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Supplementary Documentation
to the financial report for the first quarter
of the fiscal year ending March 2024

August 14, 2023

Eyes to the all machines

kudan

- **Product-related projects have accelerated toward the expansion of product-related revenue**

  - Although full-scale expansion of product-related revenue is expected in the second half of the fiscal year, the pace of orders and deliveries of customer products, especially in the mapping area, is accelerating. Continued product enhancements, including the commercial launch of a productization package for mapping that is jointly developed with Vecow

  - In the robotics area, customer projects for Intel products have been expanded. In addition, we have developed a productization package for robots, which serve as "priming" for further customer commercialization expansion, and acquired many new projects from automotive OEMs and major manufacturing companies

- **In evaluation and development phase projects, new projects have increased mainly overseas due to measures to boost product-related revenue[*], and existing projects have also progressed steadily**

  - Expanded both mapping and robotics projects with major global manufacturing companies in the U.S. and other countries. Solution platform business has also started to expand overseas, including Europe, and several demonstration tests are in progress

  - On the other hand, the number of projects expected to be delivered in the second half of the fiscal year has increased more than before, partly due to the impact of scaling projects. As a result, 1Q revenue declined YoY.

[*] See p. 34-35 of the Appendix for information on measures to boost product-related revenue implemented since the previous fiscal year

Performance overview

- Although business has progressed mainly in product-related projects, revenue declined YoY in 1Q as the majority of revenue from evaluation and development projects and product-related revenue are expected to be recorded in the second half of the current fiscal year

- A large amount of foreign exchange gains of 244 million yen from intragroup receivables and payables were recorded in non-operating profit due to continued foreign currency appreciation

(Unit : million yen)

	Performance for 1Q of FY2023	Performance for 1Q of FY2024	Forecast for FY2024	Change (from the performance for 1Q of FY2023)	Performance For FY2023 (Reference)
Net Sales	**103**	**54**	**520**	**△47.6%**	**332**
Operating Profit	**△138**	**△184**	**△560**	**—**	**△598**
Ordinary Profit	**40**	**58**	**△520**	**45.9%**	**△394**
Profit Attributable to Owners of Parent	**37**	**55**	**△550**	**49.2%**	**△413**

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Project highlights

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	Projects toward customer commercialization	Productization package	Customer products

Robotics

Robots Related Companies (🇺🇸)
Completed development integration work on autonomous mobile robots for logistics warehouses and began testing in a large-scale environment

Robots Related Companies (🇺🇸)
Continue testing of autonomous mobile robots for hospitals in multiple environments

(🇯🇵 🇰🇷)
Progress in projects with heavy industry, automotive OEMs, and major manufacturing companies, mainly in Japan, using productization packages for robots

Intel (🇺🇸)
Expansion of customers using the product.
Aiming to further expand customer base further through joint market promotions.

Movel AI (🇸🇬)
Started small scale implementation for end customer

Mapping

Mapping system company (🇮🇳)
Started development of mapping device adopting Kudan technology

Mapping system company (🇺🇸)
Confirmed the effect of lower HW cost by adopting Kudan technology. Demonstrations for a wider range of environments are ongoing

Major telecommunication (🇯🇵)
Demonstration tests and various preparatory work are in progress for the commercial deployment of mapping services

(🇪🇺)
Progress on solution development projects utilizing a productization package for mapping

Vecow (🇹🇼)
Commercial launch of a jointly developed productization package for mapping

UCS (🇰🇷)
Accelerated pace of licensing orders

Other

Virtual technology company (🇯🇵)
Started providing technology for the development of Visual Positioning System optimized for 3D city models
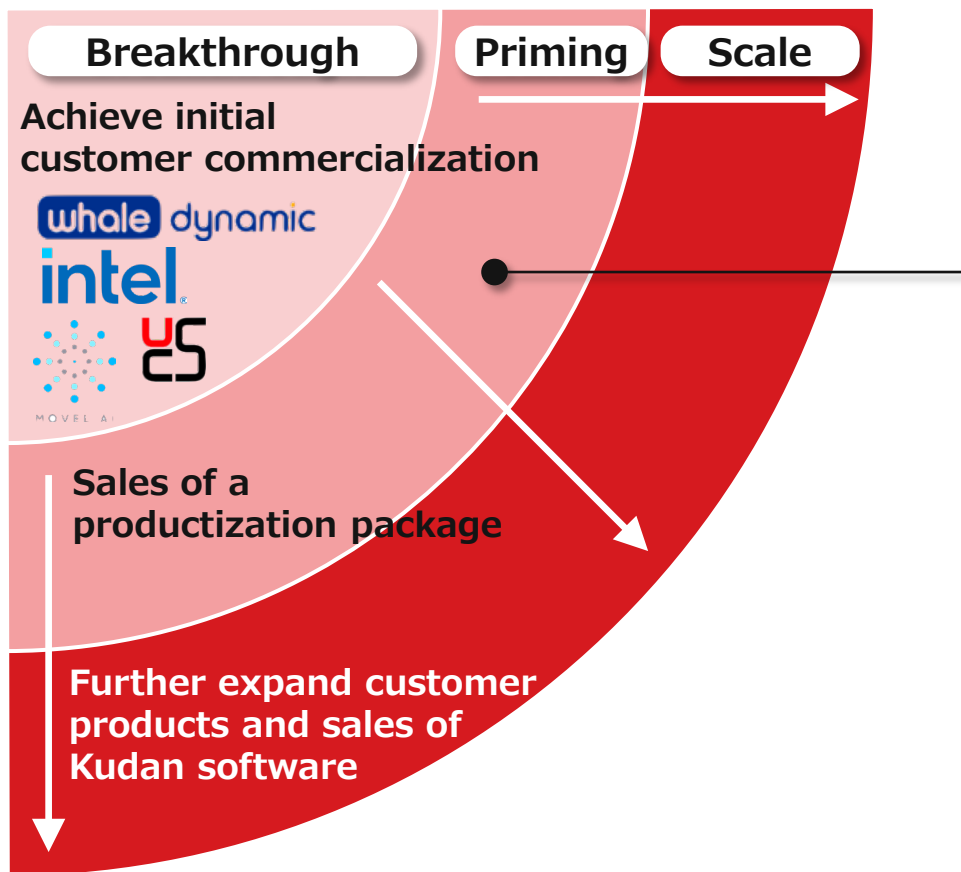
ERASMO (🇪🇺)
First multi-vendor integration test and road test for the EU autonomous driving project are completed as scheduled

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Release of a productization package for robots

— We have been developing a productization package for robots in addition to a package for mapping, backed by accumulated technologies for customer commercialization

Expanding business by selling a productization package

Breakthrough **Priming** **Scale**

Achieve initial customer commercialization

whale dynamic

intel

UCS

MOVEL AI

Sales of a productization package

Further expand customer products and sales of Kudan software

A package that shortens the development and test operation period of customer products and can also be directly put to practical use as products

Mapping

- Digital twin applications
- Already released in Nov. 2022
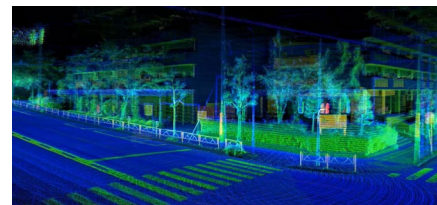
Robotics (New)

- **Autonomous mobility applications**
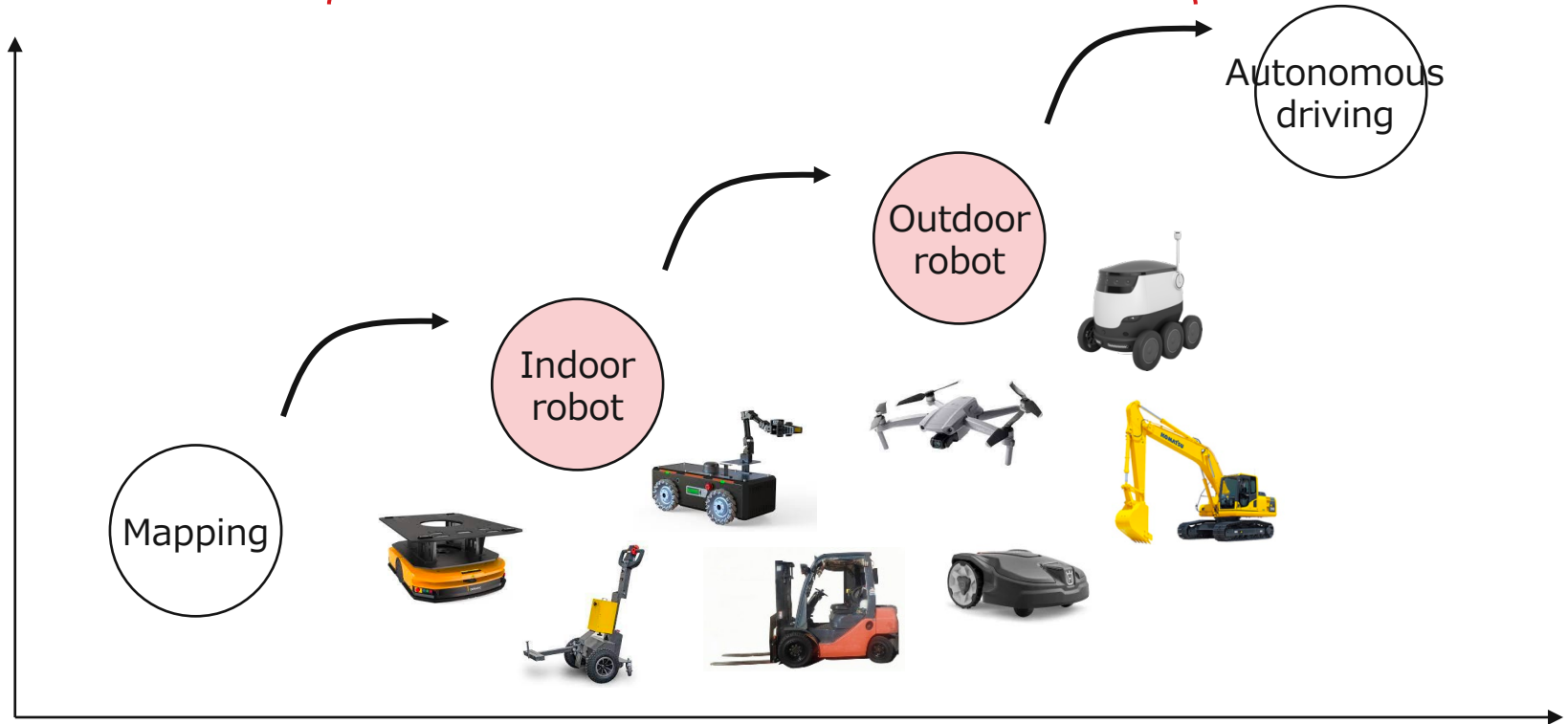- **Development in progress, 3Q release expected**

This expands and accelerates autonomous mobility projects for a wide range of robots

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– Already introduced on a trial basis in many new projects, including automotive OEMs and major manufacturing companies. Expand future robotics projects and accelerate customer commercialization.

