



**ADDENDUM & CORRIGENDUM-3**

**REQUEST FOR PROPOSAL**

For

**SELECTION OF IMPLEMENTATION AGENCY FOR  
INTEGRATED TRAFFIC CONTROL SYSTEM (ITCS)  
IN SURAT CITY**

**Tender Number: SSCDL-Traffic-ITCS-RFP-01-2016**

**Last date for Price Bid Submission: 15. 02. 2017**



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 3**

**RFP Notification No.: SSCDL-Traffic-ITCS-RFP-01-2016**

---

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.
- The queries raised and given by SIs, 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.

**Bidder shall read and consider following points, which shall be a part of the RFP documents.**



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause																																																
1		6 & 213	Table of content. Section 9	Annexure III: Non-IT Requirements Specifications	Annexure <b>IV</b> : Non-IT Requirements Specifications																																																
2		6 & 226	Table of content. Section 10	Annexure IV- Common guidelines regarding compliance of systems/equipment	Annexure <b>V</b> : Common guidelines regarding compliance of systems/equipment																																																
3		6 & 228	Table of content. Section 11	Annexure V Traffic Signal Pole Design	Annexure <b>VI</b> : Traffic Signal Pole Design																																																
4	5.2	25	Geographical Scope of services	<table border="1"> <thead> <tr> <th>#</th> <th>System Description</th> <th>Locations</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>New Adaptive Traffic Control Systems</td> <td>78 Locations</td> </tr> <tr> <td>2.</td> <td>Up gradation of Existing Traffic Signaling Systems</td> <td>27 Locations</td> </tr> <tr> <td>3.</td> <td>Integration from VAC to ATCS</td> <td>94 Locations</td> </tr> <tr> <td>4.</td> <td>Speed Control Sign Boards</td> <td>18 Locations</td> </tr> <tr> <td>5.</td> <td>Variable Message Sign Boards</td> <td>100 Locations</td> </tr> <tr> <td>6.</td> <td>Red Light Violation Detection System at Intersection</td> <td>25 Locations</td> </tr> <tr> <td>7.</td> <td>Speed Violation Detection Systems</td> <td>15 Locations</td> </tr> </tbody> </table>	#	System Description	Locations	1.	New Adaptive Traffic Control Systems	78 Locations	2.	Up gradation of Existing Traffic Signaling Systems	27 Locations	3.	Integration from VAC to ATCS	94 Locations	4.	Speed Control Sign Boards	18 Locations	5.	Variable Message Sign Boards	100 Locations	6.	Red Light Violation Detection System at Intersection	25 Locations	7.	Speed Violation Detection Systems	15 Locations	<table border="1"> <thead> <tr> <th>#</th> <th>System Description</th> <th>Locations</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>New Adaptive Traffic Control Systems</td> <td><b>146 Locations</b></td> </tr> <tr> <td>2.</td> <td>Up gradation of Existing Traffic Signaling Systems</td> <td>27 Locations</td> </tr> <tr> <td>3.</td> <td>Integration from VAC to ATCS</td> <td>94 Locations</td> </tr> <tr> <td>4.</td> <td>Speed Control Sign Boards</td> <td><b>15 Locations</b></td> </tr> <tr> <td>5.</td> <td>Variable Message Sign Boards</td> <td><b>20 Locations</b></td> </tr> <tr> <td>6.</td> <td>Red Light Violation Detection System at Intersection</td> <td>25 Locations</td> </tr> <tr> <td>7.</td> <td>Speed Violation Detection Systems</td> <td>15 Locations</td> </tr> </tbody> </table>	#	System Description	Locations	1.	New Adaptive Traffic Control Systems	<b>146 Locations</b>	2.	Up gradation of Existing Traffic Signaling Systems	27 Locations	3.	Integration from VAC to ATCS	94 Locations	4.	Speed Control Sign Boards	<b>15 Locations</b>	5.	Variable Message Sign Boards	<b>20 Locations</b>	6.	Red Light Violation Detection System at Intersection	25 Locations	7.	Speed Violation Detection Systems	15 Locations
				#	System Description	Locations																																															
				1.	New Adaptive Traffic Control Systems	78 Locations																																															
				2.	Up gradation of Existing Traffic Signaling Systems	27 Locations																																															
				3.	Integration from VAC to ATCS	94 Locations																																															
				4.	Speed Control Sign Boards	18 Locations																																															
				5.	Variable Message Sign Boards	100 Locations																																															
				6.	Red Light Violation Detection System at Intersection	25 Locations																																															
7.	Speed Violation Detection Systems	15 Locations																																																			
#	System Description	Locations																																																			
1.	New Adaptive Traffic Control Systems	<b>146 Locations</b>																																																			
2.	Up gradation of Existing Traffic Signaling Systems	27 Locations																																																			
3.	Integration from VAC to ATCS	94 Locations																																																			
4.	Speed Control Sign Boards	<b>15 Locations</b>																																																			
5.	Variable Message Sign Boards	<b>20 Locations</b>																																																			
6.	Red Light Violation Detection System at Intersection	25 Locations																																																			
7.	Speed Violation Detection Systems	15 Locations																																																			



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause																																										
				<table border="1"> <tr> <td>8.</td> <td>Traffic Violation Cameras</td> <td>31 Locations</td> </tr> <tr> <td>9.</td> <td>Traffic Surveillance Cameras</td> <td>50 Locations</td> </tr> <tr> <td>10.</td> <td>ANPR Cameras</td> <td>12 Locations</td> </tr> <tr> <td>11.</td> <td>Public Address (PA) System</td> <td>267 Locations</td> </tr> <tr> <td>12.</td> <td>Emergency Call Box (ECB) System</td> <td>20 Locations</td> </tr> <tr> <td>13.</td> <td>Traffic Command Center (TCC)</td> <td>1 Location</td> </tr> <tr> <td>14.</td> <td>Pedestrian lamp heads</td> <td>134 Location</td> </tr> </table>	8.	Traffic Violation Cameras	31 Locations	9.	Traffic Surveillance Cameras	50 Locations	10.	ANPR Cameras	12 Locations	11.	Public Address (PA) System	267 Locations	12.	Emergency Call Box (ECB) System	20 Locations	13.	Traffic Command Center (TCC)	1 Location	14.	Pedestrian lamp heads	134 Location	<table border="1"> <tr> <td>8.</td> <td>Traffic Violation Cameras</td> <td>31 Locations</td> </tr> <tr> <td>9.</td> <td>Traffic Surveillance Cameras</td> <td>50 Locations</td> </tr> <tr> <td>10.</td> <td>ANPR Cameras</td> <td>17 Locations</td> </tr> <tr> <td>11.</td> <td>Public Address (PA) System</td> <td>Stands Removed from Scope of Work</td> </tr> <tr> <td>12.</td> <td>Emergency Call Box (ECB) System</td> <td>20 Locations</td> </tr> <tr> <td>13.</td> <td>Traffic Command Center (TCC)</td> <td>1 Location</td> </tr> <tr> <td>14.</td> <td>Pedestrian lamp heads</td> <td>134 Location</td> </tr> </table> <p>The location count is considered as per above table where ever it appears across the RFP.</p>	8.	Traffic Violation Cameras	31 Locations	9.	Traffic Surveillance Cameras	50 Locations	10.	ANPR Cameras	17 Locations	11.	Public Address (PA) System	Stands Removed from Scope of Work	12.	Emergency Call Box (ECB) System	20 Locations	13.	Traffic Command Center (TCC)	1 Location	14.	Pedestrian lamp heads	134 Location
8.	Traffic Violation Cameras	31 Locations																																													
9.	Traffic Surveillance Cameras	50 Locations																																													
10.	ANPR Cameras	12 Locations																																													
11.	Public Address (PA) System	267 Locations																																													
12.	Emergency Call Box (ECB) System	20 Locations																																													
13.	Traffic Command Center (TCC)	1 Location																																													
14.	Pedestrian lamp heads	134 Location																																													
8.	Traffic Violation Cameras	31 Locations																																													
9.	Traffic Surveillance Cameras	50 Locations																																													
10.	ANPR Cameras	17 Locations																																													
11.	Public Address (PA) System	Stands Removed from Scope of Work																																													
12.	Emergency Call Box (ECB) System	20 Locations																																													
13.	Traffic Command Center (TCC)	1 Location																																													
14.	Pedestrian lamp heads	134 Location																																													
5	5.3	28	Feasibility study for finalization of detailed technical architecture and project Plan (Point-1 Scalability)	Scalability - Important technical components of the architecture must support scalability to provide continuous growth to meet the growing demand of the city traffic. The system should also support vertical and horizontal scalability so that depending on changing requirements from time to time, the system may be scaled upwards. There must not be any system imposed restrictions on the upward scalability in number of field devices. Main technological components requiring scalability are storage, bandwidth, computing performance (IT Infrastructure), software / application performance. In quantitative terms, there may	Scalability - Important technical components of the architecture must support scalability to provide continuous growth to meet the growing demand of the city traffic. The system should also support vertical and horizontal scalability so that depending on changing requirements from time to time, the system may be scaled upwards. There must not be any system imposed restrictions on the upward scalability in number of field devices. Main technological components requiring scalability are storage, bandwidth, computing performance (IT Infrastructure), software / application																																										



