Investor Relations | Sep 2025

AI Autonomous Driving, Adding Intelligence to Logistics

THORDRIVE

INVESTMENT HIGHLIGHTS

01 Korean Top-Tier Talents & Technological Capabilities in R&D of Autonomous Driving and AI

- ✓ Our team is comprised of experienced Master's and Ph.D.-level experts, capable of full-cycle development from the research stage through to commercialization.
- ✓ We secured over a decade of accumulated technological development experience, including Korea's first urban autonomous driving, along with achievements in international academic papers and patents.

02 Unrivaled Commercialization Leadership in the Nascent Outdoor Intra-Logistics Market

- ✓ We currently performing Korea's sole autonomous driving demonstration at Incheon International Airport, in collaboration with key aviation stakeholders including the Airport Corporation, airlines, and ground handling companies.
- ✓ We secured market leadership by pioneering regulations and standardization through exclusive domestic participation in the IATA Ground Handling Automation Guideline development working group.

03 Secured Competitive Edge in the Indoor Intra-Logistics Market through Differentiated Technology

- ✓ We gained a competitive advantage by internalizing logistics-specific autonomous core technology and developing next-generation AI, leveraging proven urban autonomous capabilities.
- ✓ We possessed differentiated competitiveness by lowering customer adoption barriers with a control system that features flexible integration with heterogenous AMRs and upper-level management systems for logistics.

01
COMPANY OVERVIEW

Company Overview

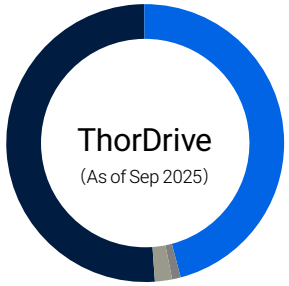
Based on full-stack autonomous driving technology, ThorDrive develops and supplies independent autonomous solutions for automation of on-site logistics.

※ ADS: Autonomous Driving System

Summary

Name	ThorDrive Co., Ltd.
CEO	Dong-Kyoung Kye, Joohyun Lee
HQ Address	RM401, 165, Seonyu-ro, Yeongdeungpo District, Seoul, Republic of Korea
Establishment	January 2016
# of Employees	49 (As of Sep 2025 / Including CEOs)
Business Areas	R&D and Supply of Autonomous Driving Solutions for Intra-Logistics
Core Tech.	✓ Autonomous Driving SW ✓ Vehicle & Robot HW ✓ Monitoring & Control System

Shareholders



Unitrontech Co., Ltd.	51%
ThorDrive, Inc. (US)	46%
4 Board Members of Affiliates	2%
Emford Equity Partners	1%

(REF) Shareholders & History of ThorDrive, Inc. (US)

8 Individuals	39.8%	Posco Investment	6.2%
Kiwoom-Emford	18.3%	Kakao Mobility	4.4%
Unitrontech	14.1%	Mirae Asset Capital	2.5%
Daishin-Emford	8.8%	Ignite Innovation	1.5%
Posco Holdings	3.1%	CJ Logistics	1.3%

2017	Established ThorDrive, Inc. (US), Incorporated ThorDrive Co., Ltd. as 100% Subsidiary
2018	Received Investment of 3.2B KRW (Series Seed / Unitrontech)
2020	Received Investment of 9.1B KRW (Series Pre-A / Posco Holdings, Kiwoom-Emford)
2022	Received Investment 22B KRW (Series A / Daishin-Emford, Kakao Mobility, CJ Logistics, Posco Investment, Mirae Asset Capital, Ignite Innovation)
2024	Unitrontech acquired 51% shares of ThorDrive Co., Ltd.
Present	(Ongoing) Liquidation of ThorDrive, Inc. **(Expected to be completed by 1H 2026)**

Global PoC Locations

10+ cities

Accumulation, Domestics and North America

Types of Vehicles Applied ADS

10+ types

Supporting commercial and specialized logistics vehicles from various manufacturers

Accumulated Driving Distance

200,000 km

Autonomous driving in diverse environments (on-site and off-site), including public roads and restricted areas

No Accident Record

0 accident

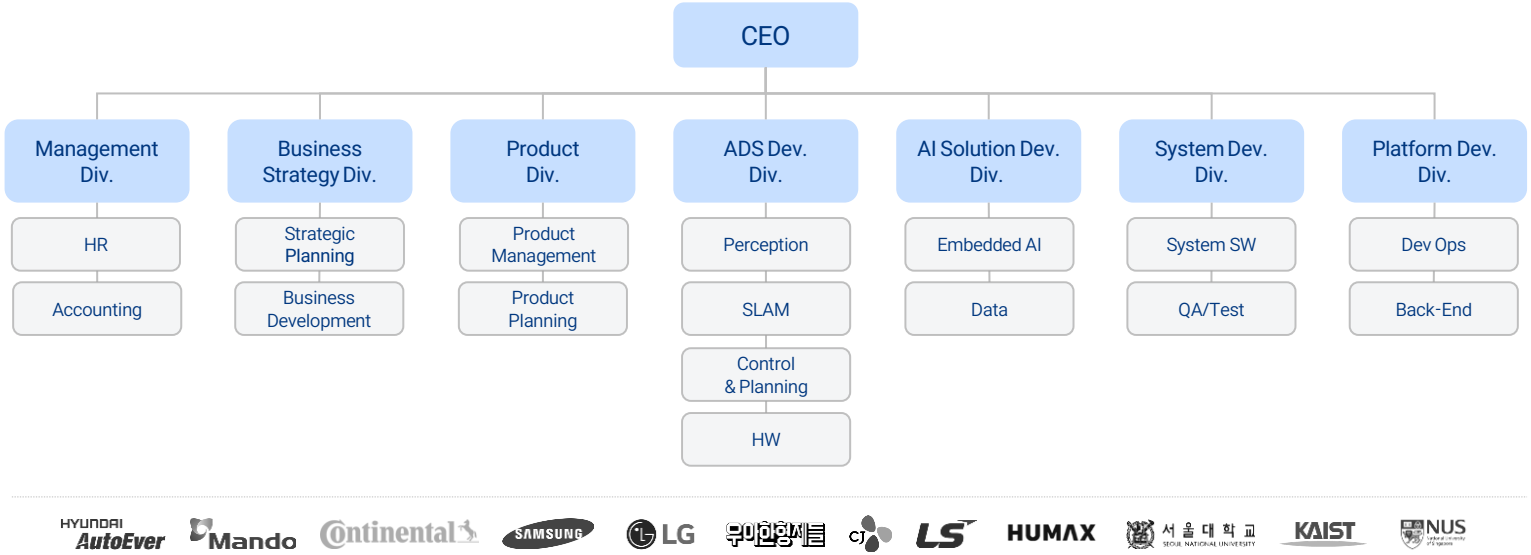
Possessing systematic safety validation processes and technology

Team

ThorDrive is powered by top-tier experts of autonomous driving and AI, possessing over 10 years of accumulated R&D experience, along with achievements in international academic publications and patents.

※ ADS: Autonomous Driving System

Organization Structure



Core Personnel

DK Kye
CEO

JH Lee
CEO

MS Kim
System Dev.

SG Seo
AI Solution Dev.

SH Kim
Perception Dev.

HT Jin
ADS (GSE) Dev.

ADS R&D Experience

15+ years

(Established Autonomous Driving Laboratory in Seoul National University in 2009)

Number of Team Members

49 members

(As of Sep 2025)

Accumulated Driving Distance

8 years

(Average Experience of ThorDrive's R&D manpower)

No Accident Record

28 patents

(20 in South Korea, 8 Overseas)

History

Leveraging technology from urban autonomous driving R&D, ThorDrive secured various domestic and international first-ever demonstrations. However, recognizing market regulatory and demand limitations, the company strategically pivoted to 'Intra-Logistics Autonomous Driving' — a segment predicting rapid commercialization and revenue realization.

2016-2019

Secured core foundation technology and safeness via PoC of autonomous driving in the urban

- 2016. 01 Established company
  (Founded by Seoul National University research team that developed the 'SNUver' autonomous taxi)
- 2017. 06 Succeeded AD in the urban
  (Seoul Yeouido / Korea's first autonomous driving in the urban)
- 2018. 11 Launched an autonomous delivery pilot service in California, US
  (First Korean Company)
- 2019.10 Launched an autonomous delivery service in the Urban
  (Seoul Yeouido / E-Mart)




2020-2021

Exceeding limitations of commercialization of AD in urban area, proceeded PoC of AD in special environment

- 2020.10 Launched a passenger shuttling service at Korean airport (ICN)
  (First Company in the World)
- 2020.10 Launched a passenger shuttling bus in military area
  (Jinhae City, Korea / Navy)


2022-2024

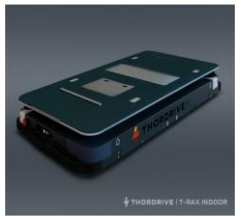
Conducted autonomous driving demonstrations and commercialization centered on intra-logistics environments

- 2022.04 Launched a logistics vehicle pilot service at US airport (CVG)
  (First Company in North America / DHL NA Hub)
- 2022.10 Expanded operational area of logistics vehicle service at US airport (SDF)
  (UPS Global Hub)
- 2024.12 Obtained autonomous driving qualification within a restricted airport area (ICN)
  (First Company in Korea)


2025-Present

Accelerated business through product launch and strategic collaboration with key industry ecosystem players.

- 2025.07 Launched a product of low-floor AMR, 'T-RAX Indoor'
- 2025.07 Signed an MOU for the commercialization of autonomous logistics vehicles at airports
  (First Company in North America / DHL NA Hub)




02
MARKET OVERVIEW

Market Definition & Opportunity

The target market for ThorDrive is intra-logistics, which encompasses the short-distance transportation of materials and products within key supply chain hubs such as manufacturing facilities, warehouses, airports, and seaports. This market is experiencing an increasing need for automation solutions due to decreased productivity — caused by labor shortages, industrial accidents, and rising labor costs — even as the demand for rapid delivery grows due to the increase in e-commerce.

