

GASTRON

World Class Gas Detector Manufacturer, from Korea

Developing, Manufacturing, Supplying & Servicing Gas Leak Detector Systems



23. Gunpocheomdansaneop 1-ro, Gunpo-si, Gyeonggo-do, Korea

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GTD-2000Ex

1. Profile

1-1. Overview

1-2. Vision

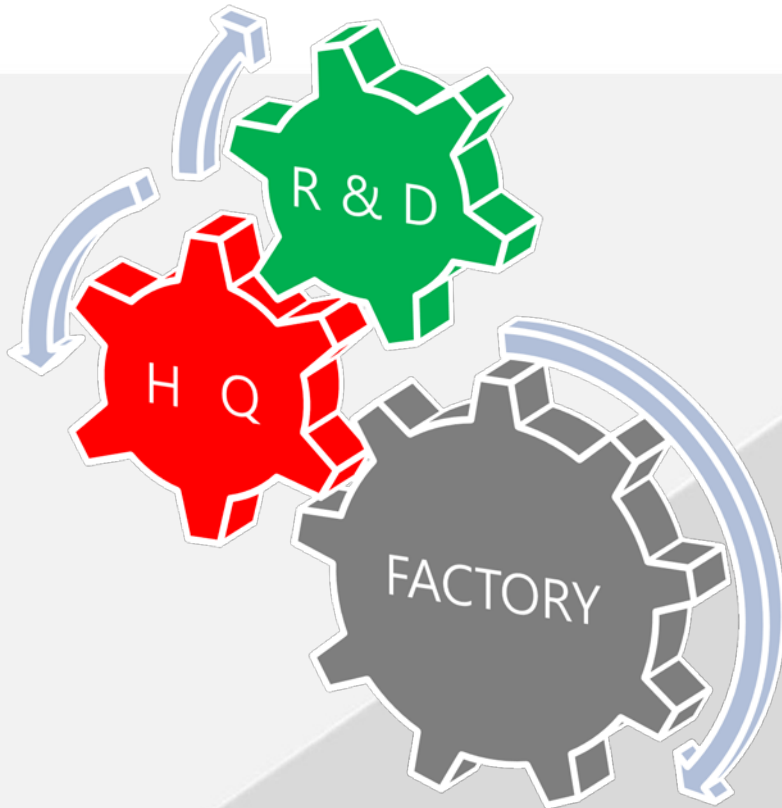
1-3. History



GTD-2000Tx

1-1. Overview

GASTRON Limited Company



Established

June. 26. 1992

CEO

Dong Jin Choi

Capital

US\$ 500,000

Employee

200 Staff Members

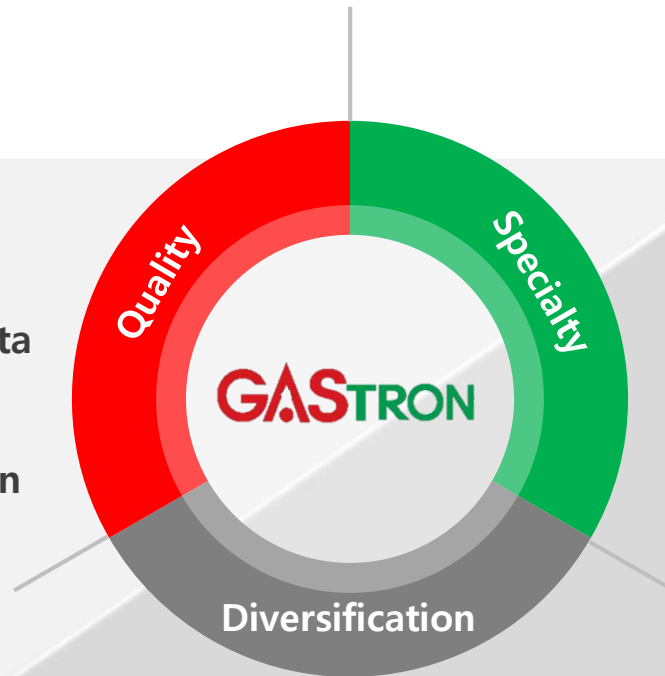
Main Products

Gas leak detectors,
Gas monitoring systems

1-2. Vision

Best Quality

- Choice of Material based on objective data
- Expert of Inspection Qualification



Specialty

- Sensor Self-Development
- Multi Sensor Application
- In Stages Verification System

Diversification

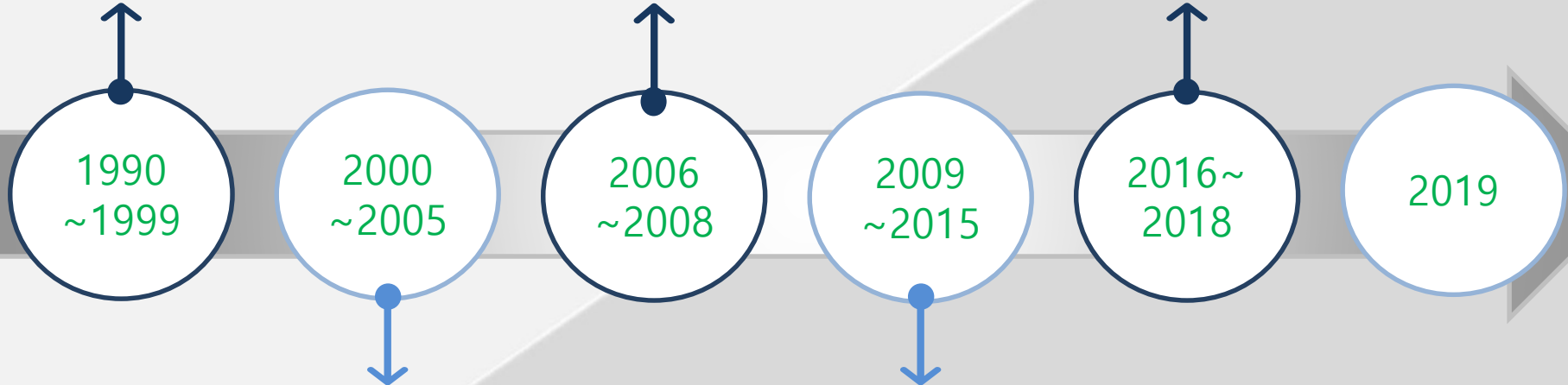
- Variety of Application & Meet Customer's Needs
- Produce Differentiation Products

