

## WiSafeCar on 4th Car 2 Car Forum in Paris 23-24.11.2010



The fourth Car 2 Car Forum was held in Paris 23-24.11.2010. There were altogether some 165 participants in this forum, mainly representing the key car industry partners (such as Renault, DaimlerChrysler, Audi AG, BMW Group and Volkswagen AG), but also other partners (OEM members, assisting members, developer members and basic members). The Car 2 Car Forum consisted of general scientific sessions, workshop sessions and poster exhibition, in which the Finnish Meteorological Institute (Timo Sukuvaara) had own prepared a poster summarizing the objectives, findings and expected impacts of the WiSafeCar project. In addition Timo Sukuvaara there were two other Finnish representatives, Pekka Eloranta, the co-ordinator of the WiSafeCar project and Juhani Jääskeläinen from European Commission (the Head of Unit ICT for Transport DG Information Society and Media). From WiSafeCar also Michel Krim from Ubistream participated the Forum on 24.11.

### Main messages from the presentations

**Christian Balle**, Director of Safety Advanced Projects, Renault presented the official welcome words and opening of the meeting. He briefly introduced the Meeting Venue Renault

SQUARECOM–centre (where the C2C Forum took place) and the Trapezium area, historical centre of both Renault and in a way the whole vehicle industry in France. He also pointed out that Renault has done and will do the voluntary deployment of car-to-car networking equipment in all the vehicles until 2015. This basically means that when all the related standards are frozen by mid 2012, the fast deployment begins with cars and on the long run into infrastructure (V2I) and road operators.

**Søren Hess**, the General manager of Car 2 Car Communication Consortium and Chairman ETSI TC ITS, also welcomed all the participants. He was happy to tell that the harmonization and standardization work has clearly progressed since the last Car 2 Car Forum. General interest is clearly raising, there are new partners, new projects and active standardization work ongoing in ETSI ITS with C2C representatives in key positions.



**Juhani Jääskeläinen**, Head of Unit in ICT for Transportation in Information Society and Media Directorate General of the European Commission, presented European Commission's views on the vehicle systems. The key point was the Europe 2020 strategy, with 7 flagship initiatives (Innovation union, Youth on the move, Digital Agenda for Europe, Resource-efficient Europe, Industrial policy for green growth, agenda for new skills and jobs, European platform against poverty).

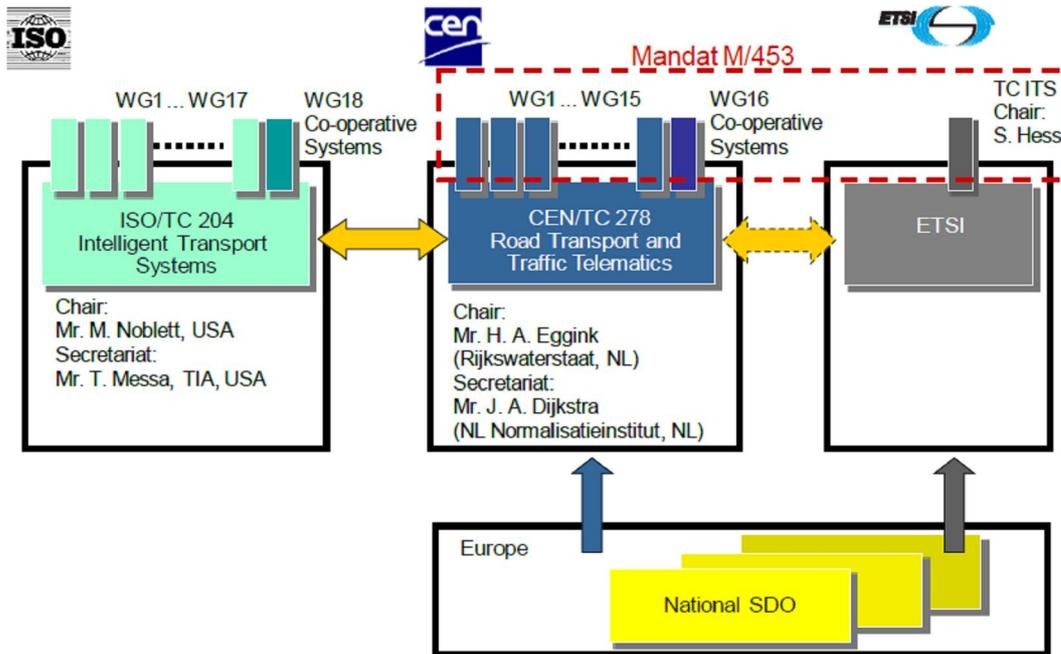
In the Digital Agenda for Europe there are actions related among other issues to Intelligent Transport Systems for efficient transport and better mobility. The Commission will increase the speed of ITS take-up, in particular for road and urban transport by, applying the proposed ITS Directive in support of interoperability and rapid standardization. The Commission reintroduces the target of halving the road fatalities, this time from year 2010 to 2020. Globally USA and Japan are ahead in the deployment of vehicle systems, with 40 million VICS users in Japan and 6 million