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
				not be major change in number of Command Centers. However, command Centre should have to be shifted from TCC to ITMAC, once ITMAC gets operational. Number of field locations could be even increased over 500 in 5 years' time.	performance. In quantitative terms, there may not be major change in number of Command Centers. However, command Centre should have to be shifted from TCC to ITMAC, once ITMAC gets operational. <b>Number of traffic Junctions could be even increased over 500 in 5 years' time"</b>
6	5.4.4	30	Electrical works and power supply	The SI shall directly interact with electricity boards for provision of mains power supply at all desired locations for ITCS field solution. The SSCDL shall facilitate the same. The recurring electricity charges will be borne by SMC as per actual consumption.	The SI shall directly interact with electricity boards for provision of mains power supply at all desired locations for ITCS field solution. <b>The SI will be responsible to submit the electricity bill including connection charge, meter charge etc. to the electricity board directly. SI shall have to submit the challan of bill submission to SSCDL. SSCDL will reimburse the amount submitted to the SI after verification.</b> The recurring electricity charges will be borne by SMC as per actual consumption.
7	5.4.7	31	Junction Box, Poles and Cantilever (Point-3)	The Additional 50% space in the Junction Box shall be utilised by SMC to accommodate any future requirements under other projects.	The Additional 50% space in the Junction Box shall be utilized by SMC to accommodate any future requirements <b>(i.e 8 port or higher Switches for "Connected Surat project" etc)</b> under other projects.
8	5.5.4	36	Public Address System. (Point-1)	The System Integrator shall install IP based Public Address System as part of the information dissemination system at 276 locations in the city. These systems shall be deployed at identified junction to make public interest announcements. The system deployed shall be IP based and have the capability to be managed and controlled from the TCC.	The System Integrator shall install IP based Public Address System as part of the information dissemination system at <b>267 locations (i.e at all junctions)</b> in the city. These systems shall be deployed at identified junction to make public interest announcements. The system deployed shall be IP based and have the capability to be managed and controlled from the TCC.
9	5.5.5	37	Speed Violation Detection System. (Point-1)	The SI shall install the Speed Violation Detection Systems at 18 locations across the city. At the time of BoQ finalization SI shall also survey the location of exiting cameras and suggest if there are overlapping of locations mentioned in the RFP. This system shall capture the infractions of speed violations at these locations.	The SI shall install the Speed Violation Detection Systems at <b>15 locations</b> across the city. At the time of BoQ finalization SI shall also survey the location of exiting cameras and suggest if there are overlapping of locations mentioned in the RFP. This system shall capture the infractions of speed violations at these locations.
10	5.5.7	38	Traffic Surveillance System.	The SI shall install Traffic Surveillance Cameras for traffic monitoring and management at 49 junctions across the city. SI shall also survey the location of exiting cameras and	The SI shall install Traffic Surveillance Cameras for traffic monitoring and management at <b>50 junctions</b> across the city. SI shall also survey the location of



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
				suggest if there are overlapping of locations mentioned in the RFP.	exiting cameras and suggest if there are overlapping of locations mentioned in the RFP.
11	5.5.8	39	ANPR Cameras. (Point-1)	The SI shall install the ANPR Cameras at 12 traffic junctions across the city. SI shall also survey the location of exiting cameras and suggest if there are overlapping of locations mentioned in the RFP. This system shall automatically capture the license number plate of the vehicle at these junctions.	The SI shall install the ANPR Cameras at 17 traffic junctions across the city. SI shall also survey the location of exiting cameras and suggest if there are overlapping of locations mentioned in the RFP. This system shall automatically capture the license number plate of the vehicle at these junctions.
12	5.6	40	Design, Supply, Installation and Commissioning of Network & Backbone Connectivity for ITCS (Point-6)	The System Integrator shall provision for an additional 24 Ports on the network field switch (SI may consider an additional switch if required) being designed for the ITCS requirement. These additional ports shall be utilised by SMC, SSDCL for any of its future projects	This clause is deleted. However, junction box should have the Additional 50% space in the Junction Box shall be utilized by SMC to accommodate any future requirements (i.e 8 port or higher Switches for "Connected Surat project" etc) under other project
13	5.9	45	Capacity Building and Training (Point-1)	Functional Training: This training would focus on the use of the software of the various ITCS components at Traffic Command Center, so that the users are aware of all the operations of the ITCS and are able to implement the overall process defined by the SMC/SSDCL for optimum use of the system. Broad training requirement defined for the purpose of calculation of effort is as follows: a. Training program of 1 batch (of 20 personnel) of 2 days every 2 months b. Expected training time of 24 hours (3 days of 8 hours each)	Clause "b. Expected training time of 24 hours (3 days of 8 hours each)" is removed from the RFP
14	5.13	49	Operations and Maintenance for a period of 5 years.	Success of the Project would lie on how professionally and methodically the entire Project is managed once the implementation is completed. From the System Integrator perspective too this is a critical phase since the quarterly payments are linked to the SLA's in the post implementation phases. System Integrator thus is required to depute a dedicated team of professionals to manage the Project and ensure adherence to the required SLAs. SI shall provide operations and maintenance services for the software, hardware and other IT and Non-IT infrastructure installed as part of ITCS project for a period of 5 years i.e. 1 year warranty & 4 years of comprehensive AMC.	Success of the Project would lie on how professionally and methodically the entire Project is managed once the implementation is completed. From the System Integrator perspective too this is a critical phase since the quarterly payments are linked to the SLA's in the post implementation phases. System Integrator thus is required to depute a dedicated team of professionals to manage the Project and ensure adherence to the required SLAs. SI shall provide operations and maintenance services for the software, hardware and other IT and Non-IT infrastructure installed as part of ITCS project for a period of 5 years i.e. 1 year warranty & 4 years of comprehensive AMC. Warranty period of the product supplied under ITCS project i.e hardware,



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
					software, IT/Non-IT etc., will be considered after issue of last request order to the SI & entire ITCS system will gets operational
15	5.13.1	50	Project Management & Facilities Management Services		Please refer Annexure XI of the Addendum & Corrigendum 3 for the amendment.
16	5.15	55	Others (Point-2).	SI will have to carry his own four-wheeler and a ladder of 15 feet length for carry out implementation and maintenance work (including transportation of items required for Project) during the Contract Period. All the expenses pertaining to four wheeler such as driver's expense, fuel, lubricants, maintenance, etc, will have to be borne by the SI.	SI will have to carry his own four-wheeler and a ladder of 15 feet length for carry out implementation and maintenance work (including transportation of items required for Project) during the Contract Period. All the expenses pertaining to four wheeler such as driver's expense, fuel, lubricants, maintenance etc., will have to be borne by the SI. The SI will have to keep minimum 1 number of loaded 4 wheeler for maintenance & minimum 1 number of 4 wheeler for supervision. SMC/SSCDL may ask bidder to arrange additional vehicle if required. The vehicle & related accessories should follow RTO norms of Government of Gujarat.
17	7.7	95	List of Location for Traffic Surveillance Cameras.	List of locations for Traffic Violation Cameras System.	List of locations for Traffic Surveillance Cameras System.
18	8.1.1	98	Traffic Signal Controller (point-5)	The controller shall provide a real time clock (RTC) with battery backup that set and update the time, date and day of the week from the GPS. The RTC shall have minimum of 10 years battery backup with maximum time tolerance of 10 sec per day.	The controller shall provide a real time clock (RTC) with battery backup that set and update the time, date and day of the week from the GPS. The RTC shall have minimum of 10 years battery backup with maximum time tolerance of +/- 2 sec per day.
19	8.1.2	105	Camera based Vehicle Detector (Point-2)	The detector shall be able to count vehicles in non-lane based mixed traffic flow conditions and differentiate between different vehicle types (two-wheeler, three-wheeler, car, HGV). The accuracy of counts shall be bigger than 90% over all light and weather conditions. The contractor shall clearly specify how this is accomplished.	The detector shall be able to count vehicles in non-lane based mixed traffic flow conditions. The accuracy of counts shall be bigger than 90% over all light and weather conditions. The contractor shall clearly specify how this is accomplished.
20	8.2	110	Functional Requirements of the Red Light Violation Detection System (Point 5b)	It should print the photograph of violations captured by the outstation system which would include a wider view covering the violating vehicle with its surrounding and a closer view indicating readable registration number plate patch of the violating vehicle along with all data as per clause 4.	It should generate the photograph of violations captured by the outstation system which include a wider view covering the violating vehicle with its surrounding and a closer view indicating readable registration number plate patch of the violating vehicle or its web link on notices for court evidence.



