

Mobile and Wireless Communications Technology Platform
Minutes of General Assembly 6

Venice, 16 September 2010

Chair: Werner Mohr, NSN
Minutes: Uwe Herzog, Eurescom
Distribution: Public
Slides: eMobility members can download all presented slides from the eMobility web:
<http://www.emobility.eu.org/GA6/agenda.html>

Agenda

09.30 - 10.45	Plenary Session I <ul style="list-style-type: none"> Opening of the meeting, report on platform status and summary of activities (Werner Mohr, eMobility Chairperson) Keynote speeches: <ul style="list-style-type: none"> - <u>Ruprecht Niepold</u>, EC, DG Information Society and Media – Advisor to the General Director: "Radio Spectrum Policy in Europe: Shared use of spectrum" as a new paradigm for spectrum management" - <u>Rainer Zimmermann</u>, EC: "FP7 Work Programme for the period 2011-12, forthcoming Calls 7 and 8, and progress towards FP8" 					
10.45 - 11.00	<i>Coffee break</i>					
11.00 - 12.30	Plenary Session II <ul style="list-style-type: none"> eMobility viewpoint on how mobile communications can contribute to mastering the Grand Societal Challenges (Werner Mohr, NSN) eMobility vision 2022, and how FP8 should support research activities (Fiona Williams, Ericsson) Updates on research directions according to eMobility Strategic Research and Applications Agenda (Rahim Tafazolli, Uni. Of Surrey, Luis Correia, IST-TUL) The growing relevance of optical communications – views from Photonics21 (Alfredo Viglienzoni, Ericsson) 					
12.30 - 13.30	<i>Lunch</i>					
13.30 - 15.00	Parallel Sessions <table border="1" data-bbox="389 1554 1423 2027"> <tr> <td data-bbox="389 1554 687 2027"> Energy <u>Keynote 1:</u> SmartGrids Grids: where power meets intelligence Speaker: Ronnie Belmans, esat, Katholieke Universiteit Leuven <u>Keynote 2:</u> "Smart Energy Grids Communications" Speaker: Prof. Matti Latva-aho, University of Oulu, Finland </td> <td data-bbox="692 1554 1054 2027"> Transport <u>Keynote 1:</u> "Roadmaps and requirements from the automotive sector on ICT", Speaker: Jean-Luc di Paola-Galloni, Vice-chair of the European Road Transport Research Advisory Council (ERTRAC) <u>Keynote 2:</u> "Istanbul Traffic Control Center - Experiences from using intelligent transportation systems in a megacity", Speaker: Sadullah Uzun, R&D </td> <td data-bbox="1059 1554 1423 2027"> Future Networking <u>Keynote 1:</u> "Technologies for Fast and Energy Efficient Future Networks" Speaker: Prof. Hamed Al-Raweshidy, Brunel University Keynote 2: "Challenge of Future Networks" Speaker: Dr. Shahram Niri, Director of Global LTE/SAE Strategy and Solutions, NEC Europe, UK </td> </tr> </table>			Energy <u>Keynote 1:</u> SmartGrids Grids: where power meets intelligence Speaker: Ronnie Belmans, esat, Katholieke Universiteit Leuven <u>Keynote 2:</u> "Smart Energy Grids Communications" Speaker: Prof. Matti Latva-aho, University of Oulu, Finland	Transport <u>Keynote 1:</u> "Roadmaps and requirements from the automotive sector on ICT", Speaker: Jean-Luc di Paola-Galloni, Vice-chair of the European Road Transport Research Advisory Council (ERTRAC) <u>Keynote 2:</u> "Istanbul Traffic Control Center - Experiences from using intelligent transportation systems in a megacity", Speaker: Sadullah Uzun, R&D	Future Networking <u>Keynote 1:</u> "Technologies for Fast and Energy Efficient Future Networks" Speaker: Prof. Hamed Al-Raweshidy, Brunel University Keynote 2: "Challenge of Future Networks" Speaker: Dr. Shahram Niri, Director of Global LTE/SAE Strategy and Solutions, NEC Europe, UK
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		and IT Manager, ISBAK	
15.00 - 15.20	<i>Coffee break</i>		
15.20 - 16.00	Closing session <ul style="list-style-type: none"> • Reports from parallel sessions (3 session chairs) • Cooperation on Future Internet and ICT between Europe and Latin America (Julian Sesena, FIRST project, Rose Vision) • Future plans for 2010/11 (Werner Mohr, eMobility Chairperson) 		
16.00	Close of meeting		

