

AGREEMENT

For

**O&M of Submarine OFC Network between
Mainland (Chennai) and Andaman & Nicobar Islands (CANI) Project under
Comprehensive Telecom Development Plan (CTDP)**

AMONGST

Universal Service Obligation Fund, Department of Telecommunications, Government of India

And

Bharat Sanchar Nigam Limited

And

UT Administration of Andaman & Nicobar Islands

Agreement No. 30-174-7/2015-USOF-BB (Vol. IX), Dated 13th November, 2020

Total Pages: 45

Government of India

Ministry of Communications

Department of Telecommunications

Universal Service Obligation Fund (USOF)

Sanchar Bhawan, 20, Ashoka Road, New Delhi - 110001, India

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SECTION-I

No. 30-174-7/2015-USOF-BB (Vol. IX)
Government of India
Department of Telecommunications
Office of the Administrator USO Fund
20, Ashoka Road, Sanchar Bhawan, New Delhi - 110 001

AGREEMENT Between

(i) Universal Service Obligation Fund (USOF), Department of Telecommunications (DoT), Government of India	
(ii) Bharat Sanchar Nigam Limited (BSNL)	(iii) UT Administration of Andaman & Nicobar Islands

The Agreement is made and entered into on the 13th the day of November 2020

AMONGST

The President of India, acting through the Administrator, Universal Service Obligation Fund (USOF), Department of Telecommunications (DoT) (hereinafter referred to as "Government of India") who for the purpose of this Agreement is being represented by Sh. Vilas Burde, Director USOF, DoT under the administrative control of Ministry of Communications having its office at Sanchar Bhawan, Ashoka Road, Delhi - 110001 (hereinafter referred to as "USOF, DoT" which expression shall, unless repugnant to the context or meaning thereof, include its Administrators, successors and assigns) of the **First Party**:

AND

Bharat Sanchar Nigam Limited, a company registered under the Companies Act 1956, having its registered office at Bharat Sanchar Bhawan, H.C. Mathur Lane, New Delhi - 110001, acting through Sh. Vineet Saxena, PGM (ILD & SP), Bharat Sanchar Nigam Limited, the Authorized Signatory (hereinafter called BSNL which expression shall, unless repugnant to the context or meaning thereof, shall include its successors, administrators or permitted assignees) of the **Second Party**:

AND

UT Administration of Andaman & Nicobar Islands, acting through Sh. Vijay Kumar, Pr. Secretary, Finance, Administration of A&N Islands, the authorized signatory (hereinafter called the UT / MHA which expression shall, unless repugnant to the context, include its authorised signatory, successors and assigns) of the **Third Party**.

Whereas, the Government of India has approved on 21.09.2016 Provision of Submarine Optical Fibre Cable (OFC) connectivity between Mainland India (Chennai) and Port Blair & seven other Islands viz. Little Andaman, Car Nicobar, Kamorta, Great Nicobar, Swaraj Dweep, Long and Rangat Islands.

Whereas, the Government of India has decided that Capital Expenditure (CAPEX) for the project to be met from Universal Service Obligation Fund (USOF).

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Whereas, the net Annual Operational Expenditure (OPEX) i.e. OPEX minus Revenue, as per actual in the form of viability gap funding to be provided by UT Administration of Andaman & Nicobar Islands for initial period of Five years. Subsequently a call may be taken to fund it further based on the revenue and cash flow by taking into consideration the viability gap funding.

Whereas, in pursuance of above, USOF/DoT entered into an Agreement No. 30-174-1/2014-BB-USOF dated 12.7.2018 with BSNL for Provision of Submarine Optical Fiber Cable (OFC) connectivity between Mainland (Chennai) and A&N Islands.

Whereas in this Agreement dated 12.7.2018, BSNL agreed to undertake the work of Project Execution Agency (PEA) for the implementation of the project including the operation and maintenance of the project for 5 years after its commissioning which includes warranty period.

Whereas the CANI project is a national asset with non-discriminatory access to the bandwidth in this project which will be provided to eligible TSPs, ISPs, etc.

Whereas now the CANI project has been commissioned and the introductory tariff has been finalised, requiring an appropriate arrangement for operation and maintenance of the created network and the provision of services to the customers, on non-discriminatory basis.

(1) NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

- (2) This Agreement will remain valid for FIVE years from the date of commissioning of the CANI project unless revoked earlier for any reason whatsoever. The conditions pertaining to operations and maintenance of the CANI project mentioned in the Agreement dated 12.7.2018 will continue to apply fully to the CANI project unless specifically curtailed or deleted under this Agreement.
- (3) BSNL hereby agrees and unequivocally undertakes to fully comply with all terms and conditions stipulated in this Agreement and the existing Agreement dated 12.7.2018 without any deviation or reservation of any kind.

In consideration of the mutual covenants set out in this Agreement, the parties hereby agree as follows:

1.1 This Agreement is divided into seven Sections. Apart from the present Section-I, other Sections are as under:

- I. Preamble (this Section)
- II. Definitions
- III. Scope & General Conditions
- IV. Operation & Maintenance Conditions
- V. Commercial Conditions
- VI. Financial Conditions
- VII. Technical Specifications of Equipment etc.

All the Sections and Annexure together form the Agreement.

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- 1.2 **No Partnership** - Nothing in this Agreement shall be construed to constitute a partnership or agency between the Parties and BSNL shall not make any assurance, promise or covenant nor shall hold itself out as competent to do so, on behalf of the Administrator / UT Administration of A & N Islands nor shall pledge the credit of the Administrator / UT Administration of A & N Islands for any transaction in relation to this Agreement.
- 1.3 **No Employment** - Nothing in this Agreement shall constitute an offer or assurance of employment of any nature whatsoever to BSNL or any person employed by or under him for this Agreement.
- 1.4 **Indemnify the Administrator / UT Administration of A & N Islands** - BSNL shall indemnify and at all times keep the Administrator / UT Administration of A & N Islands indemnified and harmless against any direct loss to it or any claims by any third person, for any personal injury to anybody or loss to property, movable or immovable, caused by or attributable to any act or omission of BSNL or any of its officer, employee, agent or professional etc. while performing or purporting to perform this Agreement.
- 1.5 **Waiver** - Neither the failure of any Party to insist on any occasion upon the performance of the provisions of this Agreement nor time or other indulgence granted by a Party to the other Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right there under. Waiver by any Party of any default by the other Party in the observance or performance of any provision of this Agreement shall not operate or be construed as a waiver of any other or subsequent default or of other provisions of or obligations under this Agreement nor shall affect the validity or enforceability of this Agreement in any manner.
- 1.6 **Severability of Terms** - If for any reason whatsoever, any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner.

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SECTION-II
DEFINITIONS

Interpretation of Terms/ Definitions

Unless the context otherwise requires, the different terms and expressions used shall have the meaning assigned to them in the following paragraphs:

- **ADMINISTRATOR** means the Administrator, Universal Service Obligation Fund in the Department of Telecommunications under Ministry of Communications.
- **UT Administration of A&N** means the Union Territory Administration of Andaman & Nicobar Islands, Port Blair represented by its authorised signatories.
- **CANI Submarine Project** shall mean Chennai to A&N Islands (CANI) network connecting all the nodes i.e. Mainland India (Chennai) and Port Blair & seven other Islands of A&N viz. Little Andaman, Car Nicobar, Swaraj Dweep, Kamorta, Great Nicobar, Long and Rangat Islands with a dedicated submarine optical fibre cable on appropriate bandwidth and telecom connectivity.
- **AGREEMENT** shall mean the tripartite Agreement signed by BSNL with the Administrator USOF and UT Administration of A&N Islands related to O & M of the CANI Submarine OFC Transport Network and associated infrastructure for effective provisioning of direct communication link through a dedicated submarine optical fibre cable (OFC) between Mainland India (Chennai) and Port Blair & seven other Islands viz. Little Andaman, Car Nicobar, Swaraj Dweep, Kamorta, Great Nicobar, Long and Rangat Island with appropriate bandwidth and telecom connectivity to be executed by BSNL.
- **DESIGNATED MONITORING AGENCY** refers to the agency authorized by the Administrator to settle claims and disburse fund and to carry out inspection of the records, systems, claims and installations including physical verification in order to ensure compliance with terms and conditions of the Agreement.
- **EFFECTIVE DATE** is the date on which this Agreement comes into effect.
- **LICENSE** means a License granted or having effect as if granted under Section 4 of the Indian Telegraph Act 1885 and Indian Wireless Act 1933.
- **SERVICE AREA** means the territorial jurisdiction as specified under the Basic Service Licence except the areas that may be notified to be excluded from time to time.
- **TRAI** means Telecom Regulatory Authority of India constituted under the TRAI Act, 1997 as amended from time to time.
- **USO** means Universal Service Obligation as enunciated in Indian Telegraph Act and the Rule framed there under.
- **USO FUND** means the fund established under Indian Telegraph (Amendment) Act, 2003, Indian Telegraph (Amendment) Act, 2006 and Rules framed there under.
- **Pr. CCA** means Principal Controller of Communications Account which is defined as Designated Monitoring Agency under this Agreement.
- **DoT** means Department of Telecommunications.

- 3.2.2 O&M for Dry Plant which includes all of the below:
- a. Terrestrial cable upto BMH
 - b. Equipment like SLTE / OIE / PFE/ NMS / EMS /NOC, etc. at all locations
 - c. Responsible for the maintenance of Civil & Electrical infrastructure items including buildings at all CLS locations.
 - d. Defining & carrying out the NOC procedures for equipment monitoring, fault restoration etc.
- 3.2.3 Provisioning of submarine CANI bandwidth to all TSPs/ISPs at the instructions of USOF / DOT from time to time and defining Service Level Agreements with TSPs/ISPs.
- 3.2.4 Provision of a Complaint redressal mechanism to other clients.
- 3.2.5 BSNL shall provide Technical Manpower support for day to day maintenance and other related activities in all CLS locations. Please see clause 3.1.7 for more details.
- 3.2.6 Any other related activities regarding the above.

