

ERICSSON'S RECOMMENDATIONS

Agenda Item 1.4 at ITU WRC-07



1. Ericsson's views

The ITU World Radiocommunication Conference 2007 (WRC-07) is nearing and the time to act to secure the future success of the wireless industry is now. Allocation and identification of spectrum are expected to not only attract a high level of interest but also to pose some significant challenges. The WRC-07 needs to repeat the successes of its earlier Conferences, which incorporated two key considerations into their decision making: identifying internationally harmonized spectrum and supporting global standards. These considerations are critical to facilitating economies of scale and market success.

Of these two factors, global spectrum allocations are the most critical decisions the WRC-07 will make. In fact, identifying additional spectrum for new IMT-Advanced¹⁾ systems with highly developed capabilities is essential to meeting the projected demand for broadband wireless access (BWA) services. Further, the identification of globally harmonized spectrum supports standardized radio technologies, which underpin the ability to achieve economies of scale that enable operators to reduce network OPEX and CAPEX and to deploy spectrally efficient technologies that bring more affordable and ubiquitous advanced wireless and broadband services.

If WRC-07 identifies new spectrum for IMT-Advanced according to the considerations above, the WRC-07 will pave the way for a truly global mobile digital society and will ensure that next generation mobile networks and services are universally available.

2. Ericsson's recommendations

In light of the above objective, **Ericsson recommends that WRC-07 take the following actions on the Agenda Item**

1.4 candidate bands to address spectrum needed by 2015-2020:

Priority item: Allocate to the Mobile Service on a primary basis in Region 1 and in all Regions identify, at a minimum, 2x40 MHz within the **698–862 MHz portion** of the candidate frequency band 470–862 MHz as a sub-band for IMT-Advanced. Ericsson supports a globally harmonized solution for providing both coverage and capacity in large geographical areas of low population density. A globally harmonized sub-band is needed in order to realize the special combination of both coverage and capacity.

Priority item: Identify the 2300–2400MHz band for IMT which is near the bands already identified for IMT-2000 mobile services. This would ensure that these bands share similar propagation conditions and may facilitate reuse of 2500–2690 MHz band antennas.

Priority item: Allocate the 3400–3800 MHz portion of the candidate frequency bands 3400–4200MHz and 4400–4990 MHz for IMT Advanced, which is sufficient to fulfill anticipated future spectrum requirements for mobile services.

Sharing with broadcasting and satellite

With the migration of analogue TV to digital TV, we see new ways of delivering TV services to consumers e.g. via cable, satellite, fiber, and cellular systems. Due to this transformation, bandwidth like the sub-band 698–862 or 750–862 MHz could be designated as shared spectrum to enable new interactive TV and communication services.

In countries with heavy precipitation, part of the spectrum identified for IMT-Advanced should be shared with satellite networks. A confined part of the 3800–4200 MHz candidate band could remain designated for satellite usage in those countries. Furthermore, geographical sharing needs to be considered in order to maximize spectrum efficiency.

3. Other considerations

An identification of the 410–430 MHz and the 450–470 MHz candidate bands for IMT could be considered. These bands are already allocated to the Mobile Service on a primary basis in all three ITU-R Regions. These lower frequency bands have superior propagation characteristics, which allow operators to build larger cells with significant coverage benefits and cost efficiencies. However, there may be adverse antenna size and terminal and base station efficiency impacts associated with this use.

An allocation to the Mobile Service and identify the 2700–2900 MHz candidate band for IMT could be considered. The radio wave propagation properties of this band are more favorable compared to bands in the 4 GHz range. In addition, this band is situated 'near' bands already identified for IMT-2000. So, antenna reuse may be possible. Moreover, the 2700–2900 MHz band and the 2500–2690 MHz band have similar propagation characteristics. In some countries, only a limited number of radar systems are deployed in this band so there would be minimal displacement of existing users.

4. Conclusions

The ITU WRC-07 is encouraged to decide on a regulatory framework that allows operators to more easily introduce advanced technologies that enhance the mobile user's experience. IMT-Advanced technologies are especially important to the continued growth of wireless services, particularly in emerging markets; where IMT solutions will improve geographical coverage, support new business models, make affordable IMT devices more readily available, thereby closing the digital divide quickly and cost efficiently.

Ericsson invites the WRC-07 to identify globally harmonized spectrum for IMT-Advanced below 5 GHz. Hence, Ericsson recommends, where applicable, that the WRC-07 allocate spectrum to the Mobile Service on a primary basis; specifically, Ericsson urges the WRC-07 to identify for IMT the candidate bands and sub-bands discussed above, primarily: **the 698–862 MHz band, the 2300–2400 MHz band, and the 3400–3800 MHz band**. In this way, the WRC-07 can assure that IMT-Advanced technologies can be deployed and can bring rich mobile communications and reliable broadband to everyone, everywhere.

1) Future developments of IMT-2000 systems and systems beyond IMT-2000.