

# Microwave Manager's Report on Davos, 2005

G3PFR, October 2005

## Davos '05

The triennial IARU Region 1 meeting was held at the Conference Centre in Davos, between Sunday 10th and Thursday 14th of September, hosted by USKA, the Swiss national radio Society, five days of hard work instead of the usual six!

## The Conference Centre in Davos



Davos '05

Permanent Committee C5 has always dealt with VHF, UHF and Microwave matters - that is, all bands from 50MHz to "light".

The UK Microwave Group and the RSGB were represented by myself (RSGB Microwave Manager) and the RSGB by David Butler, G4ASR (RSGB VHF Manager).

Davos '05

Unfortunately, Graham Shirville, G3VZV, who normally represents AMSAT UK *and* BATC in an ex-officio role was unable to be present, being in Russia for the delayed launch of the SSETI Express satellite.

## Davos '05

The Committee was chaired, for the last time, by Arie Dogterom, PA0EZ, who resigned for health reasons after ably holding the Chair for some 12 or more years. Michael Kastelic, OE1MCU, was duly unanimously elected to the chairmanship. Ivan Stauning, OZ7IS, was elected as Vice Chairman

## Davos '05 - All the delegates



Committee C5 at Davos





## The societies and papers

22 national societies were represented on Committee C5, but the majority of the 40-odd papers presented, discussed and actioned came from the more “microwave aware” societies, such as RSGB, DARC (Germany), VERON (the Netherlands), EDR (Denmark) and REF (France).

Of these papers, many were concerned with operating procedures, detailed band-planning in the VHF and UHF bands, and Contest logging and Adjudication. These papers were handled by the RSGB VHF Manager, G4ASR.

The most significant change in these bands was, I suppose, the allocation of sub-bands by “maximum bandwidth” rather than “mode”, a trend introduced by CEPT. The sub-bands used for ARDF, MS, EME, CW and MGM were fine-tuned to resolve some small anomalies remaining after the last conference in San Marino, 2002, and the Vienna Interim meeting, 2004.

Incidentally, the next Committee C5 interim meeting will be in Vienna in January or February 2007, with the next General Triennial Conference in Croatia in late summer/autumn 2008.

## Microwave papers

Coming now to the microwave bands, the most significant papers were those presented by the RSGB on behalf of the UK Microwave Group, plus one paper from EDR (the Danish society) by Ivan Stauning, OZ7IS, their VHF/UHF and Microwave manager. More on this paper later.

Our joint RSGB/UKuG papers were:

- [Galileo in the 1.3GHz band, by Peter Blair, G3LTF \(Information\)](#)
- [Challenges to Amateurs in the microwave bands by Murray Niman, G6JYB \(Information\)](#)
- [The role of Special Interest Groups, by Peter Day, G3PHO \(Information\)](#)
- [Harmonising the 76GHz band in IARU Region 1, by Mike Dixon, G3PFR, \(Recommendation\)](#)

## **The outcome: Challenges to Amateurs in the microwave bands**

Murray's paper was received with great interest and, unusually for an Information Paper, resulted in a recommendation (DV05\_C5Rec\_03) that:

***“Societies should collect information on possible threats to the VHF/UHF/Microwave bands in their respective countries. This information is to be forwarded to the Allocations Coordinator for inclusion in the Threats Table”.***

Murray's table from the paper was attached to this recommendation as a good example of the reporting format.

**Our voice has been heard!**

**Note that this an ongoing action for me and UKuG**

## The outcome: Harmonising the 76GHz band in IARU Region 1

My paper on “Harmonising the 76GHz band in IARU Region 1” resulted in my chairing a working sub-committee which led to Recommendation DV05\_C5\_Rec\_08 which says:

***“In accordance with the IARU principle of using Primary and Primary exclusive allocations in preference to secondary allocations, it is recommended that Amateur and Amateur Satellite weak-signal operation should, wherever possible, use the 500MHz segment 75.5GHz to 76GHz, as per CEPT Footnote EU35 in the European Frequency Tables. Region 1 societies in CEPT countries should encourage their administrations to implement EU35 as soon as possible.*”**

***The IARU bandplan should be amended accordingly. In the bands above 76GHz, for example 241GHz, users are encouraged to use the Primary Exclusive allocations.”***

We have been very successful in invoking EU35 in the 75GHz band. We have yet to invoke Footnotes EU17 and EU23 which are given later

# Extract from Appendix 01 (OZ7IS paper)

At present (in Region 1) we have access to hundreds of MHz in the following bands:

1,3 GHz: 60 MHz	(in the UK 75MHz with restrictions)
2,3 GHz: 150 MHz	(in the UK 140MHz)
3,4 GHz 10 (+) MHz	(in the UK 75MHz)
5,7 GHz 200 MHz	(in the UK 70MHz, fragmented)
10 GHz 450 MHz	(in the UK 500MHz with restrictions)

These figures indicate amateur access to over 8.6% of the available spectrum from 1 to 11 GHz!

