Name of Work: **Request for Proposal for "Selection of Concessionaire for supply, installation and maintenance of Smart Street light Poles (55 Nos.) having provisions of Wi-Fi, Smart Warm LED Street Light, CCTV camera, and environmental sensors".**

Subject: **Replies to the pre-bid queries for the pre-bid meeting held on 30-11-2016.**

LAST DATE FOR BID SUBMISSION IS EXTENDED UPTO 03:00PM ON 22.12.2016

Sr. No.	Reference	Clause	Query	Reply of the NDMC
M/s NOKIA				
1	3.7, Part 3, Page 19	The height of the Pole will be similar to pole replaced from that place, or in case of a new pole similar to the nearby poles, and may vary from 6 meter to 12 meter. This needs to be deployed as per other poles and site condition. The maximum allowed diameter (at bottom section) is 275mm.	1) The bottom of the pole will house an over ground dog house which cannot be accommodated within the 275mm specification. Request NDMC to allow an overground dog house/ cabinet structure for this requirement. 2) Kindly confirm the number of 6M, 9M and 12 M poles	1. No change from RFP. 2. For height of Pole, refer **Annexure No. A** to these replies. Contents of Sl. No. 4 of table under Clause 3.7 will read as: "The height of the Pole will be similar to pole replaced from that place, or in case of a new pole similar to the nearby poles, and may vary from 8 meter to 12 meter. This needs to be deployed as per other poles and site condition. The maximum allowed diameter (at bottom section) is 275mm."

Sr. No.	Reference	Clause	Query	Reply of the NDMC
2	3.7, Part 7, Page 19	Smart Street Light Pole should able to support city as well telecom standards for India such as wind speed, climate, aesthetic etc. Specifically, the Smart Pole should have been tested by an independent agency such as IIT/SERC for wind speeds of at-least 170 KMPH. **The copy of the test certificate to be attached along with bid.**	Test certificate will be provided during the project phase. Kindly confirm if the same can be accommodated.	No change from RFP.
3	3.7, Part 9, Page 20	All the cables, Antenna, jumpers etc. required for Telecom and other Smart Services should be inside the Smart Pole and should not be visible due to security and aesthetic reasons. Hanging of telecom equipments boxes at bottom level (Outside of structure) is not allowed.	Antenna cannot be inside the pole. It can be accommodated inside a camouflaged structure. Kindly clarify Telecom equipment needs space at the bottom of the pole. Ventilation of the underground cabinet would be a challenge.	No change from RFP.
4	3.2.6 page 14	Environmental monitoring sensors: The concessionaire has to install the sensors for monitoring of the parameters like Temperature, Humidity, CO, CO_2, CH_4, NH_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$. Each set of all these sensors will be installed on a group of every three smart street light poles, and these sensors shall provide and send online data of these parameters to one central location so that the same can be display on NDMC 311 app. Nine (9) numbers digital / LED Outdoor Panels (65” to 72" inches) will be installed by the concessionaire for online display of these parameters at the locations provided by the NDMC. No advertisement will be allowed on these digital / LED panels.	Kindly clarify that NDMC will take care of the pole/ gantry requirement for the LED outdoor Panel. Further we understand that these outdoor panel will not be on proposed smart pole and there would be a separate structure for these panels.	The Concessionaire has to install the Outdoor LED Screens as defined in Clause 3.2.6 at designated places at the cost of the Concessionaire. Details of such places will be provided by the NDMC to the concessionaire.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
5	3.7, Part 4, Page 19	Smart Street Light Pole should be capable of supporting all telecom technologies such as 2G/3G/4G/Wi-Fi/RF/Next Generation simultaneously.	Kindly clarify whether 2G/3G has to be considered as small cell or full fledge macro BTS/nodeB sites	Telecom technologies such as 2G/3G/4G/Wi-Fi/RF/NextGeneration will be provided by using (i) small cell or (ii) AP's or (iii) BTS having antenna upto 1.5 metre height. In any case, all such equipments shall be accommodated within the Pole Structure itself as defined in this RFP document.
6	3.7, Part 2, Page 19	Smart Street Light Pole should support all Smart Services envisaged in this RFP in ambient range of 0-50 degrees of temperature. It should be possible to house minimum 3-4 telecom technologies (GSM, WCDMA, LTE and Wi-Fi etc.) simultaneously with minimum 2-3 sectors. It should also be possible to support future technologies such as 5G.	Kindly clarify whether 2G/3G has to be considered as small cell or full fledge macro BTS/nodeB sites	Refer reply at S.N. 5 above.
7		Kindly clarify the Number of LED luminaire required per Pole	Kindly clarify the Number of LED luminaire required per Pole	Atleast one smart Pole will have three Nos. of LED luminaire. Atleast six smart Pole will have two Nos. of LED luminaire. Around rest of the poles will have one nos. of LED luminaire. The Concessionaire has to meet the average LUX level of 30 at ground.
8	3.2.4	The Concessionaire will install PTZ IP based camera on these Smart street light poles as per specifications defined in the	what is the duration in terms of months or day for which the feed of the camera is to be stored	The camera feed will be stored for 30 days and @ 15 frames per second at 2 Megapixel resolution.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
		RFP document. The feed of the camera will be stored in the Cloud based storage or local data storage for CCTV in NDMC premises (built up space for keeping servers of local data storage of data will be provided by NDMC fee of cost) so that the same can be seen anytime and anywhere. Detailed specifications are available at Clause-3.7.		
9	3.2.5	The Concessionaire will provide the Smart Phone charger facility (atleast two sockets at a pole easily accessible to public) on these poles and will also provide sitting place around smart poles (atleast one bench per pole). These benches shall be made from stainless steel of grade 304. The design of the bench will be done by the concessionaire at his own cost and the same will be approved by the NDMC or NDMC can provide its own design to concessionaire to prepare the bench before providing and fixing the bench near the smart street light pole.	Please provide details of the charging socket , whether the socket should be USB compliant or provide AC power point on which charger can be place	Clause 1.2 (i) (e) & 3.2.5 deleted. **"Smart charging facility and Smart sitting Place around smart poles (one bench per Pole)"** deleted from the scope of the work of this RFP**.**
10	3.2.6	The concessionaire has to install the sensors for monitoring of the parameters like Temperature, Humidity, CO, CO2, CH4, NH3, NO2, SO2, PM10, PM2.5. Each set of all these sensors will be installed on a group of every three smart street light poles, and these sensors shall provide and send online data of these parameters to one central location so that the same can be display on NDMC 311 app. Nine (9) numbers digital / LED Outdoor Panels (65" to 72" inches) will be installed by the concessionaire for online	Please provide integration details for the environment application 311App. of NDMC to which environment sensor will send the information.	Necessary API to integrate the data from the environmental sensors with the (i) NDMC 311 App (running at present), and (ii) NDMC's Command and Control System (proposed to be set-up in future) will be provided by the Concessionaire.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
		display of these parameters at the locations provided by the NDMC. No advertisement will be allowed on these digital / LED panels.		
11	3.7	The smart street lighting system should be able to communicate to the Lighting Operations Management software hosted on the data centre	For the communication with the data centre will the LAN/WAN network will be provided by the NDMC including the RJ45 connectivity locally at pole in case if there is some other alternative means of communication please specify	Concessionaire will be responsible for providing the entire communication infrastructure, including LAN/ WAN, required for bringing data upto data centre and/or uploading the data on Cloud. The rights over the data and Cloud to be used for the purpose of this RFP will be of the NDMC. The concessionaire shall bear all CAPEX & OPEX throughout the concession period with respect to such Cloud space.
12	3.7	The smart lighting system are preferably a combination of LED lights and sensors	Please specify the types sensors that are expected with the LED light solution	Refer Clause 3.7 for LED specification. The LED controller of LED luminaries shall have ready to use feature to support the sensors for lumens controlling based on movement of traffic/ human and/ or on change in the weather conditions.
13 (a)	5.2.3 Sr no 6, Page 50	Smart Pole should have been deployed at at-least three locations in India or out-side India.	While there are Global Pole designs and solutions available and deployed in POC environment in India and overseas, specific to India urban requirements, it is still in evolution phase and leading players are in process of creating new and aesthetically appealing designs while meeting the technical and	No change from RFP. The applicant has to show the same Smart Pole as proposed to be installed under this RFP.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
			functional requirements. Hence we will request NDMC to relax the pre-requisite reqmts as the final design which NDMC may eventually procure or deploy could be different from what bidders have deployed anywhere else in India or overseas. Prior experience of having offered multiple pole solutions for Telecom Industry can be included as one of the pre-requisites as most of the Telecom Infra Solution providers have all the required experience and expertise to translate into what is required for Smart Poles.	
13(b)		Smart Poles should be live at minimum one location with at-least two of the services (i.e. Wi-Fi/ CCTV/ LED/ Environmental sensors) as stipulated in this RFP, on the last date for submission of bid.	NDMC can add requiste clause in RFP, that final design and pole solution to be deployed in agreed timelines will be duly approved by NDMC team and to be showcased at one location within 60 days of proposed design duly approval by NDMC	No change from RFP.
13(c)		Necessary reference certificate of the principal owner or self-certificate for the deployments should be submitted as part of bid response	As explained above, pre-requisite to be relaxed as quite a few Global and local players are investing and creating innovative India suited and commercially viable site design solutions to address this market and will be devoid from participating in this RFP otherwise.	No change from RFP.
M/s INDUS TOWERS				
14.	Clause 1.7, Page 6	Last date and time for submission of bids (Bid Due Date)	Since an extensive survey will be required in the project are for identifying the exact location of poles and other accessories, we request you to extend the submission of bid further by 1 week	No change from RFP.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
15.	Clause 1.8, Page 6 Clause 4.1.10, Page 29	Earnest Money Deposit (EMD) – Online The Applicant has the option to provide the EMD either as a Demand Draft/Pay order/Bankers Cheque/FDR/TDR	The two clauses states differently with respect to depositing of EMD. Please clarify whether the EMD has to be deposited online or through Demand Draft/Pay order/Bankers Cheque/FDR/TDR .	In column 'item' of S.No.1 in table of Clause 1.8, "Earnest Money Deposit (EMD) - Online" will be read as "Earnest Money Deposit (EMD)".
16.	Clause 3.2.2, Page 13	Wi-Fi Services at smart pole locations	1) We understand that the Concessioner is allowed to utilize all the available SSIDs for generating revenue. **Please confirm.** 2) We understand that one access point catering to 75 users simultaneously to be installed at each smart street light pole. **Please confirm**	1) In Clause no 3.2.2, the following will be added in the end. "The maximum number of SSID's to be allowed on a single access point / device shall not exceed three (each SSID on separate non-overlapping channel) in case of 2.4 GHz environment, out of which one shall be specifically assigned for providing free Wi-Fi services to the public. The maximum number of SSID's to be allowed on a single access point / device shall not exceed maximum number of non-overlapping channels (each SSID on separate non-overlapping channel) in case of 5 GHz environment, out of which one shall be specifically assigned for providing free Wi-Fi services to the public." 2) One access point catering to 75 **free** users simultaneously to be installed at each smart street light pole under the scope of this RFP."