3.3 Duration of the Agreement:

This Agreement will remain valid initially for a period of **FIVE YEARS** from the effective date of commissioning of system, during which period Net OPEX (OPEX minus Revenue), as per actual in the form of viability gap funding to be provided by UT Administration of Andaman & Nicobar Islands.

3.4 Extension of Agreement

The Agreement may be extended, if deemed expedient, the validity of Agreement for such period and on such terms as may be mutually agreed by the three parties.

3.5 Modifications in the Terms and Conditions of Agreement

The Administrator/ UT Administration reserves the right to modify at any time the terms and conditions of the Agreement, in consultation with BSNL, if in the opinion, it is necessary or expedient to do so in public interest or in the interest of the security of the State or for the proper conduct of the service.

3.6 Maintenance of Separate Account & Furnishing of Information:

BSNL shall furnish to the Administrator or DMA, on demand, such documents, accounts, estimates return, reports or other information as may be called for by the Administrator/DMA pertaining to the O&M expenses and reconciliation of revenue from leasing of bandwidth of submarine cable laid between Chennai to ANI Islands.

3.7 Suspensions, Revocation or Termination of Agreement

3.7.1 The Administrator may, in consultation with UT Administration, without prejudice to any other remedy available for the breach of any conditions of Agreement, by a written notice of 90 calendar days issued to BSNL at its registered office, terminate the Agreement under any of the following circumstances:

- a. Failure to perform any obligation(s) under the Agreement;
- b. Failing to rectify, within the time prescribed, any defect as may be pointed out by the Administrator/UT Administration.

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- 3.7.2 The Agreement shall stand terminated forthwith in case BSNL goes into liquidation or is ordered to be wound up.
- 3.7.3 Wherever considered appropriate, Administrator may conduct an inquiry to determine whether there has been any breach in compliance of the terms and conditions of the Agreement by BSNL and upon such inquiry, BSNL shall extend all reasonable facilities and shall endeavour to remove the hindrance of every type.
- 3.7.4 It shall be the responsibility of BSNL to maintain the Quality of Service as per conditions of the Agreement during the period of notice for termination of Agreement.
- 3.7.5 If it is found that BSNL had received any payment in excess of the amounts under the Agreement prior to termination, then such amount shall be paid back by BSNL immediately on demand. Due from BSNL under this Agreement, without prejudice to any other mode of recovery, may be recovered.

3.8 Disputes Settlement

- a. Except otherwise provided in this Agreement in the event of any question or interpretation of any clause, dispute or difference or to any other claim, right, matter or thing whatsoever in any way arising out or relating to this Agreement whether arose during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be settled by the parties amicably through negotiation within a period of 30 days of the notice by other party, failing which, the dispute shall be referred to the sole arbitrator appointed by the Secretary, Department of Telecommunications, Government of India. The arbitration shall be conducted in accordance with the provisions of the Arbitration & Conciliation Act, 1996 or any statutory modification of re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings. The arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and shall give reasons for the award. The fee payable to arbitrator shall be paid equally by the parties.
- b. Notwithstanding any dispute or claim of the pendency of any arbitration or other proceedings, BSNL shall continue to provide the service for the whole duration of the Agreement.

3.9 Force-Majeure

- 3.9.1 If at any time, during the continuance of the Agreement, the performance in whole or in part, by either party, of any obligation under this is prevented or delayed, by reason of war, or hostility, acts of the public enemy, terrorism, civic commotion, sabotage, Act of State or direction from Statutory Authority, explosion, epidemic, quarantine restriction, strikes and lockouts (not limited to the establishments or facilities of BSNL), fire, floods, natural calamities or any act of GOD (hereinafter referred to as EVENT), provided notice of happenings of any such EVENT is given by the affected party to the other, within 10 Calendar days from the date of occurrence thereof, neither party shall, by reason of such event, be entitled to terminate the Agreement, nor shall either party have any such claims for damages against the other, in respect of such non-performance or delay in performance. Provided SERVICE under the Agreement shall be resumed as soon as practicable, after such EVENT comes to an end or ceases to exist.

3.9.2 The decision of the Administrator as to whether the service may be so resumed (and the time frame within which the service may be resumed) or not, shall be final, binding and conclusive.

3.10 Set off Clause

3.10.1 In the event any sum of money or claim becomes recoverable from or payable by BSNL either against the Agreement or otherwise in any manner, such money or claim can be (without restricting any right of set off for counter claim given or employed by law) deducted or adjusted against any amount or sum of money then due or which at any time thereafter may become due to BSNL under this Agreement or any other Agreement or Contract between the Administrator/Department of Telecommunications, Govt. of India/UT Administration of A & N Islands and BSNL.

3.10.2 The aforesaid sum of money payable by BSNL shall include any valuable security, which can be converted into money.

3.11 Other Obligations

3.11.1 BSNL shall be bound by the terms and conditions of the Agreement as well as by such orders/directions/regulations/ guidelines issued by DoT/TRAI from time to time.

3.11.2 Any other instructions issued by the Administrator, USOF, DoT and UT Administration of A & N Islands after consultation with BSNL.

3.11.3 The provisions of the Indian Telegraph Act, 1885 or the Indian Wireless Telegraphy Act, 1933 as amended or replaced, the Rules made and orders passed under these statutes, so far as applicable, shall be binding on BSNL.

3.11.4 BSNL represents and warrants that

- a. It is duly organized and validly incorporated under the laws of India, and has full power and authority to execute and perform its obligations under this Agreement;
- b. It has taken all necessary corporate and other actions under applicable laws to authorize the execution and delivery of this Agreement and to validly exercise its rights and perform its obligations under this Agreement;
- c. It has the financial standing and capacity to undertake and perform the obligations in accordance with this Agreement;
- d. This Agreement constitutes its legally valid and binding obligation, enforceable against it in accordance with the terms hereof, and its obligations under this Agreement will be legally valid, binding and enforceable obligations under it in accordance with the terms hereof;
- e. The execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under, or accelerate performance required by, any of the terms of its memorandum and Articles of Association or any Applicable law or any covenant, contract, Agreement, arrangement, understanding, decree or order to which it is a party or by which it or any of its properties or assets is bound or affected.

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SECTION-IV
OPERATION AND MAINTENANCE CONDITIONS

The terms and conditions of the, NLDO or BSO or CMTS or UASL or UL License Agreement and any future evolution of licenses from time to time, as applicable, shall prevail and shall be binding mutatis mutandis. The same shall also be applicable in case of migration to or award of new license in lieu of the ILD/NLDO/BSO/ CMTS/ UASL/UL license.

4.1 O & M OF CANI NETWORK

- 4.1.1 CANI submarine cable Network comprises of the Submarine OFC transport network created under CANI project which includes submarine OFC network connecting Chennai with eight Islands of A&N viz. Port Blair, Little Andaman, Car Nicobar, Swaraj Dweep, Kamorta, Great Nicobar, Long and Rangat Islands with equipment like SLTE / OIE / PFE/ NMS / EMS / NOC etc. and OFC connectivity of nodes. At the start this network shall have a bandwidth of 200 Gbps out of which 100 Gbps shall be equipped. [i.e. two lambdas @ 100 Gbps each per fiber pair] between Chennai and Port Blair and 100 Gbps i.e. one lambda @ 100 Gbps per fiber pair for all other segments. A sample format is given at Appendix-I.
- 4.1.2 BSNL shall be fully responsible for maintenance of all Network Elements created under the CANI Project. During the O & M, BSNL shall undertake the following services.
- i. Operation of the equipment.
 - ii. Provision of Bandwidth to TSP/ ISPs etc.
 - iii. Planned and unplanned maintenance
 - iv. Monitoring of SLAs
 - v. Report generation& sharing - All the system logs shall be saved and archived and report shall be shared with USOF on a monthly basis indicating the optical signal, BER and alarm status.
 - vi. Other standard O & M Procedures
 - vii. NOC Operations & Maintenance
 - viii. Fault restoration
- 4.1.3 The Warranty of the submarine cable system shall include SLTE equipment, OIE, Test Instruments (TI) and UPSs is for two years from the date of commissioning. The Warranty does not cover Wet Plant the maintenance of which shall be separately covered in the Agreement with SEAIOCMA.
- 4.1.4 BSNL shall ensure the warranty / AMC obligations for the performance of repair required to restore the system as per its contract provisions with its respective vendors including electrical infra items like DG, AC, Batteries & PP etc. During the warranty period no AMC charges would be applicable. After the expiry of warranty period, as per contractual provisions with various vendors AMC as per the contract will be applicable. After expiry of warranty period, BSNL has to intimate USOF about contract executed with various vendors.
- 4.1.5 Operation and Maintenance (O&M) in respect of Wet Plant will be done by BSNL by entering into Agreement with South East Asia and Indian Ocean Cable Maintenance Agreement (SEAIOCMA).

- 4.1.6 O&M for Dry Plant (Land Cables) and Cable Land Stations (Equipment) will be done by BSNL with their staff. During this period, BSNL will also deploy its manpower in parallel and take over O&M subsequently.
- 4.1.7 BSNL will deploy its manpower and other resources for the O & M activities of CANI System as per the below details:
- Project Manager – 1 No. [To be stationed at Chennai]
 - NOC Engineers – 1 No. [As per Annexure-III]
 - Transmission Equipment Engineers – 4 No. [Two at Chennai and Two at Port Blair]. The Engineers at Port Blair shall cover the other A&N Islands also.
 - Terrestrial OFC cable patrolling teams [One team at Chennai and one team at Port Blair]. The Port Blair team to cover the other A&N Islands also.
- 4.1.8 Access to Network Operations Centre (NOC)/Network Management System (NMS) shall be provided to representatives authorised by the Administrator. Web based access to NOC/NMS shall also be made available.

