



Financial Results Material for FY23/12 Q3

ACSL Ltd (TYO: 6232)
Nov 13, 2023

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Company outline

Corporate Name	ACSL Ltd.
Representative	Satoshi Washiya (CEO and Representative Director)
Established	November 2013
Location	3-6-4 Rinkai-cho, Edogawa-ku, Tokyo Hulic Kasai Rinkai Bldg. 2F
No. of Employee	87 (as of Sep 2023)
Description of Business	Manufacture and sale of commercial drones and provision of solution services for unmanned and IoT applications using autonomous control technology

At a glance¹

Ratio of engineers

Approx. **58%**

of Non-Japanese

Approx. **20%**

ISO

2

ISO9001 (Quality Management)
ISO27001 (Security)

Client

218

companies

1: Percentage of engineers and number of foreign employees are as of Sep 30, 2023. The number of customers is the total number of customers from FY19/03 to FY23/12 3Q. All figures do not include group companies

A drone is shown in flight against a clear blue sky. Below the drone, a series of mountain ranges are visible, with the foreground mountains appearing more distinct and the background ones fading into a light mist or haze. The drone is a quadcopter with a camera mounted underneath.

1. Mission / Market / Growth strategy

2. FY23/12 Q3 result

3. Business highlights

4. Strategy to achieve mid-term goal

5. Appendix

MISSION

**Liberate Humanity
Through Technology**

VISION

**Revolutionizing Social
Infrastructure By Pursuing
Cutting-Edge Robotics
Technology**

Issue

Social infrastructure is not sustainable

Lack of workforce

Decreasing workforce willing to work in tough, dirty, dangerous tasks driven by low birth rate

Aging population

Transition of know-hows from experts have not progressed, and accidents still continue

Rapid increase of workload

Aging infrastructure increasing and EC drives # of packages, resulting in increasing workload

Free human from time and physical constraints, and Update social infrastructure

Act autonomously

Drone thinks and act on its own using high level control and AI. No need for human intervention

Become "Eye" and "Hand"

Can act as human's eye and hand using sensors and mechatronics

Move space freely

Drone can fly both indoor and outdoor in any open space

Control remotely

Drone can be controlled remotely using wireless radio, e.g., between Tokyo and Hokkaido

Effectiveness of drones are being recognized. Further discussions taking place around geopolitics, economic security and data sensitivity

01

Economic Security Data sensitivity

Initiatives related to economic security and data sensitivity taken place at a national scale in the US, India, AU and Japan

02

Unmanned Optimization, DX

Drones and robotics being implemented as unmanned and efficient operations are in demand. Japan promoting Digital Rural City concept

03

Decarbonization EV

Drones recognized as a tool for decarbonation and EV. Drones are considered to work together with trucks in logistics field

Ban on Chinese drone procurement accelerates in the U.S.

The U.S. House of Rep. Select Committee on China has introduced the U.S. Security Drone Bill, prohibiting the gov. from purchasing Chinese-made drones

NATIONAL DEFENSE AUTHORIZATION ACT (NDAA)

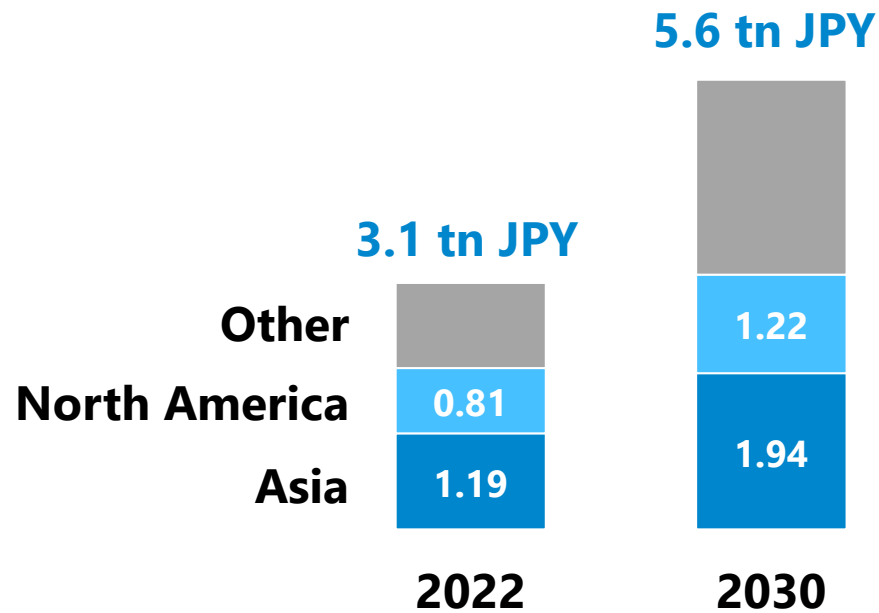
- Regulates overall U.S. national defense policy
- Regulates procurement related to national defense, **restricting the use of any particular company's products or systems**
- In FY 2019, regulations will be tightened to prevent information and technology leakage to China
- Drones deployed by government agencies and many companies are required to be **NDAA compliant**

