matthias Schulze, you need to involve a large number of vehicles, it should really be at more than 100 vehicles in order for an FOT to make sense.

2.3 Cooperative mobility from the Infrastructure point of view: Needs and potential, Siebe Turksma, Peek Traffic BV

Why are FOTs on CS important? For deployment, proof is needed and FOTs should bring proof that these CS have real benefit. And for some applications the proof is quite easy to obtain. For safety applications simulations could be done. For public transport applications FOT testing can be easily done. However he considered that 100 vehicles may not be enough to test some of the systems.

CS need to give a lot of thought to issues such as assessment tools, the environment they are been carried out in (urban, provincial, motorway) and also consider that some FOTs don't transfer well from one city to the other.

There was discussion on the amount of information provided to the drivers (how it could be too much) and how the HMI still needs to be resolved.

The issue was raised that as we move in the next 40 years into electric vehicles, the present investments in the infrastructure need to be long term.

3 Tools for FOTs on Cooperative Systems

3.1 PRE-DRIVE C2X: methods and tools for next steps, Ilja Radusch, Fraunhofer Institute FOKUS

There are many use cases that could be tested but how do you select the most appropriate one for an FOT? FOTs are being carried out now but they may not be performed all the time. A simulation environment would be beneficial in this context since you cannot perform FOTs every 5 years.

How many vehicles do you need to test? In a simulation maybe you only need 10 vehicles. However for CS it is not as simple since you are using communications through the simulator communications.

In the case of PRE-DRIVE C2X, it was not intended to build a simulator from scratch, so they have tried to couple simulators. One way is to have a generic infrastructure which allows coupling several other simulators.

In what concerns the work package on Test Management, and specifically the selection of the use case PRE-DRIVE C2X faced the problem that the description of use cases differ from consortium to consortium. PRE-DRIVE C2X collected the descriptions and harmonised the wording. It was a difficult process, which included a 2 step selection mechanism (ranking and balancing). The use cases were divided into three areas safety, efficiency and business & deployment. 16 cases were selected, stakeholders were asked to respond to a number of questions. Traffic Information and recommended itinerary was selected as the top one.

Also concerning the test management, the aim is to reuse hardware, you don't want to test systems which will require new hardware. The Test Management Center coordinates all the vehicles and monitors all 3 stations (vehicle, central, roadside). You also want a test bench, which requires limited testing (where the vehicles are not yet on the road). This gives the impression that the test in ongoing in order to test the hardware.

For the selection of trial sites, fact finding was done with European trial sites. With questionnaires, the second step includes visits to the test sites. It's important that the sites have a long term vision. And it is also positive when there is support from local municipalities.

The final PRE-DRIVE C2X will take place mid 2010. All publications will be available on the website. The final event will take place 10-11 June in Brussels (a conference will take place on the 10th and on the 11th participants will be able to test the systems).

3.2 CVIS1.1 enabling Cooperative Mobility Services, Erik Olsen, Q-Free

A selection of results of the CVIS project were presented. CVIS is working on a communication platform: CVIS1.0. The project has looked on how to make the architecture more flexible for FOTs. The aim is to have a roof top antenna (no use of PCs anymore) with a touch PC inside the vehicle. The costs are lower and the functionalities are the same.

Concerning the road side unit, the pan is to have it all in one box. At the end of CVIS would like to develop a platform that can be used for FOTs with reduced costs which offers the same functionalities.

There was a discussion on the need for multi-vendor scenario, the need for competition complying with EU's competition laws and the need for more standardisation activities. It was agreed that cooperation was vital however market competition is also a need to the field.

PRE-DRIVE C2X was given as an example in which several vendors were involved and that has interoperability with ETSI standards allowing for a competitive oriented platform.

It was further clarified that CVIS has 10 sites in six different countries. Internal consistence was needed so reference design was produced. There are no issues of IPR, the reference implementation is also available. CVIS has already 13 collaborations with outside partners. It's being tested and feedback is being received. CALM standards are being implemented which are very well established standards, ETSI is also being supported and CVIS is giving inputs. All this information is available.

4 National Cooperative Systems FOT initiatives

4.1 SIM-TD in Frankfurt/Hessen, Justin Geistefeldt, Hessian Road and Traffic Authority

The presentation was two-fold: presentation of the SIM-TD FOT but also elucidate on the motivation as road and traffic authority to participate in SIM-TD and other C2X projects (CVIS, AKTIV, DIAMANT, SIM-TD).

Hessen's motivation to participate in C2X projects are the government's high tech strategy (federal and state); need for new measures to tackle increasing traffic; Vehicle data as an additional data source for improved traffic management; expected effects of C2X technology towards further improving road safety and long-term potential of C2X technology to complement or even replace collective ITS applications (CS may be cheaper than just ITS solutions on their own).

The SIM-TD architecture will allow for the comparison of different communication technologies.

