



**UNIQUE IDENTIFICATION AUTHORITY OF INDIA  
PLANNING COMMISSION, GOVERNMENT OF INDIA  
2<sup>nd</sup> Floor, Tower-I, Jeevan Bharati Building,  
Connaught Circus, New Delhi - 110 001**

**NOTICE INVITING BIDS  
(T-11011/16/2010-Tech-UIDAI)**

The Unique Identification Authority of India (UIDAI) invites sealed bids from eligible IT companies for **Supply, Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services** in the Data Centres of Unique Identification Authority of India in Bengaluru and Delhi/NCR.

Interested bidders may download the bid document from the website [www.uidai.gov.in](http://www.uidai.gov.in) (under Tenders section).

The bid responses should reach the Deputy Director General, UIDAI, 2<sup>nd</sup> Floor Tower-I Jeevan Bharati Building, New Delhi - 110001 on or before 24<sup>th</sup> December' 2010 along with a draft of Rs 10,000/-.

All queries and clarifications should be addressed to: Deputy Director General, UIDAI, 2<sup>nd</sup> Floor Tower-I Jeevan Bharati Building, New Delhi - 110001; Tele/Fax: 011- 49819826, , Email: [tech@uidai.gov.in](mailto:tech@uidai.gov.in) and CC: [ddguidai@gmail.com](mailto:ddguidai@gmail.com).

Sd/-  
B.B.Nanawati  
Deputy Director General  
UIDAI, New Delhi

Please visit <http://uidai.gov.in> for further details/announcements.

**BID NO. T-11011/16/2010-Tech-UIDAI  
UNIQUE IDENTIFICATION AUTHORITY OF INDIA,  
PLANNING COMMISSION,  
GOVERNMENT OF INDIA  
NEW DELHI**

**BID DOCUMENT**

**FOR**

**Supply, Installation and Commissioning of Servers,  
Storage Systems, Security Systems and Accessories with  
Incidental Services**

*November, 2010*

## Check list

Please check whether following have been enclosed in the respective covers, namely, Pre-qualification Bid, Technical Bid and Commercial Bid :

**1. Checklist of Documents/ Supporting Documents to be enclosed in the Pre-qualification Bid** (Please refer to Clause 20 of Section II – Instructions to Tenderers)

S. No.	Pre_qualification Condition	Whether enclosed (Yes/ No)
(i)	Bid Security (in original) of the prescribed amount and validity pursuant to <b>Clause 12.</b>	
(ii)	The Bidder should be either the OEM manufacturing the Servers or the authorized agent/distributor of such OEM and should produce documentary evidence from the OEM in this regard in the form of an authorization letter from the OEM in the <b>Pre-qualification Bid</b> as well as in the <b>Technical Bid</b> as per <b>Annexe 4.1.8.</b>	
(iii)	<b>The Bidder should submit</b> authorization letter from the OEM of Storage, Networking Equipment, Security equipment, in case the bidder is not an OEM of such equipment, in the form of an authorization letter from the OEM in the <b>Technical Bid</b> as per <b>Annexe 4.1.8.</b>	
(iv)	The Bidder should be a profit making company in the last three financial years ended on 31.03.2010.	
(v)	The Bidder should have minimum average annual turnover of <b>Rs. 250,00,00,000/- (Rupees Two Hundred Fifty Crores)</b> from sales of Information Technology(IT) equipment/ IT Systems Integration services during each of the last three financial years ended on 31.03.2010. The average turnover refers to the average turnover of the company and not the composite turnover of its subsidiaries/sister concerns etc. The Bidder must submit copy of the Audited Balance Sheets and Profit & Loss Account Statement for the last 3 financial years ended on 31.03.2010 along with the bid. However, in the case of non availability of audited balance sheets, a Certificate from the Statutory Auditor/Chartered Accountant of the Bidder's Company certifying the turnover of the Bidder in the last three financial years would be acceptable.	
(vi)	The Bidder must have executed at least two (2) purchase orders/contracts in <b>India</b> involving supply, installation and commissioning of servers, storage systems, Networking Equipment and IT Security systems in the last three financial years. Each such order/contract should, <i>interalia</i> , include the value of at least <b>Rs. 10,00,00,000/- (Rupees Ten Crores)</b> from supply, installation and commissioning of servers, storage systems, Networking Equipment and IT Security systems. For each of such orders/contracts, the Bidder should submit the following : <ol style="list-style-type: none"> <li>1. Copy of each such Purchase Order/Contract clearly indicating the total value of the Order/Contract.</li> <li>2. A certificate in original from the Statutory Auditor/Chartered Accountant/ Company Secretary/ Director of the Bidder's Company indicating and certifying the value of the components relating to supply, installation and commissioning of servers, storage systems, Networking Equipment and IT Security system.</li> <li>3. A copy of the certificate from respective customers for satisfactory execution of such order/contract from the respective customer.</li> </ol>	
(vii)	The Bidder must have its own maintenance/support infrastructure facilities in India in respect of all goods/services covered in this Bid, so as to serve all over India particularly in the places as listed in <b>Appendix F.</b>	

**Important Note :** This list should be duly filled, signed and placed in the cover containing the Pre-qualification Bid.

## 2. Check List of Annexe/ Appendix to be enclosed in the Technical Bid

(i) **Section IV** comprising of:

S. No.	Description	Whether enclosed (Yes/ No)
1	Bid Particulars ( <b>Annexe 4.1.1</b> )	
2	Technical Bid Letter ( <b>Annexe 4.1.2</b> )	
3	Technical Details of Goods/ Services offered ( <b>Annexe 4.1.3</b> )	
4	Statement of Deviation(s) from Schedule of Requirements ( <b>Annexe 4.1.4</b> )	
5	Statement of Deviation(s) from Bid Terms and Conditions ( <b>Annexe 4.1.5</b> )	
6	Timelines ( <b>Annexe 4.1.6</b> )	
7	Warranty ( <b>Annexe 4.1.7</b> )	
8	Manufacturer's Authorization Form ( <b>Annexe 4.1.8</b> )	
9	Maintenance Infra-Structure Facilities ( <b>Annexe 4.1.9</b> )	
10	Response Sheet for Goods Offered ( <b>Annexe 4.1.10</b> )	
11.	Details of Bill of Material, Solution Architecture, Methodology and Implementation Plan for Backup Solution ( <b>Annexe 4.1.11</b> )	
12.	Details of Bill of Material, Solution Architecture, Methodology and Implementation Plan for Replication Solution ( <b>Annexe 4.1.12</b> )	
13.	Details of Bill of Material, Solution Architecture, Methodology and Implementation Plan for Anti Virus Solution ( <b>Annexe 4.1.13</b> )	
11	Statement of Undertaking from OEM ( <b>Appendix E</b> )	
12	Technical Literature of the Goods Offered	

(ii) **Section VII** comprising of Technical Specifications and Response Sheets for various items:

S. No.	Description	Whether enclosed (Yes/ No)
1	Blade Servers ( <b>Annexe 7.1</b> )	
2	Blade Chassis ( <b>Annexe 7.2</b> )	
3	Rack Servers-1 ( <b>Annexe 7.3</b> )	
4	Rack Servers-2 ( <b>Annexe 7.4</b> )	
5	Rack Servers-3 ( <b>Annexe 7.5</b> )	
6	Event Correlation Server ( <b>Annexe 7.6</b> )	
7	Radius Server ( <b>Annexe 7.7</b> )	
8	Terminal Server ( <b>Annexe 7.8</b> )	
9	Load Balancer ( <b>Annexe 7.9</b> )	
10	Desktops ( <b>Annexe 7.10</b> )	
11	SAN for DMZ (raw images) with SAN Fabric Management Software ( <b>Annexe 7.11</b> )	
12	SAN (Storage for DFS (raw images)) with SAN Fabric Management Software ( <b>Annexe 7.12</b> )	
13	SAN (Storage for Operational Data) with SAN Fabric Management Software ( <b>Annexe 7.13</b> )	
14	SAN Switches (for host to san connectivity - for all servers) ( <b>Annexe 7.14</b> )	
15	DMZ - SAN Switches (4/8 Gbps 16 ports) ( <b>Annexe 7.15</b> )	
16	DC Core SAN Switch (4/8 Gbps 64 ports) ( <b>Annexe 7.16</b> )	
17	NAS for Storing web, portal content ( <b>Annexe 7.17</b> )	
18	Tape Library ( <b>Annexe 7.18</b> )	
19	Router ( <b>Annexe 7.19</b> )	
20	Link Load Balancer ( <b>Annexe 7.20</b> )	
21	DC-Core LAN ( <b>Annexe 7.21</b> )	

**Important Note :** This list should be duly filled, signed and placed in the cover containing the Pre-qualification Bid.

S. No.	Description	Whether enclosed (Yes/ No)
22	DC-Management- LAN ( <b>Annexe 7.22</b> )	
23	DC-Backup – LAN ( <b>Annexe 7.23</b> )	
24	L3 Switches Access ( <b>Annexe 7.24</b> )	
25	ABIS LAN ( <b>Annexe 7.25</b> )	
26	Firewall with content filtering 3 pairs each of different makes for DC and DR out of which one pair non CISCO for DC ( <b>Annexe 7.26</b> )	
27	HIDS ( <b>Annexe 7.27</b> )	
28	NIDS ( <b>Annexe 7.28</b> )	
29	Perimeter Security Device ( <b>Annexe 7.29</b> )	
30	HSM ( <b>Annexe 7.30</b> )	
31	Anti Virus Server ( <b>Annexe 7.31</b> )	
32	Anti Virus Software ( <b>Annexe 7.32</b> )	
33	Network Operation Console ( <b>Annexe 7.10 and Annexe 7.33</b> )	

**Important Note :** This list should be duly filled, signed and placed in the cover containing the Pre-qualification Bid.

**3. Check List of Annexe to be enclosed in the Commercial Bid**

S. No.	Description	Whether enclosed (Yes/ No)
1	Bid Particulars ( <b>Annexe 4.2.1</b> )	
2	Bid Letter ( <b>Annexe 4.2.2</b> )	
3	Statement of Commercial Deviation(s) ( <b>Annexe 4.2.3</b> )	
4	Summary of Cost of Goods and Services offered ( <b>Annexe 4.2.4</b> )	
5	Details of Costs for Goods Offered ( <b>Annexe 4.2.5</b> )	
6	Details of Costs for Accessories ( <b>Annexe 4.2.6</b> )	
7	Details of Costs for Technical Services ( <b>Annexe 4.2.7</b> )	
8	Details of Other Costs ( <b>Annexe 4.2.8</b> )	
9	Details of Costs of Resident Engineers ( <b>Annexe 4.2.9</b> )	
10	Details of Costs for Post Warranty Annual Maintenance ( <b>Annexe 4.2.10</b> )	
11	Details of Costs for Optional Items ( <b>Annexe 4.2.11</b> )	

**Important Note :** This list should be duly filled, signed and placed in the cover containing the Pre-qualification Bid.

**SECTION I - Invitation to Bid**

This Invitation to Bid is for “**Supply, Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services**” in the Data Centres of Unique Identification Authority of India in Bengaluru and Delhi/NCR.

1. Bidders are advised to study the Bid Document carefully. Submission of Bids shall be deemed to have been done after careful study and examination of the Bid Document with full understanding of its implications. Sealed offers prepared in accordance with the procedures enumerated in **Clause 1 of Section II** should be submitted to UIDAI not later than the date and time laid down, at his address given in the **Schedule for Invitation to Bid under Clause 4.**

2. All bids must be accompanied by a **EMD (Earnest Money Deposit)/ Bid Security of Rs.5,00,00,000 (Rupees Five Crores only).**

3. This Bid document is not transferable.

**4. Schedule for Invitation to Bid**

a) Name of the Purchaser:

**The President of India acting through the Director General,  
Unique Identification Authority of India,  
Planning Commission,  
Government of India**

b) Addressee and Address at which Bids to be submitted:

**The Deputy Director General  
Unique Identification Authority of India (UIDAI),  
Planning Commission, Govt. of India (Gol),  
3rd Floor, Tower II, Jeevan Bharati Building,  
Connaught Circus,  
New Delhi – 110001**

c) Latest time and date for receipt of Bids

**On or before 1500 hours of 24th Dec 2010**

d) Place, Time and Date of opening of Pre-Qualification Bids:

**Unique Identification Authority of India (UIDAI),  
Planning Commission, Govt. of India (Gol),  
3rd Floor, Tower II, Jeevan Bharati Building,  
Connaught Circus,  
New Delhi – 110001**

**At 1600 hours of 24th Dec 2010**

e) Name of the contact person for any clarification :

**Shri. B B Nanawati  
Deputy Director General  
Unique Identification Authority of India (UIDAI),  
Queries should be submitted via E-mail and followed by paper copy in post.  
E-mail – [tech@uidai.gov.in](mailto:tech@uidai.gov.in) and copy to [bbnanawati@gmail.com](mailto:bbnanawati@gmail.com),**

f) Date till which the response to the Bid should be valid:

**180 days from the date of opening of Pre-Qualification Bids.**

g) **Important dates :**

The following table provides information regarding the important dates of the Bid process for this Bid:

<b>Activity</b>	<b>Date</b>
Release/Issue of Bid document	25 <sup>th</sup> Nov 2010
Last date for submission of written queries for clarifications on Bid document	29 <sup>th</sup> Nov 2010
Pre-Bid Conference	3 <sup>rd</sup> Dec 2010
Last date for reply to written queries of prospective Bidders	8 <sup>th</sup> Dec 2010
Last date for submission of Bids	24 <sup>th</sup> Dec 2010
Opening of Pre-Qualification Bids	24 <sup>th</sup> Dec 2010

5. The Bidder is required to pay Rs. 10,000/- (Rupees Ten Thousand Only) towards Bid Document Fee, at the time of submission of the Bids, in the form of a Bank Demand Draft **failing which the Bids submitted by the Bidder shall not be entertained and shall be outrightly rejected.** The Bank Demand Draft **should be drawn** in favor of “**PAO, UIDAI**” and payable at **New Delhi. The Bid Document Fee is Non-Refundable.**

**Note: The Purchaser shall not be responsible for non-receipt / no-delivery of the Bid documents due to any reason whatsoever.**



**SECTION II - Instructions to Bidders****TABLE OF CONTENTS**

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## SECTION II - Instructions to Bidders

### 1. Procedure for Submission of Bids

- 1.1. It is proposed to have a **Two Cover System** for this Bid process.
  - a) Technical Bid (2 copies) in one cover.
  - b) Commercial Bid (2 copies) in one cover.
- 1.2. Each copy of Technical Bid and Commercial Bid of the Bidder should be put in separate sealed covers super scribing the wordings "**Technical Bid**" and "**Commercial Bid**" respectively. Each copy in each bid should also be marked as "**Original**" and "**First copy**". Both the copies of each bid should be put in a single sealed cover super scribing the wordings "**Technical Bid**" and "**Commercial Bid**" as the case may be. **Please Note that Prices should not be indicated in the Technical Bid and should only be indicated in the Commercial Bid.**
- 1.3. The cover containing Two copies of Technical Bid and the cover containing Two copies of Commercial Bid should be put in another envelope and this envelope should be clearly marked "**Supply, Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services**". The Bid Covers are to be kept in a single sealed cover super scribed with Bid Number, Due Date, Item and the wordings "**DO NOT OPEN BEFORE 16.00 hours on 24<sup>th</sup> Dec, 2010**".
- 1.4. The cover thus prepared **should also indicate clearly the name, address and telephone number of the Bidder**, to enable the Bid to be returned unopened in case it is declared "**Late**".
- 1.5. Each copy of the Bid should be a complete document and **should be bound** as a volume. **The document should be page numbered and appropriately flagged and contain the list of contents with page numbers. Different copies must be bound separately.** The deficiency in documentation may result in the rejection of the Bid.
- 1.6. The Bidder should also provide the technical and commercial bids in soft copy, in the form of a non-re-writeable CD (Compact Disc).
  - o Two copies of CD containing the technical bid
  - o Two copies of CD containing the commercial bid
- 1.7. The CD's would be sealed along with the hard copies of the respective technical and commercial bids. In case of any discrepancy in the contents of the documents, the information furnished on original paper document will prevail over the soft copy.

### 2. Cost of Bid Document

- 2.1. The Bidder shall bear all costs associated with the preparation and submission of its bids, including cost of presentation for the purposes of clarification of the bids, if so desired by the UIDAI. The UIDAI, will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

### 3. Contents of the Bid Document

- 3.1. The Schedule of Requirements of the Goods/ Services required, Bid procedures and contract terms are prescribed in the Bid Document. In addition to **Section I - Invitation to Bid**, the Bid Document includes:
  - a) **Section II** - Instructions to Bidders;
  - b) **Section III** - General Conditions of Contract;
  - c) **Section IV** – Contents of the Bid
    - **Technical Bid**
    - **Commercial Bid**
  - d) **Section V** – Schedule of Requirements

- e) **Section VI – Appendices**
  - i. Contract Form (**Appendix A**)
  - ii. Proforma for Bank Guarantee for Contract Performance Security (**Appendix B**)
  - iii. Proforma for Bid Security Form (**Appendix C**)
  - iv. Vendor Profile (**Appendix D**)
  - v. Statement of Undertaking From OEM (**Appendix E**)
  - vi. List of Locations of UIDAI (**Appendix F**)

f) **Section VII – Technical Specifications and Response Sheets**

3.2. The Bidder is expected to examine all instructions, forms, general terms & conditions, and Schedule of requirements in the Bid Document. **Failure to furnish all information required by the Bid Document or submission of a bid not substantially responsive to the Bid Document in every respect will be at the Bidder's risk and may result in the rejection of the Bid.**

**4. Clarification of Bid Document**

4.1. A prospective Bidder requiring any clarification of the Bid Document may notify the UIDAI in writing at the UIDAI's mailing address indicated in **Clause 4 of Section I**. The queries must be submitted in **Microsoft Excel** format as follows:

Sr. No	Section No.	Clause No.	Page number in Section	Existing Provision in the Clause	Clarification Sought

4.2. The UIDAI will respond in writing, to any request for clarification of the Bid Document, received not later than the date prescribed by the UIDAI in **Section I, Clause 4(g)** of this Bid document. Written copies of the UIDAI's response (**including an explanation of the query but without identifying the source of inquiry**) will be sent to all prospective Bidders who have received the Bid Document. UIDAI's response to clarifications will also be uploaded on the Website of UIDAI.

**5. Amendment of Bid Document**

- 5.1. At any time prior to the last time and date for receipt of bids, the UIDAI, may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bid Document by an amendment.
- 5.2. The amendment will be notified in writing or by fax or e-mail to all prospective Bidders who have received the Bid Document and will be binding on them.
- 5.3. In order to provide prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, the UIDAI may, at its discretion, extend the last date for the receipt of Bids.

**6. Language of Bids**

6.1. The Bids prepared by the Bidder and all correspondence and documents relating to the bids exchanged by the Bidder and the UIDAI, shall be written in the **English language**, provided that any printed literature furnished by the Bidder may be written in another language so long the same is accompanied by an English translation in which case, for purposes of interpretation of the bid, the **English translation** shall govern.

**7. Documents Comprising the Bids**

7.1. The Bids prepared by the Bidder shall comprise of the following components (*Refer Clause 20 of Section II, Section IV, V and VII*):

- a) **Pre-Qualification Bid** (please refer to **Clause 20 of Section II**) in **separate sealed cover**.

b) **The Technical Bid** should comprise of the following:

(i) **Section IV** comprising of:

1	Bid Particulars ( <b>Annexe 4.1.1</b> )
2	Technical Bid Letter ( <b>Annexe 4.1.2</b> )
3	Technical Details of Goods/ Services offered ( <b>Annexe 4.1.3</b> )
4	Statement of Deviation(s) from Schedule of Requirements ( <b>Annexe 4.1.4</b> )
5	Statement of Deviation(s) from Bid Terms and Conditions ( <b>Annexe 4.1.5</b> )
6	Timelines ( <b>Annexe 4.1.6</b> )
7	Warranty ( <b>Annexe 4.1.7</b> )
8	Manufacturer's Authorization Form ( <b>Annexe 4.1.8</b> )
9	Maintenance Infra-Structure Facilities ( <b>Annexe 4.1.9</b> )
10	Response Sheet for Goods Offered ( <b>Annexe 4.1. 10</b> )
11.	Details of Bill of Material, Solution Architecture, Methodology and Implementation Plan for Backup Solution ( <b>Annexe 4.1.11</b> )
12.	Details of Bill of Material, Solution Architecture, Methodology and Implementation Plan for Replication Solution ( <b>Annexe 4.1.12</b> )
13.	Details of Bill of Material, Solution Architecture, Methodology and Implementation Plan for Anti Virus Solution ( <b>Annexe 4.1.13</b> )
11	Statement of Undertaking from OEM ( <b>Appendix E</b> )
12	Technical Literature of the Goods Offered

(ii) **Section VII** comprising of Technical Specifications and Response Sheets for various items:

1	Blade Servers ( <b>Annexe 7.1</b> )
2	Blade Chassis ( <b>Annexe 7.2</b> )
3	Rack Servers-1 ( <b>Annexe 7.3</b> )
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25	ABIS LAN ( <b>Annexe 7.25</b> )
26	Firewall with content filtering 3 pairs each of different makes for DC and DR out of which one pair non CISCO for DC ( <b>Annexe 7.26</b> )
27	HIDS ( <b>Annexe 7.27</b> )
28	NIDS ( <b>Annexe 7.28</b> )
29	Perimeter Security Device ( <b>Annexe 7.29</b> )
30	HSM ( <b>Annexe 7.30</b> )
31	Anti Virus Server ( <b>Annexe 7.31</b> )
32	Anti Virus Software ( <b>Annexe 7.32</b> )
33	Network Operation Console ( <b>Annexe 7.10 and Annexe 7.33</b> )

c) **The Commercial Bid** should comprise of the following (**Refer Section IV**):

1	Bid Particulars ( <b>Annexe 4.2.1</b> )
2	Bid Letter ( <b>Annexe 4.2.2</b> )
3	Statement of Commercial Deviation(s) ( <b>Annexe 4.2.3</b> )
4	Summary of Cost of Goods and Services offered ( <b>Annexe 4.2.4</b> )
5	Details of Costs for Goods Offered ( <b>Annexe 4.2.5</b> )
6	Details of Costs for Accessories ( <b>Annexe 4.2.6</b> )
7	Details of Costs for Technical Services ( <b>Annexe 4.2.7</b> )
8	Details of Other Costs ( <b>Annexe 4.2.8</b> )
9	Details of Costs of Resident Engineers ( <b>Annexe 4.2.9</b> )
10	Details of Costs for Post Warranty Annual Maintenance ( <b>Annexe 4.2.10</b> )
11	Details of Costs for Optional Items ( <b>Annexe 4.2.11</b> )

7.2. Bidders should enclose with their Technical Bid, full details of the **Timelines (Refer Annexe 4.1.6 of Section IV)** proposed to be followed for “**Supply, Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services**” in the Data Centres of Unique Identification Authority of India (UIDAI) in Bengaluru and Delhi/NCR . All documentations are required to be in **English**.

#### 8. Bid Prices

8.1. The Bidder shall indicate in the proforma prescribed at **Annexe 4.2.4 to Annexe 4.2.10 of Section IV**, the unit prices and total Bid Prices of the Goods/ Services, it proposes to provide under the Contract. The unit prices of **optional items** should be indicated in **Annexe 4.2.11**.

8.2. The unit prices quoted in the above mentioned proforma will be used to calculate charges for ‘change orders’, if any.

8.3. In absence of the above information, as requested in **Clause 8.1 and 8.2**, a bid **may be considered incomplete and summarily rejected**.

8.4. The Bidder shall prepare the bid based on details provided in the Bid documents. It must be clearly understood that the quantities, specifications etc., are intended to give the Bidders an idea about the order and magnitude of the work and are not in any way exhaustive and guaranteed by UIDAI. Bidder shall carry out the design and detailed study of the facilities in accordance with the requirements of the Bid document and it shall be the responsibility of the Bidder to fully meet all the requirements of the Bid document. If during detailed study any upward revisions of the specifications and sizes given in the Bid document, specifications etc. are to be made to meet the requirements of Bid document, all such changes shall be carried out within the lump sum contract price without any impact to the UIDAI.

## 9. Firm Prices

- 9.1. Prices quoted must be firm and final and shall not be subject to any upward modifications, on any account whatsoever. The Bidder shall, therefore, indicate the prices in **Annexe 4.2.4 to Annexe 4.2.11 of Section IV** enclosed with the Bid. The Bid Prices shall be indicated in **Indian Rupees (INR)** only.
- 9.2. The Commercial bid should clearly indicate the price to be charged without any qualifications whatsoever and should include all taxes, duties, fees, levies, works contract tax and other charges as may be applicable in relation to the activities proposed to be carried out. Such charges should to be shown separately in **Annexe 4.2.4 to Annexe 4.2.11 of Section IV**. However, should there be a change in the applicable taxes, UIDAI reserves the right to negotiate with the selected Bidder.

## 10. Discount

- 10.1. The Bidders are advised not to indicate any separate discount. Discount, if any, should be merged with the quoted prices. Discount of any type, indicated separately, will not be taken into account for evaluation purpose. However, in the event of such an offer, without considering discount, is found to be the lowest, the UIDAI shall avail such discount at the time of award of contract.

## 11. Bidder Qualification

- 11.1. The "Bidder" as used in the Bid documents shall mean the one who has signed the Bids. The Bidder may be either the Constituted attorney of the company or the Principal Officer or his duly **Authorized Representative**, in which case he/she shall submit a certificate of authority. All certificates and documents (including any clarifications sought and any subsequent correspondences) received hereby, shall, as far as possible, be furnished and signed by the Representative and the Principal Officer.
- 11.2. It is further clarified that the individual signing the Bid or other documents in connection with the Bid must certify whether he/she signs as :

- a) Constituted attorney of the company.

OR

- b) The Principal Officer or his duly Authorized Representative of the company, in which case he/she shall submit a certificate of authority on behalf of the company

The Bidder shall sign its Bids with the exact name of the Company to whom the contract is to be issued. The Bids shall be duly signed and sealed by an executive officer of the Bidder's organization. Each bid shall be signed by a duly authorized officer executed under seal

The Bidder shall clearly indicate their legal constitution and the person signing the Bids shall state his capacity and also source of his ability to bind the Bidder

The power or authorization, or any other document consisting of adequate proof of the ability of the signatory to bind the Bidder shall be annexed to the bid. **UIDAI may outrightly reject any bid not supported by adequate proof of the signatory's authority**

## 12. Bid Security

- 12.1. Pursuant to **Clause 20**, the Bidder shall furnish, as part of its bid, **a bid security of the amount mentioned in Clause 2 of Section I**.
- 12.2. The bid security is required to protect the UIDAI against the risk of Bidder's conduct which would warrant the security's forfeiture, pursuant to **Clause 12.7**.
- 12.3. The bid security shall be denominated in Indian Rupees, and shall be in the form of a bank guarantee issued by a **Nationalized / Scheduled Bank**, in the proforma provided at **Appendix C of Section VI** in the Bid Document and shall be valid for 45 days beyond the validity of the Bid.

- 12.4. Bidders who are Government Departments and Central Public Sector Undertakings are exempted from furnishing of bid security. **Any bid not secured in accordance with Clauses 12.1 and 12.3 will be rejected by the UIDAI as non-responsive.**
- 12.5. Unsuccessful Bidder's bid security will be discharged/ returned as promptly as possible but not later than 30 days after the expiration of the period of bid validity prescribed by the UIDAI, pursuant to **Clause 13.**
- 12.6. The successful Bidder's bid security will be discharged upon the Bidder executing the Contract, pursuant to **Clause 35** and furnishing the performance security, pursuant to **Clause 36.**
- 12.7. The bid security may be forfeited:
- a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder in the Bid; or
  - b) in the case of a successful Bidder, if the Bidder fails;
    - i. to sign the Contract in accordance with **Clause 35;** or
    - ii. to furnish performance security in accordance with **Clause 36.**

### **13. Period of Validity of Bids**

- 13.1. Bids shall remain valid for **180 days** after the date of opening of Pre-Qualification Bids prescribed by the UIDAI. **A bid valid for a shorter period may be rejected by the UIDAI as non-responsive.**
- 13.2. In exceptional circumstances, the UIDAI may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by fax). The validity of bid security provided under **Clause 12** shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.

### **14. Format and Signing of Bid**

- 14.1. The Bidder shall prepare two copies of each Bid, clearly marking each "Original", and "First Copy" as appropriate in accordance with **Clause 1.** In the event of any discrepancy between them, the original shall govern.
- 14.2. The original and first copy of the bid shall be typed or written in indelible ink. **The original and first copy** shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract in accordance with **Clause 11.** **The authorization shall be indicated by written power-of-attorney accompanying the bid.** All pages of the bid, except for unamended printed literature, shall be initialed and stamped by the person or persons signing the bid.
- 14.3. The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

### **15. Revelation of Prices**

- 15.1. **Prices in any form or by any reason before opening the Commercial Bid should not be revealed, failing which the offer shall be liable to be rejected.** If price change is envisaged due to any clarification, revised Bid in a separate sealed cover shall be submitted with prior written permission of the UIDAI.

### **16. Income Tax Clearance Certificate**

- 16.1. Not required. [ITCC provisions are deleted in the Income tax Act].

### **17. Terms and Conditions of Bidders**

- 17.1. Printed terms and conditions (General Conditions) of the Bidders will not be considered as forming part of their Bids. In case terms and conditions of the contract applicable to

this Invitation of Bid are not acceptable to any Bidder, he should clearly specify deviation in his Technical Bid (**Annexe 4.1.5 of Section IV**).

- 17.2. Similarly in case the Goods/ Services being offered have deviations from the specifications laid down in **Section V - Schedule of Requirements**, the Bidder shall describe in what respects and to what extent the Goods/ Services being offered differ/deviate from the specifications, even though the deviations may not be very material. The Bidder must state categorically whether or not his offer conforms to Bid specifications as indicated in **Section V - Schedule of Requirements** and indicate deviations, if any, in his Technical Bid (**Annexe 4.1.4 of Section IV**)

## **18. Local Conditions**

- 18.1. It will be imperative on each Bidder to fully acquaint himself with the local conditions and factors, which would have any effect on the performance of the contract and / or the cost.
- 18.2. The Bidder is expected to visit and examine the sites of UIDAI offices and its surroundings and obtain for themselves on their own responsibility all information that may be necessary for preparing the bid and entering into contract. The cost for visiting the site shall be at Bidder's own cost.
- 18.3. The Bidder and any of their personnel or agents / subcontractors will be granted permission by the UIDAI to enter upon its premises and lands for the purpose of such inspection, but only upon the express condition that the Bidder, their personnel and agents/ subcontractors from and against all liability in respect thereof and will be responsible for personal injury (whether fatal or otherwise), loss of or damage to life, property and other loss damage, costs and expenses however caused, which, but for the exercise of such permission would not have arisen.
- 18.4. Failure to visit the UIDAI office sites will in no way relieve the successful Bidder from furnishing any material or performing any work in accordance with the bidding documents.
- 18.5. It will be imperative for each Bidder to fully inform themselves of all legal conditions and factors which may have any effect on the execution of the contract as described in the bidding documents. The UIDAI shall not entertain any request for clarification from the Bidder regarding such local conditions
- 18.6. It is the responsibility of the Bidder that such factors have properly been investigated and considered while submitting the bid proposals and that no claim whatsoever including those for financial adjustment to the contract awarded under the bidding documents will be entertained by the UIDAI and that neither any change in the time schedule of the contract nor any financial adjustments arising thereof shall be permitted by the UIDAI on account of failure of the Bidder to appraise themselves of local laws / conditions

## **19. Headings**

- 19.1. The headings of conditions hereto shall not affect the construction thereof.

## **20. Conditions for Pre-Qualification of Bidders**

- 20.1. For the purpose of pre-qualification of Bidders, the Bidder should enclose in their **Pre-Qualification Bid (to be submitted in a separate sealed cover)**, statement of qualification on following parameters, **duly supported by necessary documentary evidences**, as applicable:
- i. Bid Security (in original) of the prescribed amount and validity pursuant to **Clause 12**.
  - ii. The Bidder should be either the OEM manufacturing the Servers or the authorized agent/distributor of such OEM and should produce documentary evidence from the OEM in this regard in the form of an authorization letter from the OEM in the **Pre-qualification Bid** as well as in the **Technical Bid** as per **Annexe 4.1.8**.



- iii. **The Bidder should submit** authorization letter from the OEM of Storage, Networking Equipment, Security equipment, in case the bidder is not an OEM of such equipment, in the form of an authorization letter from the OEM in the **Technical Bid** as per **Annexe 4.1.8**.
- iv. The Bidder should be a profit making company in the last three financial years ended on 31.03.2010.
- v. The Bidder should have minimum average annual turnover of **Rs. 250,00,00,000/- (Rupees Two Hundred Fifty Crores)** from sales of Information Technology(IT) equipment/ IT Systems Integration services during each of the last three financial years ended on 31.03.2010. The average turnover refers to the average turnover of the company and not the composite turnover of its subsidiaries/sister concerns etc. The Bidder must submit copy of the Audited Balance Sheets and Profit & Loss Account Statement for the last 3 financial years ended on 31.03.2010 along with the bid. However, in the case of non availability of audited balance sheets, a Certificate from the Statutory Auditor/Chartered Accountant of the Bidder's Company certifying the turnover of the Bidder in the last three financial years would be acceptable.
- vi. The Bidder must have executed at least two (2) purchase orders/contracts **in India** involving supply, installation and commissioning of servers, storage systems, Networking Equipment and IT Security systems in the last three financial years. Each such order/contract should, *inter alia*, include the value of at least **Rs. 10,00,00,000/- (Rupees Ten Crores)** from supply, installation and commissioning of servers, storage systems, Networking Equipment and IT Security systems. For each of such orders/contracts, the Bidder should submit the following :
  - Copy of each such Purchase Order/Contract clearly indicating the total value of the Order/Contract.
  - A certificate in original from the Statutory Auditor/Chartered Accountant/ Company Secretary/ Director of the Bidder's Company indicating and certifying the value of the components relating to supply, installation and commissioning of servers, storage systems, Networking Equipment and IT Security system.
  - A copy of the certificate from respective customers for satisfactory execution of such order/contract from the respective customer.
- vii. The Bidder must have its own maintenance/support infrastructure facilities in India in respect of all goods/services covered in this Bid, so as to serve all over India particularly in the places as listed in **Appendix F**.

## 21. Sealing and Marking of Bids

- 21.1. The Bidders shall seal and mark the original and each copy of the Bid strictly in accordance with **Clause 1**.
- 21.2. If the outer cover of the bid is not sealed and marked as required by **Clause 1**, the UIDAI will assume no responsibility for the bid's misplacement or premature opening.

## 22. Last Date for Receipt of Bids

- 22.1. Bids will be received by the UIDAI at the address specified under **Clause 4(b) of Section I** not later than the time and date specified in **Clause 4(c) of Section I**. In the event of the specified date for the receipt of Bids being declared a holiday for the UIDAI, the Bids will be received upto the appointed time on the next working day.
- 22.2. The UIDAI may, at its discretion, extend the last date for the receipt of bids by amending the Bid Document in accordance with **Clause 5**, in which case all rights and

obligations of the UIDAI and Bidders previously subject to the last date will thereafter be subject to the last date as extended.

### **23. Late Bids**

- 23.1. Any bid received by the UIDAI after the last date and time for receipt of bids prescribed by the UIDAI, pursuant to **Clause 4(c) Section I, will be rejected and/or returned unopened to the Bidder.**

### **24. Modification and Withdrawal of Bids**

- 24.1. The Bidder may modify or withdraw its bid after the Bids' submission, provided that written notice of the modification or withdrawal is received by the UIDAI prior to the last date prescribed for receipt of bids.
- 24.2. The Bidder's modification or withdrawal notice shall be prepared, sealed, marked and submitted in accordance with the provisions of **Clause 1**. A withdrawal notice may also be sent by fax but followed by a signed confirmation copy, post marked not later than the last date for receipt of bids.
- 24.3. No bid may be modified subsequent to the last date for receipt of bids.
- 24.4. No bid may be withdrawn in the interval between the last date for receipt of bids and the expiry of the bid validity period specified by the Bidder in the Bid. **Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its bid security.**

### **25. Address for Correspondence**

- 25.1. The Bidder shall designate the official mailing address, place and fax number to which all correspondence shall be sent by the UIDAI.

### **26. Opening of Bids by UIDAI**

- 26.1. On the basis of information furnished in the **Pre-Qualification Bid**, pursuant to **Clause 20**, Bidders will be pre-qualified. The bids of Bidders, who do not qualify at this stage, will not be taken up for further evaluation, and the sealed Technical and Commercial Bids of such Bidders will be returned unopened immediately.
- 26.2. **Bids of only pre-qualified Bidders will be taken up for further evaluation.**
- 26.3. The UIDAI will open the Bids, in the presence of the representatives of the Bidders who choose to attend, at the time, date and place, as mentioned in **Clause 4 of Section I** of this Document.
- 26.4. The Bidders' names, modifications, bid withdrawals and the presence or absence of the requisite Bid Security and such other details as the UIDAI, at its discretion, may consider appropriate will be announced at the bid opening.
- 26.5. The UIDAI will prepare minutes of the bid opening.

### **27. Clarifications**

- 27.1. When deemed necessary, the UIDAI may seek clarifications on any aspect from the Bidder. However, that would not entitle the Bidder to change or cause any change in the substance of the Bid submitted or price quoted.

### **28. Preliminary Examination**

- 28.1. The UIDAI will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required bid security has been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
- 28.2. Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. **If the Bidder does not accept the correction of the errors, its bid will be rejected.** If there is a discrepancy between words and figures, the amount in words will prevail.

- 28.3. A bid determined as not substantially responsive will be rejected by the UIDAI and may not subsequently be made responsive by the Bidder by correction of the nonconformity.
- 28.4. The UIDAI may waive any minor informality or nonconformity or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

### **29. Contacting the UIDAI**

- 29.1. No Bidder shall contact the UIDAI on any matter relating to its Bid, from the time of the Bid opening to the time the Contract is awarded.
- 29.2. Any effort by a Bidder to influence the UIDAI's Bid evaluation, Bid comparison or Contract award decisions **may result in the rejection of the Bidder's Bid.**

### **30. Post Qualification**

- 30.1. The UIDAI will determine to its satisfaction whether the Bidder selected as having submitted the best evaluated responsive bid is qualified to satisfactorily perform the Contract.
- 30.2. This determination will take into account the Bidder's financial, technical, implementation and post-implementation capabilities. It will be based upon an examination of the documentary evidence submitted by the Bidder as per **Appendix D** as well as such other information as the UIDAI deems necessary and appropriate.
- 30.3. An affirmative determination will be a prerequisite for award of the Contract to the Bidder. A negative determination will result in rejection of the Bidder's bid, in which event, the UIDAI will proceed to the next best evaluated bid to make a similar determination of that Bidder's capabilities to perform satisfactorily.

