

# Wireless World Initiative (WWI)

## External Newsletter



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### INSIDE THIS ISSUE

WWI Overview	Page 1
1 <sup>st</sup> WWI Symposium in Dec 2004	Page 1
MOCCA-WWI Symposium - Paris	Page 1
MOCCA-WWI Workshop - Shanghai	Page 2
WWI Phase II	Page 2
Girls' Day	Page 2
Vehicular Communication Workshop	Page 2
WWI Projects	Page 3
WWI Liaisons	Page 4

## WWI Overview

The Wireless World Initiative (WWI), a major joint effort by industry (manufacturers and operators), R&D centers, academia and government, launched a research initiative in January 2004 in the 6<sup>th</sup> Framework Programme of the European Commission to lay the foundations for the medium- to long-term future of global mobile and wireless communications. WWI represents a series of cooperating and complementary research projects.

The overall objective of WWI is to define systems and functions that provide users with an excellent user experience while minimising the financial investment. The FP6 projects in WWI address services and applications from the user and terminal perspective (MobiLife), networking across different access systems via a generic link layer (Ambient Networks), development of new radio access systems with capabilities significantly beyond today's systems (WINNER) and end-to-end reconfigurability across heterogeneous systems (E<sup>2</sup>R). For WWI, the driving force is user centricity. Future wireless communications systems will have to provide all users with immediate added value.

In the first year of the projects basic concepts and architectures were developed, which were disseminated widely in deliverables, publications and international conferences.

## 1<sup>st</sup> WWI Symposium on 9-10 December 2004 in Brussels

The 1<sup>st</sup> WWI Symposium in December 2004 in Brussels targeted especially the strategic component of technologies for Systems Beyond 3G – the Wireless World.

On the first day, the requirements and concepts for the Wireless World were discussed from a global perspective. Plenary presentations discussed the different aspects followed by a panel discussion with executives from the European Commission and the industry. High-ranking keynote speakers coming from the different sectors and countries shared their views on the requirements, concepts and architecture for systems beyond 3G with the participants. On the second day, the WWI projects Ambient Networks, E<sup>2</sup>R, MobiLife and WINNER organised parallel workshops presenting and discussing their initial results, architectures and further steps.

The WWI Symposium was open to all interested parties and attracted a total of 250 participants coming from over 25 countries. That made the Symposium a big success for all parties and paved the way towards further global cooperation.

## MOCCA-WWI Symposium on 6-7 December 2005 in Paris

On December 6 and 7, 2005 the MOCCA, WWI and other key wireless projects in the 6<sup>th</sup> Framework Programme will organise the MOCCA-WWI Symposium to present the achievements of Phase I of the projects and the plans for Phase II starting in January 2006. This two-day event will be collocated with the WWRF #15 meeting in Paris in order to allow global participation. The WWRF #15 meeting will be organised by France Telecom.

Speakers from the participating projects as well as from other international initiatives will be invited to make presentations at the event.

The current planning for the Symposium, in conjunction with the WWRF meeting, is to follow the following time plan:

- December 6: Plenary and general overview
- December 7: Project specific workshops
- December 8: WWRF # 15 meeting
- December 9: WWRF #15 meeting

Further details will be communicated via the MOCCA and WWI project web sites and the Concertation Process of the European

Commission as soon as details on the logistics are available.

## MOCCA-WWI Workshop on October 20 and 21 in Shanghai

MOCCA project, the WWI projects and other key wireless projects in the 6<sup>th</sup> Frameworks Programme are organising a workshop on their activities and achievements in Shanghai, China on October 20<sup>th</sup>-21<sup>st</sup> 2005.

This combined MOCCA-WWI event will be collocated with the "International Conference on Systems beyond 3G" in Shanghai, which is organised by the CJK (China, Japan, Korea) initiative on October 18<sup>th</sup>-19<sup>th</sup>. Speakers from different Chinese, Japanese and Korean organisations and from EU FP6 projects will be invited to present their views. It will enable the mutual exchange of information between research activities in that region and European activities as part of global harmonisation.

The MOCCA-WWI event in conjunction with the CJK conference will have the following time plan:

- *Tuesday:*  
"International Conference on Systems beyond 3G", day 1
- *Wednesday:*  
"International Conference on Systems beyond 3G", day 2
- *Thursday:*  
MOCCA-WWI event, plenary and general overview
- *Friday:*  
MOCCA-WWI event, project specific presentations, and project specific workshops with Asian counterparts
- *Saturday:*  
Laboratory visits and sightseeing events

Further details will be communicated via the MOCCA and WWI project web sites and the Concertation Process of the European Commission as soon as details on the logistics are available from the Chinese colleagues.

