

Project : Absheron Phase 2 - CPF Project
 Owner : TotalEnergies Absheron EP B.V.
 Client : Hyundai Engineering Co., Ltd.
 Attn. : 나진수 책임매니저님
 RFQ No. : AGSA-MR-CI-027_Material Requisition for Telecom & Security System
 Job No. : FP-HEC-Absheron Phase 2 - CPF -26-01
 Date : 2026-02-19
 Validity : 30 Days
 Subject : Proposal from KDA



Kuk Dong Automation Co., Ltd.
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Dear Sir,

We are pleased to forward our proposal as per your inquiry. Enclosed please see a detailed, itemized equipment list.
 The bid was prepared according to our experiences with similar installations and our understanding the specification for this project.
 Our scope of work consists of the followings:

[SCOPE of WORK] (VAT: Excluded)

Item No.	Description	TOTAL Price (KRW)	
I	TELECOM & SECURITY SYSTEM	1	LOT 10,093,209,610
1	Data Network System	1	SET 357,946,800
2	PAGA System	1	SET 2,423,699,655
3	Radio System	1	SET 408,643,224
4	Mobile 4G LTE System	1	SET 320,430,000
5	CCTV System	1	SET 1,716,370,065
6	Telephone & Structured System	1	SET 329,611,245
7	Fiber Optic Network System	1	SET 50,600,000
8	GPS System	1	SET 15,565,000
9	Meteorological System	1	SET 51,059,122
10	ACS(Access Control System) & ePOB	1	SET 382,719,194
11	Entertainment System	1	SET 140,635,000
12	Security System	1	SET 1,891,697,058
12.2	ACS(Access Control System)	1	SET 395,826,717
12.3	Perimeter Intrusion Detection System	1	SET 939,345,000
13	Video Conference System	1	SET 617,731,130
14	Other System	1	SET 50,050,000
A	Spare Parts List for Start-up & Commissioning	1	SET 694,100
B	Special tools	1	SET 586,300
II	Engineering Cost and Other Services	1	LOT 226,400,000
1	Detailed Engineering, Design, Drawing and Documentation	1	LOT 70,000,000
2	System Fabrication/Integration, Factory Acceptance Test(FAT) at KDA Workshop in Korea , Inspection and Packing & FOB Transportation	1	LOT 10,000,000
3	- Site Survey / Site Training - Supervision 2man - Training Fee 1man	90 days 3 days	144,000,000 2,400,000

	Total Price (I+II)	10,319,609,610	
OPTION	Spare Parts List for Operation (2 year)	1	SET 697,489,255

- **Delivery Terms:** FOB Korean port
- **Delivery Time:** 22~28 weeks after Document Approval
- **Payment Terms:** TBD

