



# International Amateur Radio Union Region 1

## Interim Meeting – Vienna Austria

### 27-28 April 2019



**Document number:** VIE19 C5-002  
**Source:** Dave Court, EI3IO, IRTS, IARU Liaison  
**Subject:** 5 and 8 Metre Band Plans  
**Committee(s):** C5

#### **Summary:**

Following an IRTS request made in response to a recent consultation process by the Irish telecommunications regulator (ComReg), a determination was made in early 2018 that the amateur service in Ireland may use the frequency bands 30-49 MHz and 54.0-69.9 MHz on a national secondary basis.

Currently there are no regional or international allocations to the amateur service in these frequency ranges in any of the 3 ITU/IARU Regions. In 1995 the management body of a CEPT Detailed Spectrum Investigation (DSI) consultative process raised this issue in their published report. The DSI management body were persuaded that propagation beacons could be implemented with a minimal likelihood of interference occurring to other radio services. The DSI report queried whether the ISM (Industrial, Scientific and Medical) band centred on 40.68 MHz would be appropriate for such beacons. It was felt that a secondary allocation to the amateur service would also be appropriate.

Since the DSI, IARU has encouraged their national Member Societies to deploy multi-band beacon clusters covering low VHF between 30 MHz and 70.5 MHz. Amateurs are also encouraged to set up and maintain automated monitoring stations in order to contribute measurement results to the scientific community.

In the last few years Denmark, and the UK have authorised beacons near 40 MHz and Slovenia and South Africa have released the band circa 40.66-40.70 MHz to the amateur service.

Historically in 1949 the 5 metre amateur band was 58.5–60.0 MHz and in earlier times 56-60 MHz. The same band extended to 69.9 MHz would therefore seem appropriate for amateur propagation studies and experimentation on a national secondary basis to facilitate scientific research. The UK already has an amateur propagation beacon on 60.050 MHz.

Based on a consultative exercise within the amateur community, IRTS has developed band plans for the frequency bands 40–45 MHz, (8 metres); see Table 1 attached and 54–69.9 MHz (5 metres); see Table 2 attached.

#### **Proposal:**

That the 5 metre and 8 metre band-plans in Table 1 and Table 2 attached be published in the IARU VHF Handbook in order that future national or regional spectrum awards to the amateur service in the range 40-45 MHz and 54.0-69.9 MHz take due account of the situation in those countries which have already implemented such allocations.

# **New IRTS Band Plans for New Spectrum 30-69.9 MHz**

## **Introduction**

Following an IRTS request made in response to a recent consultation process by the Irish telecommunications regulator, ComReg a determination was made in early 2018 that the amateur service in Ireland may use the frequency bands 30-49 MHz and 54.0-69.9 MHz on a national secondary basis. In addition the current 4 metre 70 MHz band has been extended to 69.9-70.5 MHz, which means that the International Amateur Radio Union (IARU) Region 1 4m band plan can now be fully implemented in Ireland. The new frequency bands are listed among the bands generally available to radio amateurs in Annex 1 of the Irish Amateur Station Licence Guidelines document ComReg 09/45 R4 which is available for downloading from the ComReg.ie website.

In May 2018 IRTS initiated a public consultation process in respect of how Irish amateur licensees and licensees in other countries believed spectrum in the range 30.0–69.9 MHz should be utilised.

IRTS' initial thoughts were sent to International Amateur Radio Union Region 1 (IARU) Member Societies (or representatives) in Denmark, Slovenia, South Africa and United Kingdom which have beacons or an allocation at 40 and/or 60 MHz. In addition an invitation to comment was sent to 70MHzdotorg, IARU-R1 VHF and Microwave Committee and the UK Six Metre Group. Comments were gratefully received from EI7GL, EI8EJB, EI8JA, G3XBM, KU3N, LY2YR, ON4TA and TF3KB. Many of the issues raised by respondents have been incorporated into the band plans proposed in Tables 1 and 2 below.

## **The New Spectrum available in Ireland**

### **30 – 49 MHz (8 metre band)**

Currently there is no regional or international allocation to the amateur service in 30-49 MHz in any of the 3 ITU/IARU Regions. However the absence of reliable and identifiable signals in this frequency range means that the progress of a propagation event starting in the HF range circa 28 MHz cannot be reliably tracked as it progresses towards 50 MHz and beyond. Nor can general experimentation take place with amateurs in countries which have a national 8m allocation.