4.2 CANI BANDWIDTH:

The Initial capacity of the CANI system shall be as given below:

- a. Out of four Fibre pairs, one fibre pair shall be allocated to Ministry of Defence (MoD) for strategic requirement while two fibre pairs (lit) shall be used in redundant 1+1 mode for commercial traffic and one additional fiber pair would be used for maintenance purpose.
- b. In Chennai – Port Blair segment, each lit fibre pair shall initially carry 2 x 100 Gbps Traffic capacity. In other segments, each lit fibre pair shall initially carry 1 x 100 Gbps Traffic capacity.
- c. Each lit fibre pair may be loaded upto 50 % capacity and remaining 50% capacity shall be for protection of other lit fibre pair.
- d. However, it shall also be possible to use each fibre pair to its full capacity, without provision of protection. The protection shall be provided at client interface level.

This network will meet the futuristic requirement in terms of capacity and technology for various applications and services.

As and when the bandwidth demand increases and it is required to increase the capacity on the fiber, BSNL shall submit necessary techno-commercial proposal from OEM to USOF for approval. BSNL shall ensure that adequate number of transponder cards are available so that the bandwidth can be increased as per SLA.

4.3 TECHNICAL SUPPORT:

BSNL, during the O & M period, shall ensure the availability of technical support, analysis of traffic, conformity to regulatory issues, software license rights, confidentiality, capacity increase as needed, upgradation of hardware & software as and when required, as per the terms and conditions of CANI Tender.

4.4 FAULT RESTORATION:

BSNL, during the O & M period, shall undertake the proper functioning of the equipment, viewing, analysing & handling of alarms and faults in NMS / Helpdesk, analysis of performance study and report as per the requirements.

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4.5 NOC PROCEDURES& WEB PORTAL:

BSNL, during the O & M period, shall follow the standard NOC procedures which is capable of creating all the necessary configurations on the network, configure the client port as requested, alarm & fault management, report generation, provision of feedback of the O & M. Apart from the above activities, BSNL through a web portal will generate ticket management / assignment for provisioning / configuring the new bandwidth requests and monitoring SLA mechanism.

BSNL shall also submit such reports on a regular basis as mutually agreed.

4.6 PERFORMANCE LEVEL

- 4.6.1 BSNL shall ensure that the OFC transport network performance level meets the TRAI Quality of Service parameters defined for OFC transport network. The OFC network availability at each node shall be better than or equal to 99.9%. The penalty on BSNL will be imposed for non-compliance of the stipulated performance level and shall be in accordance with the penal & SLA provisions given in Annexure-A. and form part of the Agreement.
- 4.6.2 In case of any fault in Submarine cable, the same need to be considered under Force Majeure Clause and no penalty is to be imposed on BSNL for any fault occurrence in Wet Plant of CANI Submarine Cable and subject to terms & conditions of agreement by BSNL with SEAICOMA.

4.7 SHARING THE INFORMATION OF SUBMARINE OFC TRANSPORT NETWORK:

BSNL shall keep a record of all details mentioned in 3.1. and bandwidth provided to various Service Providers, types of traffic transported from different nodes and also maintain Service Provider-wise and node-wise faults and rectification reports of the OFC system and associated infrastructure and other related details in respect of the service rendered, which will be produced before the Administrator or TRAI, as and when and in whatever form desired.

4.8 PROHIBITION OF CERTAIN ACTIVITIES BY BHARAT SANCHAR NIGAM LIMITED (BSNL)

The terms and conditions as to prohibition of certain activities of the NLD/ILD license Agreement, as the case may be, shall be binding mutatis mutandis.

4.9 SECURITY CONDITIONS:

- 4.9.1 The terms and conditions as to security conditions of the NLD/ILD license Agreement, as the case may be, shall be binding mutatis mutandis.
- 4.9.2 Mandatory Licensing requirements, policy guidelines, etc., with regards to security related concerns issued by the Government of India from time-to-time shall be strictly followed.
- 4.9.3 If the entity is found indulging in acts inimical to India's national security, the tender/Agreement is liable to be terminated and matter will be reported to concerned authorities for suitable legal/criminal action.

SECTION-V
COMMERCIAL CONDITIONS

BSNL shall abide by the existing land laws, labour laws, local customs and the best of prevalent latest practices in the Industry.

5.1 DETAILS OF THE CANI NETWORK

The technical specifications of the scheme for creation and management of network are explained in the forthcoming clauses.

CANI Network has been set up with the appropriate transport technology equipment at each node ensuring each have a minimum 200 Gbps bandwidth between Chennai and Port Blair per fiber pair and 100 Gbps bandwidth i.e. one lambda (100 Gbps) available on two lit fibre pairs for all other segments each in the submarine cable of total four fibre pair, meeting all the deliverables, conforming to ITU-T Standard and performance level for availability of the OFC network as per Performance Level requirement. The OFC network has the capability to efficiently transport SDH/ IP / OTN protocols, conforming to ITU-T / IEEE rates and standards to facilitate maximum utilization by stakeholders.

BSNL, at each node, shall provide equipment with tributary/interface/ add-drop modules of required capacity and type on demand, for transport of the traffic as per the provisions of the CANI Tender.

5.2 SPECIFICATIONS AND NETWORK FEATURES CANI NETWORK

CANI network has the equipment with associated infrastructure with the following features

- a) **Scalability:** The network and the equipment should be technologically as well as capacity-wise scalable, compatible and flexible so as to support the future bandwidth and service needs, to carry and route all standard traffic protocols.
 - i. In Chennai - Port Blair Segment, the DWDM system of appropriate technology having ultimate design Capacity of 64 x 100 Gbps per lambda i.e 6.4 Tbps transmission capacity per fibre pair shall be provided.
 - ii. In all other segments, DWDM system of appropriate technology having ultimate design Capacity of 16 x 100 Gbps per lambda i.e 1.6 Tbps transmission capacity per fibre pair shall be provided.
- b) **Connectivity requirements:** The network and equipment shall meet service provider's connectivity needs as per ITU-T standards.
- c) **Network Operation Centre/Network Management System / Element Management System:** The NMS / EMS/ shall manage the Submarine Cable system (cable and equipment) The NMS/EMS provide the capability to monitor, configure, re-configure and control the network elements from a centralized location.

5.3 LEASING OF BANDWIDTH TO OTHER TSPs:

For the gainful utilisation of the created CANI bandwidth, the introductory tariff has been finalised by USOF/DoT and circulated vide letter no. 30-174-7/2015-USOF-BB (Vol. IX) dated 01.07.2020 for sharing / leasing of bandwidth to all TSPs / Licensees in a non-discriminating basis. The above letter will form part of the Agreement.

5.4 REDRESSAL MECHANISM:

There shall be a complaint redressal system for TSPs/ISPs in case of any grievance. Further, rebate to be considered in case of cable cut/ outage on pro-rata basis due to unforeseen reasons.

5.5 QUALITY OF SERVICE PARAMETERS

- 5.5.1 The Quality of Service Parameters (QOS) for lease bandwidth, as prescribed by TRAI, shall be applicable.
- 5.5.2 BSNL shall ensure provision of bandwidth on lease to the services providers as per the Quality of Service (QOS) prescribed by the TRAI from time to time. BSNL shall adhere to such QOS standards and provide timely information as required therein.
- 5.5.3 The Administrator or TRAI may carry out performance tests either directly themselves or through Independent Monitoring Agency and also evaluate the QOS parameters at any time during the tenure of the Agreement. BSNL shall provide access and other support, including documents, instruments, equipment etc. for carrying out such performance tests and evaluation of Quality of Service.
- 5.5.4 BSNL will keep a record of equipment installed at all the stations. Submarine OF cable provided for connecting, and lease bandwidth provided from, the node installed under the scheme. BSNL shall also maintain faults and rectification reports of the nodes, submarine cable and other related items of the transport network such as Battery, Power Plant in respect of the bandwidth, provided to the service provider on lease, which will be produced before the Administrator or TRAI as and when and in whatever form desired.
- 5.5.5 BSNL shall be responsive to the complaints and shall rectify the deficiencies and maintain the history sheets for each installation, statistics and analysis on the overall maintenance status.
- 5.5.6 Proper arrangement should be made by BSNL for reporting/ booking complaints.

SECTION-VI
FINANCIAL CONDITIONS

- 6.1** The Net Annual Operational Expenditure (net OPEX) i.e. OPEX minus Revenue, as per actual in the form of Viability Gap Funding (VGF) to be provided by MHA/ UT Administration of Andaman & Nicobar Islands for initial five years from date of commissioning.
- 6.2** Subsequently, at the end of this initial term of 5 years a decision would be taken by USOF / Department of Telecom regarding further VGF based funding of net OPEX based on the actual revenue and actual cash outflow towards O&M and future projections.
- 6.3** UT Administration of Andaman & Nicobar Islands will make sufficient provision in its annual plan allocation from the year 2020-21 for five years from the date of commissioning of the project to meet the net operational expenditures for the project as VGF.

6.4 Revenue from CANI Project

- 6.4.1** The access to bandwidth created under CANI project will be permitted to all eligible DoT licensees on non-discriminatory basis at applicable tariff rates. The bandwidth may be provided in various denominations as per approved tariff.
- 6.4.2** The introductory tariff has been finalised by USOF/DoT through a tariff committee where the representative of UT Administration also participated and circulated vide letter no. 30-174-7/2015-USOF-BB (Vol. IX) dated 01.07.2020 for sharing / leasing of bandwidth to all TSPs / Licensees in a non-discriminating basis. The tariff has been initially approved by USOF/DoT. The tariff may be reviewed as and when required.

