



**Surat
Municipal
Corporation**

ADDENDUM & CORRIGENDUM-1

REQUEST FOR PROPOSAL

FOR

**SELECTION OF IMPLEMENTATION AGENCY FOR
INTEGRATED COMMAND AND CONTROL CENTER
(ICCC) IN SURAT CITY**

RFP No.: SSCDL-ICCC-RFP-01-2019

Last date for Price Bid Submission: 22.04.2019



Invited by

Surat Smart City Development Limited

115, Smart City Cell, Surat Municipal Corporation,

Muglisara, Main Road, Surat - 395003, Gujarat.

Surat Smart City Development Limited

ADDENDUM AND CORRIGENDUM-1

RFP Notification No.: SSCDL-ICCC-RFP-01-2019

The Bidder are requested to take note of the following changes made in the RFP documents, which are to be taken in to account while submitting the RFP. They shall be presumed to have done so and submitted the RFP accordingly.

- This Addendum and Corrigendum shall be the part of the RFP documents.
- All items specified in this Addendum and Corrigendum supersede relevant items to that effect as provided in the original RFP documents. All other specifications, terms and conditions of the original RFP document shall remain unchanged.
- Bidder shall read and consider following points, which shall be a part of the RFP documents.
- All the changes mentioned in this document should be read across the RFP, Addendum & Corrigendum, wherever applicable.
- **The queries raised and given by bidders, but the clarifications are not made in this Addendum and Corrigendum shall be considered to remain unchanged as per the terms and conditions mentioned in the original RFP documents.**

Changes with respect to RFP Schedule

Please note that with respect to tendering schedules, the following changes have been effected. Bidders are requested to take note of the same and adhere to the dates specified hereunder with regards to Price Bid Submission and Technical Bid Submission:

Particular	Current Dates	Proposed Dates
Online Price Bid Submission Date	10.10.2018 up to 18:00 hrs.	22.04.2019 up to 18:00 hrs.
Technical Bid Submission (in Hard Copy) Filled-in Technical Bid along with Bid Fee, EMD and other documents	In sealed envelope strictly by RPAD/Postal Speed Post On or before 15.10.2018 up to 18:00 hrs. To the Chief Accounts, Surat Municipal Corporation, Muglisara, Surat – 395003, Gujarat by RPAD or Speed Post Only.	In sealed envelope strictly by RPAD/Postal Speed Post On or before 26.04.2019 up to 18:00 hrs. To the Chief Accounts, Surat Municipal Corporation, Muglisara, Surat – 395003, Gujarat by RPAD or Speed Post Only.

ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for Integrated Command Control Centre (ICCC) in Surat [RFP No.: SSCDL-ICCC-RFP-01-2019]



Other Changes

#	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
1.	5.1	20	Bidder's Eligibility Criteria		Please refer to Annexure I for revised Bidder's Eligibility Criteria
2.	5.2	23	OEM's Eligibility Criteria		Please refer to Annexure II for revised OEM's Eligibility Criteria
3.	6.22	36	Technical Evaluation Criteria		Please refer to Annexure III for revised Technical Evaluation Criteria
4.	6.23	40	Opening of Commercial Bid	SSCDL/SMC will open the Commercial Bids of those Bidders who have achieved minimum score of 70% of total marks in technical evaluation	SSCDL/SMC will open the Commercial Bids of those Bidders who have achieved minimum score of 60% of total marks in technical evaluation
5.	11.3	74	TQ_2: Format for Specifying the Make & Model		Please refer to Annexure IV for revised TQ_2 Format
6.	12.2	84	General Instructions	Point no 8: Quantities mentioned in the commercial formats are indicative in number. SSCDL may or may not procure the listed components in mentioned quantities. SSCDL has the rights to delete any of the component before final implementation. Also, SSCDL reserves the right to remove any of the line components (as per BOQ provided)	Point no 8. Quantities mentioned in the commercial formats are indicative in number. SSCDL may or may not procure the listed components in mentioned quantities. SSCDL has the rights to delete/ vary the quantities of any of the component before final implementation. Also, SSCDL reserves the right to remove any of the line components (as per BOQ provided)
7.	12.3	86	Commercial Bid Format		Please refer to Annexure V for revised Price Bid Format
8.	13.9	104	Data Analytics Capability	1. The ICCC software solutions should have inbuilt capability of data analytics/ business intelligence	1. The ICCC solutions should have the capability of data analytics/ business intelligence for data analysis and informed decision for all stakeholders
9.	15.1	151	Video Wall Screen		Please refer to Annexure VI for revised Specifications
10.	15.2	152	Video Wall Controller (From same Video wall OEM)		Please refer to Annexure VI for revised Specifications
11.	15.4	155	49" Curved Monitor for ICCC Operator		Please refer to Annexure VI for revised Specifications
12.	15.5	156	Workstations for ICCC Operators		Please refer to Annexure VI for revised Specifications
13.	15.6	158	Desktop PC (Dell/HP/Lenovo)		Please refer to Annexure VI for revised Specifications
14.	15.15	166	55" LED Display Screen	Screen Mirroring: Yes	Please refer to Annexure VI for revised Specifications
15.	15.16	167	Indoor Wifi Access Points(AP)		Please refer to Annexure VI for revised Specifications

ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for Integrated Command Control Centre (ICCC) in Surat [RFP No.: SSCDL-ICCC-RFP-01-2019]



#	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
16.	15.17	169	8 ports Web Managed PoE+ Switch		8 ports PoE+ Switch Please refer to Annexure VI for revised Specifications
17.	15.18	171	24 ports Web Managed PoE+ Switch		Please refer to Annexure VI for revised Specifications
18.	15.19	173	24 ports Web Managed Switch		Please refer to Annexure VI for revised Specifications
19.	15.20	173	48 ports Web Managed Switch		Please refer to Annexure VI for revised Specifications
20.	15.21	177	10G SFP+ LX Transceiver Module for 8 Port PoE+/24 Port PoE+/24 Port/48 Port Web Managed Switches		10G SFP+ LR Transceiver Module for 24 Port PoE+/24 Port/48 Port Web Managed Switches Please refer to Annexure VI for revised Specifications
21.	15.22	177	DC Core Switch		Please refer to Annexure VI for revised Specifications
22.	15.23	181	10G BASE-T RJ-45 Copper Transceiver Module for DC Core Switch		This stands deleted
23.	15.24	181	10 G SFP+ LX transceiver module for DC Core Switch		This stands deleted
24.	15.25	182	40G QSFP+LX transceiver Module for DC Core Switch		This stands deleted
25.	15.26	182	DC Aggregation Switch		This stands deleted
26.	15.27	186	10G BASE-T RJ-45 Copper Transceiver Module for DC Aggregation Switch		This stands deleted
27.	15.28	187	10G SFP+ LX Transceiver Module for DC Aggregation Switch		This stands deleted
28.	15.29	187	40G QSFP+ LX Transceiver Module for DC Aggregation Switch		This stands deleted
29.	15.30	187	DC Application & Delivery Controller with Global Server Load Balancing		Please refer to Annexure VI for revised Specifications
30.	15.31	189	Wireless LAN Controller for Indoor Wifi Access Point		Please refer to Annexure VI for revised Specifications
31.	15.32	191	Servers for SMC Application Requirements		Please refer to Annexure VI for revised Specifications

ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for Integrated Command Control Centre (ICCC) in Surat [RFP No.: SSCDL-ICCC-RFP-01-2019]



#	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
32.	15.33	193	Servers for ICCC Requirements		Please refer to Annexure VI for revised Specifications
33.	15.34	194	Storage	Minimum 512 GB of useable cache across controllers. Cache must be controller cache and not SSD based cache.	Minimum 512 GB of useable cache across controllers, out of which minimum 384 GB Cache must be controller cache and rest can be flash based cache. Please refer to Annexure VI for revised Specifications
34.	15.38	207	Call Center Management Solution		Please refer to Annexure VI for revised Specifications
35.	15.39		Blade Chassis (if Blade Server is proposed)		This stands added
36.	15.40		Video Conference System		This stands added
37.	15.41		10G DAC (10M Length) for DC Core Switch		This stands added
38.	15.42		10G SFP+ SR/LR Transceiver Module for DC Core Switch		This stands added
39.	15.43		40G QSFP+ LR4/SR4 Transceiver Module for DC Core Switch		This stands added
40.	15.44		DC TOR / DC Aggregation Switch Type-1		This stands added
41.	15.45		DC TOR/ DC Aggregation Switch Type-2		This stands added
42.	15.46		10G SFP+ SR/LR Transceiver Module for DC TOR / DC Aggregation Switch		This stands added
43.	15.47		40G QSFP+ LR4/SR4 Transceiver Module for DC TOR/ DC Aggregation Switch		This stands added
44.	15.48		Colour Laser Printer		This stands added
45.	16	215	Annexure IV- Scope & requirements for Data Center & other Components		Please refer to Annexure VII for Specifications of below components: 16.9 Access Control System 16.12 Precision Air Conditioning 16.13 Datacentre Management System / Building Control System
46.	13.14		New Clause Added		(iii) Bidder is required to setup/configure/implement Redundant High Availability topology between

ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for Integrated Command Control Centre (ICCC) in Surat [RFP No.: SSCDL-ICCC-RFP-01-2019]



#	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
			13.14 ICCC Infrastructure Provisioning > Design Consideration > Point No. iii		<ol style="list-style-type: none"> 1. DC Top of the Rack/DC Aggregation Switch to DC-Core Switch 2. Access Switches to DC Top of the Rack/ DC Aggregation 3. Servers to DC Top of the Rack/DC Aggregation 4. DC-Core Switch to DC-Core Switch <p>Note: The above scope is required to carry out only for Critical Racks/Systems/Servers/Switches that will be identified by SMC/SSCDL.</p>

ANNEXURE-I

5.1 Revised Bidder's Eligibility Criteria

Note: For evaluation following definition is considered

- The total Project value shall be considered as Capex Cost + Opex Cost
- OEM experience will not be considered for Pre-Qualification Criteria and Technical Evaluation.
- **Integrated Command & Control Centre (ICCC)/ Command Control Centre (CCC): ICCC/CCC Project is defined as those project where Command Centre Application is implemented along with Video Wall component.** ICCC Application at such installation should not only be a viewing platform but should be used for SOP creation and triggering for specific event/incident.
- In case of Consortium only 2 partners are allowed including Prime Bidder. For more details on Consortium please refer to the section 6.6

#	Eligibility Criteria	Proof Document Required	Applicable to Sole Bidder	Applicable to Consortium
1.	<p>The Prime Bidder / Sole Bidder should be registered under the Companies Act 1956 and should be in operation in India for a period of at least 5 years as on publication of bid.</p> <p>In case of Consortium, the Consortium Partner should be registered under the Companies Act 1956 Or a partnership firm registered under LLP Act, 2008 or partnership firm registered under Indian Partnership Act 1932</p>	<p>Copy of certification of incorporation issued by competent authority/ Registration Certificate</p>	Yes	Yes
2.	<p>Bidder/ Primer Bidder should have a minimum average annual turnover of Rs. 100 crore from ICT based business for last three financial years i.e. FY 2017-18, FY 2016-17, 2015-16</p> <p>In case of Consortium, Consortium Partner should have a minimum average</p>	<p>Copy of the Audited Profit and Loss statement and statutory auditor / CA certificate from a regarding turnover.</p> <p>The certificate should be originally signed or notarized.</p>	Yes	Yes

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Eligibility Criteria	Proof Document Required	Applicable to Sole Bidder	Applicable to Consortium
	<p>annual turnover of Rs. 25 crore from ICT business for last three financial years i.e. FY 2017-18, FY 2016-17, 2015-16</p> <p>The copies of Audited Annual Accounts for last three years to be submitted along with the bid [Financial Years of 2015-16, 2016-17 and 2017-18].</p>			
3.	Bidder/ Consortium should have a positive net worth as on 31 st March 2018	Certificate from the statutory auditor / CA towards positive net worth of the company. The certificate should be originally signed or notarized	Yes	Yes (All Members of Consortium)
4.	<p>Sole Bidder / Prime Bidder (in case of consortium) should have an experience in implementation of Integrated Command & Control Centre (ICCC) / Command Control Center (CCC) Network Operations Centre (NOC) in India in last 7 years from the date of publishing this RFP</p> <p>One project costing not less than the amount equal to INR 20 Cr. with ICCC application and video wall solution component worth minimum INR 2.5 Cr.</p> <p>OR</p> <p>Two projects costing not less than the amount equal to INR 12 Cr. each with ICCC application and video wall solution component worth minimum INR 1.5 Cr.</p>	<ul style="list-style-type: none"> • Copy of completion certificate issued by client • In case of an ongoing project, the project must have achieved the respective value in terms of entire project cost and ICCC application & Video Wall Solution component respectively from financial perspective. The Certificate to this effect from the client on client's letter head to be provided. • Copy of Work order / Contract 	Yes	Yes (Prime Bidder in case of Consortium)

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Eligibility Criteria	Proof Document Required	Applicable to Sole Bidder	Applicable to Consortium
	<p>OR</p> <p>Three projects costing not less than the amount equal to INR 10 Cr. each with ICCC application and video wall solution component worth minimum INR 1.25 Cr.</p>			
5.	<p>In case of consortium, the consortium partner should have completed at least one project pertaining to setting up of Datacenter / Data Center Infrastructure in last 7 years as on Bid Submission date of value not less than INR 3 Crore in India.</p> <p>Note: In-house projects for own or group companies shall not be considered for above criteria. Data Center Infrastructure cost should be excluding software license cost.</p>	<p>1. Copy of completion certificate issued by client</p> <p>2. Copy of Work order / Contract</p>	No	Yes (Consortium Partner)
6.	Bidder should be registered for GST number in India.	GST Registration Certificate PAN Card	Yes	Yes (All Members of Consortium)
7.	Bidder should not be blacklisted or debarred by any Government / PSU in India at the time of submission of the bid.	Declaration letter by bidder as per format given in the RFP document	Yes	Yes (All Members of Consortium)

ANNEXURE-II

5.2. Revised OEM's Eligibility Criteria

#	Selection criteria for the OEM	Proof Document Required
A	Active Network Equipment (Network Switches)	
1.	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Wired and Wireless LAN Access Infrastructure.	Latest and relevant report from Gartner to be submitted clearly showing presence of the OEM.
2.	<p>Commitment to Support The OEM should commit to support the product proposed in the scope of this RFP for at least five (5) years. End of support date should not have been announced for the product proposed.</p>	OEM self-certification as per Section-TQ_8 indicating the commitment to support along with product roadmap
B	Server	
1.	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Modular Servers	Latest and relevant report from Gartner to be submitted clearly showing presence of the OEM.
2.	<p>Commitment to Support The OEM should commit to support the product proposed in the scope of this RFP for at least five (5) years. End of support date should not have been announced for the product proposed.</p>	OEM self-certification as per Section-TQ_8 indicating the commitment to support along with product roadmap
C	Storage	
1	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for General-Purpose Disk Arrays	Latest and relevant report from Gartner to be submitted clearly showing presence of the OEM.
2	<p>Commitment to Support The OEM should commit to support the product proposed in the scope of this RFP for at least five (5) years. End of support date should not have been announced for the product proposed.</p>	
D	ICCC OEM	
1	<p>ICCC OEM Solution should be deployed in at least 3 locations globally covering at least 3 domains (with minimum 1 use case per domain) from below mentioned list out of which minimum 1 deployment should be within India.</p> <ol style="list-style-type: none"> 1. Adaptive/Intelligent Traffic Control System (ATCS signals, ANPR, RLVD, Wrong side, Speed detection, etc.) 2. Intelligent Transit Management System 3. Water Supply 	<ol style="list-style-type: none"> 1. Work order of projects for supply of ICCC Solution 2. Any client document that clearly specifies the use cases implemented as part of solution.

