

## **Intellect Response to Ofcom Consultation:**

### **Authorisation of terrestrial mobile networks complementary to 2 GHz mobile satellite systems**

**24 March 2008**

#### **1. Introduction**

Intellect is the UK trade association for the IT, telecoms and electronics industries. Its members account for over 80 per cent of these markets and include blue-chip multinationals as well as early stage technology companies. These industries together generate around 10 per cent of UK GDP and 15 per cent of UK trade. Members include companies in the business of fixed, wireless and satellite communications both upstream and downstream. For more information about Intellect go to: <http://www.intellectuk.org>.

Intellect congratulates Ofcom in conducting this consultation on the authorisation of terrestrial mobile networks complementary to 2 GHz mobile satellite systems in a timely manner and we consider that Ofcom is setting a good example for European administrations in doing so. Intellect is pleased to provide comments in response to the consultation document, given below.

#### **2. Comments not covered directly by the questions asked**

Intellect suggests that careful consideration may be needed on the structure of the licence exemption that would be applied to operators. There are two different approaches that have been taken in the UK. In the case of 1.5/1.6 GHz MSS systems, licence exemption has been for the operation of terminals within different MSS systems all associated with the bands 1626.5-1645.5/1646.5-1660.5 MHz and 1525.0-1544.0/1545.0-1559.0 MHz. However, the approach taken by Ofcom with regard to systems in the 1.6/2.4 GHz MSS bands is different, whereby specific systems are exclusively authorised by licence exemption for specific frequency bands, identified through the interface requirements. Intellect suggests that the former approach should be taken in this case, whereby licence exemption would apply to user terminals operating throughout the 2 GHz MSS bands, subject to meeting the appropriate equipment standards. We envisage that this licence exemption would apply to the terminals whether they operate directly with the MSS satellite, or with the CGC base stations. With regard to authorisation of the CGC base stations however, it is anticipated that each CGC licence will be for a specific operator and for CGC operation only in the frequency range identified by the EC selection and assignment process.

As a further comment, Intellect notes that the current UK licence exemption legislation authorises the installation and use of ICO terminals to operate in parts of the 2 GHz MSS bands: 1997.5 - 2010.0 MHz and 2187.5 - 2200.0 MHz. Intellect assumes that this authorisation will be removed or revised as necessary to be aligned with the outcome of the EC process and we request that Ofcom clarify its intention in this regard.

### 3. Answers to questions

***Question 1: Do you agree that the CGC licence should be in the form of a spectrum access licence with standard terms and conditions?***

Intellect agrees that the standard terms and conditions appear to be reasonable and appropriate.

***Question 2: Do you agree that such licences should be awarded on a UK-wide basis?***

As far as Intellect is aware, potential CGC applications would be deployed throughout the UK and therefore a UK-wide licence would be appropriate.

***Question 3: Do you agree that the CGC licence should authorise the complete set of frequencies assigned under the EC process?***

An MSS network employing a CGC might not use all the authorised frequencies for CGC in any one area, and a typical scenario for the UK would see some frequencies used for the satellite part and different frequencies used for CGC in different parts of the UK. However, the MSS operator would need the flexibility to manage the frequency arrangements to meet system requirements. Therefore, a licence which covers the complete set of assigned frequencies is recommended.

***Question 4: Do you agree that the initial grant of the CGC licence should made be to the MSS operator only?***

Yes. Due to the constraints on the CGC element, in particular the need for it to be integrated with the satellite element, only the authorised MSS operator should be entitled to a CGC licence. This requirement is also included in the draft Article 95 Decision. Intellect also wishes to highlight that, in accordance with the draft Decision, the operator must be established in the EU, but does not necessarily need a formal UK presence.

Intellect considers that an applicant for a UK CGC licence should be expected to provide at least partial coverage of the UK by the satellite. However Intellect understands that this requirement is likely to result from the qualification criteria in the EC procedure, so it may not be necessary to include such a requirement in the UK licence conditions.

***Question 5: Subject to certain safeguards, would it be appropriate to license the CGC in advance of the satellite service coming into operation and if so, what criteria should be applied to determine whether the satellite component of the MSS network is operational and what period of time do you consider would be appropriate?***

In section 7.8, Ofcom asks three sub questions, which we address in turn.

***• should Ofcom license the CGC in advance of the EC selection and authorisation procedure?***

For the reasons given by Ofcom, and for consistency with the draft Article 95 Decision, Ofcom should not license the CGC in advance of the selection and authorisation procedure.