intelliDrive users in USA. This status should be changed, with the help of 59 FP7 European projects (budget 208 M€). Projects under negotiations were listed by Mr. Jääskeläinen, containing 7 field operational test projects (e.g. Drive C2X, FOTSis, Presereve) and other framework projects like COMeSafety2 (extension of the previous COMeSafety project). The ITS Action Plan for the deployment of ITS includes 24 actions in 6 priority areas (see below).



**Dr. Timo Kosch** from BMW Group Research and Technology concentrated in his presentation on International harmonization between Europe and USA. Intellidrive and VII (Vehicle Infrastructure Integration) are mainly compatible with C2C, and now it is important to keep it this way through co-operation and harmonization. In this sense, 3 applications are under consideration, forward collision (V2V Safety: Forward Collision Avoidance – FCA, V2I Safety: Red Light Violation Warning – RLW, V2X Efficiency: Energy Efficient Intersection Control – EEIC). When it comes to standardization, Me. Kosch set the an objective “Small set of non-overlapping standards”.

**Hans-Joachim Schade** the Convenor of CEN/TC278 and ISO/TC204/WG told about the Standardisation Mandate M/453 for Co-operative Systems and standardization activities in CEN/TC278 and ISO/TC204/WG. In CEN standardization for C2C the approach and objective is to complete standardization documentation until July 2012. CEN and ETSI co-operation needs to be close, not forgetting ISO co-operation. CEN tasks were overviewed, from which WG1 (architecture) and WG8 (Road Traffic Data) seemed to be the closest ones for WiSafeCar work. The figure below presents how the standardization organizations are involved in co-operative systems standardization.



**Søren Hess** told about C2C CC standardization within ETSI (ETSI TC ITS). ETSI standardization has similarities with CEN, and basically the same time tables with C2C standards, meaning that documentation should be ready at July 2012 (64 EN standards are to developed/adopted by that time). C2C work has strong connections to C2C CC, and there are many counterparts in these working groups. C2C CC WG APP is counterpart for ETSI WG1 (Application requirement), WG ARC for ETSI WG2 (Architecture and crosslayer) and WG Com for ETSI WG3 (Network and transport), respectively. Some parts of the standardization is already finished in ETSI, like Communication architecture (EN 302665), Cooperative awareness (TS 102637), Network architecture (TS 102636), Basic transport protocols (TS 102636) and European profile on ITS G5 (IEEE 802.11p and other protocols) (ES 202663). ETSI is global certificate authority within C2C CC.

**Gerd Riegelhuth** from the Hessian Road and Traffic Authority co-operative traffic management aspects of road operators. He gave an extensive overview of the systems and expectations among road operators. The key question, as far as he is concerned, is who collects the data, what data and who's authoring it (the same issues has raised in many initiatives, also in WiSafeCar).

**Gérard Segarra** from Renault presented the ideas of field operational testing in France in the SCORE@F project. The expected results of the project are: Engineering process refinement, Viable business model; Deployment strategy in partnership (PPP), Validation of standard technical platform, European convergence at applications level, Customers' acceptability and Societal benefits assessment.

**Matthias Schulze** Senior Manager Driver Support & Warning Daimler AG presented the overviews of the projects Pre-Drive C2X and planned Drive C2X. The objective in the Drive C2X project will be the evaluation of the common European system in field trials on several places in Europe (to verify proper functioning in real life conditions, to prove Europe-wide interoperability, to assess the impact of the various use cases). Additionally it will aim to support the completion of standardization, development of a commonly agreed implementation strategy and realistic business cases and contribution to common deployment decision of all stakeholders involved. Mr. Schulze

overviewed the test sites in his presentation. One site tests will cover all functions, one is for system testing, two are serving interoperability testing purposes, and one for harsh winter conditions testing. The cooperative traffic site will be for functional testing. The test site in Finland is expected to be Tampere (utilizing also the results of WiSafeCar).

**T. Russell Shields**, the Cahir of Ygomi LLC, had a presentation on the service providers view in the deployment of Cooperative services. His vision of the future was car-to-car communication handling the critical data communication, and in parallel LTE (Long Term Evolution) kind of system. The key point of his presentation was the LTE cannot completely replace C2C, especially in time-critical and safety systems. His concluding message “A positive contribution might be made by adding capabilities to the TD-LTE standard and testing it as an alternative to 802.11p”. This summarizes partly also the strategy of WiSafeCar (naturally since LTE is not yet commercially available WiSafeCar has used/will use 3G, however LTE has already been discussed with the test LTE operators.)

