

Summary of the TRAI recommendations

Assignment of Spectrum for Satellite-Based Commercial Communication Services

Spectrum Assignment & Validity:

- a. Frequency Bands - TRAI recommended for considering Ku, Ka, and Q/V bands for user and feeder links for NGSO-based FSS (data/internet). For GSO/NGSO-based MSS, L and S bands for user links, and C, Ku, Ka, and Q/V bands for feeder links are recommended, subject to NFAP 2022 alignment.
- b. Assignment Period and policy - Spectrum assignment should be for up to five years, with a potential extension of up to two years by the Government. The recommended terms and conditions, including pricing, should be valid for five years.
- c. Assignment Timeline - Spectrum should be assigned within 30 days of application, provided in-principle satellite network clearance is granted.
- d. Entities should be permitted to surrender spectrum rights with a notice period (30 days to Government/TRAI, 60 days with consumer impact). DoT may charge a reasonable processing fee.

Interference Management & Coordination:

- a. ITU-RR Applicability - Relevant provisions of ITU-RR should apply to all authorized entities. Future ITU framework for NGSO coordination should also be applicable.
- b. Spectrum Sharing - Entities sharing spectrum in higher frequency bands (C, Ku, Ka, Q/V) must coordinate in good faith. The Government may prescribe a spectrum sharing framework in higher bands if needed, binding on all users.
- c. TEC should examine the need for a spectrum sharing framework, potentially including EPFD limits. The Government may prescribe coordination distances between earth station gateways (GSO-NGSO, NGSO-NGSO) operating in the same frequencies, based on a TEC study.
- d. Coexistence with Terrestrial & IMT Services - Article 21 of ITU-RR (sharing above 1 GHz) and ITU-RR provisions/recommendations for satellite-IMT coexistence should apply. In identified IMT bands (e.g., 42.5-43.5 GHz), satellite earth station gateways may be permitted at uninhabited/remote locations on a case-by-case basis, subject to DoT-prescribed exclusion zones.

Gateway Deployment Timeline - Satellite Earth Station Gateways should be installed and commissioned within 12 months of permission.

Spectrum Charges:

- a. AGR-based Charges - Spectrum charges should be a percentage of Adjusted Gross Revenue (AGR) for NGSO-based FSS (data/internet) @ 4% of AGR and

GSO/NGSO-based MSS @ 4% of AGR. GSO-based FSS - Spectrum charges should be 4% of AGR.

- b. Additional Charge for NGSO-based FSS (Urban) - NGSO-based FSS providers should pay an additional annual per-subscriber charge of ₹500 in urban areas (exempting rural/remote areas).
- c. Minimum Spectrum Charges - An Annual Minimum Spectrum Charge of ₹3,500 per MHz is recommended for both GSO/NGSO-based FSS and GSO/NGSO-based MSS.
- d. NGSO-based FSS - Higher of {(4% of AGR + ₹500 x Number of urban subscribers), Annual minimum spectrum charge}.
- e. Payment Terms - Annual spectrum charges are payable quarterly in advance. Minimum charges are payable in advance annually. Per-subscriber charges for NGSO-based FSS are payable quarterly based on the previous quarter's urban subscriber count.

Support for Rural/Remote Areas:

- a. Subsidy for NGSO-based FSS Terminals - The Government may consider providing a subsidy for NGSO-based FSS user terminals in un-served/underserved rural/remote regions.
- b. Subsidy Disbursement - The subsidy can be a lump sum or in installments, potentially through DBT to eligible subscribers or direct payment to service providers via the Digital Bharat Nidhi Fund.