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
21	8.2	111	Functional Requirements of the Red Light Violation Detection System (Point 5f)	The automatic number plate recognition Software will be part of the supplied system, Success rate of ANPR will be taken as 75% or better during the day time and 60% % or better during the night time with a standard number plate.	The automatic number plate recognition Software will be part of the supplied system, Success rate of ANPR will be taken as <b>80% or better during the day time and 60%</b> or better during the night time with a standard number plate.
22	8.2	113	Functional Requirements of the Red Light Violation Detection System (Point 5v)	Image should have a header/footer depicting the information about the site IP and violation details like date, time, equipment ID, location ID, Unique ID of each violation, lane number, Regn. Number of violating vehicle and actual violation of violating vehicle etc. so that the complete lane wise junction behavior is recorded including (Speed of violating vehicle, Signal Jumping, Stop Line Violation,	Image should have a header/footer depicting the information about the site IP and violation details like date, time, equipment ID, location ID, Unique ID of each violation, lane number, Regn. Number of violating vehicle and actual violation of violating vehicle etc. so that the complete lane wise junction behaviour is recorded including <b>(Red Light violation and Stop Line Violation)</b>
23	8.3	115	Functional Requirements of the Speed Violation Detection System (Point-2a)	Speed measurement may be made by using non-intrusive technology such as Radar/sensor/camera/virtual based or any other appropriate certified technology. CE and homologation certificate from Ministry of Traffic or equivalent department from respective country of origin, document authenticated by Indian Embassy (to authenticate that systems are legalized and tested for infractions to avoid legal issues)". Certifications shall be provided for the complete system and not individual components like laser / radar etc.	Speed measurement may be made by using non-intrusive technology such as Radar/sensor/camera/virtual based or any other appropriate certified technology. CE and homologation certificate from Ministry of Traffic or equivalent department from respective country of origin, document authenticated by Indian Embassy (to authenticate that systems are legalized and tested for infractions to avoid legal issues) <b>or Certificate from internationally accredited metrology laboratories (approved for speed calibration) is acceptable</b>
24	8.3	117	Functional Requirements of the Speed Violation Detection System (Point-5f)	The automatic number plate recognition Software may be part of the supplied system, or can be provided separately as add on module to be integrated with violation detection. a.) Success rate of ANPR will be taken as 75% or better during the day time and 60%% or better during the night time on standard number plates.	The automatic number plate recognition Software may be part of the supplied system, or can be provided separately as add on module to be integrated with violation detection. a.) Success rate of ANPR will be taken <b>as 80% or better during the day time and 60%</b> or better during the night time on standard number plates.
25	8.3	120	Functional Requirements of the Speed Violation	Image should have a header and footer depicting the information about the site IP and violation details like viz. date, time, equipment ID, location ID, Unique ID of each violation, lane number, Regn. Number of violating vehicle	Image should have a header and footer depicting the information about the site IP and violation details like viz. date, time, equipment ID, location ID, Unique ID of





Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
			Detection System (Point 5x)	and actual violation of violating vehicle etc. so that the complete lane wise junction behavior is recorded viz. (Speed of violating vehicle, notified speed limit, Signal Jumping, Stop Line Violation, Speed Violation with Registration Number Plate Recognition facility. Number plate of cars, buses/HTVs should be readable automatically by the software/interface. There should be user interface for simultaneous manual authentication / correction and saving as well.	each violation, lane number, Regn. Number of violating vehicle and actual violation of violating vehicle etc. so that the complete lane wise junction behaviour is recorded viz. (Speed of violating vehicle, notified speed limit, Speed Violation with Registration Number Plate Recognition facility. Number plate of cars, buses/HTVs should be readable automatically by the software/interface. There should be user interface for simultaneous manual authentication / correction and saving as well
26	8.4	125	Functional Requirements of the Mid-Block Variable Message Signage System (Point-3b)	Remote Diagnostics to allow identifying reason of failure up to the level of failed individual LED.	Remote Diagnostics to allow identifying failure up to the level of failed individual LED.
27	8.6.3	128	Role Based Access to the Entire System (Point-3)	Biometric standardized coupled with login name & password should be enabled to ensure that only the concerned personnel are able to login into the system	The system should be with login name & password enabled to ensure that only the concerned personnel are able to login into the system
28	8.6.4	128	Storage/Recording Requirements. New Clause added.	It is proposed that the storage solution shall be modular enough to ensure compliance to the changes in storage / recording policy, to be evolved upon initial deployment of the system. The following storage requirements shall be fulfilled by the SI as scope for the project: a) There will be DC at TCC b) 30 days of storage for all traffic surveillance camera feeds c) Data on storage would be over-written automatically by newer data after the stipulated time period. If some data is flagged by police personnel (or by designated personnel) as important data / evidence data due to some reporting of crime or accident in the area or due to court order or due to suspicious activity, it would need to be stored for longer duration, as per requirements. Surat Traffic Police would analyze such flagged data every 3months to take such decisions for preservation of the flagged data beyond 90 days. d) Full audit trail of reports to be maintained for 90 days. Please refer <b>Annexure II</b> of this document of Tender for specifications for storage.	It is proposed that the storage solution shall be modular enough to ensure compliance to the changes in storage / recording policy, to be evolved upon initial deployment of the system. The following storage requirements shall be fulfilled by the SI as scope for the project: a) There will be DC at TCC b) 30 days storage of all the traffic surveillance camera feeds to be stored at Data Centre and Flagged data (critical incidents) will be stored for approximately 90 days, permanent storage envisaged on secondary/backup storage c) 90 days storage for all traffic enforcement systems including RLVD, Speed Violation



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
					<p>Detection, Traffic violation cameras and ANPR camera at Data Centre.</p> <p>d) 365 days storage of traffic junction data for ATCS at Data Centre and Flagged data will be stored for approximately 5 years.</p> <p>e) Above systems except ATCS are required to be stored on Primary storage for 7 days &amp; on Secondary Storage for remaining days respectively at Data Centres.</p> <p>f) For ATCS, Primary storage will be for 90 days and Secondary Storage for 275 days. Back up storage for 5 Years approximately.</p> <p>g) Data on storage would be over-written automatically by newer data after the stipulated time period. If some data is flagged by police personnel (or by designated personnel) as important data / evidence data due to some reporting of crime or accident in the area or due to court order or due to suspicious activity, it would need to be stored for longer duration, as per requirements. Surat Traffic Police would analyse such flagged data every 3months to take such decisions for preservation of the flagged data beyond 90 days.</p> <p>h) Full audit trail of reports to be maintained for 90 days.</p> <p>i) Bidder is expected to carry out the storage requirement estimation and supply as per the solution proposed.</p>



Sr. No.	Section	Page No.	Tender Reference	Existing Clause			Amended/New Clause		
							Please refer Annexure IX of Addendum & Corrigendum for minimum storage required.		
29	8.11	137	Adaptive Traffic Control- Traffic Light Aspects	#	Description	Bidder Compliance(Yes/No)	#	Description	Bidder Compliance(Yes/No)
				e	Should be Intertek/ETL/EN/IRC certified		e	Should be Intertek/ETL/EN certified	
				f	All units operate at voltage of 230Vac * 10% and frequency 50*5Hz		f	All units operate at voltage of 230Vac +/- 10% and frequency 50 +/-5Hz	
							g	New Clause Added: LED shall be single source narrow beam type with clear lens & Luminance uniformity of 1:15	
							h	New Clause Added: Phantom Class 5 or equivalent. IP Rating: IP65	
				2	<b>LED aspects:</b>		2	<b>LED aspects:</b>	
				a	Red, Amber, Green-Full (300 mm diameter) : Hi Flux		a	Red, Amber, Green-Full (300 mm diameter) : Hi Flux	
				b	Red, Amber, Green-arrow (300 mm diameter): Hi flux		b	Green-arrow, BRT: Red & Green (300 mm diameter): Hi flux	
				c	Red, Green-Pedestrian (300 mm diameter):Hi Flux and Hi Brite		c	The Clause stands Removed from the RFP Vol-2	



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause																														
				<table border="1"> <tr> <td>d</td> <td>Animated Pedestrian-Red and Green Animated c/w countdown (200 mm) Hi Brite with diffusions</td> </tr> <tr> <td><b>4</b></td> <td><b>LED Retrofit Specifications:</b></td> </tr> <tr> <td>a</td> <td>Power supply:230 Vac *10% and frequency 50*5Hz</td> </tr> <tr> <td>b</td> <td>Standards: EN 12368 complaint</td> </tr> <tr> <td>i</td> <td>Minimum Luminous Intensity (measured at intensity point)(nm): Red 250</td> </tr> <tr> <td>j</td> <td>Amber 250</td> </tr> <tr> <td>k</td> <td>Green 250</td> </tr> </table>	d	Animated Pedestrian-Red and Green Animated c/w countdown (200 mm) Hi Brite with diffusions	<b>4</b>	<b>LED Retrofit Specifications:</b>	a	Power supply:230 Vac *10% and frequency 50*5Hz	b	Standards: EN 12368 complaint	i	Minimum Luminous Intensity (measured at intensity point)(nm): Red 250	j	Amber 250	k	Green 250	<table border="1"> <tr> <td><b>d</b></td> <td><b>Animated Pedestrian-Red and Green Animated c/w countdown (300 mm) Hi Brite with diffusions</b></td> </tr> <tr> <td><b>4</b></td> <td><b>LED Retrofit Specifications:</b></td> </tr> <tr> <td>a</td> <td>Power supply:230 Vac +/- 10% and frequency 50 +/- 5Hz</td> </tr> <tr> <td>b</td> <td>Standards: EN 12368 Certified</td> </tr> <tr> <td>i</td> <td>Minimum Luminous Intensity (measured at intensity point)(cd): Red 400</td> </tr> <tr> <td>j</td> <td>Amber 400</td> </tr> <tr> <td>k</td> <td>Green 400</td> </tr> <tr> <td><b>o</b></td> <td><b>New Clause Added: Complete LED Aspect Warranty: 5 Years</b></td> </tr> </table>	<b>d</b>	<b>Animated Pedestrian-Red and Green Animated c/w countdown (300 mm) Hi Brite with diffusions</b>	<b>4</b>	<b>LED Retrofit Specifications:</b>	a	Power supply:230 Vac +/- 10% and frequency 50 +/- 5Hz	b	Standards: EN 12368 Certified	i	Minimum Luminous Intensity (measured at intensity point)(cd): Red 400	j	Amber 400	k	Green 400	<b>o</b>	<b>New Clause Added: Complete LED Aspect Warranty: 5 Years</b>
d	Animated Pedestrian-Red and Green Animated c/w countdown (200 mm) Hi Brite with diffusions																																		
<b>4</b>	<b>LED Retrofit Specifications:</b>																																		
a	Power supply:230 Vac *10% and frequency 50*5Hz																																		
b	Standards: EN 12368 complaint																																		
i	Minimum Luminous Intensity (measured at intensity point)(nm): Red 250																																		
j	Amber 250																																		
k	Green 250																																		
<b>d</b>	<b>Animated Pedestrian-Red and Green Animated c/w countdown (300 mm) Hi Brite with diffusions</b>																																		
<b>4</b>	<b>LED Retrofit Specifications:</b>																																		
a	Power supply:230 Vac +/- 10% and frequency 50 +/- 5Hz																																		
b	Standards: EN 12368 Certified																																		
i	Minimum Luminous Intensity (measured at intensity point)(cd): Red 400																																		
j	Amber 400																																		
k	Green 400																																		
<b>o</b>	<b>New Clause Added: Complete LED Aspect Warranty: 5 Years</b>																																		
<b>30</b>	8.12	140	Red Light Violation Detection Systems. (Point-2n: Protocol)	IPV4, IPV6, HTTP, HTTPS, FTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, QoS, ONVIF Profile S	IPV4, IPV6, HTTP, HTTPS, <b>FTP/SMTp</b> , RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, QoS, ONVIF Profile S																														
<b>31</b>	8.12	140	Red Light Violation Detection Systems. (Point-3d: Protocol)	The system should be capable of working in ambient temperature range of -5°C to 60°C.	The system should be capable of working in ambient temperature range of <b>0°C to 50°C.</b>																														
<b>32</b>	8.13	143	Speed Violation Detection System (Point-14: Protocol)	IPV4, IPV6, HTTP, HTTPS, FTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, QoS, ONVIF Profile S	IPV4, IPV6, HTTP, HTTPS, <b>FTP/SMTp</b> , RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, NTP, QoS, ONVIF Profile S																														
<b>33</b>	8.13	145	Speed Violation Detection System (Point-3d)	The system should be capable of working in ambient temperature range of -50 degree C to 60 degree C	The system should be capable of working in ambient temperature range <b>of 0 degree C to 50 degree C</b>																														