1-3. History

- HWASUNG CO., LTD was founded
- Excellent Products Prize by Commerce & Industry Minister
- ISO 9001 Certified

- Developed IR Gas Detector, the first one in Korea
- ATEX, IECEx Certified

- ISO14001 Certified
- OHSAS18001 Certified
- Industrial Scientific Co. & DOD Technology Partnership
- Developed Small-Size Explosion Proof type Gas Detector (GTD-5100F)



- Changed company name to GASTRON
- HQ moved to larger facility
- Excellent Company in Gyeonggi-do
- Register Membership of HART Communication
- MED, BV, DNV, ABS, SIL2 Certified
- Established Young-Nam Branch
- Developed Multi-type gas detector(GTM-1000/2000)

2. Sales

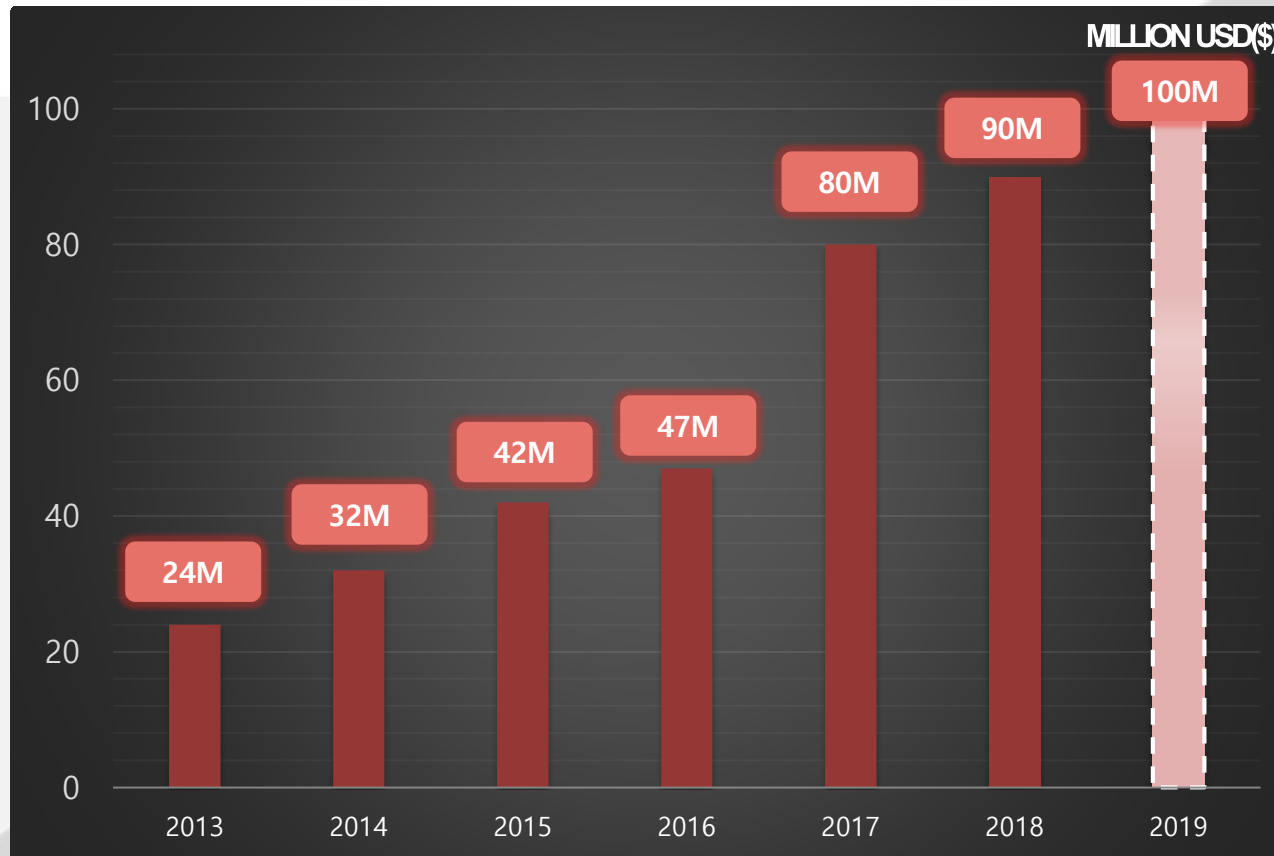
2-1. Yearly Sales Revenue

2-2. Domestic & International Sales

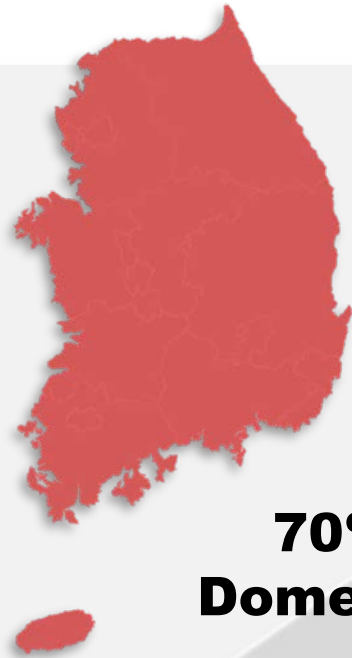


GTC-200A

2-1. Yearly Sales Revenue



2-2. Domestic & International Sales



70%
Domestic

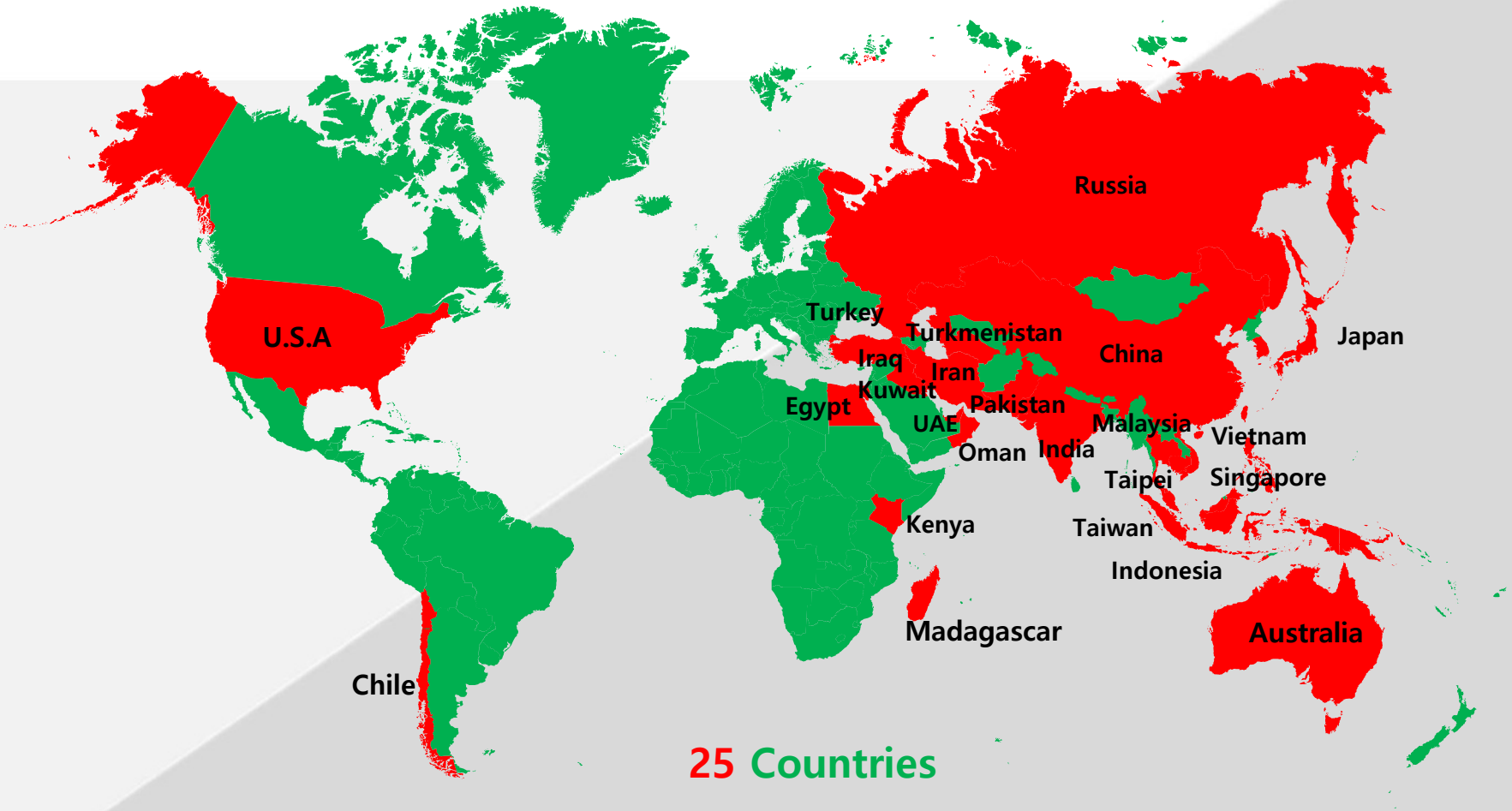
- Semiconductor
- Domestic EPC Projects
- General Industry
- Steel, Power Station



