

THiRA-UTECH

Smart Factory & Logistics DX Solution Provider

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01

Company Overview

Company Overview

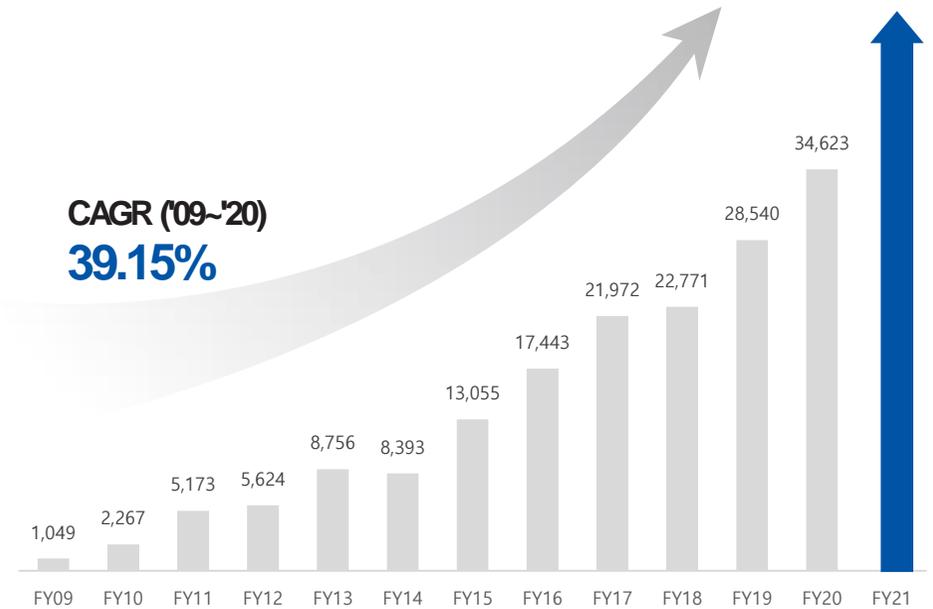
Leading the Smart Factory & Logistics Innovation

Overview

Name	THIRA-UTECH Co., Ltd
Date Established	Aug. 25 th , 2006
CEO	Jeoung-Ha Kim, Won-Cheol Cho
Business Areas	Smart Manufacturing / SCM / Autonomous Mobile Robot (AMR) Solutions
HQ	CK Building 1~7F 7, Hakdong-ro 5-gil, Gangnam-gu, Seoul, Korea
Regional Offices	Cheonan Office, Nambu Technology Center, Daegu Gyeongbuk Office
Employees	303
Website	www.thirautech.com

Sales Growth

(Unit: Million KRW)

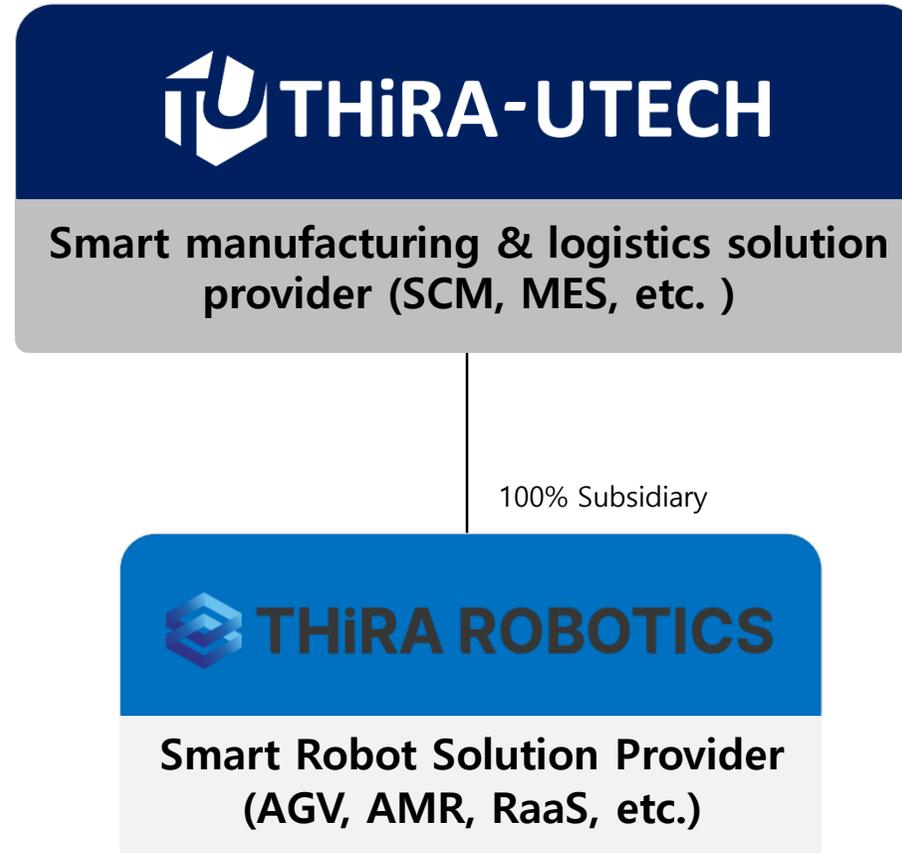


History



Corporate Structure

Robot division was split with 100% stake in THiRA-Utech (2022.1.1)