## WWI Phase II Projects

The WWI Phase I projects Ambient Networks, E2R, MobiLife and WINNER submitted proposals on a second phase in Call 4 of FP6 to continue the research activities towards detailed system design. In addition, a new WWI proposal SPICE on service platforms was submitted in Call 4. These proposals are currently in the evaluation phase of the Commission. Final results on the evaluation and contract negotiation are expected latest in July 2005.

## Girls' Day

On 28 April 2005 the Girls' Day took place at the research department at Ericsson Eurolab in

Aachen, Germany. The day was arranged within the frame of the German wide initiative "Girls' Day", which aims to bring more women into technical jobs.

21 girls at the age of 15-16 years visited the company. The organizers were also happy to have a very special guest, Mrs. Nancy Pascall from the European Commission. She is responsible for gender actions and was very interested to accompany the girls during the day.

The main focus was on the scenario workshops. These scenarios have been developed within the FP6 project "Ambient Networks". They show everyday life situations in 2015 and demonstrate how the future network technology can be used. Female diploma students presented these scenarios and afterwards the girls used the opportunity to critically discuss the scenarios from their point of view.

The day was successful – for both the girls and the organizers. The girls said that they were able to get interesting insights to the research work and had at the same time a lot of fun experiencing the atmosphere.

More information can be found on:

[www.ambient-networks.org/edd\\_girlsday](http://www.ambient-networks.org/edd_girlsday)  
[www.girls-day.de](http://www.girls-day.de)

## Workshop on Vehicular Communication

As a result out of the first stakeholder meetings in May 2004, a workshop on Vehicular Communication was arranged in November 2004 at Daimler-Chrysler headquarter in Stuttgart. Ten expert participants, a half of them from the car industry, and a half from the communication industry collected and discussed requirements for the next generation mobile communication systems around car traffic.

The main target of this workshop was to understand the requirements of the car industry for the next generation mobile communication systems, including:

- Mobility in the future,
- Data communication within a car and between cars, and
- Requirements for links from a car to the communications network.

A segmentation into three different application areas helped to address specific details:

- Vehicle centric (applications used to maintain the car during lifetime and provide specific vehicular applications),
- Drive centric (support the driver during the journey to allow for a safe and comfortable drive), and
- User centric (provide applications that the drivers and passengers are used to use at home).

As a result of the day, some main differences in the product requirements themselves were identified (lifetime, security, liability, safety), but also a lot of common interests and specific know-how between both expert groups (Web-interface, navigation, user interface) show a lot of new business opportunities, which have still to be evaluated.

## WWI Projects

### MobiLife

MobiLife has applied user-centric approach in applications and services requirements collection process as well as in influencing the applications and services development process. MobiLife has also conducted user studies with multiple families in Finland and Italy in October-November 2004 and in April-May 2005 to get feedback for applications and services scenarios to drive the technology and application work.

MobiLife has worked on and experimented with novel views on multi-modality, personalisation, privacy & trust, and context technologies and mechanisms to fit into a common Reference Model. The consolidated Reference Model identifies the essential functional blocks for the realisation of new mobile services and applications. Related to that, MobiLife Context Management Framework represents the MobiLife approach to discovery of, exchange of, and reasoning with context information.

In parallel to the technology work, MobiLife is developing a set of applications – e.g., Wellness-Aware Multi-Modal Gaming – matching to the user-centric scenarios. These applications show what will be enabled by the technologies developed, but are also driving the research.

These and related work have been consolidated into more than 20 deliverables. Additionally MobiLife has organised several workshops and conferences, prepared more than 20 papers and demonstrated the results, e.g. in CeBIT 2005.

More information: [www.ist-mobilife.org](http://www.ist-mobilife.org).

### Ambient Networks

Communication networks are tools that enable users to communicate and allow access to information and services. The networks and their intrinsic technologies are only facilitators; their operation and management should not concern the users. However, the situation today is different. Users must be familiar and distinguish between the technical and commercial specifics of networks of different types. In addition, access to these networks is often restricted due to security and business considerations. Usage requires pre-established, per-network subscriptions, although static, pre-established roaming agreements can extend the scope of these subscriptions to some

other networks. Furthermore, incompatibilities and inconsistencies between network functionality – especially in naming and addressing schemes – limit the potential usefulness of the available networks. The current networking capabilities thus do not yet support a vision where services and information are the focus and access and networking details are transparent to the user.