Sr. No.	Reference	Clause	Query	Reply of the NDMC
17.	Clause 3.2.3, Page 13	Smart Lighting solution with Smart connectivity to control room through Cloud	Since the infrastructure utilized will be of third party cloud service provider, we request you to not consider any disruption due to CSP as breach of SLA.	No change from RFP. Complete responsibility lies with the concessionaire.
18.	Clause 3.2. 3Page 13	Smart Lighting solution with Smart connectivity to control room through Cloud	1)**Please specify** the number of LEDs to be installed on each pole . 2)**Please specify** the exact location of the poles 3)Implementation should start from the date of agreed locations. **Please confirm** 4) It is assumed that only NDMC approval is sufficient and necessary for the installation of the poles. **Please confirm**	(1) Refer reply at S.No.7. (2) Refer **Annexure 'A'** to these replies. (3) No change from RFP. (4) Refer Clause 3.4.6
19.	Clause 3.2.4 Page 13	CCTV Based Surveillance	Please confirm the number of PTZ cameras to be installed	One PTZ camera (as per specification given in **Annexure 'B'** to these replies) shall be installed on each Smart Street Light Pole.
20.	Clause 3.2.6. Page 14	Environmental Monitoring Sensors	Please confirm the exact locations of the Digital/ Outdoor Panels to be installed on the poles	The locations of Outdoor digital Panels will be decided by the NDMC.
21.	Clause 3.2.4, Page 14	CCTV Based Surveillance - Recording Parameters and Period	RFP does not specify any recording resolution parameters and retention time. Please specify the count of the days for which the recording is to be kept	Modified CCTV specifications have been given in **Annexure 'B'** to these replies. Recording of CCTV data will be as per replies at S.No.8 above.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
22.	Clause 3.2.6 page 14	Environmental monitoring sensors: The concessionaire has to install the sensors for monitoring of the parameters like Temperature, Humidity, CO, CO2, CH4, NH3, NO2, SO2, PM10, PM2.5. Each set of all these sensors will be installed on a group of every three smart street light poles, and these sensors shall provide and send online data of these parameters to one central location so that the same can be display on NDMC 311 app. Nine (9) numbers digital / LED Outdoor Panels (65" to 72" inches) will be installed by the concessionaire for online display of these parameters at the locations provided by the NDMC. No advertisement will be allowed on these digital / LED panels.	Kindly clarify that NDMC will take care of the pole/gantry requirement for the LED outdoor Panel. Further we understand that these outdoor panel will not be on proposed smart pole and there would be a separate structure for these panels.	Refer reply at S.No.4 above.
23.	Clause 3.2.5, Page 14	The Concessionaire will provide the Smart Phone charger facility (atleast two sockets at a pole easily accessible to public) on these poles and will also provide sitting place around smart poles (atleast one bench per pole). These benches shall be made from stainless steel of grade 304. The design of the bench will be done by the concessionaire at his own cost and the same will be approved by the NDMC or NDMC can provide its own design to concessionaire to prepare the bench before providing and fixing the bench near the smart street light pole.	Please provide details of the charging socket, whether the socket should be USB compliant or provide AC power point on which charger can be place	Refer reply at S.No.9.
24.	Clause 3.2.6 , Page 14	The concessionaire has to install the sensors for monitoring of the parameters like Temperature, Humidity, CO, CO2, CH4,	Please provide integration details for the environment application 311App. of NDMC to which environment sensor will send the	Refer reply at S.No.10 above.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
		NH3, NO2, SO2, PM10, PM2.5. Each set of all these sensors will be installed on a group of every three smart street light poles, and these sensors shall provide and send online data of these parameters to one central location so that the same can be display on NDMC 311 app. Nine (9) numbers digital / LED Outdoor Panels (65" to 72" inches) will be installed by the concessionaire for online display of these parameters at the locations provided by the NDMC. No advertisement will be allowed on these digital / LED panels.	information.	
25.	Clause 3.4.4, Page 16	All the electricity consumed for providing service to NDMC, like CCTV Cameras, Warm LED Street Light and any other equipment used for NDMC services, will be free of cost.	We request NDMC to take the responsibility of power supply required for the Wi-Fi as it is being provided partially free of cost by the concessionaire	No change from RFP
26	Clause 3.2.6. Page 14	**Environmental Monitoring Sensors** - The concessionaire has to install the sensors for monitoring of the parameters like Temperature, Humidity, CO, CO2, CH4, NH3, NO2, SO2, PM10, PM2.5	We suggest NDMC to remove the parameters - CH4 and NH3 for measuring the Air Quality Index (AQI) through environmental sensors. As per the document for AQI Published by :(PR Division on behalf of Dr. A.B. Akolkar, Member Secretary, CPCB, Delhi-110032 released by Honorable Prime Minister in 2015) - CH4 is not a relevant parameter for the calculation of AQI and for NH3 it is mentioned that its is not the lead pollutant in the Urban areas hence it need not be taken as a parameter to calculate the AQI	Clause 3.2.6. will read as: "The concessionaire has to install the sensors for monitoring of the parameters like Temperature, Humidity, CO, CO_2, NO_2, SO_2, PM_{10}, $PM_{2.5}$. Each set of all these sensors will be installed on a group of every three smart street light poles, and these sensors shall provide and send online data of these parameters to one central location so that the same can be display on NDMC 311 app. **API for integrating such data with NDMC App 311 shall be provided by the concessionaire.** Nine (9) numbers digital / LED Outdoor