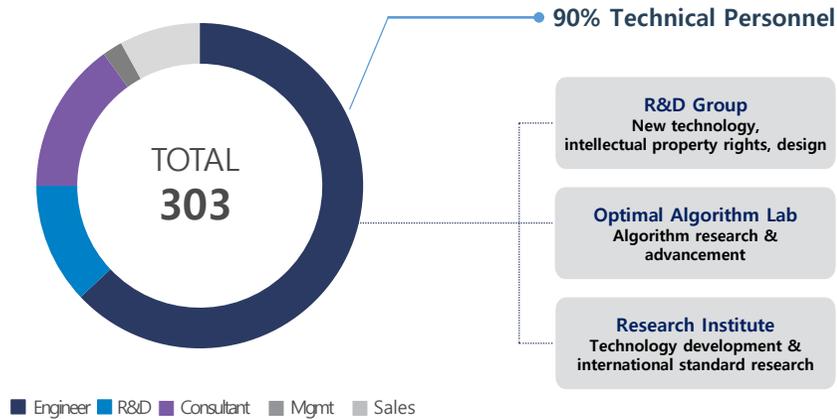


Organization

Korea's No. 1 Smart Industry Solution Provider

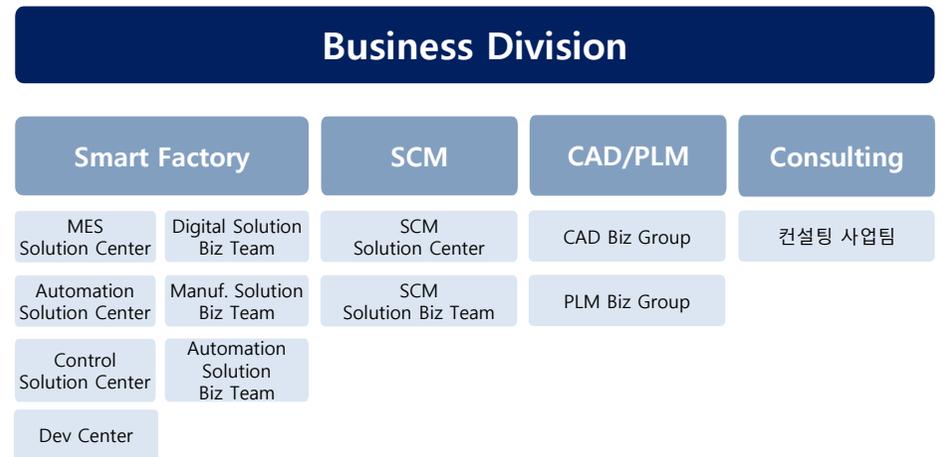
Workforce Status

Employee Ratio



구분	기술 인력 보유 현황
Consultant	SCM, SCP, FP, Scheduler, Dispatcher
	Logistics Optimization
	Manufacturing Process Innovation
Engineer	Project Management & Auditing
	System Integration & Maintenance
R&D	Product Development & Maintenance
	Market Research & Analysis

Organization Chart



Solution Architecture

Total Solution Providing Production Planning, Full Automation & Logistics Robot

Customer Needs



- How many to produce?
- Where to produce?
- When to produce?



- How to produce it?
- How to increase productivity?



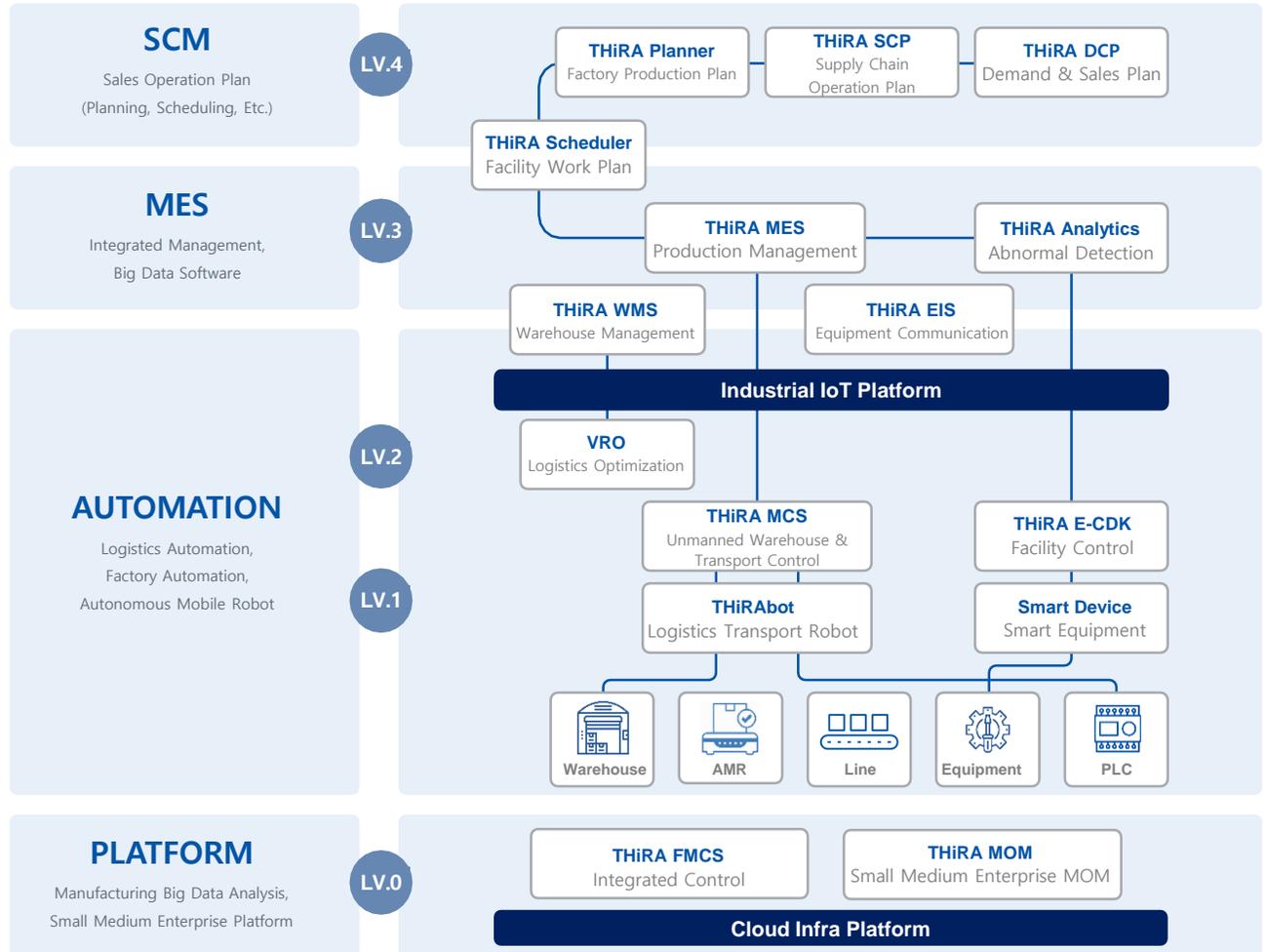
- How to handle higher volumes?
- How to operate stably and efficiently?
- How to automate it?

- * SCP (Supply Chain Planning)
- * DCP (Demand Consensus Planning)
- * MES (Manufacturing Execution System)
- * EIS (Equipment Interface System)
- * VRO (Vehicle Route Optimizer)
- * MCS (Material Control System)
- * E-CDK (Equipment Controller Development Kit)
- * AMR (Autonomous Mobile Robot)
- * PLC (Programmable Logic Controller)
- * FMCS (Facility Monitor & Control System)
- * MOM (Manufacturing Operation Management)



- How to reduce defect rate?
- How to increase accuracy?