The Ambient Networks project is currently addressing these challenges. The project's main objective is to enable seamless interoperation between heterogeneous networks. Ambient Networks aim to establish this interoperation through a common control plane distributed across the individual, heterogeneous networks and addressing domains. This new common control plane functionality can be deployed both as an integral component of future network architectures and as an add-on to existing, legacy networks, enabling legacy interoperability.

More information: [www.ambient-networks.org](http://www.ambient-networks.org).

### WINNER

The WINNER project has gained a lot of momentum: based on agreed and settled list of requirements, the technical work is progressing very well, and several achievements can be shown already as a big success:

- *System concept*  
As the main goal in Phase I, the work on the system concept description is going on as planned: based on the technology candidates selected in the beginning, simulations and evaluations contribute significantly to the process of focusing on a system concept description.
- *Spectrum requirements calculation methodology*  
The Work Package "spectrum and regulation" prepared a proposal for the spectrum requirements calculation methodology suitable for ITU-R WP8F. As a result, the corresponding ITU-R WP8F output document is incorporating this WINNER contribution to a very large extent.
- *Channel model*  
Two channel models suitable for MIMO simulations were selected, METRA-based IEEE802.11n for indoor simulations and 3GPP/3GPP2 SCM channel model for the outdoor simulations.

In addition, it was decided to implement the SCM channel model in MATLAB as a response to the needs of some other work packages. The implementation has now been created and tested, and it has also been used by the other work packages.

More information: [www.ist-winner.org](http://www.ist-winner.org).

## E<sup>2</sup>R

The end-to-end reconfigurability is the key enabler for providing a seamless experience to the end-user and the operators by managing and increasing resilience of growingly complex architectures, reducing costs of communication systems, and providing flexibility to developers of services and applications. E<sup>2</sup>R is seen by many actors of the wireless industry as a core technology to enable the full potential of beyond 3G systems, it has the potential to revolutionize wireless just as the PC revolutionized computing.

Since the project start, the full Integrated Project and consortium dimensions have been developed. The project achievements are huge and the potential connected to the future plans is also very promising. All technical challenges progressed in the different work packages, addressing the system aspects, equipment management, network support, radio modem reconfigurability, radio resource and spectrum management, as well as prototyping environment.

The E<sup>2</sup>R project organised six workshops during 2004, with participants from FP6 and worldwide experts in the field of Software Defined Radio (SDR), Cognitive Radio (CR) and Reconfigurability. Furthermore, E<sup>2</sup>R built its standardisation and regulatory plans, and already contributed to ITU-8F, ECC PT1/PT8, ARIB, IEICE, OSGi Alliance, OMA DM, OMG and SDR Forum. Finally, E<sup>2</sup>R realised more than 100 sources of dissemination in conferences, journals, workshops, interviews, press releases, etc.

More information: [www.e2r.motlabs.com](http://www.e2r.motlabs.com).

## WWI Liaisons

### Mocca

MOCCA has been investigating the requirements and opportunities of emerging markets for mobile and wireless communications, in its work package 2. Desk research was followed by the formation of a Think Tank of senior representatives from South America, Africa and India. Three meetings of the Think Tank addressed issues and

requirements in usage, technology and regulations/policies.

A rich crop of findings emerged from this work and they have led to a much better understanding of the priorities and attitudes governing the dynamics of emerging markets. These results will now be documented in a report made available on the web and disseminated in a number of conferences over the coming months.

The results can be summarised as follows:

- a) Emerging markets are not just following the developed markets with a time delay. They clearly wish to intercept developments relating to advanced data based applications. These meet some urgent requirements caused by the absence or cost of traditional alternatives for service infrastructures.
- b) Technology requirements are generally the same as in developed markets. The differences are a matter of degree. This does not apply to the applications, these tend to be greatly dependent on local conditions. A transfer of applications is possible on a generic level, but will always require a considerable adaptation to local conditions.
- c) Supportive public policies are considered crucial to the development of communications. The investment in backbone networks is a special problem in many regions. Developed markets could build on existing backbone networks in the past whereas in developing markets, the backbone may not be well developed and the investment needed to build it is difficult to motivate.
- d) While regulations are considered necessary, experience has shown that regulations can create obstacles to market development in some cases and the application of the regulations of the developed markets in the developing markets may often not be an optimal solution.

For details and the reasoning please refer to the web site ([www.ist-mocca.org](http://www.ist-mocca.org)) and the final report when this becomes available.



[www.wireless-world-initiative.org](http://www.wireless-world-initiative.org)

### Wireless World Initiative (WWI) - Newsletter

Comments and suggestions are always appreciated. Please send them to the Editors:

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