6.5 Billing of revenue

- 6.5.1** The billing for the applicable tariff for CANI project will be done by the office of Pr. CCA, Tamil Nadu, Chennai, which is also the Designated Monitoring Agency for the CANI project based on the feasibility report from the CGM (STR), BSNL and the applicable tariff.
- 6.5.2** The billing of revenue will be subject to GST at applicable rates. The GST on the billed amount will be payable by the users on reverse charge basis
- 6.5.3** The prospective / eligible users will approach the CGM (Southern Telecom Region) BSNL with its requirement of bandwidth, space, etc. The office of CGM (STR) BSNL will issue a feasibility report to the prospective user with a copy to Pr. CCA (TN), DoT. Then, after the billing and payment Pr. CCA (TN) will share the particulars with CGM (STR) BSNL for actual provisioning. However, the prospective users may inspect the cable landing station (CLS) at any of the Islands for firming up their requirement of bandwidth and space.
- 6.5.4** CANI is a national project, to which the bandwidth etc. is provided to all the eligible users on non-discriminatory basis and hence no license fee is payable from the revenue received from the project.

6.6 Estimated Annual O & M Expenses

BSNL is responsible for complete O & M of assets created under CANI project. BSNL will undertake this activity by using its existing manpower resources as well as sub-contracts through tender discovered prices. The AMC of equipment(s), where required has to be undertaken preferably with OEMs. The BSNL claim for O&M expenditures will be done on actual basis.

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6.7 The initial estimate of the O & M expenses per annum is as under:

Sr.	O & M Heads of CANI Cable	Amount (in Cr)	Remarks	
1	Wet Plant Maintenance	28	BSNL has entered into an arrangement / Agreement with M/s SEAIOCMA. The amount includes a fixed amount payable for the maintenance and also charges on per cut / fault in submarine cable. For calculation of estimate 1.5 faults per annum have been considered @ Rs. 14 crores per fault. The variable amount will be based on actual faults. (also see Note-1 below). A copy of this arrangement will be shared by BSNL with Pr. CCA, TN.	
2	Dry Plant Maintenance	AMC charges of CLS Equipments	4.25	As per the already tender discovered rates and are payable to M/s NECTI. The dry plant includes the terrestrial cable from BMH to CLS, terminal equipment, Inter-connect equipment, PFE etc.
		O & M of NOC	2.59	As per the already tender discovered cost and are payable to M/s NECTI (for initial 2 years). After the first two years, BSNL will carry out the operations of NOC or extend the arrangement with M/s NECTI based on requirement.
3	Operating & Administrative expenses BSNL deliverables *	15	The CLS station based estimate of cost payable to BSNL for various services. The final amount will be payable as per the ACTUALS (also see Note-2 below)	
	Gross O & M Charges	49.84	See Note-3 & Note-4 below	
*Charges like Deployment of manpower, Electricity charges, Fuel charges for DG sets, hiring of vehicles, Security charges, maintenance of buildings, etc				

Note-1: The Wet Plant Maintenance charges are payable to SEAIOCMA is Rs. 28 Cr. It comprises of Fixed & Variable Charges. This variable charges shall be payable as per actuals depending on the number of faults. The payments to M/s SEAIOCMA will be paid in Singapore Dollar which is subject to currency fluctuation.

Note-2: A detailed / tentative estimate on BSNL deliverables like deployment of dedicated manpower, their TA / DA charges, vehicle charges, Fuel charges for DG sets, Electricity charges, Rent for Port Blair CLS, maintenance of buildings and other administrative charges etc. which works out to Rs. 15 Cr. per annum.

Note-3: Obligation of UT Administration of A & N Islands is restricted to Rs.46.84 Crs (fixed) per annum

Note-4: BSNL will be paid PMC @ 10% over and above the actual cost of O&M including SEAIOCMA.

- 6.8 The above charges are only estimated and tentative only and may vary from time to time depending on the actuals in the field.
- 6.9 All the above mentioned charges including all the AMC charges for equipment, electrical infra items, battery, power plant & inverters, civil works, wet & dry plants and operation charges (including PMC) like EB charges, fuel, vehicle, staff, rentals for Port Blair CLS etc., the O & M cost shall be payable as per the actual subject to the submission of vouchers / receipts / invoices / certificates, etc. Wherever not possible through actual vouchers / invoices, BSNL shall certify and provide undertaking to that extent.
- 6.10 Additional Requirement of Fund, beyond the approved amount as discussed in above paras for the operation and maintenance of the CANI project, if required, shall be payable on actuals, subject to approval of the Competent Authority of UT Administration of A & N Islands.
- 6.11 Fund Management for O&M & Revenue**
- The office of Pr. CCA TN will carry out all the responsibilities with respect to fund management of the CANI project in respect of O&M (receipt of funds from UT Administration of A & N Islands and payment to BSNL & others), Billing and collection of Revenue from TSPs/ISPs for the provision of CANI bandwidth, Revenue Assurance (for sale of bandwidth and space/electricity charges, etc.), maintaining a separate bank account (where all the money will be credited and payments made), calculation of net annual OPEX (OPEX less revenue), settlement & reconciliation of accounts (with UT Administration of A&N Islands), auditing (expenditure claims of BSNL and other parties with reference to the Agreements etc. and the allocation of expenses) and any other related work.
 - The amount received in advance towards the annual estimated O&M expenditure will be kept in a separate bank account opened in a nationalised bank. The account will be having a sweep-in and sweep-out facility, where by the excess funds will be kept in fixed deposit. The interest earned on the fixed deposit will form part of the revenue of the CANI project and will be used for calculation of net OPEX.

6.12 Responsibility matrix:

Sr.	Agency (USOF/BSNL/ UT Administration)	Brief Nature of work
1	BSNL	All activities of O & M and bandwidth provisioning, monitoring and Record keeping of BW utilization and to provide all records when sought.
2	UT Administration of Andaman & Nicobar Islands	Payment of Net OPEX
3	Administrator, USOF	Monitoring and issuance of approvals & suitable guidelines
4	Pr. CCA (TN), Chennai	Fund Management of the Project (receipt of funds from UT Administration of A&N Islands / users, billing of revenue, payment, release of O&M funds, bank account operations, reconciliation etc.)
5	CGM (STR) BSNL	Interaction with prospective and eligible users and issuance of feasibility report based on principles of non-discriminatory access.

6.13 Release of Fund by UT Administration of Andaman & Nicobar Islands

- i. The annual fund requirement towards OPEX will be sought by Pr. CCA, TN from UT Administration of A&N Islands, at the beginning of each financial year. The UT Administration of A&N Islands will make available the estimated fund requirement with the office of Pr. CCA, TN within 30th April of each financial year.
- ii. The trend of actual expenditure during the preceding year along with expected expenditure for the ensuing year will form the basis of the annual estimate of O&M expenses.

6.14 Release of Funds to BSNL:

- i. For incurring expenditure on O & M, BSNL will submit the annual O & M estimate to Pr. CCA, TN with a copy to USOF/UT Administration of A&N Islands one (1) month in advance to the beginning of each year. The funds shall be made available to BSNL initially for the two quarters and then 30 days prior to beginning of next quarter in a separate bank account opened for this purpose in the name of BSNL. As such, BSNL will retain additional funds of one quarter at all times to avoid hindrance in O&M activities owing to delay in release of funds and due to change in financial year.
- ii. BSNL will submit the statement of expenditure within 30 days of end of each quarter to Pr. CCA TN with a copy to USOF/UT Administration.
- iii. No license fees are applicable on the receipt of reimbursement of O & M expenses by BSNL.
- iv. The funding towards net OPEX shall be disbursed for each quarter ending on 30th June, 30th of September, 31st of December and 31st of March.
- v. Any advance payment shall be adjusted against the quarterly claim.
- vi. The claim for a part of quarter will be computed with reference to the actual number of days in that quarter.
- vii. The claim in the prescribed format along with the supporting documents should be submitted, at the office of Pr. CCA TN with a copy to UT Administration of A & N Islands and USOF or any designated authority within one month of the end of the quarter. (Annexure-I)
- viii. To meet the exigencies other than schedule maintenance work, like cable cut in submarine cable etc. the approval and funding shall be provided within 3 days of estimate submitted by BSNL. BSNL will issue the work order post receipt of approval and funds in account.

6.15 Annual Audit: The aforesaid quarterly claim statements for each financial year shall be required to be audited by the auditors of BSNL appointed under Section 139 or any other relevant section of the Companies Act, 2013. The report of the Auditors should be in the prescribed form given in Annexure-II to be filed with the designated Controller of Communication Account Offices within 7 (seven) calendar days of the date of signing the audit report but not later than 30th September of the following year.

6.16 The funding for a quarter shall be paid after making adjustments, if any, for the advance payments made in the previous quarter(s).

6.17 Final adjustment, if any in respect of excess or shortage in the disbursed amount shall be made in the following year based on the quarterly statements duly certified by BSNL

6.18 The detailed guidelines regarding inspection of sites and verification of claims regarding the project will be communicated separately.