A productization package for robots enables a wide range of autonomous mobility

Time to practical use

Autonomous driving

Outdoor robot

Indoor robot

Mapping

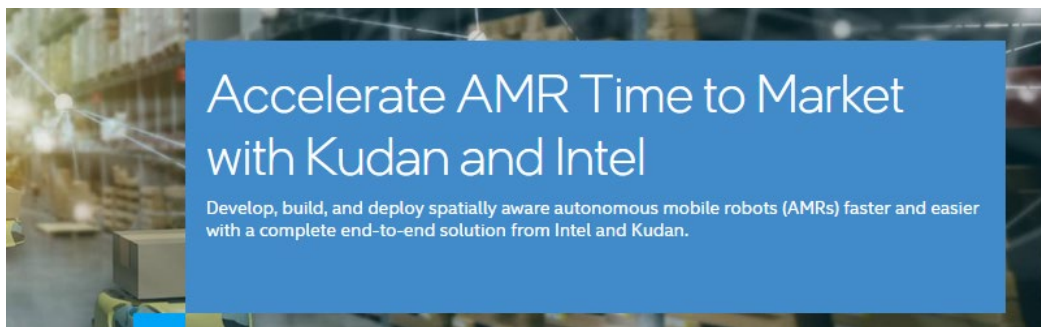Difficulty of technology application

Progress in partnership

— Enhanced a productization package for mapping and launched commercially in joint development with Vecow, an embedded technology manufacturer of Taiwan's Foxconn (Hon Hai) Group

- Embedded Vecow controller in a back-pack/handheld type of 3D mapping device
- Combination of Kudan's 3D-Lidar SLAM (KdLidar) and multi-sensor fusion technology with Vecow's time-synchronization technology to significantly improve accuracy, reliability, and overall quality in mapping
- In addition to joint development, both companies will jointly promote sales in the future. For product details, refer to the following URL

https://contents.xj-storage.jp/xcontents/AS02977/c9f95e82/4b4f/4867/9c43/e7bc57acbdf8/140120230804534983.pdf

— Joint marketing with Intel has increased the number of customer evaluation projects for Intel products embedded with Kudan SLAM. We expect to further expand our customer base through joint market promotions scheduled for this year.

(Reference) Product introduction on Intel's website
https://www.intel.com/content/www/us/en/partner/showcase/kudan/overview.html?wapkw=kudan

Appendix : Company Overview

Business Model

AP will be the basis for broad range of industries alongside AI

- The artificial perception technology provided by Kudan (providing machines with "eyes") both complements and operates in unison with artificial intelligence (providing machines with "brains") to allow a range of machinery (robots and computers) to move and function autonomously

Artificial Perception
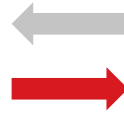
Artificial Intelligence

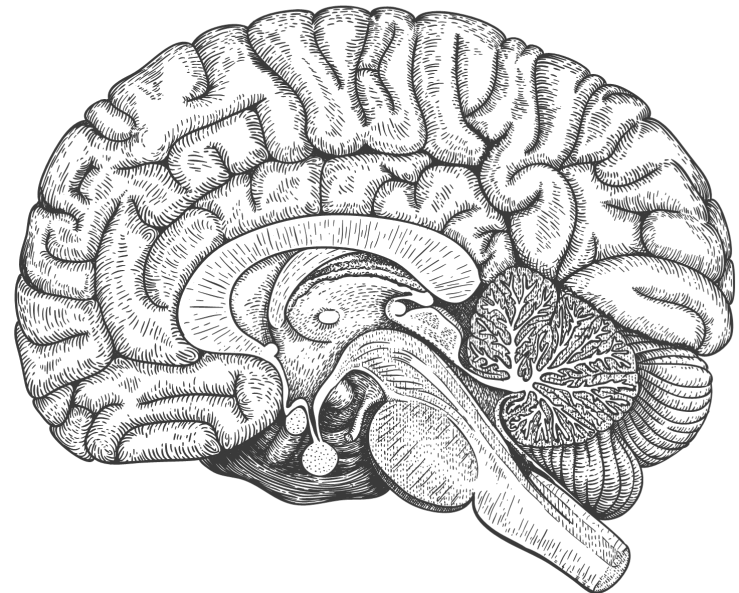||

||

**The "eyes" of machines, allowing them to perceive and understand their environment**

The "brains" of machines, allowing them to make appropriate decisions

Relation to the evolution of AI

− With the evolution of AI, the need for AP to connect machines and real space will continue to grow

From "Internet AI" that does not act directly in real space
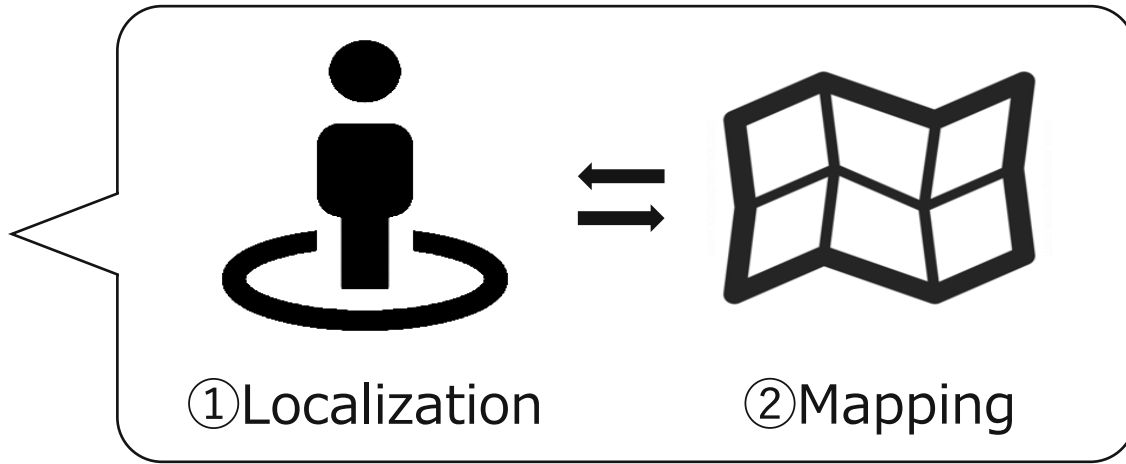
To "Embodied AI" that can act directly in real space
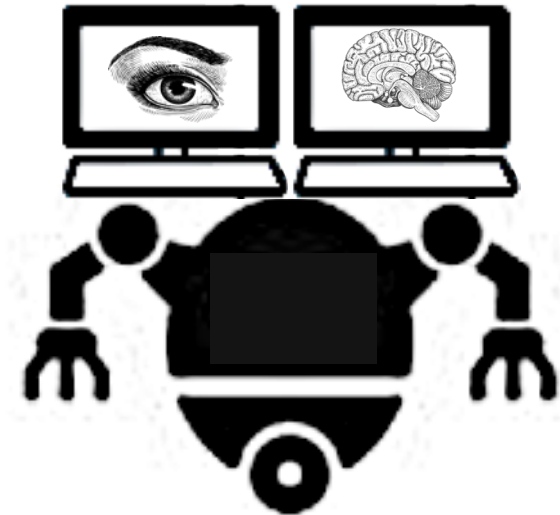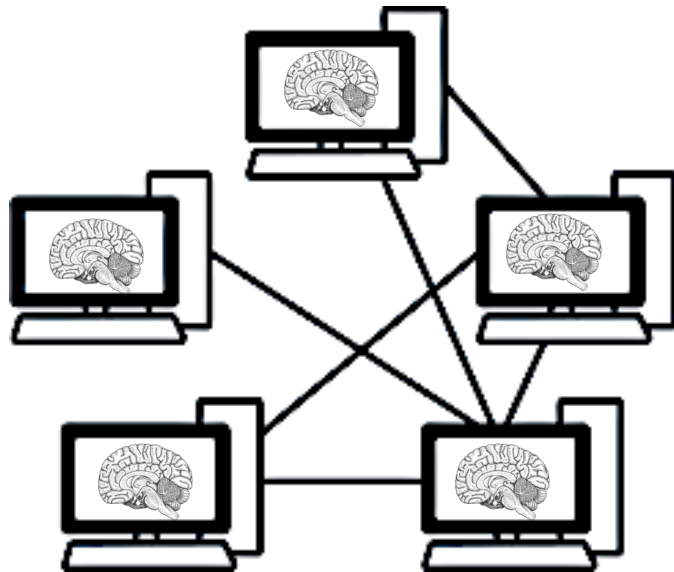
SLAM (Simultaneous Localization and Mapping) as the core of AP technology

- AP technology is a group of Deep Tech centered on SLAM (Simultaneous Localization and Mapping)

SLAM technology (Simultaneous Localization and Mapping)

①Localization   ②Mapping

Re-localization technology

Tight-coupling technology

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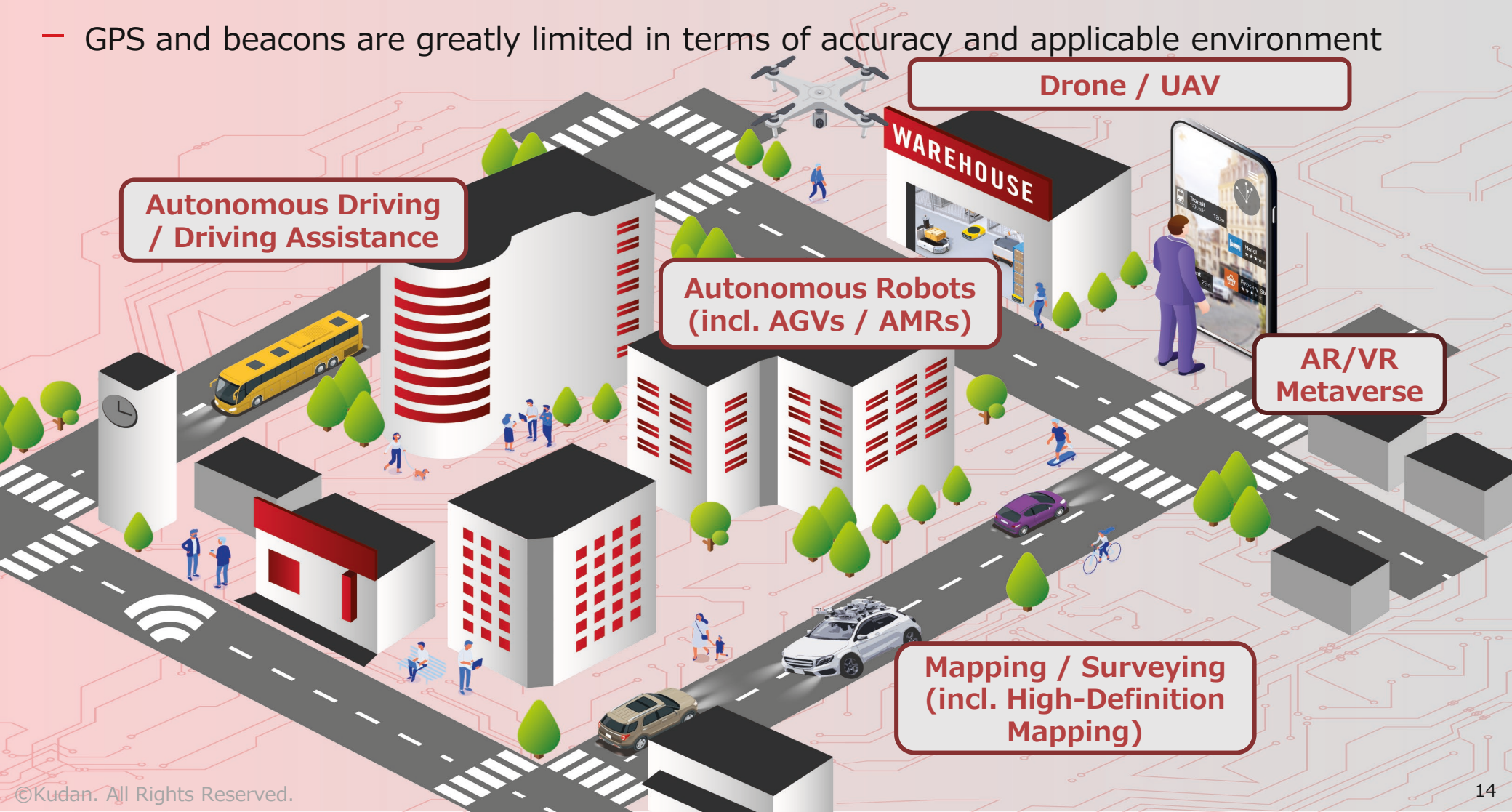# What is SLAM (Simultaneous Localization and Mapping)?