**• *should the CGC be licensed before the satellite component of the MSS system is operational?***

Intellect agrees that CGC may be licensed and authorised to operate in advance of the deployment of the satellite system, subject to certain safeguards. Intellect agrees that the operator should be required to provide evidence of binding contracts to support the implementation schedule of the satellite part. After award of the CGC licence, the need to show evidence of progress in deploying the satellite part may also be considered appropriate as a condition for the CGC licence, but this is likely to be a requirement in the EC procedure in any case.

However Intellect members have differing views on the progress that should be demonstrated by an operator as a condition of award of the CGC licence. On one hand, some members consider CGC could be licensed any time after the completion of the selection and assignment process, with the safeguards mentioned above. This would allow the start of service with limited coverage soon after selection and assignment for all successful MSS systems, to the benefit of users, and with a good level of assurance that the associated satellite will be brought into use. On the other hand, some members consider that CGC should not be licensed before the associated satellite is launched, but that CGC operation may be permitted during the period from satellite launch to the start of satellite service (i.e. during the satellite testing period). This would allow the start of service with limited coverage soon after selection and assignment for those MSS systems which expect to be operational soonest, to the benefit of users, and with the highest level of assurance that the satellite of the associated MSS system will actually be brought into commercial operation, as it will have been launched.

**• *what criteria should Ofcom apply to determine whether the MSS is operational?***

This question is not necessarily related to the potential authorisation of CGC. However, there will likely be a requirement for the European administrations, including Ofcom to make an assessment that operators meet the relevant milestones after the selection and assignment process. This includes the final (9th) milestone: "Provision of satellite service within the territories of the EU Member States". It is necessary that the European administrations assess milestone compliance in a consistent manner, using the same criteria. For the purpose of ensuring compliance with respect to this and other milestones, Ofcom should follow the criteria which are expected to be included in the Article 95 Decision.

Ofcom mentions Gateway earth stations as one criterion, however we would note that requirements related to Gateway earth stations seem to be adequately covered by milestone 4.

***Question 6: Do you agree that the CGC licence should not include a coverage obligation?***

Intellect agrees with Ofcom that coverage obligations are unnecessary in the CGC licence. For one thing, the coverage of the system will be provided by the associated MSS network in conjunction with the CGC element so the two elements cannot be separated. It is also noted that the CGC is an optional element of the MSS network. As the EC process allows stand-alone MSS systems, there seems to be no reason to place coverage requirements on the CGC.

With regard to the duration of the licence (discussed in section 7.15), Ofcom suggests that the duration be linked to the expected lifetime of the satellite. Intellect understands that the licence duration will be prescribed in Article 95 Decision. Authorisations for the CGC and the terminals should be in accordance with this requirement.

**Question 7: Do you agree that the CGC licence should be provided on a service and technology neutral basis?**

Intellect agrees that the CGC licence should be provided on a service and technology neutral basis, to the extent that this is possible within the constraints of the EC Decision and Article 95 Decision.

**Question 8: Do you agree that CGC licences should be tradable and, if so, that they should be both totally or partially tradable and both outright or concurrently tradable, that Ofcom's consent should be required for transfers and that the grounds on which Ofcom may withhold consent should be limited as proposed?**

Under the draft Article 95 Decision, Ofcom would be required to grant authorisation to the successful applicants, and by implication, only to the successful applicants. Given the constraints on use of a CGC licence, in particular the need for the CGC to be integrated with the satellite network and given the potential requirement for social obligations such as supporting public protection and disaster relief applications, it may not be possible to allow trading whilst ensuring that all obligations and requirements on the MSS operator are upheld. It therefore may not be legally or practically possible for trading to take place (other than under a change of ownership of the MSS system), and even in these circumstances Ofcom would be required to ensure that the requirements arising from the EC process and the conditions applicable to the original licensee are maintained.

**Question 9: Do you agree that AIP should be applied to CGC licences at a rate that reflects the associated opportunity cost?**

Intellect is generally supportive of AIP as one of the spectrum management tools available to Ofcom. However, in this case it is not apparent what spectrum management objective would be *incentivised* by the application of significant fees. Given that the selection and assignment of frequencies will be made at the European level, the CGC licence fee cannot influence the total quantity of spectrum made available. Independent of the licence fee, any CGC operator will be under natural commercial pressure to maximise the efficient use of the band. For example, a system providing a mobile TV/multicast service will naturally want to maximise the number of channels made available to users to maximise the value to customers. It should also be recalled that spectrum efficiency is one of the assessment criteria in the EC process. Therefore we are doubtful that attempts to increase spectrum efficiency through AIP would be necessary or effective.