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I TELECOM & SECURITY SYSTEM				1	SET	10,093,209,610	10,093,209,610
1 Data Network System				1	SET	357,946,800	357,946,800
1.1 Data Cabinet				8	SET	24,108,525	192,868,200
- 800(W) x 800(D) x 2100(H)		RITTAL	VX 5307124	1			
- 48C FOPP x 2EA				2			
- with F/O Patch cord				48			
- Firewall with IPS Function		CISCO	FPR3110-NGFW-K9	1			
- Access Switch (48 port)		Alcatel lucent	OS6560-P48X4	1			
- SFP modules, 1G		Alcatel lucent	OS6560-BP-PX	1			
- SFP modules, 10G		Alcatel lucent	SFP-GIG-LX	2			
- UTP Patch Panel		Alcatel lucent	SFP-10G-LR	2			
- with UTP Patch cord			Cat.6a	1			
- Voice Gate Way				24			
- Terminal Blocks				1			
- Grounding Bus Bar				1			
- Cable Trunk				1			
-ATS for Redundant Input Power				1			
- Surge Diverter							
1.2 Data/Voice outlet					EA		
- 2 Port							
- 4-port outlet configuration and mounted in standard 4"x4" electrical box(dual outlet power socket)				325	SET	30,800	10,010,000
-Faceplate				1			
-Cat.6a modular				2			
- back box				1			
1.3 Wifi Access point		Aruba	AP515	41	EA	1,870,000	76,670,000
- Indoor							
1.4 Wifi Access point		Aruba	AP-587EX	14	EA	5,599,900	78,398,600
2 PAGA System				1	SET	2,423,699,655	2,423,699,655
2.1 PAGA Central Cabinet		RITTAL	VX 5307124	1	SET	86,413,800	86,413,800
- 800(W) x 800(D) x 2100(H)							
- Surge Diverter							
-ATS for Redundant Input Power				1			
2.2 PAGA MDF Cabinet		RITTAL	VX 5307124	2	SET	37,789,400	75,578,800
- 800(W) x 800(D) x 2100(H)							
- Amplifier 300W x n (As per Speaker capacity + 20% spare)							
- N+1 configuration							
- Surge Diverter							
-ATS for Redundant Input Power				2		2,750,000	5,500,000
2.3 PAGA Cabinet		RITTAL	VX 5307124	5	SET	30,231,520	151,157,600
- 800(W) x 800(D) x 2100(H)							
- Amplifier 300W x n (As per Speaker capacity + 20% spare)							
- N+1 configuration							
- Surge Diverter							
-ATS for Redundant Input Power				5		2,750,000	13,750,000
2.3 PAGA Cabinet		RITTAL	VX 5307124	2	SET	30,231,520	60,463,040
- 800(W) x 800(D) x 2100(H)							
- Amplifier 300W x n (As per Speaker capacity + 20% spare)							
- Modular type UPS (mounted inside PAGA Cabinet) - 'Less than 10kVA x 2sets (A, B)							
- Backup time >1-hour							
- Battery 'Ni-Cd							
- N+1 configuration							
- Surge Diverter							
-ATS for Redundant Input Power				2		2,750,000	5,500,000
2.4 Loudspeaker (6W)		DNH	BF-620(T)	126	EA	287,958	36,282,708
- Wall structure mounted							
With adjustable SS316 mounting bracket With JB(SUS316), Cable glands(SUS316) with Plugs				126	SET	330,000	41,580,000
2.5 Loudspeaker (6W)		DNH	DSP-15EExmN(T) 8W	7	EA	1,367,976	9,575,832
- Wall structure mounted (Explosion proof), ATEX certified							
Zone 1, IIA T3 With adjustable SS316 mounting bracket With JB(SUS316), Cable glands(SUS316) with Plugs				7	SET	2,200,000	15,400,000
2.6 Loudspeaker (25W)		DNH	DSP-25EEExmNT	355	EA	1,759,945	624,780,475
- Wall structure mounted							
- Explosion proof outdoor (ATEX certified)							

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Item No	Description	Manufacturer	Model	Q'ty	Unit	Unit Price	Total Price (KRW)
	Zone 1, IIA T3 With adjustable SS316 mounting bracket With JB(SUS316), Cable glands(SUS316) with Plugs			355	SET	2,200,000	781,000,000
2.7	Ceiling speaker (1W) - Indoor	DNH	BF-620(T)	100	EA	287,958	28,795,800
2.8	PAGA ACU(Access Control Unit)	Industronic	AP 7x1	5	EA	4,723,700	23,618,500
2.9	Beacon - Red & Yellow - Explosion proof outdoor	E2S	D1xC1X10R	49	EA	4,799,900	235,195,100
	Zone 1, IIA T3 With adjustable SS316 mounting bracket With JB(SUS316), Cable glands(SUS316) with Plugs			49	SET	2,200,000	107,800,000
2.10	Mounting Mast (Pole) - 3 meters	DAESAN		182	EA	594,000	108,108,000
2.11	PMB (PAGA Marshalling Junction box) - Explosion proof outdoor (ATEX) - Zone 1			8	EA	1,100,000	8,800,000
2.12	FJB (PAGA Flahing beacon Junction box) - Explosion proof outdoor (ATEX) - Zone 1			4	EA	1,100,000	4,400,000
3	Radio System			1	SET	408,643,224	408,643,224
3.1	PMR/MARINE VHF Cabinet - 800(W) x 800(D) x 2100(H) - Base Station Transceiver (VHF) - Server - SII Gateway switch - 48C FOPP - with F/O Patch cord - Access Switch (24 port)	RITTAL Motorola	VX 5307124 XiR M8668i	2	SET	19,663,050	39,326,100
	- SFP modules, 1G - UTP Patch Panel - with UTP Patch cord - Surge Divterer -ATS for Redundant Input Power	Alcatel Lucent	OS6560-P24X4 OS6560-BP-PX SFP-GIG-LX Cat.6a	1 1 2 1 24 1			
3.2	PMR/Private Marine Radio) desktop console	Motorola	XiR M8668i	2	EA	3,168,000	6,336,000
3.3	Fixed PMR Radio	Motorola	XiR M8668i	5	EA	3,168,000	15,840,000
3.4	VHF Marine RCU(Remote Control Unit)			3	EA	7,700,000	23,100,000
3.5	Omni-directional Antenna - Outdoor - Building roof mounting			5	EA	2,200,000	11,000,000
3.6	Ceiling Omni-antenna - Indoor			14	EA	1,312,366	18,373,124
3.7	Telecom Tower (Radio antenna) - Air Craft Warning Light (LED twin) - 40 meters - PMR/Private Marine Radio) Antenna - VHF(Very High Frequency) Marine Antenna			1	EA	16,500,000	16,500,000
3.8	Hand Portable Radio (IS, ATEX Zone 1, IIA T3)	Motorola	XIR P8668Ex	53	EA	2,860,000	151,580,000
3.9	Multiway Charger for Radio			5	EA	880,000	4,400,000
3.1	Single Charger for Radio			5	EA	220,000	1,100,000
3.11	Headset Radio - Fixed desktop	Motorola	XiR M8668i	6	EA	3,168,000	19,008,000
3.12	Headset Radio (IS, ATEX Zone 1, IIA T3) - Fixed desktop	Motorola	XIR P8668Ex	27	EA	2,860,000	77,220,000
3.13	Vehicle Radio (IS, ATEX Zone 1, IIA T3)	Motorola	XIR P8668Ex	6	EA	2,860,000	17,160,000
3.14	Workstation - Rack mounted type - 42 inch monitor			2	EA	3,850,000	7,700,000