Sr. No.	Section	Page No.	Tender Reference	Existing Clause				Amended/New Clause			
				#	Parameter	Description	Bidder Compliance (Yes/No)	#	Parameter	Description	Bidder Compliance (Yes/No)
34	8.14	146	Speed Control Signs	1		The system shall use be based Light Emitting Diodes (LEDs)/high gain trans-reflective Liquid Crystal Displays (LCDs) for outdoor ambient sunlight		1		The system shall use be based Light Emitting Diodes (LEDs)	
				7	Pixel Pitch	25 mm		7	Pixel Pitch	12 mm	
				8	Input voltage	24 volts DC		8	Input voltage	230 VAC	
				12	Operating Temperature	-5° C to 65° C or better		12	Operating Temperature	0° C to 50° C or better	
								The Clause Stands removed from the scope of work.			
35	8.15	150	Variable Message Sign Boards 1					The Clause Stands removed from the scope of work.			
36	8.16	154, 155	Variable Message Sign Boards 2(Point no-7, 16, 21, 22a)	#	Parameter	Description	Bidder Compliance	#	Parameter	Description	Bidder Compliance
				7	Pixel Pitch	20mm or better		7	Pixel Pitch	12 mm or better	



Sr. No.	Section	Page No.	Tender Reference	Existing Clause		Amended/New Clause					
				16	<b>Ambient Operating Temperature</b>	The system should be capable of working in ambient temperature range of -5°C to 55°C.		16	<b>Ambient Operating Temperature</b>	The system should be capable of working in ambient temperature range of 0°C to 55°C.	
				21	Material for VMS frame	at least 2mm aluminum or non-corrosive, water resistant or better		21	Material for VMS frame	at least 2mm aluminum or Non-corrosive, water resistant or better. Frame of the VMS should be black & Powder coated.	
				22 (a)	Mounting structure shall use minimum 6Mtrs. High hexagonal/octagonal MS Pole or suitable structure with 5.5 mtr. Minimum vertical clearance under the VMS sign from the Road surface.			22 (a)	Mounting structure shall use minimum 6Mtrs. High Cylindrical GI Pole (Class B) or suitable structure with 5.5 mtr. Minimum vertical clearance under the VMS sign from the Road surface.		



Sr. No.	Section	Page No.	Tender Reference	Existing Clause				Amended/New Clause			
				#	Parameters	Minimum Specifications or better	or Bidder Compliance (Yes/No)	#	Parameters	Minimum Specifications or better	or Bidder Compliance (Yes/No)
37	8.17	156	Traffic Surveillance Cameras. (Point-9, 11, 17)	9	PTZ	Pan: 360° endless/continuous, 0.2 to 300°/s (auto), 0.2 to 100°/s (Manual) Tilt: 90°, 0.2 to 100°/s (Auto), 0.2 to 40°/s (Manual) 20x optical zoom and 10x digital zoom 64 preset positions Auto-Tracking Pre-set tour		9	PTZ	Pan: 360° endless/continuous, 0.2 to 300°/s (auto), 0.2 to 100°/s (Manual) Tilt: 90°, 0.2 to 100°/s (Auto), 0.2 to 40°/s (Manual) <b>30x optical zoom</b> and 10x digital zoom 64 preset positions Auto-Tracking Pre-set tour	
				11	Protocol	HTTP, HTTPS, FTP, NTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, QoS, IPV4, IPV6		11	Protocol	HTTP, HTTPS, <b>FTP/SMTP</b> , <b>NTP</b> , RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, QoS, IPV4, IPV6	
				17	IR	Built in		17	IR	<b>Internal/External. IR range should be 100 mtr or better</b>	
38	8.18	158	Fixed Box Cameras for Traffic Violation and ANPR system (Point-14)	IPV4, IPV6, HTTP, HTTPS, FTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, QoS, ONVIF Profile S				IPV4, IPV6, HTTP, HTTPS, <b>FTP/SMTP</b> , <b>NTP</b> , RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, QoS, ONVIF Profile S			



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause																																				
39	8.19	159	IR Illuminators	The infrared illuminators are to be used in conjunction with the Fix Box / PTZ cameras specified above to enhance the night vision.	The infrared illuminators are to be used in conjunction with the <b>Fix Box cameras</b> specified above to enhance the night vision.																																				
40	8.22	161	Field Junction Box	<table border="1"> <thead> <tr> <th>#</th> <th>Parameter</th> <th>Minimum Specifications</th> <th>Bidder Compliance (Yes/No)</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>Cabinet Material</td> <td>GI</td> <td></td> </tr> <tr> <td>3</td> <td>Material Thickness</td> <td>Min 1.2mm</td> <td></td> </tr> </tbody> </table>	#	Parameter	Minimum Specifications	Bidder Compliance (Yes/No)	2	Cabinet Material	GI		3	Material Thickness	Min 1.2mm		<table border="1"> <thead> <tr> <th>#</th> <th>Parameter</th> <th>Minimum Specifications</th> <th>Bidder Compliance (Yes/No)</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>Cabinet Material</td> <td>GI with <b>powder coated</b></td> <td></td> </tr> <tr> <td>3</td> <td>Material Thickness</td> <td><b>Min 2mm</b></td> <td></td> </tr> </tbody> </table>	#	Parameter	Minimum Specifications	Bidder Compliance (Yes/No)	2	Cabinet Material	GI with <b>powder coated</b>		3	Material Thickness	<b>Min 2mm</b>													
				#	Parameter	Minimum Specifications	Bidder Compliance (Yes/No)																																		
2	Cabinet Material	GI																																							
3	Material Thickness	Min 1.2mm																																							
#	Parameter	Minimum Specifications	Bidder Compliance (Yes/No)																																						
2	Cabinet Material	GI with <b>powder coated</b>																																							
3	Material Thickness	<b>Min 2mm</b>																																							
41	8.23	162	Poles for Traffic Signals (Cables-No. of cores)	<table border="1"> <thead> <tr> <th>Sr. No</th> <th>Component</th> <th></th> </tr> </thead> <tbody> <tr> <td colspan="3"><b>Pole</b></td> </tr> <tr> <td>1</td> <td>Material</td> <td>GI Class 'B' pipe</td> </tr> <tr> <td>2</td> <td>Paint</td> <td>Pole painted with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or otherwise as required by architect and in addition bituminous painting for the bottom 1.5 m portion of pole.</td> </tr> <tr> <td colspan="3"><b>Cables</b></td> </tr> <tr> <td>1</td> <td>No's of core</td> <td>7 or 14 as specified</td> </tr> </tbody> </table>	Sr. No	Component		<b>Pole</b>			1	Material	GI Class 'B' pipe	2	Paint	Pole painted with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or otherwise as required by architect and in addition bituminous painting for the bottom 1.5 m portion of pole.	<b>Cables</b>			1	No's of core	7 or 14 as specified	<table border="1"> <thead> <tr> <th>Sr. No</th> <th>Component</th> <th></th> </tr> </thead> <tbody> <tr> <td colspan="3"><b>Pole</b></td> </tr> <tr> <td>1</td> <td>Material</td> <td><b>Dimension as per drawing.</b> GI Class 'B' pipe</td> </tr> <tr> <td>2</td> <td>Paint</td> <td>Pole painted with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or otherwise as required by architect and in addition bituminous painting for the bottom 1.5 m portion of pole.</td> </tr> <tr> <td colspan="3"><b>Cables</b></td> </tr> <tr> <td>1</td> <td>No's of core</td> <td><b>7 and 14 core 1.5 sq. mm.</b> <b>3 Core 2.5 sq. mm.</b></td> </tr> </tbody> </table>	Sr. No	Component		<b>Pole</b>			1	Material	<b>Dimension as per drawing.</b> GI Class 'B' pipe	2	Paint	Pole painted with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or otherwise as required by architect and in addition bituminous painting for the bottom 1.5 m portion of pole.	<b>Cables</b>			1	No's of core	<b>7 and 14 core 1.5 sq. mm.</b> <b>3 Core 2.5 sq. mm.</b>
Sr. No	Component																																								
<b>Pole</b>																																									
1	Material	GI Class 'B' pipe																																							
2	Paint	Pole painted with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or otherwise as required by architect and in addition bituminous painting for the bottom 1.5 m portion of pole.																																							
<b>Cables</b>																																									
1	No's of core	7 or 14 as specified																																							
Sr. No	Component																																								
<b>Pole</b>																																									
1	Material	<b>Dimension as per drawing.</b> GI Class 'B' pipe																																							
2	Paint	Pole painted with two coats of zinc chromate primer and two coats of golden yellow Asian apostolate paint or otherwise as required by architect and in addition bituminous painting for the bottom 1.5 m portion of pole.																																							
<b>Cables</b>																																									
1	No's of core	<b>7 and 14 core 1.5 sq. mm.</b> <b>3 Core 2.5 sq. mm.</b>																																							





