

Ref#PK-IT-SUN-G-29-SEP/26-001M

SEPTEMBER 29, 2026

Attention : Mr. Abdullah Jan/Project Director, TPDP, MoITT
Email : pd.itpark@moitt.gov.pk

Subject: Submission of Assets Register for IT Park Islamabad

Dear Sir,

As requested by the Client, we hereby submit the Assets Register covering ICT, Mechanical, Architectural, and Electrical works for your information and official record.

The submitted Assets Register contains the relevant details of the assets/equipment under the respective disciplines and is being provided for record, verification, and future reference.

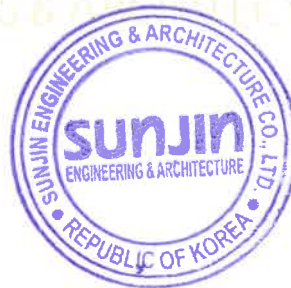
The register has been prepared based on the best of our knowledge and the available project records.

Kindly acknowledge receipt and retain the same for your future reference.

Thanks and Regards



Mr. Yeo Chang Uk
Acting Construction Supervisor/Deputy PM
SUNJIN Engineering & Architecture Co., Ltd.
Technology Park Development Project



Assets register / Inventory (Mechanical)												
Description	Unit	Basement Qty	Ground to Roof Qty	Mosque Qty	Visitor Center Qty	Tubewell Room-1 Qty	Tubewell Room-2 Qty	IESCO Panel Room	Post Guard-1 Qty	Post Guard-2 Qty	Post Guard-3 Qty	Remarks
Plumbing Fixtures												
Water closet at western type with flush tank type												
WC-1 / VC-1110	no	12.00	108.00	2.00	2.00							
WC-2 / VC-1110 / Handicaped	no	4.00	48.00	2.00								
Water closet handle for handicaped	no	4.00	48.00	2.00								
Water closet at eastern type with flush tank type												
WC-3 / VC-310	no			3.00								
Urinal with electro sensitive sensor												
UR-1 / VU-320	no	8.00	85.00									
Lavatory												
LA-2 / VL-1050 / round-type	no	24.00	216.00									
Lavatory												
LA-2 / VL-1050 / Square-type	no			4.00								
Lavatory												
LA-1 / VL-520 / square-type	no				2.00							
Faucet for lavatory: Supply and Installation of plumbing fixtures & faucets complete in all respects including all accessories, support, hangers, etc. ready to use as per specifications, drawings and instructions of Consultant.	no	216.00	24.00	4.00	2.00							
Cleaning sink with Faucet: Stainless Steel industrail sink size and specifications as per drawings or as approved by the engineer. Supply and Installation of plumbing fixtures & faucets complete in all respects including all accessories, support, hangers, etc. ready to use as per specifications, drawings and instructions of Consultant.												
SS-1 / S-210	no	4.00	44.00	1.00	1.00							
Kitchen sink: Stainless Steel kitchen sink size and specifications as per drawings or as approved by the engineer complete in all respects including all accessories, support, hangers, etc. ready to use as per specifications, drawings and instructions of Consultant.	no		18.00									
Faucet:Supply and Installation of plumbing fixtures, showers & faucets complete in all respects including all accessories, support, hangers, etc. ready to use as per specifications, drawings and instructions of Consultant.												
LF-1 / Hand faucet next to water closets with cold water supply only	no	16.00	165.00	7.00	2.00							
Faucet:Supply and Installation of plumbing fixtures, showers & faucets complete in all respects including all accessories, support, hangers, etc. ready to use as per specifications, drawings and instructions of Consultant.												
SH-1 / Shower at guest house and Gym with hot & cold mixers	no		22.00									
KS-1 / Kitchen sink faucet with hot & cold mixers	no		18.00									
Sanitary ware fittings:Supply and Installation of fittings complete in all respects including all accessories, support, hangers, etc. ready to use as per specifications, drawings and instructions of Consultant.												
Tower bar	no		7.00	11.00	2.00							
Toilet paper holder	no	16.00	156.00	7.00	2.00							
Soap dish holder	no	24.00	191.00	26.00	2.00							
Hand dryer	no	8.00	75.00	3.00								

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Paper tower	no	8.00	65.00									
Cold water meter with remote controllers												
40mm dia. meter for cold water	no	8.00										
100mm dia. meter for cold water	no	1.00										
Pressure gauges: Supply and Fixing gauge, syphone tube, gauge cock, including all accessories required to complete and ready to operate as per specification, drawings & instruction of Consultant.	no	20.00										
Thermometers include thermometer, well, all neccessry accessries and such as installation	no	20.00										
Sanitary equipments works												
Hot water boilers, type to vacuum hot water, complete with all the necessary accessories												
B-2 / 200,000KCAL/H	no	1.00										
B-3 / 200,000KCAL/H	no	1.00										
Electric water heaters: Supply and fixing of electric heaters complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
EWH-02 / 30L, 2.0kW	no	8.00										
Electric water heaters:Supply and fixing of electric heaters complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
EWH-01 / 15L, 1.5kW	no		28.00									
EWH-02 / 30L, 2.0kW	no		68.00									
Electric water heaters:Supply and fixing of electric heaters complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
EWH-02 / 15L, 1.0kW	no			1.00								
EWH-03 / 80L, 6.0kW	no			3.00								
Electric water heaters: Supply and fixing of electric heaters complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
EWH-01 / 3 ~ 4.5kW- (Considered 30 L)	no				2.00							
Electric water coolers complete with all the necessary accessories												
EWK-01 / 2kW	no			1.00								
In-line centrifugal pumps, complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
PP-2 / 40GPM*1.5kW	no			1.00								
In-line centrifugal pumps, complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
PP-1 / 15GPM*1.12kW	no				1.00							
Submerisble duplex sump pumps, complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
SP-1 / 10GPM*0.5M*0.375KW	no			6.00								

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Booster pumps ,type to vertical multistage, complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
P-4 / 600LPM*1.1MPA*18.5KW	no	1.00										
In-line centrifugal pumps ,complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
P-5 / 65LPM*150KPA*0.37kW	no	2.00										
P-6 / 35LPM*100KPA*0.37kW	no	2.00										
P-7 / 43LPM*100KPA*0.37kW	no	2.00										
P-8 / 35LPM*100KPA*0.37kW	no	2.00										
In-line centrifugal pumps , complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
WSP-1 / 400GPM*220M*90kW	no					1.00						
In-line centrifugal pumps , complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
WSP-1 / 400GPM*220M*90kW	no						1.00					
Submerisble duplex sump pumps ,complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
SP-1 / 500LPM*190KPA*3.7KW	no	2.00										
SP-2 / 500LPM*200KPA*3.7KW	no	2.00										
SP-3 / 200LPM*180KPA*2.2KW	no	2.00										
SP-4 / 200LPM*220KPA*3.7KW	no	2.00										
SP-5 / 200LPM*200KPA*3.7KW	no	2.00										
SP-6 / 200LPM*150KPA*1.5KW	no	2.00										
SP-7 / 200LPM*150KPA*1.5KW	no	2.00										
SP-8 / 200LPM*150KPA*1.5KW	no	2.00										
SP-9 / 200LPM*150KPA*1.5KW	no	2.00										
SP-10 / 200LPM*150KPA*1.5KW	no	2.00										
SP-11 / 500LPM*200KPA*3.7KW	no	14.00										
Submerisble duplex sump pumps , complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
SP-1 / 10GPM*0.5M*0.375KW	no					1.00	1.00	1.00				
Sweage package tanks ,type to in-line centrifugal, includes to emergency power, complete with all the necessary accessories including labour ready to use as per drawings, specifications and instructions of consultant.												
SPT-1 / 130LPM*190KPA*(2.8KW*3)	no	3.00										
SPT-2 / 70LPM*190KPA*(2.9KW*2)	no	2.00										
SPT-3 / 180LPM*190KPA*(2.8KW*3)	no	3.00										
SPT-4 / 90LPM*190KPA*(2.9KW*2)	no	2.00										
Hot water tanks , type to horizontal, material as STS316, includes to 0.7mm thickness aluminum jacket attachment to 50mm thickness urethane insulation, complete with all the necessary accessories complete in all respects ready to use as per sepcifications, drawings and instructions of consultnat.												
T-2 / 6,000Liters / 1,700Φ*2,650H	no	1.00										

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Hot water tanks , type to horizontal, material as STS304, complete with all the necessary accessories												
T-3 / 9,000Liters / 2,000Φ*2,900H	no	1.00										
Expansion tank & air separators , type to bladder SS400, complete with all the necessary accessories												
ET-3 / 2,000Liters / 1,700Φ*2,650H	no	2.00										
Hot water boilers , type to vacuum hot water, complete with all the necessary accessories												
B-1 / 500,000KCAL/H	no	1.00										
Heat & Ventilation System (HVAC)												
Chillers , type to water cooled electric centrifugal, complete with all the necessary accessories												
CH-1 / 200USRT	no	1.00										
Constant temperature & humidity units ,type to air-cooled, complete with all the necessary accessories												
CRAC-1 / Cooling:86.5kW / Heating:36kW	no		8.00									
In-line centrifugal fans , complete with all the necessary accessories including built-in sound attenuators and anti vibration pads complete in all respects ready to use as per drawings and shall be submitted for approval of consultant												
EF-1 / Φ850 / 9,000CMH*200PA*1.5kW	no	1.00										
EF-2 / Φ1,000 / 19,600CMH*200PA*3.8kW	no	1.00										
EF-3 / Φ900 / 12,300CMH*200PA*2.3kW	no	1.00										
SF-1 / Φ850 / 9,000CMH*200PA*1.5kW	no	1.00										
SF-2 / Φ1,000 / 19,600CMH*200PA*3.8kW	no	1.00										
SF-3 / Φ900 / 12,300CMH*200PA*2.3kW	no	1.00										
In-line centrifugal fans , complete with all the necessary accessories including built-in sound attenuators and anti vibration pads complete in all respects ready to use as per drawings and shall be submitted for approval of consultant												
EF-5 / Φ550 / 1,800CMH*200PA*0.4kW	no		1.00									
EF-6 / Φ550 / 1,300CMH*200PA*0.4kW	no		1.00									
EF-7 / Φ1,120 / 28,200CMH*200PA*5.6kW	no		1.00									
EF-8 / Φ550 / 1,700CMH*200PA*0.4kW	no		1.00									
EF-9 / Φ600 / 4,900CMH*200PA*1.5kW	no		1.00									
EF-10 / Φ550 / 3,900CMH*200PA*0.75kW	no		1.00									
EF-11 / Φ500 / 1,000CMH*200PA*0.4kW	no		1.00									
EF-12 / Φ500 / 1,000CMH*200PA*0.4kW	no		1.00									
EF-13 / Φ550 / 1,460CMH*200PA*0.4kW	no		1.00									
EF-14 / Φ550 / 1,460CMH*200PA*0.4kW	no		1.00									
EF-17 / Φ500 / 2,290CMH*200PA*0.4kW	no		1.00									
EF-19 / Φ500 / 1,200CMH*200PA*0.4kW	no		1.00									
EF-20 / Φ550 / 2,800CMH*200PA*0.75kW	no		1.00									
EF-21 / Φ550 / 3,100CMH*200PA*0.75kW	no		1.00									
EF-23 / Φ500 / 1,500CMH*200PA*0.4kW	no		1.00									
EF-24 / Φ850 / 13,100CMH*200PA*2.3kW	no		1.00									
EF-25 / Φ850 / 9,800CMH*200PA*1.5kW	no		1.00									
SF-5 /Φ550 / 2,500CMH*200PA*0.4kW	no		1.00									
SF-6 / Φ550 / 1,300CMH*200PA*0.4kW	no		1.00									
SF-7 / Φ1,120 / 28,200CMH*200PA*5.6kW	no		1.00									
SF-8 / Φ550 / 1,700CMH*200PA*0.4kW	no		1.00									
SF-9 / Φ600 / 4,900CMH*200PA*1.5kW	no		1.00									
SF-10 / Φ550 / 3,900CMH*200PA*0.75kW	no		1.00									
SF-11 / Φ500 / 1,200CMH*200PA*0.4kW	no		1.00									
SF-12 / Φ550 / 2,800CMH*200PA*0.75kW	no		1.00									

