



Radiocommunication Bureau
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Circular Letter
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27 July 2004

**To Administrations of Member States of the ITU, Radiocommunication Sector Members
and ITU-R Associates participating in the work of Working Parties 8A, 8B, 8D and 8F
of Radiocommunication Study Group 8**

Subject: Study Group 8 Seminar on Tomorrow's Technological Innovations related to WRC-07
(Geneva, 9 September 2004)

ITU-R Study Group 8 is organizing a Seminar on Tomorrow's Technological Innovations related to WRC-07. This seminar will take place on 9 September 2004 at the ITU Headquarters in Geneva. The seminar will occur in the same timeframe as the meetings of ITU-R Working Parties 8A (6-15 September 2004), 8B (7-16 September 2004), and 8D (7-17 September 2004), to facilitate attendance by participants in these Working Parties. The presentations will be in English.

The preliminary programme for this seminar is provided in Attachment 1. The objectives of this seminar are to provide a forum to exchange views and information, and to discuss and reflect on technology advances for mobile, radiodetermination, amateur and related satellite services which may have an influence on your policy in the preparations of WRC-07.

Participants in the various ITU-R Working Party meetings being held in Geneva at this time will not be required to register separately for the seminar. Individuals not participating in the Working Party meetings are required to register at the registration desk, located on the second basement level (2SS) of the ITU Tower building from 8:30 hours on 9 September 2004.

* English only

Information on hotels in the area is provided on the ITU web site at <http://www.itu.int/travel/index.html>. We would remind you that citizens of some countries are required to obtain a visa in order to enter and spend any time in Switzerland. The visa must be requested and obtained from the office (embassy or consulate) representing Switzerland in your country or, if there is no such office in your country, from the one that is closest to the country of departure. If problems are encountered, the Union can, at the official request of the administration or company you represent, approach the competent Swiss authorities in order to facilitate delivery of the visa.

Valery Timofeev
Director, Radiocommunication Bureau

Distribution:

- Administrations of Member States and Radiocommunication Sector Members participating in the work of Working Parties 8A, 8B, 8D and 8F of Radiocommunication Study Group 8
- ITU-R Associates participating in the work of Radiocommunication Study Group 8
- Chairman and Vice-Chairmen of Radiocommunication Study Group 8
- Secretary-General of the ITU, Director of the Telecommunication Standardization Bureau, Director of the Telecommunication Development Bureau

ITU-R STUDY GROUP 8 SEMINAR ON TOMORROW'S TECHNOLOGICAL INNOVATIONS RELATED TO WRC-07

(Geneva, 9 September 2004)

Over the last number of years it has become evident that additional international attention should be placed on technological innovations and the urgency to get these new technologies to the marketplace. Recent developments in telecommunications can provide advanced solutions and systems to connect the world community. In recognition of the importance of getting emerging technologies to the marketplace, several items were placed on the agenda for the ITU World Radiocommunication Conference, 2007. The objectives of this seminar are to provide a forum to discuss, exchange views, and reflect on these technological innovations in preparation for WRC-07.

Public protection technologies are expanding from specialized applications to widespread use, an example being the tracking of objects with wireless mobile technologies for property protection.

Intelligent Transportation Systems, including Telematic applications for them, are becoming essential in improving the safety and efficiency of our roads and highways. New technologies enable more advanced and efficient applications for extensive use in intelligent transportation systems.

Advances in software defined radio and cognitive radio continue to enable greater flexibility of radio systems and potentially greater utilization of the radio frequency spectrum.

Radio local area networks and wireless metropolitan area networks enable broadband wireless access in a variety of environments, thus making the whole range of voice, image, video and Internet services and applications available cost-effectively to large segments of the population.

Radar systems in the 9-10 GHz range are emerging with new innovative technologies. Technologies like the Active Electronically Scanning Array (AESA) radar systems mark a significant advance in radar technology, featuring active electronic beam scanning — which allows the radar beam to be steered at nearly the speed of light and will provide increased capability. The radar system is composed of numerous solid state transmit and receive modules to virtually eliminate mechanical breakdowns. Its other components include an advanced receiver/exciter, commercial off-the-shelf processor, and power supplies.

Aeronautical telecommand and high bit-rate aeronautical telemetry emerging technologies require large data transfer to support testing of commercial aircraft and other airframes. Future technologies and performance expectations for airborne platforms contemplate a need for real-time monitoring of large data systems with multiple video streams, high definition sensors and integrated high-speed electronics.