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Selection criteria for the OEM	Proof Document Required
	4. Drainage 5. Solid Waste Management 6. Grievance Redressal System 7. CCTV/ Surveillance Network 8. Smart Street Lighting 9. Revenue Collection Systems (Property Tax, Water Meter Billing, AFCS etc.) 10. Project Management System 11. Network monitoring for large scale WiFi service / dedicated OFC network 12. Smart Parking	
E	Enterprise Security Solution for Servers	
1	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Endpoint Protection Platforms	Latest and relevant report from Gartner to be submitted clearly showing presence of the OEM

ANNEXURE -III

6.22 Revised Technical Evaluation Criteria

#	Technical Evaluation Criteria	Technical Evaluation parameter	Marks								
A	Bidders Financial Competence & Organizational Strength		20								
1	Bidder's Competence – Turnover	<ul style="list-style-type: none"> The bidder (Prime bidder in case of consortium) having average annual turnover of 100 Cr from ICT based business in last three financial years (FY 2017-18, FY 2016-17, 2015-16) will get 7 of total allocated marks. For every additional Rs.50 Cr of average turnover from ICT business the bidder (Prime bidder in case of consortium) will get additional marks as below, subject to a maximum of 10 marks. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #c00000; color: white;"> <th style="width: 70%;">Average Turnover (in crores)</th> <th style="width: 30%;">Marks</th> </tr> </thead> <tbody> <tr> <td style="background-color: #90ee90;">>= INR 200 Cr</td> <td style="text-align: center;">10</td> </tr> <tr> <td style="background-color: #90ee90;">>= INR 150 Cr. and < INR200 Cr.</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="background-color: #90ee90;">>= INR 100 Cr. and < INR 150 Cr.</td> <td style="text-align: center;">8</td> </tr> </tbody> </table> <p>Maximum Marks: 10</p> <ul style="list-style-type: none"> Bidder to submit the Certificate from the statutory auditor / CA clearly specifying the annual turnover from ICT for the specified years. Original or Notarized copy of the certificate should be submitted 	Average Turnover (in crores)	Marks	>= INR 200 Cr	10	>= INR 150 Cr. and < INR200 Cr.	9	>= INR 100 Cr. and < INR 150 Cr.	8	10
Average Turnover (in crores)	Marks										
>= INR 200 Cr	10										
>= INR 150 Cr. and < INR200 Cr.	9										
>= INR 100 Cr. and < INR 150 Cr.	8										
2	People in organization	<ul style="list-style-type: none"> The prime bidder having at least 250 FTE (full time employees) on the payroll of organization working on ICT projects will get 7 marks For every additional FTEs as below the bidder will get additional marks subject to maximum of 5 marks. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #c00000; color: white;"> <th style="width: 70%;">Number of FTE</th> <th style="width: 30%;">Marks</th> </tr> </thead> <tbody> <tr> <td>> 500</td> <td style="text-align: center;">5</td> </tr> <tr> <td>> 250 FTE to =<500 FTE</td> <td style="text-align: center;">4</td> </tr> <tr> <td>= 250 FTE</td> <td style="text-align: center;">3</td> </tr> </tbody> </table> <p>Maximum marks: 5</p> <p>Note: Full time Employees defined as employees on the Payroll of organization.</p> <ul style="list-style-type: none"> Bidder to submit the Certificate from the HR or Company Secretary clearly specifying the total no of employees within the organization. Original or Notarized copy of the certificate should be submitted 	Number of FTE	Marks	> 500	5	> 250 FTE to =<500 FTE	4	= 250 FTE	3	5
Number of FTE	Marks										
> 500	5										
> 250 FTE to =<500 FTE	4										
= 250 FTE	3										
	Bidder's Certification	Certification with the Sole Bidder or any member of consortium (valid as on date of issuance of the bid): <ul style="list-style-type: none"> ISO 9001:2008 ISO 20000:2011 for IT Service Management 									

#	Technical Evaluation Criteria	Technical Evaluation parameter	Marks												
		<ul style="list-style-type: none"> ISO 27001:2013 for Information Security Management System CMMi Level 3 CMMi Level 5 <table border="1"> <thead> <tr> <th>Certification</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>Any one ISO certificate</td> <td>2</td> </tr> <tr> <td>Any two ISO certification or CMMi Level 3</td> <td>3</td> </tr> <tr> <td>All ISO certification or CMMi Level 5 Certification or Any two ISO certification & CMMi Level 3 Certification</td> <td>4</td> </tr> <tr> <td>Any two ISO certification & CMMi Level 5 Certification or All ISO Certification & CMMi Level 3 Certification</td> <td>5</td> </tr> </tbody> </table>	Certification	Marks	Any one ISO certificate	2	Any two ISO certification or CMMi Level 3	3	All ISO certification or CMMi Level 5 Certification or Any two ISO certification & CMMi Level 3 Certification	4	Any two ISO certification & CMMi Level 5 Certification or All ISO Certification & CMMi Level 3 Certification	5			
Certification	Marks														
Any one ISO certificate	2														
Any two ISO certification or CMMi Level 3	3														
All ISO certification or CMMi Level 5 Certification or Any two ISO certification & CMMi Level 3 Certification	4														
Any two ISO certification & CMMi Level 5 Certification or All ISO Certification & CMMi Level 3 Certification	5														
B	Project Experience of Bidder		60												
1	Bidder Experience – Executing Command Control Center Project	<p>Experience of Sole Bidder / Prime Bidder (in case of consortium) in implementation of Integrated Command & Control Centre (ICCC) / Command Control Center (CCC)–Network Operations Centre (NOC) in India in last 7 years from the date of publishing this RFP (maximum 2 projects)</p> <table border="1"> <thead> <tr> <th>Number of Projects</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>For satisfying PQ criteria</td> <td>20</td> </tr> <tr> <td colspan="2">Additional project over and above the projects submitted under PQ criteria</td> </tr> <tr> <td>Every additional project costing not less than the amount equal to INR 20 Cr. with ICCC application and video wall solution component worth minimum INR 2.5 Cr.</td> <td>15</td> </tr> <tr> <td>Every additional costing not less than the amount equal to INR 12 Cr. each with ICCC application and video wall solution component worth minimum INR 1.5 Cr.</td> <td>9</td> </tr> <tr> <td>Every additional project costing not less than the amount equal to INR 10 Cr. each with ICCC application and video wall solution component worth minimum INR 1.25 Cr.</td> <td>7.5</td> </tr> </tbody> </table> <p align="center">Maximum Marks: 35</p> <p>Bidder is required to submit :</p> <ul style="list-style-type: none"> Copy of completion certificate issued by client In case of an ongoing project, the project must have achieved the respective value in terms of entire project cost and ICCC application & Video Wall Solution component respectively from 	Number of Projects	Marks	For satisfying PQ criteria	20	Additional project over and above the projects submitted under PQ criteria		Every additional project costing not less than the amount equal to INR 20 Cr. with ICCC application and video wall solution component worth minimum INR 2.5 Cr.	15	Every additional costing not less than the amount equal to INR 12 Cr. each with ICCC application and video wall solution component worth minimum INR 1.5 Cr.	9	Every additional project costing not less than the amount equal to INR 10 Cr. each with ICCC application and video wall solution component worth minimum INR 1.25 Cr.	7.5	35
Number of Projects	Marks														
For satisfying PQ criteria	20														
Additional project over and above the projects submitted under PQ criteria															
Every additional project costing not less than the amount equal to INR 20 Cr. with ICCC application and video wall solution component worth minimum INR 2.5 Cr.	15														
Every additional costing not less than the amount equal to INR 12 Cr. each with ICCC application and video wall solution component worth minimum INR 1.5 Cr.	9														
Every additional project costing not less than the amount equal to INR 10 Cr. each with ICCC application and video wall solution component worth minimum INR 1.25 Cr.	7.5														

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Technical Evaluation Criteria	Technical Evaluation parameter	Marks								
		financial perspective. The Certificate to this effect from the client on client's letter head to be provided. <ul style="list-style-type: none"> • Copy of Work order / Contract 									
	Bidder Experience – Executing Command Control Center Application	Experience of Sole Bidder / Prime Bidder (in case of consortium) in implementation of ICCC Solution integrating domains/systems in the last seven (7) years (maximum 2 projects) <ol style="list-style-type: none"> 1. Adaptive/Intelligent Traffic Control System (ATCS signals, ANPR, RLVD, Wrong side, Speed detection etc.) 2. Intelligent Transit Management System 3. Water Supply 4. Drainage 5. Solid Waste Management 6. Grievance Redressal System 7. CCTV/ Surveillance Network 8. Smart Street Lighting 9. Revenue Collection Systems (Property Tax, Water Meter Billing, AFCS etc.) 10. Project Management System 11. Network monitoring for large scale WiFi service / dedicated OFC network 12. Smart Parking <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Particular</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>One project integrating any 5 domains/systems mentioned above</td> <td align="center">10</td> </tr> <tr> <td>One project integrating any 3 domains/systems mentioned above</td> <td align="center">7.5</td> </tr> <tr> <td colspan="2">Maximum Marks: 20 Maximum projects: 2</td> </tr> </tbody> </table> <p>Bidder is required to submit :</p> <ol style="list-style-type: none"> 1. Copy of completion certificate issued by client 2. In case of an ongoing project, the claimed domains/systems must have been integrated. The Certificate to this effect from the client on client's letter head to be provided. 3. Copy of Work order / Contract 	Particular	Marks	One project integrating any 5 domains/systems mentioned above	10	One project integrating any 3 domains/systems mentioned above	7.5	Maximum Marks: 20 Maximum projects: 2		20
Particular	Marks										
One project integrating any 5 domains/systems mentioned above	10										
One project integrating any 3 domains/systems mentioned above	7.5										
Maximum Marks: 20 Maximum projects: 2											
3	Bidder Experience – Executing Data Center Project	Relevant experience of Sole bidder / Any member in the consortium in creation of Datacenter/ Data Center Infrastructure in State Govt./Central Govt./ULB/ Public Sector Units(PSU) in India in past 7 years having minimum project value of Rs. 3 Crore. (Note: In-house projects for own or group companies shall not be considered for above criteria) <p align="center">Each Project: 2.5 marks Maximum Projects: 2</p> Bidder is required to submit : <ul style="list-style-type: none"> • Copy of Work Order/ Contract • Copy of completion certificate issued by client Note: In-house projects for own or group companies shall not be considered for above criteria. Data Center Infrastructure cost should be excluding software license cost	5								

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Technical Evaluation Criteria	Technical Evaluation parameter	Marks
C	Presentation and Demonstration		20
1	Presentation and Demonstration Following parameters will be evaluated: <ul style="list-style-type: none">• Understanding of the project• Approach & Methodology• Ability to clearly explain the proposed Solution• Uniqueness of proposed solution as per requirement of SSCDL/SMC• Demonstration of proposed ICCC Software for Use cases provided by SSCDL/SMC		20

ANNEXURE-IV

11.3. Revised TQ_2: Format for Specifying the Make & Model

The bidder needs to mention and submit relevant information as per the below mentioned table as part of their Technical Proposal.

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II / III / IV on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II / III / IV on OEM's Letter Head	OEM's Compliance as per TQ_1
IT Hardware Components for ICCC									
1	Desktop PC	Number	75	3	Specify	Specify	Yes	Yes	Yes
2	Workstations for ICCC Operators	Number	100	3	Specify	Specify	Yes	Yes	Yes
3	49" Curved Monitor for ICCC Operators	Number	100	3	Specify	Specify	Yes	Yes	Yes
4	Monochrome Printer	Number	20	3	Specify	Specify	Yes	Yes	Yes
5	Multi Function Printer - 1	Number	5	3	Specify	Specify	Yes	Yes	Yes
6	Multi Function Printer -2 (Heavy Duty)	Number	2	3	Specify	Specify	Yes	Yes	Yes
7	Colour Laser Printer	Number	1	3	Specify	Specify	Yes	Yes	Yes
8	Indoor Wifi Access Points	Number	30	5	Specify	Specify	Yes	Yes	Yes
9	Projector-1 (6000 lumens)	Number	2	3	Specify	Specify	Yes	Yes	Yes
10	Projector-2 (3000 lumens)	Number	1	3	Specify	Specify	Yes	Yes	Yes
11	Projector Screen 1 (200 Inch)	Number	2	3	Specify	Specify	Yes	Yes	Yes
12	Projector Screen 2 (100 Inch)	Number	1	3	Specify	Specify	Yes	Yes	Yes
13	55" LED Display Screen	Number	15	3	Specify	Specify	Yes	Yes	Yes

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II / III / IV on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II / III / IV on OEM's Letter Head	OEM's Compliance as per TQ_1
14	Video Conference System	Number	1	3	Specify	Specify	Yes	Yes	Yes
15	Video Wall Cubes- 70/72" DLP (2 video walls of 14 X 4 matrix)	Number	112	5	Specify	Specify	Yes	Yes	Yes
16	Network based Video Wall Controller (for 60 inputs and 60 outputs)	Number	2	5	Specify	Specify	Yes	Yes	Yes
17	Video Wall Monitoring Software	Number	1	5	Specify	Specify	Yes	Yes	Yes
18	8 ports PoE+ Switch	Number	5	5	Specify	Specify	Yes	Yes	Yes
19	24 Port web managed PoE+ switch	Number	10	5	Specify	Specify	Yes	Yes	Yes
20	24 Port web managed switch	Number	10	5	Specify	Specify	Yes	Yes	Yes
21	48 Port web managed Switch	Number	10	5	Specify	Specify	Yes	Yes	Yes
22	10 G SFP+ LR transceiver module	Number	60	5	Specify	Specify	Yes	Yes	Yes
IT Hardware Components for Data Center									
23	DC Core Switch	Number	2	5	Specify	Specify	Yes	Yes	Yes
24	10G DAC (10M Length) for DC Core Switch	Number	12	5	Specify	Specify	Yes	Yes	Yes
25	10G SFP+ SR/LR Transceiver Module for DC Core Switch	Number	36	5	Specify	Specify	Yes	Yes	Yes
26	40G QSFP+ LR4/SR4 Transceiver Module for DC Core Switch	Number	22	5	Specify	Specify	Yes	Yes	Yes
27	DC Aggregation/TOR Switch Type 1	Number	8	5	Specify	Specify	Yes	Yes	Yes
28	40G QSFP+ LR4/SR4 Transceiver Module for DC Aggregation/TOR Switch	Number	18	5	Specify	Specify	Yes	Yes	Yes
29	DC Aggregation/TOR Switch Type 2	Number	2	5	Specify	Specify	Yes	Yes	Yes

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II / III / IV on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II / III / IV on OEM's Letter Head	OEM's Compliance as per TQ_1
30	10G SFP+ SR/LR Transceiver Module for DC Aggregation/TOR Switch	Number	60	5	Specify	Specify	Yes	Yes	Yes
31	40G QSFP+ LR4/SR4 Transceiver Module for DC Aggregation/TOR Switch	Number	4	5	Specify	Specify	Yes	Yes	Yes
32	DC Application & Delivery Controller with Global Server Load Balancing	Number	2	5	Specify	Specify	Yes	Yes	Yes
33	Wireless LAN controller (Hardware/Software with server) with necessary licenses	Number	1	5	Specify	Specify	Yes	Yes	Yes
34	Rack Servers for SMC Own Requirement	Number	9	5	Specify	Specify	Yes	Yes	Yes
35	Storage with 2 no. of SAN Switches & Complete mounting accessories	Number	1	5	Specify	Specify	Yes	Yes	Yes
36	Blade/Rack Servers for SI's Solution under RFP	Number	To be specified by bidder as per sizing	5	Specify	Specify	Yes	Yes	Yes
37	Blade Chassis for Blade Server for above mentioned Blade Servers	Number	To be specified by bidder as per sizing	5	Specify	Specify	Yes	Yes	Yes
Software Components for Data Center									
38	ICCC Software with perpetual license with unlimited sensors	Number	1	3	Specify	Specify	Yes	Yes	Yes
39	ICCC Software integration & implementation Cost per Use Case	Use Case	50	NA	NA	NA	NA	NA	NA

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II / III / IV on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II / III / IV on OEM's Letter Head	OEM's Compliance as per TQ_1
40	Call Center Management Solution (Software + License)	Number	1	3	Specify	Specify	Yes	Yes	Yes
41	Enterprise Security & Antivirus Software License for all Servers	Number	To be specified by bidder as per requirement	3	Specify	Specify	Yes	Yes	Yes
42	Server OS Licenses (for physical Servers)	Number	To be specified by bidder as per requirement	NA	Specify	Specify	NA	NA	NA
43	Server OS Licenses (for VMs)	Number	To be specified by bidder as per requirement	NA	Specify	Specify	NA	NA	NA
44	Database Licenses	Number	To be specified by bidder as per requirement	NA	Specify	Specify	NA	NA	NA
45	Virtualisation Management Software	Number	To be specified by bidder as per requirement	3 yr. OEM support	Specify	Specify	NA	NA	NA