Intra-Logistics (On-site)

Logistics for Short-Haul Transportation, Loading, Sorting, and Transfer of Materials/Cargo within Sites like Manufacturing Facilities, Warehouses, Airports, and Ports

Factory

Indoor	Transfer of Semi-finished/Finished Products Between Processes
Outdoor	Transfer of Finished Goods/Components Between On-site Factories

"Intra-Logistics Costs Account for 11-21% of Manufacturing Cost"
(Lund University, 2015)

Warehouse

Indoor	Transportation Between Receiving/Shipping, Picking, and Staging Areas
Outdoor	Container Transport Between Loading and Unloading Docks/Bays

"163,000 Global Large Logistics Warehouses"
(Interact Analysis, 2022)

Airport

Indoor	Sorting and Movement of Unit Cargo within the Terminal
Outdoor	Cargo Transfer Between Ramps and Terminals

"Annual Air Cargo Volume of 58 Million Tons"
(IATA, 2023)

Seaport

Indoor	Transfer Between Sorting Areas within the Terminal
Outdoor	Container Transport Between Docks/Piers and Yards

"Annual Container Throughput of 820 Million TEU"
(UNCTAD, 2023)

Increased Need for Automated Solution

The Intra-Logistics Market Where the Necessity for Automation Solutions is Growing Due to Labor Gaps, Cost Pressure, Safety Risks, and Changing Customer Demands

Worsening Labor Shortage

"Ground handling manpower at Incheon International Airport has recovered to 60% of pre-COVID-19 levels" (Chosun Ilbo, 2023)

"Logistics warehouses in the US face a labor shortage of over 35,000 workers" (Meteor Space, 2024)

Increase in Industrial Accidents Due to Worker Negligence

"Industrial accidents occurring annually in logistics-related industries, including domestic parcel delivery and warehousing, amount to 13,838 cases" (Ministry of Employment and Labor, 2022)

"The injury rate for logistics warehouse workers in the U.S. is 5.5 cases per 100 workers" (US DoL, 2023)

Surging Logistics Labor Costs

"Labor costs in the logistics industry have consistently risen by an average of 6.5% annually over the past five years, increasing pressure from labor cost hikes" (Korea Logistics Association)

"Average hourly wages for U.S. warehouse workers surpass $20, rising over 40% in two years" (Prologis, 2023)

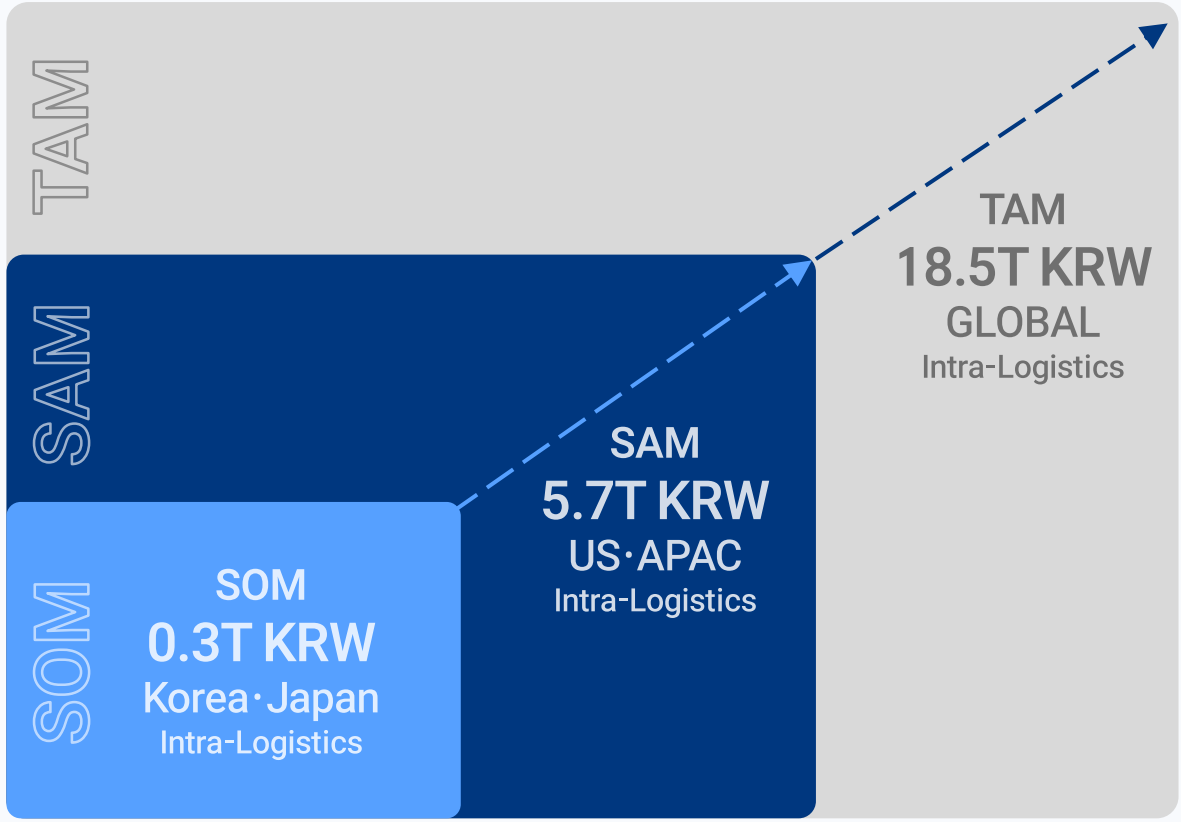
Increased Demand for E-commerce-Based Rapid Delivery

"Amazon's share of same-day and next-day deliveries increased by over 65% year-over-year" (AP, 2024)

"Shein and Temu platforms occupy a large share of air freight for ultra-fast delivery to consumers" (Reuters, 2024)

Target Market

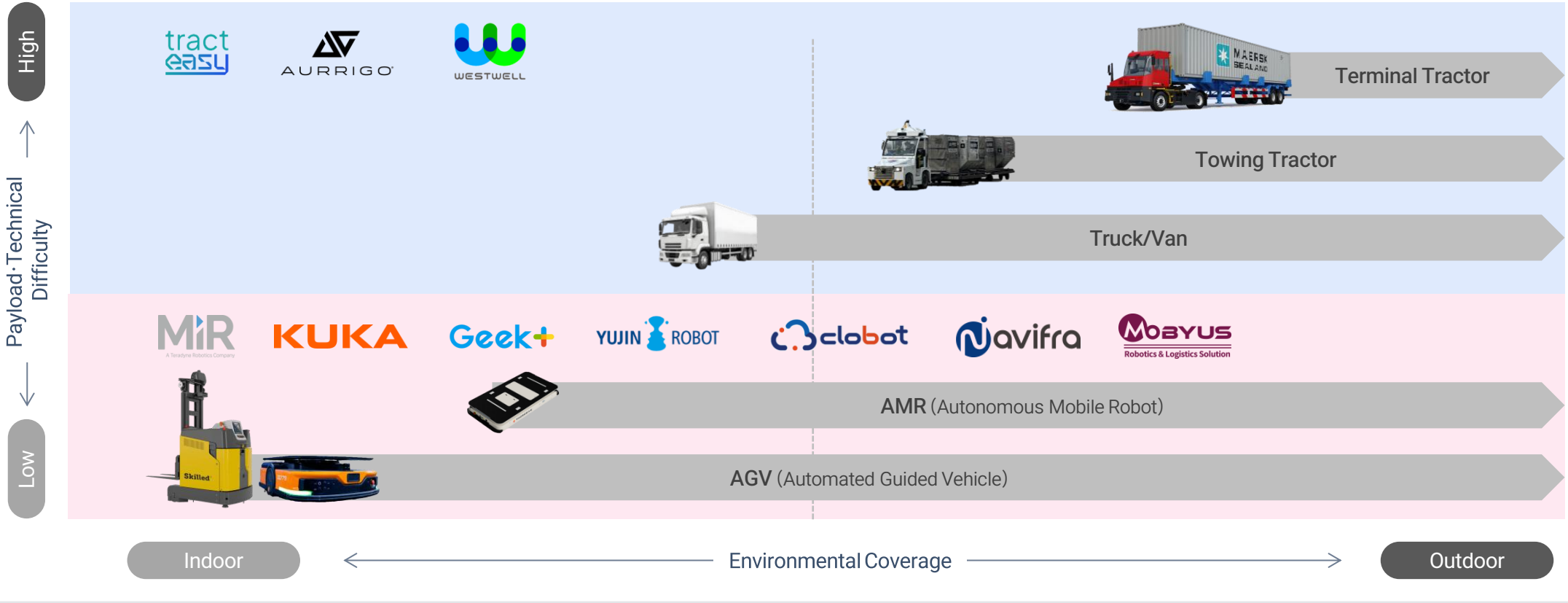
We are targeting the South Korea and Japan intra-logistics market, where existing and potential customers are present, as our primary revenue market. We aim for global expansion, starting with adjacent regions to the primary revenue market, such as APAC, and the North American region, where we have proof-of-concept (PoC) experience.



Status of Target Market

The demand for autonomous driving in the intra-logistics sector is a rapidly increasing trend aligned with the efficiency requirements of global manufacturing and logistics companies. Due to the difficulty of application stemming from diverse mobile platforms, payloads, and environmental variables, the barrier to entry is high, leading this market to emerge as one where opportunities are concentrated among companies possessing differentiated technology and data competitiveness.

Intra-Logistics Autonomous Driving Market



03
PROBLEM & SOLUTION

Problems in the Intra-Logistics Autonomous Driving Market

Customers operating intra-logistics facilities desire the autonomous driving and integrated control of all logistics mobile platforms spanning both outdoor and indoor environments, but the players currently in the market are unable to satisfy this need.

※ AD: Autonomous Driving

Problem 1.