The Global Maritime Distress and Safety Systems (GMDSS) is evolving to take advantage of new technology. All ships subject to the International Convention for the Safety of Life at Sea (SOLAS), 1974 as amended, are required to be fitted with GMDSS. The International Maritime Organization (IMO) urges administrations to require all seagoing vessels under national legislation, and encourages all vessels voluntarily carrying VHF radio equipment to be fitted with facilities for transmitting and receiving distress alerts by digital selective calling (DSC) on VHF channel 70 no later than 1 February 2005. The ITU urges all administrations to assist in enhancing safety at sea by encouraging all vessels to make use of the GMDSS as soon as possible.

Use of digital systems by the maritime mobile service in the MF and HF bands. With the increased demand for data exchange at HF and the declining use of Narrow Band Direct Printing

(NBDP) within the GMDSS, new maritime communication systems must be examined to meet emerging maritime requirements. E-mail communications in the HF band offers enhanced data exchange, is fully automated, offers message-tracking features, and requires little operator skill. How can this new technology fit in with maritime systems?

Civil aviation must have new technologies to support communications and air navigation including airborne and ground surveillance applications. New applications and concepts in air traffic management, which are data intensive, are also needed. Innovations are required to meet aviation safety objectives of providing more information to the pilot and the cockpit and of reducing runway incursions. New technology is needed to support data links that carry critical aeronautical data from systems such as air traffic control radars wind shear radars, remote maintenance monitoring systems, runway lighting, low-level wind shear alert systems, automated weather surface observing systems, or automated weather observation systems.

Satellite technologies now exist where different civil aviation services can be accommodated by efficient use of a single spacecraft or satellite network. Some countries still lack an appropriate communications infrastructure that meets the evolving requirements of modern civil aviation. The cost of providing and maintaining such an infrastructure, specifically a terrestrial infrastructure, is increasingly expensive, particularly in remote areas. Satellite communications provide a real possibility to meet the demands of the International Civil Aviation Organization communication, navigation, surveillance and air traffic management especially in the areas where a terrestrial communication infrastructure is not available. The benefits of establishing and using satellite communication systems for civil aviation would also bring additional benefits for developing and sparsely populated countries, by enabling the development of telecommunication systems in conjunction with the civil aviation systems.

Satellite digital multimedia broadcast (S-DMB) architecture will become an enabler for the success of 3G point-to-multipoint multimedia services. It takes advantage of the satellite inherent capability in providing broadcast/multicast services over global coverage, and it is best suited to distribute popular multimedia content towards 3G handsets with local cache memory. The system architecture combines high power geostationary satellites and a limited number of terrestrial gap-fillers, providing outdoor and in-building coverage with nationwide umbrella cells maximizing the potential audience. The system also encompasses point-to-point communications capabilities for specific applications ranging from PPDR application to fleet management or data collection.

New technology trends in the mobile-satellite service include new systems in the bands 1 518-1 525 MHz and 1 668-1 675 MHz. The satellite community has supported efforts to increase the MSS 1.5/1.6 GHz band allocations from as far back as the WRC-97, and has been active in the continuing work in ITU bodies since 1997, which led to an agreement at WRC-03 to extend the existing MSS allocation at 1.5/1.6 GHz by an additional 2 x 7 MHz. The additional allocations are very important in relieving some of the congestion in the traditional 1.5/1.6 GHz band MSS allocations, hence the satellite community's interest in investigating ways to have access to them in the near future. With that objective, Inmarsat has joined Astrium, which is leading the Amethyst programme, part of ESA's Artes 3 Line 4 study programme on advanced mobile satellite systems. The Amethyst programme is co-funded by ESA, Astrium and Inmarsat, and investigates the modifications required to the Inmarsat 4 spacecraft, currently under construction, to enable utilisation of the extended 1.5/1.6 GHz band allocations. The presentation will provide an overview of the main issues addressed in that study programme, and the implications on the I4 satellite architecture.

International Mobile Telecommunications-2000 (IMT-2000) is the global standard for third generation (3G) wireless communications, defined by a set of interdependent ITU

Recommendations. IMT-2000 provides a framework for worldwide wireless access by linking the diverse systems of terrestrial and/or satellite based networks. It will exploit the potential synergy between digital mobile telecommunications technologies and systems for fixed and mobile wireless access systems. New mobile radiocommunication technology must address the needs of the developing countries and countries with large areas of low population density. IMT-2000 systems will change and develop towards the capabilities and functionalities of systems beyond IMT-2000. Service functionalities in fixed, mobile and broadcasting networks are increasingly converging and inter-working. The future development of IMT-2000 and systems beyond IMT-2000 will accommodate the continuing and accelerated growth in the demand for multi-media applications, such as high-speed data, IP packet and video, in mobile communication systems. What are these new services and what will the new systems look like? The key to the success of mobile communications systems is global operation and economy of scale.