Description	Unit	Basement Qty	Ground to Roof Qty	Mosque Qty	Visitor Center Qty	Tubewell Room-1 Qty	Tubewell Room-2 Qty	IESCO Panel Room	Post Guard-1 Qty	Post Guard-2 Qty	Post Guard-3 Qty	Remarks
SF-13 / Ø550 / 3,100CMH*200PA*0.75kW	no		1.00									
SF-15 / Ø500 / 1,500CMH*200PA*0.4kW	no		1.00									
SF-16 / Ø850 / 13,100CMH*200PA*2.3kW	no		1.00									
SF-17 / Ø850 / 9,800CMH*200PA*1.5kW	no		1.00									
Sirocco SS fans , complete with all the necessary accessories inlcuding built-in sound attenuators and anti vibration pads complete in all respects ready to use as per drawings and shall be submitted for approval of consultant												
EF-4 / SS#6 / 24,300CMH*200PA*3.7kW	no	1.00										
SF-4 / SS#6 / 24,300CMH*200PA*3.7kW	no	1.00										
Sirocco SS fans ,complete with all the necessary accessories inlcuding built-in sound attenuators and anti vibration pads complete in all respects ready to use as per drawings and shall be submitted for approval of consultant												
EF-15 / SS#2 / 1,570CMH*200PA*0.4kW	no		1.00									
EF-16 / SS#2.5 / 3,120CMH*200PA*0.75kW	no		1.00									
Multi fans: to underground parking lot, complete with all the necessary accessories inlcuding built-in sound attenuators and anti vibration pads complete in all respects ready to use as per drawings and shall be submitted for approval of consultant												
EF-1-1 / 90,000CMH*100PA*8.1KW	no	1.00										
EF-2-1 / 90,000CMH*100PA*8.1KW	no	1.00										
SF-2-1 / 90,000CMH*100PA*8.1KW	no	1.00										
Ceiling jet fans: to underground parking lot, complete with all the necessary accessories inlcuding built-in sound attenuators and anti vibration pads complete in all respects ready to use as per drawings and shall be submitted for approval of consultant												
KLJ-350 / 3,500CMH*30PA*0.43KW	no	95.00										
Ceiling fans , complete with all the necessary accessories												
EF-18 / Ø200 / 90CMH*100PA*0.1kW	no		7.00									
Wall fans , complete with all the necessary accessories												
EF-22 / Ø250 / 500CMH*50PA*0.1kW	no		1.00									
SF-14 / Ø250 / 500CMH*50PA*0.1kW	no		1.00									
E.H.P & E.R.V works include all material such as equipment, controls, piping, fittings, all necessary accessories and labor such as installation, also necessary equipment complete in all respects ready to use as per drawings and specifications shall be submitted by the Contractor and subject approval by the Engineer.												
Outdoor units												
OAC-02-01-4F / 14HP	no		1.00									
OAC-03-01-1F / 16HP	no		1.00									
OAC-03-01-3F / 16HP	no		1.00									
OAC-03-01-GF / 16HP	no		1.00									
OAC-04-01-3F / 8HP	no		1.00									
OAC-04-01-3F / 10HP	no		1.00									
OAC-04-01-5F / 8HP	no		1.00									
OAC-04-01-5F / 10HP	no		1.00									
OAC-04-01-6F / 8HP	no		1.00									
OAC-04-01-6F / 10HP	no		1.00									
OAC-04-01-7F / 8HP	no		1.00									
OAC-04-01-7F / 10HP	no		3.00									
OAC-04-01-8F / 10HP	no		3.00									
OAC-04-01-9F / 10HP	no		3.00									

Description	Unit	Basement Qty	Ground to Roof Qty	Mosque Qty	Visitor Center Qty	Tubewell Room-1 Qty	Tubewell Room-2 Qty	IESCO Panel Room	Post Guard-1 Qty	Post Guard-2 Qty	Post Guard-3 Qty	Remarks
OAC-04-02-6F / 10HP	no		3.00									
OAC-04-03-6F / 10HP	no		2.00									
OAC-05-01-3F / 10HP	no		1.00									
OAC-05-01-4F / 10HP	no		1.00									
OAC-05-01-4F / 12HP	no		1.00									
OAC-05-02-3F / 10HP	no		4.00									
OAC-05-03-3F / 10HP	no		3.00									
OAC-06-01-1F / 10HP	no		1.00									
OAC-06-01-1F / 12HP	no		1.00									
OAC-06-01-2F / 12HP	no		2.00									
OAC-06-01-3F / 12HP	no		2.00									
OAC-06-01-4F / 12HP	no		2.00									
OAC-06-02-1F / 12HP	no		2.00									
OAC-06-03-1F / 12HP	no		2.00									
OAC-07-01-1F / 12HP	no		2.00									
OAC-07-01-2F / 12HP	no		2.00									
OAC-07-01-4F / 12HP	no		2.00									
OAC-07-01-5F / 12HP	no		2.00									
Outdoor units												
OAC-07-01-6F / 12HP	no		2.00									
OAC-07-01-7F / 12HP	no		2.00									
OAC-07-01-8F / 12HP	no		2.00									
OAC-07-01-9F / 12HP	no		2.00									
OAC-07-02-5F / 12HP	no		2.00									
OAC-07-02-7F / 12HP	no		2.00									
OAC-08-01-4F / 12HP	no		1.00									
OAC-08-01-4F / 14HP	no		1.00									
OAC-08-01-6F / 16HP	no		1.00									
OAC-08-01-7F / 16HP	no		1.00									
OAC-08-01-GF / 14HP	no		1.00									
OAC-08-02-4F / 14HP	no		2.00									
OAC-09-01-1F / 14HP	no		2.00									
OAC-09-01-4F / 14HP	no		1.00									
OAC-09-01-4F / 16HP	no		1.00									
OAC-09-01-5F / 12HP	no		1.00									
OAC-09-01-5F / 16HP	no		1.00									
OAC-09-02-2F / 14HP	no		1.00									
OAC-10-01-1F / 14HP	no		1.00									
OAC-10-01-1F / 16HP	no		1.00									
OAC-10-01-2F / 16HP	no		3.00									
OAC-10-01-3F / 16HP	no		2.00									
OAC-11-01-3F / 12HP	no		2.00									
OAC-11-01-GF / 14HP	no		1.00									
OAC-12-01-GF / 4HP	no		1.00									
OAC-12-02-GF / 4HP	no		1.00									
Indoor units												
IAC-02-01-4F1 /5.6kW, 6.3kW	no		2.00									
IAC-03-01-1F / 9.0kW, 10.0kW	no		2.00									
IAC-04-01-3F1 / 7.1kW, 8.0kW	no		2.00									
IAC-04-01-5F1 / 7.1kW, 8.0kW	no		6.00									
IAC-04-01-6F1 / 7.1kW, 8.0kW	no		6.00									
IAC-04-01-7F1 / 7.1kW, 8.0kW	no		6.00									
IAC-04-01-8F1 / 7.1kW, 8.0kW	no		6.00									
IAC-04-01-9F1 / 7.1kW, 8.0kW	no		6.00									
IAC-04-02-6F1 / 7.1kW, 8.0kW	no		6.00									
IAC-04-03-6F1 / 7.1kW, 8.0kW	no		6.00									
IAC-05-01-1F1 / 5.6kW, 6.3kW	no		3.00									
IAC-05-01-3F1 / 7.1kW, 8.0kW	no		7.00									

Description	Unit	Basement Qty	Ground to Roof Qty	Mosque Qty	Visitor Center Qty	Tubewell Room-1 Qty	Tubewell Room-2 Qty	IESCO Panel Room	Post Guard-1 Qty	Post Guard-2 Qty	Post Guard-3 Qty	Remarks
IAC-05-01-4F1 / 11.2kW, 12.5kW	no		18.00									
IAC-05-02-3F1 / 7.1kW, 8.0kW	no		6.00									
IAC-05-03-3F1 / 7.1kW, 8.0kW	no		7.00									
IAC-06-01-1F1 / 7.1kW, 8.0kW	no		5.00									
IAC-06-01-1F4 / 2.8kW, 3.2kW	no		4.00									
IAC-07-01-1F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-01-2F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-01-4F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-01-5F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-01-6F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-01-7F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-01-8F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-01-9F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-02-5F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-02-7F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-02-8F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-02-9F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-03-5F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-03-7F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-03-8F1 / 7.1kW, 8.0kW	no		8.00									
IAC-07-03-9F1 / 7.1kW, 8.0kW	no		8.00									
IAC-08-01- HALLS2 / 7.1kW, 8.0kW	no		1.00									
IAC-08-01- HALLS4 / 7.1kW, 8.0kW	no		1.00									
IAC-08-01- HALLS6 / 7.1kW, 8.0kW	no		1.00									
IAC-08-01- HALLS9 / 7.1kW, 8.0kW	no		1.00									
IAC-08-01-4F5 / 7.1kW, 8.0kW	no		9.00									
IAC-08-01-5F1 / 7.1kW, 8.0kW	no		9.00									
IAC-08-01-6F1 / 7.1kW, 8.0kW	no		9.00									
IAC-08-01-7F1 / 7.1kW, 8.0kW	no		9.00									
IAC-08-01-8F1 / 7.1kW, 8.0kW	no		9.00									
IAC-08-01-9F1 / 7.1kW, 8.0kW	no		9.00									
IAC-08-01-HALLS1 / 7.1kW, 8.0kW	no		1.00									
IAC-08-01-HALLS3 / 7.1kW, 8.0kW	no		1.00									
IAC-08-01-HALLS5 / 7.1kW, 8.0kW	no		1.00									
IAC-08-01-HALLS7 / 7.1kW, 8.0kW	no		1.00									
IAC-08-01-HALLS8 / 7.1kW, 8.0kW	no		1.00									
IAC-08-02-4F6 / 7.1kW, 8.0kW	no		5.00									
IAC-08-02-HALLS1 / 7.1kW, 8.0kW	no		1.00									
IAC-08-02-HALLS2 / 7.1kW, 8.0kW	no		1.00									
IAC-08-02-HALLS3 / 7.1kW, 8.0kW	no		1.00									
IAC-08-02-HALLS4 / 7.1kW, 8.0kW	no		1.00									
IAC-08-02-HALLS5 / 7.1kW, 8.0kW	no		1.00									
IAC-08-02-HALLS6 / 7.1kW, 8.0kW	no		1.00									
IAC-08-02-HALLS7 / 7.1kW, 8.0kW	no		1.00									
IAC-08-02-HALLS8 / 7.1kW, 8.0kW	no		1.00									
IAC-08-02-HALLS9 / 7.1kW, 8.0kW	no		1.00									
IAC-08-03-4F1 / 7.1kW, 8.0kW	no		9.00									
IAC-09-01-1F / 7.1kW, 8.0kW	no		5.00									
IAC-09-01-2F1 / 7.1kW, 8.0kW	no		10.00									
IAC-09-01-4F1 / 7.1kW, 8.0kW	no		10.00									
IAC-09-01-5F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-01-6F1 / 7.1kW, 8.0kW	no		1.00									
IAC-09-01-7F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-01-8F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-01-9F1 /5.6kW, 6.3kW	no		7.00									
IAC-09-01-9F8 / 7.1kW, 8.0kW	no		4.00									
IAC-09-01-GF1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-01-GF5 /5.6kW, 6.3kW	no		2.00									

Description	Unit	Basement Qty	Ground to Roof Qty	Mosque Qty	Visitor Center Qty	Tubewell Room-1 Qty	Tubewell Room-2 Qty	IESCO Panel Room	Post Guard-1 Qty	Post Guard-2 Qty	Post Guard-3 Qty	Remarks
IAC-09-02-2F1 / 7.1kW, 8.0kW	no		5.00									
IAC-09-02-5F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-02-6F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-02-7F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-02-8F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-02-9F8 / 7.1kW, 8.0kW	no		4.00									
IAC-09-03-5F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-03-6F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-03-7F1 / 7.1kW, 8.0kW	no		4.00									
IAC-09-03-8F8 / 7.1kW, 8.0kW	no		4.00									
IAC-09-03-9F8 / 7.1kW, 8.0kW	no		4.00									
IAC-10-01-1F1 / 9.0kW, 10.0kW	no		4.00									
IAC-10-01-2F8 / 9.0kW, 10.0kW	no		4.00									
IAC-10-01-3F7 / 7.1kW, 8.0kW	no		6.00									
IAC-10-01-GF1 / 11.2kW, 12.5kW	no		20.00									
IAC-10-02-3F1 / 7.1kW, 8.0kW	no		6.00									
IAC-10-02-GF1 / 11.2kW, 12.5kW	no		20.00									
IAC-10-02-GF9 / 7.1kW, 8.0kW	no		2.00									
IAC-10-03-GF1 / 7.1kW, 8.0kW	no		4.00									
IAC-11-01-3F1 / 7.1kW, 8.0kW	no		10.00									
IAC-11-02-3F1 / 7.1kW, 8.0kW	no		10.00									
Roof top units type to air cooled, complete with all necessary accessories complete in all respects ready to use as per specifications, drawings and shall be submitted for approval of consultant												
RTU-01 / 70.3kW	no			2.00								
Air-curtains												
2,500CFM	no			8.00								
Package air-conditioners , indoor unit with outdoor unit, complete with all necessary accessories												
IAC-02 / c:10,750 / h:11,530 (BTU/H)	no			1.00								
Package air-conditioners , indoor unit with outdoor unit, complete with all necessary accessories												
IAC-01 / c:26,000 / h:26,000 (BTU/H)	no				2.00							
Package air-conditioners indoor unit with outdoor unit, complete with all necessary accessories												
IAC-02 / c:10,750 / h:11,530 (BTU/H)	no								1.00			
Package air-conditioners , indoor unit with outdoor unit, complete with all necessary accessories												
IAC-02 / c:10,750 / h:11,530 (BTU/H)	no									1.00		
Package air-conditioners , indoor unit with outdoor unit, complete with all necessary accessories												
IAC-02 / c:10,750 / h:11,530 (BTU/H)	no										1.00	
In-line centrifugal fans , complete with all the necessary accessories inlcuding built-in sound attenuators and anti vibration pads complete in all respects ready to use as per drawings and shall be submitted for approval of consultant												
EXF-01 / 200Φ, 35W	no			1.00								
EXF-02 / 400CFM	no			1.00								
EXF-03 / 550CFM	no			1.00								
Wall Mounted fans , complete with all the necessary accessories ncluding installation, complete in all respect ready to use as per drawings, specs, and subject to approval of Engineer	no				2.00							
Wall Mounted fans , complete with all the necessary accessories complete in all respects ready to use as per specifications, drawings and instructions of Consultant.	no								1.00			

