PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA)

CONTRACT AWARD PROFORMA – I

To Be Filled And Uploaded on PPRA Website In Respect of All Public Contracts of Works. Services and Goods

	Public Contracts of Works, Services and Goods
>	NAME OF THE ORGANIZATION/DEPTT. National Telecommunication Corp.
>	FEDERAL / PROVINCIAL GOVT. Federal Govt.
>	TITLE OF CONTRACT Supply, Installation, Testing and Commissioning
of	Juniper Router (at Islamabad, Lahore & Karachi) and Juniper BRAS at

> TENDER NUMBER HQ/ADV-02/2020-21

(Peshawar & Quetta) on DDP Site Turnkey Basis

Commissioning of Juniper Router (at Islamabad, Lahore & Karachi) and

Juniper BRAS at (Peshawar & Quetta) on DDP Site Turnkey Basis

> TENDER VALUE PKR 55,005,717.29/
> ENGINEER'S ESTIMATE (for civil Works only)

> ESTIMATED COMPLETION PERIOD 16 x weeks

> WHETHER THE PROCUREMENT WAS INCLUDED IN ANNUAL PROCUREMENT PLAN? Yes Yes / No

> ADVERTISEMENT:

> BRIEF DESCRIPTION OF CONTRACT Supply, Installation, Testing and

PPRA Website_Yes, Receipt No. 143152 dated: 05-08-2020 Yes / No

NATURE OF PURCHASE <u>Local</u> Local / International
 EXTENSION IN DUE DATE (If any) No. Yes / No

>	NUMBER OF TENDER DOCUMENTS SOLD
>	WHETHER QUALIFICATION CRITERIA WAS INCLUDED IN BIDDING/TENDER DOCUMENTS Yes / No (If yes enclose a copy).
>	WHETHER BID EVALUATION CRITERIA WAS INCLUDED IN BIDDING/TENDER DOCUMENTSYes / No (If yes enclose a copy).
>	WHICH METHOD OF PROCUREMENT WAS USED: - (Tick one)
	a) SINGLE STAGE – ONE ENVELOPE PROCEDURE
	b) SINGLE STAGE - TWO ENVELOPE PROCEDURE
	c) TWO STAGE BIDDING PROCEDURE
	d) TWO STAGE – TWO ENVELOPE BIDDING PROCEDURE
	- PLEASE SPECIFY IF ANY OTHER METHOD OF PROCUREMENT WAS ADOPTED WITH BRIEF REASONS (i.e EMERGENCY, DIRECT CONTRACTING, NEGOTIATED TENDERING ETC.)
	- WHO IS THE APPROVING AUTHORITY MD NTC
>	WHETHER APPROVAL OF COMPETENT AUTHORITY WAS OBTAINED FOR USING A METHOD OTHER THAN OPEN COMPETITIVE BIDDING.
>	NUMBER OF BIDS RECEIVED <u>07</u>
>	WHETHER THE SUCCESSFUL BIDDER WAS LOWEST BIDDER Yes / No
>	WHETHER INTEGRITY PACT WAS SIGNEDNo Yes / No

PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA)

CONTRACT AWARD PROFORMA – II

To Be Filled And Uploaded on PPRA Website In Respect of All Public Contracts of Works, Services & Goods

	>	NUMBER OF OPENING OF BIDS		PRESENT 07	AT	THE	TIME	OF
>		NAME AND ADDRE chnologies, # 03, 04 amabad.						
		RANKING OF SUCC (i.e. 1 st , 2 nd , 3 rd EVAI			UATIOI	N REPO	RT	
			<u>1st</u>					_
	>	NEED ANALYSIS (V	Vhy the procu		ecessar	y?)		
	>	IN CASE EXTENSION REASONS (Briefly of				,	T WERE	

	WHETHER NAMES OF THE BIDDERS AND THEIR PRICES WERE READ
	OUT AT THE TIME OF OPENING OF BIDS Yes /
	No
>	DATE OF CONTRACT SIGNING(Attach a copy of agreement)
>	CONTRACT AWARD PRICE
>	WHETHER COPY OF EVALUATION REPORT GIVEN TO ALL BIDDERS Yes Yes / No
	(Attach copy of the bid evaluation report)
>	ANY COMPLAINTS RECEIVED No (If yes result thereof)
>	ANY DEVIATION FROM SPECIFICATIONS GIVEN IN THE TENDER NOTICE/DOCUMENTS No. Yes / No (If yes give details)
>	DEVIATION FROM QUALIFICATION CRITERIA No. Yes / No (If yes give details)
>	SPECIAL CONDITIONS, IF Any (Give Brief Description)
	<u>NA</u>

BETWEEN

NATIONAL TELECOMMUNICATION CORPORATION

AND

M/s Hedra Technology Consultants (Pvt) Ltd

FOR

Supply, Installation, Testing and Commissioning of Juniper Router (at Islamabad, Lahore & Karachi) and Juniper BRAS at (Peshawar & Quetta) on DDP Site Turnkey Basis

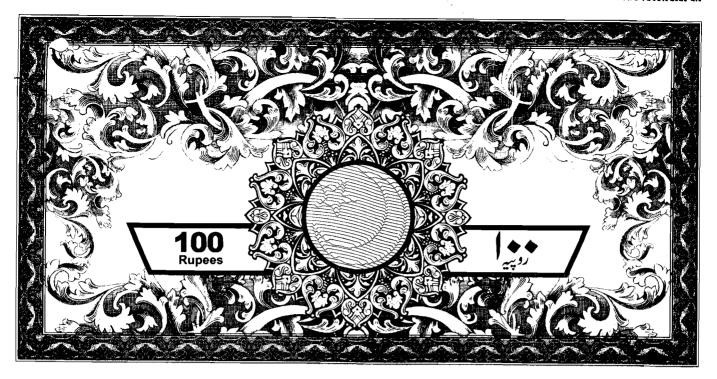
Contract No:

HQ/R&M/20-21/Juniper/Hedra

LLL January, 2021



Hedra



CONTRACT AGREEMENT

: HQ/R&M/20-21/Juniper /Hedra

THIS CONTRACT is made at Islamabad on this <u>26th</u> day of January, 2021 by and between NATIONAL TELECOMMUNICATION CORPORATION, <u>Headquarters</u>, <u>G-5/2</u>, <u>Islamabad (PAKISTAN)</u> (hereinafter called "NTC") of the one part,

AND

M/s Hedra Technology Consultants (Pvt) Ltd, Office # 3, 3rd Floor, Buland Markaz, Blue Area, Islamabad (Tel: 051-2801127) (hereinafter called "CONTRACTOR") Of the Other part.

WHEREAS, NTC desires to procure Juniper Routers (for Islamabad, Lahore & Karachi) and Juniper BRAS (for Peshawar & Quetta) on DDP Site Turnkey Basis to be supplied, delivered, installed, tested & commissioned on turnkey basis through the Contractor and they are willing to oblige to NTC as defined herein and as described in the Annex "A" attached hereto, under the terms and conditions set forth herein.

AND WHEREAS, the Contractor made their offer No. Nil dated 24-08-2020, and all subsequent clarifications from the date of submission of the offer upto the date of signing of the Contract.

NTC accepted the offer of the Contractor for successful completion of the project. The total contract value is PKR 55,005,717/- (Pak Rupees Fifty Five Million, Five Thousand, Seven and Seventeen Only) as per Annex- A.

Now Therefore this agreement witnessed in consideration of the terms and conditions contained herein, Contractor shall supply the equipment, and provide the services as defined in the Scope of Work in accordance with the time schedule of this contract, and hereby agreed as follows:

1. **DEFINITIONS**

IN THIS CONTRACT, THE FOLLOWING TERMS SHALL HAVE THE MEANING ASCRIBED THERETO BELOW:

- "Acceptance Certificate" or "AC", means a Provisional Acceptance Certificate and/or the Final Acceptance Certificate, as applicable, to be issued by NTC to the Contractor upon successful installation, testing and commissioning of the equipment in accordance with the terms and conditions of this contract, bill of quantity (Annex-A), Responsibility Matrix (Annex-B);
- 1.2 "Bill of Quantities" or "BOQ" means the bill of quantities specified (but not limited to) in (Annex-A) attached to the contract;
- 1.3 "Business Day" means a day, other than a Saturday or a Sunday or a Pakistan public holiday, on which the principal commercial banks are open for business during normal banking hours in Pakistan;
- 1.4 "Commercial Launch" shall mean when the installed & tested equipment is put into commercial service by NTC;
- 1.5 "Contract" means this contract between NTC and Contractor, and together with any Annexes attached and any valid amendment, any supplementary agreements and succeeding amendments thereto, form an integral part of this Contract;
- "Contract Period" shall mean validity period of this Contract, commencing from the Effective Date of Contract, and continuing until all the rights and obligations of both Parties have been performed as per (Annex-A&B);
- 1.7 "Contract Price" means the price payable to the Contractor under this contract as per Annex-A;
- "Confidential Information" shall mean all information, data, know-how, whether it is technical in nature or not, which is disclosed to the other party, and which is related to research, technology, design, Equipment and business activities or strategies of the proprietor, which is either marked or stated to be confidential, or is by its nature and/or its name reasonably intended to be confidential.
- 1.9 "Contractor's Personnel" means the person or persons for the time being or from time to time duly appointed by the Contractor to act for the purpose of the Contract;

"Contractor" is defined in the preamble;

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- "DDP" stand for "delivered duty paid" as defined in Incoterms 2000 and in this Contract shall mean all Equipment and Services to be provided by the Contractor on DDP Basis for completion of this Contract;
- 1.12 "Effective Date of Contract" means the date of signing of the contract;
- 1.13 "Equipment" means all the necessary hardware, required to build the Network as described in the Contract alongwith associated systems, cables, machinery, apparatus, materials, accessories, articles, spare parts, necessary tools, test and measurement equipment (with software) for operation and maintenance, relevant drawings, operation manuals, handbooks and other documentation which the contractor is required to supply to NTC under the Contract, as further described in the BOQ (but not limited to).
- 1.14 "Network" shall mean the network connecting the Equipment by which the Customer operates its telecommunication system;
- 1.15 "PKR" or "Pak Rupees" shall mean the lawful currency of the Islamic Republic of Pakistan.
- 1.16 "Responsibility Matrix" shall mean the Responsibility Area Matrix (RAM) attached in (Annex-B) setting out the different responsibilities of NTC and the contractor under this contract and which may be amended from time to time upon mutual written agreement of the Parties;
- 1.17 "Scope of Work" or "SOW" means the scope of work as described in the Contract;
- 1.18 "Services" means the installation, testing and commissioning of the Equipment, training and any other obligations of the contractor as provided in this BOQ & Responsibility Area Matrix of the Contract;
- 1.19 "Site" means the final place or places to which the Equipment as the case may be is to be delivered for installation and/or commissioning, or where the services are to be performed by the Contractor;
- 1.20 "Software" means the software (including any upgrades) bundled with, embedded, or supplied by the supplier with Equipment which is described in the Technical Specifications of offered equipment and BOQ;
- 1.21 "Software Update" shall mean a revised version of the software containing corrections of errors or defects in NTC's software without changing the functionalities of the system;
- 1.22 "Software Upgrade" in this contract shall mean to include in any manner any new, different, improved, enhanced and/or changed features, applications and functionality;
- 1.23 "Sub-Contractor" means any subcontractor selected by the contractor subject to the prior written approval of NTC, which may not be withheld unreasonably, for the purpose of carrying out obligations of the Contractor under the contract;

- 1.2 "Technical Specification" or "Specification(s)" means the technical compliance of hardware & software offered in the bid & evaluated by NTC provided in **Annex-A** attached to the Contract;
- 1.25 "Territory" means the Islamic Republic of Pakistan;
- 1.26 "Unit Price" means the unit price as stated in the BOQ;
- 1.27 "Warranty Period for Equipment" means twelve (12) months starting from the date of issuance of the PAC;
- 1.28 "Year", "Month", "Week" and "Day" are respectively the Gregorian calendar year, month, week and day.

Words importing the singular only also include the plural and vice versa where the context requires. Any terms not defined herein shall be given the same meaning as in the Contract.

2. **SCOPE OF WORK**

The contractor shall Supply, Install, optimization, Test and Commission of Juniper Routers and BRAS nodes for NTC on DDP site Basis on Turnkey Basis in accordance with BoQ (Annex-A) along with following deliverables but not limited to:

- a) Project Plan and Implementation Schedule
- b) Responsibility Area Matrix
- c) Design and Engineering (Technical Specifications and Design, drawings etc.)
- d) Test Strategy and Plan
- e) Relevant Documentation

3. RESPONSIBILITIES OF THE CONTRACTOR

For the execution of this project for supply, installation, testing, migration, optimization and commissioning of the equipment, software & allied services along with necessary items on turnkey basis, The Contractor shall undertake the following assignments:

- 3.1 Supply all hardware and software including Licenses, installation, testing and commissioning as per BoQ.
- 3.2 The contractor shall provide NTC fully functional system and the Equipment in accordance with the agreed Scope of Work and BOQ. Any new requirement which is not mentioned in BOQ and Scope of Work & is necessary to make the network functional or any integration/interfacing shall be obliged by the contractor upto the reasonable cost, however, are contractor shall not be liable to any major changes in the BoQ and scope of work.

