

## **Inmarsat Response to the Ofcom Consultation on Freedom4 Application for Licence Variation**

### Ofcom Question:

Are there any reasonable grounds why Ofcom should not grant Freedom4's request to vary its licence as soon as practicable? If so, please explain your reasoning for this.

### Inmarsat Answer:

Inmarsat operates a network of 11 geostationary satellites, which provide mobile satellite services to users throughout the world. While Inmarsat's MSS service links operate in L-band (1.5 / 1.6 GHz), the feeder links and TT&C links operate in some of the C-band spectrum that is covered by the Freedom4 licence. Inmarsat is therefore potentially affected by interference from Freedom4 system deployments.

Inmarsat is of the view that there are reasonable grounds not to grant the Freedom4's request in its current form. We propose that the following changes should be made before the request is granted:

1. Clearly state the requirement to coordinate base stations with satellite earth stations in the licence
2. Specify the coordination procedure in the licence
3. State the requirement to coordinate with earth stations located abroad in the licence
4. Terminal stations operating in FDD systems need to be coordinated
5. Involve stakeholders in the planned review of the coordination approach
6. Mobile use should not be allowed above 3800 MHz

Further explanation of the above proposals is given below.

1. Clearly state the requirement to coordinate base stations with satellite earth stations in the licence

Coordination of base stations with satellite earth stations is essential and we endorse the statements in the consultation document that propose to retain the coordination requirement for base/central stations. We note however that this requirement is not clearly stated in the proposed modified Freedom4 licence. There is a significant change proposed in the Freedom4 licence with regard to the coordination requirement. Section 5 of Schedule 1 of the existing licence (Annex 6 of the consultation document) reads:

#### **"5. Co-ordination**

a) Without prejudice to the Site Clearance required in paragraph 4, the Licensee must obtain permission from Ofcom prior to establishing, installing and/or using the Radio Equipment at any geographic location covered by this Licence. Ofcom shall grant such permission where, following use of its co-ordination process, Ofcom

considers that the Radio Equipment does not cause undue interference to existing authorised users of the band and adjacent band users.

b) In granting approval Ofcom may specify restrictions on the use of Radio Equipment including restrictions, beyond those set out in the other terms of this Licence, on the maximum radiated spectral power density allowed on specific frequencies, the directions of transmissions and locations of Radio Equipment.

c) The Licensee must also operate the Radio Equipment in accordance with any coordination procedure notified by Ofcom.”

In the proposed new licence (Annex 7 of the consultation document), only item c) has been retained. Item a) and b) are very important provisions for the protection of satellite earth stations<sup>1</sup>. By contrast, item c) does not give any clear guidance or guarantee for earth station protection. We believe that the requirement for coordination should be more clearly stated in the licence and that items a) and b) should be retained for base station installations.

## 2. Specify the coordination procedure in the licence

Currently, there is no explanation in the licence of the coordination procedure. Even items a) and b) above do not provide a full explanation. We request that the coordination procedure is fully described in the licence.

## 3. State the requirement to coordinate with earth stations located abroad in the licence

The consultation document does not mention coordination with earth stations located abroad. Such coordination may be required due to the potentially very large interference distances from BWA stations into FSS earth stations. To give just one example, Burum-09 (published in BR IFIC 2645), located at Burum, Netherlands, operates with the Inmarsat-3 AOR East satellite (15.5W). The ITU coordination area for this station is shown in Figure 1 and indicates that terrestrial stations deployed in some parts of the UK would need to be coordinated with Burum-09<sup>2</sup>. There are several other Inmarsat earth stations at Burum with similar coordination areas. The requirement to coordinate with earth stations located outside the UK should be spelled out in the Freedom4 licence conditions.

## 4. Terminal stations operating in FDD systems need to be coordinated

It is proposed to remove the requirement to coordinate terminal stations with a power spectral density not exceeding 25dBm/MHz and a total EIRP not exceeding 30dBm. Since the interference distances for terminal stations are considerably smaller than those for base stations, Inmarsat agrees that the coordination requirement for terminal stations could be removed (provided that the coordination approach for base stations adequately protects satellite earth stations). However, this is only valid for BWA systems using TDD technology. If FDD is used, coordination should be required also for terminal stations.

## 5. Involve stakeholders in the planned review of the coordination approach

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<sup>1</sup> Inmarsat notes however that the wording of these provisions implies that coordination will be conducted only with earth stations within the UK. Coordination with earth stations outside the UK is also required (see item 3). In such cases, agreement is required with other Administration(s).

<sup>2</sup> RR provisions Nos. 9.17 and 9.18 apply in this band. Therefore, coordination is required for any transmitting terrestrial station situated within the coordination area of a receiving earth station that has already been coordinated (such as Burum-09).

