

RSGB Spectrum Strategy

This strategy has been developed by the members of the RSGB Spectrum Forum, which includes representation from a wide variety of different interests within the hobby. We also consulted with our members and others within the UK amateur community.

The intent of developing this document is to have a clear and transparent statement of our broad aims and means of approach that will provide the necessary strategic direction for our spectrum managers, committees and others within the Society, when they engage nationally and internationally to develop and protect our spectrum needs.

Spectrum Management

a) Requirements

In terms of UK spectrum requirements the following are seen as the main needs:

1. *Achieving a harmonised 50MHz allocation for the Amateur Service & Amateur Satellite Service across all Regions*
2. *A harmonised allocation at 5 MHz and an expanded allocation at 10 MHz across all Regions.*
3. *Gaining a European allocation for the 70 MHz band*
4. *Protection of 2.3GHz and harmonisation of 3.4GHz*

b) General threats and concerns

Our existing primary allocations require protection from both intrusions, from official users and from secondary effects of other electronic systems, e.g. PLT/PLA, plasma TV, etc. Of these, the following need special attention over the next few years from various threats:

| Band | Threat / Intruder |
|----------------|--------------------------------------|
| HF | OTH radars |
| 18, 24 MHz | CODAR Coastal HF radar transmissions |
| 28 MHz | Russian taxis |
| 24.0-24.05 GHz | Car Short Range Radar (SRR) |

c) Secondary allocations that need particular attention in terms of protecting our interests, and challenges in terms of licensing and band planning, are:

| Band | Threat |
|------|--------|
|------|--------|

| | |
|--------------|---|
| 10 MHz | <i>Key non-contest band throughout low part of sunspot cycle</i> |
| 430 MHz | <i>Licence exempt devices</i> |
| 1.3 – 10 GHz | <i>All allocations in this range face a variety of pressures from changes in commercial or Primary Usage.</i> |

d) Spectrum Protection

The RSGB seeks to ensure that the radio spectrum available to the Amateur Radio Service remains free from unauthorised interferers. We do this by:

- Active involvement in relevant standards-setting bodies at UK and European level and through IARU at global level
- Raising awareness and working within IARU on the monitoring and protection of the noise floor
- Involvement with Ofcom on both standards and enforcement actions
- Maintaining an active team of EMC advisors able to guide members in the resolution of EMC cases
- Monitoring the development and marketing of new products which might present potential interference potential
- Maintaining an active Intruder Watch and Observation service to highlight and take action on unauthorised or inappropriate use of amateur spectrum

Background

a) IARU

The RSGB's spectrum strategy needs to be considered in the context of the IARU-AC Spectrum Requirements document¹. The Society and IARU Region-1 have in recent years had some success in influencing this important top level document

b) European Parliament & European Commission

The EU Framework Agreement makes specific requirements on administrations such as Ofcom in the UK to follow certain principles in respect to technology and system neutrality, trading and leasing of spectrum. This could affect licensing conditions as

¹ See http://www.iaru.org/IARU_Spectrum_Requirements_2011.pdf

Ofcom are required to review all licences by 25th May 2016 to ensure that they conform to the Framework agreement. It can work in two ways – one which would ease certain restrictions, for example where they are judged to not enable technology or system neutrality, or it may potentially expose potential risks where the primary user of a part of the spectrum, where we are a secondary user, leases access to a third party.

Europe is also wishing to exert itself as a significant block of 27 nation states upon spectrum management policy. The Commission's Radio Spectrum Policy Programme has some items that will impact on our own spectrum strategy. These include

- a) the awarding and provision of new spectrum in the UHF, 2.6 and 3.4GHz bands; and the prospect of usage auditing and further 'releases' including 2.3GHz
- b) Implementation of EU sectoral policy for systems such as GALILEO, Public Protection and Disaster Relief, Science and R&D, Smart metering and Smart Grid.
- c) Measures to mandate reviews of spectrum holdings and prevent spectrum hoarding
- d) Interference, e.g. impact of cable TV systems on LTE. This particular area may be an interesting one which may drive up receiver and screening standards. In certain cases there may also be the possibility of a coordinated spectrum trade or substitution.

This EU programme may well bring it into conflict with CEPT which currently represents 48 administrations, many of which are not EU members.

Approaches

A number of approaches are open to the hobby. These are

- a) TOP->DOWN: Achievement of either Primary or Secondary status in the ITU Radio Regulations;

Pros

1. Normally provides for a global solution
2. Enduring – once achieved, the process for removal of an allocation is generally a time consuming and complex process
3. Highest level of protection against intrusion

4. Has been successful over recent years with 40m expansion, new bands at 136 kHz and 472 kHz and an Agenda Item to consider 5 MHz at the WRC-15 conference

Cons

1. 3 to 6 years of waiting, and little certainty of getting the requirement on a WRC agenda.
2. Lots of work and cross-IARU support for a requirement once it has made it to a WRC agenda item; heavy scrutiny often from other ITU services, many of whom don't necessarily see value in spectrum allocation to the Amateur and Amateur Satellite services.

b) BOTTOM->UP: Regional agreement within CEPT.