Sr. No.	Section	Page No.	Tender Reference	Existing Clause		Amended/New Clause	
				2	Materials PVC insulated and PVC sheathed armored cable with copper conductor of suitable size as specified in BOQ.	2	Materials PVC insulated and PVC sheathed armored cable with copper conductor of suitable size as specified in BOQ.
				3	Certification SI Marked	3	Certification ISI Marked
				4	Standards Indian Electricity Act and Rules	4	Standards Indian Electricity Act and Rules
				a	IS:1554 PVC insulated electric cables (heavy duty)	a	IS:1554 PVC insulated electric cables (heavy duty)
				b	IS: 1753 Aluminium conductors for insulated cables	b	Clause Removed
				c	IS: 3961 Recommended current ratings for cables.	c	Clause Removed
				d	IS: 8130 Aluminium conductors for insulated cables	d	Clause Removed



Sr. No.	Section	Page No.	Tender Reference	Existing Clause				Amended/New Clause			
				#	Parameters	Minimum Specifications or better	Bidder Compliance (Yes/No)	#	Parameters	Minimum Specifications or better	Bidder Compliance (Yes/No)
42	8.25	165	Layer 3 Gigabit Manageable Switch. (To be used for DC/Aggregation Layer 3 Switch). Point-1	1	Ports	<ul style="list-style-type: none"> <li>24 or 48 (as per requirements) 10/100/1000 Base-TX Ethernet ports and extra 2 nos of Base-SX/LX ports</li> <li>All ports can auto-negotiate between 10Mbps/ 100Mbps/ 1000Mbps, half-duplex or full duplex and flow control for half-duplex ports.</li> </ul>		1	Ports	<ul style="list-style-type: none"> <li>24 or 48 (as per requirements) 10/100/1000 Base-TX Ethernet ports and extra 2 or 4 nos of 10G Base SX/LX/LR ports as per network solution offered.</li> <li>All ports can auto-negotiate between 10Mbps/ 100Mbps/ 1000Mbps, half-duplex or full duplex and flow control for half-duplex ports.</li> </ul>	
43	8.26	167	Data Center TOR (Top of the Rack) Switch. Point-13 (Ports)	24 or 48 (as per density required) 1G/ 10G Ethernet ports (as per internal connection requirements) and extra 2 numbers of Uplink ports (40GE)				48-ports 10G SFP+ Top of Rack Core Switch with at least 6 X 40GbE QSFP+ uplinks with LR transceiver module.			
44	8.26	167	Data Center TOR (Top of the Rack) Switch. New Parameter added					New parameter added: Switch should support FCoE & IPv6 from day one			
45	8.32	178	Storage. <b>Primary Storage (Point-2, Storage)</b>	<ul style="list-style-type: none"> <li>Storage Capacity should be minimum 10 TB (usable, after configuring in offered RAID configuration)</li> <li>RAID solution offered must protect against double disc failure.</li> <li>Disks should be preferably minimum of 1 TB capacity, 10k SAS drives</li> </ul>				<ul style="list-style-type: none"> <li>Storage Capacity should be minimum <b>50 TB</b> (usable, after configuring in offered RAID configuration)</li> <li>RAID solution offered must protect against double disc failure.</li> </ul>			



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause						
				<ul style="list-style-type: none"> <li>To store all types of data (Data, Voice, Images, Video, etc)</li> </ul> Storage system capable of scaling vertically and horizontally	<ul style="list-style-type: none"> <li>Disks should be preferably minimum of 3 TB capacity</li> <li>To store all types of data (Data, Voice, Images, Video, etc)</li> </ul> Storage system capable of scaling vertically and horizontally						
46	8		New Clause Added with Storage: <b>Secondary Storage</b>		<table border="1"> <thead> <tr> <th data-bbox="1444 561 1576 671">Parameter</th> <th data-bbox="1576 561 2045 671">Minimum Specifications</th> </tr> </thead> <tbody> <tr> <td data-bbox="1444 671 1576 1102">1 Solution/Type</td> <td data-bbox="1576 671 2045 1102"> <ul style="list-style-type: none"> <li>Secondary Storage (Archival/Backup) can be on any media such as Tapes, Disks, Disk systems, etc. or its combination along with all associate software. (so as to arrive at lower cost per TB)</li> <li>Minimum 285 TB usable as secondary storage</li> <li>May or may not use de-duplication technology</li> <li>Compatible with primary storage</li> <li>Must use latest stable technology platform, with support available for next 5 years.</li> </ul> </td> </tr> <tr> <td data-bbox="1444 1102 1576 1415">2 Backup Size</td> <td data-bbox="1576 1102 2045 1415">                     To store data as required, to meet the archival requirement for different type of data/information                     <ul style="list-style-type: none"> <li>23 days of storage for traffic surveillance camera feeds</li> <li>83 days of storage for traffic enforcement systems</li> <li>275 days of storage for ATCS systems</li> </ul> </td> </tr> </tbody> </table>	Parameter	Minimum Specifications	1 Solution/Type	<ul style="list-style-type: none"> <li>Secondary Storage (Archival/Backup) can be on any media such as Tapes, Disks, Disk systems, etc. or its combination along with all associate software. (so as to arrive at lower cost per TB)</li> <li>Minimum 285 TB usable as secondary storage</li> <li>May or may not use de-duplication technology</li> <li>Compatible with primary storage</li> <li>Must use latest stable technology platform, with support available for next 5 years.</li> </ul>	2 Backup Size	To store data as required, to meet the archival requirement for different type of data/information <ul style="list-style-type: none"> <li>23 days of storage for traffic surveillance camera feeds</li> <li>83 days of storage for traffic enforcement systems</li> <li>275 days of storage for ATCS systems</li> </ul>
Parameter	Minimum Specifications										
1 Solution/Type	<ul style="list-style-type: none"> <li>Secondary Storage (Archival/Backup) can be on any media such as Tapes, Disks, Disk systems, etc. or its combination along with all associate software. (so as to arrive at lower cost per TB)</li> <li>Minimum 285 TB usable as secondary storage</li> <li>May or may not use de-duplication technology</li> <li>Compatible with primary storage</li> <li>Must use latest stable technology platform, with support available for next 5 years.</li> </ul>										
2 Backup Size	To store data as required, to meet the archival requirement for different type of data/information <ul style="list-style-type: none"> <li>23 days of storage for traffic surveillance camera feeds</li> <li>83 days of storage for traffic enforcement systems</li> <li>275 days of storage for ATCS systems</li> </ul>										