Consider why national authorities shuffle around with the radio amateurs when commercial interests occur?  
*(Numerous examples can be mentioned!)*

Consider why the Amateur Radio Satellite Service has had better luck keeping access to the satellite segments?  
*(They had a plan! A known worldwide scheme!)*

At the Annual International Amateur Radio Satellite Forum during the AMSAT UK Colloquium 2004 this problem was discussed. There was a general feeling that if we fail to establish common worldwide narrowband segments (common to the terrestrial as well as the satellite operators) within the next few years, - it will never happen. Most of the spectrum will be occupied by commercial services! (One additional benefit to this plan will be that the satellite and terrestrial operators will be able to use the same equipment for both activities. That is in general not possible today. Example: On 2,3 GHz terrestrial = 2304/2320 MHz. Satellite above 2400 MHz!)

## The outcome: Common narrowband segments in the Secondary Microwave bands

Ivan's paper, given in full as Appendix 01, renews the long held IARU view of "harmonisation" – that is, adoption of common, agreed, narrow sub-bands where *both* Amateur Services can operate in harmony between one another and other services, *where possible protected*.

After lengthy discussion of this paper, *it was agreed that action is needed*, and I volunteered to open the discussion in the UK, with the UKuG, BATC and Amsat UK and later invite other national societies to take part in this process. Progress would be reported in the Region 1 VHF Newsletter.

Here is a chance to lead!

I believe that time is of the essence since, as we all know, commercial eyes are cast on most of the amateur bands below 24GHz!

I would like the UKuG, BATC and AMSAT UK, through the RSGB (*and independently*), to be in a position to make reasoned recommendations within the next six to nine months in order that the recommendations can be taken to the Vienna Interim meeting in early 2007.

*It has been intimated that we may be successful if we agree to 10MHz segments protected by invoking Footnotes EU17 and EU23*

# A first suggestion (1)

- It is unrealistic to hope to retain almost 9% of the microwave spectrum between 2.3 and 10GHz.
- It is vitally important to *protect* the “weak signal flux” sub-bands, where a low noise floor is essential, invoking Footnotes EU17 and EU23, aiming ultimately for Primary status (*unlikely but not impossible!*),
- for *both* Amateur Services,
- for *extreme terrestrial DX, EME, Space and Satellites.*
- It is not intended to alter the status of the remaining spectrum, used for wideband modes such as ATV,
- This is not to say that in the longer term we must not be prepared to relinquish it.

# A first suggestion (2)

## What can we do about it?

We can:

- Agree one or more 10MHz segments in all the bands from 2.3/2.4GHz to 10.00/10.50GHz, protected by Footnotes EU17 and EU23
- Do this in a timely fashion – in time for the Vienna Interim meeting in early 2007, preferably much earlier
- It is up to you and me, members of the UKuG, to lead by supporting all the IARU Recommendations agreed at Davos
- I suggest that responses be routed to myself and Murray, as it is probable that we will work on these together.

This is a “consultation paper” - the difference is that your opinion will count!



# A first suggestion: (3)

Why these sub-bands?

*Because these are the sub-bands specifically mentioned -  
and there are some subtle differences between EU17 and EU 23*

EU17 says

In the sub-bands 3400 - 3410MHz, 5660 - 5670MHz, 10.360 -10.370GHz, 10.450 - 10.460GHz *the Amateur Service operates on a secondary basis.*

EU23 says

In the sub-bands 5660 - 5670MHz (earth to space), 5830 -5850MHz (space to earth) and 10.450 – 10.500GHz, *the amateur\_satellite service additionally operates on a secondary and non-interference basis to other services.*