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II / III / IV on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II / III / IV on OEM's Letter Head	OEM's Compliance as per TQ_1
46	Virtualisation Host Licenses	Number	To be specified by bidder as per requirement	3 yr. OEM support	Specify	Specify	NA	NA	NA
47	MS Office Business 2019 (standard one-time purchase) License	Number	100	NA	Specify	Specify	NA	NA	NA
Civil and Non IT for Data Center and ICCC									
48	42U Rack	Number	15	3	Yes	Yes	Yes	Yes	Yes
49	IP KVM Switch	Number	1	3	Yes	Yes	Yes	NA	Yes
50	Access Control System	Number	1	3	Yes	Yes	Yes	NA	Yes
51	Fire Detection and Alarm System	Number	1	3	Yes	Yes	Yes	Yes	Yes
52	Water Leak Detection System	Number	To be specified by bidder as per requirement	3	Yes	Yes	Yes	Yes	Yes
53	Rodent Repellent System	Number	To be specified by bidder as per requirement	3	Yes	Yes	Yes	NA	Yes
54	Fire Suppression System	Number	1	3	Yes	Yes	Yes	Yes	Yes
55	Aspirating Smoke Detector System	Number	1	3	Yes	Yes	Yes	Yes	Yes
56	PAC System of 10 tonnes each	Number	4	5	Yes	Yes	Yes	Yes	Yes

#	Description	Unit of Measurement	Quantity	Warranty in Years	Proposed Make	Proposed Model/Version	Bidder's Compliance as per Annexure II / III / IV on Letter Head and Datasheets submission	OEM's Compliance as per Annexure II / III / IV on OEM's Letter Head	OEM's Compliance as per TQ_1
57	Data Center Management System	Number	1	3	Yes	Yes	Yes	Yes	Yes
58	Civil Work for DC (Raised Floor, False Ceiling, Ducting, Access Doors, Painting, Partitioning etc)	sq ft	1419	NA	NA	NA	NA	NA	NA

ANNEXURE-V

12.3. Revised Commercial Bid Format

A1. CAPITAL EXPENDITURE (CAPEX)

A1. CAPITAL EXPENDITURE (CAPEX)

#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
SITC of IT Hardware Components for ICCC								
1	Desktop PC	Number	75					
2	Workstations for ICCC Operators	Number	100					
3	49" Curved Monitor for ICCC Operators	Number	100					
4	Monochrome Printer	Number	20					
5	Multi Function Printer - 1	Number	5					
6	Multi Function Printer -2 (Heavy Duty)	Number	2					

A1. CAPITAL EXPENDITURE (CAPEX)

#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
7	Colour Laser Printer	Number	1					
8	Indoor Wifi Access Points	Number	30					
9	Projector-1 (6000 lumens)	Number	2					
10	Projector-2 (3000 lumens)	Number	1					
11	Projector Screen 1 (200 Inch)	Number	2					
12	Projector Screen 2 (100 Inch)	Number	1					
13	55" LED Display Screen	Number	15					
14	Video Conference System	Number	1					
15	Video Wall Cubes- 70/72" DLP (2 video walls of 14 X 4 matrix)	Number	112					
16	Network based Video Wall Controller (for 60 inputs and 60 outputs)	Number	2					
17	Video Wall Monitoring Software	Number	1					
18	8 ports PoE+ Switch	Number	5					
19	24 Port web manged PoE+ switch	Number	10					
20	24 Port web manged switch	Number	10					
21	48 Port web managed Switch	Number	10					
22	10 G SFP+ LR transceiver module	Number	60					
SITC of IT Hardware Components for Data Center								
23	DC Core Switch	Number	2					
24	10G DAC (10M Length) for DC Core Switch	Number	12					
25	10G SFP+ SR/LR Transceiver Module for DC Core Switch	Number	36					
26	40G QSFP+ LR4/SR4 Transceiver Module for DC Core Switch	Number	22					
27	DC Aggregation/TOR Switch Type 1	Number	8					
28	40G QSFP+ LR4/SR4 Transceiver Module for DC Aggregation/TOR Switch	Number	18					
29	DC Aggregation/TOR Switch Type 2	Number	2					

A1. CAPITAL EXPENDITURE (CAPEX)

#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
30	10G SFP+ SR/LR Transceiver Module for DC Aggregation/TOR Switch	Number	60					
31	40G QSFP+ LR4/SR4 Transceiver Module for DC Aggregation/TOR Switch	Number	4					
32	DC Application & Delivery Controller with Global Server Load Balancing	Number	2					
33	Wireless LAN controller (Hardware/Software with server) with necessary licenses	Number	1					
34	Rack Servers for SMC Own Requirement	Number	9					
36	Storage with 2 no. of SAN Switches & Complete mounting accessories	Number	1					
SITC of Software Components for Data Center								
36	ICCC Software with perpetual license with unlimited sensors	Number	1					
37	ICCC Software integration & implementation Cost per Use Case	Use Case	50					
38	Call Center Management Solution (Software + License)	Number	1					
39	MS Office Business 2019 (standard one-time purchase) License	Number	100					
Civil and Non IT for Data Center and ICCC								
40	42U Rack	Number	15					
41	IP KVM Switch	Number	1					
42	Access Control System	Number	1					
43	Fire Detection and Alarm System	Number	1					
44	Fire Suppression System	Number	1					
45	Data Center Management System	Number	1					
46	Civil Work for DC (Raised Floor, False Ceiling, Ducting, Access Doors, Painting, Partitioning etc)	sq ft	1419					
47	PAC system of 10 tonnes each	Number	4					

A1. CAPITAL EXPENDITURE (CAPEX)

#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
48	Aspirating Smoke Detector System	Number	1					
Total (INR)- Without GST								
Total (INR)- With GST								
Total (INR)- Without GST in Words								

A2. CAPITAL EXPENDITURE (CAPEX) - Bidder to specify the quantity

A2. CAPITAL EXPENDITURE (CAPEX) - Bidder to specify the quantity

#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
SITC of IT Hardware Components for Data Center								
1	Blade/Rack Servers for SI's Solution under RFP	Number	To be specified by bidder as per sizing					
2	Blade Chassis for Blade Server for above mentioned Blade Servers	Number	To be specified by bidder as per sizing					
SITC of Software Components for Data Center								
3	Enterprise Security & Antivirus Software License for all Servers	Number	To be specified by bidder as per requirement					
4	Server OS Licenses (for physical Servers)	Number	To be specified by bidder as					

A2. CAPITAL EXPENDITURE (CAPEX) - Bidder to specify the quantity								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
			per requirement					
5	Server OS Licenses (for VMs)	Number	To be specified by bidder as per requirement					
6	Database Licenses	Number	To be specified by bidder as per requirement					
7	Virtualisation Management Software	Number	To be specified by bidder as per requirement					
8	Virtualisation Host Licenses	Number	To be specified by bidder as per requirement					
Civil and Non IT for Data Center and ICCC								
9	Water Leak Detection System	Number	To be specified by bidder as per requirement					

A2. CAPITAL EXPENDITURE (CAPEX) - Bidder to specify the quantity								
#	Description	Unit of Measurement	Quantity (A)	Unit Rate (w/o GST) (INR) (B)	Total w/o GST C=A*B (INR)	Applicable GST (G)%	Total GST D =C*G% (INR)	Total With GST E=C+D (INR)
10	Rodent Repellent System	Number	To be specified by bidder as per requirement					
Total (INR)- Without GST								
Total (INR)- With GST								
Total (INR)- Without GST in Words								

SUMMARY OF CAPEX COST

Total (INR)- Without GST (A=A1+A2)	
Total (INR)- With GST(A=A1+A2)	
Total (INR)- Without GST in Words	

B1. OPERATION AND MAINTENANCE EXPENDITURE (OPEX)

B1. OPERATION AND MAINTENANCE EXPENDITURE (OPEX)						
#	Description	Unit Rate / Year (w/o GST) (INR) (A)	Total w/o GST for 4th & 5th Year B=A*2 (INR)	Applicable GST (G)%	Total GST C=B*G% (INR)	Total With GST for 4th & 5th Year D=B+C (INR)
IT hardware for ICCC						
1	Desktop PC					
2	Workstations for ICCC Operators					
3	49" Curved Monitor for ICCC Operators					
4	Monochrome Printer					
5	Multi Function Printer - 1					
6	Multi Function Printer -2 (Heavy Duty)					
7	Colour Laser Printer					
8	Projector-1 (6000 lumens)					
9	Projector-2 (3000 lumens)					
10	Projector Screen 1 (200 Inch)					
11	55" LED Display Screen					
12	Video Conference System					
Civil and Non IT for Data Center and ICCC						
13	Access Control System					
14	Fire Alarm & Smoke Detector System/VESDA					

B1. OPERATION AND MAINTENANCE EXPENDITURE (OPEX)

#	Description	Unit Rate / Year (w/o GST) (INR) (A)	Total w/o GST for 4th & 5th Year B=A*2 (INR)	Applicable GST (G)%	Total GST C=B*G% (INR)	Total With GST for 4th & 5th Year D=B+C (INR)
15	Water Leak Detection System					
16	Rodent Repellent System					
17	Fire Suppression System					
18	Data Center Management System					
19	Aspirating Smoke Detector System					
ATS Charges (OEM)						
20	ICCC Software Application					
21	Call Center Management Solution					
22	Enterprise Security & Antivirus Software License for all Servers					
23	Virtualisation Software Support					
Total (INR)- Without GST						
Total (INR)- With GST						
Total (INR)- Without GST in Words						

B2. SI's Support Cost

B2. SI's Support Cost						
#	Description	Unit Rate / Year (w/o GST) (INR) (A)	Total w/o GST for 5 Years B=A*5 (INR)	Applicable GST (G)%	Total GST C =B*G% (INR)	Total With GST for 5 Years D=B+C (INR)
1	SI's Support cost including onsite manpower deployment					

B2. SI's Support Cost

#	Description	Unit Rate / Year (w/o GST) (INR) (A)	Total w/o GST for 5 Years B=A*5 (INR)	Applicable GST (G)%	Total GST C =B*G% (INR)	Total With GST for 5 Years D=B+C (INR)
Total (INR)- Without GST						
Total (INR)- With GST						
Total (INR)- Without GST in Words						

SUMMARY OF OPEX COST

Total (INR)- Without GST (B=B1+B2)	
Total (INR)- With GST(B=B1+B2)	
Total (INR)- Without GST in Words	

C. PROJECT SUMMARY

C. Project Summary

#	Commercial Bid Summary	Total Price (INR) w/o Tax	Total Price (INR) with Tax
1	CAPEX (A1+A2)		
2	OPEX (B1+B2)		
	Total Project Cost (INR)		
	Total Project Cost In words		

ANNEXURE-VI

[This section overrides the original Annexure-III of the RFP document]

15. Annexure III – Technical requirements for ICT Components

1. The bidder can quote for each item meeting or exceeding the below mentioned minimum specification. Separate sheet needs to be attached if required.
2. The specification mentioned below are minimum specification. The bidder can quote the products equivalent or higher depending upon the sizing for the entire solution.
3. The technical spec sheet and the product brochure of the product offered should also be submitted along with technical bid.
4. In case the space provided is not sufficient then a separate paper as per the format below can be annexed to the bid. The same must be duly signed and stamped.

15.1 Video Wall Screen

The Video Wall for CCC shall be configured with 14 x 4 matrix formation of the following Professional Display (TV) Screens of DELTA /BARCO/CHRISTIE/PLANNER/NEC/MITSUBISHI make.

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Technology	DLP Display suitable for use in video wall		
2.	Screen Size	70” or higher (14x4 matrix)		
3.	Operation	24 X 7		
4.	Lifetime of Light Source	Minimum 60,000 hrs.		
5.	Resolution	1920 x 1080 Full high definition (1080p) 16:9 Widescreen or 16:10		
6.	Contrast ratio	2200:1		
7.	Brightness	Minimum 1000 lumens (ANSI) or Minimum onscreen 290 Cd/m2		
8.	Brightness Uniformity	≥ 95 %		
9.	Viewing angle	Maximum ± 35° Horizontal / ± 33°Verticle		
10.	Response time	8ms		
11.	Screen to Screen Gap	≤ 0.2 mm at all temperature/humidity conditions		
12.	Input	HDMI and other inputs as per Video Wall solution offered		
13.	Control	- On Screen Display (OSD) - IR remote control (Desirable)		
14.	Chip Type	Single chip DLP		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
15.	Operations	24 x 7		
16.	Specify the proposed Make			
17.	Specify the proposed Model No			

15.2 Video Wall Controller (From same Video wall OEM)

#	Parameters	Minimum Requirements	Compliance (Yes/No)	Remarks, if any
Display Processor				
1.	Features	Supports output up to 1920 * 1200 resolution with 60fps		
		Supports H.264 decoding immediately		
		Supports up to 64 windows per display		
		Supports Multicasting Windows		
2.	Output	HDMI 1.3 , Channel -1 , Color depth 8/10 bit		
3.	Image processing	High tap filter for image scaling		
		Accurate synchronization for display wall		
		Support H.264/H.265/MPEG4 decoding		
		Up to 64 free window per display		
		Window title with vector texts		
		Bezel-compensation and overlap		
4.	Network	1000 MB network with redundancy		
		Should support POE		
		Supports protocol - DHCP, UDP, TCP/IP		
		Supports Static IP & Automatic IP		
5.	MTBF	more than 100,000 hours		
6.	Interface	HDMI x1, RS 232x1, USB x 2, RJ-45 x 2, BNC-F*2 Sync In/Out		
7.	Operating Range	Temperature: 0-40 degree Centigrade, Humidity - 10 to 90% non-condensing		
8.	LED indicator	LED indicators for Power, Status, Network, Fan.		
HD Input Processor				
9.	Features	Captures signals up to 1920 * 1200 resolution with 60fps		

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Parameters	Minimum Requirements	Compliance (Yes/No)	Remarks, if any
		Supports four windows at any position and in any size		
		Supports to loopback progressive VGA or HDMI input signal		
		Supports Multicasting Windows		
		Supports Power-on-Ethernet		
		Supports KVM		
10.	Input	DVI -I, Channel -1, Color depth 8 bit		
11.	Output	HDMI 1.3 , Channel -1		
12.	Network	1000 MB network with redundancy		
		Should support POE		
		Supports protocol - DHCP, UDP, TCP/IP		
		Supports Static IP & Automatic IP		
13.	Image processing	High tap filter for image scaling		
		Accurate synchronization for display wall		
		Support 4 window simultaneously		
		Supports windows multicasting		
14.	LED indicator	LED indicators for Power, Status, Network, Fan.		
15.	Operating Range	Temperature: 0-40 degree Centigrade, Humidity - 10 to 90% non-condensing		
16.	MTBF	more than 100,000 hours		
17.	Interface	HDMI x1 Type A, DVI-I x1 Type A, RS 232 x1 (DB 9), USB x 2, RJ-45 x 2,		
18.	Specify the proposed Make	Make should be same of Video wall display		
19.	Specify the proposed Model No			
Server Specifications (Dell/HP/Lenovo)				
20.	CPU	Core 2 Duo 2.4G Hz or above		
21.	Memory	16 GB or above		
22.	Network	2*1 GbE LAN		
23.	OS	Windows Server 2008		
24.	HDD	SATA 160GB or above		
25.	Make	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Modular Servers		
26.	Specify the proposed Make			

#	Parameters	Minimum Requirements	Compliance (Yes/No)	Remarks, if any
27.	Specify the proposed Model No			

15.3 Video Wall Management Software

#	Functionality	Compliance (Yes/No)	Remarks, if any
Video Wall Monitoring Software from same OEM			
1.	Ability to pre-configure and store various display layouts and access them at any time with a simple mouse click.		
2.	Ability to display multiple sources anywhere on video wall in any size.		
3.	Ability to configure display layouts in real time without reboot.		
4.	Ability to create the display layout in background without interrupting the live display.		
5.	Ability to create and store different profiles defining one or more source and size for different scenarios.		
6.	Application must be GUI based with easy to use and configure interface.		
7.	Ability to control the Wall Monitoring System through remote PC connected by LAN		
8.	Ability to display the screen content of the desktop / workstation connected with the Display Controller on the Display wall.		
9.	The wall management software should support open APIs to enable system integrators to integrate it with their Software.		
10.	Ability to centrally manage configuration parameters.		
11.	Ability to schedule backup and restore the configuration parameters.		
12.	Ability to Drag and Drop of sources.		
13.	Event log of user access and client access with time stamp.		
14.	Role based user creation and management.		
15.	Specify the proposed Make (Make should be same of Video wall display)		
16.	Specify the proposed Model No		

15.4 49" Curved Monitor for ICCC Operator

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Screen Size (Diagonal)	48 - 49 Inch		
2.	Technology	LED Backlit		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
3.	Resolution (Pixels)	Minimum 3840 X 1080		
4.	Aspect Ratio	32:9		
5.	Brightness (Nits)	350		
6.	Native Contrast Ratio (Minimum)	1000 : 1		
7.	Antiglare Coating	Yes		
8.	Split Screen Feature	Yes		
9.	Inbuilt Speakers	Yes		
10.	Input Ports	Minimum 3 ports (HDMI / Display Port / DVI-D)		
11.	USB Port	Yes		
12.	Mounting Arrangement	Table Mount		
13.	Operating Humidity (%RH)	10 - 80%		
14.	Power Supply	230V AC, 50 Hz		
15.	Type Of Power Supply	In-built		
16.	Specify the proposed Make			
17.	Specify the proposed Model No			