- 3.3 The contractor shall not subcontract the whole of the works or any part of the work without the written consent of NTC.
- 3.4 All types of transportation shall be the responsibility of contractor. Permission for site working earned should be of NTC.
- 3.5 The Contractor shall execute the basic and detailed design and the implementation activities necessary for successful installation & commissioning of the System in compliance with the provisions of the Contract or, where not so specified, in accordance with good industry practice. The Contractor shall prepare and furnish the documents for the Project Director's approval or review. Any part of the System covered by or related to the documents to be approved by the Ultimate Consignee/Project Director shall be executed only after the approval of these documents.
- 3.6 The Contractor shall submit the Project implementation schedule to Director (Procurement) NTC and Project Director / Ultimate Consignee within 01 x week after signing the contract.
- 3.7 The Contractor shall conduct an engineering survey of sites.
- 3.8 The contractor shall provide the detailed literature for the installed equipment in the form of hard copies and soft copies as mentioned in the BOQ, covering all the details of the equipment and their operations, maintenance and recovery procedures.
- 3.9 The contractor shall submit detailed PAT documents within 15 x days from the date of signing of this contract enunciating all the test procedures as per international standards to (N&SE) Wing NTC HQs for vetting through Director (Procurement) NTC.
- 3.10 To carry out installation and commissioning according to the implementation schedule, including all action/activities and inform/update Project Director of NTC.

4 RESPONSIBILITIES OF NTC

- 4.1 The Ultimate Consignee / Project Director shall arrange to prepare the site as per standard equipment room; however this standard must be supportive to the SOW, BOQ and other requirements for this project.
- 4.2 If the delay in site preparation occurs due to NTC fault, the delay time should be accumulated, and NTC should extend equal time to Contractor. For clarity purposes in the event of any delay attributable to the breach of any responsibility of NTC the total delay period will be compensated to the contractor in the form of extending the completion period & penalty will be imposed accordingly.
- 4.3 NTC shall provide air-conditioning, fire-alarm protection and fire-fighting system.
- 5. COORDINATION AND IMPLEMENTATION OF THE PROJECT



- 5.1 Director (Data Comm) NTC HQs will assist in timely and satisfactory completion of the project in their areas of jurisdiction as per SOW and responsibility area matrix by the Contractor.
 - The ultimate consignee/ Project Director shall be responsible to verify the equipment against contract, to issue PAC & FAC and to coordinate with any third party (if required). He will also be responsible to verify the delivery challans of the delivered equipment by the contractor.

6. PRICES

- 6.1 All unit prices set forth in Annex "A" (BOQ) are firm and final and no variation whatsoever shall be acceptable to NTC. All the prices in Pak Rupees on DDP Turnkey basis at sites, inclusive of all taxes, duties, fees or any other charges/taxes till the date of submission of the quotation of M/s Hedra Technology Consultants (Pvt) Ltd.
- 6.2 Moreover, any other services /sales taxes if levied by the Federal Government of Pakistan and / or Provincial Governments in Pakistan during delivery & execution of contract will be paid by NTC as per actual.

7. COMPLETION PERIOD

The contractor shall supply, install, test and configure the equipment & allied services along with necessary items in accordance with BOQ within 16 x weeks from the date of receipt of advance payment from NTC subject to the provision of invoice along with Advance Payment Bank Guarantee. M/s Hedra Tech will provide said invoice and Bank Guarantee within 02 weeks of the signing of contract. Otherwise the completion schedule shall be deemed as commended after that time frame.

8. PERFORMANCE SECURITY

- The Contractor shall furnish performance security (@10% of total contract value valid for 14 months) in the shape of bank guarantee issued from any scheduled bank of Pakistan after issuance of LOI. The contract will be signed after getting confirmation from bank about the genuineness of guarantee submitted by the contractor.
- 8.2 The performance security shall be further extended, if required by NTC owing to project delay if caused by the contractor. In case contractor fails to extend the bank guarantee than same amount will be retained from the PAC payment as performance security to cover the warranty period.
- 8.3 The performance security will be released on issuance of FAC. Failure of the contractor to complete the work in time or fulfill the warranty requirements within retention of guarantee will result in confiscation of performance security.

Failure to furnish the required security will lead to confiscation of tender security.

LIQUIDATED DAMAGES

Unless the delay in completion of work (i.e. issuance of PAC) is caused by force majeure or delay is not on part of NTC, the Contractor (due to its sole and direct fault) shall pay to NTC Headquarters as liquidated damages a sum equivalent to 0.5% of the dayed portion for each week subject to a maximum of 10% of total contract value and the same will be recovered from the Contractor at the time of PAC payment. In case of force majeure the delivery period may be extended on receipt of request from contractor with documentary evidences during the completion period. Such request should only be entertained when received well before expiry of contract period. If extension is granted in the completion period then contractor will be penalized accordingly. Penalty charges will be calculated keeping in view the delay on both sides (i.e. NTC & Contractor).

10. PROVISIONAL ACCEPTANCE CERTIFICATE (PAC)

- 10.1 Upon satisfying itself that installation and testing of the Equipment undertaken by the Contractor is complete in all respects, the contractor will inform in-writing to Director (Data Comm) NTC HQs to detail a team for Provisional Acceptance Test. Director (Data Comm) NTC HQs will constitute team(s) comprising of members to conduct the PAT. The equipment installed will be verified with the contract and all tests be carried out in accordance with approved PAT documents from NTC N&SE wing.
- 10.2 The Contractor will arrange the tests as per approved PAT Documents. If NTC put the equipment in commercial services without conducting PAT then that equipment will be considered as accepted and this acceptance date will be considered the date of successful conduct of PAT. However, PAT will be conducted in accordance with approved/vetted PAT documents from (N&SE) wing NTC HQs.
- 10.3 The constituted & approved PAT team will sign Provisional Acceptance Test after successful completion of Test. After successful conduct of PAT, Director (Procurement) NTC HQs will issue certificate of successful completion of PAT after which Ultimate Consignee will issue the PAC on the basis of provisional acceptance test.
- 10.4 In case Provisional Acceptance Certificate is not issued within one (01) week, Project Director/Ultimate Consignee NTC shall inform in-writing of the specific reason(s) for the delay within one (01) week after receipt of request from the Contractors, to this effect.
- 10.5 NTC reserves the rights to reject any item before Provisional Acceptance Certificate if it does not conform to the specifications by reason of some defect, latent or otherwise of material which was not discoverable by a reasonable examination.
- 10.6 The PAT / PAC can be issued per site basis.
- 10.7 The Provisional Acceptance Certificate (PAC) will be valid for warranty period of 12 months.

11. TERMS OF PAYMENT



- 11. Fifteen percent (15%) payment of the total contract value shall be payable to the contractor in advance against submission of following by contractor:
 - Commercial Invoice.
 - Guarantee of equivalent amount issued by any scheduled bank of Pakistan valid for six (06) months from the date of signing of contract/issuance of purchase order.

The invoice will be processed for payment after confirmation of genuineness of submitted guarantee by the issuing authority (i.e. bank). Moreover, the contractor will ensure submission of the bank guarantee within 01 x week of the signing of the contract.

- 11.2 Forty Five percent (45%) of the total contract value shall be payable to the contractor upon successful delivery of equipment at destination. The ultimate consignee will confirm the delivery of equipment by signing the delivery challan. The contractor shall furnish invoice of (60%) of total contract value including adjustment of 15% advance value along with duly signed original delivery challan. The GST number of NTC & contractor shall be clearly mentioned on commercial invoice.
- 11.3 Thirty Five percent (35%) payment of total contract value shall be payable to contractor upon successful installation, testing and commissioning of system which shall be proved by Provisional Acceptance Certificate (PAC) issued by ultimate consignee/Project Director.
- 11.4 Five percent (05%) balance payment shall be payable on removal of minor discrepancies pointed out in PAC at any site. If there exists no discrepancies in PAC this payment shall be payable on issuance of NDC (Nil Deficiency Certificate) by Project Director.
- 11.5 All the payments shall be made through cross cheque in the Pak Rupees.
- 11.6 Taxes will be deducted as per prevailing tax laws at the time of payment. However, NTC shall provide to the contractor the tax receipts duly paid into the government.
- 11.7 Any new tax/charge/levy/impose which if become applicable under the prevailing tax laws of Pakistan on or after the signing of this contract, whereby the contractor is under legal obligation to charge and collect the same from NTC, shall be to the cost of NTC.
- 11.8 All the payments will be made by Director (Procurement) NTC HQ through CFO NTC HQ.

WARRANTY / SERVICES

The Contractor will warrant that the equipment supplied under the contract are new, unused, and incorporates all recent improvements in design and materials and of good quality. The warranty shall remain valid for 12 months after the issuance of PAC. NTC shall

promptly notify the Contractor in writing of any claims arising under this warranty and the supplier will repair / replace/rectify within 24-hours notice by NTC without any cost effect.

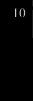
- 12.2 It shall be the responsibility of the contractor to make good, to NTC's satisfaction, equipment exhibiting repeated failures to the same type. This may involve replacement during the warranty period. The contractor shall subject to the conditions below, during the warranty period, at its option, repair or replace (within the period specified in Clause # 13.1) without charge to NTC any parts of the Equipment found to be defective by reasons of defective material, design or workmanship, provided that:
 - a. The Equipment is used and maintained under normal conditions and in accordance with the documents, information and advice furnished by the contractor under this contract;
 - b. NTC has given the contractor notice of such defects not later than thirty (30) days after its occurrence and
 - c. NTC shall give the contractor every opportunity to inspect and remedy such defect.
- 12.3 The contractor shall not under any circumstances whatsoever be liable (after the Equipment has been provisionally accepted by NTC) for any defects to/ faults of the Equipment if they are the result of:
 - a) Improper storage, handling or usage of the Equipment.
 - b) Mismanagement of the Equipment by NTC.
 - c) Operation or application of the Equipment in violation of the operating manual or the instructions furnished by the Contractor, or any of its sub-the contractors or subcontractors.
 - d) Modification, alteration, repair and/or improper wiring of the Equipment by;
 - e) Any force Majeure event;
- 12.4 The period of warranty applicable to the items repaired or replaced during the warranty period shall be up to the end of the original Warranty Period, whichever is longer.

13. FINAL ACCEPTANCE CERTIFICATE

The Contractor may notify the Project Director/Ultimate Consignee NTC at-least 15 days before the expiry of warranty period for the issuance of final acceptance certificate (FAC). Upon such notification from contractor, the Project Director/Ultimate Consignee will issue Final Acceptance Certificate in favour of contractor subject to satisfactory completion of warranty period as per requirement of contract. Alternatively the Project Director / Ultimate Consignee will notify the Contractor for the discrepancies that still remained un-resolved and the Contractor will rectify the discrepancies.

14. **CONFIDENTIALITY**

14.1 Each party shall not, during the term thereof or after the termination of this Contract, disclose any information gained by it in connection with the performance of this Contract, to any third party without the consent of the other party, unless disclosure of such information is required by any law, regulation, authority, court and/or such information



has entered the public domain other than by breach of this Contract ("Confidential Information").

- 14.2 Each party hereby agrees to use all reasonable efforts to take such action(s) as may be appropriate to prevent the unauthorized use and disclosure of, and to keep confidential such Confidential Information, including, without limitation:
 - a. Ensuring that such Confidential Information is disclosed only to responsible employees on a need-to-know basis and who have first been properly instructed to maintain such Confidential Information in confidence; and
 - b. Not disclosing to any party the existence of this Contract, the terms and conditions of this Contract or any Confidential Information.
- 14.3 If the recipient of the Confidential Information has to disclose such information as compelled by legal, judicial or administrative proceedings, the recipient shall give the disclosing party reasonable prior notice before the disclosure and cooperate with the disclosing party to enable the disclosing party to seek a protective order or other relief to prevent or limit disclosure of such Confidential Information.
- 14.4 The Parties agrees that, notwithstanding expiration or termination of this Contract for any reason whatsoever, the provisions relating to Confidential Information shall survive the expiration or termination of this Contract and shall be continuing obligations unless the Parties agree to discontinue its effect.