### **31. Criteria for Evaluation of Bids**

- 31.1. To meet the UIDAI's requirements, as spelt out in the Bid Document, the selected Bidder must have the requisite experience in providing Goods/ Services in the field of Information and Communication Technology, the technical know-how, and the financial wherewithal that would be required to successfully set-up the required infrastructure and provide the Goods/ Services sought by the UIDAI, for the entire period of the contract. The evaluation process of the Bid proposed to be adopted by the UIDAI is indicated in **Clauses 31.2 to 31.5**. The purpose of **Clause 31** is only to provide the Bidders an idea of the evaluation process that the UIDAI may adopt. The UIDAI reserves the right to modify the evaluation process at any time during the Bid process, without assigning any reason, whatsoever, and without any requirement of intimating the Bidders of any such change.

Any time during the process of evaluation the UIDAI may seek specific clarifications from any or all Bidders.

#### **31.2. Phase I: Evaluation of Technical Bids**

Technical Bids will be opened in the presence of representatives of the Bidders who choose to be present as per the date indicated by the UIDAI. A detailed analysis will be subsequently carried out by the UIDAI.

In this phase, the Technical Bids will be reviewed for compliance of the Bid requirements (**Section IV**), responses to the technical requirements given in **Section VII** and schedule of requirements of this Bid (**Section V**).

**Technical Bids which meet the above mentioned criteria will be eligible for consideration in the subsequent rounds.** If required, the UIDAI may seek specific clarifications from any or all Bidder(s) at this stage. The UIDAI shall determine the Bidders that qualify for the next phase after reviewing the clarifications provided by the Bidder(s).

#### **31.3. Phase II: Evaluation of Commercial Bids**

In this phase, the Commercial Bids of the Bidders, who are technically qualified in Phase I, shall be opened. The Commercial Bid should contain the total cost, both non-

recurring and recurring, of all Goods/ Services, comprising of all items as mentioned in **Annexe 4.2.4 to Annexe 4.2.11 of Section IV**, proposed to be charged by the Bidder.

- 31.4. Subject to **Clause 30**, the UIDAI will award the Contract to the successful Bidder whose bid has been determined to be technically qualified and has been determined as the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily. The UIDAI will however not bind itself to accept the lowest evaluated bid or any bid and reserves the right to accept any bid, wholly or in part.

**31.5. Determination of Lowest Commercial Bid:**

The formula for determining the lowest evaluated bid (L1) will be as under

$L1 = \text{Lowest of [Total One Time Non-Recurring Costs + Cost for Resident Engineers for 12 months + 2x(Total Post-warranty Annual Maintenance Costs)]}$

where,

**Total One-Time Non Recurring Costs** includes:

- (i) Costs for Goods (**Annexe 4.2.5**)
- (ii) Accessories (as per details in **Annexe 4.2.6**)
- (iii) Technical Service (as per details in **Annexe 4.2.7**)
- (iv) Other Costs (as per details in **Annexe 4.2.8**)
- (v) Costs of Optional Items (as per details in **Annexe 4.2.11**)

**Total Annual Recurring Costs** includes:

- (i) Cost for Resident Engineers for 12 months (as per details in **Annexe 4.2.9**)
- (ii) Post Warranty Annual Maintenance Costs (as per details in **Annexe 4.2.10**) for two years shall be taken into account for the purpose of evaluation of Commercial Bids.

**32. UIDAI's Right to Vary Scope of Contract at the time of Award**

- 32.1. The UIDAI may at any time, by a written order given to the Bidder pursuant to **Clause 15 of Section III – General Conditions of Contract**, make changes within the general scope of the Contract.
- 32.2. If any such change causes an increase or decrease in the cost of, or the time required for, the Bidder's performance of any part of the work under the Contract, whether changed or not changed by the order, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Bidder for adjustment under this Clause must be asserted within thirty (30) days from the date of the Bidder's receipt of the UIDAI's changed order.

**33. UIDAI's Right to Accept Any Bid and to Reject Any or All Bids**

- 33.1. The UIDAI reserves the right to accept any bid, and to annul the Bid process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the UIDAI's action.

**34. Notification of Award**

- 34.1. Prior to the expiration of the period of bid validity, the UIDAI will notify the successful Bidder in writing by registered letter or by fax, to be confirmed in writing by registered letter, that its bid has been accepted.
- 34.2. The notification of award will constitute the formation of the Contract.

- 34.3. Upon the successful Bidder's furnishing of performance security pursuant to **Clause 36**, the UIDAI will promptly notify each unsuccessful Bidder and will discharge its bid security, pursuant to **Clause 12**.

### **35. Signing of Contract**

- 35.1. At the same time as the UIDAI notifies the successful Bidder that its bid has been accepted, the UIDAI will send the Bidder the Contract Form (**Appendix A of Section VI**) provided in the Bid Document, incorporating all agreements between the parties.
- 35.2. Within 15 days of receipt of the Contract Form, the successful Bidder shall sign and date the Contract and return it to the UIDAI.

### **36. Performance Security**

- 36.1. Within 15 days of the receipt of notification of award from the UIDAI, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, in the Contract Performance Guarantee Bond prescribed at **Appendix B of Section VI**.
- 36.2. Failure of the successful Bidder to comply with the requirement of **Clause 35 or Clause 36** shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the UIDAI may award the Contract to the next lowest evaluated Bidder or call for new bids.

### **37. Confidentiality of the Document**

- 37.1. This Bid Document is confidential and the Bidder is required to furnish an undertaking that anything contained in this Bid Document shall not be disclosed in any manner, whatsoever.

### **38. Rejection Criteria**

#### **38.1. Technical Rejection Criteria**

The following vital technical conditions should be strictly complied with failing which the bid will be rejected:

- Only the Bidders who quote for the complete Scope of Work and Supply of Goods/Services as indicated in this Bid Document, addendum thereof (if any) and any subsequent information given to the Bidder, shall be considered. **Incomplete bids will be rejected outright.** Evaluation will be carried out for the total scope of work covered in the Bid document.
- The Bidder shall be deemed to have complied with all clauses in the Bid document under all the sections/chapters of the Bidding document, including Bid Evaluation Criteria (BEC), Schedule of Requirements, Technical specifications, Timelines and General Terms and Conditions of Contract unless otherwise stated in the deviation statement. Evaluation will be carried out on the information available in the bid.
- If the information provided by the Bidder is found to be incorrect / misleading at any stage / time during the Bidding Process.

#### **38.2. Commercial Rejection Criteria**

The following vital commercial conditions should be strictly complied with failing with the bid will be rejected.

- **Bid should be submitted in Two Bid systems in two separate envelopes.**  
**The Technical Bid shall contain no commercial details.** However a blank copy of the commercial bid should be enclosed with the Technical Bid with the price column of the price bid format blanked out. A tick mark (✓) shall be provided against each item of the price bid format to indicate that there is a quote against this item in the Commercial bid. **Offers with technical Bid containing prices shall be rejected outright.**
- **Offers of following kinds will be rejected:**

- i. Offers made without Bid Security/Bid Bond/Bank Guarantee along with the offer
  - ii. Telex /Telegraphic / Fax/Email
  - iii. Offers which do not confirm unconditional validity of the bid for 180 days from the date of opening of bid.
  - iv. Offers where prices are not firm during the entire duration of the contract and / or with any qualifications.
  - v. Offers which do not conform to UIDAI's price bid format.
  - vi. Offers which do not conform to the completion period indicated in the bid.
- Total lump sum price quoted by the Bidder must be inclusive of all taxes including excise duty and sales tax etc.
  - Bidder shall bear, within the quoted rates, all the taxes and duties as levied on them including the Personnel Tax as applicable in respect of their personnel and their sub-contractor's personnel, arising out of this contract. Bidder shall also bear, within the quoted rates, the Corporate Tax, as applicable, on the income arising out of this contract.

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**SECTION III****GENERAL CONDITIONS OF CONTRACT****1. Definitions**

1.1 In this Contract, the following terms shall be interpreted as indicated:

- (a) **"UIDAI"** means the Unique Identification Authority of India.
- (b) **"The Purchaser"** means the President of India acting through the Director General, Unique Identification Authority of India or any other representative authorised by the Director General, Unique Identification Authority of India.
- (c) **"Purchase Officer"** means the officer signing the acceptance of Bid and includes any officer who has authority to execute the relevant contract on behalf of the Purchaser.
- (d) The **"Contract"** means the agreement entered into between the Purchaser and the Vendor as recorded in the Contract Form signed by the Purchaser and the Vendor, including all attachments and annexes thereto and all documents incorporated by reference therein.
- (e) The **"Vendor"** means the person or the firm or the company with whom the order for the Supply, Installation and Commissioning of the Goods/Services is placed and shall be deemed to include the Vendor's successors, representatives (approved by the Purchaser), heirs, executors, administrators and permitted assigns, as the case may be, unless excluded by the terms of the contract.
- (f) **"The Contract Price"** means the price payable to the Vendor under the Contract for the full and proper performance of its contractual obligations;
- (g) **"The Goods"** mean all of the equipment, hardware, software, machinery, accessories and/or other material which the Vendor is required to supply to the Purchaser under the Contract;
- (h) **"Service"** means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, erection, commissioning, configuration, testing, acceptance, warranty and post warranty maintenance and support, provision of technical assistance, training and other obligations of the Vendor covered under the Contract;
- (i) **"Acceptance of Bid"** means the letter/telex/telegram/ fax or any memorandum communicating to the selected Bidder the acceptance of his Bid and includes an advance acceptance of his Bid.

**2. Application**

2.1 These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

**3. Standards**

3.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standards, such standard shall be the latest issued by the concerned institution.

3.2 The Vendor shall ensure that the Goods supplied under the Contract against all purchase orders are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials without any additional cost to the Purchaser.

#### **4. Use of Contract Documents and Information**

- 4.1 The Vendor shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Vendor in the Performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
- 4.2 The Vendor shall not, without the Purchaser's prior written consent, make use of any document of information enumerated in **Clause 3 of Section II** except for purposes of performing the Contract.
- 4.3 Any document, other than the Contract itself, enumerated in **Clause 3 of Section II** shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Vendor's performance under the Contract, if so required by the Purchaser.

#### **5. Patent Rights**

- 5.1 The Vendor shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from the use of the Goods or any part thereof.

#### **6. Performance Security**

- 6.1 Within 15 days after the receipt of notification of award of the Contract from the Purchaser, the successful Vendor shall furnish performance security to the Purchaser, which shall be equal to 10 percent of the value of the contract in the form of a bank guarantee bond from a recognised bank.

#### **7. Installation, Erection, Commissioning, Configuration, Testing and Acceptance Tests**

- 7.1 The Vendor shall be responsible for erection and installation of the Goods/Services at the destination sites and for making them fully operational.
- 7.2 The acceptance test which involves the operation of the complete Goods/Services shall be conducted by the Vendor in the presence of the Purchaser and/or authorised officials and/or any other team or agency nominated by the Purchaser. All expenses for special devices, if any, for erection, commissioning, configuration, testing and acceptance of the Goods/Services shall be borne by the Vendor.
- 7.3 The Vendor shall describe in advance the tests and in details the system on which he proposes to demonstrate the correct working of the equipment supplied both individually and as an integrated system. System testing schedules are thus additional to test specifications for individual items or units of equipment and shall comprise of :
- a) Factory tests
  - b) On-site commissioning tests

It shall be the responsibility of the vendor to get pre-despatch inspection of the goods as part of factory tests through internationally reputed third party inspection agencies

and furnish necessary certificate to the Purchaser certifying that the goods conform to the specifications given in the contract.

- 7.4 The above tests shall demonstrate the satisfactory operation of all equipment as an integrated whole covering full range of the facilities of the equipment. Simulation equipment shall be provided by the Vendor wherever necessary, to simulate all input and output functions on the test configuration. All functions shall be tested including but not limited to:
  - a) Power failure and restoration.
  - b) All combinations of permissible voltage and frequency variations.
  - c) Limiting signal-noise ratios on data carrying circuits.
  - d) Maintenance and testing facilities.
  
- 7.5 All test facilities required for factory system tests shall be made available by the Vendor.
  
- 7.6 The acceptance test shall be carried out by the Vendor in the presence of the Purchaser or any other person(s) or agency designated by the Purchaser. In order to qualify for acceptance, the equipment must, as a complete system, operate for thirty (30) consecutive days, 24 hours a day, at 99.5% up-time efficiency. Up time is defined as productive and error-free time of the computer system using the Manufacturer's standard test procedures. Any un-utilised time, during the tests, will also qualify as up-time provided there are no hardware malfunctions. During the aforesaid 30 days period, the Purchaser shall be permitted to make use of the equipment for running any or all of their programmes. Up-time efficiency will be computed as follows:
 
$$\frac{\text{Up-time}}{\text{Total time for which the equipment is available.}} \times 100$$
  
- 7.7 The following will not be included in the total time:
  - a) Time lost due to power or environmental failures;
  - b) Time taken to recover the computer equipment because of power or environmental failures.
  
- 7.8 In case the required up-time efficiency is not obtained as mentioned in **Clauses 7.6 and 7.7** the equipment will be run for an additional number of days till the efficiency of 99.5% is achieved. **This will be evidenced by a certificate of acceptance duly signed and/or countersigned by representatives of the Purchaser which shall be deemed to be acceptance of the equipment** without prejudice to **Clause 7.7**. The Vendor shall send such certificate to the Purchaser.
  
- 7.9 The Vendor shall conclude the Acceptance test not later than ninety (90) days, after the arrival of each equipment, and not later than 60 days from the installation of the System, in the presence of person(s) or agency designated by the Purchaser.
  
- 7.10 Should the Acceptance Tests not be concluded to the satisfaction of the Purchaser within the said ninety (90) days from the arrival of the equipment and 60 days from the installation, the Vendor shall repair or replace, at the Vendor's cost, the whole or any part of the equipment as may be necessary for conclusion of the acceptance tests to the satisfaction of the Purchaser within a further period of sixty (60) days.
  
- 7.11 Should Acceptance Tests still not be concluded to the satisfaction of the Purchaser after the expiration of two hundred and twenty (220) days from the arrival of each

equipment, the Purchaser shall have the right to reject the equipment in respect of which the acceptance tests are not satisfactorily concluded as provided in this Clause and to terminate this contract to the extent it relates to such equipment and in that event the Vendor shall refund and repay all amounts received by the Vendor and the Manufacturer from the Purchaser and all moneys paid by the Purchaser towards freight, insurance, customs duty, octroi and other connected expenses including interest at the rate of 10% per annum in respect of that equipment, within 60 days from the receipt of a written claim from the Purchaser.

- 7.12 The Purchaser shall, however, have the right to change the period of 30 consecutive days, 24 hours a day prescribed for acceptance tests under **Clause 7.6**. The Purchaser shall also have the right, if it so desires, to waive the factory tests in his presence or in the presence of its authorised representative or the agency nominated by him. However, in such cases the Purchaser shall have the right to ask for the results of the factory tests/reports from the Vendor.

## **8. Incidental Services**

- 8.1 The Vendor shall be required to provide any or all of the following services:
- (a) Installation, erection, commissioning, configuration, testing, acceptance, warranty and post warranty maintenance and support in respect of supplied Goods.
  - (b) Performance or supervision of on-site assembly and start-up of the supplied Goods;
  - (c) Furnishing of tools required for assembly and start-up of the Supplied Goods;
  - (d) Furnishing of detailed operations and maintenance manuals for each appropriate unit of the supplied Goods;
  - (e) Performance, supervision, maintenance and repair of the supplied Goods, for a period of time agreed by the Purchaser and the Vendor, provided that this service shall not relieve the Vendor of any warranty obligations under this Contract; and
  - (f) Conduct of training of the Purchase's personnel, at Bengaluru and Delhi/NCR on-site in assembly, start-up, configuration, operation, maintenance of the supplied Goods.
  - (g) Provision of technical assistance and Resident Engineers
  - (h) Other obligations of the Vendor covered under the Contract

## **9. Training – Clause Deleted**

## **10. Delivery and Documents**

- 10.1 Delivery of the Goods shall be made by the Vendor in accordance with the terms specified by the Purchaser in its Notification of Award / Letter of Intent.

## **11. Maintenance and Spare Parts**

- 11.1 Documentation shall be supplied for installation, maintenance, servicing and operation of equipment. All equipment, symbols and abbreviations shall be in accordance with the generally accepted nomenclature and standards. The maintenance manual shall contain a description of the complete hardware system

and maintenance procedures. The hardware description shall start with the overall configuration of the system with layouts showing the location of every unit with block diagram and explanation of operation. Detailed descriptions of component units shall explain their operation. Block diagrams showing the flow and interaction of data and logic diagrams shall be provided. Part list and wiring schedules shall be provided, but care shall be taken to avoid obscuring of the operational description. Maintenance procedures shall cover the diagnosis of faults, testing and setting up adjustments, replacement of units, routine mechanical servicing, if any, and operation of test equipment.

- 11.2 The servicing manual shall cover all the procedures and information necessary for the diagnosis and repair of faulty units or components of every type. It shall include circuits, board layouts, component schedules (with Vendors' names), test points and test parameters, and use of test equipment.
- 11.3 The Vendor undertakes that necessary maintenance will be directly made available for at least Five years after the acceptance of the system on a continuing basis at a reasonable price, at the option of the Purchaser (**Annexe 4.2.8**).
- 11.4 The Vendor warrants that spare parts for the system would continue to be supplied even after a period of Five years indicated in para (ii) above, and that however, before phasing out or discontinuation of production of any of the spare parts, required for the maintenance of the System he will give at least twelve (12) months' notice prior to such discontinuation to the Purchaser.
- 11.5 The Vendor guarantees that in case he decides to discontinue production of spare parts, he will make available the blue prints, drawings of the spare parts and specifications of material at no cost to the Purchaser as and when required to enable the Purchaser to fabricate or procure these spare parts from other sources.

## **12. Warranty**

- 12.1 The Vendor warrants that the Goods supplied under the Contract are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Vendor further warrants that the Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except insofar as the design or material is required by the Purchaser's Specifications) or from any act or omission of the Vendor, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.
- 12.2 This warranty shall remain valid, for **36 (Thirty six) months** in respect of Servers and Storage Systems and **12 (Twelve) months** in respect of all other Goods, after the Goods, or any portion thereof as the case may be, have been delivered (and commissioned) to the final destination indicated in the **contract and accepted**, unless specified otherwise in the General Conditions of Contract.
- 12.3 The Purchaser shall promptly notify the Vendor in writing of any claims arising under this warranty.
- 12.4 Upon receipt of such notice, the Vendor shall, with all reasonable speed, repair or replace the defective Goods or parts thereof, without prejudice to any other rights which the Purchaser may have against the Vendor under the Contract.
- 12.5 If the Vendor, having been notified, fails to remedy the defect(s) within a reasonable period, the Purchaser may proceed to take such remedial action as may be necessary, at the Vendor risk and expense and without prejudice to any other rights which the Purchaser may have against the Vendor under the Contract.

### 13. Payment

- 13.1 Payment shall be made by the Purchaser only after completion of supply, installation commissioning and acceptance of the Goods/Services mentioned in the schedule, to the entire satisfaction of the Purchaser or any other agency nominated by him.
- 13.2 The Purchaser may however, consider making payments which shall be subject to the following conditions:
- i) 50% payment against delivery and installation of Goods/ Services.
  - ii) 30% payment against satisfactory commissioning of Goods/ Services. In case the commissioning of the Goods/Services is delayed or put off beyond 90 days of the receipt of the equipment at Purchaser's sites (as per **Appendix F**) due to express written instructions of the Purchaser, this amount may be released to the Vendor on his furnishing a necessary Bank Guarantee on stamp paper of requisite value of an equivalent amount from any of the **Nationalised/Scheduled Bank**.
  - iii) Balance 20% payment against acceptance of Goods/ Services. In case the acceptance of the Goods/Services is delayed or put off beyond 60 days of the installation of Goods/ Services at Purchaser's sites (as per **Appendix F**) due to express written instructions of the Purchaser, this amount may be released to the Vendor on his furnishing a necessary Bank Guarantee on stamp paper of requisite value of an equivalent amount from any of the **Nationalised/Scheduled Bank**.
  - iv) No payment shall, however, accrue until after the Performance Guarantee Bond envisaged in **Clause 6** has been furnished.
- 13.3 Payments in respect of Resident Engineers shall be made on monthly basis subject to submission of certification regarding satisfactory performance of technical support/services by the Resident Engineers from the authorized representative of the Purchaser.

### 14. Currency of Payment

- 14.1 Payment shall be made in Indian Rupees only.

### 15. Change Orders

- 15.1 The Purchaser may at any time, by a written order given to the Vendor pursuant to **Clause 28**, make changes within the general scope of the Contract in any one or more of the following:
- (a) drawings, designs or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
  - (b) the method of shipment or packing;
  - (c) the place of delivery; or
  - (d) the Services to be provided by the Vendor.
  - (e) increase/ decrease quantities of goods

15.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Vendor's performance of any part of the work under the Contract, whether changed or not changed by the order, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Vendor for adjustment under this Clause must be asserted within thirty days from the date of the Vendor's receipt of the Purchaser's change order.

## 16. Contract Amendments

16.1 Subject to **Clause 18**, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

## 17. Assignment

17.1 The Vendor shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent. The permission, if any, of the purchaser has to be taken within 15 days of award of the contract.

## 18. Subcontracts

18.1 The Vendor shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in his bid. Such notification, in his original bid or later, shall not relieve the Vendor from any liability or obligation under the Contract.

## 19. Delays in the Vendor's Performance

19.1 Delivery of the Goods and performance of Service shall be made by the Vendor in accordance with the Timelines specified by the Purchaser in **Clause 13 Section V – Scope of Work**.

19.2 An un-excused delay by the Vendor in the performance of its delivery obligations shall render the Vendor liable to any or all of the following sanctions: forfeiture of its performance security, imposition of liquidated damages, and/or termination of the Contract for default.

19.3 If at any time during performance of the Contract, the Vendor or its sub-contractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the Vendor shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Vendor's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Vendor's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract. If the vendor request to delay the delivery of goods and performance of services is not found acceptable to the purchaser, **Clause 19.2** would be invoked.

## 20. Liquidated Damages

20.1 Subject to **Clause 22**, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the time period(s) specified in the Contract, the Purchaser shall without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the 0.5 per cent per week (Seven Days) or part thereof of the contract price of the delayed Goods or unperformed Services for each week (Seven Days) or part thereof of delay until actual delivery or performance, up to maximum deduction of 10% of the contract price. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to **Clause 21**.

20.2 In the event of failure of the Vendor to secure acceptance of equipment by the Purchaser, within two hundred and twenty (220) days after arrival at site, it is agreed that the Purchaser reserves the option to recover from the Vendor as liquidated damages and not by way of penalty for the period after the said one hundred days,

until acceptance a sum equivalent to two percent (2%) of the Vendor value for each month of the failure of Vendor upto a maximum deduction of Ten (10) percent, to secure acceptance or part thereof, without prejudice to the Purchaser's other remedies under the Contract.

## **21. Termination for Default**

21.1 The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Vendor, terminate the Contract in whole or in part:

- (a) If the Vendor fails to deliver any or all of the Goods within the time period(s) specified in the Contract, or any extension thereof granted by the Purchaser pursuant to **Clause 19**; OR
- (b) If the Vendor fails to perform any other obligation(s) under the contract.

21.2 In the event the Purchaser terminates the Contract in whole or in part, pursuant to **Clause 21.1** the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods similar to those undelivered, and the Vendor shall be liable to the Purchaser for any excess costs for such similar Goods. However, the Vendor shall continue performance of the Contract to the extent not terminated.

## **22. Force Majeure**

22.1 Notwithstanding the provisions of **Clauses 19, 20, 21** the Vendor shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

22.2 For Purposes of this Clause, "Force Majeure" means an event beyond the control of the Vendor and not involving the Vendor and not involving the Vendor's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

22.3 If a force Majeure situation rises, the Vendor shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Vendor shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

## **23. Termination for Insolvency**

23.1 The Purchaser may at any time terminate the Contract by giving written notice to the Vendor, without compensation to the Vendor, if the Vendor becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

## **24. Termination for Convenience**

24.1 The Purchaser may by written notice sent to the Vendor, terminate the Contract, in whole or in part at any time of its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective.

24.2 The Goods that are complete and ready for shipment within 30 days after the Vendor receipt of notice of termination shall be purchased by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:



- (a) to have any portion completed and delivered at the Contract terms and prices; and/or
- (b) to cancel the remainder and pay to the Vendor an agreed amount for partially completed Goods and for materials and parts previously procured by the Vendor.

## **25. Dispute Resolution**

- 25.1. If during the subsistence of this Contract or thereafter, any dispute between the Parties hereto arising out of or in connection with the validity, interpretation, implementation, material breach or any alleged material breach of any provision of this Contract or regarding any question, including as to whether the termination of this Contract by one Party hereto has been legitimate, the Parties hereto shall endeavor to settle such dispute amicably and/or by Conciliation to be governed by the Arbitration and Conciliation Act, 1996 or as may be agreed to between the Parties. The attempt to bring about an amicable settlement is considered to have failed as soon as one of the Parties hereto, after reasonable attempts; which attempt shall continue for not less than thirty (30) days, gives thirty (30) days notice to refer the dispute to arbitration to the other Party in writing.
- 25.2. The Arbitration proceedings shall be governed by the Arbitration and Conciliation Act, 1996.
- 25.3. The Arbitration proceedings shall be held in Delhi, India.
- 25.4. The Arbitration proceeding shall be governed by the substantive laws of India.
- 25.5. The proceedings of Arbitration shall be in English language.
- 25.6. Except as otherwise provided elsewhere in the contract if any dispute, difference, question or disagreement arises between the parties hereto or their respective representatives or assignees, at any time in connection with construction, meaning, operation, effect, interpretation or out of the contract or breach thereof the same shall be decided by an Arbitral Tribunal consisting of three Arbitrators. Each party shall appoint one Arbitrator and the Arbitrators so appointed shall appoint the third Arbitrator who will act as Presiding Arbitrator.
- 25.7. In case, a party fails to appoint an arbitrator within 30 days from the receipt of the request to do so by the other party or the two Arbitrators so appointed fail to agree on the appointment of third Arbitrator within 30 days from the date of their appointment upon request of a party, the Chief Justice of India or any person or institution designated by him (in case of International commercial Arbitration) shall appoint the Arbitrators/Presiding Arbitrator. In case of domestic contracts, the Chief Justice of the High Court or any person or institution designated by him within whose jurisdiction the subject purchase order/contract has been placed / made, shall appoint the arbitrator/Presiding Arbitrator upon request of one of the parties.
- 25.8. If any of the Arbitrators so appointed dies, resigns, incapacitated or withdraws for any reason from the proceedings, it shall be lawful for the concerned party/ arbitrator to appoint another person in his place in the same manner as aforesaid. Such person shall proceed with the reference from the stage where his predecessor had left if both parties consent for the same, otherwise, he shall proceed de novo.
- 25.9. It is a Scope of the contract that the party invoking arbitration shall specify all disputes to be referred to arbitration at the time of invocation of arbitration and not thereafter.
- 25.10. It is also a Scope of the contract that neither party to the contract shall be entitled for any interest on the amount of the award.
- 25.11. The Arbitral Tribunal shall give reasoned award and the same shall be final, conclusive and binding on the parties.
- 25.12. The fees of the arbitrator shall be borne by the parties nominating them and the fee of the Presiding Arbitrator, costs and other expenses incidental to the arbitration proceedings shall be borne equally by the parties.

25.13. Subject to as aforesaid the provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment in lieu thereof shall apply to the arbitration proceedings under this clause.

25.14. Continuance of the Contract: Notwithstanding the fact that settlement of dispute(s) (if any) under arbitration may be pending, the parties hereto shall continue to be governed by and perform the work in accordance with the provisions under this Contract.

## **26. Governing Language.**

26.1 The Contract shall be written in the English language. Subject to **Clause 27**, that language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in that same language.

## **27. Applicable Law**

27.1 The Contract shall be interpreted in accordance with the Indian laws.

## **28. Notices**

28.1 Any notice by one party to the other pursuant to the Contract shall be sent in writing or by telegram or telex/cable/fax and confirmed in writing to the address specified for that purpose in the contract.

28.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

## **29. Back-up Support**

29.1 Vendor shall furnish details of the back-up engineering and systems support that will be available to the Purchaser. If the maintenance of the system, after expiry of the Warranty period, is taken over either by the Purchaser or any other person/Agency to be nominated by the Purchaser, the Vendor shall be responsible for supply of spare parts and back-up maintenance support required by the Purchaser or that Agency and shall continue to make available the spare parts.

## **30. Power Tolerance**

30.1 The system must be capable of withstanding power failures and must not get damaged due to 'tripouts'. It should be capable of withstanding permissible voltage and frequency variations without any damage to equipment or loss of information.

## **31. Price Fall**

31.1 The Vendor shall provide "**Most Preferred Customer**" status to the Purchaser. Accordingly, the prices charged for goods and services supplied under this contract by the Vendor shall in no event exceed the lowest price at which the Vendor sells the Goods/ Services or offers to sell Goods/ Services of identical description to any persons/organizations including the Purchaser or any department of the Central or State Government or any statutory undertaking of the Central or State Govt., as the case may be, during the currency of the contract..

31.2 If any time during the said period the Vendor reduces the sale price, sells or offers to sell such Goods/ Services to any person/organization including the purchaser or any department of State or Central Govt. or any department. of a State Govt. for ;statutory undertaking of the Central or State Govt. as the case may be at a price lower than the price chargeable under the contract, he shall forthwith notify such reduction of sale or offer to sell to the purchaser and the price payable under the contract for the Goods/ Services supplied after the date of coming into force of such reduction or sale or offer to sell shall stand correspondingly reduced.

31.3 Prices shall remain firm and shall not be subject to any upward revision on any account whatsoever throughout the currency of contract. The Purchaser, however, reserves the right to review and negotiate the charges payable for Goods/ Services at the beginning of the each year or at any time, whichever is earlier, to incorporate downward revisions as applicable and necessary.

### **32. Delivery**

32.1 The computer system and other equipment specified in the schedule (**Annexe 4.1.6**) are required to be supplied installed and commissioned by the Vendor within the period indicated in the letter of intent .

### **33. Passing of Property**

33.1 Ownership shall not pass to the Purchaser unless and until the Goods have been delivered, installed and accepted, in accordance with the conditions of the contract to the entire satisfaction of the Purchaser.

### **34. Prices**

34.1 **Prices to be firm:** The prices quoted for the Goods shall be firm throughout the currency of contract and shall not be subject to any variation.

### **35. Deductions**

35.1 Payments, as envisaged in **Clause 13**, shall be subject to deductions of any amount, for which the Vendor is liable under the agreement against this Bid.

### **36. Taxes and Duties**

36.1 The Vendor shall be entirely responsible for all taxes, duties, octroi, license fees, **demurrage charges** etc., incurred until delivery of the contracted Goods to the Purchaser. However, sales tax (not surcharge in lieu of sales tax) in respect of the transaction between the Purchaser and the Vendor shall be payable extra by the Purchaser if so stipulated in the Notification of Award. If there is any reduction in duties due to any reason whatsoever, after Notification of Award, the same shall be passed on to the Purchaser.

**36.2 The Vendor must also note that the octroi exemption certificate, if any, applicable to the Central Government purchases, may be issued by the Purchaser on receipt of the request from the Vendor. The Purchaser will, however, not be responsible if the octroi exemption certificate issued by it is not honoured by the concerned local/municipal authorities. In that case, the Vendor shall have to bear octroi duties, demurrage charges etc.**

### **37. Insurance**

37.1 The Goods supplied under the Contract shall be fully insured by the Vendor against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery.

37.2 The insurance shall be obtained by the Vendor, naming the Purchaser as the beneficiary, in an Amount equal to 110% of ex-works value of goods upto the installation at site on "all risks" basis, including War Risks and Strike clauses.

### **38. "No Claim" Certificate**

38.1 The Vendor shall not be entitled to make any claim whatsoever against the Purchaser under or by virtue of or arising out of this contract, nor shall the Purchaser entertain or consider any such claim, if made by the Vendor after he shall have signed a "No claim" certificate in favour of the Purchaser in such forms as shall be required by the Purchaser after the works are finally accepted.

**39. Continuing Support**

- 39.1 The Vendor shall provide adequate and appropriate support and participation, on a continuing basis, in tuning all vendor supplied software to meet the requirements of the applications.

**40. Satisfactory Complimentary Performance**

- 40.1 The Vendor shall, notwithstanding anything stated in **Clauses 6, 7 and 12 of Section III**, guarantee satisfactory performance of all hardware and software to the specifications in the contract and further undertake to reimburse the Purchaser or any agency nominated by the Purchaser, all payments made in pursuance of this contract and such other cost as may be decided by mutual consent or by arbitrator as envisaged in **Clause 25** , if the software features do not perform to committed standards thus materially affecting performance of the applications.

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18	Details of Costs for Hardware, Software & associated Peripherals etc. ( <b>Annexe 4.2.5</b> )	25
19	Details of Costs for Accessories ( <b>Annexe 4.2.6</b> )	27
20	Details of Costs for Technical Services ( <b>Annexe 4.2.7</b> )	28
21	Details of Other Costs ( <b>Annexe 4.2.8</b> )	29
22	Details of Costs for Resident Engineers ( <b>Annexe 4.2.9</b> )	30
23	Details of Costs for Post Warranty Annual Maintenance ( <b>Annexe 4.2.10</b> )	31
24	Details of Costs for Optional Items ( <b>Annexe 4.2.11</b> )	33

**Annexe 4.1.1**  
(Please see Clause 7 of Instructions to Bidders)

**A. TECHNICAL BID**

**BID PARTICULARS FOR Bid No. \_\_\_\_\_**

- 1. Name of the Bidder \_\_\_\_\_
- 2. Address of the Bidder \_\_\_\_\_
- 3. Name of the Manufacturer/Developer of the Product(s) offered \_\_\_\_\_
- 4. Address of the Manufacturer/Developer of the Product(s) offered \_\_\_\_\_
- 5. Place of Manufacture/Development of the Product(s) offered \_\_\_\_\_
- 6. Service facilities available for maintenance \_\_\_\_\_
- 7. Availability of spare parts (for hardware components) \_\_\_\_\_
- 8. Bidder's proposal number and date \_\_\_\_\_
- 9. Name & address of the officer to whom all references shall be made regarding this tender \_\_\_\_\_  
Tel. No. \_\_\_\_\_ Cell No. \_\_\_\_\_  
Fax No. \_\_\_\_\_

**Witness :**

**Bidder :**

Signature -----  
 Name -----  
 Address -----  
 Date -----

Signature -----  
 Name -----  
 Designation -----  
 Company -----  
 Date -----

**Company Seal**

**Annexe 4.1.2**  
(Please see Clause 7 of  
Instructions to Bidders)

### Technical Bid Letter

To

**The Director General,  
Unique Identification Authority of India (UIDAI),  
Tower 2, Third Floor,  
Jeewan Bharti Building,  
Connaught Place,  
New Delhi 110001.**

Ref : Bid No. \_\_\_\_\_

Sir,

We declare:

- i) that we are manufacturers/developers/authorized agents/ distributors of -----  
-----
- ii) that we/our principals are equipped with adequate machinery for production quality control and testing of offered products manufactured/developed and used by us and that our development establishment is open for inspection by the representatives of the **Director General, UIDAI.**

2. We hereby offer to supply the Goods/Services at the prices and rates mentioned in the Commercial Bid at Annexe 4.2.3 to 4.2.12.

#### 3. PERIOD OF DELIVERY

We do hereby undertake, that, in the event of acceptance of our bid, the supply of Goods/Services shall be made as stipulated in the schedule to the Bid document as given in **Annexe 4.1.6** and that we shall perform all the incidental services.

#### 4. TERMS OF DELIVERY

The prices quoted are inclusive of all charges inclusive of installation and commissioning charges in the UIDAI at the locations as mentioned in **Appendix E.**

5. We enclose herewith the complete Technical Bid as required by you. This includes:  
(i) **Section IV** comprising of:

1	Bid Particulars ( <b>Annexe 4.1.1</b> )
2	Technical Bid Letter ( <b>Annexe 4.1.2</b> )
3	Technical Details of Goods/ Services offered ( <b>Annexe 4.1.3</b> )
4	Statement of Deviation(s) from Schedule of Requirements ( <b>Annexe 4.1.4</b> )
5	Statement of Deviation(s) from Bid Terms and Conditions ( <b>Annexe 4.1.5</b> )
6	Timelines ( <b>Annexe 4.1.6</b> )
7	Warranty ( <b>Annexe 4.1.7</b> )
8	Manufacturer's Authorization Form ( <b>Annexe 4.1.8</b> )
9	Maintenance Infra-Structure Facilities ( <b>Annexe 4.1.9</b> )
10	Response Sheet for Goods Offered ( <b>Annexe 4.1. 10</b> )
11.	Details of Bill of Material, Solution Architecture, Methodology and Implementation Plan for Backup Solution ( <b>Annexe 4.1.11</b> )
12.	Details of Bill of Material, Solution Architecture, Methodology and Implementation Plan for Replication Solution ( <b>Annexe 4.1.12</b> )
13.	Details of Bill of Material, Solution Architecture, Methodology and Implementation Plan for Anti Virus Solution ( <b>Annexe 4.1.13</b> )
11	Statement of Undertaking from OEM ( <b>Appendix E</b> )
12	Technical Literature of the Goods Offered

(ii) **Section VII** comprising of Technical Specifications and Response Sheets for various items:

1	Blade Servers ( <b>Annexe 7.1</b> )
2	Blade Chassis ( <b>Annexe 7.2</b> )
3	Rack Servers-1 ( <b>Annexe 7.3</b> )
4	Rack Servers-2 ( <b>Annexe 7.4</b> )
5	Rack Servers-3 ( <b>Annexe 7.5</b> )
6	Event Correlation Server ( <b>Annexe 7.6</b> )
7	Radius Server ( <b>Annexe 7.7</b> )
8	Terminal Server ( <b>Annexe 7.8</b> )
9	Load Balancer ( <b>Annexe 7.9</b> )
10	Desktops ( <b>Annexe 7.10</b> )
11	SAN for DMZ (raw images) with SAN Fabric Management Software ( <b>Annexe 7.11</b> )
12	SAN (Storage for DFS (raw images)) with SAN Fabric Management Software ( <b>Annexe 7.12</b> )
13	SAN (Storage for Operational Data) with SAN Fabric Management Software ( <b>Annexe 7.13</b> )
14	SAN Switches (for host to san connectivity - for all servers) ( <b>Annexe 7.14</b> )
15	DMZ - SAN Switches (4/8 Gbps 16 ports) ( <b>Annexe 7.15</b> )
16	DC Core SAN Switch (4/8 Gbps 64 ports) ( <b>Annexe 7.16</b> )
17	NAS for Storing web, portal content ( <b>Annexe 7.17</b> )
18	Tape Library ( <b>Annexe 7.18</b> )
19	Router ( <b>Annexe 7.19</b> )
20	Link Load Balancer ( <b>Annexe 7.20</b> )
21	DC-Core LAN ( <b>Annexe 7.21</b> )
22	DC-Management- LAN ( <b>Annexe 7.22</b> )
23	DC-Backup – LAN ( <b>Annexe 7.23</b> )
24	L3 Switches Access ( <b>Annexe 7.24</b> )
25	ABIS LAN ( <b>Annexe 7.25</b> )
26	Firewall with content filtering 3 pairs each of different makes for DC and DR out of which one pair non CISCO for DC ( <b>Annexe 7.26</b> )
27	HIDS ( <b>Annexe 7.27</b> )
28	NIDS ( <b>Annexe 7.28</b> )
29	Perimeter Security Device ( <b>Annexe 7.29</b> )
30	HSM ( <b>Annexe 7.30</b> )
31	Anti Virus Server ( <b>Annexe 7.31</b> )
32	Anti Virus Software ( <b>Annexe 7.32</b> )
33	Network Operation Console ( <b>Annexe 7.10 and Annexe 7.33</b> )

6. We agree to abide by our offer for a period of **180 days** from the date fixed for opening of the tenders and that we shall remain bound by a communication of acceptance within that time.
7. We have carefully read and understood the terms and conditions of the tender and the conditions of the contract applicable to the tender and we do hereby undertake to supply as per these terms and conditions. The deviations from the Schedule of Requirements are only those mentioned in **Annexe 4.1.4**. The deviations from the above terms and conditions are only those mentioned in **Annexe 4.1.5**.
8. Certified that the Bidder is:
- a) The Constituted attorney of the company and the person signing the Bids is the constituted attorney of the Company.  
OR
- b) The Principal Officer or his duly Authorized Representative of the company, and he has the authority to refer to arbitration disputes concerning the business of the Company by virtue of the general power of attorney



*(NOTE: Delete whatever is not applicable. All corrections/ deletions should invariably be duly attested by the person authorized to sign the tender document.)*

- 9. Bid Security (Earnest Money), in original, for an amount equal to **Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only)** is enclosed in the Cover containing **Pre-qualifying Bid** in the form specified in **Clause 12 of Section II.**
- 10. We do hereby undertake, that, until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and placement of letter of intent awarding the contract, shall constitute a binding contract between us.

