

RADIONET3

TRIPS OF WP7

RADIO ASTRONOMICAL SPECTRUM MANAGEMENT

SUBJECT	7th meeting of ITU-R JTG 4-5-6-7
DATE	21-31 July, 2014
PLACE	Geneva, Switzerland
PARTICIPANTS	Wim van Driel (CRAF)

BACKGROUND:

At the 2012 World Radiocommunication Conference (WRC) of the International Telecommunication Union (ITU) an Agenda Item was defined for the next WRC in 2015, on the identification of an additional 600 MHz bandwidth in the range 470 MHz to 6 GHz to be allocated to International Mobile Telecommunications (IMT) for the development of terrestrial mobile broadband applications.

Some of the frequency bands considered for the new IMT allocations are shared with, immediately adjacent to, or nearby 14 bands used for radio astronomical observations. This indicates there are potential threats to some of the most commonly used radio astronomy bands from these potential allocations.

At the WRC in 2015, decisions will be made at a global level on possible allocations of frequency bands to IMT and their conditions, such as limits on levels on unwanted emissions into radio astronomy bands. Prior to the month-long WRC there will be a Conference Preparatory Meeting (CPM), at which the methods and options for allocating frequencies will be reviewed and where national administrations can declare their positions.

JTG 4-5-6-7 was tasked to prepare the draft CPM text on this particular Agenda Item, and to prepare all ITU-R Reports or Recommendations on technical issues linked to any frequency allocations to IMT systems. This included Report ITU-R RA.[RAS-IMT].on compatibility studies between possible IMT frequency allocations and radio astronomical observations.

CRAF performed most of the studies contained in the Report, and lead the work towards the Report and the drafting of related CPM text at previous meetings of JTG 4-5-6-7.

HIGHLIGHTS:

At this 7th and final meeting of JTG 4-5-6-7 the draft CPM text on the possible allocation of frequencies to IMT mobile broadband systems had to be finalized and as many as possible of the ongoing linked compatibility studies finalized and adopted as ITU-R Draft New Reports (DNRs), to be subsequently discussed in other ITU-R fora and ultimately elevated to full Report status.

At the previous meeting, our Draft New Report presenting the results of in-band sharing and adjacent band compatibility studies between radio astronomy and IMT systems in 8 frequency bands had been adopted by the plenary, as well as draft astronomy-related CPM text based on its conclusions.

At this meeting, although there were input documents from national administrations proposing to modify our draft CPM texts, both these draft CPM texts and our Draft New Report were accepted unchanged by the final plenary.

In summary, provided sufficiently low limits are imposed on unwanted emission levels of IMT systems, compatibility between radio astronomy and IMT systems operating in adjacent or nearby bands looks feasible, with separation distances of 60 to 100 km between IMT base stations and radio telescopes. On the other hand, in-band sharing does not look possible, with separation distances of 500 km or more.

Of particular continued concern to CRAF are the adoption of sufficiently low unwanted emission level limits and the protection of the band 1330-1400 MHz (used, *i.a.*, for observations of the redshifted 21cm HI line), where we have no allocation in the ITU-R Radio Regulations but only a mention in a Footnote, which urges all national administrations to take all practicable steps to protect the radio astronomy service from harmful interference.

NEXT STEPS:

With the activities of ITU-R JTG 4-5-6-7 finished, work will have to be continued elsewhere towards defining which administrations are in favour of IMT broadband mobile use in which frequency bands, and under what conditions.

Within the ITU, this will first happen at the Conference Preparatory Meeting in 2015. At a European level, preparation for the CPM will continue in meetings of CPG-PTD of the CEPT, and at a national level in all countries represented in CRAF there are also regular preparatory meetings.

CRAF will need to remain vigilant and continue to participate actively at all levels in this process - national, regional and global.