



Consulting Private Limited  
Radiocommunication & Satellite Advisory

Regd. Office: B-4/3059 Vasant Kunj, New Delhi – 110070 Mob: +91 9971571885  
GSTIN: 07AAGCR2315A1ZZ

## **Redbooks' Response to TRAI Consultation Paper on the Framework for Satellite Communication Network Authorisation, and Assignment of Spectrum to Satellite Communication Network Providers**

### **General Views:**

1. The SatCom services are crucial, among others, for coverage of and provision of Broadband in remote & inaccessible areas, which are difficult, or unviable, to be covered through terrestrial cellular applications. Hence, the SatCom services need Policy & regulatory encouragement for their growth, in the overall national interest
2. The Rules & Guidelines should be as simple as possible, for ease of doing business;
3. The Rules & Guidelines should lead to a 'Light Touch Regulations/ Authorisation'. Even the security related compliances & issues should not be cumbersome;
4. The Recommendations (& subsequent Rules & Guidelines) being considered now, and the TRAI Recommendations issued in May 2025 for '**Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services**' (along with reply to DoT Back Reference issued in Dec 2025) should be in sync. to the maximum possible extent – (Question 13 of 'Issues for Consultation' refers);

5. The financial burden and liabilities on the SatCom services should be as low as possible. With their growth, their revenue will grow, and the GST on the increased revenue, will more than make up for any perceived loss in Licence Fee & Spectrum Charges – (Questions 14 and 27 - 32 of 'Issues for Consultation' refer);
6. The Satellite Communication Network (SCN) authorised entity (the main Operator) should have full control on the technical facilities as well as the RF spectrum – whether for Feeder Links or service links;
7. The frequencies for Sat Com network have to be in FDD mode – separate for uplink and downlink – (Question 19 b of 'Issues for Consultation' refers);
8. Also, to control/ mitigate cross-border interference, besides provisions under RR 4.4, the authorised entity/ Operator should be able to stop transmission/ operation of the interference causing elements of the network, in case of any reported interference – (Question 19 d of 'Issues for Consultation' refers);
9. Area of authorization for D2D Service – nationwide or 22 LSAs – the Service Area has to be nationwide, because satellite coverage, especially forthcoming NGSO systems, need to provide nationwide service and can't limit it to any particular LSA or different LSAs (Question 19 e of 'Issues for Consultation' refers).

Yours sincerely



Rajesh Mehrotra

Director

Redbooks Consulting Pvt.Ltd.

Mob: +91 9971571885

Question-wise responses are provided below:

Q. No.	Text	Response
1	<p>What should be the eligibility conditions, area of operation, validity period of authorisation and the scope of the proposed Satellite Communication Network (SCN) authorisation under Section 3(1)(b) of the Telecommunications Act, 2023? Kindly provide a detailed response with justification.</p>	<p><b>The area of operation should be countrywide due to larger coverage of satellite networks and the validity of Authorisation should be ideally 20 years but not less than 10 years (with scope for extension) due to the capital intensive nature of the satellite networks.</b></p> <p><b>Scope of the proposed satellite communication Network authorization should be all voice and data (including internet) services.</b></p> <p><b>In general, this should be a 'Light Touch Regulation' to encourage growth, but allow only serious players.</b></p>
2	<p>What should be the terms and conditions (general, technical, operating, security related etc.) that should be made applicable for the proposed Satellite Communication Network authorisation? Kindly provide a detailed response with justification.</p>	<p><b>While Light Touch Regulation be encouraged for rapid growth of the service, security issues be adequately addressed by the government.</b></p>
3 & 4	<p><b>3.</b> Which type of authorised entities should be permitted to seek Satellite Communication Network as a Service (SCNaaS) from the entities holding the proposed Satellite Communication Network authorisation? Whether virtual network operators (VNOs) should also be permitted to seek SCNaaS? Kindly provide a detailed response with justification.</p>	<p><b>Overall responsibility and control (including spectrum) for the network and service provision should be with the SCN Authorised Entity/ operator. However, SCNaaS entities be allowed to assist the SCN operator for provision of service in various areas. A suitable service agreement should also be there between the two.</b></p> <p><b>SCN operator should have the flexibility to choose SCNaaS entities and 'Terms and Conditions' of their agreement.</b></p>

