GUIDELINES ON SATELLITE NETWORK FILING

1. Introduction

1.1. Satellite orbital slots are valuable and limited resources, which need to be planned and managed for the efficient use of, and also, the avoidance of harmful interference between satellite networks. As such, the International Telecommunication Union ("**ITU**") has set out procedures and provisions in the ITU Radio Regulations ("**RR**") for the registration, co-ordination and operation of satellites.

1.2. The satellite network filing may only be submitted to ITU by an administration of an ITU Member State. IDA represents the Singapore Government in the ITU and acts as the notifying administration for Singapore's satellite network filings under the ITU RR.

1.3. In accordance with the provisions of the ITU RR, only the satellite network filings recorded in the ITU Master International Frequency Register ("**MIFR**") will receive the due regulatory protection from satellite network filings of later date. As part of its filing requirements, the ITU requires information submitted accompanying satellite network filings to indicate a serious and firm intention to establish the satellite networks.

1.4. In view of the above, IDA has adopted specific measures at the national level to take into consideration of ITU's requirements for filed satellite systems with the ITU are including putting in place a set of criteria to assess the filing requests from the satellite operators and also procedures for managing the satellite network filings.

1.5. These Guidelines may be referred to as the "**Satellite Network Filing Guidelines**" and describes the satellite network filing activities carried out by the IDA to achieve efficient and effective use of orbital slots. The procedures for the application of satellite orbital slot licences and information on the relevant fees may be found in the **Guidelines on the Submission of Application for the Grant of Licence for the Use of Satellite Orbital Slot**.

1.6. The provisions in these Guidelines are advisory and they do not impose any binding legal obligations on IDA.

1.7. IDA intends to review both its satellite network filing management policies, *inter alia*, for consistency with the ITU RR requirements (as may be revised

from time to time), as well as its application procedures for the licensing of satellite orbital slots periodically, and welcomes comments from all interested parties. For any comments, queries or clarifications, please contact the following:

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2. Types of Satellite Systems

2.1. Satellite systems may be categorised into two types, namely, geostationary satellite orbit (usually abbreviated as "**GSO**") and non-geostationary satellite orbit ("**non-GSO**").

2.2. The orbital slot occupied by a satellite will determine the coverage area on Earth and the characteristics of the satellite operation. Satellites operating in the GSO, which is at an altitude of approximately 35,800 km in the plane of the equator, have an orbital period equal to the Earth's rotation period (one sidereal day). Thus the satellites appear to be at a fixed position in the sky from ground observers. Communications satellites and weather satellites are often given GSO, so that the antennas on ground that communicate with them do not have to move to track them, but can be pointed permanently at the position in the sky where they stay.

2.3. The non-GSO satellite's position relative to the Earth is not fixed. There are a few types of non-GSO such as Highly Elliptic Orbit ("**HEO**"), Medium Earth Orbit ("**MEO**") and Low Earth Orbit ("**LEO**"). The non-GSO satellite network uses a wide variety of earth stations to support different kinds of services and users.

2.4. GSO satellites have been the exclusive means of providing commercial space-based communications, and the regulatory structure governing satellite communications was designed to fit GSO characteristics. Nonetheless, advances in technology have now made it possible to use non-GSO satellites to fulfil a wide range of mobile-service and fixed service communication needs as well.

3. Satellite Network Filing Procedure

3.1. As the notifying administration, IDA is responsible to ensure that Singapore satellite networks comply with the provisions of the ITU RR. After IDA accepts a filing request and issues a licence to the successful applicant, IDA will proceed to file the satellite network application to the ITU. The general steps[1] involved in bringing a Singapore satellite network into use are as follows:

(a) IDA files the Advanced Publication Information ("**API**") with ITU as provided by the operator;

(b) ITU publishes the API in the Space Radiocommunication Bureau ("**BR**") International Frequency Information Circular ("**IFIC**");

(c) Arising from the ITU's publication of the API in the Space BR IFIC, other administrations may advise the IDA of existing services that they believe may be affected by the published satellite network;

(d) IDA files a Co-ordination Request ("**CR**") filing[2] with ITU;

(e) ITU publishes the CR filing in the Special Section CR/C of the Space BR IFIC;

(f) Arising from the ITU's publication of the CR filing in the Special Section CR/C of the Space BR IFIC, other administrations may advise the IDA of existing services that they believe may be affected by the published satellite network;

(g) In the event that co-ordination is required, IDA will assist[3] the satellite operator to co-ordinate the published satellite network with those existing networks of other Administrations that may be affected by its operation; and

(h) When co-ordination is completed, IDA files a Notification Request with ITU and seeks inclusion of the satellite network in the MIFR.

[1] The steps are for GSO satellite network filings. Some of the steps may not applicable to non-GSO satellite network filings.

[2] The Co-ordination Request filing consists of the technical characteristics of the proposed satellite network submitted in the ITU software format.

[3] The co-ordination will be conducted by the affected operator as it mainly involves the satellite operation arrangement between the operators. The Administrations will normally be involved in the co-ordination only if no agreement could be reached by the operators.

4. Submission of Satellite Network Information

4.1. Application and all related correspondence relating to satellite network filing(s) in planned and non-planned bands shall be submitted by the applicant to IDA in electronic format, where possible, and in accordance with the format required by the ITU Space Service software (http://www.itu.int/en/ITU-R/software/Pages/spacecap.aspx).

