

Report from WRC-12 in Geneva, on 23 January–17 February 2012

by A. Jessner, MPIfR (March 2012)

The CRAF chair A. Jessner participated in the conference (funded by Radionet) from 31.01.2012 to 14.01.2012.

At the world radio conference 2012 (WRC-12) there were 193 Countries (= administrations) and additional Sector members (e.g. CRAF, NATO) represented, together making it more than 3000 delegates.

CRAF was represented at the by the CRAF FM Harry Smith (full time), and for part of the conference by the CRAF chair Axel Jessner and CRAF members Hans van der Marel and Michael Lindquist as well as by Willem Baan (ASTRON). Remote support was given by Adrian Tiplady and Roberto Ambrosini.

One can see from the summary below, that the conference had in general a good outcome for radio astronomy, thanks mainly to CRAF's involvement in the conference preparation process. However one of the overriding issues at the conference was the use of the bands above 5 GHz and 15.4 GHz for different aeronautical applications. From our point of view, none of them were desirable, but it became clear, that we were to have one or the other as a neighbour, as administrations in Europe and the US were intent on allocating it to their favourite service.

The US eventually got the upper hand for their radio-location (=radar) service above 15.4 GHz. Although that was finally not our favourite option, a study made for the ITU (Rep. M 2170) showed, that the radio location system could completely avoid interfering with radio observatories i.e. by not pointing at them. The band 15.35-15.40 GHz is an exclusive passive band (5.340) and in that case it is sensible to ask for an interference limit from RA 769 not to be exceeded at any time and any radio observatory. The study did not indicate another requirement and that was confirmed to us in direct discussions with the (US) author. But in the CPM text, there was an initial allowance of 2% out of band interference exceeding the RA 769 limit to an unspecified level and we approached our US and IUCAF colleagues to support us in removing it. Such a limit does not make sense in the case of radar systems, which very often operate at much lower duty cycles and hence would not be constrained in any way by that rule. To our great surprise, our US colleagues and IUCAF in their wake insisted on the 2% clause, even though the US delegation had signalled that they could do without it, 'if it weren't for our radio astronomers'. CRAF could not accept that, and neither could the administrations from most European countries and South Africa. It became evident, that there was a big difference of opinion between radio astronomers and that didn't help in the situation either. The Europeans were outvoted in this case, especially as Russia also opted for the 2% clause, but for different reasons. In the end, after a weekend of long discussions and consultations, our concerns were noted in the chairman's report and we have a theoretical opportunity to reverse the situation at the next WRC, if 'Studies can show' that the allowed 2% interference is unnecessary.

As a result, may have to bear up to 4% interference on that band, as a satellite service was already given the exceptional permission to cause up to 2% rfi for radio telescopes. European observatories, operating on a densely populated continent with plenty of military activity will now be at a disadvantage compared to those in e.g. the US, where there are radio quiet zones and density of planes (including military) is much less around the observatories.

The administrations have all been very supportive and constructive and had it not been for the intervention of the US (and IUCAF in their wake) colleagues, the conference might have been a full success for radio astronomy.

The following table contains outcomes for the various WRC-12 agenda items of interest to CRAF.

AGENDA ITEM	Outcome for CRAF	Comments
1.3 – UAS near 5 & 15.4 GHz RAS bands	Unsatisfactory	Near to 5 GHz, some UAS use allowed limited to internationally standardized aeronautical systems. No allocations adjacent to 15.4 GHz, but new WRC-15 Resolution agreed which seeks to find other potential spectrum for allocation in the future which may threaten other RAS bands
1.4 – AM(R)S adjacent to 5 GHz RAS band	Acceptable	No allocations immediately adjacent to 5 GHz RAS band & resolution suppressed; in line with CRAF's position.
1.6 – Revision of RR FN 5.565 (Frequencies above 275 GHz)	Satisfactory	The text of the agreed revision was supported by CRAF
1.8 – Protection of EESS at 86 - 92 GHz from FSS	Satisfactory	'Recommended' emission limits adopted in line with EESS requirements. Res 731 & 732 slightly modified and retained. Some limited improvement from the RAS perspective.
1.16 – METAIDS 8.3 -11.3 kHz	N/A	Allocation made in line with WMO requirements. Not a RAS/CRAF issue as such, but CRAF formally supported the allocation.
1.19 – SDR & CRS	Satisfactory	SDR: no change to RR. CRS: no change to RR. Suppression of resolution. All in line with CRAF's position. RCC countries generated a weak additional WRC-12 recommendation
1.20 – HAPS near 6.7 GHz	Acceptable	No HAPS to be deployed in most of the world. A country footnote that will allow the operation of HAPS in Australia and a few African countries was agreed. Specific text has been added to the associated resolution to protect radio astronomy.
1.21 – Airborne Radar near 15.4 GHz	Unsatisfactory	Allocation to airborne radars adjacent to the 15.4 GHz RAS band from 15.4 -15.7 GHz with 2% time interference to the RAS permitted. See detailed comments Days 20 -22 below.
1.22 – Short Range Devices	Satisfactory	No change to the RR and suppression of resolution 953; in line with CRAF's position.
1.25 – New MSS allocations near 10.6 & 15.4 GHz	Satisfactory	No allocations/Changes to RR & resolution suppressed; in line with CRAF's position