Explanatory Documentation
regarding Business Plan and Growth Potential

June 30, 2023

Eyes to the all machines

1. 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
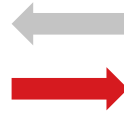
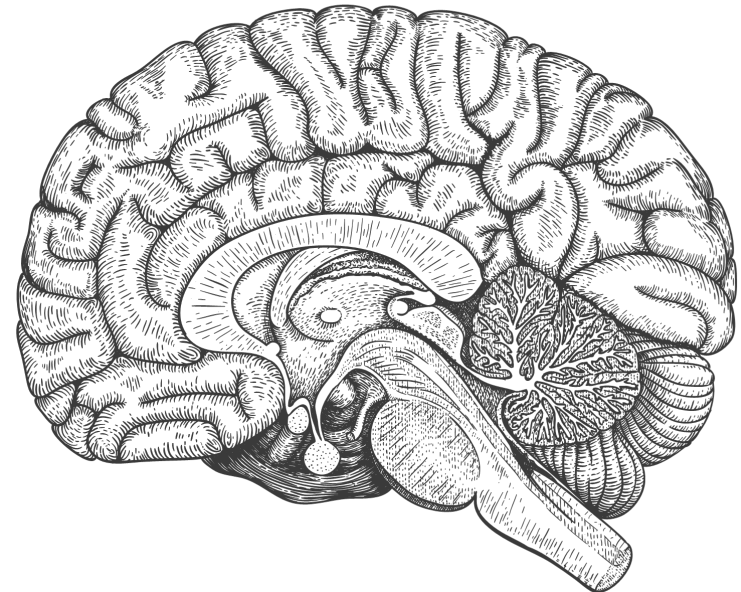| **A**rtificial **P**erception	**A**rtificial **I**ntelligence
||	||
The "eyes" of machines, allowing them to perceive and understand their environment	**The "brains" of machines, allowing them to make appropriate decisions**

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**
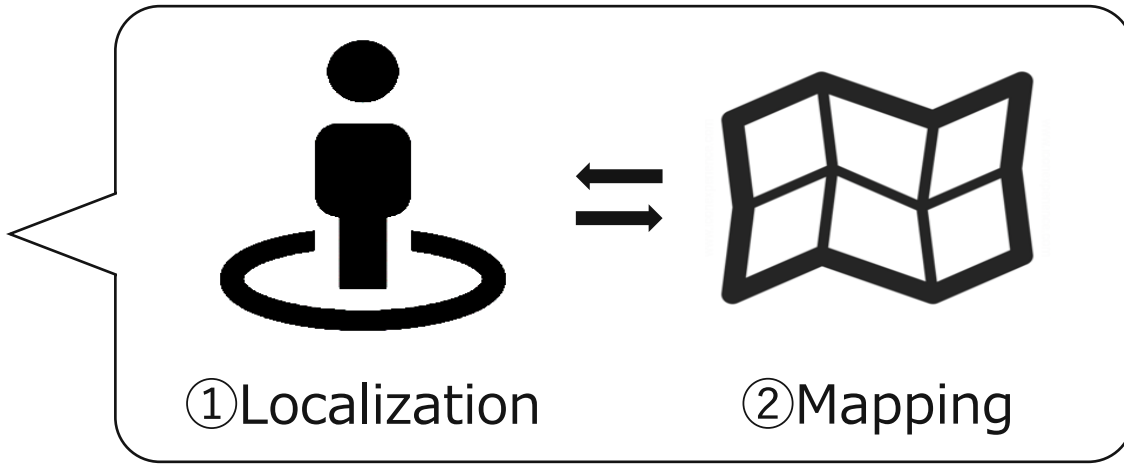
**To "Embodied AI" that can act
directly in real space**
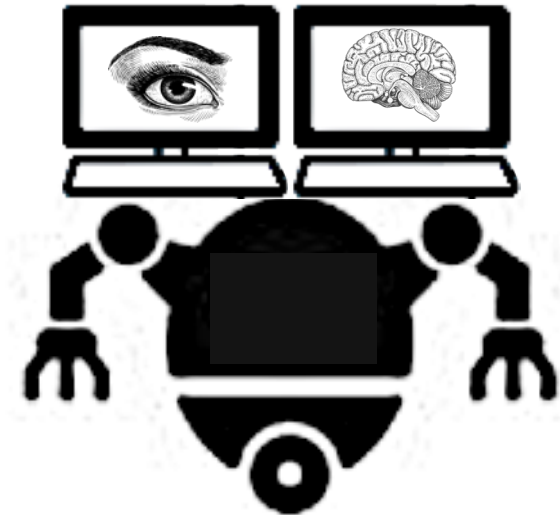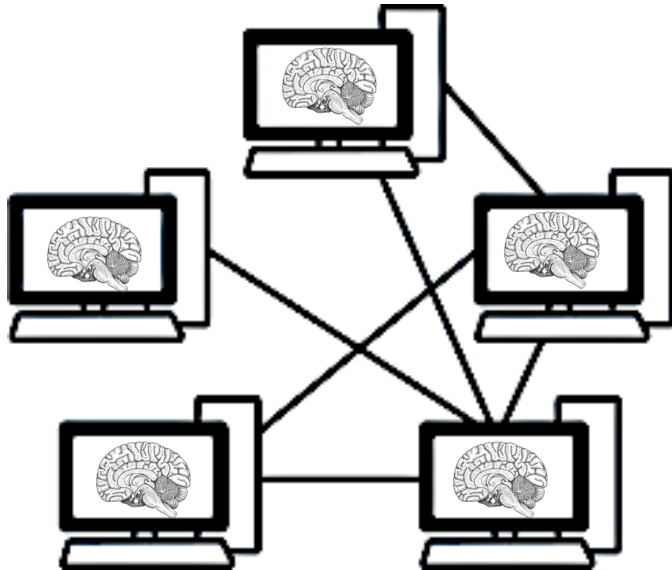
SLAM (Simultaneous Localization and Mapping) as the core of AP technology

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

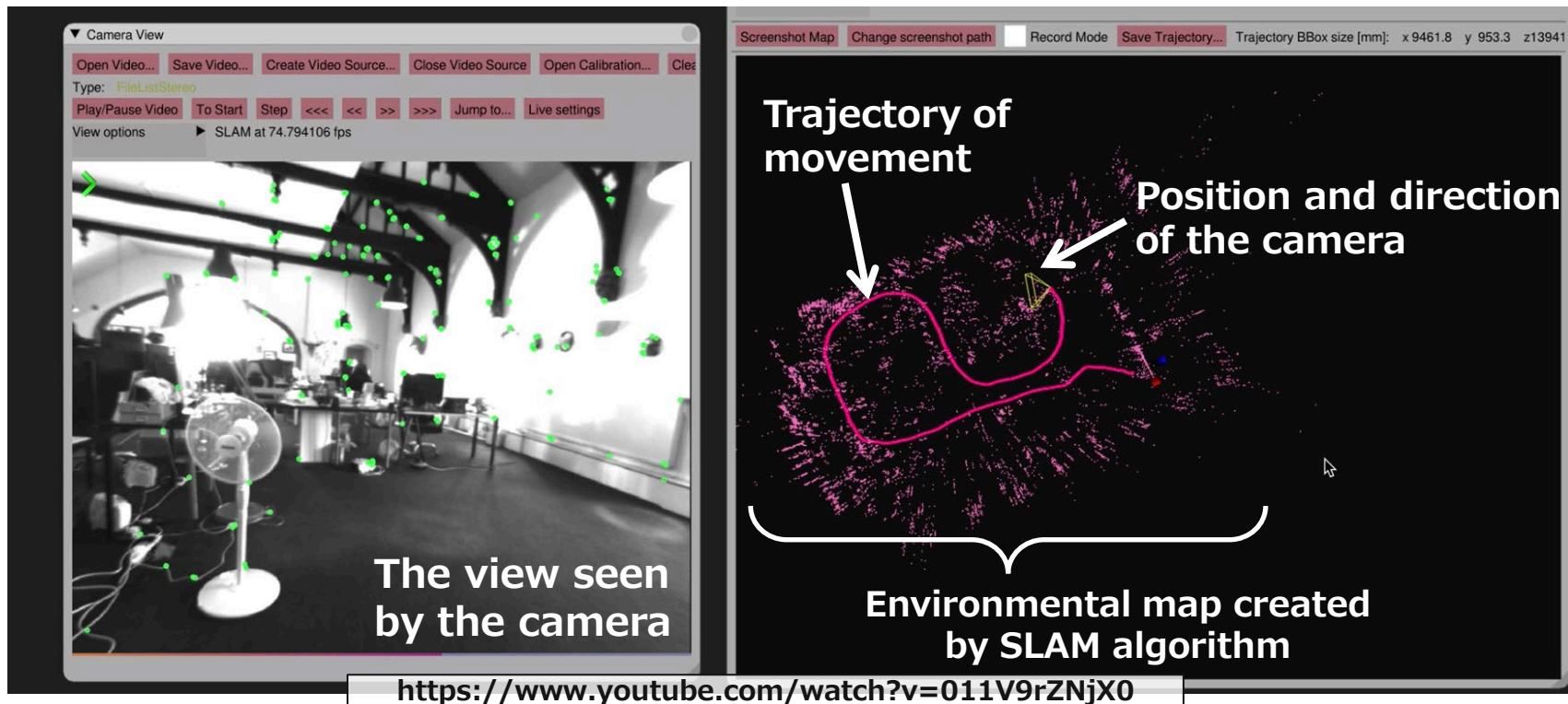**SLAM technology** **(Simultaneous Localization and Mapping)**