Solution Architecture



One-Stop Integrated Service

Full Cycle Covering Consulting, Solution Deployment to System Operation



Business Partnership

■ SI Partners (Conglomerates)

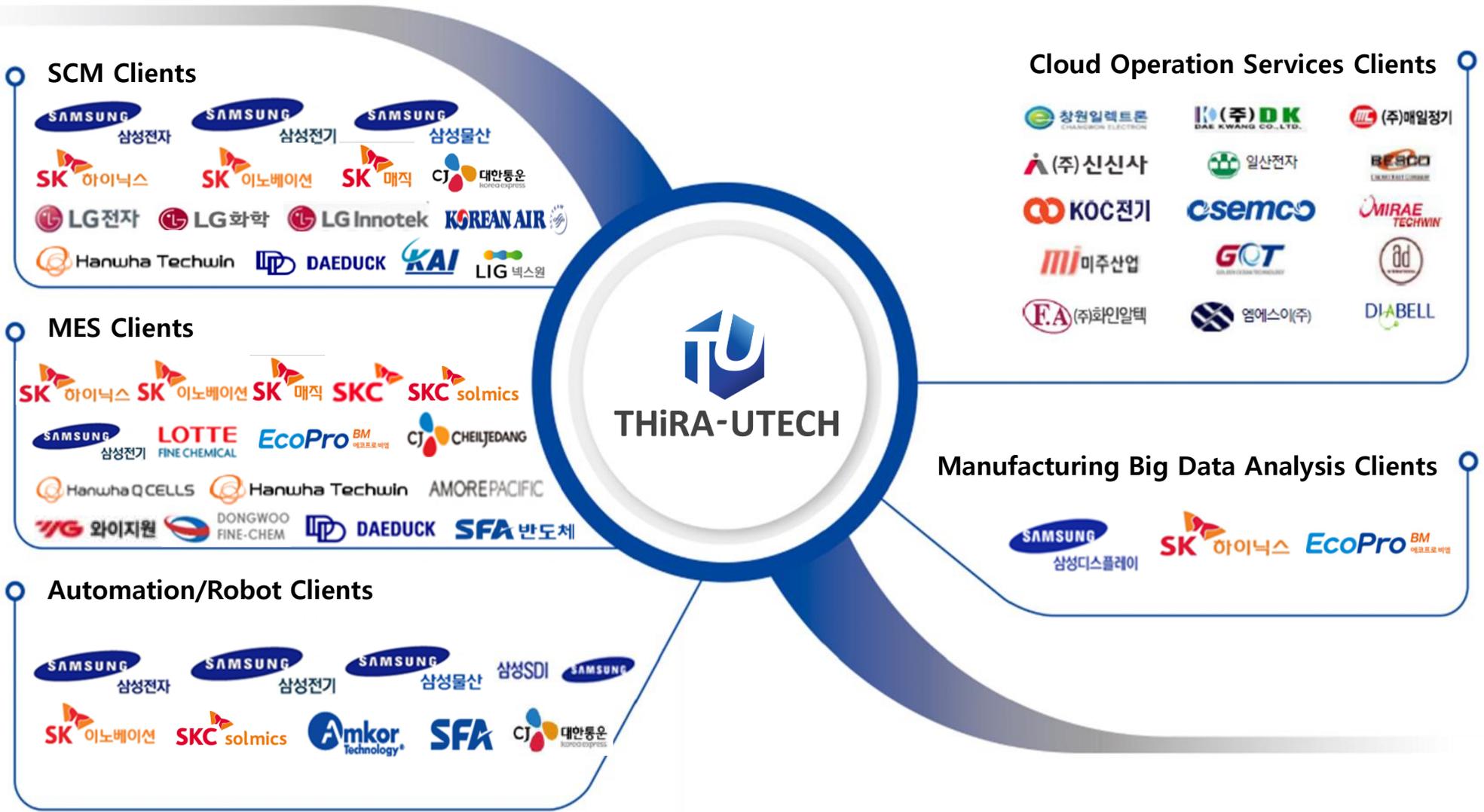
Partners	Industry	Scope of Cooperation
	Smart Factory	<ul style="list-style-type: none"> Joint Development of Manufacturing Intelligence Integration Platform (I-factory) → Supplied to SKC, SK Siltron, Etc. Expansion of ITO Business (SK Hynix, SK Innovation, And SKC Solmix IT Operation)
	SCM	<ul style="list-style-type: none"> Specialized SCM Solution Development for LG → Supplied LG Electronics Global Supply Plan & LG Innotek Production Plan Solution
	SCM Automation	<ul style="list-style-type: none"> Collaborated w/ Global SCM Company (O9) to Co-Develop Semiconductor & Global SCM Platform Expanded facility control & mobile robot (AGV) business → Supplied to Samsung Electronics, SDI, etc.

■ Strategic Investment Partners

Partners	Investment Type	Scope of Cooperation
	Joint Venture	<ul style="list-style-type: none"> Pre-emptive response to the automotive parts and future mobility industry
	Equity Participation	<ul style="list-style-type: none"> Expanded manufacturing/logistics robot business by converging autonomous mobile robot (AMR) navigation technology

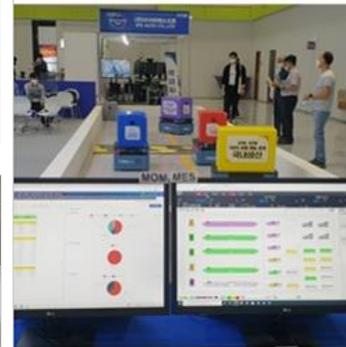
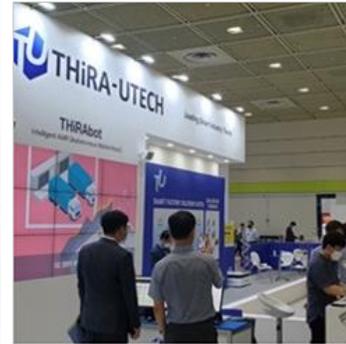
Top-Tier References

Market Leadership through Customer References with Domestic & Foreign Conglomerates



Corporate Events

THiRA-UTECH Exhibition/Conference



02

Business Overview

A blue-tinted photograph of a car body on an assembly line. The car is the central focus, with its metal frame and some body panels visible. It is surrounded by various mechanical components and robotic arms. The background shows a large industrial building with arched windows. The overall scene is industrial and modern.