With regard to the proposal to base fees on the associated opportunity cost, it is necessary to give more thorough consideration to the potential alternative uses. At a certain point, a high AIP based on the opportunity cost for another application might, in theory, persuade the operator to voluntarily reduce the quantity of spectrum authorised for CGC, which could then be used by an alternative application. Given the restrictions imposed by the European regulations and the mandatory requirement stemming from the EC process for MSS systems to cover at least part of the UK, any alternative application would have to protect current and future MSS and MSS/CGC systems operating in the UK and outside of the UK. Hence, any alternative application would have to operate with severe technical and operational constraints (for example very low power, restricted coverage) and could certainly not include standard terrestrial cellular networks. As a consequence, the opportunity cost is much lower than the value proposed by Ofcom. Basing the opportunity cost on a service which attracts a high value but cannot feasibly be deployed may ultimately result in spectrum being unused giving a net loss to the overall economic efficiency of the spectrum.

Ofcom states in paragraph 8.3 that external factors which might prevent alternative uses such as those arising from international agreements should be disregarded. However, if this approach were to be taken (which is contrary to the Indepen report to the Radiocommunications Agency<sup>1</sup> and contrary to the approach previously taken by Ofcom in this regard), it would inevitably lead to the incorrect identification of the alternative application, and in this case would overestimate the opportunity cost. In paragraph 8.27, Ofcom indicates that external constraints may change in the future. If this were the case, Ofcom would also be able to review the applicable licence fees in recognition of any change in opportunity cost.

**Question 10: Do you agree that the licence fees should be set at around £554,000 per 2 x 1MHz?**

Intellect does not agree that fees should be set based on comparison with the licence fees paid by GSM operators in the 1.8 GHz band. As indicated above, the opportunity cost for the 2 GHz MSS bands cannot be based on terrestrial cellular networks as the best alternative use, as such systems cannot be deployed under the current regulations. This approach should not be used as a basis for setting fees for CGC.

Furthermore, a terrestrial only cellular system and a CGC should not be considered as equivalent for the purpose of setting fees. Ofcom must take into account that the bands in question have been designated for MSS systems, with or without CGC. Any such system that will be deployed in these bands must be primarily an MSS system. This is ensured, for example, under the CEPT agreed conditions for systems employing a CGC<sup>2</sup>: 1) the frequency band to be used by the CGC of a particular satellite system shall be accommodated within the same portions of the frequency band used by the satellite component of that satellite system; and 2) the use of CGC shall not increase the spectrum requirement of the satellite component of that particular mobile satellite system. As a consequence, a CGC will not have the same capacity as a terrestrial only mobile system for the same amount of spectrum. At any time, a portion of the spectrum licensed to the CGC operator will not be usable for CGC but will be used for the satellite part. Furthermore, the costs of the overall system need to be considered, including the satellites and their associated ground infrastructure, and dual mode handsets that will be able to work with both the satellite and CGC. These are costs which, naturally, a terrestrial only operator does not have to bear. It must also be recognised that the MSS operator must, under the proposed Article 95 Decision, meet certain social obligations, in particular requirements for substantial territorial and population coverage in all EU Member States. The same requirements could not apply to a UK based terrestrial operator.

In summary, the licence fee proposed does not accurately reflect the true opportunity cost of these bands and it should not be considered that CGC systems and terrestrial mobile systems are comparable for the purpose of setting fees.

Intellect has not attempted to determine the true opportunity cost in this case, but bearing in mind the very limited scope that exists for alternative services and systems in this band, we believe it would be significantly less than the fees proposed.

One Intellect member has indicated that it does not concur with the answer to this question.

---

<sup>1</sup> An Economic Study To Review Spectrum Pricing; Indepen, Aegis Systems And Warwick Business School; February 2004.

<sup>2</sup> ECC Decision of 1 December 2006 on the designation of the bands 1980-2010 MHz and 2170-2200 MHz for use by systems in the Mobile-Satellite Service including those supplemented by a Complementary Ground Component (CGC) (ECC/DEC/(06)09)

**Question 11: If you believe that setting fees at this level would result in CGC systems not being deployed, please provide your reasons and full supporting evidence including a detailed business case.**

It has already been decided at the European level that these bands will be available for MSS systems (with or without CGC) and Ofcom is party to that decision. Such use is fully in accordance with Ofcom's general duties. Ofcom must therefore be careful not to introduce regulations, and in particular licence fees, that prevent CGC systems from being deployed. However, Intellect, as a trade association, cannot provide detailed business plans for planned systems.

---

Intellect Contact:  
Jennifer Carlton  
T: 020 7331 2003  
E: [jennifer.carlton@intellectuk.org](mailto:jennifer.carlton@intellectuk.org)