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4	Mobile 4G LTE System			1	SET	320,430,000	320,430,000
4.1	4G LTE Cabinet - 800(W) x 800(D) x 2100(H) - Surge Diverter -ATS for Redundant Input Power	RITTAL	VX 5307124	1	set	43,450,000	43,450,000
4.3	Mobile (ATEX Zone 1, IIA T3)	ECOM	Smart-Ex 03	27	set	5,060,000	136,620,000
4.4	Smart Tablet (ATEX Zone 1, IIA T3) 21.5" FHD IP66 Intel Core i5-6300U 2.4GHz, fan less panel PC with accessories	ECOM	Tab-Ex® 04 Pro	29	set	4,840,000	140,360,000
5	CCTV System			1	SET	1,716,370,065	1,716,370,065
5.1	CCTV Cabinet - 800(W) x 800(D) x 2100(H) - NVR, Intelligent Video Surveillance Server - Access Switch (24 port) - SFP modules, 1G - UTP Patch Panel - 48C FOPP for Uplink - with F/O Patch cord - 48C FOPP for Camera Connection - with F/O Patch cord - Media Converters - KVM Switch - Surge Diverter -ATS for Redundant Input Power - VMS, Dell Server XProtect Expert Base License XProtect Expert Device License 1 year Care Plus for XProtect Expert Base License 1 year Care Plus for XProtect Expert Device License F/O Switch 5.2 Dome camera (security) - Indoor	RITTAL	VX 5307124	3	SET	14,361,600	43,084,800
		Alcatel Lucent	OS6560-P24X4	1			
		Alcatel Lucent	OS6560-BP-PX	1			
		Alcatel Lucent	SFP-GIG-LX	2			
			Cat.6a	1			
				1			
				24			
				1	set	-	-
				24		-	-
						include JB	
		Milestone	158	1		22,000,000	22,000,000
		Milestone	158	1		2,871,000	2,871,000
		Milestone	158	1		385,000	60,830,000
		Milestone	158	1		515,900	515,900
		Milestone	158	1		70,400	11,123,200
		Pelco	IMP331-1IRS	22	EA	1,100,000	6,600,000
		Pelco	P2230L	81	EA	694,375	15,276,250
		Pelco	P2230L	81	set	1,911,940	154,867,140
		Pelco	ExSite Enhanced 2 Series Fixed	17	EA	1,320,000	106,920,000
		Pelco	ExSite Enhanced 2 Series Fixed	17	EA	3,678,285	62,530,845
		Pelco	ExSite Pro IR PTZ	35	EA	3,850,000	65,450,000
		Pelco	WASEX2T4IC	35	EA	17,275,418	604,639,630
		Pelco	WASEX2T4IC	35	EA	2,508,000	87,780,000
		Pelco	WASEX2T4IC	35	EA	3,850,000	134,750,000
		PELCO	ExSite Enhanced Bispectral PTZ 2 Series	3	EA	28,799,100	86,397,300
		PELCO	ExSite Enhanced Bispectral PTZ 2 Series	3	EA	-	-
		PELCO	ExSite Enhanced Bispectral PTZ 2 Series	3	EA	3,850,000	11,550,000
		PELCO	ExSite Enhanced Bispectral PTZ 2 Series	3	EA	2,508,000	7,524,000
		PELCO	ExSite Enhanced Bispectral PTZ 2 Series	3	EA	3,850,000	11,550,000
		PELCO	ExSite Enhanced Bispectral PTZ 2 Series	3	EA	1,650,000	61,050,000
		Dell	2	EA	1,705,000	3,410,000	
		Dell	2	EA	3,850,000	7,700,000	
		Dell	2	EA	3,850,000	7,700,000	
		Dell	5	EA	1,100,000	5,500,000	
6	Telephone & Structured System			1	SET	329,611,245	329,611,245
6.1	SCS(Structural Cabling System) Cabinet - 800(W) x 800(D) x 2100(H) - Surge Diverter -ATS for Redundant Input Power	RITTAL	VX 5307124	3	SET	7,810,000	23,430,000
		RITTAL	VX 5307124	1		-	-
		RITTAL	VX 5307124	1		-	-