- Technology that simultaneously determines where we are (Localization) and what our surroundings look like (Mapping) based on input from sensors such as cameras and Lidars

- We can keep a track of how we move while creating a map in a new environment (tracking), and recognize where we are based on a map we created beforehand (re-localization)

- Unlike GPS and beacons, which use external radio waves to detect location, SLAM can recognize its own location as a stand-alone software and can be used in a wider range of environments, situations, and use cases

The view seen by the camera

Trajectory of movement

Position and direction of the camera

Environmental map created by SLAM algorithm

https://www.youtube.com/watch?v=011V9rZNjX0

* Refer to our YouTube channel (the URL below) for further demo movies of our technologies
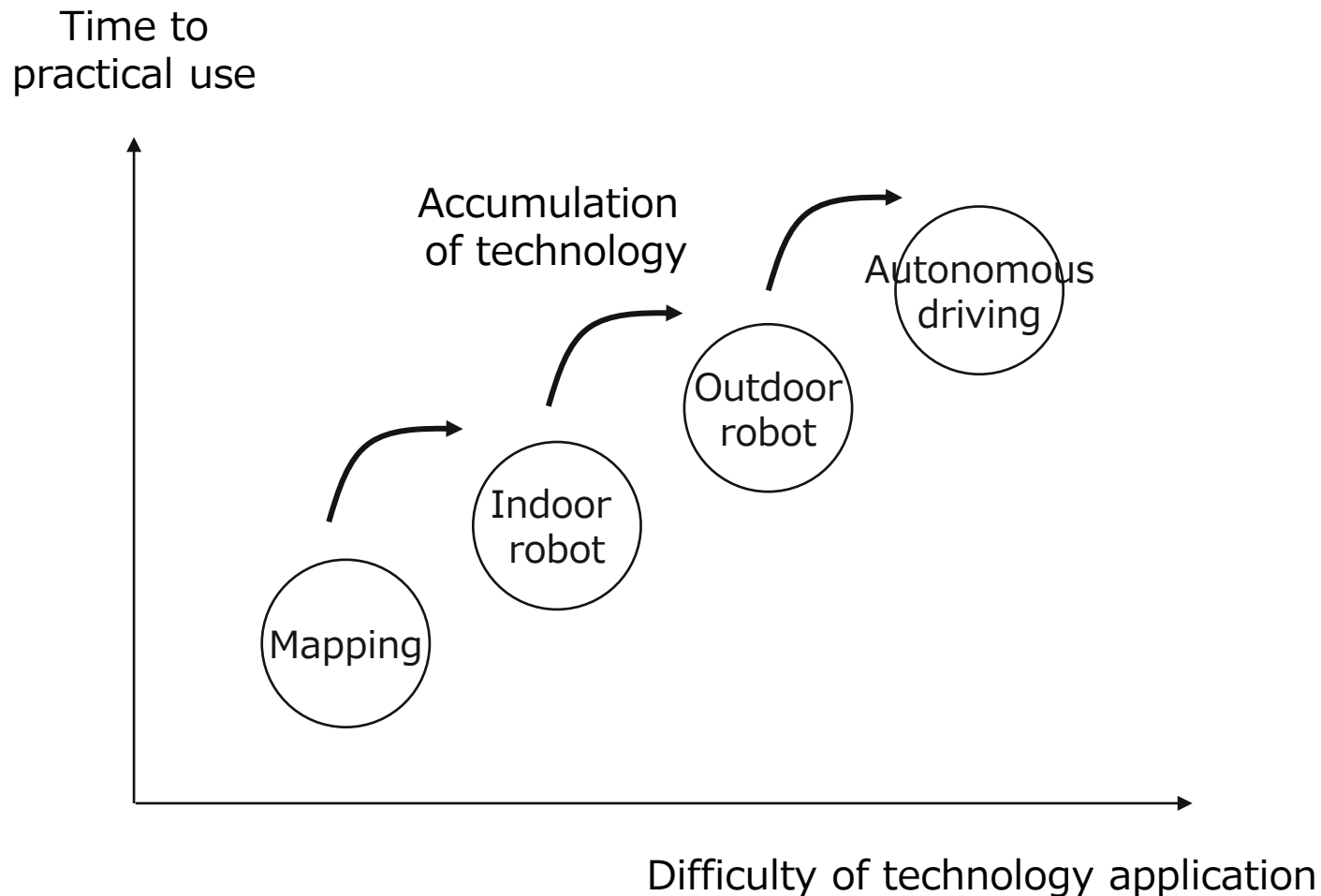https://www.youtube.com/user/KudanLimited/featured

Broad range of SLAM application

- Localization & Mapping technology centered SLAM is necessary in cases where moving machines and equipment need to change their subsequent movements and outputs depending on their positions and movements

- GPS and beacons are greatly limited in terms of accuracy and applicable environment

Drone / UAV

Autonomous Driving / Driving Assistance

Autonomous Robots (incl. AGVs / AMRs)

AR/VR Metaverse

**Mapping / Surveying (incl. High-Definition Mapping)**

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Broader applications through accumulation of technology

- Proceed strategically to realize full automation in stages in each area and realize subsequent applied technologies

Time to practical use

Accumulation of technology

Autonomous driving

Outdoor robot

Indoor robot

Mapping

Difficulty of technology application

# Evolution of the technological axis (evolution of the eye)

- Full automation is difficult to achieve through the accumulation of non-automatic and semi-automatic technologies

- Kudan's technology targets full automation
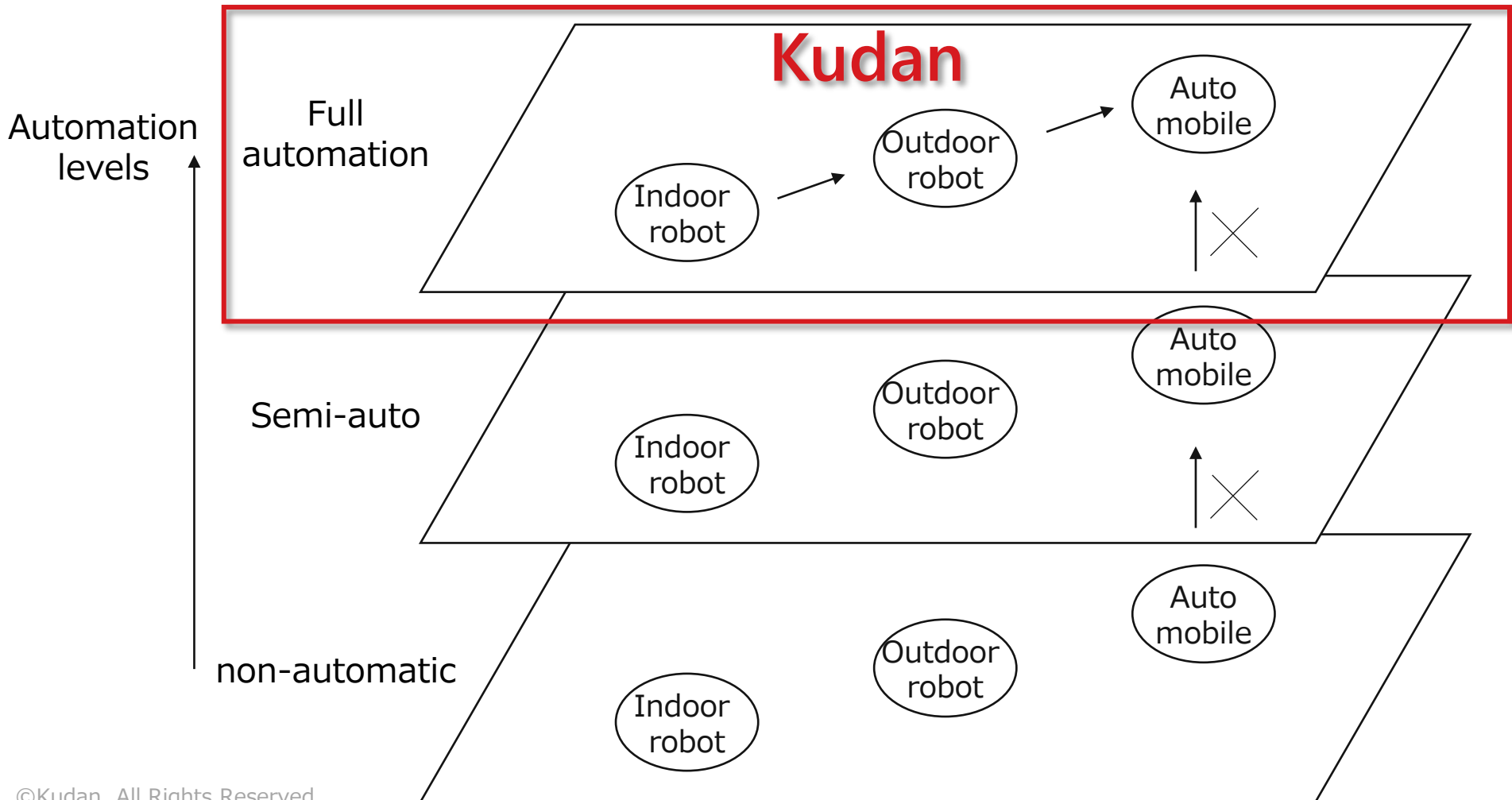
"ARM-like position" targeted by our small number of professionals