Dated this    day of    2010

**Signature of Bidder**

**Name** :  
**Full Address** :  
**Telephone No.** :  
**Fax No.** :

**Details of enclosures :**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- .
- .
- .

**Annexe 4.1.3**

(Please see Clause 7 of Section II and Section V -Schedule of Requirements)

**TECHNICAL DETAILS OF GOODS/SERVICES OFFERED**

S. No.	No. Brief Description of Goods	Quantity (nos.)	Technical Specifications @	Remarks*
<b>A.</b>	<b>Blade Servers</b>			
1	Blade Servers			
2	Blade Chassis			
<b>B.</b>	<b>Rack Servers</b>			
3	Rack Servers-1			
4	Rack Servers-2			
5	Rack Servers-3			
<b>C.</b>	<b>Other Servers</b>			
6	Event Correlation Server			
7	Radius Server			
8	Terminal Server			
9	Load Balancer			
<b>D.</b>	<b>Desktops</b>			
10	Desktops			
<b>E.</b>	<b>Storage Area Network (SAN) System</b>			
11	SAN for DMZ (raw images) with SAN Fabric Management Software			
12	SAN (Storage for DFS (raw images)) with SAN Fabric Management Software			
13	SAN (Storage for Operational Data) with SAN Fabric Management Software			
<b>F.</b>	<b>SAN Switches</b>			
14	SAN Switches (for host to san connectivity - for all servers)			
15	DMZ - SAN Switches (4/8 Gbps 16 ports)			
16	DC Core SAN Switch (4/8 Gbps 64 ports)			
<b>G.</b>	<b>Network Attached Storage (NAS)</b>			
17	NAS for Storing web, portal content			
<b>H.</b>	<b>Tape Backup System</b>			
18	(a) Tape Library			
	(b) LTO 5 Media (3 TB Raw)			
<b>I.</b>	<b>Networking Equipment</b>			
<b>(a)</b>	<b>Routers</b>			
19	Router			
20	Link Load Balancer			
<b>(b)</b>	<b>L3 Switches</b>			
21	DC-Core LAN			
22	DC-Management- LAN			
23	DC-Backup - LAN			
24	L3 Switches Access			
25	ABIS LAN			
<b>J.</b>	<b>Security Components</b>			
<b>(a)</b>	<b>Firewall</b>			
26	Firewall with content filtering 3 pairs each of different makes for DC and DR out of which one pair non CISCO for DC.			
<b>( b)</b>	<b>Security Device</b>			
27	HIDS			
28	NIDS			
29	Perimeter Security Device			
30	HSM			
<b>K.</b>	<b>Anti Virus Solution</b>			
31	Anti Virus Server			
<b>32</b>	Anti Virus Software			
	<b>(a) Antivirus Scan Engine</b>			
	<b>(b) Client Licenses</b>			
<b>L.</b>	<b>Systems Software</b>			
33	Linux Operating System Enterprise			

S. No.	No. Brief Description of Goods	Quantity (nos.)	Technical Specifications @	Remarks*
	Edition			
34	Microsoft Windows Server 2008 Enterprise Edition			
35	Database Software MySql on Linux (64 bit with partitioning/HA support)			
<b>M.</b>	<b>Backup and Replication Solution</b>			
36	Backup Solution			
37	Replication Solution			
<b>N.</b>	<b>Network Operation Console (NOC)</b>			
38	LED Display			
39	Desktops			
40	Graphic Controller Cards			
<b>O.</b>	<b>Accessories</b>			
41	Racks for Blade Servers, Storage, Networking Equipment			
42	Intra-Rack Cabling and Other Accessories			

**Signature of witness**  
**Date**  
**Place**

**Signature of the Bidder**  
**Date**  
**Place**

@ See Section V - Schedule of Requirements and Section VII – Technical Specifications and Response Sheets

\* If the specification of any offered item is different from the required, as given in Section V - Schedule of Requirements, the details of the same may be indicated in this column also.

**Annexe 4.1.4**  
(Please see Clause 17 of Instructions to Bidders)

**STATEMENT OF DEVIATIONS FROM SCHEDULE OF REQUIREMENTS**

Dear Sirs,

Following are the Technical deviations and variations from the Schedule of Requirements. These deviations and variations are exhaustive. Except these deviations and variations, the entire work shall be performed as per your specifications and documents.

Sl. No.	Section No.	Clause No.	Page No.	Statement of deviations and variations.

Signature of witness  
Date  
Place

Signature of the Bidder  
Date  
Place

**Annexe 4.1.5**  
(Please see Clause 17 of Instructions to Bidders)

**STATEMENT OF DEVIATIONS FROM TENDER TERMS AND CONDITIONS**

Dear Sirs,

Following are the deviations from the Terms and Conditions of the Bid Document. These deviations and variations are exhaustive. Except these deviations and variations, all other Terms and Conditions of the Bid Document are acceptable to us.

Sl. No.	Section No.	Clause No.	Page No.	Statement of deviations and variations.

Signature of witness  
Date  
Place

Signature of the Bidder  
Date  
Place

**Annexe 4.1.6**  
(Please see Clause 22 of the  
General Conditions of Contract)

**TIMELINES**

S. NO.	Description of Goods/Services	Quantity (nos.)	Date of Delivery from the Date of Issue of Purchase Order	Date of Installation from the Date of Issue of Purchase Order	Date of Commissioning from the Date of Issue of Purchase Order
<b>A.</b>	<b>Blade Servers</b>				
1	Blade Servers				
2	Blade Chassis				
<b>B.</b>	<b>Rack Servers</b>				
3	Rack Servers-1				
4	Rack Servers-2				
5	Rack Servers-3				
<b>C.</b>	<b>Other Servers</b>				
6	Event Correlation Server				
7	Radius Server				
8	Terminal Server				
9	Load Balancer				
<b>D.</b>	<b>Desktops</b>				
10	Desktops				
<b>E.</b>	<b>Storage Area Network (SAN) System</b>				
11	SAN for DMZ (raw images) with SAN Fabric Management Software				
12	Enterprise SAN (Storage for DFS (raw images)) with SAN Fabric Management Software				
13	SAN – ODS (Storage for Operational Data) with SAN Fabric Management Software				
<b>F.</b>	<b>SAN Switches</b>				
14	BSP SAN Switches (for host to san connectivity - for all servers)				
15	DMZ - SAN Switches (4/8 Gbps 24 ports)				
16	DC Core SAN Switch (4/8 Gbps 150 ports)				
<b>G.</b>	<b>Network Attached Storage (NAS)</b>				
17	NAS for Storing web, portal content				
<b>H.</b>	<b>Tape Backup System</b>				
18	(c) Tape Library				
	(d) LTO 5 Media (3 TB Raw)				
<b>I.</b>	<b>Networking Equipment</b>				
<b>(a)</b>	<b>Routers</b>				
19	Internet Router				
20	Link Load Balancer				
<b>(b)</b>	<b>L3 Switches</b>				
21	DC-Core LAN				

S. NO.	Description of Goods/Services	Quantity (nos.)	Date of Delivery from the Date of Issue of Purchase Order	Date of Installation from the Date of Issue of Purchase Order	Date of Commissioning from the Date of Issue of Purchase Order
22	DC-Core Management Security - LAN				
23	DC-Core Backup - LAN				
24	L3 Switches Access				
25	ABIS LAN				
<b>J.</b>	<b>Security Components</b>				
<b>(a)</b>	<b>Firewall</b>				
26	Firewall with content filtering 3 pairs each of different makes for DC and DR out of which one pair non CISCO for DC.				
<b>(b)</b>	<b>Security Device</b>				
27	HIDS				
28	NIDS				
29	Perimeter Security Device				
30	Hardware Security Module (HSM)				
<b>K.</b>	<b>Anti Virus Solution</b>				
31	Anti Virus Server				
32	Anti Virus Software				
	<b>(c) Antivirus Scan Engine</b>				
	<b>(d) Client Licenses</b>				
<b>L.</b>	<b>Systems Software</b>				
33	Linux Operating System Enterprise Edition				
34	Microsoft Windows Server 2008 Enterprise Edition				
35	Database Software MySql on Linux (64 bit with partitioning/HA support)				
<b>M.</b>	<b>Backup and Replication Solution</b>				
36	Backup Solution				
37	Replication Solution				
<b>N.</b>	<b>Network Operation Console (NOC)</b>				
38	LED Display				
39	Desktops				
40	Graphic Controller Cards				
<b>O.</b>	<b>Accessories</b>				
41	Racks for Blade Servers, Storage, Networking Equipment				

**Signature of witness**  
**Date**  
**Place**

**Signature of the Bidder**  
**Date**  
**Place**

**Annexe 4.1.7**

(Please see Clause 18 of the General Conditions of Contract)

**WARRANTY**

We warrant that everything to be supplied by us hereunder shall be brand new, free from all encumbrances, defects and faults in material, workmanship & manufacture and shall be of the highest grade and quality and consisted with the established and generally accepted standards for materials of the type ordered shall be in full conformity with the specifications, drawings or samples, if any, and shall operate properly. We shall be fully responsible for its efficient and effective operation. This warranty shall survive inspection of and payment for, and acceptance of the goods, but shall expire after **36 (Thirty six) months** in respect of Servers and Storage Systems and **12 (Twelve) months** in respect of all other Goods, after their successful installation and acceptance by the Purchaser.

The obligations under the Warranty expressed above shall include all costs relating to labour, spares, maintenance (preventive and unscheduled), and transport charges from site to manufacturers works and back and for repair/adjustment or replacement at site of any part of the equipment which under normal care and proper use and maintenance proves defective in design, material or workmanship or fails to operate effectively and efficiently or conform to the specifications and for which notice is promptly given by the purchaser to the supplier.

**Signature of witness****Date****Place****Signature of the Bidder****Date****Place**

**Annexe 4.1.8**  
(Please See Clause 11 of  
Instructions to Bidders)

## MANUFACTURER'S AUTHORIZATION FORM

To,

**The Director General,  
Unique Identification Authority of India (UIDAI),  
Tower 2, Third Floor,  
Jeewan Bharti Building,  
Connaught Place,  
New Delhi 110001.**

Dear Sir,

Sub : Bid No. \_\_\_\_\_

We \_\_\_\_\_ who are established and reputable manufacturers of \_\_\_\_\_ having factories at \_\_\_\_\_ do hereby authorize M/s. \_\_\_\_\_ (Name and address of Agent) to bid, negotiate and conclude the contract with you against Tender No. \_\_\_\_\_ dated \_\_\_\_\_ for the above goods manufactured by us.

2. We hereby extend our full guarantee and warranty for the goods offered for supply against this invitation for bid by the above firm.

Yours faithfully,

(Name)  
for and on behalf of M/s.  
(Name of manufacturers)

**Note: This letter of authority should be on the letterhead of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer.**



**ANNEXE 4.1.9**

(Please see Clause 7 of  
Instructions to Bidders)

**MAINTENANCE INFRASTRUCTURE FACILITIES**

<b>Details of the Service Centre (s)</b>					
<b>Name of City where located</b>	<b>Address</b>	<b>Contact Person</b>	<b>Telephone Number (s)</b>	<b>Fax Number (s)</b>	<b>Remarks</b>

**Signature of the Witness**  
Date  
Place

**Signature of the Bidder**  
Date  
Place

**Annexe 4.1.10**

(Please see Clause 7 of Instructions to Bidders)

**RESPONSE SHEET FOR GOODS OFFERED**

<b>S. No.</b>	<b>No. Brief Description of Goods</b>	<b>Quantity (nos.)</b>	<b>Make and Model Offered by the Bidder</b>	<b>Remarks, if any</b>
<b>A.</b>	<b>Blade Servers</b>			
1	Blade Servers			
2	Blade Chassis			
<b>B.</b>	<b>Rack Servers</b>			
3	Rack Servers-1			
4	Rack Servers-2			
5	Rack Servers-3			
<b>C.</b>	<b>Other Servers</b>			
6	Event Correlation Server			
7	Radius Server			
8	Terminal Server			
9	Load Balancer			
<b>D.</b>	<b>Desktops</b>			
10	Desktops			
<b>E.</b>	<b>Storage Area Network (SAN) System</b>			
11	SAN for DMZ (raw images) with SAN Fabric Management Software			
12	Enterprise SAN (Storage for DFS (raw images)) with SAN Fabric Management Software			
13	SAN – ODS (Storage for Operational Data) with SAN Fabric Management Software			
<b>F.</b>	<b>SAN Switches</b>			
14	BSP SAN Switches (for host to san connectivity - for all servers)			
15	DMZ - SAN Switches (4/8 Gbps 24 ports)			
16	DC Core SAN Switch (4/8 Gbps 150 ports)			
<b>G.</b>	<b>Network Attached Storage (NAS)</b>			
17	NAS for Storing web, portal content			
<b>H.</b>	<b>Tape Backup System</b>			
18	(e) Tape Library			
	(f) LTO 5 Media (3 TB Raw)			
<b>I.</b>	<b>Networking Equipment</b>			
<b>(a)</b>	<b>Routers</b>			
19	Internet Router			
20	Link Load Balancer			
<b>(b)</b>	<b>L3 Switches</b>			
21	DC-Core LAN			
22	DC-Core Management Security - LAN			
23	DC-Core Backup - LAN			
24	L3 Switches Access			
25	ABIS LAN			
<b>J.</b>	<b>Security Components</b>			
<b>(a)</b>	<b>Firewall</b>			
26	Firewall with content filtering 3 pairs each of different makes for DC and DR out of which one pair			

S. No.	No. Brief Description of Goods	Quantity (nos.)	Make and Model Offered by the Bidder	Remarks, if any
	non CISCO for DC.			
( b)	<b>Security Device</b>			
27	HIDS			
28	NIDS			
29	Perimeter Security Device			
30	Hardware Security Module (HSM)			
<b>K.</b>	<b>Anti Virus Solution</b>			
31	Anti Virus Server			
<b>32</b>	Anti Virus Software			
	<b>(e) Antivirus Scan Engine</b>			
	<b>(f) Client Licenses</b>			
<b>L.</b>	<b>Systems Software</b>			
33	Linux Operating System Enterprise Edition			
34	Microsoft Windows Server 2008 Enterprise Edition			
35	Database Software MySql on Linux (64 bit with partitioning/HA support)			
<b>M.</b>	<b>Backup and Replication Solution</b>			
36	Backup Solution			
37	Replication Solution			
<b>N.</b>	<b>Network Operation Console (NOC)</b>			
38	LED Display			
39	Desktops			
40	Graphic Controller Cards			
<b>O.</b>	<b>Accessories</b>			
41	Racks for Blade Servers, Storage, Networking Equipment			
42	Intra-Rack Cabling and Other Accessories			

**Witness :**

Signature -----

Name -----

Address -----

Date -----

**Bidder :**

Signature -----

Name -----

Designation -----

Company -----

Date -----

**Company Seal**

**Annexe 4.1.11**

(Please see Clause 7 of Instructions to Bidders)

**RESPONSE SHEET FOR BACKUP SOLUTION**

1. **Details of Bill of Material** (Please give details of Hardware and Software offered)
2. **Solution Architecture** (Please give details alongwith solution diagram)
3. **Methodology** (Please give details)
4. **Implementation Plan** (Please give details)
5. **Compliance to Schedule of Requirements** (Please refer to Clause 10.4 of Section V of the Bid Document)

S. No.	Bid Requirement	Response of the Bidder	Whether complied
1	The backup solutions should enable daily incremental and weekly full backups		
2	<b>The backup solution should cover the following components:</b>		
	(a) File Systems of all Servers		
	(b) Backup of Databases		
	(i) MySQL		
	(ii) Oracle RAC		
	(iii) Error and Audit logs on all systems		
3	NAS - Upto 20 TB of data		
4	FTP Server - Upto 60 TB of data		
5	Configuration of all network devices		
6	<b>The backup solution shall support the following:</b>		
	(i) Fully integrated with the Tape Library		
	(ii) Support hostless backup and restore		
	(iii) Should be compatible with industry leading backup solutions		
	(iv) Based on open standards, no vendor lockin		
	(v) Support integration with leading Enterprise Management Solutions		
	(vi) Should be fully automated, schedule based		
7	<b>Backup methods shall include:</b>		
	(i) Full online backup of databases and filesystems		
	(ii) Partial backup of databases and filesystems		
	(iii) Transaction logging backup		
	(iv) Table level backup		
8	<b>Restore methods shall include:</b>		
	(i) Full recovery of databases and filesystems		
	(ii) Partial backup of databases and filesystems		
	(iii) Point-in-time restore of database and filesystems		
	(iv) Restore databases based on transaction log		
	(v) Restore databases at table level		
9	The backup and recovery strategies should work across different storage vendors.		
10	The backup and recovery solution should be scalable to accomodate higher capacities (upto 1000s of servers, petabytes or storage) than those specified.		
11	The solution shall provide secure backup and restore		

S. No.	Bid Requirement	Response of the Bidder	Whether complied
	methods		
12	The Backup and Restore functional shall provide unified GUI interface and command line interface for management and administration.		
13	The indicative backup server, tape library specifications are provided.		
14	The backup window is 4 hours for daily backup, 8 hours for weekly backup. In addition critical database transaction logs have to be backed up on a hourly basis.		
15	The Vendor shall provide a complete solution including all software, hardware as part of the solution.		

**Witness :**

Signature -----

Name -----

Address -----

Date -----

**Bidder :**

Signature -----

Name -----

Designation -----

Company -----

Date -----

**Company Seal**

**Annexe 4.1.12**

(Please see Clause 7 of Instructions to Bidders)

**RESPONSE SHEET FOR REPLICATION SOLUTION**

1. **Details of Bill of Material** (Please give details of Hardware and Software offered)
2. **Solution Architecture** (Please give details alongwith solution diagram)
3. **Methodology** (Please give details)
4. **Implementation Plan** (Please give details)

S. No.	Bid Requirement	Response of the Bidder	Whether complied
1	<b>The replication solution shall provide asynchronous replication of data from Bangalore DC to Delhi/NCR DC via the network and shall cover the following aspects:</b>		
	(i) MySQL		
	(ii) Oracle RAC		
	(iii) Critical data stored in the file systems - including configuration, management data		
2	<b>The replication solution</b>		
	(i) Support integration with leading Enterprise Management Solutions		
	(ii) Should be fully automated		
	(iii) Shall provide unified GUI interface and command line interface for management and administration.		
	(iv) Shall provide replication of file system data.		
	(v) Should work across different storage vendors.		
	(vi) Should be based on open standards, no vendor lockin		
	(vii) Should support synchronous and asynchronous modes		
	(viii) Should support multi-site replication		
	(ix) The proposed bandwidth between DC and DR site will be 100 Mbps burstable to 300 Mbps.		
	(x) The Vendor shall provide a complete solution including all software, hardware as part of the solution.		

**Witness :**

Signature -----

Name -----

Address -----

Date -----

**Bidder :**

Signature -----

Name -----

Designation -----

Company -----

Date -----

**Company Seal**

**Annexe 4.1.13**

(Please see Clause 7 of Instructions to Bidders)

**RESPONSE SHEET FOR ANTI VIRUS SOLUTION**

1. **Details of Bill of Material** (Please give details)
2. **Solution Architecture** (Please give details alongwith solution Diagram)
3. **Methodology** (Please give details)
4. **Implementation Plan** (Please give details)
5. **Compliance to Schedule of Requirements** (Please give a brief note on compliance to **Clause 9 of Section V** of the Bid Document)

**Witness :**

Signature -----

Name -----

Address -----

Date -----

**Bidder :**

Signature -----

Name -----

Designation -----

Company -----

Date -----

**Company Seal**

**Annexe 4.2.1**  
(Please see Clause 7 of Instructions to Bidders)

**B. COMMERCIAL BID**

**BID PARTICULARS FOR Bid No. \_\_\_\_\_/10-UIDAI**

- 1. Name of the Bidder \_\_\_\_\_
- 2. Address of the Bidder \_\_\_\_\_
- 3. Name of the Manufacturer/Developer of the Product(s) offered \_\_\_\_\_
- 4. Address of the Manufacturer/Developer of the Product(s) offered \_\_\_\_\_
- 5. Place of Manufacture/Development of the Product(s) offered \_\_\_\_\_
- 6. Service facilities available for maintenance \_\_\_\_\_
- 7. Availability of spare parts (for hardware components) \_\_\_\_\_
- 8. Bidder's proposal number and date \_\_\_\_\_
- 9. Name & address of the officer to whom all references shall be made regarding this tender \_\_\_\_\_  
Tel. No. \_\_\_\_\_ Cell No. \_\_\_\_\_  
Fax No. \_\_\_\_\_

**Witness :**

Signature -----  
 Name -----  
 Address -----  
 Date -----

**Bidder :**

Signature -----  
 Name -----  
 Designation -----  
 Company -----  
 Date -----

**Company Seal**



**Annexe 4.2.2**  
(Please see Clause 7 of  
Instructions to Bidders)

## Commercial Bid Letter

To

The Director General,  
Unique Identification Authority of India (UIDAI),  
Tower 2, Third Floor,  
Jeewan Bharti Building, Connaught Circus,  
New Delhi 110001.

Ref : \_\_\_\_\_

Sir,

We declare:

- i) that we are manufacturers/developers/authorized agents/ distributors of -----  
-----
- ii) that we/our principals are equipped with adequate machinery for production quality control and testing of offered products manufactured/developed and used by us and that our development establishment is open for inspection by the representatives of **the Director General, Unique Identification Authority of India (UIDAI)**.

2. We hereby offer to supply the Goods/Services at the prices and rates mentioned in the Commercial Bid at **Annexe 4.2.4 to 4.2.8**.

### 3. PERIOD OF DELIVERY

We do hereby undertake that, in the event of acceptance of our bid, the supply of Goods/Services shall be made as stipulated in the schedule to the Bid document as given in **Annexe 4.1.6 - Timelines** and that we shall perform all the incidental services.

### 4. TERMS OF DELIVERY

The prices quoted are inclusive of all costs inclusive of installation and commissioning charges in the UIDAI at the locations as mentioned in **Appendix E**.

### 5. COMMERCIAL BID

We enclose herewith the complete Commercial Bid as required by you. This includes:

1	Bid Particulars ( <b>Annexe 4.2.1</b> )
2	Commercial Bid Letter ( <b>Annexe 4.2.2</b> )
3	Statement of Commercial Deviation(s) ( <b>Annexe 4.2.3</b> )
4	Summary of Cost of Goods and Services offered ( <b>Annexe 4.2.4</b> )
5	Details of Costs for Goods offered ( <b>Annexe 4.2.5</b> )
6	Details of Costs for Accessories ( <b>Annexe 4.2.6</b> )
7	Details of Costs for Technical Services ( <b>Annexe 4.2.7</b> )
8	Details of Other Costs ( <b>Annexe 4.2.8</b> )
9	Details of Costs for Resident Engineers ( <b>Annexe 4.2.9</b> )
10	Details of Costs for Post Warranty Annual Maintenance ( <b>Annexe 4.2.10</b> )
11	Details of Costs for Optional Items ( <b>Annexe 4.2.11</b> )

- 6. We agree to abide by our offer for a period of **180 days** from the date fixed for opening of the tenders and that we shall remain bound by a communication of acceptance within that time.
- 7. We have carefully read and understood the terms and conditions of the tender and the conditions of the contract applicable to the tender and we do hereby undertake to supply as per these terms and conditions. The Commercial Deviations are only those mentioned in **Annexe 4.2.3.**
- 8. Certified that the Bidder is:
  - a) The Constituted attorney of the company and the person signing the Bids is the constituted attorney of the Company.  
OR
  - b) The Principal Officer or his duly Authorized Representative of the company, and he has the authority to refer to arbitration disputes concerning the business of the Company by virtue of the general power of attorney

*(NOTE : Delete whatever is not applicable. All corrections/ deletions should invariably be duly attested by the person authorised to sign the tender document.)*
- 9. Bid Security (Earnest Money) for an amount equal to **Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only)** is enclosed in the cover containing **Pre-qualifying Bid** in the form specified in **Clause 12 of Section II.**
- 10. We do hereby undertake, that, until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and placement of letter of intent awarding the contract, shall constitute a binding contract between us.

Dated this    day of    2006

**Signature of Bidder**

**Name**                                :  
**Full Address**                        :  
**Telephone No.**                       :  
**Fax No.**                                :

**Details of enclosures :**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- .
- .
- .
- .

**Annexe 4.2.3**  
(Please see Clause 7 of  
Instructions to Bidders)

**STATEMENT OF COMMERCIAL DEVIATION(S)**

Dear Sirs,

Following are the Commercial deviation(s) and variation(s) from the exceptions to the specifications and documents for the Tender. These deviation(s) and variation(s) are exhaustive. Except these deviation(s) and variation(s), the entire work shall be performed as per your specifications and documents.

Sl. No.	Section No.	Clause No.	Page No.	Statement of deviations and variations.

**Signature of witness**  
Date  
Place

**Signature of the Bidder**  
Date  
Place

**Annexe 4.2.4**

Please See Clause 8 & 9 of  
"Instructions to Bidders"

**SUMMARY OF THE COST OF GOODS / SERVICES OFFERED**

S.No.	Item Description	Price (in Rupees)
<b>1</b>	<b>One Time Non-Recurring Costs</b>	
a.	Costs for Goods Offered <b>(Total from Annexe 4.2.5)</b>	
b.	Costs for Accessories <b>(Total from Annexe 4.2.6)</b>	
c.	Costs for Technical Services <b>(Total from Annexe 4.2.7)</b>	
d.	Other Costs <b>(Total from Annexe 4.2.8)</b>	
e.	Costs for Optional Items <b>(Total from Annexe 4.2.11)</b>	
f.	Estimated cost of freight / insurance transportation etc.	
	<b>A. Total One-Time Non-Recurring Costs (Total of Items 1(a) to 1(f))</b>	
<b>2.</b>	<b>Recurring Costs</b>	
a.	Costs of Resident Engineers for 12 months <b>(Total from Annexe 4.2.9)</b>	
b.	Post Warranty Annual Maintenance Costs for 2 years <b>(Total from Annexe 4.2.10)</b>	
	<b>B. Total Recurring Costs (Total of Items 2(a) to 2(b))</b>	
<b>3.</b>	<b>Total Costs (A + B)</b>	

Note : The cost break-up of the various items is as shown in the enclosures.

**Signature of witness**

**Date**

**Place**

**Signature of the Bidder**

**Date**

**Place**

**NOTE :** The Bidder shall submit an exact copy of this Annexe with prices blanked off alongwith the Technical Bid.

**Annexe 4.2.5**  
(Please See Clause 8 & 9 of  
"Instructions to Bidders")

**DETAILS OF THE COST FOR DETAILS OF COSTS FOR GOODS OFFERED - ONE TIME NON-RECURRING COSTS**

S.No.	Item Description	No. of Units	Unit Rate  (in Rupees)	Taxes per unit  (in Rupees)	Total Unit Cost [(6)=(4)+(5)]  (in Rupees)	Total Cost including Taxes (8)=(3)x(6)  (in Rupees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>A.</b>	<b>Blade Servers</b>					
1	Blade Servers					
2	Blade Chassis					
<b>B.</b>	<b>Rack Servers</b>					
3	Rack Servers-1					
4	Rack Servers-2					
5	Rack Servers-3					
<b>C.</b>	<b>Other Servers</b>					
6	Event Correlation Server					
7	Radius Server					
8	Terminal Server					
9	Load Balancer					
<b>D.</b>	<b>Desktops</b>					
10	Desktops					
<b>E.</b>	<b>Storage Area Network (SAN) System</b>					
11	SAN for DMZ (raw images) with SAN Fabric Management Software					
12	Enterprise SAN (Storage for DFS (raw images) with SAN Fabric Management Software					
13	SAN – ODS (Storage for Operational Data) with SAN Fabric Management Software					
<b>F.</b>	<b>SAN Switches</b>					
14	BSP SAN Switches (for host to san connectivity - for all servers)					
15	DMZ - SAN Switches (4/8 Gbps 24 ports)					
16	DC Core SAN Switch (4/8 Gbps 150 ports)					
<b>G.</b>	<b>Network Attached Storage (NAS)</b>					
17	NAS for Storing web, portal content					
<b>H.</b>	<b>Tape Backup System</b>					
18	(g) Tape Library					
	(h) LTO 5 Media (3 TB Raw)					
<b>I.</b>	<b>Networking Equipment</b>					
<b>(a)</b>	<b>Routers</b>					
19	Internet Router					
20	Link Load Balancer					
<b>(b)</b>	<b>L3 Switches</b>					
21	DC-Core LAN					

S.No.	Item Description	No. of Units	Unit Rate (in Rupees)	Taxes per unit (in Rupees)	Total Unit Cost [(6)=(4)+(5)] (in Rupees)	Total Cost including Taxes (8)=(3)x(6) (in Rupees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
22	DC-Core Management Security - LAN					
23	DC-Core Backup - LAN					
24	L3 Switches Access					
25	ABIS LAN					
<b>J.</b>	<b>Security Components</b>					
<b>(a)</b>	<b>Firewall</b>					
26	Firewall with content filtering 3 pairs each of different makes for DC and DR out of which one pair non CISCO for DC.					
<b>(b)</b>	<b>Security Device</b>					
27	HIDS					
28	NIDS					
29	Perimeter Security Device					
30	Hardware Security Module (HSM)					
<b>K.</b>	<b>Anti Virus Solution</b>					
31	Anti Virus Server					
32	Anti Virus Software					
	<b>(g) Antivirus Scan Engine</b>					
	<b>(h) Client Licenses</b>					
<b>L.</b>	<b>Systems Software</b>					
33	Linux Operating System Enterprise Edition					
34	Microsoft Windows Server 2008 Enterprise Edition					
35	Database Software MySQL on Linux (64 bit with partitioning/HA support)					
<b>M.</b>	<b>Backup and Replication Solution</b>					
36	Backup Solution					
37	Replication Solution					
<b>N.</b>	<b>Network Operation Console (NOC)</b>					
38	LED Display					
39	Desktops					
40	Graphic Controller Cards					
<b>O.</b>	<b>Accessories</b>					
41	Racks for Blade Servers, Storage, Networking Equipment					
42	Intra-Rack Cabling and Other Accessories					
<b>Total Costs</b>						

**IMPORTANT NOTE: The Bidder should note that all items mentioned above should be quoted failing which the Bid is liable to be rejected.**

**TOTAL AMOUNT IN RUPEES** (in figures)-----  
(in words)-----

**Signature of witness**  
**Date**  
**Place**

**Signature of the Bidder**  
**Date**  
**Place**

**NOTE :** The Bidder shall submit an exact copy of this Annexe with prices blanked off alongwith the Technical Bid.

**Annexe 4.2.6**  
(Please See Clause 8 & 9 of  
"Instructions to Bidders)

**DETAILS OF THE COST OF ACCESSORIES - ONE TIME NON-RECURRING COSTS**

S.No.	Item Description	Qty.	Basic Unit Price (in Rs.)	Customs/ Excise Duty (in Rs.)	Sales Tax/ VAT (in Rs.)	Total Unit Cost (in Rs.)	Total Cost (in Rs.)
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							

**TOTAL AMOUNT IN RUPEES** (in figures)-----

(in words)-----

**Signature of witness**  
Date  
Place

**Signature of the Bidder**  
Date  
Place

**NOTE :** The Bidder shall submit an exact copy of this Annexe with prices blanked off alongwith the Technical Bid.

1. If the above space is not enough for your proposal, please use additional sheet as a part of the Bid.
2. **Costs of Interconnect Power Cables and cords, if any, should be indicated in this Annexe.**

**Annexe 4.2.7**  
(Please See Clause 8 & 9 of  
"Instructions to Bidders)

**DETAILS OF THE TECHNICAL SERVICE COSTS - ONE TIME NON-RECURRING COSTS**

S.No.	Description of Services	Qty.	Basic Unit Price (in Rs.)	Taxes (in Rs.)	Total Unit Cost (in Rs.)	Total Cost (in Rs.)
1.	Installation					
2.	Commissioning					
3.						
4.						
<b>Total Technical Service Costs</b>						

**TOTAL AMOUNT IN RUPEES** (in figures)-----

(in words)-----

**Signature of witness**  
**Date**  
**Place**

**Signature of the Bidder**  
**Date**  
**Place**

\* **Service Tax, Education Cess , Works Contract Tax etc, if applicable, should be shown separately**

**NOTE :** The Bidder shall submit an exact copy of this Annexe with prices blanked off alongwith the Technical Bid.



**Annexe 4.2.8**  
(Please See Clause 8 & 9 of  
"Instructions to Bidders)

**DETAILS OF OTHER COSTS - ONE TIME NON-RECURRING COSTS**

S.No.	Item Description	Qty.	Basic Unit Price (in Rs.)	Customs/ Excise Duty (in Rs.)	Sales Tax/ VAT (in Rs.)	Total Unit Cost (in Rs.)	Total Cost (in Rs.)
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							

**TOTAL AMOUNT IN RUPEES** (in figures)-----

(in words)-----

**Signature of witness**  
Date  
Place

**Signature of the Bidder**  
Date  
Place

**NOTE :** The Bidder shall submit an exact copy of this Annexe with prices blanked off alongwith the Technical Bid.

1. If the above space is not enough for your proposal, please use additional sheet as a part of the Bid.
2. Costs of Interconnect Power Cables and cords, if any, should be indicated **against item 1(e)** relating to the cost of accessories in **Annexe 4.2.4 and in this Annexe 4.2.6**

**Annexe 4.2.9**  
(Please See Clause 8 & 9 of  
"Instructions to Bidders)

**DETAILS OF THE COSTS FOR RESIDENT ENGINEERS - RECURRING COSTS**

S.No.	Description of Services	Qty.	Basic Unit Price per month (in Rs.)	Taxes per unit per month (in Rs.)	Total Unit Cost per month (in Rs.)	Total Cost per month (in Rs.)
1.	Server Engineer					
2.	Engineer for Storage Equipment					
3.	Engineer for Networking Equipment					
4.	Engineer for Security Equipment					
5.	Personnel for Asset Management					
<b>(A) Total Costs of Resident Engineers for one month</b>						
<b>(B) Total Costs of Resident Engineers for 12 months (12 x (A))</b>						

**TOTAL AMOUNT FOR TWELVE MONTHS (B) IN RUPEES** (in figures) -----

(in words) -----

**Signature of witness**  
Date  
Place

**Signature of the Bidder**  
Date  
Place

\* **Service Tax, Education Cess , Works Contract Tax etc, if applicable, should be shown separately**

**NOTE :** The Bidder shall submit an exact copy of this Annexe with prices blanked off alongwith the Technical Bid.

**Annexe 4.2.10**

(Please See Clause 8 & 9 of "Instructions to Bidders")

**DETAILS OF THE POST WARRANTY ANNUAL MAINTENANCE COSTS - RECURRING COSTS**

S.No.	Item Description	No. of Units	Unit Rate per Annum  (in Rupees)	Taxes per unit per annum  (in Rupees)	Total Unit Cost per Annum [(6)=(4)+(5)]  (in Rupees)	Total Cost per annum including Taxes (8)=(3)x(6) (in Rupees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>A.</b>	<b>Blade Servers</b>					
1	Blade Servers					
2	Blade Chassis					
<b>B.</b>	<b>Rack Servers</b>					
3	Rack Servers-1					
4	Rack Servers-2					
5	Rack Servers-3					
<b>C.</b>	<b>Other Servers</b>					
6	Event Correlation Server					
7	Radius Server					
8	Terminal Server					
9	Load Balancer					
<b>D.</b>	<b>Desktops</b>					
10	Desktops					
<b>E.</b>	<b>Storage Area Network (SAN) System</b>					
11	SAN for DMZ (raw images) with SAN Fabric Management Software					
12	Enterprise SAN (Storage for DFS (raw images)) with SAN Fabric Management Software					
13	SAN – ODS (Storage for Operational Data) with SAN Fabric Management Software					
<b>F.</b>	<b>SAN Switches</b>					
14	BSP SAN Switches (for host to san connectivity - for all servers)					
15	DMZ - SAN Switches (4/8 Gbps 24 ports)					
16	DC Core SAN Switch (4/8 Gbps 150 ports)					
<b>G.</b>	<b>Network Attached Storage (NAS)</b>					
17	NAS for Storing web, portal content					
<b>H.</b>	<b>Tape Backup System</b>					
18	(i) Tape Library					
	(j) LTO 5 Media (3 TB Raw)					
<b>I.</b>	<b>Networking Equipment</b>					
<b>(a)</b>	<b>Routers</b>					
19	Internet Router					
20	Link Load Balancer					
<b>(b)</b>	<b>L3 Switches</b>					
21	DC-Core LAN					
22	DC-Core Management Security - LAN					
23	DC-Core Backup - LAN					
24	L3 Switches Access					

S.No.	Item Description	No. of Units	Unit Rate per Annum  (in Rupees)	Taxes per unit per annum  (in Rupees)	Total Unit Cost per Annum [(6)=(4)+(5)]  (in Rupees)	Total Cost per annum including Taxes (8)=(3)x(6) (in Rupees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
25	ABIS LAN					
<b>J.</b>	<b>Security Components</b>					
<b>(a)</b>	<b>Firewall</b>					
26	Firewall with content filtering 3 pairs each of different makes for DC and DR out of which one pair non CISCO for DC.					
<b>(b)</b>	<b>Security Device</b>					
27	HIDS					
28	NIDS					
29	Perimeter Security Device					
30	Hardware Security Module (HSM)					
<b>K.</b>	<b>Anti Virus Solution</b>					
31	Anti Virus Server					
<b>32</b>	<b>Anti Virus Software</b>					
	<b>(i) Antivirus Scan Engine</b>					
	<b>(j) Client Licenses</b>					
<b>L.</b>	<b>Systems Software</b>					
33	Linux Operating System Enterprise Edition					
34	Microsoft Windows Server 2008 Enterprise Edition					
35	Database Software MySQL on Linux (64 bit with partitioning/HA support)					
<b>M.</b>	<b>Backup and Replication Solution</b>					
36	Backup Solution					
37	Replication Solution					
<b>N.</b>	<b>Network Operation Console (NOC)</b>					
38	LED Display					
39	Desktops					
40	Graphic Controller Cards					
<b>O.</b>	<b>Accessories</b>					
41	Racks for Blade Servers, Storage, Networking Equipment					
42	Intra-Rack Cabling and Other Accessories					
<b>Total Post Warranty Annual Maintenance Charges for One Year (X)</b>						
<b>Total Post Warranty Annual Maintenance Charges for Two Years (Y= 2 x X)</b>						

**TOTAL AMOUNT FOR TWO YEARS (Y) (IN RUPEES)** (in figures)-----  
 (in words)-----

- **Service Tax, Education Cess , Works Contract Tax etc, if applicable, should be shown separately**

**NOTE :** The Bidder shall submit an exact copy of this Annexe with prices blanked off alongwith the Technical Bid.

**Signature of witness**  
**Date**  
**Place**

**Signature of the Bidder**  
**Date**  
**Place**

**Annexe 4.2.11**

(Please See Clause 8 & 9 of "Instructions to Bidders")

**DETAILS OF COSTS FOR OPTIONAL ITEMS - ONE TIME NON-RECURRING COSTS**

S.No.	Item Description	Product/ Part No., if any (Please specify)	Quantity	Basic Unit Price (in Rs.)	Customs/ Excise Duty (in Rs.)	Sales Tax/ VAT (in Rs.)	Total Unit Cost (in Rs.)	Total Cost (in Rs.)
1	Additional DDR3, ECC Memory Module 8GB (Qty: one) for offered Blade Servers		1					
2	Additional DDR3, ECC Memory Module 16GB (Qty: one) for offered Blade Servers		1					
3	Additional DDR3, ECC Memory Module 32GB (Qty: one) for offered Blade Servers		1					
4	Additional DDR3, ECC Memory Module 8 GB (Qty: one) for offered Rack Servers		1					
5	Additional DDR3, ECC DIMM Memory Module 16GB (Qty: one) for offered Rack Servers		1					
6	Additional DDR3, ECC DIMM Memory Module 32 GB (Qty: one) for offered Rack Servers		1					
7	Additional Internal Hot Swappable 300 GB SAS Disk, 10000 RPM for offered Blade Servers (Qty:one)		1					
8	Additional 600 GB Hot Swappable FC Disks 15000 RPM for offered SAN-ODS and SAN-DFS including software licenses if any		1000					
9	Additional SSD disks for SAN-ODS along with requisite accessories including software licenses if any		6 TB Usable Capacity					
10	Additional 2 TB Additional 2 TB Hot Swappable SATA Disks 7200 RPM for offered SAN-DFS including software licenses if any		300					
11	Additional 600 GB Hot Swappable FC Disks 10000 RPM for offered NAS RPM for offered NAS along with requisite accessories (for upgrade from 20 TB to 40 TB usable capacity) including software licenses if any		80					
12	Additional Backend port for offered DMZ SAN		8					
13	Additional Frontend port for offered DMZ SAN		8					
14	Additional Backend port for offered DFS SAN		32					
15	Additional Frontend port for offered DFS SAN		64					
16	Additional Backend port for offered SAN ODS		24					
17	Additional Frontend port for offered SAN ODS		24					
<b>Total Cost of Optional Items</b>								

**TOTAL AMOUNT IN RUPEES** (in figures)-----  
 (in words)-----

**Signature of witness**  
**Date**  
**Place**

**Signature of the Bidder**  
**Date**  
**Place**

**NOTE :** The Bidder shall submit an exact copy of this Annexe with prices blanked off alongwith the Technical Bid.

## SECTION V – SCOPE OF WORK

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## 1. Introduction

### 1.1. Background

- 1.1.1. UIDAI has its Data Centre at Bengaluru and plans to set up a Disaster Recovery Centre at Delhi/NCR. The sites would be housed in a professionally managed datacenters in respective cities.
- 1.1.2. The UIDAI application is developed under Linux environment using MySQL.
- 1.1.3. UIDAI has appointed three Biometric Solution Providers.

