STANDARD BIDDING DOCUMENT

Procurement and Installation of Network equipments, and LAN set up for new DCRC & DoI Building, Kawajangsa, Thimphu

Royal Government of Bhutan
Ministry of Finance
November, 2017
INTEGRITY PACT

1 General:

Whereas ..............................................................(Name of head of the procuring agency or his/her authorized representative, with power of attorney) representing the ..............................................................(Name of procuring agency), Royal Government of Bhutan, hereinafter referred to as the “Employer” on one part, and .............................................................. (Name of bidder or his/her authorized representative, with power of attorney) representing M/s. ..............................................................(Name of firm), hereinafter referred to as the “Bidder” on the other part hereby execute this agreement as follows:

This agreement shall be a part of the standard bidding document, which shall be signed by both the parties at the time of purchase of bidding documents and submitted along with the tender document. The head of the employing agency/or his authorized representative should be the signing authority. For the bidders, the bidder himself or his authorized representative must sign the Integrity Pact (IP). If the winning bidder had not signed during the submission of the bid, the tender shall be cancelled.

2 Objectives:

Now, therefore, the Employer and the Bidder agree to enter into this pre-contract agreement, hereinafter referred to as Integrity Pact, to avoid all forms of corruption by following a system that is fair, transparent and free from any influence/unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into, with a view to :-

2.1 Enabling the Employer to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works or goods or services; and

2.2 Enabling bidders to abstain from bribing or any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also refrain from bribing and other corrupt practices.

3. Scope:

The validity of this IP shall cover the bidding process and contract administration period.

4. Commitments of the Employer:

The Employer Commits itself to the following:-

4.1 The Employer hereby undertakes that no officials of the Employer, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favor or any material or immaterial benefit or any other advantage from the Bidder, either 1. Bidding process, for the purpose of this IP, shall mean the procedures covering tendering process starting from bid preparation, bid submission, bid processing, and bid evaluation. 2. Contract administration, for the purpose of this IP, shall mean contract award, contract implementation, un-authorized sub-contracting and
contract handing/taking over, for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process and contract administration.

4.2 The Employer further confirms that its officials shall not favor any prospective bidder in any form that could afford an undue advantage to that particular bidder in the bidding process and contract administration and will treat all Bidders alike.

4.3 Officials of the Employer, who may have observed or noticed or have reasonable suspicion shall report to the head of the employing agency or an appropriate government office any violation or attempted violation of clauses 4.1 and 4.2.

4.4 Following report on violation of clauses 4.1 and 4.2 by official(s), through any source, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings shall be initiated by the Employer and such a person shall be debarred from further dealings related to the bidding process and contract administration.

5. Commitments of Bidders:

The Bidder commits himself/herself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of the bidding process and contract administration in order to secure the contract or in furtherance to secure it and in particular commits himself/herself to the following:

5.1 The Bidder shall not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Employer, connected directly or indirectly with the bidding process and contract administration, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding process and contract administration.

5.2 The Bidder shall not collude with other parties interested in the contract to manipulate in whatsoever form or manner, the bidding process and contract administration.

5.3 If the bidder(s) have observed or noticed or have reasonable suspicion that the provisions of the IP have been violated by the procuring agency or other bidders, the bidder shall report such violations to the head of the procuring agency.

6. Sanctions for Violation:

The breach of any of the aforesaid provisions shall result in administrative charges or penal actions as per the relevant rules and laws.

6.1 The breach of the IP or commission of any offence (forgery, providing false information, misrepresentation, providing false/fake documents, bid rigging, bid steering or coercion) by the Bidder, or any one employed by him, or acting on his/her behalf (whether with or without the knowledge of the Bidder), shall be dealt with as per the terms and conditions of the contract and other provisions of the relevant laws, including Debarment Rules.
6.2 The breach of the IP or commission of any offence by the officials of the procuring agency shall be dealt with as per the rules and laws of the land in vogue.

7. Monitoring and Administration:

7.1 The respective procuring agency shall be responsible for administration and monitoring of the IP as per the relevant laws.

7.2 The bidder shall have the right to appeal as per the arbitration mechanism contained in the relevant rules.

We, hereby declare that we have read and understood the clauses of this agreement and shall abide by it.

The parties hereby sign this Integrity Pact at (place) _____________ on (date) _____________

EMPLOYER

CID:

BIDDER/REPRESENTATIVE

Witness: _________________  Witness: __________

Witness: _________________  Witness: __________
DECLARATION OF CONFLICT OF INTERESTS

Name of the Official:-

Name of work:-

Date:_

Financial Interest:

________________________________________________________________________

________________________________________________________________________

Close Personal Relationship:

________________________________________________________________________

________________________________________________________________________

Other Potential Conflicts of Interest/Enmity:

________________________________________________________________________

________________________________________________________________________

I hereby declare that the above details are correct to the best of my knowledge and I make this conflict of interest declaration in good faith.

Signature (Employee)

Date:

(To be filled by Chairperson of the Committee)

I hereby declare that I have received and appropriately noted this conflict of interest to be:

☐ Actual ☐ Perceived ☐ Potential ☐ Pecuniary ☐ Non-pecuniary

Signature (Chairperson)

Date:_
**Brief descriptions of the types of conflict of interest**

**Financial/Pecuniary interests**

Money does not need to change hands for an interest to be pecuniary/financial. People have a pecuniary/financial interest if they (or a relative or other close associate) own property, hold shares, have a position in a company bidding for government work, or receive benefits (such as concessions, discounts, gifts or hospitality) from a particular source. Or when there was actual exchange of cash in the form of loan or lending of money between the two parties.

**Close Personal Relationship:**

Close personal relationship should include anyone who is related through blood.

**Other Personal relationship:**

Other personal relationship should include everyone who enjoys intimate relationship like family doctors, lawyers, and close friends.

**Enmity**

Conflict of Interest not only occurs in the form of good relations, it can equally or more seriously occur in the situation of enmity.

Conflicts of interest can be actual, perceived or potential.

- **An actual conflict of interest** involves a direct conflict between a public official’s current duties and responsibilities and existing private interests.

- **A perceived or apparent conflict of interest** can exist where it could be perceived, or appears, that a public official’s private interests could improperly influence the performance of their duties – whether or not this is in fact the case.

- **A potential conflict of interest** arises where a public official has private interests that could conflict with their official duties in the future.
Preface

Procurement under projects financed by the Royal Government of Bhutan is carried out in accordance with policies and procedures laid down in the *Procurement Rules and Regulations 2009*.

To obtain further information on procurement you may contact:

Public Procurement Policy Division

Ministry of Finance
Guidance Notes on the Use of the Standard Bidding Document

This guidance notes have been prepared by the PPPD to assist a Procuring Agency in the preparation and using of Standard Bidding Document (SBD), for the procurement of small Works. The Procuring Agency should also refer to the Procurement Rules and Regulations and the circulars and Notifications issued from time to time to supplement the Regulations.

The use of SBD applies for the Open bidding method and also for the limited bidding method, whereby bids are invited from a list of enlisted bidders.

Since the intention is that SBD small work should only be used for Contracts of short duration and of low risk/value, there is no provision for price adjustment. The general procurement principal shall apply.

SBD is based upon internationally acceptable model formats, which have been adapted to suit the particular needs of procurement within Bhutan. The SBD has 10 Sections, of which Section 1: (Instruction to Bidders) and Section 5: (General Conditions of Contract) must not be altered or modified under any circumstances.

The way in which a Procuring Entity addresses its specific needs is through the information provided in the Bidding Data Sheet (BDS) and the Special Conditions of Contract (SCC), as well as in the detailed requirements of the procurement in the Schedule of Works and/or the Drawings/specifications.

SBD when properly completed will provide all the information that a Bidders need in order to prepare and submit a Bid. This should provide a sound basis on which a Procuring Agency can fairly, transparently and accurately carry out a Bid evaluation process on the Bids submitted by the Bidders.

The following briefly describes the Sections of SBD and how a Procuring Entity should use these when preparing a particular Bidding Document.

Section 1. Instructions to Bidders (ITB)

This Section provides relevant information to help Bidders prepare their Bids. Information is also provided on the submission, opening, and evaluation of Bids and on the award of Contract.

This Section also contains the criteria to be used by the Employer in order to determine the lowest evaluated Bid and the qualifications of the Bidder to perform the Contract. The text of the clauses in this Section shall not be modified.

Section 2. Bidding Data Sheet (BDS)

This Section consists of provisions that are specific to each object of procurement and that supplements the information or requirements included in Section 1: Instructions to Bidders.

Section 3. Evaluation and Qualification Criteria

This section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders if the bidding was not preceded by a pre qualification exercise and post qualifications are applied. In accordance with ITB 34 and ITB 36, no other methods, criteria and factors shall be used. The Bidder shall provide all the information requested in the forms included in Section 4 (Bidding Forms).

Section 4. Bidding forms

This Section provides the standard format for the Bid Form and Bid Security if required, that are to be submitted by the Bidder.

This Section also contains the form of the Notification of Award (Form-2) and the Contract Agreement (Form-3) which, when completed, incorporates any corrections or modifications to the accepted Bidder relating to amendments permitted by the ITB, GCC and SCC.

The forms for Performance Security (Form-5) and Advance Payment Security (Form-6).
when required, are to be completed by the successful Bidder after Contract award.

Section 5. General Conditions of Contract (GCC)
This Section provides the General Conditions of Contract that will apply to the Contract for which the Bidding Document is issued. The text of the clauses in this Section shall not be modified.

Section 6. Special Conditions of Contract (SCC)
This Section provides clauses specific to the Special Conditions to a particular Contract. This can be modified according to requirements specific to the contract.

Section 7. Contract Forms
This section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after Contract award.

Section 8. Bill of Quantities/Price Schedule
This Section provides the items and estimated quantities of Works and Related Services to be performed, as well as the detailed Technical Specifications that describe the Works to be procured and must be carefully prepared by a Procuring Agency for each object of procurement.

Section 9. Drawings
This Section contains any Drawings that supplement the Schedule of Works including Specifications for the Works and Related Services to be procured.

Section 10. Terms of Reference
This section contains terms of reference for the goods/equipment and works required.
INVITATION FOR BID

(IFB)

ROYAL GOVERNMENT OF BHUTAN
RGoB PROJECT
INVITATIONS FOR BIDS (IFB)
(Procurement and Installation of Network equipments, and LAN set up for New DCRC & Dol Building, Kawajangsa, Thimphu)

NATIONAL COMPETITIVE BIDDING

Date: 17/11/2017
Bid No.: CHHA(2)-11/2017-2018/1257

1. Ministry of Home and Cultural Affairs invites bids for ‘Procurement and Installation of Network equipments, and LAN setup for New DCRC & Dol Building, Kawajangsa, Thimphu ‘. The bidders may submit bids for the given works.