Layers of technology industries

Solution

Product

Applied technology

Deep Tech
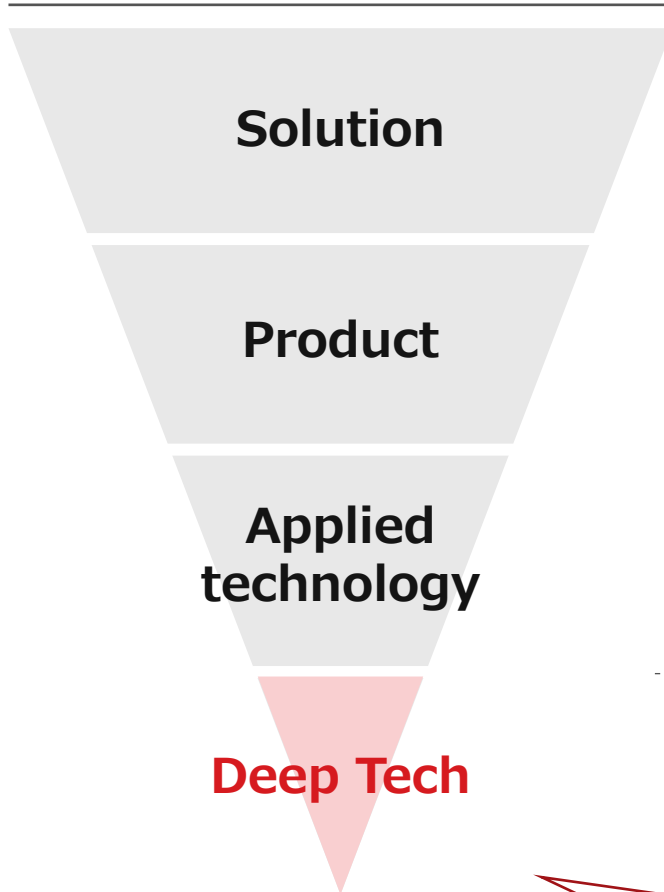
Players in Artificial Perception

- Operation and added-value services

- Products in robotics / wearable / mobility fields

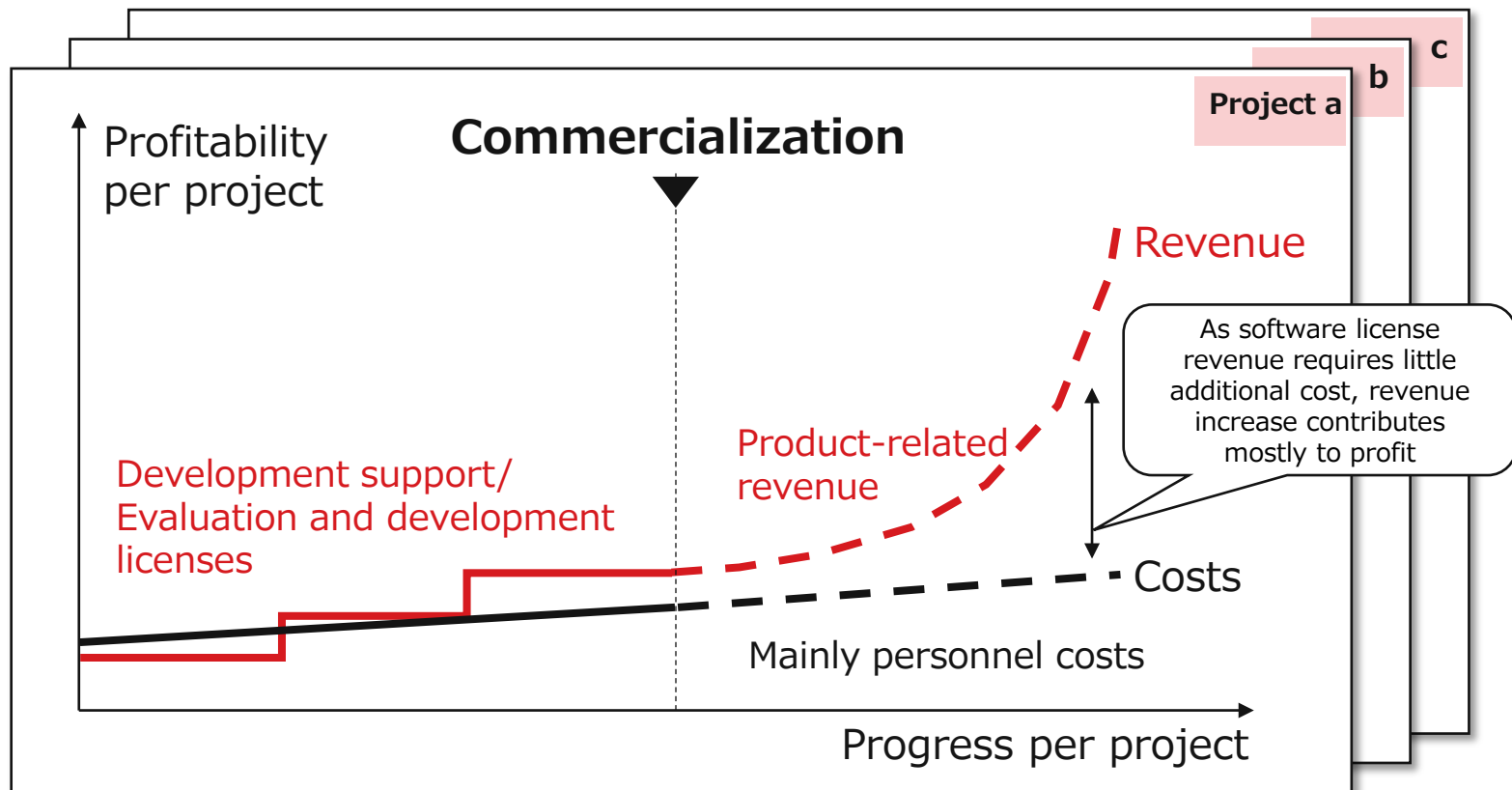- Packages with sensors and semiconductors

- **Algorithms** kudan
  (Software development & licensing business)

Maximum value with a small number of professionals, difficult to replace

Revenue model

- Currently, the majority of projects are in the "evaluation and development" phase, a business phase that is in the red due to prior investment in R&D expenses
- A certain scale of profitability and growth is expected in evaluation and development licenses/customer development support, but we aim to dramatically increase profit by building up significant product-related revenue through market penetration of technology by popularization of customer products

Profitability per project

Commercialization

Project a

b

c

Revenue

Product-related revenue

As software license revenue requires little additional cost, revenue increase contributes mostly to profit

Development support/ Evaluation and development licenses

Costs

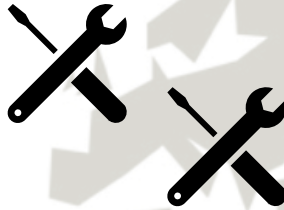Mainly personnel costs

Progress per project

Source of competitiveness

A "globally born" technical group

GB Bristol (R&D/Sales)
- Kudan group founded in 2011

JP Tokyo (Admin/Sales)
- Established in 2014
- Listed on TSE Mothers (currently, Growth) in 2018

US Silicon Valley (Sales)
- Established in 2020

DE Munich (R&D/Sales)
- Artisense founded in 2017
- Kudan's investment in Artisense in 2020
- Kudan's acquisition of Artisense in 2021

An elite company led by a world-class SLAM researcher
- Dr. Cremers, Chief Professor, Technical University of Munich
- 63,000 citations of his work in academic papers, h-index 116

Demand for technology that is not open-source and has been professionally developed for commercial use

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	Artificial Intelligence	**Artificial Perception**
Characteristic	▪ Algorithm is simple（several hundreds of lines）	▪ Algorithm is complex（several hundred thousand lines）
Development environment	▪ Can be completed on Internet	▪ Hardware integration and demonstration in a real-world environment are essential
Open-source	▪ Practical	▪ Not practical
Technological competitiveness	▪ **Quality and quantity of data**（**= capital strength** ）	▪ **Accumulation of development capabilities and technological demonstrations**

Specialized companies like Kudan are developing the technology with a rare talent pool
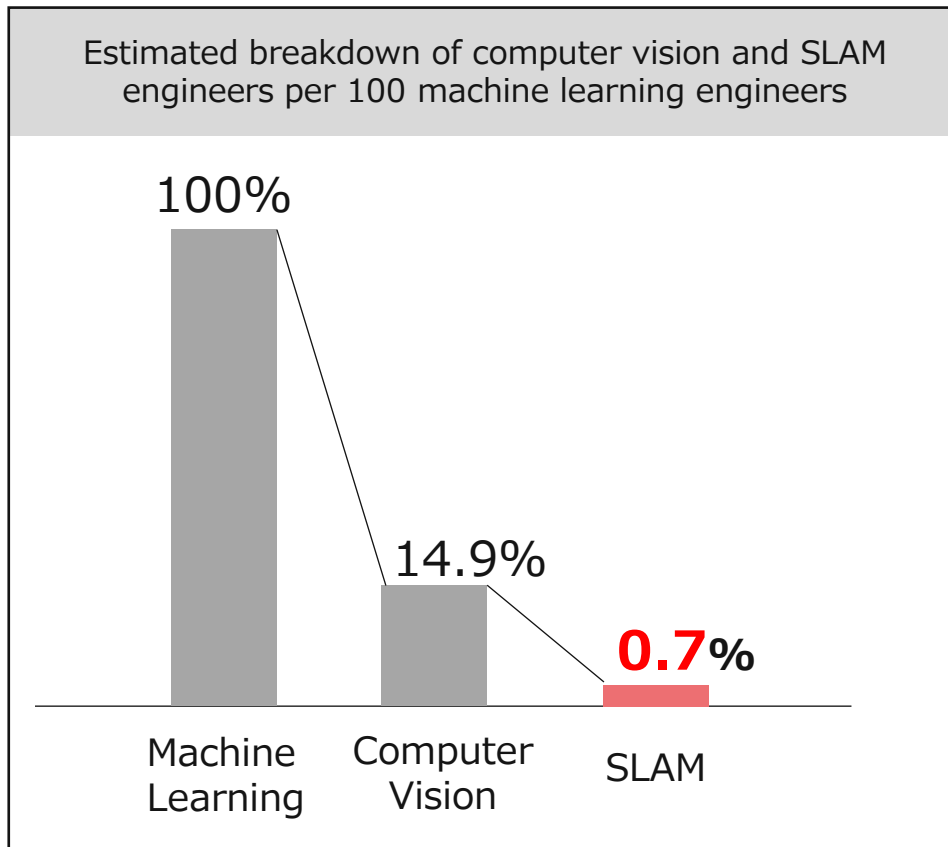
Acquired world-class technical team to support R&D

Researchers and engineers specializing in SLAM technology are extremely rare, even in the field of computer vision. Despite this, Kudan and Artisense employ many world-class professionals with PhDs in the field

University of BRISTOL   Technical University of Munich **TUM**

There is our CSO, Professor Cremers

Estimated breakdown of computer vision and SLAM engineers per 100 machine learning engineers

