



Licensing framework for the Complimentary Ground Component (CGC) of the 2 GHz Mobile Satellite Service (MSS)

Consultation Document

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1. Purpose of document

This Consultation considers the licensing regime most appropriate for Malta to facilitate the deployment of Complimentary Ground Components ('CGCs') of the 2 GHz Mobile Satellite Service (MSS) in accordance with EU legislation¹. The satellite component of the MSS and the CGC share the same 2 GHz frequency bands, i.e. from 1980 to 2010 MHz for earth-to-space communications, and from 2170 to 2200 MHz for space-to-earth communications.

The aim of this Consultation is to receive feedback from key stakeholders on the proposed national regime for the licensing of CGCs. Interested parties are invited to submit their views to the Malta Communications Authority ('MCA') and are requested to provide all relevant data in support of their submissions.

¹ EC Decisions [2007/98/EC](#), [626/2008/EC](#) and [2009/449/EC](#).

2. Introduction

The National Frequency Plan, in line with Decision No. 2007/98/EC² has allocated the frequency ranges 1980-2010 MHz (for Earth-to-space communications) and 2170-2200 MHz (for space-to-Earth communications) for systems providing mobile satellite services ('MSS') including any integral complementary ground based stations. The said complementary ground based stations are also referred to as complementary ground components ('CGCs').

Article 2 of the Decision defines the term 'systems providing mobile satellite services' as systems capable of providing radiocommunications services between a mobile earth station and one or more space stations, or between mobile earth stations by means of one or more space stations, or between a mobile earth station and one or more complementary ground based stations used at fixed locations.

In order to facilitate the development of a competitive internal market for MSS across the EU and to ensure gradual coverage in all Member States, through Decision No. 626/2008/EC the European Parliament and Council created an EU-wide procedure for the common selection of operators of mobile satellite systems that use the 2 GHz MSS frequency band. This procedure selected EchoStar Mobile Limited (previously named as 'Solaris Mobile Limited'), a company registered in the Republic of Ireland and Inmarsat Ventures Limited, a company registered in the United Kingdom as the successful operators and entitled them to be granted with authorisations from Member States to use 2 x 15 MHz of spectrum³ each for the delivery of MSS on a pan-European basis⁴.

In Malta, the 2 GHz MSS licensing framework is established through the Authorisation of Frequency Use (Provision of 2GHz Mobile Satellite Services) Regulations [S.L.399.44 of the Laws of Malta]⁵. By virtue of these Regulations the MCA granted the satellite component licenses to EchoStar Mobile Limited in March 2012 and to Inmarsat Ventures Limited in January 2015.

It should be noted that the current provisions of these Regulations focus on the satellite component of MSS and the specific conditions for CGCs need to be included following closure of this consultation process.

² [EC Decision 2007/98/EC](#).

³ Inmarsat: 1980-1995 MHz (E-s) and 2170-2185 MHz (s-E); Echostar: 1995-2010 MHz (E-s) and 2185-2200 MHz (s-E).

⁴ [EC Decision 2009/449/EC](#).

⁵ [S.L.399.44](#).

3. European Situational Analysis relevant to CGCs

3.1 European Union

Commission Decision No. 626/2008/EC defines CGCs as:

"ground-based stations used at fixed locations, in order to improve the availability of MSS in geographical areas within the footprint of the system's satellite(s), where communications with one or more space station cannot be ensured with the required quality".

The same decision requires Member States to authorise the use of CGCs of mobile satellite systems on their territories, where the authorisation shall be subject to the following common conditions:

- operators shall use the assigned radio spectrum for the provision of CGCs of MSS;
- CGCs shall constitute an integral part of a MSS and shall be controlled by the satellite resource and network management mechanism; they shall use the same direction of transmission and the same portions of frequency bands as the associated satellite components and shall not increase the spectrum requirement of the associated MSS;
- independent operation of CGCs in case of failure of the satellite component of the associated MSS shall not exceed 18 months;
- rights of use and authorisations shall be granted for a period of time ending no later than the expiry of the authorisation of the associated mobile satellite system, i.e. May 2027.

3.2 CEPT

The Electronic Communications Committee (ECC) of CEPT has adopted the below listed deliverables with respect to the 2 GHz MSS / CGC:

ECC/DEC/(06)09	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/REC/(10)01	Guidelines for compatibility between Complementary Ground Components (CGC) operating in the band 2170-2200 MHz and EESS/SOS/SRS earth stations operating in the band 2200-2290 MHz.
ECC Report 233	Adjacent band compatibility studies for aeronautical CGC systems operating in the bands 1980-2010 MHz and 2170-2200 MHz.