Sr. No.	Reference	Clause	Query	Reply of the NDMC
				Panels (65" to 72" inches) will be installed by the concessionaire for online display of these parameters at the locations provided by the NDMC. No advertisement will be allowed on these digital / LED panels." The concessionaire has to install the sensors for monitoring of the parameters like Temperature, Humidity, CO, CO_2, NO_2, SO_2, PM_{10}, $PM_{2.5}$"
27.	Clause 3.4.5, Page 17	At the end of the concessionaire period, all the rights be given to the concessionaire, including right to use the electric poles, shall be terminated automatically	We request NDMC to allow the Concessionaire to use the smart poles for another 10 years post concession period mentioned in the RFP as the economic life of the poles is more than 20 years , hence making the project economically viable	No change from RFP.
28.	Clause 3.5.4, Page 18	Concessionaire is required to provide adequate battery bank to ensure uninterrupted power supply to services provided to the NDMC under this project, except for the Warm LED Lights and CCTV cameras at street light poles	We request NDMC to take the responsibility of power back up for Environment sensors and Wi-Fi as well	No change from RFP.
29.	Clause 3.6,Page 19	Smart Lighting solution with Smart connectivity to control room through Cloud - During the Implementation of the Pilot Project, the quantity of the smart poles may deviate (+) (-) 30% as the case may be, the quantity will be decided by NDMC	Deviation Quantity and implementation period will be decided on mutual agreement	No change from RFP.
30.	Clause 5.2.3, Page 50	Experience of the Firm - Smart Poles should be live at minimum one	We have installed number of smart poles at various locations with functionalities as specified in the clause 3.7. of the RFP:	Smart Street Light Poles shall be as per Clause 3.7 of the RFP Document.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
		location with at-least two of the services (i.e. Wi-Fi/ CCTV/ LED/ Environmental sensors) as stipulated in this RFP, on the last date for submission of bid.	1) Smart Street Light Pole should support all Smart Services envisaged in this RFP in ambient range of 0-50 degrees of temperature. It should be possible to house minimum 3-4 telecom technologies (GSM, WCDMA, LTE and Wi-Fi etc.) simultaneously with minimum 2-3 sectors. It should also be possible to support future technologies such as 5G. 2)Smart Street Light Pole should be capable of supporting all telecom technologies such as 2G/ 3G/ 4G/ Wi-Fi/ RF/ Next Generation simultaneously. Further these Smart Poles have the capability of housing smart components such as Access Points, Cameras, Warm LEDs, Digital Displays etc. **Please clarify if these poles meet the eligibility criteria as mentioned in the RFP**	
31.	Clause 3.7, Page 19	Having a height of 6 to 12 meters and designed as approved by NDMC (Poles of similar height in case of replacement and of the height of nearby poles in case of new location)	**1) We request NDMC to allow installation of new poles of height upto 25 meters.** The telecom services (2G /3G /4G / Wi-Fi) are better achieved with equipment installed on the telecom pole at a reasonable height. **2) We suggest that the maximum (allowed) diameter to be considered should be 900 mm.** **<u>Justification for above mentioned change</u>**	No change from RFP. The following will be added at S. No. 13 in table 'Smart Street Light Pole' under clause 3.7: "The maximum (allowed) diameter of dome of the Smart Pole (to accommodate Antennas) will (i) not be more than 600 mm at any point of the pole; (ii) not be longer than 4.0 meter (iii) not be above the height of the