## 2. Intent

- 2.1 The Unique Identification Authority of India (UIDAI) is inviting Bids for Supply, Installation, Integration and Commissioning, of Servers, Storage, Networking and Security equipment along with associated Software, Peripherals, Accessories and Services for its Data Centre at Bengaluru and Disaster Recovery (DR) Data Centre at Delhi/ NCR. In addition, the UIDAI is also committed to provide Hardware and Software infrastructure to the appointed three Biometric Solution Providers.

## 3. Scope of Work

- 3.1. The scope of work for this Bid includes:
- 3.1.1. Supply of following Servers, Storage, Networking and Security equipment along with associated Software, Peripherals, Accessories.

S.No.	Item Description	Quantity Required for Data Centre at Bengaluru		Quantity Required for Disaster Recovery Data Centre at Delhi/NCR		Annex No. of Section VII for Response
		Biometric Solution	Data Centre	Biometric Solution	DR	
<b>A. Blade Servers</b>						
1	Blade Servers	300	12	300	34	7.1
2	Blade Chassis	30	2	30	4	7.2
<b>B. Rack Servers</b>						
3	Rack Servers-1	Nil	4	Nil	4	7.3
4	Rack Servers-2	Nil	4	Nil	4	7.4
5	Rack Servers-3	6	Nil	6	Nil	7.5
<b>C. Other Servers</b>						
6	Event Correlation Server	Nil	2	Nil	2	7.6
7	Radius Server	Nil	2	Nil	2	7.7
8	Terminal Server	3	3	3	3	7.8
9	Load Balancer	Nil	4	Nil	4	7.9
<b>D. Desktops</b>						
10	Desktops	Nil	10	Nil	10	7.10
<b>E. Storage Area Network (SAN) System</b>						
11	SAN for DMZ (raw images) with SAN Fabric Management Software	Nil	1	Nil	1	7.11
12	Enterprise SAN (Storage for DFS (raw images)) with SAN Fabric Management Software	Nil	1	Nil	1	7.12
13	SAN – ODS (Storage for Operational Data) with SAN	3	1	3	1	7.13



S.No.	Item Description	Quantity Required for Data Centre at Bengaluru		Quantity Required for Disaster Recovery Data Centre at Delhi/NCR		Annex No. of Section VII for Response
		Biometric Solution	Data Centre	Biometric Solution	DR	
	Fabric Management Software					
<b>F.</b>	<b>SAN Switches</b>					
14	BSP SAN Switches (for host to san connectivity - for all servers)	6	Nil	6	Nil	7.14
15	DMZ - SAN Switches (4/8 Gbps 24 ports)	Nil	2	Nil	2	7.15
16	DC Core SAN Switch (4/8 Gbps 150 ports)	Nil	2	Nil	2	7.16
<b>G.</b>	<b>Network Attached Storage (NAS)</b>					
17	NAS for Storing web, portal content	Nil	1	Nil	1	7.17
<b>H.</b>	<b>Tape Backup System</b>					
18	(a) Tape Library	Nil	1	Nil	1	7.18
	(b) LTO 5 Media (3 TB Raw)	Nil	250	Nil	250	
<b>I.</b>	<b>Networking Equipment</b>					
<b>(a)</b>	<b>Routers</b>					
19	Internet Router	Nil	2	Nil	4	7.19
20	Link Load Balancer	Nil	2	Nil	2	7.20
<b>(b)</b>	<b>L3 Switches</b>					
21	DC-Core LAN	Nil	2	Nil	2	7.21
22	DC-Core Management Security - LAN	Nil	2	Nil	2	7.22
23	DC-Core Backup - LAN	Nil	2	Nil	2	7.23
24	L3 Switches Access	Nil	3	Nil	3	7.24
25	ABIS LAN	6	Nil	6	Nil	7.25
<b>J.</b>	<b>Security Components</b>					
<b>(a)</b>	<b>Firewall</b>					
26	Firewall with content filtering 3 pairs each of different makes for DC and DR out of which one pair non CISCO for DC.	Nil	4	Nil	6	7.26
<b>(b)</b>	<b>Security Device</b>					
27	HIDS	Nil	6	Nil	6	7.27
28	NIDS	Nil	2	Nil	2	7.28
29	Perimeter Security Device	Nil	2	Nil	6	7.29
30	Hardware Security Module (HSM)	Nil	5	Nil	5	7.30
<b>K.</b>	<b>Anti Virus Solution</b>					
31	Anti Virus Server	Nil	1	Nil	1	7.31
32	Anti Virus Software					7.32
	<b>(a) Antivirus Scan Engine</b>					
	<b>(b) Client Licenses</b>	Nil	10000	Nil	Nil	
<b>L.</b>	<b>Systems Software</b>					
33	Linux Operating System Enterprise Edition	300	44	300	44	
34	Microsoft Windows Server 2008 Enterprise Edition	Nil	4	Nil	4	

S.No.	Item Description	Quantity Required for Data Centre at Bengaluru		Quantity Required for Disaster Recovery Data Centre at Delhi/NCR		Annex No. of Section VII for Response
		Biometric Solution	Data Centre	Biometric Solution	DR	
35	Database Software MySQL on Linux (64 bit with partitioning/HA support)	Nil	4	Nil	4	
<b>M.</b>	<b>Backup and Replication Solution</b>					
36	Backup Solution	Nil	Required	Nil	Required	
37	Replication Solution	Nil	Required	Nil	Required	
<b>N.</b>	<b>Network Operation Console (NOC)</b>					
38	LED Display	Nil	3	Nil	Nil	7.33
39	Desktops	Nil	6	Nil	Nil	7.10
40	Graphic Controller Cards	Nil	3	Nil	Nil	7.33
<b>O.</b>	<b>Accessories</b>					
41	Racks for Blade Servers, Storage, Networking Equipment	Nil	35	Nil	50	
42	Intra-Rack Cabling and Other Accessories	As required	As required	As required	As required	

**IMPORTANT NOTE: The Bidder should note that all items mentioned above should be quoted failing which the Bid is liable to be rejected.**

- 3.1.2. Immediately, after the receipt of letter of intent/purchase order, the selected Bidder shall have to visit the DC and DR Data Centres of UIDAI at Bengaluru and Delhi/NCR and coordinate with the Data Centre Service Providers(DCSPs) for finalising the layout and cabling plan which need to be followed by the DCSPs for providing the necessary inter-Rack cabling for the Racks. The selected Bidder shall get the aforesaid layout plan approved by the UIDAI before commencement of installation and commissioning of systems.
- 3.1.3. Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services in respect of above mentioned hardware and Software items including Integration, Migration and Relocation, wherever required, of the existing IT Infrastructure of UIDAI at the Data Centre, Bengaluru in consultation with UIDAI.
- 3.1.4. Design, Install, Configure and Implement an optimal solution for Backup, Replication and Anti Virus solutions.
- 3.1.5. Deployment of Anti Virus Clients on approximately 10000 Desktops/Laptops/Servers for two years..
- 3.1.6. On-site Resident Engineers for providing Technical Support to UIDAI.
- 3.2. **The Bidder is also expected to co-operate with UIDAI in critical situations to provide services beyond the established scope of work.**

#### **4. Schedule of Requirements**

- 4.1. The Bidder shall be responsible to Supply, Install, Configure, Commission and Maintain the Servers, Storage, Networking and Security equipment along with associated

Software, Peripherals, Accessories and also provide Services as mentioned in this Section. **The Bidder should offer only one choice for each of the components / services proposed as part of this Bid failing which the Bid is liable to be rejected.**

- 4.2. The following is a list of categories of components that the Bidder is expected to supply as part of the scope of work of this Bid:
- Blade Servers
  - Rack Servers
  - Storage Infrastructure
  - Network Components
  - Security Components
  - Anti-Virus Solution
  - Systems Software
  - Backup Solution
  - Replication Solution
  - Network Operation Console (NOC)
  - Services

Each of the above mentioned categories is elaborated in the **Clauses 5 through 11**.

- 4.3. The Bidder should ensure that all the peripherals, accessories, sub-components required for the functionality and completeness of the schedule of requirements, including but not limited to devices, equipment, accessories, patch cords (copper/fibre), cables, software, licenses, tools, etc. should also be provisioned according to the requirements for successful installation, integration and commissioning of systems.
- 4.4. UIDAI will not be responsible if the Bidder has not provisioned some components, sub-components, assemblies, sub-assemblies as part of bill of material in the bid. The Bidder will have to make all provisions to meet the schedule of requirements at no additional cost and time implications to UIDAI.
- 4.5. All the software licenses that the Bidder proposes should be **perpetual software licenses** along with maintenance, upgrades and updates during the **currency of the contract**. The software licenses should not be restricted based on location and UIDAI should have the flexibility to use the software licenses for other requirements if required. The Bidder should provide the **licensing policy for every software component** along with the Technical Bid. The licensing policy should provide details on the charging mechanisms adopted, but the **Bidder should ensure that there are no commercial values / information provided in the document**.
- 4.6. The Bidder should ensure that there is a **24 x 7 comprehensive onsite support arrangement** during the **currency of the contract**, with all the OEM for respective components. The Bidder should ensure that all the OEMs have an understanding of the service levels required by UIDAI. The OEMs should provide an undertaking in this regard in the format provided in **Section VI, Appendix E**.
- 4.7. The Bidder should ensure that none of the components and sub-components is declared **end-of-sale** or **end-of-support** by the respective OEM.
- 4.7.1. The Bidder should not propose any products/solutions that is likely to be declared **end-of-sale** during **24 months from the date of submission** of Bid or 12 months from the date of acceptance by the Purchaser, whichever is later. If, the OEM declares any of the products/solutions end-of-sale within the said period, the Bidder should replace the

- proposed products/solutions with an equivalent or better alternate that is acceptable to UIDAI at no additional cost to UIDAI and without causing any performance degradation and/or project delays.
- 4.7.2. The Bidder should not propose any product/solution that is likely to be declared **end-of-support** within **the currency of contract**. If, the OEM declares any of the products/solutions end-of-support within the said period, the Bidder should replace the products/solutions with an alternate that is acceptable to UIDAI at no additional cost to UIDAI and without causing any performance degradation and/or project delays.
- 4.8. The **specifications** for all the components proposed as part of the Bid should be provided in accordance to the respective formats provided in **Section VII**. The Bidder should provide the specifications in the **provided formats only**. Providing incomplete information will not be acceptable. **Generic specification sheets as a substitute will not be acceptable.**
- 4.9. The Bidder should ensure that the equipment can be mounted into the industry standard racks provisioned by the UIDAI or by the Bidder. If the equipment proposed by the Bidder cannot be mounted into the racks provisioned, the racks for those equipments should be provisioned by the Bidder separately without any additional cost to the UIDAI.
- 4.10. Bidder should offer **latest and proven technologies** that are available for items including but not limited to Processor model with highest possible clock speed, I/O, Memory and Cache, Tape drive capacity and bandwidth, FC interface and bandwidth, Security products, etc.
- 4.11. The Bidder is responsible for provisioning all the equipment alongwith associated peripherals, accessories, cables, sub-components etc.
- 4.12. Any additional components, **sub-components, assemblies, sub-assemblies** that **would be required to meet the desired performance requirements under “live” conditions will have to be provisioned by the Bidder at no additional cost to UIDAI and without any project delays.**
- 4.13. It is expected that the Bidder will provide an integrated solution after due consideration to the **compatibility issues** between various components. If there is a problem with compatibility between components, the Bidder should **replace the components with an equivalent or better component that is acceptable to UIDAI** at no additional costs to UIDAI and without any project delays.
- 4.14. The Selected Bidder shall have to provide **minimum one hard and two soft copies** of all the manuals, documentation, including but not limited to, detailed operations manual, maintenance manual, administration manual, etc. for each and every equipment / component proposed as part of this Bid. The documentation shall be supplied for Installation, Maintenance, Servicing and operations of equipment / components.
- 4.15. The Bidder should provide a **Technology refresh policy in the Technical Bid** that would enable UIDAI to consider overhaul / upgrade of the technology after the 3<sup>rd</sup> year. The technology refresh policy should provide the various options that the Bidder can offer in this regard for all the components proposed. **The technology refresh policy should not contain any commercials.** It may also be noted that this document should not be a binding on UIDAI in any manner whatsoever.

## 5. Servers

### 5.1. Objectives and Requirements

- 5.1.1. The Bidder should provision the server infrastructure that would be deployed by UIDAI at the Data Centre in Bengaluru and Disaster Recovery (DR) Data Centre at Delhi/NCR.
- 5.1.2. The infrastructure at the above sites will require different types of servers.
- 5.1.3. The following is the list of Servers, Software and Devices that should be provided as part of this Bid.
- 5.1.4. The Servers should be based on a 64-bit architecture using a **latest and proven 64-bit processor** that has been in field for at least six months from the date of release of this Bid. The processor should natively support 32-bit applications.

### 5.2. Blade Servers

- 5.2.1. The Blade Servers will be mainly used for running the UIDAI Application, Biometric De-duplication and Biometric Authentication services.
- 5.2.2. Each Blade Server should have two nos. of CPU of latest six core or more core per CPU with 64-bit x86 processor and having 12 MB or higher L3 cache per processor. The processor should be fully binary compatible to 32-bit applications. A six core or more core on a single die/socket will be treated as a single processor. The server should have Processor SPEC CPU2006 benchmarked with SPEC Rating in the range of at least **281-290** (60% of SPECint\_rate\_base2006 plus 40% of SPECfp\_rate\_base2006 scores).
- 5.2.3. The Blade Servers should be based on 64-bit architecture **that is latest in respective product line**. The Server should have the capability of supporting 32-bit applications as well.
- 5.2.4. **The detailed specifications for the offered Blade Servers and Blade Chassis should be provided in accordance with format provided in Section VII Annex 7,1 and Annex 7.2 respectively.**

### 5.3. Rack Servers

- 5.3.1. The Rack Servers will be mainly used for Database of Biometric De-duplication, Authentication, Management and Administration etc.
- 5.3.2. The Rack Servers should be based on 64-bit architecture **that is latest in respective product line**. The Server should have the capability to supporting 32-bit applications as well.
- 5.3.3. Each server should have two nos. six core or more core 64-bit x86 processor with 12 MB or higher L3 cache per processor. The processor should be fully binary compatible to 32-bit applications. A six core or more core on a single die/socket will be treated as a single processor. Processor SPEC CPU2006 benchmarked with SPEC rating in the range of at least **281-290** (60% of SPECint\_rate\_base2006 plus 40% of SPECfp\_rate\_base2006 scores).
- 5.3.4. **The detailed specifications for the offered Rack Servers 1, 2 and 3 should be provided in accordance with format provided in Section VII, Annex 7.3, Annex 7.4 and Annex 7.5 respectively.**

### 5.4. Event Correlation Servers

- 5.4.1. The detailed specifications for the offered Terminal Servers should be provided in accordance with format provided in **Section VII, Annex 7.6.**

## 5.5. Radius Servers

5.5.1. The detailed specifications for the offered Terminal Servers should be provided in accordance with format provided in **Section VII, Annex 7.7.**

## 5.6. Terminal Servers

5.6.1. The detailed specifications for the offered Terminal Servers should be provided in accordance with format provided in **Section VII, Annex 7.8.**

## 5.7. Load Balancers

5.7.1. Appliance based Load Balancers shall be used to balance the load between the Servers. The Bidder should offer eight Load Balancers (Four each for DC and DR) that are highly available and configured in fail-over mode with session redundancy.

5.7.2. The following is the list of Load Balancers that should be offered as part of this Bid.

5.7.3. The detailed specifications for the offered Load Balancers should be provided in accordance with format provided in **Section VII, Annex 7.9.**

## 5.7.4. Software Licenses

5.7.4.1. The Bidder should provide requisite licenses for all the system software required for the Load Balancer including, but not limited to, Operating System, Management Software, etc.

## 5.8. Desktops

5.8.1. The detailed specifications for the offered Desktops should be provided in accordance with format provided in **Section VII, Annex 7.10.**

## 6. Storage Infrastructure

### 6.1. Objectives and Requirements

6.1.1. The Bidder should provision the storage infrastructure and accessories that would be deployed by UIDAI at the Data Centre in Bengaluru and Disaster Recovery (DR) Data Centre at Delhi/NCR.

6.1.2. **The NAS solution proposed by the Bidder should be independent from the SAN Fabric proposed so as to effectively separate the storage for core application from other storage requirements.**

### 6.2. Storage Area Network (SAN) System

6.2.1. The storage system should be compatible with the proposed replication software which have to be provisioned for replication from storage to storage of all leading SAN disk arrays and tape libraries including EMC, Hitachi, HP, IBM, Network Appliance. Storage vendors should also propose the heterogeneous replication solutions which works across the different vendor storage arrays and systems and application.

6.2.2. The detailed specifications for the offered SAN Systems should be provided in accordance with format provided in **Section VII, Annex 7.11, Annex 7.12, Annex 7.13.**

### 6.3. SAN Switch

6.3.1. The Bidder should provision SAN switches for connecting all the devices on the SAN through Fibre Channel or unified IO.

6.3.2. The SAN switch should support all leading SAN disk arrays and tape libraries including, but not limited to, EMC, Hitachi, HP, IBM, Network Appliance.

**6.3.3. Software Licenses**

- 6.3.3.1. The Bidder should provide requisite licenses for all the system software required for the SAN Switch including, but not limited to, Operating System, SAN Fabric Manager, Performance Management, etc.
- 6.3.4. The detailed specifications for the SAN Switch should be provided in accordance with format provided in **Section VII, Annexe 7.14, 7.15 and 7.16.**

**6.4. Network Attached Storage (NAS)**

- 6.4.1. The detailed specifications for the offered NAS Systems should be provided in accordance with format provided in **Section VII, Annex 7.17.**

**6.4.2. Software Licenses**

- 6.4.2.1. The Bidder should offer requisite licenses for all the system software required for the NAS Array including, but not limited to, Operating System, Business Volume Copy, Replication, Load Balancing, Configuration, Performance Management, etc.

**6.5. Tape Library**

- 6.5.1. The Bidder should provision tape library as a backup device for copying the data on to a removable media.

**6.5.2. Tape Media / Accessories**

- 6.5.2.1. The Bidder should estimate the requirements of the tape and labels independently. UIDAI estimates that at this stage the requirement for DC and DR sites put together would be a 500 tapes and approximately 1000 labels.
- 6.5.3. The detailed specifications for the offered Tape Library Systems should be provided in accordance with format provided in **Section VII, Annex 7.18.**

**7. Network Components**

- 7.1. The Bidder should offer following Networking equipment alongwith associated accessories, cables and software:
- 7.2. The specification for the above mentioned Networking Components have been provided in **Section VII, Annex 7.19 to Annex 7.25.**

**8. Security Components****8.1. Objectives and Requirements**

- 8.1.1. The DC and DR datacentres will host servers for UIDAI Application, Biometric Deduplication and Authentication Services.
- 8.1.2. The security requirements for the UIDAI datacenter should ensure that the Security policy of UIDAI is optimally implemented and the users for one application should not get any access to the other application.
- 8.1.3. The Selected Bidder shall ensure that the data in the datacenters is secure and any external or internal attacks are successfully thwarted.
- 8.1.4. The Selected Bidder shall implement security components, in consultation with UIDAI Technology Team.
- 8.1.5. The requirements under each of the above mentioned Security Solution components are indicated below.

## 8.2. Firewalls

8.2.1. The desired and minimum specifications for the same have been provided in **Section VII, Annex 7.26.**

## 8.3. Intrusion Detection System (IDS)

8.3.1. The Bidder should offer appropriate Host based IDS and Network based IDS.

8.3.2. The desired and minimum specifications for the Host based IDS and Network based IDS have been provided in **Section VII, Annexure 7.27 and 7.28** respectively.

## 8.4. Perimeter Security Device

8.4.1. The Bidder should provision an appropriate Perimeter Security Appliance. The Perimeter Security Appliance should be an integrated device that should include the following modules:

- Firewall
- Intrusion Prevention System
- VPN
- Anti Virus
- Content Filtering

8.4.2. The appliance should include capabilities for standard stateful inspection, detection and prevention of widely known attacks, scan of incoming and outgoing mail attachments, scan HTTP and FTP traffic, scan quarantine and eliminate viruses and worms found in encrypted VPN tunnels.

8.4.3. The desired and minimum specifications for the same have been provided in **Section VII, Annexure 7.29.**

## 8.5. Hardware Security Module

8.5.1. The desired and minimum specifications for the same have been provided in **Section VII, Annexure 7.30.**

## 9. Anti-virus Solution

### 9.1. Requirements and Objectives

9.1.1. The Bidder should propose the latest version In order to protect **an estimated 1000 Desktops/Laptops** and **all the servers** from any kind of virus/worm/trojan/spyware/adware attack, the Bidder should provision and implement an enterprise-wide Anti-Virus solution, which will include the following:

- Agent for Desktops/Laptops
- Agent for Servers
- Anti-Virus Gateway
- Virus scanner for SMTP

9.1.2. **The client component of Anti-virus solution should be supported on all variants of MS Windows including but not limited to Windows XP, Windows Vista, Windows 2008 Server, Windows 7 etc.**

9.1.3. The Bidder should propose a **enterprise edition** of Anti-virus solution from the following product family options only. The Bidder should propose the solution with appropriate licenses, updates and upgrades for **full period of the contract:**

- McAfee



- Symantec
- Trend Micro

- 9.1.4. The Bidder should propose the latest version of the proposed AntiVirus solution available in the market on the day of submission of the bid. However, it is mandatory that the Bidder should deploy the latest version of the Anti-virus available at the time of implementation in case newer version is available after the submission of bid.
- 9.1.5. The detailed specifications for the offered Anti Virus Server and Anti Virus Software should be provided in the format provided in **Section VII Annex 7.31 and Annexe 7.32.**

## 9.2. Solution Design

- 9.2.1. A “tree-like” architecture is envisaged for Anti-Virus distribution, where the central server situated in the datacenter will pull updates through Internet from the main Antivirus server of the OEM.

The software at the DC and DR should have capability to the push and pull the update respectively depending on the policy.

- 9.2.2. The Antivirus Server should then distribute the updates to all the desktops in the location using either a push or a pull mechanism depending on the policy settings.

## 9.3. Software Licenses

- 9.3.1. The Bidder should provide requisite licenses for all the software required for the Anti-virus Solution for a period of two years.

## 10. Systems Software

### 10.1. Linux Operating System for Blade/ Rack Servers

The Operating systems (OS) should be 64-bit Redhat Enterprise Linux 5.0 (upgrade 1 or higher) and should support both 32-bit and 64-bit applications. The Selected Bidder shall provide requisite licenses as also support for this Operating System. **However, the UIDAI reserves the right to negotiate the price directly with the OEM/Principal.**

### 10.2. Microsoft Windows Server 2008 Enterprise Edition

The Selected Bidder shall have to provide 8 (Eight) Licenses (4 each for DC and DR) of Microsoft Windows Server 2008 Enterprise Edition **alongwith Media.**

### 10.3. MySql

The Selected Bidder shall have to provide 8 (Eight) Licenses) (4 each for DC and DR) of MySql on Linux (64 bit with partitioning/HA support) **alongwith Media. However, the UIDAI reserves the right to negotiate the price directly with the OEM/Principal.**

### 10.4. Backup Solution

- 10.4.1. The Selected Bidder shall provide a complete Backup Solution **and shall propose appropriate Backup Software and Hardware to implement the solution.**

- 10.4.2. The backup solutions should enable daily incremental and weekly full backups. The backup solution should cover the following components:

- (i) File Systems of all Servers
- (ii) Backup of Databases
  - (a) MySQL
  - (b) Oracle RAC Error and Audit logs on all systems

- (iii) NAS - Upto 20 TB of data
- (iv) FTP Server - Upto 60 TB of data
- (v) Configuration of all network devices

The backup solution shall support the following:

- (i) Fully integrated with the Tape Library
- (ii) Support hostless backup and restore
- (iii) Should be compatible with industry leading backup solutions
- (iv) Based on open standards, no vendor lockin
- (v) Support integration with leading Enterprise Management Solutions
- (vi) Should be fully automated, schedule based
- (vii) Backup methods shall include:
  - (a) Full online backup of databases and filesystems
  - (b) Partial backup of databases and filesystems
  - (c) Transaction logging backup
  - (c) Table level backup

10.4.3. Restore methods shall include:

- (i) Full recovery of databases and filesystems
- (ii) Partial recovery of databases and filesystems
- (iii) Point-in-time restore of database and filesystems
- (iv) Restore databases based on transaction log
- (v) Restore databases at table level

10.4.4. The backup and recovery strategies should work across different storage vendors.

10.4.5. The backup and recovery solution should be scalable to accommodate higher capacities (of servers and petabytes of storage) than those specified.

10.4.6. The solution shall provide secure backup and restore methods

10.4.7. The Backup and Restore functional shall provide unified GUI interface and command line interface for management and administration.

10.4.8. The indicative backup server, tape library specifications are provided.

10.4.9. The backup window is 4 hours for daily backup, 8 hours for weekly backup. In addition critical database transaction logs have to be backed up on a hourly basis.

10.4.10. The Vendor shall provide a complete solution including all software, hardware as part of the solution.

## 10.5. Replication Solution

10.5.1. The Selected Bidder shall provide a complete Replication optimal solution based on the analysis of the present infrastructure at the data centres **and shall propose appropriate Replication Software and Hardware to implement the solution. The bidder shall coordinate with on site teams to identify the data for replication and sign off from UIDAI. Bidder will also coordinate with onsite representatives for migration of data from one source to another.**

10.5.2. The replication solution shall provide asynchronous replication of data from Bangalore DC to Delhi/NCR DC via the network and shall cover the following aspects:

- (i) MySQL

- (ii) Oracle RAC Critical data stored in the file systems - including configuration, management data

10.5.3. The replication solution

- (i) Support integration with leading Enterprise Management Solutions
- (ii) Should be fully automated
- (iii) Shall provide unified GUI interface and command line interface for management and administration.
- (iv) Shall provide replication of file system data.
- (v) Should work across different storage vendors.
- (vi) Should be based on open standards, no vendor lockin
- (vii) Should support synchronous and asynchronous modes
- (viii) Should support multi-site replication
- (ix) The proposed bandwidth between DC and DR site will be 100 Mbps burstable to 300 Mbps.
- (x) The Vendor shall provide a complete solution including all software, hardware as part of the solution.

11. **Network Operations Console (NOC)**

11.1 A mini Network Operations Console should be setup at Bangalore UIDAI Tech Centre

11.2 The **Scope of Work** with respect to **NOC** will be as under:

- (a) The NOC has to be integrated with the CIDR Data Centre in Bengaluru.
- (b) The NOC shall integrate with the Event Co-Relation Servers; Open Source Management Tools used by UIDAI and generate real time reports.
- (c) The NOC shall connect to the CIDR Data Centre using secure communication.
- (d) The NOC shall have 3 Display Units and shall allow splitting of display across multiple display units and also provide logical splitting within a single display unit.
- (e) The Vendor shall provide all necessary connectors, convertors, cables and other accessories required to install, commission and operate the NOCs.
- (f) The Vendor shall provide and install, commission all the necessary software required on the desktops to operate the NOC.

SI No	Item	Description	Qty
1	LED Display	Size – 52 Inches Display Type - LCD Resolution -Min 1920*1080 pixels Contrast –Min 5000:1 Brightness – Min 700 Nit Response Time - Min 8 milliseconds PIP Support Input Ports – Min 3 HDMI Ports, Min 2 DVI Ports Wall Mount with Accessories 220 V AC Input Associated Software Drivers for Windows Vista/7 Desktops With Remote Control	3
2	Desktops	As Per Spec	6
3	Graphic Controller Cards	PCI Express . Small Form Factor . Memory min – 512 DDR3+ . at least 2 display connectors . Digital Display – 2560 X 1600 Minimum . Best power consumption . DVI links 2 connection The Graphics Controller Card should be compatible with the supplied Desktop and LCD Display	3

## 12. Accessories

The selected Bidder shall provide appropriate mix of Racks for Blade Servers, Rack Servers, Storage Systems and Networking equipment and other items offered as part of the this Bid.

UIDAI has estimated requirement of **35 racks at DC in Bengaluru**, and **50 racks at DR in Delhi/NCR**. The Bidder shall have to supply industry standard **42 U racks**. **Also, the Bidder shall have to load appropriate number of Chassis into the Racks keeping in mind a average load of 7 KVA per Rack.**

If the equipment proposed by the Bidder cannot be mounted into the racks provisioned by the Bidder, the racks for those equipments should be provisioned by the Bidder separately at no additional cost to the UIDAI.

The racks should preferably be of one of the following makes:

- APC
- Rittal
- APW President
- WQ
- Valrack

## 13. Services

### 13.1. Requirements and Objectives

- 13.1.1. The Bidder should provide services for installation, commissioning, configuration and other incidental services at DC, Bengaluru and DR Data Centre at Delhi/NCR.
- 13.1.2. The services should including, but not limited to the following should be provided
- (i) Planning and Scheduling for Installation and Commissioning
  - (ii) Installation of new hardware, software and other equipment
  - (iii) De-installation and relocation of existing hardware, software and other infrastructure
  - (iv) Commissioning of all the new as well as relocated infrastructure
  - (v) Configuration / re-configurations / tuning of all the installed equipment and software.
  - (vi) Integration and testing of installed systems / subsystems / equipment / Software.
  - (vii) Maintenance and Support for the entire infrastructure for the period of the contract.
- 13.1.3. The Bidder shall be responsible for the generation and submission of necessary documentation required during various phases of the project viz. Planning, Installation, Commissioning, Rollout and Acceptance. Prior approval of UIDAI is required on all such documentation before commencement of activity.
- 13.1.4. The Bidder shall be responsible for the installation of the equipment supplied, commissioning of the infrastructure, integration of the infrastructure with network, installation of system software and other related software and assistance and coordination to/with other vendors/entities to ensure proper rollout of the application.
- 13.1.5. The Bidder should document the baseline configurations for all equipment and get it approved from UIDAI prior to commencement of installation. The Bidder should

develop and implement a system to maintain these configurations and ensure adequate controls for change management process on an ongoing basis.

**13.1.6. The solution would be considered acceptable only after the conditions stipulated as under Clause 20.2 of this Bid are completely met to the satisfaction of UIDAI.**

13.1.7. The Bidder shall be responsible for co-ordination with all the vendors, troubleshooting, addressing borderline issues, co-ordinating with users at UIDAI locations, to ensure successful rollout of the solution.

13.1.8. UIDAI shall provide necessary space and infrastructure (utilities, telephone lines, bandwidth, etc.). **However UIDAI shall not provide for any Desktops, Printers, Stationary, etc. required by the resources** for providing services under this contract.

**13.1.9. All the personnel employed by the Bidder for this contract should adhere to the security policy of UIDAI and should follow the policy of UIDAI in terms of software, configuration and services.**

### **13.2. Installation, Commissioning and Integration Services**

#### **13.2.1. Installation and Commissioning for all Servers**

13.2.1.1. The Bidder along with UIDAI and Datacenter service provider (s) of UIDAI should undertake pre-installation planning at both the locations including but not limited to Rack planning, structured cabling, power points, check on utility services, environmental conditions, etc.

13.2.1.2. Delivery, Installation and commissioning of the hardware servers and related equipment in the datacenter space provisioned by UIDAI at their DC and DR sites.

13.2.1.3. The plan and layout design for the placement of equipment in the provisioned datacenter is required to be carried out by the Bidder. The Bidder should provide an elevation plan for each of the DC and DR datacenter for housing of the servers and other equipment.

13.2.1.4. The plan and layout design shall be developed in a manner so as to optimally and efficiently use the resources and facilities available or being provisioned at the respective datacenters viz. space, racks, power, air-conditioning, cabling, etc.

13.2.1.5. The Bidder should co-ordinate with the datacenter provider and the VPN vendor of UIDAI in order to prepare the plan and develop the layout design.

13.2.1.6. The plan and design documents thus developed shall be submitted to UIDAI for approval and the acceptance should be obtained prior to commencement of installation.

13.2.1.7. Carry out installation of equipment in accordance with plans and layout design as approved by the UIDAI

13.2.1.8. Installation and configuration of the software including, but not limited to, Operating System (OS), System software etc. on the servers would be responsibility of the Bidder. The Bidder should also tune parameters for optimal performance of the OS should be carried out.

13.2.1.9. Undertake necessary changes to harden the OS to prevent against malicious and unwarranted attacks.

13.2.1.10. The Bidder will provide assistance to the Application Vendor during installation of Database software. The tuning of appropriate parameters in these software to ensure optimal performance should also be undertaken.