①Localization   ②Mapping

Re-localization technology

Tight-coupling technology

⋮

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

Trajectory of movement

Position and direction of the camera

The view seen by the camera

Environmental map created by SLAM algorithm

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

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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)
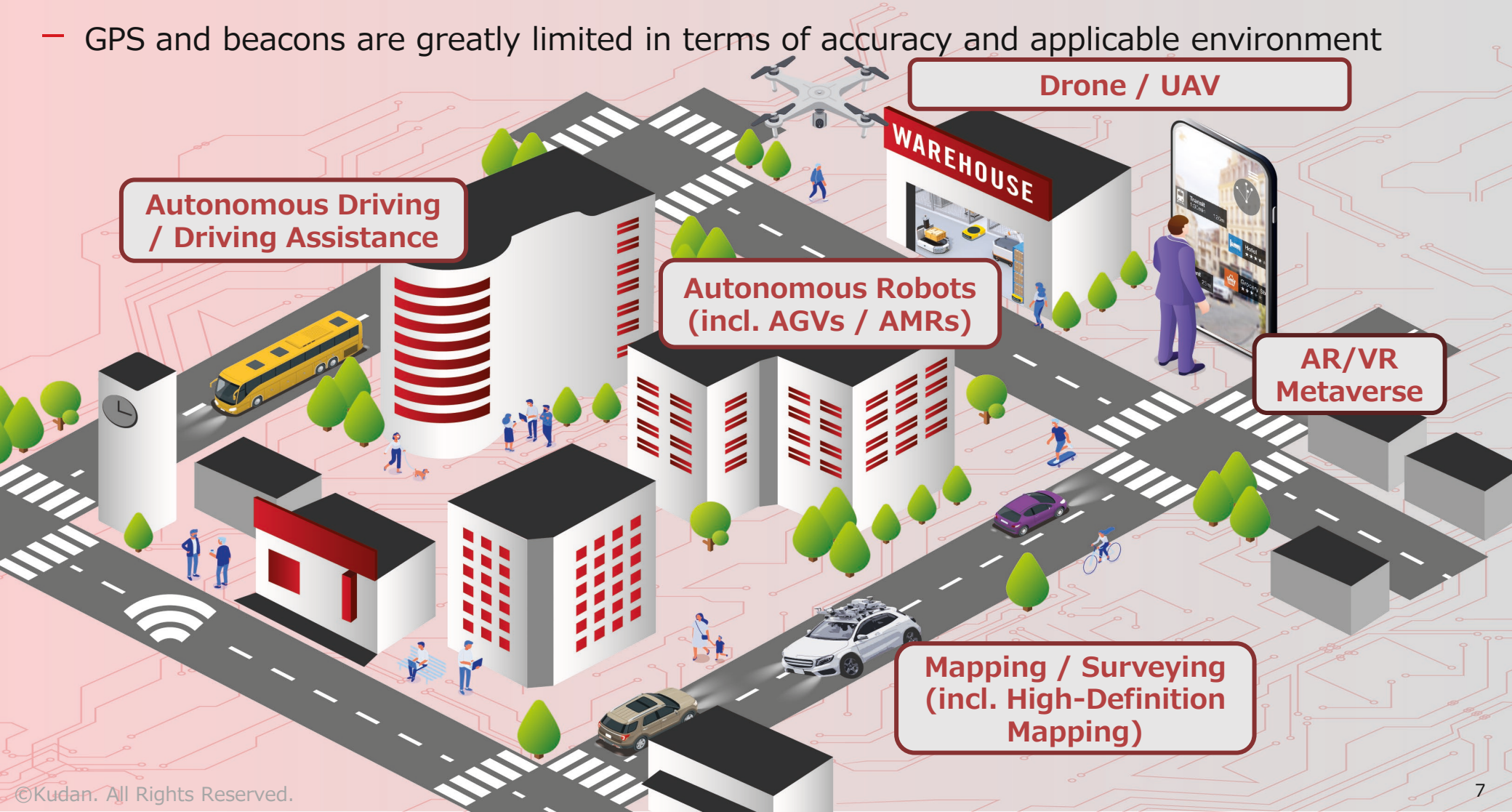
Broader applications through accumulation of technology

- Proceed strategically to realize full automation in stages in each area and realize subsequent applied technologies
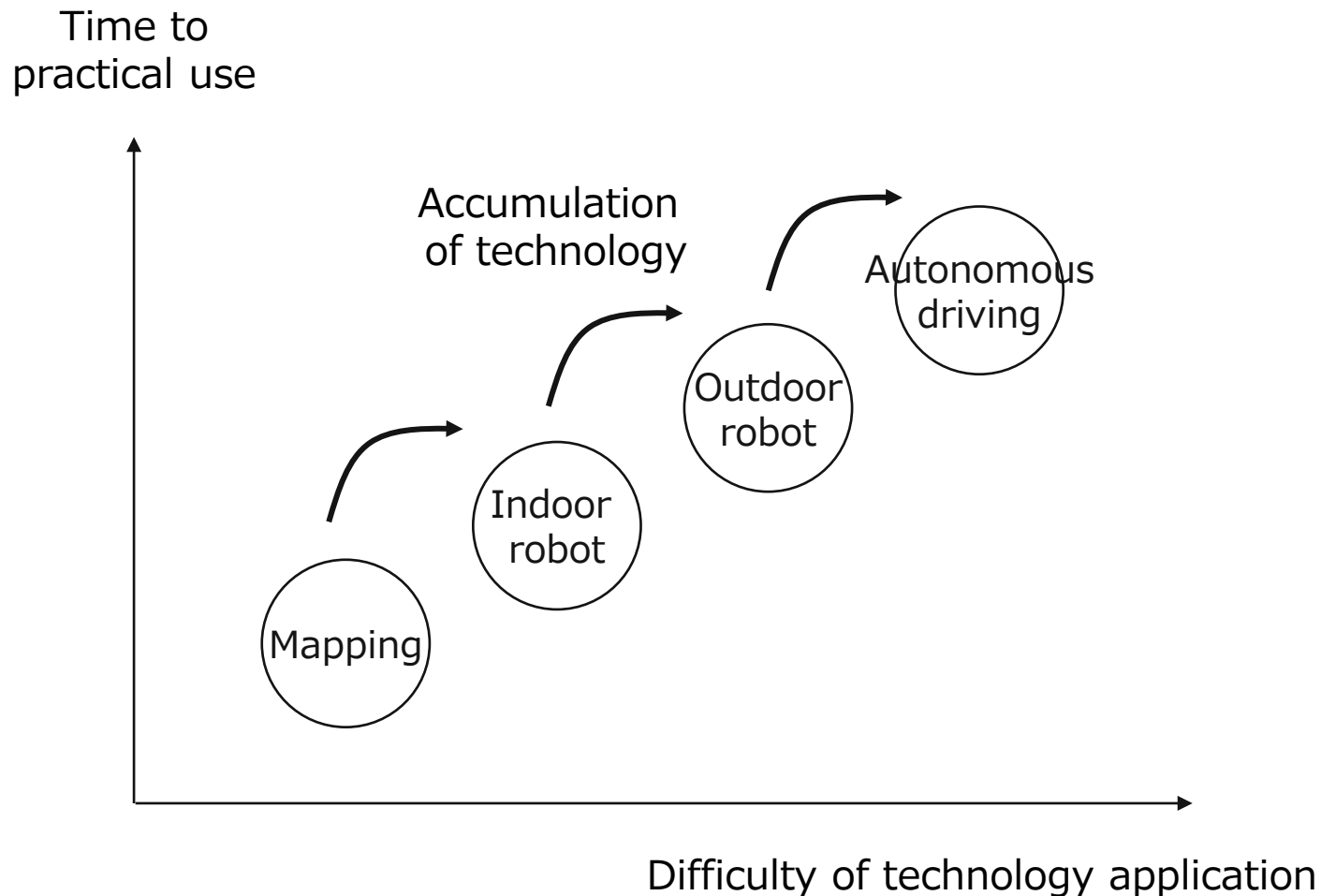
Evolution of the technological axis (evolution of the eye)