15. CONTRACTOR'S NEGLIGENCE & LIMITATION OF LIABILITY

- 15.1 The Contractor shall indemnify NTC in respect of all injury or damage to any person or to any property and against all actions, suites, claims, demands, charges and expenses arising in connection herewith which shall be occasioned by the negligence or breach of statutory duty solely and directly of the Contractor, any of its sub-Contractors and due to force majeure or due to fault of NTC or any third party before, the whole of the project has been finally accepted.
- 15.2 Notwithstanding anything contrary contained in this contract, if the contractor is in breach of any obligations under this contract (or any part of it) to NTC or if any other liability is arising (including liability for negligence or breach of statutory duty) solely due to contractor's fault and not due to force majeure or due to NTC's or any third party's fault related to NTC, then the maximum liability of the contractor under this contract under any claim, whether in contract, tort (including negligence) or otherwise, arising out of, connected with, or resulting from the manufacture, sale, license, delivery, repair, replacement or use of the equipment and/or the provision of the service shall be limited to the ten percent (10%) of the Contract Price which shall exclude indirect, incidental, exemplary, punitive, special or consequential losses/damages of any kind including but not limited to loss of goodwill or reputation, revenue or any other indirect financial or economic loss even if the party has been advised of possibility of such damages.

CONTRACTOR'S DEFAULT

16.1 If the Contractor:

- Fails to deposit within 15 working days of the signing of contract by both the partic, the security equivalent to 10% of the Contract Price, or
- Not signing the Contract, or
- Without reasonable excuse have failed to commence the Works or have suspended the progress of the Works for twenty (20) days after receiving from NTC written notice to proceed, or
- Failure within a period of 30 days (or such longer period as NTC may authorize in writing) after receipt of the default notice from NTC.
- Despite previous warnings by NTC in writing, not be executing the works in accordance with the contract, or be neglecting to carry out his obligations under the Contractor, cancel the Contract and may procure upon such terms and in such manner as it deems appropriate.
- 16.2 NTC will have the right to cancel the contract under the above clause, and it shall not be liable to pay to the Contractor any money on account of the contract except for the accrued rights. Moreover the security deposited by the Contractor shall also be confiscated by the NTC under such circumstances.
- 16.3 The default on part of NTC, the Contractor shall not be liable, however, the contractor shall be suitably compensated.

17. ARBITRATION AND AMICABLE LAW

- 17.1 The Contract will be construed under and governed by THE LAWS OF THE ISLAMIC REPUBLIC OF PAKISTAN.
- 17.2 NTC and the Contractor shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 17.3 Any dispute, disagreement or question arising out of or relating to or in consequence of this contract or relating to its execution or performance which cannot be settled amicably, shall be referred to arbitration to Chairman NTC. All the decisions will be made in view of Arbitration Act 1940.
- 17.4 Within 30 days of the said notice, one arbitrator shall be nominated in writing by NTC and one arbitrator shall be nominated in writing by the Contractor.
- 17.5 The arbitration shall initiate arbitration proceedings at Islamabad. In case the arbitration does not reach on conclusion, then case would be referred to the court of Law.



17.6 Each party shall bear the cost of its own arbitrator and the cost of the third arbitrator shall be borne equally by both parties.

18. FORCE MAJEURE

- 18.1 The Contractor shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure.
- 18.2 If either party is temporarily rendered unable, wholly or in part by Force Majeure to perform its duties or accept performance by the other party under the Contract it is agreed that on such party, giving notice with full particulars in writing of such Force majeure to the other party within 14 (fourteen) days after the occurrence of the cause relied on, then the duties, of such party as far as they are affected by such Force Majeure shall be suspended during the continuance of any inability so caused but for not longer period and such cause shall as for as possible be removed with all reasonable speed. Neither party shall be responsible for delay caused by Force Majeure.
- 18.3 The terms "Force Majeure" as used herein shall mean Acts of God, strikes, lockouts or other industrial disturbance, act of public enemy, war, blockages, insurrections, riots, epidemics, landslides, earthquakes, fires, flood, washouts, civil disturbances, explosion, Governmental Export/Import Restrictions (to be supported by a letter from the relevant Authority and verified by the Diplomatic Mission in Pakistan), Government actions/restrictions due to economic and financial hardships, change of priorities and any other cause similar to the kind herein enumerated or of equivalent effect, not within the control of either party and which by the exercise of due care and diligence either party is unable to overcome.
- 18.4 The term of this Contract shall be extended for such period of time as may be necessary to complete the work which might have been accomplished but for such suspension. If either party is permanently prevented wholly or in part by Force Majeure for period exceeding 12 (twelve) months from performing or accepting performance, the party concerned shall have the right to terminate this contract immediately giving notice with full particulars for such Force Majeure in writing to the other party, and in such event, the other party shall be entitled for an amount for the work done or the extra amount already paid.
- 18.5 If a Force Majeure situation arises, the Contractor shall promptly notify NTC in writing of such conditions and the cause thereof. Unless otherwise directed by NTC in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practicable, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

19. TERMINATION FOR INSOLVENCY

With out prejudice or affecting of any right action or remedy which has accrued or will accrue there-after to NTC, NTC may at any time terminate the contract by giving written notice to the Contractor, without compensation to the Contractor if the Contractor becomes bankrupt or otherwise insolvent.

20. TERMINATION FOR CONVENIENCE

NTC may by a thirty (30) days written notice sent to the Contractor, terminate the contract in whole or in part at any time for its convenience.

21. <u>ULTIMATE CONSIGNEE/PROJECT DIRECTOR</u>

Director (Data Comm)

NTC HQs G-5/2

Islamabad.

Tel:-051-9208809

Fax:-051-9201489

22. AMENDMENTS IN CONTRACT

- 22.1 No variation in or modification of the terms of the contract shall be made except by written amendments signed by the parties.
- 22.2 NTC may at any time but at least thirty (30) days prior to the delivery of the Equipment or service, intimate by official email and followed by a written order given to the contractor, change within the general scope of the contract in any one or more of the following: Drawings, designs or specifications, where Goods or service to be furnished under this contract. If any such change causes and increase in the cost of or the time required for the contractor's performance of any part of the work under the contract, whether changed or not changed by the order, an equitable adjustment shall be made in the contract price or delivery schedule, or both, after approval from competent authority of NTC and the contract shall accordingly be amended. Any claims by the contractor for adjustment under this paragraph must be asserted within fifteen (15) days from the date of contractor's receipt of NTC changed order. Similarly, the contractor may also reserve the right to make amendment in the contract under the same condition above but it will be at no extra cost.

23. PRIORITY OF DOCUMENTS

Unless there is anything repugnant in this contract, various documents shall have priority as under:

- a. The Contract/Agreement and its attached Annexes
 - (i) Annex-A (BoQ)
 - (ii) Annex-B (Responsibilities Matrix)
- b. The L.O.I.
- c. The Bid/Tender Documents.
- d. The Contractor's Offer and subsequent clarification etc.

24. EFFECTIVE DATE OF CONTRACT

"Effective Date of Contract" means the date of signing of the contract.

25. DEBARMENT / BLACKLISTING OF FIRM



- As per clause-19 of the PPRA rules 2004, NTC reserves the right of debarment 'or' blacklisting of a firm, association, corporation, joint venture, company, partnership or any other legal entity subject to any of the following acts:
 - a. Consistent failure to provide satisfactory performance.
 - b. Contractor becomes insolvent.
 - c. Existence of judicial decision against a contractor in respect of a corrupt or collusive practice.
 - d. Submission of false and spurious documents, making false statements and allegations to gain undue advantage.
 - e. Commission of fraud.
 - f. Contractor abandons the contract.
 - g. Contractor without reasonable excuse fails to commence the work 'or' suspends the progress of work for 14 days.
 - h. Contractor is not executing the work in accordance with the contract or is persistently or flagrantly neglecting to carry out his obligations under the contract.
 - i. Commission of embezzlement, criminal breach of trust, theft, cheating, forgery, bribery, falsification or destruction of records, receiving stolen property, false use of trademark, securing fraudulent registration with sales tax authorities, Pakistan Engineering council etc, giving false evidence, furnishing of false information of serious nature.
 - 25.2 Chairman NTC will constitute a committee comprising of three NTC officers and they will investigate the matter in connection with allegation of corrupt, fraudulent, coercive or collusive practices or illegally harassment or threat. Moreover, the committee shall also accord adequate opportunity of being heard to the contractor who is to be debarred / blacklisted. The said committee will forward its clear recommendations for the approval of Chairman NTC.
 - 25.3 The debarment shall be for a reasonable specified period of time, commensurate with the seriousness of the cause. However, the debarment period shall not exceed from three years. Moreover, NTC also reserves the right of permanent blacklisting of a contractor subject to severity of the corrupt or fraudulent practices.

26. NOTICES

26.1 Purchaser's address

NATIONAL TELECOMMUNICATION CORPORATION, HEADQUARTERS, G-5/2, ISLAMABAD.

26.2 Contractor's address

M/s Hedra Technology Consultants (Pvt) Ltd, Office # 3, 3rd Floor, Buland Markaz,

Blue Area, Islamabad (Tel: 051-2801127)

27. INTEGRITY

- 27.1 M/s Hedra Technology Consultants (Pvt) Ltd hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other owned or controlled by it (GoP) through any corrupt business practice.
- 27.2 Without limiting the generality of the foregoing M/s Hedra Technology Consultants (Pvt) Ltd represents and warrants that it has fully declared the brokerage, commission, fees etc, paid or payable to anyone and not given or agreed to give and shall not give or agree to five to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or including the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.
- 27.3 M/s Hedra Technology Consultants (Pvt) Ltd certified that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken an action or will not take any action to circumvent the above declaration, representation or warranty.
- 27.4 M/s Hedra Technology Consultants (Pvt) Ltd accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that nay contract, right, interest, privilege or other right and remedies available to GoP under any law, contract or other instrument, be avoidable at the option of GoP.
- 27.5 Notwithstanding any rights and remedies exercised by GoP in this regard, M/s Hedra Technology Consultants (Pvt) Ltd agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten time the sum of any commission, gratification, bribe, finder's fee or kickback given by M/s Hedra Technology Consultants (Pvt) Ltd as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

28. LANGUAGE

The official language of this contract shall be English Language.

IN WITNESS HEREOF, The Parties hereto executed this Contract as of the day and year and at the respective place of business herein above set forth and have set their hand below:

Contract Agreement - Supply, Installation, Testing and Commissioning of Juniper Router (at Islamabad, Lahore & Karachi) and Juniper BRAS at (Peshawar & Quetta) on DDP Site Turnkey Basis

16

Consultant

FOR AND ON BEHALF OF M/s Hedra Technology Consultants (Pvt)

Name, Designation & address

FOR AND ON BEHALF OF NATIONAL TELECOMMUNICATION CORPORATION

Director (Procurement) NTC HOs

Witness

Juimos Younis 6/10/-5402/07-7

Waheed Hussain
DE (Procurement)
NTC HQs G-5/2, Islamabad

Contract Agreement - Supply, Installation, Testing and Commissioning of Juniper Router (at Islamabad, Lahore & Karachi) and Juniper BRAS at (Peshawar & Quetta) on DDP Site Turnkey Basis

5 E



Supply, Installation, Testing and Commissioning of Juniper Router (at Islamabad, Lahore & Karachi) and Juniper BRAS at (Peshawar & Quetta) on DDP Site Turnkey Basis