5. Types of satellite network filings and its process

5.1. IDA will generally acknowledge receipt of the API data from the applicant within five working days. The data, as specified in the ITU RR Appendix 4, shall be provided to IDA by the applicant in the current ITU software format. IDA will then submit this to ITU BR within fourteen working days of acknowledging receipt from the applicant. The applicant will receive a sent copy of IDA's email submission to the ITU BR.

5.2. IDA will generally acknowledge receipt of the CR data from the applicant within five working days. The data, as specified in the ITU RR Appendix 4, shall be provided to IDA by the applicant in the current ITU software format. IDA will then submit this to ITU BR within fourteen working days of acknowledging receipt from the applicant. The applicant will receive a sent copy of IDA's email submission to the ITU BR.

5.3. IDA will generally acknowledge receipt of the notification data from the applicant within five working days. The data, as specified in the ITU RR Appendix 4, shall be provided to IDA by the applicant in the current ITU software format. IDA will then submit this to ITU BR within fourteen working days of acknowledging receipt from the applicant. The applicant will receive a sent copy of IDA's email submission to the ITU BR.

5.4. IDA will generally acknowledge receipt of the due diligence (resolution 49) data from the applicant within five working days. The data, as specified in the ITU RR Appendix 4, shall be provided to IDA by the applicant in the current ITU software format. IDA will then submit this to ITU BR within fourteen working days of acknowledging receipt from the applicant. The applicant will receive a sent copy of IDA's email submission to the ITU BR.

5.5. IDA will generally acknowledge receipt of the satellite network being brought into use from the applicant within five working days. IDA will then submit this information to ITU BR within fourteen working days of acknowledging receipt

from the applicant. The applicant will receive a sent copy of IDA's email submission to the ITU BR.

5.6. IDA will generally acknowledge receipt of the part A/B or AP30B data from the applicant within five working days. The data, as specified in the ITU RR Appendix 4, shall be provided to IDA by the applicant in the current ITU software format. IDA will then submit this to ITU BR within fourteen working days of acknowledging receipt from the applicant. The applicant will receive a sent copy of IDA email submission to the ITU BR.

5.7. The Space BR IFIC is published fortnightly by the ITU. Administrations are required by the ITU BR to identify issues of potential interference arising from the published networks in accordance with the provisions of ITU RR. IDA, in turn, requires the satellite operator, who is in the best position to assess such potential interference to its existing satellite networks, to provide necessary advices.

5.8. IDA will deem the satellite operator solely responsible to meet all the obligations and interference management requests arising from its filing(s) in accordance with the provisions of ITU RR. These include but are not limited to the following:

(a) The satellite operator shall be responsible for responding to other administrations identified by ITU BR on any potential interferences arising from its planned satellite network;

(b) The satellite operator shall be responsible for examining the Special Sections of Space BR IFIC and informing IDA, through written communications, of the identified issues of potential interference resulting from the published networks in accordance with the provisions of the ITU RR; and

(c) The satellite operator shall be responsible for providing the interference analysis (reference to Article 9, Section II of the ITU RR) and a list of those identified administrations and networks with which co-ordination will be required.

5.9. The satellite operator shall provide all comments or correspondence to IDA within one month of the date of publication of the associated Space BR IFIC. Separately, IDA will generally forward any comments received from ITU and/or other administrations which identify its filings on behalf of the satellite operator as having the potential to cause interference to other satellite

operators within fourteen working days, and the satellite operator must take the comments into considerations and provide any necessary action and respond within IDA's imposed deadline of fourteen working days.

5.10. The satellite operator shall deal directly with identified satellite operators on all technical and operational aspects of the co-ordination of frequency assignments and orbital locations, relating to the appropriate satellite networks in accordance with the ITU RR.

5.11. IDA may attend an operator-to-operator co-ordination meeting at:

(a) its discretion;

(b) the request of the satellite operator; or

(c) the request of another administration.

5.12. IDA will not submit notification data to the ITU BR for the satellite operator unless the co-ordination of the subject application has been completed[4] with affected satellite networks of higher regulatory procedure. The operator shall submit a copy of the completed co-ordination agreements to IDA for reference.

5.13. If the subject application is brought into use without completing the co-ordination with affected satellite networks of higher regulatory procedure and causes harmful interference to these satellite networks, the subject network will need to eliminate that interference in accordance to the provisions of the ITU RR. If it fails to do so, IDA may exercise its powers to withdraw its related filing(s) from ITU.

5.14. The satellite operator must provide IDA with yearly progress report(s) for each satellite network indicating any variations from the previously submitted business plan. Such yearly progress report(s) shall be provided to IDA from the date of submission of the API by the satellite operator until such time as all necessary co-ordination is completed (see footnote 4) and the satellite filing is brought into use; or as deem by IDA.

5.15. The satellite operator must provide IDA with report(s) describing the co-ordination progress every six months or whenever it is requested to. Copies of

[4] If the co-ordination is incomplete, the satellite operator could request IDA, through written communications, to file the Notification Request with ITU base on ITU RR No.11.41. The satellite operator shall provide justification for doing so.

co-ordination arrangements also have to be provided to IDA if the operators require IDA's endorsement of the co-ordination.

5.16. The satellite operator shall be responsible for the accuracy and completeness of all the information required for the satellite network filling(s), to be submitted to IDA.

5.17. The satellite operator shall provide IDA with detailed information on the satellite launch (e.g. launch date, launching operator, launching state, etc) and a confirmation of the frequency assignment(s) intended to be brought into use, six months before the satellite launch.

5.18. For the avoidance of doubt, IDA may request for any other information that it considers necessary for the purposes of facilitating the satellite network filing procedure.