- Full automation is difficult to achieve through the accumulation of non-automatic and semi-automatic technologies
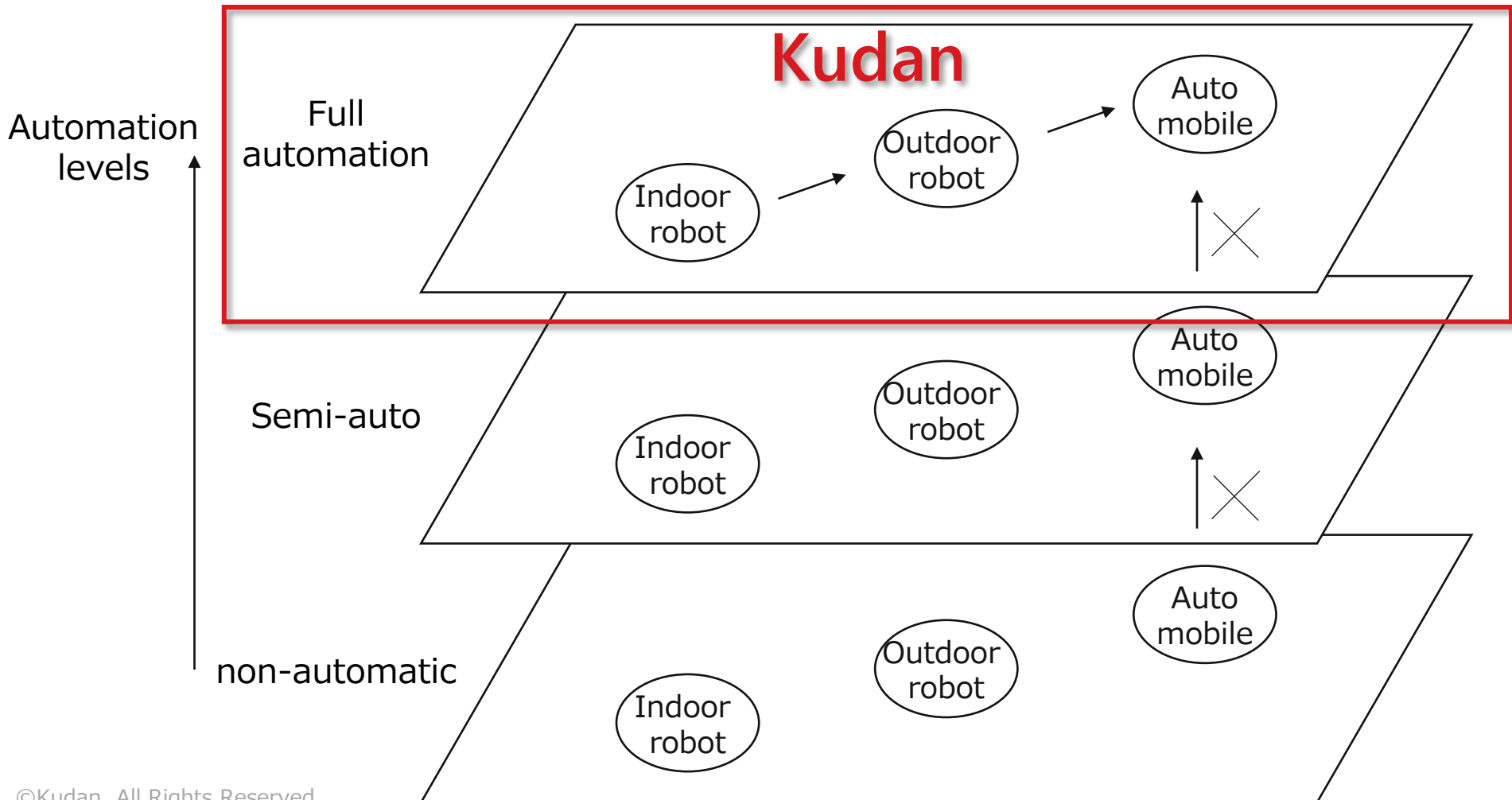
- Kudan's technology targets full automation

"ARM-like position" targeted by our small number of professionals

Layers of technology industries
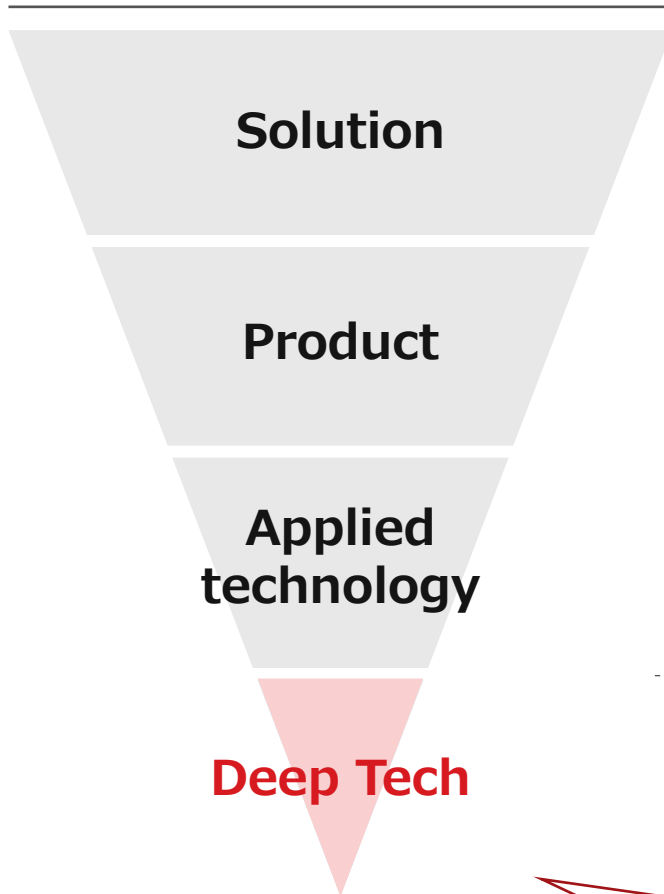
Players in Artificial Perception

