



## **RSGB Microwave Manager's Spectrum Forum Report**

**October 2017**

The Microwave Manager is responsible for amateur bands at 23cm and above. Current duties also include some IARU/international matters.

### **Summary**

- Two Ofcom initiatives in the 5GHz band could impact amateur operations in the 6cm band.
- Early 5G initiatives from Ofcom could bring both threats and opportunities for the amateur service (in particular relating to the 24 GHz band).
- WRC-19 preparatory processes continue to be monitored.
- 5GHz consultation responses to Ofcom available here:  
[http://rsgb.org/main/files/2017/09/170926\\_5GHz\\_FWA\\_RSGB-Response.pdf](http://rsgb.org/main/files/2017/09/170926_5GHz_FWA_RSGB-Response.pdf)  
[http://rsgb.org/main/files/2016/08/170411\\_RSGB\\_5GHz-WT-Regs-2017.pdf](http://rsgb.org/main/files/2016/08/170411_RSGB_5GHz-WT-Regs-2017.pdf)
- Two mm-wave RSGB papers delivered and accepted at the IARU Region 1 Conference.
- A 5 GHz band clarification paper also delivered and accepted at the IARU-R1 Conference.
- 2300 MHz band NoV renewal process opened, ahead of the end of the first 3yr NoV period.
- The release of the 2.3 GHz and 3.4 GHz bands by Ofcom for commercial mobile broadband continues to be delayed.
- Some microwave beacon applications approved.
- ITU-R Recommendation M.1732 published in January 2017.
- IARU has agreed to investigate into an alternative narrow band centre of activity in the 13cms band (above 2400MHz) for those countries losing access to the main 2300 band.

### **General Matters**

#### **1) Ofcom consultation activities relating to the 5GHz / 6cm band**

Ofcom has been working on two initiatives that will provide more access to spectrum in the 5 GHz region for commercial data transmission services:

##### a) The 5 GHz Wi-Fi Extension (5725 – 5850 MHz)

In July 2017 and continuing a process started in 2016, Ofcom published a statement identifying the proposed way forward for increasing the amount of spectrum available for Wi-Fi applications in the range 5725 – 5850 MHz. Not unexpectedly the RSGB opposition to this extension was not upheld given the commercial and policy pressures. However the final statement does offer some respite for continued amateur operation with a low power and indoor usage restriction. The RSGB supported this pragmatic way forward but underlined the need for monitoring and enforcement.

b) 5.8 GHz Broadband Fixed Wireless Access (BFWA) expansion

BFWA has been operating in the UK under a lightly licensed regime for a number of years in the range 5725 – 5850 MHz. The European framework for this application identifies the range 5725 – 5850 MHz but in the UK the range 5795 – 5815 MHz was excluded due to anticipated road tolling system usage (the so-called RTTT notch). However this usage has not materialised so Ofcom is proposing to remove this “notch” from the band plan and thereby increase availability across the whole band up to 5850 MHz. The RSGB delivered a consultation response (Sept 2017) that opposes the extension of BFWA services above 5830 MHz due to the potential impact on amateur satellite operations in 5825-5850 MHz.

**2) Ofcom consultation on future 5G services at 26 GHz**

Ofcom published a “Call for Information” (CFI) on the industry preparations for 26 GHz band (24.25 – 27.5 GHz) 5G services from around 2020. The use of this range for 5G systems has the potential to impact amateur spectrum in the near-adjacent primary band 24-24.05 GHz. In particular the out-of-band emissions from the 5G systems could fall across the amateur band. The RSGB has requested that Ofcom takes due account of the primary status of the amateur band here and that 5G specifications are developed that properly protect adjacent services.

Response: [http://rsgb.org/main/files/2017/09/170927\\_CFI-for-5G-spectrum\\_RSGB-Response.pdf](http://rsgb.org/main/files/2017/09/170927_CFI-for-5G-spectrum_RSGB-Response.pdf)

In addition Ofcom has proposed a moratorium on new 26 GHz band fixed link licences with the expectation they will remove this service from the band over the next five years or so.