Business Overview

1. Smart Manufacturing

#1 Smart Factory Solutions

Optimized for Manufacturing Value Chain from Production Planning to Facility Automation

Core Competencies

01 Production Planning



02 Production Management



03 Facility Monitoring



04 Big Data Analytics



05 Autonomous Mobile Robot



Core Strategies

1. AI Process Control & Demand Prediction
2. Digital Twin Process Optimization
3. Manufacturing Big Data Analytics

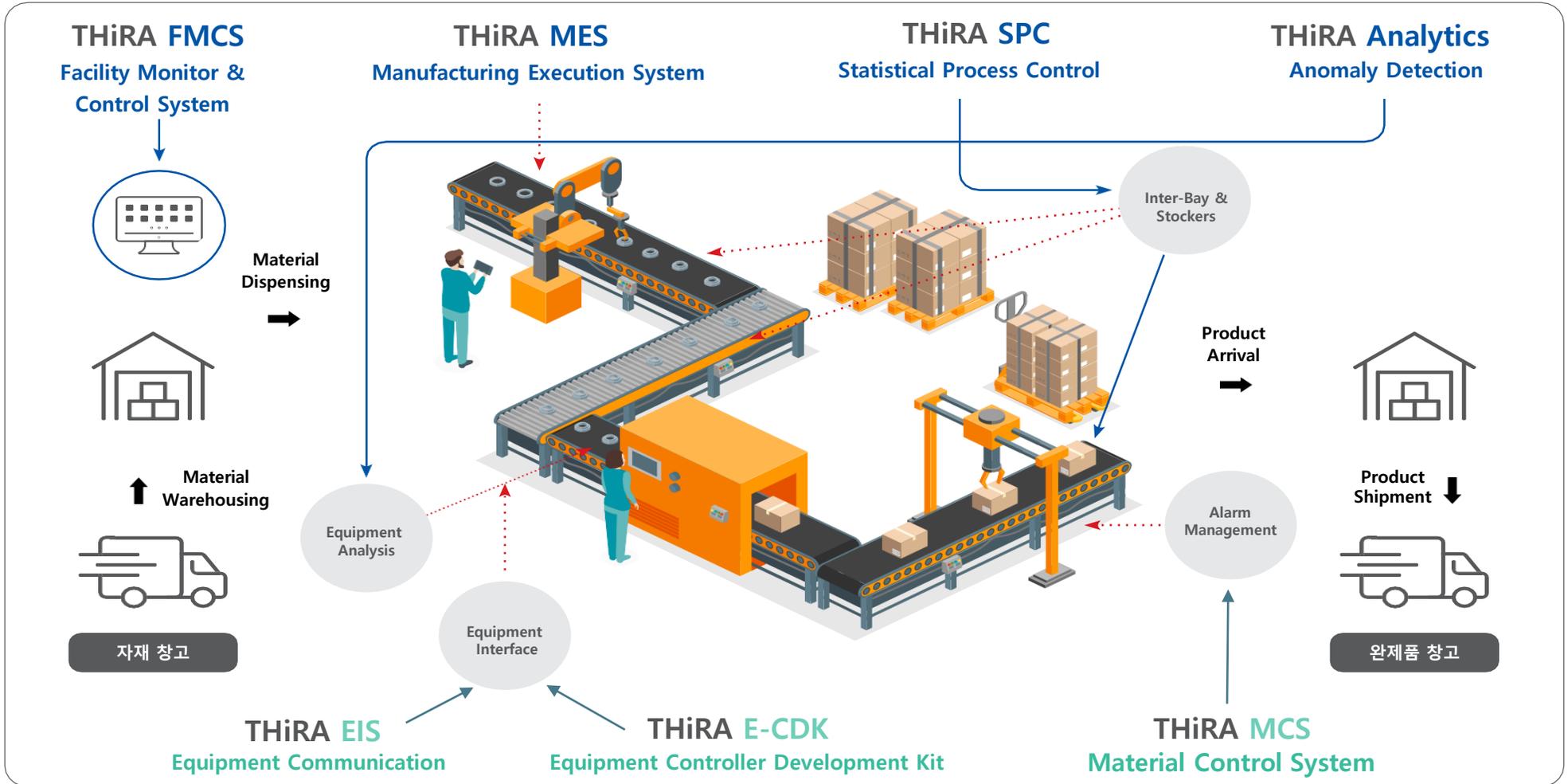
Core Solutions

Production Planning	THiRA APS
Production Management	THiRA MES
Facility Monitoring	THiRA FMCS
Big Data Analytics	THiRA Analytics
Autonomous Mobile Robot	THiRA bot

#1 Smart Factory Solutions

1-1. MES & Factory Automation

Total Solution including Factory Management Control, Production Management, Factory Automation, etc.

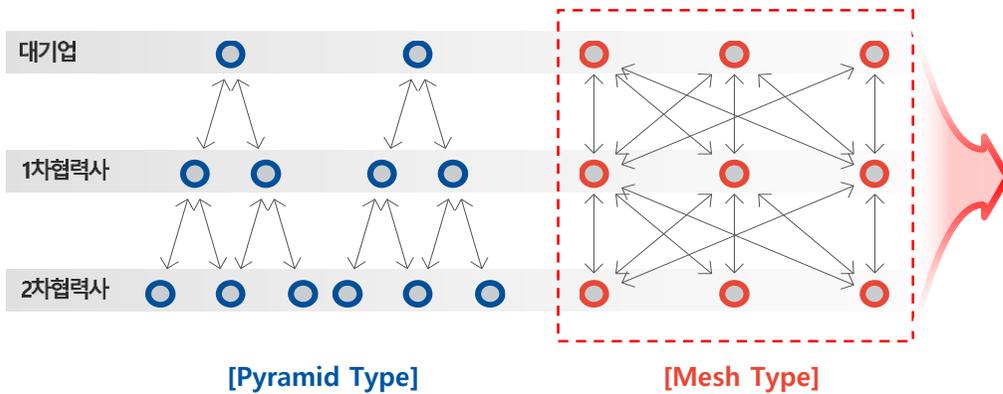


#1 Smart Factory Solutions

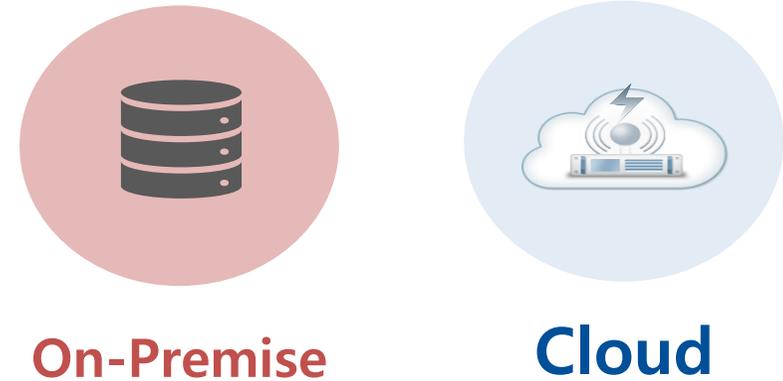
1-2. Cloud Manufacturing Operation Management for SMEs (Small & Medium-Sized Enterprises)

Platform for Sharing Production Plan & Performance Data between Conglomerates & SMEs