Solution

- Operation and added-value services

Product

- Products in robotics / wearable / mobility fields

Applied technology

- Packages with sensors and semiconductors

Deep Tech

- **Algorithms (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

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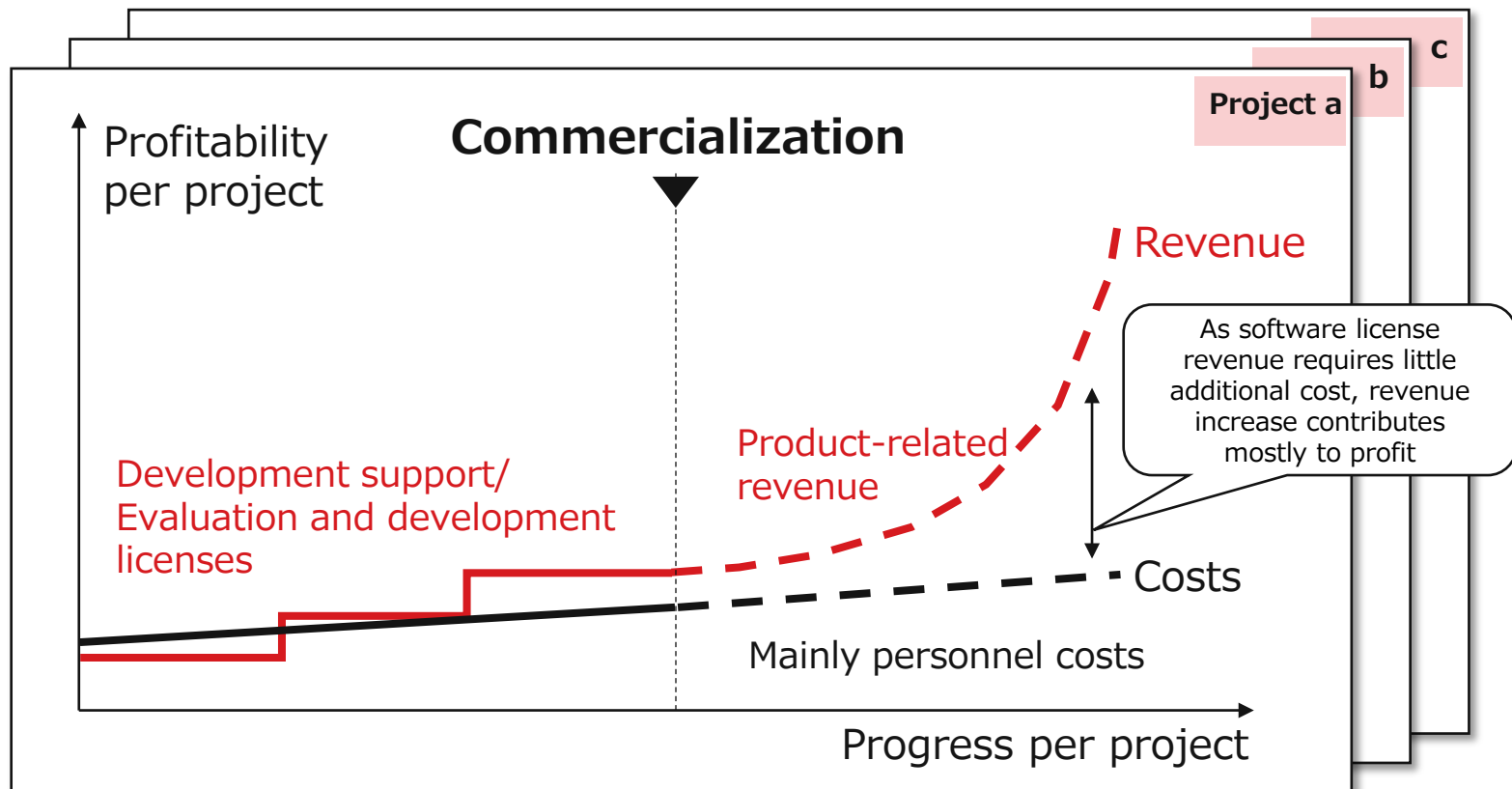
2 . **Source of competitiveness**

A "globally born" technical group

GB Bristol (R&D/Sales)
- Kudan group founded in 2011
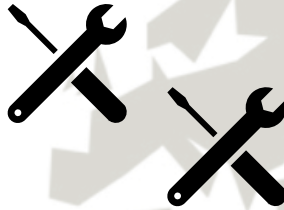
JP Tokyo (Admin/Sales)
- Established in 2014
- Listed on TSE Mothers (currently, Growth) in 2018

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

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

	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

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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

in Q "vision google"

386件の

in Q "vision facebook"

93件の結果を

in Q "Vision Microsoft"

307件の結果を表示中

LinkedInメンバー
Senior Software Development Engineer at Micros
アメリカ合衆国 グレーター・シアトル エリア
現在: Microsoft - Senior Software Development Engineer

LinkedInメンバー
Vision System Administrator at Mead and Hunt
アメリカ合衆国 ウィスコンシン州 マディソン エリア
過去: RMT Inc - Business System Analyst

LinkedInメンバー

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

*Based on a LinkedIn search

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

kudan

kudan
Founded in 2011

IPOed in 2018 🇯🇵 ➡️ **kudan**
🇯🇵 🇬🇧 🇩🇪

ARTISENSE
Founded in 2017

Fully acquired in 2021

Around 20 SLAM specialized engineers
(General purpose, including robotics)

13th lab
Founded in 2010

Acquired in 2014 ➡️ **∞ Meta**

SCAPE
Founded in 2016

Acquired in 2020

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

- 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

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	cādence

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Achieve commercial-level customer commercialization

kudan

- **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
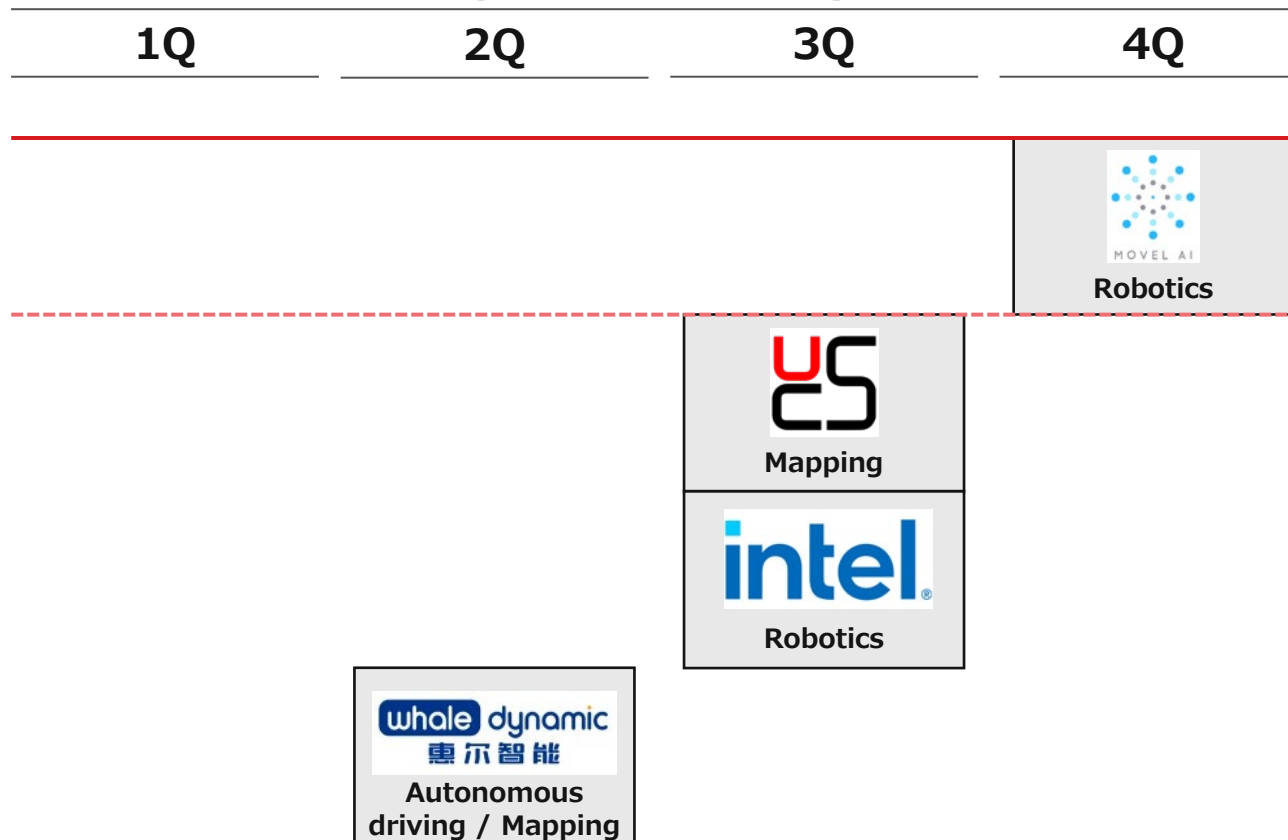
Achievements in FY2023 (4 in total)

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

UCS
Mapping

intel.
Robotics

whale dynamic
惠示智能
Autonomous driving / Mapping

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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.
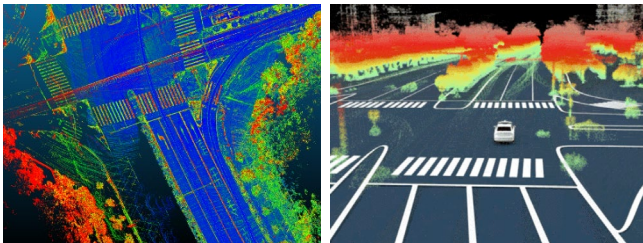

Technology Development Path
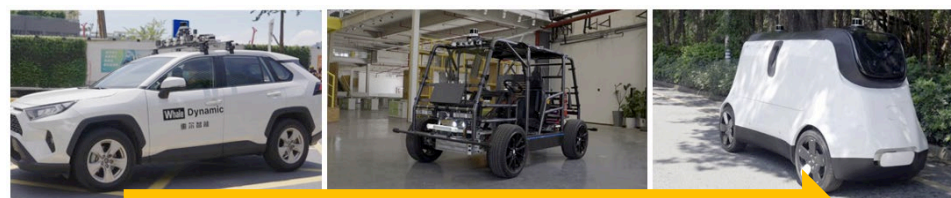
Product①: Whale Dynamic Product Release

- 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.

