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Office of Communications (Ofcom)

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Dear Sir,

Inmarsat Global Limited is pleased to provide input to Ofcom's consultation on "*Authorisation of terrestrial mobile networks complementary to 2 GHz mobile satellite systems*", published on 15 January 2008

Inmarsat Global Ltd is a leading provider of global mobile satellite services, interested in using the band 1980-2010 MHz – 2170-2200 MHz (S-band).

We'd like to express our appreciation for the early consultation organised by Ofcom. Taking into account the recent progress on the EU selection process and authorisation process, it is crucial to clarify and decide upon national conditions for the licensing of the CGC element in order to provide regulatory certainty to candidates which anticipate using CGC as an integral part of their business plans, enabling them to attract business partners and finalise the necessary financial backing. In this regard, it is very important that regulatory cost implications can be identified and factored in.

We would like to congratulate the authors of the comprehensive document for its clarity and completeness and welcome particularly the recognition of:

- the fact that sharing between terrestrial mobile services and mobile satellite services is not possible unless both are under the control of the same frequency management system (4.9) (4.15)
- the benefits of CGC (4.12), including enabling operators to increase efficiency of use of the spectrum and improve service capability in areas which are hard to serve by satellite, including built-up urban areas

We believe that, with the exception of the proposal on spectrum fees which is discussed in more detail below, the proposed framework is generally befitting and invite Ofcom to take into account the attached input to the questions set out in annex 4 of the consultation document.

Sincerely

Ann Vandenbroucke
Manager Regulatory and Policy Issues

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?

Applying standard terms and conditions of spectrum access licences is in line with a non-discriminatory, technology / service neutral approach. There is no need to create a completely novel framework and fitting CGC under the existing standard terms constitutes a major time saving.

However, some of the unique elements need to be taken into account with regard to the particular nature of the service and the requirements arising from the art 95 Decision and the EC selection and assignment process.

First of all, the CGC infrastructure, including base stations, needs to be defined as an integral part of the mobile satellite service. This implies additional terms clarifying that frequencies used for CGC are managed by the same system that controls the frequencies in the associated MSS system.

Furthermore, conditions should be imposed to ensure that the CGC network is solely operated in synergy with the satellite network. Such conditions should address the event of satellite failure, setting limits on the duration of independent usage of the terrestrial network and maximum delays for replacement of the satellite.

A third element to differentiate CGC terms from the standard terms and conditions follows from the proposed *“Decision of the European Parliament and of the Council on the selection and authorisation of systems providing mobile satellite services (MSS)”* (art 95 decision). Once this decision is adopted and implemented, a coordinated selection process will be organised. The outcome of this coordinated process will need to be respected by the different member states. This has implications on which entity will be issued the CGC licence, which we will comment further on under question 4, and the timing for the grant which will be dealt with under question 5.

Further matters issuing from the proposed art 95 Decision that may need to be taken into account in addition to or as a variation of the standard terms and conditions are:

- enforcement in accordance with the milestones mentioned in the annex of the decision
- openness to any co-ordinated monitoring or enforcement procedure initiated by the Commission (conform considering 17 and title III), including the annual report
- inclusion of commitments pertaining to the UK as put forward by the winning candidates in the EU comparative selection process
- duration of the right of usage, conform to art 7

A last important aspect to include is the possibility of extending the original term of the licence. Taking into account the long lead-times for the design of a next-generation satellite and the substantial upfront investment, it is crucial that Ofcom encourage investment and innovation by providing for automatic extension of a CGC licence, as long as the system operates appropriately as a complement to an authorised satellite network.

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

Yes, we agree with the grant of a right to cover the whole of the UK without coverage or quality of service obligation. Further input regarding coverage obligations is included under question 6.

The complementary ground component is intended to improve the availability of the satellite service in cities and built-up areas. Since the satellite footprint can easily cover the full territory of the UK, it is consistent to allow operators to install ground segments wherever suitable in the full territory. Operators should, however, be free to decide on the need and the extent for CGC roll out.

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

The proposed art 95 decision foresees in Title III that Member States grant to the selected applicants the right to use the specific radio frequencies identified in the Commission decision confirming the selected applicants. It would therefore be inconsistent with this Commission decision to authorise less than the complete set assigned under the EC process.