Labor Structure Change Between Conglomerates & Subcontractors



Manufacturing Cooperation Platform for Enterprises



Current Delivery Status & Future Plans

Success Stories & References



- Promoted enterprise platform to 30 LG Electronics partners

Cloud Business Expansion



- Expanded cloud business to electronics assembly & automotive parts industries

Manufacturing Business Expansion



- Expanded manufacturing business to domestic conglomerates & SMEs
- Accumulated big data according to platform usage

#1 Smart Factory Solutions

1-3. AI Manufacturing Big Data Analytics

Solution To Increase Equipment Efficiency & Reduce Product Defects By Comparing & Analyzing Equipment Data



- Developed data algorithm calculation with relevance to process characteristics by utilizing patented database analysis technique
- Simultaneously detectable with production

- Expanded data analysis business by supplying SK Hynix system IC
- Quickly analyzed problems with abnormalities by combining data pre-processing & analysis algorithms
- Executed Samsung Display analysis POC
- Performed EcoPro virtual measurement project

- Expand to various industries through accumulated big data analytics solutions
- Secure global competitiveness through active entry into overseas markets



Business Overview

2. Smart Logistics

#2 Smart Logistics Solutions

Integrated Logistics Solutions including Supply Chain, Order, Transport & Logistics Management

Core Competencies

01 Production Planning



02 Work Planning



03 Supply Chain Planning



04 Warehouse Control



05 Warehouse Management



Core Strategies

1. AI Algorithms for Establishing Supply Chain
2. Order Management for Logistics Transportation
3. Real-time Tracking of Transport Status
4. Automated Sorting & Logistics
5. Optimization Through Big Data Analysis

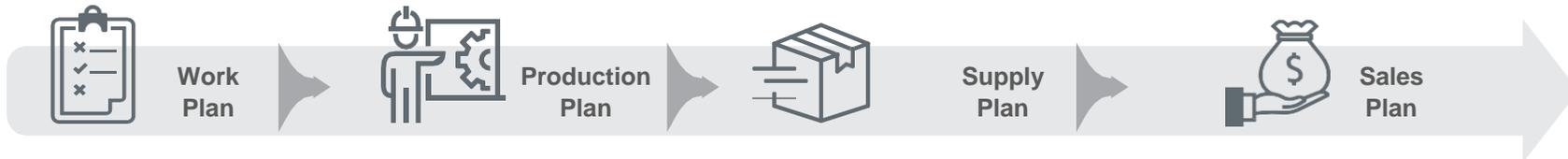
Core Solutions

Production Planning	THiRA Planner
Work Planning	THiRA Scheduler
Supply Chain Planning	THiRA SCP
Material Control	THiRA MCS
Warehouse Management	THiRA WMS

#2 Smart Logistics Solutions

2-1. Supply Chain Management (SCM)

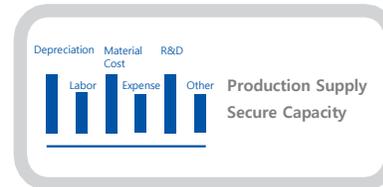
All-in-One Integrated Supply Chain Management Solution



THiRA Scheduler



THiRA Planner



THiRA SCP

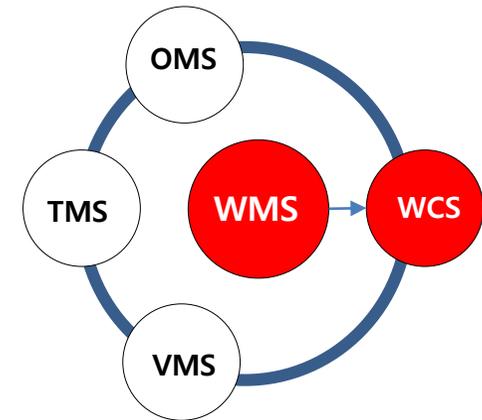


THiRA DCP

#2 Smart Logistics Solutions

2-2. Warehouse Logistics Automation (WMS/WCS)

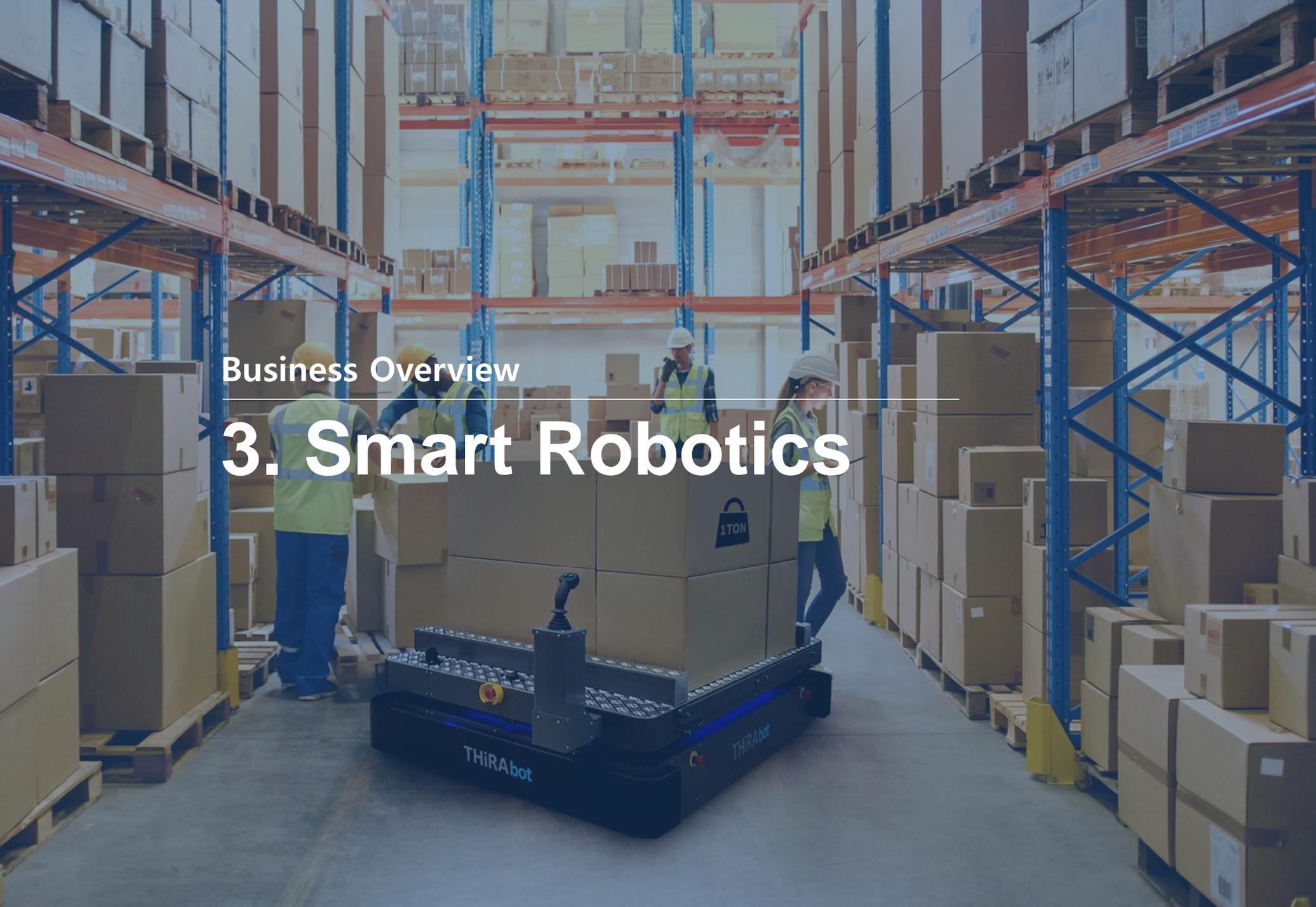
Solutions for Controlling Unmanned, Automated Warehouses & Logistics Conveyance System