30%
Oversea

- EPC Projects
- Semiconductor
- Distribution
- Direct Sales

2-2. International Sales



3. Products

3-1. Standard Gas Detector

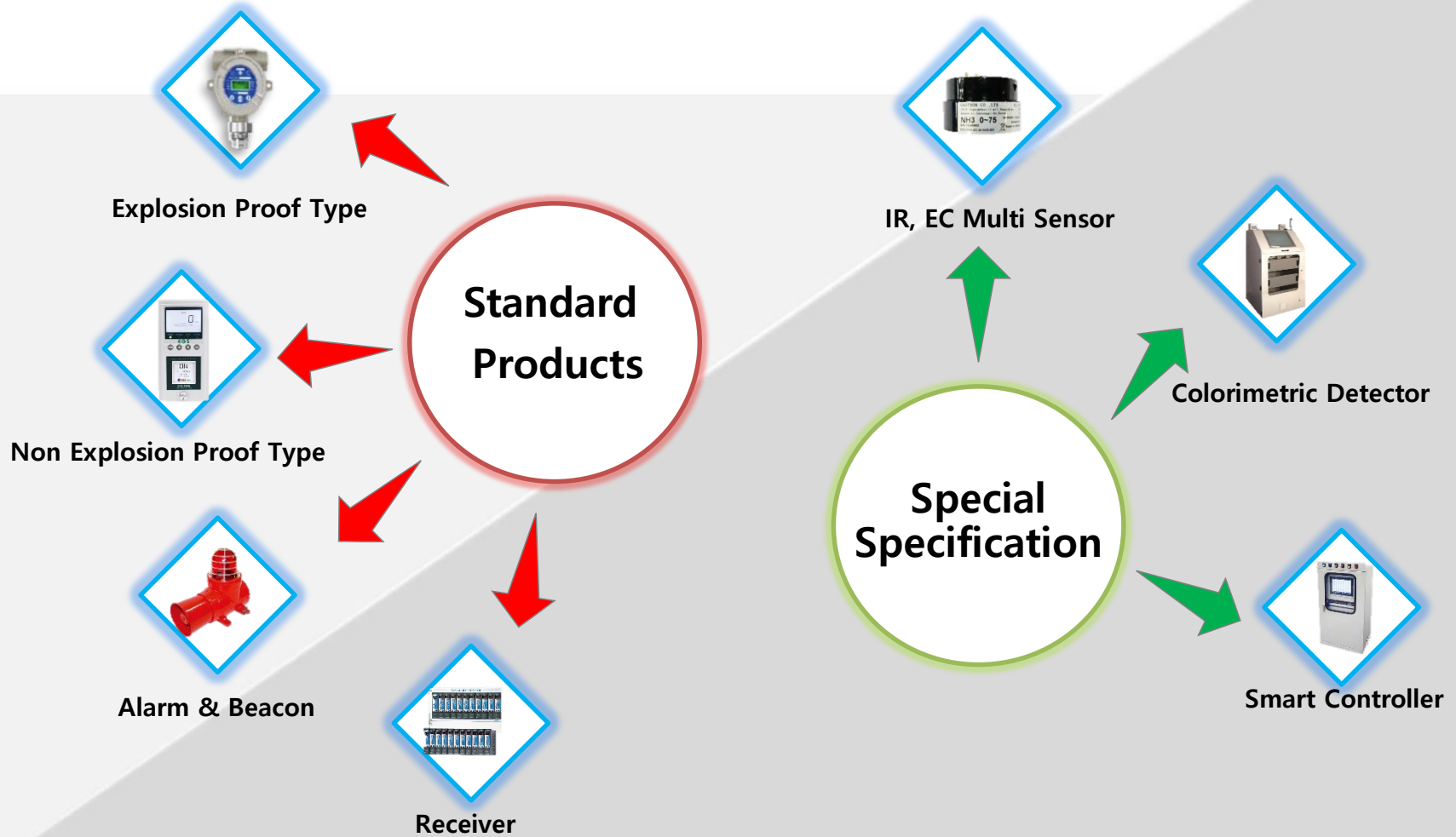
3-2. Special Specification

3-3. New Products



GIR-3000A

3. Products



3-1. Standard Gas Detector



1. Explosion Proof Type

GTD-5000Ex, GTD-5000F Tx

GTD-3000A, GIR-5000 etc. + 12 Types

2. Non Explosion Proof Type

GTD-5000Tx, GTC-200A

GTC-200F, GTC520F etc. + 7 Types

3. Portable Gas Detector Type

GPD-1000, TX1, MX4 etc. + 7 Types

4. Flame Detector

GTF-1100, 40/40M, 40/40U etc. + 8 Types

5. Alarm & Beacon

GTL-200, BExBE05, MB005 etc. + 11 Types

3-2. Special Specification



1. Multi Sensor Detector

GTM-1000(Infrared + EC)

GTM-2000(EC Type)

- Detection Maximum 4gases Simultaneously
- Prevent Malfunction for Interference gas

2. New Explosion Proof Detector

GTD-5100F

- Suction Function in Explosion proof Type
- 50% Size Down

3. Colorimetric Detector

- Discoloration Sensitive Multi Gas Detector
- Colorimetric without Mulfunction
- ppb Detectove