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Item No	Description	Manufacturer	Model	Q'ty	Unit	Unit Price	Total Price (KRW)
6.2	Telephony Cabinet - 800(W) x 800(D) x 2100(H) - PABX - Analog Gateway - MDF - UTP Patch Panel - with UTP Patch cord - Access Switch (24 port) - SFP modules, 1G - Surge Diverter -ATS for Redundant Input Power	RITTAL	VX 5307124	1	SET	80,678,400	80,678,400
				1			
				1			
				1			
				1			
			Cat.6a	24			
		Alcatel lucent	OS6560-P24X4	6			
		Alcatel lucent	OS6560-BP-PX	6			
		Alcatel lucent	SFP-GIG-LX	12			
6.3	VSAT(Very Small Aperture Terminal) Cabinet - 800(W) x 800(D) x 2100(H) - Surge Diverter -ATS for Redundant Input Power	RITTAL	VX 5307124	1	SET	4,950,000	4,950,000
				1			
6.4	IP Phone -Indoor	Alcatel lucent	ALE-300	130	EA	539,000	70,070,000
6.5	Reception phone with cordless headset Key expansionmodule	Alcatel lucent	ALE-500: 3ML37120AB	2	EA	792,000	1,584,000
6.6	Hotline Telephone	Viking	K-1900-D2	3	EA	548,591	1,645,773
6.7	VSAT(Very Small Aperture Terminal) Telephone Satellite Modem and Antenna, Laptop and accessories	Iridium	Iridium 9555	3	EA	2,805,000	8,415,000
6.8	Telephone station with Acoustic hood - Explosion proof outdoor (ATEX Zone 1, IIA T3) - Sounder & Beacon	FHF	FHF11286180	34	EA	3,921,708	133,338,072
		FHF	TWIN-EExII	1			
				1			
7	Fiber Optic Network System			1	SET	50,600,000	50,600,000
7.1	FOPP Cabinet - 800(W) x 800(D) x 2100(H) - Surge Diverter -ATS for Redundant Input Power	RITTAL	VX 5307124	1	SET	4,950,000	4,950,000
				1			
7.2	FOC Marshalling Cabinet - 800(W) x 800(D) x 2100(H) - Surge Diverter -ATS for Redundant Input Power	RITTAL	VX 5307124	1	SET	4,950,000	4,950,000
				1			
7.3	FOJB (Fiber optic Junction box) - Explosion proof outdoor (ATEX Zone 1, IIA T3) as per IEC 60079-28 - Min. IP65			16	set	2,200,000	35,200,000
8	GPS System			1	SET	15,565,000	15,565,000
8.1	Primary GPS Cabinet - 800(W) x 800(D) x 2100(H) - Time Server and Antenna Digital Clock - Surge Diverter -ATS for Redundant Input Power	RITTAL	VX 5307124	1	SET	4,950,000	4,950,000
		Master clock	GMR5000	1	ea	5,500,000	5,500,000
		Master clock	NTDS44	1		825,000	825,000
				1			
8.2	GPS Antenna			2	ea	770,000	1,540,000
9	Meteorological System			1	SET	51,059,122	51,059,122
9.1	Meteorological System Cabinet - 800(W) x 800(D) x 2100(H) -ATS for Redundant Input Power - Server - Access Switch	RITTAL	VX 5307124	1	SET	11,429,000	11,429,000
				1		-	-
		Alcatel lucent	OS6560-P24X4	1		-	-
		Alcatel lucent	OS6560-BP-PX	1		-	-
		Alcatel lucent	SFP-GIG-LX	1		-	-
				1			
9.2	Meteo System Workstation + monitor			4	EA	3,850,000	15,400,000
9.3	Telecom Mast (Weather monitoring) - Air Craft Warning Light (LED twin) - 20 meters			1	EA	15,266,918	15,266,918
9.4	Combined Wind Speed & Direction Sensor	Vaisala	WMT700	1		2,713,279	2,713,279
9.5	Precipitation Sensor	Vaisala	QMR102	1		2,399,925	2,399,925
9.6	Combined Temperature, Barometric Pressure And Humidity Sensor						
9.7	Junction Box - Explosion proof outdoor (ATEX) - Min. IP 65 - Transducers / FO Converter - 230VAC UPS Power			1		3,850,000	3,850,000