Opening of the meeting, report on platform status and summary of activities – Werner Mohr, eMobility Chairperson

- Werner opened the meeting, welcomed the participants and introduced the agenda. A main message to be given to its members’ is that eMobility, in the light of converging fixed and mobile networks, is widening its scope to also encompass fixed optical networks. eMobility is active for its members to set trends, to provide members with recent information, organise networking opportunities, and to influence priorities for public research funding. eMobility currently has 671 members with a good balance of members from industry, research, and SMEs. eMobility currently runs a survey with SMEs to understand how SMEs are involved in FP7 research and what issues they face.
- eMobility has recently responded to a number of Commission documents, e.g. the Digital Agenda and the Grand Societal Challenges, in order to show what the opinion of the sector is. eMobility has also participated in a number of meetings in the last year, e.g. related to Future Internet, and was involved in the organisation of the Future Networks and Mobile Summit. eMobility will also take an active role in providing input and feedback towards the preparation of FP8.



Figure: eMobility Chairman Werner Mohr during Opening Speech

Sharing use of spectrum: A new paradigm for spectrum management? – Ruprecht Niepold, EC DG Information Society and Media, Advisor Radio Spectrum policy

- Ruprecht Niepold gave his personal view about the need of spectrum management, about trends in spectrum usage and scarcity, and presented conceptual features of spectrum sharing models.

- Spectrum is a public good that needs to be managed e.g. to prevent interference, and a policy needs to be defined that ensures the best usage of this resource. There is the wide opinion that there is a growing shortage of radio spectrum. This seems indeed the case but only in the band below 2 GHz. However, scarcity depends largely on the conditions to its access, i.e. supply and demand. There are also new spectrum usage patterns, e.g. smaller usage areas (LAN, PAN) allow a higher reuse of spectrum geographically. Further trends include e.g. nomadic and occasional use and higher tolerance of applications against varying transmission quality.
- From the technology point, receivers are becoming more intelligent, software-controlled, and spectrum efficiency has increased. Adaptive (cognitive) radio is a major breakthrough. There is also a trend towards spectrum sharing with tolerable interfering, and interference mitigation will be a major issue to work. Besides the planned coexistence of a known number of spectrum users there will be models that enable the variable use of spectrum, dynamically occupied by an unknown number of users. The “White Space Model” and “Arbitration of exclusive rights” are futuristic concepts in this respect that will need further research. Shared use will have a profound impact on regulation, and regulators should become (pro)active to gradually develop an enabling regulatory environment.