2. Bidding documents (and additional copies) may be downloaded from the website www.mohca.gov.bt from 21st November, 2017 to 22th December, 2017

3. Bids must be accompanied by a bid security of 2% of the total quoted Price drawn in favour of Offtg. Director, Directorate Services, MoHCA. Bid security will have to be in any one of the forms as specified in the bidding document and shall have to be valid for 30 days beyond the validity of the bid.

4. Bids must be delivered to Procurement Officer, MoHCA. On or before 12.00 (noon) on 22nd December, 2017 and will be opened on the same day at 2.30 PM, in the presence of the bidders who wish to attend in the Secretary’s Conference Hall of MoHCA.
INVITATIONS FOR BIDS (IFB)

Section 1: Instructions to Bidder (ITB)

A. General
   1. Scope of Tender
   2. Corrupt Fraudulent Collusive or Coercive Practices
   3. Eligible Bidders
   4. Site Visit

B. Content of Bidding Document
   5. Contents of Bidding Documents
   6. Clarification of Bidding Documents
   7. Amendment of Bidding Documents

C. Preparation of Bids
   8. One Bid per Bidder
   9. Bid Preparation Costs
  10. Language of Bid
  11. Documents comprising the Bid
  12. Alternative Bid
  13. Bid Price and Discount
  14. Currencies of Bid and Payment
  15. Documents comprising the Technical Proposal
  16. Documents establishing the Qualification of the Bidder
  17. Bid Validity
  18. Bid security
  19. Format and Signing of Bid

D. Submission and Opening of Bids
   21 Sealing and Marking of Bids
   22 Bid Submission Deadline
   23 Late Bids
   24 Modification, Substitution or Withdrawal of Bids
   25 Bid Opening
   26 Confidentiality
   27 Clarification
   28 Bidder: Contacting the Employer
   29 Determination of Responsiveness
   30 Non Conformities, Errors and Omissions
   31 Evaluation and Comparison of Tenders
   32. Employer's Right to Accept or Reject any or all
   33. Award Criteria
   34. Notification of Award

Section 2: Bidding Data Sheet

A. General
B. Bidding Documents
C. Preparation of Bids
D. Submission and Opening of Bids
F. Award of Contract

Section 3: Evaluation and Qualification Criteria
Section 4: Forms of Bid, & Qualification Information
Bank Guarantee for Bid Security

Section 5: General Conditions of Contract

1. Definitions
2. Interpretation & Documents forming the Contract
3. Corrupt, Fraudulent, Collusive or Coercive Practices
4. Governing Language and Law
5. Engineer's Decision
6. Delegation
7. Communications and Notices
8. Sub-Contracting
9. Contractor's Personnel
10. Welfare of Labourers & Child Labour
11. Safety, Security and Protection of the Environment
12. Access to the Site
13. Documents, Information.
14. Property
15. Insurance
16. Possession of the Site
17. Commencement of Works
18. Completion of Works
19. Programme of Works
20. Early Warning
21. Compensation Events
22. Non-Scheduled Items of Works
23. Schedule of Works
24. Payment Certificates
25. Payments and Currency
26. Retention
27. Liquidated Damages
28. Performance Security
29. Price Adjustment
30. Completion
31. Correction of Defects
32. Taking Over
33. Final Account
34. Termination
35. Payment upon Termination
36. Release from Performance
37. Force Majeure
38. Settlement of Disputes

38.1 The Employer and the Contractor shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

38.2 Any dispute between the parties to the Contract that may not be settled amicably will be referred to Arbitration at the initiative of either of the parties.
Section 6: Special Conditions of Contract
Section 7: Contract Forms
Section 8: Bill of Quantities/Price Schedule
Section 9: Drawings
Section 10: Term of Reference
Section I. Instructions to Bidders (ITB)

Notes on the Instructions to Bidders

This section of the Bidding Documents should provide the information necessary for Bidders to prepare responsive Bids, in accordance with the requirements of the Employer. It should also give information on Bid submission, opening and evaluation, and on the award of Contract.

Matters governing the performance of the Contractor, payments under the Contract, or matters affecting the risks, rights and obligations of the parties under the Contract are not normally included in this Section, but rather under Section V, General Conditions of Contract and/or Section VI, Special Conditions of Contract. If duplication of a subject is inevitable in the different sections of the documents, care must be exercised to avoid contradictions between clauses dealing with the same matter.

These Instructions to Bidders shall not be part of the Contract and shall cease to have effect once the Contract is signed.
Section 1: Instructions to Bidder (ITB)

A. General

1. Scope of Tender

1.1 The Employer, as indicated in the BDS issues this Bidding Document for the procurement of Works as specified in Section 6 (Employer’s requirement): The name, identification and identification of this bidding are provided in the BDS.

1.2 The successful Bidder will be required to complete the Works within the Time for Completion stated in the Special Conditions of Contract (SCC).

1.3 Throughout this Bidding Documents:

   (a) The term “in writing” means communicated in written form with proof of receipt;

   (b) If the context so requires, singular means plural and vice versa; and

   (c) “day” means calendar day.

2. Corrupt Fraudulent Collusive or Coercive Practices

2.1 The Royal Government of Bhutan requires that Employers and the Bidders shall observe the highest standard of ethics during the implementation of procurement proceedings and the execution of Contracts under public funds.

2.2 In pursuance of this requirement, the Employer shall

   (a) exclude the bidder from participation in the procurement proceeding concerned or reject a proposal for award; and

   (b) declare a bidder ineligible, either indefinitely or for a stated period of time, from participation in procurement proceedings under public funds;

2.3 If it, at any time, determines that the bidder has engaged in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a Contract under the public funds.

2.4 The Government defines, for the purposes of this provision, the terms set forth below as follows:

   a) “corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

   b) “fraudulent practice” is any intentional act or omission including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefits or to avoid an obligation;

   c) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

   d) “coercive practice” is impairing or harming or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party.
2.5 The bidder shall be aware of the provisions on fraud and corruption stated in GCC Clause 3 and GCC Sub-Clause 34.2(d).

2.6 The RGoB requires that the Employer’s personnel have an equal obligation not to solicit, ask for and/or use coercive methods to obtain personal benefits in connection with the said proceedings.

3. Eligible Bidders

3.1 Bidders of the categories specified in the BDS are eligible to participate in this bidding process.

3.2 The Employer shall invite Bids using the Open Tendering Method (National Competitive Bidding) or limited tender as applicable.

3.3 The bidder shall meet the qualification requirement stated in the BDS.

4. Site Visit

4.1 The Bidders, at their own responsibility and risk, is encouraged to visit and examine the Site and obtain all information that may be necessary for preparing the bid and entering into a Contract for performance of the Works. The costs of visiting the Site shall be at the bidder’s own expense.

B. Content of Bidding Document

5. Contents of Bidding Documents

5.1 The sections comprising the Bidding Document are listed below and should be read in conjunction with any Amendment issued in accordance with ITB Clause 7:

PART 1 Bidding Procedures

- Section 1: Instructions to Bidders (ITB)
- Section 2: Bidding Data Sheet (BDS)
- Section 3: Evaluation and Qualification Criteria
- Section 4: Bidding forms
- Section 5: General Conditions of Contract (GCC)
- Section 6: Special Conditions of Contract (SCC)
- Section 7: Contract Forms
- Section 8: Bill of Quantities & Specifications
- Section 9: Drawings
- Section 10: Terms of Reference

---

1 ‘Another party’ refers to a public official acting in relation to the procurement process or contract execution.

2 A ‘party’ refers to a public official; the term ‘benefit’ and ‘obligation’ relate to the procurement process or contract execution; and the ‘act or omission’ is intended to influence the procurement process or contract execution.

3 ‘parties’ refers to participations in the procurement process including public officials attempting to establish bid prices at artificial, non competitive levels.

4 A ‘party’ refers to a participant in the procurement in the procurement process or contract execution.
5.2 The Employer is not responsible for the completeness of the Bidding Document and their Addenda, if they were not obtained directly from the source stated by the Employer in the Invitation for Bids.

5.3 The Bidder is expected to examine all instructions, forms terms, and specifications in the Bidding Documents. Failure to furnish all information or documentation required by the Bidding Documents may result in the rejection of the bid.

6. Clarification of Bidding Documents 6.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Employer in writing at the Employer's address indicated in the BDS.

7. Amendment of Bidding Documents 7.1 At any time prior to the deadline for submission of Bid, the Employer may amend the Bidding Document by issuing addenda and extend the deadline for the submission of bids at its discretion. Any amendment issued shall become an integral part of the Bidding Document and shall be communicated in writing to all those who have purchased the Bidding Document.

C. Preparation of Bids

8. One Bid per Bidder 8.1 A Bidder shall submit only one (1) Bid. A Bidder who submits or participates in more than one (1) Bid shall cause all the proposals with the Bidder’s participation to be disqualified.

9. Bid Preparation 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bids, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

10. Language of Bid 10.1 All documents relating to the Bid shall be in the language specified in the BDS.

11. Documents comprising the Bid 11.1 The original and copy(ies) of Bid submitted by the Bidder shall comprise the following:

(a) The Bid form (in the format indicated in Section IV – Forms of Bid, Qualification Information, Letter of Acceptance, and Contract);

(b) License and certificate

(c) Bid Security in accordance with Clause 19;

(d) Priced Bill of Quantities;

(e) and any other materials required to be completed and submitted by Bidders, as specified in the BDS.

11.2 The Instruction to Bidders, Bidding Data Sheet, General Conditions of Contract, Special Conditions of Contract, Specifications and drawings are for the information of the bidders and is not required to be submitted by the bidder.

12 Letter of Bid and Schedule 12.1 The letter of Bid, Schedules, and all documents listed under Clause 11, shall be prepared using the relevant forms in Section 4 (Bidding Forms), if so provided in BDS. The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.
13. Alternative Bid
13.1 Alternative Bid shall not be considered in small works.

14. Bid Price and Discount
14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Schedules shall confirm to the requirements specified below;

14.2 The bidder shall submit a bid for the whole of the works described in ITB 1.1 by filling in prices for all items of the Works, as identified in Section 4, Bidding Forms. In case of admeasurements contracts, the Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities.

14.3 The Bid price shall take into account the cost of materials, transportation, labour, taxes, levies, overheads and profit and any other cost. The Bid price shall be fixed for the duration of performance of the Contract and shall not be subject to any adjustment on any account. The Bid price shall be applicable for the whole works described in the Drawings, Specifications and Schedule of Works.

15. Currencies of Bid and Payment
15.1 All prices shall be quoted in Bhutanese Ngultrum (BTN) and shall be paid in BTN.

16. Documents comprising the Technical Proposal
16.1 The bidder shall furnish a work plan in simple bar chart and other information if provided in BDS, to demonstrate the adequacy of the Bidders’ proposal to meet the work requirements and the completion time.