- 입고고 관리, 반품관리, 인수증 관리
- 재고관리: 재고현황, 이력, 보류, 조사, 조정
- 유통가공 관리, Cross-Docking 관리
- 로케이션 관리
- RF 관리, 피킹 작업전략 관리: 적치, 피킹
- 작업 모니터링: 입고, 피킹, 출고 등
- 통계 / 지표관리 : 생산성, 운영지표 등

주요 고객사





Business Overview

3. Smart Robotics

#3 Smart Robot Solutions

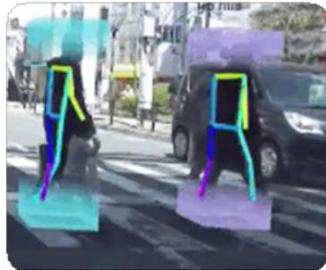
Smart Robot & Unmanned Solutions In the Post-Pandemic Era

Core Competencies

01 100% In-house Design



02 Hybrid Driving Algorithm



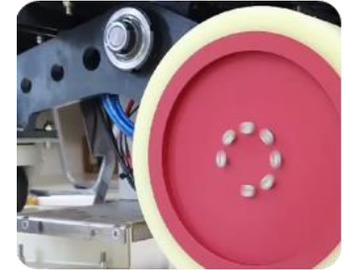
03 Fleet Management System



04 10-Degree Incline Climb



05 6-Grounded Wheel Design



Core Strategies

1. Selection of Drive Units According to Payload & Roles
2. In-house Design of Accessories (Conveyor, Lift, Etc.)
3. Combination of Drive Units + Accessories
4. Autonomous Driving Technology
5. Connection to Smart Factory System

Core Solutions

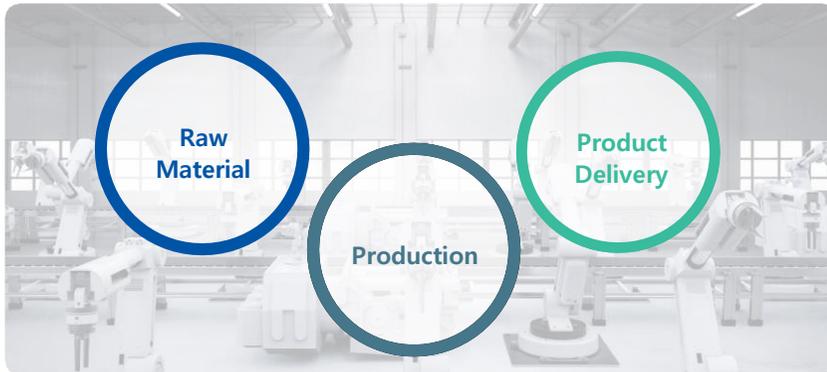
Model	Features	Max Payload
THiRAbot 1000	Autonomous Driving / AI Follow Mode Stereo Camera + LIDAR	1000 kg
THiRAbot 600	Autonomous Driving / QR Driving / Hybrid SLAM	600 kg
THiRAbot 300	Autonomous Driving / QR Driving / Hybrid SLAM	300 kg
THiRAbot 200	Autonomous Driving / QR Driving / Hybrid SLAM	200 kg
robo L	Autonomous Driving / AI Follow Mode	200 kg

#3 Smart Robot Solutions

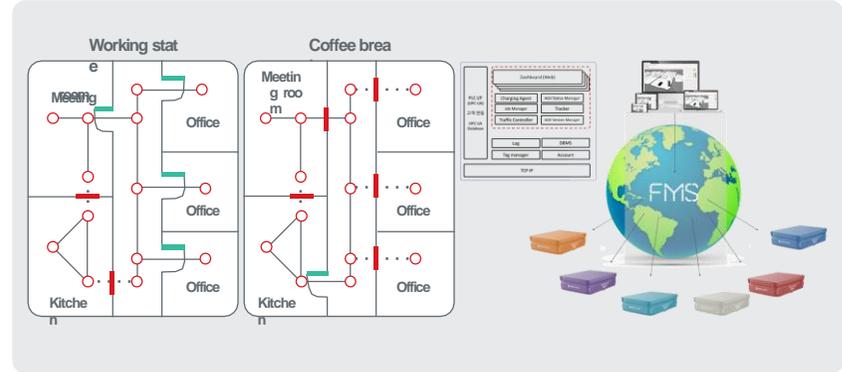
3-1. Unmanned Automation & Autonomous Mobile Robots

Control Solutions & Autonomous Mobile Robots for Unmanned, Automated Factory Operations

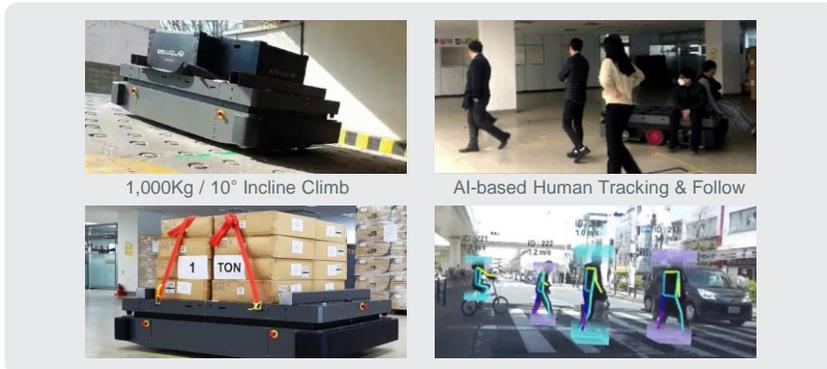
Solution for Efficient Factory Operation & Reduced Logistics Costs