Description	Unit	Basement Qty	Ground to Roof Qty	Mosque Qty	Visitor Center Qty	Tubewell Room-1 Qty	Tubewell Room-2 Qty	IESCO Panel Room	Post Guard-1 Qty	Post Guard-2 Qty	Post Guard-3 Qty	Remarks
Wall Mounted fans , complete with all the necessary accessories complete in all respects ready to use as per specifications, drawings and instructions of Consultant.	no									1.00		
Wall Mounted fans , complete with all the necessary accessories complete in all respects ready to use as per specifications, drawings and instructions of Consultant.	no										1.00	
Ceiling Fans complete with all the necessary accessories including installation, complete in all respect ready to use as per drawings, specs, and subject to approval of Engineer	no				4.00							
Energy recovery units												
260CMH	no		9.00									
500CMH	no		12.00									
800CMH	no		17.00									
1,000CMH	no		4.00									
In-line centrifugal pumps, Basement complete with all the necessary accessories complete in all respects ready to use as per drawings and shall be submitted for approval of consultant												
P-1 / 2,016LPM*360KPA*22kW	no	2.00										
P-2 / 2,600LPM*200KPA*19kW	no	2.00										
P-3 / 834LPM*350KPA*11kW	no	2.00										
Expansion tank & air separators type to closed SS400, complete with all the necessary accessories												
ET-1 / 300Liters / 800W*1,810L*1,574H	no	1.00										
Headers , includes to 0.45mm thickness aluminum jacket attachment to 50mm thickness glass wool insulation, material as sch#40 black steel, complete with all the necessary accessories												
HD-1 / 300Φ*3,650L	no	1.00										
HD-2 / 300Φ*3,990L	no	1.00										
HVAC Control System												
Automatic control works , include all material such as equipment applicable to HVAC facilitie controls, detectors, conduits, cables, all necessary accessories and labor such as installation, also necessary equipment complete in all respects ready to use as per drawings and shall be submitted for approval of consultant												
C.C.M.S	no	1.00										
DDC-M	no	1.00										
DDC-GA	no	1.00										
DDC-2A	no	1.00										
DDC-2B	no	1.00										
Gate Way	no	1.00										
U.P.S / 3 KVA	no	1.00										
Fire Fighting Mechanical												
Airfoil fans: to smoke controls, complete with all the necessary accessories												
FSF-1 / 20,000CMHx50MMAQx10HP	no	1.00										
FSF-2 / 20,000CMHx50MMAQx10HP	no	1.00										
FSF-3 / 20,000CMHx50MMAQx10HP	no	1.00										
FSF-4 / 20,000CMHx50MMAQx10HP	no	1.00										
FSF-6 / 30,000CMHx65MMAQx15HP	no	2.00										
Motor driven fire pumps , type to horizontal split case, complete with all the necessary accessories including material, labour, complete in all respect, ready to use as per darwings, specifications and subject to approval of Engineer												

Description	Unit	Basement Qty	Ground to Roof Qty	Mosque Qty	Visitor Center Qty	Tubewell Room-1 Qty	Tubewell Room-2 Qty	IESCO Panel Room	Post Guard-1 Qty	Post Guard-2 Qty	Post Guard-3 Qty	Remarks
FP-1 / 1,500GPM*131PSI*200HP	no	1.00										
FP-3 / 44GPM*131PSI*10HP	no	1.00										
FP-4 / 1,000GPM*109PSI*125HP	no	1.00										
Diesel engine driven fire pumps , type to horizontal split case, complete with all the necessary accessories and fuel storage day tank including labour complete in all respects ready to use as per drawings, spcifications and subject to approval of Engineer.												
FP-2 / 1,500GPM*131PSI*216HP	no	1.00										
FP-5 / 1,000GPM*109PSI*115HP	no	1.00										
Jockey fire pumps , type to vertical multi stage, complete with all the necessary accessories CNF												
FP-6 / 44GPM*109PSI*10HP	no	1.00										
S/F Fire hose cabinet double height, Height 1200mm, width 800mm and depth 200mm stainless steel front with vision glass, powder coated back including 2-1/2"x100 Rft or 65mm/30RM. rubber hose reel, automatic & manual operation 180 deg. swing type, nozzle guide, gate valve, pressure regulating valve (max. pressure 3.0 Bars), 1-fire extinguishers as shown on drawing.complete UK / USA/UL Listed. Prices for fire extinguishers paid separately.												
Burried	no	12.00	52.00	2.00								
Exposed	no	8.00										
Dry chemical extinguishers with extinguisher brackets CNF												
ABC 4kg, A-type	no	68.00	462.00	2.00								
ABC 4kg, B-type	no		2.00									
Clean agent extinguishers CNF												
2kg	no		17.00									
Wet chemical extinguishers CNF												
4 Liters	no		2.00									
Sprinkler heads CNF												
Pendent (Standard Response)	no	76.00	1,264.00									
Pendent (Fast Response)	no	32.00	4,168.00									
Up-right (Standard Response)	no	2,269.00	381.00									
Clean agent systems , include all material such as clean agent cylinders, pipe, fittings, valves and pipe supports, all necessary accessories and labor such as installation, also necessary equipment complete in all respects ready to use as er specifications, drawings shall be submitted by the Contractor and subject to approval by the Engineer.												
HFC-227ea Cylinders CNF												
82.5L/40kg	BTL	16.00										
82.5L/45kg	BTL	35.00										
82.5L/55kg	BTL	9.00										
HFC227 Agent Included in Cylinders	Kgs											
180 L		14.00										
140 L		5.00										
40L		1.00										
Main Fire Alarm & Control Panel	no	1.00										
Analogue Adressable Loop Expension Module	no	1.00										
In-line fire pumps, complete with all the necessary accessories 50GPM*75PSI*4.5KW	no			1.00								

K	Offuice IDF-9Th-F		15
L	Guard Post - I,I,I,I		3
M	External - Tubewell Room		1
	Total Office IDF	Nos	132
2.06	Fiber Optic IEDE		
1	24 Port at Data Center Main IDF	Nos	22
2	24 Port Floor Level Fiber IDF	Nos	32
3	12 Port Offices Fiber IDF	Nos	135
2.07	Layer-2 Edge Switch		
	Supply, Installation of Layer-2 Ethernet Network Switch Rack Mounted having Switching Capacity 56 Gbps, Through put 83 MPPS, standalone chassis in a 1U form factor with 24 10/100/1000 BaseT ports and 4 Gigabit SFP ports. Includes an internal AC power supply with a country power cord, user manuals access card, RJ-45 to DB-9 adaptor.Static Routing. UNP supported Cable.Make : Al-Catel.(Life time Warranty) or Equivalent or Higher	Nos	205
	08-Port Giga Network Switch	Nos	8
2.08	Fiber Optic Tranceivers.		
	Supply, Installation of 1000Base-LX Gigabit Ethernet optical transceiver SFP MSA. Supports Multimode fiber over 850nm wavelength nominal with an LC connector. Typical reach of 550 meters on 50/125m MMF. Make: Al-Catel or Equivalent or Higher	Nos	209
2.10	MDF/IDF Monitoring Controller 4.3 Inch		
	Supply at site, Installation of MDF /IDF Monitoring Controller 19" Rack Mounted with 4.3", complete in all respect. Make ; Al-Catel	Nos	26

Wifi - NETWORKING SYSTEM.

Item No.	Description	Unit	QTY
4.01	Wiring For Wifi Points on Wall / Ceiling		
	Basement-2	EA	4
	Basement-1	EA	2
	Ground Floor..	EA	38
	1st Floor	EA	27
	2nd Floor	EA	9
	3rd Floor	EA	14
	4Th Floor	EA	16
	5th Floor	EA	15
	6th Floor	EA	13
	7Th Floor	EA	15
	8Th Floor	EA	15
	9th Floor	EA	15
	Roof Top	EA	0
	Visitor Center	EA	1
	Total Quantity	EA	184
4.05	Wifi Access Points		
a	Basement-2	EA	0
b	Basement-1	EA	0
c	Ground Floor..	EA	23
d	1st Floor	EA	16
e	2nd Floor	EA	0
f	3rd Floor	EA	0
g	4Th Floor	EA	4
h	5th Floor	EA	0
i	6th Floor	EA	0
j	7Th Floor	EA	0
k	8Th Floor	EA	0
l	9th Floor	EA	0
	Visitor Center		1
	Total	Nos	44
4.06	Wireless Access Controller		
	Supply, Installation of Wireless LAN controller, 8x10/100/1000BASE-T or 8x1GBASE-X SFP dual personality ports, Supports up to 64 AP and 4K clients. EU Power Cord.Maximum remote/campus AP licenses 64.Maximum concurrent users/devices 4096. Active firewall sessions 65,536.Firewall throughput 8 Gb/s.LINK/ACT and status LEDs.LCD panel and navigation buttons. (OAW-4030-RW) Make: Al-Catel (Aruba) or Equivalent or Higher	Nos	1
	Omni Access 20 AP capacity license to enable support for one AP on a Mobility Controller. Order multiple license SKUs based on desired AP capacity per controller. Multiple controller license order require line item for each controller. (OAW-AP-LAP)		
	Omni Access 20 AP feature license to enable Policy Enforcement Firewall per AP. Order multiple license SKUs based on desired AP capacity per controller.Multiple controller license order require line item for each controller. (OAW-AP-PEFNG)		
4.07	Layer-2 PoE Edge Switch		
	Supply, Installation of Gigabit Ethernet 1RU chassis with 24 Port (PoE 380 Watt) 10/100/1000 BaseT ports and 4 Gigabit SFP ports. Includes an internal AC power supply with a power cord, manuals access card, and RJ-45 to DB-9 adaptor. Make: - Al-Catel (Warranty Life Time) OS6350-P24 or Equivalent or Higher	Nos	6
	8-Port PoE Network Switch	Nos	2
4.08	Fiber Optic Tranceivers.		
	Supply, Installation of 1000Base-LX Gigabit Ethernet optical transceiver SFP MSA. Supports Multimode fiber over 850nm wavelength nominal with an LC connector. Typical reach of 550 meters on 50/125m MMF. Make: Al-Catel or Equivalent or Higher	Nos	8

CCTV SYSTEM.