In 1995 the management body of a CEPT Detailed Spectrum Investigation (DSI) consultative process raised this issue in their published report as a result of several inputs from amateur radio interests to the DSI consultative committee. CEPT is the 48 Member State European regulatory body which addresses spectrum management issues. The DSI management body were persuaded that propagation beacons could be located at appropriate geographical sites, chosen in order to minimise the possibility of interference to other radio services. The DSI report queried whether the ISM (Industrial, Scientific and Medical) band centred on 40.68 MHz would be appropriate for such beacons, possibly using frequencies interleaved with on-site paging applications. It was felt that a secondary allocation to the amateur service would also be appropriate.

Since the DSI, IARU has encouraged their national Member Societies to deploy multi-band beacon clusters covering low VHF between 30 MHz and 70 MHz. Beacon clusters should wherever possible provide signals at circa 40 MHz and 60 MHz to supplement those beacons already providing emissions at 28 MHz, 50 MHz and 70 MHz. Amateurs are also encouraged to set up and maintain automated monitoring stations in order to contribute measurement results to the scientific community. A common transmission format is proposed to aid the reception of multiple clusters.

In the last number of years Denmark, and the UK have authorised such beacons near 40 MHz e.g. on 40.071 and 40.050 MHz respectively, Slovenia has released the band 40.66-40.70 MHz to the amateur service and South Africa has released the band 40.675-40.685 MHz.

Based on the comments received since May, IRTS has developed a band plan for the frequency band 40–44 MHz, (8 metres); see Table 1 below. For the time being usage of 30-40 MHz and 45–49 MHz has not been planned. Furthermore IRTS considers that the band most likely to be transverted to an IF of 28–30 MHz would be 40–42 MHz.

#### **54.0–69.9 MHz (5 metre band)**

Historically in 1949 the 5 metre amateur band was 58.5–60.0 MHz and in earlier times 56-60 MHz. The same band extended to 69.9 MHz would therefore seem appropriate for amateur propagation studies and experimentation on a national secondary basis to facilitate scientific research. The UK already has an amateur propagation beacon on 60.050 MHz.

A 5 metre band will also facilitate digital television in addition to all other modes and bridges the 4 metre and 6 metre allocations, although we have to await the outcome of the 2019 ITU World Radiocommunication Conference to determine whether the amateur service in Region 1 will gain general or partial access to the 50–54 MHz frequency band.

Taking account of the foregoing IRTS has developed a draft band plan for the frequency band 54–69.9 MHz (5 metres); see Table 2 below.

#### **IARU Band Plans**

The VHF and microwave committee of IARU Region 1 prepares, revises and maintains the official IARU Region 1 band plans for 50 MHz, 70MHz, 145 MHz, 435 MHz as well as the microwave bands. VHF Managers are requested to give maximum publicity to the adopted band plans. In view of the many newcomers to the hobby, regular publication of the band plans is advised. Member Societies, and particularly their VHF Managers or VHF Committees are strongly tasked to promote adherence to the adopted band plans by amateurs in their country.

Concerning the usage column in the band plans, operators should take notice of these agreements which are made for operational convenience, but no right to reserved frequencies should be derived from any mention in the usage column or from referenced notes. Users should be aware that these band plans are generic for all members states of IARU R1. They can be more detailed in some Member States due to practical reasons or legislation. Therefore IARU advises amateur licensees to

study and implement their national band plans where these vary from the IARU plans.

The 5 Metre and 8 Metre band plans prepared by IRTS have been approved by the IRTS committee. The IRTS Committee has also agreed that the band plans should be submitted to the 2019 Vienna interim meeting of IARU Region 1.

### **Next Steps**

Tables 1 and 2 below are suggested band plans for most of the 5 and 8 metre spectrum granted to the amateur service in Ireland by ComReg. The plans are loosely based on the current 50–54 MHz IARU band plan and have been in the public domain since May 2018 by means of the IRTS web-site.

Concerning propagation beacons work has begun on upgrading some existing beacons and procuring beacons in the new bands. Transverters are already on the market to transvert 40-42 MHz to 28-30 MHz.

Originally intended for the Italian 4 Watt “Apparati a 43 MHz” service in the 43.3000 – 43.5875 MHz band, an “international” version is freely available in the Ukraine. This 25 Watt FM transceiver for the band 42.3000 – 45.0875 MHz has a 224 channel capability and is manufactured in Korea and the Philippines.

Amateurs in the Dublin area are currently trialling both the 40 MHz transverter and the 42 MHz FM transceiver.