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10	ACS(Access Control System) & ePOB			1	SET	382,719,194	382,719,194
10.1	ACS & ePOB Cabinet - 800(W) x 800(D) x 2100(H) - ACS Server - ACS Management Software - ACS Controller - 48C FOPP - Access Switch (24 port) - SFP modules, 1G - UTP Patch Panel -ATS for Redundant Input Power - Surge Diverter	RITTAL	VX 5307124	1	SET	39,769,400	39,769,400
10.2	ACS Cabinet - 800(W) x 800(D) x 2100(H) - ACS Controller - 48C FOPP - Access Switch (24 port) - SFP modules, 1G - UTP Patch Panel -ATS for Redundant Input Power - Surge Diverter Redundant ACS Server, ACS Controller, FOPP, Access Switch, UTP Patch Panel and accessories	RITTAL	VX 5307124	6	SET	12,544,400	75,266,400
10.3	Card reader - Indoor	Suprema	BioLite N2	73	EA	1,204,775	87,948,575
10.4	Card reader - Weather proof outdoor	Suprema	BioLite N2	33	EA	1,204,775	39,757,575
10.5	Card reader - Explosion proof outdoor (ATEX Zone 1, IIA T3)	Suprema	BioLite N2	12	EA	1,204,775	14,457,300
10.6	Card reader with Keypad - Indoor	Suprema	BioLite N2	35	EA	1,204,775	42,167,125
10.7	Card reader with Keyboard - Outdoor	Suprema	BioLite N2	1	EA	1,204,775	1,204,775
10.8	Door status contact			165	EA	55,000	9,075,000
10.9	Electro magnetic lock	IDTECK	IEM280LED	112	EA	149,160	16,705,920
10.11	Break glass unit	IDTECK	EBG02	97	EA	10,692	1,037,124
10.12	ACS Intercom			5	EA	5,500,000	27,500,000
10.13	Master station, Substation, Built-in video camera, Keypad, Card reader or Biometric scanners			4	EA	3,850,000	15,400,000
10.14	ACS & ePOB Workstation			4	EA	1,100,000	4,400,000
10.15	ACS & ePOB 42" display - Wall mounted			14	EA	55,000	770,000
10.16	IN/OUT POB Reader - Explosion proof outdoor (ATEX)			3	EA	770,000	2,310,000
10.16	OCU(Override Control Unit) - Explosion proof outdoor (ATEX)			3	EA	1,650,000	4,950,000
11	Entertainment System			1	SET	140,635,000	140,635,000
11.1	Entertainment Cabinet - 800(W) x 800(D) x 2100(H) -ATS for Redundant Input Power Head End, 48P Entertainment switch, - SFP modules, 1G Controller, IT set-top box, TVRO SAT(Television Receive-Only Satellite) - Surge Diverter	RITTAL	VX 5307124	2	SET	45,408,000	90,816,000
11.2	Entertainment screen - 42 inch 4K UHD SMART TV			1		2,750,000	2,750,000
11.3	Entertainment display - 55 inch			1		33,000,000	33,000,000
11.4	TVRO SAT (Television Receive-Only Satellite)	Alcatel lucent	OS6560-P48X4	1		3,850,000	3,850,000
		Alcatel lucent	OS6560-BP-PX	1		660,000	660,000
		Alcatel lucent	SFP-GIG-LX	2		44,000	88,000
11.2	Entertainment screen			13	EA	550,000	7,150,000
11.3	Entertainment display			2	EA	715,000	1,430,000
11.4	TVRO SAT (Television Receive-Only Satellite)			3	SET	297,000	891,000
12	Security System			1	SET	1,891,697,058	1,891,697,058
12.1	CCTV System						
12.1.1	Security CCTV camera	Pelco	Esprit Anti-Corrosion Fixed	103	SET	6,349,436	653,991,908