Fragmented Logistics Equipment

The mixture of logistics mobile equipment with diverse types and form factors makes the rapid application of customized autonomous driving solutions difficult

Problem 2.

Difficulty in Interlinking Systems and AD Equipment

High cost and time consumption required for interlinking high-level logistics systems such as WMS/WES/MES with heterogeneous autonomous vehicles and robots

Problem 3.

Complex and Variable Logistics Environments

Lack of an autonomous driving solution capable of stable response to the specific characteristics of real logistics sites, such as narrow spaces, environments shared with people, and outdoor settings

End-to-End Autonomous Driving Solution, THOR AUTONOMY SUITE

To meet the diverse needs of customers for automating intra-logistics movement, ThorDrive offers an end-to-end autonomous driving solution consisting of an autonomous driving kit for heavy-payload logistics vehicles, a low-payload autonomous mobile robot (AMR), and an FMS (Fleet Management System) for integrated management and control of various heterogeneous autonomous mobile platforms.

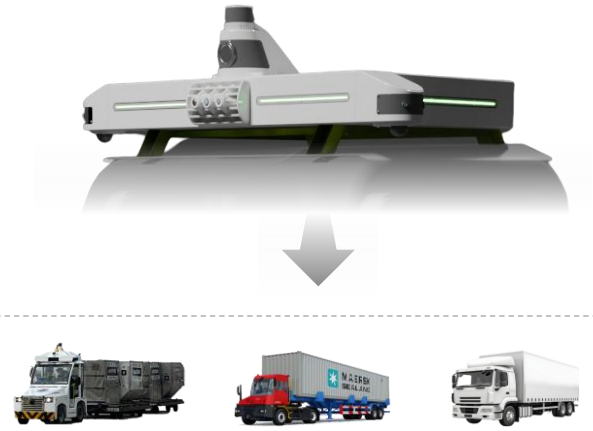
All-in-One Autonomous Driving Solution for Automation of Intra-Logistics

THOR AUTONOMY SUITE

Autonomous Driving Kit for Logistics Vehicles

Vehicle Automation Kit

All-in-One Attachable Autonomous Driving Kit (Sensors, Computer, Actuator, SW) for Standard Logistics Vehicles



Intelligent Logistics Robot

Autonomous Mobile Robot

AMR optimized for low-payload logistics transportation, flexibly applicable to logistics sites through modular design

Integrated Monitoring & Control of Autonomous Mobility

Fleet Management System

Integrated Management System for Simultaneous Monitoring & Control of Autonomous Vehicles/Robots

Product 01. Vehicle Automation Kit

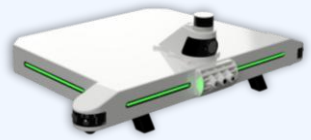
The Vehicle Automation Kit is an attachable/detachable kit and software package integrating sensor, control, telecommunication, and computing devices for autonomous driving. It is a solution that allows for fast and flexible application to various manufacturers and vehicle types and can be combined and expanded according to customer requirements.

※ AD: Autonomous Driving

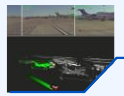
Hardware

Attachable/detachable kit composed of sensor, control, telecommunication, and computing modules, providing the core foundation for the physical implementation of autonomous driving

① AI Component Kit



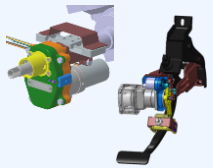
Sensors for AD

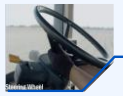


AI Computing Unit

Vehicle Control Unit

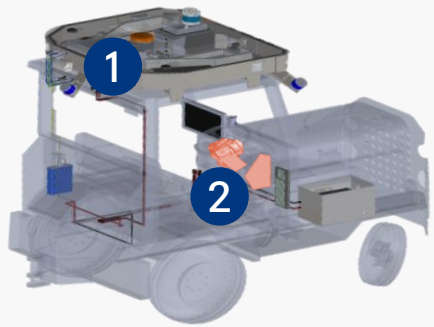
② Control Interface Kit





Steering Control Module

Braking Control Module

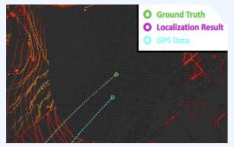


Software

Support for autonomous driving functions, including AI-based environment perception, localization, decision-making, and path generation, and functions optimized for the special operations of logistics sites

Universal AD Function (Universal Autonomy)

Environment Perception via Multiple Sensors



High-Precision Localization

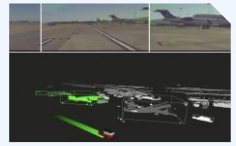
High-Precision Map

Planning & Control for Safe Driving

Logistics-Specified Function (Industrial Autonomy)

Towing Control for Multiple Cargos

High-Precision Docking



Perception of Mega-Size Object

Perception & Avoidance of High-Temperature Object

Product 02. Autonomous Mobile Robot

Equipped with logistics-specialized technology based on urban autonomous driving capabilities, our AMR boasts superior responsiveness in complex and variable logistics environments compared to conventional AMRs, and customized manufacturing and delivery in diverse forms are possible by leveraging domestic hardware partners with industry references.

※ AD: Autonomous Driving

AMR-Specialized HW & SW

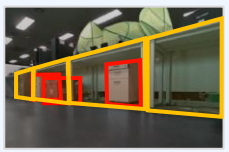
Provision of stable autonomous driving and optimized performance
even in complex logistics environments through the combination
of an AI computing platform and core autonomous driving technologies

AMR-Specialized Computing Unit

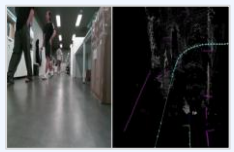
Unitrontech
AI Computing Platform

- ✓ AI-based Optimization of Autonomous Driving Actuation
- ✓ Real-time Sensor Fusion Processing
- ✓ Support for Broad Sensor Interfaces
- ✓ All-in-one Support for Computing, Communication, and Sensing

AMR-Specialized AD Software

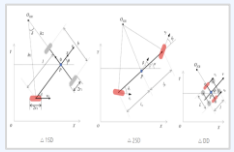


Perception
via Multiple Sensors



Visual SLAM

Intelligent
Path Planning



Various Methods
for Driving & Control

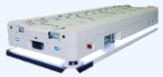
Customized AMR

Provision of an AMR tailored to customer needs
through collaboration with hardware partners,
combining diverse AMR form factors and on-board equipment

Support for Various Form Factors Available

Flat-Bed

Long Body



Square

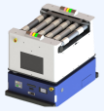
Outdoor Vehicle

Support for Various On-Board Equipment Available

Picking Cart

Turning Lift

Lift



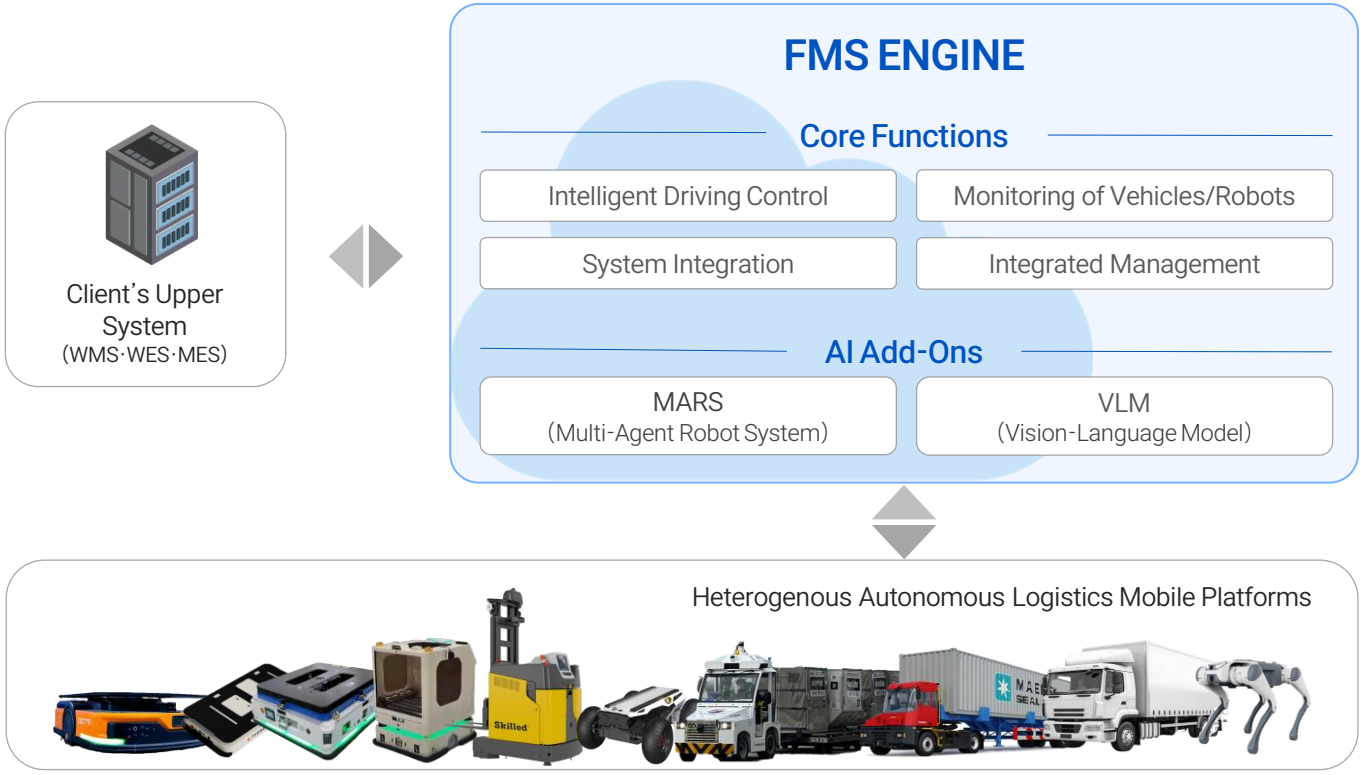
Conveyor

Manipulator

Product 03. Fleet Management System

FMS (Fleet Management System), which is an integrated management/control system for various types of autonomous robots and vehicles, possesses strengths in its integrated control function capable of simultaneously controlling multiple heterogeneous vehicles and robots. It supports flexible interfacing with various high-level logistics systems, simultaneously achieving operational optimization and efficiency.