Sr. No.	Reference	Clause	Query	Reply of the NDMC
			The above mentioned changes in the dimensions of the pole are required to meet the functionalities (as stated in the RFP) of Smart Street Light Pole - 1) Smart Street Light Pole should support all Smart Services envisaged in this RFP in ambient range of 0-50 degrees of temperature. It should be possible to house minimum 3-4 telecom technologies (GSM, WCDMA, LTE and Wi-Fi etc.) simultaneously with minimum 2-3 sectors. It should also be possible to support future technologies such as 5G. 2)Smart Street Light Pole should be capable of supporting all telecom technologies such as 2G/3G/4G/Wi-Fi/RF/Next Generation simultaneously 3) Smart Street Light Pole should have enough space for Site passive infra (space and power) and should support sharing among telecom operators	pole as given at **Annexure A**."
32.	Clause 3.7, Part 7, Page 19	Smart Street Light Pole should able to support city as well telecom standards for India such as wind speed, climate, aesthetic etc. Specifically, the Smart Pole should have been tested by an independent agency such as IIT/SERC for wind speeds of at-least 170 KMPH. **The copy of the test certificate to be attached along with bid.**	Test certificate will be provided during the project phase. Kindly confirm if the same can be accommodated.	No change from RFP.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
33.	Clause 3.7, Page 19	The smart street lighting system should be able to communicate to the Lighting Operations Management software hosted on the data centre	For the communication with the data centre will the LAN/WAN network will be provided by the NDMC including the RJ45 connectivity locally at pole in case if there is some other alternative means of communication please specify	Refer reply at S.No.11 above.
34.	Clause 3.7 , Page 20	**Smart Street Light Pole -** Smart Pole should support backup of 2 hours for all Telecom and Smart Services.	We request NDMC to relax the specification of Smart Pole and it should support the backup of 2 hrs only for Wi-Fi as for the telecom equipment there will be a separate agreement between the concessionaire and telecom service provider for availability of telecom equipments in case of power failure.	No change from RFP.
35.	Clause 3.7, Part 9, Page 20	All the cables, Antenna, jumpers etc. required for Telecom and other Smart Services should be inside the Smart Pole and should not be visible due to security and aesthetic reasons. Hanging of telecom equipments boxes at bottom level (Outside of structure) is not allowed.	Antenna cannot be inside the pole. It can be accommodated inside a camouflaged structure. Kindly clarify Telecom equipment needs space at the bottom of the pole. Ventilation of the underground cabinet would be a challenge.	No change from RFP.
36.	Clause 3.7 , Page 21	**Smart Street Light Pole -** Underground space should be used for telecom equipment's with suitable telecom grade enclosure box with IP67 protection to protect telecom and Smart Services equipment. Underground equipment box should be maintenance friendly, provision of lifting of equipment's (at suitable working height) from maintenance perspective should be available. Lifting column should be able to support 200Kg of equipment load. It is allowed to use underground space	We suggest NDMC to consider the hosting of telecom equipments over the surface as the underground solution is not feasible in Indian scenario due to the below listed considerations: 1) Keeping the Indian drainage conditions and heavy monsoon in view , the underground solution of hosting telecom equipments is difficult to install, operate and maintain. 2) As the area being considered for deployment is highly congested, it would be difficult to operate and maintain the	No change from RFP.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
		(2x2x1M , WxDxH max) for telecom equipment's with suitable telecom grade enclosure box with IP67 protection**.**	underground equipments . Hence over the surface solution is preferable. The concessionaire should be allowed to install the telecom equipment overground however aesthetically concealed Further, the lifting arrangement should be between Operator and Concessioner.	
37.	Clause 3.7, Page 20	Pt 17 - Smart Pole material should have RF transparency with maximum 0.5db of attenuation covering all the radio frequency bands available in India	We request you to change this clause as; "The attenuation should be between permissible and agreed limits between Concessioner and Operator who is using the telecom equipment"	No change from RFP.
38.	Clause 3.7, Page 20	Smart Street Light Pole (Mentioned in specifications point [18])	RFP calls for Effective heat dissipation mechanism for the smart pole. **Please clarify weather any cooling arrangement will be given along with electronic equipment's externally.**	No external instrument/ equipments (electronic/ mechanical/ any other type) is allowed externally i.e. outside the pole. No external cooling arrangement is allowed for cooling. Cooling arrangement can be done within the underground box.
39.	Clause 3.7 , Page 20	Smart Street Light Pole (Mentioned in specifications point [19])	Please clarify specification mentioned in Smart Street Light Pole- **IP 67 degree of protection upto 1 mtr height from reference ground level for the pole**	Refer S.N. 19 and 21 of table 'Smart Street Light Pole' under Clause 3.7.
40.	Clause 3.7, Page 21	Surveillance Camera	Please specify the resolution for the cameras.	Refer specifications of PTZ CCTV camera provided in **Annexure 'B'** to this reply.
41.	Clause 3.7 , Page 23	Luminairies Technical Specifications	Colour temperature mentioned is 2400 to 2700 K which is quite unobvious. Kindly consider relaxation of 3000K± 300K	No change from RFP.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
42	Clause 3.7 , Page 25	Typical specifications of led street lights to be provided by the concessionaire (220W + 5%) (Mentioned in Specification point [14])	Efficacy of 120lm/W in case of warm LED is not feasible. Kindly relax it up to 95lm/W at system level. System Lumens Output of 120 Lumen / watt is not possible for the CCT range 2400-2700K . If CCT would have been standard 5700K which is most commonly used , it is possible.	In S.No.14 (Column 3) of table 'Typical Specifications of LED Street Lights' under Clause 3.7, "120 lumen/watt' will read as "95 lumen/watt".
43.	Clause 4.18, Page 41	Confidentiality	The confidentiality obligations under this Contract will not apply to information already in the public domain or available to us independently of this Contract.	No change from RFP.
44.	Clause 6.2 , Page 57	**Term of the Concession Agreement -** The term of this Concession Agreement shall be a period of nine and half years from the date of signing of this Agreement [this includes implementation period of maximum 6 months]. The Concession Agreement period shall not be extended beyond nine and half years in any case.	We request NDMC to allow the Concessionaire to use the smart poles for another 10 years post concession period mentioned in the RFP as the economic life of the poles is more than 20 years , hence making the project economically viable	No change from RFP.
45.	Clause 6.6, Page 59	**Tax liability -** The Concessionaire shall be responsible for all the statutory taxes, statutory dues, local levies, Service tax, etc. to be paid to Government / Statutory bodies / Authorities etc. for the services rendered by it. There will be no tax liability upon the NDMC whatsoever on any account.	We request that during the project execution stage tax levy/duty/statutory taxes ,statutory dues, local levies, Service tax etc. (other than what is mentioned in the commercial proposal) if arise will be paid by NDMC . Concessionaire will only share the committed revenue with NDMC.	No change from RFP.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
46.	Clause 6.7.1 , Page 60	the Concession Agreement may be terminated by giving 30 days notice as cure period and if it is not cured within 30 days then NDMC will terminate the Concession Agreement by giving further notice of 30 days for termination of Concession Agreement.	It is requested that the cure period may be increased from 30 days to 90 days and similar changes may be made to the other references of termination (Clause 11.4)	No change from RFP.
47.	Clause 8.6, Page 64	However total implementation will have to be completed in 12 (twelve) months.	Please clarify if the implementation period is of 12 months or 6 months, as on Page 10 the implementation period is mentioned as 6 months	Clause 8.6 will read as: "The Applicant has to complete the work in 6 (six) months as per milestones defined in clause 3.1. If the targets for each mile stone as defined in Clause 3.1 are not completed, then necessary penalties will be imposed as provided in Clause 9.1.1 of this RFP document on proportionate basis (i.e. number of poles covered under the milestone against the total number of poles to be installed under this RFP) for intermediate milestones. After the stipulated implementation time of six months, the penalties prescribed under clause 9.1.1 will be imposed for delay in project (i.e. for all poles irrespective of installation of number of poles installed by the concessionaire)."
48.	Clause 8.7, Page 65	Indeminity	We suggest NDMC to remove this clause or else modify the verbiage to **Any indemnity amounts will be limited to the fees paid, subject to final determination by a competent court/arbitrator."**	No change from RFP.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
49.	Clause 8.12 , Page 66	Conflict of Interest	We do not use or disclose your confidential information pertaining to our other clients.	No change from RFP.
50.	9.1.1 , Page 71	**Implementation SLAs -** These SLAs shall be used to evaluate the timelines for completion of deliverables that are listed in the deliverable. These SLAs will be applicable for commissioning of the project (upto GO-LIVE) Delay in implement of project as per this RFP (in Weeks) Penalty value - Per week per milestone given in clause 3.1(iii) - Rs.50,000/- per week Maximum - Rs.15 lakh	We request NDMC to reduce the penalty value per week to INR 5000/- and it should be attributable	No change from RFP.
51.	Clause 9 , Page 71	Punitive Clause	We suggest NDMC to include a cure period of 1 Quarter before invoking the termination clause	No change from RFP.
52.	Clause 9 , Page 71	Punitive Clause	Keeping in view the congested area of CP restoration time of fibre cut will be on higher side. Hence recommended to exclude from SLA calculations and allow temporary overhead fibre.	No change from RFP.
53.	Clause 9.4 (A), Clause 9.4 (B) Page 73	SLA for LED Luminaire	We request NDMC to provide the calculation for the SLAs related to downtime of the LEDs and Environmental Sensors	The following will be added after clause 9.4(A) for LED luminaries: "Downtime means non-working/ non-availability of LED luminaries at any location. Uptime shall be calculated as **[1- (no. of LED luminaries hours not available)/(Total no of LED luminaries* Half of the total hours in one quarter)].** For ex, if 600 nos. of

Sr. No.	Reference	Clause	Query	Reply of the NDMC
				LED luminaries are deployed at various locations, and 20 LED luminaries do not work for 1 hour, the total non-working LED luminaries hours will be 20 and the uptime would be {1-(20/(600*90*12)}, 600 being the number of LED luminaries, for 90 days on 12 hours basis. This down time will be used for penalty calculations on quarterly basis and necessary penalty calculated have to be deposited by the concessionaire. The penalties would be levied for every LED luminaries down time, be it for non-availability of network, theft, damage etc., because the Concessionaire is responsible for supply of all enabling components on end-to-end basis." The following will be added after clause 9.4(B) for Environmental Sensors: "Downtime means non-working/ non-availability/incorrect data of Environmental sensor at any location. Uptime shall be calculated as **[1- (no. of environmental sensors hours not available)/(Total no of environmental sensors * the total hours in one quarter)].** For ex, if 600 nos. of **environmental sensors** are deployed at various locations, and 20 **environmental sensors** do not work

Sr. No.	Reference	Clause	Query	Reply of the NDMC
				for 1 hour, the total non-working **environmental sensors** hours will be 20 and the uptime would be {1-(20/(600*90*24)}, 600 being the number of **environmental sensors**, for 90 days on 24 hours basis. This down time will be used for penalty calculations on quarterly basis and necessary penalty calculated have to be deposited by the concessionaire. The penalties would be levied for every **environmental sensors** down time, be it for non-availability of network, theft, damage etc., because the Concessionaire is responsible for supply of all enabling components on end-to-end basis."
54.	Clause 9.4 (B) Page 73	SLA for Environmental Sensor	We request NDMC to reduce the penalty amount from INR 50000 to INR 1000 and INR 1lakh to INR 5000 Further, please remove point (4) - 85% clause	No change from RFP.
55.	Clause 10, Page 74	Force Majeure -	Theft cases by default/ vandalism, political rallies etc. would not be considered as "beyond the control of Concessionaire" and hence be included under force majeure	No change from RFP.
56.	Clause 11.10, Page 83	Early determination	Since it is a high capital project, we request NDMC to remove the clause of early determination and this should not be effective before 10 the end of the concessionaire period	No change from RFP.
57.	Clause 14.2, Page 85	Transfer of assets	The telecom equipment has a life span of approximate 20 years and further in the interest of the business viability of the concessionaire ,we request NDMC to allow transfer of all the assets except Smart Street	No change from RFP.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
			Light Pole with telecom equipments	
58.	General , Page 82	Liquidity Damages	The overall amount of liquidated damages and penalties shall not exceed 5% of the contract value. Liquidated damages or penalties (if any) shall be applicable only for delays solely attributable to concessionaire	No change from RFP.
59.	General	Optical Fibre	1) RFP has no mention of the existing state of Fibre in the region. Please elaborate the existing state of fibre (length of fiber already laid) 2) Please specify the tentative length of incremental fibre required for the overall connectivity of the system 3) Please clarify if we the concessionaire by through leasing out the fiber	1) NDMC has not laid any Optical fibre. The Concessionaire has to arrange the network connectivity from any Internet Service Provider (ISP) for transferring the data of LED, CCTV, Wi-Fi, Environmental Sensor, etc. to the cloud or data centre in NDMC premises as the case may be. 2) The length of the optical fibre or CAT5/6 cable required will depend on the existing network of the ISP selected by the Concessionaire. 3) The Concessionaire shall not lease out the optical fibre cable laid under this project to connect to the nearest network of ISP.
60.	General	Smart Poles	Pole design codes are not specified in the Tender. We suggest that the codes should be of Indian Standards	No change from RFP.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
61.	General	Smart Poles	We have enclosed the design and live photographs of our Smart Poles, for both overground and underground telecom equipment, for your reference.	No change from RFP.
M/s Ericsson				
62.	3.2.5 Smart Phone charger facility and sitting place around smart poles (one bench per pole).	Smart Phone charger facility and sitting place around smart poles (one bench per pole).	There might be issues regarding getting space around smart pole for sitting bench due to locations of smart pole. Smart pole locations will be dependent on telecom traffic profile, these will come mostly in congested areas. Request NDMC to remove this requirement from smart pole specs .If required provision should be made to provide mobile charger locations in parks etc wherever sitting space is available.	Refer reply at S.No.9 above
63.			There are no details available on Command and Control Center (CCC) BoQ and requirements, kindly help understand your expectations. If we provide a fully working CCC on cloud and provide web based access to NDMC authorities, would it suffice?	Refer clause 3.2.4.
64.			Requirement on fibre is not specified, the concessionaire should be permitted to monetise the fibre over 9 years of period as the avenues to monetise the assets are very limited in this project.	The Concessionaire shall not lease out the optical fibre cable laid under this project to connect to the nearest network of ISP.
65.	5.2.3 Eligibiliy Criteria Lead member shall have highest share-holding in consortium and	Lead member shall have highest share-holding in consortium and shall have an share holding of at least 26% (twenty six percent) of the Consortium	We request Requirement of Equity based consortium be diluted to non-equity based consortium. Equity Based Consortiums are not approved by most companies We request NDMC to allow Non-equity based consortium to bid	'Specific Requirements' in Sl. No. 2 of table under Clause 5.2.3 will be read as: "Applicant/ Lead Member (in case of consortium) should be i) Telecom Infrastructure provider