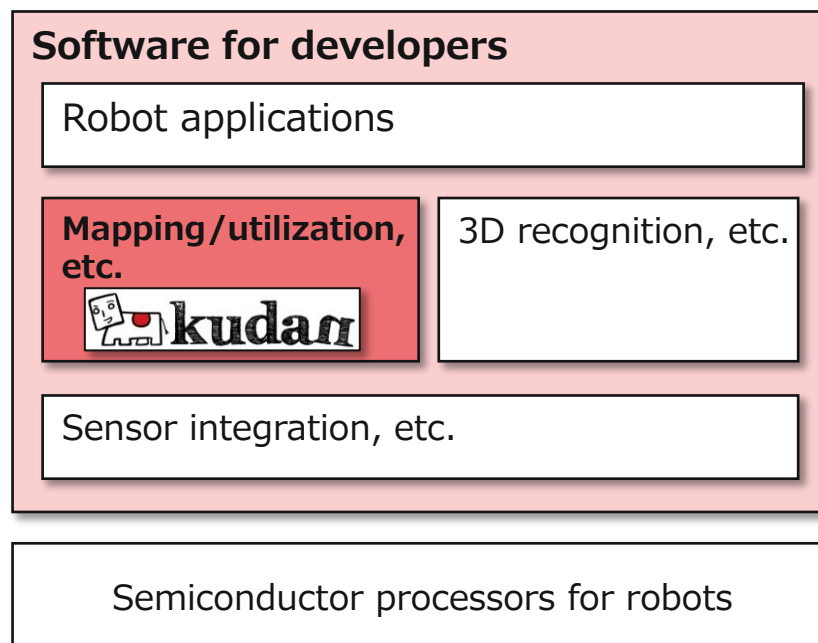| High-definition Mapping Kit	Multi-Purpose Autonomous Vehicle - WD1	Drivable Test Vehicle
• Consists of the mapping hardware kit and software toolchain for HD mapping. • Hardware can be easily installed in passenger cars as a mobile mapping system, enabling high quality data collection. • Software toolchain 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.

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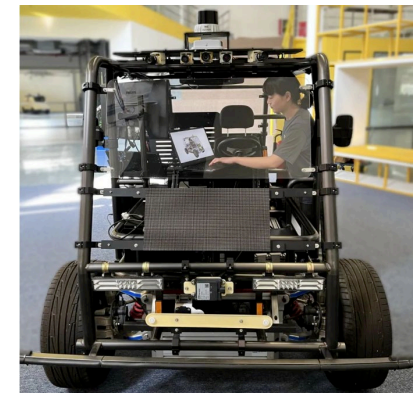
- The world's first commercial SLAM fully adopted on a major semiconductor platform, as a company specializing in this technology area

- 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
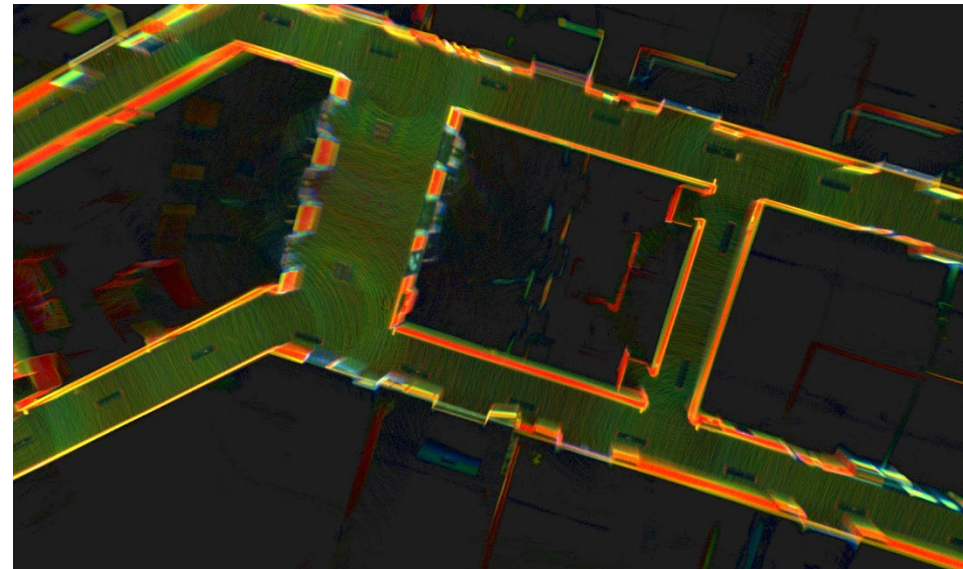
Product④: Product release with Movel AI

- 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
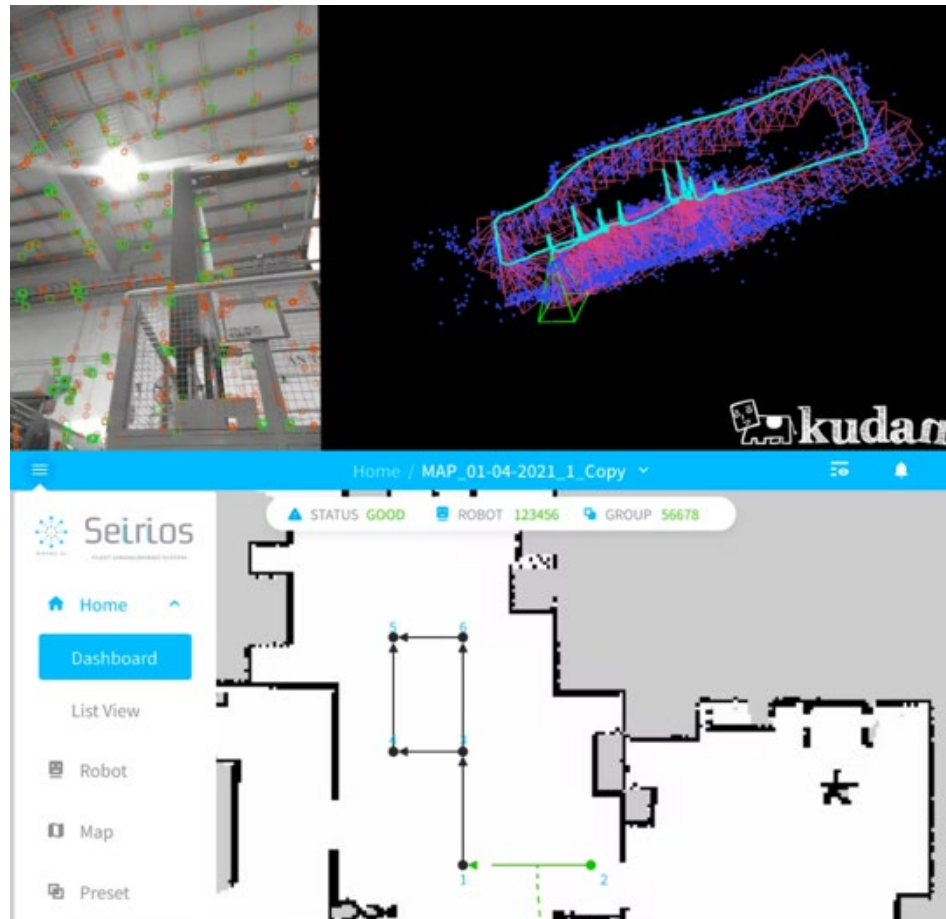
Completed integration of hybrid technology into customers' products