	s/Software/Licenses	T		M/s Hedra Te	ch
SR. No		Quantity	Unit Prices without GST	Unit Price with	Total Price PKR
1	Chasis with Redundant Control Boards and Power Supply	3	3,018,359.00		10,594,440.0
	MX480 Premium Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E	3			
	JUNOS-64 Bit Standard Software Suite	3	1	1	
	Routing Engine-6Core-2.0GHz with 64 G Memory Base, Burdle, for MX240/MX480/MX960	6			1
	Enhanced MX Switch Control Board, Base Bundle	- 6	-		-
	MX480 High Capacity Fantray, configurable option in base bundle	3	}	1	l L
	2400W DC Power Supply, configurable option in base bundle	12)	
	Juniper Care Next Day Support for MX480 Chasis(Includes RE/SCB/PWR/JUNOS) 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules 20 Port SFP GE MIC (35 ports)	3	1,948,627.00	2,279,893.59	13 670 261 5
	NG MPC2E, Port Queue, Full Scale, 32 L3 VPN	6	1,946,627.00	2,273,093.39	13,679,361.5
	20-Port SFP GE MIC with 1588 & MACSEC	6	ł	Í	1
	Juniper Care Next Day for MPC2E-30-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C-		-	} -	} •
_	192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48)	3			<u>_</u>
3	1 GE 1310nm 10 KM Single Mode Optical Transcievers	60	23,592.00	27,602.64	1,656,158.4
4		36	12,296.00		517,907.5
	100/1000 Base -T Electrical Transcievers	30	9,636.00	11,274.12	338,223.60
	Installation / Commissioning Material	3	150,000.00	175,500.00	526,500.0
7	Management NoteBook core i7 9th Gen 16 GB RAM 1 256 SSD for router	2	195,575.00	195,575.00	391,150.0
ervices	Sub Total				27,703,741.1
	Supply, Installation, Testing and Commissioning-Islamabad	1	50,000.00	52,500,00	52,500.00
	Supply, Installation, Testing and Commissioning- Lahore	1	125,000.00	145,000.00	145,000.00
	Supply, Installation, Testing and Commissioning-Karachi	1	125,000.00	141,250.00	141,250.00
4	Migration from existing router to new router-islamabad	1	50,000.00	52,500.00	52,500.00
	Migration from existing couter to new router-Lahore	1	125,000.00	145,000.00	145,000.00
6	Migration from existing router to new router-Karachi	1	125,000.00	141,250.00	141,250.00
	Sub Total				677,500.00
	Grand Total 3 x Routers PKR				28,381,241.15
DAC (DI	NC) Berhause & Ouette				
	NG) Peshawar & Quetta				
aroware	/Software/Licenses				
R. No	Description	Quantity	Unit Prices	Unit Price with	Total Price PKR
			without GST	GST	
1 1	Chacks with Redundant Control Roards and Dower Supply	-	2 018 250 00	3 631 480 03	7 000 000 00
1		2	3,018,359.00	3,531,480.03	7,062,960.06
1	MX480 Premium Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E	2	3,018,359.00	3,531,480.03	7,062,960.06
1	MX480 Premium Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite	2	3,018,359.00	3,531,480.03	7,062,960.06
1	MX480 Premium Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E	2	3,018,359.00	3,531,480.03	7,062,960.00
1	MX480 Premium Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory Base, Bundle,for MX240/MX480/MX960	2 2	3,018,359.00	3,531,480.03	7,062,960.06
1	MX480 Premium Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory Base, Bundle,for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle	2 2 4	3,018,359.00	3,531,480.03	7,062,960.06
1	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis (Includes RE/SCB/PWR/JUNOS)	2 2 4 4 2	3,018,359.00	3,531,480.03	7,962,960.06
2	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E IUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory 8ase, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis Includes RE/SCB/PWR/JUNOS) 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports)	2 2 4 4 2 8	3,018,359.00 1,948,627.00	3,531,480.03 2,279,893.59	
	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory 8ase, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 200/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. [35 ports] NG MPC2E, Port Queue, Full Scale, 32 L3 VPN	2 2 4 4 4 2 8 2 4 4	·	-	
	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC	2 2 4 4 2 8 2	·	-	
2	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6 Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 200/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPCZE, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B [MIC Included except MIC3-100G-DWDM, MIC-3D-10C-	2 2 4 4 2 8 2 4 4 4	·	-	
2	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis (Includes RE/SCB/PWR/JUNOS) 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C- 192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48)	2 2 4 4 2 8 2 4 4 4 4	1,948,627.00 -	2,279,893.59	7,062,960.06 9,119,574.36
2	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis (Includes RE/SCB/PWR/JUNOS) 300/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B [MIC Included except MIC3-100G-DWDM, MIC-3D-10C-192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports	2 2 4 4 2 8 2 4 4 4	·	-	
2	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis Includes RE/SCB/PWR/JUNOS) 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C- 192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) MIC-3D-4XGE-XFP	2 2 4 4 2 8 2 4 4 4 4 4 8	1,948,627.00 548,329.00	2,279,893.59 641,544.93	9,119,574.36 5,132,359.44
3	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B [MIC Included except MIC3-100G-DWDM, MIC-3D-10C-192KFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transcievers	2 2 4 4 2 8 2 4 4 4 4 4 4	1,948,627.00 548,329.00 23,592.00	2,279,893.59 641,544.93 27,602.64	9,119,574.36 5,132,359.44 1,104,105.60
3 4 5 5	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis Includes RE/SCB/PWR/JUNOS) 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C- 192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) MIC-3D-4XGE-XFP	2 2 4 4 2 8 2 4 4 4 4 4 8	1,948,627.00 548,329.00 23,592.00 12,296.00	2,279,893.59 641,544.93 27,602.64 14,386.32	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68
2 3 4 5 6	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6-Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis (Includes RE/SCB/PWR/JUNOS) 300/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C-192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP I GE 1310nm 10 KM Single Mode Optical Transclevers 106/1000 Base -T Electrical Transclevers	2 2 4 4 2 8 2 4 4 4 4 4 8 8	1,948,627.00 548,329.00 	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68 225,482.40
3 4 4 5 6	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6 Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Siots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B [MIC Included except MIC3-100G-DWDM, MIC-3D-10C-192KFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE KSFP Ports MIC-3D-4XGE-KFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 850nm 300m Multi Mode Optical Transclevers	2 2 4 4 2 8 2 4 4 4 4 4 8	1,948,627.00 548,329.00 23,592.00 12,296.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,774.12 114,438.87	9,119,574.36 5,132,359.44 3,104,105.60 345,271.68 225,482.40 915,510.96
3 4 5 6 7 8	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6 Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B [MIC Included except MIC3-100G-DWDM, MIC-3D-10C-192KFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE KSFP Ports MIC-3D-4XGE-KFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 850nm 300m Multi Mode Optical Transclevers 100/1000 Base -T Electrical Transclevers Dual Rate Plugable 10 GE 850nm 300m Multimode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 31K Subscribers	2 2 4 4 4 2 8 2 4 4 4 4 4 8 8 2 2 4 4 4 2 2 4 4 4 2 4 4 4 4	1,948,627.00 548,329.00 23,592.00 12,296.00 9,636.00 97,811.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12	9,119,574.36 5,132,359.44 3,104,105.60 345,271.68 225,482.40 915,510.96
3 4 5 6 7 8	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC included except MIC3-100G-DWDM, MIC-3D-10C-192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 650nm 300m Multi Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 830nm 300M Multimode Mode Optical Transclevers	2 2 4 4 2 8 2 4 4 4 4 8 8 40 24 20 8	1,948,627.00 548,329.00 23,592.00 12,296.00 9,636.00 97,811.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,774.12 114,438.87	9,119,574.36 5,132,359.44 3,104,105.60 345,271.68 225,482.40 915,510.96
3 4 5 6 7 8 9	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.0GHz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis Includes RE/SCB/PWR/JUNOS) 300/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C-192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 850nm 300m Multi Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 1310nm 10 KM Single mode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers Subscriber Service Management Feature Packet License (RIDIUS/SRC Based Service Activation) JUNOS Subscriber Access Feature Pack, MX960	2 2 4 4 2 8 2 4 4 4 4 4 2 2 2 2 2 3 3 4 4 4 4 4 2 4 4 4 4	1,948,627.00 548,329.00 23,592.00 12,296.00 9,636.00 97,811.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,774.12 114,438.87	9,119,574.36 5,132,359.44 3,104,105.60 345,271.68 225,482.40 915,510.96
3 4, 5, 6, 7, 8, 9	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] J00/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C- 192XFP,MIC-3D-8CHDC3-4CHDC12 & MIC-3D-8OC3OC12-40C48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 850nm 300m Multi Mode Optical Transclevers 1 1 GE 850nm 300m Multi Mode Optical Transclevers 1 Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 1310nm 10 KM Single mode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers JUNOS Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers, MX Series	2 2 4 4 2 8 2 4 4 4 4 4 2 2 2 2 2 3 3 4 4 4 4 4 2 4 4 4 4	1,948,627.00 548,329.00 23,592.00 12,296.00 9,636.00 97,811.00 73,358.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12 114,438.87 85,828.86	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68 225,482.40 915,510.96 686,630.88
3 3 4 5 6 7 8 9	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC included except MIC3-100G-DWDM, MIC-3D-10C- 192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 650nm 300m Multi Mode Optical Transclevers 1 Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers, MX Series Installation / Commisioning Material	2 2 4 4 2 8 2 4 4 4 4 4 20 8 8 2 2 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1,948,627.00 548,329.00 23,592.00 12,296.00 9,636.00 97,811.00 73,358.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12 114,438.87 85,828.86	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68 225,482.40 915,510.96 686,630.88
2 3 4 5 6 7 8 9	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6 Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B [MIC Included except MIC3-100G-DWDM, MIC-3D-10C-192KFP,MIC-3D-8CH0C3-4CH0C12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 450nm 300m Multi Mode Optical Transclevers 100/1000 Base -T Electrical Transclevers Dual Rate Plugable 10 GE 850nm 300m Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 830nm 300m Multimode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers Subscriber Service Management Feature Packet License (RIDIUS/SRC Based Service Activation) JUNOS Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers, MX Series Installation / Commisioning Material Management NoteBook core i7 9th Gen 16 GB RAM 1 256 SSD for BRAS	2 2 4 4 2 8 2 4 4 4 4 4 8 8 20 20 20 21 4 20 21 4 20 21 4 21 4 4 21 4 4 4 4 4 4 4 4 4 4 4 4	1,948,627.00 548,329.00 23,592.00 12,296.00 9,636.00 97,811.00 73,358.00 438,464.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,774.12 114,438.87 85,828.86 513,002.88	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68 225,482.40 915,510.96 686,630.88 1,026,005.76 351,000.00 195,575.00
2 3 4 5 6 7 8 8 9	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC included except MIC3-100G-DWDM, MIC-3D-10C- 192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 650nm 300m Multi Mode Optical Transclevers 1 Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers, MX Series Installation / Commisioning Material	2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1,948,627.00 548,329.00 23,592.00 12,296.00 9,7,81.00 73,358.00 438,464.00 150,000.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12 114,438.87 85,828.86 513,002.88 175,500.00	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68 225,482.40 915,510.96 686,630.88 1,026,005.76 351,000.00 195,575.00
2 3 4 5 6 7 8 9	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis Includes RE/SCB/PWR/JUNOS) JOO/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C-192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-40C48) 10 GE XSFP Ports MIC-3D-4XGE-XFP I GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 850nm 300m Multi Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 1310nm 10 KM Single mode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers, MX Series Installation / Commisioning Material Management NoteBook core i7 9th Gen 16 GB RAM 1 256 SSD for BRAS Sub Total	2 2 4 4 4 2 8 2 4 4 4 4 8 8 20 8 20 8 2 20 24 4 20 24 20 21 21 21 21 21 21 21 21 21 21 21 21 21	1,948,627.00 548,329.00 23,592.00 12,296.00 9,636.00 97,811.00 73,358.00 438,464.00 150,000.00 195,575.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12 114,438.87 85,828.86 513,002.88 175,500.00 195,575.00	9,119,574,36 5,132,359,44 3,104,105,60 345,271,68 225,482,40 915,510,96 686,630,88 1,026,005.76 351,000.00 195,575,00 26,164,476,14
2 3 4 5 6 7 8 9 10 11	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis Includes RE/SCB/PWR/JUNOS) 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C- 192XFP,MIC-3D-8CHDC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 6350nm 300m Multi Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 830nm 300M Multimode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers, MX Series Installation / Commisioning Material Management NoteBook core i7 9th Gen 16 GB RAM 1 256 SSD for BRAS Sub Total	2 2 4 4 4 2 8 2 4 4 4 4 4 8 8 20 24 20 8 2 2 1	1,948,627.00 548,329.00 23,592.00 12,296.00 9,636.00 97,811.00 73,358.00 150,000.00 195,575.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12 114,438.87 85,828.86 513,002.88 175,500.00 195,575.00	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68 626,630.88 1,026,005.76 351,000.00 195,575.00 26,164,476.14
2 3 4 5 6 7 8 9 10 11	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6 Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B [MIC included except MIC3-100G-DWDM, MIC-3D-10C-192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 6850nm 300m Multi Mode Optical Transclevers 1 GE 6850nm 300m Multi Mode Optical Transclevers 1 Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers 2 Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers 2 Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers 3 Subscriber Service Management Feature Packet License (RIDIUS/SRC Based Service Activation) JUNOS Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers, MX Series 1 Installation / Commisioning Material Management NoteBook core i7 9th Gen 16 GB RAM 1 256 SSD for BRAS Sub Total Supply, Installation, Testing and Commissioning-Quetta	2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1,948,627.00 548,329.00 23,592.00 12,296.00 97,811.00 73,358.00 438,464.00 150,000.00 195,575.00 75,000.00 125,000.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12 114,438.87 85,828.86 513,002.88 175,500.00 195,575.00 86,250.00 143,750.00	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68 225,482.09 915,510.96 686,630.88 1,026,005.76 351,000.00 195,575.00 26,164,475.14 86,250.00 143,750.00
2 3 4 5 6 7 8 9 10 11	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6 Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B [MIC Included except MIC3-100G-DWDM, MIC-3D-10C- 192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 550nm 300m Multi Mode Optical Transclevers 1 GE 550nm 300m Multi Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300m Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300m Multimode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers, MX Series Installation / Commissioning Material Management NoteBook core i7 9th Gen 16 GB RAM 1 256 SSD for BRAS Sub Total Supply, Installation, Testing and Commissioning-Peshawar Supply, Installation, Testing and Commissioning-Quetta Migration from existing BRAS to new BRAS-Peshawar	2 2 3 4 4 4 4 4 4 4 4 4 2 2 2 2 1 1 1 1 1 1 1	1,948,627.00 548,329.00 23,592.00 11,296.00 97,811.00 73,358.00 438,464.00 150,000.00 195,575.00 75,000.00 75,000.00 75,000.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12 114,438.87 85,828.86 513,002.88 175,500.00 195,575.00 86,250.00 86,250.00 86,250.00	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68 225,482.40 915,510.00 195,575.00 26,164,476.14 86,250.00 143,750.00 86,250.00
2 3 4 5 6 7 8 9 10 11 11 ervices 1 2 3	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6 Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX360 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis[Includes RE/SCB/PWR/JUNOS] 100/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B [MIC Included except MIC3-100G-DWDM, MIC-3D-10C- 192XFP,MIC-3D-8CH0C3-4CH0C12 & MIC-3D-8OC3OC12-4OC48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 550nm 300m Multi Mode Optical Transclevers 1 GE 550nm 300m Multi Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300m Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 850nm 300m Multimode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers, MX Series Installation / Commissioning Material Management NoteBook core i7 9th Gen 16 GB RAM 1 256 SSD for BRAS Sub Total Supply, Installation, Testing and Commissioning-Peshawar Supply, Installation, Testing and Commissioning-Peshawar Migration from existing BRAS to new BRAS-Peshawar Migration from existing BRAS to new BRAS-Peshawar Migration from existing BRAS to new BRAS-Peshawar	2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1,948,627.00 548,329.00 23,592.00 12,296.00 97,811.00 73,358.00 438,464.00 150,000.00 195,575.00 75,000.00 125,000.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12 114,438.87 85,828.86 513,002.88 175,500.00 195,575.00 86,250.00 143,750.00	9,119,574.36 5,132,359.44 1,104,105.60 345,271.68 225,482.40 915,510.60 686,630.88 1,026,005.76 351,000.00 195,575.00 26,164,476.14 86,250.00 143,750.00
2 3 4 5 6 7 8 9 10 11	MX480 Premjum Chassis Bundle with Enhanced Midplane. Also includes redundant RE,SCB-E JUNOS-64 Bit Standard Software Suite Routing Engine-6Core-2.06Hz with 64 G Memory Base, Bundle, for MX240/MX480/MX960 Enhanced MX Switch Control Board, Base Bundle MX480 High Capacity Fantray, configurable option in base bundle 2400W DC Power Supply, configurable option in base bundle Juniper Care Next Day Support for MX480 Chasis Includes RE/SCB/PWR/JUNOS) JOO/1000 Mbps SFP Ports on 2 separate Slots/MPCs/LPUs/Modules. (35 ports) NG MPC2E, Port Queue, Full Scale, 32 L3 VPN 20-Port SFP GE MIC with 1588 & MACSEC Juniper Care Next Day for MPC2E-3D-NG-IR-B (MIC Included except MIC3-100G-DWDM, MIC-3D-10C-192XFP,MIC-3D-8CHOC3-4CHOC12 & MIC-3D-8OC3OC12-40C48) 10 GE XSFP Ports MIC-3D-4XGE-XFP 1 GE 1310nm 10 KM Single Mode Optical Transclevers 1 GE 850nm 300m Multi Mode Optical Transclevers 1 GE 850nm 300m Multi Mode Deptical Transclevers Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transclevers Dual Rate Plugable 10 GE 1310nm 10 KM Single mode Mode Optical Transclevers Subscriber Access Feature Pack License Scaling Limit to 32K Subscribers Subscriber Service Management Feature Pack License (RIDIUS/SRC Based Service Activation) JUNOS Subscriber Access Feature Pack Licence Scaling Limit to 16K Subscribers, MX Series Installation / Commisioning Material Management NoteBook core i7 9th Gen 16 GB RAM 1256 SSD for BRAS Sub Total Supply, Installation, Testing and Commissioning-Peshawar Migration from existing BRAS to new BRAS-Peshawar	2 2 3 4 4 4 4 4 4 4 4 4 2 2 2 2 1 1 1 1 1 1 1	1,948,627.00 548,329.00 23,592.00 11,296.00 97,811.00 73,358.00 438,464.00 150,000.00 195,575.00 75,000.00 75,000.00 75,000.00	2,279,893.59 641,544.93 27,602.64 14,386.32 11,274.12 114,438.87 85,828.86 513,002.88 175,500.00 195,575.00 86,250.00 86,250.00 86,250.00	9,119,574,36 5,132,359,44 1,104,105,60 345,271,68 225,482,40 915,510,96 686,630,88 1,026,005,76 351,000,00 195,575,00 26,164,476,14 86,250,00 143,750,00 460,000,00
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Supply, Installation, Testing and Commissioning of Juniper Router (at Islamabad, Lahore & Karachi) and Juniper BRAS at (Peshawar & Quetta) on DDP Site Turnkey Basis **Responsibilities Matrix** Responsibility Sr No Activity Initiation Phase **Contract Signing** NTC, Hedra Planning Phase NTC, Hedra 2 Project Teams Engagement 3 NTC, Hedra Project Kick-Off Meeting & SoW Discussions Design Phase PIP (Project Implementation Plan) Submission Hedra 4 5 **PAT Document Submission** Hedra Implementation Phase Equipment Delivery Equipment Arrival and Delivery Notification to NTC Hedra 6 7 **Equipment Onsite Delivery** Hedra 8 **Equipment Delivery Note Signing** NTC Project Delivery Approach Technical Site Survey Hedra, NTC 9 Technical Site Survey Report Submission 10 Hedra 11 Site Readiness NTC 12 Provision of Rack Space as per Equipment Space NTC 13 Provision of Stabilized Power and earthing till each NTC, Hedra 14 Provision of IT Controlled Environment as per industry NTC standards. **Equipment Physical Installation** 15 Hedra 16 Equipment Power-up Hedra 17 **Equipment Configurations** Hedra Testing Phase PAT Testing & Acceptance 18 Hedra, NTC Closure. Documentation Completed PAT Documents Submission Hedra 19 Project Closeout & Sign-off 20 Project Closeout & Sign-off Hedra, NTC Project End