Item No.	Description	Unit	QTY
3.01	Wiring For Camera,s Points on Wall		
	Basement-2	EA	38
	Basement-1	EA	30
	Ground Floor..	EA	35
	1st Floor	EA	47
	2nd Floor	EA	18
	3rd Floor	EA	12
	4Th Floor	EA	10
	5th Floor	EA	10
	6th Floor	EA	12
	7Th Floor	EA	10
	8Th Floor	EA	10
	9th Floor	EA	20
	Roof Top	EA	10
	Outdoor	EA	46
	Guard Post-1	EA	1
	Guard Post-2	EA	1
	Guard Post-3	EA	1
	IESCO Room	EA	2
	Total Quantity	EA	313
3.05	IDF - 42U Floor Standing Cabinet.		
a	IDF-FF-A-B-C-D	Nos	2
3.06	IDF For Offices (Wall Mounted)		
a	B2	Nos	1
b	B1	Nos	3
C	FF	Nos	1
3.07	Fiber Optic IFDE		
A	12 Port Offices Fiber IDF	Nos	20
3.08	Layer-2 Edge Switch		
	Supply, Installation of Gigabit Ethernet 1RU chassis with 24 Port (PoE 380 Watt) 10/100/1000 BaseT ports and 4 Gigabit SFP ports. Includes an internal AC power supply with a power cord, manuals access card, and RJ-45 to DB-9 adaptor. Make: - Al-Catel (Warranty Life Time) OS6350-P24 or Equivalent or Higher	Nos	23
3.09	Layer-3 Distribution Switch		

	Supply, Installation of Layer-3, Core Network Switch 1U Rack Mounted with L3 chassis with 28x 100/1000 Base-X SFP ports, 4 fixed SFP+ 1G/10G ports, 2 stack ports.Enhanced network services, Routing SW. Redundant power,Advanced Switching Capacity 200 Gbp, Flash 2 GB, RAM 2 GB,Throughput 150 Mpps, Dual Power Supply, Layer-3 Routing Protocols. Complete in all respect, as per drawing and specifications. Make: Al-Catel or Equivalent or Higher	Nos	2
3.10	Fiber Optic Transceivers.		
	Supply, Installation of 1000Base-LX Gigabit Ethernet optical transceiver SFP MSA. Supports Multimode fiber over 850nm wavelength nominal with an LC connector. Typical reach of 550 meters on 50/125m MMF. Make: Al-Catel or Equivalent or Higher	Nos	52
3.13	Dome Camera		
	Supply at site, installation of Bullet IP - Camera,s 2.0 Mega Pixel, 1/3" Progressive scan, Fixed lens 4mm, Max resolution 1080P, Codec H-265, Camera with 25 fps, day night (ICR), ONVIF, IP-66, Max IR distance 30 meter, WDR Smart Analytics, including mounting bracket, all fixing and mounting accessories, including cost of all required accessories / materials. Make: - Norden or Equivalent or Higher	Nos	156
3.14	Bullet Camera		
	Supply at site, installation of Bullet IP - Camera,s 4.0 Mega Pixel, 1/3" Progressive scan, motorised lens 2.8 to 12mm, Max resolution 2592 x 1920mm, Codec H-265, Camera with 25 fps, day night (ICR), ONVIF, IP-66, Max IR distance 25 meter, WDR Smart Analytics, including mounting bracket, all fixing and mounting accessories, including cost of all required accessories / materials. Make: - Norden or Equivalent or Higher	Nos	85
3.15	Outdoor Bullet Camera		
	Supply at site, installation of Bullet IP - Camera,s 4.0 Mega Pixel, 1/3" Progressive scan, motorised lens 2.8 to 12mm, Max resolution 2592 x 1920mm, Codec H-265, Camera with 25 fps, day night (ICR), ONVIF, IP-66, Max IR distance 50 meter, WDR Smart Analytics, including mounting bracket, all fixing and mounting accessories, including cost of all required accessories / materials. Make: - Norden or Equivalent or Higher	Nos	33
3.16	Elevator Dome Camera		
	Supply at site, installation of 2 Mega Pixel Elevator Dome Camera. Make: - Norden.	Nos	16
3.17	Face Recognition Dome Camera		
	Supply, Installation of 2MP H.265 IR IP Bullet camera with 2.7to 13.5mm Motorized lens, POE, SD card Slot, WDR, Analytic feature, includes face, human body, vehicle, non-motor detection and capture with 40M IR support. (ENC-HBU5M-40R-73) Make: - Norden or Equivalent or Higher	Nos	3
3.18	Dome PTZ Camera		
	Supply, Installation of 2MP IR IP High speed Starlight PTZ Dome camera with 30x optical zoom SD card Slot Wiper and 150 Meter IR. (ENC-HHP5Z-150R-52) Make: Norden	Nos	21
3.19	NVR (Network Video Recorder)		
	Supply, Installation of Network Video Recorder 64 ch IP Cameras access Easy to use Same Interface of GUI/WEB/Client 8 SATA Hard disk each up to 8TB (Installed HDD Capacity 64 TB) 2 x RJ45 10M/100M/1000M Network interface Simultaneous HD-OUT & VGA, Up to 4Koutput 2 x 2.0 & 1 x 3.0 USB Host 1ch Audio I/O 16ch Alarm input, 4ch Alarm output. (ENR-08064) Make: Norden UK or Equivalent or Higher	Nos	6
3.20	LED Type Colour Display for Video Wall.		
	Supply at site, installation, testing and commissioning of 40 inch LED type Android Smart TV, colour monitors. Model Samsung, LG or Approved equivalent, including cost of all necessary accessories and materials, complete in all respects.	Nos	6
3.21	PTZ Controller / Joystick		
	Supply at site, installation of PTZ Controller / Joystick, LCD screen display, Four-dimensional joystick control, Based on IP Network, Connectable to NVR to control NVR menu and PTZ operations, Support multiple user permissions, Multiple devices can be connected, complete in all respects. Make: - Norden or Equivalent or Higher	Nos	1
3.22	CCTV Pole		
	Supply & Hoisting and Erecting of 6 meter high hot dipped galvanized tubular pole fabricated from 3" dia pipe to 2" dia pipe with base plate size 300x300x10mm including 20mm dia 900mm long l bolts, nuts, washers and bracket/plate form for cameras installation, RCC foundation, complete in all respects as per drawings and specifications.	Nos	25
3.23	Man Hole		
	Supply and Construction of following internal size cable catch pits including earth work 4" thick P.C.C. 9" thick first class burnt brick work, in 1:5 cement sand mortar plaster inside in 1:5 cement sand, and 4" thick P.C.C. slab with 12" dia C.I. manhole cover to BS 497 double rubber seal material conforming to BS 1452 grade 150 including 4" dia PVC pipe of 12 feet length vertically installed after making a bore hole under manhole, complete in all respects and as per details shown in drawing.		
3.24	PoE Network Switch		
	Supply, Installation of 08 Port Manageable Rack Mounted POE / PoE+ Network Switch (120Watt) with 2 Nos. of Multimode SFP modules for IP-Cameras, including cost of all necessary accessories, complete in all respects. Make: - Al-catel or Equivalent or Higher	Nos	3
	PoE Industrial Switch 8-Port	Nos	11
3.25	6U Wall / Pole Mounted CCTV Cabinet (Outdoor Type)		
	Supply, Installation of 6U (Size 600 x 500 x 300mm) Wall / Pole Mounted outdoor IP65 CCTV Single section design, composed with main body, roof, the rear panel, the side panel and the base, Front solid metal door with black water-proof rubber, polyurethane joint stip near the protect slot, dust proof and waterproof, cabinet can adopt 19 inch structure to Install cabling equipments, Front door with bolt lock, Bottom wire path with flanges, material SPCC cold rolled steel, Degrease, acid pickling, rust prevention and parkerizing, pure water cleaning, static electricity powder coating surface finish, PDU, compliance with GB/T 19183 and IEC 61969 standards. Make: Norden, Dell, HP or Equivalent or Higher	Nos	14
3.28	CCTV - Security Team Furniture.		
	chairs & tables	Nos	6

CCTV SYSTEM. (Mosque-Visitor-Center)

Item No.	Description	Unit	QTY
12.05	IDF For CCTV & Mosque (Wall Mounted)		
	Supply at site, installation 15U Double Section Size (600 x 550 x 769mm)Wall Mounted Data / Voice IDF at designated location or as shown on CCTV system layout plan, modular imported cabinet made of MS Sheet Steel, Powder Coated M.S frame, front glass & two side openings, 02 way fans for cooling on top, 06 way Power distribution unit, Cable entry top & bottom with all necessary accessories/ materials, complete in all respects. Make: Norden.		2
12.06	Fiber Optic IDF		
a	12 Port Fiber IDF	Nos	2
	PoE Network Switch		
	Supply, Installation of 08 Port Giga Manageable Rack Mounted POE / PoE+ Network Switch (120Watt) with 2 Nos. of Multimode SFP modules for IP-Cameras, including cost of all necessary accessories, complete in all respects. Make: - Al-catel.	Nos	2
12.08	Fiber Optic Transceivers.		
	Supply, Installation of 1000Base-LX Gigabit Ethernet optical transceiver SFP MSA. Supports Multimode fiber over 850nm wavelength nominal with an LC connector. Typical reach of 550 meters on 50/125m MMF. Make: Al-Catel	Nos	4
12.10	Outdoor Bullet Camera		
	Supply at site, installation of Bullet IP - Camera,s 4.0 Mega Pixel, 1/3" Progressive scan, motorised lens 2.8 to 12mm, Max resolution 2592 x 1920mm, Codec H-265, Camera with 25 fps, day night (ICR), ONVIF, IP-66, Max IR distance 50 meter, WDR Smart Analytics, including mounting bracket, all fixing and mounting accessories, including cost of all required accessories / materials. Make: - Norden.	Nos	2
12.11	Dome Camera		
	Supply at site, installation, testing & commissioning of Dome / Bullet IP - Camera,s 4.0 Mega Pixel, 1/3" Progressive scan, fixed lens 2.8 mm AF, Max resolution 2592 x 1920mm, Codec H-265, Camera with 25 fps, day night (ICR), ONVIF, IP-66, Max IR distance 30 meter, SD Card Slot, WDR Smart Analytics, including mounting bracket, all fixing and mounting accessories, including cost of all required accessories / materials. Make: - Norden.	Nos	9
12.12	Man Hole		
	Supply and Construction of following internal size cable catch pits including earth work 4" thick P.C.C. 9" thick first class burnt brick work, in 1:5 cement sand mortar plaster inside in 1:5 cement sand, and 4" thick P.C.C. slab with 12" dia C.I. manhole cover to BS 497 double rubber seal material conforming to BS 1452 grade 150 including 4" dia PVC pipe of 12 feet length vertically installed after making a bore hole under manhole, complete in all respects and as per details shown in drawing.		
	3'x3'x3'.	Nos	2

PHYSICAL SECURITY SYSTEM.

Item No.	Description	Unit	QTY
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2.01	Road Blocker (Wedge Type) Heavy Duty Hydraulic Road Blocker Supply, Installation of Wedge Type Hydraulic Road Blocker having following Specifications Length : 6.5Feet Height : 28 Inch Width : 32 Inch Top Head Sheet : 12mm Thickness MS Channel Ground Structure/Frame structure Heavy Duty Hydraulic Jack Jack plate fitting with Concrete Wall Special Design for Striking Hydraulic Operating Unit - Hydraulic Pump (Imported) - Double Action Solenoid Valve (Imported) - Lock Valve (imported) 3-Phase Motor 5.5 HP (Imported) - Hydraulic Safety Control - Manual Release Control Valve In Case of Electricity Failure Auto-Operated Electricity Safety Control Panel with push control Transportation, Civil Work and Services Charges / Fitting.	Nos	5
2.03	Tyre Killer / Tyre Buster TYRE KILLER - Height 255MM - Width 380MM - Length 3660MM Withstand 50 ton weight Vehicle Passing Velocity 50 KM/HR Spikes Height 80-90 mm From Surface Spikes Thickness 12MM Spikes at 60 degree position Teeth spaced at 75mm Movement Gravity Basis With Manual Lockdown system Double coat Enamel paint for Anti-corrosion Installation & Civil work	Nos	2
9.04	UVSS (Under Vehicle Scanner) Under Vehicle Scanner System - Two Ramp & One Box - Cameras & lights - Network Video Recorder & Display Unit Specification of Ramp & Box 2pcs Ramps of MS Checker sheet Size {48"*32"} 1pcs Box of MS checker sheet Size(28"*18") - Both are Powder Coated For Anti-Corrosion Cameras & Lights 04 Norden Ultra High Resolution Camera day/night - One Camera Module for number plate, One for driver Image and other 02 cameras for Under vehicle searching. 04 LED 8W lights For Under Vehicle Searching. Digital Video Recorder & Display Unit 04 channel (NVR) Video Recorder With 8TB Hard Disk Drive - True Real time image 120fps live - USB backup 19" Samsung / Sony Display Unit Including cost of Electrical, CCTV Wiring & Installation & Civil Work	Job	2
9.05	Baggage Scanner a Supply, Installation of Baggage Scanner with Tunnel Opening: 60.0 cm x 40.0 cm, Single 160 KV Xray generator for superior image quality, multienergy, Image is computer based with Windows® OS based operating system, sensitivity, Continuous Zoom up to 64x zoom. Intel 40 AWG typical wire sensitivity, Continuous Zoom up to 64x zoom. Intel Core i5 Technology, Single 19" LCD flat panel color monitor, Standard UPS, Edge enhancement Imaging, Pseudo Color, Adjustable Contrast, High Penetration. Organic / Inorganic Imaging, "Picture perfect" image enhancement, Real-Time Image Manipulation, Geometric Distortion Correction. Auto Image Archiving 150,000 images, Z level detection. Image Annotation, Image Review. Continuous Self Diagnostics. Day/Date/Time indicator, Baggage counter, Multi-level Security Access, Print on any printer in Windows library, Network ready-LAN/WAN. Threat Image Projection (TIP) Item loading SUS, 1000mm(Adjustable) System Management Server & So Max 8Unit Control b Supply, Installation of Baggage Scanner with Tunnel Opening: 53.3 cm x 35.8cm, Single 160 KV Xray generator for superior image quality, multienergy, Image is computer based with Windows® OS based operating system, sensitivity, Continuous Zoom up to 64x zoom. Intel 40 AWG typical wire sensitivity, Continuous Zoom up to 64x zoom. Intel Core i5 Technology, Single 19" LCD flat panel color monitor, Standard UPS, Edge enhancement Imaging, Pseudo Color, Adjustable Contrast, High Penetration. Organic / Inorganic Imaging, "Picture perfect" image enhancement, Real-Time Image Manipulation, Geometric Distortion Correction. Auto Image Archiving 150,000 images, Z level detection. Image Annotation, Image Review. Continuous Self Diagnostics. Day/Date/Time indicator, Baggage counter, Multi-level Security Access, Print on any printer in Windows library, Network ready-LAN/WAN. Threat Image Projection (TIP) Item loading SUS, 1000mm(Adjustable) System Management Server & So Max 8Unit Control	Nos	1
9.06	Walk Through Gate / Metal Detector Supply at site, installation of 33 Zone Walk Through Gate / Metal Detector. Size Metal detector gate 2200 x 850 x 630mm, 1~100 leve Temperatures: Operating: -4° F (-20° C) to +122° F (50° C) Humidity: to 95% non condensing Storage: -40° F (-40° C) to 158° F (70° C) Power: Fully automatic 100 to 240 VAC, 50 or 60 Hertz, 45 watts; no rewiring, switching or adjustments needed. Weatherproofing / Foreign Object Protection Standards: Meets IP 55, IEC Standard. "Degrees of Protection provided by Enclosures," IEC 529. *IP65optional Target Pinpointing Lights: Thirty-three (33) distinct zones are displayed with two (2) independent columns of LEDs located on exit side of PD 6500i. Programs: More than Twenty (20) independent programs designed to meet all installation specific requirements including ECAC requirements for European airports and TSA requirements for U.S. airports. Multi-Unit and Multi-Brand Compatibility: 2,300 selectable operating frequencies and multiple channels allow the PD 6500i to operate in close proximity to other PD 6500is as well as with non-Garrett walk-through. Interference Suppression: Advanced analog and digital filtering—as well as adjustable operating frequencies—eliminates the potential effects from x-ray units, radios and other electrical interference sources. Directional Counter: Counter tracks the number of patrons that have passed through the detector, the direction of patrons, the number of alarms and calculates alarm percentage. Four directional count settings (forward, reverse subtraction reverse and bi-directional). Random Alarm Feature: Provides ability to randomly alarm on a selected percentage of non-alarming persons; adjustable from 0 to 50 percent. Alarms: Audible tone and volume adjustable. Bright LED visual alarm. Pacing Lights: International symbols located at entrance. Tamper-Proof: All settings are secured with a key lock and two levels of access codes. Further security is accomplished with a cabinet lock which prevents unauthorized access to physical cables, connectors and electronics.	Nos	9