- a. Getting a regional usage recognised by CEPT through as a footnote in the European Common Allocations Table
- b. By gaining agreement with CEPT Working Group Frequency Management

c) By firstly obtain a number of national allocations under the provisions of Article 4.4 of the ITU Radio Regulations through a Special Research Permit / Notice of Variation to the licence

Pros

1. Gains some regional recognition for the usage
2. Can be seen as a necessary "stepping stone" to gaining status on the ITU Radio Regulations
3. Provides a firmer basis on which Ofcom can grant access to the frequencies concerned
4. Demonstrates a regional agreement to others, e.g. CITEL.

Cons

1. Article 4.4 requires national allocations to be made on a non-interference basis with other countries, thus this mechanism would be less applicable for bands where propagation extends into countries where coordination would not be feasible or possible (i.e. it's use is probably restricted to VHF and above and MF and below).
2. NoVs tend to be for limited periods and require renewal

3. In terms of a CEPT agreement this only gains recognition in countries that are covered by CEPT arrangements

Influence

Liaison with Ofcom and working within IARU are the two main direct methods whereby the RSGB can promote its members interests.

In terms of Ofcom the following opportunities exist for monitoring and applying influence:

- a) Ofcom / RSGB Forum
- b) Ofcom's International Frequency Planning Group, which reports directly to the UK Government Cabinet's UK Spectrum Strategy Committee
- c) Ofcom's International Spectrum Stakeholders Briefing
- d) ITU-R SG1 & its working parties, WP5A/5D and UK WP5B
- e) CEPT WGFM & WGSE
- f) Ofcom's Business Radio Interest Group

In terms of the IARU we have the triennial General Conferences and the intervening Interim Meetings. In addition there are a number of posts, such as positions on the Executive Committee, the chairs of the two spectrum committees C4 and C5, the informal positions on the External Relations Committee, Political Relations Committee, etc.

The indirect channels are through CEPT, where there is the opportunity for national or IARU representation on a number of working groups. The importance of leveraging support from Amateurs attending working groups in their professional capacity needs to be recognised. The RSGB's Spectrum Strategy needs to reflect policy and plans in both the achievement of the technical goals and also development of what are seen to be the key people that we need to influence.

Note: In addition to Spectrum, IARU does carry significant influence in CEPT-WGFM which manages the T/R 61-01 and T/R 61-02 reciprocal licensing arrangements

17 April 2012

Glossary

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| PLT | Short for “Power Line Technology”, a term used to describe a range of technologies to deliver Internet services over main power systems |
| PLA | Short for “Power Line Adapters”, a generic term for devices that provide an interface between Internet transmission protocols and 50 Hz mains power systems |
| OTH | Short for “Over-the-Horizon Radar” |
| CODAR | A commercial company that provide ocean sensor / oceanographic radar technology |
| IARU | International Amateur Radio Union |
| EMC | Electromagnetic Compatibility |
| EU | European Union |
| GALILEO | The project name for the European Space Agency’s global navigation system |
| LTE | “Long Term Evolution”, which is a 4 th generation standard for wireless communication of high-speed data for mobile phones and data terminals. |
| CEPT | European Conference of Postal and Telecommunications Administrations. CEPT is our regional grouping of 48 countries that work to regulate posts, radio spectrum and communication networks. Website: http://www.cept.org/ |
| WRC-15 | World Radiocommunication Conference 2015, organised by the International Telecommunications Union |
| ITU | International Telecommunications Union |
| ITU-R | International Telecommunications Union – Radiocommunication Sector |
| CITEL | Inter-American Telecommunications Commission – the regional grouping for the Americas that is equivalent to our CEPT grouping |
| ITU SG1 | ITU Study Group 1, which covers spectrum management principles and techniques, general principles of sharing, spectrum monitoring, long-term strategies for spectrum utilisation, economic approaches to national spectrum management, automated techniques and assistance to developing countries in cooperation with the Telecommunication Development Sector. |
| WP5A | ITU Working Party that covers land mobile service above 30 MHz; wireless access in the fixed service; amateur and amateur-satellite services |

- WP5D ITU Working Party that covers International Mobile Telecommunications
- WP5B ITU Working Party that covers Maritime mobile service including Global Maritime Distress and Safety System (GMDSS); aeronautical mobile service and radiodetermination service
- WGFM CEPT Working Group Frequency Management – a remit that covers a wide range of top-levels spectrum management policy decisions within CEPT, see <http://www.ero.dk/wgfm> for Terms of Reference
- WGSE CEPT Working Group Spectrum Engineering – a remit that covers a wide range of technical sharing and interference studies in support of WGFM policy decisions within CEPT