- 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

Hybrid SLAM

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

Indirect SLAM
- Fast processing, versatile

Direct SLAM
- Precise recognition, high stability

3. 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]
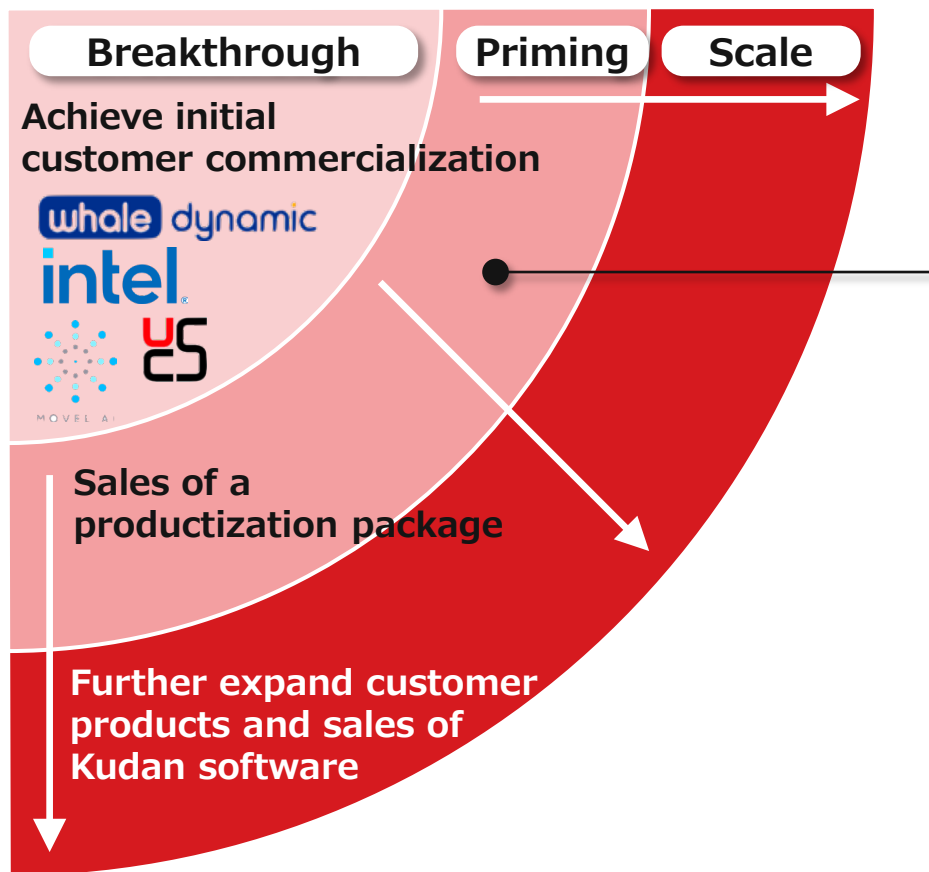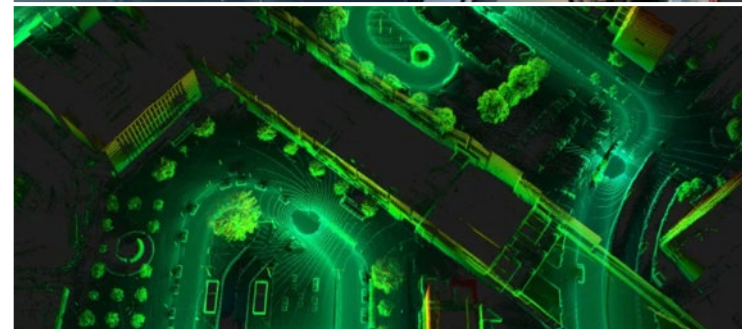
Measures to boost product-related revenue ② : Provide a productization package

- 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.

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MOVEL A

Sales of a productization package

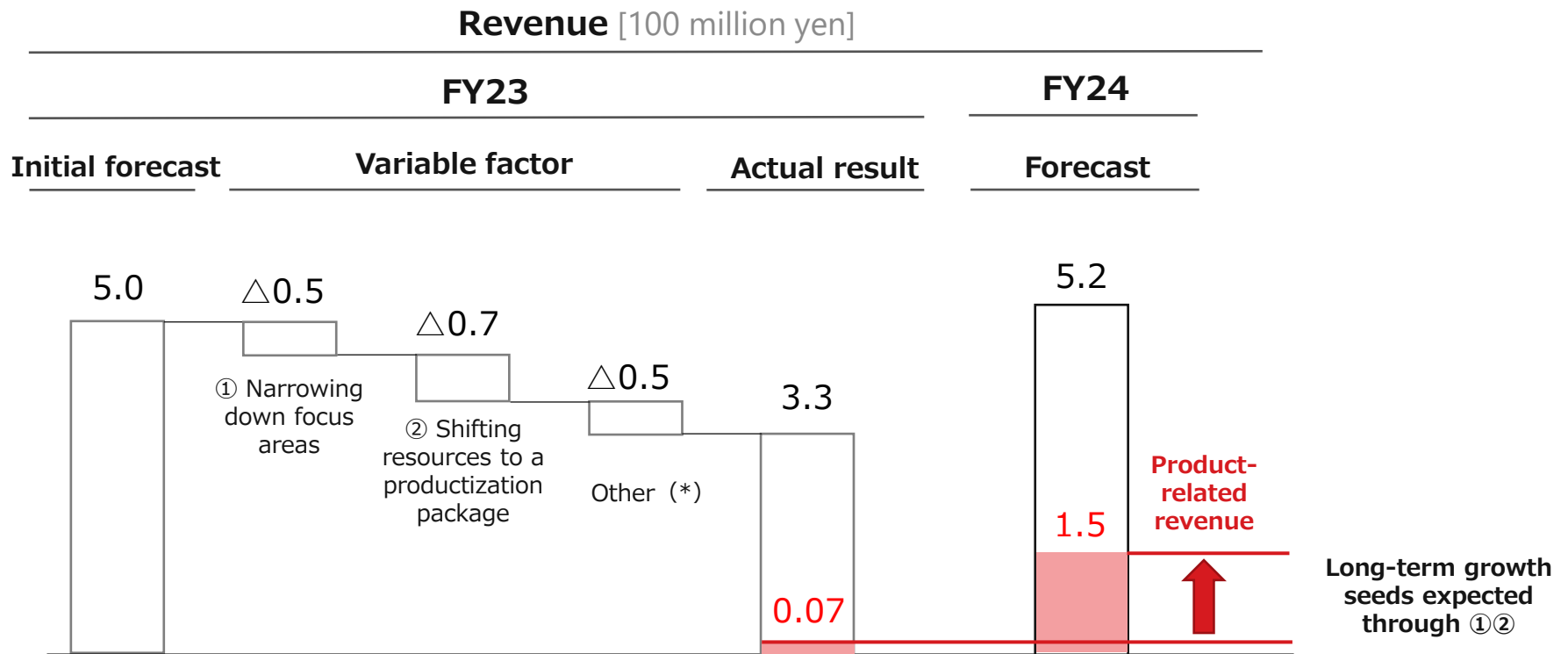**Further expand customer products and sales of Kudan software**

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)

Impact on revenue associated with measures to boost product-related revenue

- Priority given to measures to boost product-related revenue led to the scaling back in some projects in non-focus areas and development projects that are far from commercialization, and this impacted revenue (330 million yen against the initial forecast of 500 million yen)

