



International Amateur Radio Union Region 1

Europe, Middle East, Africa and Northern Asia

Founded 1950



General Conference, Davos, 11 to 16 September 2005

SUBJECT	Challenges to amateurs in the Microwave Bands		
Society	RSGB	Country:	United Kingdom
Committee:	C5	Paper number:	06
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Introduction

All of the lower microwave bands are Amateur Secondary, and this status offers little protection from commercial pressures on UK Spectrum allocation. Recent developments in the UK indicate that even those bands with Amateur Primary status may not be much safer. This paper summarises the latest status, and suggests new tactics to organise defence of Amateur allocations.

Changed Regulatory Environment

In the UK the creation of Ofcom on January -1st 2004, absorbed the former UK Radio Communications Agency and other regulatory bodies, and has prompted a more hands-off approach to regulation. It is apparent that Ofcom's resources, support and consideration for Amateurs are declining. Recent examples that demonstrate this are:

- **Ofcom's Spectrum Framework Review (SFR)** released in November 2004. This advocated a radical commercially driven liberalisation of 70% of the entire rf/microwave spectrum, including suggestions of not being constrained by the radio regulations. It advocates widespread use of spectrum trading at up to £1m/MHz and techniques such as cognitive radio in order to raise spectrum occupancy. It also proposes Ofcom's withdrawal from direct Amateur licensing.
- **24/79GHz Short Range Radar.** In December 2004 an Ofcom notification regarding the allocation of 77-81GHz to Automotive Short Range Radar (and the prospect of 21-26GHz) was introduced with barely 30 days to reply. It did not originally recognise that there were any other users in the 79GHz band, let alone that UK Amateurs had Primary allocations, nor recognise footnote EU35 for continued Amateur access to 75.5-76GHz. Both the RSGB and the UK Microwave Group submitted representations to Ofcom in response to this notification.
- **Commercial pressures are likely to see the advent of Ultrawideband (UWB)** in the 3.4 - 10GHz bands, as well as new Wireless LANS at 5.7GHz. Large volumes of Zigbee short range devices are also expected to be a feature in future on the 2.4GHz band in addition to Bluetooth and Wifi. Galileo will impact the 23cms band - discussed in a separate paper.

The above is compounded by increased restrictions in the UK on 70cms and 23cms by other Primary users, and the advent of Power Line Telecomms (PLT) affecting HF.

Pressures on Amateur Spectrum are nothing new, but the large amounts of bandwidth available at microwave frequencies (including Primary Allocations) are now directly at risk from the latest developments. UK microwave allocations are summarised in Attachment-1 along with comments on their allocation status and the latest threats. It may be worth IARU considering collating such information to create a pan-Region threat table

The RSGB response so far has been two fold –

- In late 2003 the Spectrum Forum was formed as a unified replacement for the HF, VHF and Microwave committees. The UK Microwave Group has taken over some of the activities of the former Microwave committee and is affiliated to the RSGB and the Forum (see RSGB IARU Paper by Peter Day G3PHO)
- The RSGB has successfully stimulated voluntary training activities at local club level in support of the Foundation, Intermediate and Advanced license structure following the withdrawal of the UK City & Guilds Institute and the former Radio Communications Agency from Examination provision and administration.

In this increasingly challenging environment, it seems clear that Amateur organisations need to be strengthened and their profile raised. Traditional defences have relied on good relations with an understanding regulator, as well as emphasis on the value of emergency communications. Amateur Microwaves faces the additional challenges that it is not perceived to be an entry level topic, nor an easily accessible or popular part of the hobby, and yet its bands are most under threat. Therefore -

Recognising

That serious threats exists to the Microwave amateur service and amateur satellite service allocations, a three-pronged approach is proposed for IARU members to adopt which we have termed the '3Es' - Evolution, Education and Engagement:-

i) Evolution.

We need to evolve improved organisations, tactics and effectiveness. In this regard we propose that the analysis of Strengths, Weaknesses, Opportunities and Threats (known as SWOT analysis) is a good framework for this. This is described in further detail in Attachment-2. It is worth noting that the RSGB has for the first time hired an external PR company to advise on its Communications strategy (initially in response to the threat from PLT)

ii) Education.

We need to provide educational resources to new entrants as well as existing amateurs. In addition we should develop links with Schools and colleges to foster understanding and future generations of microwave amateurs and engineers. Society increasingly uses the microwave bands whilst understanding very little about the technology and issues, and is dependent on a very modest pool of skills.