	<p>4. Whether the SCN authorised entity establishing, operating, maintaining, or expanding the baseband system alongwith SCN should be mandated to extend control, visibility, resource allocation and management of the telecommunication services, being provisioned using SCN to users, to the partnering entity on mutually agreed terms and conditions? Please provide a detailed response with justification.</p>	
<p>5</p>	<p>What provisions should be included in the terms and conditions of Satellite Communication Network (SCN) authorisation considering the policy/ Act in the Space sector? Kindly provide a detailed response with justification.</p>	<p><b>Security &amp; O&amp;M Controls:</b>  <b>India-based NOC should be mandatory and critical control functions should be retained in India; only restricted remote access should be allowed with monitoring. Gateway should be located in India.</b>  <b>Overall regulation should be ‘Light Touch’ but essential aspects of Telecom Act &amp; Policy, as well as Space Policy and INSPACe Guidelines should be included.</b>  <b>Suitable Enforcement and graded penalties (for violations) are recommended.</b></p>
<p>6</p>	<p>Whether there is any need for mandating a reference agreement between the entities holding the proposed Satellite Communication Network authorisation and the authorised entities providing telecommunication service? If yes, what should be the salient features of the reference agreement between such entities? Kindly provide a detailed response with justification.</p>	<p><b>A broad reference Agreement which allows the SCN operator some flexibility, is recommended. Market Forces should be allowed to play their role effectively.</b></p>
<p>7</p>	<p>With respect to the interconnection with the proposed Satellite Communication Network Authorised Entities, whether there are any other issues in addition to those raised in TRAI’s consultation paper on ‘Review of existing TRAI Regulations on Interconnection matters’ dated 10.11.2025, which require to be addressed in</p>	<p><b>The review of existing regulations on interconnection matters (TRAI Consultation Paper of 10 Nov 25 refers) should take into account SCN networks and entities, also. These Regulations should allow adequate flexibility to Operators to work out interconnection details, taking into account various Market Forces, but without any discrimination.</b></p>

	this consultation process? Please provide a detailed response with justification.	
8	Any other inputs or suggestions relevant to the proposed Satellite Communication Network authorisation may kindly provided with detailed justification.	-
9	Which of the following services should be permitted to be provided by using the SCNs established by the proposed SCN authorised entities: (a) Fixed Satellite Service (FSS); (b) Mobile Satellite Service (MSS); (c) Direct-to-Device (D2D) Service via satellite by using MSS spectrum; (d) Direct-to-Device (D2D) Service via satellite by using IMT spectrum? Kindly provide a detailed response with justification.	<b>In line with the response given for Question No. 1, the SCN Authorised Entity/ operator should be authorized to provide all satellite-based Voice &amp; Data services - FSS, MSS, D2D (using MSS Spectrum), and/ or D2D (using IMT Spectrum), etc.</b>  <b>There should be flexibility provided to the SCN Authorised Entity/ operator to choose the services he wishes to provide, as per the permitted use of assigned Spectrum.</b>
10	Whether D2D Service via satellite by using IMT spectrum should be permitted at this stage itself, or should this matter be examined after considering the outcome of WRC-2027? Kindly provide a detailed response with justification.	<b>At this stage, use of IMT spectrum for D2D service may be considered as a pilot project to check its feasibility and identify various challenges. There are many pros and cons associated with the use of IMT spectrum for D2D service. It is recommended that any commercial service for IMT D2D in India should be allowed only after the WRC-27 decisions.</b>
11	From the perspective of holding spectrum for the feeder link and the user link on SCNs, which of the following combinations should be permitted at the SCNs established by the proposed SCN authorised entities:	<b>As stated earlier (in response to questions 3 &amp; 4) the overall responsibility and control (including spectrum) for the network and service provision should be with the SCN operator/authorized entity.</b>  <b>The Partnering entities will be assisting the SCN authorized entities in marketing and access to end users, while the complete responsibility and control for all spectrum use for satellite based services should be with the SCN authorized entity.</b>