FMS Structure



Core Functions

Intelligent Driving Control

- Optimization of Multiple Vehicle/Robot Movements/Paths
- Real-time Job Scheduling and Path Readjustment
- Fleet-specific Response in Case of Emergency

Monitoring of Vehicles/Robots

- Optimal Path Generation and Task Assignment
- Real-time Monitoring and Remote Control
- Charging Status Notification and Reservation

Integrated Management

- Collection and Analysis of Component/Equipment Status and Movement Data
- Predictive Maintenance (Failure Prediction, Proactive Response)
- Integrated Management of Operation/Driving Logs

System Integration

- Interfacing with Client and Site Operation Systems
- Cloud and On-premise Support
- Over-the-Air (OTA) Updates

Product 03. FMS AI Add-On

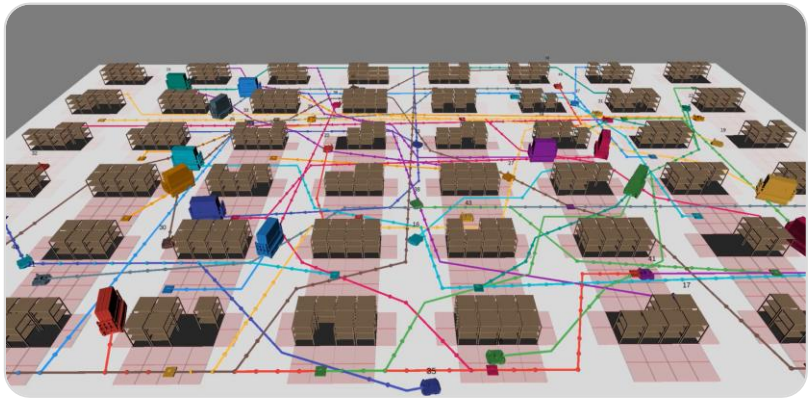
Beyond simple mobile platform monitoring and management, we plan to additionally support AI add-on features designed to create high added value and differentiated competitiveness for customers by providing deadlock-free operation, maximum efficiency, and operator decision-making support through collaborative intelligence and vision/language-based AI technology. (Scheduled for sequential release starting after '26)

AI Add-On (1)

MARS (Multi-Agent Robot System)

Deadlock-free operation and maximum site efficiency through collaborative intelligence-based multi-robot path optimization and control functions

- Real-time Collaborative Control Based on Actions and Events
- Flexible Path Planning Considering Robot Form Factor
- Uninterrupted Operation Based on Deadlock Minimization Algorithm
- Pre-verification Based on Simulation

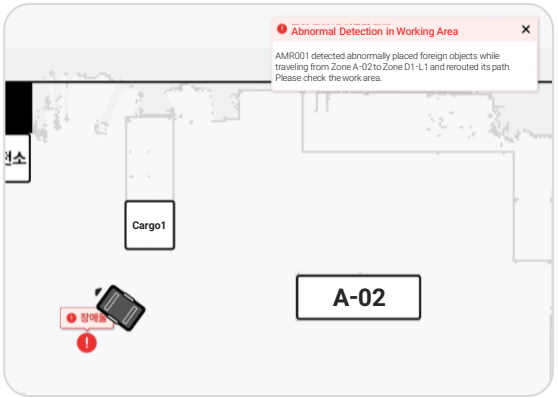


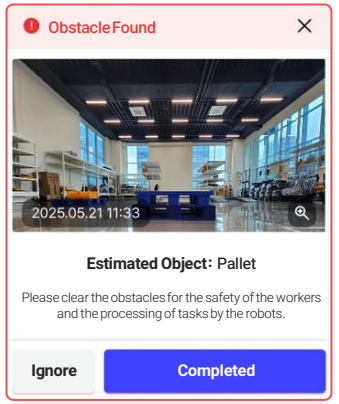
AI Add-On (2)

VLM (Vision-Language Model)

Provision of intuitive insights and added value to operators beyond simple monitoring by combining AI-based visual perception and language understanding

- Natural Language-Based Robot Task Instruction
- On-site Anomaly Detection and Real-time Reporting
- Natural Language-Based Access to Site Manuals and Records
- Self-Analysis and Reporting of Obstacle Factors



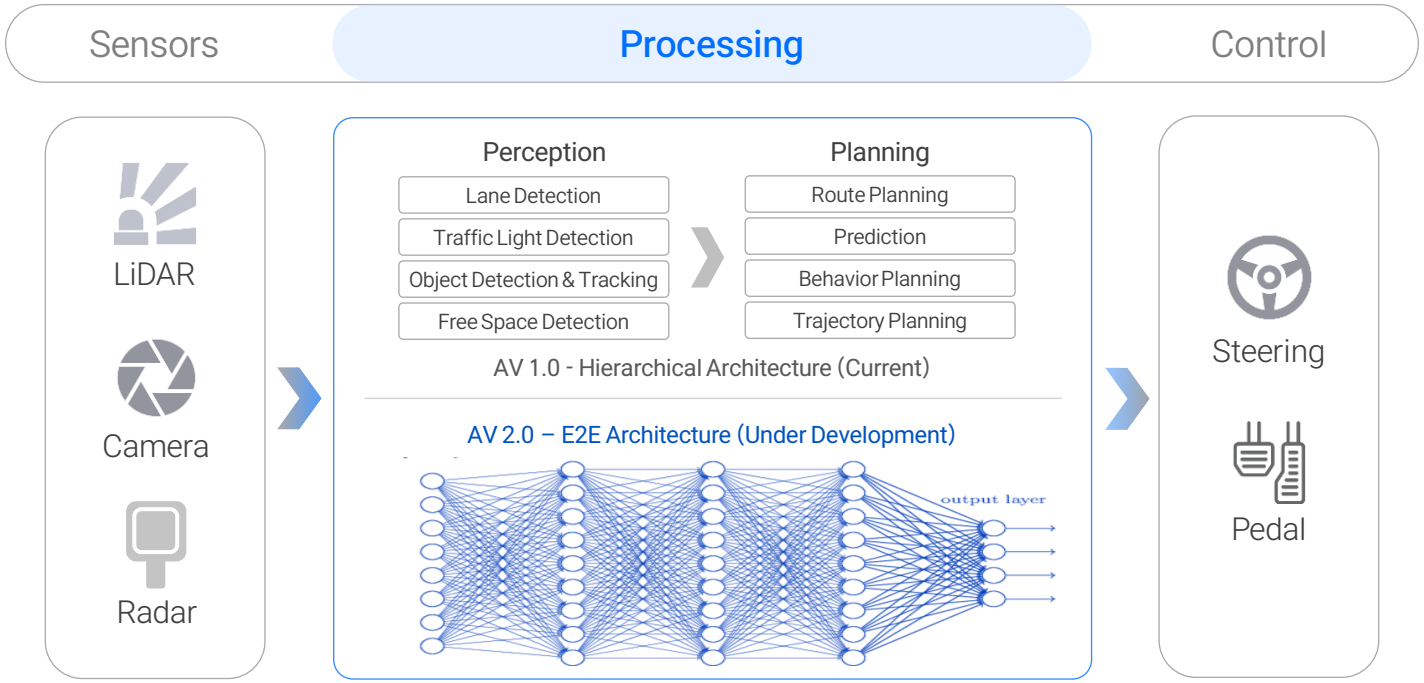


Next-Gen. Autonomous Driving Architecture Based on E2E AI

Through the E2E (End-to-End) approach, which implements the entire process from sensor input to driving control with a single AI model, we aim to dramatically increase the speed of data learning and field adaptation. This technology will highlight the strength of the robust data barrier built upon our vast accumulated data from specialized logistics environments (e.g., airports), allowing us to achieve rapid expansion following market preemption.

End-to-End Autonomous Driving Architecture

Dramatic improvement in learning and adaptation speed by simplifying the structure through integration from sensor input to control into a single AI model, unlike the current layered/hierarchical architecture



Learning & Application Speed

Capable of Data-Driven
High-Speed Optimization

Scalability and Versatility

Quickly applicable to diverse
environments and vehicle types

Situational Response Flexibility

Flexible decision-making possible
based on AI learning, not explicit rules

System Complexity

Reduction in integration costs between
modules and maintenance burden

Competitiveness

Based on its accumulated autonomous driving technology and references in specialized environments (e.g., airport logistics), ThorDrive possesses solution competitiveness that simultaneously offers versatility for immediate application to various logistics mobile equipment and systems, flexible interfacing with high-level logistics systems, and site-optimized stability.

Problem 1.

Dispersed Logistics Equipment

Problem 2.

Difficulty in Interlinking Logistics Systems and Autonomous Driving Equipment

Problem 3.

Difficulty in Responding to Complex and Variable Logistics Environments

Our Solution 1.

Versatile Solution

Modularized Solution Immediately Applicable to Diverse Equipment

Possession of technical competitiveness that realizes rapid autonomization regardless of whether equipment is new or existing through in-house designed hardware and modularized software technology, while simultaneously reflecting the characteristics of each equipment type and providing scalability

Our Solution 2.

Flexible Interfacting

Integrated Control Solution Based on Open Architecture

Fast and cost-efficient integrated control solution capable of unified operation of heterogeneous logistics mobile platforms on a single platform by utilizing an architecture organically linkable with various customer logistics systems and the VDA5050 standard protocol

Our Solution 3.