AMERICAN NATIONAL SECURITY DRONE ACT

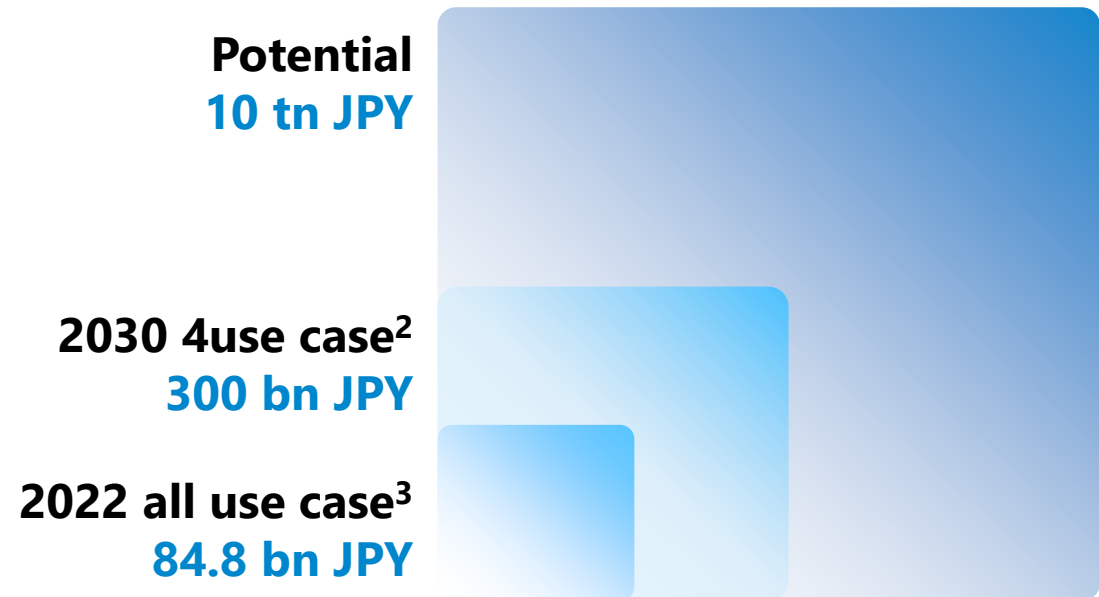
- Legislation introduced in November 2023 in the U.S. House of Representatives to protect U.S. interests and the national security supply chain
- **Prohibits** local and state governments **from using federal grants to purchase Chinese drones**
- Require federal agencies to submit **a federal report detailing the number of commercial drones and other items procured from China**
- U.S. Senate approves legislation in October 2023 that would prohibit the Federal Aviation Administration (FAA) from operating or providing federal funding for drones manufactured in China, Russia, Iran, North Korea, Venezuela, and Cuba

Drone market expected to reach more than 5 tn JPY in 2030

Global drone market¹



Japan drone hardware market



1: Drone Industry Insights (Calculated at 100 JPY/USD)

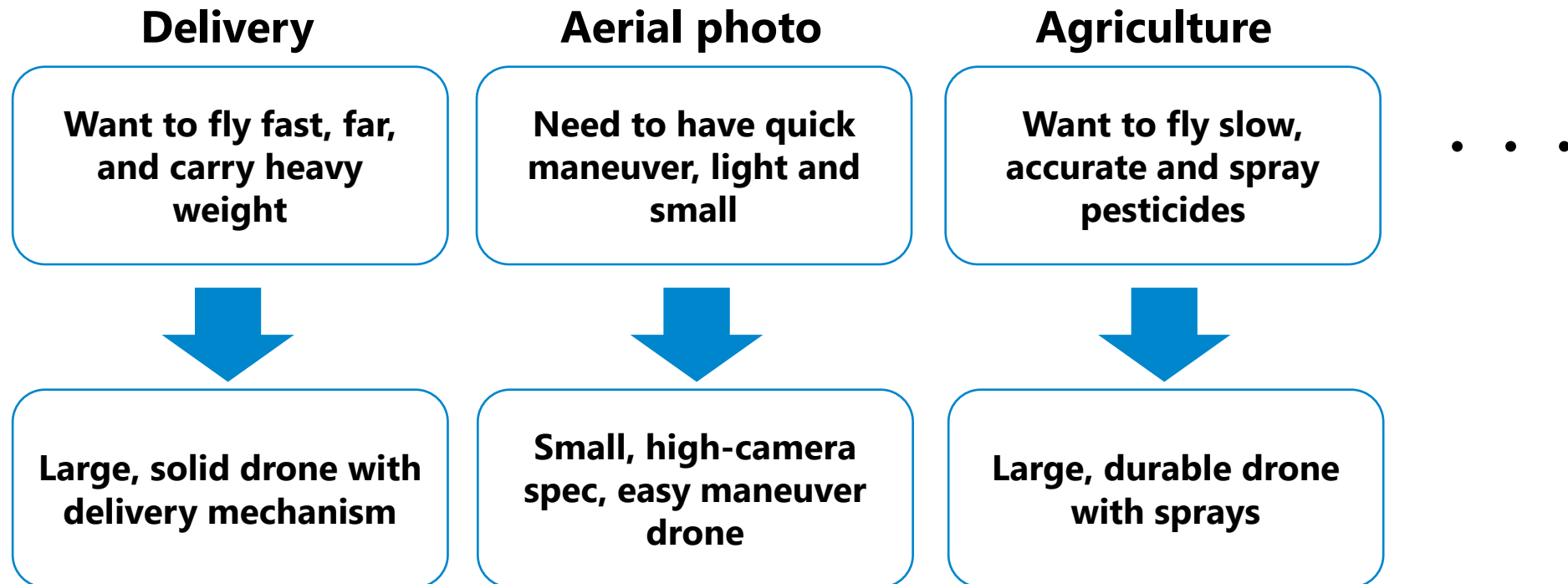
2: Company estimate based on assumptions to number of assets, total service values, service frequency, drone unit sales on the following information
 Ministry of Land, Infrastructure, Transport and Tourism, "Trends Surrounding Logistics"
 Ministry of Land, Infrastructure, Transport and Tourism, "Conditions Surrounding Infrastructure Maintenance"
 Cabinet Secretariat, "Estimation of the size of the private sector market for national land fortification"

Ministry of Economy, Trade and Industry/Digital Architecture and Design Center (DADC) "Autonomous Mobile Robot Architecture Design Report"

3: Impress Research Institute "Drone Business Report 2023"

Drones that serve social infrastructure will be tailored to meet the requirements of individual applications

Drones will have specific features tailored to each applications



A global manufacturer that **update social infrastructure through realization of **autonomous control technology** and **co-existence of robotics and humans****

Identify applications to focus on through Proof-of-Concept trials, and then develop and manufacturer application-specific drones