- On the other hand, product-related revenue are expected to increase in FY24 and account for about 30% of total revenue (150 million yen of revenue, 20 times the previous year)
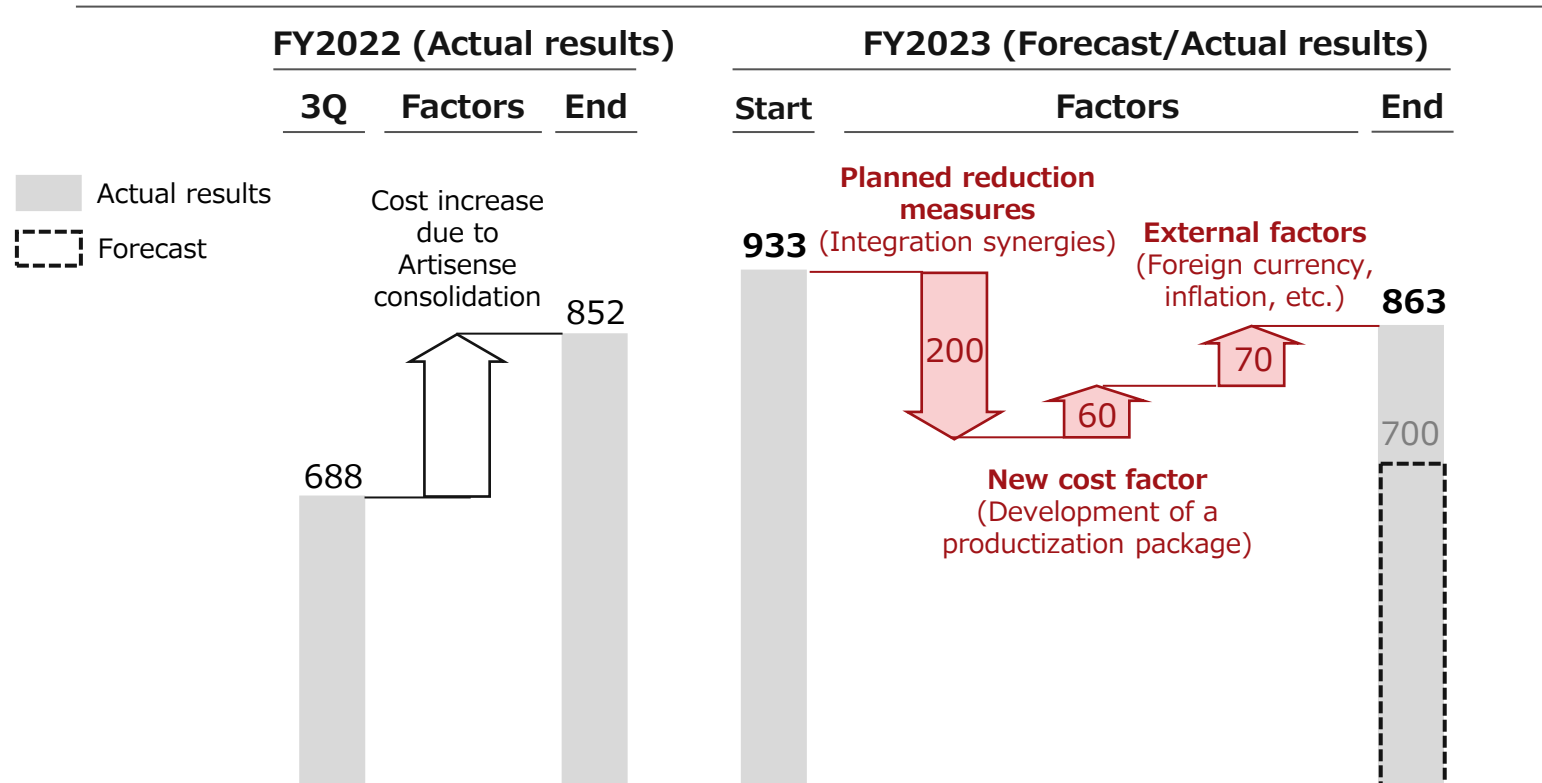
Revenue [100 million yen]

FY23			FY24
Initial forecast	Variable factor	Actual result	Forecast

5.0

△0.5
① Narrowing down focus areas

△0.7
② Shifting resources to a productization package

△0.5
Other （*）

3.3

0.07

5.2

1.5

Product-related revenue

Long-term growth seeds expected through ①②

（*）　Delay in ERASMO delivery confirmation procedures -20 million yen, other delivery delays、freeze or delay of projects due to economic downturn, etc.

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Burn rate (cost)

- Planned reduction measures (cost synergies with Artisense: -200 million yen) were effective, but development for product-related revenue (productization package: +60 million yen) became a new cost factor

- In addition, a variety of external factors, etc. (foreign currency appreciation and inflation in the U.S. and Europe, etc.: +70 million yen) resulted in higher costs compared to the initial forecast

Burn rate (Annual conversion[1]) [million yen]

	FY2022 (Actual results)			FY2023 (Forecast/Actual results)		
	3Q	Factors	End	Start	Factors	End

Actual results

Forecast

Cost increase due to Artisense consolidation

852

688

933

Planned reduction measures (Integration synergies)

200

New cost factor (Development of a productization package)

60

External factors (Foreign currency, inflation, etc.)

70

863

700

1. Annual costs required for business activities, calculated by each quarterly cost times four. Calculated by deducting R&D subsidy income from total cost of sales, SG&A expenses, non-operating expenses, extraordinary losses, income taxes, etc. (adjusted for seasonal variations, foreign exchange losses and other transitory costs). Prior to FY22/3Q before Artisense was consolidated, Artisense-related costs such as impairment losses and share of loss (income) of entities accounted for using equity method were deducted and only Kudan's costs were totaled.

Performance overview for FY2023

- Operating profit was lower than initially expected due to lower revenue resulting from measures to boost product-related revenue, and higher costs resulting from development to accelerate the launch of product-related revenue (productization package: +25 million yen) and external factors (foreign currency and inflation: +50 million yen)

- R&D subsidies from overseas governments were received as expected, and a large amount of foreign exchange gains were recorded due to the foreign currency appreciation. Non-operating profit exceeded the initial forecast, but ordinary profit and net profit also were lower than initially expected

(Unit : million yen)

	Performance for FY2021	Performance for FY2022	FY2023		
			Performance	Forecast (Initial)	Forecast (Revised)
Net Sales (Prior to accounting standards change)	127	271 (296)	332	500	328
Operating Profit	△451	△433	△598	△350	△603
Ordinary Profit (incl. "share of loss of entities accounted for using equity method")	△1,575 (△1,232)	△681 (△403)	△394	△300	△399
Profit Attributable to Owners of Parent (incl. impairment losses)	△1,608	△2,237 (△1,474)	△413	△315	△416

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**

Financing

- Financing ahead of schedule against the initial plan, which took several years to complete in line with business (customer commercialization) and shareholder value progress
- This allows Kudan to aim to quickly launch product-related revenue through various measures and to respond to uncertainties in the global financial markets

July, 2022   **April, 2023**   **July, 2025**

Purpose

1.06 billion yen

530 million yen

Initial plan

Acceleration and expansion of customers' commercialization

Establishment of solution business structure

Further measures to develop the solutions business (capital and business alliances, etc.)

970 million yen

Financing ahead of schedule, early launch of product-related revenue

After business transformation

Acceleration and expansion of customers' commercialization

(Measures to boost product-related revenue expansion, etc.)

Establishment of solution business structure

Further measures to develop the solutions business (capital and business alliances, etc.) [1]