17. Documents establishing the Qualification of the Bidder
17.1 To establish its qualification to perform the Contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding information sheets included in Section 4 (Bidding Forms).

18. Bid Validity
18.1 Bids shall remain valid for the period specified in the BDS. Any Bids which does not meet the validity requirement as per the BDS shall be rejected by the Employer as non-responsive.

19. Bid Security
19.1 The Bidder shall at their option furnish, as part of the Bid, a Bid Security as specified in the BDS issued by any reputed Financial Institutions in Bhutan and shall be valid thirty (30) days beyond the Bid validity period.

   a) Unconditional Bank Guarantee;
   b) A demand Draft; or
   c) Cash Warrant

19.2 In exceptional circumstances, prior to the expiration of the Bid validity period, the Employer may solicit the Bidder’s consent to an extension of the Bid validity period. The request and responses shall be made in writing. The validity of Bid Security shall be suitably extended promptly.

19.3 The Bid Security may be forfeited:
   (a) if the Bidder withdraws the Bid after Bid opening during the period of Bid validity. Further the bidder may be excluded from future participation for a period of two years.
   (b) if the Bidder does not accept the correction of the Bid price, pursuant to clause 31; or
   (c) in the case of a successful Bidder, if the Bidder fails within the
specified time limit to sign the Agreement; or furnish the required Performance Security.

20 Format and Signing of Bid

20.1 The Bidder shall prepare one (1) original of the documents comprising the Bid as described in ITB Clause 11 and clearly mark it “ORIGINAL.” In addition, the Bidder shall prepare the number of copies of the Bid, as specified in the BDS and clearly mark each of them “COPY.” In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 The original and each copy of the Bid shall be typed or written in indelible ink and shall be signed by the person duly authorized to sign on behalf of the Bidder.

20.3 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person(s) signing the Bid.

D. Submission and Opening of Bids

21 Sealing and Marking of Bids

21.1 The Bidder shall enclose the original in one (1) envelope and all the copies of the bid in another envelope, duly marking the envelopes as “ORIGINAL” and “COPY.” These two (2) envelopes shall then be enclosed in one (1) single outer envelope.

21.2 The inner envelopes shall:

(a) Be signed across the seals by the person authorized to sign the Bid on behalf of the Bidder;

(b) Be marked “ORIGINAL” and “COPY” and

(c) Bear the name and address of the Bidder.

21.3 The outer envelope shall;

(a) Be signed across the seals by the person authorized to sign the Bid on behalf of the Bidder;

21.4 be addressed to the Employer at the address specified in the BDS; bear a statement “DO NOT OPEN BEFORE......” the time and date for Bid opening as specified in the BDS.

21.5 If all or any envelopes are not sealed and marked as required by ITB Sub-Clause 21, the Employer shall not reject the bids but assume no responsibility for the misplacement or premature opening of the Bid.

22 Bid Submission Deadline

22.1 Bids must be received by the Employer at the address and no later than the date and time specified in the BDS.

22.2 Bids may be hand delivered, posted by registered mail or sent by courier.

22.3 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document in accordance with ITB Clause 7, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the new deadline as extended.

23 Late Bids

23.1 Late bids shall not be considered and shall be returned unopened.

24 Modification, Substitution or Withdrawal of Bids

24.1 A Bidder may modify, substitute or withdraw their Bids after it has been submitted by sending a written notice before the deadline for submission of Bids.
25 Bid Opening

25.1 The Employer shall open the Bids in the presence of the bidders who is attending the bid opening, including modifications or substitutions made pursuant to ITB Clause 24. Bidders or their representatives shall be allowed to attend and witness the bid opening and shall sign a register evidencing their attendance.

25.2 The name of the Bidder, Bid modifications, substitutions or withdrawals, total amount of each Bid, number of corrections, discounts, and the presence or absence of requisite Bid Security, and such other details as the Employer, at its discretion, may consider appropriate, shall be read out aloud and recorded.

25.3 The Employer shall prepare minutes of the Bid opening. The minutes shall include, as a minimum, the name of the Bidders and whether there has been a withdrawal, substitution or modification; the Bid Price including any discounts and the presence or absence of a Bid Security, if one was required.

25.4 Bids not opened and read out at the Bid opening shall not be considered, irrespective of the circumstances, and shall be returned unopened to the Bidder.

25.5 Bids shall be rejected at the Bid opening only on the following grounds:
   a) If the bid form is not complete and signed
   b) Non-signing of BoQ; and
   c) Insufficient amount of Bid Security and validity

E. Tender Opening and Evaluation

26 Confidentiality

26.1 After the opening of Bids, information relating to the examination, clarification, and evaluation of Bids and recommendations for award shall not be disclosed to Bidders or other persons not officially concerned with the evaluation process until after the award of the Contract is announced.

27 Clarification

27.1 The Employer may ask Bidders for clarification of their Bids in order to facilitate the examination and evaluation of Bids. The request for clarification and the response shall be in writing, and any changes in the prices or substance of the Bid shall not be sought, offered or permitted, except to confirm the correction of arithmetical errors discovered by the Employer in the evaluation of the Bids, in accordance with ITB Clause 31.

28 Bidder: Contacting the Employer

28.1 Following the opening of Bids and until the Contract is signed no Bidder shall make any unsolicited communication to the Employer or try in any way to influence the Employer’s examination and evaluation of Bids which may result in the rejection of bids. If any Bidder wishes to contact the Employer on any matter related to the Bidding process, it should do so in writing

29 Determination of Responsiveness

29.1 The Employer’s determination of a bid’s responsive is to be based on the contents of the Bid itself without recourse to extrinsic evidence.

29.2 A substantially responsive Bid is one that conforms in all respects to the requirements of the Bidding Document without material deviation,
reservation or omission. A material deviation, reservation or omission is one that:

(a) affects in any substantial way the scope, quality, or performance of the Works specified in the Contract; or

(b) limits in any substantial way, or is inconsistent with the Bid Document, the Employer’s rights or the Bidder’s obligations under the Contract; or

(c) if rectified would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

29.3 If a Bid is not substantially responsive to the Bidding Document it shall be rejected by the Employer and shall not subsequently be made responsive by the Bidder by correction of the material deviation, reservation or omission.

29.4 There shall be no requirement as to the minimum number of responsive Bids.

30.1 The Employer may regard a Bid as responsive even if it contains minor deviations that do not materially alter or depart from the characteristics, terms, conditions and other requirement set forth in the Bidding Document or if it contains errors or oversights that are capable of being corrected without affecting the substance of the Bid.

31.1 The Employer shall evaluate and compare only those Bids determined to be substantially responsive to the requirements of the Bidding Document. Substantially responsive Bids are those which fulfil the requirements of ITB Clauses 11 and 12.

31.2 The evaluation will take into account corrected Bid Price and discounts (if any).

31.3 The Employer will check substantially responsive Bids for any arithmetical errors. Where there is a discrepancy between the amounts in figures and words, the amount in words will govern. If a Bidder refuses to accept the correction, its Bids shall be rejected. The Employer shall correct arithmetical errors on the following basis:

(a) if there is a discrepancy between the unit price and the line item total, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price, as quoted, shall govern and the unit price shall be corrected; and

32.1 The Employer reserves the right to accept any Bid, to annul the Bid proceedings, or to reject any or all Bids, at any time prior to Contract award, without thereby incurring any liability to Bidders, or any obligation to inform Bidders of the grounds for the Employer’s actions.

33.1 The Employer shall award the Contract to the Bidders whose offer is substantially responsive to the Bidding Document and that has been determined to be the lowest evaluated Bid, provided that the Bidder is determined to be qualified to perform the Contract satisfactorily.
<table>
<thead>
<tr>
<th>Clause</th>
<th>Description</th>
</tr>
</thead>
</table>
| 34. Notification of Award | 34.1 Prior to the expiration of the period of Bid validity, the Employer shall notify the successful Bidder, in writing that its Bid has been accepted. Until a formal contract is prepared and executed, the Notification of Award shall constitute a binding Contract.  
34.2 Within fifteen (15) working days of the receipt of the Notification of Award from the Employer, the successful Bidder shall furnish the Performance Security, in the amount specified in the BDS.  
34.3 The proceeds of the performance security shall be payable to the Employer unconditionally upon first written demand as compensation for any loss resulting from the Contractor’s failure to complete its obligations under the Contract  
34.4 Within fifteen (15) working days of receipt of the notification of award, the successful Bidder shall sign, date and return it to the Employer. |
| 35 complaints | 35.1 If there are any complaints both the parties shall submit the complaints as specified in BDS. The complaints if any shall be submitted within 10 working days from the date of notification of award. |
Section 2 : Bidding Data Sheet

*Instructions for completing the Bidding Data Sheet are provided, as needed, in the notes in italics mentioned for the relevant ITB Clauses*

ITB Amendment of, and Supplements to, Clauses in the Instructions to Bidders

Clause

A. General

ITB 1.1 The Employer is [The Director, DCRC-DOI, MoHCA, Thimphu]

ITB 1.2 The Intended Completion Date is [60 Days from the Date of award letter]

The Name and Identification of the Contract is/are; ‘Procurement and Installation of Network equipments, and LAN setup for New DCRC & DoI Building, Kawajangsa, Thimphu’

ITB 3.2 Option B : Open Tendering method

All Bidders regardless of whether enlisted or not enlisted with the Dzongkhag may submit Bids provided they otherwise qualify.

ITB 3.3 The evaluation shall be based on the lowest price of the responsive bidder and the work will awarded to the lowest responsive bidder.

The information required from Bidders:

1. Updated Trade License & Tax Clearance Certificate.
2. The bidder should be fully acquainted with Site and BOQ before quoting the rates.
3. The intended bidder must sign Integrity Pact (IP) and Submit along with other bid documents.

B. Bidding Documents

ITB 7.1 For clarification of Tenders purposes only, the Employer’s address is:

Attention: [Tashi Dorji, Tashi Jamtsho, Pema Dechen]
Address: [ICT Division, MoHCA, Thimphu]
Telephone: 02-328870

Electronic mail address: [tashidorji@mohca.gov.bt, tashijamtsho@mohca.gov.bt]

C. Preparation of Bids

ITB 15.1 The Bid validity period shall be [60] days.