The regulatory provisions of ECC/DEC/(06)09 are very similar to the provisions contained in EU Decision numbers 2007/98/EC and 626/2008/EC. The ECC/REC/(10)01 contains guidelines with respect to the compatibility between CGC operating in the band between 2170 and 2200 MHz and certain satellite Earth stations operating in the 2200-2290 MHz range.

ECC Report 233 considers compatibility issues related to a possible implementation of aeronautical CGC systems operating in the 2 GHz MSS band (1980-2010 MHz uplink, 2170-2200 MHz downlink). This Report identifies certain technical and operational requirements for an aeronautical CGC system within the 2 GHz MSS band. Such technical requirements are necessary to ensure protection of the services operating in the adjacent bands (i.e. 1920-1980 MHz, 2010-2025 MHz, 2110-2170 MHz, above 2200 MHz) and of the conventional CGCs of MSS systems in the 2 GHz MSS band.

3.3 Other EU Member States

Article 8(1) of Commission Decision No. 626/2008/EC requires Member States to grant to the selected MSS operators the authorisations necessary for the provision of complementary ground components of mobile satellite systems on their territories. Article 9(1) of the same Decision requires the operators to comply with any conditions attached to their authorisations and for payment of any applicable authorisation and/or usage fees and charges as required by laws of Member States.

The regulatory frameworks adopted by the Member States with respect to the 2 GHz MSS/CGCs vary considerably. In particular, the approaches taken by the Member States, in terms of the type and amount of the fees and the methods of calculation are very diverse and this makes it difficult to categorise the different fees⁶.

⁶ http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=6611.

4. Analysis of the local situation

As stated earlier in this document Malta's 2 GHz MSS licensing framework is established through Subsidiary Legislation 399.44. However, the specific conditions for CGCs still need to be established and incorporated in these Regulations so as to have a single instrument regulating the provision of MSS in the 2 GHz band.

In addition to the requirement to be granted with the right to use radio frequency spectrum, the MSS operators and/or the entity providing the service are also required to notify in writing their intention to provide electronic communications network and, or an electronic communications service in Malta⁷. This notification carries an annual payment as established in Part A under the Eighth Schedule of S.L.399.28⁸.

4.1 Services to be provided by the 2 GHz CGCs and implications on the local electronic communications sector

The services that are intended to be provided over the MSS-CGC network by Inmarsat and EchoStar vary considerably and are not comparable.

Inmarsat intends to deploy an integrated telecommunications network to deliver aviation passenger connectivity services on a European-wide basis⁹. These types of aeronautical services will be new for Malta since similar services are not being provided by other market players.

EchoStar plans to deploy an all IP-enabled mobile communications network with an integrated mobile satellite and terrestrial system¹⁰. Through its network EchoStar intends to provide electronic communication services in Europe. The services that EchoStar intends to provide by its terrestrial network are expected to create competition with local electronic communications networks or service providers.

⁷ Refer to Regulation 66 of the Electronic Communications Networks and Services (General) Regulations [[S.L. 399.28](#)].

⁸ Additional information on the notification process is also available in the General Authorisations Notification Form ([MCA-OPS/tf/12-0746](#)).

⁹ <http://www.inmarsat.com/press-release/inmarsat-lead-eu-wide-roll-flight-passenger-broadband-services/>.

¹⁰ <http://www.echostar.com/NewsEvents/PressReleases/PressRelease.aspx?prid=11363>.

5. Proposed CGC licensing framework

The information contained under this section puts forward for consultation the terms and conditions linked to the proposed licensing framework for CGCs in the 2 GHz band. The framework for CGCs will eventually be contained in the Authorisation of Frequency Use (Provision of 2GHz Mobile Satellite Services) Regulations and will serve as the legal basis for the granting of rights of use of radio frequencies in the 2 GHz MSS band for CGCs.

In establishing the proposed licensing framework and respective fees the Government and the MCA took into consideration the following principles:

- The impact on competition that any new services would generate and the need to ensure a level playing field with already licensed operators;
- The range of services that can be provided over such spectrum; and
- The need to encourage services of an innovative nature.