Client pain points

Don't know if drones are useful for operations

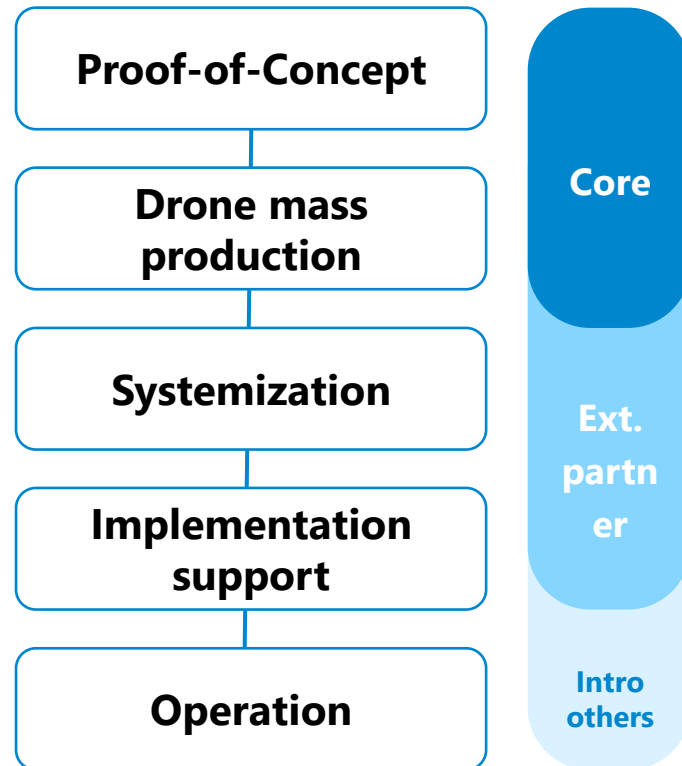
Need high quality drones durable enough for business operations

Want to link with internal system and big data analytics

Need operational manual and pilot training

Want to outsource everything

ACSL Business



1. Solution development

Conduct trial to identify how effective drones can support current operations (PoC) and sell evaluation custom drones. **Identify key marketable application to focus.**

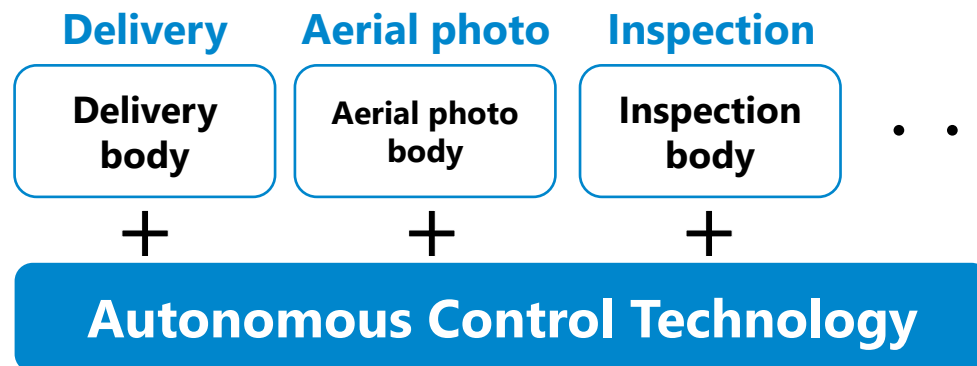
2. Sales of application-specific drones

Develop, manufacture and sell **mass production model of applications identified** as marketable based on PoC

Leverage core autonomous control system to customize and conduct trial based on customer demand. Mass produce those that are identified as marketable

Solution development

ACSL develops proprietary autonomous control system, which can be customized based on customer demand



Sales of application-specific drones

Develop, manufacture and sell mass production model of applications identified as marketable based on PoC

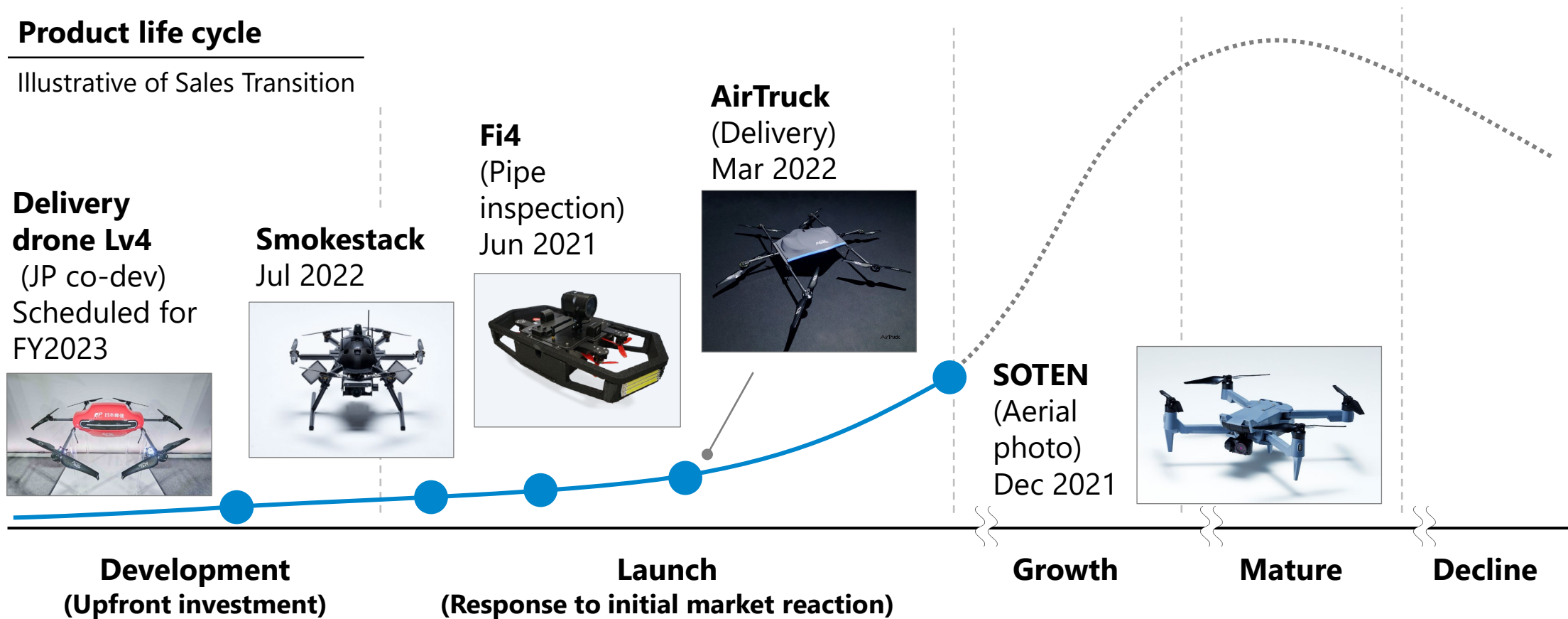


Application-specific drones already in mass production phase

Product launch for 4 applications completed in Japan. Next is launching overseas

Product life cycle

Illustrative of Sales Transition





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Overall

- Overseas expansion is growing.
- U.S. is in the process of **export procedures** for local sales, in addition to the promotion of a **large project in India**
- Strong growth in order backlogs with **positive outlook for full year**