ITB 15.2 A Bid Security amounting to [2%] of the total quoted amount should be furnished in any of the following form;

a) Unconditional Bank guarantee
b) Cash warrant; or
c) Demand draft

ITB 16.1 A simple bar chart is not required

ITB 19.1 In addition to the original, [one] copies shall be submitted.
D. Submission and Opening of Bids

ITB 17.2 The inner and outer envelopes shall bear the following additional identification marks:

*Do not open before 2.30 hours on 22/12/2017.*

ITB 17.2 For **Bid submission purposes** only, the Employer’s address is:

Attention: *[Procurement Officer]*

Address: *MoHCA, Thimphu.*

The deadline for the submission of Tenders is:

Time & Date: **12.00 Noon on 22/12/2017**

ITB 21.1 The Bid opening shall take place on the same day as the closing day of the bid submission at: *[Secretary’s Conference Hall, MoHCA]*

Date: **22/12/2017**; Time: **2.30 PM**

F. Award of Contract

ITB 34.2 The amount of Performance Security shall be [*10%* percent of the Contract Price after receipt by the Employer of an acceptable Advance Payment Guarantee.]

ITB 35.1 The name and address of the office where complaints to the Procuring Entity is to be submitted *[Procurement Section, MoHCA, Thimphu]*
Section 3 : Evaluation and Qualification Criteria

This section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders if the bidding was not preceded by a pre-qualification exercise and post qualifications are applied. Procuring Agency may apply basic minimum technical qualification requirement (manpower and equipments) only if there is a project specific need.

The items must meet the minimum technical specification specified.

1. Evaluation

   1.1 Evaluation shall be done to determine the responsiveness and the award shall be made to the lowest evaluated bidder meeting the technical specification and other requirements as specified in the term and conditions.
Section 4: Forms of Bid, & Qualification Information

Standard Forms

Standard Form: Form of Bid
Standard Form: Letter of Acceptance
Standard Form: Bid security Bank Guarantee
Standard Form: Form of bid

Notes on Form of Bid:
The Bidder shall fill in and submit this bid form with the Bid. If Bidders do not fill in the Contract Price and does not sign this Bid form, the bids will be rejected.

[Date]

To

Address

We offer to execute the contract for “________________________________________________________________________” in accordance with the Conditions of Contract accompanying this Bid for the Contract Price of [Amount in figures] (______________________________________________________________) [Amount in words] [Name of currency].

The contract shall be paid in Ngultrums (Nu.)

This Bid and your written acceptance of it shall constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any Bid you receive.

We hereby confirm that this Bid complies with the Bid validity and Bid Security required by the bidding documents and specified in the Bidding Data.

Authorized Signature: _________________________________________________________

Name and Title of Signatory: ___________________________________________________

Name of Bidder: _____________________________________________________________

Address: ___________________________________________________________________
Standard Form: Qualification Information

Notes on Form of Qualification Information: The following information is to be filled in by bidders which will be used for purposes of evaluation

1. Individual bidders

1.1 Constitution of legal status of Bidder [attach copy]

Place of registration: _______________________

Principal place of business: _______________________

Power of attorney of signatory of Bid [attach]

1.2 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Refer BDS. The supporting documents such detailed CVs signed in original supported by certificates for qualification and experience.

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Qualification &amp; year of experience (general)</th>
<th>Year of experience in proposed position</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not required</td>
</tr>
</tbody>
</table>
Standard Form: Letter of Acceptance

To:
Ms …………………
…………………………….

Dear Sir/Madam,

This is to notify that your Bid dated ...... for the execution of the contract for the "......................... " for the Contract Price [.......] [Ngultrum], as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency. The start date of the project is [......date]. The completion date for whole of the works shall be [date].

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract documents.

Authorized Signature:
_______________________________________________________

Name and Title of Signatory: _______________________________________________________

Name of Agency:
_______________________________________________________

Attachment: Agreement
Bank Guarantee for Bid Security

[\textit{this is the format for the Bid Security to be issued by a financial institutions in Bhutan in accordance with ITB Clause 19}]

Invitation for Bid No: \hspace{1cm} Date:

Bid Package No:

To:

[Name and address of Employer]

\textbf{TENDER GUARANTEE No:}

We have been informed that \textit{[name of Bidder]} (hereinafter called “the Bidder”) intends to submit to you its Bid dated \textit{[date of bid]} (hereinafter called “the Tender”) for the execution of the Works of \textit{[description of works]} under the above Invitation for Bids (hereinafter called “the IFB”).

Furthermore, we understand that, according to your conditions Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we \textit{[name of bank]} hereby irrevocably undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Nu \textit{[insert amount in figures and words]} upon receipt by us of your first written demand accompanied by a written statement that the Bidder is in breach of its obligation(s) under the Bid conditions, because the Bidder:

\begin{itemize}
\item[(a)] has withdrawn its Bids during the period of Bid validity specified by the Bidder in the Form of Bid; or \\
\item[(b)] does not accept the correction of errors in accordance with the Instructions to Bidders ITB; or \\
\item[(c)] having been notified of the acceptance of the Bid by the Employer during the period of Bid validity, (i) fails or refuses to furnish the performance security in accordance with the ITT, or (ii) fails or refuses to execute the Contract Form,
\end{itemize}

This guarantee will expire

\begin{itemize}
\item[(a)] if the Bidder is the successful Bidder, upon our receipt of a copy of the Performance Security and a copy of the Contract signed by the Bidder as issued by you; or \\
\item[(b)] if the Bidder is not the successful Bidder, thirty days after the expiration of the Bidder’s Tender validity period, being \textit{[date of expiration of the Tender]}.
\end{itemize}

Consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature \hspace{1cm} Signature
Section 5: General Conditions of Contract

1. Definitions

1.1 The following words and expressions shall have the meaning hereby assigned to them. Boldface type is used to identify the defined terms:

(a) **Completion Certificate** means the Certificate issued by the Employer as evidence that the Contractor has executed the Works in all respects as per drawing, specifications, and Conditions of Contract.

(b) The **Completion Date** is the date of completion of the Works as certified by the Engineer, in accordance with GCC Clause 18.

(c) **Contract** means the Agreement entered into between the Employer and the Contractor to execute, complete and maintain the Works.

(d) **Contractor** means the person or corporate body whose Tender to carry out the Works has been accepted by the Employer and is named as such in the SCC.

(e) **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract. The **Contractor's Bid** is the completed Bid Document including the priced offer submitted by the Contractor to the Employer.

(f) **Days** mean calendar days.

(g) A **Defect** is any part of the Works not completed in accordance with the Contract.

(h) The **Employer** is the party named in the SCC who employs the Contractor to carry out the Works.

(i) The **Engineer** is the person named in the SCC, who is responsible for supervising the execution of the works and administering the Contract.

(j) The **Intended Completion Date** is the date specified in the SCC on which the Contractor shall complete the Works and may be revised if extension of time or an acceleration order is issued by the Engineer.

(k) The **Site** is the area defined as such in the SCC.

(l) The **Works** are what the Contract requires the Contractor to construct, install, and hand over to the Employer, as defined in the SCC.

2. Interpretation & Documents forming the Contract

2.1 In interpreting the GCC, singular also means plural, male also means female or neuter, and the other way around. Headings in the GCC shall not be deemed part thereof or be taken into consideration in the interpretation or construance of the Contract. Words have their normal meaning under the language of the Contract unless specifically defined.

2.2 The following documents forming the Contract shall be interpreted in the following order of priority:

(a) the signed Contract Agreement.

(b) the letter of Notification of Award.

(c) the completed Bid form as submitted by the Bidder.

(d) the Special Conditions of Contract.

(e) the General Conditions of Contract.

(f) Specifications

(g) the Drawings.
3. Corrupt, Fraudulent, Collusive or Coercive Practices

3.1 The Government requires that Employers, as well as Contractors shall observe the highest standard of ethics during the implementation of procurement proceedings and the execution of Contracts under public funds.

3.2 In pursuance of this requirement, the Employer shall

(a) exclude the Contractor from participation in the procurement proceedings concerned or reject a proposal for award; and

(b) declare a Contractor ineligible, either indefinitely or for a stated period of time, from participation in procurement proceedings under public fund;

3.3 The Government defines, for the purposes of this provision, the terms set forth below as follows:

(a) corrupt practice\(^5\) is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value\(^6\) to influence improperly the actions of another party;

(b) fraudulent practice\(^7\) is any intentional act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(c) collusive practice\(^8\) is an arrangement between two or more parties designed to achieve an improper purpose,

---

\(^5\) “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes staff and employees of any organizations (including any institutions providing finance for the Works) taking or reviewing procurement decisions.

\(^6\) “anything of value” includes, but is not limited to, any gift, loan, fee, commission, valuable security or other asset or interest in an asset; any office, employment or contract; any payment, discharge or liquidation of any loan, obligation or other liability whatsoever, whether in whole or in part; any other services, favour or advantage, including protection from any penalty or disability incurred or apprehended or from any action or proceeding of a disciplinary or penal nature, whether or not already instituted and including the exercise or the forbearance from the exercise of any right or any official power or duty.

\(^7\) a “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

\(^8\) “parties” refers to participants in the procurement process (including public officials) and an “improper purpose” includes attempting to establish bid prices at artificial, non competitive levels.
including to influence improperly the actions of another party; and

(d) “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party.

3.4 The Government requires that the Client’s personnel have an equal obligation not to solicit, ask for and/or use coercive methods to obtain personal benefits in connection with the said proceedings.

4. Governing Language and Law

4.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Contractor and the Employer, shall be written in English unless otherwise stated in the SCC. The Contract shall be governed by and interpreted in accordance with the laws of the Kingdom of Bhutan.

5. Engineer’s Decision

5.1 Except where otherwise specifically stated in the SCC, the Engineer will decide Contractual matters between the Employer and the Contractor in the role as representative of the Employer.

6. Delegation

6.1 The Engineer may delegate any of his duties and responsibilities to his representative, after notifying the Contractor, and may cancel any delegation, without retroactivity, after notifying the Contractor.

7. Communications and Notices

7.1 Communications between Parties pursuant to the Contract shall be in writing to the address specified in the SCC. A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

8. Sub-Contracting

8.1 The Contractor shall not be permitted to subcontract any part of the Works in whole or in part.

9. Contractor’s Personnel

9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel, as referred to in the SCC, to carry out the functions stated in the Schedule, or other personnel approved by the Engineer.

10. Welfare of Labourers & Child Labour

10.1 The Contractor shall provide proper accommodation to his labourers and arrange proper water supply, conservancy and sanitation arrangements at the site in accordance with relevant regulations, rules and orders of the government.

10.2 The Contractor shall comply with the applicable minimum age, labour laws and requirements of (including applicable treaties which have been ratified by) the Government of Bhutan regarding hazardous forms of child labour.

11. Safety, Security and Protection of the Environment

11.1 The Contractor shall throughout the execution and completion of the Works and the remedying of any defects therein:

(a) have full regard for the safety of all persons entitled to be upon the Site and keep the Site and the Works in an orderly state;

(b) provide and maintain at the Contractor’s own cost all lights, guards, fencing, warning signs and watching for the protection of the Works or for the safety on-site; and

(c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of the Contractor’s methods of operation.