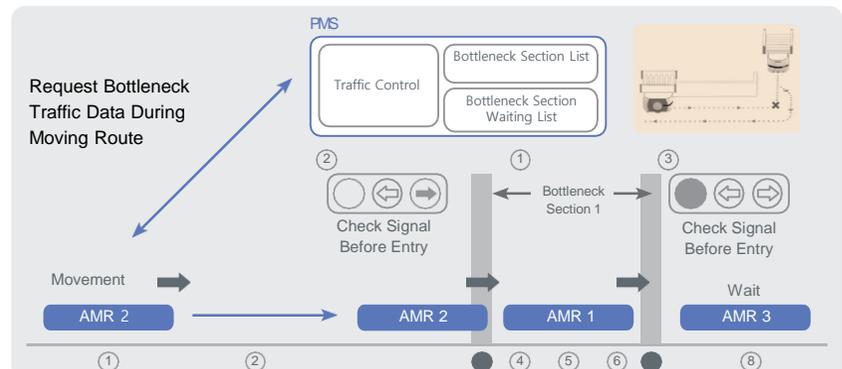
Hybrid Autonomous Driving Algorithm



Unique Features & Performance



Traffic Control for Robot Platooning



#3 Smart Robot Solutions

With 100% in-house technology, we have launched THiRAbot series.

THiRAbot Line-up

Model	THiRAbot 1000	THiRAbot 600	THiRAbot 300	THiRAbot 200	roboL
	Released	Released	Released	Released	Released
Design					
Dimension (mm)	2000×1400×650	900×720×340	700×500×360	700×500×360	600W X 1,100L X 1,200
Payload (Kg)	1,000	600	300	200	200
Docking Stop Precision (mm)	±100	±5	±5	±5	±100
Max Speed (m/s)	0.94	1.0	1.1	1.1	1.0
Battery Capacity [V][A]	LiFePO4 51.2[V]113[Ah]	Li-ion 48[V]40[Ah]	Li-ion 24[V]40[Ah]	Li-ion 24[V]40[Ah]	Li-ion 24[V]40[Ah]
Applications	Factory Warehouse Construction Site Cargo Transfer	Factory Warehouse	Factory Warehouse	Factory Warehouse	Market Hospital Warehouse
Navigation Characteristic	Autonomous Driving AI Human Follow Mode Stereo Camera + LiDAR	Autonomous Driving QR Driving Hybrid SLAM	Autonomous Driving QR Driving Hybrid SLAM	Autonomous Driving QR Driving Hybrid SLAM	Autonomous Driving AI Human Follow Mode

03

Business Growth Strategy

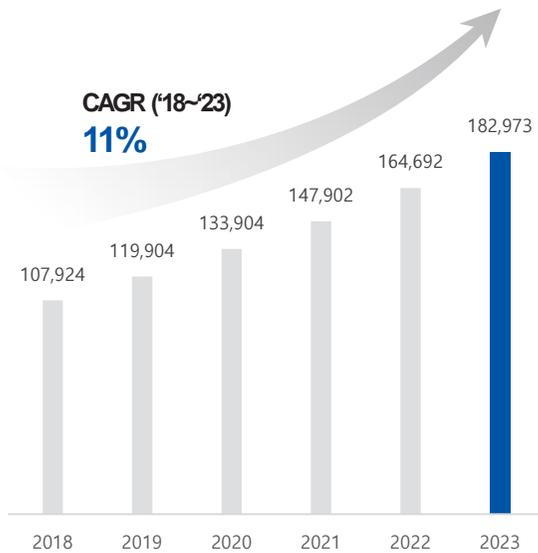
Market Growth

Market Growth in Accordance w/ Government Policy Changes of Industry 4.0 & Post-Pandemic Era