	Control Outputs: Solid state switches (low voltage AC or DC) for operating external alarms and control devices. Construction: Attractive scratch and mar-resistant laminate. Detection Heads and Support: Heavy duty aluminum.		
9.07	Divesting Table		
	Supply at site, installation of Divesting Table Size Wood type 300*600*850	Nos	9
9.08	Hand Held / Portable Metal Detector		
	Supply at site, installation of Hand Held / Portable Metal Detector with 9V Battery, NiMH. Operating Temperatures: -35°F (-37°C) to 158°F (70°C) Humidity: To 95% non-condensing Indicators: Silent / Vibrate, Audible Speaker LED Alert Lights: Green : Power ON Amber : Battery Low Red : Alarm Condition Controls: 3 way switch ON (Speaker / LED Light) ON (Vibrating / LED Light) OFF Battery: Single 9 volt battery provides up to 60 hours of normal operation.	Nos	9
9.09	Speed Gate		
	Supply at site, installation of Turnstile		
a	LTOP-111R Slim Case Angular Wings Optical Turnstile (AISI 304 Case, Glass Wing, Transparent Wing Color).	Nos	2
b	LTOP-111C Slim Case Angular Wings Optical Turnstile (AISI 304 Case, Glass Wing, Transparent Wing Color).	Nos	4
c	LTOP-111L Slim Case Angular Wings Optical Turnstile (AISI 304 Case, Glass Wing, Transparent Wing Color).	Nos	2
d	TNS-025 / Electronic Counter	Nos	8
e	TNS-060 / Logo Engraving on the wing	Nos	12
f	TNS-015 / Reader Bracket	Nos	8
g	TNS-008 / Button Control Unit	Nos	8
h	TNS-002 / Remote controller	Nos	8
i	TNS-003 / Remote control receiver Unit	Nos	8
9.10	Tempered Glass		
	Supply, Installation of Glass wall 12T, tempered glass	Nos	35
9.11	Steel Pole		
	Supply, Installation of Stain less steel Pole sus 304	Nos	45

ACCESS CONTROL SYSTEM.

Item No.	Description	Unit	QTY
A	Main Controller TCP/IP, Reader x 14ch, I/O Mod		
	Main Controller TCP/IP, Reader x 2 ch, I/O Mod	EA	20
	Main Controller TCP/IP, Reader x 4 ch, I/O Mod	EA	16
B	RF Card Reader 13.56 Mhz	EA	92
	Biometric Reader	EA	
	Biometric Reader	EA	4
C	EM Lock & L2 Bracket 12VDC, Fail Safe	EA	87
D	Exit Button Push Type	EA	86
E	RF Card Mifare 13.56Mhz	EA	1000
F	- Card Case PVC	EA	1000
G	- Necklace cord BLUE	EA	1000
	Access Control System Rack		
A	Card Writer MIFARE 13.56	EA	1
B	Card Photo Printer Card Photo Printing	EA	1
C	ACS Management Server one 8-core Silver 4110	EA	1
D	ACS Management Software Server Software	EA	1
E	ACS Control PC I7	EA	2
F	ACS Control Software Client Software	EA	2
G	LCD Monitor 24"	EA	3
H	L2 Switch 24Port 10/100/1000, 2 Gigabit	EA	3
	L2 Switch 08Port 10/100/1000, 2 Gigabit	EA	3
I	L3 Management Switch 24 Port SFP ports	EA	1
J	PDU 8ch	EA	1
K	Server Rack H : 2000mm x D : 1090mm	EA	1
L	ACS Miscellaneous cost	EA	1
M	ACS Labor cost	EA	1

PARKING GUIDENCE SYSTEM.

Item No.	Description	Unit	QTY
1	ANPR Camera	PCS	7
2	Automatic Parking Barrier	PCS	9
	- . 3D Digital Anti-smash Car Detector		9
	- . 3D Digital Trigger Car Detector		9
3	Software	SETS	1
4	Parking Access System Server(Linux OS)	PCS	1
5	Switch	PCS	12
6	Toll Station Computer	SETS	1
7	IP Intercom Host	PCS	1
8	IP Intercom Extension	PCS	9
9	Long Range RFID Reader	PCS	9
10	RFID Card Issuer	PCS	1
11	RFID Card	PCS	500
12	Entrance LED Display(Vacant Space)	PCS	3
13	Forward Mounting Sensor	SETS	436
14	Indoor LED Display(single side)	PCS	6
	- . B1 Floor Led Display		
	- . B2 Floor Led Display (1-Way)		
15	Indoor LED Display (double sides)	PCS	8
16	Outdoor LED Display	PCS	6
17	Parking Guide Server(Window OS)	PCS	1
18	Zone Control Unit	PCS	10
19	42U IDF 800*1000	PCS	1
20	08 Way PDU	PCS	1
21	24" Display	PCS	1
	6U Cabinet	EA	1
	Transceivers	EA	4
	ODDF 12-Port	EA	11
	L-3 Distribution Switch	EA	1

Public Address System all

Item No.	Description	Unit	QTY
	Wiring For Column / Ceiling Type Speakers		
	Wiring of Ceiling / Column speakers with PVC insulated, PVC sheathed flexible twin core Shielded Speaker Cable Make: Norden, 1" dia Heavy duty PVC conduit. Recessed in walls, columns, slabs, floors or above false ceiling with all necessary fixing accessories as required as per site condition, all PVC conduit accessories, pull boxes, steel pull wires, complete all respects. Wiring to be done as per drawing.	EA	1408
A	Ceiling Speaker 3W	EA	1247
B	Wall Speaker 3W	EA	9
C	Column Speaker 10W	EA	85
D	Speaker Box 10P	EA	26
E	Speaker Box 20P	EA	2
A	Multi Player CD, SD, USB	EA	1
B	Pre Amp 8ch, Zout	EA	1

C	Control Room Monitor Speaker 28W	EA	2
F	Emergency Manual Switch Custom Made	EA	3
G	Emergency TX/RX Encoder TCP/IP, 8contact (System Manager VX-3000)	EA	9
I	Digital Power Amplifier 500 Watts	EA	15
J	Output cable 2 amplifiers-DOM	EA	7
K	Terminal Board 16ch	EA	11
L	Fire Sensor Receiver R to P	EA	1
M	Ethernet Call Station 7" Touch Screen	EA	2
N	Call Station Keypad 18ch Ext	EA	4
O	Microphone Dynamic/Stand	EA	1
P	Control PC Xeon W-2123	EA	1
Q	Control PC Software GUI	COPY	1
R	LCD Monitor 24"	EA	1
S	Power Sequence 8ch	EA	2
	24 Port Network Switch in Emergency Room PAEA	EA	1
	Multimode Tranceivers	EA	4
	42U - Floor Standing Cabinet in Monitor Room	EA	1
A	HORN SPEAKER 20W	EA	57
	Bill.4-1 -Mossque (Equipment)		
A	Wall Speaker 3W	EA	6
B	Outdoor Speaker	EA	4
C	Main Amp Mosque	SET	1
D	Main Amp Setup for Mosque	SET	1

Satellite receiving & Cable TV System

Item No.	Description	Unit	QTY
A	TV Outlet		344
S1	SMD Screen 18000mm (L) x 5425mm (H)	Nos	1
S2	Cable Boot BNC Plug RJ45 Connector Blackmagic Design HDMI to SDI 6G HDMI Cable 5m HDMI Cable 5m HDMI Cable 5m	set	1
S3		set	1

Audio & Visual System

Item No.	Final	Unit	QTY
1			
A	TASCAM , SonicView24 44in/24 Bus With Dante	EA	1
B	TASCAM , SB-16D Digital Stage Box 24 Input / 12 Output	EA	1
C	RCF , 4 x TTL-6A Vertical Array; Dual 12" + 4 x 6.5" 4400 fMax Watts 139db max SPL	EA	2
D	RCF , Array Bracket Wall Type	EA	2
E	RCF , Subwoofer TTS 15 A Bass Reflex 15" Builtin 1100 Watts RMS / 2200 Max Class D power amplifier	EA	4
F	RCF , Sidefill KXL 4 A; Builtin 1600 Watts RMS / 3200 Watts Max Class D PowerAmplifier	EA	2
G	RCF , - Speaker Stand Bracket Wall Type	EA	2
H	RCF , KX 32 A; Stage monitor 12" Active 1600 Watts	EA	4
I	RCF , Lobby KX 515 A 2 x 5" With Builtin 1000 Watts RMS / 2000 Watts max Power	EA	4
J	RCF , - Lobby Speaker Bracket Wall Type	EA	4
O	RCF , Ayrapro 5" Active Bi-amp 75+25 watt built in power	EA	2
Q	Audio-Technica ATW- 3212/C510 - 3000 Series Wireless Handheld Microphone System with ATW-C510 Capsule	EA	4
R		EA	2
S	Audio-Technica - DE2 - Bodypack Wireless Mic Cardioid lavalier System	EA	2
T	Audio Technica ATW- DA49a - UHF antenna distribution system	EA	1
U	Audio Technica ATW-A49a - UHF Wide-band Directional LPDA Antenna	EA	2
V	Rode PSA1+ Professional Studio Arm	EA	2
W	Archer T3U - AC1300 Mini Wireless MU-MIMO USB Adapter	EA	1
X	PennElcom Made in UK, PDU01-14 Power Distribution 8 Way	EA	2
Z	RCF, 42U System Rack CR 2642 Front Glass Back perf	EA	1
a	Hard Case 20RU	EA	1
b	Special 8' X 4'	EA	1
d	K&M made in Germany, Mic Boom Stand with Tripod	EA	4
f	Extron HAE 100 4K Plus - 4K/60 HDMI Audio De-Embedder	EA	1
g	Canare Speaker Cable 2S11F 12 AWG 2 Core	M	400
h	Canare L-2T2S - Twisted Pair Microphone Cable 300m	M	300
i	Canare DA202 Digital Mic Cable 2 Conductor AES/EBU	M	100
j	NEXUS CAT 6 (SFTP) 305m	M	250
k	Schneider CAT 6 CAB300m 305m	M	300
l	Pakistan Cable 6mm SINGLE CORE	M	70
m	Power Cable VCTF 2.5 SINGLE CORE	M	200
n	CD conduit 22~28mm	M	800
ADDITIONAL ITEMS - AUDIO SYSTEM (Auditorium)			
	Neutrik, 3-Pin Male XLR Connector		100
	Neutrik, 3-Pin Female XLR Connector		100
	Neutrik, 1/4" TRS Phone Plug		15
	Sennheiser, MEG 14-40-L- II B Gooseneck Mic	EA	2
	Tascam, SB 16-D 16 x 16 Dante		1
	Dante AVIO Install for Amplifier	EA	3
	Audio Technica, ATWT 3212 With DE2 - Bodypack Mic Cardioid Lavalier		1
	Neutrik NL2FXX-W-5	EA	18
	Neutrik NL2MDXX-H-3		6
A	Datavideo, SE-4000 - 4K 8-Channel Digital Video Switcher	EA	1
B	TCL, 32" LED Smart TV (With Bracket)	EA	1
C		EA	1
D	Vmix, Lifetime License for Software	EA	1
E	Axel Technology CG Plus - Axel Technology CG Plus Compact (01 Channel) CGPLUS SOFTWARE	EA	1
F	live graphics generator. 1 channel SW+ HD SDI/NDI. Animated logos;	EA	1
G	BirdDog X5 Ultra PTZ Camera NDI with 20X Zoom	EA	4
H	Birddog, wall mount	EA	4
I	Birddog, PTZ KBd keyboard	EA	1
K	Blackmagic, Design SDI to HDMI 6G - Mini Converter	EA	1
O	TCL, 49" Smart Led - LED	EA	2
P	TCL, Bracket	EA	2
Q	Blackmagic Design SDI to HDMI 6G - Mini Converter	EA	2
S	PennElcom, PDU01-14 Power Distribution 8 Way	EA	2
U	Extron HAE 100 4K Plus - 4K/60 HDMI Audio De-Embedder	EA	1
V	HDMI Repeater UTP	EA	1
W	JDI Passive DI Box - with Jensen Transformer	EA	1
X	Canare Video Coaxial Cable L-5CFB (400m)	M	400
Y	Schneider CAT 6 UTP CAB300m 305m	M	500
Z	Power Cable VCTF 2.5 3C. 500m	M	500
a	CD Conduit 22~28mm. 900m	M	900
A	Allen & Heath , QU5D ; 16 input 12 Out Put With Dante	EA	1
B	RCF , NXL 14 A 2 x 6" 1000 Watts Builtin Power Amp	EA	3
C	RCF , Array Bracket Wall Type	EA	3
D	RCF , NXL 14 A 2 x 6" 1000 Watts Builtin Power Amp	EA	1
E	RCF , Array Bracket Wall Type	EA	1
H	Rode, PSA1+ Studio Arm	EA	1
I	PennElcom, PDU01-14 Power Distribution 8 Way	EA	1