Autonomous Driving Technology

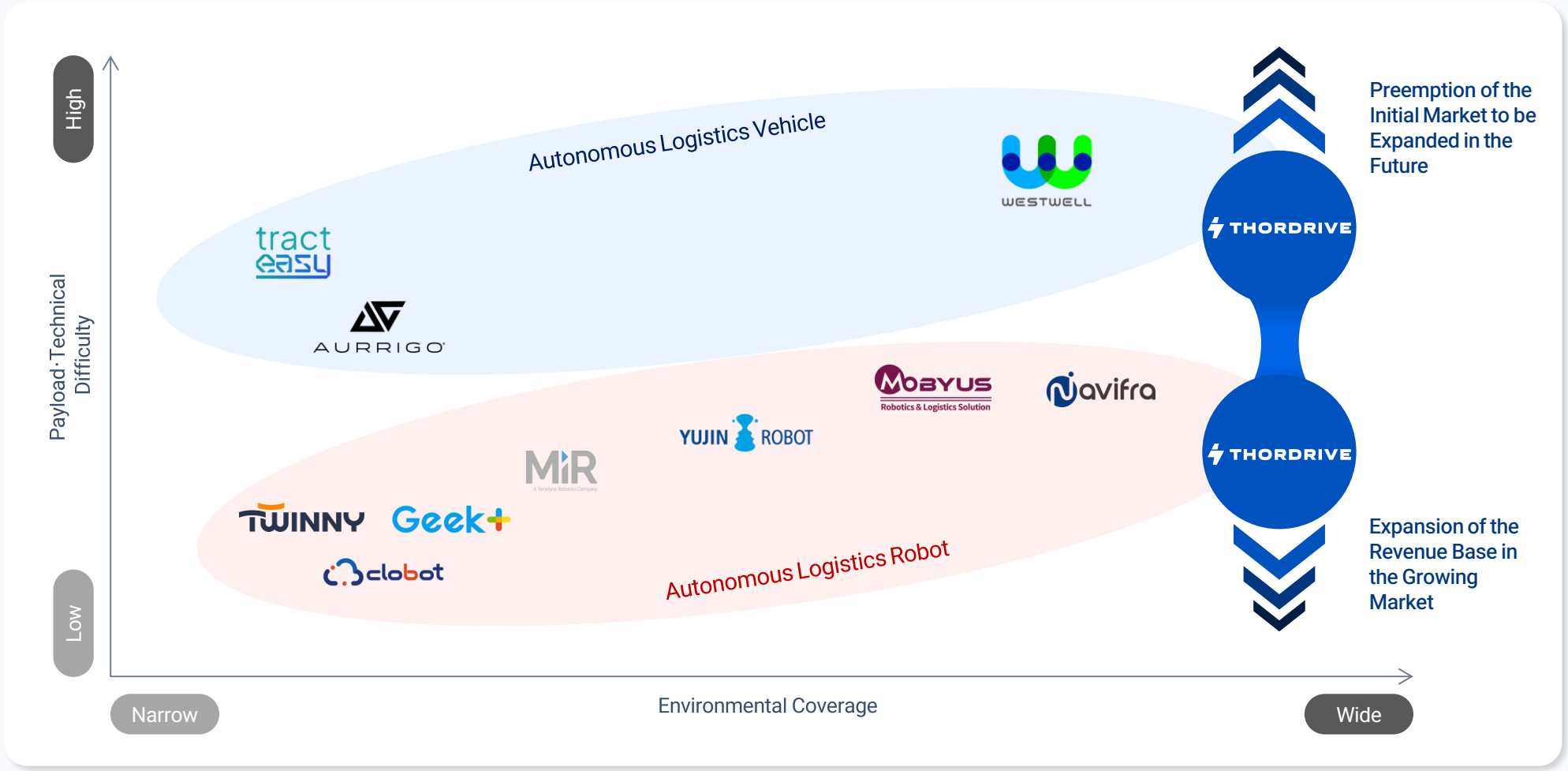
Logistics-Specialized Autonomous Driving Technology Based on Urban-Proven Technology

Securing perception, decision-making, and control technology that can operate stably in complex indoor/outdoor environments and variable conditions such as day/night and adverse weather, and ensuring a high level of operational stability through accumulated data from logistics sites and AI-based advancement of AD SW

04
BUSINESS OVERVIEW

Competitive Landscape

ThorDrive is positioned as a unique autonomous driving solution company that can encompass diverse logistics payloads and wide environmental coverage and is securing an expandable growth foundation via technological advancement and product diversification.



Companies Related to Autonomous Driving Solutions, but not related to Intra-Logistics

A2Z AUTONOMOUS

RideFlux

NEUBILITY

SEOUL ROBOTICS.

Business Model

ThorDrive's business model is capable of generating stable and recurring revenue annually via maintenance and regular updates, in addition to one-time sales from the initial introduction of products and solutions. Furthermore, by incorporating an expandable revenue structure that licenses core software modules to external partners, we aim for a balanced revenue system that can achieve both stability and scalability simultaneously.

		Upfront Revenue	Recurring Revenue	Licensing Revenue
		One-time revenue generated from the sale of HW + SW packages and site optimization costs upon initial implementation	Subscription revenue generated repeatedly every year through continuous maintenance and updates	Expandable revenue generated by licensing core autonomous driving and FMS module software to partners
Product	A-Kit	On-site Optimization (Charged per site) KIT Supply and Installation (Charged per unit)	Service of KIT Maintenance and Updates (Charged annually per unit)	Autonomous Driving SW Module Licensing (Charged per unit)
	AMR	On-site Optimization (Charged per site) AMR Supply (Charged per unit)	Service of AMR Maintenance and Updates (Charged annually per unit)	Autonomous Driving SW Module Licensing (Charged per unit)
	FMS	Site System Interfacing and Installation (Charged per site)	Service of System Maintenance and Updates (Charged annually per site)	Componential Function Licensing (Charged per site)
Customer		Intra-Logistics Facility Operators (End-Users) investing in the establishment of autonomous driving systems to rapidly adopt large-scale automation	Intra-Logistics Facility Operators (End-Users) who have already adopted our solution and require continuous support for stable operation and maximum efficiency of the autonomous driving system	Manufacturers of logistics mobile equipment (AMR/AGV) and logistics system suppliers (Partners) who seek to embed our differentiated autonomous driving and control functionalities into their own solutions

Business Opportunity & Progress

We are proactively securing references and gradually expanding commercialization through demonstration projects with domestic and international global aviation industry leaders. Furthermore, by expanding the customer base to the retail logistics sector based on the launch of our AMR, we are simultaneously securing expanded revenue opportunities and long-term growth opportunities.

Business Area	Client	Country	Project Summary	Status
Airport	Japanese National Airline, 'A'	Japan	Demonstration and Commercialization of Autonomous Driving for Ground Support Vehicles at Major Japanese Civilian Airports	POC Planning in Progress (2026 Revenue Projected)
	Korean Air · Korea Airport Service	Korea	Demonstration and Commercialization of Autonomous Driving for Ground Support Vehicles at Incheon International Airport	PoC in Progress (2027 Revenue Projected)
	Global Logistics Company, 'U'	US	Demonstration and Commercialization of Autonomous Driving for Ground Support Vehicles within a Global Logistics Hub Airport	PoC Completed / Discussion Scheduled to Resume Later (2028 Revenue Projected)
	Global Logistics Company, 'D'	US	Demonstration and Commercialization of Autonomous Driving for Ground Support Vehicles within a North American Logistics Hub Airport	PoC Completed / Discussion Scheduled to Resume Later (2028 Revenue Projected)
Retail	Meat Distributor Company, 'M'	Korea	AMR Application Verification and Implementation Project at Logistics Centers	PoC Planning in Progress (2025 Revenue Projected)
	Food and Distribution Group Affiliate, 'D'	Korea	AMR Application Verification and Implementation Project at Logistics Centers	PoC Planning in Progress (2026 Revenue Projected)
	Duty-Free Shop Operator, 'L'	Korea	AMR Application Verification and Implementation Project at Logistics Centers	Initial Discussion in Progress
	Cosmetics Manufacturer, 'A'	Korea	AMR Application Verification and Implementation Project at Logistics Centers	Initial Discussion in Progress
Seaport	AGV and Defense Equipment Manufacturer, 'H'	Korea	Development of Unmanned Control System for Port Transfer Vehicles	Initial Discussion in Progress
	Domestic Port Operator, 'H'	Korea	Autonomous Driving Demonstration for Electrified Yard Tractors within Ports	Initial Discussion in Progress
Etc.	'Y', 'E'	Korea	Domestic Development of Charging Infrastructure for Airport Electric Ground Support Equipment	Currently in Cooperation
	PBV Developer, 'M', Ground Handler, 'H'	Korea	Electrification Project for Diesel-Based Ground Support Vehicles	Business Planning in Progress

Key Achievements

By focusing on strategic partnerships, accumulating market experience, and leading standardization, ThorDrive secures its position as a trusted global partner. This strong foundation directly drives future revenue growth and enhanced corporate value.