Paradigm Shift



Smart Factory Market Growth



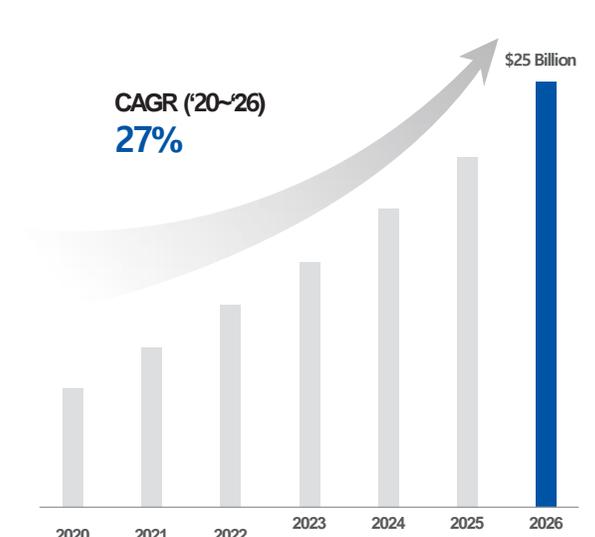
* Source : Market and Markets

Smart Logistics Market Growth



* Source : IFR, Daishin Securities Research Center

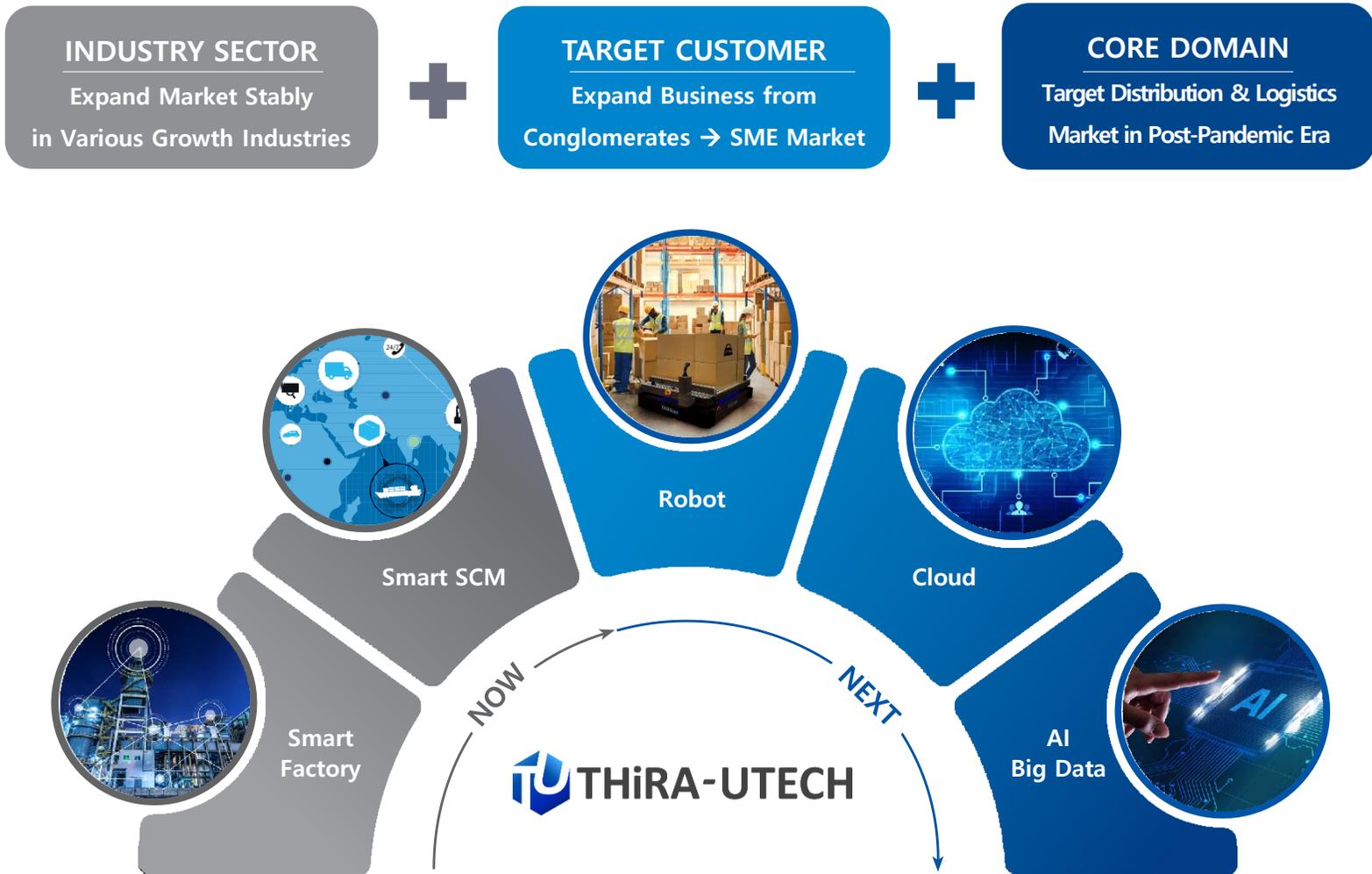
Smart Robot Market Growth



* Source : KBV Research

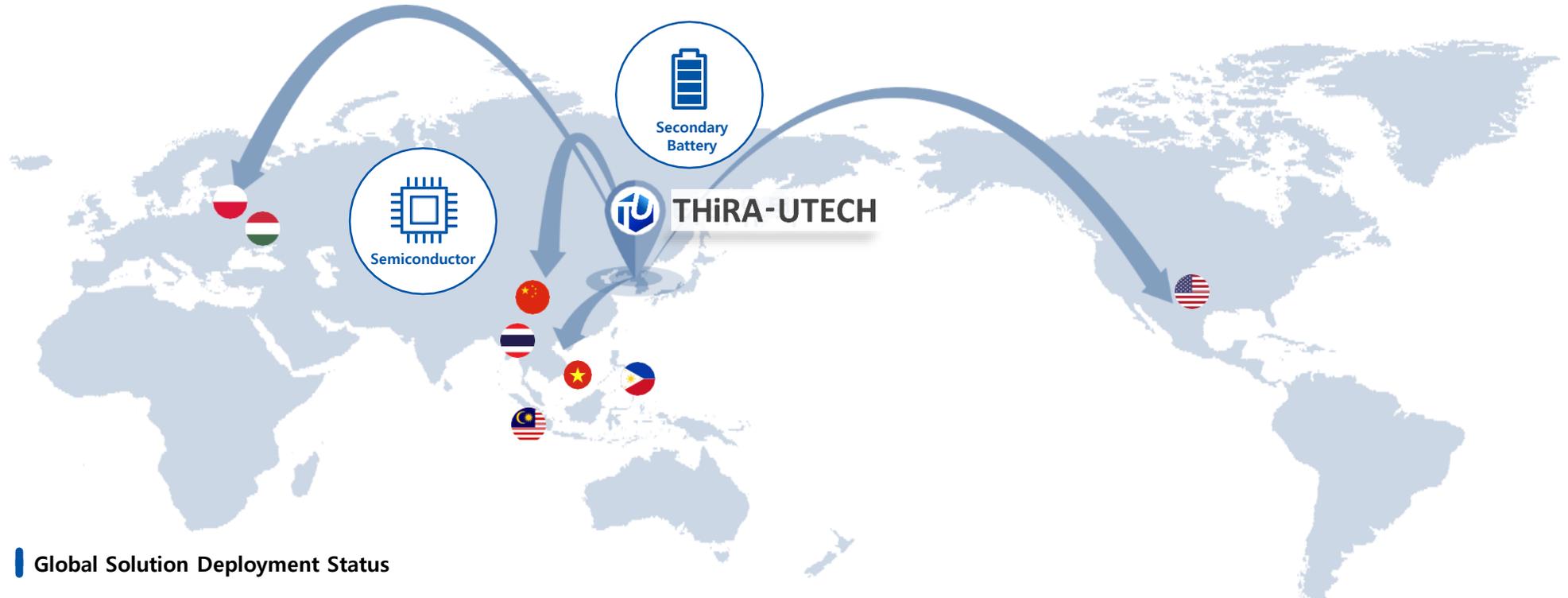
Business Roadmap

Expand Business from Existing MES & SCM to Cloud-based MOM & AI Big Data Markets



Global Business Expansion

Overseas Market Entry Using Our Major References in Semiconductor & Secondary Battery



Global Solution Deployment Status

North America		ASIA		EUROPE	
United States	THiRA Planner / SCP / MRP / MES	China	THiRA Planner / SCP / MRP / MES / AGV / EIS / Analytics	Thailand	THiRA Planner
		Vietnam	THiRA Planner / Scheduler / Simulator / E-CDK / MES / AGV	Malaysia	THiRA Planner / MES / EIS
				Poland	THiRA Planner / FMCS
				Hungary	THiRA Planner / MES / THiRA AGV

Cloud, AI, Big Data

The convergence of smart factory platform with IOT, robot, hardware



Secure Captive Market through
Conglomerate Clients



Cloud-Based
AI/Big Data Solution



Expand Business into
Various Emerging Industries



Develop New Market through
Hardware Convergence



Target Small & Medium-Sized
Enterprise (SME) Market



Enter Global Market

THANK YOU



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