New Delhi correspondence:
Viasat, Office B-39, 1st floor, Middle Circle
Connaught Place, New Delhi 110001

Viasat India Private Limited
Module 1 & 2, 5th Floor
Block C, Global Infocity Park
No. 40. MGR Salai, Kandanchavadi
Perungudi, Chennai, India 600 096
www.viasat.com

13 December 2021

Attention: Shri Syed Tausif Abbas
Advisor (Networks, Spectrum and Licensing)
Telecommunications Regulatory Authority of India
New Delhi
Email: advmn@trai.gov.in

Consultation on Licensing Framework for Establishing Satellite Earth Station Gateway

Respected Sir,

Viasat appreciates the opportunity to provide comments on the TRAI's review of the of the licensing framework for establishing satellite earth station gateways in India. Viasat submits these comments to provide input on the questions posed in the consultation paper. Our comments address questions 1) and 2) of the questionnaire.

Background on Viasat

Viasat is a global communications company that believes everyone and everything in the world can be connected. Founded in 1986 and based in Carlsbad, California; with 5800+ employees globally, that includes our engineering solutions team based in Chennai, India. Viasat currently powers hundreds of millions of internet connections annually on land, in the air, and at sea, with reliable networking and advanced cybersecurity. Viasat is recognized for quality satellite broadband solutions, for example, by U.S. News & World Report as one of the top internet service providers (ISPs) in the United States, by Fortune for advancing a commercial connectivity solution that has a measurable social impact, by CNET as the best satellite provider for rural connectivity in the United States, and by Fast Company's World Changing Ideas list for using satellite-connected Wi-Fi hot spots to provide broadband service where wireless infrastructure is too costly to install.

Viasat will start launching our next generation satellite broadband network, known as the ViaSat-3 constellation, next year followed by the ViaSat-4 network. These satellite networks are designed and built to operate across the entire 27.5-31 GHz band, including the critical 27.5-29.5 GHz (28 GHz) band (Earth-to-space) and the 17.7-21.2 GHz band (space-to-Earth). Today, these are the most effective spectrum bands for advanced, cost-effective satellite broadband services. Each of three ViaSat-3 global satellites will provide over one Terabit per second of throughput. ViaSat-4 will materially increase this throughput to 5-7 Terabit per second. Through technical advancements, Viasat has **been able to reduce satellite broadband capacity**

costs by a factor of 400 and increase capacity by a factor of 500, when compared with legacy satellite networks. These advances result in much higher speeds, and more bandwidth, at affordable costs for consumers and government uses in India, on land, in the air, and at sea.

Viasat Comments on the questions posed:

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?

Q2. If yes, what kind of license/permission should be envisaged for establishing Satellite Earth Station Gateway in India?

Viasat provides the following comments to address both these questions.

Viasat strongly recommends that TRAI consider the evolution of ground segment design when refining the regulatory regime for earth station gateways, making sure the **licensing regime is future proof** and flexible enough to allow India to benefit from the latest innovations on advanced satellite and ground segment network design. Authorizing advanced satellite networks designs in India will increase India's ability to develop and deploy innovations for the benefit of Indian users and be a part of the technology evolution that is taking place in satellite broadband connectivity.

Satellite networks, just like terrestrial wireless networks, are evolving towards Cloud- based architectures. A revised licensing regime for earth station gateways in India should consider these developments. By TRAI embracing these technological innovations it will be better placed to be a part of the emergent digital economy, aligning licensing with technological evolution, and allowing India to continue liberalising its space economy to encourage innovation and to attract foreign investment for satellite solutions.

In India, earth station gateways (as found in legacy satellite network designs) have been used as a compliance requirement for national information security, by requiring gateways to be installed within India. However, the evolution of satellite network design towards cloud-based architecture means that physical network components such as gateways are no longer a defining feature for ensuring information security. Cloud and network virtualisation have made physical elements like earth station gateways redundant or meaningless for ensuring information security. Nevertheless, there are advanced information security solutions that address this evolution and provide even better, more resilient, and flexible means for ensuring India's information security needs. It is therefore necessary for TRAI to modernise its licensing regime in accordance with the latest information security approaches that will ensure India's information security will not be reliant on legacy practices set to be made obsolete.

Viasat is already providing information security solutions that solve the issue of earth station gateways becoming redundant and meaningless for national information security given the evolution of network

design towards cloud-based architectures. Viasat is ready to provide TRAI and other relevant authorities the necessary technical means to ensure India's information security approaches for satellite communications can incorporate the advances of cloud-based architecture.

If local licensing requirements in India are defined to rely on physical infrastructure (earth station gateways) for information security, as seen on legacy satellite network designs and without consideration of the technology evolution towards cloud-based designs, keeping with information security evolution and emerging developments will be difficult for India. This would likely result in India being less prepared to take a leading position in the region in terms of information security preparedness. In addition, obsolete local gateway requirements drive up cost and complexity, and hinder investment in the sector and ultimately deployment of services to the citizens of India.

Satellite operators, like Viasat, are evolving beyond traditional gateways designs to modern, cloud-based architectures (like many communications services) that provide greater network flexibility, capacity, and resiliency, while also being able to meet the information security needs of India. As long as a foreign satellite operator can satisfy India's national information security and other requirements through appropriate technical means, satellite operators should be authorized to operate in India. Legacy network components, like large gateways, have evolved to virtual network nodes that provide the same, or better, service for national information security purposes, while creating a more flexible network design and reducing operating costs that can be passed on to consumers in the form of affordable, and higher speed, broadband access.

We look forward to further discussions on these important issues and would be grateful for an opportunity to have your kind audience for a short presentation on Viasat's information security solutions, technology, and capabilities to suit India's information security needs.

Sincerely,

Cristian Gomez
Senior Director
Government & Regulatory APAC

Cc: Mr. Mehul Bhandari, Senior Adviser
Policy & Regulatory, Viasat (India)