Sr. No.	Reference	Clause	Query	Reply of the NDMC
	shall have an share holding of at least 26% (twenty six percent) of the Consortium.			(IP category-I); or ii) Telecom Service Provider having valid UL(AS) / UASL or Category 'A' ISP licensee from Department of Telecommunication, Government of India; or iii) system integrator for IT/Telecom Network/ IT Hardware and software, duly registered under the Companies Act 1956/ 2013. Lead member shall have atleast 51% (fifty one percent) of the Consortium". In clause 4.1.20, **"will hold equity share capital representing not less than 26% (twenty six per cent) of the paid-up equity of the Consortium"** will be read as **"will hold not less than 26% (twenty six per** cent) of the Consortium". In clause 5.2.7.1(iii)**, "who shall have highest shareholding in consortium and shall have share holding of at least 51% (Fifty one percent) share of the Consortium"** will be read as **"who shall hold at least 51% (Fifty one percent) of the Consortium"**. In clause 5.2.7.1(x)(g), **"shall subscribe to 26% (twenty six per**

Sr. No.	Reference	Clause	Query	Reply of the NDMC
				cent) or more of the share of the Consortium" will read as **"shall have 26% (twenty six per cent) or more of the Consortium"**. In Annexure 7, the following changes will be made: (i) In Point No. 5, **"Shareholding in the Consortium"** will be read as **"holding in the Consortium".** (ii) In point No. 5.1, **"the proportion of shareholding"** will be read as **"the proportion of holding"**. (iii) In point 5.2, **"all equity lock-in requirements"** will be read as **"all holding lock-in requirements"**. (iv) In point No. 5.2(iii), **"who shall have highest share holding in consortium and shall have an equity share holding of at least 51% fifty one percent) of the paid up equity of the Consortium"** will be read as **"who shall hold at least 51% (Fifty one percent) of the Consortium"**. (v) In point No. 5.2(ix)(f), **"the minimum equity stake commitment, to be held by each member"** will be read as **"the minimum holding commitment to be held by each member"**. (vi) In point No. 5.2(ix)(g), "**shall subscribe to 26% (twenty six per cent) or more of the paid up**

Sr. No.	Reference	Clause	Query	Reply of the NDMC
				equity of the Consortium" will be read as "**shall subscribe to 26% (twenty six per cent) or more of the Consortium".** (vii) In point No. 5.2(ix)(h), **"dilute their equity stack in the Consortium"** will be read as **"dilute their holding in the Consortium"**.
M/s Sparsh Securitech				
66.	3.7 Specifications of Smart Streetlight Poles, PTZ Cameras and LED luminaries Surveillance Camera	All the cameras proposed shall support Smart coding Technology i.e. Group of Pictures (GOP) control function removes unnecessary information from the frame for realizing efficient encoding, Multi process Noise Reduction and FDF(Frequency Divided Filter) etc. to reduce the network bandwidth and the disk space of recorder.	Multi process Noise Reduction & FDF is proprietary technology of a particular Vendor which bars others to participate in the tender. Request you to **rename this with generic feature VBR (variable bit rate control) in the camera specification** .	Modified Specifications of PTZ camera has been given in **Annexure 'B'** to these replies.
67.	3.7 Specifications of Smart Streetlight Poles, PTZ Cameras and LED luminaries Surveillance Camera	Resolution	Resolution of PTZ camera is missing in RFP. kindly specify the resolution. It should be Min 2 MP.	Refer reply at Sr. No. 66 above.
68.	3.7 Specifications of Smart Streetlight Poles, PTZ Cameras and LED luminaries Surveillance Camera	Focal Length & optical zoom	Focal Length & optical zoom is missing in RPF. kindly specify the Focal Length & optical zoom. it should be F= 4.3~129mm with 30x optical zoom .	Refer reply at Sr. No. 66 above.
69.	3.7 Specifications of Smart Streetlight Poles, PTZ Cameras and LED luminaries Surveillance Camera	Certification	The camera is low voltage product and which is supposed to be installed in street light pole (high voltage) it is highly recommended to incorporate the certification: **IEC 61000-4-4:2004,IEC 61000-4-2:2008,IEC 61000-4-8:2009,IEC 61000-4-11:2004,IEC 61000-4-**	Refer reply at Sr. No. 66 above.

Sr. No.	Reference	Clause	Query	Reply of the NDMC
			18:2010,IEC 61000-4-17:2006 .	
70.	3.7 Specifications of Smart Streetlight Poles, PTZ Cameras and LED luminaries Surveillance Camera	The camera shall be able to setup and stream out at least four (4) stream of H.264 High profiles simultaneously. Each stream profile can has its own compression, resolution, frame rate and quality independently.	Replace stream to **Dual stream**, Dual streams are more than enough , one stream can be used for recording , playback & live view and one additional stream can be used where bandwidth is low. Four stream will only increase the cost of the product without adding much to its usefulness. This is proprietary technology of a particular Vendor which bars others to participate in the tender.	Refer reply at Sr. No. 66 above.
71.	3.7 Specifications of Smart Streetlight Poles, PTZ Cameras and LED luminaries Surveillance Camera	The camera shall have Image Cropping (4 Areas) and Picture in Picture Function	This is a restrictive clause at limited vendors have image cropping & picture in picture in camera which bars others to participate in the tender. Request you to **remove it from camera specification.**	Refer reply at Sr. No. 66 above.
72.	3.7 Specifications of Smart Streetlight Poles, PTZ Cameras and LED luminaries Surveillance Camera	The PTZ camera shall have Tilt Range of –15° to 195° or better with 360° continuous Panning.	Replace **Tilt Range to 180**° Auto Flip with 360° continuous Panning. This is a restrictive clause aa limited vendors have Tilt Range of –15° to 195°which bars others to participate in the tender	Refer reply at Sr. No. 66 above.
		M/s Giga Tera		
73.	Section 3.7 Clause 1	High bright white power LEDs shall be used in the Luminaries and the wattage of these LEDs shall be>1W and <3W.	High bright **middle** power LEDs shall be used in the Luminaries and the wattage of these LEDs shall be>**0.2W** and <3W.	In Column 'Type of Test / Specifications' of S.No.1 in table 'Typical Specifications of LED Street Lights' under Clause 3.7, "**High bright white power LEDs shall be used in the Luminaries and the wattage of these LEDs shall be>1W and <3W.**" will read as "**Warm LEDs shall be used in the Luminaries:**"