Sales

Q3 **132** mn JPY Cumulative **657** mn JPY
YoY +2% YoY -43%

Large purchase order from India, and backlogs built up to 2.23 bn JPY. Outlook for full year is positive

Profit rate

Gross profit rate
(Cumulative)

-9%

YoY -16pt

Marginal profit rate maintained at high level

Marginal profit rate
(Cumulative)

52%

YoY +20pt

Operating income

Cumulative

-1,398 mn JPY

YoY -69 mn JPY

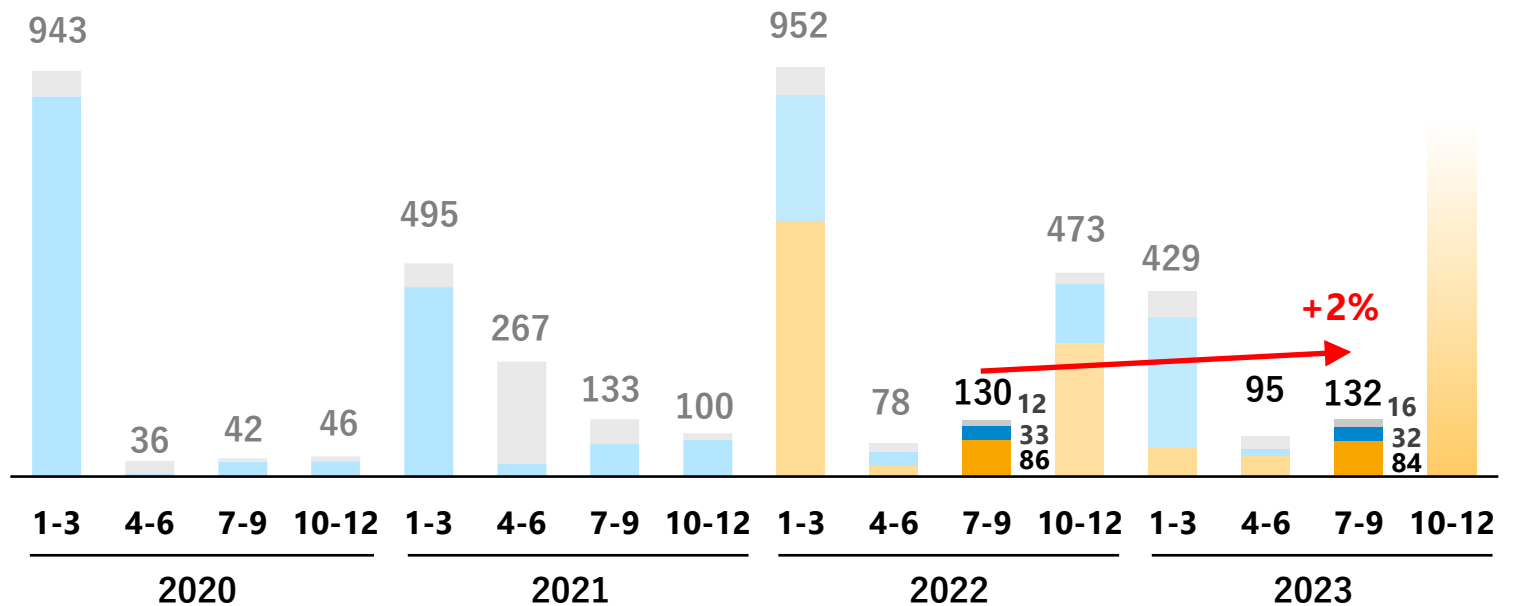
Though lower revenue, operating profit same as last year

Quarterly sales transition and backlogs

Q3 had 2% growth versus last year. Large project won in India, and orders also started in the U.S.

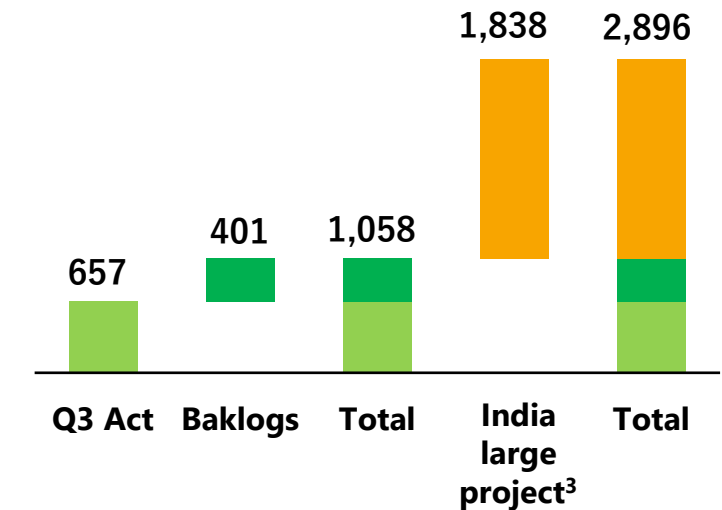
Sales¹

mn JPY



Sep. end sales and backlogs²

mn JPY



Orders have started in the U.S. from Sep.

1: The fiscal year ended March 31, 2021, and the following fiscal year ended December 31 2021 is a 9-month irregular accounting period from
 2: Order backlogs 401mn JPY is the total value of projects with a purchase order or similar documents at the end of Sep 2023, excluding large projects in India
 3: There is a possibility that this product may not be sold depending on export-related permits and approvals or the results of risk assessments.
 The amount of sales and the timing of recording sales are currently being reviewed (1 USD = 135 JPY)

Strategic MOU signed with a local company for overseas start-up

Across FY23-FY25, MOU related to drone and robotics projects tallies more than 400 units, 5 bn JPY (37 mn USD) globally

Order of 1.83 bn in India

- Already signed 30 mn USD worth of MOU across FY23 and FY24 with AeroArc
- Received an order worth 13.6 mn USD (1.83 bn JPY) in August for the sale of robotics parts as the first project under the MOU
- Licensing, approval, and other procedures are in progress for delivery in FY23¹

U.S. Export procedures in progress

- As a result of entering the U.S. market, signed MOU with two partner companies and expect to sell 50~100 units in 23 years
- Currently undergoing export procedures for SOTEN in the U.S.
- As soon as the procedures are approved, we will sell the products to end users through our distributors in the U.S.