Strengthening Commercialization Competitiveness

Securing a foundation for business growth from demonstration to commercialization through collaboration with key industry partners and product launches

Signed a MOU for the Commercialization of Autonomous Driving for Airport Logistics Vehicles (ICN, Korean Air, Korean Airport Service)

Launched the Low-Floor AMR 'T-RAX Indoor' Launched Proprietary AMR Brand 'T-RAX'

Expanded Mutual Cooperation for Expanding AMR Sales Network in Factories and Logistics Warehouses (with Zin Corporation)

Signed a WES-Autonomous Driving Technology Cooperation MOU for E2E Logistics Automation (With Near Solution)

Securing Regulatory and Standardization Leadership

Alleviating market entry barriers and strengthening long-term corporate competitiveness via leading domestic and international standardization Institutions

Advised AD Regulations and Infrastructure within the Airport, and Enactment/Revision of Movement Area Safety Guidelines (ICN)

Acquired Autonomous Driving Qualification for Tow Tractors within a Restricted Airport Area, a Domestic First (ICN)

Participated in the International Air Transport Association (IATA) Ground Handling Automation Guideline Development Working Group

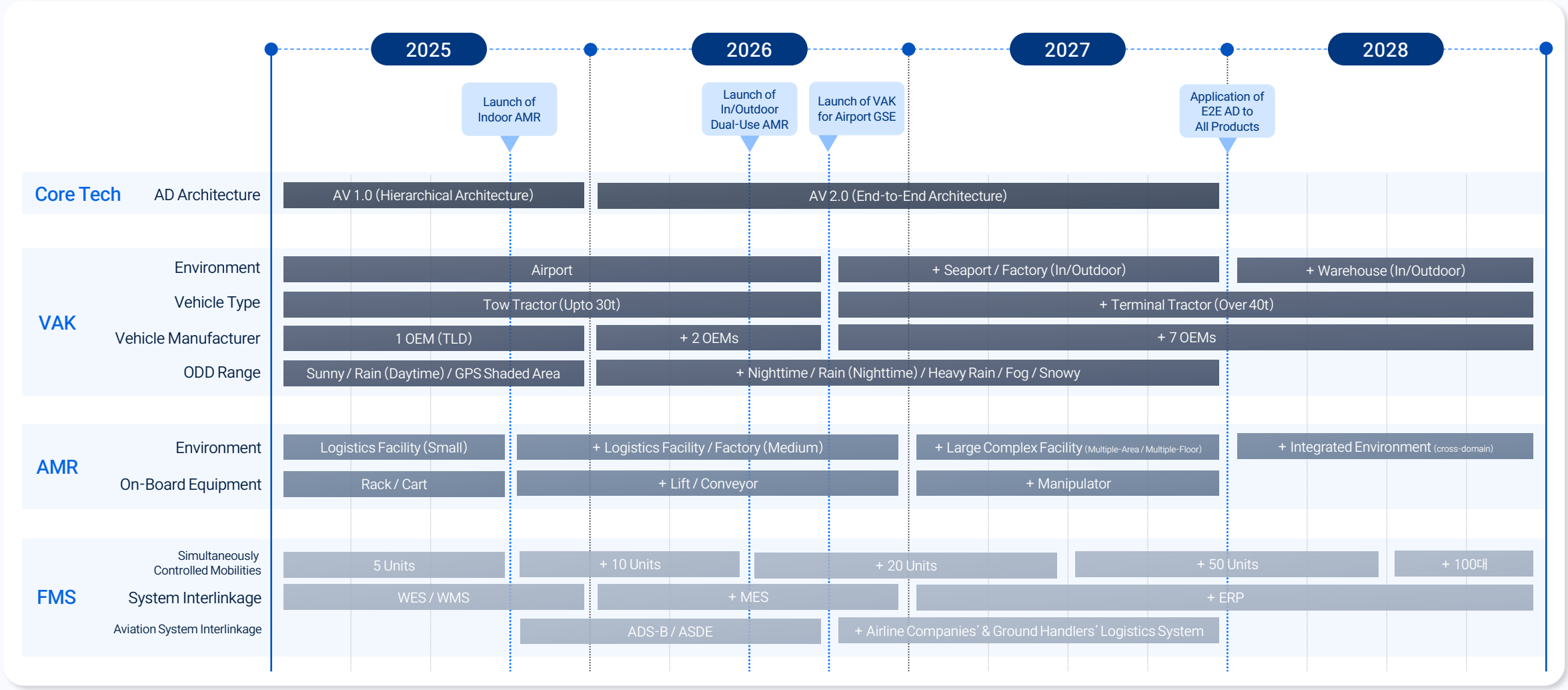
Pushing ahead regulatory improvement procedures for unmanned operation of airport logistics vehicles based on MOLIT Sandbox

05
BUSINESS PLAN

Product Roadmap

We pursue an executable product strategy capable of realizing revenue growth and enhanced corporate value via the development of a product roadmap characterized by the advancement of the autonomous driving architecture and diverse industrial applicability.

※ AD: Autonomous Driving



Roadmap for Business Expansion

ThorDrive plans to accelerate revenue growth with a business expansion roadmap that progresses from the demonstration and commercialization of autonomous driving solutions both domestically and internationally, leading to global market entry and an IPO.

Series-B

2025

VAK Business Seg.
PoC of Autonomous Tug Car (GSE)

Operation of 1 Autonomous Tug Car

AMR Business Seg.
Launch of Indoor AMR & PoC

Supply for 1 Site

2026

Sales
2.7B KRW

VAK Business Seg.
PoC of Autonomous Tug Car (GSE)

Supply of 4 Sets of VAK
Entrance into the Japanese Market

AMR Business Seg.
Launch of In/Outdoor Dual-Use AMR & PoC

Supply for 3 Sites
Entrance into Factory Logistics

Pre-IPO

2027

Sales
7.4B KRW

VAK Business Seg.
Commercialization of Autonomous Tug Car

Supply of 5 Sets of VAK
Entrance into the APAC Market

AMR Business Seg.
Scale-up of In/Outdoor Logistics Service

Supply for 7 Sites
Entrance into Airport Logistics

IPO

2028

Sales
20.1B KRW

VAK Business Seg.
Expansion of Autonomous Tug Car (GSE)

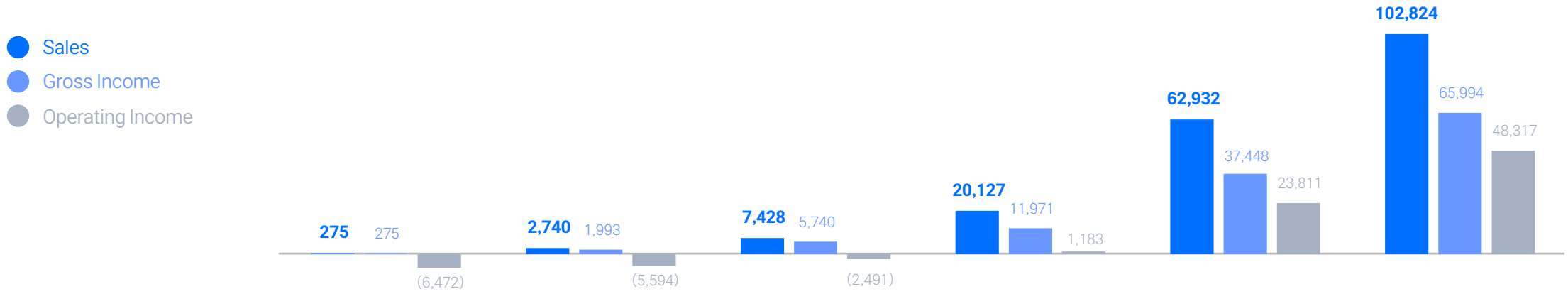
Supply of 57 Sets
Entrance into the US Market

AMR Business Seg.
Launch of Heavy-Payload AMR for Seaport

Supply for 17 Sites
Entrance into Seaport Logistics

Financial Projection

We expect revenue improvement by securing a revenue base through the commercialization of AMR and FMS and by preempting the initial markets of autonomous driving in airport and port logistics. We aim for a turnaround to profitability by the end of 2028.

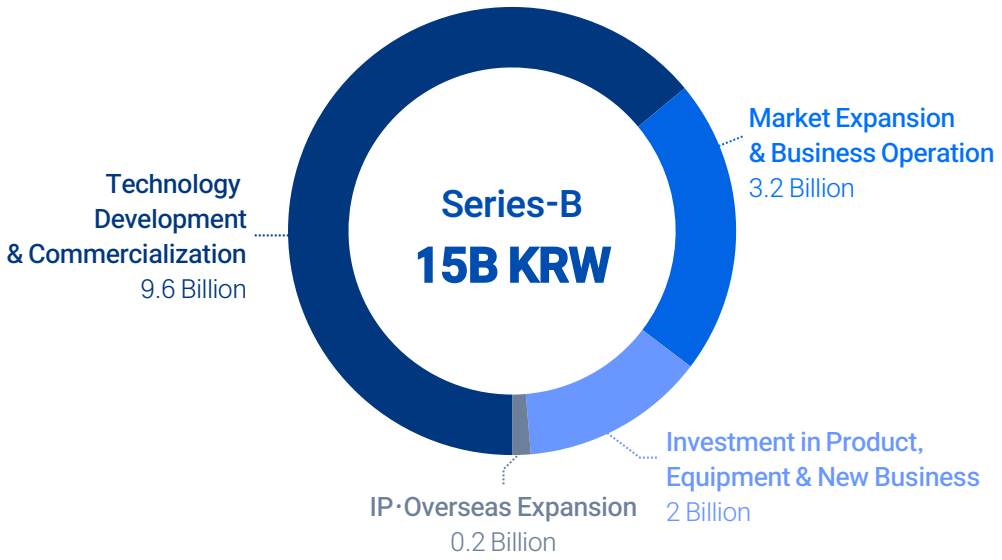


(Unit: Million KRW)	2025E	2026E	2027E	2028E	2029E	2030E
Sales	275	2,740	7,428	20,127	62,932	102,824
Sales Growth Rate	-	***896%***	***171%***	***171%***	***213%***	***63%***
VAK Business Seg.	0	760	676	8,260	30,431	36,491
AMR & FMS Business Seg.	150	1,980	4,552	11,647	28,541	60,833
FMS for Airport/Seaport & Etc.	125	0	2,200	220	3,960	5,500
Cost of Goods Sold	0	747	1,688	8,155	25,484	36,830
Gross Income	275	1,993	5,740	11,971	37,448	65,994
SG&A Expense	6,747	7,587	8,231	10,788	13,637	17,677
Operating Income	(6,472)	(5,594)	(2,491)	1,183	23,811	48,317
Operating Margin		***-204%***	***-34%***	***6%***	***38%***	***47%***

Investment Plan

ThorDrive's Series B funding will be utilized for advancing core autonomous driving technology, full-scale business operation through product commercialization, and establishing a foundation for growth to enter the global market.