This makes sense considering the integrated spectrum management for the satellite and the CGC elements on a pan-European scale. Furthermore, the actual frequency use of the CGC system will be highly dynamic, and the use for services over the CGC network will vary substantially over the territory. Therefore, while the total bandwidth used for CGC may be vary, for spectrum efficiency reasons spectrum across the whole 15 MHz needs to be available.

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

The Art 95 decision foresees in title II that Member States shall ensure that authorisations necessary for the provision of CGC on their territory are granted to the applicants selected and authorised to use the spectrum in accordance with the provisions of that decision.

It is therefore necessary for Ofcom to be aligned with this approach which is required to assure efficient use of spectrum and effective avoidance of harmful interference.

Flexibility after the initial grant is an important element and will be addressed in Q8.

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?

With subquestions

- a) should Ofcom license the CGC in advance of the EC selection and authorisation procedure?*
- b) should the CGC be licensed before the satellite component of the MSS system is operational?*
- c) what criteria should Ofcom apply to determine whether the MSS is operational?*

As set out in the earlier reply to the Consultation Document, issued by the European Commission on 30 March 2007, Inmarsat supports the authorisation of CGC from the date of the Final Selection and Assignment, allowing the operator to start offering services in limited areas in advance of the full coverage which is only possible when the satellite is launched. Naturally, such authorisation must be tied to the requirement to launch the satellite and introduce coverage to meet the requirements of the EC process within the deadline for milestone 9. In the event that this milestone is not ultimately met, the CGC authorisation must cease to be valid.

Conforming to the Art 95 decision, evidence of progress in deploying the satellite is the most appropriate measure to maintain the CGC licence in advance of satellite launch.

With regard to determination of whether an MSS system is operational, we encourage defining this so as to encompass meaningful commercial services, including availability of terminals, distribution chain, paying customers and all necessary support systems such as customer care, billing, network maintenance etc.

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

Inmarsat agrees that coverage obligations are unnecessary in the CGC licence. In essence, CGC is a means to increase the performance and availability of the satellite service in areas where, due to build-up or geographical conditions, the propagation of the satellite signal has a low quality. It should be a commercial decision for the operator where and when a CGC network is rolled out to overcome these limitations.

Coverage obligations will be imposed at the European level with regard to the satellite coverage. National administrations, including Ofcom, may be called upon to monitor or enforce these. With regard to CGC, though, this needs to be regarded as an auxiliary service with no obligation to offer it at all.

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

Candidate operators are interested in a variety of services, ranging from broadcast service, mobile TV to traditional MSS services, or even a mix of these. It is therefore opportune to issue service and technology neutral licences, keeping in mind always that the CGC part is inexorably part of an MSS system.

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?

As set out in section 3.20, the Framework Directive allows for spectrum trading to occur, subject to the need to ensure that: "the use of spectrum harmonised under Community measures does not change". Therefore, trading of all or part of the CGC licence is not practical if it involves change of use, and any trade will need to respect the control of the satellite network over the spectrum usage.

As set out in the reply to question 4, the initial grant should be to the entity that is selected under the European selection and authorisation process.

Simple transfer of the original CGC licence, upon demand of MSS entity selected under the ESAP process, should be allowed to accommodate the pursuit of an appropriate business structure. The winning operator could for example enter into consortia with partners for the CGC network that are different on a country/country basis. Assuming always that the satellite operator controls the integrated spectrum usage, there could be a need for consortia that vary from country to country and have a different legal structure than the company that was selected under the ESAP process to hold the CGC licence.

It may even be envisaged that over time there is a degree of integration among the operations of the CGC elements of the winning systems, coordinated by the satellite operator. Trading without change of use could provide flexibility to accommodate this.

Taking into account requirements under the ESAP process and the intrinsic interdependency between the CGC and the satellite network, tradability with change of use on a national level of all or part of the CGC licence is not feasible and should not be allowed. There is also a need for an adequate system to monitor, verify and enforce compliance. Any form of transfer and trading should ensure that clear responsibilities continue to exist with regard to the respect of the conditions imposed under the EU process.