K	RCF, 42U System Rack CR 2642 Front Glass Back perf	EA	1
M	Canare Speaker Cable 2S11F 12 AWG 2 Core. (m)	M	200
N	Canare, L-2T2S - Twisted Pair Microphone Cable 200m	M	100
O	Power Cable VCTF 25 200m	M	100
P	CD Conduit 22~28mm. 300m	EA	300
ADDITIONAL ITEMS - EXHIBITION HALL			
	Neutrik, NC3Mxx 50pcs	EA	50
	Neutrik, NC3Fxx 50 pcs	EA	50
	Neutrik, 1/4" TRS Phono	EA	10
A	Tascam , Model 12 ; 8 x mono mic with USB	EA	2
B	RCF, Passive Speaker Array Model L 2406 T 6 x 5" woofer / 4 x 1" Tweeter 200 Watts (Speaker brackets included (8 Nos))	EA	8
D	RCF, DMA 504; 4 x 500 Watts With Powerful DSP	SET	2
E	Audio Technica, ATW- 3212/CS10 Handheld Mic with ATW-CS10 Mic Capsule	EA	4
F	Rode, PSA1+ Studio Arm	EA	2
H	Extron HAE 100 4K Plus - 4K/60 HDMI Audio De-Embedder	EA	2
L	Clopal, Video Jack Plate HDMI, MIC	EA	2
M	HDMI Repeater UTP	EA	4
N	HDMI Cable IC 10m	EA	2
P	RCF, Digital Conference System DMU 6100 RJ45	EA	1
Q	RCF, Digital Conference System DMS 6410	EA	1
R	RCF, Digital Conference System DMS 6410. 16 Pcs (With 2m Ext cables (19 Nos))	EA	16
T	RCF, 20m Extension cable	EA	2
V	PennElcom, PDU01-14 Power Distribution 8 Way	EA	2
W	RCF, 42U System Rack CR 2642 Front Glass Back perf	M	2
X	Canare Speaker Cable 2S11F 12 AWG 2 Core. (m)	M	400
Y	Canare, L-2T2S - Twisted Pair Microphone Cable 200m	M	200
Z	Schneider CAT 6 CAB300m	M	100
a	Power Cable VCTF 25 200m	M	200
b	CD Conduit 22~28mm. 400m	M	400
ADDITIONAL ITEMS - CONFERENCE ROOM 3,4			
1	Neutrik, NC3Mxx 50pcs	EA	
	Neutrik, NC3Mxx 50pcs		50
2	Neutrik, NC3Fxx 50 pcs	EA	
	Neutrik, NC3Fxx 50 pcs		50
3	Neutrik, 1/4" TRS Phono	EA	
	Neutrik, 1/4" TRS Phono		10
A	Tascam , Model 12 ; 8 x mono mic with USB	EA	3
B	RCF, Passive Speaker Array Model L 2406 T 6 x 5" woofer / 4 x 1" Tweeter 200 Watts RMS (Speaker Brackets included(6 Nos))	EA	6
D	RCF, DMA 504; 4 x 500 Watts With Powerful DSP	SET	3
E	Audio Technica, ATW- 3212/CS10 Handheld Mic with ATW-CS10 Mic Capsule	EA	6
F	Rode, PSA1+ Studio Arm	EA	3
H	Extron HAE 100 4K Plus - 4K/60 HDMI Audio De-Embedder	EA	3
M	Clopal, Video Jack Plate HDMI, MIC	EA	3
N	HDMI Repeater UTP	EA	6
O	HDMI Cable IC 10m	EA	3
P	PennElcom, PDU01-14 Power Distribution 8 Way	EA	3
Q	RCF, 42U System Rack CR 2642 Front Glass Back perf	M	3
R	Canare Speaker Cable 2S11F 12 AWG 2 Core. (m)	M	300
S	Canare, L-2T2S - Twisted Pair Microphone Cable 200m	M	150
T	Schneider CAT 6 CAB300m	M	70
U	Power Cable VCTF 25 100m	M	100
V	CD Conduit 22~28mm. 200m	M	300
ADDITIONAL MATERIAL			
AUDITORIUM - Video System			
Conference Room - 1 & 2			
B	Size – 75" Resolution: 3840*2160 (pixels) Brightness : 450cd/m131 Excellent Touch Performance Contrast Ratio: 1200:1 Touch Response Time: <=6ms CPU: Quad core A73+Quad core A53(≤2.2GHz) Storage: 8G RAM+128GB ROM Camera: 48MP Microphone: 8 microphones array(up to 12m) Cables: Power Cable*1, USB Cable*1, HDMI Cable*1 Remote Controller 1 Wall mount 1 Stylus Pen 2 Eraser 1 Stand Rack	Nos	2
Conference Room - 3 & 4 -- Classroom - 1 & 2 -- Industry Academia Linkage Center			
C	Size – 86" Resolution: 3840*2160 (pixels) Brightness : 450cd/m² Excellent Touch Performance Contrast Ratio: 1200:1 Touch Response Time: <=6ms CPU: Quad core A73+Quad core A53(≤2.2GHz) Storage: 8G RAM+128GB ROM Camera: 48MP Microphone: 8 microphones array(up to 12m) Cables: Power Cable*1, USB Cable*1, HDMI Cable*1 Remote Controller 1 Wall mount 1 Stylus Pen 2 Eraser 1 Stand Rack	Nos	5
Conference Room - 5			
D	Size – 65" Resolution: 3840*2160 (pixels) Brightness : 450cd/m131 Excellent Touch Performance Contrast Ratio: 1200:1 Touch Response Time: <=6ms CPU: Quad core A73+Quad core A53(≤2.2GHz) Storage: 8G RAM+128GB ROM Camera: 48MP Microphone: 8 microphones array(up to 12m) Cables: Power Cable*1, USB Cable*1, HDMI Cable*1 Remote Controller 1 Wall mount 1 Stylus Pen 2 Eraser 1 Stand Rack	Nos	1
Data Center			
Item No.	Description	Unit	QTY
	Bill No. 1 - ICT Infrastructure		
	Element No.1 - Network Infrastructure		
A	Internet router	set	2

B	- Type of device: Modular type , standard 19" rack mountable - I/O Module Slot: 4 Slot+ - Bandwidth per Slot: more than 440Gbps (Full duplex dual fabric base), mounting Fabric module for guaranteeing performance when I/O module expansion only in the future Fabric module - Redundant components: Fabric modules, CPU/control module, Power module - Online insertion and removal (OIR) of Redundant components - L2 Protocol: 802.1d, 802.1s, 802.1w, VLAN Trunking support - L3 Protocol: Static, RIP, OSPF, BGP support - Multiprotocol Label Switching (MPLS) support - Link Aggregation Control Protocol support - Policy Based Routing support - QoS Policing (single rate and dual rate): Committed Information Rate(CIR), Peak Information Rate(PIR) of traffic - Network Management Protocol: SNMP v1/v2/v3, support - Supporting function in IPv6 environment - Supportable ports: 1G, 10G, and 40G Gigabit Ethernet support - Demanding ports: not less than 8 ports of GbEthernet - Interconnecting patch cord - Including service fee till O&M period	set	2
	Datacenter Backbone Switch, L3, 10Gbps 48 ports - Type of Equipment: Modular type , standard 19" Rack mountable - I/O Module Slot : 4 Slots - Bandwidth per System: 15 Tbps+ (Full duplex) - Bandwidth per Slot: 1.2 Tbps+ (Full duplex) for aggregate, and Fabric module mount for future expansion of I/O Module only - Redundant components: Fabric modules, CPU/control module, AC Power module - Online Insertion and Removal(OIR) of Redundant components - L2 Protocol: 802.1d, 802.1s, 802.1w, VLAN Trunking - L3 Protocol: Static, RIP, OSPF, BGP - Link Aggregation Control Protocol - Policy Based Routing - QoS Policing (single rate and dual rate): Committed Information Rate(CIR), Peak Information Rate(PIR) of traffic - Network Management Protocol: SNMP v1/v2/v3, - IPv6 function support - Supportable ports: 1G, 10G, 25G, and 40G Gigabit Ethernet - Demanding ports: not less than 48 ports of 10GbE - Interconnecting patch cord - Including service fee till O&M period		
C	Datacenter Distribution Switch, L3, 1Gbps 48 copper ports, 24 fiber ports - Type of Equipment: Modular type or Stackable, Standard 19" rack mountable - Bandwidth per System: 200Gbps+ (Full duplex) - Redundant components: Power module - Online insertion and removal(OIR) of Redundant components - L2 Protocol: 802.1d, 802.1s, 802.1w, VLAN Trunking - L3 Protocol: Static, RIP, OSPF - Link Aggregation Control Protocol - Policy Based Routing - QoS Policing (single rate and dual rate): Committed Information Rate(CIR), Peak Information Rate(PIR) of traffic - Network Management Protocol: SNMP v1/v2/v3 - IPv6 function support - Stacking extension - Supporting ports: 1G, 10G, and 40G Gigabit Ethernet - Demanding ports: 48 ports 10/100/1000 of GbEthernet copper, 24 ports of GbEthernet fiber, 4 ports of GbEthernet fiber uplink - Interconnecting patch cord - Including service fee till O&M period	set	6
D	Datacenter Access Switch or DMZ, L3 (Copper) - Type of Equipment: Modular type or Stackable, Std 19" Rack mountable - Bandwidth per System: 200Gbps+ (Full duplex) - Redundant components: Power module - Online insertion and removal(OIR) of Redundant components - L2 Protocol: 802.1d, 802.1s, 802.1w, VLAN Trunking - L3 Protocol: Static, RIP, OSPF - Link Aggregation Control Protocol - Policy Based Routing - QoS Policing (single rate and dual rate): Committed Information Rate(CIR), Peak Information Rate(PIR) of traffic - Network Management Protocol: SNMP v1/v2/v3 - IPv6 function support - Supporting ports: 1G, 10G, and 40G Gigabit Ethernet - Demanding ports: 48 ports of 10/100/1000 GbEthernet copper, 4 ports of GbEthernet fiber uplink - Interconnecting patch cord - Including service fee till O&M period	set	2
E-1	Building Distribution Switch, L3, 10Gbps Uplink 2 port - Type of Equipment: Modular type or Stackable, Std 19" Rack mountable - Bandwidth per System: 200Gbps+ (Full duplex) - Redundant components: Power module - Online insertion and removal(OIR) of Redundant components - L2 Protocol: 802.1d, 802.1s, 802.1w, VLAN Trunking - L3 Protocol: Static, RIP, OSPF - Link Aggregation Control Protocol - Policy Based Routing - QoS Policing (single rate and dual rate): Committed Information Rate(CIR), Peak Information Rate(PIR) of traffic - Network Management Protocol: SNMP v1/v2/v3 - IPv6 function support - Supporting ports: 1G, 10G, and 40G Gigabit Ethernet - Stacking extension - Demanding ports: 24 ports of GbEthernet fiber, not less than 2 ports of 10GbEthernet fiber uplink - Interconnecting patch cord - Including service fee till O&M period	set	24
E-2	Building Distribution Switch, L3, - Type of Equipment: Modular type or Stackable, Std 19" Rack mountable - Bandwidth per System: 200Gbps+ (Full duplex) - Redundant components: Power module - Online insertion and removal(OIR) of Redundant components - L2 Protocol: 802.1d, 802.1s, 802.1w, VLAN Trunking - L3 Protocol: Static, RIP, OSPF - Link Aggregation Control Protocol - Policy Based Routing - QoS Policing (single rate and dual rate): Committed Information Rate(CIR), Peak Information Rate(PIR) of traffic - Network Management Protocol: SNMP v1/v2/v3 - IPv6 function support - Supporting ports: 1G, 10G, and 40G Gigabit Ethernet - Stacking extension - Demanding ports: 48 ports of 10/100/1000 of GbEthernet copper, - Interconnecting patch cord - Including service fee till O&M period	set	1
F	Security Distribution Switch, L3, 10Gbs Uplink 2 port - Type of Equipment: Modular type or Stackable, Std 19" Rack mountable - Bandwidth per System: 200Gbps+ (Full duplex) - Redundant components: Power module - Online insertion and removal(OIR) of Redundant components - L2 Protocol: 802.1d, 802.1s, 802.1w, VLAN Trunking - L3 Protocol: Static, RIP, OSPF - Link Aggregation Control Protocol - Policy Based Routing - QoS Policing (single rate and dual rate): Committed Information Rate(CIR), Peak Information Rate(PIR) of traffic - Network Management Protocol: SNMP v1/v2/v3 - IPv6 function support - Supporting ports: 1G, 10G, and 40G Gigabit Ethernet - Demanding ports: 48 ports of 10/100/1000 of GbEthernet copper, 24 ports of GbEthernet fiber, not less than 2 ports of 10GbEthernet fiber uplink - Interconnecting patch cord - Including service fee till O&M period	set	2
G	Anti-DDoS system - Equipment type: Standard 19" Rack mountable - Min Throughput: more than 4 Gbps - Min Packet Throughput: more than 8 Mbps - Simultaneous TCP Connections: more than 1,000,000 - Redundant components: Power - Attack mitigation: TCP, FTP, HTTP, ICMP, UDP, DNS - Protection of abnormal packet attack - Protection based on Signature - Network Management Protocol: SNMP v1/v2/v3, support - Support function of IPv6 environment - Composable In-line and Out of Path - High Availability configurations: Active-Active, Active-Passive - Supporting ports : 1G copper , 1G fiber Gigabit Ethernet - Demanding ports: no less than 8 ports of GbE copper, and 8port of GbE fiber - Management port, HA port separately - Interconnectine patch cord	set	2
H	External Firewall +IPS - Equipment type: standard 19" Rack mountable - Min Firewall Throughput : more than 30 Gbps - Simultaneous TCP Connections : more than 1,000,000 connections - Redundant components: Power - Firewall, NAT, IPS, VPN function - Network management protocol: SNMP v1/v2/v3 - Support of function of IPv6 - Composable In-line and Out of Path - High Availability configurations: Active-Active, Active-Passive - Available ports: 1G copper , 1G fiber, 10G fiber Gigabit Ethernet - Demanding ports: no less than 8 ports of GbE copper, and 8 ports of GbE fiber, 2 ports of 10GbE fiber, - Management port, HA port separately - Interconnectine patch cord	set	2
I	Internal Firewall	set	2