- 6.19 All the relevant records, systems, relevant NOC (Network Operation Centre)/ Network Management System (NMS) data, logbooks, books of accounts of BSNL shall be subject to such scrutiny & examination as may be prescribed by the Administrator / UT Administration of A & N Islands so as to facilitate independent verification of the claims and disbursed/paid amount.
- 6.20 In order to ensure proper utilization of funds released and verification thereof, the Administrator / UT Administration of A & N Islands can issue instructions/directions & even modify, alter, or substitute and amend, if deemed necessary, whatever is stated herein with the consultation of BSNL.
- 6.21 Bank Guarantees: Performance Bank Guarantee (PBG) is not required from BSNL so long as BSNL continues to be wholly owned by the Government of India.
- 6.22 **Maintenance and Supply of Records:**
- a. The UT Administration of A & N Islands / Administrator / DMA shall have the right to call for and BSNL shall be obliged to maintain, supply and provide for examination the relevant NOC (Network Operation Centre) data, books of accounts, measurement books, log books and any record(s) and the details of BW provision / Utilisation relating to CANI submarine project.
 - b. BSNL shall invariably preserve all accounting records and other records (electronic as well as hard copy) for a period of three years from the date of publishing of duly audited and approved accounts of the company. Any dereliction thereof shall be treated as a material breach independent of any other breach, sufficient to give cause for cancellation of the Agreement.
 - c. The relevant records of BSNL shall be subject to such scrutiny as may be prescribed by the Administrator so as to facilitate independent verification of the amount due to BSNL.

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SECTION-VII

TECHNICAL SPECIFICATIONS OF OFC EQUIPMENT & OF CABLE AND NETWORK FEATURES

SPECIFICATIONS OF SUBMARINE LINE TERMINAL EQUIPMENT (SLTE)

7.1 The following two types of SLTE equipment are envisaged in this project:

- **Type-A:** SLTE with 64 x 100 Gbps capacity- For repeated section [Chennai to Port Blair]
- **Type-B:** SLTE with 16 x 100 Gbps capacity- For repeaterless sections [all other segments]

Each SLTE shall be equipped with two wavelengths each of 100 Gbps / OUT-4 capacity initially. The line side of every channel cards (transponder cards) shall be tuneable through software for entire range of the DWDM grid.

7.2 The SLTE equipment shall be a Dense Wave length Division Multiplexing (DWDM) Optical Line equipment and shall consist of DWDM Mux De-Mux, booster amplifier, pre-amplifier etc. which shall operate at discrete wavelengths in the C-band 1529 nm to 1565 nm, centred around 193.1 THz frequency as per ITU-T Rec.G.694.1 grid, at 50 GHz (64 λ system) and at 50 / 100 GHz channel spacing (for 16 λ system) as the case may be. The DWDM system shall support transmission of 64/16 wavelengths channels comprising of OTU-4 per channel or a combination of them in the C-band.

7.3 The system shall have OUT-4 interfaces both on client side and line side. The line side shall be tuneable in entire range of C-band. The SLT shall consist of-

- I) Optical multiplex section(OMS) consisting of Mux and De-Mux blocks,
- II) DWDM bandwidth transport layer consisting of Optical Transmission Section (OTS) processing module having booster and pre-amplifier.

7.4 The equipment shall support forward error correction (FEC) in accordance with ITU-T Rec.G.709 in the optical budget of the equipment and the same shall be part of the network planning.

7.5 The bidder / manufacturer shall supply entire common hardware including Mux / Demux and embedded control & management software etc. for ultimate capacity @ 64 Channels / 16 Channels of OTU-4 DWDM system on day one. The system shall hitlessly be upgradable in field to its full capacity by inserting transponder cards @ OTU-4 followed by necessary cross connection and mapping functions.

7.6 The Booster Amplifier and Pre-Amplifier (Optical Amplifier) shall be the integral part of SLTE and ILAs.

7.7 The removal/ insertion of any card including the redundant one shall not disturb the working of the system or deteriorate the BER of the other working channels in the system.

7.8 **Optical Monitoring (OM):** The objective of optical monitoring is to detect anomalies, defects, degradations and fault affecting the quality of SLTE systems at optical layer. The optical monitoring of the SLTE system shall provide the facility of locally and remotely monitoring of some important parameters as specified in the ITU-T Rec.G.697. The parameters shall facilitate in-service fault analysis and performance degradation of SLTE system and enhance the reliability of the system. The methodology of "Optical Monitoring" shall be as specified

in ITU-T Rec.G.697. The local and remote monitoring of following Optical parameters of the SLTE system shall be supported by the system through its EMS & LCT.

I) **Channel power:** The equipment shall support the channel power measurements at the following points:

- a. Channel power before the DWDM multiplexer,
- b. Channel power after the DWDM demultiplexer.

II) **Total power:** The equipment shall support the total channel power measurements at the following points:

- a. Total power at input of various stages of optical amplification,
- b. Total power at output of various stages of optical amplification,

7.9 Supervisory parameters:

The supervisory system of the equipment shall be capable of local & remote monitoring the various parameters of the equipment:

The measurement accuracy of input/ output power of the Booster/ In-Line Amplifier/ Pre-Amplifier from the EMS of the system shall be within ± 1 dB from the actual measured value on a wide-band Optical Power Meter.

The supervisory system shall provide necessary audio/ visual alarm on equipment for indicating the alarms. Also from the EMS of the system it shall be possible to locate the faulty-section in the case the fibre is cut.

To maintain transparency and supervision capability of client services in accordance with ITU-T Rec.G.709, all client services shall be supervised by processing the ODU/ OTU overhead bytes. At least path monitoring (PM) and section monitoring (SM) shall be supported.

7.10 **Monitoring points** There shall be the provisioning of monitoring points for monitoring of channel power, OSNR and wavelengths at the output points of Booster Amplifier, In Line Amplifier and Pre-amplifier using external OSA/ DWDM analyser etc. These points shall be suitably connectorised and on connection of a measurement device, the main transmission path shall not be affected at all.

7.11 Specification of OTN Based Interconnect equipment:

The Optical Interconnection Equipment (OIE) including Digital Cross Connectors (DXC) shall:

- Interface with SLTE in each cable landing station.
- On Client side, the IE shall provide connection to the Landing Point Party equipment via the Cable System Interface
- Provide connection to other transmission facilities for restoration, interconnection with other cable systems/back-haul facilities.
- Support Layer1 control plane for providing protection, restoration

The OIE shall consist of the required OTN Digital Cross-connect (including Craft Terminal) and associated Element Management System (EMS).

7.12 Cross Connect Capacity:

The cross connect module of the equipment shall be universal packet / OTN switch matrix type. The equipment is divided in to two distinct categories based on cross-connect matrix size and functionality, as equivalent OTU4.

- A) Type -A: 3.2 Terabits / OUT-4 equivalent ports bi-directional non-blocking matrix with each port configurable for any direction of transmission.
- B) Type- B: 1.6 Terabits / OTU4 equivalent ports bi-directional non-blocking matrix with each port configurable for any direction of transmission.

7.13 Requirement of physical interfaces:

The following physical interfaces configuration of the IE shall be made available :

Type of Interfaces	Quantity of Interfaces to be equipped	
	Type-A	Type-B
OUT-4 / 100 GbE	6	6
40 GbE	2	0
OUT-2/ OUT-2e / STM-64 / 10 GbE LAN / 10 GbE WAN	28	24
OUT-1 / STM-16 / STM-4 / STM-1/ GbE	16	16

The IE shall be upgradable in future by just inserting additional interfaces cards.

- a. Only one OIE has been proposed at each cable station except at Port Blair, where two different types of OIE have been proposed. The single OIE shall provide connectivity to all SLTES. However, at Port Blair, one OIE will be connected for Chennai – Port Blair section and other with remaining sections. These two OIE shall be interconnected with each other.
- b. It is desirable that the 100 G (OTU4) interfaces are configurable as client interfaces or line interfaces.
- c. 10 G (OTU-2) interface shall be software configurable for STM-64/ 10GE LAN /10 GE WAN / OTU2/OTU2e using appropriate plug.
- d. 2.5 G (OTU 1) Interface shall be software configurable for STM-1/STM-4/STM-16/OTU1/GigE using appropriate plug.
- e. Minimum two nos. of interface cards shall be provided for each interface.

7.14 Power supplies:

The equipment shall meet the requirements of ETSI 300 132-2 for nominal –48V DC power supplies. The Bidder shall describe how the power is distributed within the equipment and how the equipment is protected against power failures (redundancy, etc.). The IE shall support redundant power supply inputs (A & B supplies). The IE shall be capable of meeting the performance requirements of this Technical Specification if either of the –48V supply fails.

7.15 SPECIFICATION OF SUBMARINE CABLE:

GENERAL REQUIREMENTS:

Cable Products shall include cables (including fibres, fibre splices), cable joints, cable transitions, Universal Joints/ interconnection devices, beach joint, land joint, cable end seals, and manufacturing repairs.

Cable Product Set is the complete range of Cable Products offered.

Only qualified Cable Product Sets that meet the requirements of this specification shall be accepted for use in the system.

The fibre, fibre splices, couplers (terminations), cable, cable joints, cable transitions, cable end seals and interconnection devices shall be designed such that the overall performance requirements, shall be met throughout the Design Life of the System. The quality and materials and workmanship used in their manufacture shall be appropriate for the design life of the system.

All system components shall conform to ITU-T Recommendation G.973/G.976 where applicable unless required otherwise by this specification.

7.16 CABLE TYPES: The following types of cables are to be provided as per requirement:

Light Weight (LW): This type of cable shall be suitable for deployment, operation, recovery and reuse in water depths down to more than 3000 metres.

Light Weight Protected (LWP): This type of cable shall provide a quantifiable improvement over LW in fish-bite protection and protection from abrasion and be suitable for deployment, operation, recovery and reuse in water depths down to 3000 metres.

Single Armoured (SA): This type of cable shall be suitable for laying, burial, recovery and reuse in depths down to 1000 metres.

Double Armoured (DA): This type of cable shall be suitable for laying, burial, recovery and reuse and for providing protection in depths down to 100 metres, where required. This cable shall be sufficiently heavy so as to be unlikely to be moved by tidal action.