15.5 Workstations for ICCC Operators

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Processor	Intel® 8th generation Core™ i7-8700 Processor (3.20 GHz Base Frequency/Clock Speed, 12M Cache, 6 core) or higher		
2.	Chipset	Intel Q370 chipset or better		
3.	Motherboard	OEM Motherboard		
4.	RAM	16 GB DDR4 RAM @ 2666 MHz or higher with single DIMM, Minimum 4 DIMM slots and Shall be expendable to 64 GB		
5.	Graphics card	NVIDIA Graphics card with 4 GB memory		

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
6.	HDD	Minimum 2 TB SATA III Hard Disk @7200 RPM or higher		
7.	Media Drive	NO CD / DVD Drive		
8.	Network interface	10/100/1000 Mbps autosensing on board integrated RJ-45 Ethernet port.		
9.	Audio	Line/Mic IN, Line-out/Speaker Out (3.5 mm)		
10.	USB Ports	Minimum 6 USB ports at least 4 USB 3.0 ports (out of that 2 must be in front)		
11.	Ports	Minimum 3 display output ports(HDMI/DVI/Display Port)		
12.	Keyboard	104 keys minimum OEM keyboard		
13.	Mouse	2 button optical scroll mouse (USB)		
14.	Monitor	Please refer specifications for 49" Curved Monitor for Operators		
15.	Accessories	All workstations should be with keyboard, mouse, headphones including mic.		
16.	Certification	Energy star 5.0/BEE star certified		
17.	Operating System ¹⁵	Pre-loaded Windows 10 (or latest) Professional 64 bit, licensed copy with certificate of authenticity (or equivalent authenticity information) and all necessary and latest patches and updates. Can be downgraded to Windows 7 Professional (64 bit). All Utilities and driver software, bundled in CD/DVD/Pen-drive media No software that are trial version or unlicensed in nature should be pre-installed on the system.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
18.	Security	Onboard Integrated Trusted Platform Module 2.0		
19.	Specify the proposed Make			
20.	Specify the proposed Model No			

15.6 Desktop PC (Dell/HP/Lenovo)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Processor	Intel® 8th generation Core™ i3-8100 Processor (3.60 GHz Base Frequency/Clock Speed, 6M Cache, 4 core) or higher		
2.	Memory	8 GB DDR4 RAM @ 2400 MHz or higher with single DIMM, Shall be expendable to 64 GB One DIMM Slot must be free for future upgrade		
3.	Motherboard	Intel Q370 chipset or better		
4.	Hard Disk Drive	Minimum 1 TB SATA III Hard Disk @7200 RPM or higher		
5.	Audio	Line/Mic In, Line-out/Speaker Out (3.5 mm)		
6.	Network port	10/100/1000 Mbps auto-sensing on-board integrated RJ-45 Ethernet Port		
7.	USB Ports	Minimum 6 USB ports at least 4 USB 3.0 ports (out of that 2 must be in front)		
8.	Display Port	Minimum 2 display output ports (VGA/HDMI/DVI/Display Port)		
9.	Keyboard	104 keys Heavy Duty Mechanical Switch Keyboard (USB Interface) with 50 million keystrokes life per switch. Rupee Symbol to be engraved.		
10.	Mouse	Optical with USB interface (same make as desktop)		
11.	Monitor	Minimum 21.5" diagonal LED Monitor with 1366x768 or higher		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		resolution. (Same make as desktop). Must be TCO05 certified		
12.	Operation System and Support	Pre-loaded Windows 10 (or latest) Professional 64 bit, licensed copy with certificate of authenticity (or equivalent authenticity information) and all necessary and latest patches and updates. Can be downgraded to Windows 7 Professional (64 bit). All Utilities and driver software, bundled in CD/DVD/Pen-drive media No software that are trial version or unlicensed in nature should be pre-installed on the system.		
13.	Certification for Desktop	Energy Star 5.0 or above / BEE star certified		
14.	Other pre-loaded software (open source/ free)	Latest version of Libre-office, Latest version of Adobe Acrobat Reader, Scanning Software (as per scanner offered). These software shall be pre-loaded (at the facility of OEM or any other location) before shipment to SSCDL/SMC offices/locations.		
15.	Specify the proposed Make			
16.	Specify the proposed Model No			

15.7 Office Productivity suite

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Software OEM	Microsoft		
2.	Software	Microsoft Office 2019 Professional		
3.	License Type	Perpetual, Not tied to OEM Machine (can be used on any desktop)		

15.8 Monochrome Printer

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Printer type	Monochrome laser		
2.	Printer speed	Minimum 27 PPM		
3.	Memory	32 MB RAM		
4.	Duty cycle	Minimum 10000 monthly		
5.	Duplex	Automatic		
6.	Input Tray Capacity	Minimum 250 pages		
7.	Paper size	A4, Letter, Legal		
8.	Paper Types	Plain paper, envelopes		
9.	Interface/Connectivity	USB 2.0 or higher and 10/100 Ethernet		
10.	OS Compatibility	Windows 7, 8, 8.1,10 and above		
11.	Accessories	Power cord; Ethernet Cable (patch cord), USB cable; Install Guide; Driver Software CD		
12.	Specify the proposed Make			
13.	Specify the proposed Model No			

15.9 MFP I (Network B/W MFP for Offices in ICCC)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Function	Printer, Scanner, Copier all-in-one		
Printer				
2.	Printing Speed	Min. 25 ppm or Higher		
3.	Print Technology	Laser		
4.	Print Quality	1200 x 1200 dpi		
5.	Duty Cycle	Min 20000 pages/month		
6.	2-Side Printing	Automatic		
7.	Automatic Paper Sensor	Yes		
Scanner				
8.	Scanner type	Flat Bed with ADF for Duplex documents		
9.	Scan File Format	JPEG, PDF, PNG		
10.	Resolution	1200 x 1200 dpi		
11.	Scan speed	Min. 20 ppm		
Copier				
12.	Copy Speed	Min. 20 ppm		
Paper Feeder				
13.	Total No. of Trays	1		
14.	Input paper Handling	Min. 150-sheet standard		
15.	Output Paper Handling	Min. 150-sheet		
16.	Media Size Support	A4, A5, Legal, Letter		
Network Capabilities				

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
17.	Network support	Built-in Ethernet 10/100/1000 Base TX		
18.	Operating System Support	Windows XP, Vista, 7, 8, 10, Linux/Unix		
19.	Memory / Processor	256 MB, 600MHz		
20.	Cartridge Yield	7000 pages/cartridge		
21.	Specify the proposed Make			
22.	Specify the proposed Model No			

15.10 MFP II (Heavy Duty)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Function	Printer, Scanner, Copier all-in-one		
Printer				
2.	Printing Speed	Min. 30 ppm or Higher		
3.	Print Type	Monochrome		
4.	Duty Cycle	Min 50000 pages/month		
5.	2-Side Printing	Automatic		
6.	Automatic Paper Sensor	Yes		
Scanner				
7.	Scanner type	Flat Bed with ADF for Duplex documents		
8.	Scan File Format	JPEG, PDF, PNG		
Copier				
9.	Copy Speed	Min. 30 ppm		
Paper Feeder				
10.	Total No. of Trays	Minimum 2		
11.	Input paper Handling	Min. 250-sheet standard		
12.	Output Paper Handling	Min. 150-sheet		
13.	Media Size Support	A4, A5, Legal, Letter		
Network Capabilities				
14.	Interface/Connectivity	USB 2.0 and 10/100 Ethernet		
15.	OS Compatibility	Windows 7, 8, 8.1 and 10		
16.	Accessories	Power cord; Ethernet Cable (patch cord), USB cable; Install Guide; Driver Software CD		
17.	Specify the proposed Make			
18.	Specify the proposed Model No			

15.11 Projector-1 (6000 lumens)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Technology	High-aperture 3-chip, 3LCD technology		

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
2.	Projection Method	Ceiling Mount		
3.	Color light output	6,000 lumens or more		
4.	White light output	6,000 lumens or more		
5.	Contrast Ratio	50,000:1 (Full White 6500 lm / Full Black 0 lm)		
6.	Size (projected distance)	50 inches to 300 inches		
7.	Color Reproduction	Up to 1 billion colors		
8.	Keystone Correction	Vertical: ±45 degrees; horizontal: ±30 degrees		
9.	Projection Lens Type	Powered focus/zoom		
10.	Lens Focal Length	24.0 mm - 38.2 mm		
11.	Lens Zoom Ratio	Optical zoom 1 – 1.6x		
12.	Connectivity	HDBaseT x 1 DVI-D x1 HDMI x 1 Computer: D-sub 15 pin x 1 Component Video: BNC x 1 Audio-in: Mini stereo x 3 Audio Out x 1 Network: RJ-45 x 1, 100 Mbps Serial: RS-232c Hardwire remote jack x 1 Monitor Out: D-sub 15 pin x 1, Wireless Connectivity		
13.	Input Signals	NTSC/NTSC4.43/PAL/M-PAL/N-AL/PAL60/SECAM/480i/576i/480p/576p/720p/1080i/1080p		
14.	Resolution	XGA		
15.	Lamp Life	Approx. 3,000 Hours durability in Normal mode & 4,000 Hours durability in Eco mode		
16.	Aspect ratio supports	4:3, 16:9, 16:10		
17.	Security Features	Security cable hole, lens lock, Kensington lock provision		
18.	Advance Features	Simultaneously project side-by-side from different sources with Split Screen Web-based remote management – control and monitor projector status via a Web browser Multi-PC Projection – connect up to 50 Windows®, Mac®, iOS® or Android™ devices and display up to four screens simultaneously over the network (controlled via the Moderator4 function from your PC) advanced built-in Edge Blending, image warping and curved-surface correction technologies for a variety of applications		
19.	Mounting	Ceiling mount with fixed structure, with all accessories including of 30 mt cables		
20.	Other Features	<ul style="list-style-type: none"> Fully Functional remote with battery Power, source search selection, computer, video, A/V Mute, freeze, user ID, auto, aspect, color mode, number, page up and down, E-zoom, volume, help, menu, enter, esc and pointer functions 		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
21	Accessories	carry bag, power cable, VGA/HDMI cable, remote control, User's manual (English)		
22	Lamp warranty	Please specify		
23	Projector Warranty	5 years comprehensive onsite back-to-back OEM warranty including service and parts		
24	Specify the proposed Make			
25	Specify the proposed Model No			

15.12 Projector-2 (3000 lumens)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Display Technology	Poly-silicon TFT 3LCD		
2.	Resolution	1080p, 16:10		
3.	Colours	16.7 million Colours		
4.	Brightness	3000 or more ANSI lumens (in Normal Mode)		
5.	Contrast Ratio	2000:1 or more		
6.	Video Input	HDMI, VGA, USB-A (Wi-Fi Adaptor), USB-B, Audio, S-video		
7.	Keystone Correction	Horizontal and vertical		
8.	Zoom and Focus	Manual Zoom and Focus		
9.	Audio	Internal speaker		
10.	Remote Operations	Full function Infrared Remote Control		
11.	Other features	Auto source detect, Auto-synchronisation, Keystone Correction		
12.	Mounting	Ceiling mount with fixed structure, with all accessories including of 15 mt cables		
13.	Lamp Life	Minimum 4000 Hours in Normal mode & 5000 Hours in Eco mode		
14.	Specify the proposed Make			
15.	Specify the proposed Model No			

15.13 Projector Screen 1 (200 Inch size)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Type	Portable Motorized Projection Screen with remote		
2.	Mounting Type	Manual Wall Mount		
3.	Screen Size	200 inch diagonally		
4.	Supported Display Technology	1080p , 3D and 4K Technology		
5.	Aspect Ratio	16:9		
6.	Fabric	Matt white, high gain fabrics, flame retardant, uniform flat screen surface with less imperfection		
7.	Specify the proposed Make			
8.	Specify the proposed Model No			

15.14 Projector Screen 2 (100 Inch size)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Type	Portable Projection Screen		
2.	Mounting Type	Manual Wall Mount		
3.	Screen Size	100 inch diagonally		
4.	Supported Display Technology	1080p , 3D and 4K Technology		
5.	Aspect Ratio	16:9		
6.	Fabric	Matt white, high gain fabrics, flame retardant, uniform flat screen surface with less imperfection		
7.	Specify the proposed Make			
8.	Specify the proposed Model No			

15.15 55" LED Display Screen

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Display Size	55" inch diagonal		
2.	Technology	LED Backlit		
3.	Resolution pixel	(1920 x 1080) Full HD		
4.	Aspect Ratio	16:9		
5.	Brightness	350 nits or more		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
6.	Native Contrast Ratio	1000:1		
7.	Viewing Angle	178:178		
8.	Response time	8 ms or less		
9.	Screen Mirroring	No		
10.	Inbuilt Speakers	Yes		
11.	VGA Port	Yes		
12.	HDMI	Yes		
13.	USB	Yes		
14.	DVI-D	Yes		
15.	Display Port	Yes		
16.	Power Supply	230V AC, 50 Hz		
17.	Mounting	Want Mount		
18.	Certification	BIS		
19.	Should able to sync with centralized content management, Video wall , in premise presentation if necessary			
20.	Specify the proposed Make			
21.	Specify the proposed Model No			

15.16 Indoor Wifi Access Points (AP)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Architecture	The Access Point should support IEEE 802.11a/b/g/n/ac/ac Wave 2 standards		
2.		Frequency of Radio 1 shall be 2.4 GHz b/g/n 20/40 MHz (2x2:2 stream)		
3.		Frequency of Radio 2 shall be 5 GHz b/g/n/ac/ac Wave 2 20/40/80 MHz (2x2:2 stream)		
4.		Should have minimum 2 Internal Antennas		
5.		Should have minimum 1x GE RJ45		
6.		Should support Power over Ethernet (PoE) IEEE 802.3af PoE or 802.3at PoE+ & External DC Adapter Input		
7.		Radio 1 should minimum Throughput: 300Mbps		
8.		Radio 2 should minimum Throughput: 800Mbps		
9.	Mobility	Should support wireless controller discovery		
10.		Should support minimum 16 SSIDs		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
11.	Security	Should support minimum 20 dBm Transmission Power on both Radio		
12.		Should support Wireless Mesh or equivalent technology		
13.		User/Device Authentication with WPA and WPA2 with 802.1x or Pre-shared key, WEP		
14.		Solution should have support for Captive portal for guest authentication		
15.		Solution should support devices authentication/Access List based on MAC address Filtering.		
16.		Should detect and suppress Rogue APs from day one		
17.		Solution should have security for application level filtering based on IP/Users/Group		
18.		Should have support for integration with existing security infrastructure.		
19.		Solution should have support two-factor authentication.		
20.	Management	It should be able managed by virtual/physical wireless controller.		
21.		Should support web-based secured management interface		
22.		Support Wall mounting option and necessary mounting kit should be provided with product.		
23.		Operating Temperature should be 0°C to 40°C		
24.		It should be WiFi /WiFi Alliance Certified		
25.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
26.	Warranty	Minimum 5 Years OEM Comprehensive Replacement warranty with support & subscription of all modules/software/components if any required to utilize the product/solution with all features enabled.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
27.	Specify the proposed Make			
28.	Specify the proposed Model No			

15.17 8 ports PoE+ Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	The switch shall have minimum 8 x RJ-45 auto-sensing/negotiating 1G 802.3at compatible PoE+ ports to power up the Access Points quoted above.		
2.		Integrated LEDs for improved visual monitoring and analysis.		
3.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
4.	Warranty	5 Years OEM comprehensive Warranty with support.		
5.	Chassis	1U, rack-mounting kit must be included		
6.	Power	Power supply AC 230 V (50/60 Hz)		
7.	Specify the proposed Make			
8.	Specify the proposed Model No			