	<table border="1"> <thead> <tr> <th>Combination No.</th> <th>Spectrum for the feeder link held by -</th> <th>Spectrum for the user link held by -</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SCN authorised entity</td> <td>SCN authorised entity</td> </tr> <tr> <td>2</td> <td>SCN authorised entity</td> <td>Partnering entity (service provider)</td> </tr> <tr> <td>3</td> <td>Partnering entity (service provider)</td> <td>SCN authorised entity</td> </tr> <tr> <td>4</td> <td>Partnering entity (service provider)</td> <td>Partnering entity (service provider)</td> </tr> </tbody> </table> <p>Kindly provide a detailed response with justification.</p>	Combination No.	Spectrum for the feeder link held by -	Spectrum for the user link held by -	1	SCN authorised entity	SCN authorised entity	2	SCN authorised entity	Partnering entity (service provider)	3	Partnering entity (service provider)	SCN authorised entity	4	Partnering entity (service provider)	Partnering entity (service provider)	<p>Hence combination at S. No.1 only, appears practical for MSS cases.</p> <p>However, in case of D2D using IMT Spectrum, the User Link spectrum is with the Mobile Network Operator(s), while Feeder Link spectrum is with the SCN Operator. Hence, combination at S. No. 2 appears practical in that case.</p>
Combination No.	Spectrum for the feeder link held by -	Spectrum for the user link held by -															
1	SCN authorised entity	SCN authorised entity															
2	SCN authorised entity	Partnering entity (service provider)															
3	Partnering entity (service provider)	SCN authorised entity															
4	Partnering entity (service provider)	Partnering entity (service provider)															
12	<p>Which of the following types of spectrum should be assigned to the proposed SCN authorised entities:</p> <p>(a) Spectrum in the frequency bands allocated for FSS</p> <p>(b) Spectrum in the frequency bands allocated for MSS</p> <p>(c) Any other?</p> <p>Kindly provide a detailed response with justification.</p>	<p><b>The overall responsibility and control of the assigned spectrum (assigned by the government) to be used for FSS (for feeder links and other uses), for MSS (for user links besides use of IMT spectrum) and the use of BSS (for TV broadcasting and distribution, video streaming, etc.), rests with the SCN Authorized entity, after this entity has been assigned the spectrum by the Indian administration.</b></p>															
13 a) & b) C) & d)	<p>What should be the broad policy and regulatory framework for the assignment of FSS spectrum and/ or MSS spectrum to the proposed SCN authorised entities? Specifically, -</p> <p>(a) NGSO-based FSS and GSO/ NGSO-based MSS: Whether in respect of NGSO-based FSS and GSO/ NGSO-based MSS, TRAI's recommendations dated 09.05.2025 on 'Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services' to DoT (read with the TRAI's response dated 08.12.2025 to DoT's back-reference dated 12.11.2025) should be made applicable to SCN authorised entities with necessary</p>	<p><b>Various issues related with assignment of spectrum for any satellite based commercial communication service are similar to what have already been examined in 2025 in connection with the terms and conditions for the assignment of spectrum for certain satellite based commercial communication services.</b></p> <p><b>Hence, the TRAI recommendations dated 9<sup>th</sup> May 2025 and TRAI response dated 8 Dec. 2025 to DoT's back-reference in this regard, can be applied to SCN authorised entities/operators, with some modifications, if necessary.</b></p> <p><b>The 'Terms &amp; Conditions' for spectrum assignment for various satellite based services and applications should generally be same</b></p>															