---

9 a “party” refers to a participant in the procurement process or contract execution.
12. Access to the Site

12.1 The Contractor shall allow the Engineer and any person authorised by the Engineer access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

13. Documents, Information.

13.1 The Contractor shall furnish to the Engineer all information, schedules, calculations and supporting documentation that may be requested of it.

14. Property

14.1 If the contract is terminated by the Employer because of the contractors default, then, the contractor shall not be allowed to remove any materials on the Site, Plant, and Temporary Works until the matter is amicably resolved.

15. Insurance

15.1 The Contractor shall provide insurance as stated in the SCC

15.2 The Contractor shall deliver policies and certificates of insurance to the Engineer, for the Engineer’s approval, before the Start Date.

15.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

16. Possession of the Site

16.1 The Employer shall give possession of the Site, or parts of the Site, to the Contractor on the date(s) specified in the SCC.

17. Commencement of Works

17.1 The Contractor may commence execution of the Works on the Start Date, or other such date as specified in the SCC, and shall carry out the Works in an expeditious manner.

17.2 If the Contractor fails to commence the works within the above stated period, the Employer may, at his sole discretion, terminate the Contract and forfeit the Performance Security, if any.

18. Completion of Works

18.1 The Contractor shall complete the Works within the number of days stated in the SCC from the date of commencing the Works on the Site.

19. Programme of Works

19.1 Within the time stated in the SCC, the Contractor shall submit to the Engineer for approval a work program. The Contractor shall submit to the Engineer for approval an updated Programme at intervals no longer than the period stated in the SCC.

20. Early Warning

20.1 The Contractor shall warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, result in increase to the Contract Price or delay in the execution of the Works.

21. Compensation Events

21.1 The following shall be Compensation Events:

(a) the Employer does not give access to the Site or part of the Site by the Site Possession Date stated in the SCC; and

(b) if the payment is delayed pursuant to Clause 25.1.

21.2 If a Compensation Event would prevent the work being completed before the Intended Completion Date, the Intended Completion Date shall be extended, as appropriate, by the Engineer.

22. Non-Scheduled Items of Works

22.1 The Contractor shall be paid for non-scheduled items of works only when the Engineer approves such works and at the rates and in the manner stated in the SCC.
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
</table>
| 23. Schedule of Works | The Schedule of Works will contain rates for all items for the construction including temporary works, installation, testing, and commissioning work to be done by the Contractor.  
23.2 The Contractor shall be paid for the quantity of the work done at the rate in the Contract Agreement for each item.  
23.3 The Contractor shall be entirely responsible for all taxes, duties, license fees, and other such levies imposed outside and inside Bhutan. |
| 24. Payment Certificates | The Contractor shall submit to the Engineer monthly statements of the estimated value of the work executed less the cumulative amount certified previously. The Engineer shall check the Contractor’s monthly statement and certify the amount to be paid to the Contractor.  
24.2 The value of work executed shall be determined by the Engineer.  
24.3 The value of work executed shall comprise the value of the quantities of the items in the Schedule of Works completed.  
24.4 The value of work executed shall include the valuation of Variations, Certified Dayworks and Compensation Events.  
24.5 The Engineer may exclude any item certified in previous certificates or reduce the proportion of any item previously certified in any certificate in the light of later information. |
| 25. Payments and Currency | The Employer shall pay the Contractor the amounts certified by the Engineer within thirty (30) days of the date of each certificate.  
25.2 The Employer shall make Advance Payment (mobilization and secured advance) to the Contractor of the amounts and by the dates stated in the SCC against provision by the Contractor of an unconditional Bank Guarantee, (Form 4).  
25.3 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilisation expenses required specifically for the execution of the Contract. The Contractor shall demonstrate that the advance payment has been used in this way by submitting copies of invoices or other documents to the Employer.  
25.4 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, variations, claims or any amount payable due to failure to complete the works. |
| 26. Retention | The Employer shall retain from each payment due to the Contractor the proportion stated in the SCC until the completion of the whole of the Works.  
26.2 On completion of the whole of the Works, half the total amount retained shall be repaid to the Contractor, the remaining half when the Defects Liability Period has passed and the Engineer has certified that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected. |
| 27. Liquidated Damages | The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the SCC for each day that the Completion Date is later than the Intended Completion date for the works or for any part thereof. |
28. Performance Security

Upon Notification of Award, a Performance Security shall be provided to the Employer in the amount and form stated in the Contract Forms (Form 3). The Performance Security shall be valid until a date thirty (30) days from the date of issue of the Certificate of Completion.

29. Price Adjustment

The rates and prices in the bill of quantities are fixed for the duration of the Contract and not subject to price adjustment during the performance of the Contract.

30. Completion

The Contractor shall request the Engineer to issue a Certificate of Completion of the Works, and the Engineer will do so upon deciding that the work is substantially completed.

31. Correction of Defects

The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the SCC. The Defects Liability Period shall be extended for as long as the Defects remain to be corrected.

If the Contractor has not corrected a Defect within the time specified in the Engineer’s notice, the Engineer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

32. Taking Over

The Employer shall take over the Site and the Works within seven (7) days of the Engineer issuing a Certificate of Completion.

33. Final Account

The Contractor shall supply the Engineer a detailed account of the total amount that the Contractor considers payable under the Contract. The Engineer shall certify any final payment that is due to the Contractor within twenty-one (21) days of receiving the Contractor’s account if it is correct and complete.

The Employer shall effect payment of the final account within thirty (30) days from the date of certification by the Engineer.

34. Termination

The Employer or the Contractor by giving thirty (30) days written notice of default to the other party, may terminate the Contract in whole or in part if the other party causes a fundamental breach of Contract.

Fundamental breaches of the Contract shall include, but shall not be limited to, the following:

(a) the Contractor stops work for more than thirty (30) days when no stoppage of work is shown on the current Programme and the stoppage has not been authorised by the Engineer;

(b) the Engineer gives notice that failure to correct a particular defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
38

(c) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of Liquidated Damages can be paid;

(d) the Contractor, in the judgment of the Employer, has engaged in corrupt or fraudulent practices, as defined in GCC Clause 3, in competing for or in executing the Contract; and

(e) a payment certified by the Engineer is not paid to the Contractor by the Employer within sixty (60) days of the date of the Engineer’s certificate.

34.3 The Employer and the Contractor may at any time terminate the Contract by giving notice to the other party if either of the parties becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to any party provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue to the other party.

34.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

34.5 If the Contract is terminated, the Contractor is to stop work immediately, make the Site safe and secure and hand over the Site to the Employer as soon as reasonably possible.

35. Payment upon Termination

35.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done and Plant and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the SCC. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

35.2 If the Contract is terminated for the Employer’s convenience or because of a fundamental breach of Contract by the Employer, the Contractor shall be entitled to payments for completed works and the materials that have been brought to the site for the purpose of the works, but not used as certified by the Engineer after adjusting any payments received by the Contractor.

36. Release from Performance

36.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible, after receiving this certificate. The Contractor shall be paid for all works carried out before stoppage of work and any work carried out afterwards to which a commitment was made.

37. Force Majeure

37.1 For the purposes of this Contract, “Force Majeure” means an exceptional event or circumstance:

(a) which is beyond a Party’s control,

(b) which such Party could not reasonably have provided against before entering into the Contract,

(c) which, having arisen, such Party could not reasonably have avoided or overcome, and

(d) which is not substantially attributable to the other Party.

37.2 Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:
(a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
(b) rebellion, terrorism, sabotage by persons other than the Contractor’s Personnel, revolution, insurrection, military or usurped power, or civil war,
(c) riot, commotion, disorder, strike or lockout by persons other than the Contractor’s Personnel,
(d) munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the Contractor’s use of such munitions, explosives, radiation or radio-activity, and
(e) natural catastrophes such as earthquake, hurricane, typhoon Or volcanic activity.

37.3 However, force majeure shall not include the following;
   i. rainfall
   ii. snowfall
   iii. strikes in other countries
   iv. non-availability of labourer and materials such as timbers, boulders, sand, and other materials
   v. difficulty and risky terrain and remoteness of site.

38. Settlement of Disputes

38.1 The Employer and the Contractor shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

38.2 Any dispute between the parties to the Contract that may not be settled amicably will be referred to Arbitration at the initiative of either of the parties.

38.3 The Arbitration shall be conducted in accordance with the Arbitration Rules of the Kingdom of Bhutan in force.
# Section 6 : Special Conditions of Contract

*Instructions for completing the Special Conditions of Contract are provided, as needed, in the notes in italics mentioned for the relevant GCC Clauses.*

<table>
<thead>
<tr>
<th>Clause</th>
<th>Amendments of, and Supplements to, Clauses in the General Conditions of Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCC 1.1(d)</td>
<td>The Contractor is [__________________________].</td>
</tr>
<tr>
<td>GCC 1.1(i)</td>
<td>The Employer is [DCRC-DOI, MoHCA, Thimphu].</td>
</tr>
<tr>
<td>GCC 1.1(k)</td>
<td>The Intended Completion Date for the whole of the Works shall be two month from Issue of work order. Failing to complete as per the scheduled date should be liable of Liquidity damage of 0.1 percent per day.</td>
</tr>
<tr>
<td>GCC 1.1(m)</td>
<td>The Works are: 'Procurement and Installation of Network equipments, and LAN setup for New DCRC &amp; DoI Building, Kawajangsa, Thimphu.'</td>
</tr>
<tr>
<td>GCC 2.2(i)</td>
<td>The additional documents forming part of this Contract are: [No additional document.]</td>
</tr>
<tr>
<td>GCC 4.1</td>
<td>The Language governing the Contract shall be [English]</td>
</tr>
<tr>
<td>GCC 15.1</td>
<td>For insurance purposes the type of cover required shall be: The contractor shall be responsible for the insurance [not applicable]</td>
</tr>
<tr>
<td>GCC 16.1</td>
<td>Possession of the site shall be within [7] days from the date of signing of the Contract.</td>
</tr>
<tr>
<td>GCC 18.1</td>
<td>Completion of works shall be within 60 days days from date of award letter.</td>
</tr>
<tr>
<td>GCC 19.1</td>
<td>The Contractor shall submit the first work plan [not applicable days after signing the Contract, and shall update the work plan every [not applicable weeks during the period of the Contract.[Not applicable]</td>
</tr>
<tr>
<td>GCC 22.1</td>
<td>[Enter here the agreed rates for non-scheduled items of work if known, if not known then make the statement “The rates for non-scheduled items of works shall be determined by the Engineer”.] [Not applicable]</td>
</tr>
<tr>
<td>GCC 27.1</td>
<td>The liquidated damages for the whole of the Works are [0.01 to 0.10] per day. The maximum amount of liquidated damages for the whole of the Works is [10] percent of the initial Contract Price.</td>
</tr>
<tr>
<td>GCC 31.1</td>
<td>The Defects Liability Period shall be (36 months) from the date of handing taking by the departments.</td>
</tr>
<tr>
<td>GCC 35.1</td>
<td>The percentage to apply to the value of the work not completed, representing the Employer’s additional cost for completing the Works, is [20 percent, it is generally 20% of the value of work not completed up to a maximum of 10% of the initial contract price]</td>
</tr>
</tbody>
</table>
Section 7: Contract Forms

This section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after Contract award.