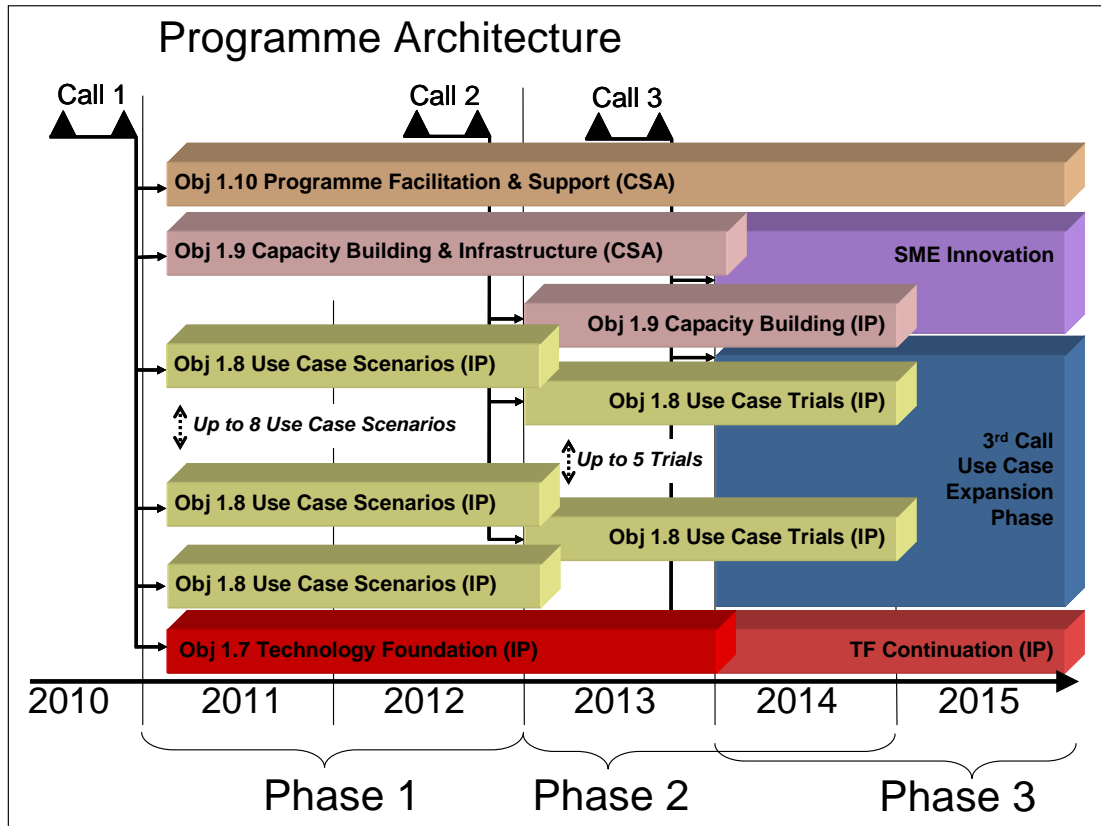


Figure: Plenary session at eMobility GA Venice

The Future Network and the Network of the Future – FP7 WP 2011- 2012 – Rainer Zimmerman, Head of Unit ‘Software & Service Architectures and Infrastructures, EC

- There are a few trends that were influencing the WP 2011-12, e.g. ICT as the engine for growth in a low carbon economy. Nevertheless, the changes in WP2011-12 have been rather small. The structure of Challenges has been maintained. Regarding plans for FP8 there seems to be more conservatism than sometimes thought and there will probably be no radical changes.
- Future Internet will be the key enabler for the upcoming (European?) services. From a technical point of view, NGN will enable the knowledge based society. Topics like net neutrality, new architecture paradigms and efficient content distribution are topics currently discussed. Two trends are seen: towards an enhanced Internet (e.g. 3D Internet), and towards smarter business processes with application domains in health, transport, environment, energy, logistics, etc.
- Conceptual Programme characteristics of the FI PPP call include Large Scale Projects (i.e. larger than current IPs), flexibility (phased approach), requirement that projects must contribute to the programme and uniquely address it’s aspects, the open sharing of foreground, include large scale trials, etc. Details on the intended projects structure and interaction can be found in

the WP. Any proposal will need to follow the required structure and provide a contribution to the overall effort or will have no chance for being accepted. Proposals are recommended to ensure they contribute to the expected impact criteria listed in the WP as this is often neglected.



- Deadlines for upcoming Calls are: Call 1: 2/12/10, Call2: 29/10/12, Call 3: later 2013.
- FP7 Call 8: Date of publication: 26 July 2011, Deadline: 17 January 2012

eMobility viewpoint on how mobile communications can contribute to mastering the Grand Societal Challenges – Werner Mohr, NSN

- The European Commission has published “Europe 2020 – A European strategy for smart, sustainable and inclusive growth” in March 2010. The flagship initiatives “Digital Agenda” and "Innovation Union" aim to re-focus R&D and innovation policy on challenges facing our society, e.g. climate change, energy and resource efficiency, health, and demographic change.
- eMobility has drafted a position paper which shows potential contributions from the mobile communications sector to solving of Societal Challenges that are addressed in the EC publication, with an additional section on Transport. Potential contributions could be made by the ICT infrastructure (the mobile, wireless, satellite and fixed communications networks), sensors and actuators of IoT (Internet of Things), information networking, processing and storage systems, their management and control, trust, security, and robustness. For each area the main research challenges are listed. Development of solutions will require a close cooperation of different industry and application sectors. eMobility has identified such research and innovation topics in its SRA and SAA.