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DE (Procurement)

NTC: HQs G-512, Islamaba



national telecommunication corporation

HEADOUARTERS G-5/2, ISLAMABAD

Tender Documents

FOR

Supply, Installation, Testing and Commissioning of NTC Islamabad Router and NTC Peshawar BRAS on DDP Site Turnkey Basis

Tender Notice # HQ/ADV-02/2020-2021



TERMS & CONDITIONS OF TENDER

1. GENERAL

1.1 INTRODUCTION

National Telecommunication Corporation was established in 1996 under Pakistan Telecommunication Re-Organization Act 1996. NTC has a definite mandate to provide basic telecommunication services to its designated customers, which include Federal and Provincial Governments, their departments, autonomous organizations and defense services throughout the country.

1.2 SUPPLY and INSTALLATION OF MATERIAL

1.2.1 NTC intends to procure, install, test and commission items as per Annex-A (Bill of Material). The incumbent bidder is responsible to provide the items as per the quantity mentioned in annex-A.

2. ELIGIBILITY CRITERION OF BIDDERS

Invitation to submission of bids is open to OEM's (Original Equipment Manufacturers) & their authorized partners/re-sellers in Pakistan who meet following conditions:

- 2.1 Have relevant experience of supply, Installation, Testing and Commissioning of such items to PTCL / SCO /NTC or any other major organization of Pakistan.
- 2.2 Registered with sales tax & income tax department of Pakistan.
- 2.3 The partner/re-seller must be duly authorized by OEM & provide valid authorization certificate.
- 2.4 Never been involved in any litigation with any Govt/Semi Govt. organization & will submit affidavit on judicial paper to this effect.
- 2.5 Never been blacklisted from any Govt. /Semi Govt. organization & will submit affidavit on judicial paper to this effect.
- 2.6 Supplied items are not manufactured in India or Israel & will submit affidavit on judicial paper to this effect.

Note:

✓ Prospective Bidder Must Provide Valid Documentary Proof against serial # (2.1-2.6) along with the bid. Non-Submission of any of above document will lead to Consideration of a firm as NON-RESPONSIVE (As per clause # 14) & Sub-sequent NON-CONSIDERATION for the evaluation.

3. COST OF TENDERING

The bidder shall bear all costs associated with the preparation and submission of its bid and the NTC will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.



4. CLARIFICATIONS OF TENDER DOCUMENTS

A prospective bidder requiring any clarification(s) regarding technical matter may notify to DE (IP Core) NTC HQs (Tele: 051-9208686) in writing & for commercial matter may notify to DE (Procurement-I) NTC HQs (Tele: 051-9245864). The concerned NTC officer will respond to any request for clarification, which receives well before (approximate 05 working days or more) to the deadline for the submission of bids. Copies of NTC response will be forwarded to all prospective bidders (if not already clarified in the tender or deemed necessary for the bidders).

5. AMENDMENT OF TENDER DOCUMENTS

- At any time prior to the deadline for submission of bids, the NTC may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify or amend the tender documents by issuing amendment.
- 5.2 Any amendment thus issued shall be part of the tender documents. To afford bidders reasonable time in which to take an amendment into account in preparing their bids, the NTC may at its discretion extend the deadline for submission of bids if deemed necessary.

6. PREPARATION OF TENDER/ BID DOCUMENTS

- 6.1 Bids should be prepared considering "Single Stage-Two Envelope" procedure.
- (i) The bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
- (ii) The envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion;
- (iii) Initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened;
- (iv) The envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of the procuring agency without being opened;
- (v) The procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements;
- (vi) During the technical evaluation no amendments in the technical proposal shall be permitted;
- (vii) The financial proposals of bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
- (viii) After the evaluation and approval of the technical proposal the procuring agency, shall at a time within the bid validity period, publicly open the financial proposals of the technically accepted bids only. The financial proposal of bids found technically nonresponsive shall be returned un-opened to the respective bidders; and
- (ix) The bid found to be the lowest evaluated bid shall be accepted. The bid shall comprise of packages containing technical & financial proposals.

The bidders must submit original of both technical and financial bids which must be separately sealed and signed by the authorized representative(s) of bidder. The technical & financial proposals must be submitted along with the softcopy of bid in the form of CD.

- 6.2 The bid should have a covering letter on printed letter pad of the firm. The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by the bidder or a person or persons duly authorized from their company/firm. All pages of the bid, except for un-amended printed literature shall be initialed by the person or persons signing the bid. The bid shall contain no inter lineation, erasures or over writing at any page except as necessary to correct errors made by the bidder in which case such corrections shall be initialed by the person or persons signing the bid.
- 6.3 Following documents shall be furnished / submitted with the bid:
 - a) Duly filled Bill of Material as per Annex-A. (The bidder must provide End of Life, End of Sale/Support timelines of quoted hardware/software).
 - b) Duly filled and signed by authorized personnel the commercial compliance statement as per Annex-B.
 - c) Valid Tender Security (equivalent to 2% of bid value) as per the detail in Clause-8. (Bid security must be enclosed in financial evelope)
 - d) Relevant Experience supported by supply/ purchase orders.
 - e) Valid General Sales Tax Certificate.
 - f) Valid National Tax Number Certificate.
 - g) Valid certificate of authorization from the OEM.
 - h) Certificate on judicial paper of never been black listed by any Govt./Semi-Govt. organization.
 - i) Certificate on judicial paper of never been involved in litigation with any Govt. /Semi-Govt organization
 - j) Certificate on judicial paper regarding India / Israel linkages and manufacturing

NOTE: Every participant bidder shall submit all above mentioned documents. Non-submission of any of above documents will lead to declaration of bidder as non-responsive & non-consideration for further evaluation.

7. PRICE

- 7.1 Prices should be quoted in Pak Rupees on DDP basis as per Annex-A.
- 7.2 The price quoted should be firm, final, and clearly written/typed without any ambiguity.
- 7.3 The quoted price should include all the applicable government taxes, custom duties, inland transportation, & any other applicable charges.
- 7.4 The rates / prices shall be entered against each item in the Bill of Material (BOM) as per Annex-A. Any item against which no rate or price is entered and left blank by the bidder even mistakenly shall be deemed covered by the rates / prices for other items in the BOM and bidder shall be bound to provide that item free of cost.
- 7.5 The bidder shall be deemed to have obtained all information as to all the requirements thereto which may affect the bid price.
- 7.6 Price of any or all items quoted in a currency other than PKR shall be converted into PKR and for calculation purpose conversion rate (i.e. selling) prevailing on the date of tender opening shall be applied.



8. TENDER SECURITY

- The bidder shall furnish tender security equivalent to 2% of the total value of bid in the form of Pay Order/Deposit at Call or a Bank guarantee as per Annex-C issued by a scheduled bank of Pakistan or from a foreign bank duly counter guarantee by a scheduled bank in Pakistan or an insurance company having at least AA rating from PACRA/JCR in favor of NTC valid for a period of 28 x days beyond the bid validity date.
- 8.2 Any bid not accompanied by valid tender security shall be rejected by the NTC at the time of opening of bid.
- 8.3 The tender securities of the unsuccessful bidders will be returned upon award of contract to the successful bidder or on expiry of validity of tender security whichever is earlier. The tender securities of bidders, who are not in competition, can be returned earlier at NTC discretion upon receiving a request.
- 8.4 The tender security of the successful bidder will be returned when the bidder has furnished the required Performance Security and signed contract agreement.
- 8.5 The tender security may be forfeited:
 - i. If a bidder withdraws his bid during the period of bid validity.
 - ii. If the bidder does not accept the correction of his bid price.
 - iii. In the case of successful bidder, if he fails to furnish the required performance security or sign the contract agreement.
- 8.6 All correspondence regarding release/extension of bid security shall be made with DE (Procurement-I) NTC HQ.