**Dr. Hermann Meyer** the Chief Executive Officer in Ertico presented the stakeholders aspects of Cooperative System Deployment. His key point was that instead of “nice services” we need to focus on things which the customers will buy. “Cooperative Mobility Alliance” is the key thing, bringing all the players together. It will help to learn from all stakeholders and to work with all stakeholders and initiatives on interoperable, seamless solutions, which are reliable, safe, secure and cost-effective, on a common strategy and deployment roadmap and on creating conditions for effective market deployment.

**Søren Hess** had another presentation, called “Cooperative systems deployment and open issues”. The main message was that based on estimated cooperative traffic costs for users, ETSI ITS G5 is a cost-efficient way to provide C2C. Joint efforts are needed to do this, meaning that all the stakeholders/players related to traffic should be involved. The deployment road map needs to have 4 phases. Phase 1: Basic System enabling sustainable set of use cases with a manageable level of complexity. Vehicles/Infrastructure units create messages enabling a set of day one use cases Cost-effective system for the mass market Allows for warning/efficiency applications, no automated tasks Phase 2: More complex use cases (no/minor level of automation) Phase 3: Automated assistance systems based on a combination of car-to-x and environmental sensor information Phase 4: achieving the vision Seamless „combination of use cases“. WiSafeCar is directly involved in and in line with the ideas of the phase 1.

### **Summary of Workshops**

24.11. was allocated for three workshops (WG Workshop 1 - Hazardous Location Warning, WG Workshop 2 - Energy Efficient Intersection, WG Workshop 3 – Key Components of the CAR 2 CAR Communication Consortium System)

**Workshop 1 - Hazardous Location Warning.** The hazardous location warning is a very powerful Car-2-Car Application supporting a broad spectrum of use cases. Starting from the application the facilities, components and interfaces of the cooperative ITS architecture were discussed more in detail as well as message sets and functions of the Car-2-Car Communication System. Furthermore related issues of security and privacy, deployment, testing and certification were considered.

**Workshop 2 - Energy Efficient Intersection Control & Green-light Optimal Speed Advisory.** The high potential of cooperative ITS on increasing traffic efficiency was highlighted for these selected Car-2-X use cases. The involved facilities, components and interfaces of the ITS

architecture, the message sets and message handling were discussed. In addition possible attacks, security and privacy concepts as well as issues on cost-benefit, validation and deployment were considered. When it comes to Intersection Collision Warning, starting from the accident analysis the Car-2-X Application, its functions, message sets, the involved facilities, components and interfaces of the ITS architecture were described. The most important issues of communication, security and privacy as well as cost-benefit- analysis and deployment were discussed.

**Workshop 3 – Key Components of the CAR 2 CAR Communication Consortium System.** The concepts of local dynamic maps, geo-routing and traffic classes were introduced and discussed considered. Special issues of simulation of cooperative ITS were discussed as well as the basic system components and aspects of the roadmap from standards to mass production.

### Exhibition

The exhibition consisted of 8 posters and other material (also hardware and software), presented mainly during the session breaks. Comparing to the pervious events, the stands had more results available now, being therefore more interesting than in earlier Forums. One of the most interesting stands was concerning the iTetris project. They had used similar kind of simulation construction as is being used in WiSafeCar, consisting of SUMO traffic model and ns-3 simulation (in WiSafeCar case ns-2). They have been simulating communication procedures (like WiSafeCar) but also for example emission of different type of gases (CO<sub>2</sub>, NO<sub>x</sub>) which might be interesting for instance from FMI point of view. Timo Sukuvaara from FMI had his own poster about WiSafeCar project. There was quite a lot of interest towards the poster and the WiSafeCar presentation running in a PC at the stand. Many questions were pointed to both author and the project coordinator Pekka Eloranta, present in the stand most of the time. Setting up the poster for this event was indeed fruitful, and WiSafeCar will generate poster(s) also to the following events.



## Conclusions

CAR 2 CAR Forum was the fourth one arranged. FMI (Timo Sukuvaara) has attended to each one of them. It is clear that to see that the work is ongoing, and step by step we are approaching the ultimate goal of standardized, embedded car-to-car communication systems compatible with each other regardless of the vehicle manufacturer. The standardization work has now clear time table (documentation ready until July 2012) and it seems to be possible to also follow this time table. The poster of WiSafeCar project brought a lot of visibility to the project and generated many interesting contacts for the future. Participation to Car 2 Car Forum was ultimately beneficial for WiSafeCar. The WiSafeCar project seems to be in the good position to contribute when C2C Consortium work ultimately leads to emerging standardized vehicle systems.