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

Inmarsat does not believe that application of AIP is required to incentivize operators to increase efficient use of the spectrum.

- It must be emphasized that CGC is integrated with the MSS offering, and that the dynamic assignment of CGC in relation to the MSS offering needs to be taken into account. CGC will not necessarily use spectrum equally over an entire country, and that use will change over time. It is therefore inappropriate to charge a high fee per MHz for the full 15 MHz in a single country. CGC offerings and spectrum cannot be segmented from satellite offerings and spectrum and therefore the CGC spectrum should not be dealt with in a different way than satellite spectrum.
- The goal of CGC is to increase efficiency in use of satellite spectrum. It seems illogical that an operator that is not implementing CGC would not be subject to any fee payments, while an operator rolling out a CGC network would be "rewarded" for his increased efficiency with an "incentive" fee of several million pounds a year. It

would be ironic if the high cost of AIP would deter investment in CGC and undermine increased efficient use of satellite spectrum.

- A major motivator and measure of spectrum efficiency will already be applied in the pan-European selection process. Particularly in the case where there is spectrum scarcity, candidates are competing to win one of the available licences by making aggressive engagements with regard to the number of users and throughput they will accommodate in the assigned spectrum.
- Once this process is finished, an award is made by Commission decision and member states need to authorise to the selected operator authorisation to use that spectrum for CGC. In other words, fees set at a national level will not have any impact on the amount of spectrum awarded to and used by a given operator.

For all these reasons, Inmarsat believes that setting a high level fee based on AIP defeats the purpose of increasing spectrum efficiency.

The opportunity cost, if applied as means to create a spectrum value, is necessarily zero or at least very low for the case of CGC.

Opportunity cost is defined as cost based on foregone alternative use.

- CGC service should be considered in essence as an extended or improved satellite service, not a stand alone terrestrial mobile system. In reality the main part of the spectrum will be used by the satellite and will not be usable for CGC, and the CGC operations will be integrated with the MSS offering.
- In the particular case of the S-band spectrum used for CGC, it needs to be emphasized that this is not “virgin spectrum”, it is shared with and inhibited by satellite use. Ofcom cannot compare the opportunity cost of shared spectrum - with the serious constraints attached to it - with the value of unencumbered spectrum for alternative services in similar bands. This is in essence mobile satellite spectrum, and can not be compared with terrestrial mobile spectrum.
- The number of mobiles and communications an integrated MSS/CGC network can accommodate is not comparable to the loading a terrestrial-only network can carry. Neither the technical nor economic characteristics of the two networks are comparable. Moreover, certain business models are based on mobile TV. In these cases it would be anti-competitive to apply a very different AIP price to one mobile TV operator compared to another.
- Ofcom needs to consider what is realistically the value of the foregone benefit. Rather than comparing the value of the CGC spectrum with the AIP paid by systems operating in spectrum with similar propagation characteristics, the real question is : “what would the value of the CGC spectrum be to the next best alternative usage”. It is clear that given the constraints resulting from sharing with a satellite service, the value to alternative operators (who would need to work under the control of the satellite operator) would far lower than the equivalent AIP rate mentioned in section 8.33 and in actual fact be close to zero.
- It is not acceptable to determine fees in direct comparison with the licence fees paid by GSM operators in the 1.8 GHz band or any of the systems it is compared with in the consultation because terrestrial cellular networks would not be the best alternative use, given the shared spectrum constraint.

Inmarsat is of the firm opinion that the limitations originating in international agreements and the EU framework should be taken into account when deciding how to value opportunity cost, and that ignoring these constraints would artificially overstate opportunity cost in this context.

- Commission decision 2007/98 of 14 February 2007 clearly determines that any alternative use shall not cause harmful interference and cannot claim protection. As a consequence, in the unlikely and hypothetical case where there would be only partial coverage of the UK by the satellite with associated CGC service, and Ofcom were to authorise an alternative service in the uncovered area, this would only be possible for low power devices and any interested operator would estimate the value of that spectrum as extremely low due to the constraints. This demonstrates that the impact of technical limitations on the opportunity cost is tangible and needs to be taken into account.