

INTERIM MEETING OF THE IARU REGION 1 VHF/UHF/MICROWAVE COMMITTEE  
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<b>Document</b>	<b>B13</b>
<b>Subject</b>	<b>Allocations at 3400 MHz</b>
<b>Society</b>	<b>Radio Society of Great Britain</b>
<b>Committee</b>	<b>C5 - VHF/UHF/Microwave Committee</b>
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## Background

In Regions 2 and 3 the Amateur and Amateur Satellite Services have formal ITU Secondary allocations in the 3400 MHz band, within which 3400-3410MHz is allocated to the Amateur Satellite Service. The latter is noteworthy in that it is one of the few bi-directional satellite allocations in the lower microwave bands. By contrast, in Region-1 there is no ITU allocation for the amateur services, inhibiting harmonised usage and the use of amateur satellite global downlinks.

Following CEPT DSI Phase-1 in 1992 and in line with EU17<sup>1</sup> a modest but increasing number of CEPT states now have Amateur Service allocations. This has increased with the recent expansion of the European Union resulting in an influx of states joining CEPT and adopting EU17. A recent survey of these is illustrated by a map in Figure-1, and a more detailed list in Figure-2. In addition, permits have also been made available in Sweden, whilst Denmark also has an Amateur Satellite allocation.

## Current Position

It is evident from the illustrations that there is greater success in requesting the 10MHz wide allocation in newer states than has been previously been achieved in the more established parts of Europe. It is conceivable that further countries would accede to EU17 requests if their amateur societies were to press for them. This process needs to be accelerated to consolidate our position in the face of mounting commercial pressures from Fixed Wireless Access and the fact that 3400-3500 is an 'IMT-Advanced' candidate band at WRC-07 (agenda item 1.4). It is noteworthy though that the lower 10MHz as endorsed by EU17 is effectively a radio-navigation guard band and least favoured by commercial systems.

It was recently announced in October-2006 that, after careful deliberation, the Amsat-NA Eagle amateur satellite project would use 3.4GHz uplinks to deliver a high-quality, high-data-rate 5GHz downlinks from its Advanced Communications Package. Region-1 Societies would need to acquire Amateur Satellite privileges for uplinks, if full benefit is to be gained from this exciting project.

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<sup>1</sup> **EU17:** In the sub-bands **3400-3410MHz**, 5660-5670MHz, 10.36-10.37GHz, 10.45-10.46GHz 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.

In effect, EU17 encourages administrations to afford some consideration to amateur weak-signal operations in the sub-band 3400 – 3410 MHz, among others.

## EME as a Precedent

In considering how additional privileges may be obtained for satellite uplinks, perhaps initially by special permits, it became clear that EME activity in the 3400 MHz band might be a useful precedent. UK and European amateurs have conducted a modest amount of EME activity in the 3400 MHz band. The moon is a natural satellite and, as such, does not fall within the definition of an ITU Satellite Service (which is specifically defined to be the use of Artificial Satellites).

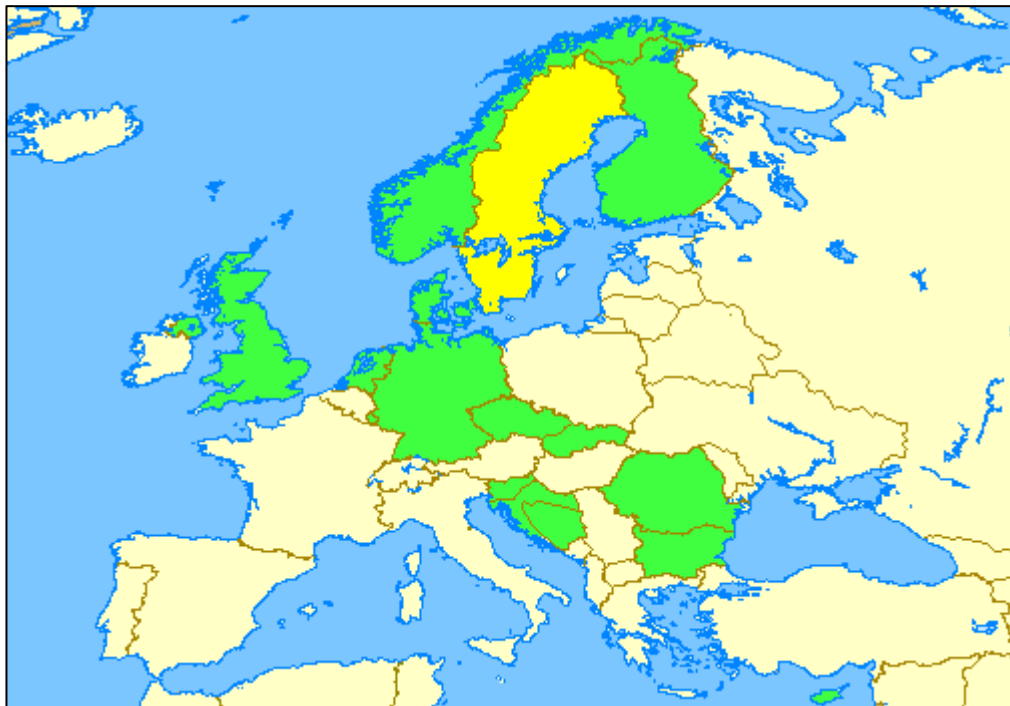
If it can be shown that more frequent EME uplinks do not interfere with Primary Users, then evidence-based submissions can be made for Amateur Satellite privileges. It is important that CEPT states who have the opportunity afforded to them by EU17 press home their advantage in order to realise the IARU spectrum goal of a Region-1 allocation, and underpin the success of the ambitious Eagle programme.

## Summary

Interest in the 3400 band is gaining momentum from both amateur and commercial interests. It is important that our position, at least in the 3400-3410 segment, is not only maintained, but also enhanced.

## Proposals

- 1) IARU-R1 maintain an online status table/map of Societies with 3400MHz privileges
- 2) 3400MHz EME Activity is actively encouraged and expanded.
- 3) All Societies seek to gain at least 10MHz allocation at 3400-3410MHz in line with EU17
- 4) Societies should collaborate more closely in order to get EU17 implemented, especially in those countries that have been particularly reticent, or are under-resourced.



**Figure-1:** Countries with confirmed 3400 Amateur Service Allocations as at Nov-2006  
Note: At time of writing, Poland was unconfirmed and Sweden is based on 2006 permits

	3400	3410	3475	3500	Remarks
Austria					
Belgium					
Bosnia Herzegovina					
Bulgaria					
Croatia					
Cyprus					
Czech Republic					20 W (info of OK2ZI, 5/2003) and Amateur Satellites
Denmark					
Estonia					
Finland					upper limit 3408
France					
Germany					
Great Britain					Correct
Greece					
Hungary					
Iceland					
Ireland					
Israel					10Watt
Italy					
Liechtenstein					
Lithuania					
Luxembourg					
Malta					
Montenegro					
Namibia					
Netherlands					
Norway					
Poland				?	usage 3400-3410 MHz upper limit 3470 ?
Portugal					
Romania					
Russia					
Slovak Republik					
Slovenia					50W Erp max
South Africa					
Spain					
Sweden					Permits
Switzerland					
Serbia					
Zimbabwe					

**Figure-2: 3400 MHz Band Frequency Allocation Details as at Nov-2006**

Note: At time of writing, Poland was unconfirmed and Sweden is based on 2006 permits