3-3. New Products

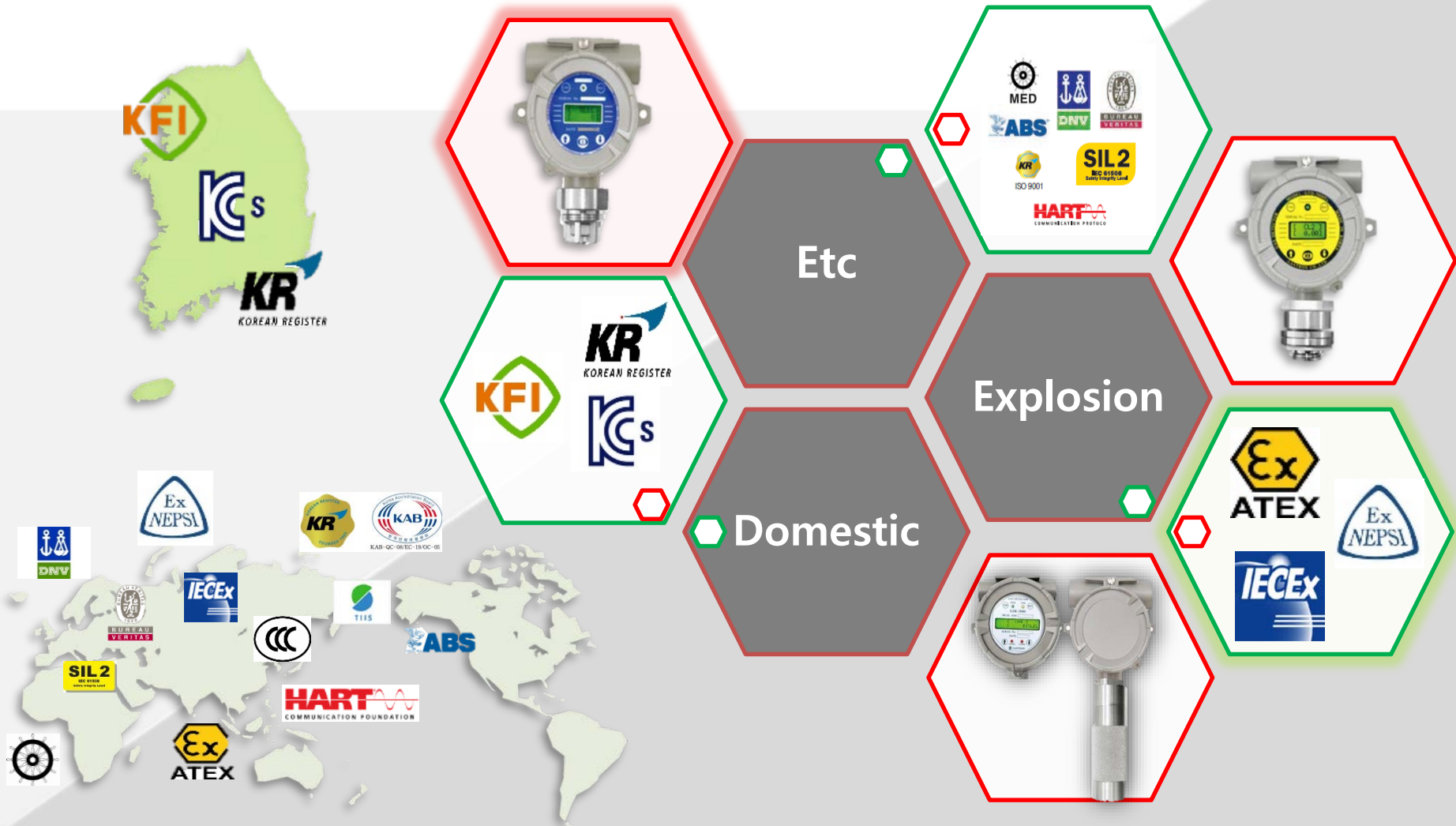


- The First Maximum 4 Types Sensor Module Transmitter
- IR Type (G100), EC Type (G200), Catalytic (G300) Sensor
- MODBUS, HART etc. Support Various Smart Function & Interface

- Established Production Line of EC Type Sensor at First in the Field
- Produce Semiconductor H₂S Gas Sensor at First in the Field
- H₂, H₂S Sensor Development based on Chalcogemide Nano Structure

- Gas Detectors & Flame Detectors Control System
- Maximum 16 expandability with lightning and Smart Function