9. VALIDITY OF BIDS

Bid shall remain valid for a period of 180 days from the date of tender opening.

10. DEADLINE FOR SUBMISSION OF BID

- 10.1 The bid shall be delivered in person or sent by the registered mail which should reach the Office of Director (Procurement) Room # 05, Ground Floor, NTC HQs, G-5/2 Islamabad on or before 1100 hours on 24th August, 2020.
- 10.2 Bid should be submitted in sealed envelope having necessary information regarding tender notice and warning message "DO NOT OPEN BEFORE 24th August, 2020 at 1130 Hrs.
- 10.3 No open, e-mailed or faxed bid will be accepted.
- 10.4 Any bid received by the NTC concerned officer after the date and time of tender submission will be returned unopened to such bidder.

11. MODIFICATION & WITHDRAWAL OF BID

- 11.1 Any bidder may modify or withdraw his bid after bid submission provided that written notice of the modification or with-drawl is received by the concerned officer prior to the deadline for submission of bids.
- 11.2 No bid may be modified or withdrawn by a bidder after the deadline for submission of bids.

12. OPENING OF BID

- 12.1 The NTC tender committee will open the bids at 1130 hours on dated 24th August, 2020 in the presence of bidders representatives who choose to attend, at NTC HQ G-5/2 Islamabad.
- 12.2 The bidder's name, bid prices, any discount, the presence or absence of tender security, technical details of quoted models and such other details as the committee at its discretion may consider appropriate, will be announced at the tender opening.
- 12.3 The tender committee will resolve any issue raised by the bidders, on the spot.
- 12.4 The tender committee reserves the right to reject any one or all bids as per Public Procurement Rules, 2004 33(1).

13. CLARIFICATIONS / CORRECTIONS OF BID

- 13.1 To assist in the examination, evaluation and comparison of the bids the committee at its discretion may ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing (i.e. letter/email etc.) and no change in the price or substance of the bid shall be sought, offered or permitted.
- 13.2 Arithmetical errors will be rectified on the following basis:
 - "If there is a discrepancy between unit price and total price that is obtained by the multiplying the unit price and quantity, the unit price shall prevail and total price shall be corrected. If there is a discrepancy between the words and figures the amount in words shall prevail. If there is a mistake in addition / totaling that can be corrected."
- 13.3 If the bidder does not accept the corrected amount of bid, his bid will be rejected and his tender security forfeited.

14. RESPONSIVENESS OF BIDDERS

- 14.1 The bid is valid till required period.
- 14.2 The bid prices are firm during its validity and inclusive of all taxes, duties & freight charges etc
- 14.3 The bidder has furnished valid tender security
- 14.4 The bidder is eligible to tender.
- 14.5 The bid is generally in order as per Clause-6.
- 14.6 The bidder promptly responds to queries sought by NTC.

NOTE: "Any bidder found non-compliant in any of above mentioned conditions will be declared as non-responsive and will not be considered for further Evaluation proceedings:

15. EVALUATION CRITERION

- 15.1 Initially the eligibility criterion of each incumbent bidder will be evaluated & the bidders declared as eligible will be further considered for evaluation proceedings as under:
- 15.2 Bids of incumbent bidders will be examined in detail whether the bids comply with the commercial terms & conditions of the tender documents as per **Annex-B**. It is mandatory that no major deviation/stipulation shall be taken by the bidders.
- 15.3 Detailed technical evaluation shall be carried out. Financial bids of technically qualified bidders shall be opened only. Contract will be awarded to technically qualified financially lowest Evaluated bidder.
- 15.4 The cost of making good and deficiency resulting from any quantifiable variations and deviations from the tender schedules and conditions of the contract, as determined by the NTC will be added to the corrected total bid price for comparison purpose only. Adjustment for commercial compliance will be added to the corrected total bid prices. Adjustment factor will be calculated by committee as deemed appropriate.
- 15.5 No bidder shall contact NTC on any matter relating to its tender from the time of opening to the time of contract is awarded.
- 15.6 Any effort by a bidder to influence NTC in the tender evaluation, bid comparison or order award decision may result in the rejection of his bid.
- 15.7 Any minor informality or non-conformity or irregularity in the bid which does not constitute a material deviation may be waived by NTC, provided such waiver does not prejudice or affect the relative ranking of any other bidders.

16. COMMERCIAL/TECHNICAL COMPLIANCE STATEMENT

The bidder will furnish a commercial compliance certificate with the bid as per enclosed format as per Annex-B and technical compliance certificate with the bid as per enclosed format as per Annex-E (duly signed along with company seal).

17. AWARD CRITERIA & NTC'S RIGHT

- 17.1 The contract will be awarded to substantially responsive lowest evaluated bidder, provided that such bidder has been determined to be qualified to satisfactorily perform the order.
- 17.2 The NTC reserves the right to accept or reject any bid, and to annul the tendering process and reject all bids, at any time prior to award of order, without thereby incurring any liability to the affected bidders or any obligation to inform the affected bidders of the grounds for the NTC's action.

18. VARIATION ORDER



NTC reserves the right to place variation order (increase or decrease in the quantities of all or any item of BOM) at the time of signing of contract/placing of purchase order. The contractor shall be bound to accept the variation order by NTC.



SECTION-II TERMS & CONDITIONS OF CONTRACT/PURCHASE ORDER

1. PERFORMANCE SECURITY

- 1.1 The successfully evaluated bidder shall furnish to the NTC a performance security equivalent to 10% of the total contract/ ordered value, in the shape of bank guarantee valid for a period of 15 months (as per Annex "D") after issuance of purchase order.
- 1.2 The bank guarantee of performance security shall be further extended if the delivery is delayed. Furthermore, on issuance of acceptance certificate, contractor shall extend the bank guarantee (if required) to cover the warranty period.
- 1.2 Failure of the successful bidder to furnish performance security shall constitute sufficient grounds for the annulment of the award and forfeiture of the tender security.
- 1.4 All the correspondence regarding release of performance guarantee shall be made with DE (Procurement-I) NTC HQ.

2. CONTRACTORS RESPONSIBILITIES

2.1 The contractor shall complete the supply in accordance with the contract BOM within the agreed completion time.

3. TRANSPORTATION / PACKING

All types of transportation for delivery of equipment at final destination will be the responsibility of the contractor. Contractor shall ensure proper / international packing of equipment to avoid deterioration of equipment etc.

4. TIME FOR COMPLETION

- 4.1 The contractor shall complete the work within **Twelve (12) weeks** from the date of signing of contract/placing of purchase order.
- 4.2 If the contractor fails to supply, install, test, commission the items on DDP site Turnkey Basis within the completion time, the contractor's only liability to the NTC for such failure shall be to pay an amount equivalent to 0.5% per week for the delayed store/service maximum to 10% value of the contract. If delay in the completion is due to NTC then completion period will be extended & penalty will be calculated accordingly.

5. WARRANTY / SERVICES

- 5.1 The contractor will warrant that the equipment supplied under the contract are new, unused, and incorporates all recent improvements in design and materials and of good quality. The warranty shall remain valid for a minimum period of 12 months after the issuance of Provisional Acceptance Certificate. NTC shall promptly notify the supplier in writing of any claims arising under this warranty.
- 5.3 Upon receipt of such notice, the Contractor shall, with all reasonable speed, repair or replace, at the NTC's Consignee's store as the case may be at that time, the defective goods or part thereof, without costs to NTC.

- 5.4 If the Contractor, having been notified, fails to remedy the defect(s) within a reasonable period, NTC may proceed to take such remedial actions as may be necessary, at the Contractor's risk and expense and without prejudice to any other rights which NTC may have against the Contractor under the contract.
- 5.5 Without prejudice to any other clauses of this contract, the Contractor shall promptly correct at no cost to NTC, any defect in any work of correction executed previously, upon receipt of written notice of defect within twelve months warranty period from the acceptance of the corrected defect.

6 PROVISIONAL ACCEPTANCE CERTIFICATE

Upon satisfying itself that installation and testing of the equipment undertaken by the contractor is complete in all respects, the contractor will inform in-writing to Director (Datacom) NTC HQs to detail a team for Provisional Acceptance Test. Director (Datacom) NTC HQs will constitute team(s) comprising of members to conduct the PAT with approval of CTO NTC. The equipment installed will be verified with the contract and all tests be carried out in accordance with approved PAT documents from NTC Procurement Dte. The Contractor will arrange to provide the PAT documents within 15 days of the signing of contract and will arrange to conduct the tests as per PAT Documents. The PAT will be conducted in accordance with approved/vetted PAT documents from N&SE wing NTC HQs. The constituted & approved PAT team will sign Provisional Acceptance Test after successful completion of Test. After successful conduct of PAT, Director (Procurement) NTC HQs will issue certificate of successful completion of PAT after which Ultimate Consignee will issue the PAC on the basis of provisional acceptance test.

In case Provisional Acceptance Certificate is not issued within one (01) week, Director (Datacom) NTC HQs shall inform in-writing of the specific reason(s) for the delay within one (01) week after receipt of request from the contractor, to this effect. Furthermore, the ultimate consignee will notify the contractor that the work is not fully complete and contractor will rectify the discrepancies. PAC will be issued after successful commissioning & testing of equipment at site.

7 PAYMENT

Payment of contract price shall be made in the following manners.

- 7.1 Fifteen percent (15%) payment of the total contract value shall be payable to the contractor in advance against submission of following by contractor:
 - Commercial Invoice
 - Guarantee of equivalent amount issued by any scheduled bank of Pakistan valid for six (06) months from the date of signing of contract/issuance of purchase order.

The invoice will be processed for payment after confirmation of genuineness of submitted guarantee by the issuing authority (i.e. bank). Moreover, the contractor will ensure submission of the bank guarantee within 10 x days of the signing of the contract.

7.2 Forty Five percent (45%) of the total contract value shall be payable to the contractor upon successful delivery of equipment at destination. The ultimate consignee will confirm the delivery of equipment. The contractor shall furnish invoice of (60%) of total contract value including adjustment of 15% advance value. The GST number of NTC & contractor shall be clearly mentioned on commercial invoice.

- 7.3 Thirty Five percent (35%) payment of total contract value shall be payable to contractor upon successful installation, testing and commissioning of system which shall be proved by Provisional Acceptance Certificate (PAC) issued by ultimate consignee/Project Director.
- 7.4 Five percent (05%) balance payment shall be payable on removal of minor discrepancies pointed out in PAC at any site. If there exists no discrepancies in PAC this payment shall be payable on issuance of NDC (Nil deficiency certificate) by project director.
- 7.5 All the payments shall be made through cross cheque in the Pak Rupees.
- 7.6 Taxes will be deducted as per government rules at the time of payment.

8. FINAL ACCEPTANCE CERTIFICATE

The contractor may notify the Ultimate Consignee/Project Director at-least 15 days before the expiry of warranty period for the issuance of final acceptance certificate. Upon such notification from contractor, the Ultimate Consignee/Project Director will issue Final Acceptance Certificate in favour of contractor subject to satisfactory completion of warranty period as per requirement of contract. Alternatively the Ultimate Consignee/Project Director will notify the contractor for the discrepancies that still remain un-resolved and contractor will rectify the discrepancies.

9. <u>DEFAULT BY CONTRACTOR</u>

- 9.1 If the contractor fails to supply the items, refuses or fails to comply with a valid instruction of the NTC, the NTC may give notice and stating the default.
- 9.2 If the contractor has not taken all practicable steps to remedy the default within 14 days after receipt of NTC notice, the NTC may by a second notice cancel the contract and performance security will be confiscated.

10. REPEAT ORDER

Repeat Order may be placed in accordance with Public Procurement Rules 2004.

11. ARBITRATION AND AMICABLE LAW

- 11.1 The Contract will be construed under and governed by THE LAWS OF THE ISLAMIC REPUBLIC OF PAKISTAN.
- 11.2 NTC and the Contractor shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 11.3 Any dispute, disagreement or question arising out of or relating to or in consequence of this contract or relating to its execution or performance which cannot be settled amicably, shall be referred to arbitration to Managing Director NTC. Only Managing Director NTC will have sole authority in arbitration to decide and the decisions will be made in view of Arbitration Act 1940.

- 11.4 Within 30 days of the said notice, one arbitrator shall be nominated in writing by NTC and one arbitrator shall be nominated in writing by the Contractor.
- 11.5 The arbitration shall initiate arbitration proceedings at Islamabad. In case the arbitration does not reach on conclusion, then case would be referred to the court of Law
- 11.6 Each party shall bear the cost of its own arbitrator and the cost of the third arbitrator shall be borne equally by both parties.