eMobility vision 2020, and how FP8 should support research activities – Fiona Williams, Ericsson

- Fiona gives an overview of the eMobility vision. It has three views: On the individual, on the society, and on the technologies supporting them. People will have a life in the cloud, have a voice in the communities, and will trust their services. Multi-disciplinary research and innovation will be in focus for 2020. New concepts for networks will be needed to support the huge volume of data traffic, and to support applications in the various sectors. In spite of the growing complexity of systems their usage will have to be simplified.
- Regarding FP8, the general structure and budgets will be defined in the coming months, and there are signs that budgets might be reduced. The focus will be in line with the Digital Agenda, the Innovation Union, and the Grand Societal Challenges. ICT has an essential role in enabling other sectors as e.g. health and transport to address the challenges. Europe still has the lead in communications infrastructure, but future research activities will be needed in order to maintain this lead. eMobility is expressing its respective views in responses to the Digital Agenda and other EU documents, in discussions with MEPs and other activities.

Updates on research directions according to eMobility Strategic Research and Applications Agenda – Rahim Tafazolli, Uni. of Surrey, Luis Correia, IST-TUL

- The eMobility SRA is based on a vision of future from a society's needs perspective in the next decade, taking into account strategic technologies and research challenges. It aims at the improvement of the individual's (society's) quality of life, achieved through the availability of an environment of instant provision and access to meaningful, multi-sensory information and content. Nine Expert Working Groups have been active during the last year to prepare the current version of the SRA, e.g. on M2M communications and Future Internet. The challenges for the future mobile and wireless communications industry are seen e.g. in the areas of cost and complexity management, ubiquitous and high capacity mobile broadband communications, spectrum scarcity, energy consumption, trusted services and privacy aspects. Further details can be found in the SRA available on the eMobility web.
- Topics from the applications side have been included in the latest SRA which therefore has been renamed to SARA – Strategic Application and Research Agenda. A number of workshops have been held at which applications from various sectors, including Health & Inclusion, Transport, Environment, and their requirements have been discussed. The main conclusions from the workshops were included in SARA. One requirement was commonly mentioned from all application areas: Trust is the key issue, when it comes to Mobile & Wireless communications, along with security and privacy of data, whose definition strongly depends on the culture of a country and of an individual.

The growing relevance of optical communications – views from Photonics21 – Alfredo Viglienzoni, Ericsson

- Alfredo Viglienzoni presented the Photonics21 view on the relevance of optical communications. Photonics21 is an ETP with more than 1500 members and has the overall goal of defining a photonics strategy for Europe and to accelerate research in this area. The Photonics SRA focuses on European societal challenges and how photonics is able to contribute. WG1 deals with optical communications.
- IPTV applications in their various forms (broadcast, VoD, peering video) and some further Internet applications (e.g. gaming) will generate increasing volumes of traffic at an unprecedented scale. Most of the traffic so far is best-effort. However, QoS aspects will become more important in future. Some applications as e.g. M2M will not tolerate best effort data transport. Also the emerging Cloud Computing and storage will impose new and specific requirements on bandwidth and QoS. Just deploying additional transport capacity will not be a

solution of the problem in the longer run. Solutions must cope with changing paradigms of QoS, QoE, regulation, pricings pressure and competition.

- NGN face three key challenges: Convergence, flexibility, and cost. A value of optical networks is that its hierarchical network architecture can connect instantaneous customer service requests to long term infrastructure in an optimal way, decoupling provisioning cycles from service lifetimes. There are four trends that will transform optical networks: Make it faster, more transparent (keep information optical as long as possible), more dynamic (cope with fast network changes), and more green.

