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New Delhi, 20 December 2021

Subject: **Consultation Paper on Licensing Framework for Establishing Satellite Earth Station Gateway – Inmarsat India Comments**
Re: **TRAI Consultation Paper No.6 /2021**

Dear Sirs,

Inmarsat India ("Inmarsat"), at this moment, respectfully submits its comments in the above-referenced proceedings.

Inmarsat recognises the impact of emerging space technologies on the existing regulatory framework applicable to satellite communications and, consequently, the need to discuss changes that could better adapt and accommodate those evolving space environments.

Inmarsat welcomes the initiative to consider establishing a new licensing regime to streamline the authorisation process of ground segment components, particularly earth station gateways. In connection with the ongoing review of the SpaceCom Policy, this action should create the necessary conditions for a dynamic space environment in India prone to timely meeting the Government goals of providing digital connectivity to Indian people with modern telecommunication technologies.

Gateway earth stations ("gateways") are critical elements of the ground segment of both geostationary (GSO) and non-geostationary (NGSO) satellite systems to provide means for Intra satellite beam connectivity and terrestrial network interconnection. There are several situations where the deployment of these gateways become necessary, including where laws and regulations impose the need for the satellite network to have an in-country gateway earth station to give direct access to the satellite data for lawful inspection and other security purposes.

Inmarsat's view is that the proposed gateway earth station licensing category should cover all kinds of gateways and separate them from the service license procedures described in our comments below.

TRAI Consultation Paper No.6 /2021	Inmarsat Comments
Q1. Whether there is a need to have a specific license for establishing satellite Earth Station Gateway in India for the purpose of providing satellite-based resources to service licensees? Do justify your answer.	The Consultation document recognises that technological developments in GSO HTS and NGSO systems (for satellite beam coverage connectivity) may require the installation of several gateway earth stations in the desired coverage area of a country to address the full capacity potential of the designed satellite system architecture and beam handover capability. The licensing procedures should also address other types of gateway earth stations as those used to interconnect to the telecommunication network, including hub stations for VSAT, IoT, MSS-R and GMPCS systems, feeder link earth stations for broadcasting, and those gateways mandated by existing regulations, as the IFMC Policy. As these gateway earth stations are deployed by the satellite system operators or their authorised proxy entities based on design or regulatory requirements to achieve the desired performance, for network interconnection purposes or mandated by existing regulations, there is no need to link their licenses to the regulatory authorisations for the provision of the services.
Q2. If yes, what kind of license/permission should be envisaged for establishing Satellite Earth Station Gateway in India? Do provide details concerning the scope of the license and technical, operational, and financial obligations, including license fee, entry fee, bank guarantees, and NOCC charges, etc.	The establishment by WPC-DoT of a Gateway Earth Station License category is supported. It should cover all kinds of gateways with a fixed location in the Indian territory, including feeder link earth stations for communications and broadcasting systems, hub stations of VSAT, IoT, MSS-R and GMPCS systems, operating with GSO and NGSO satellite systems. It should contain the following characteristics: - Identification of the associated satellite network (e.g., a letter of endorsement by the DoS should state that the satellite network proposed to be used should have been coordinated with INSAT networks and notified as per the ITU procedures.) - Physical data: site location, equipment details (antenna type/size, transmit power, elevation angles) - Technical and operational requirements and data: the gateway earth station should obtain SACFA-DoT clearance (including the use frequencies allocated in the NFAP to the