5.1 Types of licences

The MCA, cognisance of the fact that the MSS operators will provide different types of electronic communications services, is proposing the establishment of two licensing regimes for CGCs:

- a. a regime limited for the use of CGCs to provide hybrid satellite-terrestrial aeronautical services; and
- b. a regime for the use of CGCs on a service neutral basis to provide hybrid satellite-terrestrial mobile services.

The satellite operators can opt to apply for the regime they deem appropriate at the licence application stage.

It should be noted that the MCA acknowledges that the business case of the MSS operators can develop. In this regard in the event that the MCA receives requests for the provision of specific electronic communications services other than the above-mentioned hybrid satellite-terrestrial aeronautical services, it will initiate the relevant procedure leading to the establishment of a new licensing regime to authorise these new services.

5.2 Specific Licence Conditions

5.2.1 EU driven licence conditions

In line with Article 8 of Commission Decision No. 626/2008/EC, the right of use of radio frequencies for the provision of complementary ground components of mobile satellite systems will contain the following conditions:

- Operators shall use the assigned radio spectrum for the provision of complementary ground components of mobile satellite systems;
- Complementary ground components shall constitute an integral part of a mobile satellite system and shall be controlled by the satellite resource and network management mechanism;
- Independent operation of complementary ground components in case of failure of the satellite component of the associated mobile satellite system shall not exceed 18 months;
- Rights of use and authorisations shall be granted for a period of time which will terminate by not later than the expiry of the authorisation of the associated mobile satellite system (eighteen years from May 2009, the date when the selection decision was adopted, resulting in an expiry date of May 2027).

5.2.2 Other licence conditions

The CGC licence to be granted by the MCA will contain the standard licence conditions aimed to, amongst other things, ensure the efficient use of the radio frequency spectrum as well as to limit the exposure of the general public to electromagnetic fields.

In addition all wireless network operators are legally bound to ensure that their networks do not create any undue interference to other networks or services in the same or adjacent frequency bands.

Studies conducted by the ECC concluded that the use of CGCs for aeronautical systems will introduce interference scenarios, and in this respect, through ECC Report 233, the ECC identifies certain technical and operational requirements which are necessary to ensure protection of the services operating in the adjacent bands (i.e. 1920-1980 MHz, 2010-2025 MHz, 2110-2170 MHz, above 2200 MHz) and of the conventional CGCs of MSS systems in the 2 GHz MSS band.

In this respect it is proposed that MSS operators are required to implement those applicable mitigation measures identified in the aforesaid ECC Report in order to ensure coexistence between electronic communications services.

5.2.3 Spectrum Pricing

The frequency spectrum, being a national resource, is owned by Government and administered by the MCA through the National Frequency Plan. The fees for the grant of rights of use of the radio frequency spectrum are therefore established by Government in accordance with national legislation.

The services that are intended to be provided over the MSS-CGC network vary considerably and are not comparable. As stated earlier in this document the services that are intended to be provided by Inmarsat focus on the aeronautical sector, which services will not be competing with services provided by other local operators. On the other hand, the services that are intended to be provided by EchoStar are anticipated to be in direct competition with the services provided by the local operators.

The Government, taking into account the regulatory objectives contained in article 4(2) of the Electronic Communications (Regulation) Act (Chapter 399), considers that the national licensing framework and associated licence fees should be dependent on the type of electronic communication services to be provided over the CGC network to be established in Malta.

Licence fees for Aeronautical CGC services

The provision of pan-European electronic communications services to aircraft over a hybrid MSS-CGC infrastructure operating in the 2 GHz band is not comparable to an existing electronic communications service currently provided in Malta. Therefore the establishment of a service specific licensing regime for the provision of these services would encourage industry to establish the necessary ground components to provide its aeronautical services to aircraft passing through Malta.

The Government, in line with the criteria established in Decision No. 626/2008/EC has taken due cognisance of the consideration that the establishment of a hybrid satellite-terrestrial network for the provision of pan-European commercial satellite services

carries a high up-front investment required for the development of mobile satellite systems with significant technological and financial risks.

In this regard, Government proposes that the spectrum licence fee for the provision of hybrid aeronautical services via CGCs is established at €13,000 annually independent on the number of deployed CGCs.

Fee regime applicable for the provision of service neutral CGC services

The granting of licenses authorising CGCs to provide hybrid satellite-terrestrial mobile services will be in direct competition with the services being provided by the local terrestrial mobile network operators. Taking into account the principles mentioned earlier in this document, Government considers appropriate to benchmark the CGC fees on the spectrum with the fees paid by existing licensees holding rights to use spectrum in bands adjacent to the 2GHz MSS/CGC band, i.e. the 2100 MHz band. These fees are indicated in figure 1 below.