Utilization Plan of Invested Fund



(Unit: KRW)

Technology Development & Commercialization — 9.6 B

- Optimization and Advancement of Autonomous Driving System and Software
- Optimization and Advancement of Vehicle/Robot Control System (FMS)
- Development of AI Add-on Features and Next-Generation Autonomous Driving Technology
- Verification of Performance/Safety and Securing Reliability

Market Expansion & Business Operation — 3.2 B

- Sales Activities Targeting Potential Clients and Partners
- Participation in Domestic and International Exhibitions and Conferences
- Public Relations and Advertising Activities
- Strengthening Business Operation Network and Infrastructure

Investment in Product, Equipment & New Business — 2 B

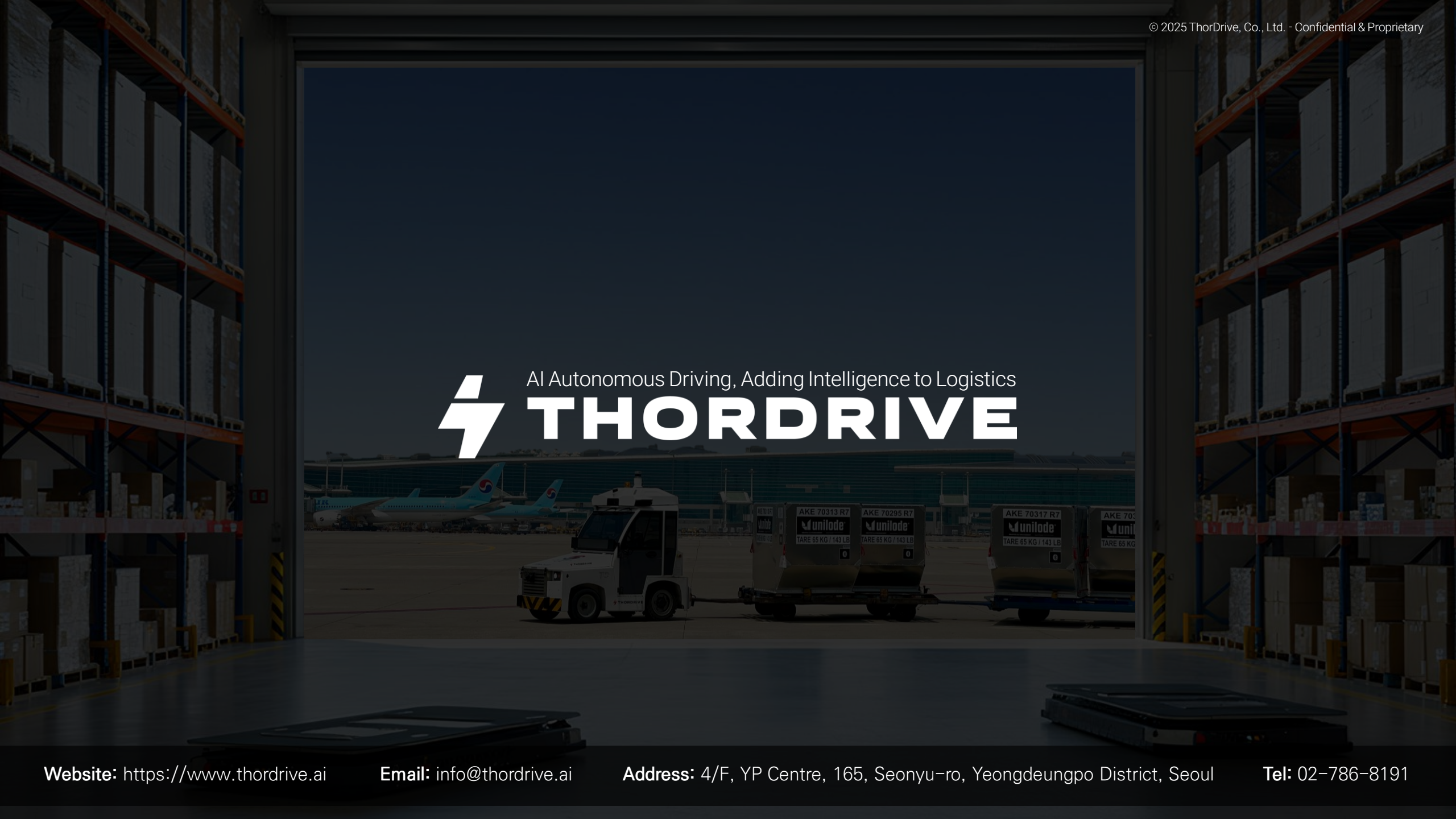
- Expansion of Research Facilities and Equipment
- Expansion of Core Components and Test Vehicles/Robots
- Manufacturing of Simulation Equipment
- Expansion of Future Growth Portfolio

IP·Overseas Expansion — 0.2 B

- Establishment of Overseas Subsidiaries
- Establishment of Global Business Operation Network and Infrastructure
- Execution of Intellectual Property Strengthening and Protection Strategy
- Acquisition of International Standards/Specifications and Certifications

AI Autonomous Driving, Adding Intelligence to Logistics

THORDRIVE



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Appendix

ACHIEVEMENT

Technology Patents

ThorDrive is accumulating proprietary autonomous driving technology through the application and registration of 28 patents (20 domestic, 8 international).

	KR Domestic	Overseas
Applied	10	4
Registered	10	4
Sub-Total	20	8
Total	28	

Key Patents

	Tech Area	Title	Number
KR Domestic	Core	· Apparatus and Method for Simulation based on External Trigger Information (2024)	10-2022-0157995
	Perception	· System for Generating Long-Range Object Data Using Aerial Detection Data (2024)	10-2024-0176161
		· Apparatus and Method for Detecting Occlusion Status of a Camera (2022)	10-2022-0157993
		· Data Processing System And Method for Fusion of Multiple Heterogenous Sensors (2022)	10-2020-0112791
	SLAM	· Apparatus and Method for Inspecting High-Precision Map Data (2024)	10-2024-0176382
		· Apparatus and Method for Localization Using Environmental Information (2023)	10-2023-0005215
		· Efficient Map Matching Method for Autonomous Driving and Apparatus thereof (2023)	10-2019-0166900
	Control	· Driving System and Method for Autonomous Vehicles Near Blind Spots (2024)	10-2024-0101221
Overseas	Core	· Apparatus and Method for Simulation based on External Trigger Information (2024 | US, Japan, Europe)	US18/688537 JP202408108 EP24176753.2
	Perception	· Sensor Fusion-Based Object Detection System and Method for Objects with a Complex Shape or Large-Size (2025 | US)	US17743290
	SLAM	· Data Processing System And Method for Fusion of Multiple Heterogenous Sensors (2022 | US)	US16561882
		· Method for Estimating Position of Ego Vehicle for Autonomous Driving and Autonomous Driving Apparatus (2021 | US)	US16262289

National Project Experience

ThorDrive has laid the foundation for autonomous driving technology through the execution of national autonomous driving projects.

No	Project Title	Content	Subsidy Allocated to ThorDrive (Million KRW)	Period	Institutions Participated	Relevant Ministry
1	Development of Technology for Road Traffic Infrastructure Monitoring and Emergency Recovery Support Service	Development and Demonstration of Technology Capable of Supporting Road Infrastructure Monitoring and Emergency Recovery Services Using Autonomous Driving-Based Monitoring Vehicles	3,737	Apr 2021 ~ Dec 2026	Korea Expressway Corporation, Ajou University, The Korea Transport Institute, and 6 Other Institutions	Ministry of Land, Infrastructure and Transport (MOLIT)
2	Development of Test Scenario Generation and Multi-Agent-Based Simulation Software Technology for Edge-Connected Urban Autonomous Driving Service Verification	Development of Core Software Technology for Generating and Simulating Test Scenarios for Verification in a Virtual Environment Operating Multiple Edge-Connected Autonomous Vehicles	1,267	Apr 2021 ~ Dec 2025	Intelligent Automotive Parts Promotion Institute (IAAP), MORAI Co., Ltd., and 3 Other Institutions	Ministry of Science and ICT (MSIT)
3	Development of Commercialization Technology for Autonomous Driving AI Software Platform and Tool Chain Based on Standard Architecture	Development of a standard framework supporting multiple complex AIs, and optimization and demonstration of autonomous driving complex perception functions and standard control functions	1,308	Apr 2021 ~ Dec 2025	Korea Automotive Technology Institute (KATECH), Hyundai AutoEver, Seoul National University, and 3 Other Institutions	Ministry of Trade, Industry and Energy (MOTIE)
4	Development of Shared Autonomous Driving Shuttle Platform Technology for Untact Services	Analysis of Autonomous Driving System Requirements and Design-Development-Verification-Improvement of Shared Shuttle Autonomous Vehicle HW/SW	1,147	Apr 2021 ~ Dec 2024	Iroom AT, Chonnam National University, and 3 Other Institutions	Ministry of Trade, Industry and Energy (MOTIE)

Autonomous Driving Experience

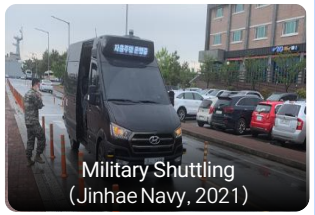
ThorDrive has proven its technological scalability and commercialization capability by verifying its autonomous driving technology across multiple services and vehicle types.