Darlene A. Drazenovich
Seminar Coordinator and Vice-Chair of SG8

STUDY GROUP 8 SEMINAR PROGRAMME

8:30 – 9:00 hours	Registration
9:00 – 9:15 hours	Opening session
<p>Opening of the Seminar, Ms. Darlene Drazenovich, United States, Seminar Coordinator and Vice-Chair SG 8</p> <p>Welcome address by ITU, Mr. Valery Timofeev, Director, Radiocommunication Bureau</p>	
9:15 – 10: 45 hours	Session 1: Working Party 8A
<p>1.1 Introduction by WP 8A Chair, Mr. Jose Costa, Nortel Networks</p> <p>1.2 Wireless mobile technology for property protection, Mr. Diego Tebaldi, LoJack International</p> <p>1.3 Advances in ITS/Telematics technology and applications, Mr. Paul Najarian, ITSA and Mr. Masayuki Fujise, NICT</p> <p>1.4 Policy-based cognitive radios: Future framework for spectrum access, Mr. Preston Marshall, DARPA, United States</p> <p>1.5 Advances in wireless local area networks, Mr. Jan Kruys, Cisco Systems</p> <p>1.6 Exploring the feasibility and benefits of additional uses of unused TV broadcast spectrum, Mr. Carl Stevenson, Agere Systems</p> <p><i>Questions and answers</i></p>	
10:45 – 11:00 hours	Coffee break
11:00 – 12:30 hours	Session 2: Working Party 8B
<p>2.1 Introduction by WP 8B Chair, Mr. Thomas Ewers, Germany</p> <p>2.2 New radar technology 9-10.5 GHz, Mr. Frank Sander, U.S. Department of Commerce, National Telecommunications and Information Administration and Mr. Tom Fagan, Raytheon</p> <p>2.3 New aeronautical telemetry systems, Mr. Darrell Ernst, Mitre Corporation, Mr. Gerhard Mayer, University of Salzburg and Mr. Jean-Claude Ghnassia, Airbus</p> <p>2.4 New aviation systems, Eurocontrol, IATA and Mr. Don Willis, U.S. Federal Aviation Administration</p> <p>2.5 New HF/MF digital maritime mobile systems, Mr. Peter Kierens and Mr. Kerry Hanson, Globe Wireless</p> <p>2.6 The Global Maritime Distress and Safety System, Mr. Eirik Blikrud, Post and Telecommunication Authority, Norway</p> <p><i>Questions and answers</i></p>	

12:30 – 14:00 hours	Lunch break
14:00 – 15:30 hours	Session 3: Working Party 8D
<p>3.1 Introduction by WP 8D Chair, Mr. Takeshi Mizuike, Japan</p> <p>3.2 Overview of new technology trends in the mobile-satellite service, Mr. Marcus Vilaca, Inmarsat</p> <p>3.3 Satellite digital multimedia broadcast, Mr, Laurent Combelles, Alcatel</p> <p>3.4 Satellite systems supporting modernization of civil aviation telecommunication systems, Mr. David Weinreich, Boeing</p> <p><i>Questions and answers</i></p>	
15:30 – 15:45 hours	Coffee break
15:45 – 17:15 hours	Session 4: Working Party 8F
<p>4.1 Introduction of WP 8F, Mr. Peter Scheele, Germany (on behalf of Chairman, Mr. Stephen Blust)</p> <p>4.2 Future framework for IMT-2000 and systems beyond IMT-2000, Ms. Cindy Cook, Canada</p> <ul style="list-style-type: none">– Enhancing IMT-2000– Relationship with other radio systems– External R&D activities– New capabilities <p>4.3 Examples of potential future services/applications, Mr. Yves Bellego, France Telecom</p> <p>4.4 Preparations related to WRC-07, Mr. Jim Ragsdale, Ericsson, Inc., Work programme (services - market survey - methodology - technology assumptions, etc.</p> <p><i>Questions and answers</i></p>	
17:15 – 17:30 hours	Closing Session
Summary and conclusions: Seminar Chairman, Ms. Darlene Drazenovich, Vice-Chair SG 8	