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	- Fixed type - Weather proof outdoor - Junction Box - Wash and Wipe feature - Water hose - Spray nozzle			1			
12.1.2	Security PTZ CCTV camera	Pelco	WASPT0V23L11M00	1			
12.1.3	Tilt-Over Lattice Tower (CCTV camera) - Self-supporting - 6 meters	Pelco	EspritAnti-corrosionPTZ	33	SET	28,289,550	933,555,150
12.1.4	Tilt-Over Lattice Tower (PTZ CCTV camera) - Self-supporting - 10 meters	Pelco	WAS0V5L5M00	1			
12.1.5	FEC(Field Equipment Cabinet) -ATS for Redundant Input Power	RITTAL	VX 5307124	111	EA	1,650,000	183,150,000
12.2	ACS(Access Control System)			1	SET	395,826,717	395,826,717
12.2.1	Card reader - Weather proof outdoor	Suprema	BioLite N2	27	EA	2,084,775	56,288,925
12.2.2	ACS Intercom - Weather proof outdoor			25	EA	1,100,000	27,500,000
12.2.3	Turnstile	Optima	F100-003	4	EA	7,788,908	31,155,632
12.2.4	Dome camera (Turnstile) - Weather proof outdoor Fixed type	Pelco	Sarix Value Z Series Outdoor Dome	8	EA	360	3,880
12.2.5	Vehicle Arm Barrier 4m with ANPR camera with accessories	Optima	B600	4	EA	2,376,330	9,505,320
		Optima	ALPR-100	4		40,318,740	161,274,960
12.2.6	Sliding gate 15m (Motorized type, push button with accessories) for Plant Main Entrance	Optima	TSG	1		31,999,000	31,999,000
12.2.7	X-Ray scanner and Metal detection archway	astrophysicsinc	XIS-5335S™	1		55,000,000	55,000,000
			SMD 600 PLUS	1		23,100,000	23,100,000
12.3	Perimeter Intrusion Detection System			1	SET	939,345,000	939,345,000
12.3.1	PIDS System Cabinet -ATS for Redundant Input Power			1	SET	205,810,000	205,810,000
	PIDS Controller (Up to 500m of sensing cable per zone) Outdoor Enclosure - Surge Diverter	Fiber sensys	FD-322	1		-	-
12.3.2	Fiber Optic Sensing Cable (24C) - Single-armor, single-jacket fiber optic sensor/lead cable, 24 fibers, recommended for buried applications			24C, SM	9,799	EA	11,000
	IR Sensor (Weather proof)	OPTEX	SL-350QDP	6		330,000	1,980,000
12.3.4	PIDS Workstation			2	SET	6,050,000	12,100,000
12.4	Anti Intrusion Detection System (OIL/GAS Pipe Line)						
	- Single-armor, single-jacket fiber optic sensor/lead cable, 24 fibers, recommended for buried applications						
12.4.1	Fiber Optic Sensing Cable (48C)			48C, SM	10,910	M	22,000
12.4.2	Fiber Optic Sensing Cable (48C)			48C, SM	6,186	M	22,000
12.4.3	Fiber Optic Sensing Cable (48C)			48C, SM	3,176	M	22,000
12.4.4	Fiber Optic Sensing Cable (48C)			48C, SM	5,046	M	22,000
13	Video Conference System			1	SET	617,731,130	617,731,130
13.1	Video conference system (Microphone)			10	EA	59,947,113	599,471,130
	Cisco Room Kit EQ	Cisco					
	Cisco Room Navigator For Table	Cisco					
	Pan-Tilt-Zoom 4K 20x Camera, Bracket for wall mounting of PTZ 4K camera,	Cisco	PTZ 4K Camera				
	42" LED display,						
	Cisco Table Microphone with Euroblock plug	Cisco	CS-MIC-TABLE-J				
13.2	Video Projector			2	EA	1,100,000	2,200,000
13.3	Video conference screen - 55 inch display			10	EA	1,100,000	11,000,000
13.4	IP STB			2	EA	550,000	1,100,000
13.5	EVR(Emer. Voice Recorder) Microphone			12	EA	330,000	3,960,000
14	Other System			1	SET	50,050,000	50,050,000