AD-Applied Service

Passenger


Campus Robo-Taxi
(Seoul, 2015)

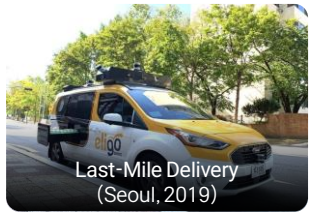

Airport Passenger Shuttling
(KR ICN, 2020)


Military Shuttling
(Jinhae Navy, 2021)

Delivery


Last-Mile Delivery
(US CA, 2017)

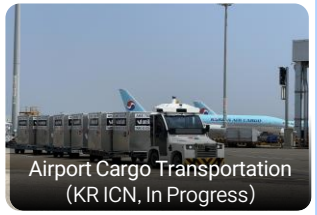

Last-Mile Delivery
(US CA, 2018)


Last-Mile Delivery
(Seoul, 2019)

Air Cargo


Airport Cargo Transportation
(US CVG, 2022)


Airport Cargo Transportation
(US SDF, 2022)


Airport Cargo Transportation
(KR ICN, In Progress)

AD-Applied Vehicle Type

GENESIS


G80

KIA


NIRO EV


SM6

TLD


JST-30E

WOLLARD INTERNATIONAL


M40D

TUG


MA50

HYUNDAI


SOLATI


STARIA

Ford


Transit


Transit Connect

Recent Progress by Business Area

2023. 09 — Designed Autonomous Driving System

- Autonomous Vehicle Hardware Modification and Software Function Optimization
- 3D High-Precision Map Generation for Cargo Logistics Movement Areas within Incheon International Airport

2024.06 — Revised Movement Area Safety Manual

- Establishment of Autonomous Driving Testing Procedures within the Incheon International Airport Corporation's Movement Area Safety Guidelines
- Approval of Changes to the Incheon International Airport Movement Area Safety Guidelines by the Ministry of Land, Infrastructure and Transport (MOLIT)

2024.10 — Executed Autonomous Driving Pre-Confirmation

- Execution of initial autonomous driving verification and establishment of administrative foundation
- Acquisition of the Pre-Confirmation Drive Qualification for Autonomous Operation, excluding aircraft crossing sections

2024.12 — Acquired AD Qualification within a Restricted Airport Area

- First Autonomous Driving Company to Enter the Domestic Airport Environment
- First Attempt at Domestic Regulatory Standardization Related to Autonomous Driving within Airports

2025.05 — Started to scale up cooperation with Japanese National Airline (‘A’) for Autonomous Driving of Airport Logistics Vehicles

- Domestic First: Receipt of Letter of Intent (LOI) from a Japanese Airline and Concretization of Cooperation for Entry into Japanese Airports
- Expanding the Scope of Cooperation, including Tug Cars and Commercial Trucks

2025.06 — Participated in the International Air Transport Association (IATA) Airport Logistics Vehicle Autonomization

- Official Member of Strategic Working Group for International Guidelines on Airport Logistics Vehicles and FMS
- Participation in Global Regulatory Standardization Proposals and Securing Global Aviation Leadership

Present — Signed a Quadripartite Subsidiary Agreement and MOU with Incheon International Airport, Korean Air, and Korean Airport Service

- Concretization of practical technology application and operational plans aimed at commercialization by 2027

Collaboration Partners

ups · DHL · Incheon Airport · KOREAN AIR · ANA · CHANGI airport singapore · Lufthansa · IATA · ZIN Corporation ZENITH INFORMATION NETWORK · Near Solution

Recent Progress by Business Area

2024.06 — Planned a New Business for Autonomous Driving Robots Based on Logistics Automation

- Initiation of a new AMR-based logistics automation business utilizing proprietary autonomous driving technology
- Multi-faceted planning including high-volume heterogeneous operation, transport optimization, and integration of collaborative intelligence

2024.07 — Initiated Design and Development for Low-Floor (Flatbed) AMR System for Indoor Logistics

- Design of HW and SW based on Autonomous Driving and Multi-Agent Technology
- Simultaneous Planning and Initiation of Development for Basic FMS

2025.03 — Initiated Design and Development for Low-Floor (Flatbed) AMR System for Indoor/Outdoor Integrated Logistics

- All-weather-responding HW and SW design, covering medium-payload logistics centers to public roads connecting logistics sites, open areas, etc.
- Completion of basic FMS development and initiation of planning and development for Integrated FMS (Control, Mapping, Robot, Task)

2025.06 — Launch of ThorDrive's AMR Brand 'T-RAX'

- Expression of commitment to commercializing new products through the launch of a proprietary brand
- Utilization of unique product names for each product type, including low-floor, ground-type, and outdoor logistics models

2025.07 — Launch of Low-Floor AMR 'T-RAX Indoor' for Indoor Logistics

- Expression of commitment to commercializing new products through the launch of a proprietary brand
- Utilization of unique product names for each product type, including low-floor, ground-type, and outdoor logistics models

2025.06 — Participation in the International Air Transport Association (IATA) Airport Logistics Vehicle Autonomization

- Launch of the low-floor AMR lineup through proprietary autonomous driving technology and HW partnerships
- Feasible SaaS application within warehouses by payload type through application diversification (e.g., flatbed-type etc.)

Signing of MOU with Near Solution for End-to-End Logistics Automation

- Cooperation for the establishment of smart factories and logistics automation through WES-Autonomous Driving technology collaboration
- Enhancement of logistics system interfacing flexibility

Present — Accelerated Development of Ground-Type AMR 'T-RAX Omni' for Indoor/Outdoor Integrated Logistics

- Development expected to be completed by September 2025, with launch scheduled for October

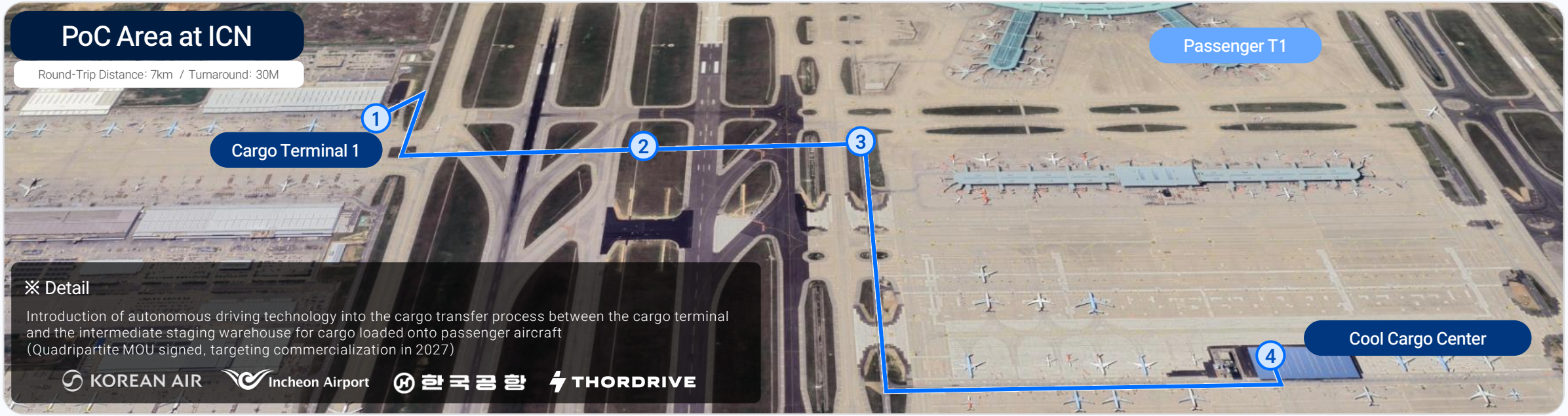
Collaboration Partners

Appendix

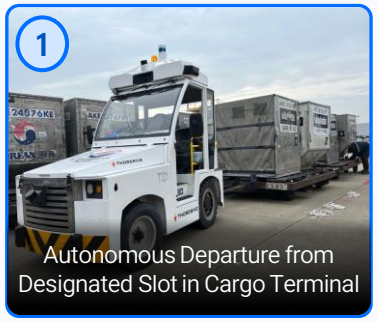
CARGO TRACTOR AT AIRPORT

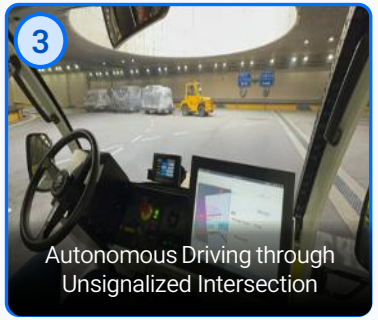
Autonomous Cargo Tow Tractor at Incheon International Airport (ICN)

We are currently conducting autonomous driving demonstrations between key hubs within the airport cargo movement handling process, where autonomous transit between hubs, based on a semi-automated process, is expected to reduce the necessary handling manpower.

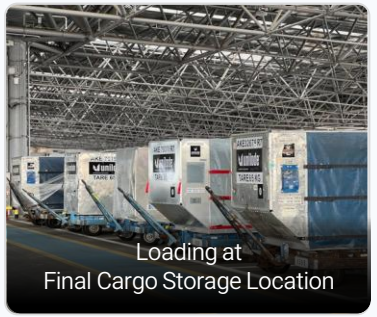


Worker Deployment within Hub





Autonomous Driving Movement Between Hubs



Worker Deployment within Hub

Appendix

VALUATION BENCHMARK

Valuation Benchmark

As of August 2025

Status of Autonomous-Driving-Related Companies (Listed)

Company Name	Business Area	Market Value	PSR
Aurrigo	Autonomous Logistics Vehicles	29M GBP	3.3X
TXR Robotics	AMR	185B KRW	3.8X
Clobot	AMR	660B KRW	19.7X
Yujin Robot	AMR	416B KRW	17.2X
Robotiz	AMR, Humanoid, Actuator	1.32T KRW	10.1X
Geek+	AMR	2.8B USD	8.3X
MiR	AMR	Acquired by Teradyne in 2018 (272M USD)	

Investment Status of Autonomous-Driving-Related Companies (Private)

Company Name	Business Area	Growth Series	Accumulated Investment Received	Post/Pre-IPO Value
Westwell	Autonomous Logistics Vehicles	Series E	Over 120B KRW	973M USD
Autonomous A2Z	Non-Logistics Autonomous Mobility	Series C	82B KRW	280B KRW
Seoul Robotics	LiDAR Infrastructure for Autonomous Logistics Vehicles	Pre-IPO	Over 42B KRW	300B KRW
Mobyus	AMR	Series B	54B KRW	-
Twinny	AMR	Series C	Over 30B KRW	130B KRW
Neubility	AMR	Series B	Over 29B KRW	-