Asia and EU

- Taiwan: MOU signed on drone project worth up to 1 billion yen by FY25
- Indonesia: MOU signed on product sales and sales expansion collaboration in Indonesia
- Europe: MOU signed for sales of more than 300 drones in Europe and South America by FY25

1: There is a possibility that this product may not be sold depending on export-related permits and approvals or the results of risk assessments.

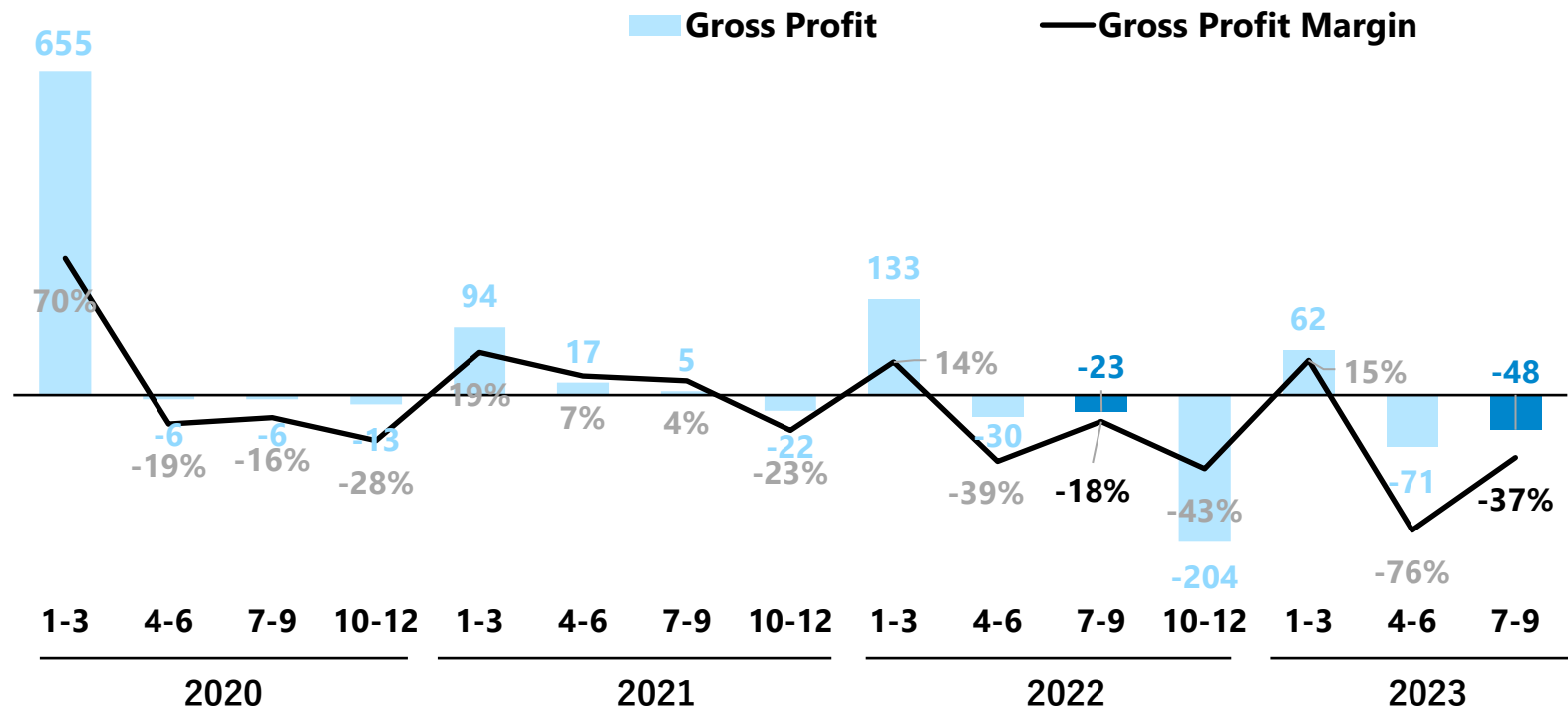
The amount of sales and the timing of recording sales are currently being reviewed
Calculated based on 1 USD = 135 JPY

Gross Profit and Gross Profit Ratio

Gross profit margin and declined compared to the same period of the previous year

Gross Profit and Gross Profit Ratio¹

mn JPY



- Gross profit lower compared to same period last year
- Gross profit is negative due to small sales on a booked basis and the burden of fixed manufacturing cost
- Marginal profit will improve cumulatively this fiscal year due to design changes, etc

1: Fiscal year ending in March until FY21/3. FY21/12 is irregular with 9 months between 21/04~21/12. FY22 onward is fiscal year ending December