4. Certificates



5. Customers (Overseas End User)



5. Customers (Overseas E.P.C)

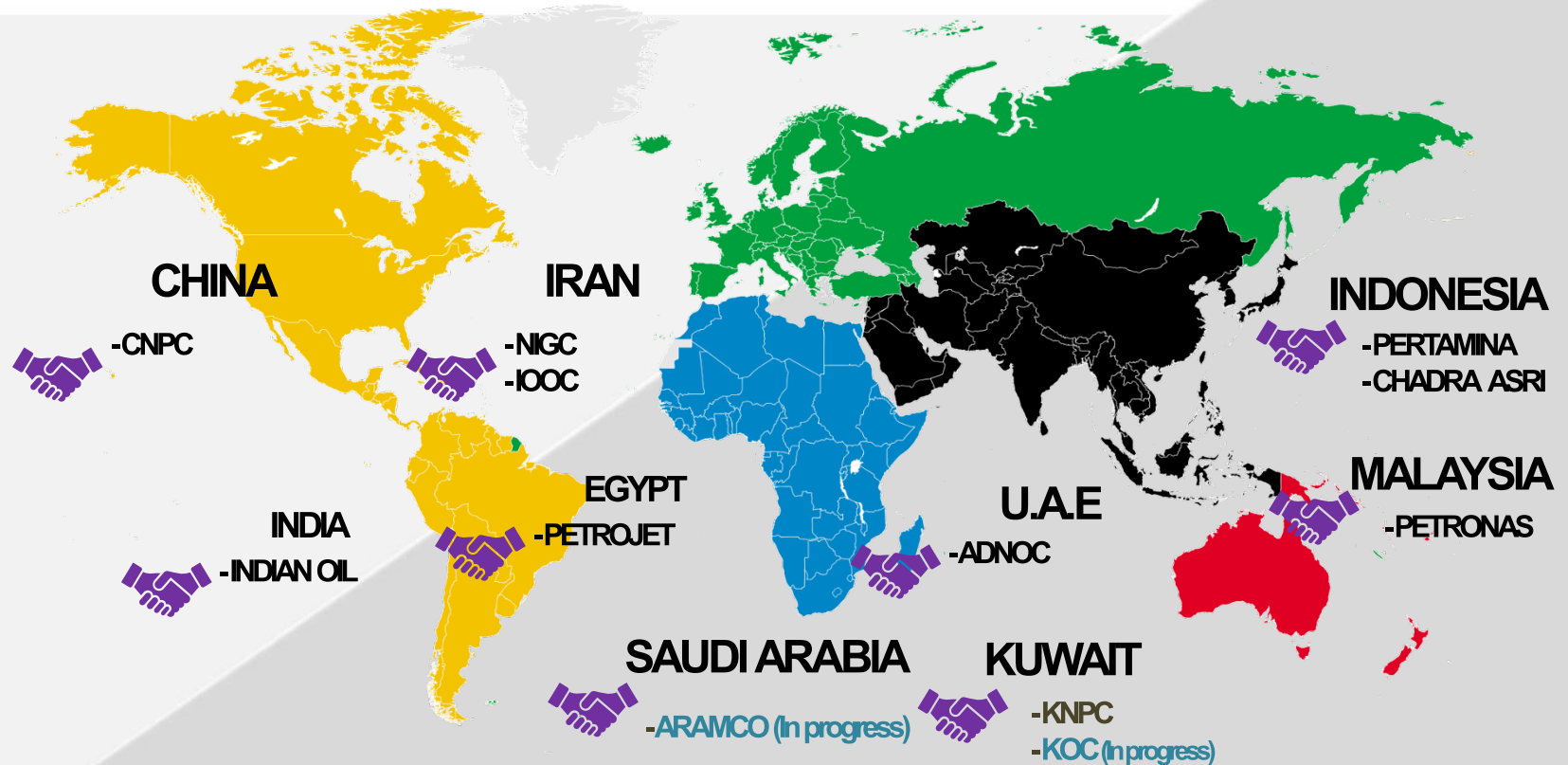


5. Customers (Domestic)

Local



5. Customers (Vender Registration)



5. Customers (Projects_Domestic)

NO.	Customer	Country	EPC	Project	Items	Years
1	SAMSUNG ELECTRO-MECHANICS	Korea	SAMSUNG ELECTRO-MECHANICS	ELECTRONICS	COMBUSTIBLE & TOXIC GAS DETECTOR	2010~
2	LG DISPLAY		LG DISPLAY	ELECTRONICS		
3	KCTECH		KCTECH	SEMICONDUCTOR		
4	LINDE		LINDE	GAS MANUFACTURER		
5	HYUNDAI STEEL		HYUNDAI STEEL	STEEL	STEEL	
6	KOLON LIFE SCIENCE		KOLON LIFE SCIENCE	LAB	HEALTH & MEDICAL	
7	SK METEERIALS		SK METEERIALS	PLANT	GAS DETECTION SYSTEM	
8	SAMSUNG ELECTRO-MECHANICS		SAMSUNG ELECTRO-MECHANICS	PLANT		
9	HYUNDAI MOTOR COMPANY		HYUNDAI MOTOR COMPANY	PLANT		
10	HANWHA CHEMICAL		HANWHA CHEMICAL	PLANT		

5. Customers (Projects_Domestic)

NO.	Customer	Country	EPC	Project	Items	Years
11	KRICT	Korea	KRICT	LAB	GAS DETECTION SYSTEM	2010~
12	KDHC		KDHC	PLANT		
13	KOREA WESTERN POWER Co Ltd		KOREA WESTERN POWER Co Ltd	PLANT		
14	KOREA EAST-WEST POWER CORPORATION		KOREA EAST-WEST POWER CORPORATION	PLANT		
15	KUMHO PETROCHEMICAL Co Ltd		KUMHO PETROCHEMICAL Co	PLANT		2011~
16	SK HYNIX		SK HYNIX	SEMICONDUCTOR		
17	AIR LIQUIDE		AIR LIQUIDE	GAS PRODUCTION		
18	LG SILTRON		LG SILTRON	PLANT		
19	SAMSUNG SDI		SAMSUNG SDI	PLANT		
20	KAERI		KAERI	LAB		

5. Customers (Projects_Domestic)

NO.	Customer	Country	EPC	Project	Items	Years
21	POSCO	Korea	POSCO	PLANT	GAS DETECTION SYSTEM	2011~
22	KOGAS		KOGAS	PLANT		
23	AIR LIQUIDE KOREA		AIR LIQUIDE KOREA	GAS MANUFACTURER		
