

Spectrum for IMT in WRC-07

**WRC-07 is the right time
to identify new mobile bands**

Version: 8 January 2007
Minor update: 27 February 2007



Alcatel-Lucent

Ericsson

Fujitsu

Huawei

Motorola

NEC

Nokia

Nortel



ZTE

Siemens

Samsung

Qualcomm

Panasonic





<http://standards.nortel.com/spectrum4IMT/>



Vision for a global mobile society



is inspired by the ITU vision for a global mobile society, where every person has mobile access and is connected wirelessly.

Global spectrum availability is the key to realizing this vision.

Spectrum for the global mobile society: what usage could be more valuable and more important ?



Content

- WRC-07 has IMT on its agenda
- Existing bands will not be enough for IMT services after year 2015
- Bands for IMT should be globally common and low enough
- Spectrum - why now?
- WRC-07 is the right time to identify new spectrum for IMT
- Preferred spectrum bands to be identified at WRC-07
- Conclusions



WRC-07 has IMT on its agenda

The WRC-07 (World Radiocommunication Conference) will take place in Geneva, Switzerland, from October 22nd to November 16th.

In its agenda is the item 1.4:

“to consider frequency-related matters for the future development of IMT-2000 and systems beyond IMT-2000 taking into account the results of ITU-R studies in accordance with Resolution 228 (Rev. WRC-03)”



WRC-07 has IMT on its agenda

Resolution 228 (Rev.WRC-03) resolves:

1. to further study technical and operational issues...;
2. to report to WRC-07 on the spectrum requirements and potential frequency ranges...;
3. to conduct regulatory and technical studies on the usage of frequencies below those identified for IMT-2000...;
4. to take into consideration the particular needs of developing countries including use of the satellite component of IMT-2000...;
5. to include sharing and compatibility studies with services already having allocations in potential spectrum...;
6. that WRC-07 should consider frequency-related matters for the future development of IMT-2000 and systems beyond IMT-2000...,

Existing bands will not be enough for IMT services after year 2015

Report ITU-R M.2078 (IMT.ESTIMATE)

Market setting	Total Spectrum Requirement (MHz)		
	Year 2010	Year 2015	Year 2020
High Market Setting	840	1300	1720
Low Market Setting	760	1300	1280

Note 1: High and low market settings as in Report M.2078

Note 2: Figures in Total Spectrum Requirements includes spectrum already in mobile use

Existing bands will not be enough for IMT services after year 2015

Report ITU-R M.2078 (IMT.ESTIMATE)

Additional spectrum by regions, for example:

- For Europe, additional need will be **695 MHz** in areas of low market and **1135 MHz** in areas of high market (existing IMT-2000 spectrum = 585MHz)
- For Americas (Citel), additional need will be **721 MHz** in areas of low market and **1161 MHz** in areas of high market (existing IMT-2000 spectrum = 559 MHz as of PCCIII/Rec 70 (XXI-02))
- For Region 3, additional need will be **531 MHz** in areas of low market and **971 MHz** in areas of high market (existing IMT-2000 spectrum = 749MHz as per IMT.Estimate)

Bands for IMT should be globally common and low enough

- According to Report ITU-R M.2074 (on radio aspects), the preferred bands for IMT are bands below 5 GHz.
- Also, the Report ITU-R M.2079 (on candidate bands) indicates that the prioritized candidate bands should focus on bands between 400 MHz and 5 GHz, but that nomadic applications may be accommodated in the 5 GHz bands (allocated to the mobile service at WRC-03, if such use is in accordance with RR 5.446A and Resolution 229).
- This is due to the,
 1. Propagation characteristics
 2. Other technical reasons like:
 - support for fully mobile services
 - acceptable trade-off between cost and full area coverage
 - availability of required RF hardware components,
 - acceptable mobile handheld terminal complexity and power consumption.