	corresponding satellite services), obtain certification on technical characteristics established by TEC-DoT; demonstrate having undertaken any frequency coordination with existing and planned space and terrestrial systems enjoying priority rights; have successfully performed NOCC-DoT mandatory performance verification testing - Financial obligations: Fees will cover license (recurrent) and testing (one time)
Q3. Whether such Earth Station license should be made available to the satellite operator, its subsidiary, or any entity having a tie-up with the satellite operator? Do justify your answer.	The Gateway Earth Station licensee could be the satellite system operator (via its Indian local representative legal entity or subsidiary) or another Indian entity, which entered in contract to be responsible for the gateway operation by the satellite system operator. Depending on the gateway type, this flexibility could provide options where different service providers could share the gateway services and facilities. If it is the license holder, it could also give the satellite operator the possibility of providing services directly to the users if it could have also obtained the appropriate service license.
Q4. What mechanism/ framework should be put in place to regulate the access to satellite transponder capacity and satellite-based resources of a Satellite operator/Earth Station licensee by the service licensees so as to get the resources in a time-bound, transparent, fair and non-discriminatory manner?	The service licensees should agree with the satellite network operator to access its satellite-based resources, including the gateway services. In the case of commercial systems, the relevant laws and regulations (e.g., The Competition Act) should be observed concerning the rights and obligations of the parties concerning granting a transparent, fair and non-discriminatory access to the satellite-based resources.
Q5. Whether the Earth Station Licensee should be permitted to install baseband equipment also for providing satellite bandwidth to the service licensees as per need? Provide a detailed response.	Yes, as a function of the applicable agreement passed between the Earth Station Gateway and Service Licensees.
Q6. What amendments will be required to be made in the existing terms and conditions	The Unified License framework needs to be revised entirely in order to remove the references to the service provision licensees needing to deploy a gateway/hub.

of the relevant service authorizations of Unified License, DTH License/Teleport permission to enable the service licensee to connect to the Satellite Earth Station Gateway established by Earth Station Licensee/Service Licensee, for obtaining and using the satellite transponder bandwidth and satellite-based resources? Do justify your answer.	Furthermore, rather than only publishing the amendments to the specific sections of the license, this could be the chance for the overall Unified License to be re-published in totality as a single document to reflect all amendments and revisions made in the last few years.
Q7. Whether the sharing of Earth Station among the licensees (between proposed Earth Station licensee and Service Licensee; and among service licensees) should be permitted? Do provide the details with justification.	Yes. One of the benefits of establishing a separate category for the Gateway Earth Station License is sharing the gateway operational services among the Earth Station licensee and service licensees. The Gateway Earth Station license holder will be accountable for meeting the license requirements vis-à-vis WPC-DoT, informing the regulator of the service contracts that use the concerned gateway earth station services and facilities.
Q8. To whom should the frequency carriers be assigned: the Earth Station Licensee, or the Service Licensee, or whoever establishes the Satellite Earth Station? Do justify your answer.	The WPC-DoT frequency carrier assignment is delivered to the Service Licensee, which is the entity responsible for the spectrum utilization of the satellite network, including the Gateway Earth Station.
Q9. What should be the methodology for the assignment of spectrum for establishing satellite Earth Station? Provide a detailed justification.	Spectrum is allocated to the satellite service in the NFAP. It´s assumed that the Service Licensee, which the Earth Station Gateway is contracted to work with, has been awarded the carrier frequency assignment by WPC-DoT. The assignment of spectrum to the Gateway Earth Station is then associated to the frequency assignment granted to the Service Licensee and is based on the current methodology applied by WPC-DoT, which examines the application and issues the Wireless Operating License (WOL) considering: - Compliance with NFAP, - Satisfaction of the conditions of the Agreement in Principle (AIP) or Decision Letter (DL), including equipment and SACFA clearance

	- Payment of applicable fees The requirement to have obtained in advance a telecom service license should be no longer applicable as it is the matter of the associated Service Licensee.
Q10. What should be the charging mechanism for the spectrum assigned to the satellite Earth Station licensee? Elaborate your answer with justification.	Spectrum charges in the current WPC formula involving the Royalty led to potentially exorbitant fees for High Throughput Satellites (HTS) and new NGSO constellations. Modern HTS can flexibly and efficiently use up to approximately 4 GHz of the spectrum (overall for uplink and downlink). In general, spectrum costs vary from country to country, depending on whether it is for gateway earth stations or user terminals. The general trend is towards a lowering of spectrum fees for satellite services. For example, Australia has recently deliberated on a drastic reduction (factor of 10) of spectrum fees. Similarly, New Zealand has also allowed a more straightforward licensing system for satellite services. As another example, spectrum fees for user terminal operations are generally zero in Europe.
Q11. Give your comments on any related matter that is not covered in this Consultation Paper.	No comments.