1. Further measures to develop the solutions business will be considered as the business progresses

33

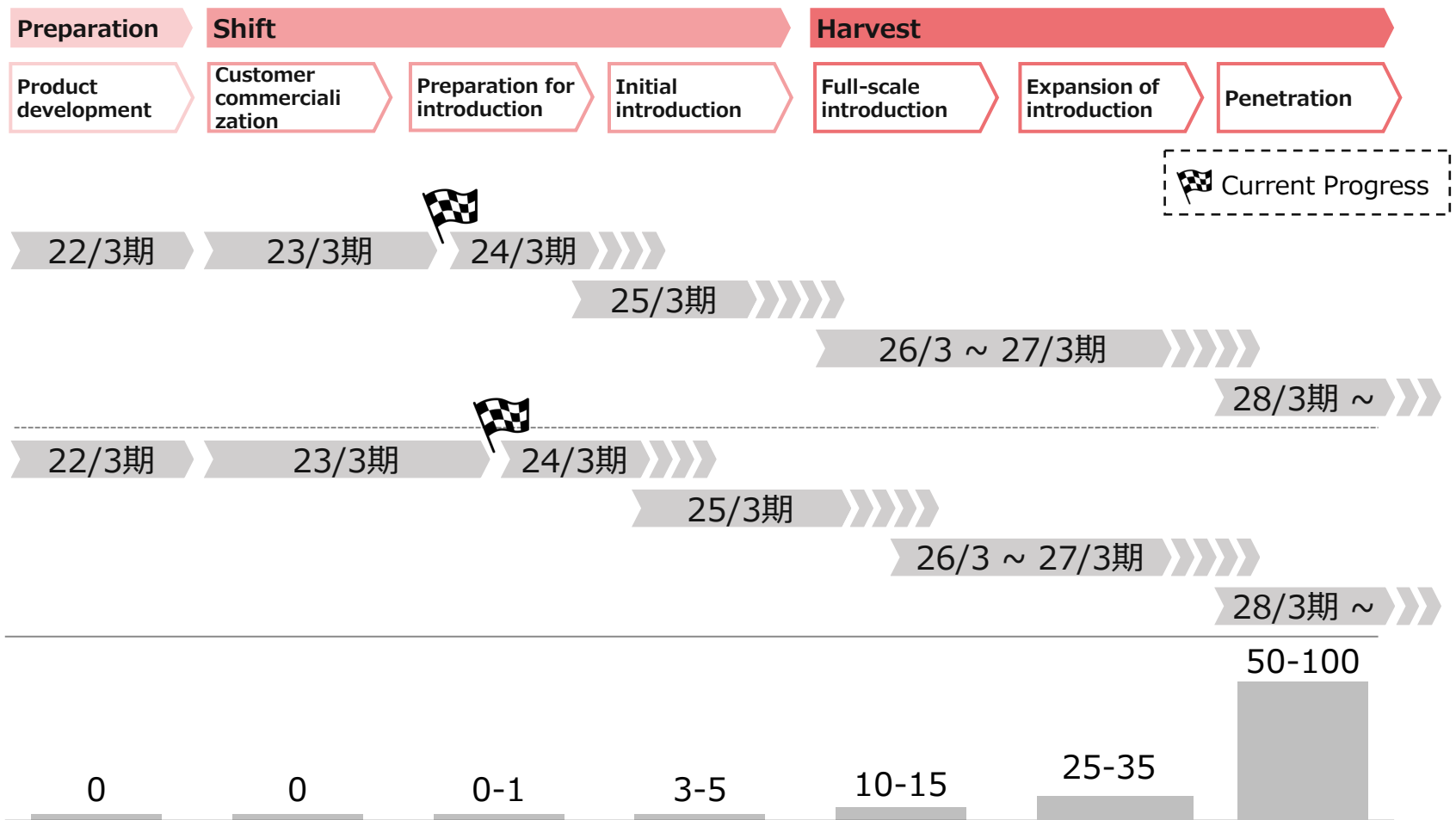# Project highlights accumulated toward customer commercialization

	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**

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

NVIDIA.®

ADLINK® LEADING EDGE COMPUTING

intel.®

INNOVIZ™ TECHNOLOGIES

cadence®

New partnership

Development progress

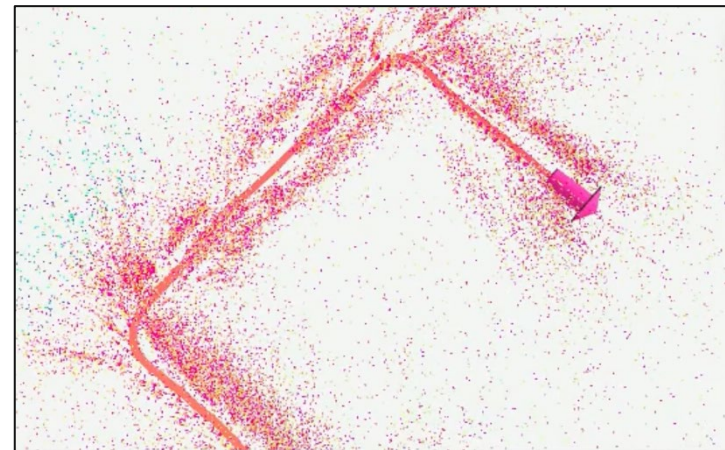Commercialization[2]

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

- 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.

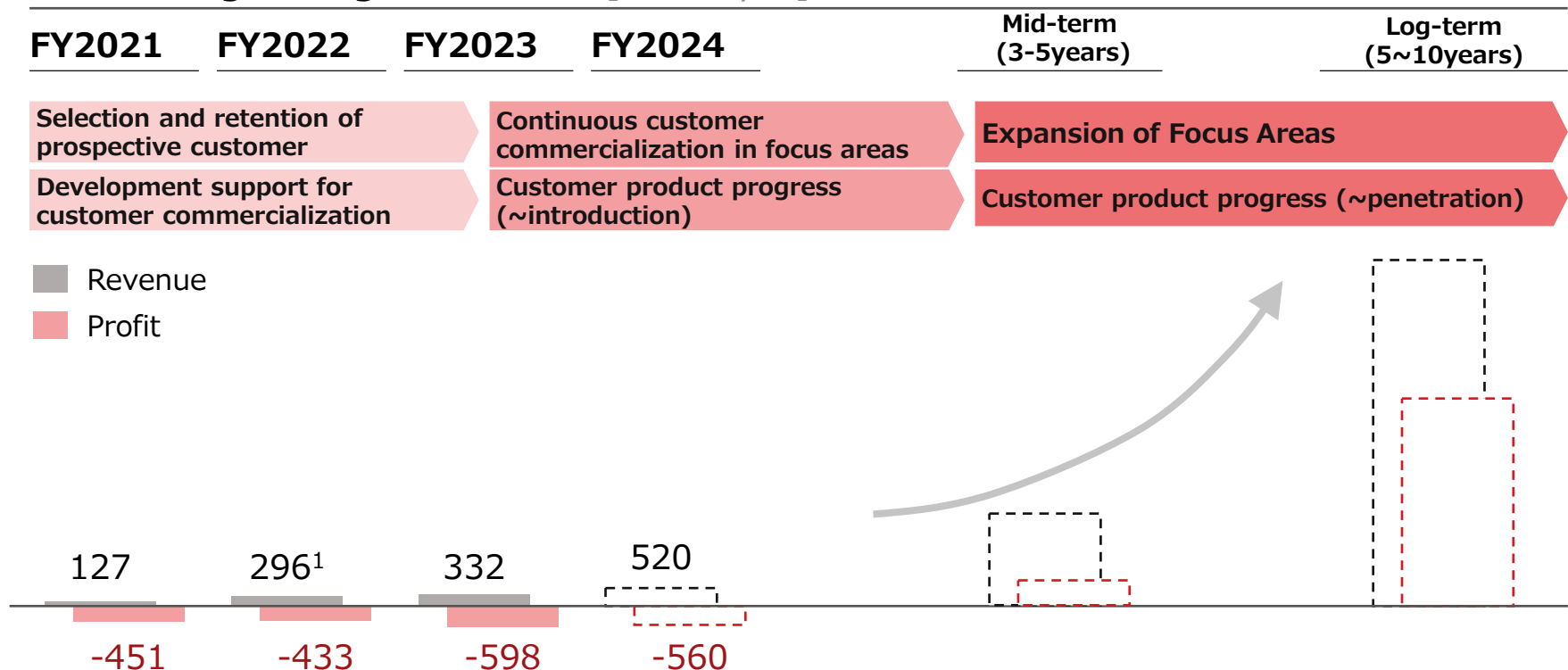## Project image (e,g., major European automotive company)

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

4. Risk Information

Key risks and countermeasures

- Identified the following risks and countermeasures that could have a significant impact on our growth strategy
- Please refer to "Business and Other Risks" in the Annual Report for the year ended March 31, 2023 for other risks

Key risks	Period	Impact	Countermeasures
Risk that the development of each market requiring AP (Artificial Perception) does not proceed as expected	Mid- to long term	Delays in revenue growth due to delays in expected customer commercialization and product-related revenue expansion	- Support for accelerating customer development projects by providing a productization package - Focus on markets and customer projects with high prospects for commercialization over the mid- to long term - Promote joint R&D and business development through alliances with leading global sensor and semiconductor companies
Risk that our technological advantage cannot be sustained	Mid- to long term	Decrease in mid- to long term revenue forecast due to inability to continue to maintain technological advantage in the SLAM market	- Maintain technological superiority through continuous updates of Kudan/Artisense integrated SLAM technology
Risk that the amount and timing of revenue recognition may vary depending on the progress of the project	Short~mid- to long term	Volatility in revenue	- Leveling of the timing of revenue recognition by increasing the number of projects - Expansion of stable revenue base through the increased commercialization and product-related revenue

- 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 June 30, 2023.

- Kudan plans to continue to disclose each indicator in its supplementary documentation to the financial report and other materials on a regular basis, including the progress of projects for customers' commercialization disclosed in this document.

- The next update of this document will be disclosed in June 2024.