4.2 Dutch CVIS/SPITS test site in Helmond, Boudewijn Schokker, Logica

The SPITS project was initiated in demos during CVIS and SAFESPOT and has as motivation to help the automotive sector through the economic crisis in the Netherlands.

It aims to be completed by mid -2011 and has the objective to create value for the consumer and society in general. The intention is to take the cooperative ITS application which will be developed beyond the Netherlands.

The concept is to develop open source applications that can be used using the SPITS architecture. The interface specifications will be open and available.

Will go for a couple of hundred of cars but may scale it at event larger level.

The test sites will be in Amsterdam, Helmond and other cities. In Amsterdam will try to show CVIS applications on an in-car Renault system. There are 50 cars lightly equipped, and the other 50 cars not equipped, allowing comparison. Other existing projects such as project Odysa will link up to SPITS.

4.3 FOT in Gothenburg, Sweden, Peter Follin, Lindholmen Science Park and John-Fredrik Grönvall, VolvoCars

The Gothenburg ITS Test site will link up to CVIS and SAFESPOT RSU locations in order to demonstrate safety applications.

A simulator is available in Lindholmen in which both cars and trucks can be simulated. It also has a ITS simulator.

The Test Site will try to reuse current assets to test cooperative systems. The PC logger will allow to test cooperative systems that are close to the market. You can also record the behaviour of the drivers.

All cars have 3G connections, investigating how to install on board units. Even though this is not part of the SeMiFOT and euroFOT projects the local stakeholders are looking to run a pre-pilot with these vehicles. Data is already being collected and a baseline is being created.

The cooperative systems testing will be done in a naturalistic way, by using the customers. It's all naturalistic driving. All cars have normal customers. The eye trackers will be in all 100 cars and 30 trucks. It is important to know how drivers react. There will be a lot of information around and inside the car. The analysis tool includes the 4 cameras and output of CAN signals. There is full control of what is happening in the car. There is continuous monitoring, not only of incidents.

Most drivers tend to forget that they are being observed. They drive relatively normal. The equipment is visible but they go back quite early back to normal driving.

At the moment they are testing mature systems that are in the market (forward collision warning, blind spot, lane changing)

4.4 SCOREF, Versailles, France, Stephane Amarger, Hitachi and Jean Marc Blosseville, LIVIC

MOVEOLAB is the French pole of competiveness of MOVEO. It is used for research cooperative projects. The plan is to construct new testing facilities. But first they need to understand what would be useful as equipment for a research team to test the systems.

The FOT plans to use the French highways for their test on the south west of Paris, 90 km long and a tunnel will be part of the route. 50 % of the vehicles will be trucks.

4.5 SISCOGA, Galicia, Spain, David Sanchez, CTAG

SISCOGA is a follow-up to cooperative systems developments already conducted by CTAG. The C2ECom project will end in September 2010. Until now CTAG has had a positive experience on C2X technologies. How can we test those technologies at larger scale? SISCOGA wants to answer this with FOT which will include 20 vehicles.

The FESTA methodology will be followed although some parts will not be applicable. The outcomes of the SISCOGA experience can be fed into FOT-Net.

The FOT will include 60 km of motorways. It's a complicated environment, with many sharp bends and also facing diverse weather conditions.

4.6 InnovITS testing grounds, Midlands, UK, Roger Wilson, InnovITS

The innovITS Advance test track will open in the coming months. It aims to become the primary single site research and development centre in Europe. innovITS: (intelligent innovation) UK wants to open up to the rest of Europe and serve as a link between private and public sectors. Advance is the nest stage in cooperative systems testing.

The first phase will include the city circuit, then a motorway circuit.

4.7 ITS Test Site, Finland, Mikko Tarkiainen, VTT

The ITS Test site Finland is in its set up phase, though they are already participating in a number of projects. The funding of the set-up will be national research programme. Testing areas will be in Tampere and Helsinki.

Cellular/wireless broadband will be the basis. During 2011 will be ready for cooperative systems FOTs.

5 Joint Working Items on Methodology and Components for cooperative systems FOT

CS FOTs should focus on cooperative applications/functions/services rather than on choice of technologies however it is agreed that 3G and C2X are a must.

CS FOTs will have to collect data to assess the potential benefits in terms of safety, traffic, environment and comfort aspects.

There is a large number of functions/applications possible and the platform built in the FOT should be future proof to accommodate new standards and new applications.

Stakeholders include a large number of different players each interested to invest in a win-win scenario.

To be credible, FOTs should be based on multi-vendor equipment to guarantee competitiveness.

Public-private/vehicle-infrastructure industry should work together to guarantee a future proof and agreed deployment.

All FOTs should follow the current agreed European standards under the ETSI/CEN/CENELEC mandate and foster on interoperability at higher application layer.