## A first suggestion: (4)

- 13cm: adopt 2390 – 2400MHz as the common band for terrestrial and satellite operation (EU17)
- 9cm: adopt 3400 – 3410MHz as the common band for terrestrial and satellite operation (EU17)
- 6cm: adopt 5660 - 5670MHz (earth to space) and 5830 - 5850MHz (space to earth) as the common bands for terrestrial and satellite operation (EU17)
- 3cm: adopt 10.360 -10.370GHz and 10.450 – 10.460GHz as the common bands for terrestrial and satellite operation and seek earth-to-space and space-to-earth usage (EU17 & EU23)

# What do we do about it?

- I would suggest that we all seriously consider the possible consequences of both amateur services not harmonising our use of the microwave spectrum,
- We have been successful in invoking Footnote EU35 in the 75.5 to 76GHz band.
- There seems to be no reason, **given enough support**, why we should not be able to invoke Footnotes EU17 and EU23 in order to protect the “weak signal flux” sub-bands in a similar manner
- There are already indications from Ofcom, ERO and CEPT that this may be an acceptable compromise. **Mitigation methods have been suggested.**

**It's now up to us!**

On the last day (1): Hornblower?



On the last day (2): C5 at work!



On the last day (3): a quick visit to Engadine



## Appendix 01:

### **SUBJECT COMMON NARROWBAND-SEGMENTS, IN THE SECONDARY MICROWAVE BANDS**

**Society EDR**

**Country: Denmark**

**Committee: C5**

**Paper number: 10**

**Contact: Ivan G. Stauning, OZ7IS e-mail: [is@ihk.dk](mailto:is@ihk.dk)**

For a number of years the commercial use of the microwave bands between 1 and 11 GHz has been steadily and rapidly increasing. At the same time the amateur use of the rather wide secondary microwave amateur bands between 1 and 11 GHz have not changed significantly!

As a consequence of the increased commercial use, the (terrestrial) amateur radio activities are facing more and more problems, due to the “non-harmonized” national usage of the bands.

(Example: In Region 1, we are forced to use at least three narrowband segments on 2,3 GHz: 2304, 2308 and 2320 MHz! This due to differing national limitations/usage.)

For decades the amateur microwave community has been divided in two philosophies:

a) Keep access to all we have got at present. Let's make no changes!

b) Let's work towards common (semi-) exclusive narrowband segments and give up access to parts of the (quite wide) secondary segments!

## Appendix 01: continued (1)

At present (in Region 1) we have access to hundreds of MHz in the following bands:

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At the Annual International Amateur Radio Satellite Forum during the AMSAT UK Colloquium 2004 this problem was discussed. There was a general feeling that if we fail to establish common worldwide narrowband segments (common to the terrestrial as well as the satellite operators) within the next few years, - it will never happen. Most of the spectrum will be occupied by commercial services! (One additional benefit to this plan will be that the satellite and terrestrial operators will be able to use the same equipment for both activities. That is in general not possible today. Example: On 2,3 GHz terrestrial = 2304/2320 MHz. Satellite above 2400 MHz!)



## **Appendix 01: continued (2)**

We therefore propose to produce a plan with the primary aim to establish common worldwide narrowband segments in the lower secondary microwave bands. (Exclusive or “semi-exclusive”.)

A secondary aim would be to retain access to bandwidth enough to conduct experiments with real wideband modes. These segments do not need to be coordinated worldwide.

This plan will be the best possible future development to both the Amateur Radio Service as well as the Amateur Satellite Service in the lower secondary microwave bands.

## Appendix 02

**Footnote EU 35:** The band 75.5 – 76.0GHz is in Europe also allocated to the Amateur and Amateur Satellite Services after year 2006.

**Footnote EU 17:** In the sub-bands 3400 - 3410MHz, 5660 - 5670MHz, 10.360 -10.370GHz, 10.450 - 10.460GHz the Amateur Service operates on a secondary basis. In making assignments to other services, CEPT administrations are requested wherever possible to maintain these sub-bands in such a way as to facilitate the reception of amateur emissions with minimal power-flux densities.

**Footnote EU 23:** In the sub-bands 5660 - 5670MHz (earth to space), 5830 -5850MHz (space to earth) and 10.450 – 10.500GHz, the amateur satellite service additionally operates on a secondary and non-interference basis to other services. In making assignments to other services, CEPT administrations are requested wherever possible to maintain these sub-bands in such a way as to facilitate the reception of amateur emissions with minimal power-flux densities.