

# eMobility – Plans for the future

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# Global activities on future systems



## North America

- **IEEE activities in**
  - IEEE 802.11a, b, g, h, n
  - IEEE 802.15
  - IEEE 802.16, a, d, e
  - IEEE 802.20
  - IEEE 802.21
- **Claims from start-ups and IT companies to provide 4G solutions**
  - Flarion (Fast Low Latency Access with Seamless Handoff and OFDM)
  - Arraycomm – advanced antenna technology and SDMA
  - Navini Networks – Advanced beamforming technology for range & coverage
  - IP Wireless – TD-CDMA with IP core network
  - Aperto Networks – Fixed Broadband Wireless Access vendor
  - Redline Communications – Fixed BWA
  - Airspan – Fixed BWA
  - Alvarion – Fixed BWA
  - Intel – Active in 802.16 development and its promotion in WiMAX
- **Many activities are on short-range and WLAN enhancements**

## Europe

- UMTS
- UMTS enhancements
- Research on systems beyond 3G in FP6

## China

- 3G licenses not yet granted
- Research on beyond 3G in 863 FuTURE Project
- Joint Research Center Shanghai

## Korea

- Reluctant with wide-spread 3G deployment
- HPI / WiBro (WiMAX derivative) under development (3.5G)
- Research on systems beyond 3G

## Japan

- 3G deployments (cdma2000, WCDMA)
- Enhancements of 3G
- Research on systems beyond 3G
- DoCoMo proposal Super 3G

## CJK – China, Japan, Korea

- Cooperation on government level, one working group on mobile communication
- Cooperation between SDOs

## Globally

- ITU-R Framework Recommendation
- WWRF, since 2001

Europe is being challenged



- *Asian countries, such as China and Korea, are making substantial efforts to overtake Europe in this strategically crucial domain*
- *The USA dominates in the short-range wireless technology sector and invests its defense budget in supporting technological advances*

*Europe today accounts for around one third of global ICT sales, which are growing at 5% per year, with double-digit growth in emerging markets such as India and China*

# Investment in ICT research (2002)



ICT R&D	EU-15	US	Japan
Private sector investments	23 B€	83 B€	40 B€
Public sector investments	8 B€	20 B€	11 B€
Inhabitants	383 M	296 M	127 M
Investments / inhabitant	80 €	350 €	400 €
ICT R&D as % Total R&D	18 %	34 %	35 %

Source: European Commission i2010 –  
A European Information Society for growth and employment

# What is needed in order to maintain Europe's position



- Develop large-scale European approaches to system research and development, and to ICT services and applications in the context of digital convergence
- International co-operation within collaborative research programmes promotes the exchange of scientific information and technological know-how, which further strengthen the position of Europe in a fast-growing global market
- It is also about new value-added chains and change of business models, where now Europe needs to define its place in the value chain

## Where eMobility can add value

- The phase of the business for its activities



- **Competitive phase:** Actual business, where cooperation is only possible to a limited extent. Competition law has to be respected. These areas are most probably not suited for the eMobility Platform.
- **Semi-competitive phase:** Specification and standardisation phase, where a cooperation is needed in order to achieve consensus solutions as much as possible. However, also industry standards and proprietary solutions could be provided to the market. Topics related to this phase have to be decided on case-by-case basis in the eMobility Platform by considering other ongoing activities.
- **Pre-competitive phase:** Collaborative research phase, where the highest degree of cooperation between competitors is possible. Areas beyond research have to be evaluated, whether are already ongoing activities in other bodies and context. If the eMobility Platform could provide an added-value, which is missing, such topics should seriously be considered for the eMobility scope.

# Potential Additional Areas for Consideration



Large-scale European approaches to system research and development

## **Market Development**

- How to meet the demand of the world markets

## **Regulations for growth**

- How to stimulate the internal European organisation/market

## **Standards and specifications for seamless services**

- How to create “seamless” eMobility

## **Infospace and services infrastructure**

- How to establish the capabilities required (Usage driven)

## **Developing the technology base for leadership**

- How to get the techno-economics right