		- Equipment type : Standard 19" Rack mountable - Min Firewall Throughput: more than 30 Gbps - Simultaneous TCP Connections: more than 1,000,000 connection - Redundant components: Power - Firewall/ NAT /VPN function - Network Management Protocol: SNMP v1/v2/v3 - Supporting function of IPv6 environment - Composable In-line and Out of Path - High Availability configurations: Active-Active, Active-Passive - Supportable ports: 1Gb copper , 1Gb fiber, 10Gb fiber - Demanding ports: no less than 8 ports of GbE copper, and 8 ports of GbE fiber, 2 ports of 10GbE fiber - Management port, HA port separately - Interconnective match cord	set	1
J		DNS Server ~ 19" Rack mountable type ~ 2.0GHz 8 cores CPU or equal to or higher ~ 32 Gbytes RAM ~ DNS server embeded ~ 1 TB HDD x 2 EA (Raid config.) ~ 1 Gb Ethernet 2port (UTP) ~ Dual Power (240Vac) OS: Microsoft Windows Server 2019 equal to or latest version		
K		Operation supporting system		
k1		EMS Enterprise Management System (S/W) Web Service & Enterprise Manager EMS Integrated control Dashboard (Main 1 naee)	set	1
k2		NMS Network Management System (S/W) Network Manager 1set Polling Engine for 60 Devices	set	1
k3		TMS Traffic Management System(S/W) Traffic Collect System Flow Monitoring (Flow Based) - 5,000 (Flow / minute) License	set	1
k4		SMS Server Management System - Server Manager Server Agent (Windows/Linux)	set copy	1 60
k5		FMS Facilities Management System(S/W) Fault monitoring, Operating status, Notification of event Target: UPS 2sets. HVAC 8sets. PDU 5 nairs sets	set	1
k6		Manager Server HW CPU : 2.0Ghz 8core; RAM : 32GB- HDD : 1TB * 2EA(Raid), power redundant- OS : Linux-	set	1
k7		DB Server HW CPU : 2.0Ghz 8core; RAM : 64GB- HDD : 2TB * 2EA(Raid), power redundant- OS : Linux- DB : Maria or opensource	Set	1
k8		Interworking to Billing system Development and customizing for the interworking to Billing system to get a usage of traffic.	MM	3
L		Billing System for Internet Service Authentication/Subscription (H/W, S/W) User definition, Subscription and authentication, H/W Appliance or Server type Intel Xeon 3.30 GHz x 2ea (8core*2) equivalent or better At least 32 GB Memory HA or Active/Standby	set	2
L1				
L2		Billing management(H/W, S/W) Collecting traffic volume, Metering/Charging/Billing software, Invoicing, Web-authentication portal (s/w) H/W Appliance or Server type Intel Xeon 3.30 GHz x 2ea (8core*2) equivalent or better At least 32 GB Memory HA or Active/Standby	set	2
L3		Interworking to MIS and IMS(NMS)	set	2
		Bill No. 1 - ICT Infrastructure Element No.2 - Datacenter Infrastructure Network equipment infrastructure at datacenter and IDF of each floor UPS, HVAC, Racks & tray, Test lab, Integrated surveillance center, _		
A		UPS	set	
A1		UPS main frame: 600KVA, modular extension, Basement (height: 600mm), Output:500KW	set	2
A2		Battery, Battery rack & BCB Fabrics, Basement (height: 600mm), minimum 20 minutes backup time guarantee for full load (500kw), minimum 10 years guarantee	set	2
A3		MBP (Maintenance Bypass Panel), Basement (height: 600mm), Active-Active input, Power cable included from PDU in EPS to PDU in server room.	set	2
A4		PDU in EPS for UPS, dual input Sub Distribution PDU 1250/1000A	set	2
A5		Distribution PDU and Power monitoring (400A)	set	10
A6		Installation UPS including passive materials Installation equipment and cabling including Cable and copper bus bar, Work scope: from PDU at EPS, MBP, UPS, Battery & BCB, to the PDUs at the wall before the racks. Cabling, span: PDU in EPS, MBP-UPS-PDU, UPS-BATT Cabling, span: UPS PDU - Distribution PDU	set	1
A7		Management system and agent, SNMP support	set	2
B		HVAC		
B1		HVAC, Rated input 78.6kw, 3P415V50Hz, 30RT	set	8
		CRAC Units 40KW for UPS & Battery Room	set	2
C		Racks and Tray		
C1		19" 42U Rack, 600mm width including Rack PDU(16A or 32A(only 10kw rack)) 15ports - 2set, cooling fan, locker including miscellaneous materials	set	78
		PDUs for Monitoring	set	156
		PDU's Variation (SNMP Supported)	set	1
C2		Rack-STS : Single phase 240V / 16A (3set) / 50Hz; - 19" rack mountable type	set	3
C3		Rack-STS : Single phase 240V / 32A (2set) / 50Hz; - 19" rack mountable type	set	2
C4		Patch panel, UTP CAT 6, 24ports including rear side patch cabling. 1 set per server Rack (65EA), 5 set per network Rack (65EA)	set	188
C5		FDF, 48 ports for MDF in Emergency room - BB S/W in Datacenter	set	5
C6		FDF, 12 ports for ISP-Datacenter	set	20
C7		20" Monitor, Keyboard, Mouse; Moving table with wheel	set	2
C8		Data cable Tray, 300x100mm, 600x100mm, PC/ABC material including miscellaneous materials	m	90
C9		Data cable tray, Fixed support including miscellaneous materials	ea	112
C10		Power cable tray, St W600x100Hx2.3t for Server rack including miscellaneous materials	m	100
C11		Power cable tray, St W900x100Hx2.3t for UPS & Battery Room , ICT Control room including miscellaneous materials	m	140
C12		Power cable from the distribution PDU to Racks, F-CV 6sq, 3c	m	5,000
C13		Industrial AC Power plug and socket (2P+E, 16A and/or 32A, IP44)	ea	156
		VESDA Solution for Data Center , UPS & Battery Rooms	set	
(a)		Data Center Area (Size: Big)	set	1
(b)		UPS & Battery Room (Size: Small)	set	2
D		Test lab		
		Software Zone		
D1		Linux Server, Processor: AMD64 or Intel EMT-64 Processor, Memory: 16GB, HDD: 500GB; OS-Red hat enterprise Linux 6.7	set	-
D2		Desktop PC Set, Processor: Intel i3-7100, Memory:4GB, HDD:500GB; Windows 10	set	-
D3		Free Software, Performance Test: AutomaI, NeoLoad Free software tool for testing performance for software developemnt	copy	-
D4		Free Software, Stress test: LoadNinja, StressStimulus Free software tool for testing stress or load for software developemnt	copy	-
		Mobile zone		
D5		Android smart phone (by 2 models), Android 9.0, Octa-Core, 2.8GHz (Single Core Max Clock) + 2.4GHz + 1.7GHz, LTE	ea	-
D6		iOS smart phone (by 2 models), iOS, A11 Bionic chip Neural Engine, 5.5" Display	ea	-
		IOT Zone		
D7		Platform for smart city, manufacturing etc, IOT Development and libray for IOT development	set	-
D8		Input sensors, Output sensors, Varios senser bundle for remote access, temperature, on-off sensors, etc	set	-
		3D Printing zone		
D9		3D Printer, Design Prototyping about idea, Large Size X-Plus Intelligent Industrial Grade 3D Printing with Nylon, Carbon Fiber, PC,High Precision Printing 10.6x7.9x7.9 Inch	ea	-
D10		Materials for 3D printer, Printing materials, PLA,ABS,TPU,PETG,Nylon,PC,Carbon fiber,	set	-
		Test-Lab & BMT Furniture		
D11		Rack for servers and network, 19", 42U standard Rack	set	2
D12		LAN switch for test Lab & BMT, 24 port L3 Switch	set	2
D13		Console desk, 1400*900*750, (Test-Lab & BMT)	ea	6
D14		Chairs, Wheels	ea	6
D15		Cabinet for Test Lab/ BMT , multiple shelves and 2 door cabinet with 2000mm height	ea	2