Sr. No.	Reference	Clause	Query	Reply of the NDMC
74.	Section 3.7 Clause 10	Power factor > 0.95	Power factor >**0.9**	In Column 3 of S.No.10 in table 'Typical Specifications of LED Street Lights' under Clause 3.7, "**Power Factor > 0.95**" will be read as "**Power Factor >= 0.90**".
75.	Section 3.7 Clause 15	Operating voltage: 140 V to 270 V universal electronic driver with surge protection of >5 KV (Application IS 15885, Driver safety 16104-1/2).	Operating voltage: **100**V to 270 V universal electronic driver with surge protection of >**4** KV (Application IS 15885, Driver safety 16104-1/2).	In Column 3 of S..No.15 in table 'Typical Specifications of LED Street Lights' under Clause 3.7, "**>5 KV**" will be read as: "**>=4KV**".
76.	Section 3.7 Clause 14	Overall system output minimum 120 lumen/watt	Overall system output minimum **100**lumen/watt	Refer reply at S.N. 42 above
77.	Section 3.7 Clause 16	Total Harmonic Distortion: <10% THD	Total Harmonic Distortion: <**15%**THD	In Column 3 of S..No.16 in table 'Typical Specifications of LED Street Lights' under Clause 3.7, "**<10%THD**" will be read as "**<15%THD**".
78.	Section 3.7 Clause 16	Smart Pole should have been deployed at at-least three locations in India or out-side India	Smart Pole should have been deployed at at-least **one** locations in India or out-side India	No change from RFP
79.	Section 3.7 Clause 3	LED Driver Test report as per tender specification (drive efficiency, THD, <=10% Surge protection > 5kv internal & 10KV external)	Test report as per tender specification (drive efficiency, THD, <=**15%** Surge protection > **4kv** internal & 10KV external)	In 'Luminaries Technical Specifications' under Clause 3.7, ''3. LED Driver' will read as : "3. LED Driver • "Type Test report as per IS:15885-Part 5 sec-13, IS:16104. • Test report as per tender specification (drive efficiency , THD, **<15%** Surge protection **>=4kv** internal & 10KV external) • NDMC is at liberty to verify genuineness of LM79/NABL test report and other supporting documents from the LAB/LED

Sr. No.	Reference	Clause	Query	Reply of the NDMC
				manufacture. • NABL certificate should be submitted within **60 days** of bid submission."
80	Typical Specification of LED Street Lights	Technical Specification of LED Street Lights at S. No.1 High bright white power LEDs shall be used in the Luminaries and the wattage of these LEDs shall be >1W and <3W.		Refer reply at S.N. 73 above
M/s Keselec Schreder				
82.	LED Street Light Specifications Sr. No. 8		CCT to be 2700K as per ANSI 2725k +/- 145	No change from RFP
83.	Sr. No. 14 of the Specifications		Overall system Efficacy should be 100 lm/w (+/-5%)	Refer reply at S.N. 76 above
84.	Sr. No. 15 of the Specifications	Operating voltage	Internal Surge Protection of LED Driver should be ≥ 4 kv	Refer reply at S.N. 75 above
85.	Sr. No. 16 of the Specifications	Total Harmonic Distortion	THD<20% should be considered	Refer reply at S.N. 77 above
86.	Input Current <1000mA		≤ 1000 mA	In Column 2 of S..No.22 in table 'Typical Specifications of LED Street Lights' under Clause 3.7, "**<1000mA**" will be read as "**<=1000mA**".
87.	Make of LED chip		Inclusion of LG Innotek	In S.N. 38 "Make of LED chip" in table 'Typical Specifications of LED Street Lights' under clause 3.7, **"NICHIA/ OSRAM/ LUMILEDS/ CREE"** will read as "**NICHIA/ OSRAM/ PHILIPS-LUMILEDS/ CREE/ SEOUL-SEMI CONDUCTOR/ SAMSUNG/ EVERLIGHT**".

Sr. No.	Reference	Clause	Query	Reply of the NDMC
Energasia Smart Poles Pvt. Ltd.				
88.	3.1 (ii)	The Concessionaire has to maintain these Smart Street Light Poles throughout the concession period of nine and half year (This includes implementation period of 6 months)	We request that the concession period be revised from nine and half year to 15 and half years.	No change from RFP.
89.	3.2.1 (c)	From (i) the date of implementation (i.e. Go-Live) of the project, or (ii) expiry of six month period from the date of signing of the concession agreement, whichever is earlier, and till expiry of the concession period, the concessionaire shall pay lump-sum amount quoted in the bid which will be increased by 5% annually on compounded basis as the monthly concession fee to the NDMC subject to a minimum of Rs.5000/- per pole per month. Such minimum concession fee will be increase @ 5% every year on annual compounding basis.	We request that the monthly concession fee to NDMC be revised to Annual concession fee. The minimum concession fee to NDMC be revised from Rs. 5000/- per pole per month to Rs. 2500/- per pole per month.	Clause 3.3 will read as " Concession Fee--- Applicant shall quote lump sum amount quoted in the bid which will be increased by 5% annually on compounded basis to be paid to NDMC as monthly concession fee throughout concession period, subject to a minimum of Rs.2500/- per pole per month. The concession fee will be increased @ 5% every year on annual compounding basis".

Other changes in the RFP document:

1) The specifications for LED outdoor panels (65" to 72") mentioned in Clause 3.2.6 will be as per **Annexure C**.
2) In Sl. No.6 under column 'Locations' in Annexure 1, "**Tolstoy Marg from Jantar Mantar to Connaught Place**" will be read as "**Tolstoy Marg from Jantar Mantar to Barakhamba Road Crossing**".
3) In computing the Technical and Financial Capacity of the Applicant/ Consortium Members under Clauses 5.2.3 and 5.3.2, the Technical and Financial Capacity of their respective Associates would also be eligible hereunder.
4) For purposes of this RFP, Associate means, in relation to the Applicant/ Consortium Member, a person who controls, is controlled by, or is under the common control with such Applicant/ Consortium Member (the "Associate"). As used in this definition, the expression "control" means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person by operation of law.
5) S.N. 21 of table 'Smart Street Light Pole' under Clause 3.7 will read as " Underground space should be used for telecom equipment's with suitable telecom grade enclosure box with IP67 protection to protect telecom and Smart Services equipment. Underground equipment box should be maintenance friendly, provision of lifting of equipment's (**hydraulically operated** at suitable working height) from maintenance perspective should be available. Lifting column should

be able to support 200Kg of equipment load. It is allowed to use underground space **(1.75x1.5x0.75 M** , WxDxH max) for telecom equipment's with suitable telecom grade enclosure box with IP67 protection. **The material of the Smart Streetlight Pole to be installed under this RFP will be stainless steel of suitable grade**."