24	LG ELECTRONICS SORLA		LG ELECTRONICS SORLA	PLANT	GAS DETECTION SYSTEM	2012~
25	KOREA WATER RESROUCES CORPORATION		KOREA WATER RESROUCES CORPORATION	PLANT		
26	TAEKWANG INDUSTRIAL Co Ltd		TAEKWANG INDUSTRIAL Co Ltd	PLANT		
27	LG HAUSYS Ltd		LG HAUSYS Ltd	PLANT		
28	KRISS		KRISS	LAB	GAS DETECTION SYSTEM	2013~
29	SHINSUNG SOLAR ENERGY		SHINSUNG SOLAR ENERGY	SOLAR ENERGY	COMBUSTIBLE & TOXIC GAS DETECTOR	
30	SK INNOVATION		SK INNOVATION	REFINERY	GAS DETECTION SYSTEM	

5. Customers (Projects_Domestic)

NO.	Customer	Country	EPC	Project	Items	Years
31	KOREA SOUTHERN POWER Co Ltd	Korea	KOREA SOUTHERN POWER Co Ltd	PLANT	GAS DETECTION SYSTEM	2014~
32	KOLON FASHION MATERIAL Inc		KOLON FASHION MATERIAL Inc	PLANT		
33	YUHAN KIMBERLY Ltd		YUHAN KIMBERLY Ltd	PLANT		
34	DOOSAN HEAVY INDUSTRIES & CONSTRUCTION Co Ltd		DOOSAN HEAVY INDUSTRIES & CONSTRUCTION Co Ltd	PLANT		
35	KCC		KCC	PLANT		
36	KISWIRE Co Ltd		KISWIRE Co Ltd	PLANT		
37	KOLON INDUSTRY INC		KOLON INDUSTRY INC	CHEMICAL	GAS DETECTION SYSTEM / SAFETY SHEILDS	2015~
38	ETRI		ETRI	LAB	ELECTRONICS TELECOMMUNICATIONS	
39	POONG SAN Co Ltd		POONG SAN Co Ltd	PLANT	GAS DETECTION SYSTEM	
40	LG LIFE SCIENCES Ltd		LG LIFE SCIENCES Ltd	PLANT		

5. Customers (Projects_Domestic)

NO.	Customer	Country	EPC	Project	Items	Years
41	LS-NIKKO COPPER Inc	Korea	LS-NIKKO COPPER Inc	PLANT	GAS DETECTION SYSTEM	2015~
42	KOREA HYDRO & NUCLEAR POWER Co Ltd		KOREA HYDRO & NUCLEAR POWER Co Ltd	PLANT	GAS DETECTION SYSTEM	
43	HANWHA-QCELLS		HANWHA-QCELLS	SOLAR ENERGY	COMBUSTIBLE & TOXIC GAS DETECTOR	2016~