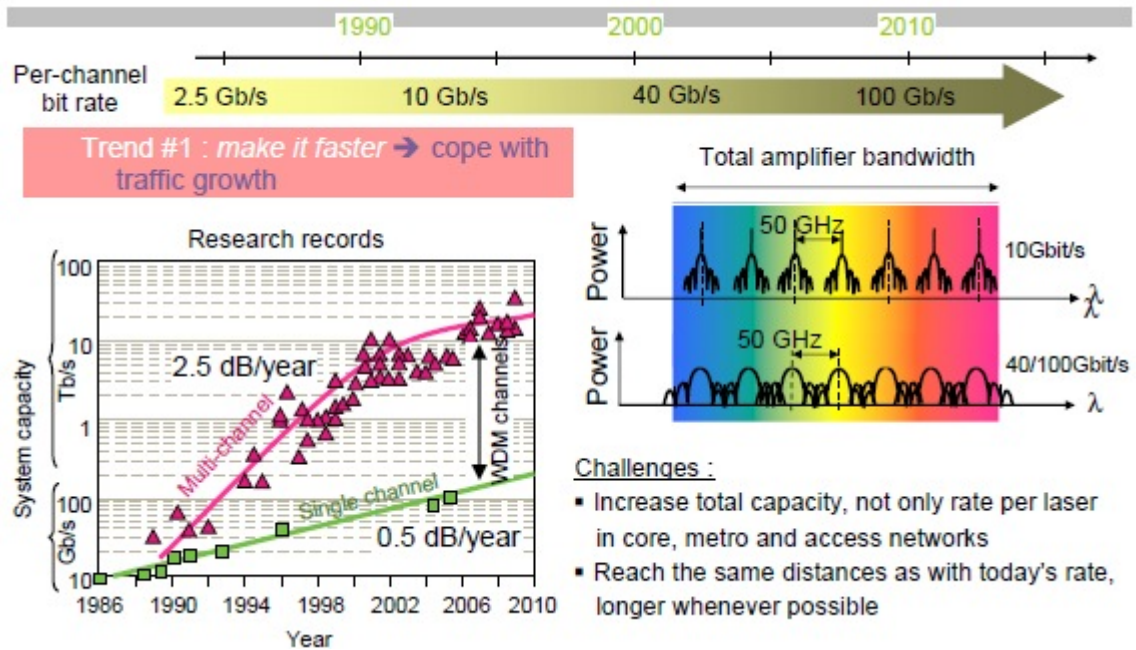


Figure: Trend #1: make it faster to cope with traffic growth

- A test bed for new & innovative Internet based services called Digital Village will connect businesses and homes within a geographic region via world class access to a next generation network. As a long term project it will allow the network to evolve and grow with best of breed technologies.
- Photonics21 WG1 has already attended key eMobility meetings and contributed to its SRA/SARA. It suggests to form a common work group with eMobility.

Parallel Sessions

Energy	Transport	Future Networking
Chair: Jacques Magen, InterInnov	Chair: Thomas M. Bohnert, SAP	Chair: Rahim Tafazolli, Univ. of Surrey
<p><u>Keynote 1:</u> SmartGrids Grids: where power meets intelligence (Ronnie Belmans, esat, Katholieke Universiteit Leuven)</p> <p><u>Keynote 2:</u> Smart Energy Grids Communications (Prof. Matti Latva-aho, University of Oulu, Finland)</p>	<p><u>Keynote 1:</u> Roadmaps and requirements from the automotive sector on ICT (Jean-Luc di Paola-Galloni, Vice-chair of the European Road Transport Research Advisory Council ERTRAC)</p> <p><u>Keynote 2:</u> Istanbul Traffic Control Center - Experiences from using intelligent transportation systems in a megacity (Mehmet Necip Ertas, Traffic Manager on behalf of Istanbul Municipality)</p>	<p>Keynote 1: Technologies for Fast and Energy Efficient Future Networks (Prof. Hamed Al-Raweshidy, Brunel University)</p> <p>Keynote 2: Challenge of Future Networks (Dr. Shahram Niri, Director of Global LTE/SAE Strategy and Solutions, NEC Europe, UK)</p>

Reports from parallel sessions

After the parallel sessions, the session chairs gave a short summary in plenary:

Future Networking

- A main question was “Is optical communications cost effective?” – yes in the long term but ROI would be hard to achieve. Also the cost efficiency of radio vs. hybrid solutions was discussed.
- Trends are that laptops get ever smaller, and smartphones ever larger. Garden walls are coming down, and communication networks will become the 4th utility after gas, electricity, and water. Further questions discussed were: Do we overload society and kids? What about polluting with electromagnetic fields? Do we really face spectrum shortage?