100%
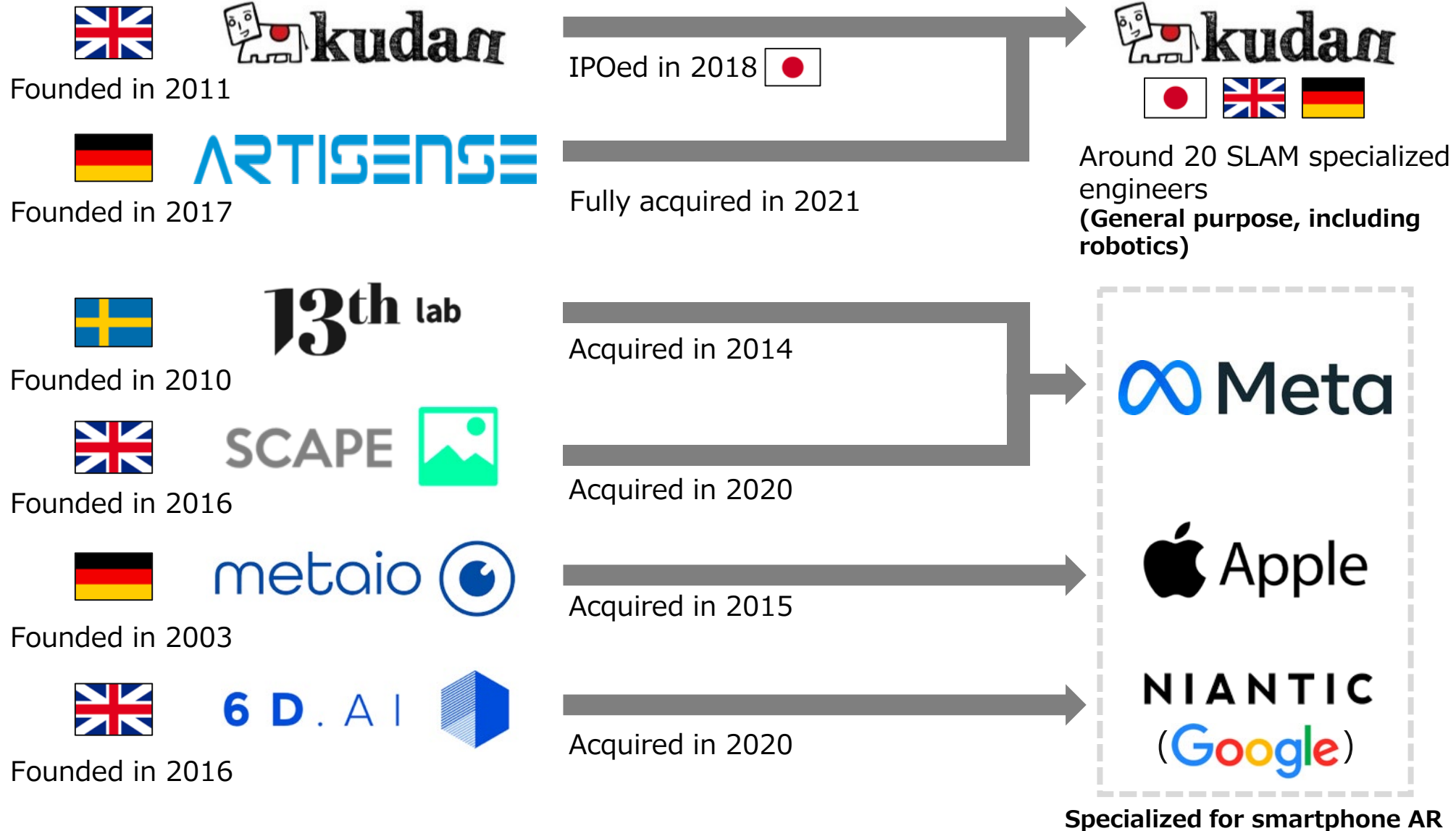
14.9%

0.7%

Machine Learning   Computer Vision   SLAM

*Based on a LinkedIn search

Other companies trying to organize SLAM engineer teams of the same level and scale will require large investments in both recruitment and labor costs

Related technologies are acquired in the world, only a few independent SLAM development companies left

Kudan
🇬🇧 Founded in 2011
IPOed in 2018 🇯🇵

ARTISENSE
🇩🇪 Founded in 2017
Fully acquired in 2021

→ kudan
🇯🇵 🇬🇧 🇩🇪
Around 20 SLAM specialized engineers
(General purpose, including robotics)

13th lab
🇸🇪 Founded in 2010
Acquired in 2014

SCAPE
🇬🇧 Founded in 2016
Acquired in 2020

→ ∞ Meta

metaio
🇩🇪 Founded in 2003
Acquired in 2015

→ 🍎 Apple

6 D . A I
🇬🇧 Founded in 2016
Acquired in 2020

→ NIANTIC (Google)

Specialized for smartphone AR

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While the increase of acquisitions of the related technologies, Kudan leads the market in track record and awareness

- More limited numbers of SLAM-focus / SLAM-feature software companies due to acquisitions by larger technology companies
- Kudan has been in a leading position in terms of breadth of offering, track record and awareness in the market

SLAM-focus / SLAM-feature software player

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- Offers Indirect & Direct Visual SLAM and Lidar-SLAM
- Flexible sensor options
- Track records in various applications such as AR, robotics and autonomous driving

SLAMCORE

- Only Indirect Visual SLAM
- Optimized for limited camera models

sevensense

- Only Indirect Visual SLAM
- Optimized for specific cameras, focus only on robotics area

VanGogh Imaging

- Focus on very specific medical application

outsight

- Only Lidar-SLAM
- Optimize for their own hardware kit

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# Development projects and partnership with global leading players have been increasing

Timing		Main target applications and project overview	
FY20	May.	**Robotics**) Partnership with Thales group for next-gen tracking system development	THALES
	Aug.	**Mobility**) Signed with Japan Unisys to collaborate as Business Scaling Partner	UNISYS
	Sep.	**Mobility**) Partnership with Macnica to develop new value-added solutions for mobility business	macnica
		Robotics, Mapping) Partnership with Ouster. Provide localization and mapping solutions with Lidar	OUSTER
	Nov.	**AR**) Develop RGB-D SLAM on smartphones with ToF sensor with Sony Semiconductor Solutions	SONY
	Jan.	**Robotics, Mapping)** Partnership with Cepton on Lidar-SLAM and joint exhibition demo	CEPTON
		Robotics, Mapping) Partnership with Velodyne on Lidar-SLAM	Velodyne Lidar
FY21	May	**Robotics**) Launch SLAM library for Qualcomm® Robotics RB3 Platform with their technical support	Qualcomm
		Robotics) Joint development of 3D SLAM demo application with Analog Devices	ANALOG DEVICES
	Nov.	**Robotics**) Partnership with Vecow to jointly offer integrated solution for autonomous mobile robots	Vecow
		AR, Mobility) Artisense released Automotive AR navigation demo with HERE technologies and NNG	here NNG
	Dec.	**General**) Achieved 40% image process acceleration with Synopsys ARC EV processor IP on Kudan SLAM	SYNOPSYS
	Mar.	**General**) Joined NVIDIA Inception Partner Network	NVIDIA
FY22	Apr.	**AR**) Released utilization of Kudan SLAM in NTT docomo's developing AR cloud	docomo
	May.	**Robotics**) Partnership with robotics developer UGO to integrate Kudan SLAM into robotics and joint sales	ugo
	Jul.	**Mapping**) Signed a Developing License General Agreement with BIMEXPERTS and develop joint solutions	BIMEXPERTS
	Aug.	**Robotics**) Partnership with ADLINK, development of AMR, integration of Kudan SLAM into robotics, joint sales	ADLINK
		General) Joined Texas Instrument's partnership network in robotics	TEXAS INSTRUMENTS
		General) Become official SLAM partner with Ouster, a leading Lidar provider, and start offering tools on HP	OUSTER
	Oct.	**Autonomous Driving**) Participation with Renault and other companies in ERASMO, autonomous driving project by EU research institute	
FY23.24	Oct.	**Robotics**) Adopted as a commercial SLAM for Edge Insight, Intel's platform for AMR	intel
		Robotics, Mapping) Partnership with Innoviz to promote digital mapping project	INNOVIZ TECHNOLOGIES
	Apr.	**Robotics**) Partnership with Cadence to enhance SLAM performance for robotics	cadence

Achieve commercial-level customer commercialization

- **Progress exceeded expectations, mainly for robotics and mapping** (4 projects in total)
- Among them, full-adoption of commercial SLAM in a major semiconductor product is **the world's first achievement（Intel).**

Number of customer commercialization projects in FY2023
(cumulative total)

1Q	2Q	3Q	4Q

MOVEL AI
Robotics
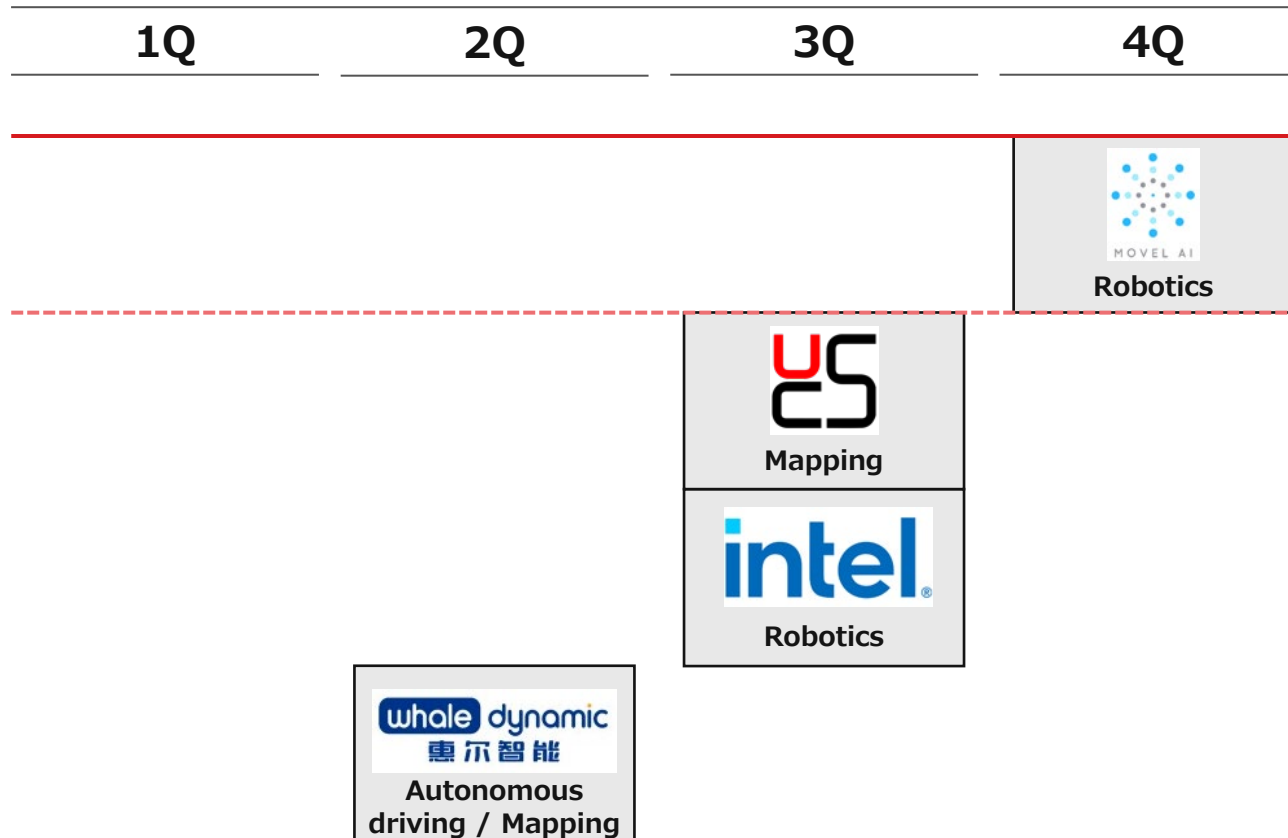
Achievements in FY2023 (4 in total)

The forecast as of May in FY2022 (3 in total)

UC25
Mapping

intel.
Robotics

whale dynamic
惠尔智能
Autonomous driving / Mapping

Product①: About Whale Dynamic

Company Overview:

|	
Name	Whale Dynamic Co.Ltd.
Represen-tative	CEO and Founder David Yufei Chang
Office	Shenzhen, China
Established	2017
Business	Development and sales of automated driving and intelligent transportation products

Whale Dynamic is an autonomous driving technology company, founded by David Chang, former senior product manager of Baidu's Apollo autonomous driving platform. The company holds a number of basic technology patents related to driverless vehicle, and its technology is widely used by many transportation providers, tier1 companies, and universities in China.