12. FORCE MAJEURE

- 12.1 The Contractor shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure.
- 12.2 If either party is temporarily rendered unable, wholly or in part by Force Majeure to perform its duties or accept performance by the other party under the Contract it is agreed that on such party, giving notice with full particulars in writing of such Force majeure to the other party within 14 (fourteen) days after the occurrence of the cause relied on, then the duties, of such party as far as they are affected by such Force Majeure shall be suspended during the continuance of any inability so caused but for not longer period and such cause shall as for as possible be removed with all reasonable speed. Neither party shall be responsible for delay caused by Force Majeure.
- 12.3 The terms "Force Majeure" as used herein shall mean Acts of God, strikes, lockouts or other industrial disturbance, act of public enemy, war, blockages, insurrections, riots, epidemics, landslides, earthquakes, fires, storms, lightning, flood, washouts, civil disturbances, explosion, Governmental Export/Import Restrictions (to be supported by a letter from the relevant Authority and verified by the Diplomatic Mission in Pakistan), Government actions/restrictions due to economic and financial hardships, change of priorities and any other cause similar to the kind herein enumerated or of equivalent effect, not within the control of either party and which by the exercise of due care and diligence either party is unable to overcome.
- 12.4 The term of this Contract shall be extended for such period of time as may be necessary to complete the work which might have been accomplished but for such suspension. If either party is permanently prevented wholly or in part by Force Majeure for period exceeding 12 (twelve) months from performing or accepting performance, the party concerned shall have the right to terminate this contract immediately giving notice with full particulars for such Force Majeure in writing to the other party, and in such event, the other party shall be entitled to compensation for an amount to be fixed by negotiations and mutual agreement.
- 12.5 If a Force Majeure situation arises, the Contractor shall promptly notify NTC in writing of such conditions and the cause thereof. Unless otherwise directed by NTC in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practicable, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

13 <u>TERMINATION FOR INSOLVENCY</u>

The NTC may at any time terminate the contract by giving written notice to the bidder, without any compensation to bidder. If the bidder becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any



right of action or remedy which has accrued or will accrue thereafter to action to the NTC.

14 TERMINATION FOR CONVENIENCE

The NTC may send a written notice to the bidder, terminate the contract in whole or in part any time for its convenience. The notice of termination shall specify that the termination is for the NTC's convenience, the extent to which performance or work under the contract is terminated and the date upon which such termination becomes effective.

15 ULTIMATE CONSIGNEE

Director (Data Comm) NTC HQs G-5/2 Islamabad Phone: 051-9208809 Fax: 051-9201489

16. TEMPORARY BAR/ BLACK-LISTING OF FIRM

- 16.1 As per clause-19 of the PPRA Rules 2004, NTC reserves the right of debarment 'or' blacklisting of a firm, association, corporation, joint venture, company, partnership or any other legal entity subject to any of the following acts:
 - a. Consistent failure to provide satisfactory performance.
 - b. Contractor becomes insolvent.
 - c. Existence of judicial decision against a contractor in respect of a corrupt or collusive practice.
 - d. Submission of false and spurious documents, making false statements and allegations to gain undue advantage.
 - e. Commission of fraud.
 - f. Contractor abandons the contract.
 - g. Contractor without reasonable excuse fails to commence the work 'or' suspends the progress of work for 14 days.
 - h. Contractor is not executing the work in accordance with the contract or is persistently or flagrantly neglecting to carry out his obligations under the contract.
 - i. Commission of embezzlement, criminal breach of trust, theft, cheating, forgery, bribery, falsification or destruction of records, receiving stolen property, false use of trademark, securing fraudulent registration with sales tax authorities, Pakistan Engineering council etc, giving false evidence, furnishing of false information of serious nature.
- 16.2 Managing Director NTC will constitute a committee comprising of three NTC officers and they will investigate the matter in connection with allegation of corrupt, fraudulent, coercive or collusive practices or illegally harassment or threat. Moreover, the committee shall also accord adequate opportunity of being heard to the contractor who is to be debarred / blacklisted. The said committee will forward its clear recommendations for the approval of Managing Director NTC.
- The debarment shall be for a reasonable specified period of time, commensurate with the seriousness of the cause. However, the debarment period shall not exceed from three years. Moreover, NTC also reserves the right of permanent objects of a contractor subject to severity of the corrupt or fraudulent practices.

<u> </u>	BOQ FOR NGN CORE ROUTER ISLAMABAD AND BRAS	PESHAWAR		Annex	(-A
NGN C	ore Router Islamabad				
Hardwa	re/Software/Licenses				
			Unit Prices	Unit Price	Total Price
SR. No	Description	Quantity	without GST	with GST	PKR
1	Chasis with Redundant Control Boards and Power Supply	1			
2	100/1000 Mbps SFP Ports with Slots(MICs,LPUs,Modules) level redundency	35			
3	1 GE 1310nm 10 KM Single Mode Optical Transcievers	20]		
4	1 GE 850nm 300m Multi Mode Optical Transcievers	12			
5	100/1000 Base -T Electrical Transcievers	10	1		Ţ <u>, , , , , , , , , , , , , , , , , , , </u>
6	Installation / Commissioning Material]		
7	Management NoteBook core i7 9th Gen 16 GB RAM 1 256 550 for router	1]		
	Sub Total				
Services					
1.	Supply, Installation, Testing and Commissioning	1			T
. 2	Migration from existing router to new router		1		
	Sub Total				
	Grand Total PKR				1
BRAS I	BNG) Peshawar		·		<u> </u>
	re/Software/Licenses				
R. No	Description	Quantity	 -	·	T
1	Chasis with Redundant Control Boards and Power Supply	1	 		
2	100/1000 Mbps SFP Ports with Slots(MIC,LPU,Module) level redundency	35	 		
3	10 GE XSFP Ports	4	 		
<u> </u>	1 GE 1310nm 10 KM Single Mode Optical Transcievers	20	†	 	 -
5	1 GE 850nm 300m Multi Mode Optical Transcievers	12			
6	100/1000 Base -T Electrical Transcievers	10	†———		
7	Dual Rate Plugable 10 GE 850nm 300M Multimode Mode Optical Transcievers	4	 		
8	Dual Rate Plugable 10 GE 1310nm 10 KM Single mode Mode Optical Transcievers	4	 		
9	Subscriber Access Feature Pack License Scaling Limit to 16K Subscribers	2	 	i—-	
10	Installation / Commissioning Material	1	 -	 	
11	Management NoteBook core :7 9th Gen 16 GB RAM 1 256 SSD for BRAS	1	1		
	Sub Total	 	h		
Services					_
1	Supply, Installation, Testing and Commissioning	1	 _	 _	1
 -	Migration from existing BRAS to new 8RAS	<u> </u>	 		
			 -		+
	Sub Total				

Notes:

- 1. NTC reseves the right to increase / decrease the quantities mentioned in BoQ.
- 2. Rack Space, Power Provisioing, Cabling (Data / Power) related survey required for services extension / migration on turnkey Bassis may be conducted before the submission of bid.
- 3. Mandatory features mentioned in Technical Specification are part of BoQ.
- 4. Critical spares quantity shall be decided at the time of evaluation by NTC, unit prices of critical spare modules shall be taken from the quoted / evaluated main BoQ prices.

Muhamarid Jako Javaid Divisional Engineer (IP Core) Data Comm. NTC HQs, F-5/1, Islamabad



COMMERCIAL COMPLIANCE STATEMENT Annex-B S.No. Description Complied | Not Partially General Complied Remark: complied Eligibility Criterion of Bidders 3 Cost of tendering Marifications of Tender Documents Amendment of Tender Documents Preparation of Bid 6. Price Tender Security 8 Validity of Bids 9 Deadline for submission of bid 10 Modification & withdrawal of bid 11 Opening of Bid 1.2 Clarification/Corrections of bids 13 Non-Responsiveness of Bidders 14 **Evaluation Criterion** 15 Commercial Compliance Statement 16 Award Criteria & NTC's Right 17 Variation Order 18. Contract Conditions Performance Security Contractor responsibilities 3 Transportation & Packing Time for Completion 4 5 Warranty / Services 6 Inspection & Testing Payment Default by contractor Ricpeat Order 10 As bitration & Amicable Law

11

12

13

14

15

Force Majeure

Ultimate Consignee

Termination for Insolvency

Termination for convenience

Temporary Bar/Blacklisting of Firm



Bank Guarantee No. ------Dated at Islamabad, the -----

FORMAT OF BANK GUARANTEE FOR BID SECURITY

	Validity
То,	
	THE MANAGING DIRECTOR, NATIONAL TELECOMMUNICATION CORPORATION HEAD QUARTERS G-5/2 ISLAMABAD.
Dear Sir,	
Guarantee in	WHEREAS M/s (hereinafter called the Tenderer) have through Bank Ltd., to furnish Bid Security by way of Bank your favour in the sum of (IN FIGURE) (IN gainst your Tender Notice No dated for
	WE HEREBY AGREE AND UNDERTAKE:
i.	To make unconditional payment to you on demand without further question or reference to the Tenderer in case of withdrawal or modification of bid or any default or non-execution of the Contract or refusal to accept order by the Tenderer from the date of opening of bids until the expiry of the validity of their offer,
ii.	To keep this guarantee in full force from (date) upto (date) the date until which the Tenderer's offer is valid.
iii.	To extend the period of guarantee if such extension be necessary beyond the date stated in para (ii) and as so desired by the tenderer.
period the gu	Any claim arising out of this guarantee must be lodged with this Bank within the parantee is valid and before the date of its expiry. After this date the guarantee dered null and void and should be returned to us.
	Yours faithfully,
	Name of the Bank:
	Authorized officer's Signature & Seal:

BANK GUARANTEE FOR PERFORMANCE SECURITY

	Bank Guarantee No
	Date of Issue
	Valid upto
	Value (Rs.)
FROM:	
1 10 1.1.	
TO,	
,	THE MANAGING DIRECTOR,
	NATIONAL TELECOMMUNICATION CORPORATION
	HEAD QUARTERS G-5/2
	ISLAMABAD
SUBJECT	T: B/G AND DATE FOR ON BEHALF OF FOR
	DUE AND FAITHFUL PERFORMANCE ORDER NO.
	DATED
	Whereas M/s(hereinafter called the Supplier) have
requested	us to furnish a Bank Guarantee in your favour in the sum (IN
WORDS)	as performance security against order
No	as performance security against orderto be concluded between the Supplier and National
Telecomn	nunication Corporation HQs G-5/2 Islamabad.
	WE HEREBY AGREE:
1). To	make an un-conditional payment of to you on demand without any
fur	ther question or reference to the Supplier upon failure of the Supplier to perform the
Or	der for which you will be the sole judge.
2). To	keep this guarantee valid in full force from this date upto the time of the due and
fait	thful completion of the Order under reference (the schedule of implementation shall
be	as described in the Purchase order and its subsequent amendments) or
till	whichever date is later. The faithful completion of the order by the
Suj	pplier will be intimated by the NTC.
3). To	extend the period of the enforceability of this guarantee if such extension be
neo	cessary or desired by you of us. All claims thereunder must be submitted to the Bank
of_	on or before the expiry date mentioned in this guarantee are the date
me	ntioned in its extensions issued from time to time, after which this guarantee will
bed	come null and void and should be returned to us. Irrespective of its return, we shall
cor	isider ourselves fully discharged from any obligation there under after the said expiry
dat	
Da	ted This Day of
	Authorized Signature:
	& Seal of bank



Technical Specifications of NGN IP Core Router (ISB)