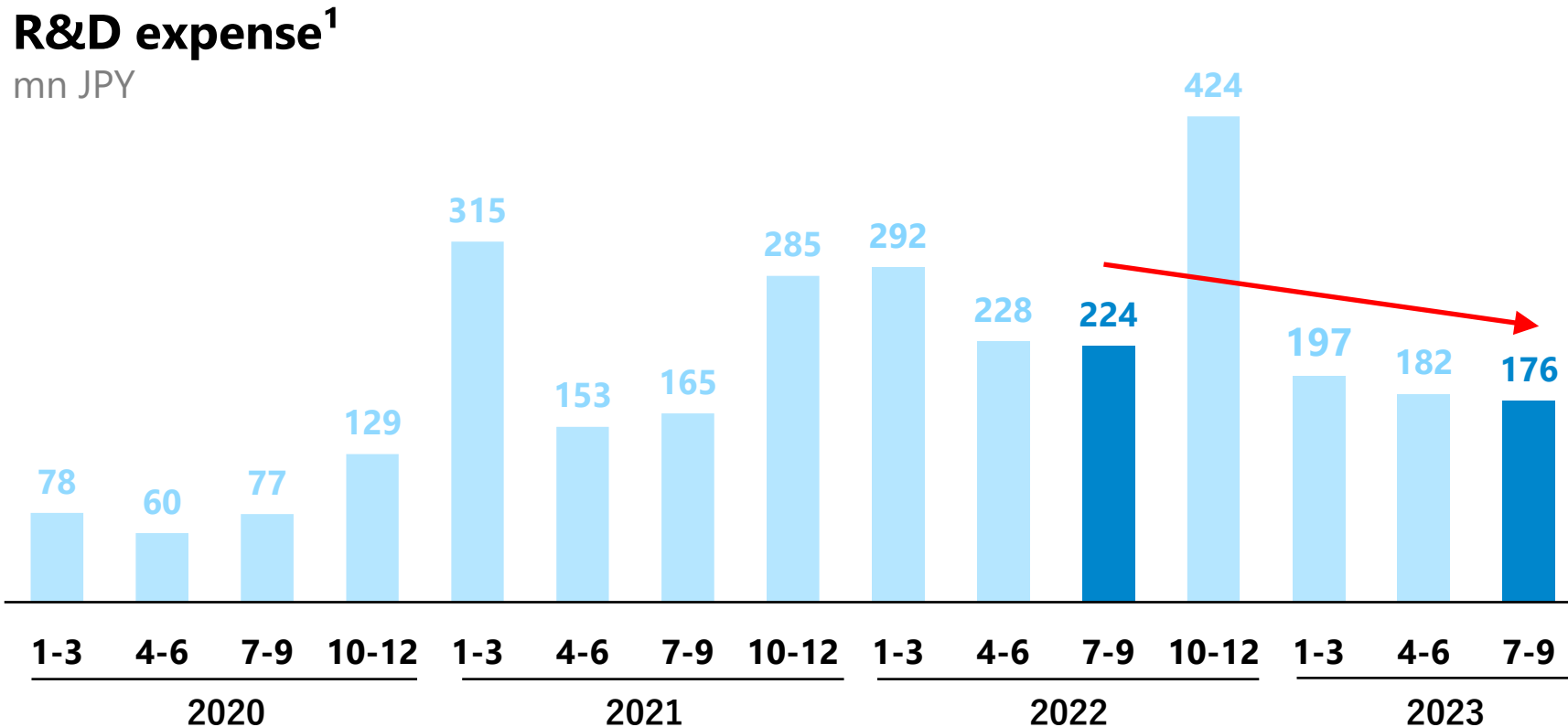
Marginal profit ratio by segments¹

Both SOTEN and Solutions dev. achieved higher profit ratio than previous year

		<u>FY22/12 full year</u>		<u>FY23/Q3 cum</u>
SOTEN (Aerial photography)	Sales (100 mn JPY)	9.3		1.2
	# of drones (units)	645		42
	Marginal profit ratio (%)	20	➔	51
Solution Development (Proof-of-concepts trials, sales of prototype drone)	Sales (100 mn JPY)	5.0		3.4
	Marginal profit ratio (%)	54	➔	61

1: Marginal profit by product is defined as net sales minus variable costs; for SOTEN and drone sales, it is defined as net sales minus material costs; and for proof-of-concept trials, it is defined as profit minus direct subcontracting costs. Gross profit is defined as marginal profit minus labor and manufacturing costs.

R&D investment curbed in FY23/12 from the previous year as major R&D investment completed. 25% curbed in 3Q YTD compared to the previous year



1: Fiscal year ending in March until FY21/3. FY21/12 is irregular with 9 months between 21/04~21/12. FY22 onward is fiscal year ending December

Japanese proposal on collision avoidance for UAV¹ adopted as international standard

Int'l. standardization of collision avoidance procedures accelerates the efforts on social implementation and leads to the realization of various services

- Collision avoidance is an essential technology for the social implementation of UAV
- Worked with SUBARU and Japan Radio to revise international standards starting in 2021²
- Officially adopted and published by the International Organization for Standardization (ISO) on October 2, 2023³
- International standard to follow the steps and take uniform avoidance actions for collision avoidance



Image of developed collision avoidance technology

1: UAV (Unmanned Aerial Vehicle)

2: Based on the results of NEDO's "Project to Realize an Energy-Saving Society where Robots and Drones Play an Active Role"

3: "ISO21384-3 Unmanned aircraft systems - Part 3: Operational procedures"

Started collaboration with Fixstars to develop and promote the application development environment for SOTEN, a domestically produced drone.

- **Open software development kits (SDKs) and the development of an environment are key to the widespread adoption of drones in society and the expansion of their applications**
- **Fixstars has a lot of experience in developing SDKs in advanced fields such as AI semiconductors for automated driving and quantum computing business**
- **Aiming to open up the development environment for SOTEN by combining ACSL's "practical and reliable drone development technology" and Fixstar's "SDK development technology draws out processing power of the computer "**



**Small Aerial
Photography Drone
"SOTEN"**



Business progress was solid. Gross profit increased, R&D expenses decreased, and cost structure improved

[mn JPY]	FY23/12 Q2 actual	FY22/12 Full year	Results of same period last year	YoY compari- son	Summary
Net sales	657	1,635	1,161	▲504	<ul style="list-style-type: none"> The amount decreased from the same period of the previous year due to the initial shipment of SOTEN (590 mn JPY) The latest order backlog is 2.23 bn JPY, and the business is progressing steadily
Gross profit	▲57	▲124	80	▲137	<ul style="list-style-type: none"> Gross profit was negative, but improved compared to the full year of the previous year Significant improvement in segment marginal profit margins, with the impact of the previous year's semiconductor price spike subsiding
Gross profit ratio	▲9%	▲8%	7%	▲16pt	
R&D expense	555	1,168	744	▲188	<ul style="list-style-type: none"> R&D by Q3 was suppressed by about 25% compared to the same period last year Plans to invest flexibly in overseas expansion, etc. in the future
Operating income	▲1,398	▲2,203	▲1,329	▲69	<ul style="list-style-type: none"> Operating loss remained at the same level as the previous year despite sales decline Non-operating expenses were recorded as costs related to fundraising, etc.
Net income	▲1,458	▲2,593	▲1,277	▲180	

A drone is shown in flight against a clear blue sky, positioned in the upper left quadrant of the slide. Below the drone, a series of misty, layered mountain ranges stretch across the horizon, creating a sense of depth and scale. The overall color palette is dominated by various shades of blue and white, giving the image a clean, professional appearance.