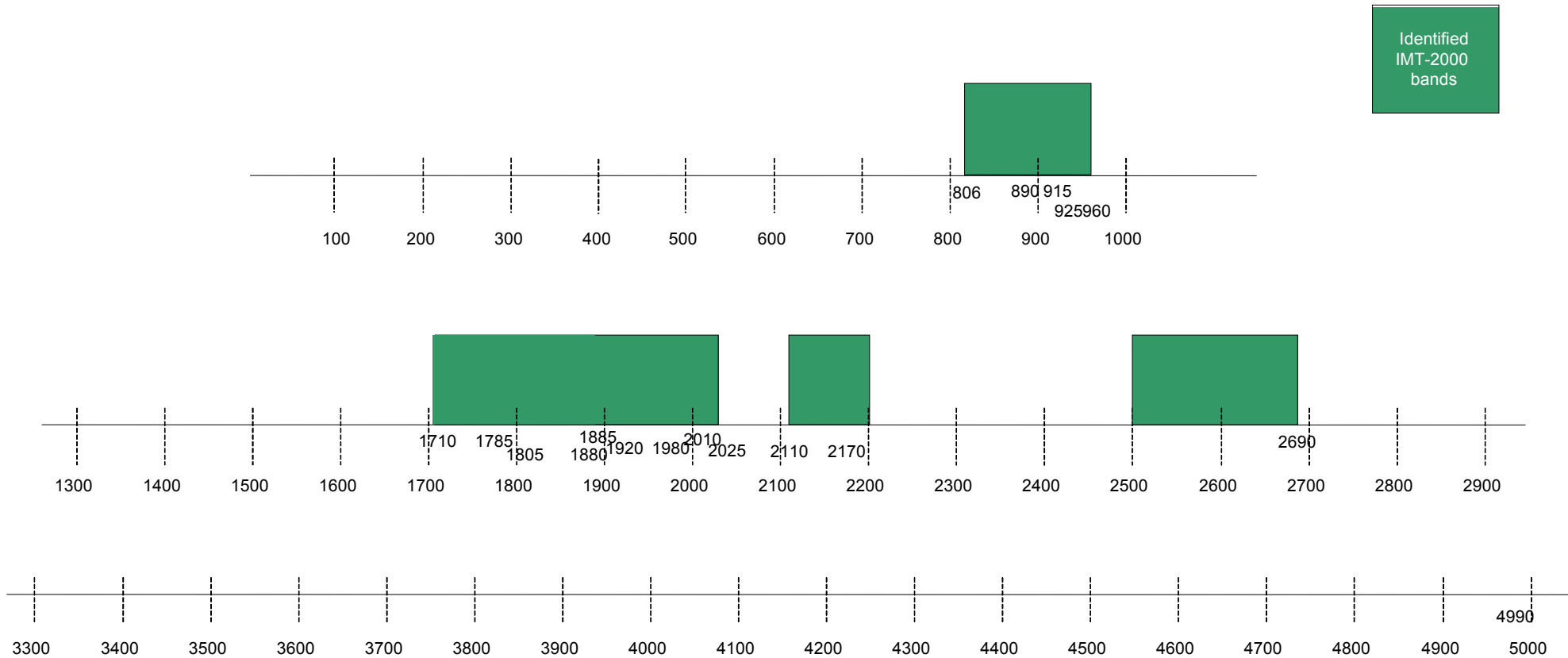
Bands for IMT should be globally common and low enough

In Report ITU-R M.2079 and in draft CPM-text (Doc.CPM07-2/1), following bands are identified as candidate bands:

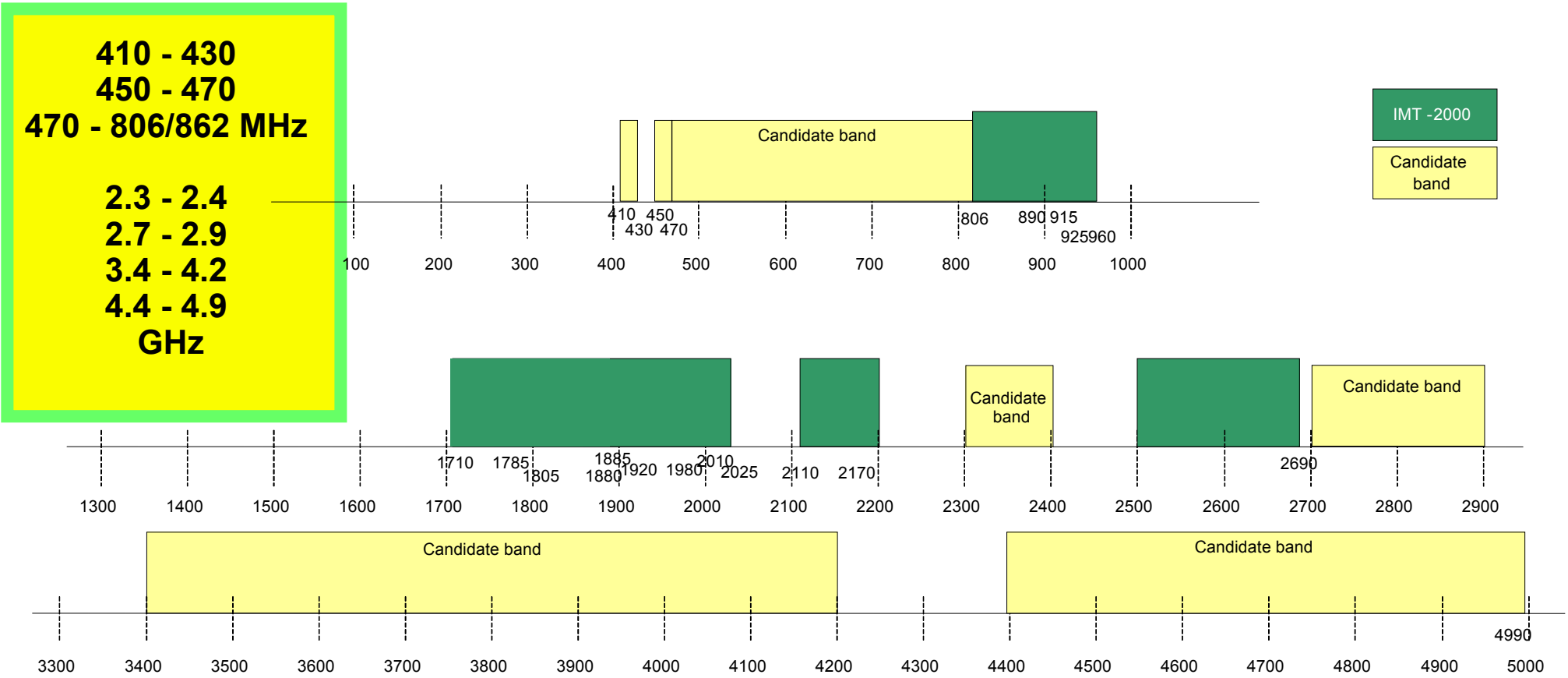
410 - 430
450 - 470
470 - 806/862
MHz

2.3 - 2.4
2.7 - 2.9
3.4 - 4.2
4.4 - 4.9
GHz

Spectrum bands identified for terrestrial IMT-2000



Candidate bands related to WRC-07 agenda item 1.4



410 - 430
450 - 470
470 - 806/862 MHz

2.3 - 2.4
2.7 - 2.9
3.4 - 4.2
4.4 - 4.9
GHz

Bands for IMT should be globally common and low enough

- Mobile and wireless industry are developing technologies to enhance spectrum usage efficiency and also studying proposed new concepts for future spectrum management
- However, new spectrum management concepts are long-term issues and will not eliminate the benefits of globally common spectrum bands:
 - Economies of scale
 - Global Roaming
 - Smooth implementation
- Spectrum harmonization is still needed.

More spectrum for IMT - Why at WRC-07?

1. Planning for future spectrum needs for IMT must be done today to be able to respond to the future demand of global mobile society
2. The WRC-07 agenda was set at WRC-03 in anticipation of the rapid market growth of mobile communications, which is the reality today
3. It is beneficial to know spectrum bands well in advance to start the development of radio interface standards and detailed band planning
4. Must also consider the additional time for spectrum to be made available
 - Regional and individual Administration processes after WRC decisions
 - The time to move/retire existing spectrum users, design new equipment and deploy and build the systems
5. If not now for future - then when? Will suitable spectrum be available as time progresses?

WRC-07 is the right time to identify new spectrum for IMT

- It typically takes about 7-10 years from WRC-decision to make spectrum available:
 - WARC-92 → IMT-2000 started to be licensed around the year 2000 in the identified bands
 - WRC-2000 → IMT-2000 is scheduled to be licensed at the 2500-2690 MHz band starting from 2007
 - WRC-07 → licensing of some of the new bands could start from around 2015, subject to market requirements
- When providing harmonized spectrum solution for IMT at WRC-07, unnecessary regional diversions can be avoided
- Therefore WRC-07 is the right moment !

Key Messages

1. Existing spectrum bands will be exhausted in key markets for carrying the predicted IMT traffic after year 2015
2. Bands for IMT should be globally common, wide enough (for 100 MHz carriers) and low enough (preferably below 5 GHz)
3. WRC-07 is the right time to identify new spectrum for IMT
4. WRC-07 decision would enable IMT-Advanced deployment in year 2015-2020 timeframe

Summary for Administrations

- Mobile communications will facilitate economic growth, enable new jobs and new business creation
- mib is inspired by the ITU vision for a [global mobile society](#), where every person has mobile access and is connected wirelessly. Are you ?
- One step to make ITU vision of a [global mobile society](#) to happen is to identify new spectrum for IMT at WRC-07, as global spectrum availability is the key to realize this vision
- Identification of new IMT spectrum is needed now, so at WRC-07, a visionary decision is needed in favour of future [global mobile society](#).
- Spectrum for the [global mobile society](#): what usage could be more valuable and more important ?