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause															
					<table border="1"> <tr> <td>3</td> <td>Hardware Platform</td> <td> <ul style="list-style-type: none"> <li>Rack mounted,</li> <li>Rack based Expansion shelves</li> </ul> </td> </tr> <tr> <td>4</td> <td>Software Platform</td> <td>Must include backup/archive application portfolio required</td> </tr> <tr> <td>5</td> <td>Retrieval time</td> <td>Retrieval time for any data stored on secondary storage should be max. 4 hours for critical data &amp; 8 hours for other data. This would be taken into account for SLA calculation. (Critical data means any data needing urgent attention by the Judicial System or by Police Dept. for investigation / terrorist treat perception).</td> </tr> </table>	3	Hardware Platform	<ul style="list-style-type: none"> <li>Rack mounted,</li> <li>Rack based Expansion shelves</li> </ul>	4	Software Platform	Must include backup/archive application portfolio required	5	Retrieval time	Retrieval time for any data stored on secondary storage should be max. 4 hours for critical data & 8 hours for other data. This would be taken into account for SLA calculation. (Critical data means any data needing urgent attention by the Judicial System or by Police Dept. for investigation / terrorist treat perception).						
3	Hardware Platform	<ul style="list-style-type: none"> <li>Rack mounted,</li> <li>Rack based Expansion shelves</li> </ul>																		
4	Software Platform	Must include backup/archive application portfolio required																		
5	Retrieval time	Retrieval time for any data stored on secondary storage should be max. 4 hours for critical data & 8 hours for other data. This would be taken into account for SLA calculation. (Critical data means any data needing urgent attention by the Judicial System or by Police Dept. for investigation / terrorist treat perception).																		
47	8.36	185	Fixed Dome Camera for Indoor Surveillance		Clause Removed: Fixed Dome Camera for indoor Surveillance is removed from the scope of work of the RFP.															
48	8.47	209	E Challan Handheld device. Motherboard, Point j (Protection Class	<table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Component</th> <th>Bidder Compliance (Yes/No)</th> </tr> </thead> <tbody> <tr> <td>j</td> <td>Protection class</td> <td>IP65</td> </tr> </tbody> </table>	Sr. No.	Component	Bidder Compliance (Yes/No)	j	Protection class	IP65	<table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Component</th> <th>Bidder Compliance (Yes/No)</th> </tr> </thead> <tbody> <tr> <td>j</td> <td>Protection class</td> <td>IP54</td> </tr> <tr> <td>g</td> <td>Enclosure</td> <td>Rugged</td> </tr> </tbody> </table>	Sr. No.	Component	Bidder Compliance (Yes/No)	j	Protection class	IP54	g	Enclosure	Rugged
Sr. No.	Component	Bidder Compliance (Yes/No)																		
j	Protection class	IP65																		
Sr. No.	Component	Bidder Compliance (Yes/No)																		
j	Protection class	IP54																		
g	Enclosure	Rugged																		
49	9.2	215	Wiring (Point-8)	All power sockets shall be piano type with associate's switch of same capacity. Switch and socket shall be enclosed in a M.S. sheet steel enclosure with the operating knob projecting. Entire assembly shall be suitable for wall mounting with Bakelite be connected on the live wire and neutrals of each circuit shall be continuous everywhere having no fuse or switch installed in the line excepting at the	Clause remains unchanged															



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
				main panels and boards. Each power plug shall be connected to each separate and individual circuit unless specified otherwise. The power wiring shall be kept separate and distinct from lighting and fan wiring. Switch and socket for light and power shall be separate units and not combined one.	
50	9.3	215	Cable Work.	Cable ducts should be of such dimension that the cables laid in it do not touch one another. If found necessary the cable shall be fixed with clamps on the walls of the duct. Cables shall be laid on the walls/on the trays as required using suitable clamping/ fixing arrangement as required. Cables shall be neatly arranged on the trays in such manner that a criss-crossing is avoided and final take off to switch gear is easily facilitated.	Cable ducts should be of such dimension that the cables laid in it do not touch one another. If found necessary the cable shall be fixed with clamps on the walls of the duct. Cables shall be laid on the walls/on the trays as required using suitable clamping/ fixing arrangement as required. Cables shall be neatly arranged on the trays in such manner that a criss-crossing is avoided and final take off to switch gear is easily facilitated. <b>Cable shall be laid as per the IS standard</b>
51	9.4	216	Road Marking	The System Integrator shall provide and apply 2.50mm thick hot applied thermoplastic road marking of White/Yellow colour on bituminous/ concrete surface with fully automatic machines as per detailed plan of feasibility report and engineer in charge approval.	The System Integrator shall provide and apply 2.50mm thick hot applied thermoplastic road marking of White/Yellow colour on bituminous/ concrete surface with fully automatic machines as per detailed plan of feasibility report and engineer in charge approval. <b>SI shall responsible to paint the road markings in every 6 months or instructed by authority from SSCDL.</b>
52	10	227	Annexure IV-Common guidelines regarding compliance of systems/equipment (Point-18)	All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs). Police Department reserves the right to ask replacement of any hardware / software if it is not from a reputed brand and conforms to all the requirements specified in the tender documents.	All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs). <b>The Department reserves the right to ask replacement of any hardware / software if it is not conforms to all the requirements specified in the tender documents</b>
53	10	227	Annexure IV-Common guidelines regarding compliance of systems/equipment (Point-19)	All servers, active networking components (for edge level switches, please refer below for additional information), security equipment, storage systems and COTS Application (except C4i/Command and Control applications) proposed should be from OEMs who are amongst the top 5 for world-wide market share in terms of revenue as per IDC latest published quarterly report presence in the latest Magic Quadrant of Gartner. SI is expected to attach the report along with the Technical Bid.	All servers, active networking components ( <b>except for edge level switches</b> ), security equipment, storage systems and COTS Application (except C4i/Command and Control applications) proposed should be from OEMs who are amongst the top 5 for world-wide market share in terms of revenue as per IDC latest published quarterly report presence in the latest Magic Quadrant of Gartner. SI is expected to attach the report along with the Technical Bid
54			Additional Clause		<b>Bidder shall be responsible to file FIR in nearest Police Station for any theft or physical damage of product under ITCS Project (including cable &amp; accessories) due</b>



Sr. No.	Section	Page No.	Tender Reference	Existing Clause	Amended/New Clause
					to any unforeseen reason. The SI shall have to submit the copy of FIR to SSCDL/SMC within 7 days from the date of filing FIR.
55			Additional Clause		SI shall have to take approval from SSCDL/SMC for Schematic drawing of junction box or any fabrication work.
56			Additional Clause		Painting of pole shall be part of CAMC & SI shall have to do the same in every 2 year till the contract period. Cleaning of traffic signal aspect shall have to do in every 2 months till the contract period.
57			Additional Clause		Please refer Annexure IV of the Addendum & Corrigendum 3 for make & Model related detail of the existing system under "Surat safe city" project.
58			Additional Clause		Please refer Annexure V of the Addendum & Corrigendum 3 for the detail of existing E Challan software Platform
59			Additional Clause		Please refer Annexure VI of the Addendum & Corrigendum 3 for the detail of Existing intersection controller for traffic signal.
60			Additional Clause		Please refer Annexure VII of the Addendum & Corrigendum 3 for the functional scope of the countdown Timer.
61			Additional Clause		Please refer Annexure VIII of the Addendum & Corrigendum 3 for the Technical specifications of the countdown timer.
62			Additional Clause		Please refer Annexure IX of the Addendum & Corrigendum 3 for the detail of minimum data storage required under ITCS Project.
63			Additional Clause		Please refer Annexure X of the Addendum & Corrigendum 3 for minimum qualification for manpower.
64			Additional Clause		Please refer Annexure XII of the Addendum & Corrigendum 3 for Scope of Integration ITCS Component.
65			Additional Clause		Please refer Annexure XIII of the Addendum & Corrigendum 3 for the technical Compliance sheet for Display Screen required at each Zone Office.
66			Additional Clause		Please refer Annexure XIV of the Addendum & Corrigendum 3 for the technical compliance sheet for Fish Eye Camera.

**Annexure I: List of locations for Traffic Violation Cameras System**

#	Junction Name	No of Arms
1	Athwagate Circle	4
2	Udhana Darwaja	4
3	Kadiwala, Ring Road	4
4	Rokdiya Hanuman Char rasta	4
5	Kargil Chowk	3
6	Railway Station Yard	3
7	Rushab Petrol Pump Ringroad	3
8	Falsawadi Circle	3
9	Bapa Sitaram Chowk	4
10	Paras Chowkdi char rasta	4
11	Kamela Darwaja	4
12	Dhanmora Complex	4
13	Singapore Char Rasta	4
14	South Zone Office	3
15	Dakeshwar char rasta	4
16	Unn Char Rasta	4
17	Udhana Gham	3
18	Bhathena Nehar	3
19	Bharat Nagar	3

#	Junction Name	No of Arms
20	Kapodara Char Rasta	4
21	Mini Bazar	3
22	Hirabaug junction	4
23	Rachna Circle	3
24	CNG Pump	3
25	Nana Varchagham	4
26	New Bombay Market	3
27	Parvat patiya junction	5
28	Puna Patiya	4
29	Bhulka bhavan school junction	3
30	Navyug College	3
31	Subhash Nagar Garden	3



**Annexure II: List of locations for Traffic Surveillance Cameras System**

#	Junction Name	No of Arms
1	Daksheshwar mahadevmandir junction	3
2	Unn Naka Bus Stand	4
3	Dumas Resort 'Y' junction	3
4	VNSGU Gate junction	2
5	Unique Hospital junction	4
6	Swaminarayanmandir junction	4
7	Keshav Nagar Police Chowki /Model town junction	4
8	Ramchowk, Ghoddod Road	3
9	Palanpur Jakatnaka	4
10	Palanpur patiya	3
11	Prime Market, Adajan	3
12	PragatiWadi / Honey Park, Adajan	4
13	Hirabaug kapodra junction	5
14	Tadwadi junction	3
15	Star bazar junction	3
16	Y- junction UdhanaMagdalla road	3
17	Anurat Dwar, U.M. Road	4
18	Patrakar Colony Junction	3
19	Sita nagar chokdi	4



#	Junction Name	No of Arms
20	Dabholi char rasta	4
21	Gajera school junction	4
22	Kosad E.W.S Junction	4
23	Sumul Dairy Road, Under Alkapuri Bridge	4
24	Gandhiji Statue near State Bank HQ	3
25	Sabjail Tin Rasta Point / Chamunda Resturant	4
26	Falsawadi Circle / Golden Point Circle	3
27	Zampa Bazar SaliyaMarket	4
28	BombayMarket	3
29	Sargam Shopping Center	4
30	Lal Darwaja	4
31	Parvat patiya junction	5
32	Navjivan Restaurant (Recommended)	3