**13.2.2. Storage Installation and Configuration**

- 13.2.2.1. The Bidder should undertake study of the application environment in order to plan for an integrated storage infrastructure based on SAN and NAS. The zoning, LUN and volume creation should be decided based on the characteristics of the application.
- 13.2.2.2. Develop an implementation plan, installation and configuration of the storage infrastructure, including but not limited to configuration of disk arrays, switches, routers, fibre channel, tape library, disk library and other solution components to implement the overall solution.
- 13.2.2.3. It is expected that the Bidder will draw knowledge from industry best practices and his experiences to develop a storage architecture that is best suited for the UIDAI and document the blueprint for a cohesive architecture, prior approval for which should be obtained from the UIDAI before actual implementation.
- 13.2.2.4. The deployment of the disk storage shall consists of tasks, including, but not limited to, installation and configuration of SAN and NAS design, creation and configuration volumes, LUN, RAID storage sets, assisting in migration of data and undertake tuning exercise to optimize performance of the solution.
- 13.2.2.5. The storage architecture should include appropriate use of Tape Library to set the backup process. The Bidder should undertake study of the existing archival and backup policy to determine the optimal configurations of tape libraries and backup software.
- 13.2.2.6. Installation and configuration of backup servers and integration of the tape and disk libraries with backup software in order to set the archival and backup process in accordance with the respective policies of the UIDAI.
- 13.2.2.7. Installation and configuration of services for replication software, including, but not limited to, configuration checks, installation, integration with the replication router and IP network
- 13.2.2.8. The storage management software should support integration with ERM environment (industry leading) to provide a single console view.
- 13.2.2.9. The Bidder should address key design and architecture issues of maintaining copies of data at multiple datacenters through effective management of data replication strategies, failover, and fallback strategies in order to achieve fast, predictable recovery times.

**13.2.3. Installation and Configuration of Security Suite**

- 13.2.3.1. The Bidder should undertake a study of the Security policy and design the overall solution accordingly. The Bidder may suggest improvements to the Security policy and its implementation.
- 13.2.3.2. Installation of Perimeter Security Suite, Firewall, Network IDS, Host based IDS, RSA Authentication, etc. in accordance with the architecture design approved by the UIDAI, configuration of access control and ports in accordance with security policy. The configuration of firewall rules for items including, but not limited to, LAN, WAN and DMZ ports, network access, filtering malicious requests, user access.
- 13.2.3.3. Ensure that proper permissions are provided for partner organizations like NSDL, UTIISL and any other as specified by UIDAI for access.
- 13.2.3.4. Installation and configuration of Intrusion Detection System (IDS) / Intrusion Prevention System (IPS) to ensure protection against different types of attacks, including, but not limited to, denial of service attacks based on TCP, UDP, IP and ICMP protocols such as SYN flood, Ping-of-Death, IP spoofing.
- 13.2.3.5. Undertake installation and configuration of Viruswall to scan inbound and outbound traffic for malicious virus activities. Configure the viruswall and integrate the same with

the firewall and define administrative rules in accordance with the security policies of UIDAI.

### 13.3. Technical Support

- 13.3.1. The Bidder shall provide **comprehensive onsite support** to UIDAI at the DC and DR Data Centres of UIDAI on a 24 x 7 basis to ensure **99.5% uptime** for the infrastructure provided as part of this Bid.
- 13.3.2. Ensure that the entire solution as a whole is operational and run according to stipulated performance standards.
- 13.3.3. The Bidder along with all the associated OEMs shall commit to provide all necessary resources and expertise to resolve any issues and carry out required changes, optimizations and modification so that complete system as a whole works according to the specified requirements and satisfaction of UIDAI.
- 13.3.4. The Bidder shall provide comprehensive technical support services for all the software proposed for the entire period of the contract. The technical support shall include all the upgrades, updates and patches that are released by the respective OEMs during the period of contract.
- 13.3.5. The OEM of Servers and Storage shall assign onsite Hardware Support Engineers on a 24 x 7 basis at the DC and DR sites to diagnose, troubleshoot and resolve issues with the equipment / components supplied. The engineer should possess capability for supporting the equipment and components proposed, but not limited to undertaking preventive and break-fix maintenance, troubleshooting, resolving problems, tuning, etc.

### 13.4. Warranty

- 13.4.1. The Bidder shall provide **comprehensive onsite warranty on a 24 x 7 basis** for a period of **36 (Thirty six) months** in respect of Servers and Storage Systems and **12 (Twelve) months** in respect of all other Goods, after the Goods, or any portion thereof as the case may be, have been delivered (and commissioned) to the final destination indicated in the **contract and accepted** as part of scope of this Bid. The warranty period shall commence from the **date of acceptance** of the entire system.

### 13.5. Ongoing Maintenance and Support Services

- 13.5.1. **The Bidder shall be responsible for tasks including but not limited to configuration and setting up of servers, storage equipment, networking equipment and security equipment, and backup, replication and antivirus solution. The Bidder shall also be responsible for executing hardware and software updates when necessary. These services shall be provided at the time of installation and commissioning and thereafter on ongoing basis for a period of one year.**
- 13.5.2. The Bidder shall provide support at the DC and DR Data Centres of UIDAI at Bengaluru and Delhi/ NCR for the infrastructure provided by the Bidder.
- 13.5.3. The Bidder shall provision skilled and experienced Resident Engineers to administer and manage the entire infrastructure at the DC and DR Data Centres of UIDAI.
- 13.5.4. The Bidder shall be responsible for periodic health check of the systems, troubleshooting problems, analysing and implementing rectification measures.
- 13.5.5. The Resident Engineers of the Bidder shall be responsible for troubleshooting issues in the infrastructure, namely, servers, storage equipment, network equipment and security equipment to determine the areas where fixes are required and ensuring resolution of the same.

## 14. TIMELINES

### 13.1 Delivery Schedule

#### (i) Racks

All Racks should be delivered **within 4 (Four) weeks** from the Date of issue of Purchase Order.

#### (ii) Blade Servers

It should be noted that the UIDAI will place the Purchase Order for Blade Servers in a Phased manner. Accordingly, **the deliveries for the Blade Servers shall be made by the selected Bidder in a phased manner after receipt of corresponding Purchase Order(s) for the Blade Servers. Blade Servers should be delivered within 6 (Six) weeks** from the Date of issue of each such Purchase Order. **The First Purchase order for Blade servers shall be issued for 188 Blade servers (34+60=94 for each site).**

(iii) All other items should be delivered **within 6 (Six) weeks** from the Date of issue of Purchase Order.

### 13.1 Implementation Schedule

All items should be installed, configured and commissioned **within two weeks from the date of delivery of equipment** at the respective sites.

## 15. Commissioning and Acceptance Tests

### 15.1. Commissioning of System

15.1.1. The Bidder should describe in advance the tests and details of the process that will be adopted to demonstrate the correct working of the equipment supplied both individually and as an integrated system.

15.1.2. System testing schedules, formats for testing and commissioning reports and dissemination mechanism for such reports shall be drawn by the Bidder in consultation with UIDAI.

15.1.3. It shall be the responsibility of the Bidder to get pre-despatch inspection of the goods as part of factory tests and furnish necessary certificate to UIDAI certifying that the goods conform to the specifications in the proposed bill of material.

#### 15.1.4. Commissioning of the systems shall be considered to be complete only after the following conditions have been met successfully to the satisfaction of UIDAI.

- (i) Successful completion of Factory Acceptance Tests and submission of reports to UIDAI.
- (ii) Delivery of **all the items** under the proposed bill of material at the designated locations of installation. Short shipment of goods will not be acceptable.
- (iii) Installation and Configuration of all the components including, but not limited to, hardware, software, devices, accessories, etc. to the satisfaction of UIDAI at Data Centre at Bengaluru and Disaster Recovery (DR) Data Centre at Delhi/NCR,.
- (iv) Successful testing of all components individually.
- (v) Integration of all the components, including but not limited to, Servers, Storage Systems, Security Solution, Network, Anti-virus, Backup etc.
- (vi) Successful testing of the integrated system.



(vii) A clearance to commence the use of integrated system should be provided by the Bidder to UIDAI.

(viii) Successful completion of Commissioning would need to be certified by UIDAI.

## **15.2. Acceptance of System**

15.2.1. Acceptance schedules, detailed acceptance tests, formats for acceptance reports and dissemination mechanism for such reports shall be drawn by the Bidder in consultation with UIDAI.

**15.2.2. The Acceptance of the systems shall be provided by UIDAI only after the following conditions have been met successfully to the satisfaction of UIDAI.**

(i) Successful operation of the systems for **30 working days** after complete integration and commissioning of the systems.

(ii) Completion of all the documentation required as part of this Bid and as desired by UIDAI to the satisfaction of UIDAI.

(iii) Installation and Configuration of all the components as per schedule of requirements including, but not limited to, hardware, software, devices, accessories, etc. to the satisfaction of UIDAI at Data Centre at Bengaluru and Disaster Recovery (DR) Data Centre at Delhi/NCR, and successful testing of all components.

**SECTION VI : APPENDICES****TABLE OF CONTENTS**

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**Appendix A**

(Please see Clause 37 of Instructions to Bidders)

**CONTRACT FORM**

**THIS AGREEMENT** made the \_\_\_\_\_ day of 2010 between the President of India acting through the **Director General, Unique Identification Authority of India (UIDAI)** (hereinafter "**the Purchaser**") of one part and (Name of the Vendor) (hereinafter "**the Vendor**") of the other part:

**WHEREAS** the **Purchaser** is desirous that certain Goods and Services should be provided by the Vendor, viz, "**Supply, Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services**" in the Data Centres of Unique Identification Authority of India in Bengaluru and Delhi/NCR, and has accepted a bid by the Vendor for the supply of those Goods and Services in the sum of (Contract Price in Words and Figures) (hereinafter "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 Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement viz:
  - (a) The General Conditions of Contract;
  - (b) The following Appendices:
    - Appendix A:** Schedule of Requirements;
    - Appendix B:** Break-up of Costs of Goods/ Services
  - (c) Bid Document of Bid No. T-11011/16/2010-Tech-UIDAI regarding "**Supply, Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services**" in the Data Centres of Unique Identification Authority of India in Bengaluru and Delhi/NCR.
  - (e) Clarifications issued by the Purchaser.
  - (f) Pre-qualification, Technical and Commercial proposals submitted by the Vendor.
  - (g) Order No. \_\_\_\_\_ dated \_\_\_\_\_ placed on the Vendor.
  - (h) Acceptance of the order No. \_\_\_\_\_ dated \_\_\_\_\_ by the Vendor.
3. In consideration of the payments to be made by the **Purchaser** to the **Vendor** as hereinafter mentioned, the **Vendor** hereby covenants with the **Purchaser** to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The **Purchaser** hereby covenants to pay the **Vendor** in consideration of the provision of the Goods and Services 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.

Brief particulars of the goods and services which shall be supplied/provided by the Vendor are as under:

S.No.	Item Description	Unit of Measurement	No. of Units	Unit Rate (in Rupees)	Taxes (in Rupees)	Total Unit Cost [(7)=(5)+(6)] (in Rupees)	Total Cost including Taxes (8)=(4)x(7) (in Rupees)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

**TOTAL VALUE:**

**DELIVERY SCHEDULE :**

**DURATION OF THE CONTRACT:**

**IN WITNESS** whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

**Signed, Sealed and Delivered for & on behalf of M/s** \_\_\_\_\_

**Signed, Sealed and Delivered for and on behalf of the President of India acting through the Director General, Unique Identification Authority of India**

Signed  
 Name : \_\_\_\_\_  
 Designation : \_\_\_\_\_  
 Date : \_\_\_\_\_  
 Place : **New Delhi**

Signed  
 Name : \_\_\_\_\_  
 Designation : \_\_\_\_\_  
 Date : \_\_\_\_\_  
 Place : **New Delhi**

**Signed, Sealed and Delivered for & on behalf of M/s** \_\_\_\_\_

Signed  
 Name : \_\_\_\_\_  
 Designation : \_\_\_\_\_  
 Date : \_\_\_\_\_  
 Place : **New Delhi**

**in the presence of :**

**in the presence of :**

Signed  
 Name : \_\_\_\_\_  
 Designation : \_\_\_\_\_  
 Date : \_\_\_\_\_  
 Place : **New Delhi**

Signed  
 Name : \_\_\_\_\_  
 Designation : \_\_\_\_\_  
 Date : \_\_\_\_\_  
 Place : **New Delhi**

**Appendix B**(Please see Clause 6 of the  
General Conditions of Contract)**PROFORMA OF BANK GUARANTEE FOR  
CONTRACT PERFORMANCE GUARANTEE BOND**

Ref : \_\_\_\_\_

Date \_\_\_\_\_

Bank Guarantee NO. \_\_\_\_\_

To

**The Director General,  
Unique Identification Authority of India (UIDAI),  
Tower 2, Third Floor,  
Jeewan Bharti Building,  
Connaught Place,  
New Delhi 110001.**

1. Against contract vide Advance Acceptance of the Bid No. \_\_\_\_\_ dated \_\_\_\_\_ covering **“Supply, Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services”** in the Data Centres of Unique Identification Authority of India in Bengaluru and Delhi/NCR (hereinafter called the said 'Contract') entered into between the **Unique Identification Authority of India (UIDAI)** (hereinafter called the “Purchaser”) and \_\_\_\_\_ (hereinafter called the “Vendor”) this is to certify that at the request of the Vendor we ----- Bank Ltd., are holding in trust in favour of the Purchaser, the amount of \_\_\_\_\_ (write the sum here in words) to indemnify and keep indemnified the Purchaser against any loss or damage that may be caused to or suffered by the Purchaser by reason of any breach by the Vendor of any of the terms and conditions of the said contract and/or in the performance thereof. We agree that the decision of the Purchaser, whether any breach of any of the terms and conditions of the said contract and/or in the performance thereof has been committed by the Vendor and the amount of loss or damage that has been caused or suffered by the Purchaser shall be final and binding on us and the amount of the said loss or damage shall be paid by us forthwith on demand and without demur to the Purchaser.
2. We \_\_\_\_\_ Bank Ltd, further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for satisfactory performance and fulfilment in all respects of the said contract by the Vendor i.e till \_\_\_\_\_ (viz the date upto 12 months after the date of successful commissioning and acceptance of the system by the Purchaser) hereinafter called the said date and that if any claim accrues or arises against us \_\_\_\_\_ Bank Ltd, by virtue of this guarantee before the said date, the same shall be enforceable against us \_\_\_\_\_ Bank Ltd, notwithstanding the fact that the same is enforced within six months after the said date, provided that notice of any such claim has been given to us \_\_\_\_\_ Bank Ltd, by the Purchaser before the said date. Payment under this letter of guarantee shall be made promptly upon our receipt of notice to that effect from the Purchaser.
3. It is fully understood that this guarantee is effective from the date of the said contract and that we \_\_\_\_\_ Bank Ltd, undertake not to revoke this guarantee during its currency without the consent in writing of the Purchaser.
4. We undertake to pay to the Purchaser any money so demanded notwithstanding any dispute or disputes raised by the Vendor in any suit or proceeding pending before any court or Tribunal relating thereto our liability under this present bond being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the Vendor shall have no claim against us for making such

payment.

- 5. We \_\_\_\_\_ Bank Ltd, further agree that the Purchaser shall have the fullest liberty, without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said contract or to extend time of performance by the Vendor from time to time or to postpone for any time of from time to time any of the powers exercisable by the Purchaser against the said Vendor and to forebear or enforce any of the terms and conditions relating to the said contract and we, \_\_\_\_\_ Bank Ltd., shall not be released from our liability under this guarantee by reason of any such variation or extension being granted to the said Vendor or for any forbearance by the Purchaser to the said Vendor or for any forbearance and or omission on the part of the Purchaser or any other matter or thing whatsoever, which under the law relating to sureties, would, but for this provision have the effect of so releasing us from our liability under this guarantee.
- 6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Vendor.

Date \_\_\_\_\_

Place \_\_\_\_\_

Witness \_\_\_\_\_

Signature \_\_\_\_\_

Printed name \_\_\_\_\_

**(Bank's common seal)**

**Appendix C**

(Please see Clause 12 of Instructions to Bidders)

**BID SECURITY FORM**

Whereas ----- (hereinafter called 'the Bidder') has submitted its bid dated ----- for **“Supply, Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services”** in the Data Centres of Unique Identification Authority of India in Bengaluru and Delhi/NCR (hereinafter called "the Bid").

KNOW ALL MEN by these presents that WE ----- of ----- having our registered office at ----- (hereinafter called "the Bank") are bound unto the **Director General, Unique Identification Authority of India (UIDAI)** (hereinafter called "the UIDAI") in the sum of ----- for which payment well and truly to be made to the said UIDAI, the Bank binds itself, its successors and assigns by these presents.

THE CONDITIONS of this obligation are:

- 1. If the Bidder, having its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
- 2. If the Bidder, having been notified of the acceptance of its bid by the UIDAI during the period of bid validity.
  - (a) fails or refuses to execute the Contract Form, if required; or
  - (b) fails or refuses to furnish the Performance Security, in accordance with the instructions to Bidders;

We undertake to pay to the UIDAI up to the above amount upon receipt of its first written demand, without the UIDAI having to substantiate its demand, provided that in its demand the UIDAI will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 days after the period of bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

Sealed with the Common Seal of the said Bank this -----day of -----2010.

-----  
(Authorised Signatory of the Bank)

**Appendix D**  
(Please see Clause 20 of  
Instructions to Bidders)

**A. General Information:**

- i) Location of Corporate Head Quarters:
- ii) Date and Country of Incorporation:
- iii) Manufacturing facility(ies) Location & Size:
- iv) Service facility(ies) Location:
  - (a) No. in India
  - (b) Average value of inventory of spares per service location.
- v) Technical Collaborators (if any)
- vi) Turnover
  - (a) Average turnover for last three years.
  - (b) Product-wise turnover for last three years.
- vii) Geographical Distribution of the Vendor :  
(offices, locations to be specified with their respective staff strength).
- viii) Total number of similar installations:
  - (a) World-wide (excluding India)
  - (b) In India
- ix) Total number of installations of the product model quoted / year of announcement:
  - (a) World-wide (excluding India)
  - (b) In India
- x) Number of Employees:
  - (a) Total Number
  - (b) Manufacturing
  - (c) R & D (if any)
  - (d) Hardware maintenance
  - (e) Software
- xi) Representation in India (only if the bidder is a company not incorporated in India):
  - (a) Through affiliate / subsidiary / Authorised representative.
  - (b) Points (i) to (viii) and (xi) to be given for the affiliate / subsidiary / authorised representative (if any).

**B. Similar Reference Sites**

S.No.	Customer Name and Address	Contact Person's Name, Designation, Phone/Fax Nos.	Name of Item supplied/ date of Supply	No. of units supplied



**Appendix E**

(Please see Clause 20 of  
Instructions to Bidders)

**Statement of Undertaking From OEM**

To

The Director General,  
Unique Identification Authority of India  
3<sup>rd</sup> Floor, Tower II,  
Jeewan Bharati Building,  
Connaught Place,  
New Delhi – 110 001.

Sir,

**Sub : Statement of Undertaking from OEM**

**Ref : Bid No. T-11011/16/2010-Tech-UIDAI covering “Supply, Installation and Commissioning of Servers, Storage Systems, Security Systems and Accessories with Incidental Services” in the Data Centres of Unique Identification Authority of India in Bengaluru and Delhi/NCR.**

We, the undersigned OEM, having read and examined in detail all the bidding documents in respect of the abovementioned **Bid No. T-11011/16/2010-Tech-UIDAI**, in respect to product(s) offered / supplied by us and as a gesture towards our commitment for continued support for our product(s) / solution do hereby declare as under;

1. We confirm that we would support the installation, commissioning, integration and maintenance of products offered/supplied to the Unique Identification Authority of India (herein referred to as “UIDAI”)
2. We hereby confirm that we would treat UIDAI as a preferred customer and that resolution of all problems and issues reported to us in fulfillment of the abovementioned Bid would be undertaken by us on priority basis.
3. We hereby confirm that the products / solutions being supplied to UIDAI will not be declared end of sale for a minimum of 24 months from the date of its acceptance by UIDAI and that we shall support the same for a minimum period of 7 years from the date of its acceptance by UIDAI. If the same is de-supported by us for any reason whatsoever, we undertake to replace it with an equivalent or better substitute that is acceptable to UIDAI, without any additional cost to UIDAI and without impacting the performance of the solution in any manner.
4. We hereby agree to supply and/or install all new releases, versions, any type of update, upgrade patch and/or bug fixes for the software or firmware from time to time at no additional cost to UIDAI. Additionally, the documentation and training services associated with the product(s) shall be provided free of cost to UIDAI.
5. We hereby confirm that our partner M/s \_\_\_\_\_ (the Bidder for this Bid) possess the necessary capability and training required to support our product(s).
6. We hereby agree to abide by the General Terms & Conditions of this Bid being accepted by our partner M/s \_\_\_\_\_ (the Bidder for this Bid) with UIDAI. We further agree to provision the required critical

spares/components at the designated sites of UIDAI for meeting the uptime commitment.

- 7. In case of any dissatisfaction or default on part of our partner M/s \_\_\_\_\_ (the Bidder for this Bid) in providing the level of support desired by UIDAI, we agree to extend the support required to meet the commitments made by our partner without any financial liability to UIDAI.
- 8. In case of any change in our arrangement or terms of agreement with our partner M/s \_\_\_\_\_ (the Bidder for this Bid) for providing product support, we agree to maintain the level of support as desired by UIDAI and as committed by our partner under the abovementioned Bid, without any financial liability to UIDAI.
- 9. We hereby agree to provide to UIDAI, required assistance, consultancy and services beyond the defined scope of work to resolve issues under critical and unforeseen situations.
- 10. We hereby confirm our commitment towards providing the necessary support and assistance in case of any problems / issues arising due to integration of our product(s) with any other component(s) / product(s) under the purview of the overall solution.
- 11. We also confirm that in the event of UIDAI deciding, at any time during the term of contract under this Bid, to re-locate the product(s) / setup, we will provide necessary assistance to UIDAI to relocate the Equipment at no additional cost.

We hereby confirm that this undertaking is made in good faith and the aforesaid declarations are binding on us for the entire term of contract under the aforementioned Bid.

Thanking you,

Yours faithfully,

\_\_\_\_\_  
(Signature)

For and on behalf of: \_\_\_\_\_ (Name of OEM)

**Authorised Signatory**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Office Seal: \_\_\_\_\_

Place: \_\_\_\_\_

Date: \_\_\_\_\_

**Appendix F**

(Please see Clause 20 of  
Instructions to Bidders)

**List of Locations where Goods/Services have to be have to be Supplied, Installed,  
Commissioned**

<b>Sr. No.</b>	<b>City</b>	<b>Address</b>	<b>Name of the Contact Person</b>
1	Bengaluru	UIDAI Data Centre, Bharti Airtel Limited, 111 - 112, EPIP Area, Road No. 7, Opposite SJR Park, Whitefield, Bengaluru – 560 066	Shri Anup Kumar, Assistant Director General,  Cell No. : 09448010971
2	Delhi/NCR	Will be communicated separately to the selected Bidder	

**Annexure 7.1**

**Blade Servers**

S. No.	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	<b>Power Specification</b>		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,HZ		
2	<b>Processors</b>	No. of Processors	2	No. CPU/Sockets in one server, can have more cpus in a single blade		
		No of cores in each processor	6	No of cores in each physical CPU/socket		
		Processor Type	x86			
		Type of processor	64-bit	64-bit		
		Native support for 32-bit applications	YES	YES/NO		
		L2 Cache per Core		MB		
		L3 Cache per processor	12	MB		
		Hyper Threading Support				
		Clock Speed	2.93	GHZ		
3	<b>Architecture</b>	64-bit architecture	YES	YES/NO		
4	<b>Main Memory</b>	Size	64	GB		
		Expandible Upto per Core	8 GB Per Core			
		Type	DDR3			
		DIMM Type	ECC	(ECC / Non ECC)		
		DIMM Size	4 GB	GB		
		Free DIMM slots after populating 64 GB RAM	4			
5	<b>Disk Controller</b>	RAID level supported		RAID Levels (0/1/5/6/other)		
		RAID protection type	RAID 1	YES / NO		
		No. of channels in the RAID controller	Dual	Single / Dual / Quad		
6	<b>Internal Disks</b>	Type of disk proposed	SAS			
		Disk capacity	2X300 GB	GB		
		Min RPM	10000	RPM		
		Are Proposed Disks Hot Swappable?	YES	YES / NO		
		Max. no. of Disks supported in the proposed server	2			
	<b>Network-1</b>	Type of Ethernet controller proposed	Full duplex 1 Gbps	YES / NO		
		No. of Ethernet Controllers proposed	2	Units		
		Dual Homing proposed	YES	YES / NO		
		Teaming of Ethernet Controllers proposed	YES	YES / NO		

**Annexure 7.1**

**Blade Servers**

S. No.	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Total Throughput of all the proposed Ethernet Controllers together		Gbps		
		TCP/IP offload engine		YES / NO		
	<b>Network-2</b>	Type of Ethernet controller proposed	Full duplex 10 Gbps	YES / NO		
		No. of Ethernet Controllers proposed	2	Units		
		Dual Homing proposed	YES	YES / NO		
		Teaming of Ethernet Controllers proposed	YES	YES / NO		
		Total Throughput of all the proposed Ethernet Controllers together		Gbps		
		TCP/IP offload engine		YES / NO		
8	<b>Host based Adapters</b>	Type of HBA proposed	Full duplex Fiber channel			
		Throughput of each of the proposed HBA	8 Gbps	Gbps		
		Proposed HBA		PCI / PCI-X		
		I/O Slot used by HBA		PCI / PCI-X		
		No. of HBA required	2	Units		
		No. of ports on each HBA required	Dual	Single / Dual / Quad		
		Whether only single port is be used on each controller	Yes	YES / NO		
		Total Throughput of all the proposed HBA together		Gbps		
		Capability to dynamically load balance between multiple HBA	YES	YES / NO		
		Support for storage subsystems of leading manufacturers like EMC, Hitachi, HP, IBM, SUN,Net App, Dell	YES	YES / NO		
		LUN Size	10	in TB		
		No of LUNs				
		Max luns supported per server				
9	<b>Operating System</b>	Operating system is natively compliant with 32-bit and 64-bit applications	YES	YES / NO		
		Operating System Support - RHEL 5.X and CentOS X	YES	YES / NO		
		Operating System Support Windows 2003/ 2008 (32, 64 bit)				
		Virtualization Support (support for hypervisors like ESXi/ ESX, XEN, KVM, HYPER-V, VirtualBox )	YES			
	<b>File System</b>	Maximum file system partition size (file system)	8	TB		
12	<b>Remote Boot Support</b>	Network, SAN	Yes			
13	<b>Estimated Ratings of offered configuration</b>	SPEC Int2006				

**Annexure 7.1**

**Blade Servers**

S. No.	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		SPEC Rating (60% of SPECint_rate_base2006 plus 40% of SPECfp_rate_base2006 scores)	281-290			
		SPEC int_rate_2006 (base rate)				
		SPEC fp2006				
		SPECfp_rate_2006 (base rate)				
		tpmC				
		SPECpower_ssj2008				
14	<b>Support</b>	Is the proposed product <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product reach <b>End-of-support</b> during the next five years	NO	YES / NO		

**Annexure 7.2**

**Blade Servers Chassis**

S. No.	Parameter	Technical Specifications	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	<b>Power Specification</b>		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,HZ		
2	<b>Blade Density</b>	no. of blade servers (which fit into the enterprise class chassis) Full Blades	2 processor blades capable of accommodating 14 servers in the chassis	Nos		
3	<b>Dimensions</b>	Chassis Height		9U/10U		
		Chassis Dimensions		inches (LxWxH)		
		Chassis Weight when fully loaded (as per the Blade Density Specified)		KG		
4	<b>Redundancy</b>	Backplane redundancy	YES	YES/NO - dual backplane bus for high availability		
5	<b>Power &amp; Cooling</b>	Power Consumption At Full load		KVA		
		Power Consumption At normal load		KVA		
		Heat Dissipation at full load		BTU/Hr		
		Heat Dissipation at normal load		BTU/Hr		
		No of Cooling Fans Proposed				
		Redundant Cooling Fans	Yes			
		Hot Swappable Power supply proposed	YES	YES / NO		
6	<b>Networking &amp; Storage</b>	Dual AC input proposed	YES	YES / NO		
		Redundant Power Supply Proposed	YES			
		Number of 10G Ethernet ports in high availability - from chassis to external network so that end to end connectivity is for 10 Gbps	4			
		10 G Ethernet Manageable Interconnect Switch with high availability (support for VLAN, Bridging/STP etc.), SFP+ Modules	Yes			
		Number of 1G Ethernet ports - from chassis to external network	2			
		Number of Fiberchannel ports (8 Gbps) from chassis to external network	8			
		8G Manageable FC Interconnect Switch (with support for zoning) with high availability	YES			

**Annexure 7.2**

**Blade Servers Chassis**

S. No.	Parameter	Technical Specifications	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
7	<b>Management</b>	Management Module	Yes			
		Remote Installation, KVM, Blade Chassis/Server configuration & Management & diagnostics, energy management	Yes			
		Shared DVD/ROM Drive	Yes			
		Shared USB 2.0 Drive	Yes			
8	<b>Others</b>	Proposed Number of Blade Chassis (fully loaded) per 42U rack at 7KVA power consumption				
		Max number of Blade Chassis (fully loaded) per 42U rack				
		Operating Temperature and Humidity				
		Acoustic Noise at Full Load (fully loaded blade chassis) as per ISO 9296		LWAd and LpAm		
		Acoustic Noise at Normal Load (fully loaded blade chassis) as per ISO 9296		LWAd and LpAm		
8	<b>Support</b>	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		



**Annexure 7.3**

**Rack Server - 1**

Sr. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	<b>Power Specification</b>		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,HZ		
2	<b>Processor</b>	Processor Type (CISC)	x86	CISC / EPIC / RISC		
		Type of processor	64-bit	bits		
		Native support for 32-bit applications	YES	YES/NO		
		No of CPUs	2			
		Cores per CPU	6			
		Hyper Threading Support				
		Clock Speed	2.93	GHZ		
		L2 Cache per core		MB		
		L3 Cache per processor	12 MB	MB		
3	<b>Dimensions</b>	Chassis Height		1U/2U		
		Chassis Dimensions		inches (LxWxH)		
		Chassis Weight when fully loaded		KG		
4	<b>Power &amp; Cooling</b>	Power Consumption At Full load		KVA		
		Power Consumption At normal load		KVA		
		Heat Dissipation at full load		BTU/Hr		
		Heat Dissipation at normal load		BTU/Hr		
		No of Cooling Fans Proposed				
		Redundant Cooling Fans	Yes			
		Hot Swappable Power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
		Redundant Power Supply Proposed	YES			
5	<b>Main Memory</b>	Main Memory Type	ECC	(ECC / Non ECC)		
		DDR Type	DDR3			
		Total Memory	64 GB			
		Free DIMM slots after populating 64 GB	4			
6	<b>Disk Controller</b>	RAID protection type proposed	RAID 1	YES / NO		
		No. of channels in the proposed RAID controller	Dual	Single / Dual / Quad		
		Proposed size of battery backed cache	128 MB	MB		
7	<b>Internal Disks</b>	SAS Disk Supported	YES	YES / NO		
		Disk capacity	2X300 GB	GB		
		Disk Speed	10000 RPM	RPM		
		Are Proposed Disks Hot Swappable?	YES	YES / NO		
8	<b>Network</b>	Type of Ethernet controller proposed	Full duplex 10G	Units		
		No. of ports used on each Ethernet controller proposed	2	YES / NO		

**Rack Server - 1**

Sr. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Whether only single port is be used on each controller	Yes	YES / NO		
		Dual Homing proposed	YES	Gbps		
		Teaming of Ethernet Controllers proposed	YES	YES / NO		
		No of 10 G Ethernet ports	4			
		No of 1 G Ethernet ports	2			
9	Host based Adapters	Type of HBA proposed	Full duplex Fiber channel	PCI / PCI-X		
		Throughput of each of the proposed HBA	8 Gbps	PCI / PCI-X		
		No. of HBA proposed	2	YES / NO		
		No. of ports used on each HBA proposed	Single	Gbps		
		Whether only single port is to be used on each controller	Yes	YES / NO		
		Capability to dynamically load balance between multiple HBA	YES			
		Support for storage subsystems of leading manufacturers like EMC, Hitachi, HP, IBM, SUN,NetApp, Dell	YES	YES / NO		
10	Operating System	Operating system is natively compliant with 32-bit and 64-bit applications	YES	YES / NO		
		Operating System Support - RHEL 5.1 or higher (32,64 bit), Windows 2003/2008 (32, 64 bit)	YES			
11	Virtualalization Support	(support for hypervisors like a ESXi/ESX, XEN, KVM, HYPER-V, VirtualBox )	YES			
12	File System	Maximum file system partition size (file system)	8	TB		
13	Remote Boot Support	Network, SAN	Yes			
14	Others	Max no of fully loaded servers per 42U rack at 7KVA load				
		Free expansion slots	2			
15	Estimated Ratings of server for proposed configurarion	SPEC Int2006				
		SPEC Rating (60% of SPECint_rate_base2006 plus 40% of SPECfp_rate_base2006 scores)	281-290			
		SPEC int_rate_2006 (base rate)				
		SPEC fp2006				
		SPECfp_rate_2006 (base rate)				
		tpmC				
		SPECpower_ssj2008				
16	Support	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO			
		Will the proposed product/solution reach End-of-support during the currency of contract?	NO			

**Annexure 7.4**

**Rack Server - 2**

Sr. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	<b>Power Specification</b>		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,HZ		
2	<b>Processor</b>	Processor Type (CISC)	x86	CISC / EPIC / RISC		
		Type of processor	64-bit	bits		
		Native support for 32-bit applications	YES	YES/NO		
		No of CPUs	2			
		Cores per CPU	8			
		Hyper Threading Support				
		Clock Speed	2.93	GHZ		
		L2 Cache per core		MB		
		L3 Cache per processor	12 MB	MB		
3	<b>Dimensions</b>	Chassis Height		1U/2U/4U		
		Chassis Dimensions		inches (LxWxH)		
		Chassis Weight when fully loaded		KG		
4	<b>Power &amp; Cooling</b>	Power Consumption At Full load		KVA		
		Power Consumption At normal load		KVA		
		Heat Dissipation at full load		BTU/Hr		
		Heat Dissipation at normal load		BTU/Hr		
		No of Cooling Fans Proposed				
		Redundant Cooling Fans	Yes			
		Hot Swappable Power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
		Redundant Power Supply Proposed	YES			
5	<b>Main Memory</b>	Main Memory Type	ECC	(ECC / Non ECC)		
		DDR Type	DDR3			
		Total Memory	96 GB			
		Free DIMM slots after populating 96 GB	2			
6	<b>Disk Controller</b>	RAID protection type proposed	RAID 5	YES / NO		
		No. of channels in the proposed RAID controller	Dual	Single / Dual / Quad		
		Proposed size of battery backed cache	128 MB	MB		
7	<b>Internal Disks</b>	SAS Disk Supported	YES	YES / NO		
		Disk capacity	2X300 GB	GB		
		Disk Speed	10000 RPM	RPM		
		Are Proposed Disks Hot Swappable?	YES	YES / NO		
8	<b>Network PCI / PCI-X</b>	Type of Ethernet controller proposed	Full duplex 10G	Units		

**Annexure 7.4**

**Rack Server - 2**

Sr. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		No. of ports used on each Ethernet controller proposed	2	YES / NO		
		Whether only single port is be used on each controller	Yes	YES / NO		
		Dual Homing proposed	YES	Gbps		
		Teaming of Ethernet Controllers proposed	YES	YES / NO		
		No of 10 G Ethernet ports	4			
		No of 1 G Ethernet ports	2			
9	<b>Host based Adapters</b>	Type of HBA proposed	Full duplex Fiber channel	PCI / PCI-X		
		Throughput of each of the proposed HBA	8 Gbps	PCI / PCI-X		
		No. of HBA proposed	2	YES / NO		
		No. of ports used on each HBA proposed	Single	Gbps		
		Whether only single port is to be used on each controller	Yes	YES / NO		
		Capability to dynamically load balance between multiple HBA	YES			
		Support for storage subsystems of leading manufacturers like EMC, Hitachi, HP, IBM, SUN,NetApp, Dell	YES	YES / NO		
10	<b>Operating System</b>	Operating system is natively compliant with 32-bit and 64-bit applications	YES	YES / NO		
		Operating System Support - RHEL 5.1 or higher (32,64 bit), Windows 2003/2008 (32, 64 bit)	YES			
11	<b>Virtualalization Support</b>	(support for hypervisors like a ESXi/ESX, XEN, KVM, HYPER-V, VirtualBox )	YES			
12	<b>File System</b>	Maximum file system partition size (file system)	8	TB		
13	<b>Remote Boot Support</b>	Network, SAN	Yes			
14	<b>Others</b>	Max no of fully loaded servers per 42U rack at 7KVA load				
		Free expansion Slots	2			
15	<b>Estimated Ratings of server for proposed configurarion</b>	SPEC Int2006				
		SPEC Rating (60% of SPECint_rate_base2006 plus 40% of SPECfp_rate_base2006 scores)	281-290			
		SPEC int_rate_2006 (base rate)				
		SPEC fp2006				
		SPECfp_rate_2006 (base rate)				
		tpmC				
		SPECpower_ssj2008				

**Annexure 7.4**

**Rack Server - 2**

Sr. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
16	<b>Support</b>	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO			
		Will the proposed product/solution reach End-of-support during the currency of contract?	NO			

**Annexure 7.5**

**Rack Server-3**

Sr. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	<b>Power Specification</b>		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
2	<b>Processor</b>	Processor Type (CISC)	x86			
		Type of processor	64-bit	bits		
		Native support for 32-bit applications	YES	YES/NO		
		No of CPUs	2			
		Cores per CPU	6			
		Hyper Threading Support				
		Clock Speed	2.93	GHZ		
		L2 Cache per core		MB		
		L3 Cache per processor	12 MB	MB		
3	<b>Dimensions</b>	Chassis Height		1U/2U/4U		
		Chassis Dimensions		inches (LxWxH)		
		Chassis Weight when fully loaded		KG		
4	<b>Power &amp; Cooling</b>	Power Consumption At Full load		KVA		
		Power Consumption At normal load		KVA		
		Heat Dissipation at full load		BTU/Hr		
		Heat Dissipation at normal load		BTU/Hr		
		No of Cooling Fans Proposed				
		Redundant Cooling Fans	Yes			
		Hot Swappable Power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
		Redundant Power Supply Proposed	YES			
5	<b>Main Memory</b>	Main Memory Type	ECC	(ECC / Non ECC)		
		DDR Type	DDR3			
		Total Memory	96 GB			
		Free DIMM slots after populating 96 GB	2			
6	<b>Disk Controller</b>	RAID protection type proposed	RAID 5	YES / NO		
		No. of channels in the proposed RAID controller	Dual	Single / Dual / Quad		
		Proposed size of battery backed cache	128 MB	MB		
7	<b>Internal Disks</b>	SAS Disk Supported	YES	YES / NO		
		Disk capacity	4*500 GB	GB		
		Disk Speed	10000 RPM	RPM		
		Are Proposed Disks Hot Swappable?	YES	YES / NO		
8	<b>Network PCI / PCI-X</b>	Type of Ethernet controller proposed	Full duplex 10G	Units		