	<p>(b) modifications? If yes, what modifications would be required in the terms and conditions for the assignment of spectrum for NGSO-based FSS and GSO/ NGSO-based MSS? If no, what should be the terms and conditions for this purpose?</p> <p>(c) GSO-based FSS: Whether the terms and conditions for the assignment of spectrum to SCN authorised entities for GSO based FSS should be analogous to those recommended by TRAI for NGSO-based FSS and GSO/ NGSO-based MSS through its recommendations on 'Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services' dated 09.05.2025 (read with the TRAI's response dated 08.12.2025 to DoT's back-reference dated 12.11.2025) with necessary modifications? If yes, what modifications would be required for GSO-based FSS? If no, what should be the terms and conditions for this purpose?</p> <p>Kindly provide a detailed response with justification.</p>	
<p><b>14 &amp; 15</b></p>	<p><b>14.</b> What should be the eligibility conditions for seeking administrative assignment of FSS spectrum and/or MSS spectrum by the proposed SCN authorised entities? Kindly provide a detailed response with justification.</p> <p><b>15.</b> Whether there are any other inputs or suggestions relevant to the assignment of FSS spectrum and/ or MSS spectrum to the entities holding the proposed SCN authorisation? Kindly provide a detailed response with justification.</p>	<p><b>The Telecom Act provides for Administrative Assignment of spectrum for satellite based services &amp; applications.</b></p> <p><b>As a part of the eligibility conditions, 'Light Touch Regulation' is recommended to encourage growth of these services,.</b></p>
<p><b>16</b></p>	<p>In case it is decided to permit the proposed SCN authorised entity to utilize the FSS spectrum and/ or MSS spectrum assigned to a service</p>	<p><b>Please see our response to question No. 11 above where we have stated that</b></p>

	<p>authorised entity (“partnering entity”) for the purpose of providing SCNaaS to the partnering entity – whether there is a need to establish a policy and regulatory framework for enabling the SCN authorised entity to enter into an agreement/ arrangement with the partnering entity to utilize FSS spectrum and/ or MSS spectrum assigned to such partnering entity for the purpose of providing SCNaaS to the partnering entity?</p> <p>(i) If yes, what should be the terms and conditions under such a framework?  (ii) If no, in what manner such agreements/ arrangements should be enabled and regulated? Kindly provide a detailed response with justification.</p>	<p><b>the overall responsibility and control (including spectrum) for the network and service provision should be with the SCN operator/authorized entity.</b></p> <p><b>However, in future, if multiple SCN operators/authorized entities are allowed shared use of their assigned spectrum, Terms and Conditions similar to what were specified for sharing of spectrum among Cellular/ IMT service operators, may be considered.</b></p>
17	<p>Whether there are any other inputs or suggestions relevant to the agreement/ arrangement between the proposed SCN authorised entities and service authorised entities (“partnering entities”) to utilize the FSS spectrum and/ or MSS spectrum assigned to such partnering entities? Kindly provide a detailed response with justification.</p>	<p><b>The agreement/arrangement between the SCN authorized entities and their partnering entities should be left to the market forces.</b></p> <p><b>Nevertheless, we wish to reiterate that the overall responsibility and control for the spectrum use be with the SCN authorized entity/operator.</b></p>
18	<p>In case it is decided to permit D2D service via satellite by using the spectrum in the frequency bands allocated for MSS such as L-band and S-band, whether there is a need to establish a policy and regulatory framework for enabling and regulating such a service? If yes, kindly suggest a broad framework for this purpose and the key terms and conditions to be included under such a framework? Kindly provide a detailed response with justification.</p>	<p><b>There is no need for a separate regulation since the MSS frequency assignments have already been coordinated at international level, as per ITU’s Radio Regulations.</b></p> <p><b>At national level, GMPCS Guidelines are adequate in this regard.</b></p>