Technology and Product Development

Whale Dynamic has traditionally developed core element technologies and full-stack integration in the area of automated driving for passenger vehicles, and has transplanted these technologies into multi-purpose autonomous vehicles designed from zero-base. By employing a good balance of in-house developed and partner technologies for hardware and software, Whale Dynamic could quickly bring high-quality finished, mass-producible, and cost-competitive products to the markets.

Domestic and international industry organizations have recognized the company for its technological capabilities and high level of product perfection. In 2021, Whale Dynamic received several awards, including the Baidu Apollo's Excellent Team Award and Technology Innovation Award at the World Intelligent Vehicle Conference.
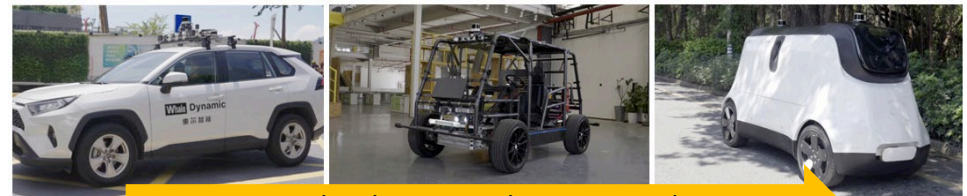
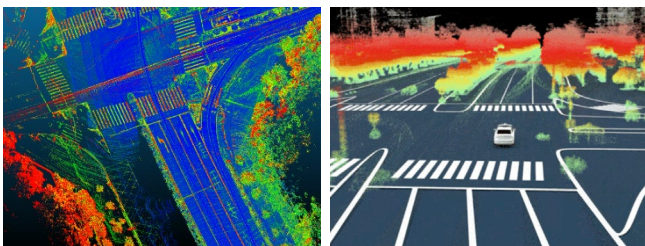Technology Development Path

Product①: Whale Dynamic Product Release

- As the autonomous driving market continuously grows, Kudan and Whale Dynamic have been in technology collaboration since 2021, to respond to the rapidly increasing market needs for driverless delivery and other autonomous mobility-related services.

- In July 2022, release of commercilized products integrated Kudan 3D-Lidar SLAM (KdLidar) is announced, along with purchase order of the project in Tier1 city in China. KdLidar integration enables highly accurate and robust mapping and positioning in dynamic changing environments.

- Two companies will further strengthen their technology collaboration, and partner in the sales of products to the global market and expand the sales in China.

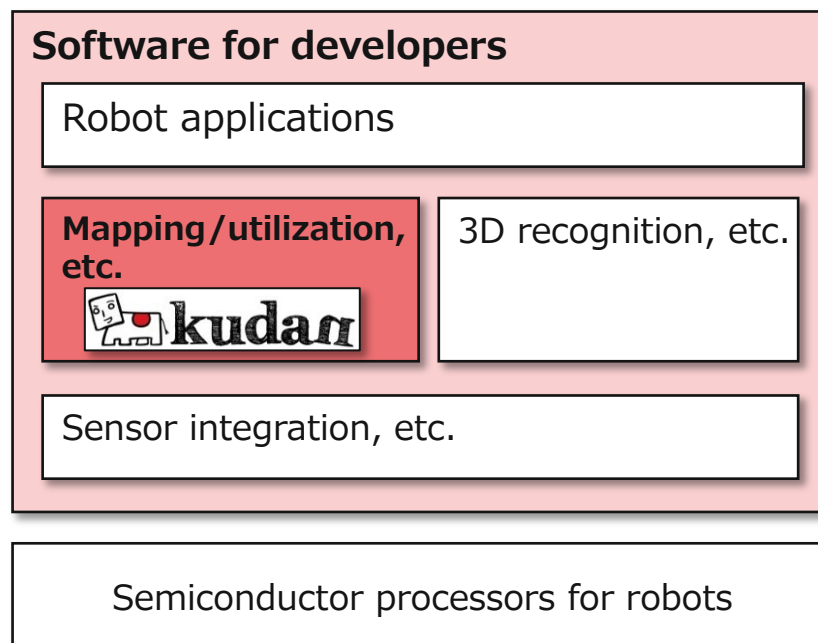| High-definition Mapping Kit	Multi-Purpose Autonomous Vehicle - WD1	Drivable Test Vehicle
• Consists of the mapping hardware kit and software toolchain for HD mapping. • Hardware can be easily installed in passenger cars as a mobile mapping system, enabling high quality data collection. • Software toolchain generates high-density point clouds and semantic HD maps with centimeter-level accuracy.	• As driverless delivery vehicle, it can operate autonomously as the electric vehicle on public roads in urban areas and perform various daily tasks. • Designed and developed from scratch, from hardware (including chassis) to software modules, the sophisticated design, detailed operational scenario design, and extensive on-road testing enables a wide range of use cases.	• Supports autonomous driving and manual driving in parallel, and is developed with good customization flexibility. • Fits for validation of autonomous driving technology by developers and researchers of autonomous service enterprises or academic institutions, and makes it possible to quickly conduct practical tests in reasonable cost levels.
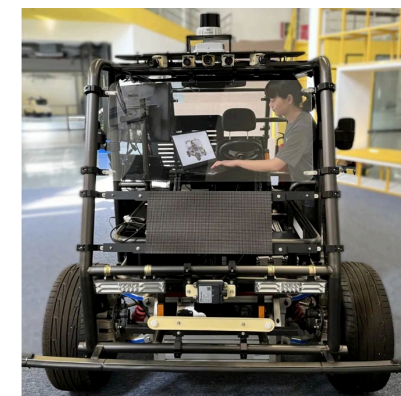
Product②: Adoption for the Intel product

- The world's first commercial SLAM fully adopted on a major semiconductor platform, as a company specializing in this technology area

- Intel's platform provides comprehensive software functions, in which our technology is a core module, for elemental technologies of next-generation autonomous mobility capabilities that robot manufacturers need to invest significantly in to develop in-house

- In addition, dedicated customization specifically for the linked Intel hardware chip delivers a significant improvement in SLAM performance

- This is expected to greatly eliminate hurdles to commercial development for robot manufacturers adopting Intel products and expand efficient and rapid practical application of autonomous mobile robots

Intel's package for robots*

Software for developers
Robot applications
Mapping/utilization, etc. kudan	3D recognition, etc.
Sensor integration, etc.

| Semiconductor processors for robots |
|---|

- Among the various software required for robot development, the mapping and utilization module is at the core of the product's autonomous mobility capability

- The software processing method is optimized to match the characteristics of Intel's semiconductor circuits, enabling extremely high-speed processing. This was achieved through joint development with Intel

[*] See below for detailed product information
https://contents.xj-storage.jp/xcontents/AS02977/0f99200a/333d/40c0/9924/c4b15824611d/140120221013544058.pdf

Product③: Product release with UCS

- Developed a handheld mapping device implementing Kudan technology in about 6 months with UCS, a Korean mapping solution provider, and have already sold several units. This proves the maturity of Kudan technology, which enables a customer to quickly develop and complete integration to a customer product.
- Kudan 3D-Lidar SLAM enables accurate mapping with an inexpensive sensor set, realizing product commercialization at a competitive price
- We will meet the high market demand for simple and affordable mapping solutions on a global level for a variety of applications, including research, surveying and inspection of forests, roads, buildings, and indoor facilities
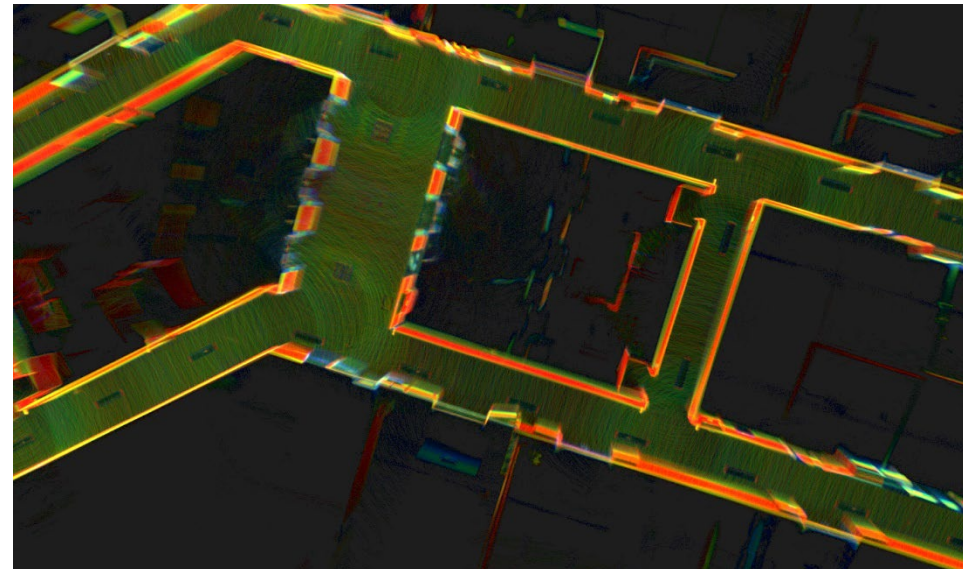
Product④: Product release with Movel AI