UKuG has set out to develop a Starters CDROM and other introductory material, which will support the 'Use or Lose' situation.

iii) Engagement

We need to become more directly engaged so we can seek to influence matters at an earlier stage. UKuG, National Societies and IARU need to become more deeply enmeshed in standards bodies, professional societies such as the IEE/IEEE, committees etc, especially if a vacuum develops as regulators start to withdraw. 'Outreach' should also be extended to politicians, policymakers and commercial microwave companies to show the value of amateur microwave experimentation, the benefits to them and society, thus reinforcing our justification for microwave frequency allocations.

We would also do well to forge links with other weak signal flux users such as the Earth Sciences and Astronomy communities who face similar threats to frequency allocations. Their numbers may be modest but they do have political connections and often get significant amounts of national funds.

It is Proposed that

1. *IARU Member Societies should take note of changes to the regulatory environment, and observe that Primary status does not necessarily afford protection.*
2. *That the IARU VHF/UHF/Microwave Committee collates threats to the amateur allocations on a regular basis and publishes this to assist co-ordination.*
3. *That member societies consider the '3Es' proposal above (Evolution, Education & Engagement) in response to the challenges we now face.*

Attachments: (next page)

1. Summary Table of UK Microwave Allocations and Threats to them
2. SWOT Analysis

Attachment-1: UK Amateur Radio Microwave Allocations and Status

Band	Allocation Status	Threat/Comment
1240-1325	Secondary	Galileo
2310-2450	Secondary Users must accept interference from ISM users	WLANs
3400-3475	Secondary	Various Digital Radio, UWB
5650-5680 5755-5765 5820-5850	Secondary Users must accept interference from ISM users	Fragmented into 3 subbands. EU17 & EU23 Largely ignored Wimax WLANs, UWB 5725+ Fixed Wireless Access
10000-10125 10225-10475	Secondary	Various Fixed Digital Radio UWB
24000-24050	Primary Users must accept interference from ISM users	Automotive SRR
24050-24150	Secondary (2) May only be used with written consent. Users must accept interference from ISM users	Automotive SRR
24150-24250	Secondary	Automotive SRR
47000-47200	Primary	
75500-76000	Primary (1)	EU35 2006+ extension not yet implemented in the UK
76000-77500	Secondary	Automotive LRR
77500-78000	Primary	Automotive SRR
78000-81000	Secondary	Automotive SRR
122250-123000	Primary	
134000-136000	Primary	
136000-141000	Secondary	
142000-144000	Primary (1)	
241000-248000	Secondary	
248000 –250000	Primary	

ISM = Industrial, Scientific and Medical.

LRR = Long Range Radar, SRR= Short Range Radar, for Automotive applications

UWB = Ultra Wide Band

(1) Until 31st December 2006.

(2) No permits have been issued for this band

NOTE: UK Intermediate Licence Users lost access to bands between 47.2GHz and 248GHz, following Notice of Variations (NoVs) issued on 26-Jul-2003

Attachment-2: SWOT Analysis

Strengths Weakness Opportunities and Threats

SWOT analysis has been a routine procedure in many businesses for years, and is adapted below for Amateur organisations and other voluntary societies. It offers a quick way to 'take the temperature' of an organisation and the environment it operates in. It provides a framework to generate ideas for improvements to meet the challenges.

What does it involve? Simply a consideration of the following points:

Strengths

What makes people use us or join us?
What makes people recommend us to others?
What skills do we have and what are we especially good at?
What can we do that nobody else can?
What successes have we had recently, and why?

Weaknesses

What skills do we lack and what aren't we good at?
What do others do better than us?
Why do people choose other activities/organisations instead of us?
Why do previously happy members leave us?
What failures have we had recently, and why?

Opportunities

What new facilities/products/services could we offer?
What new skills and capabilities could we acquire?
How do we distinguish ourselves or become unique?
What new types of users/needs/applications could we serve?
What changes in the market could we exploit?
What new ideas, techniques and technology could we use?

Threats

What new ideas, techniques and technology could undermine us?
What are our 'competitors' doing that could damage us?
Are there any legal, economic or political threats to us?
Are our users needs changing?
What other changes in the market could damage us?
Are there any other black clouds on the horizon?

Once initially undertaken, a SWOT analysis should be reviewed on a regular basis, perhaps annually with an intermediate half year review to assess progress