<p>19</p>	<p>In case with a view to enable D2D service via satellite using IMT spectrum, it is decided to permit the proposed SCN authorised entity to utilize IMT spectrum assigned to a service authorised entity (“partnering entity”) for the purpose of providing SCNaas to the partnering entity, -</p> <p>(a) whether there is a need to establish a policy and regulatory framework for enabling the SCN authorised entity to enter into an agreement/ arrangement with the partnering entity to utilize IMT spectrum assigned to such partnering entity for the purpose of providing SCNaas to the partnering entity? If yes, what should be the terms and conditions under such a framework? If no, in what manner such arrangements should be enabled and regulated?</p> <p>(b) Which frequency bands identified for IMT should be considered for this purpose? Specifically, whether only FDD-based frequency bands should be considered?</p> <p>(c) For the frequency bands identified for IMT where D2D is decided to be permitted, whether the National Frequency Allocation Plan (NFAP) should be modified to include MSS on a secondary basis? If yes, kindly furnish your suggestion for the proposed modification(s).</p> <p>(d) To mitigate the issues related to cross-border interference, whether any other condition in addition to Article 4.4 of the ITU-Radio Regulations is required to be made applicable?</p> <p>(e) What regulatory framework should be established for ensuring interference-free operation of D2D service via satellite by using</p>	<p><b>(a) The agreement/arrangement between the SCN authorized entities and the IMT authorized entities should be left to the market forces, while taking care of conditions specified for use of such spectrum.</b></p> <p><b>(b) Frequency bands identified for IMT should only be considered for pilot projects to check the practicality of use. For SCN use, only FDD is practical &amp; recommended.</b></p> <p><b>(c) Suitable NFAP revision shall include the relevant stipulation for use of spectrum for D2D service as per the ITU’s Radio Regulated as revised by WRC-27.</b></p> <p><b>(d) Besides RR 4.4 and its Rules of Procedure (RoP), specific directives to Operators to switch off the service, if required, as per our international obligations under RR.</b></p>
-----------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<p>IMT spectrum within the country? Specifically, which of the following methods should be followed:</p> <p>(i) The SCNs established by SCN authorised entities should be permitted to be used to provide D2D service via satellite by using IMT spectrum only if a single partnering entity (access service provider) holds the relevant IMT frequency channel in all the 22 LSAs of the country and agrees to permit the usage of its IMT frequency channel by the SCN authorised entity at its SCN for the purpose of providing SCNaaS; or</p> <p>(ii) The SCNs established by SCN authorised entities should be permitted to be used to provide D2D service via satellite by using IMT spectrum if one or more access service providers – together holding the assignment of the relevant IMT frequency channel across all 22 licensed service areas of the country – agree to allow the usage of their IMT frequency channel by the SCN authorised entity at its SCN for the purpose of providing SCNaaS; or (iii) Any other method? Kindly provide a detailed response with justification.</p>	<p>(i) <b>Yes, it has to be a country-wide assignment of the same IMT channel (FDD mode) in all the 22 LSAs for D2D service. Hence, this alternative is preferable, if feasible.</b></p> <p>(ii) <b>For the use of any assigned IMT freq. channel (FDD mode) for D2D service, if it has been assigned to multiple operators, for country-wide coverage, all concerned operators should agree to the use of that IMT channel for its use for D2D service.</b></p>
20	<p>Whether there are any other inputs or suggestions with respect to the delivery of D2D services via satellite through SCNs established by the proposed SCN authorised entities? Kindly provide a detailed response with justification.</p>	<p><b>The aspects concerning the delivery of D2D services have been suitably covered in our response to Question No.19.</b></p>
21	<p>Any other inputs or suggestions related to the use of spectrum on SCNs established by the proposed SCN authorised entities may be submitted with proper explanation and justification.</p>	<p><b>Pending the decisions of the WRC-27 (AI 1.13) relating to the identification of spectrum for MSS for D2D service, this service may operate only on an experimental / trial basis as a pilot project (See also, our response to Question No.10).</b></p>