	<u> </u>	Technical Specifications of NGN IP Cor	e Route	r (ISB)				
				g Mag Kus big			er's Statement	
S.No	Title	Description	Marks	É	PC .	NÇ.	Bidder's Quoted Feature	Reference in Datasheets/M
	Performance	<u> </u>	,		<u> </u>	,	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
1		≥ 900 Gbps	. м			· ·	The stage of the s	· · · · · · · · · · · · · · · · · · ·
	Switching Capacity CPU	1 GHz or greater (Bidder should specify)	4					
	Routing Entries	1 M or better (Bidder should specify)	2	L				
1.4	Minimum DPC/MPC/FPC/LPU or equivalent per chassis	3 or greater	М					
1.5	Software configuration commits	Capability to rollback at least 20 or greater previously committed configuration changes in 'VRP/JUNOS/IOS etc	м					
2	Interfaces Support		N-M		4757	liby V	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
2.1	10/100 /1000 Base -T	16x Ports	M				l	
	10/100/1000 Base X	16xPorts	· м					
	10 GbE SFP SFP-1GE-LX	8 x Ports GE SFP SM 10km	. IVI				-	
	SFP-1GE-SX	GE SFP MM S00m	M					
	SFP 10/100/1000 Base-T	GE Electrical SFP	М					
2.7	SFPP-10GE-LR	10GE SFP SM	М					
	General	<u> </u>					·	
3.1	Interoperatibilty	With all major Vendor Equipment	M					
3.2	Redundancy	Internal Redundant power supplies	М				l'	
	Lie gradation	Redundent Control Boards ISSU (In-service Software/Patch upgrade) Support	M					
3.3	Up-gradation	without interruption	4					
4	Layer-2 Features				- 11:	5		100 100 100 100
4.1		BFD support for VCCV	1					
4.2		MAC Table size: 650K or better (Bidder should	3					
		specify)					<u></u>	
4.3		Layer 2 protocol tunneling (L2PT) LLDP, LACP, MAC Pinning, Integrated Routing and	2					
4.4		Bridge Domains	8				,	•
4.5	L-2 Features	Support for configuring interface MTU settings (range: 256–9192 bytes)	3					
4.6		Support for the following encapsulations: ppp, ppp- ccc, ppp-tcc, MPLS circuit cross-connect, MPLS translational cross-connect	. 4	. [,		
5	Layer-3 Features		1.12		í			1:
5.1		OSPF V2&3, BGP V4, I5-I5	M					
5.2		MBGP, L3 VPNs, VPLS, Martini / Kompelia L2 circuits	м					
5.3	Routing Protocols	Policy-Based Routing, Route Filtering	М					
5.4		IS-IS/OSPF FRR route convergence BFO on physical interfaces and protocols (IS-IS,	М					
5.5		RSVP, PIM), Micro BFD for LACP links	М	ļ				ı
5.6		BGP route prefix prioritization	3					
5.7		MPLS, LDP, RSVP, MPLS TE FRR	М					
5.8		IPv6 support for static egress LSPs	1					
	MPLS	Ingress PE router redundancy for P2MP LSPs	<u></u> !					
5.10.		RSVP LSP Action Based on BFD Failures ,	- 1					·
5.11		RSVP scalability Flow-aware transport pseudowing for BGF L2VPN	- 1					
5.12	•	and BGP VPLS, VPLS ping	4		ļ	į		
5.13		Layer 2 VPN multihoming	2					
5.14	i	VPN FRR	2					
5.15	VPN	Loop prevention in VPLS network due to MAC	4			Ţ		
		moves					•	
5.16_		Next-hop-based dynamic tunnels		-				
S.17		FAT or Entropy Label support for Loadbalacing	М					1
6	General Protocols							
6.1		Broadband Network Gateway (BNG capability)	2					
6.2		Universal SDN Gateway	2					
6.3		VXLAN .	2					
6.4		MPLSOGRE Ethernet VPN (EVPN)	2 4					
6.6		AAA, TACACS	2					
0.0		non, menea			i			

m Such . I

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		Technical Specifications of NGN IP Cor	e Route	r (ISB))			_
					7/	Bidd	er's Statement	
S.Na	Title	Description	Marks	FC		NC	Bidder's Quoted reature	Reference in Datasheets/M angal
6.7		VRF Lite support of 2000 instances	4		$\overline{}$			
7	Multicast Protocol Support			-11	37.5	- Bolos	- 878171 <u>87</u> 2-	Dan Sur
7.1		IGMP V-1/2, 3 (RFC 1112/2236 / 3376)	2	<u> </u>		T		
7,2	Multicast Support	Multicast routes: BK or better (Bidder should specify)	2					
7,3		IGMP Proxy and Snooping	2				_	
7.4	IP Multicast Routing Protocol	PIM, PIM-SM . PIM-DM, SSM	2					
7.5		BFD for PIM - IPv6	1					
7.6	IPV6	PIM resolve type-length-value (TLV) for multicast in seamless MPLS	1					
8	Quality of Service			7/				
8.1	Classifying traffic based on	IP DSCP, IP Precedence, EXP	M					
8.2	Class of Service (CoS)	Support for DSCP classification on customer edge links for CCC, TCC, and VPL5	2					
8.3	Congestion avoidance capabilities	Trail Drop, LLQ, CBWFQ etc	М					
9	Security			S. C.		4		
9.1	Chassis Protection Fifter/ACL		М					
9 2	DDoS—control plane		2					
9.3	DDoS—FlowSpec		1					
9.4	ARP Attack / Mac Moves Detection /	Broadcast Attack detection and logs	М					
. 9.5	Stateless filters L2-L4		2					
10	Services		1,7	<u> </u>		11.11		<u> </u>
10.1	Flow monitoring		2					
10.2	Port Mirroring		М	<u> </u>			_	
10.3	Flow monitoring		1					
10.4	IPsec	<u></u>	2				<u>-</u>	
10.5	linecard (environment, cpu memory, errors, Y.1731 loss and Delay measure	MP): label-switched-path usage, system optics info, inpumemory), packets ddos info, packets memory), packets ddos info, packets ments reporting, RPM / TWAMP measurements ghis cale Queue Monitor, Infine Video Monitoring	2					
10.6	Stateful Firewall Capability Support		М					
11	System Virtualization			3. **.		J. 11		- 4
11.1	Enhanced StA and queuing	, ,	1					
11.2	Virtual router/switch		1		L			
12	Power						·	
12.1	Power Supply	(-40 to -72 V DC A95 DC Power Supply)	1					
12.2	Power consumption in Watts	Bidder should specify at full capacity	1					
13	Environmental		Z.					
13.1	Operating Environment	(0 to 45) °C	1					
13 ?	Humidity (non condensing)	5% to 85%	1					
	Gra	and Total	99					

Note: Any licenses, hardware or software associated with Mandatory clauses of specifications must be quoted clearly in financial bids. NFC will consider Mnadatory clause items/features as part of required BoQ (if not clarified by the vendor sepearely in Financial Bid).

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: *		Technical Specifications of Broadband Remote Acc		(P€	o pred Wi	r/Qu	o giddar's Statem			
l.No	A SECURITY OF A	Pescheion	Mark	26.5	144C	32.7	Sidder a Choted	The state of the s		
- 3"		A STATE OF S	1 23 3	FC)	200	NC	A FRAFILM SAME	Aeference in Datasheuts/Menus		
1	Performance	The state of the state of the state of the		1-18	, Š. z	Sec. 2				
.1	Architecure	Medicar Chassis	М	7,	1.79°	WAS A				
1.3	Pedundancy	Control Card/Switching Card (1+1)	- 41			1	 	 -		
1 5	Minimum OPC/MPC/FPC/(PU or	Power Card (1+1) Power must be DC)	1 "							
_	equivalent per chassis	6 or greater	M	l	ĺ	Į	- 1			
8.1	Switching Capacity	z 2 lbps	- M	┼	}	}	 			
17	RAM	≥ 16 GB	M			 	t			
,,	Total CPU Routing Entries (Pv4	A GHz or greater (Bidder should specify)								
		4 M or better (Bidder should specify)	M.							
.10	Software configuration commits	Capability to follback at least 50 or greater previously committeed configuration changes in VRP/RINCS/NOS etc.	5.			}	ļ	_		
<u> </u>	Interfaces Support	2 AAA	بـ ا	1000	L-, 23			AND WITH AND		
1_	10/100/1003 Bave-X	20xPorts	M		******					
1	10Gbf interace	4 to 8 x Ports	M	_						
.4	1000be Interface Support SFP-1GE-LX	les especiales	M							
	SEP-IGE-SX	GE SEP SM 10km GE SEP MM S00m	- M							
Ē	SEP 10/100/1000 Base-T	GE Electrical SEP	M							
7	XEPP-10GE-LR 10 Km	10GE SFP SM	ĽМ							
	Ganeral		1	200	- 3.5	ليور جسيد د	450 27 Y			
	Interoperatibility MAC SEC	With all major Vendo: Enuipment MAC Level Security	M							
		ISSU (in-service Spf(ware/Parch upgrade) Support without				أ				
_	Up-gradation	intermition	.	İ	1	ļ	ļ			
	BRAS Features		<u>ب ب</u>	na jiha.	35.0	25.c	Charles Control			
	Carrier Grade NAT (CGN)		М							
,	Reference certificates for successful C Support PPPoE, IPOE and Static IP Use	GN deployment at carrier / ISP level within Pakistan/Foreign								
-	Simultaneous Broad Band Sessions for	32K supsciber per node	<u> </u>							
	integration with RADIUS for AAA se		- <u>~</u>	-+				 -		
,		ntioned sperately along with cost and supported features / capacities)	M .							
1]				
	ALG Support : 10, RSTF, PPTP, ICIMP, S Dual Stack Lite	(P)								
9	Subscribers Bandwidth Management		-							
	Support MAC Authentication		-			+				
	Leyer-3 Features		للنة حا	V 31	Section 2	<u>(2) </u>	V			
1		State Routing, RIF V1/LZOSPF V2&3, REP V4, IS-15	М							
-		A. (BGP, FRR	M							
4		Policy-Sased Routing, Route Filtering IS-IS/OSPL FRR route convergence	<u>M</u>			-				
╗	Routing Pratocols	BED on physical interfaces and graterials (15-15, RSVP P.M.). Micro	М			-+				
5	•	BFD for LACP links) M]	Ì)	1	ì			
6		SUP route prefix priorit ration	4							
<u>'</u>		IPv6 Support	м							
B 90		SPV6 MPIS, 10P, RSVP, MPIS TE FAR	- M - M			-+	· · · · · · · · · · · · · · · · · · ·			
 [0	- 1	MPLS LZ VPN, 1.5 VPN and VPLS	M				_			
1	MPLS	RSVP LSP Action Based on BFD Failures	4							
13		Segment Routing	M							
1.1	General Protocole	Seamless MPLS	L_, <u>4,,</u> _l		73.00% 1			week a factor of the s		
.1	Delian . T. Grace .	Support for SDN	4		1		- 38 - 42 - 1			
2		VXIAN								
3		MPLSaGPE	4							
4	Seneric	Etherner VPN (EVPN)	4							
-(AAA, TACACS +	4							
7		VRF Lite support of 2000 instances	M 2			}				
		IP SLA/RPM Probe/NQA	2			+				
	Multicast Protocol Support			100	V 100 100	7.	XOACO CONTINUES	43.60		
1		IGMP V-1/ 2, 3 (RFC 1112/ 2236 / 3376)	2 .			\Box				
	Multicast Support	Multicast routes: BK or hetter (Bidder should specify)	2.							
١.,		IGNEP Presy and Supoping	1	}		—∤		····		
	P Multicast Bouting Protocol	PIM, PIM SM , PIM-DM , SSM	2							
5	PV5	BEO for PIM - IPV6	7			 {				
ð,		PIM resolve type-innigth-value (TLV) for multicast in seamless MPLS	1			ľ	_]	_		
	Quality of Service			19.	V. 1	v.ā	own own	and the second second		
	Classifying traffir based on	IA OSEP, IA Precedence, EXF	М							
	Class of Service (CoS)	Support for DSCP classification on customer edge briks for CCC, TCC,	1							
		and VPUS				— 				
3	Congestion avoidance capabilities	Trait Drop, LLQ, WFQ etc	М .))		_		
1	Security		<u> </u>	viwii)	320	7	Sept. An Indian)		
.1	Chassis Protectio - Filter		N							
		ICMP Flording and other Known Altack Signatures)	М_							
3	"Stateful Firewal" Capability Support		<u>М</u>				-			
4	ARP Attack / Mac Moves Detection / I		14	<u> </u>			<u></u>			
5		ernate Spam Filter Solution be provided by the vendor	- R91 	<u> </u>						
6	Stateless filters 12-L4 Features/Services		1 -4	بيسي	- 41C					
1 1	Support DHCP Server, DHCP Relay			Γ_	- American					
2 2	Pert Mirroring		М							
13	Flow monitoring		3							
0.4	IPsec VPN, GRE and L2TP		W	L	ليبا			17 (g), 18 (18 (18 (18 (18 (18 (18 (18 (18 (18		
1	System Virtualization			كنكت	200		The state of the s			
11	Enhanced SI.A and queuing, HQoS		3 .							
2	Virtual router/switch	The state of the s	 _		45.75	12.				
7 1	Power Supply	[-40 to -72 V DC A95 DC Power Supply)	2		1000					
7 2	Power consumption in Watts	Bidder should sperify at full capacity	Z			pa		TO STATE OF THE PARTY OF THE PA		
-	Environmental			29.7	17) E	-7	- Basana - 4	ALCOHOLD AND SELECTION		
	the owner of									
3.1	Operating Environment Hemidity (non-condensing)	10 (c 45) °= 5% to 85%	1	} —		-				

If the stateful firewall leature is not supported, vendor may provide alternate firewall solution.

Note: All Vendors participating in the tendor make sure to have local support available 24/7 with in Pakistan.

Note: Any ligenses, hardware or software associated with Mandatory clauses of specifications must be quoted dearly in financial bids. NTC will consider Minadalory square items/features as past of required Biold (if not clarified by the vendor separately in Financial And).

DE (N & SE) NTC HQs, G-5/2, Islamabad Ph: 051-9245894