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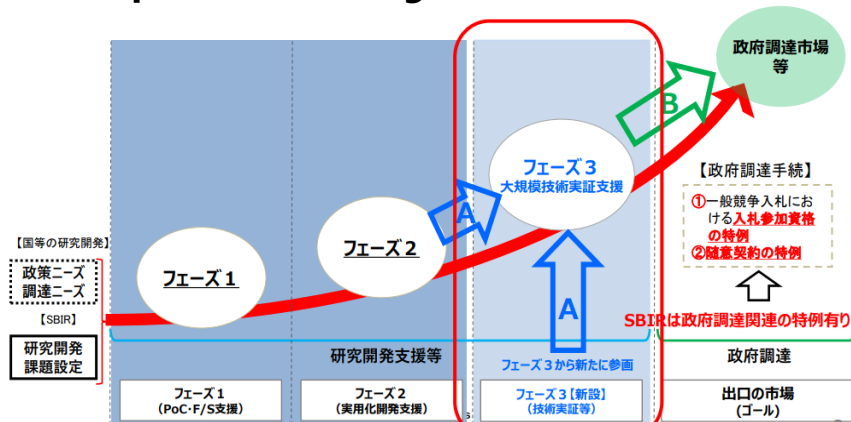
Selected as a business operator for SBIR¹ by METI²

Aims to develop a new high-performance, safe and secure drone with market-leading flight performance, and expects subsidy approx. 2.6 bn JPY by FY2026

SBIR Phase 3³



- Large-scale tech. demonstration projects to promote R&D by small and medium-sized companies and to lead to rapid social implementation of innovative and superior technologies



ACSL projects outline

- Development of new high-performance, safe and secure small aerial photography drones with economic security and security considerations
- Meet the demand for secure small aerial photography drones in Japan and overseas by leveraging the knowledge of SOTEN development and feedback from the market
- The project period is from Nov. 2023 to Dec. 2025
- The maximum amount of subsidy for the implementation period is 2.6 bn JPY

1: SBIR (Small Business Innovation Research)

2: METI (Ministry of Economy, Trade and Industry)

3: Small and Medium Enterprise Innovation Creation Promotion Project

Source: "Execution of the Ministry of Economy, Trade and Industry's SME Innovation Creation Promotion Project (SBIR Phase 3 Project)"

https://www.meti.go.jp/shingikai/economy/chusho_innovation/pdf/001_03_00.pdf

Participates as R&D organization in K Program¹

Enhance the safety of airspace use by developing autonomous and distributed control technologies for multiple small drones

K Program overview 国立研究開発法人 科学技術振興機構

- Fostering essential, cutting-edge technologies for Japan to secure a strong position globally
- R&D Subject "Construction of Small Unmanned Aircraft Swarm System by Innovating Cooperative and Digital Twin Technology (tentative name)²" was adopted in October 2023
- Project period is from Dec. 2023 to Mar. 2028, and the total R&D cost expected to be up to 1 bn JPY³
- Participates in the R&D Structure led by Yuichiro Sueoka, Ph.D., Osaka University⁴

ACSL field of technological development

- R&D on control technology and system construction that can achieve autonomous swarm flight⁵ in harsh environments, such as disaster areas, structures of infrastructures or plants, and locations affected by electromagnetic radiation (e.g., high-voltage lines)
- Technology for multiple drones to estimate and identify own location and share among themselves
- Establishment of distributed control technology enabling highly autonomous and swarm flight even under GNSS/GPS-denied and unpredictable environments

1: Economic Security Critical Technology Development Program

2: Issues in "Autonomous Control and Distributed Control Technologies for Small Unmanned Aerial Vehicles" in the R&D Concept "Autonomous Control and Distributed Control Technologies for Multiple Small Unmanned Aerial Vehicles and Detection Technologies to Enhance the Safety of Airspace Utilization"

3: The actual amount will be determined through discussions with the JST and the Program Officer, which are scheduled to take place in the future

4: Assistant professor of the Graduate School of Engineering, Osaka University

5: Simultaneous coordinated flight by multiple drones

PF2-CAT3 provided for the second Level 4 drone delivery service demonstration in Japan

Demonstration Overview

- November 6-9, 2023 in Kumejima Okinawa, Japan
- **Last mile delivery** of groceries and daily goods to the customer's home, which is approximately 2.3 km away
- Initiatives as a demonstration project for MLIT¹ "Last one mile delivery demonstration project utilizing unmanned aerial vehicles"
- **First Level 4 flight by in-house pilots** from ANA

ACSL PF2-CAT3

- In March 2023, **obtained Japan's first Type 1 Type Certification from MLIT**, and on March 24, 2023, **successfully completed Japan's first Level 4 flight with Japan Post**



Droned used for demonstration (PF2-CAT3)

Strong attention paid to SOTEN with security measures in line with the trend to emphasize economic security

- Commercial UAV EXPO held in Las Vegas in September 2023. The world's leading commercial drone expo
- ACSL exhibited for the second time after last year
- Exhibited with U.S. subsidiary ACSL, Inc. and **focused on small aerial photography drones (SOTEN)**
- **SOTEN was highly evaluated for its security measures and its ability to switch between cameras for multiple uses**
- **SOTEN evaluated the feasibility of implementing operations at several potential customers**
- **SOTEN is applying for an export license to enter the U.S. market while making improvements to the aircraft, etc.**



The ACSL booth
ACSL employees and ACSL, Inc. management explained about the small aerial photography drone from Japan, which attracted a lot of interest



SOTEN demonstration: a large number of visitors came to see the camera and to check the quietness of the propeller

Accompanied METI Minister Nishimura on his visit to India to make a pitch as a Japanese startup

Speaker at "India-Japan Deeptech Innovation & Clean Energy Seminar"