D16	Installation, Assembly	set	1
E	ICT Control room		
	Interior work		
	1. Temporary work		
	2. Front wall work		
E1	Stud structure frame, 30mm*60mm	rf	30
E2	Drywall, 2 layer, 9.5T, 2PLY	rf	30
E3	Plywood, 9T	rf	30
E4	Braket reinforcement, Steel pipe	rf	25
E5	Frame molding, Front monitor	m	20
E6	Wood panel, T=9 M.D.F	rf	15
E7	Interia film, specified sheet	rf	31
E8	wood moudle(100mm), Baseboard	m	16
E9	Installation	set	1
	3. Side & Rear side work		
E10	METAL STUD, 65mm	rf	
E11	Polyester filling, THK50M/M/32K	rf	
E12	Drywall, 2 layer, 9.5T	rf	
E13	Wood panel, T=9 M.D.F	rf	
E14	Interia film, specified sheet	rf	
E15	Fabric Panel, 9T Art board, Sound absorption cloth	rf	
E16	wood moudle(100mm), Baseboard	m	
E17	Installation	set	
	4. Furniture		
E18	Console desk, 1400*900*750, design proposed	ea	6
E19	Side panel, 30T	ea	6
E20	Chairs, Wheels	ea	6
E21	Shelter, 900*300*2000mm	ea	2
E22	Installation, Assembly	set	1
	5. Video system		
E23	55" Video Wall, DID, 700cd/1.8mm	EA	8
E24	Braket, 55"	EA	8
E25	IP Wall controller with H/W & S/W, 6Encoder IN, 8 OUT	EA	1
E26	PC Interface, HDMI 1:2	EA	9
E27	HDMI cable, 20m	EA	8
E28	System Box, Ethernet, HDMI or DVI, Elec. Power	EA	6
E29	Contro PC, included to serial 2port	EA	1
E30	Integrated control program, S/W	EA	1
E31	Miscellaneous materials, cable, adaptor	set	1
E32	Operating PC, equal or better than Intel core i5 or AMD RYZEN5 and Windows 10, double monitor interface,	set	6
E33	Agent licenses.	copy	10
E34	24" monitor	set	12
E35	Tray(300*100) and cabling under the Access floor from the storage room to the operating pc in the ICT Control room	m	30
E36	19" Rack, mountable equipments of wall screen and network in the ICT control room	set	1
	Bill No. 1 - ICT Infrastructure		
	Element No.3 - Management Information System		
	Element No.3.1 - MIS Application		
A	Techno Park Internal Portal		
A1	- Portal - Included system license - Groupware (Include e-Mail system)	set	1
A2	- Client : 200 users license - Server : svstem license - HR (Human Resource) Management System	set	1
A3	- Included svstem license	set	1
A4	- CMS (Customer Management System) - Included system license	set	1
A5	- AMS (Asset Management System) - Included system license	set	1
B	Techno Park External Portal		
B1	- Common Public Web Site - Web Page for Tenant Company	set	1
C	Installation including Technical negotiation, Test & commissioning	set	1
	Element No.3.2 - MIS H/W		
A	Web Server		
	- Intel Xeon 3.20 GHz x 1ea (8core) equivalent or better - Memory : At least 32 GB - HDD : SAS 500GB x 2ea equivalent or better - Raid Controller : 2G cache, RAID Levels 0, 1, 10, 5, 50, 6, 60 - Networking : Gigabit Ethernet 4Port equivalent or better - Dual Power / Sunoort Hot Swan	set	1
B	Groupware (e-Mail) Server		
	- Intel Xeon 3.20 GHz x 2ea (8core*2) equivalent or better - Memory : At least 32 GB - HDD : SAS 500GB x 2ea equivalent or better - Raid Controller : 2G cache, RAID Levels 0, 1, 10, 5, 50, 6, 60 - Dual Port 16Gb Fibre Channel HBA * 1ea - Networking : Gigabit Ethernet 4Port equivalent or better - Dual Power / Sunoort Hot Swan	set	1
C	WAS Server		
	- Intel Xeon 3.20 GHz x 2ea (8core*2) equivalent or better - Memory : At least 32 GB - HDD : SAS 500GB x 2ea equivalent or better - Raid Controller : 2G cache, RAID Levels 0, 1, 10, 5, 50, 6, 60 - Dual Port 16Gb Fibre Channel HBA * 1ea - Networking : Gigabit Ethernet 4Port equivalent or better - Dual Power / Sunoort Hot Swan	set	1
D	DB Server		
	- Intel Xeon 3.20 GHz x 2ea (8core*2) equivalent or better - Memory : At least 32 GB - HDD : SAS 500GB x 2ea equivalent or better - Raid Controller : 2G cache, RAID Levels 0, 1, 10, 5, 50, 6, 60 - Dual Port 16Gb Fibre Channel HBA * 1ea - Networking : Gigabit Ethernet 4Port equivalent or better - Dual Power / Sunoort Hot Swan	set	1
E	Development Server(Web/WAS)		
	- Intel Xeon 3.20 GHz x 2ea (8core*2) equivalent or better - Memory : At least 32 GB - HDD : SAS 500GB x 2ea equivalent or better - Raid Controller : 2G cache, RAID Levels 0, 1, 10, 5, 50, 6, 60 - Networking : Gigabit Ethernet 4Port equivalent or better - Dual Power / Sunoort Hot Swan	set	-
F	Development Server(DB)		
	- Intel Xeon 3.20 GHz x 1ea (8core) equivalent or better - Memory : At least 32 GB - HDD : SAS 500GB x 2ea equivalent or better - Raid Controller : 2G cache, RAID Levels 0, 1, 10, 5, 50, 6, 60 - Networking : Gigabit Ethernet 4Port equivalent or better - Dual Power / Sunoort Hot Swan	set	-
G	MIS Server		
	- Intel Xeon 3.20 GHz x 2ea (8core*2) equivalent or better - Memory : At least 32 GB - HDD : SAS 500GB x 2ea equivalent or better - Raid Controller : 2G cache, RAID Levels 0, 1, 10, 5, 50, 6, 60 - Dual Port 16Gb Fibre Channel HBA * 1ea - Networking : Gigabit Ethernet 4Port equivalent or better - Dual Power / Sunoort Hot Swan	set	1
H	Backup Server		
	- Intel Xeon 3.20 GHz x 1ea (8core) equivalent or better - Memory : At least 32 GB - HDD : SAS 500GB x 2ea equivalent or better - Raid Controller : 2G cache, RAID Levels 0, 1, 10, 5, 50, 6, 60 - Dual Port 16Gb Fibre Channel HBA * 1ea - Networking : Gigabit Ethernet 4Port equivalent or better - Dual Power / Sunoort Hot Swan	set	1
I	Storage		
	- Controller - Dual Active/Active configuration - Support fail-over among controllers - Intel Xeon 1.7GHz, 6core*2ea (6 cores per Controller) - Cache: Max. 32GB (16GB/Controller), battery-backed - Host Port: 32G FC x 8 Port, 16G FC x 8 Port, 10G iSCSI x 16 Port, 12G SAS x 8 - Operational Volume: 10TB Above - Dual Power / Sunoort Hot Swan	set	1

	J SAN Switch - 02B equivalent or better, 16 Active Port - Provide Inter-Switch Link (ISL) - Rack Mount Type - Provide SAN Switch S/W - Dual Power / Sunsoft Hot Swan		set	2
	K Physical Tape Library (PTL) - ML3 LT07 FC-HI Tape Drive * 2ea, Redundant Power Supply - LT07 Tape Media, 5 Pack * 10ea - LTO Cleanline Tape. 1 Pack * 3ea		set	1
	L Attendance checker - Fingerprint recognition sensor and management S/W or API support		set	1
	M Barcode Scanner - CPU : Qualcomm 2.26 GHz Quad-core equivalent or better - OS : Android 6.0 or Latest Version - LCD : 4.7" equivalent or better - Memory : 2GB RAM / 16GB ROM equivalent or better - IP67 equivalent or better - Operating Temperature: -30° to 50°C		set	3
	N Barcode Label Printer - Printing Speed : 100~300mm/sec equivalent or better - Memory : 128MB ROM, 128MB RAM equivalent or better - Max Printing Width : 108mm - Interface : USB Type - DPI: 203 dot equivalent or better		set	2
	O Barcode Material - Label Paper : Gloss Coated Paper 35mm*20mm, 750 - Barcode Printer Ribbon : 50mm*30m		set	50
	P Office PC - Intel Core i5-9400 equivalent or better - At least 16GB DDR4 - HDD : 1 TB equivalent or better, SSD : 256 GB - Windows 10 Professional Edition, English Edition - English keyboard, Mouse, etc. - 24-inch LED (1920*1080) equivalent or better		set	20
	Q Office Printer - All-In-One : Print, Copy, Scan, FAX - Laser, 30/30ppm equivalent or better - Max 1,200 X 1,200 DPI (Print) - Network Interface - 2GB Memory equivalent or better - 250GB HDD equivalent or better - Printer Tray : 2EA equivalent or better - <u>Support A4, A4, A4-R, A4, B5, Executive</u>		set	1
	R Miscellaneous Material - Cable, Connector, Tie, etc		set	1
	S Installation including Technical negotiation, Test & commissioning <u>Element No.3.3 - MIS System S/W</u>		set	1
	A Operation System (OS) - LINUX Latest Version / CentOS V7.6 or Latest Version		set	6
	B Web Server SW - Apache HTTP Server		set	2
	C WAS - Tomcat Latest Version		set	3
	D DBMS - MariaDB v10.5 or Latest Version		set	1
	E HA Cluster - Pacemaker v2.0 or Latest Version		set	-
	F Backup Server SW - Backup Server Software for Linux - Support commercial DBMS backup modules - Support tape and VTL backup - Support Unix, Windows and Linux client backup - Support SAN and network backup		set	1
	G Reporting Tool - Support JAVA platform - Provide scheduling function - Provide various components - Support Unicode - Support file formats including PDF, Excel, Word, JPG, TIF, GIF, BMP, etc. - Provide Export function		set	3
	H Installation including Technical negotiation, Test & commissioning <u>Bill No. 1 - ICT Infrastructure</u> <u>Element No. 4 - Teir III Certification for Data Center</u>		set	1
	A Detail design and Certification includes both Design and Construction certification for Teir III Data Center		Lot	1
Additional Items				
5	32Amp rPDUs for Data Center Racks		Nos	58

FURNITURE (ARC) LIST

S.NO	ROOM NAME	ITEM	QTY
G04	MALE LOCKER	LOCKER	41
G07	GYM OFFICE	STAFF DESK	1
		MIDDLE BACK CHAIR	1
G09	FEMALE LOCKER	LOCKER	21
G13	INFORMATION DESK	MIDDLE BACK CHAIR	2
G22	VESTIBULE (GUEST)	MULTI USE CHAIR	1
G23	RECEPTION GUEST	MIDDLE BACK CHAIR	2
G31	AUDITORIUM	LECTURE TABLE	1
G33	MANAGEMENT OFFICE -1	STAFF DESK	5
		MIDDLE BACK CHAIR	5
		FABRIC SCREEN	4
		2-3 SEATER SOFA	2
		SOFA TABLE	1
		CABINET	4
G41	RESTAURANT	DINING TABLE	43
		DINING TABLE	4
		DINING CHAIR	274
G52	VESTIBULE PODIUM	MULTI USE CHAIR	1
G53	SECURITY ROOM	STAFF DESK	1
		MIDDLE BACK CHAIR	1
G56	SECURITY CHECK ROOM	MULTI USE CHAIR	2
G59	LOBBY RECEPTION	MIDDLE BACK CHAIR	3
G61	CLASS ROOM -1	SCHOOL CHAIR	48
		MIDDLE BACK CHAIR	1
		STAFF DESK	1
G62	INDUSTRY ACADEMIA	SCHOOL CHAIR	30
		STAFF DESK	1
		MIDDLE BACK CHAIR	1
G63	CLASS ROOM -2	SCHOOL CHAIR	18
		STAFF DESK	1
		MIDDLE BACK CHAIR	1
G64	CONFERENCE ROOM -1	MIDDLE BACK CHAIR	12
		MEETING TABLE	1
G65	CONFERENCE ROOM -2	MIDDLE BACK CHAIR	12
		MEETING TABLE	1
G66	CONFERENCE ROOM-3	MULTI USE CHAIR	30
		20 SEATER MEETING TABLE	1
		MIDDLE BACK CHAIR	20
G67	CONFERENCE ROOM - 4	MULTI USE CHAIR	6
		16 SEATER MEETING TABLE	1
		MIDDLE BACK CHAIR	16
G68	CONFERENCE ROOM -5	MEETING TABLE	1
		MIDDLE BACK CHAIR	10
G69	MANAGEMENT OFFICE -2	STAFF DESK	5
		MIDDLE BACK CHAIR	5
		FABRIC SCREEN	4
		2-3 SEATER SOFA	2
		SOFA TABLE	1
		CABINET	4
G71	DAY CARE CENTRE	MEETING TABLE	2

		ROUND TABLE	1
		MULTI USE CHAIR	11
		CABINET	5
G94	EMERGENCY ROOM	STAFF DESK	6
		MIDDLE BACK CHAIR	6
G103	LOADING OFFICE	STAFF DESK	4
		MIDDLE BACK CHAIR	4
F132	LOUNGE	ROUND TABLE	6
		MULTI USE CHAIR	24
F141	PROJECTOR ROOM	STAFF DESK	2
		MIDDLE BACK CHAIR	1
		DOUBLE BED	4
		SINGLE BED	3
		MATRESS	7
		BED SIDE TABLE	14
		3 LEVEL DRAWER	3
		TV TABLE	7
		DINING TABLE	1
		STUDY TABLE	6
		DINING CHAIRS	4
		MIRROR	6
		SOFA	1
		SOFA TABLE	1
		CHAIRS	6
B103	HALL 01	MULTI USE CHAIR	1
B104	HALL 02	MULTI USE CHAIR	1
B203	HALL 01	MULTI USE CHAIR	1
B204	HALL 02	MULTI USE CHAIR	1
MOSQUE			
G09	IMAM OFFICE	MIDDLE BACK CHAIR	1
		STAFF DESK	1
		5 LEVEL CABINET	2
VISITOR CENTRE			
G03	INFORMATION DESK	MULTI USE CHAIR	2
G05	CORRIDOR -2	MULTI USE CHAIR	1
GUARD POST			
G-01	GUARD POST 01	MULTI USE CHAIR	1
G-01	GUARD POST 02	MULTI USE CHAIR	1
G-01	GUARD POST 03	MULTI USE CHAIR	1