Requirements and Technologies for The Next Generation of Mobile Communications

Nigel Jefferies
WWRF Chairman
Industry & Standards
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Reading, UK
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What is WWRF’s role?

- Develop future vision of the wireless world
- Inform and educate on trends and developments
- Enable and facilitate the translation of the vision into reality
- Bring a wide range of parties together to identify and overcome significant roadblocks to the vision
Principles of Operation

- Global
- Open to all
- Not
  - standards body
  - research funding body
  - A typical research conference
- Based on membership
- All can attend meetings and make contributions
Membership

Over 80 member organisations

- Manufacturer
- Network operator
- Industry organization
- Academic institute
- Research organization

Africa
Americas
Asia
Europe
Current Sponsor Members

Alcatel-Lucent

Nokia Siemens Networks

HUAWEI

NTT docomo

DOCOMO Euro-Labs

Nokia Connecting People

中国移动通信

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WWRF’s goal is to encourage research that will achieve unbounded communications to address key societal challenges for the future. We are using the term “Wireless World” in this broad sense to address:

- the support of innovation and business,
- social inclusion and
- infrastructural challenges

This will be achieved by creating a range of new technological capabilities from wide-area networks to short-range communications, machine-to-machine communications, sensor networks, wireless broadband access technologies and optical networking, along with increasing intelligence and virtualization in networks. This will support a dependable future Internet of people, knowledge and things and the development of a service universe.
Current Working Groups

A  User Needs & Requirements in a Secure Environment in different Socio-Economic settings

B  Services, devices and service architectures

C  Communication architectures and technologies

D  Radio Communication Technologies
WWRF outputs

- WWRF Outlook – published version of White Paper
- WWRF Library – proceedings of each meeting
- WWRF – Wiley Book series (5 published, 3 in prep.)
- WWRF – IEEE Journal Series (IEEE VT Magazine)
WWRF Vision in a nutshell

7 trillion wireless devices serving 7 billion people by 2020

- All people will be served with wireless devices
- Affordable to purchase and operate
- Calm computing: technology invisible to users
- Machine to machine communications
  - Sensors and tags: e.g. in transport and weather systems, infrastructure, to provide ambient intelligence and context sensitivity
- All devices are part of the (mobile) internet
At a second glance

- Wireless device(s) becomes our interface to the digital world.
- An ambient life style where
  - ... our mobile device becomes the key enabler to interact with smart environments and users
  - ... our mobile guides and supports us against “digital threats”
- Has to be charged once a month only – green technology
- Untethered and connected user experience
- Ubiquitous service delivery with a consistent user experience
- In Other Words:

  Wireless – The Way to Future
14 WWRF Fellows

Martin Cooper  USA
Dr João da Silva  Spain
Prof Ashok Jhunjhunwala  India
Mr Håkan Eriksson  Sweden
Dr Young Kyun Kim  Korea

Madame Li Mofeng  China
Prof Mérouane Debbah  France
Prof. Hamid Aghvami  UK
Prof. Michael Walker  UK
Dr Kohei Satoh  Japan

Prof. Gerhard Fettweis  Germany
Prof. Sureswaran Ramadass  Malaysia
Dr Zhou Hong  China
Prof. Rahim Tafazolli  UK
Next WWRF Meetings

WWRF31 Vancouver, Canada
22-24 October 2013
Hosted by University of British Columbia

WWRF32 Marrakech, Morocco
13-15 May 2014
Hosted by Kings College London

WWRF33 Guildford, UK
October 2014
Hosted by University of Surrey
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