**Annexure 7.5**

**Rack Server-3**

Sr. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		No. of ports used on each Ethernet controller proposed	2	YES / NO		
		Whether only single port is be used on each controller	Yes	YES / NO		
		Dual Homing proposed	YES	Gbps		
		Teaming of Ethernet Controllers proposed	YES	YES / NO		
		No of 10 G Ethernet ports	4			
		No of 1 G Ethernet ports	2			
9	<b>Host based Adapters</b>	Type of HBA proposed	Full duplex Fiber channel	PCI / PCI-X		
		Throughput of each of the proposed HBA	8 Gbps	PCI / PCI-X		
		No. of HBA proposed	2	YES / NO		
		No. of ports used on each HBA proposed	Single	Gbps		
		Whether only single port is be used on each controller	Yes	YES / NO		
		Capability to dynamically load balance between multiple HBA	YES			
		Support for storage subsystems of leading manufacturers like EMC, Hitachi, HP, IBM, SUN,NetApp, Dell	YES	YES / NO		
10	<b>Operating System</b>	Operating system is natively compliant with 32-bit and 64-bit applications	YES	YES / NO		
		Operating System Support - RHEL 5.X or higher (32,64 bit), CentOS 5.X ,Windows 2003/2008 (32, 64 bit)	YES			
11	<b>Virtualalization Support</b>	Virtualalization Support (support for hypervisors like a ESXi/ESX, XEN, KVM, HYPER-V, VirtualBox )	YES			
12	<b>File System</b>	Maximum file system partition size (file system)	8	TB		
13	<b>Remote Boot Support (Network, SAN)</b>	Yes				
14	<b>Others</b>	Max no of fully loaded servers per 42U rack at 7KVA load				
		Free expansion slots	2			
15	<b>Estimated Ratings of server for proposed configurarion</b>	SPEC Int2006				
		SPEC Rating (60% of SPECint_rate_base2006 plus 40% of SPECfp_rate_base2006 scores)	281-290			
		SPEC int_rate_2006 (base rate)				
		SPEC fp2006				
		SPECfp_rate_2006 (base rate)				
		tpmC				
		SPECpower_ssj2008				

**Annexure 7.5**

**Rack Server-3**

Sr. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
16	<b>Support</b>	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO			
		Will the proposed product/solution reach End-of-support during the currency of contract?	NO			



Annexure 7.6

Event Correlation Server

S. No	Form Factor/Dimension	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	<b>Make</b>					
2	<b>Model</b>					
3	<b>Form Factor/Dimension</b>			(U) / HxWxD(mm)		
4	<b>Weight</b>			Kg		
5	<b>Hear Dissipation</b>			BTU/hr		
6	<b>Power requirement</b>			KVA		
7	<b>Power Specification</b>		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	<b>Current Rating</b>			Amp		
9	<b>Number, Rating, Type of power points required</b>			Quantity, Amp, Type		
10	<b>Operating temperature range</b>			°C		
11	<b>Operating Relative Humidity range (non-condensing)</b>			%		
12	<b>Production Certification</b>					
13	<b>Product Name</b>		Enterprise event correlation, security monitoring and management			
14	<b>Version</b>		Latest software with all features as required for the solution			
15	<b>Processors</b>					
16	<b>Memory</b>			GB		
17	<b>Network Interface</b>		1G Ethernet or 10G Ethernet	Bbps		
18	<b>Number of Network Interfaces</b>		at least 2			
19	<b>Operating system</b>			YES/NO		
20	<b>number of events</b>		minimum 7000 event per sec	YES/NO		

Annexure 7.6

Event Correlation Server

S. No	Form Factor/Dimension	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
21	<b>number of devices</b>		minimum 900 devices	YES/NO		
22	<b>Event/Log collection storage</b>		at least 1TB storage, RAID protected, High Performance disks	YES/NO		
23	<b>Support Log encryption</b>		yes	YES/NO		
24	<b>Support high availability</b>		yes	YES/NO		
25	<b>Log Replication capabilities</b>		yes	YES/NO		
26	<b>Data management tools(copy, purge and move)</b>		yes	YES/NO		
27	<b>Platform should provide entire Information Life cycle management solution for log retention and purging and user customizable</b>			YES/NO		
28	<b>Event/Log collection:</b>	Collect events and logs at real time to a centralized log and Event Management system with secure storage	yes	YES/NO		
		Regular signature and vulnerability	yes	YES/NO		
		Should support auto device discovery		YES/NO		
		System Device support Capabilities				
28.1	<b>Operating system</b>	support not limiting to MS Windows, Linux, Solaris, HP UX, AIX	yes	YES/NO		
28.2	<b>Network Devices</b>	Support device Support not limiting to Routers, Switches, Wireless Access points	yes	YES/NO		
28.3	<b>Database</b>	Support not limiting to Oracle, MS SQL	yes	YES/NO		
28.4	<b>Security Device</b>	Support not limiting to Firewalls, IPS,NIDS, NIPS,HIDS, Antivirus Solutions, IPsec gateways	yes	YES/NO		
28.5	<b>Virtual Environments</b>	support not limiting to Vmware, Vcenter,Vmware	yes	YES/NO		
28.6	<b>Customization capabilities to support home grown applications</b>		yes	YES/NO		

Annexure 7.6

Event Correlation Server

S. No	Form Factor/Dimension	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
29	<b>Alert and Correlation</b>	Web based ability to monitor and manage devices which are part of solution	yes	YES/NO		
		Correlation support but not limited to - Rule Based, Behaviour Based, Vulnerability based, User defined, Baseline based	yes	YES/NO		
		Provide real-time dashboard and global view of all data captured	yes			
		Web based tool to create and manage granular Access to dashboard based on role/group		YES/NO		
		Ability to define the network baseline and alerts	yes	YES/NO		
		Capability to alert via but not limiting to - email, syslog notifications, SNMP traps, syslog	yes	YES/NO		
30	<b>Reports</b>	Standard reports should be available as part of solution and made available as and when vendor release the upgrade at no cost	yes	YES/NO		
		Ability to schedule standard user defined reports	yes	YES/NO		
		Solution support ad-hoc queries based on standard syntax and regular expression		YES/NO		
31	<b>Management</b>	System should allow multi user access	yes	YES/NO		
		Audit trail for management activities		YES/NO		
		Ability to create role/group based views		YES/NO		
		GUI/Web based Administration tool		YES/NO		
		Provision for Active Directory support for MS users		YES/NO		
		Log database should not be available directly using SQL tools		YES/NO		
		AAA support for TACACS, RADIUS, Active Directory	yes	YES/NO		
		Role Based Access to administrator web portal	yes	YES/NO		

Annexure 7.6

Event Correlation Server

S. No	Form Factor/Dimension	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
32	<b>Process</b>	Support ticketing/workflow management capabilities	yes	YES/NO		
		Allow third party ticketing systems like but not limited to - BMC Remedy, CA Unicenter, Service Desk, etc..	yes	YES/NO		
		Automatic incident creation based on alerts	yes	YES/NO		
33	<b>Mounting</b>		Standard 42u rack with required hardware			
34	<b>Compatability with proposed network devices</b>		Yes	YES/NO		
35	<b>Compatability with proposed servers</b>		Yes	YES/NO		
36	<b>Power Supply</b>	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
37	<b>Cooling Fans</b>	Hot Swappable Cooling Fans proposed	YES	YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
38	<b>Support</b>					
	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?		NO	YES/NO		
	Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.			YES/NO		
	Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?		NO	YES/NO		

**Annexure 7.7**

**Radius Server**

S. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Product Name					
2	Version					
3	No. of Licenses					
	Server					
	Processor					
	Client					
	Client Access License					
	Other 1					
	Other 2					
4	Authentication	PAP,CHAP and MS-CHAP		YES/NO		
		WPA Compliant wireless LAN authentication for		YES/NO		
		EAP-SIM		YES/NO		
5	Data Sources	Flat File		YES/NO		
		linux user Password file		YES/NO		
		linux via password file		YES/NO		
		Radius proxy authentication and accounting		YES/NO		
		RSA Ace Server		YES/NO		
		LDAP		YES/NO		
		Active Directory		YES/NO		
6	Authorization features	Simple Radius Policy		YES/NO		
		Advanced Policy Engine		YES/NO		
7	Authorization reply items	Idle-timeout				
		session time-out limits				
		IP address assignments				
		Attribute Pruning				
		Attribute Mapping				
		QoS				
		IP Filter				
		Compulsory tunnels				
		Wireless VLANs				
8	Extensibility Features	VSA Definitions and Radius Dictionary extensibility				
9	Radius RFC Compliance					
10	Accounting	Proxy Accounting		YES/NO		
		Browser View of Accounting Logs		YES/NO		
		Pre-defined and customizable loggign formats		YES/NO		
		Accounting on/off packet support		YES/NO		
11	Management	Web based Server Administration		YES/NO		

**Annexure 7.7**

**Radius Server**

S. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Remote Monitoring		YES/NO		
		Session and Event Logging		YES/NO		
		Simultaneous Access Control		YES/NO		
		DHCP Relay Support		YES/NO		
12	<b>Protocols Supported</b>			YES / NO		
13	<b>Operational Features</b>	High Speed Processing Performance		YES/NO		
		Load Balance and Failover across LDAP		YES/NO		
14	<b>Operating system supported for proposed software</b>					
15	<b>Support</b>	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		

**Annexure 7.8**

**Terminal Server**

S. No.	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor / Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power Requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating Temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Network	Integration with traditional networks		YES / NO		
		Integration with advanced peer to peer networking		YES / NO		
		Support for VOIP, security and routing features		YES / NO		
		No. of asynchronous ports	64	number		
		WAN Interfaces	Serial/BRI/PRI/Dial up ,xDSL	YES / NO		
		Number of slots for WAN interfaces		number of slots		
		Routing performance in number of packets/second		packets/second		
		Auxiliary and Console ports	YES	YES / NO		
		Support for Quality of Service		YES / NO		
13	Power Supply	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed		YES / NO		

**Annexure 7.8**

**Terminal Server**

S. No.	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Dual AC input proposed		YES / NO		
14	<b>Cooling Fans</b>	Hot Swappable Cooling Fans proposed		YES / NO		
		(N+1) redundant Cooling Fans proposed		YES / NO		
15	<b>Operating System</b>	Operating Systems proposed on this server				
		Operating Systems supported on this server				
16	<b>Any other software proposed (provide details)</b>					
17	<b>Support</b>	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		
18	<b>Estimated Ratings of server</b>	SPEC Int2000				
		SPEC int_rate_base 2000				
		SPEC fp2000				
		SPECfp_rate_base 2000				
		tpmC				



**Annexure 7.8**

**Terminal Server**

S. No.	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
19	Remote Management		Hardware based, Operating System Independent Remote Management having Integrated Management Log, Support for multiple user accounts with customizable access privileges with SSL level security, SNMP.	YES / NO		
20	Other	Rack Mountable		YES / NO		
		Automatic Server Recovery		YES / NO		
		Redundant / adaptive load balancing NIC support		YES / NO		

**Annexure 7.9**

**Load Balancer**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor / Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power Requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating Temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Architecture	Should be a multi processor based appliance	Yes			
		Traffic Throughput	8 Gbps			
		Network Connectivity support	4 x 10/100/1000 , 1Gbps connectivity			
		Memory on the device	8GB			
		L4 concurrent connections	1 Million			
		L4 connections per second	100000			
		L7 concurrent connections	250000			
		Should suport L7 connections per second	35000			
		Should support minimum L7 throughput	4 Gbps			
		Should support SSL offloading & HTTP acceleration from day one in same unit without adding another hardware to save rack space, power & cooling requirements	Yes			
		SSL Throughput	2 Gbps			
		Initial TPS support	35000			
	Max TPS support	60000				

**Annexure 7.9**

**Load Balancer**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Hardware Compression Support	6-8Gbps			
		NAT entries	60000			
		Concurrent SSL connections	1,00,000+			
		Virtual Local area Network (Vlans)	512			
		Virtual servers	3000			
		Server farms	2500			
		Real servers	8000			
		Support for sticky table entries	100000			
		Should support Port Aggregation IEEE 802.3ad	Yes			
		Should support Vlan Trunk IEEE 802.1Q	Yes			
		Should have minimum 1Gb Flash Drive	Yes			
		Should support Port Mirroring	Yes			
		Should support following deployments	Yes			
		Routing Mode : where client-side and server-side VLANs are on different subnets	Yes			
		Bridge Mode : where client-side and server-side VLANs are on the same subnets.	Yes			
		Direct Server Response : where SLB load balance an initial request from the client to a real server; however, the server directly responds to the client bypassing the SLB.	Yes			
<b>13</b>	<b>Load Balancing Features</b>	Server load balancing based on SNMP parameter like CPU load, Memory utilization etc	Yes			
		Should support Client NAT & Server NAT and PAT and NAT pool for Dynamic NAT	Yes			
		In case of Server / Application failure device should detect it in not more than 30 seconds	Yes			
		In case of Server failure traffic should be diverted to another Server automatically	Yes			

**Annexure 7.9**

**Load Balancer**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Should support following content based Load balancing features	Yes			
		Support for protocols namely HTTP, FTP, DNS, Internet Control Message Protocol (ICMP), Session Initiation Protocol (SIP), Real-Time Streaming Protocol (RTSP), Extended RTSP, RADIUS, and Microsoft Remote Desktop Protocol (RDP).	Yes			
		HTTP Header based redirection	Yes			
		Should Support HTTP Header manipulation on Client requests and server responses	Yes			
		URL-Based Redirection	Yes			
		Browser Type Based Redirection	Yes			
		Preferential Treatment (Cookie-Based)	Yes			
		Should support End-to-End SSL Encryption (Backend Encryption)	Yes			
		Should support SSL initiation ( SSL between SLB & Servers)	Yes			
		Predictors				
		Load Balancing algorithm should support following algorithm namely Least loaded, Round-robin,Adaptive response,Least bandwidth,Least connections,Hash address,Hash cookie,Hash header,Hash URL	Yes			

**Annexure 7.9**

**Load Balancer**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Probe Support should be available for the protocols HTTP, HTTPS, SMTP, POP3, IMAP, RADIUS, SIP, RTSP, SNMP, Telnet, FTP,KAL-AP, ICMP, TCP, UDP, Echo, Finger, DNS	Yes			
		Support for scripted probes	Yes			
14	<b>Server Management Features</b>	Should support Graceful shutdown of Servers	Yes			
		Should support Graceful Activation of Servers	Yes			
		Should able to redirect traffic based on Source IP, Destination IP & TCP PORT	Yes			
15	<b>Virtualization</b>	The Load Balancer should support virtualization or segmentation where it should be possible to create virtual partitions from day one. Each of this Partition should be completely isolated from each other wrt dedicated access control and resource allocation	Yes			
		Should support Min & Max resource allocation per virtual Partition	Yes			
		Should support resource sharing between virtual Partitions so in case if resource is available with another virtual partition it can be borrowed automatically	Yes			
		Should keep configuration files separately for each virtual partition or segment	Yes			
16	<b>Health Monitoring</b>	Should provide individual health checks for real servers & farms	Yes			
		Should allow to monitor protocol like HTTP, SMTP, POP, FTP etc	Yes			

**Annexure 7.9**

**Load Balancer**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Should allow to configure Customize health probes based on TCP & UDP parameters	Yes			
		Should provide GUI to configure Health Monitoring	Yes			
		Should provide flexible Script based support for complex environments & advance health monitoring	Yes			
17	<b>Redundancy</b>	System and Session redundancy-failover should happen automatically, with no human intervention,Should Provide stateful failover capabilities	Yes			
		Should support Redundancy protocol like VRRP	Yes			
		Should support transparent failover between 2 devices	Yes			
		Should support transparent failover between 2 Virtual Instances configured on 2 different units	Yes			
		Should Supports active-standby and active-active redundancy topologies with automatic configuration synchronization	Yes			
		The failover should be transparent to other networking devices	Yes			
18	<b>Security</b>	Support for Access list	1000+			
		Should support HTTP deep packet inspection (HTTP header, URL, and payload)	Yes			
		Should support bidirectional Network Address Translation (NAT) and Port Address Translation (PAT)	Yes			

**Annexure 7.9**

**Load Balancer**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Should support TCP Normalization & TCP connection state tracking	Yes			
		Should support ICMP flood guard	Yes			
		Should support Virtual connection state for UDP	Yes			
		Should support Sequence number randomization	Yes			
		Should support TCP header validation	Yes			
		Should support TCP window size checking	Yes			
		Should able to detect & drop same Source port & destination port traffic	Yes			
		Should able to detect & drop L4 port 0 traffic	Yes			
19	<b>Application Acceleration</b>	Should Support SSL Offloading & Acceleration on same hardware to reduce number of equipment in Data center & save power / cooling requirement	Yes			
		SSL certificates support	6500			
		Support for TPS	7500			
		Should support HTTP Compression technologies like GZIP & DEFLATE using dedicated hardware chips	Yes			
		Should use dedicated Hardware Card / Module for compression & not software based compression	Yes			
		Should support dynamic caching technologies	Yes			
		Should store cached content in RAM for faster content delivery	Yes			
		Should provide 1 GB dedicated storage capacity in RAM	Yes			
		Should support image optimization				
		Should support transparent TCP Multiplexing (TCP Offloading)	Yes			
20	<b>Management</b>	Role Based administration support namely Admin, Security-admin, Network-Engineer, Network Monitor, Network Manager	Yes			
		Should support following Management and diagnostics ports / Applications				
		Telnet	Yes			
		SSH	Yes			
		HTTPS	Yes			
		RS232 -Console Port	Yes			
		SNMP	Yes			
		Should support GUI for configuration & monitoring	Yes			

**Annexure 7.9**

**Load Balancer**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Should support access control per virtual unit so each virtual unit can be managed by different group without able to see config in other virtual unit	Yes			
21	Support	Is the proposed product/solution End-of-life or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO			
		Will the proposed product/solution reach End-of-life during the currency of contract? If so, specify details.				
		Will the proposed product/solution reach End-of-support during the currency of contract?	NO			



**Annexure 7.10**

**Desktop**

S. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation,
1	Make					
2	Model					
3	Form Factor / Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power Requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating Temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Processor	No. of Processors proposed	1	No. of units in one desktop		
		No of cores per CPU/Socket	4	No of cores in each cpu		
		Processor Type (intel/amd)	x86	intel/amd		
		Type of processor	64-bit	32-bit / 64-bit		
		Native support for 32-bit applications	YES	YES/NO		
		Clock speed of proposed Processor		GHZ		
		Max. Clock speed Processor supported on the machine		GHZ		
13	Cache Memory (size in MB)		8	MB		
14	Architecture	64-bit architecture	YES	YES/NO		
		Motherboard chipset of the proposed desktop				
15	Main Memory	Proposed Memory size	4	GB		
		Size of proposed Memory module		GB		
		No. of memory slots populated		Units		
		Max. size of memory module available for the proposed desktop		GB		

**Annexure 7.10**

**Desktop**

S. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation,
		Total number of memory slots available		Units		
		Max. Memory size supported		GB		
		Proposed Main Memory Type	DDR3	DDR3		
		Main Memory Bus Speed		MHz		
		Main Memory Bandwidth		GB/s		
16	I/O	No. of 64-bit PCI Slots proposed	2	Units		
		No. of populated 64-bit PCI slots		Units		
		Max. No. of PCI slots supported on the desktop		Units		
		Bus speed of proposed PCI slot		MHz		
17	Display/Graphics	Graphics Card proposed (model/chipset)				
		Graphics adaptor memory	256 MB	MB		
18	Internal Disks	Type of disk proposed	SATA/Other	YES / NO		
		Disk capacity	500 GB	GB		
		Disk Speed	7200 RPM	RPM		
		No of disks proposed		Units		
		Max. no. of Disks supported in the proposed desktop				
		Mean Time Between Failures (MTBF) of proposed Disks		Years		
		Average Seek Time of the proposed Disks		ms		
		Average Latency Time of the proposed Disks		ms		
		Support for SSD drives		YES/NO,drive size, capacity		
19	CD / DVD Drive	Optical Drive Proposed		CD Drive / DVD Drive		
		Drive Speed Proposed		X		
		No. of drives proposed				
		Is drive writeable / re-writeable?	YES	YES / NO		
		Controller Type		IDE / SCSI / ATA		
20	Network			PCI / PCI-X		

**Annexure 7.10**

**Desktop**

S. No	Parameter	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation,
		Type of Ethernet controller proposed	Full duplex 10/100/1000 Mbps	Units		
21	<b>OS</b>	Operating Systems supported on this desktop	Windows 7 professional	windows 7 professional/business/		
		Operating system is natively compliant with 32-bit and 64-bit applications	YES	YES/NO		
		Maximum Physical Memory supported by the OS		in GB		
22	<b>Antivirus proposed on the desktop</b>		YES			
23	<b>Display Monitor</b>	Size	21" wide screen,flat panel LCD/LED	inches-viewable area		
		Resolution	1024*768			
24	<b>USB Ports</b>		4			
25	<b>Support</b>	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO			
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO			
26	<b>Energy Star Compliance</b>	End-of-life Management including recycling	Yes	YES/NO - explain the procedure	Yes/No	
		Environment, friendly Products		YES/NO - explain the procedure		

**Annexure 7.11**

**SAN Storage Array - DMZ**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor / Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power Requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating Temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Raw capacity of offered SAN storage array			TB		
13	Usable capacity of offered SAN storage array		60	TB		
14	Max. capacity per cabinet with specification of disks proposed			TB		
15	Max. capacity per cabinet			TB		
16	Max. number of disk drives supported per cabinet			Units		
17	Max. number of cabinets supported per System			Units		
18	Overall capacity of storage array with full expansion		120	TB		
19	Disk Sub-system	Disk spindle type	FC			
		Capacity of each disk drive	600GB	TB		
		Disk speed	15,000 rpm	RPM		
		Formatted capacity of each disk		GB		
		Total number of disks proposed		Units		
		Support for Global hot spare disks	YES	YES / NO		
		No. of Global hot spare disks proposed	15%	Percentage		

**Annexure 7.11**

**SAN Storage Array - DMZ**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Mean Time Between Failures (MTBF) of proposed Disks				
		Average Seek Time of the proposed Hard Disks (in Millisecond)		ms		
		Average latency of proposed hard Disks (in Millisecond)		ms		
		Capacity / speed of disks supported on the system		GB @ RPM		
		Are Proposed Disks Hot Swappable?	YES	YES / NO		
		Capability for Online storage expansion without reboot	YES	YES / NO		
		Capability of completely automating activities, including but not limited to, defrag routines, scan disks, disk scrubbing, file system checks, consistency checks, etc.	YES	YES / NO		
21	<b>Controllers</b>	Storage controllers which should cover the frontend and backend requirements as specified in dual configuration mode	2	Units		
		No. of processors configured in the proposed system				
		Max. No. of processors supported on the system		Units		
		Type of processor		MIPS/ RISC		
		Clock speed of proposed processor				
		No. of backend ports proposed	8	Units		
		Max. no. of backend ports supported on the system	16	Units		
		Are backend ports configured for high-availability		YES / NO		
		No. of processors dedicated for backend processing				
		No. of front-end ports proposed	8	Units		
		Max. no. of front-end ports supported on the system	16	Units		

**Annexure 7.11**

**SAN Storage Array - DMZ**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Are front-end ports configured for high-availability		YES / NO		
		No. of processors dedicated for front end processing				
		Hardware based storage RAID controller	YES	YES / NO		
		Hot swappable controller cards?	YES	YES / NO		
		RAID protection against double failure in the same RAID group		YES / NO		
		Type of RAID protection supported	5	RAID 0, 1, 5, 1+0, 6+1		
		No. of Concurrent Access Path available from front end ports to disks		Units		
		No. of FC host ports proposed	4	Units		
		Throughput of each FC port	8 Gbps	4/8 Gbps		
		Total throughput of the proposed storage system		Gbps		
		Max. No of FC Host ports supported on the system		Units		
		Storage system end-to-end bandwidth from FC host port to backend disk	4 Gbps	4/8 Gbps		
<b>22</b>	<b>FC-AL loop</b>	No. of FC-AL loops proposed		Units		
		Max. no. of FC-AL loops supported per controller		Units		
		No. of disks proposed per FC-AL loop		Units		
		Max. No. of disks per FC-AL loop		Units		
		Bandwidth of FC-AL loop	4 Gbps	4/8 Gbps		
<b>23</b>	<b>Cache</b>	Architecture		Bus / Switch		
		Whether Data & Control Cache are separate		YES / NO		
		Type of proposed Control Cache	ECC	ECC / Non-ECC		
		Support for multiple bits error detection and correction capability in proposed Control Cache		YES / NO		
		Type of proposed Data Cache	ECC	ECC / Non-ECC		

**Annexure 7.11**

**SAN Storage Array - DMZ**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Support for multiple bits error detection and correction capability in proposed Data Cache		YES / NO		
		Proposed Data Cache	16	GB		
		Proposed Control Cache		GB		
		Max. Data Cache supported on system	32	GB		
		Max. Control Cache supported on system		GB		
		Data Cache Bandwidth		GB/s		
		Control Cache Bandwidth		GB/s		
		Is Data Cache board hot swappable?	YES	YES / NO		
		Is Control Cache board hot swappable?	YES	YES / NO		
		Is Data Cache redundancy supported?		YES / NO		
		If so, is it mirrored?		YES / NO		
		Is Control Cache redundancy supported?		YES / NO		
		If so, is it mirrored?		YES / NO		
		Is Battery backup available for Data cache?		YES / NO		
		If so, what is the duration for which it is available?		Hrs		
		Is the battery hot swappable?		YES / NO		
		Is Battery backup available for Control cache?		YES / NO		
		If so, what is the duration for which it is available?		Hrs		
		Is the battery hot swappable?		YES / NO		
		Size of proposed Data cache that is usable for purposes of Read /Write operations		GB		
		Size of proposed Control cache that is usable for purposes of Read /Write operations		GB		
		Can cache be allocated separately for read and separately for write operations?		YES / NO		
		Can cache be allocated separately for according to volumes?		YES / NO		

**Annexure 7.11**

**SAN Storage Array - DMZ**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		No. of Concurrent Access Paths in for Data Cache		Units		
		No. of Concurrent Access Paths in for Control Cache		Units		
		Support for Cache Vaulting i.e. capability to ensure no data loss during power failure by securely writing data existing in cache to disk spindles		YES / NO		
		Capability for automatic full de-staging of cache in case of power failure		YES / NO		
		Guarantee that there would be no data loss (zero data loss) for data that is committed to cache		YES / NO		
24	Support for point in time copy of volumes for backup and remote replication of data		YES	YES / NO		
25	Support for storage-to-storage replication in both synchronous and asynchronous modes		YES	YES / NO		
26	Is storage system compatible with CNT router			YES / NO		
27	Support for on-line backup of databases			YES / NO		
28	Support for non-disruptive online upgrade of firmware without reboot		YES	YES / NO		
29	Power Supply	Hot Swappable Power supply proposed	YES	YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
30	Cooling Fans	Hot Swappable Cooling Fans proposed	YES	YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
31	Hosts Supported	Linux	YES	YES / NO		
		Windows 2003	YES	YES / NO		
		Windows 2008	YES	YES / NO		
		No of Hosts Supported	64			
		No of LUNS	64			



**Annexure 7.11**

**SAN Storage Array - DMZ**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
32	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details		YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		
33	Estimated ratings	Random IOPS Read (from cache)		IOPS		
		Random IOPS Write (to cache)		IOPS		
		Random IOPS Read (from Disks)		IOPS		
		Sequential IOPS Read (from cache )		IOPS		
		Sequential IOPS Write (to cache )		IOPS		
		Sequential IOPS Read (from disks)		IOPS		
		SPC BENCHMARK 1™		IOPS		
33	Others	Noise level (idle-fully loaded)		db		
		Noise level (100% busy-fully loaded)		db		
		Weight per rack for the proposed configuration		Kgs		
		No of 42u racks required for the proposed configuration				
34	Fabric Management Software to be Provided		Yes	YES / NO		

**Annexure 7.12**

**Enterprise SAN Storage Array - DFS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor / Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power Requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating Temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Raw capacity of offered SAN storage array			TB		
13	Usable capacity of offered SAN storage array		1024	TB		
14	Max. capacity per cabinet with specification of disks proposed			TB		
15	Max. capacity per cabinet			TB		
16	Max. number of disk drives supported per cabinet			Units		
17	Max. number of cabinets supported per System			Units		
18	Overall usable capacity of storage array with full expansion		1280	TB		
19	Disk Sub-system	Disk spindle type	SATA			
		Capacity of each disk drive	2048	GB		
		Disk speed	7,200	RPM		
		Formatted capacity of each disk		GB		
		Total number of disks proposed		Units		
		Support for Global hot spare disks	YES	YES / NO		
		No. of Global hot spare disks proposed	15%	Percentage		
		Mean Time Between Failures (MTBF) of proposed Disks				

**Annexure 7.12**

**Enterprise SAN Storage Array - DFS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Average Seek Time of the proposed Hard Disks (in Millisecond)		ms		
		Average latency of proposed hard Disks (in Millisecond)		ms		
		Capacity / speed of disks supported on the system		GB @ RPM		
		Are Proposed Disks Hot Swappable?	YES	YES / NO		
		Capability for Online storage expansion without reboot	YES	YES / NO		
		Capability of completely automating activities, including but not limited to, defrag routines, scan disks, disk scrubbing, file system checks, consistency checks, etc.	YES	YES / NO		
21	<b>Controllers</b>	Storage controllers which should cover the frontend and backend requirements as specified in dual configuration mode	2	Units		two controller configuration and should be expandable.
		No. of processors configured in the proposed system				
		Max. No. of processors supported on the system		Units		
		Type of processor		RISC / MIPS		
		Clock speed of proposed processor				
		No. of backend ports proposed	32	Units		
		Max. no. of backend ports supported on the system	64	Units		
		Are backend ports configured for high-availability		YES / NO		
		No. of processors dedicated for backend processing				
		No. of front-end ports proposed	64	Units		
		Max. no. of front-end ports supported on the system	128	Units		
		Are front-end ports configured for high-availability		YES / NO		
		No. of processors dedicated for front end processing				
		Hardware based storage RAID controller	YES	YES / NO		
		Hot swappable controller cards?	YES	YES / NO		
		RAID protection against double failure in the same RAID group		YES / NO		
		Type of RAID protection supported	5	RAID 0, 1, 5, 1+0, 6+1		

**Annexure 7.12**

**Enterprise SAN Storage Array - DFS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		No. of Concurrent Access Path available from front end ports to disks		Units		
		No. of FC host ports proposed	8	Units		
		Throughput of each FC port	8 Gbps	4/8 Gbps		
		Total throughput of the proposed storage system		Gbps		
		Max. No of FC Host ports supported on the system	8	Units		
		Storage system end-to-end bandwidth from FC host port to backend disk	4 Gbps	4/8 Gbps		
<b>22</b>	<b>FC-AL loop</b>	No. of FC-AL loops proposed		Units		
		Max. no. of FC-AL loops supported per controller		Units		
		No. of disks proposed per FC-AL loop		Units		
		Max. No. of disks per FC-AL loop		Units		
		Bandwidth of FC-AL loop	4 Gbps	4/8 Gbps		
<b>23</b>	<b>Cache</b>	Architecture		Bus / Switch		
		Whether Data & Control Cache are separate		YES / NO		
		Type of proposed Control Cache	ECC	ECC / Non-ECC		
		Support for multiple bits error detection and correction capability in proposed Control Cache		YES / NO		
		Type of proposed Data Cache	ECC	ECC / Non-ECC		
		Support for multiple bits error detection and correction capability in proposed Data Cache		YES / NO		
		Proposed Data Cache	256	GB		
		Proposed Control Cache		GB		
		Max. Data Cache supported on system	512	GB		
		Max. Control Cache supported on system		GB		
		Data Cache Bandwidth		GB/s		
		Control Cache Bandwidth		GB/s		
		Is Data Cache board hot swappable?	YES	YES / NO		
		Is Control Cache board hot swappable?	YES	YES / NO		
		Is Data Cache redundancy supported?		YES / NO		
		If so, is it mirrored?		YES / NO		
		Is Control Cache redundancy supported?		YES / NO		
		If so, is it mirrored?		YES / NO		
		Is Battery backup available for Data cache?		YES / NO		
		If so, what is the duration for which it is available?		Hrs		

**Annexure 7.12**

**Enterprise SAN Storage Array - DFS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Is the battery hot swappable?		YES / NO		
		Is Battery backup available for Control cache?		YES / NO		
		If so, what is the duration for which it is available?		Hrs		
		Is the battery hot swappable?		YES / NO		
		Size of proposed Data cache that is usable for purposes of Read /Write operations		GB		
		Size of proposed Control cache that is usable for purposes of Read /Write operations		GB		
		Can cache be allocated separately for read and separately for write operations?		YES / NO		
		Can cache be allocated separately for according to volumes?		YES / NO		
		No. of Concurrent Access Paths in for Data Cache		Units		
		No. of Concurrent Access Paths in for Control Cache		Units		
		Support for Cache Vaulting i.e. capability to ensure no data loss during power failure by securely writing data existing in cache to disk spindles		YES / NO		
		Capability for automatic full de-staging of cache in case of power failure		YES / NO		
		Guarantee that there would be no data loss (zero data loss) for data that is committed to cache		YES / NO		
24	Support for point in time copy of volumes for backup and remote replication of data		YES	YES / NO		
25	Support for storage-to-storage replication in both synchronous and asynchronous modes		YES	YES / NO		
26	Is storage system compatible with CNT router			YES / NO		
27	Support for on-line backup of databases			YES / NO		
28	Support for non-disruptive online upgrade of firmware without reboot		YES	YES / NO		
29	Power Supply	Hot Swappable Power supply proposed	YES	YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
30	Cooling Fans	Hot Swappable Cooling Fans proposed	YES	YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		

**Annexure 7.12**

**Enterprise SAN Storage Array - DFS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
31	<b>Hosts Supported</b>	Linux	YES	YES / NO		
		Windows 2003	YES	YES / NO		
		Windows 2008	YES	YES / NO		
		No of Hosts Supported	128			
		No of LUNS	256			
32	<b>Protocols Support</b>	FC	YES			
		FCIP				
		FCOE	YES			
		iSCSI	YES			
		FC Host Ports	8			
		10GE Ports	2			
33	<b>Support</b>	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		
34	<b>Estimated ratings</b>	Random IOPS Read (from cache)		IOPS		
		Random IOPS Write (to cache)		IOPS		
		Random IOPS Read (from Disks)		IOPS		
		Sequential IOPS Read (from cache )		IOPS		
		Sequential IOPS Write (to cache )		IOPS		
		Sequential IOPS Read (from disks)		IOPS		
		SPC BENCHMARK 1™		IOPS		
35	<b>Others</b>	Noise level (idle-fully loaded)		db		
		Noise level (100% busy-fully loaded)		db		
		Weight per rack for the proposed configuration		Kgs		
		No of 42u racks required for the proposed configuration				
36	<b>Fabric Management Software to be Provided</b>		Yes	YES / NO		

**Annexure 7.13**

**SAN Storage Array - ODS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor / Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power Requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating Temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Raw capacity of offered SAN storage array			TB		
13	Usable capacity of offered SAN storage array		60 TB FC disks	TB		
14	Max. capacity per cabinet with specification of disks proposed			TB		
15	Max. capacity per cabinet			TB		
16	Max. number of disk drives supported per cabinet			Units		
17	Max. number of cabinets supported per System			Units		
18	Overall usable capacity of storage array with full expansion		300 TB with SSD support	TB		
19	Disk Sub-system	Disk spindle type	FC	YES / NO - 4/8 Gbps - FC		
		Capacity of each disk drive	600GB	GB		
		Disk speed	15,000 rpm	RPM		
		Formatted capacity of each disk		GB		
		Total number of disks proposed		Units		
		Support for Global hot spare disks	YES	YES / NO		
		No. of Global hot spare disks proposed	15%	Percentage		
		Mean Time Between Failures (MTBF) of proposed Disks				

**Annexure 7.13**

**SAN Storage Array - ODS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Average Seek Time of the proposed Hard Disks (in Millisecond)		ms		
		Average latency of proposed hard Disks (in Millisecond)		ms		
		Capacity / speed of disks supported on the system		GB @ RPM		
		Are Proposed Disks Hot Swappable?	YES	YES / NO		
		Capability for Online storage expansion without reboot	YES	YES / NO		
		Capability of completely automating activities, including but not limited to, defrag routines, scan disks, disk scrubbing, file system checks, consistency checks, etc.	YES	YES / NO		
21	<b>Controllers</b>	Storage controllers which should cover the frontend and backend requirements as spcified in dual configuration mode	2	Units		two controller configuration and should be expandable.
		No. of processors configured in the proposed system				
		Max. No. of processors supported on the system		Units		
		Type of processor		MIPS/RISC		
		Clock speed of proposed processor				
		No. of backend ports proposed	8	Units		
		Max. no. of backend ports supported on the system	32	Units		
		Are backend ports configured for high-availability		YES / NO		
		No. of processors dedicated for backend processing				
		No. of front-end ports proposed	8	Units		
		Max. no. of front-end ports supported on the system	32	Units		
		Are front-end ports configured for high-availability		YES / NO		
		No. of processors dedicated for front end processing				



**Annexure 7.13**

**SAN Storage Array - ODS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Hardware based storage RAID controller	YES	YES / NO		
		Hot swappable controller cards?	YES	YES / NO		
		RAID protection against double failure in the same RAID group		YES / NO		
		Type of RAID protection supported		RAID 0, 1, 5, 1+0, 6+1		
		No. of Concurrent Access Path available from front end ports to disks		Units		
		No. of FC host ports proposed	8	Units		
		Throughput of each FC port	8 Gbps	4/8 Gbps		
		Total throughput of the proposed storage system		Gbps		
		Max. No of FC Host ports supported on the system	8	Units		
		Storage system end-to-end bandwidth from FC host port to backend disk	4 Gbps	4/8 Gbps		
22	<b>FC-AL loop</b>	No. of FC-AL loops proposed		Units		
		Max. no. of FC-AL loops supported per controller		Units		
		No. of disks proposed per FC-AL loop		Units		
		Max. No. of disks per FC-AL loop		Units		
		Bandwidth of FC-AL loop	4 Gbps	4/8 Gbps		
23	<b>Cache</b>	Architecture		Bus / Switch		
		Whether Data & Control Cache are separate		YES / NO		
		Type of proposed Control Cache	ECC	ECC / Non-ECC		
		Support for multiple bits error detection and correction capability in proposed Control Cache		YES / NO		
		Type of proposed Data Cache	ECC	ECC / Non-ECC		
		Support for multiple bits error detection and correction capability in proposed Data Cache		YES / NO		
		Proposed Data Cache	24	GB		
		Proposed Control Cache		GB		
		Max. Data Cache supported on system	120	GB		
		Max. Control Cache supported on system		GB		
		Data Cache Bandwidth		GB/s		
		Control Cache Bandwidth		GB/s		