15.18 24 ports Web Managed PoE+ Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	The switch shall have minimum 24 x RJ-45 1G auto-sensing/negotiating 802.3at compatible PoE+ ports to power up the Access Points quoted above so can be utilized in Unrestricted mode / Max Powered Device mode.		
2.		Either Minimum 2 x 10G SFP+ ports and 2 x 10G BASE-T RJ-45 ports Or Minimum 4 x 10G SFP+ ports with 2 x 10G BASE-T RJ-45 SFP+ Transceivers Modules Supplied with Product from Day one		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		in addition to above fixed 24 ports.		
3.		Minimum 128 Gbps Switching Capacity		
4.		Minimum 350 Watts or Higher PoE power budget		
5.		Auto-negotiation for speed, duplex mode and flow control & Manual for 10M Half/Full 100M Half/Full.		
6.		Auto-MDI/MDIX.		
7.		IEEE 802.3X flow control.		
8.		Integrated LEDs for improved visual monitoring and analysis.		
9.	Switch Management	Must have IEEE 802.1Q Static & Trunk VLAN (4090 VLAN IDs) & Port-based VLAN.		
10.		Spanning Tree Protocol (STP) to support standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP).		
11.		IEEE 802.3ad Link Aggregation Control Protocol (LACP).		
12.		IPv6 Host, Management, multicast and QoS.		
13.		SNMPv1, v2c, and v3.		
14.		Built-in switch Web-based GUI configuration utility for easy browser-based device configuration (HTTP/HTTPS) which Supports configuration, system dashboard, system maintenance, and monitoring.		
15.		IPv6 Host, Management, multicast and QoS		
16.		Layer 3 IPv4 and IPv6 static Routing.		
17.		Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading.		
18.		Intuitive web interface to upload/download the Switch software to the switch.		
19.		Intuitive web interface to upload/download Configurations to and from the switch.		
20.		Availability of Port statistics through industry-standard RMON		
21.		Jumbo frame support for packets.		
22.		Broadcast storm control to help eliminate network traffic storms.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
23.		Must have Network traffic filtering and network control using MAC and IP-Binding based Access Control.		
24.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
25.	Warranty	5 Years OEM comprehensive Warranty with support.		
26.	Chassis	1U, rack-mounting kit must be included		
27.	Power	Power supply AC 230 V (50/60 Hz)		
28.	Specify the proposed Make			
29.	Specify the proposed Model No			

15.19 24 ports Web Managed Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any	
1.	Ports	The switch shall have minimum 24 x RJ-45 auto-sensing/negotiating 1G ports			
2.		Either Minimum 2 x 10G SFP+ ports and 2 x 10G BASE-T RJ-45 ports Or Minimum 4 x 10G SFP+ ports with 2 x 10G BASE-T RJ-45 SFP+ Transceivers Modules Supplied with Product from Day one in addition to above fixed 24 ports.			
3.		Minimum 128 Gbps Switching Capacity			
4.		Auto-negotiation for speed, duplex mode and flow control & Manual for 10M Half/Full 100M Half/Full.			
5.		Auto-MDI/MDIX.			
6.		IEEE 802.3X flow control.			
7.		Integrated LEDs for improved visual monitoring and analysis.			
8.		Switch Management	Must have IEEE 802.1Q Static & Trunk VLAN (4090 VLAN IDs) & Port-based VLAN.		
9.			Spanning Tree Protocol (STP) to support standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for		

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP).		
10.		IEEE 802.3ad Link Aggregation Control Protocol (LACP).		
11.		IPv6 Host, Management, multicast and QoS.		
12.		SNMPv1, v2c, and v3.		
13.		Built-in switch Web-based GUI configuration utility for easy browser-based device configuration (HTTP/HTTPS) which Supports configuration, system dashboard, system maintenance, and monitoring.		
14.		IPv6 Host, Management, multicast and QoS		
15.		Layer 3 IPv4 and IPv6 static Routing.		
16.		Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading.		
17.		Intuitive web interface to upload/download the Switch software to the switch.		
18.		Intuitive web interface to upload/download Configurations to and from the switch.		
19.		Availability of Port statistics through industry-standard RMON		
20.		Jumbo frame support for packets.		
21.		Broadcast storm control to help eliminate network traffic storms.		
22.		Must have Network traffic filtering and network control using MAC and IP-Binding based Access Control.		
23.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
24.	Warranty	5 Years OEM comprehensive Warranty with support.		
25.	Chassis	1U, rack-mounting kit must be included		
26.	Power	Power supply AC 230 V (50/60 Hz)		
27.	Specify the proposed Make			
28.	Specify the proposed Model No			

15.20 48 ports Web Managed Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	The switch shall have minimum 48 x RJ-45 auto-sensing/negotiating 1G ports		
2.		Either Minimum 2 x 10G SFP+ ports and 2 x 10G BASE-T RJ-45 ports Or Minimum 4 x 10G SFP+ ports with 2 x 10G BASE-T RJ-45 SFP+ Transceivers Modules Supplied with Product from Day one in addition to above fixed 48 ports. Minimum 176 Gbps Switching Capacity		
3.				
4.		Auto-negotiation for speed, duplex mode and flow control & Manual for 10M Half/Full 100M Half/Full.		
5.		Auto-MDI/MDIX.		
6.		IEEE 802.3X flow control.		
7.		Integrated LEDs for improved visual monitoring and analysis.		
8.		Switch Management	Must have IEEE 802.1Q Static & Trunk VLAN (4090 VLAN IDs) & Port-based VLAN.	
9.		Spanning Tree Protocol (STP) to support standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP).		
10.		IEEE 802.3ad Link Aggregation Control Protocol (LACP).		
11.		IPv6 Host, Management, multicast and QoS.		
12.		SNMPv1, v2c, and v3.		
13.		Built-in switch Web-based GUI configuration utility for easy browser-based device configuration (HTTP/HTTPS) which Supports configuration, system dashboard, system maintenance, and monitoring.		
14.		IPv6 Host, Management, multicast and QoS		
15.		Layer 3 IPv4 and IPv6 static Routing.		
16.		Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading.		
17.		Intuitive web interface to upload/download the Switch software to the switch.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
18.		Intuitive web interface to upload/download Configurations to and from the switch.		
19.		Availability of Port statistics through industry-standard RMON		
20.		Jumbo frame support for packets.		
21.		Broadcast storm control to help eliminate network traffic storms.		
22.		Must have Network traffic filtering and network control using MAC and IP-Binding based Access Control.		
23.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one.		
24.	Warranty	5 Years OEM comprehensive Warranty with support.		
25.	Chassis	1U, rack-mounting kit must be included		
26.	Power	Power supply AC 230 V (50/60 Hz)		
27.	Specify the proposed Make			
28.	Specify the proposed Model No			

15.21 10G SFP+ LR Transceiver Module for 24 Port PoE+/24 Port/48 Port Web Managed Switches

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	10G BASE-LR port; Duplex: full only		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
Note: Bidder is required to quote for same make & model proposed for the switches				

15.22 DC Core Switch

15.23 10G BASE-T RJ-45 Copper Transceiver Module for DC Core Switch

Stands deleted

#	Parameter	Minimum Specifications	Bidder Compliance (Yes/No)
1.	Switching Capacity	<ul style="list-style-type: none"> Minimum 5 Tbps or Higher Switching Capacity 	
2.	Slots	<ul style="list-style-type: none"> Minimum 4 Interface Line Card or Module Slots (other than management module/slot) Switch should support Interface Line cards/Modules of 1G, 10G, 40G and 100 GE ports 	
3.	Ports	<ul style="list-style-type: none"> Min. 24 x 10G Base-T RJ-45 ports Min. 48 x 10G SFP+ ports with SR/LR/ZR ports Min. 24 x 40G QSFP+ SR4/LR4 ports Minimum 1 Slot must be empty after configuring above ports HA Port. 	
4.	High Availability/ Architecture	<ul style="list-style-type: none"> Switch should have In-Service Software Upgrade (ISSU) and patching without interrupting traffic/operations. Switch needs to be provided with redundant supervisor/Fabric modules, power supplies, and fans trays from day 1. The switch should provide nonblocking, lossless CLOS architecture with VOQs and large buffers with the flexibility and scalability for future growth. The switch should support modular operating system which brings native high stability, independent process monitoring, and restart through the modular design and multiple processes and support enhanced serviceability functions The switch should support virtualization of a physical switch into multiple logical devices, with each logical switch having its own processes, configuration, and administration. 	
5.	Backplane	<ul style="list-style-type: none"> Properly sized Switching fabric capacity (as per network configuration to meet performance requirements of wire speed switching for the connected devices) 	
6.	Layer-2 Features	<ul style="list-style-type: none"> Switch should Support IEEE 802.1Q VLAN encapsulation & must have feature to configure minimum 4090 VLAN IDs. 	
		<ul style="list-style-type: none"> The switch must support dynamic VLAN Registration or equivalent and Dynamic Trunking protocol or equivalent 	
		<ul style="list-style-type: none"> Switch should Support Ether Channelling - IEEE 802.3ad or port aggregation technologies (support of LACP) 	
		<ul style="list-style-type: none"> Switch should Support IEEE 802.3x flow control for full-duplex mode ports. 	

		<ul style="list-style-type: none"> • Switch should Support IEEE 802.1s/w Rapid Spanning Tree Protocol (RSTP) and Multiple Spanning Tree Protocol (MSTP) 	
		<ul style="list-style-type: none"> • Support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors. 	
		<ul style="list-style-type: none"> • IGMP snooping v1, v2 and v3 	
		<ul style="list-style-type: none"> • Should support 64k or more ARP/MAC Address table 	
		<ul style="list-style-type: none"> • Should support Loop protection and Loop detection. 	
7.	Layer-3 Features	<ul style="list-style-type: none"> • Must have Static, OSPFv3, BGP4, RIPv1, RIPv2 and Policy based routing protocols with IPV4 & IPv6 supported. 	
		<ul style="list-style-type: none"> • Should support Dual IP stack which Maintains separate stacks for IPv4 and IPv6 	
		<ul style="list-style-type: none"> • Should support Virtual Router Redundancy Protocol (VRRP). 	
		<ul style="list-style-type: none"> • Should support Equal-Cost Multipath (ECMP) which provides equal-cost links in a routing environment to increase link redundancy. 	
		<ul style="list-style-type: none"> • Support 802.1D, 802.1S, 802.1w, Rate limiting. 	
		<ul style="list-style-type: none"> • Inter-VLAN IP routing for full Layer 3 routing between 2 or more VLANs. 	
		<ul style="list-style-type: none"> • Inbuilt Feature of Dynamic Host Configuration Protocol (DHCP) Sever which simplifies the management of large IP networks and supports client and server system. 	
		<ul style="list-style-type: none"> • L2/L3 VXLAN and EVPN support for virtualized environments 	
8.	Network Security & QoS	<ul style="list-style-type: none"> • Standard 802.1p CoS and DSCP. 	
		<ul style="list-style-type: none"> • Must have Network traffic filtering and network control using MAC and IP Binding based ACLs 	
		<ul style="list-style-type: none"> • Support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping. 	
		<ul style="list-style-type: none"> • Should support TACACS+ and RADIUS authentication 	
		<ul style="list-style-type: none"> • Support for Automatic Quality of Service for easy configuration of QoS features for critical applications. 	
		<ul style="list-style-type: none"> • Broadcast storm control to help eliminate network traffic storms 	
		<ul style="list-style-type: none"> • IEEE 802.1x to allow dynamic, port-based security, providing user authentication. 	
		<ul style="list-style-type: none"> • VLAN ACLs (VACLs) on all VLANs to prevent unauthorized data flows from being bridged within VLANs. Port-based ACLs 	

		(PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports	
		<ul style="list-style-type: none"> Standard and Extended IP security router ACLs to define security policies on routed interfaces for control- and data-plane traffic. 	
		<ul style="list-style-type: none"> Unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address. 	
		<ul style="list-style-type: none"> Unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward. 	
		<ul style="list-style-type: none"> Support for SSHv2 and SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions. 	
		<ul style="list-style-type: none"> Private VLAN to provide security and isolation between switch ports, helping ensure that users cannot snoop on other users' traffic. 	
		<ul style="list-style-type: none"> MAC address management to allow administrators for analysis of users added to or removed from the network. 	
		<ul style="list-style-type: none"> Multilevel security on console access to prevent unauthorized users from altering the switch configuration. 	
		<ul style="list-style-type: none"> IPv6 Host, Management, multicast and QoS. 	
9.	Management	<ul style="list-style-type: none"> Easy-to-use, Web-based management interface through either GUI based software utility or using standard web browser interface which Supports configuration, system dashboard, system maintenance, and monitoring and for easier software/firmware upgrade through network using TFTP/HTTP etc. 	
		<ul style="list-style-type: none"> Should have accessibility using Telnet, SSH, Console access. 	
		<ul style="list-style-type: none"> Intuitive web interface to upload/download Configurations to and from the switch. 	
		<ul style="list-style-type: none"> Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading. 	
		<ul style="list-style-type: none"> Availability of Port statistics through industry-standard RMON 	
		<ul style="list-style-type: none"> SNMPv1, SNMPv2 and SNMPv3. 	
10.	Networking Passive Components	<ul style="list-style-type: none"> All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one. 	
11.	Warranty:	<ul style="list-style-type: none"> 5 Years Direct OEM Comprehensive Warranty with parts, Support. 	

12.	Chassis:	<ul style="list-style-type: none"> Device must have 4 x AC power input supply and all 4 must be included with switch from day 1 with necessary switch mounting kit. 	
13.	Specify Make of proposed network switch		
14.	Specify Model of proposed network switch		

15.24 10 G SFP+ LX transceiver module for DC Core Switch

Stands deleted

15.25 40G QSFP+LX transceiver Module for DC Core Switch

Stands deleted

15.26 DC Aggregation Switch

Stands deleted

15.27 10G BASE-T RJ-45 Copper Transceiver Module for DC Aggregation Switch

Stands deleted

15.28 10G SFP+ LX Transceiver Module for DC Aggregation Switch

Stands deleted

15.29 40G QSFP+ LX Transceiver Module for DC Aggregation Switch

Stands deleted

15.30 DC Application & Delivery Controller with Global Server Load Balancing.

#	Minimum Specifications	Compliance (Yes / No)	Remarks, if any
1	OEM should have support Centre in India.		
	Port		
2	Should have minimum 4 X 1G Base-T ports		
3	Should have minimum 2 X 1G Base-X SFP ports (SFP Transceivers/Modules must be provided/supplied with product) from day one.		
	Appliance Throughput		
4	Minimum 1 Gbps or higher L4/L7 throughput		
5	Minimum 1,00,000 Layer 4 Connections per second		
6	Maximum Layer 4 Concurrent Connection 5M (Million)		
7	Minimum 1000 RSA TPS, 2k Keys as SSL Performance		
8	Minimum 4 Gb Memory		
	Global Server Load Balancing (GSLB)		
9	Should have Global data center DNS-based failover of web applications		
10	Should be able to Deliver local and global load balancing between multi-site SSL VPN		
11	DNS Access Control Lists		
	Layer 4 Application Load Balancing		
12	Should have Round robin, weighted round robin, least connections, shortest response		

#	Minimum Specifications	Compliance (Yes / No)	Remarks, if any
13	Should have feature of L4 dynamic load balancing based on server parameters (CPU, Memory and disk)		
	Layer 7 Application Load Balancing		
14	Should be HTTP, HTTPS, HTTP 2.0 , FTP, SIP, RDP, RADIUS supported		
15	Should have feature of L7 content switching for HTTP Host, HTTP Request URL, HTTP Referrer, Source IP Address		
16	Should have feature of URL Redirect, HTTP request/response rewrite/modification		
17	Should have feature of Layer 7 DNS load balancing, security, and caching		
	Link Load Balancing		
18	Should have Inbound and outbound Link Load Balancing		
19	Support for Policy Route and Static NAT.		
	Networking		
20	IPv6 Support, IPv6 routing		
21	License for Device		
	<ul style="list-style-type: none"> The proposed solution must be licensed per unit for 5 years & there should not be any license limit on number of sessions, rules, no of nodes/desktops, no. of IPs, domains, etc. It must include minimum 5 years subscription for above stated specifications. Hardware must be latest released product from OEM and it must not be under the list end of sale, end of support from OEM till 5 years from date of commissioning. 		
	<ul style="list-style-type: none"> All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one. 		
22	5 Years OEM comprehensive Warranty with support		
23	Specify the proposed Make		
24	Specify the proposed Model No		

