

0.1 EXECUTIVE SUMMARY

Adequate access to spectrum is a key requirement for the development of the Universal Mobile Telecommunications System, UMTS. The purpose of this report is to give a more detailed analysis of the spectrum issues and express the Forum views regarding spectrum aspects. The Forum has already in its Report N°1 [1] made a number of recommendations regarding spectrum for UMTS, and this work is now pursued by the publication of this report.

The UMTS Forum is an open and independent association of telecommunications operators, manufacturers and regulators (over 150 members) active both in Europe and other parts of the world and who share the vision of UMTS. The preparation of the report has mainly been done in the Spectrum Aspects Group (SAG), a subgroup of the Forum.


UMTS, the Universal Mobile Telecommunication System, as a member of IMT-2000 family, is recognised as the main opportunity to provide mobile multimedia services for the future mass market. UMTS will offer user bit rates up to 2 Mbps.

It should be noted that this report generally focuses on spectrum for a global UMTS/IMT-2000 market. A number of different environments were taken into a generic traffic model, that can be seen as being usable for many countries in the world with varying demographical and economical data. Actually the parameters used in the terrestrial spectrum calculations are derived from a market forecast for the EU15 states for the years 2005 and 2010. The spectrum estimates are valid for countries with environments, which are similar to those in the EU15 states. For satellite services, the spectrum estimates were based on global market studies.

Recommendations:

1. The frequency spectrum as identified for UMTS/IMT-2000 in the ITU Radio Regulations, both for terrestrial and satellite services, should be made available by the year 2002 according to market demand.

2. To meet the market forecast for the terrestrial mobile services a total spectrum amount of 582 MHz was calculated. Therefore, a minimum additional frequency spectrum of 187 MHz is required for terrestrial services in urban areas by the year 2010 in EU15 states. This additional spectrum includes the requirements of public networks and non-public (license exempt) applications.



3. To meet the UMTS market forecast for satellite services a total spectrum amount of 2*123 MHz by the year 2005 and 2*145 MHz by the year 2010 is needed with a lower requirement in Europe. Therefore, additional 2*8 MHz is required globally by the year 2005. In the year 2010 additional 2*30 MHz is required in global hot-spots with lower requirements in EU15.

4. There is a need to designate spectrum for non-public (license exempt) UMTS applications. This will be required from the beginning to help build the market for mobile multimedia terminals and to stimulate a demand for public UMTS access. The amount of spectrum and location will be further investigated by UMTS Forum.

5. The preferred minimum spectrum per operator as defined in [6] is 2*15 MHz (paired) + 5 MHz (unpaired). Care should be taken that operators have enough spectrum if the additional spectrum is not available by the year 2005.

6. The UMTS Forum recommends to study further the flexible use of TDD and FDD techniques, with the aim of improving the efficient use of spectrum.

7. A logical radio control channel (RCC) is recommended as an appropriate solution for the purpose of multimode terminal operation and global roaming. Identification of a specific physical global radio control channel in the Radio Regulations is not recommended.