**Annexure 7.13**

**SAN Storage Array - ODS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Is Data Cache board hot swappable?	YES	YES / NO		
		Is Control Cache board hot swappable?	YES	YES / NO		
		Is Data Cache redundancy supported?		YES / NO		
		If so, is it mirrored?		YES / NO		
		Is Control Cache redundancy supported?		YES / NO		
		If so, is it mirrored?		YES / NO		
		Is Battery backup available for Data cache?		YES / NO		
		If so, what is the duration for which it is available?		Hrs		
		Is the battery hot swappable?		YES / NO		
		Is Battery backup available for Control cache?		YES / NO		
		If so, what is the duration for which it is available?		Hrs		
		Is the battery hot swappable?		YES / NO		
		Size of proposed Data cache that is usable for purposes of Read /Write operations		GB		
		Size of proposed Control cache that is usable for purposes of Read /Write operations		GB		
		Can cache be allocated separately for read and separately for write operations?		YES / NO		
		Can cache be allocated separately for according to volumes?		YES / NO		
		No. of Concurrent Access Paths in for Data Cache		Units		
		No. of Concurrent Access Paths in for Control Cache		Units		
		Support for Cache Vaulting i.e. capability to ensure no data loss during power failure by securely writing data existing in cache to disk spindles		YES / NO		
		Capability for automatic full de-staging of cache in case of power failure		YES / NO		

**Annexure 7.13**

**SAN Storage Array - ODS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Guarantee that there would be no data loss (zero data loss) for data that is committed to cache		YES / NO		
24	Support for point in time copy of volumes for backup and remote replication of data		YES	YES / NO		
25	Support for storage-to-storage replication in both synchronous and asynchronous modes		YES	YES / NO		
26	Is storage system compatible with CNT router		YES	YES / NO		
27	Support for on-line backup of databases		YES	YES / NO		
28	Support for non-disruptive online upgrade of firmware without reboot		YES	YES / NO		
29	Power Supply	Hot Swappable Power supply proposed	YES	YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
30	Cooling Fans	Hot Swappable Cooling Fans proposed	YES	YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
31	Hosts Supported	Linux	YES	YES / NO		
		Windows 2003	YES	YES / NO		
		Windows 2008	YES	YES / NO		
		No of Hosts Supported	128			
		No of LUNS	256			
32	Protocols Support	FC	YES			
		FCIP				
		FCOE	YES			
		iSCSI	YES			
		FC Host Ports	8			
		10GE Ports	2			
33	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		

**Annexure 7.13**

**SAN Storage Array - ODS**

S. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details		YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		
<b>34</b>	<b>Estimated ratings</b>	Random IOPS Read (from cache)		IOPS		
		Random IOPS Write (to cache)		IOPS		
		Random IOPS Read (from Disks)		IOPS		
		Sequential IOPS Read (from cache )		IOPS		
		Sequential IOPS Write (to cache )		IOPS		
		Sequential IOPS Read (from disks)		IOPS		
		SPC BENCHMARK 1™		IOPS		
<b>35</b>	<b>Others</b>	Noise level (idle-fully loaded)		db		
		Noise level (100% busy-fully loaded)		db		
		Weight per rack for the proposed configuration		Kgs		
		No of 42u racks required for the proposed configuration				
<b>36</b>	<b>Fabric Management Software to be Provided</b>		Yes	YES / NO		

Annexure 7.14

BSP SAN Switch

SL No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Production Certification					
13	Total no. of ports on the proposed switch		32	Units		
14	Switch should be scalable to 48 ports		YES	YES / NO		
15	Non blocking architecture in the proposed FC switch		YES	YES / NO		
16	Throughput of each FC port		8 Gbps full duplex	Gbps		
17	Support for 4/8 Gb/s HBAs		8 Gbps Fiber Channel	YES / NO		
18	Fabric Latency with no contention			µs		
19	Aggregate backplane Switch bandwidth			Gbps		
20	Protocol Supported	FC	Yes	YES / NO		
		FCP	Yes	YES / NO		
		FC-AL	Yes	YES / NO		
		IP Over Fiber Channel	Yes			
21	Max Frame Size			Bytes		
22	Max. No. of Frame Buffers			Units		
23	Designed for high availability with no Single Point of Failure		YES	YES / NO		
24	Power Supply	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed		YES / NO		

Annexure 7.14

BSP SAN Switch

SL No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
25	<b>Cooling Fans</b>	Hot Swappable Cooling Fans proposed		YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
26	<b>Capability for streaming the data in multiple paths with</b>		YES	YES / NO		
27	<b>Optimization algorithms for streaming data through shortest available path.</b>		YES	YES / NO		
28	<b>Capabilities for cascading of switches</b>		YES	YES / NO		
29	<b>Non-disruptive firmware update</b>		YES	YES / NO		
30	<b>Proactive threshold monitoring (Yes/No)</b>			YES / NO		
31	<b>End to end performance monitoring</b>			YES / NO		
32	<b>HBA management with FDMI</b>			YES / NO		
33	<b>Support for POST &amp; online diagnostics</b>			YES / NO		
34	<b>Capability to interface with host based adapters (HBA) of multiple OEM, supporting multiple Operating System including but not limited to AIX, HP-UX, Linux, Solaris, Windows, etc.</b>			YES / NO		
35	<b>Support all leading SAN disk arrays and tape libraries including but not limited to EMC, IBM, Hitachi, HP, NetApp, StorageTek, Sun, etc..</b>			YES / NO		
36	<b>Zoning and security</b>	Support for hardware -enforced zoning	YES	YES / NO		
		Policy based security and centralised fabric management		YES / NO		
		Support for Encrypted password		YES / NO		
		Support for PKI Digital certificates		YES / NO		
		Support for FCAP authentication	YES	YES / NO		
		Support for RADIUS, SSL / HTTPS, SSH, SNMP V3		YES / NO		
		Support for LUN masking	YES	YES / NO		
		Support for port binding	YES	YES / NO		
		Support for port masking	YES	YES / NO		
		Encryption of management data using standard encryption methods via sectelnet or ssh v2		YES / NO		
37	<b>Support for Hardware based trunking</b>			YES / NO		

Annexure 7.14

BSP SAN Switch

SL No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
38	Support for dynamic Load balancing of links with no overhead			YES / NO		
39	Estimated ratings	Per port performance (IOPS)		IOPS		
		No. of IOPS supported by each Fiber Channel Switch		IOPS		
40	Compatability	with network devices	Yes	YES/NO		
		with servers	Yes	YES/NO		
41	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		

Annexure 7.15

DMZ SAN Switch

SL No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Production Certification					
13	Total no. of ports on the proposed switch		32	Units		
14	Switch should be scalable to 48 ports		YES	YES / NO		
15	Non blocking architecture in the proposed FC switch		YES	YES / NO		
16	Throughput of each FC port		8 Gbps full duplex	Gbps		
17	Support for 4/8 Gb/s HBAs		8 Gbps Fiber Channel	YES / NO		
18	Fabric Latency with no contention			µs		
19	Aggregate backplane Switch bandwidth			Gbps		
20	Protocol Supported	FC	Yes	YES / NO		
		FCP	Yes	YES / NO		
		FC-AL	Yes	YES / NO		
		IP Over Fiber Channel	Yes			
21	Max Frame Size			Bytes		
22	Max. No. of Frame Buffers			Units		
23	Designed for high availability with no Single Point of Failure		YES	YES / NO		
24	Power Supply	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed		YES / NO		



Annexure 7.15

DMZ SAN Switch

SL No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
25	Cooling Fans	Hot Swappable Cooling Fans proposed		YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
26	Capability for streaming the data in multiple paths with		YES	YES / NO		
27	Optimization algorithms for streaming data through shortest available path.		YES	YES / NO		
28	Capabilities for cascading of switches		YES	YES / NO		
29	Non-disruptive firmware update		YES	YES / NO		
30	Proactive threshold monitoring (Yes/No)			YES / NO		
31	End to end performance monitoring			YES / NO		
32	HBA management with FDMI			YES / NO		
33	Support for POST & online diagnostics			YES / NO		
34	Capability to interface with host based adapters (HBA) of multiple OEM, supporting multiple Operating System including but not limited to AIX, HP-UX, Linux, Solaris, Windows, etc.			YES / NO		
35	Support all leading SAN disk arrays and tape libraries including but not limited to EMC, IBM, Hitachi, HP, NetApp, StorageTek, Sun, etc..			YES / NO		
36	Zoning and security	Support for hardware -enforced zoning	YES	YES / NO		
		Policy based security and centralised fabric management		YES / NO		
		Support for Encrypted password		YES / NO		
		Support for PKI Digital certificates		YES / NO		
		Support for FCAP authentication	YES	YES / NO		
		Support for RADIUS, SSL / HTTPS, SSH, SNMP V3		YES / NO		
		Support for LUN masking	YES	YES / NO		
		Support for port binding	YES	YES / NO		
		Support for port masking	YES	YES / NO		
		Encryption of management data using standard encryption methods via sectelnet or ssh v2		YES / NO		
37	Support for Hardware based trunking			YES / NO		

Annexure 7.15

DMZ SAN Switch

SL No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
38	Support for dynamic Load balancing of links with no overhead			YES / NO		
39	Estimated ratings	Per port performance (IOPS)		IOPS		
		No. of IOPS supported by each Fiber Channel Switch		IOPS		
40	Compatability	with network devices	Yes	YES/NO		
		with servers	Yes	YES/NO		
41	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		

Annexure 7.16

DC Core SAN Switch

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Production Certification					
14	Architecture	Chassis based Director class Fiber Channel switch with sufficient modules/line cards to fit required FC ports. Chassis shall have at least 8 payload slots and scalable more than 400 ports. The director class switch should support Logical partitioning. Investment protection by live migration to IO consolidation. Switch based data replication		unit		
15	Switch Redundancy/High Availability Features	Redundant Supervisor modules/Switching Fabric	Yes	YES/NO		
		The switch must enable the Control processors/ supervisor modules, line modules, Power Supply, Fans without resetting the switch, or affecting other operational modules	Yes			
16	Zoning and security	Support for hardware -enforced zoning and support for alias	Yes	YES / NO		
		Policy based security and centralised fabric management		YES / NO		
		Support for Encrypted password		YES / NO		

Annexure 7.16

DC Core SAN Switch

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
		Support for PKI Digital certificates		YES / NO		
		Support for FCAP/DH-CHAP authentication		YES / NO		
		Support for RADIUS, SSL / HTTPS, SSH, SNMP V3,AAA,SHA1,2 and aslo provide the role access control		YES / NO		
		Support for LUN masking	YES	YES / NO		
		Support for port binding	YES	YES / NO		
		Support for port masking	YES	YES / NO		
		Encryption of management data using standard encryption methods via sectelnet or ssh v2		YES / NO		
		Support Virtual Fabric/Virtual SAN	YES	YES / NO		
17	System Throughput		Aggregate switching capacity shall be 2 Tbps or more	unit		
18	FC port type		FC port types - E,F,FL,SD,TE and TL with SFP and LC optical interfaces			
19	Throughput of each FC port		8 Gbps full duplex	Gbps		
20	Support for 1/2/4/8 Gbps and 10Gbps HBAs		8 Gbps and 10Gbps autosensing	YES / NO		
21	Total no of ports proposed on the switch		256 ports with support for 512 ports with minimum of 64 ports on each module	unit		
22	FCIP Module	No of modules	1	unit		
		No of ports per module	64 ports	unit		
23	Port features		Switch should support port Channel agreegation not limited to within same module			

Annexure 7.16

DC Core SAN Switch

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
24	Protocol Supported		Fiber Channel Switch should support some of these protocols and not limited to - Fiber Channel Protocol (FCP), Fiber Channel Over IP (FC-IP), Internet SCSI, FSPF,FC,FC-AL			
25	Other features supported		Switches must compatible with either FCOE/CEE. FC protocol for devices on SAN and support FCIP for SAN extension over IP and iSCSI			
26	Non blocking architecture in the proposed FC switch		YES	YES / NO		
27	Fabric Latency with no contention			µs		
28	Aggregate backplane Switch bandwidth			Gbps		
29	Max Frame Size			Bytes		
30	Max. No. of Frame Buffers			Units		
31	Designed for high availability with no Single Point of Failure		YES	YES / NO		
32	Capability for streaming the data in multiple paths with		YES	YES / NO		

Annexure 7.16

DC Core SAN Switch

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
33	Optimization algorithms for streaming data through shortest available path.		YES	YES / NO		
34	Capabilities for cascading of switches		YES	YES / NO		
35	Non-disruptive firmware/Software update		YES	YES / NO		
36	Proactive threshold monitoring (Yes/No)			YES / NO		
37	End to end performance monitoring			YES / NO		
38	HBA management with FDMI			YES / NO		
39	Support for POST & online diagnostics, Port mirroring, Syslog, Debug, online system health			YES / NO		
40	Capability to interface with host based adapters (HBA) of multiple OEM, supporting multiple Operating System including but not limited to AIX, HP-UX, Linux, Solaris, Windows, etc.			YES / NO		
41	Support all leading SAN disk arrays and tape libraries including but not limited to EMC, IBM, Hitachi, HP, NetApp, StorageTek, Sun, etc..			YES / NO		
42	Support for Hardware based trunking			YES / NO		
43	Support for dynamic Load balancing of links with no overhead			YES / NO		
	Per port performance (IOPS) supported			IOPS		

Annexure 7.16

DC Core SAN Switch

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
44	Total Number of IOPS supported by each Fiber Channel Switch			IOPS		
45	Management	AAA authentication RADIUS, TACACS	Yes			
		Role based Access,SSH,Telnet,SNMP	Yes			
		Diagnostics -Serial port/Aux port, CLI	Yes			
46	Support for QOS ( Quality of Service) and COS ( Class of Service)			YES/NO		
47	Software		Latest release with all features as required			
48	Mounting		Standard 19-in rack with required hardware			
49	Compatability	Compatability with proposed network devices	Yes	YES/NO		
		Compatability with proposed servers	Yes	YES/NO		
50	Power Supply	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed		YES / NO		
51	Cooling Fans	Hot Swappable Cooling Fans proposed		YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
52	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> life during the currency of contract?	NO	YES / NO		

Annexure 7.17

Network Attached Storage

Sr. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Please Mention Deviations if Any
1	Make				
2	Model				
3	Form Factor / Dimension			(U) / HxWxD(mm)	
4	Weight			Kg	
5	Heat Dissipation			BTU/hr	
6	Power Requirement			KVA	
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz	
8	Current Rating			Amp	
9	Number, Rating, Type of power points required			Quantity, Amp, Type	
10	Operating Temperature range			°C	
11	Operating Relative Humidity range (non-condensing)			%	
12	Proposed raw capacity of NAS			TB	
13	Proposed usable capacity of NAS Storage (expandable to 40 TB)		20	TB	
14	Max. capacity per cabinet with specification of disks proposed			TB	
15	Max. capacity per cabinet			TB	
16	Max. number of disk drives supported per cabinet			Units	
17	Max. number of cabinets supported per System			Units	
18	Overall usable capacity of storage array with full expansion		40	TB	
19	Disk Sub-system	Disk spindle type	SAS	YES / NO - 4/8 Gbps - SAS/FC	
		Capacity of each disk drive	600GB	GB	
		Disk speed	15,000 rpm	RPM	
		Formatted capacity of each disk		GB	
		Total number of disks proposed		Units	
		Support for Global hot spare disks	YES	YES / NO	
		No. of Global hot spare disks proposed		Units	



Annexure 7.17

Network Attached Storage

Sr. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Please Mention Deviations if Any
		Mean Time Between Failures (MTBF) of proposed Disks			
		Average Seek Time of the proposed Hard Disks (in Millisecond)		ms	
		Average latency of proposed hard Disks (in Millisecond)		ms	
		Capacity / speed of disks supported on the system		GB @ RPM	
		Are Proposed Disks Hot Swappable?	YES	YES / NO	
		Capability for Online storage expansion without reboot	YES	YES / NO	
		Capability of completely automating activities, including but not limited to, defrag routines, scan disks, disk scrubbing, file system checks, consistency checks, etc.	YES	YES / NO	
21	<b>Controllers</b>	No. of processors configured in the proposed system		Units	
		Max. No. of processors supported on the system		Units	
		Type of processor		MIPS/RISC	
		Clock speed of proposed processor			
		Hardware based storage RAID controller	YES	YES / NO	
		Hot swappable controller cards?	YES	YES / NO	
		RAID protection against double failure in the same RAID group		YES / NO	
		Type of RAID protection supported		RAID 0, 1, 5, 1+0, 6+1	
		No of 1Gbps Host ports supported on the system	2	Units	
		No of 10Gbps Host ports supported on the system	2	Units	
23	<b>Cache Size</b>			GB	
24	<b>Support for on-line backup of databases</b>		YES	YES / NO	
25	<b>Support for non-disruptive online upgrade of firmware without reboot</b>		YES	YES / NO	
26	<b>Power Supply</b>	Hot Swappable Power supply proposed	YES	YES / NO	
		(N+1) redundant power supply proposed	YES	YES / NO	
		Dual AC input proposed	YES	YES / NO	
27	<b>Cooling Fans</b>	Hot Swappable Cooling Fans proposed	YES	YES / NO	
		(N+1) redundant Cooling Fans proposed	YES	YES / NO	
28	<b>Hosts Supported</b>	Linux	YES	YES / NO	
		Windows 2003	YES	YES / NO	
		Windows 2008	YES	YES / NO	
29	<b>Protocols Supported</b>		NFS/CIFS/iSCSI/FC		
30	<b>Support</b>	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO	

Annexure 7.17

Network Attached Storage

Sr. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Please Mention Deviations if Any
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES / NO	
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO	
<b>31</b>	<b>Estimated ratings</b>	Random IOPS Read (from cache)		IOPS	
		Random IOPS Write (to cache)		IOPS	
		Random IOPS Read (from Disks)		IOPS	
		Sequential IOPS Read (from cache )		IOPS	
		Sequential IOPS Write (to cache )		IOPS	
		Sequential IOPS Read (from disks)		IOPS	
<b>32</b>	<b>Others</b>	Noise level (idle-fully loaded)		db	
		Noise level (100% busy-fully loaded)		db	
		Weight per rack for the proposed configuration		Kgs	
		No of 42u racks required for the proposed configuration			

Annexure 7.18

Enterprise Tape Library

Sr. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor / Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power Requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, T type		
10	Operating Temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Tape Drives	Type of tape drive proposed	LTO Gen 5			
		Type of tape drive interface	Native fiber channel			
		Backward read compatibility of media		YES / NO		
		Sustained Data Transfer Rate (without compression)	120	MB/s		
		Sustained Data Transfer Rate (with compression)	240	MB/s		
		Size of Tape Storage (without compression)	1536	GB		
		Size of Tape Storage (with compression)	3072	GB		
		Hot Swappable Tape drive proposed	YES	YES / NO		
		Hot Swappable Controller cards proposed	YES	YES / NO		
		Average cartridge swap time		sec		
		Tape Load time		sec		
		Average File Access Time		ms		
13	Tape Library Frame	No. of drives proposed	12			
		No. drives supported in a single frame without cascading	18			
		No. of frames proposed with scalability of frames	1			
		Max. no. of frame supported in proposed Tape Library	Should be scalable upwards of 4 frames			
		No. of Fibre Channel ports proposed with this library				

Annexure 7.18

Enterprise Tape Library

Sr. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Max. No. of Fibre Channel ports supported with this library				
		No. of Media slots proposed in the library	700			
		Support for backup encryption	YES			
		Support for future generation drives	YES	YES / NO		
		Startup Boot Time		min		
		Dual Active-Active Robotic Arm	YES	YES / NO		
		MTBF of robotic arm		years		
		No. of FC ports provisioned		Units		
<b>14</b>	<b>Protocol Supported</b>	FC	YES / NO			
		FCP	YES / NO			
		FC-AL	YES / NO			
		FCOE	YES / NO			
<b>15</b>	<b>Power Supply</b>	Hot Swappable Power supply proposed	YES	YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
<b>16</b>	<b>Cooling Fans</b>	Hot Swappable Cooling Fans proposed	YES	YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
<b>17</b>	<b>Support for online automatic calibration of robotic arm</b>		YES	YES / NO		
<b>18</b>	<b>Performance Parameters</b>	Average Cartridge Swap Time		ms		
		Tape Load time		ms		
		Average File Access Time		ms		
		Startup Boot Time		min		
<b>19</b>	<b>Support for NDMP for taking backup of NAS over LAN</b>		YES	YES / NO		
<b>20</b>	<b>Support for multiple hosts running OS including AIX, HP-UX, Linux, Solaris, Windows</b>		YES	YES / NO		

Annexure 7.18

Enterprise Tape Library

Sr. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
21	Capability for providing end-to-end 2/4/8 Gbps throughput in full duplex mode.			YES / NO		
22	Separate and dedicated control and data paths			YES / NO		
23	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		
24	Estimated time required for full-backup for all data at end of 5 years			Hours		
25	Media & Accessories	No. of tape media proposed	250	Units		
		Size of tape media (uncompressed)	1536 GB	Units		
		Size of tape media (compressed)	3072 GB	Units		
		No. of tape labels proposed	2000	Units		
26	Provisioning of Bar-Code Reader within the Tape Library & integration with proposed Media Management Software supporting media lifecycle management		YES	YES / NO		
27	Energy Savings and Management		YES	YES / NO		
28	Remote Monitoring and management Support		YES	YES / NO		
29	Support Logical Partitioning of Tape Library		YES	YES / NO		
30	High Density of Media Management		YES	YES / NO		

Annexure 7.19

Technical Specifications for **Internet Router** - Enrollment/Verification

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	HeatDissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Production Certification					
13	Architecture	Chassis based router at least four slots free for expansion		YES / NO		
		Redundant route processor and statefull failover support without performance degradation and failover less than 50 ms	Yes	YES / NO		
		Router support in-srevice software upgrades and downgrades, should be performed without traffic loss.	Yes	YES / NO		
		Online insertion and removal of line cards without affecting other linecard traffic	Yes	YES / NO		
14	Fast Convergence/High Availability Features	Router Redundancy protocol such as VRRP, BFD (Bidirectional Forwarding Detection) protocol.	Yes	YES / NO		
		Support for instant event notification for interface up/down.	Yes	YES / NO		
		Non-stop forwarding for protocols like -OSPF, IS-IS,BGP,Interface dampening capability		YES / NO		
		Support fast computation and recomputation of SPF while providing instability issues with link state routuing protocols such as OSPF, IS-IS and support incremental SPF or equivalent feature for fast convergence		YES / NO		

Annexure 7.19

**Technical Specifications for Internet Router - Enrollment/Verification**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Router support graceful restart, modular operating system for high uptime	Yes	YES / NO		
15	<b>System Throughput</b>		at least 10Gbps and upgradable	Gbps		
16	<b>Memory</b>		DRAM - 4GB or Higher Flash Memory - 1GB or higher or any other storage if required			
17	<b>Ports</b>		8 - 1 Gigabit Ethernet ports, 6 - 10 GE Ports			
18	<b>Interface types</b>	Interfaces compatability but not limited to- V.35, E1 G.703, Fast Ethernet, Gig Ethernet (Copper+Fiber), 10Gig Ethernet	Yes	YES / NO		
19	<b>L2 protocols</b>	Router shall support Frame Relay, PPP, HDLC and Ethernet encapsulation, MLPPP	Yes	YES / NO		
		PAP and CHAP authentication		YES / NO		
		ATM UNI, AAL5, IP over ATM encapsulation, IEEE 802.1Q VLAN, IGMPv2, IGMPv3 and IGMP snooping		YES / NO		
20	<b>Security Features</b>	SSL/IPSec capability	Yes	YES / NO		
		Support Access Control List to filter traffic based on Source and destination IP subnet, Source and Destination port, Protocol type (IP, UDP,TCP,ICMP etc) and port range,Timebased ACLs and QOS Policy support.	Yes	YES / NO		
		Support for ACL Logging, NAT and PAT	Yes	YES / NO		
		AAA through RADIUS or TACACS.	Yes	YES / NO		
		Integrated Firewall support for protocols (HTTP,FTP, SIP, H323, Telenet, TFTP and SMTP) and Unicast RPF.	Yes	YES / NO		
		MD5 authentication for routing protocols -RIP2, OSPF, IS-IS, BGP, MPLS	Yes	YES / NO		
		Integrated control plan policing and min 4000 ipsec tunnel, support MD5 Authentication anc control plane policing		YES / NO		

Annexure 7.19

**Technical Specifications for Internet Router - Enrollment/Verification**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
21	<b>Routing and routing features</b>	Support IPv4 - static route, Default route, RIPv2, OSPFv2, IS-IS, BGP4 protocol with advanced features and necessary licenses if any to enable routing protocols as needed.	Yes	YES / NO		
		Support route redistribution and route filtering, support MPLS features- LDP, L2VPN, traffic engineering with RSVP-TE, Fast reroute Link Node and path protection and Policy Based Routing (PBR), Support MPLS (LDP,L2VPN)and traffic engineering with RSVP-TE, Fast Reroute Link Node, etc,	Yes	YES / NO		
22	<b>Network Protocols</b>	DNS,DHCP,TFTP, NTP, GRE tunneling, IP Services, etc	Yes	YES / NO		
23	<b>Quality Of Service</b>	Integratedsupport Hierarchical QOS policy,cRTP for VoIP, RSVP for voice and video call admission.Router includes the congestion avoidance through WRED and Selective packet discard using WRED through ip precedence and DSCP	Yes	YES / NO		
		Includes traffic policing, traffic shaping and mark traffic using IP Precedence, DSCP and MPLS EXP.router support at least 30000 hardware queues for deployment of per-user,per-application, per-port QOS.		YES / NO		
		Support for traffic classification using various parameters like source physical interface, Source/destination IP, subnet, protocol types, source/destination ports, 802.1p and some well known application types		YES / NO		
24	<b>Multicast</b>	IPv4 and IPv6 Multicasting, IGMP v2,v3, IGMP snooping, PIM-sparse mode and PIM -SSM for ipv4 and ipv6, MLD, PIM-SM, PIM-SSM	yes	YES / NO		
25	<b>Other features</b>	Router support all applications like voice, video and data over a converged Infrastructure, support L3VPN, DMVPN, etc Flexible Packet Matching, NBAR	yes	YES / NO		
26	<b>Network Management</b>	Router is manageable through local console, Aux Port, Telnet, SSH and web. Support online reconfiguration and configuration roleback feature	Yes	YES / NO		
		SNMPv1,v2c/v3,RMON enabled	Yes	YES / NO		
		Multilevel rolebased ACLs, Controlled SNMP access through SNMP ACLs	Yes	YES / NO		
		Capability to monitor IP SLA in real time parameters like TCP/UDP delay, jitter, application response time, VoIP MOS Score, Packet Loss etc. scripts for real time parameters and statistics and tools like ping and traceroute				



Annexure 7.19

**Technical Specifications for Internet Router - Enrollment/Verification**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
			Yes	YES / NO		
27	Software		Latest release with all supported features as required			
28	Mounting		Standard 19-in rack with required hardware			
29	Compatability	Compatability with proposed network devices	Yes	YES/NO		
		Compatability with proposed wide Area connectivity	Yes			
		Compatability with proposed servers, if any	Yes	YES/NO		
30	Power Supply	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed		YES / NO		
31	Cooling Fans	Hot Swappable Cooling Fans proposed		YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
33	Support	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO			
		Will the proposed product/solution reach End-of-life during the currency of contract? If so, specify details.				
		Will the proposed product/solution reach End-of-support during the currency of contract?	NO			

Annexure 7.20

Link Load Balancer

Sr. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor / Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power Requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating Temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Architecture	Should be a multi processor based appliance	Yes			
		Traffic Throughput	8 Gbps			
		Network Connectivity support	8 x 10/100/ 1Gbps connectivity			
		Memory	4GB			
		Routing Protocols	OSPF, RIP V1/V2			
		Application Routing	Yes			
		Integrated DNS	Yes			
		Multiple Links and Multiple IP Addresses Support	Yes			
		Integrated System Management	Yes			
		Automatic ISP Failover	Yes			
		User defined policies for load balancing	Yes			
13	Support	Is the proposed product/solution End-of-life or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO			

**Annexure 7.20**

**Link Load Balancer**

Sr. No	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Will the proposed product/solution reach End-of-life during the currency of contract? If so, specify details.				
		Will the proposed product/solution reach End-of-support during the currency of contract?	NO			

Annexure 7.21

DC Core LAN - L3 Switches

SI No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(m m)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Production Certification					
13	Architecture	Chassis based Multilayer Switch with sufficient modules/line cards to fit required transceivers/UTP ports. Chassis shall have minimum 9 payload slots	Yes	YES/NO		
		Interface modules should have all the resources for switching and routing and provide true local switching both inter and intra module	Yes	YES/NO		
14	Switch Redundancy/High Availability Features	Switches should be quoted with redundant Supervisor/CPU/Switching fabric, Support module, System clock, power supplies and fans etc	Yes	YES/NO		
		Components like modules/power supplies/fan tray should be hot swappable.	Yes	YES/NO		

Annexure 7.21

DC Core LAN - L3 Switches

SI No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
		The switch should have redundant CPU's working in an active-active or active-standby mode. There should not be any disruption during the CPU fail-over/change-over and the fail over should be less than 1 sec	Yes	YES/NO		
		Statefull Switchover and Nonstop Forwarding to ensure that in case of active CPU module the redundant CPU should start switching L2/L3 traffic in less than 1 sec	Yes	YES/NO		
		The switch should support Hitless software upgrades to reduce downtime during software upgrades and switch should capable of providing graceful restart for all IPV4 routing protocols	Yes	YES/NO		
15	System Throughput	The total aggregate switching capacity shall be 6.1 Tbps or more		Units		
17	Memory		DRAM - 4GB or Higher Flash Memory -1GB or highr or any other storage as needed	GB		
18	Switching and routing capability		Support Minimum Switching and routing Performance of 900+ Mbps	units		
19	Backplane Connect Capacity		100% passive	Units		
20	Ports		Minimum 60 Ports RJ45 10/100/1000 autosensing --- Minimum 140 ports 10Gbps and console port	Units		
21	Connectivity	802.3ad based standad port/link aggregation, Jumbo frames, storm control	Yes	YES/NO		

Annexure 7.21

DC Core LAN - L3 Switches

SI No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
22	Switching features	vlan and MAC address (min 4000vlans and min 100000mac address)	Yes	YES/NO		
		port, subnet based 802.1Q VLANs, IEEE 802.1w RSTP and IEEE 802.1s MSTP		YES/NO		
23	Security	802.1X Network Security and Radius/TACACS Authentication	Yes	YES/NO		
		MAC Address filtering based on source and destination address, Port based security, Various ACLs like port based/time based, Standard/Extended ACLs, Control plane policing to filter unwanted traffic, support more than 50000 security and QoS ACLs	Yes	YES/NO		
		Integrated with DHCP snooping with option-82, Dynamic arp inspection, IP source guard and unicast reverse path forwarding	Yes	YES/NO		
24	Routing and routing features	IP & IPX, RIP V1 & V2, OSPF, BGP, IS-IS, ipv6, Policy based routing, Netflow and support minimum of 100000+ route entries	Yes	YES/NO		
25	Load Balancing		Equal cost load balancing			
26	Network Protocols	Protocols like but not limited to the listed protocols - DNS, DHCP, TFTP, NTP, VRF awareness, GRE tunneling, VRRP protocol or equivalent and IP Services,	Yes	YES/NO		
		Advanced protocols like but not limited to GLBP, HSRP, VRRP, PBR	Yes	YES/NO		
27	Quality Of Service	Ingress/Egress queuing, MAC based source/destination traffic limit, IP source/Destination address, TCP/UDP ports, etc	Yes	YES/NO		

Annexure 7.21

DC Core LAN - L3 Switches

SI No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
		QOS scheduling, at least 8 queues per port, TOS based traffic classification, IP precedence mapping, Layer2/3/4 traffic flows, MAC address, VLANs	Yes	YES/NO		
28	<b>Multicast</b>	IPv4 and IPv6 Multicasting, IGMP v1,v2,v3, IGMP snooping, PIM-sparse mode and PIM -SSM for ipv4 and ipv6, MSDP	Yes	YES/NO		
29	<b>Other features supported</b>		support for standards compliance with ieee802.3, 10BaseT, ieee802.3u, ieee802.3z,ieee802.3 ab, ieee802.3ae,ieee802.1D, 802.1S and 1W,ieee802.3x, ieee802.1AE	YES/NO		
30	<b>Management</b>	SNMP v1, v2c/v3, RMON enabled, SSH, Telnet,CLI GUI, Web based interface, Serial interface , Compatability with auto discovery	Yes	YES/NO		
		Switch should be manageable through NMS on per port/switch basis with common interface for all manageable devices on the network	Yes	YES/NO		
		Switch should support mirroring feature for monitoring network traffic of a particular port/VLAN/Group of ports/entireswitch	Yes	YES/NO		
		Switch support the rolebased access control to limit access to switch operations. The switch should support configuration verification and rollback	yes	YES/NO		
		for USB, Flash Card, Compact Flash for Fabric Switch Image and configuration backup		YES/NO		
31	<b>Software</b>		Latest release with all supported licenses as requied	YES/NO		

Annexure 7.21

DC Core LAN - L3 Switches

SI No	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
32	Mounting		Standard 19-in rack with required hardware	YES/NO		
33	Compatability	Compatability with proposed network devices	Yes	YES/NO		
		Compatability with proposed network security devices	Yes	YES/NO		
		Compatability with proposed servers	Yes	YES/NO		
34	Power Supply	Hot Swappable Power supply proposed	YES	YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
35	Cooling Fans	Hot Swappable Cooling Fans proposed	YES	YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
36	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES/NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES/NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES/NO		



**Annexure 7.22**

**Technical Specifications for DC Management LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-			%		
12	Production Certification					
13	Architecture	Chassis based Multilayer Switch with sufficient modules/line cards to fit required transceivers/UTP ports. Chassis shall have minimum 7 usable slots and dual switching engines. Non blocking architecture with statfull failover	Yes	YES / NO		
14	Switch Redundancy/High Availability Features	Switches should be proposed with redundant supervisor/CPU/Switching fabric, power supplies and fans etc	Yes	YES / NO		

**Annexure 7.22**

**Technical Specifications for DC Management LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
		Components like modules/power supplies/fan tray should be hot swappable. The performance of the switch in Gbps and Mbps rating should not reduce upon failure of any one supervisor/CPU/Switching fabric.	yes	YES / NO		
		Primary and redundant management module with statefull failover and one of the CPU module should not affect the performance of the switch	yes	YES / NO		
15	Throughput		400 Mbps or higher	MBps		
16	Memory		DRAM - 1GB or Higher Flash Memory -1GB or highr	GB		
17	Backplane Capacity	Connect	700 Gbps	gbps		
18	Ports		140 ports per Chassis, RJ 45, 10/100/1000 Autosensing 4 port 10G module, 10GbE	units		
19	Connectivity	802.3ad based standad port/link aggregation, Jumbo frames, storm control	Yes	YES / NO		
20	Switching features	L2 switch ports and VLAN trunks, no of VLANs at least 4000 and MAC addresses at least 50000.	Yes	YES / NO		
		Auto Negotitation of trunking protocol and VLAN trunking authentication with MD5.		YES / NO		
		Auto discovery of Layer 2 network devices and provides the mechanisum to detect connectivity issues both fiber and copper cabling	Yes	YES / NO		

**Annexure 7.22**

**Technical Specifications for DC Management LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
		Support IGMP snooping v1, v2 and v3	Yes	YES / NO		
<b>21</b>	<b>Security</b>	802.1X Network Security and Radius/ TACACS+ ,AAA authentication	Yes	YES / NO		
		MAC Address filtering based on source and destination address, Port based and policy based security	Yes	YES / NO		
		Integrated with DHCP snooping,per port broadcast, unicast and multicast storm control	Yes	YES / NO		
		support for various ACLs like port based/time based, Standard/Extended ACLs,Virtual CALs, Port based ACLs, Contol plan policing to filter unwanted traffic, support large number of security and QOS ACLs with performance impact.Local Command Accounting and logging	Yes	YES / NO		
		Deep inspection Firewall capability with 4Gig performance and scalable for non-blocking operation for 10Gig interfaces.	Yes	YES / NO		
		Logical/Virtual firewall				
		IPS capability with minimum 500Mbps inline prevention. Access lists to limit telnet and SNMP access		YES / NO		
<b>22</b>	<b>Routing and routing features</b>	Supports VRRP/HSRP and provides load balancing over multiple switches, Layer 3 or 4 switching and routing capabilities.	Yes	YES / NO		

**Annexure 7.22**

**Technical Specifications for DC Management LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
		Supports static routing, OSPF, IS-IS, RIPv1/v2, BGP4, OSPFv3, RIPng, ICMP, ICMP discovery Support IPv6 in hardware and software RIPng, OSPFv3, IGMPv6, DHCPv6. Support MD5 and Rapid convergence.	Yes	YES / NO		
<b>23</b>	<b>Firewall module</b>		Yes	YES / NO		
<b>24</b>	<b>Network Protocols</b>	DNS, DHCP, TFTP, NTP, BOOTP relay, etc	Yes	YES / NO		
<b>25</b>	<b>Quality Of Service</b>	Support Enterprise QOS Management, Classification of traffic and admission control based on Physical Port, IP Source/Destination address, IP destination/source address/L4 port, <del>revn</del>		YES / NO		
		Support congestion avoidance using WRED, multi queue thresholds. Support the policing aggregate-Flow, excess-rate policing, micro-flow		YES / NO		
<b>26</b>	<b>Multicast</b>	IPv4 and IPv6 Multicasting, IGMP v1, v2, v3, IGMP filtering, PIM-sparse mode and PIM -Dense Mode, Bi-directional PIM		YES / NO		

**Annexure 7.22**

**Technical Specifications for DC Management LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
27	Other features supported		standards such as ieee802.3,ieee802.3u,ieee803z,802.3ab,ieee802.3ae,ieee802.3af-POE,ieee802.1D,ieee802.1w,ieee802.1s,ieee802.1p,ieee802.1Q, 802.1x Chassis should support hardware Modules like Network analysis (RMON II), Server Load balancing, Network Intrusion Detection Module, Firewall Module, SSL Load Balancing module, VPN IPsec module, PSTN voice gateway module with support for FXS ports/E1 R2/PRI ports	YES / NO		
28	Management	Switch support SNMP v1, v2c/v3, RMON enabled, GUI, Web based interface,Compatibility with auto discovery. Telnet and SSH support	Yes	YES / NO		
		Switch should support mirroring feature for monitoring network traffic of a particular port/VLAN/Group of ports or remote port mirroring across switches for remote monitor.	Yes	YES / NO		