<table>
<thead>
<tr>
<th>Form</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form -1</td>
<td>Notification of Award</td>
</tr>
<tr>
<td>Form -2</td>
<td>Contract Agreement</td>
</tr>
<tr>
<td>Form -3</td>
<td>Bank Guarantee for Performance Security</td>
</tr>
<tr>
<td>Form -4</td>
<td>Bank Guarantee for Advance Payment</td>
</tr>
</tbody>
</table>
Form-1

Notification of Award

Contract No: Date:

To:

[name and address of Contractor]

This is to notify you that your Bid dated [insert date] for the execution of the Works for [name of project / Contract] for the Contract Price of Nu [amount in figures and in words], as corrected and modified in accordance with the Instructions to bidder is hereby accepted by [name of the Employer].

You are requested to proceed with the execution of the Works on the basis that this Notification of Award shall constitute the formation of a Contract, which shall become binding upon you furnishing a Performance Security within fourteen (14) days, in accordance with ITB Clause 32, and the signing the Contract Agreement within twenty-one (21) days, in accordance with ITB Clause 33.

We attach the Contract Agreement and Special Conditions of Contract for your perusal and signature.

Signed

[Duly authorised to sign for and on behalf of]

[name of Procuring Entity]

Date:
Form-2

Contract Agreement

THIS AGREEMENT, made the [day] of [month] [year] between [name and address of Employer] (hereinafter called “the Employer”) of the one part and [name and address of Contractor] (hereinafter called “the Contractor”) of the other part.

WHEREAS, the Employer invited Tenders for certain Works, viz, [brief description of the Works] and has accepted a Tender by the Contractor for the execution of those works in the sum of Ngultrum [insert amount in figures and words], hereinafter called “the Contract Price.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract hereinafter referred to.

2. The documents forming the Contract shall be interpreted in the following order of priority:
   (a) The signed Contract Agreement;
   (b) The letter of Acceptance;
   (c) The completed Bid form as submitted by the Bidder;
   (d) The Special Conditions of Contract;
   (e) The General Conditions of Contract;
   (f) Specifications
   (g) The Drawings; and
   (h) Any other document listed in the SCC as forming part of the Contract.

3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and to remedy any defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the Parties thereto have caused this Agreement to be executed in accordance with the laws of Bhutan on the day month and year first before written.

For the Employer For the Contractor

Signature
Print Name
Title
In the presence of
(Name)
Address
Bank Guarantee for Performance Security

(This is the format for the Performance Security to be issued by any financial institute in Bhutan in accordance with ITB Clause 35)

Contract No: Date:

To: [Name and address of Employer]

PERFORMANCE GUARANTEE No:

We have been informed that [name of Contractor] (hereinafter called “the Contractor”) has undertaken, pursuant to Contract No [reference number of Contract] dated [date of Contract] (hereinafter called “the Contract”), the execution of works [description of works] under the Contract.

Furthermore, we understand that, according to your conditions, Contracts must be supported by a performance guarantee.

At the request of the Contractor, we [name of bank] hereby irrevocably undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Nu [insert amount in figures and in words] upon receipt by us of your first written demand accompanied by a written statement that the Contractor is in breach of its obligation(s) under the Contract conditions, without you needing to prove or show grounds or reasons for your demand of the sum specified therein.

This guarantee is valid until [date of validity of guarantee], consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature Signature
Form-4

Bank Guarantee for mobilisation advance

(This is the format for the Advance Payment Guarantee to be issued by a financial institutions in Bhutan in their letter pad in accordance with SCC Clause 25.2)

Contract No: Date:

To:

[Name and address of Employer]

ADVANCE PAYMENT GUARANTEE No:

We have been informed that [name of Contractor] (hereinafter called “the Contractor”) has undertaken, pursuant to Contract No [reference number of Contract] dated [date of Contract] (hereinafter called “the Contract”), the execution of works [description of works] under the Contract.

Furthermore, we understand that, according to your conditions, Advance Payments must be supported by a bank guarantee.

At the request of the Contractor, we [name of bank] hereby irrevocably undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Nu. [insert amount in figures and in words] upon receipt by us of your first written demand accompanied by a written statement that the Contractor is in breach of its obligation(s) under the Contract conditions, without you needing to prove or show grounds or reasons for your demand of the sum specified therein.

We further agree that no change, addition or other modification of the terms of the Contract to be performed, or of any of the Contract documents which may be made between the Employer and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee is valid until [date of validity of guarantee], consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Signature Signature
Section 8 : Bill of Quantities/Price Schedule

A. Package 1 - supply and installation of Active Components

The technical specification for each items here are specified. All items must meet the technical specification specified.

I. Details of equipments

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Items</th>
<th>Unit</th>
<th>Qty DCRC</th>
<th>Qty</th>
<th>Make/ Model</th>
<th>Unit Rate(Nu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gateway Router</td>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Core Switch</td>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Distribution Switch</td>
<td>Nos.</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Access Switch</td>
<td>Nos.</td>
<td>5</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>WiFi AP</td>
<td>Nos.</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Security Appliance</td>
<td>Nos.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# II. Technical Specification

## 1. Core Switch

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Core Switch Specification</th>
<th>Compliance (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td><strong>General Features</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>High Density Wire-speed Scalable Layer 3 Switch</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>19&quot; rack mountable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dual AC power Supply</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operating Voltage: 100 - 240 Volt AC</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td><strong>Interfaces</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>24x10/100/1000 Base T + 4 Nos. 1/10G SFP+ Ports</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>All the ports should be non-blocking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internal Field Replaceable Redundant Power Supplies</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td><strong>Performance</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Minimum Switching capacity : 400 Gbps</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Jumbo frame : 9198 bytes</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Forwarding Rate: 60 Mbps</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td><strong>Architecture</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ASIC based packet forwarding</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The Switch should have Line Rate forwarding at all ports.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The switches shall be able to be clustered together with like VSS or equivalent virtualization feature by which they can be configured to act as one single Virtual switch with single configuration file, single image and one management IP address.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>OS should support individual process (eg ssh , snmp, telnet, dhcp etc) restart to prevent reboot in case of Software Process Crash by running processes on top of Kernel.</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td><strong>High Availability</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Hot Swappable Power Supplies</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Redundant Fans</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Software upgrades with minimal traffic disruption during the upgrade</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nonstop forwarding/routing</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td><strong>Layer 2 switching features</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Standard Port/Link Aggregation for All Ports. Also Cross Module Link aggregation should be supported</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Broadcast/multicast/unicast storm control to prevent degradation of switch performance from faulty end stations</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Port, subnet based 802.1Q VLANs. The switch should support 4000 VLANs</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30,000 MAC addresses or above</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The switch should support IEEE 802.1w RSTP and IEEE 802.1s MSTP</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The switch should support IEEE 802.1AE, IEEE 802.1br: Bridge Port Extension and IEEE 802.3ad Link Aggregation</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Minimum 15000 ARP entries</td>
<td></td>
</tr>
<tr>
<td><strong>G</strong></td>
<td><strong>Layer 3 Routing Protocols</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>RIP v1/v2, OSPF v1/v2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>BGPv4, IS-IS, VRRP</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>IPv6 packet switching and routing using OSPFv3, RIPng</td>
<td></td>
</tr>
<tr>
<td><strong>H</strong></td>
<td><strong>Security features</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Layer 2-4 Access Control Lists</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>ACLs - port based/VLAN based.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Integrated security features like DHCP relay, Control Plane DoS protection</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MAC Authentication</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>802.1X Network Security and Authentication</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Control plane denial-of-service (DoS) protection</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RADIUS and TACACS+</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1000 Security ACL’s.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Port-security.</td>
<td></td>
</tr>
<tr>
<td><strong>I</strong></td>
<td><strong>Traffic policing</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ingress/Egress shaping and policies</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Filter, mark and limit traffic flows</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Minimum 8 queues per port</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Policy based traffic classification based on MAC Address, Port, DSCP, IP Address, VLAN</td>
<td></td>
</tr>
<tr>
<td><strong>J</strong></td>
<td><strong>Multicast</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>H/W based Ipv4 and Ipv6 Multicasting</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>IGMP v1, v2, v3, IGMP Snooping</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Protocol Independent Multicast – Sparse Mode and PIM – SSM, MSDP</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Minimum 2000 IPv4/IPv6 multicast routes</td>
<td></td>
</tr>
<tr>
<td><strong>K</strong></td>
<td><strong>Network Management</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Switch should be manageable through NMS on per port/switch basis. Should Support SNMP, RMON, SSH, telnet, web management through network management software.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Port mirroring feature based on port, VLAN and ACL for monitoring network traffic.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Role based access control to limit access to switch operations.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Should have monitoring technology like netflow/s-flow to randomly sample network packets and send the samples to a monitoring station</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Should store multiple configuration and image files</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Should have the capability to revert to the last known good state if the switch image, configuration and the backup configuration files become damaged beyond repair</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Should support automatic configuration over the network from a pre-existing configuration file that is created and stored on a configuration server</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Should support automatic software download feature using the DHCP message exchange process to download and install software packages.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>L</th>
<th><strong>IEEE Standards</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gigabit Ethernet: 1000BASE-X (mini-GBIC/SFP), 1000BASE-SX, 1000BASE-LX/LH based SFP support.</td>
</tr>
<tr>
<td>2</td>
<td>10G Ethernet: 10Gbase-SR, 10Gbase-LR</td>
</tr>
<tr>
<td>3</td>
<td>IEEE 802.1D Spanning-Tree Protocol</td>
</tr>
<tr>
<td>4</td>
<td>IEEE 802.3AD LACP</td>
</tr>
<tr>
<td>5</td>
<td>IEEE 802.3AB LLDP</td>
</tr>
<tr>
<td>6</td>
<td>IEEE 802.1S &amp; 1W for Rapid Spanning tree and Multiple Spanning-tree convergence</td>
</tr>
<tr>
<td>7</td>
<td>IEEE 802.1p CoS Prioritization</td>
</tr>
<tr>
<td>8</td>
<td>IEEE 802.3x Flow Control</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M</th>
<th><strong>Certification</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UL-UL60950-1, FCC 47CFR Part 15 Class A, EN 55022 Class A, VCCI Class A, CISPR 22 Class A, EN 55024, EN 300386, CE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th><strong>Power socket</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power supply cord should be 3 pin top(type D)</td>
</tr>
</tbody>
</table>