The consultation document mentions that Ofcom will perform a review of the coordination approach. Inmarsat would like to participate in such a review.

6. Mobile use should not be allowed above 3800 MHz

The UK Frequency Allocation Table allocates the band 3600 – 4200 MHz to mobile services only on a secondary basis. We recognise that EC Decision 2008/411/EC requires the UK to permit BWA systems to operate in the band 3400 – 3800 MHz, subject to appropriate provisions to protect other services in the band. However, in the band 3800 – 4200 MHz, any mobile systems could only be deployed on a secondary basis. Therefore, mobile deployment by Freedom4 in 3800 – 4200 MHz, if permitted at all, should be on a secondary basis and should not constrain future deployment of satellite earth stations.

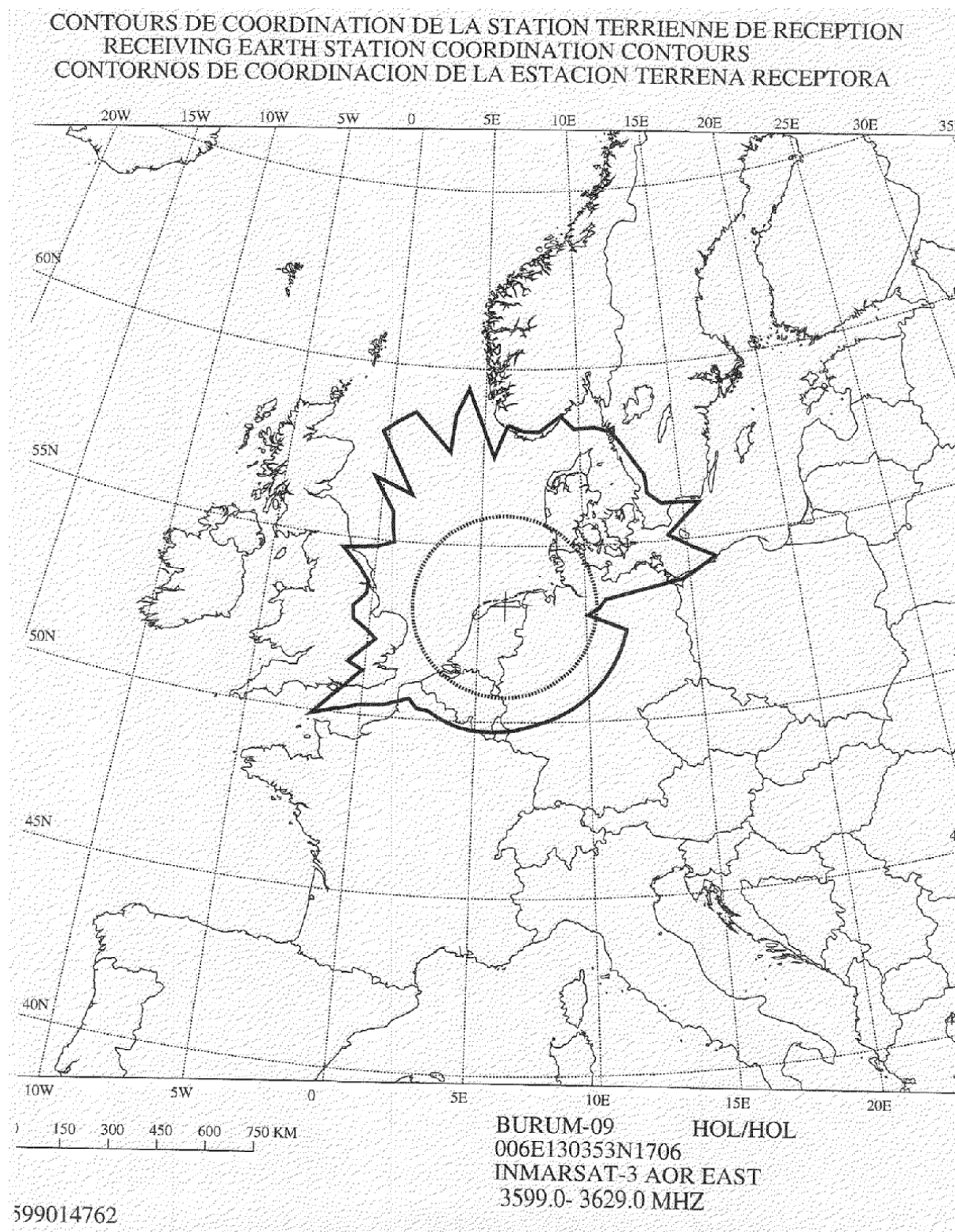


Figure 1: Coordination area for Burum-09