15.31 Wireless LAN Controller for Indoor Wifi Access Point

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Hardware	Redundancy Features: Controller Must support Active-Active and Active-Passive.		
2.		Should Support minimum 50 x 802.11 ac Wave2 base Wifi Access Points		
3.		Should support minimum 3000 clients/users/devices		
4.		Should Support minimum 4090 VLANs		
5.		Minimum 4Gbps Throughput		
6.		Should have minimum 4 x 1G RJ45 Port		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
7.		Should have minimum 1 x Management Port		
8.		Should support minimum Operating temperature 0° C to 40° C		
9.	General Feature Requirements	Ability to map SSID to VLAN.		
10.		Should support automatic channel selection – interference avoidance (Co-channel management, Adjacent Channel Management, Channel reuse management).		
11.		Should have System Internal Captive Portal for guest management		
12.	System Architecture	Centralized MAC addresses filtering		
13.		Should support onboard/ external DHCP server		
14.		Controller should support Onboard / External AAA server		
15.		The proposed architecture should be based on controller based Architecture within AP deployment. While Encryption / decryption of 802.11 packets should be performed at the AP.		
16.		Support roaming between access points deployed on same subnet and different subnets		
17.		QoS features	Per user bandwidth Rate Limiting	
18.	Self-healing (on detection of RF interference or loss of RF coverage)			
19.	Should support per user, per device, and per application/TCP-port prioritization			
20.	Dynamic load balancing to automatically distribute clients to the least loaded 802.11 channel and AP; load balancing must not require any client specific configurations or software			
21.	Adaptive RF management that provides the capability to pause channel scanning / adjust RF scanning intervals based on application and load presence.			
22.	Capability to provide preferred access for –fast clients over –			

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		slow clients (11n vs. 11g) in order to improve overall network performance.		
23.	RF Management	Should be able to load balance clients across channels and access points		
24.		Should be able to load balance clients based on client count		
25.		Should be able to load balance clients based on effective throughput on AP		
26.		Should be able to use client and throughput as a measure to load balance between bands		
27.	Inline Security Features	Should allow authenticated client devices to roam securely from one access point to another, within or across subnets, without any perceptible delay Security during re association.		
28.		Controller should support AES-128 and AES-256 encryption		
29.	Networking Passive Components	All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one..		
30.	Warranty:	5 Years OEM comprehensive Warranty with support		
31.	Specify the proposed Make			
32.	Specify the proposed Model No			

15.32 Servers for SMC Application Requirements

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
1.	Make	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Modular Servers.		
2.	Form factor	Rack		
3.	Processor	2 No. of Intel® Xeon® Gold 6130 2.1G,16C/32T, 10.4GT/s, 22M Cache,Turbo,HT (125W) DDR4-2666		
4.	RAM	<ul style="list-style-type: none"> DIMM Slots must be supporting 2400 MHz/2666MHz memory frequency 		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		<ul style="list-style-type: none"> Memory DIMM Slots must be supporting 8GB / 16GB / 32GB /64GB/128GB memory modules. Minimum 256 GB Memory per physical server 		
5.	Chipset	Compatible latest series of chipset (specify chipset)		
6.	Internal Storage	Minimum 2 x 600 GB SAS (10k rpm) hot swap		
		Specify the No. of HDD Slots Supported		
7.	Storage Controllers	SAS RAID Controller supporting RAID 0,1 and 5 with minimum 512MB Cache memory with battery backup		
8.	Network Interface	2 X 10G-Base T RJ45 LAN port for providing Ethernet connectivity		
9.	Storage Connectivity Interface	2 X Single-port 16Gbps FC HBA/FCOE for providing connectivity to SAN		
10.	Power Supply	Minimum 750W Hot Swappable High Efficiency Redundant Power Supplies (1+1) capable to provide necessary power for fully loaded server with C14 to C13 PDU Power Cables		
11.	Mounting Kit	Sliding Rack mounting kit for 2U rack server		
12.	Virtualization	Shall support Industry standard virtualization hypervisor like Hyper-V, VMWARE, Oracle VM etc. OEM of the blade chassis / rack and servers offered.		
13.	Warranty	24 x 7 Five (5) years on-site back to back comprehensive warranty		
14.	Quantity	9 No.		
15.	Specify Make of proposed Server			
16.	Specify Model of proposed Server			

15.33 Servers for ICCC Requirements

(As Building block, to establishing computing solution for sub-systems/solutions)

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
1.	Make	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for Modular Servers		
2.	Form factor	Blade / Rack		
3.	Processor	Latest series/Generation of 64 bit Gold or Platinum x86 processor(s) with 8 or higher Cores Processor speed should be minimum 2.4 GHz Minimum 2 processors each physical server		
		Specify Processor Model		
		Specify Processor Speed		
		Specify No. of Cores		
		Specify Cache		
		Specify No. of Processors Proposed		
4.	RAM	<ul style="list-style-type: none"> DIMM Slots must be supporting 2400 MHz/2666MHz memory frequency Memory DIMM Slots must be supporting 8GB / 16GB / 32GB /64GB/128GB memory modules. Minimum 64 GB Memory per physical server 		
		Specify Maximum RAM supported		
		Specify Total RAM proposed		
5.	Chipset	Compatible latest series of chipset (specify chipset)		
6.	Internal Storage	Minimum 2 x 600 GB SAS (10k rpm) hot swap		
		Specify the No. of HDD Slots Supported		
		Specify the HDD Capacity Offered		
		Specify the HDD Composition proposed with capacity of each type of HDD		
7.	Storage Controllers	SAS RAID Controller supporting RAID 0,1 and 5 with minimum 512MB Cache memory with battery backup		
8.	Network interface	2 X 10G-Base T RJ45 LAN port for providing Ethernet connectivity		
9.	Storage Connectivity Interface	2 X Single-port 16Gbps FC HBA/FCOE for providing connectivity to SAN		
10.	Power Supply (for Rack Server)	Minimum 750W Hot Swappable High Efficiency Redundant Power Supplies		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		(1+1) capable to provide necessary power for fully loaded server with C14 to C13 PDU Power Cables		
11.	Virtualization	Shall support Industry standard virtualization hypervisor like Hyper-V, VMWARE, Oracle VM etc. OEM of the blade chassis / rack and servers offered.		
12.	Warranty	24 x 7 Five (5) years on-site back to back comprehensive warranty		
13.	Quantity	Specify the quantity of the proposed server as per the solution architecture		
14.	Specify Make of proposed Server			
15.	Specify Model of proposed Server			

15.34 Storage

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
1.	Make	OEM must be listed in Leader's Quadrant of the latest Gartner Magic Quadrant for General-Purpose Disk Arrays		
2.	Controllers	<ul style="list-style-type: none"> At least 2 hot pluggable Controllers in active/active mode (for all required protocols) with automatic failover to each other in case of one controller failure. The controllers / Storage nodes should be upgradable seamlessly, without any disruptions / downtime to production workflow for performance, capacity enhancement and software / firmware upgrades. Minimum four Xeon 8 Core CPU across storage controllers Controller must support Multipath I/O Architecture. 		
3.	Storage Operating System	Storage offered must be with the latest operating system		
4.	Cache	Minimum 512 GB of useable cache across controllers, out of which minimum 384 GB Cache must be controller cache and rest can be flash based cache.		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		<ul style="list-style-type: none"> Cache shall be used only for data and control operations and should not handle any overhead of operating system 		
5.	Host Interface Port	Minimum 4 nos. of 16 Gbps Fibre Channel Ports per Controller shall be available. Ports must be active and populated with SFP+ from day one.		
6.	Back and front port	The storage should support 8/16 Gbps on FC to connect SAN Switch, 10Gbps on iSCSI (SFP+/Base-T) to Connect on LAN switch within same controller pair.		
7.	Scalability	System should support a minimum of 500 drives or more within the same set of controllers.		
8.	Disk Drive Support	System should have support for <ul style="list-style-type: none"> SSD/Flash drives SAS drives Near-line SAS drives 		
9.	RAID support	Should support various RAID Levels (RAID 0 / 1 / 5 / 6 / 10 or any combination of RAID level on single Storage system)		
10.	Solution/ Type	Bidder is required to offer corresponding ports both in server as well as storage controller based on the solution proposed (FC/iSCSI).		
11.	Storage	Bidder has to provide minimum 750 TB usable capacity across the storage with single or multiple expansion units. Out of 750 TB minimum 20% disk capacity shall be using Enterprise Grade SSD Disks, 40% disk capacity shall be on SAS Drives and 40% disk capacity shall be on NL-SAS Drives. Storage system should be configured and offered with required hot-spares for the different type and no. of disks configured, as per the system architecture best practices. (150 TB SSD, 300 TB SAS, 300 TB NL SAS)		
12.	Global Hot Spare	<ul style="list-style-type: none"> System should have the capability to designate global hot spares that can be automatically be used to 		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		replace a failed drive anywhere in the system. <ul style="list-style-type: none"> Storage system should be configured and offered with required Global Hot-spares for the different type and no. of disks configured, as per the system architecture best practices. 		
13.	Minimum LUNs	<ul style="list-style-type: none"> Capacity to create minimum 2048 numbers of LUNs 		
14.	Thin Provisioning	<ul style="list-style-type: none"> Offered Storage System should have Thin Provisioning and Thin Reclamation. 		
15.	Hardware Platform	<ul style="list-style-type: none"> Rack mounted form-factor Modular design to support controllers and disk drives expansion 		
16.	On-line Expansion/RAID Group creation/Expansion	<ul style="list-style-type: none"> System should have online expansion and shrinking of RAID Group or addition and deletion of new RAID Group. Must be able to add and delete additional disks on the fly to expand or reduce the RAID group capacity or create new RAID Group. 		
17.	Redundancy and High Availability	<ul style="list-style-type: none"> The Storage System should be able to protect the data against single point of failure with respect to hard disks, Cache memory, Controller card, connectivity interfaces, fans and power supplies 		
18.	Management software	<ul style="list-style-type: none"> All the necessary software (GUI Based) to configure and manage the storage space, RAID configuration, logical drives allocation, snapshots etc. are to be provided for the entire system proposed from day-1. Licenses for the storage management software should include disc capacity/count of the complete solution and any additional disks to be plugged in in the future, upto max capacity of the existing controller/units. 		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
		<ul style="list-style-type: none"> • A single command console for entire storage system. • Should also include storage performance monitoring and management software. This should provide detail of performance like IOPs utilization, response time and also provide capacity detail like amount of capacity allocated, capacity used and capacity free. • Should provide the functionality of proactive monitoring of Disk drive and Storage system for all possible disk failures • Should be able to take "snapshots" of the stored data to another logical drive for backup purposes • There should be a dedicated Ethernet port for management and it should not use the iSCSI host ports for management. 		
19.	Data Protection	The storage array must have complete cache protection mechanism either by de-staging data to disk or providing complete cache data protection with battery backup for up to 4 hours		
20.	Perpetual software License	The software license supplied should be perpetual so that there will be no additional software cost while replacing the storage within the same class.		
21.	Server Operating System Support	Must be completely supported by the server operating system offered by the bidder for all the features and technology		
22.	Virtualization Support	Storage System must be completely supported by the virtualization technology offered by the bidder for all the features and technology		
23.	Accessories	All the necessary tools & tackles licenses, cables/ connectors for Ethernet/ Fibre/USB/ Power etc. required for making the system operational shall be provided by the bidder.		

#	Parameter	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
24.	SAN Switch	<ul style="list-style-type: none"> Standard 24 Port 16Gbps SAN Switches x 2 Nos. Each SAN switch with minimum 16 Activated ports from day one or if more active ports require as per proposed application architecture, bidder has to provide the same. Necessary SFP modules, patch cables and other required accessories has to be provided. 		
25.	Warranty	24 x 7 five (5) years on-site back to back comprehensive warranty		
26.	Specify Make of proposed Storage			
27.	Specify Model of proposed Storage			

15.35 42U Rack

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Dimension	Rack Width: 750mm to 800mm Rack Depth/Length: 1000 mm to 1200 mm		
2.		Rack Height : 42U		
3.		Color: Black		
4.		Rack Equipment Mounting should be as per EIA-310 standard: 19" along with 'U' marking.		
5.		Rack should have minimum weight carrying Capacity of 500Kgs.		
6.	Doors	Front and Back doors should be perforated with at least 60% or higher perforations		
7.		Rack should have single front door and it should be able moved to the opposite side or interchanged with rear doors. Doors should be able to removed easily with simple lift-off design.		
8.		Rack should have Split rear doors to improve access and serviceability to rear of rack mounted equipment.		
9.	Side Panels	Side Panels should be of Half-height on each side for easy access.		

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



10.		Side panels should be lockable utilizing a single key with the doors.		
11.	Cable access	It should have cable access slots in the roof for overhead cable egress.		
12.		It should have unobstructed cable access from bottom of the Rack through a raised floor.		
13.	Wire managers	Two vertical wire/cable managers/panels should be provided in front and back of the rack for cable management.		
14.	Power Distribution Units	Rack must be supplied with 2 x PDUs/Rack - Vertically Mounted, 32AMPs with 25 Power Outputs. (20 Power outs of IEC 320 C13 Sockets & 5 Power outs of 5/15 Amp Sockets), Electronically controlled circuits for Surge & Spike protection 32AMPS MCB, 5 KV AC isolated input to Ground & Output to Ground.		
15.		PDUs provided should have LAN/RJ-45 Port and it should be able to manage by assigning IP address to fetch the Information like current/voltage/power being drawn from the each port or total from PDU.		
16.		All types of Power Cables (like C13 to C14, e.t.c.) required to power up the various Network/Server devices should be supplied/provided with it from day one.		
17.		Hardware/Accessories provided	Rack must be supplied with minimum 2 (two) nos of standard hardware pack/bag (which includes mounting nut-bolts, cable ties e.t.c) for mounting IT equipment and tools for enclosure adjustment.	
18.		Pre-installed full-enclosure height Integrated and adjustable rear accessory channel to accommodate PDUs and vertical cable organizers.		
19.		Rear accessory channel should be able to move to other locations of the enclosure along the side brace to resituate cable management as per requirement.		
20.		1U Mountable Cable Manager as per site requirement needs to be supplied from Day one.		

21.	Warranty	5 Years repair or replacement warranty with parts		
-----	----------	---	--	--

15.36 Enterprise Security & Antivirus Software License for Server

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Enterprise Server Security Software shall provide server security, network security and application security covering Antivirus, Antimalware, IDS/IPS, Web Application Protection, etc. to ensure complete security		
2.	OEM should be listed in the Leader's Quadrant of Gartner Magic Quadrant for Endpoint Protection Platforms		
3.	Specify the Proposed Make		
4.	Specify the Proposed Model / Version No		
5.	Specify the Type of License (Socket based/Core based/VM based/Trust based)		
6.	Specify the quantity of the License (same to be specified in BOQ & Price Bid)		

15.37 Call Center Management Solution

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	<p>The contact centre solution should be able to route voice/VOIP calls from centralized Interactive Voice Response System (IVRS) to respective call centre (s) along with interaction history of the calling party.</p> <p>The solution should able to integrate / route the call to existing Sitilink IVRS system for smooth operations.</p> <p>Note: Scope of EPBAX and PRI Lines are not in the scope of SI. However, the SI is required to co-ordinate with SMC for the smooth roll out of IVRS based call centre management solution.</p>		
2.	The callers should be able to access the various services through state-of-art centralized integrated Interactive Voice Response System (IVRS). The information is envisaged to be available to the customer through telephone (IVRS) and call centres agents.		
3.	The IVRS should establish two way communication on the same channel with customers through recorded synthesized voice in Hindi / English / Regional Language		