6) S.N.6 of table in Clause no. 5.2.3 will read as

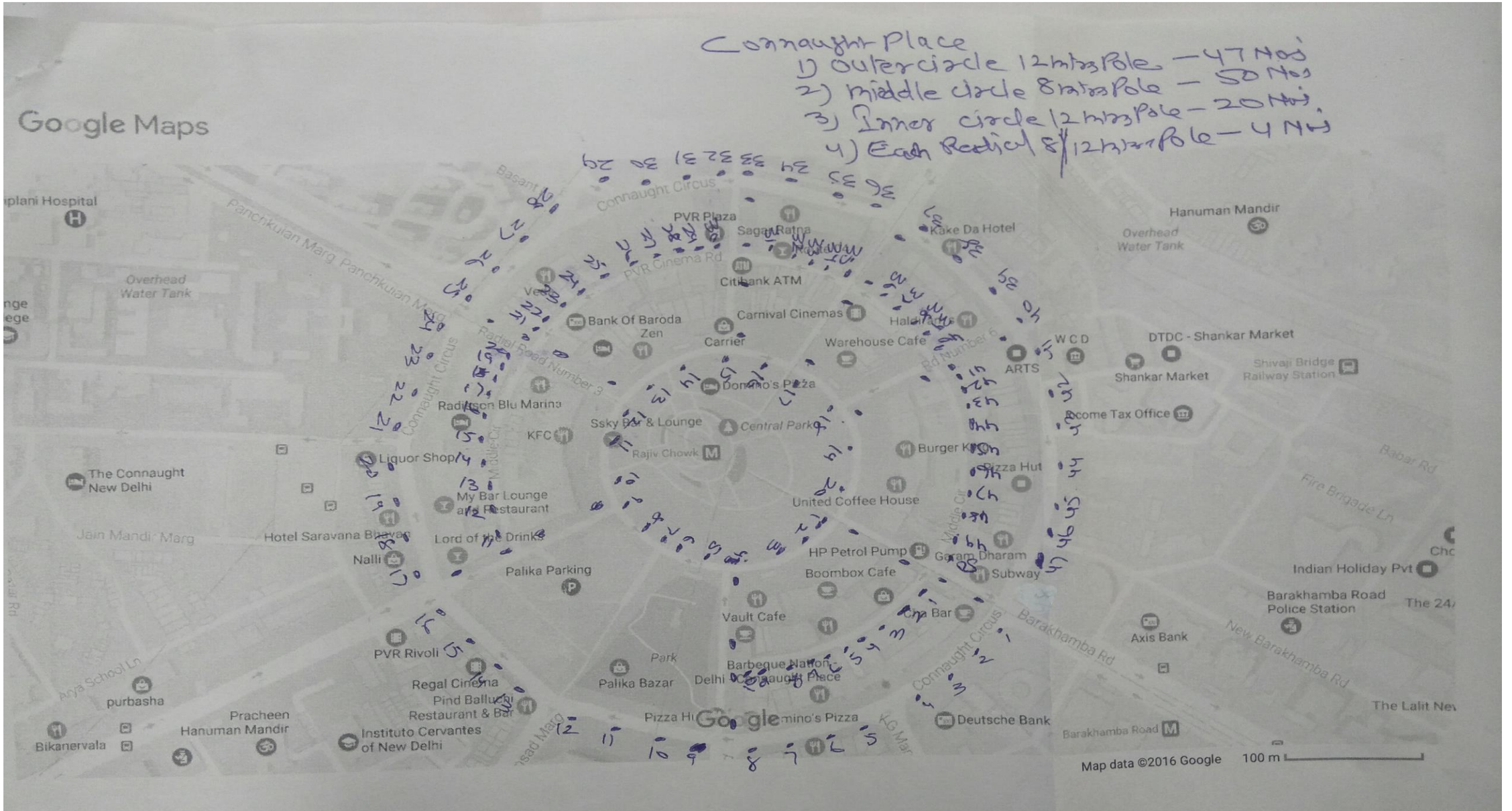
6	Experience of the firm	Smart Pole should have been deployed at at-least three locations in India or out-side India. Smart Poles should be live at minimum one location with at-least two of the services (i.e. Wi-Fi/ CCTV/ LED/ Environmental sensors) as stipulated in this RFP, on the last date for submission of bid.	Necessary reference certificate of the principal owner or self-certificate for the deployments should be submitted as part of bid response. NDMC may visit the site where same Smart Street Light Pole has been installed and working to verify the quality of products installed..

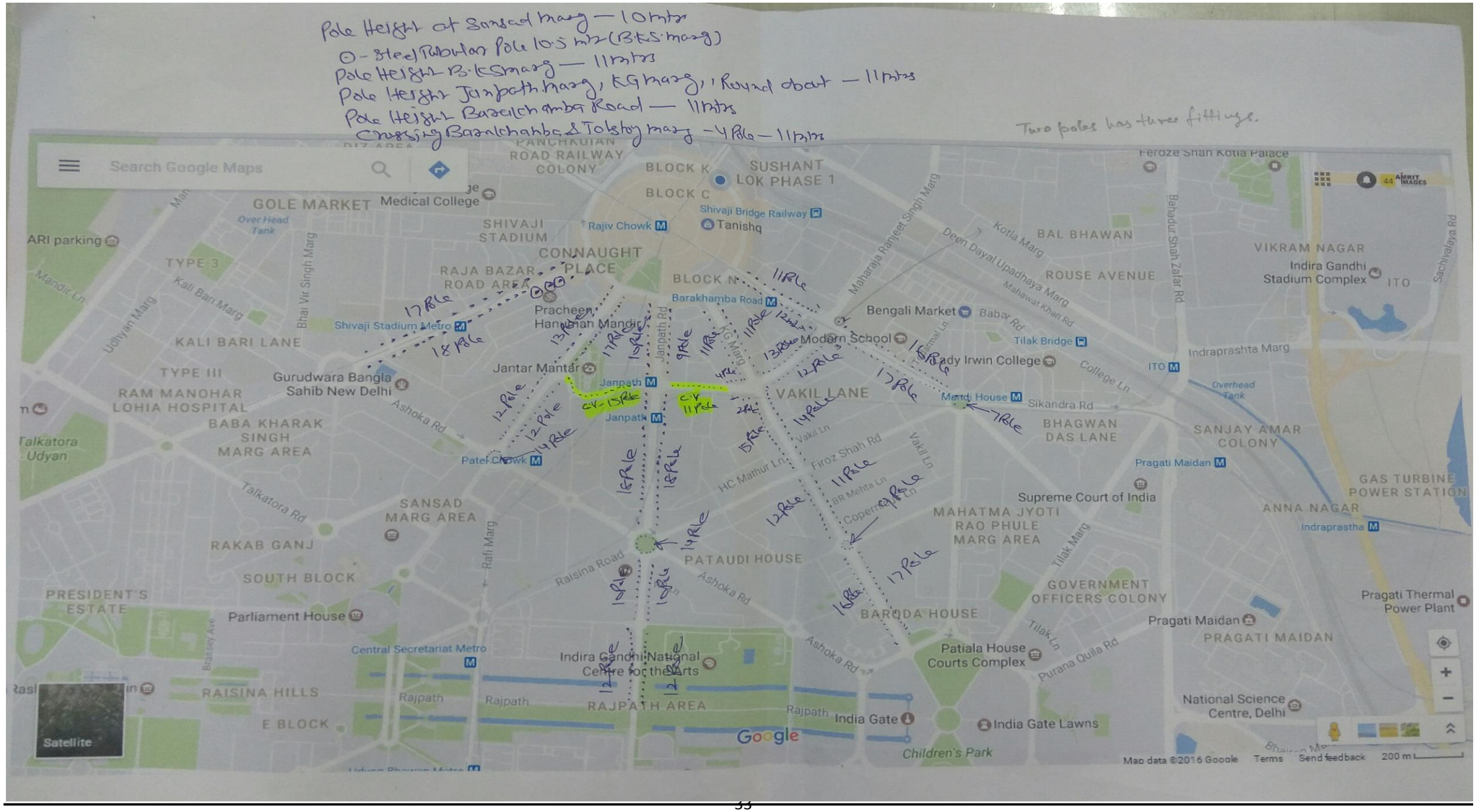
Annexure-‘ A’

Location of Smart Street Light Poles with height

S. No.	Location	Number of Smart Street Light Pole (Approx.)	Existing Height of the Pole (Approx.)	Permissible Height of the Smart Pole (Approx.)
1	B.K.S. Marg from Gole Dhakana to Connaught Place	05	11m	12m
2	Sansad Marg from Patel Chowk to Connaught Place	05	10m	9m
3	Janpath from Le Meridian Hotel to Connaught Place	06	11m	12m
4	K.G. Marg from Ferozshah Road Crossing to Connaught Place	05	11m	12m
5	Barakhamba Road from Mandi House to Connaught Place	06	11m	12m
6	Tolstoy Marg from Jantar Mantar to Barakhamba Road Crossing	07	8m	9m
7	Connaught Place – Outer Circle and Inner circle	15	12m	12m
8	Connaught Place – Middle Circle	6	8m	9m
	Total	**55 Nos.**		

Note : Smart Street light Poles are to be installed in such a way that the spacing of the Smart Poles will be uniform on each road and also to provide the uniform free Wi-Fi availability to the Public.