- Kudan Visual SLAM/3D-Lidar SLAM is incorporated into Seirios, an all-in-one commercial software solution for autonomous mobile robots (AMR) from Movel AI, a Singapore-based robot software company
- This will enable us to offer highly accurate navigation and fleet management solutions to our customers in the future
- The Kudan SLAM integrated solution is now available for the global market and is expected to have a commercial deployment on customer sites
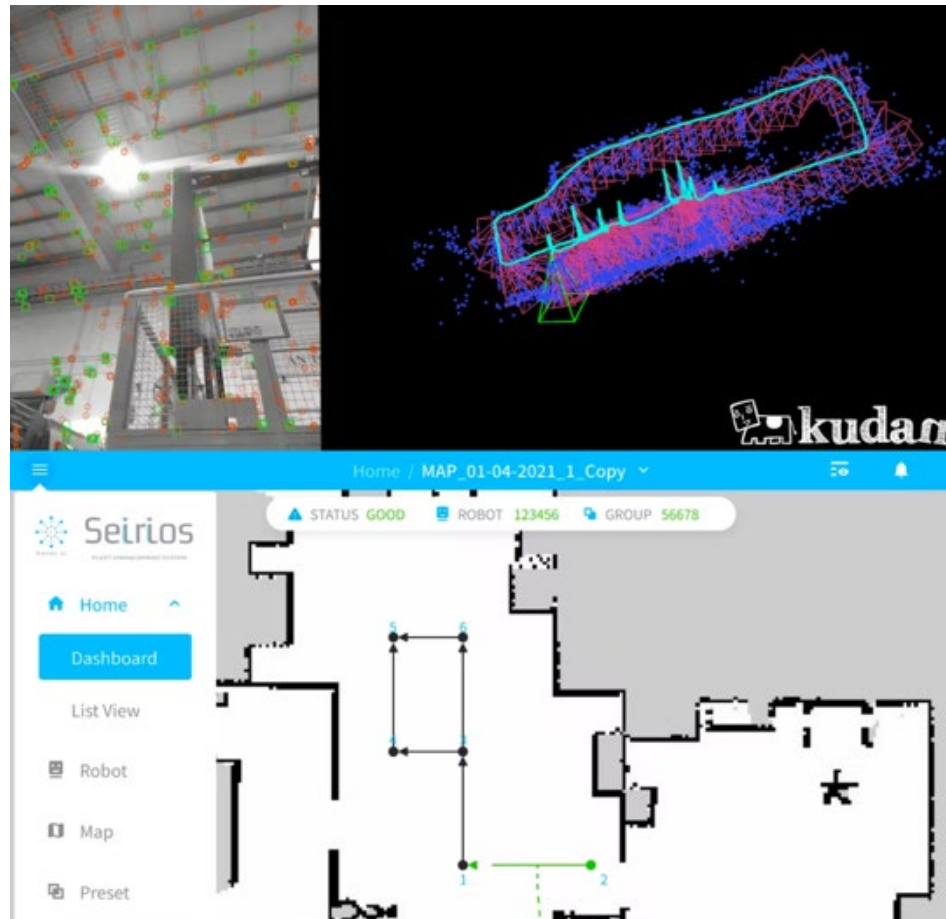
Completed integration of hybrid technology into customers' products

- Succeeded in making the world's first hybrid technology of indirect and direct SLAM as a commercial SLAM technology. By integrating the advantages of both methods, a significant improvement in basic performance has been achieved, which is expected to contribute to the expansion of the customer base in a wider range of applications

- In addition to application of the technology in customers' projects, integration of the technology into customers' products has been completed, and is expected to contribute to product-related revenue in FY24 onward

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Hybrid SLAM

- Faster processing without sacrificing recognition accuracy
- Higher stability without relying on individually optimized implementations

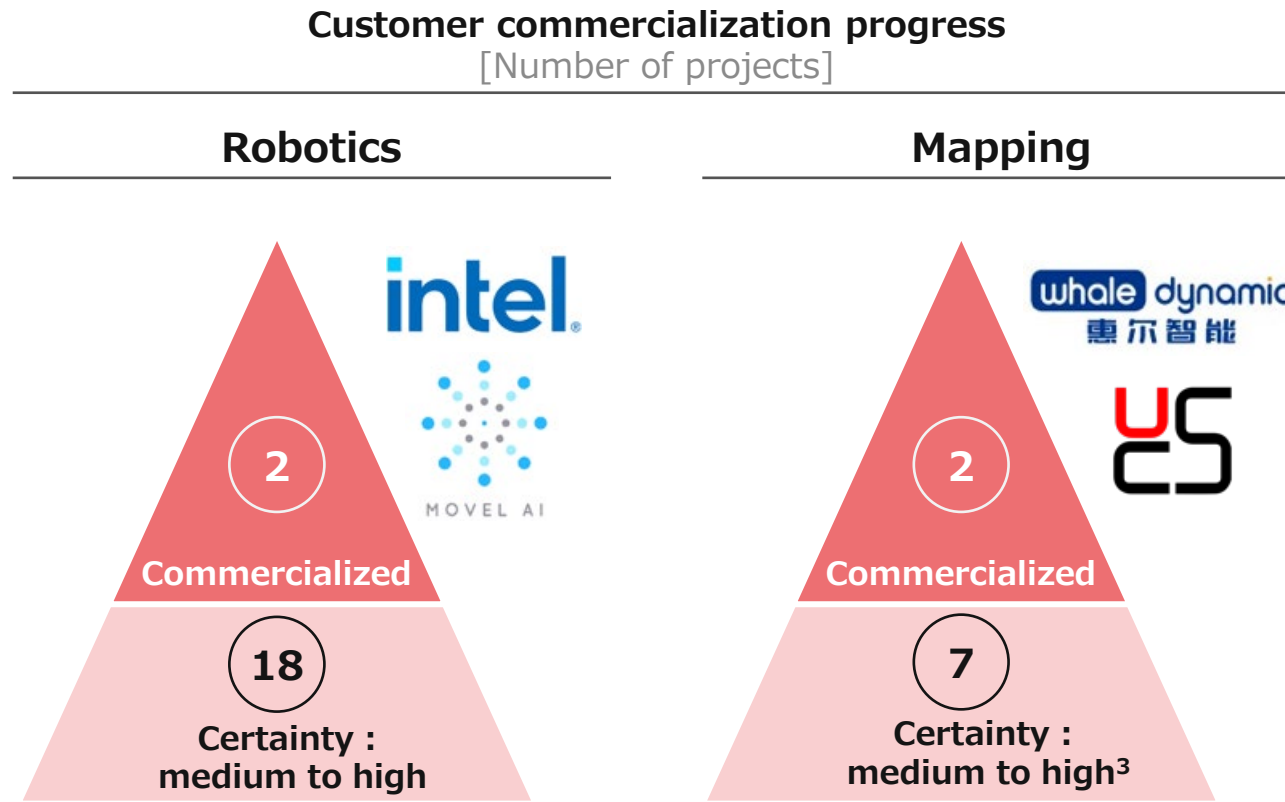| **Indirect SLAM**	**Direct SLAM**
• Fast processing, versatile	• Precise recognition, high stability
kudan	**ARTISENSE**

⊗

Future Growth Potential

Measures to boost product-related revenue ① : Narrowing down focus areas

- With the launch of customer commercialization, **revenue associated with customer products** (product-related revenue[1]) **are expected to become the main pillar of growth in the mid to long term, and Kudan is aiming for full-fledged launch of such revenue**

- **Narrowed down and focused on two markets, "robotics" and "mapping,"[2]** which have already been commercialized and **are expected to launch quickly in the future**

Customer commercialization progress
[Number of projects]

Robotics	**Mapping**

Robotics

intel.

MOVEL AI

2

Commercialized

18

Certainty : medium to high

Mapping

whale dynamic 惠尔智能

UCS

2

Commercialized

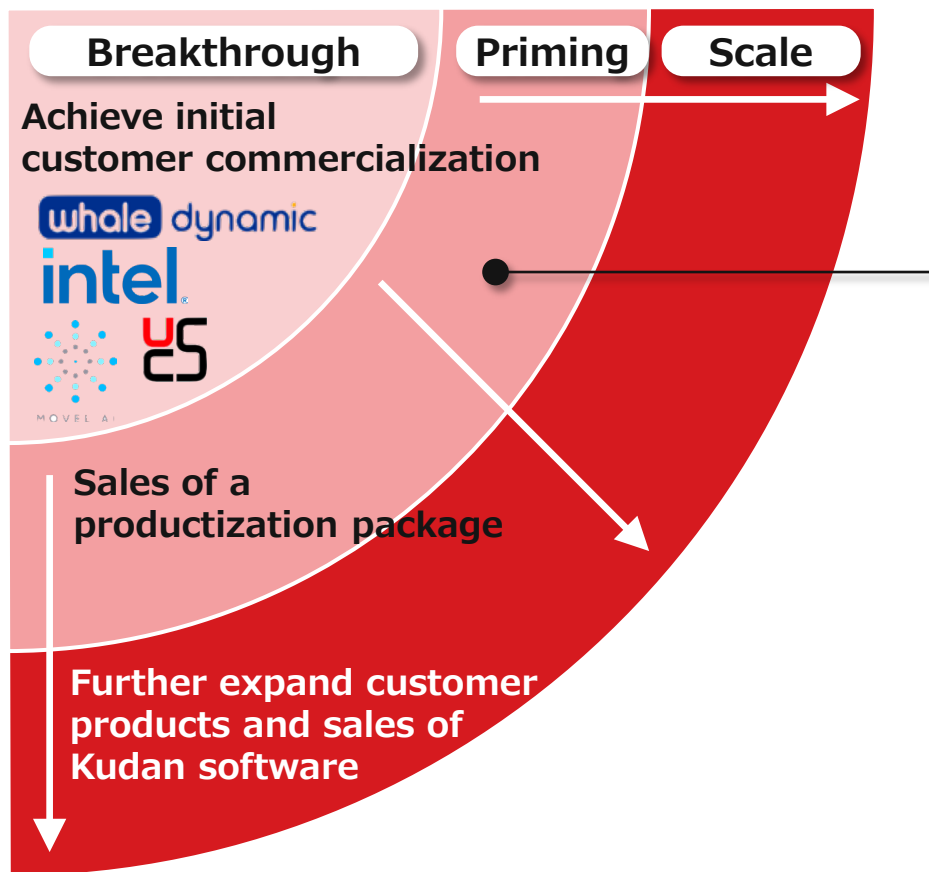7

Certainty : medium to high[3]

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1. Revenue from contracts that enable the practical use of products (product sales and internal/external service operations) using our technology
2. For areas other than two focus areas (e.g., autonomous driving), we will continue promising projects depending on their mid- to long-term growth potential
3. Characteristics of the projects: Clearly defined functionality and performance required for commercialization, sufficient potential for Kudan SLAM to meet these requirements, performance validation has already been completed, limited risk to commercialization, and a specific timeline for commercialization has been established

Measures to boost product-related revenue ② : Provide a productization package

- In addition, Kudan has started developing and providing a productization package, and **aims for "priming" effects to further expand customer commercialization and increase sales of Kudan software**

Expanding business by selling a productization package

Breakthrough   **Priming**   **Scale**

Achieve initial customer commercialization

whale dynamic

intel.

MOVEL A...