#	Junction Name	No of Arms
33	Ambedkar Statue Nr World Trade Center	4
34	Pran Nath Hospital	3
35	SingapuriWadi	4
36	Yarn Bazar	4
37	Kamal Gali	3
38	Madina Masjid Chowk	4
39	Soham Cicle	5
40	Kaddar Sanni Naad	4
41	Kamrej Char Rashta	4
42	Classic T Point	3
43	Chauta Bazar	2
44	Udhna Railway Station	3
45	Kapodra Chowpati	2



#	Junction Name	No of Arms
46	Sudama chowk, Amroli	4
47	Lajamani chowk, Amroli	3
48	Chaparbhata (Amroli)	4
49	Panas gaam entry gate Agri. University jn	3
50	Althan Char Rasta/Bredliner Circle	4

**Annexure III: List of locations for ANPR System**

#	Junction Name	No of Arms
1	Surat Railway Station	2
2	Sardar Bridge	6
3	Limbayat Mitthi Khadi	2
4	Adajan Circle	6
5	Hodi Bunglow Khadi Pool	3
6	Anuvrat Dwar-Canel Jn.	3
7	Sachin GIDC Char Rasta	4
8	Makkai Bridge	6
9	Bhagal Char Rasta	4
10	Katargam Char Rasta	3



#	Junction Name	No of Arms
11	Dabholi Char Rasta	4
12	Causway	1
13	Dabholi Bridge	1
14	Breadline Circle	4
15	Mora Bhagal Char Rasta	4
16	S K Nagar Chokdi	4
17	Archana School	3

**Annexure IV: Existing System detail for “Safe City Project”**

#	Description	Make	Model	Qty.
1	Fixed Camera	Verint	S5120	577
2	PTZ Camera	Verint	V5620	27
3	Fixed Camera	Kritikal		10
4	Video Management System	Verint	Nextiva	
5	Video wall	Delta	6778R8	18
6	Online UPS	Emerson	7400M (60KVA)	2
7	Server	Lenovo	HS22	20
8	Storage	IBM	DS 3500	1260TB



**Annexure V: Existing E Challan software platform detail**

#	E Challan Software Platform	Platform
1	E Challan Application	Developed in PHP 5.6, MySQL Server 5.6
2	Mobile Application	Android 4.1 and above
3	Web services	PHP

**Annexure VI: Existing Intersection Traffic Signal Controller**

**1. Technical Specification for Intersection Controller (Wireless) installed at BRTC Corridors (CDAC/WiTraC)**

#	Specifications
<b>1</b>	<b>General features</b>
a	32 bit Microcontroller based
b	Pole Mountable master & Slave controllers
c	Distributed architecture (1 master & 16 slave controllers)
d	Signal switching and feedback on wireless medium
e	Use unlicensed 2.4 GHz or 5.8GHz Band
f	GPS Enabled Real-time Clock (RTC)
g	Inbuilt GPS Module for Time synchronization
h	RTC with internal battery
i	Inbuilt 20X4 LED backlit LCD and 5X4 keypad interface
j	16 optically isolated solid state lamp driving output for master & slave
k	16 optically isolated Vehicle Detector inputs for master & 4 input for slave
l	PWM based programmable intensity control for signal lamps
m	Lamp monitoring for Green-Green Conflict, Open Circuit and Short Circuit
n	Error logs on Flash Memory



#	Specifications
o	Communication Interfaces
p	12 VDC Operated – Solar Power Compatible
<b>2</b>	<b>Modes of Operation</b>
a	Pre-timed
b	Vehicle Actuated
c	Semi-Actuated
d	ATCS
e	Combination Pre-Timed, Vehicle Actuated, Semi Actuated & ATCS modes in any order
f	Manual
g	Hurry Call
h	Forced Flash
<b>3</b>	<b>Extended Modes of Operation</b>
a	Cable Less Synchronization (Pre-Timed, Vehicle Actuated, Semi Actuated)
b	Remote Administration (Hurry Call, Forced Flash, Junction Off, RTC, Signal Time update)
c	Wireless Police Panel
<b>4</b>	<b>Signal Plans</b>
a	32 – Phases
b	32 – Stages
c	24 - Cycle Plans
d	20 - Day Plans
e	4 – Week Plans
f	20 – Special Day Plans
g	4 – Hurry Calls
h	Programmable All Red
i	Programmable Conflict Plan
j	Programmable Start Amber
k	Programmable Red Extension



#	Specifications
<b>5</b>	<b>Communication Interface</b>
a	Ethernet
b	Wireless ISM Band
c	USB
d	CAN
e	RS232
f	8 Auxiliary I/O interface
<b>6</b>	<b>Vehicle Detector/Sensor</b>
a	Camera based logic unit

**2. Technical Specification for Intersection Controller installed at NON-BRTC junctions (CMS/UCON)**

#	Parameter	Specifications
1	Processor	Microcontroller Based
2	No. of signal group	16 signal groups with each programmable as either vehicular or pedestrian group.
3	Group sequence	Vehicular: Green – Amber – Red Pedestrian: Green – Red Flash – Red Green – Green Flash – Red
4	No. of Phases	16
5	No of Signal Plans	16 Fixed Time/Cable Less Plans Flash Plan
6	No. of weekdays Plans	<ul style="list-style-type: none"> <li>• 4 Auxiliary Signal Plans</li> <li>• 7 Weekday</li> </ul>





#	Parameter	Specifications
		<ul style="list-style-type: none"> <li>4 Auxiliary weekday</li> </ul>
7	No. of signal plan switching in each weekday plan	32
8	Time Resolution	0.1 Seconds
9	Pedestrian wait outputs	16
10	Pedestrian Inputs	16
11	Modes & Operations	<ul style="list-style-type: none"> <li>Manual-Step or Manual- Stage</li> <li>Select Fixed time</li> <li>Hurry Call</li> <li>UTC – Links</li> <li>Flash</li> <li>Lamps – Off All Red</li> <li>Maintenance Mode</li> </ul>
12	In each phase, following features can be programmed:	Late Start Green / Early cut off Green / Late cut off green
13	Programmable Timings	
a	Cycle Time	0 ~ 255 Sec
b	Startup Flash	1 ~ 10 Sec
c	Startup Red	1 ~ 10 Sec
d	Minimum Amber Time	1 ~ 10 Sec
e	Minimum Green Time	1 ~ 30 Sec
f	Minimum All Red Time	1 ~ 10 Sec
g	Ped – Walk Time	1 ~ 99 Sec
h	Ped – Flash Time	1 ~ 30 Sec
i	Maximum Green	5 ~ 255 Sec
j	Gap, headway & Waste time	1 ~ 10 Sec



**Annexure VII: Functional Scope of Countdown Timer**

Countdown Timer shall be installed at each traffic junction under ITCS Project. The functional scope of the countdown timer as mentioned below shall be added as a new clause in section 8 of the RFP Volume-2

#	Description	Bidder Compliance (Yes, No)
1	Count Down Timer to be configured in Vehicular Mode.	
2	The Vehicular countdown timer should be dual colour, <ul style="list-style-type: none"> <li>• Red for Stop or STP</li> <li>• Green colour for Go</li> </ul>	
3	There should be alternate Red and Balance phase time for STOP or STP in Flashing	
4	Alternate Green and Balance Phase Time for Go in Flashing	

**Annexure VIII: Technical Specifications of Countdown Timer**

#	Parameters	Minimum Specifications or better	Bidder Compliance (Yes/No)
1	<b>CPU</b>	<b>Micro Controller</b>	
2	<b>Mechanical Specifications</b>		
a	Structural Material	Polycarbonate strengthened against UV rays	
b	Body Color	Light Grey/Black	
c	Dimensions	360mm x 370mm x 220mm	
3	<b>Display Specification</b>		
a	Lamp Diameter	300mm	
b	Digit Height	150 -165mm	
c	Display Type	Dual Coloured (Red & Green)	



#	Parameters	Minimum Specifications or better	Bidder Compliance (Yes/No)
d	No. of Digit	3	
<b>4</b>	<b>LED Specifications</b>		
a	LED Diameter	5mm LED	
b	Viewing Angle	30°	
c	LED Wave Length	630-640nm (Red), 505nm - 520nm (Blue-Green)	
d	LED Dice Material	AlInGap (Red), InGaN (Blue-Green)	
e	LED Warranty period	5 years	
<b>5</b>	<b>Technical Features</b>		
a	Power Consumption	20 - 30 Watt Per Lamp	
b	Input Power	85-260V AC, 50Hz	
c	Operating Temperature	-20 to + 60 °C	
d	Humidity	0% to 95% Relative Humidity	
e	Water & Dust Ingress	IP 65	
f	Standard	En12966	