**3) WRC-19 Preparation**

Focussing on WRC-19 agenda items 1.13 (5G mm-wave bands) and 1.16 (Wi-Fi extension bands between 5150 and 5925 MHz)...

The framework for preparing both the UK line and the CEPT European line on these WRC agenda items is established through the Project Teams of the Conference Preparatory Group for CEPT. The IARU positions are formally documented in these activities and informally RSGB members continue to monitor developments whilst participating in other delegations.

In the preparatory work on AI-1.13 the discussion and interest in the frequency ranges that encompass the amateur 47-47.2 GHz band continue to suggest this band is not a high priority for either the proponents of next generation mobile or the involved policy makers. Additionally the amateur and amateur satellite service use of the 5 GHz band does not feature in the European AI-1.16 discussion due to its secondary status.

#### 4) IARU Region 1 Conference – September 2017

The RSGB delivered three papers relating to the bands above 1GHz:

- a) Millimetre Wave Progress and Innovation
- b) Millimetre Wave Bands and WRC-19
- c) 5 GHz Band Plan Clarification

All three papers were accepted and are reflected in the conference outputs.

There are some further outcomes from the conference that relate to bands above 1GHz:

- a) Identification of a new/alternative narrow band centre of activity (just above 2400MHz) in the 13cms band.
- b) Licensed Shared Access guidance relating to the 13cms band.

#### 5) 2.3 GHz and 3.4 GHz Public Sector Spectrum Release

Ofcom issued a statement in mid-2017 on competition and auction regulations relating to the release of the bands 2350-2390 MHz and 3410 – 3600 MHz. A September auction timeframe was anticipated but legal challenges continue to delay the process. No revised auction date is set yet.

A process has been opened since Q3 2017 for the renewal/application of NoV's for the continued use of the 2300-2302 MHz segment in the UK for a further three years. Some crown dependencies (but not all) have now been included in the process.

### Microwave Bands Round-up

#### 1.3 GHz:

No new developments.

#### 2.3 GHz:

The revised UK amateur allocation continues in force ahead of the Public Sector Spectrum Release (PSSR) in the range 2350-2390 MHz. Around 250 NoV's had been issued for first phase use of the 2300-2302 MHz part of the band and these can now be renewed for a further three years. The PSSR auction itself continues to be delayed following UK cellular operator legal challenges, with no new timetable at present. European harmonisation measures for mobile cellular communications in this band have moved into the background.

UK Government Investments (UKGI) is evaluating new targets for the release of public sector spectrum below 10 GHz by 2022 with some earlier around 2020. The 2300-2350 MHz band is within the scope.

Some IARU member societies want to discuss the identification of a new/alternative narrow band centre of activity above 2400 MHz.



### **3.4 GHz:**

The spectrum immediately adjacent above 3410 MHz is the subject of the same delayed Public Sector Spectrum Release programme applicable to the 2.3 GHz band. A new timetable is pending. In the meantime the intensity of discussion around the likely use of this band above 3410 MHz for next generation mobile networks (5G) has resulted in its identification as a priority European 5G “pioneer band”. New cellular systems are likely to be wider bandwidth than current technologies.

### **5.7 GHz:**

See the comments above referring to the Wi-Fi usage extension and the BFWA usage extensions in the UK.

5725-5925 MHz is also within the scope of the UKGI activity reported above under the 2.3GHz band.

### **10 GHz:**

No new developments.

### **24 GHz:**

WRC-19 preparatory studies will consider the suitability of the immediately adjacent frequencies from 24.25 GHz and upwards for next generation mobile networks (5G). See the comments above referring to the Ofcom 26 GHz band consultation response.

### **47 GHz:**

See the WRC-19 Agenda Item 1.13 comments above.

### **77 GHz:**

No new regulatory developments.

### **122 GHz:**

New activity in the band noted.

### **134 GHz and above:**

No new regulatory developments. However new operating records are being set in these bands.

### **>275 GHz:**

The NoV process is open for >275 GHz access.

Any innovation in the use of these bands should be publicised heavily.

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