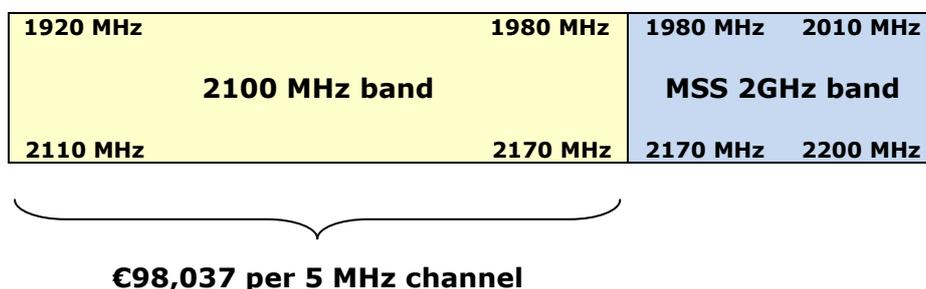


Figure 1: Malta’s ECS spectrum bands adjacent to the CGC band and applicable licence fees

In this regard Government proposes that the annual CGC fees for a service neutral licence shall be established at €98,000 per 5 MHz paired channel.

The Government, in line with the criteria established in Decision No. 626/2008/EC has taken due cognisance that the establishment of a hybrid satellite-terrestrial network for the provision of pan-European commercial satellite services carries a high up-front investment required for the development of mobile satellite systems with significant technological and financial risks.

In this regard in order to ensure that the spectrum allocated for the provision of MSS is used more effectively and at the same time reduce barriers for the provision of service neutral hybrid satellite-terrestrial services, Government proposes to establish a reduced fee for the first five years of the CGC licence term. The licence fees for CGCs used on a service neutral basis are therefore proposed to be as follows:

- Year 1 to Year 5 of licence term: **€33,000 per 5 MHz annually**
- Year 6 till licence expiry date (May 2027): **€98,000 per 5 MHz annually**

5.2.4 Legal Framework

The Government and the MCA intend to establish the licensing framework for CGCs through amendments to the Authorisation of Frequency Use (Provision of 2GHz Mobile Satellite Services) Regulations [S.L.399.44].

The proposed legal instrument amending these Regulations is attached to this consultation document and reflects the proposals described under this section.

6. Consultation Questions

1. Do you have any comments with respect to amending the Authorisation of Frequency Use (Provision of 2GHz Mobile Satellite Services) Regulations to establish the CGC licensing framework?
2. Do you agree with the establishment of different licensing regimes reflecting the type of services being provided in Malta?
3. Do you agree with the inclusion of the interference mitigation measures described in ECC Report 233? If not please provide alternative interference mitigation measures based on technical studies.
4. What are your views on the spectrum fees being proposed by Government?
5. Do you have any comments on the draft legal instrument attached to this consultation document?

The MCA would be pleased to receive comments and proposals on any other aspects that may be deemed relevant for the purposes of this consultation.

7. Consultation Framework

In accordance with its obligations under Article 4A of the Malta Communications Authority Act [Cap. 418 of the Laws of Malta], the MCA welcomes written comments and representations from stakeholders during the consultation period which shall run from the 8th August 2016 to the 23rd September 2016.

For the sake of clarity and ease of understanding, the MCA encourages stakeholders to structure their comments in order and in line with the section numbers and sub-section numbers used throughout this document.

The Authority appreciates that respondents may provide confidential information in their feedback to this consultation document. This information is to be included in a separate annex and should be clearly marked as confidential. Respondents are also requested to state the reasons why the information should be treated as confidential.

For the sake of transparency, the MCA will publish a list of all respondents to this consultation. The MCA will take the necessary steps to protect the confidentiality of all such material in accordance with the MCA's confidentiality guidelines and procedures. Respondents are however encouraged to avoid confidential markings wherever possible.

All responses should be submitted to the MCA in writing by no later than **12.00hrs. CET** on **23 September 2016** and addressed to the:

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Extensions to the consultation deadline will only be permitted in exceptional circumstances and where the MCA deems fit. The MCA reserves the right to grant or refuse any such requests at its discretion. Requests for extensions are to be made in writing within the first ten (10) working days of the consultation period.