7.17 The dimensional characteristics of fibre shall be as per ITU-T Recommendation G.654 or G.655 whichever is applicable;

7.18 SPECIFICATION OF LAND CABLE:

The land cable shall be used between the CLS and beach manhole for connecting the Station cable and Submarine cable.

Power cable for feeding power is also to be provided in Repeated section. Separate optical cable and power cables will also be accepted.

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The OFC shall meet/exceed applicable ITU-T/TEC specifications and the materials used in the manufacture of OFC.

Protection to Land Cable shall be provided as per international practice.

The system performance shall be equal to or better than 10^{-12} as per relevant ITU-T TEC Standards, including Rec. G.821/G.826/TETF/RFC/2544/Standards specific to the deployed technology, and any other approved specifications as applicable.

7.18.1 EMI / EMC Requirement: The equipment shall meet EMC/EMI requirement as per TEC Standard No. TEC/EMI/TEL-001/01/Feb-09 (including latest revisions and amendments) or equivalent ITU-T/International standards.

7.18.2 ENVIRONMENTAL SPECIFICATIONS: Equipment, Cable and their components provided under this specification shall conform to relevant ETSI standard.

7.18.3 LIGHTNING AND TRANSIENT VOLTAGE PROTECTION: BSNL shall provide lightning and transient voltage protection for all telecommunications equipment, in accordance with the following

- a) Should have proper earthing arrangement as per ITU-T/IEC/BIS/TEC standards.
- b) At the outside cable plant point-of-entry of all cabling penetration, the BSNL shall provide lightning and transient voltage isolation as well as surge protection, wherever applicable, for the inside-plant cabling, wiring, and all terminations and equipment.
- c) All equipment installed, under this specification that requires 230VAC primary power, shall be surge protected.

7.18.4 STATION SAFETY EARTHING AND SIGNAL GROUNDING: The equipment shall meet the IEC Publication 60950 (2001) in general and for optical safety it shall comply with ITU-T G.664 and IEC 60825-1 and IEC 60825-2. For each facility, the Bidder is responsible for meeting the following station and equipment earthing requirements-

- a) All safety earthing and signal grounding shall be in full compliance as per relevant international standards.
- b) Each cabinet (enclosure) shall include suitable signal ground and safety earth networks. The signal ground network shall terminate at a separate signal ground stud connection isolated from safety earth.
- c) Each earth/ ground network shall utilize copper bus bars, copper braids and/or 16 sq. mm or bigger earth cable. All equipment earth/ ground connections shall make directly to the equipment chassis utilizing grounding and secured metal-to-metal with star washers. Use of the enclosure frame, skin or chassis mounting hardware, as part of the earthing/ grounding networks, is not acceptable.
- d) The safety earth network shall be connected to "earth ground" at the safety earth stud. The earth stud connection shall be sized for an external earthing cable equipped with a 2/0 solid copper lug secured metal-to-metal with star washers. Primary AC feeds and distribution within enclosures requires earthing wire connection to the safety earth stud.
- e) The safety earth and signal ground networks shall be inter-connected only at the safety earth stud and signal ground stud.
- f) The BSNL shall be responsible for providing all required earthing/ grounding cable and installation.

7.19 ELEMENT MANAGEMENT SYSTEM: BSNL shall provide, an ELEMENT Management System (EMS). The EMS shall manage the entire CANI Submarine Cable system. The EMS should be provided, along with local craft terminal/client terminals/work stations, as applicable. The EMS shall provide the capability to monitor, configure, re-configure and control the elements of the telecommunication network from a centralized location and also at each node of the network where equipment is located using portable devices (e.g. laptops).



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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed through their duly authorized representatives, at New Delhi on the day, month & year first above written.

Burde
13/11/2020

For and on behalf of the
PRESIDENT OF INDIA
SIGNED, SEALED AND DELIVERED by

(विलास बुरडे)
(VILAS BURDE)
निदेशक (यू.एस.ओ.एफ.)
Director (USOF)
दूरसंचार विभाग, भारत सरकार
Deptt. of Telecom, Govt. of India
नई दिल्ली/New Delhi

Name: Sh. Vilas Burde
Designation: Director USOF
Address: Sanchar Bhawan, 20, Ashoka Road, New Delhi - 110001
Authorised Signatory

V Saxena

For and on behalf of the
Bharat Sanchar Nigam Limited
SIGNED, SEALED AND DELIVERED by

(विनीत सक्सेना)
(VINEET SAXENA)
प्रधान महाप्रबंधक (सबमरीन प्रोजेक्ट)
PGM (Submarine Project)
भारत संचार निगम लि. निगमित कार्यालय, नई दिल्ली
B.S.N.L. Corporate Office, New Delhi

Name: Sh. Vineet Saxena
Designation: PGM (ILD & SP)
Address: Bharat Sanchar Bhawan, H.C. Mathur Lane, New Delhi - 110001
Authorised Signatory

Vijay K

For and on behalf of the
UT Administration of Andaman & Nicobar Islands
SIGNED, SEALED AND DELIVERED by

Name: Sh. Vijay Kumar
Designation: Pr. Secretary, Finance, Administration of A&N Islands
Address: Andaman and Nicobar Administration, Secretariat, Port Blair - 744101
Authorised Signatory

In the presence of Witnesses:

- Sahil Garg*
1. SAHIL GARG
Deputy Admn (Finance), USOF
- Kamal Bhagat*
2. KAMAL BHAGAT
DDG(II)USOF
- Manish Sharma*
3. MANISH SHARMA
AM(CILD&SP)

Equipment Commissioned Status

Name of State/UT
(CLS Location wise)

Sr.	Nomenclature	Quantity
1	Submarine Cable	
2	Terminal Station Equipment	
3	Land Cable	
4	BMH	
5	CLS Buildings	
6	Electrical Infra items	
7	Other items	

Report w.r.t Submarine and Land Cable commissioned:

Name of State/UT		
Name of District/ Island		
Sr.	Name of Segment	Length of Submarine Cable

Sr.	Name of the CLS	Length of Land Cable in KMs	Address of CLS	Address of BMH

AFFIDAVIT (ON STAMP PAPER) FORMAT FOR STATEMENT OF CLAIM

AGREEMENT NO. _____ DATED _____

I,, aged about years s/o, d/o of Shri, resident of, do solemnly affirm and state as under:

1. That I am(Name) (Designation)of, BSNL in Licensed Service Area and I am duly authorized by the resolution dated passed by Board of Directors of the Company to furnish a Claim in Affidavit on behalf of BSNL.
2. That the claim pertains to creation and implementation of CANI Submarine project, after the date of entering into the Agreement and is in accordance with the Agreement provisions and details are as follows (*Strike Down whichever not applicable*)
 - a. That a claim towards mobilization advance for 2 quarters for an amount Rs. (Rupees) is being made.
 - b. That the quarterly claim of Rs. (Rupees) towards O&M of Dry Plant for the segment from.....to....., is being made. The details of the same is attached to this annexure
 - c. That a quarterly claim of Rs. (Rupees) towards O&M of Wet Plant through SEAICOMA is being made. The cost breakup for the same is enclosed along with the copy of Agreement between BSNL and SEAICOMA and the invoices/bills/receipts are enclosed for verification of the competent authority
 - d. That a quarterly claim of Rs. (Rupees) towards BSNL charges for usage of electricity, civil works, staff etc is being made. The details of each component along with bills/receipts/invoices is also attached for settlement of the claim
3. That the contents, including that of utilisation certificate towards the fund already disbursed by USOF, of all the Attachments and enclosed supporting documents, if any, are true and correct to the best of my knowledge, based on the records of the company, which are available for further verification by the appropriate authorities and that the infrastructure has been commissioned from the date as stated.
4. That any fund claimed shall be/has been utilized for the purpose as stipulated in the Agreement.
5. That excess payment or shortage, if any, shall be adjusted in the following year(s) based on the quarterly statements duly certified by the Auditors of the Company and scrutiny/verification/inspection as prescribed by the Administrator.
6. The infrastructure created under this Agreement have not been utilized in claiming fund under any other Agreement entered into with the Administrator.
7. I understand that Administrator or its representatives (DMA) shall have the right to

inspect & verify the site and records & systems, during the currency of the Agreement and if any deficiency is observed the payments made to the company shall be recovered forthwith, without prejudice to the right of Administrator to take any other action(s) as deemed fit.

For and on behalf of BSNL

Signature of the authorized signatory of BSNL

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Service Level Agreement

1. The purpose of this Service Level Agreement (hereinafter referred to as SLA) is to clearly define the levels of service of the CANI submarine Cable system which shall be provided for the complete duration of this contract. The performance of the services being provided shall be periodically reviewed for the effectiveness of this SLA.

2. **Definitions**

For purposes of this Service Level Agreement, the definitions and terms as specified in the contract along with the following terms shall have the meanings set forth below:

- "Uptime" shall mean the time period for which the specified services with specified technical and service standards are available. Uptime, in percentage, of services shall be calculated as indicated below:

$$\text{Uptime} = \{1 - [(\text{Downtime}) / (\text{Total Time} - \text{Planned Maintenance Time})]\} * 100$$

- "Downtime" shall mean the time period for which the specified services with specified technical and service standards are not available and excludes the scheduled outages planned as a part of planned maintenance for the undersea cable system.
- "Incident" refers to any event / abnormalities in the functioning of the connectivity, landing station or NOC equipment / specified services that may lead to disruption in normal operations of the project services.
- "Helpdesk Support" shall mean the 24x7x365 centre which shall handle fault reporting, trouble ticketing and related activities, fault escalation during this contract.
- "Resolution Time" shall mean the time taken (after the incident has been reported at the helpdesk), in resolving (diagnosing, troubleshooting and fixing) or escalating (to the second level or to respective Vendors, getting the confirmatory details about the same from the Vendor and conveying the same to the end user), the services related troubles during the first level escalation. The resolution time shall vary based on the severity of the incident reported at the help desk. The severity would be as follows:
 - a) **Critical:** Incidents whose resolution shall require additional investment in components or time or shall involve coordination with OEMs. These incidents shall impact the overall functioning of the undersea cable system.
 - b) **Medium:** Incidents, whose resolution shall require replacement of hardware or software parts, requiring significant interruption in working of that individual component, however the system shall be in working condition.
 - c) **Low:** Incidents whose resolution shall require changes in configuration of hardware or software, which will not significantly interrupt working of that component.