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Item No	Description	Manufacturer	Model	Q'ty	Unit	Unit Price	Total Price (KRW)
14.1	TSAS(Telecom Supervisory Alarm System) Cabinet - 800(W) x 800(D) x 2100(H) -ATS for Redundant Input Power	RITTAL	VX 5307124	1	SET	4,950,000	4,950,000
14.2	Spare Cabinet - 800(W) x 800(D) x 2100(H)	RITTAL	VX 5307124	1		2,750,000	2,750,000
14.3	- 800(W) x 1000(D) x 2100(H) for Server	RITTAL	VX 5307124	1	SET	8,800,000	8,800,000
14.3	Flare Monitoring Workstation			1	EA	3,850,000	3,850,000
14.4	Flare Monitoring display			1	EA	1,100,000	1,100,000
14.5	TSAS(Telecom Supervisory Alarm System) Workstation			1	EA	3,850,000	3,850,000
A Spare Parts List for Start-up & Commissioning					1 SET	694,100	694,100
- FO Patch Panel 24 Port (SC type)					1	102,300	102,300
- FO Patch cord (3M), Single mode, SC-LC type					24	7,700	184,800
- UTP Patch Panel 24 Port, Cat.6					1	275,000	275,000
- UTP Patch Cord, Cat 6a					24	5,500	132,000
B Special tools					1 SET	586,300	586,300
Punch-Down Tool with 110 Blade					Netmate	HT-364BR	55,000
RJ45 Crimping Tool, Cat.6					LS	LS-CT-UC5E(6)-SI1	88,000
LAN Tester					NEXT	NEXT-488PDT	59,400
Fiber Optic Power Meter					Prokit	MT-7601	181,500