**Table 1 Irish 40–44 MHz (8 metre) Band Plan for Amateur Service**

Frequency	Maximum Bandwidth	Mode (a)	Usage
40.000 40.100	1000 Hz	Telegraphy MGM	<u>Lower Beacon Band</u> 40.013 (Ireland) planned 40.071 (Denmark) and 40.050 (UK) operational.
40.100 40.200	500 Hz	Telegraphy	40.150 CW centre of activity and CW calling frequency. 40.190 – 40.200 future intercontinental CW DX sub-band
40.200 40.300	2700 Hz	Telegraphy SSB	40.200 future CW and SSB intercontinental DX calling frequency 40.200 – 40.230 future intercontinental SSB DX sub-band 40.250 SSB centre of activity and SSB calling frequency. 40.285 SSB cross-band centre of activity
40.300 40.400	2700 Hz	MGM Narrowband Telegraphy	40.305 PSK Centre of activity 40.310 -40.320 future EME centre of activity 40.320 -40.380 MS centre of activity
40.400 40.660	20 kHz	All Modes	40.410 SSTV 40.440 -40.480 Simplex FM Internet Voice Gateways 40.490-40.510 <u>NOT TO BE USED</u> 40.520-40.650 Digital Communications 40.600 DV calling  Note: Avoid 40.49-40.51 (3 <sup>rd</sup> harmonic falls close to 121.5 the aeronautical distress frequency)
40.660 40.680	1000 Hz	Telegraphy MGM	<u>Upper Beacon Band (Subject to change)</u> 40.661 – 40.674 Slovenia 40.675 – 40.679 South Africa  Applicable for countries where Amateur Service allocation is limited to all or part of the ISM band 40.66 – 40.70 MHz
40.680 40.700	2700 Hz	Telegraphy MGM SSB	SSB frequencies 40.681, 40.684, 40.687, 40.690, 40.693, 40.696  SSB calling frequency 40.681 MHz (Subject to change)  Applicable for countries where Amateur Service is limited to all or parts of the ISM band 40.66 – 40.70 MHz
40.700 43.000	20 kHz	All Modes	40.710-40.890 FM/DV Repeater Inputs, 20 kHz spacing 1.1 MHz I/P-O/P 41.210 -41.390 FM/DV Repeater Inputs, 20 kHz spacing (paired with 56.810 – 56.990 15.6 MHz I/P-O/P) 41.410 -41.590 FM/DV Simplex 41.500 FM calling frequency 41.810 – 41.990 FM Repeater Outputs, 20 kHz spacing (paired with 40.710-40.890 1.1 MHz I/P-O/P spacing) 42.000-43.000 simplex 12.5 kHz spacing 42.500 FM calling frequency (12.5 kHz channel)
43.000 45.000	500 KHz	All modes	Could be paired with 52 – 54 MHz and/or 54-56 MHz (subject to the outcome of WRC-19 and/or the CEPT ECA)

**Table 2 Irish 54.0–69.9 MHz (5 metre) Band Plan for Amateur Service**

Frequency	Maximum Bandwidth	Mode (a)	Usage
54.000 56.000	500 kHz	All modes	Could be paired with 43-45 MHz Note: R2 BC NTSC video carrier 55.25 MHz
56.000 58.000	20 kHz	All Modes	56.010 – 56.090 1.8 MHz I/P-O/P FM/DV repeaters input channels, (20 kHz spacing paired with 57.810-57.890) 56.100 – 56.800 Digital communications 56.810 – 56.990 15.6 MHz I/P-O/P FM/DV repeaters output channels, (20 kHz spacing paired with 41.210-41.390) 57.810 – 57.990 1.8 MHz I/P-O/P FM/DV repeaters output channels, (20 kHz spacing paired with 56.010-56.090)
58.000 59.500	20kHz	All Modes	58.000 – 58.475 FM/DV Simplex 58.500 FM calling frequency 58.540 – 58.580 Simplex FM Internet Voice Gateways 58.610 SSTV 58.620-58.750 Digital communications 58.630 DV calling  Note: R2 BC NTSC colorburst 58.30 MHz
59.500 59.600	2700 Hz	MGM Narrowband Telegraphy	59.505 PSK Centre of activity  59.510 – 59.520 EME centre of activity 59.520 – 59.580 MS centre of activity
59.600 59.700	2700 Hz	SSB Telegraphy	General Use 59.685 for cross band
59.700 59.800	2700 Hz	SSB Telegraphy	59.710 -59.750 International SSB DX window 59.710 International SSB calling and centre of activity 59.750 SSB National calling and centre of activity
59.800 59.900	500 Hz	Telegraphy exclusive	59.850 CW National calling and centre of activity 59.870-59.890 International CW DX window 59.890 CW International calling and centre of activity
59.900 60.100	1000 Hz	MGM Telegraphy	Beacon Band  60.050 (UK) operational 60.013 (Ireland) planned
60.100 69.900	8 MHz	Experimental Broadband	Centre Frequency 65.00