Sales of a productization package

Further expand customer products and sales of Kudan software

A package that shortens the development and test operation period of customer products and can also be directly put to practical use as products
(e.g., mapping kit)
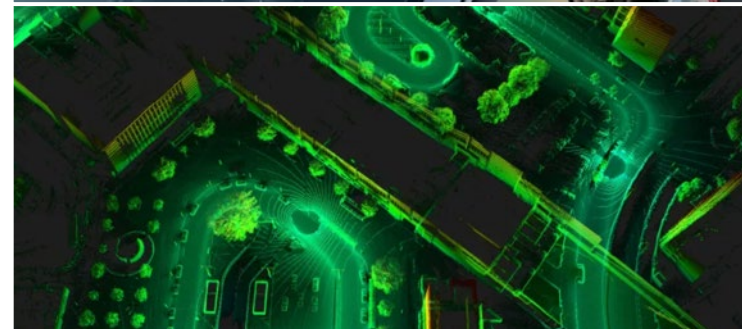
Annual earnings forecast for FY2024

- Overall revenue growth was solid, driven by the expansion of product-related revenue. Costs increased from the previous year due to development and sales of a productization package and strengthened organizational structure to expand product-related revenue

- R&D subsidy income from foreign governments is continuously expected to be received as non-operating income

- In the previous fiscal year, Kudan aimed to change to the profitable earnings structure in FY24, but will prioritize business transformation and revenue expansion to accelerate the launch of product-related revenue

(Unit : million yen)

	Performance for FY2022	Performance for FY2023	Forecast for FY2024
Net Sales (Prior to accounting standards change)	**271** **(296)**	**332**	**520**
Operating Profit	△**433**	△**598**	△**560**
Ordinary Profit (incl. "share of loss of entities accounted for using equity method")	△**681** (△403)	△**394**	△**520**
Profit Attributable to Owners of Parent (incl. impairment losses)	△**2,237** (△1,474)	△**413**	△**550**

Project highlights accumulated toward customer commercialization

	Clients & Partners	Overview & Progress	Clients & Partners	Overview & Progress
Robotics	Movel AI	Commercial launch of integrated solution for autonomous mobile robots. Multiple deployments in customer environments expected in the coming months	Robots related company	Testing at end customer facilities along with functional enhancement are in progress. Discussions have also begun on a licensing agreement for commercialization
	Robots related company	Integration work on multi-use and different types of vehicles for spatial location DX is in progress. Operational testing will be taken place at end customer facilities	Robots related company	Commercial licensing discussions are in progress in addition to functional integration for commercialization of the world's first autonomous mobile service robot for a large-scale event
	Major telecommunication	Verification tests using the functions implemented in the infrastructure for multiple types of robots are being expanded. Discussions on the business aspect of providing commercial services have also begun	Robots related company	Development integration into autonomous mobile robots for hospitals is ongoing. Testing in multiple field environments has begun
	Major industrial machinery	Initial development and field testing of spatial location DX solution was completed; full-scale development and multi-site testing will be planned for FY24	Major logistics system provider	Adoption of Kudan SLAM for upgrading AMR functions and reducing operational costs for logistics warehouses. Development integration work is in progress
Mapping	Major telecommunication	Various verification tests are in progress. Discussions have also begun on commercial deployment of elemental technologies supporting the geospatial information infrastructure under development	Mapping system provider	Kudan SLAM has been adopted to lower the HW cost of mapping systems for infrastructure. Technology integration is complete and verification tests are ongoing
	Major logistics company	Verification test and identification of various issues have been completed. Verification of technology, operations, etc. will continue for service deployment	Mapping system provider	Technology integration and functional enhancements are ongoing in order to improve the accuracy of drone mapping in non-GPS environments
Autonomous Driving /ADAS	TOP5 automotive OEM	User evaluation testing of cloud functions is ongoing. In addition, discussions are underway regarding the details of initiatives for further functional advancement	Major automotive Tier1	Development and verification in a variety of environments are continuously in progress for commercial implementation of advanced parking assist functionality

Business progress toward growth (short- and mid-term)

– Aiming to increase product-related revenue through the introduction and market penetration of customers' products, Kudan will continue to strategically promote measures to accelerate it, using the progress stage of customers' products as an indicator

Business phases along with the progress of customers' products

Preparation	Shift			Harvest		
Product development	Customer commercialization	Preparation for introduction	Initial introduction	Full-scale introduction	Expansion of introduction	Penetration

⚑ Current Progress

Progress forecast in focus areas

Robotics

22/3期 | 23/3期 | ⚑ 24/3期 >>>
25/3期 >>>
26/3 ～ 27/3期 >>>
28/3期 ～ >

Mapping

22/3期 | 23/3期 | ⚑ 24/3期 >>>
25/3期 >>>
26/3 ～ 27/3期 >>>
28/3期 ～ >>>

Scale of expected product-related revenue※

| 0 | 0 | 0-1 | 3-5 | 10-15 | 25-35 | 50-100 |

※The penetration phase is set at 100

1. Due to the progress of the business phase, the indicator of emphasis in the business has been changed from the number of customer commercialization to the progress stage of customer commercialization

Progress in partnership

- In addition to the adoption of Kudan technology in the Intel's commercial product, Kudan has also expanded and deepened its partnerships with a group of leading semiconductor and sensor companies that are also expanding their ecosystems, progressing forward significantly toward making Kudan technology an industry standard

- In FY24, work with Intel to enhance product functionality, provide customer implementation support, and conduct promotions to expand product sales

- Moreover, Kudan will strengthen partnerships with semiconductor and sensor companies for further customer commercialization as well as with system integrators that implement Kudan technology as solutions

Business co-creation and technology development partner [1] → **Product partner**

|	Business co-creation and technology development partner	Product partner
Initiatives	• Client referrals and joint participation in projects • Marketing and event planning • Technology development and implementation collaboration	• Partners provide Kudan's technology embedded products
Semiconductor and sensor companies	**OUSTER**™ Event co-sponsorship **INNOVIZ** TECHNOLOGIES **cadence**® New partnership	**NVIDIA**.® **ADLINK** LEADING EDGE COMPUTING® Development progress	**intel**.® Commercialization [2]

1. A partial selection of partner companies
2. Commercialization definition: Kudan SLAM is incorporated as part of a partner product and delivered to the end customer via the partner

Examples of next-generation technology demonstrations

- In areas other than the focus area (robotics and mapping), select projects and work on demonstrations from mid- to long-term perspectives
- In addition to hybrid SLAM, AI-embedded localization and sensor integration for autonomous driving were demonstrated, achieving effective results.

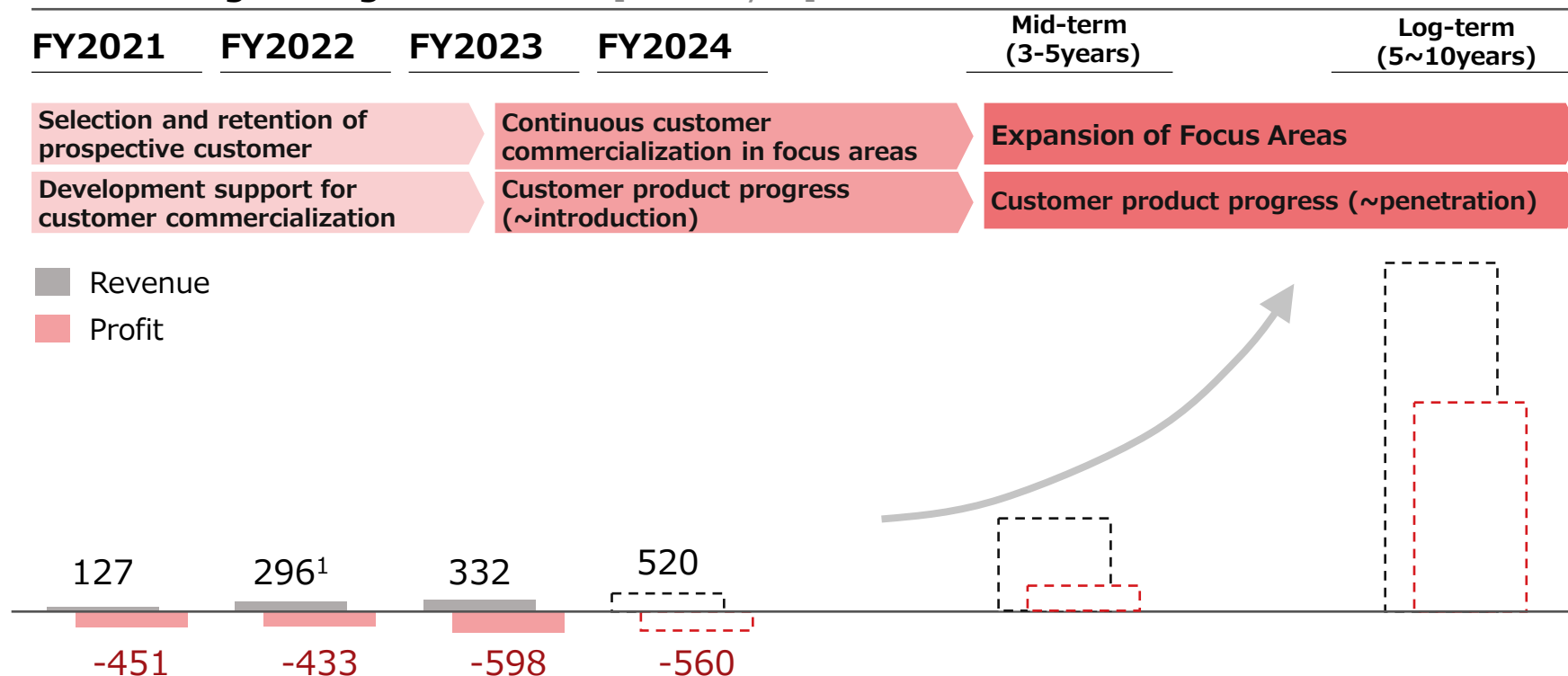**Project image (e,g., major European automotive company)**

Collaboration with GPS manufacturers and automotive companies to establish vehicle location recognition technology in urban areas, which is difficult even with next-generation high-precision GPS
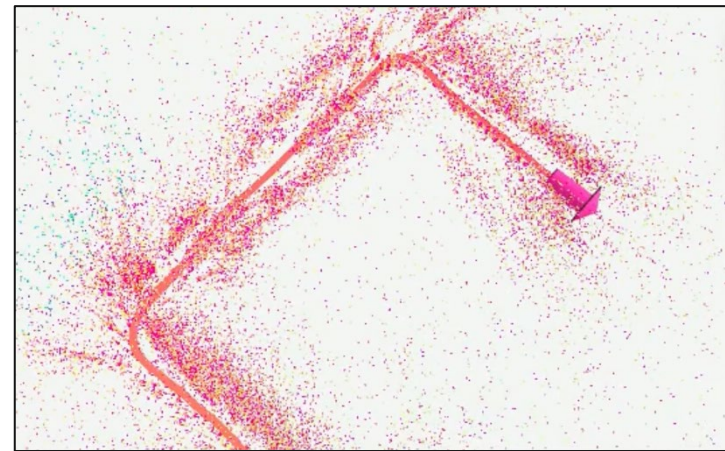
Future growth potential (mid- to long-term)

- **Continuously push forward customer commercialization and progress of customer products** to quickly achieve the transformation of the earnings structure
- Aim for dramatic profit growth by building up significant product-related revenue **through market penetration of technology by expanding focus areas and spreading customer products**

Mid- to long-term growth vision [million yen]

FY2021	FY2022	FY2023	FY2024	Mid-term (3-5years)	Log-term (5~10years)

Selection and retention of prospective customer

Continuous customer commercialization in focus areas

Expansion of Focus Areas

Development support for customer commercialization

Customer product progress (~introduction)

Customer product progress (~penetration)

Revenue
Profit

127	296[1]	332	520		
-451	-433	-598	-560		

1. Revenue adjusted for the impact due to accounting standards change

Important Notice

- This document contains Kudan's plans, estimates and expectations for the future based on its current business situation and industry trends.

- All such projections for the future inherently involve uncertainty and a wide variety of risks.

- It is conceivable that risks both understood and unforeseen, uncertainties and other factors may cause actual results to differ from the projections contained within this document.

- Kudan offers no guarantee of the accuracy of its projections for the future and accepts that they may differ significantly from actual results.

- All projections for the future included in this document are based upon information available to Kudan as of August 14th, 2023, and may not be updated or changed to reflect future developments or changes in status.