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	or in combination of languages to give information, reply to queries and provide other.		
4.	IVRS should be modular and scalable in nature for easy expansion without requiring any change in the software.		
5.	It should be possible to access IVRS through any of the access device such as Landline telephone, Mobile phone (GSM as well as CDMA) etc.		
6.	IVRS should support various means of Alarm indications/error logs in case of system failures, e.g. Functional error, missing voice message prompt, etc., and shall generate error Log		
7.	The system should have the ability to define business rules based upon which the system should quickly identify, classify and prioritize callers, and using sophisticated routing, to deliver interactions to the best qualified agent in the any of the connected local/remote call centre, regardless of interaction channel		
8.	The IVRS should be capable to capture usage details of each customer as the customer traverses through a call. The IVRS should have an interface through which usage details can be shared with other solutions.		
9.	The application should provide CTI services such as: <ul style="list-style-type: none"> • Automatic display (screen pop) of information concerning a user/customer on the call agent screen prior to taking the call based on ANI, DNIS or IVR data. • Synchronized transfer of the data and the call to the call centre agent. • Transfer of data corresponding to any query raised by any IP agent regarding a query raised by a customer whose call is being attended by the call IP agent. • Call routing facilities such as business rule based routing, skills-based routing etc. 		
10.	The application should support integration to leading CTI middleware vendors.		
11.	Should provide pre-integration with industry standard IVR servers and enhance routing & screen-pop by forwarding the information.		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
12.	Should provide facilities for outbound calling list management, and software based predictive or preview dialling.		
13.	<p>Call Centre Agent’s Desktop: The agents desktop shall have an application which shall fulfil the following functionalities :</p> <ul style="list-style-type: none"> • It should provide consistent agent interface across multiple media types like fax, SMS, telephone, email, and web call back. • The agent’s desktop should have a “soft-phone” – an application that enables standard telephony functions through a GUI. • It should be possible for agents to escalate the query. 		
14.	System should be able to integrate with e–mail / SMS gateway so that appropriate messages can be sent to the relevant stakeholders after the interaction and any updates thereon.		
15.	Should intelligently and automatically routes inquires with skills based routing discipline to agents		
16.	Should have an Intelligent distribution of email to agents		
17.	<p>CTI (Computer Telephone Integration) Application Requirements</p> <ul style="list-style-type: none"> • The CTI link should allow a computer application to acquire control of the agent resources on the IP EPABX & change state of the agent phone through commands on the CTI link. • The CTI link should pass events & information of agent states & changes in agent states as well as incoming calls to the computer applications. • The CTI link should allow a computer application to take control of the call flow inside the IP EPABX & also allow the computer application to decide the most suitable action / agent for an incoming call. • Should be able to integrate with various domain systems of SMC to send/receive data like caller number, call duration, agent id, transfer details, etc. • Ability to generate and service requests • Call events should be handled from the system such as hold, retrieve hold, conference, transfer, etc. • CTI should be integrated with core call center system and update the IVR 		
18.	Automatic Call Distribution (ACD) Requirements		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	<ul style="list-style-type: none"> The ACD solution should be able to route the call to any remote call centre agent using IP phones Should able to Handle high call volumes efficiently Should allow calls to be transferred within the call center Should support multiple groups for all call types Should provide highly configurable system for adding/removing users Should have an ability to queue or hold the call for an agent if none is immediately available. Should have an ability to keep the callers informed as to the status of the call and providing information to callers while they wait in queue. System should be able to perform prioritized call routing 		
19.	<p>Supervisor Module</p> <p>The call centre should provide a graphical console application program for the supervisor's workstation. This position shall facilitate the following features:-</p> <ul style="list-style-type: none"> Any supervisor shall be able to monitor or control any group in the call Centre. It shall show the live activity of each agent in details as well as in a summarized fashion including information like total number of calls received, calls answered, average response time etc. The Supervisor console shall also graphically display live status of the call session summary, number of call waiting in the queue, call traffic etc. Live status of the group shall be shown, including waiting calls and calls being answered currently. Access to the supervisor console shall be restricted. It shall be possible for a supervisor to attend calls whenever necessary. 		
20.	<p>Recording</p> <p>The solution should have provision for call recording, archival and retrieval. The recording should contain detailed call information and the solution must provide advanced searching capabilities</p> <p>The solution should able to store /retain the recording on the recording server for 30 days.</p>		
21.	<p>Proposed solution should not have any user license restriction. SMC/SSCDL should be able to create as many users as required. The performance of solution must not</p>		

#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	degrade with increase in number of users in the application		
22.	Should have a comprehensive audit trail detailing every user activity including system/security administrators.		
23.	<p>Security and Privacy</p> <ul style="list-style-type: none"> • Should be capable to protect the caller information and thus privacy of the caller. • System must maintain log including date, time, terminal number of each operation, done by every user/group and should have back up. • There should be a complete and comprehensive security from unauthorized access and misuse. • System should support the following <ul style="list-style-type: none"> - Forced password change - Display last login/logout - Failed login attempts - Inactivity time out - No concurrent login - Block/delete/relocate users - Password control (length, composition etc.) - Password not displayed when entered - Password change interval - Password change history - Login session timeout - Allows password reset - Allows user to change password 		
24.	<p>Reporting</p> <ul style="list-style-type: none"> • The daily, weekly, monthly MIS reports shall include all the following but not limited to: report on calls handled, call pending, average duration of calls, min. & max duration of calls, number of instances the operator found busy, calls abandoned due to breakdown, etc. The proposed solution must have comprehensive reports for various activities by the Contact Center: <ul style="list-style-type: none"> - Calls per week, month or other period. - Numeric and graphical representation of call volume - Calls for each interaction tracked by type - Number of dropped calls after answering 		

**ADDENDUM & CORRIGENDUM-1: RFP for Selection of Implementing Agency for
Integrated Command Control Centre (ICCC) in Surat
[RFP No.: SSCDL-ICCC-RFP-01-2019]**



#	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
	<ul style="list-style-type: none"> - Calls that ended while on hold, indicating that the caller hung up - Reports must have restricted access based on user access privileges. - The ad-hoc reporting tool must enable reports to be exported to other formats like MS Excel and MS word format - Agent based/shift based and other suitable reporting shall be there 		
25.	Specify the proposed Make		
26.	Specify the proposed Version No		

15.38 IP KVM with 17" Rack LED/LCD and USB VM Server Module Bundle

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Components	<ul style="list-style-type: none"> • 1 x 16 Port IP KVM with VM • 1 x 17-inch Rack LED/LCD Monitor/Console • 2 X USB Ports with Virtual Media Server Modules • 1 x KVM/LCD 1U bracket kit • Necessary Software CD, Installation guide etc. 		
2.	Form	1U Rack Mountable hardware proposed should be able to access multiple servers mounted in rack or by accessing them remotely.		
3.	Authentication	It should have feature to Control user privileges & access rights to Secure assets from unauthorized access.		
4.	OS/Platform Support	It should be compatible with Windows, Sun, Unix and Linux OS.		
5.		It should have Pluggable Operation support by which servers can be added or removed without having to power off the switch.		
6.	Accessories	All Types of accessories/cables/converters/modules required to utilize the solution at full potential should be supplied with it.		
7.	Warranty	3 Years repair or replacement warranty with parts		

New Technical Specifications

15.39 Blade Chassis (if Blade Server is proposed)

#	Minimum Specifications	Compliance (Yes, No)	Remarks, if any
1.	Minimum 6U size, rack-mountable, capable of accommodating minimum 8 or higher hot pluggable blades		
2.	Dual network connectivity of 10 G speed for each blade server for redundancy		
3.	Shall support Industry standard virtualization hypervisor like Hyper-V, VMWARE, Oracle VM etc.		
4.	DVD ROM shall be available in chassis, can be internal or external, which can be shared by all the blades allowing remote installation of software		
5.	Minimum 4 USB port		
6.	Minimum 2 hot-plug/hot-swap 10 Gbps Ethernet modules each with 8 No. of Ethernet ports for uplink and sufficient internal 10 GBPS ports within chassis to support redundancy for each blade		
7.	Two hot-plugs/hot-swap redundant 16 GBPS Fiber Channel module with 16 number of internal and 8 external 16 GBPS ports for connectivity to the external Fiber channel Switch / Storage Controller (Ports must be active and populated with SFP+ from day one.)		
8.	Power supplies shall have N+N. All power supplies modules shall be populated in the chassis. Required number of PDUs and power cables, to connect all blades, Chassis to Data Center power outlet.		
9.	Hot pluggable/hot-swappable redundant cooling unit		
10.	Provision of systems management and deployment tools to aid in blade server configuration and OS deployment		
11.	Blade enclosure shall have provision to connect to display console/central console for local management such as troubleshooting, configuration, system status/health display.		
12.	Single console for all blades in the enclosure, built-in KVM switch with facility for Virtual KVM features over IP		
13.	Dedicated management network port shall have separate path for remote management.		
14.	24 x 7 Five (5) years on-site back to back comprehensive warranty		
15.	Specify Make of proposed Chassis		
16.	Specify Model of proposed Chassis		

15.40 Video Conference System

#		Minimum Specifications	Compliance (Yes, No)	Remarks, if any
1.	Camera	Should support Full HD 1080p resolution with 30 fps from day one.		
2.		Camera should have functionality of motorized pan, tilt and zoom, controlled from remote or console		
3.		Camera/Solution should support Autofocus and minimum 3 camera pre-sets.		
4.		Camera should have minimum 10X of Lossless Optical zoom.		
5.		Should have at least 70 degrees field of view (horizontal)		
6.		Should support at least 180 degrees of pan and 120 degrees of tilt		
7.		Should support H.264 (MPEG-4 AVC), H.264 SVC video codec		
8.		Solution should have ability to send and receive two live simultaneous video sources in a single call, so that the image from the main camera and PC or document/Presentation camera can be seen simultaneously.		
9.		It should be possible to display the main video on one screen and the presentation / dual video on the other screen.		
10.	Video Input/output	Should have DVI (Digital Video Interface) or HDMI input to connect PC / Laptop directly to the Video conferencing system with Audio.		
11.		Video Output: Should have at least 2 HDMI / DVI (High Definition Multimedia Interface) with Full HD 1080p output to connect display devices such as LCD / LED and projectors for both Video and Content. (Dual Monitor Support)		
12.		Audio Inputs: Should support minimum 2 Microphone inputs. And it should be supplied from day one.		
13.	Network	Min. 1 x 1G LAN / Ethernet Port.		
14.		IPv4 and IPv6 support		
15.		Solution should be able initiate and receive Video conference Session/call via local (Intranet) static IP on Point to Multipoint Leased line/MPLS connectivity between HQ/ICCC and branches & also over the Internet (Live/Real) Static IP.		
16.		System should support Password protected system menu for better security.		

#		Minimum Specifications	Compliance (Yes, No)	Remarks, if any
17.		ITU-T standards based Encryption of the video call/session.		
18.	Speakerphone	Should have minimum 1 x Speakerphone or Speaker & MIC with Full Duplex Audio Supported functionality and have feature of echo cancellation, Noise reduction.		
19.		Solution should support integration with Leading business certifications like Skype for Business, Cisco Jabber and WebEx and it should be Compatible with BlueJeans, BroadSoft, GoToMeeting, Vidyo, and other video conferencing, recording, and broadcasting applications that support USB cameras		
20.	Accessories	Solution should be offered with Full HD Camera, Speakerphone-MIC System, Remote control, Power Supply with cables, all types of Video & Audio connectivity Cables in required quantity, all types of Video/Audio/Network converters required if any along with mounting kit for ideal wall placement or for elevating the camera on a table and placement of speakers/mic to utilize solution with full functionality from day one.		
21.		Minimum 3 Years of Comprehensive Warranty and support of Parts/Hardware/Software/License and 2 Years of AMC.		
22.		Specify the proposed Make		
23.		Specify the proposed Model No		

15.41 10G DAC (10M Length) for DC Core Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	(Minimum 10M Length) 10G DAC for 10G SFP+ Slots		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
Note: Bidder is required to quote for same make & model proposed for the DC Aggregation switches				

15.42 10G SFP+ SR/LR Transceiver Module for DC Core Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	10G BASE-SR/LR port; Duplex: full only		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
Note: Bidder is required to quote for same make & model proposed for the DC Aggregation switches				

15.43 40G QSFP+ LR4/SR4 Transceiver Module for DC Core Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	40G QSFP+ BASE- LR4/SR4 port		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
Note: Bidder is required to quote for same make & model proposed for the DC Aggregation switches				

15.44 DC TOR / DC Aggregation Switch Type-1

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Switching Capacity	<ul style="list-style-type: none"> Switching Capacity of minimum 1440 Gbps or Higher 		
2.	Ports	<ul style="list-style-type: none"> Should have minimum 48 X 10G BASE-T RJ-45 ports. Should have minimum 4 X 40G BASE-QSFP+ LR4/SR4 ports 		
3.	Switch type	<ul style="list-style-type: none"> Fully Managed & Advanced Layer 3 Core/Data Centre Switch & Non Chassis Based 		
4.	Backplane	<ul style="list-style-type: none"> Properly sized Switching fabric capacity (as per network configuration to meet performance requirements of wire speed switching for the connected devices) 		
5.	Layer-2 Features	<ul style="list-style-type: none"> Switch should Support IEEE 802.1Q VLAN encapsulation & must have feature to configure minimum 4090 VLAN IDs. 		

		<ul style="list-style-type: none"> • The switch must support dynamic VLAN Registration or equivalent and Dynamic Trunking protocol or equivalent 		
		<ul style="list-style-type: none"> • Switch should Support Ether Channelling - IEEE 802.3ad or port aggregation technologies (support of LACP) 		
		<ul style="list-style-type: none"> • Switch should Support IEEE 802.3x flow control for full-duplex mode ports. 		
		<ul style="list-style-type: none"> • Switch should Support IEEE 802.1s/w Rapid Spanning Tree Protocol (RSTP) and Multiple Spanning Tree Protocol (MSTP) 		
		<ul style="list-style-type: none"> • Support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors. 		
		<ul style="list-style-type: none"> • IGMP snooping v1, v2 and v3 		
		<ul style="list-style-type: none"> • Should support 32k or more ARP/MAC Address table 		
		<ul style="list-style-type: none"> • Should support Loop protection and Loop detection. 		
6.	Layer-3 Features	<ul style="list-style-type: none"> • Must have Static, OSPFv3, BGP4, RIPv1, RIPv2 and Policy based routing protocols with IPV4 & IPv6 supported. 		
		<ul style="list-style-type: none"> • Should support Dual IP stack which Maintains separate stacks for IPv4 and IPv6 		
		<ul style="list-style-type: none"> • Should support Virtual Router Redundancy Protocol (VRRP). 		
		<ul style="list-style-type: none"> • Should support Equal-Cost Multipath (ECMP) which provides equal-cost links in a routing environment to increase link redundancy. 		
		<ul style="list-style-type: none"> • Support 802.1D, 802.1S, 802.1w, Rate limiting. 		
		<ul style="list-style-type: none"> • Inter-VLAN IP routing for full Layer 3 routing between 2 or more VLANs. 		
		<ul style="list-style-type: none"> • Inbuilt Feature of Dynamic Host Configuration Protocol (DHCP) Server which simplifies the management of large IP networks and supports client and server system. 		

		<ul style="list-style-type: none"> L2/L3 VXLAN and EVPN support for virtualized environments 		
7.	Network Security & QoS	<ul style="list-style-type: none"> Standard 802.1p CoS and DSCP. Must have Network traffic filtering and network control using MAC and IP Binding based ACLs Support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping. Should support TACACS+ and RADIUS authentication Support for Automatic Quality of Service for easy configuration of QoS features for critical applications. Broadcast storm control to help eliminate network traffic storms IEEE 802.1x to allow dynamic, port-based security, providing user authentication. VLAN ACLs (VACLs) on all VLANs to prevent unauthorized data flows from being bridged within VLANs. Port-based ACLs (PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports Standard and Extended IP security router ACLs to define security policies on routed interfaces for control- and data-plane traffic. Unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address. Unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward. Support for SSHv2 and SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions. Private VLAN to provide security and isolation between switch ports, helping 		

		ensure that users cannot snoop on other users' traffic.		
		<ul style="list-style-type: none"> • MAC address management to allow administrators for analysis of users added to or removed from the network. 		
		<ul style="list-style-type: none"> • Multilevel security on console access to prevent unauthorized users from altering the switch configuration. 		
		<ul style="list-style-type: none"> • IPv6 Host, Management, multicast and QoS. 		
8.	Management	<ul style="list-style-type: none"> • Easy-to-use, Web-based management interface through either GUI based software utility or using standard web browser interface which Supports configuration, system dashboard, system maintenance, and monitoring and for easier software/firmware upgrade through network using TFTP/HTTP etc. 		
		<ul style="list-style-type: none"> • Should have accessibility using Telnet, SSH, Console access. 		
		<ul style="list-style-type: none"> • Intuitive web interface to upload/download Configurations to and from the switch. 		
		<ul style="list-style-type: none"> • Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading. 		
		<ul style="list-style-type: none"> • Availability of Port statistics through industry-standard RMON 		
		<ul style="list-style-type: none"> • SNMPv1, SNMPv2 and SNMPv3. 		
9.	Networking Passive Components	<ul style="list-style-type: none"> • All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one. 		
10.	Warranty:	<ul style="list-style-type: none"> • 5 Years back to back OEM Warranty with parts 		
11.	Chassis:	<ul style="list-style-type: none"> • Device must have 1+1 redundant AC power input supply and must be included with switch from day 1 with necessary mounting kit. 		
12.	Specify Make of proposed network switch			

13.	Specify Model of proposed network switch		
-----	--	--	--

15.45 DC TOR/ DC Aggregation Switch Type-2

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
14.	Switching Capacity	<ul style="list-style-type: none"> Switching Capacity of minimum 1440 Gbps or Higher 		
15.	Ports	<ul style="list-style-type: none"> Should have minimum 48 X 10G BASE-SFP+ SR/LR ports. Should have minimum 4 X 40G BASE-QSFP+ LR4/SR4 ports 		
16.	Switch type	<ul style="list-style-type: none"> Fully Managed & Advanced Layer 3 Core/Data Centre Switch & Non Chassis Based 		
17.	Backplane	<ul style="list-style-type: none"> Properly sized Switching fabric capacity (as per network configuration to meet performance requirements of wire speed switching for the connected devices) 		
18.	Layer-2 Features	<ul style="list-style-type: none"> Switch should Support IEEE 802.1Q VLAN encapsulation & must have feature to configure minimum 4090 VLAN IDs. 		
		<ul style="list-style-type: none"> The switch must support dynamic VLAN Registration or equivalent and Dynamic Trunking protocol or equivalent 		
		<ul style="list-style-type: none"> Switch should Support Ether Channelling - IEEE 802.3ad or port aggregation technologies (support of LACP) 		
		<ul style="list-style-type: none"> Switch should Support IEEE 802.3x flow control for full-duplex mode ports. 		
		<ul style="list-style-type: none"> Switch should Support IEEE 802.1s/w Rapid Spanning Tree Protocol (RSTP) and Multiple Spanning Tree Protocol (MSTP) 		
		<ul style="list-style-type: none"> Support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors. 		
		<ul style="list-style-type: none"> IGMP snooping v1, v2 and v3 		
		<ul style="list-style-type: none"> Should support 32k or more ARP/MAC Address table 		
		<ul style="list-style-type: none"> Should support Loop protection and Loop detection. 		