		<b>After WRC-27, the regular service can operate in accordance with the decisions of the conference.</b>
22 – 26	<b><i>Regulation of Charges to be shared between SCN Operator and partnering entities (See TRAI CP for details)</i></b>	<b>The charges to be shared between different entities and SLA parameters should be left to the Market Forces. Regarding spectrum utilization, it should be under the overall Control / responsibility of the SCN authorized entity/operator.</b>
27	<b><i>GR, ApGR &amp; AGR for SCN</i></b>	<b>The definitions of GR, ApGR and AGR should be simple and unambiguous</b>
28 - 33	<b><i>Spectrum Charges to be paid by SCN Authorised Entities &amp; SCNaas entities</i></b>	<b>The spectrum charges to be paid as a revenue share, should be around 1% of the AGR, the same can be reviewed after 5 or 10 years, after the services have grown reasonably.</b>
34	<b><i>Payment Terms for Spectrum Charges</i></b>	<b>The payment terms should not be too burdensome or restrictive</b>
35	In case Minimum Spectrum Charges are to be applicable for SCN authorised entities, what should be the payment terms for the minimum spectrum charges for SCN authorised entities? Please provide your response with detailed justification.	<b>A reasonable minimum spectrum charge can be specified to be paid by SCN authorized entities. However, this charge should be very low. Even the spectrum usage charges should be low and linked to the expenses of the spectrum management organisation (WPC/WMO).</b>
36	What should be the minimum equity and minimum networth requirements for a Satellite Communication Network (SCN) authorised entity? Please provide detailed justification in support of your response.	<b>A ball park figure of 25-30 Crore (250-300 million) Rupees is recommended.</b>
37 - 39	<b>37. What should be the entry fee for proposed Satellite Communication Network (SCN)authorisation? Please provide detailed justification in support of your response.</b>	

	<p><b>38.</b> What should be the rate of Authorisation Fee for a Satellite Communication Network (SCN) authorised entity? Please provide detailed justification in support of your response.</p> <p><b>39.</b> Should a Minimum Authorisation Fee be applicable for the proposed SCN Authorisation? If yes, what should be the Minimum Authorisation Fee be for the proposed SCN Authorisation? Please provide detailed justification in support of your response.</p>	<p><b>It is recommended that the entry fee should be low and the authorization fee should also be a small fraction of 1% of the AGR to encourage growth of SCN services.</b></p> <p><b>The minimum Authorisation Fee should also be low, to encourage growth of SatCom services</b></p>
<p><b>40 &amp; 41</b></p>	<p><b>40.</b> What should be the appropriate payment terms &amp; conditions for Authorisation Fees? Please provide detailed justification in support of your response.</p> <p><b>41.</b> What should be the terms and conditions for Bank Guarantees, including both Performance Bank Guarantee (PBG) and Financial Bank Guarantee (FBG), for SCN authorised entities? Please provide detailed justification in support of your response.</p>	<p><b>Payment terms and conditions for Authorisation Fee, including various Bank Guarantees, should be easy and not burdensome.</b></p>
<p><b>42</b></p>	<p>What should be the application processing fee for Satellite Communication Network (SCN) authorised entity? Please provide detailed justification in support of your response.</p>	<p><b>A ball park figure of approx. INR 10,000, is recommended</b></p>
<p><b>43</b></p>	<p>Apart from the financial provisions discussed earlier, are there any other financial terms and conditions that should be made applicable for the proposed Satellite Communication Network authorisation? Kindly provide a detailed response with justifications.</p>	<p><b>Various Policies &amp; Guidelines for SatCom services should provide for ‘Light Touch Regulation’, to encourage growth of SatCom services. These can be reviewed, if necessary, say after 10 years, when these services have grown reasonably so that the Operators can reduce the tariffs close to average global tariffs, and affordable levels from Indian economy point of view.</b></p>