Connaught Place
1) Outercircle 12mtrsPole — 47 Nos
2) Middle circle 8mtrsPole — 50 Nos
3) Inner circle 12mtrsPole — 20 Nos.
4) Each Radial 8/12mtrsPole — 4 Nos
Google Maps
Connaught Circus
PVR Plaza
Sagar Ratna
Kake Da Hotel
Hanuman Mandir
Overhead Water Tank
PVR Cinema Rd
Citibank ATM
Bank Of Baroda
Zen
Carrier
Carnival Cinemas
Warehouse Cafe
WCD
ARTS
DTDC - Shankar Market
Shankar Market
Shivaji Bridge Railway Station
Radisson Blu Marina
Domino's Pizza
Income Tax Office
Ssky Bar & Lounge
Central Park
KFC
Rajiv Chowk
Burger King
Pizza Hut
Liquor Shop
The Connaught New Delhi
My Bar Lounge and Restaurant
United Coffee House
Hotel Saravana Bhavan
Lord of the Drinks
Nalli
HP Petrol Pump
Garam Dharam
Subway
Palika Parking
Boombox Cafe
Indian Holiday Pvt
Barakhamba Road Police Station
Vault Cafe
Axis Bank
PVR Rivoli
Park
Regal Cinema
Palika Bazar
Barbeque Nation
Delhi Connaught Place
Pind Balluchi Restaurant & Bar
purbasha
Pracheen Hanuman Mandir
Instituto Cervantes of New Delhi
Pizza Hut
Domino's Pizza
Deutsche Bank
Barakhamba Road
Bikanervala
Map data ©2016 Google
100 m


Pole Height at Sansad marg — 10mtrs
⊙ - Steel Tubular Pole 10.5 mtr (B.K.S. marg)
Pole Height B.K.S marg — 11mtrs
Pole Height Janpath marg, K.G marg, Round about — 11mtrs
Pole Height Barakhamba Road — 11mtrs
Crossing Barakhamba & Tolstoy marg — 4 Pole — 11mtrs
Two poles has three fittings.
Search Google Maps
GOLE MARKET
Medical College
PANCHKUIAN ROAD RAILWAY COLONY
BLOCK K
BLOCK C
SUSHANT LOK PHASE 1
Shivaji Bridge Railway
Tanishq
SHIVAJI STADIUM
Rajiv Chowk
CONNAUGHT PLACE
RAJA BAZAR ROAD AREA
BLOCK N
Barakhamba Road
Pracheen Hanuman Mandir
Shivaji Stadium Metro
KALI BARI LANE
TYPE 3
TYPE III
RAM MANOHAR LOHIA HOSPITAL
BABA KHARAK SINGH MARG AREA
Gurudwara Bangla Sahib New Delhi
Jantar Mantar
Janpath
Janpath
Patel Chowk
SANSAD MARG AREA
RAKAB GANJ
SOUTH BLOCK
PRESIDENT'S ESTATE
Parliament House
Central Secretariat Metro
RAISINA HILLS
E BLOCK
Rajpath
Rajpath
RAJPATH AREA
Rajpath
India Gate
Indira Gandhi National Centre for the Arts
PATAUDI HOUSE
Raisina Road
Ashoka Rd
Rafi Marg
Talkatora Rd
Talkatora Udyan
Ashoka Rd
Ashoka Rd
VAKIL LANE
Vakil Ln
Firoz Shah Rd
HC Mathur Ln
BR Mehta Ln
Copernicus Ln
Bengali Market
Babar Rd
Modern School
Lady Irwin College
Mandi House
Sikandra Rd
BHAGWAN DAS LANE
Pragati Maidan
Supreme Court of India
MAHATMA JYOTI RAO PHULE MARG AREA
BARODA HOUSE
GOVERNMENT OFFICERS COLONY
Tilak Marg
Tilak Ln
Patiala House Courts Complex
Purana Quila Rd
India Gate Lawns
Children's Park
Maharaja Ranjeet Singh Marg
Kotla Marg
Deen Dayal Upadhaya Marg
Mahawat Khan Rd
BAL BHAWAN
ROUSE AVENUE
Bahadur Shah Zafar Rd
Feroze Shah Kotla Palace
Tilak Bridge
Indraprashta Marg
ITO
College Ln
Overhead Tank
SANJAY AMAR COLONY
VIKRAM NAGAR
Indira Gandhi Stadium Complex
ITO
Sachivalaya Rd
GAS TURBINE POWER STATION
ANNA NAGAR
Indraprastha
Pragati Thermal Power Plant
Pragati Maidan
PRAGATI MAIDAN
National Science Centre, Delhi
Satellite
Google
Map data ©2016 Google
Terms
Send feedback
200 m

Annexure-‘ B’

Specifications for PTZ - High Definition Camera

S. No.	Camera Characteristics	Description	Compliance (Yes/ No)
1.	Requirement Overview	IP Camera Should allows up to 20x optical zoom while viewing and recording at 1080p resolutions. Camera should support for input and output ports, state change of an input port triggers a camera to take defined action. An output port sends signals that can control 3rd party devices.	
2.	Sensor Type	1/2.8" CMOS Sensor	
3.	Max Resolution	1920x1080 @ 30fps	
4.	Dynamic Range	86db	
5.	Lens/Iris	4.7-94mm	
6.	Field of View	Horizontal Angle of View : 55.4° (W) – 2.9° (T)	
7.	Audio I/O	Audio in x 1	
8.	Digital I/O	(3.5-mm miniature jack)	
9.		Audio out x 1	
10.		(3.5-mm miniature jack)	
11.		DI x 4	
12.		DO x 2	
13.	Max Illumination	Color: 0.05 lux	
14.		B/W: 0.05 lux	
15.	Day/Night	The camera should provides true day/night functionality and includes an IR filter that automatically switches to night mode in low-light scenes. This function can be set to manual, automatic, or scheduled control.	
16.	Local Storage	Micro SD. Storage card is to be provided by the Concessionaire.	
17.	PTZ Speed	Pan speed: 0.05° to 450°/sec Tilt speed: 0.05° to 450°/sec	

18.	Video Compression & Video Streaming	• Single-stream H.264 or MJPEG up to 1080p (1920 x 1080) @ 30 fps Dual-stream H.264 and MJPEG • ◦ Primary stream programmable up to 1280 x 720 @ 30 fps ◦ Secondary stream programmable up to 960 x 544 @15 fps	
19.	ONVIF	Should support for ONVIF 2.0 allows for standards based interoperability	
20.	Motion Detection	Should be Integrated	
21.	External Power	24V AC	
22.	Power Consumption (in watts)	Max 20 Watt at PoE+	
23.	Environmental Certification	IP66	
24.	Operating Temperature	-40 to 55°C at High POE	
25.	Certifications Safety and Certifications EMC-Requirements	CE, Class A FCC, Class A UL/cUL Listed C-Tick	
26.	Auto Detection & Configuration	The camera should be automatically discovered and configured when connected to VMS or Network Switch, to set the right network parameters for the video stream on the network.	
27.	VMS Software	The concessionaire has to provide necessary Video Management Software to manage these cameras from single remote location.	
28.	OEM Criteria	All proposed Cameras should be from single OEM and OEM should have Registration in India minimum from 10 Years. Provided that eight companies viz. Bosch, Honeywell, Tyco, Sony, Panasonic, Samsung, CISCO, Verint would not to have registration in India minimum from 10 years as required above.	

Annexure –'C'

Minimum Specifications for Outdoor Digital Panels (65" to 72")

S. No.	Standard	Specification
1	Resolution	1920x1080
2	Aspect Ratio	16:9
3	Display Colors	16.7M
4	Brightness (cd/m^2) / (typ) minimum	2500
5	Contrast Ratio	5000:1
6	Viewing Angle (H./V.)	178º/178º
7	Life Time	50,000Hrs

OR

The Concessionaire can provide and install True LED of equivalent size with following minimum specifications:-

S. No.	Standard	Specification
1	Pixel Size	P10
2	Brightness	6000 nits
3	Life of LED display	1Lakh Hrs.
4	IP Rating	IP65 / IP54
5	Brightness Control	256 level
6	Input Power frequency	50 or 60 Hertz
7	Operating Temperature	-5º to 50º C
8	Viewing angle	Horizontal - 110 degree, Vertical - 75 degree
9	Colour Display	10.7 billion