Energy

- Smart grid is the evolution from the current energy grid which is difficult to do. ICT can add flexibility to operation and control of energy networks, but security, reliability and real-time must be maintained. Loading batteries of e-cars is seen a challenge.

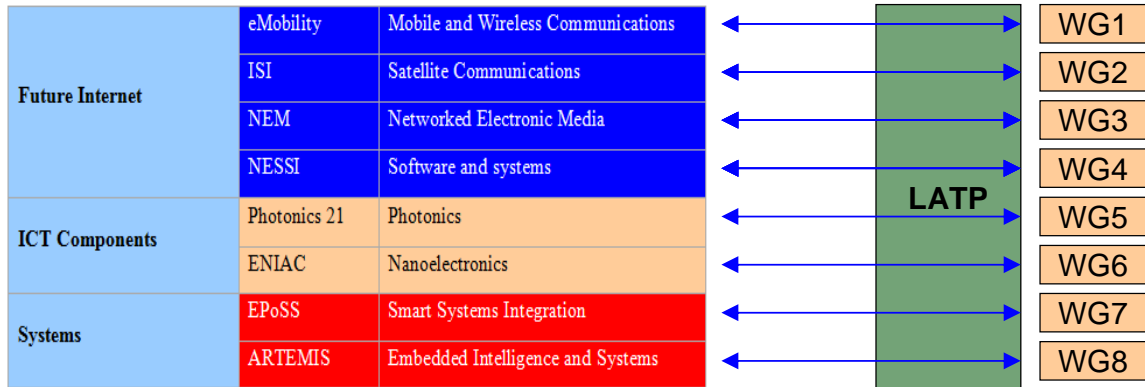
Transport

- ICT can support transport in various areas but mostly in electro mobility. There are still considerable issues to be solved for car2car communication mostly on a business level.
- A good example of ICT transport was shown from Istanbul traffic management. An application for various smartphone platforms shows traffic density, actual information about infrastructure maintenance, dramatic speed ups/downs, scheduled roadworks on network, weather conditions etc. at a cost of 2,50 euro /month, with 900.000 installations, 500.000 users.

Cooperation on Future Internet and ICT between Europe and Latin America – Julián Seseña, FIRST project, Rose Vision

- Julián Seseña gave an overview of the FP7 Support Action FIRST which aims at fostering cooperation on Future Internet and ICT between Europe and Latin America. The ultimate goal is even to setup 5 ICT Technology Platforms in Latin America (Argentina, Brazil, Chile,

Colombia and Mexico) which will focus on the topics of Future Internet and ICT components and systems. A close cooperation between these platforms and the counterpart European ETPs should be setup. They include eMobility, NEM, Nessi, ISI, Photonics21, Artemis, etc. Julian said that, in general, cooperation with developing economies is essential for several reasons such as later adoption of European technologies. This was also the case for Future Internet. Latin America is one of the most interesting developing economies in which Europe can look for potential market and strategic partnerships



Plans for 2011 and closing remarks – Werner Mohr, eMobility Chairman

- Werner Mohr gave an overview of the next steps and plans for 2011. The major item is the extension of the scope beyond mobile and wireless communications also to fixed networks issues in order to maintain a complete network view. A liaison with Photonics21 is planned. This should facilitate cross-sector research, and is also in line with the new scope of the Future Networks & Mobile Summit. The SRA/SAA will be further developed, and a number of technical workshops are planned to which members are invited. There will also be an increasing number of activities on public relations and publishing messages on the ICT sector. Replies on surveys and public consultations will be made. Also lobbying activities and feedback towards the preparation of FP8 will be made in order to express and represent the interest of the eMobility community. This includes promotion of identified research topics, and contributions to instruments in FP8 based on experience in the ICT programs.

[end of minutes]