19.	Layer-3 Features	<ul style="list-style-type: none"> • Must have Static, OSPFv3, BGP4, RIPv1, RIPv2 and Policy based routing protocols with IPV4 & IPv6 supported. 		
		<ul style="list-style-type: none"> • Should support Dual IP stack which Maintains separate stacks for IPv4 and IPv6 		
		<ul style="list-style-type: none"> • Should support Virtual Router Redundancy Protocol (VRRP). 		
		<ul style="list-style-type: none"> • Should support Equal-Cost Multipath (ECMP) which provides equal-cost links in a routing environment to increase link redundancy. 		
		<ul style="list-style-type: none"> • Support 802.1D, 802.1S, 802.1w, Rate limiting. 		
		<ul style="list-style-type: none"> • Inter-VLAN IP routing for full Layer 3 routing between 2 or more VLANs. 		
		<ul style="list-style-type: none"> • Inbuilt Feature of Dynamic Host Configuration Protocol (DHCP) Sever which simplifies the management of large IP networks and supports client and server system. 		
		<ul style="list-style-type: none"> • L2/L3 VXLAN and EVPN support for virtualized environments 		
20.	Network Security & QoS	<ul style="list-style-type: none"> • Standard 802.1p CoS and DSCP. 		
		<ul style="list-style-type: none"> • Must have Network traffic filtering and network control using MAC and IP Binding based ACLs 		
		<ul style="list-style-type: none"> • Support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping. 		
		<ul style="list-style-type: none"> • Should support TACACS+ and RADIUS authentication 		
		<ul style="list-style-type: none"> • Support for Automatic Quality of Service for easy configuration of QoS features for critical applications. 		
		<ul style="list-style-type: none"> • Broadcast storm control to help eliminate network traffic storms 		
		<ul style="list-style-type: none"> • IEEE 802.1x to allow dynamic, port-based security, providing user authentication. 		

		<ul style="list-style-type: none"> • VLAN ACLs (VACLs) on all VLANs to prevent unauthorized data flows from being bridged within VLANs. Port-based ACLs (PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports 		
		<ul style="list-style-type: none"> • Standard and Extended IP security router ACLs to define security policies on routed interfaces for control- and data-plane traffic. 		
		<ul style="list-style-type: none"> • Unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address. 		
		<ul style="list-style-type: none"> • Unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward. 		
		<ul style="list-style-type: none"> • Support for SSHv2 and SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions. 		
		<ul style="list-style-type: none"> • Private VLAN to provide security and isolation between switch ports, helping ensure that users cannot snoop on other users' traffic. 		
		<ul style="list-style-type: none"> • MAC address management to allow administrators for analysis of users added to or removed from the network. 		
		<ul style="list-style-type: none"> • Multilevel security on console access to prevent unauthorized users from altering the switch configuration. 		
		<ul style="list-style-type: none"> • IPv6 Host, Management, multicast and QoS. 		
21.	Management	<ul style="list-style-type: none"> • Easy-to-use, Web-based management interface through either GUI based software utility or using standard web browser interface which Supports configuration, system dashboard, system maintenance, and monitoring and for easier software/firmware upgrade through network using TFTP/HTTP etc. 		
		<ul style="list-style-type: none"> • Should have accessibility using Telnet, SSH, Console access. 		

		<ul style="list-style-type: none"> Intuitive web interface to upload/download Configurations to and from the switch. 		
		<ul style="list-style-type: none"> Provision of Dual flash images to provide independent primary and secondary operating system files for backup while upgrading. 		
		<ul style="list-style-type: none"> Availability of Port statistics through industry-standard RMON 		
		<ul style="list-style-type: none"> SNMPv1, SNMPv2 and SNMPv3. 		
22.	Networking Passive Components	<ul style="list-style-type: none"> All types Fiber/DAC/Cat-6/Cat-7 Patch Cords of various lengths required to Interconnect Switch-Switch, Switch-Server, Switch-LIU must be provided/supplied from day one. 		
23.	Warranty:	<ul style="list-style-type: none"> 5 Years back to back OEM Warranty with parts 		
24.	Chassis:	<ul style="list-style-type: none"> Device must have 1+1 redundant AC power input supply and must be included with switch from day 1 with necessary mounting kit. 		
25.	Specify Make of proposed network switch			
26.	Specify Model of proposed network switch			

15.46 10G SFP+ SR/LR Transceiver Module for DC TOR / DC Aggregation Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	10G BASE-SR/LR port; Duplex: full only		
2.	Warranty	5 Years comprehensive warranty.		
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
Note: Bidder is required to quote for same make & model proposed for the DC Aggregation switches				

15.47 40G QSFP+ LR4/SR4 Transceiver Module for DC TOR/ DC Aggregation Switch

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Ports	40G QSFP+ BASE- LR4/SR4 port		
2.	Warranty	5 Years comprehensive warranty.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
3.	Specify the proposed Make			
4.	Specify the proposed Model No			
Note: Bidder is required to quote for same make & model proposed for the DC Aggregation switches				

15.48 Colour Laser Printer

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Print Speed	Print – 25 ppm or higher in color and black		
2.	Resolution	600 X 600 DPI		
3.	Memory	128 MB or more		
4.	Paper Size	A3 ,A4, Legal, Letter, Executive, custom sizes		
5.	Paper Capacity	250 sheets or above on standard input tray, 100 Sheet or above on Output Tray		
6.	Duty Cycle	25,000 sheets or better per month		
7.	OS Support	Linux, Windows 2000, Vista, 7, 8, 8.1		
8.	Interface	Ethernet Interface USB 2.0 or Higher and inbuilt network connectivity		
9.	Specify the proposed Make			
10.	Specify the proposed Model No			

ANNEXURE-VII

16. Annexure IV – Scope & Requirements of Data Center & Other Components

Following specifications to be considered for the respective components, the rest other will remain same as per the RFP.

16.9 Access Control System

#	Description	Compliance (Yes/No)	Remarks, if any
1.	The system deployed shall be based on Biometric Technology		
2.	An access control system consisting of a central PC, intelligent controllers, power supplies and all associated accessories is required to make a fully operational on line access control system		
3.	Access control shall be provided for entry / exit doors		
4.	These doors shall be provided with electric locks, and shall operate on fail-safe principle. The lock shall remain unlocked in the event of a fire alarm or in the event of a power failure		
5.	The fire alarm supplier shall make potential free contacts available for releasing the locks in a fire condition especially for staircase and main doors		
6.	Entry to the restricted area shall be by showing a proximity card near the reader and biometric authentication and exit shall be using a push button installed in the secure area		
7.	The system shall monitor the status of the doors through magnetic reed contacts		
8.	The proximity cards shall be of industry standard and will be warranted against defects in materials and workmanship.		
9.	Total 100 proximity card to be provided as part of the solution		
10.	The system should be designed and implemented to provide following functionality: <ul style="list-style-type: none"> a. Controlled Entries to defined access points b. Controlled exits from defined access points c. Controlled entries and exits for visitors d. Configurable system for user defined access policy for each access point e. Record, report and archive each and every activity (permission granted and / or rejected) for each access point. f. User defined reporting and log formats 		

#	Description	Compliance (Yes/No)	Remarks, if any
	g. Fail safe operation in case of no-power condition and abnormal condition such as fire, theft, intrusion, loss of access control, etc. h. Day, Date, Time and duration based access rights should be user configurable for each access point and for each user. i. One user can have different policy / access rights for different access points		
11.	Specify the proposed Make		
12.	Specify the proposed Model No		

16.12 Precision Air Conditioning (Uniflair/Stulz/Emerson)

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
1.	Scope	a. The Data Centres Area shall be provided with fully redundant, microprocessor-based, gas-based, Precision Air-Conditioning system b. Cool air feed to the Data Centres shall be bottom-charged or downward flow type using the raised floor as supply plenum through perforated aluminium tiles for airflow distribution c. The return airflow shall be through the false ceiling to cater to the natural upwardly movement of hot air d. Cooling shall be done by the Precision Air-Conditioning system only. Forced cooling using fans on the false floor is not acceptable e. Air conditioning shall be capable of providing sensible cooling capacities at the design ambient temperature and humidity with adequate airflow. The Precision Air-Conditioning system shall be capable to be integrated with the Data center Management System for effective monitoring		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
2.	Capacity & Quantity	To provide 4 number of PACs each of 10 tonne capacity.		
3.	Temperature Requirement	<p>f. The environment inside the Data Centres shall be continuously maintained between 20°C to 25 degrees Celsius.</p> <p>g. The temperature and humidity shall be controlled at desired levels.</p> <p>h. The necessary alarms for variation in temperatures shall be monitored on a 24/7 basis and logged for providing reports</p>		
4.	Indicating Lamp	<p>a. Indicating lamps assembly shall be screw type with built in resistor having non-fading colour lens. LED type lamps are required.</p> <p>b. Wiring for Remote ON, OFF, TRIP indicating lamps is required.</p> <p>c. ON indicating lamp: Red</p> <p>d. OFF indicating lamp: Green</p> <p>e. TRIP indicating lamp: Amber</p> <p>f. PHASE indicating lamp: Red, Yellow, Blue</p> <p>g. TRIP circuit healthy lamp: Milky</p>		
5.	Relative Humidity (RH) requirements	<p>a. Ambient RH levels shall be maintained at 50% ± 5 non-condensing.</p> <p>b. Humidity sensors shall be deployed.</p> <p>c. The necessary alarms for variation in RH shall be monitored on a 24/7 basis and logged for providing reports</p>		
6.	Temperature and Relative Humidity Recorders	<p>a. Temperature and relative humidity recorders shall be deployed for recording events of multiple locations within the Data Centres.</p> <p>b. Records of events for the past 7 days shall be recorded and presentable whenever required.</p> <p>c. Sensors shall be located at various locations within the Data Centres to record temperature and humidity automatically</p>		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
7.	Air Quality Level	a. The Data Centres shall be kept at highest level of cleanliness to eliminate the impact of air quality on the hardware and other critical devices. b. The Data Centres shall be deployed with efficient air filters to eliminate and arrest the possibility of airborne particulate matter which may cause air-flow clogging, gumming up of components, causing short-circuits, or blocking the function of moving parts		
8.	Other Requirements	a. The precision air conditioners shall have two (2) independent refrigeration circuits, each comprised of one scroll compressor, refrigeration circuit and condenser, and dual blowers for flexibility of operations and better redundancy b. The unit casing shall be in double-skin construction for longer life of the unit and low noise level. c. For close control of the Data Centres temperature and relative humidity (RH) environment conditions, the controller shall have proportional integration and differential (PID). d. The precision unit shall be air-cooled, refrigerant-based system to avoid chilled water in critical space. e. The internal rack layout design shall follow the cold aisle and hot aisle concept as recommended by ASHRAE. f. The refrigerant used shall be environmentally friendly HFC, R-407-C or equivalent in view of the long-term usage of the Data Centres equipment as well as the availability of spares and refrigerant.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		g. The system shall include fully deployed Dynamic Smart Cooling with auto sequencing and auto power management features to switch the air conditioner on and off automatically and alternately as per preset/configuration for effective usage.		
		h. Thermal and computational fluid dynamics (CFD) analysis diagrams shall be provided		
		i. The fan section shall be designed for an external static pressure of 25 Pa. The fans shall be located downstream of the evaporator coil and be of the electronically commuted, backward, curved, centrifugal type, double-width, double-inlet, and statically and dynamically balanced. Each fan shall be direct-driven by a high efficiency direct current (DC) motor.		
		j. The evaporator coil shall be A-shape coil for down flow, incorporating draw-through air design for uniform air distribution. The coil shall be constructed of rifled bore copper tubes and louvered aluminium fins with the frame and drip tray fabricated from heavy gauge aluminium. Face area of coil shall be selected corresponding to air velocity not exceeding 2.5 m/sec.		
		k. Dehumidification shall be achieved by either reducing effective coil area by solenoid valve arrangement or using the dew point method of control. Whenever dehumidification is required, the control system shall enable a solenoid valve to limit the exchange surface of the evaporating coil, thereby providing a lower evaporating temperature.		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		<p>1. The humidifier and heaters shall be built-in features in each machine individually. Humidification shall be provided by boiling water in a high-temperature, polypropylene steam generator. The steam shall be distributed evenly into the bypass airstreams of the environment control system to ensure full integration of the water vapour into the supply air without condensation. The humidifier shall have an efficiency of not less the 1.3 kg/kw and be fitted with an auto-flush cycle activated on demand from the microprocessor control system. The humidifier shall be fully serviceable with replacement electrodes. Wastewater shall be flushed from the humidifier by the initiation of the water supply solenoid water valve via a U-pipe overflow system. Drain solenoid valves shall not be used. A microprocessor shall control the humidification and heating through suitable sensors</p>		
9	Microprocessor Features	<p>a. Room temperature and humidity</p> <ul style="list-style-type: none"> • Supply fan working status • Compressor working status • Condenser fans working status • Electric heaters working status • Humidifier working status • Manual/Auto unit status • Line voltage value <p>b. Temperature set point</p> <ul style="list-style-type: none"> • Humidity set point • Working hours of main component i.e. compressors, fans, heater, humidifier. • Unit working hours • Current date and time 		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		<ul style="list-style-type: none"> • Type of alarm (with automatic reset or block) • The last 10 intervened alarms 		
10	Microprocessor Functions	<ol style="list-style-type: none"> a. Testing of the working of display system b. Password for unit calibration values modification c. Automatic restart of program d. Cooling capacity control e. Compressor starting timer f. Humidifier capacity limitation g. Date and time of last 10 intervened alarm h. Start/Stop status storage i. Random starting of the unit. j. Outlet for the connection to remote system k. Temperature and humidity set point calibration l. Delay of general alarm activation m. Alarm calibration 		
11	Alarms Display on Microprocessor Screen	<ol style="list-style-type: none"> a. Air flow loss b. Clogged filters c. Compressor low pressure d. Compressor high pressure e. Smoke /ire f. Humidifier low water level g. High/Low room temperature h. High/Low room humidity i. Spare external alarms j. Water under floor 		
12	Settable Features	<ol style="list-style-type: none"> a. Unit identification number b. Start-up delay, cold start delay, and fan run on timers c. Sensor calibration d. Remote shutdown and general alarm management e. Compressor sequencing f. Return temperature control g. Choice of modulating output types 		
13	Protection	<ol style="list-style-type: none"> a. Single phasing preventers b. Reverse phasing c. Phase misbalancing d. Phase failure 		

#	Parameter	Minimum Specifications	Compliance (Yes/No)	Remarks, if any
		e. Overload tripping (MPCB) of all components		
14	Warranty & Support	a. The PAC will be with 5 years comprehensive onsite warranty and support. b. The warranty and support will include all parts including the gas filling during the contract period. c. SI will be required to carry out necessary preventive and breakdown maintenance including periodic service on a regular basis (atleast once a quarter) to ensure maximum uptime		
15	Specify the proposed Make			
16	Specify the proposed Model No			

16.13 Datacenter Management System / Building Control System

#	Description	Compliance (Yes/No)	Remarks, if any
1.	The BMS shall perform the following general functions including but not limited to: a. Building Management & Control b. Monitoring of all data center devices through a single portal/dashboard c. Data Collection & archival d. Alarm Event & Management e. Reports & MIS Generation		
2.	SI shall design & provide a datacenter management system that comprises the following general functional sub systems. a. PAC Management & Control b. Temperature monitoring and controls at all specified positions/locations c. Safety & Security Systems Integration d. Fire Alarm System Integration e. Aspirating Smoke Detector System Integration f. Access Control System integration g. Water leakage Detection System		
3.	Specify the proposed Make		
4.	Specify the proposed Model No		