**Annexure 7.22**

**Technical Specifications for DC Management LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measure	Specification Offered	Whether any deviation, Please Specify
		Switch support the rolebased access control to limit access to switch operations.		YES / NO		
		The switch should support configuration verification and single configuration file for all operations		YES / NO		
29	Software		Latest release with all supported features to be proposed			
30	Mounting		Standard 19-in rack with required hardware			
31	Compatability	Compatability with proposed network devices	Yes	YES/NO		
		Compatability with proposed security devices				
		Compatability with proposed servers	Yes	YES/NO		
32	Power Supply	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed		YES / NO		
34	Cooling Fans	Hot Swappable Cooling Fans proposed		YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
35	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO			
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.				
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO			

**Annexure 7.23**

**DC Core BKUP LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Production Certification					
13	Architecture	Chassis based Multilayer Switch with sufficient modules/line cards to fit required transceivers/UTP ports. Chassis shall have minimum 9 payload slots	Yes	YES/NO		
		Interface modules should have all the resources for switching and routing and provide true local switching both inter and intra module	Yes	YES/NO		
14	Switch Redundancy/High Availability Features	Switches should be quoted with redundant Supervisor/CPU/Switching fabric,Support module, System clock, power supplies and fans etc	Yes	YES/NO		
		Components like modules/power supplies/fan tray should be hot swappable.	Yes	YES/NO		
		The switch should have redundant CPU's working in an active-active or active-standby mode. There should not be any disruption during the CPU fail-over/change-over and the fail over should be less than 1 sec	Yes	YES/NO		

**Annexure 7.23**

**DC Core BKUP LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Statefull Switchover and Nonstop Forwarding to ensure that in case of active CPU module the redundant CPU should start switching L2/L3 traffic in less than 1 sec	Yes	YES/NO		
		The switch should support Hitless software upgrades to reduce downtime during software upgrades and switch should be capable of providing graceful restart for all IPV4 routing protocols	Yes	YES/NO		
15	<b>System Throughput</b>	The total aggregate switching capacity shall be 6.1 Tbps or more		Units		
17	<b>Memory</b>	DRAM - 4GB or Higher Flash Memory -1GB or higher or any other storage as needed	GB			
18	<b>Switching and routing capability</b>		Support Minimum Switching and routing Performance of 900+ Mbps	units		
19	<b>Backplane Connect Capacity</b>		100% passive	Units		
20	<b>Ports</b>		Minimum 48 ports 10 Gbps and console port	Units		
21	<b>Connectivity</b>	802.3ad based standard port/link aggregation, Jumbo frames, storm control	Yes	YES/NO		
22	<b>Switching features</b>	vlan and MAC address (min 4000vlans and min 100000mac address)	Yes	YES/NO		
		port, subnet based 802.1Q VLANs, IEEE 802.1w RSTP and IEEE 802.1s MSTP		YES/NO		
23	<b>Security</b>	802.1X Network Security and Radius/TACACS Authentication	Yes	YES/NO		
		MAC Address filtering based on source and destination address, Port based security, Various ACLs like port based/time based, Standard/Extended ACLs, Control plane policing to filter unwanted traffic, support more than 50000 security and QOS ACLs	Yes	YES/NO		



**Annexure 7.23**

**DC Core BKUP LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Integrated with DHCP snooping with option-82, Dynamic arp inspection, IP source guard and unicast reverse path forwarding	Yes	YES/NO		
24	<b>Routing and routing features</b>	IP & IPX, RIP V1 & V2,OSPF, BGP, IS-IS, ipv6, Policy based routing, Netflow and support minimum of 100000+ route entries	Yes	YES/NO		
25	<b>Load Balancing</b>	Equal cost load balancing				
26	<b>Network Protocols</b>	Protocols like but not limited to the listed protocols - DNS,DHCP,TFTP, NTP, VRF awareness, GRE tunneling, VRRP protocol or equivalent and IP Services,	Yes	YES/NO		
		Advanced protocols like but not limited to GLBP,HSRP,VRRP,PBR	Yes	YES/NO		
27	<b>Quality Of Service</b>	Ingress/Egress queuing, MAC based source/destination traffic limit, IP source/Destination address,TCP/UDP ports,etc	Yes	YES/NO		
		QOS scheduling, at least 8 queues per port, TOS based traffic classification, IP precedence mapping, Layer2/3/4 traffic flows, MAC address, VLANs	Yes	YES/NO		
28	<b>Multicast</b>					
	IPv4 and IPv6 Multicasting, IGMP v1,v2,v3, IGMP snooping, PIM-sparse mode and PIM SSM for ipv4 and ipv6, MSDP	Yes	YES/NO			
29	<b>Other features supported</b>	support for standards compliance with ieee802.3, 10BaseT, ieee802.3u, ieee802.3z,ieee802.3ab, ieee802.3ae,ieee802.1D, 802.1S and 1W,ieee802.3x, ieee802.1AE	YES/NO			
30	<b>Management</b>	SNMP v1, v2c/v3, RMON enabled, SSH, Telnet,CLI GUI, Web based interface, Serial interface , Compatibility with auto discovery	Yes	YES/NO		
		Switch should be manageable through NMS on per port/switch basis with common interface for all manageable devices on the network	Yes	YES/NO		

**Annexure 7.23**

**DC Core BKUP LAN - L3 Switches**

S.No.	Parameters	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Switch should support mirroring feature for monitoring network traffic of a particular port/VLAN/Group of ports/entireswitch	Yes	YES/NO		
		Switch support the rolebased access control to limit access to switch operations. The switch should support configuration verification and rollback	yes	YES/NO		
		for USB, Flash Card, Compact Flash for Fabric Switch Image and configuration backup		YES/NO		
31	<b>Software</b>	Latest release with all supported licenses as requied	YES/NO			
32	<b>Mounting</b>	Standard 19-in rack with required hardware	YES/NO			
33	<b>Compatability with proposed network devices</b>	Compatability with proposed network devices	Yes	YES/NO		
		Compatability with proposed network security devices	Yes	YES/NO		
		Compatability with proposed servers	Yes	YES/NO		
34	<b>Power Supply</b>	Hot Swappable Power supply proposed	YES	YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
35	<b>Cooling Fans</b>	Hot Swappable Cooling Fans proposed	YES	YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
36	<b>Support</b>					
	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES/NO			
	Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES/NO			
	Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES/NO			

**Annexure 7.24**

**Technical Specifications for L3 Switches - Data Center Access Switches**

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Production Certification					
13	Architecture	Enterprise class rackmountable switch.				
		Switch fabric capacity	minimum of 400+ Gbps	gbps		
		Switch forwarding rates	250mpps	mpps		
		10G/Gigabit Ethernet port	Minimum of 48 Numbers with appropriate interface connectors	unit		
		Support consolidating IP, Storage, FC and traditional Ethernet protocols into single media	Yes			
		Non-blocking switch architecture	Yes			
14	Connectivity	802.3ad based standad port/link aggregation, Jumbo frames, storm control	yes	YES/NO		
15	Switching features	Support but not limited to - L2 Fiber/Copper ports and Fiber channel ISL trunks	yes	YES/NO		
		Support at least 500 VLAN and 15000 MAC Address	yes	YES/NO		

**Annexure 7.24**

**Technical Specifications for L3 Switches - Data Center Access Switches**

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Datacenter bridging exchange, ieee 802.1Qbb and ieee802.1Qaz	yes			
		Swich support auto device discovery and storm control	yes	YES/NO		
		DNS,TFTP and NTP protocol	yes	YES/NO		
16	<b>Security</b>	802.1X Network Security and Radius/TACACS ,AAA authentication	yes	YES/NO		
		MAC Address filtering based on source and desintination address		YES/NO		
		support for various ACLs like port based/time based, vlan based and Standard/Extended ACLs L2 L4		YES/NO		
17	<b>Network Protocols</b>	DNS,DHCP,TFTP, NTP, BOOTP relay, etc	yes	YES/NO		
18	<b>Quality Of Service</b>	port-based COS assignment and COS trust	yes	YES/NO		
		minimum 4 number of hardware queues per port	yes			
		Policy based traffic classification based on Layer 2 to Layer 4	yes	YES/NO		
19	<b>Multicast</b>	IGMP v1,v2,v3, IGMP snooping		YES/NO		
20	<b>Other features supported</b>	standards such as ieee802.3. ieee802.3u, ieee803z, 802.3ab, ieee802.3ae, ieee802.3af-POE, ieee802.1D, ieee802.1w, ieee802.1s, ieee802.1p, ieee802.1Q, 802.1x, 802.3ad, 802.1X, ieee802.3x		YES/NO		
21	<b>Management</b>	SNMP v1, v2c/v3, RMON/RMON-II enabled, SSH, telnet, GUI, Web management	Yes	YES/NO		
		Switch should support port mirroring feature for monitoring network traffic of a particular port/VLAN/group of ports/Fiber Channel ports..	Yes	YES/NO		
		Built-in real-time performance monitoring capabilities	Yes	YES/NO		
22	<b>Software</b>	Latest release with all supported required features as needed				
23	<b>Mounting</b>	Standard 19-in rack with required hardware				

**Annexure 7.24**

**Technical Specifications for L3 Switches - Data Center Access Switches**

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
24	<b>Compatible</b>	Compatible with proposed network devices	Yes	YES/NO		
		Compatible with proposed servers	Yes	YES/NO		
25	<b>Power Supply</b>	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
26	<b>Cooling Fans</b>	Hot Swappable Cooling Fans proposed		YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
27	<b>Support</b>	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES/NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES/NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES/NO		

**Annexure 7.25**

**Technical Specifications for L3 Switches - ABIS LAN**

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Production Certification					
13	Architecture	Enterprise class rackmountable switch.				
		Switch fabric capacity	400+ Gbps	gbps		
		Switch forwarding rates	250mpps	mpps		
		Ports with Support for 1G and 10G Ethernet	Total of 48 Numbers with appropriate interface connectors	unit		
		Support consolidating IP, Storage, FC and traditional Ethernet protocols into single media	Yes			
		Non-blocking switch architecture	Yes			
14	Connectivity	802.3ad based standad port/link aggregation, Jumbo frames, storm control	yes	YES/NO		
15	Switching features	Support but not limited to - L2 Fiber/Copper ports and Fiber channel ISL trunks	yes	YES/NO		
		Support at least 500 VLAN and 15000 MAC Address	yes	YES/NO		

**Annexure 7.25**

**Technical Specifications for L3 Switches - ABIS LAN**

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Datacenter bridging exchange, ieee 802.1Qbb and ieee802.1Qaz	yes			
		Switch support auto device discovery and storm control	yes	YES/NO		
		DNS,TFTP and NTP protocol	yes	YES/NO		
16	<b>Security</b>	802.1X Network Security and Radius/TACACS ,AAA authentication	yes	YES/NO		
		MAC Address filtering based on source and destination address		YES/NO		
		support for various ACLs like port based/time based, vlan based and Standard/Extended ACLs L2- L4		YES/NO		
17	<b>Network Protocols</b>	DNS,DHCP,TFTP, NTP, BOOTP relay, etc	yes	YES/NO		
18	<b>Quality Of Service</b>	port-based COS assignment and COS trust	yes	YES/NO		
		minimum 4 number of hardware queues per port	yes			
		Policy based traffic classification based on Layer 2 to Layer 4	yes	YES/NO		
19	<b>Multicast</b>	IGMP v1,v2,v3, IGMP snooping		YES/NO		
20	<b>Other features supported</b>	standards such as ieee802.3,ieee802.3u,ieee803z,802.3ab, ieee802.3ae, ieee802.3af-POE, ieee802.1D,ieee802.1w,ieee802.1s, ieee802.1p, ieee802.1Q, 802.1x,802.3ad,802.1X,ieee802.3x		YES/NO		
21	<b>Management</b>	SNMP v1, v2c/v3, RMON/RMON-II enabled, SSH,telnet,GUI, Web management	Yes	YES/NO		
		Switch should support port mirroring feature for monitoring network traffic of a particular port/VLAN/group of ports/Fiber Channel ports..	Yes	YES/NO		
		Built-in real-time performance monitoring capabilities	Yes	YES/NO		
22	<b>Software</b>	Latest release with all supported required features as needed				
23	<b>Mounting</b>	Standard 19-in rack with required hardware				

**Annexure 7.25**

**Technical Specifications for L3 Switches - ABIS LAN**

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
24	<b>Compatible</b>	Compatible with proposed network devices	Yes	YES/NO		
		Compatible with proposed servers	Yes	YES/NO		
25	<b>Power Supply</b>	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed	YES	YES / NO		
26	<b>Cooling Fans</b>	Hot Swappable Cooling Fans proposed		YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
27	<b>Support</b>	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES/NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.		YES/NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES/NO		



Annexure 7.26

Firewall

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor/Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	HeatDissipation			BTU/hr		
6	Power requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage and Frequency	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Production Certification					
13	Architecture	The appliance a multiprocessing system Architecture for high performance	Yes	YES/NO		
		System should support Firewall, IPSec, VPN, SSL VPN, Unlimited users/nodes	Yes	YES/NO		
14	High Availability Features	Capability to detect hardware failure during powerup and before going online	Yes	YES/NO		
		Stateful failover to prevent session losses to minimal. Firewall support rack serviceability with easy access mainboard	Yes	YES/NO		
		Software reconfiguration/ configuration changes are immediate effect	Yes	YES/NO		
		Support active/active and active/standby failover	Yes	YES/NO		
		Should support VPN Clustering and Loadbalancing	Yes	YES/NO		
		Support in-built environmental monitoring capabilities.	Yes	YES/NO		
15	Concurrent Sessions		at least 1500000 and at least 80000 sessions per second			
16	System Throughput		at least 10 Gbps and higher	gbps		

Annexure 7.26

Firewall

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
17	Memory		at least DRAM - 5GB or higher at least Flash Memory 1GB- or higher or any other storage if required	GB		
18	Ports		minimum 12 Nos 1 Gbps ports and expandable minimum 6 Nos of 10Gbps Ports and expandable	Unit		
19	Expansion option		Network interfaces like Fast Ethernet/Gig Ethernet/10G Ethernet modules			
20	Application and protocol inspection		Should integrate with more than 24 specilized inspection engines for protocols such as: (but not limited)			
			Advanced Web Browsing (HTTP/(s))	YES/NO		
			File Transfers (FTP/(s))	YES/NO		
			Electronic mail (SMTP)/eSMTP	YES/NO		
			Domain Name System (DNS)	YES/NO		
			Simple Network Management Protocol (SNMP)	YES/NO		
			Database (SQL*Net)	YES/NO		
			Network File System (NFS)	YES/NO		
			IP Telephonu - H.323,SIP	YES/NO		
			VoIP	YES/NO		
			Session Initiation Protocol (SIP)	YES/NO		
			Real-Time Streaming Protocol (RTSP)	YES/NO		
			Internet Locator Service (ILS)	YES/NO		

Annexure 7.26

Firewall

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
			Provider voice services (MGCP,GTP/GPRS)	YES/NO		
			Network Information services (NIS+)	YES/NO		
			Stateful ICMP inspection	YES/NO		
			IPv6 transparent	YES/NO		
			Timebound, Out bound ACLs	YES/NO		
			Inspection engine should support an interface,network or host	YES/NO		
			Tunneled applications (peer-to-peer file sharing or instant messaging)	YES/NO		
21	Support VPN		Supports:			
			IKE	YES/NO		
			IPSec VPN standards	YES/NO		
			PPTP	YES/NO		
			56-bit DES	YES/NO		
			168-bit 3DES	YES/NO		
			OSPF routing and QOS over VPN	YES/NO		
			Diffie Hellman Group 7	YES/NO		
			x.509	YES/NO		
			Up to 256-bit AES data encryption	YES/NO		
22	Authentication, Authorization and Accounting (AAA) support		Integrates with popular AAA services via	YES/NO		
			RADIUS	YES/NO		
			TACACS+	YES/NO		
			Accounting for management traffic	YES/NO		
			Native Active Directory user authentication(VPN only)	YES/NO		

Annexure 7.26

Firewall

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
			Native SecureID authentication (VPN only)	YES/NO		
23	Other		Support for:			
			Port redirection and TCP intercept	YES/NO		
			Rack Mountable	YES/NO		
			ActiveX blocking	YES/NO		
			URL filtering and Java Security	YES/NO		
			Support against all network and application level attacks ranging from malformed packet attacks to DoS attacks	YES/NO		
			Support for ability to customize protocol port numbers	YES/NO		
			Support upto 1536 bit RSA and Diffie-Hellman, MD-5,SHA-1	YES/NO		
24	DHCP relay		Forwards DHCP requests from internal devices to an administrator-specified DHCP server, enabling centralized distribution, tracking, and maintenance of IP addresses	YES/NO		
			Provides:	YES/NO		
			Rich dynamic NAT and PAT services	YES/NO		
			Static NAT and PAT services	YES/NO		
			Policy-based NAT and PAT services	YES/NO		
25	Perimeter Security module/software feature	Antivirus/Antispayware/Antispam/Antiphishing/URL blocking and content filtering	Yes	YES/NO		

Annexure 7.26

Firewall

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
26	IPS Module	X.509 certificate and CRL support	Supports Simple Certificate Enrollment Protocol (SCEP)-based enrollment with leading X.509 solutions from Baltimore, Entrust, Microsoft, and VeriSign	YES/NO		
27	Management		Web based management to support for remote monitoring	YES/NO		
			Accessible through variety of methods including : Telnnet, Console Port,SSH	YES/NO		
			Dedicated Out-of-Managenet interface	YES/NO		
			Support SNMPv1, v2, v3	YES/NO		
			Support for security event logging	YES/NO		
			Support real time alerting and notification features and syslog	YES/NO		
			Should have the ability to create customizable administrative roles/profiles (monitoring only, read-only access to configuration, VPN administrator, firewall/NAT administrator, etc.)	YES/NO		
28	End point verification		Support for end point authorization based on multiple variables of each VPN connection associated with specific tunnel or session	YES/NO		

Annexure 7.26

Firewall

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
29	Software features		support for RIPv2, OSPF, VLAN, LAN Based failover, DHCP. Support, static&Dynamic NAT/PAT. Support H.323, SIP, FTP, etc. Bidirectional NAT, NAT transparency, Split tunneling VPN,	YES/NO		
30	Software		Latest release with all supported features as required			
31	Broadcast Application		Support for Microsoft Networking client server communication	YES/NO		
			support for multimedia Real Audio Video Stream Works, Applications based on H.323 standards	YES/NO		
			Support for Oracle SQL and ERP applications	YES/NO		
32	Client VPN		support and not limited to Internal websites/web enabled applications,	YES/NO		
			Email- POP3S, IMAP4S, SMTPS.	YES/NO		
			Support also telnet, RDP, VNC. MAPI and Application Access support	YES/NO		
33	Mounting		Standard 19-in rack with required hardware	YES/NO		
34	Compatability	Compatability with proposed network devices	Yes	YES/NO		
		Compatability with proposed security devices	Yes			
		Compatability with proposed servers	Yes	YES/NO		
35	Power Supply	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
		Dual AC input proposed		YES / NO		

Annexure 7.26

Firewall

S.No.	Parameters	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
36	Cooling Fans	Hot Swappable Cooling Fans proposed		YES / NO		
		(N+1) redundant Cooling Fans proposed	YES	YES / NO		
37	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO			
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so, specify details.				
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO			

**Annexure 7.27**

**Host based IDS**

Sr. No	Parameter/ Features	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	<b>Product Name</b>					
2	<b>Version</b>					
3	<b>No. of Licenses</b>	Server				
		Processor				
		Client				
		Client Access License				
		Other 1				
		Other 2				
4	<b>Operating Systems Supported</b>	The HIDS should have support for the following Operating Systems (32/64 bit):				
		Microsoft Windows Server 2008		YES / NO		
		Microsoft Windows 2003		YES / NO		
		HP-UX		YES / NO		
		Sun Solaris		YES / NO		
		RedHat Linux		YES / NO		
		IBM AIX		YES / NO		
		Support for virtual environments (VmWare, ESX/ESXI, HYPER-V, XEN, Other				
5	<b>Advanced Intrusion Prevention/Blocking</b>	HIDS should provide automated, real-time intrusion detection and protection by analyzing events, operating system logs and inbound/outbound network traffic on enterprise servers.		YES / NO		
		Monitor all inbound and outbound traffic to detect and prevent attacks, both known and unknown.		YES / NO		
		This includes:				
		Buffer overflows		YES / NO		
		Trojans		YES / NO		
		Brute force attacks		YES / NO		
		Unauthorized access and network worms		YES / NO		
		Other types of attacks.		YES / NO		
6	<b>Local and Network-Based Protection</b>	Should provide the flexibility to detect and protect from both local and network attacks through log monitoring capabilities		YES / NO		



**Annexure 7.27**

**Host based IDS**

Sr. No	Parameter/ Features	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Should prevent authorized users from attacking the system, while also preventing brute force attacks and unauthorized access to system resources that would otherwise compromise data confidentiality, integrity and accessibility		YES / NO		
7	<b>Audit Policy Management</b>	Centralized management of an OS audit policy ensures that all critical servers have a consistent and effective audit policy that allows for the management of true kernel-level auditing.		YES / NO		
8	<b>Centralized Management</b>	The management console should unify the administration servers of enterprise protection across gateways, networks, desktops, significantly reducing demands on staff and other operational resources.		YES / NO		
9	<b>Event Co-relation</b>	Should have inbuilt knowledge to dynamically escalate threatening security incidents while reducing false alarms.		YES / NO		
		The module instantly correlates security data from multiple sources to escalate serious threats, such as an attack on a vulnerable asset or a covert, multi-step attack.		YES / NO		
10	<b>Real time monitoring</b>	Real-time monitoring and analysis of the operating system, applications and network activity.		YES / NO		
		Guard server environments from misuse and intrusions with little to no impact on the performance of the system.		YES / NO		
11	<b>Corrective Measures</b>	The HIDS should be capable of carrying out following activities in event of any incident				
		Block Malicious Traffic		YES / NO		
		Send An E-mail		YES / NO		
		SMS alerts				
		Prevent Access		YES / NO		
12	<b>Support</b>	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		

**Annexure 7.27**

**Host based IDS**

Sr. No	Parameter/ Features	Technical Specification	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO		
		Will the proposed product/solution reach End-of-support during the currency of contract?	NO	YES / NO		

**Annexure 7.28**

**Network based IDS**

S. No.	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Make					
2	Model					
3	Form Factor / Dimension			(U) / HxWxD(mm)		
4	Weight			Kg		
5	Heat Dissipation			BTU/hr		
6	Power Requirement			KVA		
7	Power Specification		Indian power specifications in terms of Phase, Voltage, Freq	Ø,V,Hz		
8	Current Rating			Amp		
9	Number, Rating, Type of power points required			Quantity, Amp, Type		
10	Operating Temperature range			°C		
11	Operating Relative Humidity range (non-condensing)			%		
12	Throughput		Gigabit Throughput	Gbps		
13	No. of 10G Ports		4	Units		Await Sagars comments
14	Rack Mountable		YES	YES / NO		
15	No. of segments protected		6	No. of segments		
16	Actions		Notification actions	YES / NO		
17	Alarms		Support for Detailed Intrusion Alarms	YES / NO		
18	Attacks		Comprehensive Attack Database	YES / NO		
			Detect more than 1500 known attacks	YES / NO		
			Support detection of:			
			TCP hijacking	YES / NO		
			Trinoo	YES / NO		
			TFN	YES / NO		
		SYN Floods	YES / NO			
19	Event Correlation		Advanced Event Correlation	YES / NO		
20	High Availability		Active-Active, Active-Passive	YES / NO		
21	Integration with third party tools		Integration with paging solutions, trouble ticket systems or other event management solutions.	YES / NO		

**Annexure 7.28**

**Network based IDS**

S. No.	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
22	Management		Support for Centralised Management	YES / NO		
			Secure web-based embedded device management / GUI management	YES / NO		
23	Performance		Support for High-speed Performance (including support for gigabit environments)	YES / NO		
24	Protocols to be monitored		Extensive Protocol Monitoring			
			TCP/IP	YES / NO		Yes for All
			ICMP	YES / NO		
			FTP	YES / NO		
			UDP	YES / NO		
			SMTP	YES / NO		
			HTTP	YES / NO		
			DNS	YES / NO		
			RPC	YES / NO		
			NetBIOS	YES / NO		
			NNTP	YES / NO		
	SSL	YES / NO				
	Telnet	YES / NO				
25	Real time Intrusion Protection		Support for Accurate Real-time Intrusion Detection	YES / NO		
26	Real time Response		Support for Real-time Response to Unauthorized Activity	YES / NO		
27	Signatures		Custom User-defined Signatures	YES / NO		
			Automatic Signature Updates	YES / NO		
28	VLAN		Ability to Monitor 802.1q (trunked) traffic	YES / NO		
29	Other		Support for Pervasive Network-based and Host-based protection	YES / NO		
			Secure Communications	YES / NO		
			Comprehensive IDS Anti-Evasion Techniques	YES / NO		
			Intelligent threat investigation.	YES / NO		
		Flexible Deployment option	YES / NO			

**Annexure 7.28**

**Network based IDS**

S. No.	Parameter	Technical Specification	Minimum Requirement	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
			Fault-tolerant Communications	YES / NO		
30	Power Supply	Hot Swappable Power supply proposed		YES / NO		
		(N+1) redundant power supply proposed	YES	YES / NO		
31	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-life</b> during the currency of contract? If so,	NO	YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		

Annexure 7.29

Perimeter Security Device

Sr. No	Parameter/ Features	Technical Specification/Feature	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
1	Product Name					
2	Version					
3	No. of Licenses (Primary Site)	Server				
		Processor				
		Client				
		Client Access License				
		Other 1				
		Other 2				
4	The appliance should have separate dedicated 10G interface for management console. None of the monitoring ports should be used for this purpose.		YES	Yes/No		
5	The IPS should be deployable in the following modes: Inline Protection, Inline Simulation		YES	Yes/No		
6	IPS vendor should have its own original threat intelligence analysis center and is not overly dependent on information available in the public domain.		YES	Yes/No		
7	IPS should detect and block all known, high risk exploits along with their underlying vulnerability (not just one exploit of that vulnerability).		YES	Yes/No		
8	IPS should detect and block zero-day attacks without requiring an update.		YES	Yes/No		
9	IPS should employ full seven-layer protocol analysis of over 190 internet protocols and data file format.		YES	Yes/No		
10	IPS should operate effectively and protect against high risk, high impact malicious traffic via default out of box configuration, should be able to block known attacks by default.		YES	Yes/No		

Annexure 7.29

Perimeter Security Device

Sr. No	Parameter/ Features	Technical Specification/Feature	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
11	IPS should perform stateful packet inspection		YES	Yes/No		
12	IPS should detect and block malicious web traffic on any port.		YES	Yes/No		
13	Does TCP stream reassembly.		YES	Yes/No		
14	Does IP defragmentation.		YES	Yes/No		
15	Does Protocol anomaly detection		YES	Yes/No		
16	Does Bi- directional inspection			Yes/No		
17	Detects attacks within protocols independent of port used		YES	Yes/No		
18	Does Heuristics			Yes/No		
19	Does Shell Code Heuristic			Yes/No		
20	Does RFC Compliance			Yes/No		
21	Does Protocol tunneling			Yes/No		
22	IPS should do attack recognition inside IPv6 encapsulated packets			Yes/No		
23	IPS should do active blocking of traffic based on pre-defined rules to thwart attacks before any damage is done.			Yes/No		
24	Accurately detects intrusion attempts and discerns between the various types and risk levels including unauthorized access attempts, pre-attack probes, suspicious activity, DoS, DDoS, vulnerability exploitation, brute force, hybrids, worms, and zero-day attacks.		YES	Yes/No		
25	Allows full policy configuration and IPS sensor control via encrypted communications with remote management system.		YES	Yes/No		
26	Can enable/disable each individual signature.		YES	Yes/No		
27	Each signature should allow granular tuning.			Yes/No		

Annexure 7.29

Perimeter Security Device

Sr. No	Parameter/ Features	Technical Specification/Feature	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
28	Supports assigning of ports to custom applications.			Yes/No		
29	Filters traffic based on IP address or network range, protocol, and service in support of organizational security policy to allow/disallow specific types of activity between hosts.		YES	Yes/No		
30	Should support Active/Passive and Active/Active for the appliance, the HA should be out of the box solution and should not requires any third party or additional software for the same.		YES	Yes/No		
31	HA solution should support High Protection that is should maintain state such that there is no gap in protection during failure of one of the appliances.		YES	Yes/No		
32	IPS should fail open in case of power, software or hardware failure when deployed in stand alone mode.		YES	Yes/No		
33	IPS should notify console of unit interruption. The console should receive alert and/or provide additional notification to administrator should any component become non-operational or experience a communications problem.			Yes/No		
34	IPS should have built in ticketing system.			Yes/No		
35	IPS should inspect and block unwanted PII and sensitive content disclosure across multiple protocols. The IPS should have inbuilt signatures for this purpose		YES	Yes/No		
36	IPS management and reporting solution which shall be available in both options of purpose built appliance and software.			Yes/No		



Annexure 7.29

Perimeter Security Device

Sr. No	Parameter/ Features	Technical Specification/Feature	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
37	IPS Management console should support high availability.			Yes/No		
38	IPS should support granular management. Should allow policy to be assigned per device, port ,VLAN tag, IP address/range			Yes/No		
39	IPS centralized management console should manage all the products network, host and Vulnerability Assessment solutions.		YES	Yes/No		
40	Management Console should be able to integrate with industry standard Enterprise Managemetn Products			Yes/No		
41	IPS should offer variety of built-in responses including console alerts, database logging, email notifications, SNMP traps, offending packet captures, and packet captures.		YES	Yes/No		
42	IPS should offer Includes built-in reports. The console should be capable of producing graphical metrics and time-based comparison reporting.		YES	Yes/No		
43	IPS vendor should have 24/7 security service update and should support real time signature update.		YES	Yes/No		
44	IPS vendor product models should have been tested/certified for NSS, Tolly tested and ICSA.B15			YES / NO		
45	Prevent Port Scanning		YES	YES / NO		
46	Support	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?	NO	YES / NO		

**Annexure 7.29**

**Perimeter Security Device**

Sr. No	Parameter/ Features	Technical Specification/Feature	Minimum Requirements	Unit of Measurement	Specification Offered	Whether any deviation, Please Specify
		Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract	YES	YES / NO		
		Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?	NO	YES / NO		

Annexure 7.30

**Hardware Security Module (HSM)**

S.No.	Feature/Specification Required	Feature/ Specification Offered	Whether any deviation, Please Specify
1	Should support Windows 2000,2003,2008, Linux, Solaris, HP-UX 11i, VMWARE, AIX		
2	TCP/IP Network based appliance		
3	Should comply to standards like FIPS 140-2 Level-3, CC EAL4+, ROHS, FCC part 15 Class B		
4	Key Length Supported (1024 to 4096)		
5	Public Key Algorithm RSA encrypt/decrypt, RSA sign/verify, ECC ( Electric Curve cryptography)		
6	Keys are always in Hardware and never stored in Software in any form		
7	Key Exchange Mechanism: DES / TripleDES, AES Algorithm		
8	Hash/HMAC algorithm: MD5, SHA 1, SHA 2, SHA 256		
9	Symmetric Algorithm : AES, MD5, SHA 1, SHA 2, SHA-256 , DES, TripleDES		
10	Compatibility: PKCS#11 , CAPI, OpenSSL, JCE/JCA		
11	Scalable Up to more than 15 unique partitions		
12	Private key generation and import: Archival and duplication mechanism to be specified. Give the procedure for key transportation from one HSM card to other		
13	Support for various cryptographic algorithms: Asymmetric Key with Diffie-Hellman (1024-4096 bit), RSA (512-4096 bit) and (PKCS#1 v1.5, OAEP PKCS#1		
	v2.0), Digital Signing via RSA (1024-4096-bit), DSA (512-1024-bit),		
	EC Brainpool Curves (named and user-defined), Suite B		
	Algorithm Support and ARIA support		
14	Published API for various above functionalities for integrating with the		
	Application software		
15	Signing speed : 5000 S/S		
16	Remote PED Support for Authentication		
17	Contents can be securely stored on Backup Tokens to simplify backup, cloning, and disaster recovery		
18	Onboard key generation, Digital Signing & Verification process to be done inside the HSM only for better performance and security		

## Annexure 7.30

**Hardware Security Module (HSM)**

S.No.	Feature/Specification Required	Feature/ Specification Offered	Whether any deviation, Please Specify
19	Complete hardware based storage of key material for entire Life cycle		
20	Additional / specific software's if any, required to support multiple HSM appliances to be provided		
21	24/7 tel/email support infrastructure based out of India		
22	HSM Cards have to fit into the Server Slots of offered Blade/ Rack Servers		

**Annexure 7.31**

**Anti Virus Server (Response only)**

Sr. No	Parameter	Technical Specification	Unit of Measurement	Specification Offered
1	<b>Power Specification</b>		Ø,V,HZ	
2	<b>Processor</b>	Processor Type (CISC)		
		Type of processor	bits	
		Native support for 32-bit applications	YES/NO	
		No of CPUs		
		Cores per CPU		
		Hyper Threading Support		
		Clock Speed	GHZ	
		L2 Cache per core	MB	
		L3 Cache per processor	MB	
3	<b>Dimensions</b>	Chassis Height	1U/2U/4U	
		Chassis Dimensions	inches (LxWxH)	
		Chassis Weight when fully loaded	KG	
4	<b>Power &amp; Cooling</b>	Power Consumption At Full load	KVA	
		Power Consumption At normal load	KVA	
		Heat Dissipation at full load	BTU/Hr	
		Heat Dissipation at normal load	BTU/Hr	
		No of Cooling Fans Proposed		
		Redundant Cooling Fans		
		Hot Swappable Power supply proposed	YES / NO	
		Dual AC input proposed	YES / NO	
		Redundant Power Supply Proposed		
5	<b>Main Memory</b>	Main Memory Type	(ECC / Non ECC)	
		DDR Type		
		Total Memory		
6	<b>Disk Controller</b>	RAID protection type proposed	YES / NO	
		No. of channels in the proposed RAID controller	Single / Dual / Quad	
		Proposed size of battery backed cache	MB	
7	<b>Internal Disks</b>	SAS Disk Supported	YES / NO	
		Disk capacity	GB	
		Disk Speed	RPM	
		Are Proposed Disks Hot Swappable?	YES / NO	
8	<b>Network PCI / PCI-X</b>	Type of Ethernet controller proposed	Units	
		No. of ports used on each Ethernet controller proposed	YES / NO	
		Whether only single port is be used on each controller	YES / NO	
		Dual Homing proposed	Gbps	
		Teaming of Ethernet Controllers proposed	YES / NO	
		No of 10 G Ethernet ports		
		No of 1 G Ethernet ports		
9	<b>Host based Adapters</b>	Type of HBA proposed	PCI / PCI-X	

**Annexure 7.31**

**Anti Virus Server (Response only)**

Sr. No	Parameter	Technical Specification	Unit of Measurement	Specification Offered
		Throughput of each of the proposed HBA	PCI / PCI-X	
		No. of HBA proposed	YES / NO	
		No. of ports used on each HBA proposed	Gbps	
		Whether only single port is be used on each controller	YES / NO	
		Capability to dynamically load balance between multiple HBA		
		Support for storage subsystems of leading manufacturers like EMC, Hitachi, HP, IBM, SUN,NetApp, Dell	YES / NO	
10	<b>Operating System</b>	Operating system is natively compliant with 32-bit and 64-bit applications	YES / NO	
		Operating System Support - RHEL 5.X or higher (32,64 bit), CentOS 5.X ,Windows 2003/2008 (32, 64 bit)		
11	<b>Virtualization Support</b>	Virtualalization Support (support for hypervisors like a ESXi/ESX, XEN, KVM, HYPER-V, VirtualBox )		
12	<b>File System</b>	Maximum file system partition size (file system)	TB	
13	<b>Remote Boot Support (Network, SAN)</b>	Yes		
14	<b>Others</b>	Max no of fully loaded servers per 42U rack at 7KVA load		
15	<b>Estimated Ratings of server for proposed configurarion</b>	SPEC Int2006		
		SPEC int_rate_2006		
		SPEC fp2006		
		SPECfp_rate_2006		
		tpmC		
		SPECpower_ssj2008		
16	<b>Support</b>	Is the proposed product/solution End-of-life or will reach End-of-life within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?		
		Will the proposed product/solution reach End-of-support during the currency of contract?		

**Annexure 7.32**

**Anti-Virus Software (Response only)**

Sr. No	Parameter/ Features	Response of the Bidder	Details / Remarks, if any
1	Product Name		
2	Version		
<b><i>Licenses for components that are prices and sold separately should be indicated as separate licenses</i></b>			
3	No. of Licenses (Primary Site)		
	Server		
	Processor		
	Client		
	Client Access License		
	Other 1		
	Other 2		
4	Protection for Desktop / Servers		
5	Security for SMTP		
6	Security for Microsoft Exchange/Lotus Domino		
7	Security for Lotus Domino		
8	Gateway Antivirus		
9	Operating system for proposed software		
10	Dedicated Anitvirus Management Console		
11	Deep Packet Inspection Engine		
12	Support		
	Is the proposed product/solution <b>End-of-life</b> or will reach <b>End-of-life</b> within 24 months from the date of submission of bid or 12 months from the date of acceptance, whichever is later?		
	Provide new version upgrades, updates, patches, etc. for all the components / sub-components through the period of contract		
	Will the proposed product/solution reach <b>End-of-support</b> during the currency of contract?		

**Annexure 7.33**

**Network Operation Console (NOC)**

SI No	Item	Technical Specifications Required	Specification Offered	Whether any deviation, Please Specify
1	<b>LED Display</b>	Size – 52 Inches		
		Display Type - LCD		
		Resolution -Min 1920*1080 pixels		
		Contrast –Min 5000:1		
		Brightness – Min 700 Nit		
		Response Time - Min 8 milliseconds		
		PIP Support		
		Input Ports – Min 3 HDMI Ports, Min 2 DVI Ports		
		Wall Mount with Accessories		
		220 V AC Input		
		Associated Software Drivers for Windows Vista/7		
		Desktops		
		With Remote Control		
		2	<b>Graphic Controller Cards</b>	PCI Express
Small Form Factor				
Memory min – 512 DDR3+				
at least 2 display connectors				
Digital Display – 2560 X 1600 Minimum				
Best power consumption				
DVI links 2 connection				
The Graphics Controller Card should be compatible with the supplied Desktop and LCD Display				