3. **Category of SLAs**

This SLA document provides for minimum level of services required as per contractual obligations based on performance indicators and measurements thereof. It shall ensure provisioning of all required services while monitoring the performance of the same to effectively comply with the performance levels. The services shall be reviewed that shall:

- Regularly check performance against this SLA.
- Discuss escalated problems, new issues and matters still outstanding for resolution.
- Review of statistics related to rectification of outstanding faults and agreed changes.
- Obtain suggestions for changes to improve the service levels.

The SLA has been defined in the following categories:

- a) Connectivity related service levels
- b) Help desk Services
- c) Compliance and Reporting Procedures
- d) Manpower related SLA

The following measurements and targets shall be used to track and report performance on a regular basis. The targets shown in the following table are applicable for the duration of the contract. All the targets for the measurements are calculated on a quarterly basis. It should provide comprehensive, end-to-end service to maintain the connectivity Infrastructure, including replacement of the equipment in case of physical damage.

3.1 Connectivity related Service Levels

The following details outline the service level indicators & and the target performance levels to be maintained during the contract period:

Connectivity / Service availability at Port Blair

S. No.	Measurement	Target	Severity	Penalty
1	Availability of Committed Bandwidth between Mainland & Port Blair	≥ 99.9%	Critical	No Penalty
		<99.9% to ≥ 98%		1% of the quarterly payment of AMC for Chennai-Port Blair section
		<98% to ≥ 97%		5% of the quarterly payment of AMC for Chennai-Port Blair section
		<97% to ≥ 96%		15% of the quarterly payment of AMC for Chennai-Port Blair section
		<96% to ≥ 95%		30% of the quarterly payment of AMC for Chennai-Port Blair section
		<95%		100% of the quarterly payment of AMC for Chennai-Port Blair section

Connectivity / Service availability at Other Islands

S. No.	Measurement	Target	Severity	Penalty
1	Availability of Committed Bandwidth in other Islands	≥ 99.5%	Critical	No Penalty
		<99.5% to ≥ 98%		1% of the quarterly payment of AMC charges of respective section
		<98% to ≥ 97%		5% of the quarterly payment of O&M of six islands
		<97% to ≥ 96%		15% of the quarterly payment of AMC charges of respective section

		<96% to ≥ 95%	30% of the quarterly payment of AMC charges of respective section
		<95%	100% of the quarterly payment of AMC charges of respective section

Note: Connectivity/Service availability related penalties in respect of critical fault shall be governed by the following conditions:

- The Penalty shall be calculated section wise on a quarterly basis.
- Availability of bandwidth 10 Gbps between in other Islands to be calculated by taking arithmetic average of uptime for locations other than Port Blair.
- Availability of bandwidth means availability of total commissioned bandwidth consistently on 24 x 7 basis which will be calculated.
- Non availability of connectivity/service due to following reasons shall be excluded from SLA:
 - i) Force Majeure events.
 - ii) Submarine Cable cut.
- In case of terrestrial cable cut, 04 (four) hours of Mean Time to Repair (MTTR) shall be allowed.

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3.2 Help Desk Services

Time in which a complaint / query is resolved after receipt.

Type of Incident	Target	Penalty
Critical T shall be the agreed resolution time.	T	No Penalty
	T1 = T+2 Hours	0.05% of the quarterly payment of AMC for every unresolved call
	T2= T1+2 Hours	1% of the quarterly payment of AMC for every unresolved call
	> T2	2% of the quarterly payment of AMC for every unresolved call
Medium	1 day from the time of incident logged at the help desk	No Penalty
	>1 day and <= 2 days	0.05% of the quarterly payment of AMC for every unresolved call
	>2 days	1% of the quarterly payment of AMC for every unresolved call
Low	<= 2 days from time of response logged	No Penalty
	>2 days and <=4 days	0.01% of the quarterly payment of AMC for every unresolved call
	>4 days	0.05% of the quarterly payment of AMC for every unresolved call
Application Monitoring fault Reporting to user Department in case of connectivity unavailability	30 Minutes	1% of the quarterly payment of AMC for every hour of delay in reporting on an incremental basis to a maximum of 5%.

3.3 Compliance & Reporting Procedure SLAs

S. No.	Measurement	Definition	Target	Penalty
1	Submission of MIS Reports	MIS reports shall be submitted as requested by BSNL, Chennai and Andaman and Nicobar Islands	Report for the previous month shall be submitted by the 7 th of the next month. Penalty shall be levied only after the 10 th of the month of submission	1% of the quarterly payment of AMC for every 1 day of delay in submission on an incremental basis to a maximum of 5%.

3.4 Manpower Resources Service Levels

There shall be adequate deployment of technical manpower at Port Blair and Chennai CLS during warranty & AMC period. In cases where 24x7 manpower is not available the support personnel should be available over phone. On critical situations or when directed by the representatives of the purchaser, the support personnel must be available on site within 3 hours of request excluding travelling time. Non availability of the support personnel as stated above will be treated equivalent to single occasion downtime for critical components.

Measurement	Target	Severity	Penalty
Resource availability for all services requested under Operations and Maintenance Resource availability would be calculated as: (No. of shift days for which resource present at the designated location / Total no. of shift days) x 100	≥ 99% averaged over all resources designated for System Integration(SI) services and calculated on a quarterly basis	Critical	No Penalty
	≥ 97% to <99% averaged over all resources designated for SI services and calculated on a quarterly basis		2% of the quarterly payment of O&M
	≥ 95% to <97% averaged over all resources designated for SI services and calculated on a quarterly basis		3% of the quarterly payment of O&M
	<95% averaged over all resources designated for SI services and calculated on a quarterly basis		5% of the quarterly payment of O&M

3.5 SLA on outages due to faults in submerged part of undersea cable system

Repair and maintenance of submerged part of the undersea cable system shall be undertaken through SEAIOCMA. The time frame for restoration of fault shall be as per the key performance indicators of the agreement. It will be the responsibility of STR to coordinate with all organizations for timely restoration of fault and arrangement of all permits. After occurrence of submarine cable fault, delay on part of BSNL to immediately report to SEAICOMA may attract penalty.

Format of Utilization Certificate

Agreement No. dated

Name of Circle:

Sr.	Nature of Claim	Sanction letter no.	Amount (INR)
1	Mobilization advance		
2	O&M of Dry Plant		
	i. AMC Equipment		
	ii. AMC others		
3	O&M of Wet Plant		
	i Fixed Charges		
	ii Variable charges		
4	Miscellaneous Expenditure on account of usage of BSNL resources etc		
	i Electricity Charges (CLS Wise)		
	ii Other components (CLS Wise)		
	iii Staff etc (Detailed Breakup to be provided CLS wise)		

1. I certify that a sum of Rs. was received for the, as per details given above.
2. It is also certified that out of the above-mentioned total funds of Rs. a sum of Rs.only has been utilized for the purpose for which it was sanctioned. It is further certified that the unspent balance of Rs. only was remaining as on..... which may be adjusted in future settlement/ payment
3. Certified that I have satisfied myself that the terms & conditions of the Agreement No. datedhave been duly fulfilled for which funding was sanctioned and I have exercised the following checks to see that the money has been actually utilized for the purpose for which it was sanctioned.
 - a. BSNL's statement of accounts w.e.f.to..... have been duly audited and are enclosed/would be forwarded by (specify the date) in accordance to clause of the Agreement.

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- b. It has been ensured that the deliverables and contractual obligations has been according to the requirements as per the Agreement and instructions issued thereunder.
4. Certified that the responsibilities assigned under the project as per the Agreement and instructions issued thereunder has been satisfactorily completed.

For and on behalf of BSNL

Signature of the authorized signatory of BSNL

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BSNL

Format for Annual Auditor's Report on Statement(s) of Claim & Utilization of Funds for
CANI Submarine Project

To

The Board of Directors

.....
.....

We have examined the attached Statement(s) of Claim of Funds from USO Fund of M/s Bharat Sanchar Nigam Limited for the period ending _____. We understand that the aforesaid statement(s) is /are to be furnished to the Central Government for assessment of the fund payable to M/s Bharat Sanchar Nigam Limited by the Government, in terms of the Agreement No. for release of funds for Operation and Maintenance of CANI Submarine project for provision of Broadband Connectivity between Chennai, Mainland India and ANI Islands.

We report that:

We have obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purposes of our audit.

In our opinion and to the best of our knowledge and belief and according to the explanations given to us, the Statements have been prepared in accordance with the conditions contained in the said Agreement and clarification thereon in this behalf and gives a true and fair view of the funds claimed and utilized for the period computed on the basis of the aforesaid conditions.