Existing solutions and tools developed in European projects (Pre-Drive C2X, CVIS/SAFESPOT) should be made available to all CS FOTs.

CS FOTs should make use of national CS infrastructure in place or planned and create a synergy with national funded activities.

Beyond the technical issues, CS FOTs should keep in mind the FESTA FOT methodology (Research questions, Hypotheses, Performance indicators, study design, etc…).

CS FOT should agree on cross-FOT activities on issue that are common such as data acquisition, management and analysis issues.

Future actions should include:

- Revision of FESTA handbook adapted to CS FOTs (short term action)
- Centralise efforts done across CS FOTs for development of tools
    - Data Acquisition
    - Database design and management
    - Data Analysis

Conclusions

Conclusions of the workshop included:

- Public-private/vehicle-infrastructure industry should work together to guarantee a future proof and agreed deployment.
- All FOTs should follow the current agreed European standards under the ETSI/CEN/CENELEC mandate and foster on interoperability at higher application layer.
- CS FOTs should focus on cooperative applications/functions/services rather than on choice of technologies; and should be based on multi-vendor equipment to guarantee competitiveness.
- CS FOTs will have to collect data to assess the potential benefits in terms of safety, traffic, environment and comfort aspects.
- CS FOT should agree on cross-FOT activities on common issues such as data acquisition, management and analysis issues.

Annexes

Annex 1 – Final Agenda

Third Stakeholders Workshop

When? 09:30 – 17:00, Wednesday 27 January 2010

Where? DIAMANT BRUSSELS, Bd. Reyers, 80, 1030 Brussels

FINAL AGENDA

Workshop objectives:

- **Understand stakeholders' expectations to regards to cooperative systems FOTs.**
- **Contribute to the networking for cooperative systems FOTs.**
- **Review current state of the art and FOT activities on cooperative systems.**

09:30 – 10:00	***Registrations and Coffee***	
10:00 – 10:30	***Setting the scene***	
	Achievements of the FOT Network platform and meeting objectives	*Maxime Flament, ERTICO - ITS Europe*
	European Commission expectations towards cooperative systems FOTs	*Wolfgang Höfs, European Commission*
10:30 – 11:30	***Stakeholders point of views on Cooperative Systems FOTs***	
	Cooperative Safety and Mobility Services for Goods	*David Rylander, Volvo Technology Corporation*
	Cooperative Safety and Mobility Services for People	*Matthias Schulze, Daimler*
	Cooperative mobility from the Infrastructure point of view: Needs and potential	*Siebe Turksma, Peek Traffic BV*
11:30 – 12:30	***Tools for FOTs on Cooperative Systems***	
	PRE-DRIVE C2X: methods and tools for next steps	*Ilja Radusch, Fraunhofer Institute FOKUS*
	CVIS1.1 enabling Cooperative Mobility Services	*Erik Olsen, Q-Free*
	Discussion	
12:30 – 13:30	**Lunch & Networking**	

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13:30 – 14:30	**National Cooperative Systems FOT initiatives**	***Moderator:*** ***Paul Kompfner, ERTICO – ITS Europe***
	SIM-TD in Frankfurt/Hessen	*Justin Geistefeldt, Hessian Road and Traffic Authority*
	Dutch CVIS/SPITS test site in Helmond	*Boudewijn Schokker, Logica*
	FOT in Gothenburg, Sweden	*Peter Follin, Lindholmen Science Park* *John-Fredrik Grönvall, VolvoCars*
14:30 – 14:45	**Coffee Break**	
14:45 – 15:30	**National Cooperative Systems FOT initiatives cont.**	
	SCOREF, Versailles, France	*Stephane Amarger, Hitachi* *Jean Marc Blosseville, LIVIC*
	SISCOGA, Galicia, Spain	*David Sanchez, CTAG*
	InnovITS testing grounds, Midlands, UK	*Roger Wilson, InnovITS*
	ITS Test Site, Finland	*Mikko Tarkiainen, VTT*
15:30 – 16:00	**Joint Working Items**	
	Joint working items on Methodology and Components for cooperative systems FOT	*Maxime Flament, ERTICO - ITS Europe*
	Final discussion and Adjourn	
16:00 – 17:00	**Reception and networking**	

Annex 2 – Participants List

PARTICIPANTS LIST
as of 25 January 2010

Last Name	First Name	Company Name
Alkim	Tom	Rijkswaterstaat
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Dreher	Stephane	NAVTEQ
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Hilt	Hans-Josef	EuroTec Solutions GmbH
Hofs	Wolfgang	European Commission
Jääskeläinen	Juhani	European Commission, DG INFSO
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Jeftic	Zeljko	ERTICO - ITS Europe
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Michel	Gilles	INTEMPORA SA
Molenschot	Toine	City of The Hague
Mononen	Petri	VTT Technical Research Centre of Finland
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