**Annexure IX: Minimum Storage Requirement**

#	Minimum Storage Requirement	TB
1	Primary Storage	50
2	Secondary Storage	285



3	Back up Storage	30
	Total	365

**Annexure X: Minimum Qualification Criteria for Manpower**

#	Minimum Qualifications
<b>1</b>	<b>Project Director</b>
	<ul style="list-style-type: none"> <li>• Minimum 15 years of experience, Min. 10 years of large project experience</li> <li>• Minimum 10 years of domain experience (ICT based traffic management)</li> <li>• Should have experience of minimum 1 assignment of implementation of Adaptive Traffic Management System in India / globally</li> <li>• <b>Minimum Qualification:</b> BE/B. Tech + MBA / M. Tech</li> </ul>
<b>2</b>	<b>Project Manager</b>
	<ul style="list-style-type: none"> <li>• Minimum 10 years of experience, Min. 5 years of large SI project experience</li> <li>• Minimum 5 years of domain experience (ICT based traffic management)</li> <li>• Minimum 3 Years of experience in Transportation Domain</li> <li>• Minimum 1 large similar (similar to Pune ATCS Project) project experience</li> <li>• <b>Minimum Qualification:</b> BE/B. Tech + MBA / M Tech</li> </ul>
<b>3</b>	<b>Technical Expert- Traffic Command Center Operation</b>
	<ul style="list-style-type: none"> <li>• Minimum 10 years of experience, Min. 5 years of experience in coordinating operation management support activities for ITCS or similar projec</li> <li>• Should have experience of at least one project in setting up Command and Control Centre &amp; handling operation &amp; maintenance</li> <li>• <b>Minimum Qualification:</b> BE/B. Tech or Graduation / Post Graduation in Transportation</li> </ul>
<b>4</b>	<b>Technical Expert: Intelligent Transport Systems</b>
	<ul style="list-style-type: none"> <li>• Minimum 10 years of experience, Min. 5 years of experience in transportation domain</li> <li>• Should have experience of at least one project in design implementation of Intelligent (preferably Adaptive) Traffic Management System</li> <li>• Should have experience in real time adaptive traffic control systems (on the product quoted by the bidder)</li> <li>• Experience in setting up Command and Control Centre &amp; handling operation &amp; maintenance would be added advantage                             <ul style="list-style-type: none"> <li>• <b>Minimum Qualification:</b> BE/B. Tech or Graduation / Post Graduation in Transportation</li> </ul> </li> </ul>
<b>5</b>	<b>Technical Expert: Network &amp; Security</b>



#	Minimum Qualifications
	<ul style="list-style-type: none"> <li>• Minimum 10 years of experience, Min. 5 years of experience in IT Networks &amp; Security</li> <li>• Should have experience of at least one project in design implementation of large IT Network &amp; Security for similar project</li> <li>• Certification in Networking (CCNA or Equivalent)</li> <li>• <b>Minimum Qualification:</b> BE/ B. Tech</li> </ul>
<b>6</b>	<b>Technical Executive: Server, Storage, EMS &amp; Software Applications</b>
	<ul style="list-style-type: none"> <li>• Minimum 10 years of experience, Min. 5 years of experience in managing applications, servers and storage</li> <li>• Should have experience of at least one project in design implementation of large IT project</li> <li>• <b>Minimum Qualification:</b> BE/ B. Tech</li> </ul>

**Annexure XI: Project Management & Facilities Management Services**

#	Role	Total Number of Manpower	Shifts		
			1	2	3
1	Project Director	1	√		
2	Project Manager	1	√		
3	Technical Expert- Traffic Command Center	1		√	
4	Technical expert- Intelligent Transport Systems	1	√		
5	Technical Expert – Network & Security	1		√	
6	Technical Executive – Server, Storage, EMS & Software Applications	1	√		
7	TCC Operators ( refer section 5.13.2)	5	√	√	√



**Annexure XII: Scope of Integration for ITCS Component.**

#	System	Integration	Primary User			Secondary User		
			Entity	Data Requirement	Purpose	Entity	Data Requirement	Purpose
1	Adaptive Traffic Control System (ATCS)	Web Portal, Mobile App & existing ATCS Software	Traffic Police	Real time traffic density at each traffic junction.	Reduce Transit Time. Smooth Flow of traffic. Centralized Traffic Management	SMC	Real time traffic density at each traffic junction.	Traffic Analysis for Infrastructure development to reduce the transit time and Maintenance of Traffic Signals
2	Red Light Violation Detection (RLVD) System	Existing Challan Software of Police Department	Traffic Police	Snap shot & video Clip of vehicle violating Traffic signal rules. Registration number of the vehicle.	To Generate Challan for traffic violation.	SMC	Snap Shot & Video Clip	Data storage as per RFP, analysis or monitoring of civic services
3	Automatic Number Plate Recognition (ANPR) System	Centralized Database of Police department ( Hot listing database available )	Police Department	Registration Number of the vehicle. Over view snap shot of the vehicle & Video Clip of the vehicle	Database of the vehicle entering the city. Generate alert for suspicious vehicle. Track the vehicle in case of crime	SMC	Snap Shot & Video Clip	Data storage as per RFP
4	Traffic Violation Cameras	Existing Challan Software of Police Department	Traffic Police, Police Department	Snap shot & video Clip of vehicle violating traffic rules like illegal parking, wrong side entry. Live Video Feeds	To Generate Challan for traffic violation.	SMC	Snap Shot & Video Clip	Data storage as per RFP, analysis or monitoring of civic services
5	Traffic Surveillance Cameras	Video Management Software at Police Department and	Traffic Police	Live Video Feeds	Monitoring, Face Recognition	SMC	Live Video Feeds	Monitoring for unauthorized utilization for government property



#	System	Integration	Primary User			Secondary User		
			Entity	Data Requirement	Purpose	Entity	Data Requirement	Purpose
		with Face Recognition System of Police Department						and other civic services
6	Speed Violation Detection System	Existing E Challan Software of Police Department	Traffic Police	Snap shot & Video clip of the vehicle violating speed limit	To Generate E Challan for speed violation.	SMC	Snap Shot & Video Clip	Data storage as per RFP

**Annexure XIII: Technical Specification of Display Screen**

#	Parameter	Minimum Specifications	Bidders Compliance (Yes, No)
1	Technology	HD IPS LED Display , Direct LED Backlight	
2	Screen Size	viewing centers (minimum 42 inch diagonal)	
3	Resolution	Full high definition (Min 1920 x 1080) 16:9 Widescreen	
4	Contrast ratio	5000:1	
5	Brightness	350 nit	
6	Viewing angle	178 degree/178 degree (H/V)	
7	Response time	8ms	
8	Control	- RS232 control - On Screen Display (OSD) - IR remote control	
9	Operations	Standard	



**Annexure XIV: Compliance sheet for Fish Eye Camera**

#	Parameters	Minimum specifications or better	Bidder Compliance (Yes, No)
1	Image Sensor	1/3.2" Progressive Scan CCD / CMOS	
2	Video Resolution	12 MP (4X3MP each) i.e. 2048 x 1536 x 4	
3	Video Compression	H.264	
4	Frame rate	Minimum 10fps(8192 X 1536)	
5	Multiple Streams	8 streams( 2 per sensor) individually configurable	
6	Lens Type	Varifocal, C/CS Mount, IR Correction	
7	Lens	2.6mm, F2.0	
8	Minimum Illumination	Color: 0.5 lux, B/W: 0.01 lux (at 30 IRE)	
9	IR Illuminator	In Built/External IR illuminator of 30mtrs	
10	Day/Night Mode	Color, Mono, Auto	
11	Dynamic Range	True WDR up to 100dB	
12	S/N Ratio	≥ 50 Db	
13	Auto adjustment + Remote Control of Image settings	Color, brightness, sharpness, contrast, white balance, exposure control, backlight compensation, Auto Gain Control, Auto back focus	
14	Audio	Full duplex, line in and line out, G.711, G.726	
15	Local storage	Micro SDXC up to 64GB (Class 10) In the event of failure of connectivity to the central server the camera shall record video locally on the SD card automatically. After the connectivity is restored these recordings shall be automatically merged with the server recording such that no manual intervention is required to transfer the SD card based recordings to server.	





#	Parameters	Minimum specifications or better	Bidder Compliance (Yes, No)
16	Protocol	IPV4, IPV6, HTTP, HTTPS, FTP, RTSP, RTP, TCP, UDP, RTCP, DHCP, UPnP, QoS, ONVIF profile S	
17	Security	Password Protection, IP Address filtering, User Access Log, HTTPS encryption	
18	Intelligent Video	Motion Detection & Tampering alert	
19	Alarm I/O	Minimum 1 Input & Output contact for 3 <sup>rd</sup> part interface	
20	Operating conditions	0 to 50°C (temperature), 10 to 90% (humidity)	
21	Power	802.3af PoE (Class 0)/ PoE+ (IEEE 802.3at, Class 4) and 12-48VDC/24AC	
22	Casing	NEMA 4X / IP-66 rated & IK10	
23	Certification	UL/EN, CE,FCC	

**Note:**

1. TMC should be read as TCC across the RFP.
2. Please read RFP in place of EoI across the document.
3. Minimum Specifications of the product is mentioned in the RFP. However SI can offer better specs, if required to meet the SLA.
4. Vendor shall have to take approval for schematic diagram of all components under ITCS Project from SSCDL before supply.
5. The bidder shall provide 1 Network Laser colour Printer in line with specifications mentioned as per section 8.35 of the RFP Vol-2.
6. The evidence camera shall capture the status of red light in colour during night time.
7. Fish Eye camera should be compatible with the Video Management Software proposed by the bidder which is common for Surveillance cameras & Traffic Violation cameras. The D-Wrap function of fish eye camera should also work on same Video Management Software.

GM (IT)  
 Surat Smart City Development Ltd