(NAME AND SIGNATURE WITH COMPANY'S SEAL)

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Scope of O&M

- O&M of all Cable Landing Stations will be undertaken by BSNL.
- O&M of NOC & DR-NOC during the warranty period i.e. 2 years shall be undertaken within the scope of the BSNL on **Optional basis**. During this period, BSNL will also deploy its manpower in parallel and take over O&M subsequently.
- BSNL shall mandatorily quote for the O&M of NOC & DR-NOC at Chennai & Port Blair and EMSs during warranty period.
- During the warranty period of 2 years, the O&M of NOC & DR-NOC at Chennai & Port Blair and EMSs shall include deployment of manpower at both the NOCs as per details given below and is subject to SLA as defined in the tender:

Station	L-3 (Technicians)	L-2 (Engineers)
NOC at Chennai	2	1
DR NOC at Port Blair	1	1
Total	3	2

- During the O & M, the BSNL shall provide the following services at NOC locations:
 - i. Customer support.
 - ii. Operation of the EMS and other equipment
 - iii. Planned and unplanned maintenance
 - iv. Monitoring of SLAs
 - v. Report generation
 - vi. Other standard O & M Procedures
 - vii. NOC Operations & Maintenance
 - viii. Any other activity assigned.

CANI Maintenance Activities

Following are the various regular maintenance activities required to be carried for several components of the CANI System.

Supervision of Submersible Plant

RFTE shall be used for preventive maintenance and fault localization for the submersible plant from the landing station. When the abnormality in the repeater section is detected by the RFTE, a notification of fault occurrence is made on the Local Craft Terminal (LCT). The cable station personnel can identify the type and location of the failure by the fault analysis function of the RFTE.

For the purpose of preventive maintenance, cyclical measurements are used to supervise the submersible plant. RFTE also provides the major and minor alarms associated with the alarm severity.

TSE Maintenance

Power Supply Output Voltage Check (D200/ XF200, Monthly)

Measuring Instrument: DC voltmeter or equivalent

Measuring Procedure:

- Open the front door of the rack.
- Connect the DC voltmeter to the monitor terminal on the shelf.
- Read the value on the voltmeter, confirming that the station power voltage is correctly within operation range (-57.0 V to -40.5 V DC).
- Disconnect the DC voltmeter from the monitor terminal on the shelf.

Power Supply Output Voltage Check (OCI, Monthly)

[Apparatus]

Measuring Instrument: Digital Multimeter (DMM)

[Measuring Procedure]

- Open the front door of the rack.
- Set the DMM to read voltage.
- Connect the DMM to the MONITOR jack (BAT and RTN) on the PWR TERM [A] and PWR TERM [B].
- Read the value on the DMM, and confirm that the station power supply is operating correctly within the specification (-57.0 V to -40.5 V DC).
- Disconnect the DMM from the MONITOR jack on the PWR TERMS.
- Confirm that the green PWR LEDs on the PWR cards light up.
- Connect the DMM to the following MONITOR jacks of the PWR cards.
- Read the value on the DMM and record it on the data sheet.

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- Confirm that the value is within the specification. For details on the specification of the PWR cards.
- Disconnect the DMM from the MONITOR jack.
- If the output voltage does not satisfy the specification, perform the appropriate operation according to the countermeasure for troubles described in Section 4, TROUBLESHOOTING in CANI-DOC-7.6.2 OCI Handbook. When the operation is completed, check the voltage again.
- Close the front door of the rack.

Check Station Power Voltage (PFE, Monthly)

Check the supplied station power voltage (-48 V DC) by connecting the voltmeter to PWR monitoring terminal on each PDP and COM. Verify that the results satisfy the values listed in Table 5-2 in CANI-DOC-7.6.5 PFE Handbook.

Clean Air Filter (D200/ XF200, Monthly)

- Put off the air-filter.
- Clean the dust etc. of air-filter.
- Set back the air-filter into the shelf.

Clean Air Filter (PFE, Monthly)

Filters are installed on FANs that are mounted on CONV Unit and TEST LOAD Shelf.

Use a vacuum cleaner (or equivalent) to remove blockages and dusts from the air filter mounted on FANs.

Clean Air Filter (OCI, Every 6 months)

Put off the air-filter.

Clean the dust etc. of air-filter.

Set back the air-filter into the shelf.

EMS Server Database Backup (EMS, Periodically)

Normally, backup files are automatically generated monthly, so users do not need to perform backups. Users need to periodically save automatically generated backup files from the EMS/UMS server to the EMS/UMS client

UMS Server Database Backup (UMS, Periodically)

Normally, backup files are automatically generated monthly, so users do not need to perform backups. Users need to periodically save automatically generated backup files from the EMS/UMS server to the EMS/UMS client.

Check Feeding Current/Voltage (PFE, Non-periodic maintenance)

Press [MONITOR SELECT] OUTPUT button provided on DISP Package of COM Shelf (within CURRENT /VOLTAGE MONITOR section), and check if the indicated value is valid.

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Check Ground Current and Voltage (PFE, Non-periodic maintenance)

Press [MONITOR SELECT] S.E button provided on DISP Package of COM Shelf (within CURRENT /VOLTAGE MONITOR section), and check if the indicated value is valid.

Periodic Reports

Below tabulated reports must be submitted periodically by collecting data for specified period, reports can be collected by any means such as using external test instrument at monitoring ports or using readout option provided at UMS/EMS.

Periodicity	Report Type	Item
Weekly	Incident/Issue report	
	Performance Monitoring Log	TSE (OTN, Transponder, OCI, RFTE, PFE)
	Alarm Logs	TSE(OTN, Transponder, OCI, RFTE, PFE)
Monthly	Provisioned services Report	OTN: Optical Path Report. SLTE: DWA Path Report.

Preventive Maintenance Items

Below table summarizes the required items for preventive and maintenance activities, which must be periodically performed by the terminal station personnel.

Periodicity	Equipment	Items
Monthly	OTN	Power supply output voltage check Clean Air Filter
	TPNDF	Power supply output voltage check Clean Air Filter
	OCI	Power supply output voltage check
	PFE	Check Station Power Voltage (-48 V) Clean Air Filter
	EMS/UMS	Backup EMS/UMS server database
Every 6 months	OCI	Clean Air Filter
Non-periodic	PFE	Check Feeding Current/Voltage Check Ground Current/Voltage

Handwritten marks: a scribble, a circled 'B', and the number '16'.

No. 30-174-7/2015-USOF-BB (Vol. IX) Dated 01.07.2020

Government of India
Ministry of Communications
Department of Telecommunications
Universal Service Obligation Fund,
Sanchar Bhawan,
20, Ashoka Road, New Delhi - 110001

Subject: Submarine Optical Fibre Cable Connectivity between Mainland (Chennai) and Andaman & Nicobar Islands (CANI Project) - reg. introductory tariff of bandwidth created under CANI Project

This is in reference to this office letter no. 30-174-7/2015-USOF-BB (Vol. IX) dated 24.04.2020 and 30-174-1/2015-USOF-BB (BSNL PEA) dated 19.06.2020 vide which it was requested to make suitable arrangements for CANI bandwidth utilization.

2. In continuation of above letters, the introductory tariff of bandwidth created under CANI Project is enclosed.
3. It is further informed that
 - i. DoT licensees have to build their own network to connect to PoP locations.
 - ii. In order to boost telecom services in Andaman & Nicobar Islands, a promotional tariff offering bandwidth free of cost for first 90 days from date of commissioning will be offered to all DoT licensees who are willing to launch services. Here, no charges will be payable for bandwidth, AFC and CLC.
 - iii. The minimum period of lease is two years for bandwidth upto 1 Gbps (1 Gbps included) and five years for bandwidth more than 1 Gbps.
 - iv. DoT licensees has option to make advance payment for bandwidth on annual basis.
 - v. The enclosed introductory tariff shall be applicable after expiry of the promotional period as per (ii) above.
 - vi. The billing of the tariff will be done by Pr. CCA, Chennai.
 - vii. At present only two segments i.e. S-1 (Chennai - Port Blair) and S-6 (Port Blair - Swaraj Dweep) are being launched. The other segments which are in various stages of completion will be launched in due course.

This is issued with the approval of Secretary (Telecom), DoT.

Encl. As Above

To,
All DoT Licensees

CC:
Additional Administrator (F), USOF

Burde
01/07/2020
(Vilas Burde)
Director (VSB) USOF
Tele: 23724623

Copy for information to:

1. PSO to Secretary (Telecom)
2. Chief Secretary, UT Administration of Andaman & Nicobar Islands, Port Blair
3. Sr. PPS to Member (Finance) / Member (Technology) / Member (Services), DoT
4. Sr. PPS to Administrator, USOF
5. Director General (Telecom), DoT
6. CMD, BSNL
7. CMD, TCIL
8. Pr. CCA, Chennai, Tamil Nadu
9. CGM (STP), BSNL, Chennai
10. Dy. Administrator (F), USOF – for uploading on USOF website

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Proposed Tariff for CANI Submarine Cable Bandwidth

Type of Interface Equipment (IE)	Equivalent in G	Conversion factor	Bandwidth charges for Segment S-1 (Port Blair to Chennai) without GST	Bandwidth charges for other Segments (S2 to S8) without GST (Inter Islands)	AFC Charges per CLS without GST
STM-1	0.155 G	1	3,50,000	87,500	36,000
STM-4	0.625 G	2.6	12,00,000	3,00,000	93,000
1 G	1 G		40,00,000	10,00,000	1,22,000
STM-16	2.5 G	2	80,00,000	20,00,000	2,40,000
STM-64	10 G	5.3	2,12,00,000	53,00,000	6,25,000
40 G	40 G	2.6 of 10G	5,50,00,000	1,37,50,000	16,00,000
100 G	100 G	5.3 of 10G	11,24,00,000	2,81,00,000	26,00,000

Note:

1	Annual Access Facilitation Charge (AFC) per segment shall be extra in the proposed bandwidth charges. For one segment, AFC charges for both end CLS involved would be applicable. However, AFC charges for CLS falling in between the end segment will not be levied.
2	Co-location charges per rack (Rack Space 16 sq.ft) per annum up to 2 Kw Power @ Rs. 4,00,000/-
3	The BW will be allocated as per the availability and technical feasibility

