World Radiocommunication Conference 2007
Bringing together all Radiocommunication Services

By Nadia Katsanou, EETT Scientific Expert

Coordinating the spectrum at the international level falls under the jurisdiction of the International Telecommunication Union (ITU), an organisation of the United Nations whose mission is the continuation and the expansion of international collaborations in order to ensure the rational use and the efficient improvement of electronic communications.

Every three to four years ITU organises the World Radiocommunications Conference (WRC). The objective of this Conference was to amend the ITU Radiocommunication Regulations (RR), which coordinate the spectrum worldwide. This is one of the largest events within the framework of International Organisation Conferences, while the decisions taken affect for the evolution of the telecommunication sector, at least for the next decade.

The World Radiocommunications Conference (WRC), which is the peak of all the endeavours and preparatory actions over a period of many years, took place in Geneva from 22nd October to 16th November 2007. Over 2,800 persons in total took part in the Conference, representing 164 member states, and 106 observers, exceeding by far the number of participants at the previous Conference (WRC-03).

The final Acts (which form the Radio Regulations) of WRC- 07 are bound in a 500-page volume and have the validity of an International Treaty. The Acts in question included 30 Agenda Items, and covered almost all the terrestrial radiocommunication services and space services.

The Hellenic Delegation consisted of 23 persons from the Ministry of Transport and Communications (MTC), Civil Aviation Authority (CAA), Hellenic National Defence General Staff (HNDGS), EETT, Ministry of Mercantile Marine (MMM), ERT S.A., Hellas-Sat S.A., OTE S.A., COSMOTE S.A., the Institute of Maritime Experiments and Research (INMER) and the Permanent Hellenic Representative in Geneva.

The outcome of WRC-07 was considered to be especially successful for Greece. The majority of the national positions were endorsed by the Conference. The main national strategic targets which concerned amongst others, "IMT" technology, upgrading radiolocation services, developing broadband aeronautical telemetry and telecommand applications, reviewing the operational procedures and requirements of the Global Maritime Distress and Safety System (GMDSS), using Ship Identification Stations in Search-and-Rescue planes, world broadband satellite systems that will provide high speed Internet services at the international level, were achieved in a completely satisfactory manner for CEPT and for Greece. It is noted that these targets had received the support of the European Commission and the Council of EU Ministers of Telecommunications.

The Future of New Services for Mobile Telephony and Broadband Communications

One of the most controversial subjects and significicant focal points at WRC-07 was the field of future mobile communication systems. During the Conference, the spectrum requirements for "IMT" technology were examined (which included 3rd and 4th generation systems). During the preparatory work for WRC-07, especially over recent years, a clear demand was expressed for the additional spectrum identification worldwide for the operation of IMT systems.

In order to satisfy this additional demand, candidate spectrum zones were studied at lower and higher radiofrequencies than those operated today in mobile communication systems in Europe.

EETT, in collaboration with MTC, coordinated the Work Group that was formed in our country for this specific subject.

The name that was finally adopted for the new mobile communication technology is "IMT-Advanced" and is considered to be the next generation of radiocommunications, i.e. the evolution of IMT-2000. The services that will be provided by using these technologies will be available from 2011 and thereafter.

The most disputable frequency zones for the IMT technology of future mobile communications systems was the UHF band: 470-862 MHz, which is used by broadcasters, and the C band: 3400-4200 MHz, where many countries have fixed-satellite links.

After tough negotiations, the upper part of the UHF zone –i.e. zone 790-862 MHz and C-zone 3400-3600 MHz- were made available to mobile services for the development of IMT systems and services, with of course the prerequisite of coordinating with neighbouring countries before being implemented. This development was considered to be a good start for the harmonizing of the next generation of advanced mobile communications, especially by the mobile telephony industry. The date when these services will appear on the market will be towards the end of 2011 and thereafter, in combination with the implementation of the national strategies of the countries for the completion of the transition period for the digital switchover.

The following Tables depict the results of the Conference with respect to the additional Spectrum availability for IMT systems further development (3rd and 4th generation mobile communication cellular Systems).

In addition, in order to facilitate existing and future terrestrial service systems, the frequency zone 2500 - 2690 MHz was finally made available, for the shared use between satellite service (transmitting stations) and terrestrial service (receiving stations), taking into account the Power Flow Density (PFD) variation limits, as well as coordination requirements, ensuring adequate protection in this manner, as well as compatibility with the satellite systems in the C-zone.

The Conference came to the conclusion that the C-zone is of great significance for the satellite communications industry and that protection is needed to secure aeronautical and marine safety services, where terrestrial networks cannot provide any services, especially in risk situations and major disasters.

It should also be stressed that additional restrictions exist for all identified zones, while additional procedures will also be applied. Assignment to mobile services and deployment by IMT systems will be delayed, and will gradually be phased in from 2010 up to 2015. Finally, the corresponding PFD limits were defined in order to protect other neighbouring services.

Terestrial Component

BAND:	Indentification for JMT Systems	Total:
410-430 MHz	NO	
450-470 MHz	YES	20 MHz
470-862 MHz	YES – 790-862 MHz	72 MHz
2300-2400 MHz	YES	100 MHz
2700-2900 MHz	NO	
3400-4200 MHz	YES – 3400-3600 MHz	200 MHz
4400-4990 MHz	NO	
		392 MHz

Satellite Component

BAND:	Indentification for JMT Systems	Total:
1518-1525 MHz / 1668-1675 MHz	YES	2 x 7 MHz
		14 MHz

The Future of the World is Digital (World goes Digital)

At the next Conference (WRC-11) the results from the sharing and coexistence studies will be examined for all identified zones and more specifically, for frequency zones 450-470 MHz, 790-862 MHz, 2300-2400 MHz, 2500-2690 MHz.

ITU and the international electronic communications market considered the results of this Conference, with respect to IMT identification and the availability of additional spectrum for IMT, to be of great importance. The Chairman of this Conference and General Manager of the Spectrum Regulatory Authority in France expressed his satisfaction for the fact that telecommunication needs – both for the developed countries as well as for the developing countries - are converging for the purpose of reducing the digital dividend.

The decisions taken at this Conference will also allow hundreds of thousands of persons who reside in rural areas and in underdeveloped regions of the world to have broadband access.

In order to better prepare a future digital wireless system, future actions up to 2011 will aim at improving the regulatory frame work at the international level in order to satisfy the ever-increasing spectrum demand for existing and future radiocommunication applications.