5. Customers (Projects_Overseas)

NO.	Customer	Country	EPC	Project	Items	Years
1	ARNA	Mahdia, Algeria	HYUNDAI ENGINEERING	Ain Arnat 1200MW combined cycle power plant	GTD-2000Ex Combustible (CH4) GTC-200 Receiver Card	11th Oct, 2013
2	LUKOIL Uzbekistan Operating Company	Uzbekistan	HYUNDAI ENGINEERING	CONSTRUCTION OF CPF COMPLEX AND DEVELOPMENT OF KANDYM GROUP OF FIELDS (Gas Detector and Alarm Device)	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S)	26th.Aug.2015
3	STATE CONCERN "TURKMEN GAS"	Turkmenistan	HYUNDAI ENGINEERING	ETHANCE CRACKER UNIT (Gas Detector)	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (CO, O2)	1th.Apr.2015
4	OMAN OIL COMPANY EXPLORATION & PRODUCTION LLC	OMAN	HYUNDAI ENGINEERING	MUSANDAM GAS PLANT Project	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S, CL2)	18th.Sep.2012
5	GAZPROM NEFT	Iraq	SAMSUNG ENGINEERING	EPC CPF PHASE 2 AT BADRA OILFIELD (Gas Detector_1st)	GIR-3000, GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S, SO2, THT, NH3)	15th.Oct.2014
6	PETRONAS	Malaysia	SAMSUNG ENGINEERING	PETRONAS TGAST PHASE 1 (Gas Detector)	GTD-2000Ex Combustible (CH4) Toxic (H2S)	21th.Mar.2014
7	PETRONAS	Malaysia	SAMSUNG ENGINEERING	PETRONAS TGAST PHASE 2 (Flame& Gas Detector)	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S, CO2)	10th.Dec.2014
8	ARAMCO	Saudi Arabia	SAMSUNG ENGINEERING	POWER COGENERATION PLANT COMPANY (Gas Detector System)	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S)	24th.Oct.2014
9	STATE CONCERN "TURKMENGAS"	Turkmenistan	TOYO ENGINEERING (JAPAN, INDIA)	ETHANCE CRACKER UNIT (ECU) (Gas Detection Devices)	GTD-2000Ex Combustible (CH4)	04th.Sep.2015
10	STATE CONCERN "TURKMENGAS"	Turkmenistan	TOYO ENGINEERING (KOREA)	ETHANCE CRACKER UNIT (GSU) (Gas Detector) (Alarm Device)	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S)	04th.Aug.2015

5. Customers (Projects_Overseas)

NO.	Customer	Country	EPC	Project	Items	Years
11	STATE CONCERN "TURKMENGAS"	Turkmenistan	TOYO ENGINEERING (KOREA)	ETHANCE CRACKER UNIT (PP) (Gas Detector) (Alarm Device)	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (CO, O2)	04th.Dec.2016
12	EGYPTIAN REFINING COMPANY (TAKRIR) S.A.E	Egypt	GS E&C	ERC REFINERY PROJECT (Gas Detectors)	GIR-3000 Combustible (CH4) GTD-2000Tx Toxic (H2S)	22th.Dec.2016
13	P.T. Asahimas Chemical (ASC)	Indonesia	HYUNDAI E&C	ASC PHASE-VI PROJECT (Gas Detectors)	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (CL2, VCM, HCL)	9th.Jan.2016
14	P.T. Asahimas Chemical (ASC)	Indonesia	CHIYODA	ASC PHASE-VI PROJECT (Gas Detector)	GIR-3000 Combustible (CH4) GTD-2000Tx Toxic (VCM)	4th.Mar.2016
15	PETRONAS	Turkmenistan	HYUNDAI ENGINEERING	GAS TREATMENT PLANT ONSHORE GAS TERMINAL (GTPOGT) EXPAN SION AND MODIFICATION FOR GARAGOL DENIZ WEST OIL DEVEL OPMENT PROJECT (Gas Detector)	GTD-2000Ex Combustible (CH4)	18th.Aug.2015
16	Arabian Amines Company	Saudi Arabia	HYUNDAI ENGINEERING	AAC Ethyleneamines Project	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (NH3, EDA, EDC)	2rd.Oct.2009
17	Turkish Petro. Rep. Co.	Turkey	GS E&C	IZMIT DHRP Prkject	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S, CL2)	14th.Aug.2009
18	YACIMIENTOS PETROLIFEROS FISCALES BOLIVIANOS	Bolivia	SAMSUNG ENGINEERING	BOLIVIA YPFB AMMONIA / UREA PROJECT (Gas Detector)	GIR-3000 Combustible (CH4) GTD-2000Tx Toxic (NH3)	30th.Jun.2015
19	ATTOCK REFINERY LIMITED	Pakistan	HYUNDAI ENGINEERING	ARL UPGRADATION PROJECT (Gas Detector)	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S)	8th.Nov.2012
20	MALAYSIAN SYNTHETIC RUBBER, SDN BHD	Malaysia	SAMSUNG ENGINEERING	R1-PROJECT (Gas Detector)	GTD-2000Ex Combustible (CH4)	30th.Oct.2013

5. Customers (Projects_Overseas)

NO.	Customer	Country	EPC	Project	Items	Years
21	PT. PERTAMINA	Indonesia	GS E&C	CILACAP RESID FLUID CATALYTIC CRACKING PROJECT (Gas Detector)	GIR-3000, GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S)	6th.Nov.2012
22	MARAFIQ EXECUTION TEAM	Saudi Arabia	HANWHA E & C	YANBU2 POWER AND WATER PROJECT (Fire & Gas System)	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (NH3, O2, CL2, PH3)	12th.Mar.2012
23	ENERJISA ENERJI URETIM A.S	Turkey	SK E & C	TUFANBEYLI THERMAL POWER PLANT PROJECT (CO Detection System)	GTD-2000Tx Toxic (CO)	8th.Nov.2012
24	UZ-KOR GAS CHEMICAL LLC	Uzbekistan	HYUNDAI ENGINEERING	USTYURT GAS CHEMICAL COMPLEX UTILITIES & OFFSITES PLANT (Gas Detector)	GTD-2000Ex Combustible (CH4)	7th.Oct.2013
25	UZ-KOR GAS CHEMICAL LLC	Uzbekistan	GS E&C	USTYURT GAS CHEMICAL COMPLEX ETHYLENE PLANT PROJECT (Gas Detector)	GTD-2000Ex Combustible (CH4)	29th.Aug.2013
26	UZ-KOR GAS CHEMICAL LLC	Uzbekistan	SAMSUNG ENGINEERING	USTYURT GAS CHEMICAL COMPLEX GSP, HDPE, PP AND POLYMER PROJECT (Gas & Flame Detector)	GTD-2000Ex Combustible (CH4)	31st.Mar.2014
27	MARAFIQ	Saudi Arabia	HANHWA E & C	Marafiq STG units 5 & 6	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (H2S)	26th.Aug.2015
28	JG Summit Petrochemical Corp.	Philippines	DAELIM INDUSTRIAL	JG Summit Naphtha Cracker Project in Philippines	GIR-3000 Combustible (CH4) GTD-2000Tx Toxic (BENZENE)	29th.Dec.2010
29	TITAN PETCHEM(M) SDN. BHD	Malaysia	Lotte Engineering Construction	T-Project	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (CO)	04th.Nov.2011
30	PT. Petrokimia Butadiene Indonesia	Indonesia	TOYO ENGINEERING (KOREA)	PBIBDE Project	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (HCL, CO)	16.Jan.2011