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Item No	Description	Manufacturer	Model	Unit	Q'ty	Unit Price	Total Price (KRW)
I	Spare Parts List for Operation (2 year)			SET	1	697,489,255	697,489,255
1	- Access Switch (48 port)	Alcatel Lucent	OS6560-P48X4		3	4,375,000	13,125,000
2		Alcatel Lucent	OS6560-BP-PX		3	750,000	2,250,000
3	- SFP modules, 1G	Alcatel Lucent	SFP-GIG-LX		3	50,000	150,000
4	Data/Voice outlet						
	- 4 Port			SET	5	35,000	175,000
	-Faceplate					1	
	-Cat.6a modular					2	
	- back box					1	
5	Wifi Access point	Aruba	AP515	EA	52	2,125,000	110,500,000
	- Indoor						
6	Wifi Access point	Aruba	AP-587EX	EA	9	6,279,900	56,519,100
	- Explosion proof outdoor (ATEX)						
7	Loudspeaker (6W)	DNH	BF-620(T)	EA	5	327,225	1,636,125
	- Wall structure mounted						
8	Loudspeaker (6W)	DNH	DSP-15EExmN(T) 8W	EA	5	1,366,840	6,834,200
	- Wall structure mounted (Explosion proof)						
9	Loudspeaker (25W)	DNH	DSP-25EExmNT	EA	5	1,973,675	9,868,375
	- Wall structure mounted						
	- Explosion proof outdoor						
10	Ceiling speaker (1W)	DNH	BF-620(T)	EA	3	327,225	981,675
	- Indoor						
11	Beacon	E2S	D1xC1X10R	EA	3	6,279,900	18,839,700
	- Red & Yellow						
	- Explosion proof outdoor						
12	PMR/Private Marine Radio) desktop console	Motorola	XIR M8668i	EA	3	3,600,000	10,800,000
13	Fixed PMR Radio	Motorola	XIR M8668i	EA	3	3,600,000	10,800,000
14	Hand Portable Radio (IS)	Motorola	R7	EA	5	1,875,000	9,375,000
15	Multiway Charger for Radio			EA	5	1,000,000	5,000,000
16	Single Charger for Radio			EA	5	250,000	1,250,000
17	Headset Radio	Motorola	XIR M8668i	EA	1	3,600,000	3,600,000
	- Fixed desktop						
18	Headset Radio (IS)	Motorola	XIR M8668i	EA	1	3,600,000	3,600,000
	- Fixed desktop						
19	Vehicle Radio (IS)	Motorola	XIR M8668i	EA	1	3,600,000	3,600,000
20	Mobile (ATEX)	ECOM	Smart-Ex 02	set	2	5,500,000	11,000,000
21	Dome camera (security)	Pelco	IMP331-1IRS	EA	3	789,063	2,367,189
	- Indoor						
22	Dome camera (security)	Pelco	P2230L	EA	3	2,144,129	6,432,387
	- Weather proof outdoor						
23	Security camera	Pelco	ExSite Enhanced 2 Series Fixed	EA	3	4,124,981	12,374,943
	- Explosion proof outdoor						
24	PTZ CCTV camera	Pelco	ExSite Enhanced 2 Series PTZ	EA	3	31,875,000	95,625,000
	- Explosion proof outdoor (ATEX)	Pelco	WASNX1V10L20M00	EA	3	2,500,000	7,500,000
25	Thermal CCTV camera	PELCO	ExSite Enhanced Thermal 2 Series Fixed	EA	3	32,296,500	96,889,500
	- Explosion proof outdoor (ATEX)						
	- Fixed type						
26	IP Phone	Alcatel Lucent	H2P	EA	5	125,000	625,000
	- Indoor						
27	Reception phone with cordless headset	Alcatel Lucent	H2P	EA	1	125,000	125,000
28	Hotline Telephone	Viking	K-1900-D2	EA	1	615,212	615,212
29	Telephone station with Acoustic hood	FHF	FHF11286180	EA	2	3,918,450	7,836,900
	- Explosion proof outdoor (ATEX)	FHF	TWIN-EExII		2		
	- Sounder & Beacon						
30	Combined Wind Speed & Direction Sensor	Vaisala	WMT700		3	2,711,024	8,133,072

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Item No	Description	Manufacturer	Model	Unit	Q'ty	Unit Price	Total Price (KRW)
31	Precipitation Sensor	Vaisala	QMR102		3	2,691,375	8,074,125
32	Combined Temperature, Barometric Pressure And Humidity Sensor						
33	Card reader - Indoor	IDTECK	RF10	EA	5	168,000	840,000
34	Card reader - Weather proof outdoor	IDTECK	RF10	EA	5	168,000	840,000
35	Electro magnetic lock	IDTECK	IEM280LED	EA	3	169,500	508,500
36	Break glass unit	IDTECK	EBG02	EA	3	12,150	36,450
37	CCTV System						
38	Security CCTV camera - Fixed type - Weather proof outdoor - Junction Box - Wash and Wipe feature - Water hose - Spray nozzle	Pelco	Esprit Anti-Corrosion Fixed	SET	3	8,056,787	24,170,360
					1		
					1		
		Pelco	WAS0V5L5M00		1		
						SET	41,709,740
					3		125,129,220
39	Security PTZ CCTV camera - Long range - Weather proof - Junction Box - Wash and Wipe feature - Water hose - Spray nozzle	Pelco	EspritAnti-corrosionPTZ		1		
					1		
		Pelco	WAS0V5L5M00		1		
40	Turnstile	Optima	F100-003	EA	2	8,851,031	17,702,062
41	Dome camera (Turnstile) - Weather proof outdoor - Fixed type	Pelco	Sarix Value 2 Series Outdoor Dome	EA	3	586,720	1,760,160