**2. Distribution switch**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th><strong>Layer 3 Switch</strong></th>
<th><strong>Compliance (YES/NO)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td><strong>General Features</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>High Density Wire-speed Scalable Layer3 Switch</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>19&quot; rack mountable</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td><strong>Performance Parameters:</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Total number of MAC addresses : 32000</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Minimum Switching capacity: 250 Gbps or more</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Jumbo frame : 9198 bytes</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Forwarding Rate: 60 Mpps or More</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td><strong>Physical Interface Support:</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Minimum Interfaces to be populated are:</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The switch should have 24 x 10/100/1000 BaseT and should support 4 x 1/10G SFP/SFP+ uplinks</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>All the ports should be non-blocking</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td><strong>Architecture</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ASIC based packet forwarding</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The Switch should have Line Rate forwarding at all ports.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>OS should support individual process (eg ssh, snmp, telnet, dhcp etc) restart to prevent reboot in case of Software Process Crash by running processes on top of Kernel.</td>
<td></td>
</tr>
<tr>
<td><strong>E</strong></td>
<td><strong>High Availability</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Hot Swapplicable Power Supplies</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Redundant Fans</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Software upgrades with minimal traffic disruption during the upgrade</td>
<td></td>
</tr>
<tr>
<td><strong>F</strong></td>
<td><strong>Layer 2 and Layer 3 Features</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Standard Port/Link Aggregation for All Ports. Also Cross Module Link aggregation should be supported</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Broadcast/multicast/unicast storm control to prevent degradation of switch performance from faulty end stations</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The switch should support 4000 VLANs</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30,000 MAC addresses or above</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The switch should support IEEE 802.1w RSTP and IEEE 802.1s MSTP</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The switch should support IEEE 802.1AE</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Minimum 24,000 ARP entries</td>
<td></td>
</tr>
<tr>
<td><strong>G</strong></td>
<td><strong>Routing Protocols</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>RIP v1/v2, OSPF v1/v2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>BGPv4, IS-ISv4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>IPv6 packet switching and routing using OSPFv3, RIPng</td>
<td></td>
</tr>
<tr>
<td><strong>H</strong></td>
<td><strong>Security Features</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Layer 2-4 Access Control Lists</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>ACLs - port based/VLAN based.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Integrated security features like DHCP relay and snooping, Control Plane DoS protection</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MAC Authentication, MAC address per port</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>802.1X Network Security and Authentication</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>RADIUS and TACACS+ Static ARP support Port, VLAN, Router based ACL (PACL) TNC certified</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Port-security.</td>
<td></td>
</tr>
<tr>
<td><strong>I</strong></td>
<td><strong>Traffic Policing</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ingress/Egress shaping and policies</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Filter, mark and limit traffic flows</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Minimum 8 egress queues per port</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Policy based traffic classification based on MAC Address, Port, DSCP, IP Address, VLAN</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>VRF Lite</td>
<td></td>
</tr>
<tr>
<td><strong>J</strong></td>
<td><strong>Multicast</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>H/W based Ipv4 and Ipv6 Multicasting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>IGMP v1, v2, v3, IGMP Snooping</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Protocol Independent Multicast – Sparse Mode and PIM – SSM, MSDP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multicast entries – 2000</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Network Management</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Switch should be manageable through NMS on per port/switch basis. Should Support CLI, SNMP, RMON, SSH, telnet, web management through network management software.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Port mirroring feature based on port, VLAN and ACL for monitoring network traffic.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Should have monitoring technology like netflow/s-flow to randomly sample network packets and send the samples to a monitoring station</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Should store multiple configuration and image files</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Should have the capability to revert to the last known good state if the switch image, configuration and the backup configuration files become damaged beyond repair - Image rollback</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Should support automatic configuration over the network from a pre-existing configuration file that is created and stored on a configuration server</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Should support automatic software download feature using the DHCP message exchange process to download and install software packages.</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>IEEE Standards</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>IEEE 802.3ab 1000BASE-T specification</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>IEEE 802.1D Spanning-Tree Protocol</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>IEEE 802.3AD LACP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Port Access Control</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>IEEE 802.1S &amp; 1W for Rapid reconfiguration of Spanning tree and Multiple Spanning-tree convergence</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>IEEE 802.1p CoS Prioritization</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>IEEE 802.3x Flow Control</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Certification</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>UL-UL60950-1, FCC 47CFR Part 15 Class A, EN 55022 Class A, VCCI Class A, EN 55024, EN 300386, CE</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The switch should be NDPP certified (Public reference to be shared along with the bid)</td>
<td></td>
</tr>
</tbody>
</table>
### 3. Access Switch

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Technical Specification for Layer 2 Switch</th>
<th>Compliance (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> Architecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>The switch should have 24 x 10/100/1000 BaseT ports + 2 x 1G SFP uplink ports</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Should have at least 50 Gbps switching bandwidth and forwarding bandwidth of 50 Gbps</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Should have Forwarding rate (64-byte L3 packets) of 40 Mbps</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MAC Address table size of 8000 entries</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The Switch should be 19&quot; Rack-Mountable / 1 rack unit (RU)</td>
<td></td>
</tr>
<tr>
<td><strong>B</strong> Resiliency and high availability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Should support IEEE 802.3ad Link Aggregation Control Protocol (LACP)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Should support IEEE 802.1s/w Rapid Spanning Tree Protocol (RSTP) and Multiple Spanning Tree Protocol (MSTP)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Should support Per-VLAN Rapid Spanning Tree (PVRST+)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Should support switch-port autorecovery</td>
<td></td>
</tr>
<tr>
<td><strong>C</strong> Layer 2 Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Should support IEEE 802.1Q (4096 VLAN IDs) and 64 VLANs simultaneously</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Should support Jumbo frames of 9216 bytes</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Should support IPv4 Static IP routing</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Should support IPv6 static routing</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Should support Spanning Tree Protocol</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Should support Multicast VLAN Registration (MVR) to distribute multicast streams across an Ethernet ring-based Layer 2 network and reduce the amount of bandwidth consumed by the multicast traffic</td>
<td></td>
</tr>
<tr>
<td><strong>D</strong> Security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Should support MAC address limiting (per port and per VLAN) and MAC address move to detect MAC movement and MAC spoofing on access interfaces</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Should support port and VLAN Access control lists (Ingress and Egress)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Should support DHCP snooping, DHCP server and relay with option 82 for Layer 2 VLANs</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Should support Dynamic ARP inspection (DAI), IP source guard</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Should support broadcast, unicast and multicast (BUM) storm control</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Should support TACACS+ and MAC RADIUS authentication for secure switch CLI logon</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Should support SSHv and HTTPs allowing secure access to the switch</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control plane denial of service (DoS) protection</td>
<td></td>
</tr>
<tr>
<td><strong>E</strong> Manageability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Web User Interface, CLI</td>
<td></td>
</tr>
</tbody>
</table>
2. Should support Port mirroring and mirror traffic that is traversing interfaces or a VLAN on the switch to a different location for analysis.

3. Should support IPv6 management features like neighbor discovery (RFC 4861), Telnet, SSH, SNMP, NTP, DNS.

4. Should have monitoring technology like netflow/s-flow to randomly sample network packets and send the samples to a monitoring station.

5. Should store multiple configuration and image files.

6. Should have the capability to revert to the last known good state if the switch image, configuration and the backup configuration files become damaged beyond repair.

7. Should support automatic configuration over the network from a pre-existing configuration file that is created and stored on a configuration server.

8. Should support automatic software download feature using the DHCP message exchange process to download and install software packages.

9. Should support standard IP-MIB (RFC 4293) and SNMP v1, v2 & v3.

**H Certification**

1. UL-UL60950-1, FCC 47CFR Part 15 Class A, EN 55022 Class A, VCCI Class A, EN 55024, EN 300386, CE

2. NDPP

### 4. Security Appliance

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Firewall Features</th>
<th>Requirement</th>
<th>Compliance (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Firewall Throughput</td>
<td>14 Gbps or more</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>IPS Throughput</td>
<td>2.5 Gbps or more</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>NGFW Throughput</td>
<td>2.2 Gbps or more</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Threat Prevention</td>
<td>1.34 Gbps or more</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Connections per Second (K)</td>
<td>110 or more</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Concurrent Connections (M)</td>
<td>3.2 or more</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>RAM</td>
<td>16 GB or more</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>Features</td>
<td>Firewall Application Control IPS URL Filtering Anti-Bot Anti-Virus Anti-Spam Threat Emulation Threat Extraction</td>
<td>Yes</td>
</tr>
<tr>
<td>9</td>
<td>Management Port</td>
<td>1X10/100/1000Base-T RJ45 port</td>
<td>Yes</td>
</tr>
<tr>
<td>10</td>
<td>Console Port</td>
<td>1XRJ45/micro USB</td>
<td>Yes</td>
</tr>
<tr>
<td>11</td>
<td>SFP Port</td>
<td>1X1G SFP Port</td>
<td>Yes</td>
</tr>
<tr>
<td>12</td>
<td>Network Card</td>
<td>One network card expansion slot</td>
<td>Yes</td>
</tr>
<tr>
<td>13</td>
<td>LAN Port</td>
<td>5x 10/100/1000Base-T RJ45 ports</td>
<td>Yes</td>
</tr>
<tr>
<td>14</td>
<td>ISO Installation port</td>
<td>2x USB ports for ISO installation</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Note: Costing should include 3 years license

5. Gateway Router

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Minimum Specification</th>
<th>Compliance (YES/NO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Router Architecture:</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Modular platform with integrated Ethernet interfaces and slot to provide connectivity and services for varied branch-office network requirements</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Should offer a choice of LAN, Serial, E1/T1, 2G/3G/4G LTE to accommodate field upgrades to future technologies (Internal/External)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Router Performance Parameter:</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Routing Performance (IMIX) - minimum 2.2 Gbps or more</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Should support up to 750 Kpps of Routing Throughput</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Route Table Size (RIB) IPv4 or IPv6 – 600,000</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>IPsec VPN tunnels - 2000</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Physical Interface Support:</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Minimum Interfaces to be populated are: 4 x 10/100/1000 Gigabit Ethernet WAN-routed ports and 4 x SFP Ports out of which minimum 2 ports should be populated with 1000 BaseSX optics</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Layer 3 Routing Protocols</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Network Address Translation/Tunneling IPv6 to IPv4</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The router must support RIPv1 &amp; RIPv2, OSPF, BGPv4 and IS-IS, MPLS and latest standard RFC protocols</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>IPv6 Support</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>IPv6 / IPv4 dual stack functionality</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Should support IPv6 static route, OSPFv3, IS-IS support for IPv6</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Quality of Service (QoS) requirements</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Routers should support Class-based queuing</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Routers should support marking, policing and shaping</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Encapsulations</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ethernet, 802.1q VLAN, PPP, MLPPP, HDLC, Serial, PPPoE</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>MPLS (RSVP, LDP), Circuit cross-connect (CCC), translational cross-connect (TCC), L2/L3 MPLS VPN, pseudowires, Virtual private LAN service (VPLS), next-generation multicast VPN (NG-MVPN), MPLS traffic engineering and MPLS fast reroute</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>High Availability</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>VRRP, Active/active or Active/standby, Stateful failover</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Route and Interface failover monitoring</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Node redundancy by grouping a pair of devices into a cluster.</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>System Management and Administration</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Routers should support Configuration rollback</td>
<td></td>
</tr>
</tbody>
</table>
Support for accounting of traffic flows for Network planning and Security purposes