5. Customers(Projects_Overseas)

NO.	Customer	Country	EPC	Project	Items	Years
31	Polysilicon Technology Company	Saudi Arabia	HYUNDAI ENGINEERING	PTC Jubail Polysilicon Project	GTD-2000Ex Combustible (CH4) GTD-2000Tx Toxic (CO, BENZENE)	21th.Jul.2011
32	Gas Transmission Company	Bangladesh	HYUNDAI ENGINEERING	Compressor Station Project	GTD-2000Ex Combustible (CH4)	21th.Aug.2012
33	Kenya Electricity Generating Company	Kenya	HYUNDAI ENGINEERING	Olkaria B1 / B2 Project	GTD-2000Tx Toxic (H2S)	09th.Aug.2013
34	ARAMCO	Saudi Arabia	SAMSUNG ENGINEERING	LUBEREF Project (Fire Alarm Full Station)	Addressable Dual Action Pull Station	6th.Nov.2017
35	KNPC	Kuwait	HYUNDAI ENGINEERING	Al-Zour LNG Import Project	GIR-3000 Combustible (HC) GTD-2000Tx Toxic (CL2, H2S)	20th.Dec.2018
36	ORPIC PLASTICS LLC.	Oman	GS E&C	LPIC-EPC-3 Project	GIR-3000 Combustible (HC)	20th.Jul.2018
37	Bahrain LNG W.L.L.	Bahrain	GS E&C	Bahrain LNG Import Terminal Project	GIR-3000 Combustible (HC)	3th.Jan.2018
38	Bahrain LNG W.L.L.	Bahrain	Global Process Systems	Bahrain LNG Import Terminal Project	GIR-3000 Combustible (HC)	3th.Jan.2018

5. Customers(Projects_Overseas)

NO.	Customer	Country	EPC	Project	Items	Years
39	PT CHANDRA ASRI PETROCHEMICAL TBK	Indonesia	TOYO ENGINEERING (KOREA)	NPEFD PROJECT (AXKA002A)	GTD-2000Ex Combustible (HC,H2) GTD-2000Tx Toxic (CO, O2) Portable Gas Detector	3th.Mar.2019
40	PT CHANDRA ASRI PETROCHEMICAL TBK	Indonesia	TOYO ENGINEERING (KOREA)	NPEFD PROJECT (AXKA002B)	GTD-2000Ex Combustible (HC)	3th.Mar.2019
39	PT CHANDRA ASRI PETROCHEMICAL TBK	Indonesia	TOYO ENGINEERING (KOREA)	NPEFD PROJECT (AXKA010)	Horn & Beacon, SELECTOR SWITCH, LIMIT SWITCH, CYLINDER PRESSURE REGULATOR	3th.Mar.2019
40	PETRONAS	Malaysia	HYUNDAI ENGINEERING	Melaka Refinery Diesel Euro 5 PROJECT	GDS System	On-Going
41	PETRONAS	Malaysia	HYUNDAI ENGINEERING	Melaka Refinery Diesel Euro 5 PROJECT	GAS DETECTOR & ALARM DEVICE	On-Going

5. Customers(Projects_Overseas)

NO.	Customer	Country	EPC	Project	Items	Years
42	PT CHANDRA ASRI PETROCHEMICAL TBK	Indonesia	TOYO ENGINEERING (JAPAN) & IKPT	Butene-1 and MTBE PROJECT	GDS System, GTD-2000Ex Combustible (HC)	On-Going
43	PETRONAS	Malaysia	SAMSUNG ENGINEERING	PETRONAS RAPID PROJECT / PACKAGE 06	GTD-2000Tx Toxic (E.O)	On-Going
44	HYOSUNG	Vietnam	eTEC E&C	PP4 PROJECT	GDS System, GTD-2000Ex (Combustible) GTD-2000Tx (CO,O2)	On-Going
45	KENYA POWER GENERATING	Kenya	Fuji Electric & Power Engineers	OLKARIA I UNIT 6 GEO THERMAL PROJECT	GDS System, GTD-2000Tx (H2S), Horn & Beacon	On-Going
46	Bahrain Petroleum Company (BAPCO)	Bahrain	TechnipFMC	Bapco Refinery Modernization Program PROJECT	GIR-3000 (Combustible), GTD-2000Ex (H2) Horn & Beacon & Manual Call Point, Liner Heat Detector	On-Going
47	Bahrain Petroleum Company (BAPCO)	Bahrain	Técnicas Reunidas	Bapco Refinery Modernization Program PROJECT	GIR-3000 (Combustible), GTD-2000Ex (H2) Horn & Beacon & Manual Call Point, Flame Detector (IR3)	On-Going
48	Bahrain Petroleum Company (BAPCO)	Bahrain	SAMSUNG ENGINEERING	Bapco Refinery Modernization Program PROJECT	GIR-3000 (Combustible), GTD-2000Ex (H2) Horn & Beacon & Manual Call Point, Flame Detector (IR3)	On-Going

6. Q & A