Routers should support Software upgrades

Routers should support SNMPv2 and SNMPv3

Device should have Console, Telnet, SSH1 and SSH2 support for management

Certification

The router should be NDPP certified (Public reference to be shared along with the bid)

6. WiFi AP

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description</th>
<th>Minimum Specification</th>
<th>Compliance (YES/NO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General features</td>
<td>High-end 802.11ac Wave 2 AP with MU-MIMO and BeamFlex+</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Maximum PHY rate</td>
<td>1.733 Mbps (5GHz)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>800 Mbps (2.4GHz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Wi-Fi technology</td>
<td>802.11ac Wave 2 (5GHz)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>802.11n (2.4GHz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Concurrent users</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Radio chains: streams</td>
<td>4x4:4</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>BeamFlex gains</td>
<td>6dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Max. interference mitigation</td>
<td>15dB</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>PD-MRC</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Rx sensitivity</td>
<td>-104dBm</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>ChannelFly</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Smart meshing</td>
<td>Pending</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>USB</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Ethernet ports</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Should have PoE adaptor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Other features</td>
<td>Not limited</td>
<td></td>
</tr>
</tbody>
</table>
### B. Package 2 - Supply and laying out of Passive Components/Price Schedule

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Items</th>
<th>Unit</th>
<th>Qty DCRC</th>
<th>OTY DOI</th>
<th>Unit Rate (Nu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Structural Cabling of Local Area Network (LAN) per point Cat 6 I/O outlet and Surface Mount Box with faceplate</td>
<td>Per point</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>19 U, 19&quot; Wall mount Switch Rack</td>
<td>No.</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>9U, 19&quot; Wall mount Switch Rack</td>
<td>No.</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Wiring of electric power socket point</td>
<td>Point</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Cage nut (for mounting switch &amp; patch panel)</td>
<td>Pieces</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>UTP Cat6 factory crimped patch cord 0.5 meter</td>
<td>Nos.</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>UTP Cat6 factory crimped patch cord 5 meter</td>
<td>Nos.</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>24 ports Cat6e Patch Panel</td>
<td>Nos.</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

### C. Package 3 – Renewal of DCRC UTM License (Check Point)
# I. Technical Specification for Passive Components

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Item</th>
<th>Description</th>
<th>Compliance (YES/NO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Structured Cabling</td>
<td>Structural Cabling of Local Area Network (LAN) includes work and supply of materials as described: - Casing N Capping with complete fitting accessories like Tee, coupler, Internal coupler, External coupler/elbow, - PVC horse pipe/Conduit pipe (if required), - Plastic guard bit, Wooden Screw &amp; Casing N Capping pin &amp; Metallic saddle, - Information Outlet box (I/O) complete set, - UTP Cat6 Solid Cable(100% Copper), - Punching of UTP Cat6 cable on Patch Panel &amp; I/O face modular as per TIA/EIA T586B termination rule, - Testing of LAN from Patch panel to I/O by using LAN Cable tester &amp; Identification of I/O box to patch panel, - Fixing of Switch rack, patch panel, switches, Wireless Access Point (AP) &amp; I/O boxes.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>24 ports Cat6 Patch Panel</td>
<td>24 ports Cat6 Patch Panel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>19 U Switch Rack</td>
<td>12U, 19&quot; Wall mount Switch Rack width 550mm depth 600mm with glass door lock &amp; key.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9 U Switch Rack</td>
<td>9U, 19&quot; Wall mount Switch Rack width 550mm depth 600mm with glass door lock &amp; key.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Electrical wiring</td>
<td>Wiring of electric power socket point to switch rack including materials as follows:- Switch Socket Combined 15A, 2.50mm sq copper cable &amp; 0.75sq mm green earth wire using casing capping wiring. Power line should be drawn from existing MCB Distribution Box, (Require for each switch rack).</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Cage nut</td>
<td>Cage nut (for mounting switch &amp; patch panel)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>UTP patchcord 0.5 M</td>
<td>UTP Cat6 factory crimped patch cord 0.5 meter (100% Copper)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>UTP patchcord 5 M</td>
<td>UTP Cat6 factory crimped patch cord 5 meter (100% Copper)</td>
<td></td>
</tr>
</tbody>
</table>
D. Terms and Conditions: Minimum Requirement

**Configurations:** Network and service configurations for each sites (Routing, switching, DHCP, RADIUS) but not limited

**Conditions:**

- a. Bidders should submit Manufacturer Authorization Letter/ Dealership certificate, brochures and datasheets along with the proposal. Failing to submit the required documents with the tender documents will be treated as non responsive and hence rejected.
- b. Provide support for one year from the date of handing taking
- c. Provide license/certificate details of equipments/services where applicable
- d. Carry out testing of configurations and provide test reports with detailed documentation. Should submit 2 copies of each.
- e. Quote should be inclusive of laying, termination and testing
- f. Cat6 cables should be as per our sample (Please contact 02-328870, ICT Division, MoHCA
- g. Should provide training to the MoHCA ICT Team on configurations
- h. Provide documentation of configurations, IP addresses, network diagram and other relevant documents such as SOP/User guide but not limited.
- i. Quotes should be inclusive of warranty for the equipments for 3 years and 1 year for services
- j. The work will be awarded as single package.

The vendor should have the following human resources.

- a. At least one certified national network engineer for proposed network OEM and security equipments for **Package 1** and **Package 3**. Full CV to be submitted.
- b. One technician with minimum of certificate qualification for **Package 1 & Package 2**
- c. Salary Tax Receipt for the proposed human resources for the last 1 year
- d. Audited Annual income statement for the last two years

*** Failing to comply on above terms and conditions will be treated as non-responsive.***
Section 9: Drawings - Floor Wise LAN Diagram

- I/O Points
- Rack/Switch
- Access Point

a. Ground Floor
b. First Floor
c. Second Floor

** Note: One Part of the building
d. Logical Diagram
Section 10 : Terms of Reference

Package 1 – Active Components

a. Bidders shall carry out detailed assessment of the new DCRC-DOI building structure along with proposed floor wise LAN diagram prior to submission of bids and submit an assessment report along with their quotations.

b. Bidders shall supply and install equipments and its accessories as per BoQ/price schedule to have a fully functional Network in place.

c. Bidders shall ensure that all the equipments supplied are compatible with one another.

d. Bidders shall ensure that all installation and configuration comply with the structured cabling standard of Department of Information Technology.

e. Bidders shall configure APs, routers, servers and switches.

f. Bidders shall install, configure, test and commission New LAN- core switches, distribution switches, access switches, access points, wifi controller and security appliances (UTM) if required as per BOQ and technical specifications (Proposed Network Design as attached).

g. Bidders shall configure bandwidth segregation (allocating bandwidth to each VLAN) using security appliance router.

h. Bidders shall configure Security Policy in the security appliance router. The bidder shall ensure that Security Appliance policy must at least address the following:
   ● anti-bot configuration
   ● IDS intrusion detection system
   ● IPS intrusion prevention system
   ● bandwidth management
   ● block p2p capability
   ● prevent dos or ddos attacks
   ● URL filtering
   ● firewall policy integrated with active directory
   ● event management and logging

i. Bidders shall install, configure and commission Wifi Controller- link to Core Switch

j. Bidders shall ensure that Wifi Controller must at least address the following:
   ● guarantee to automatically avoid interference
   ● support VLAN pooling, smart mesh network controlling and monitoring (self-organizing and self- healing WLAN deployment)
- support real-time client admission control
- provide load balancing
- Capable of integrating captive portal - sync with LDAP server
- provide dynamic generation of unique pre-shared keys
- management VLAN and trunk VLAN

k. Bidders shall install, configure, test and commission Distribution Switches - link to Core Switch, Link to Access Switches).

l. Bidders shall install, configure, test and commission Access Switches - Link to Distribution Switch, link to Wifi-access points and link to I/O ports.

m. Bidders shall configure the Wifi network into three wireless name irrespective of number of Access Points – DOI WIFI, DCRC WIFI and GUEST WIFI

n. Bidders shall configure network failover for redundancy.

o. Bidders shall configure DNS and DHCP server, and other internal servers hosted in the departments and add record of TWAN hosted sites.

p. Bidders must test all equipment of LAN (Security appliance router, Core-switches, Distribution Switches, Wifi controller, access point) to have a fully functional Network in place.

q. The Bidders should provide necessary trainings (onsite) to MoHCA ICT officials for knowledge transfer and also share relevant documents.

r. Detail network diagram with the both technical and non technical features of APs, Switches and Core switch must be submitted along with the bidding documents.

**Package 2 – Passive Components**

a. Bidders shall carry out detailed assessment of the new DCRC-DOI building structure along with proposed floor wise LAN diagram prior to submission of bids and submit an assessment report along with their quotation.

b. Bidders shall supply and install equipments and its accessories as per BoQ/price schedule to have a fully functional network in place.

c. Bidders may propose an alternative floor wise LAN design if required/recommended.

d. Bidders shall ensure that all laying of cables and mounting I/O outlet comply with the existing structured cabling standard of the Department of Information Technology.

e. Bidders shall terminate UTP Cat6 cable to I/O boxes, casing, capping, and punching of UTP Cat6 cable on patch panel. Bidders must ensure that each port and patch panels are properly labeled.
f. Bidders shall work on stringing/laying of ADSS cables and keep sufficient cable loop while laying for carrying out future maintenance.

g. Bidders shall splice and terminate ADSS cables and UTP cables.

h. Bidders shall properly labeled all UTP cables and fibers terminated (from UTM to core-switch/core-switch to core-switch, core-switch to distribution-switches/distribution-switches to access-switches, access-switches to wireless AP or I/O ports, FODP and I/O ports).

i. Bidders must ensure that all I/O port and access points are tested and fully functional.