Japan-India Industrial Co-Creation Initiative 経済産業省 Ministry of Economy, Trade and Industry

- ACSL speaks at "India-Japan Deeptech Innovation & Clean Energy Seminar"
- Minister of METI Nishimura participated from Japan, and the Federation of Indian Chambers of Commerce and Industry and the Energy and Resources Institute of India were also named as co-sponsors, with participation by Indian dignitaries

(参考) 日印産業共創イニシアティブ取組事項概要

①スタートアップ協力

2. 未来産業の創出①

- ✓ 西村経済産業大臣訪印に合わせて、我が国スタートアップ約15社からなるスタートアップミッションを実施し、ビジネスイベントでの印企業向けのピッチセッションや、印スタートアップエコシステムと交流。
- ✓ 経済産業省による、起業家等の海外派遣プログラム「J-StarX」において、インド派遣プログラム事業を2024年2月以降実施予定。
- ✓ 新エネルギー・産業技術総合開発機構（NEDO）によるディープレック・スタートアップ支援事業を活用しつつ、日本のSUによるインド等での技術開発等の支援を2023年度から更に推進。

Recent Initiatives in India

- In June 2011, the "Utilization and Organization of Supply Chain Database in India" project was selected for the "Subsidy for Overseas Market Research Project" by the METI
- Signed MOU with Aeroarc in August 2011 for 30mn USD (4.05 bn JPY¹ equivalent) from FY23 to FY24
- In August 2011, received an order worth 13.6 mn USD (1.83 bn JPY¹ equivalent) for the sale of robotics parts as the first project under the MOU
- Licenses, approvals, procedures, etc. are being implemented for delivery by the end of the year²

1: 1 USD = 135 JPY

2: Subject to the status of export permits or the results of risk assessment, products may not be sold. Accounting procedures are under consideration

Source: METI Website: <https://www.meti.go.jp/press/2023/07/20230721005/20230721005.html>



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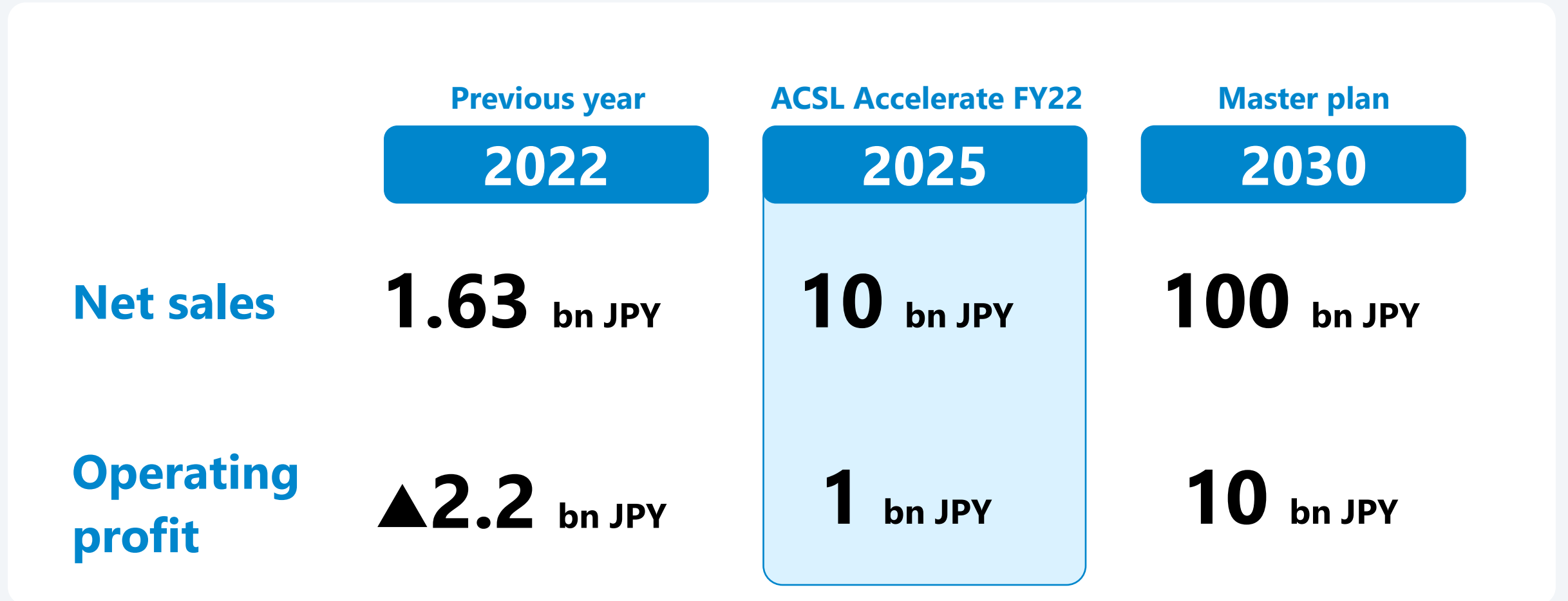
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Mid-term financial goal



Accelerate sales growth and achieve 10 bn JPY sales and 1 bn JPY profit in 2025



5 pillars for growth in this mid-term plan to realize a sustainable business with global footprints.

ACSL Accelerate FY22

**Shift to a sustainable
global manufacturer**

**Development and commercialization of
four application-specific drones**

**Development of new application drones
and compliance with security**

Full-scale launch into the Indian market

Reinforce ESG initiatives

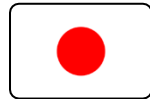
**Exploring potential adaptation of
autonomous control systems to other fields**

The background of the slide is a close-up, high-angle photograph of a grey drone. The drone's body, arms, and propellers are visible, with a red LED light glowing from the bottom of one of the arms. The lighting is soft and even, highlighting the textures of the drone's plastic and metal components.

FY23 Strategic Policy

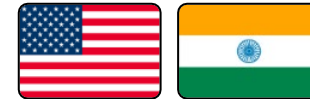
Full-scale overseas expansion

Launching product in US, Asia and India to increase shipment volume



Steady Japan growth

- Quickly reflect market feedback to the four application-specific drones already launched and move products to growth phase
- Focus on improving gross profit by improving procurement
- Focus on small-scale, effective development instead of large R&D investments



Rapid overseas growth

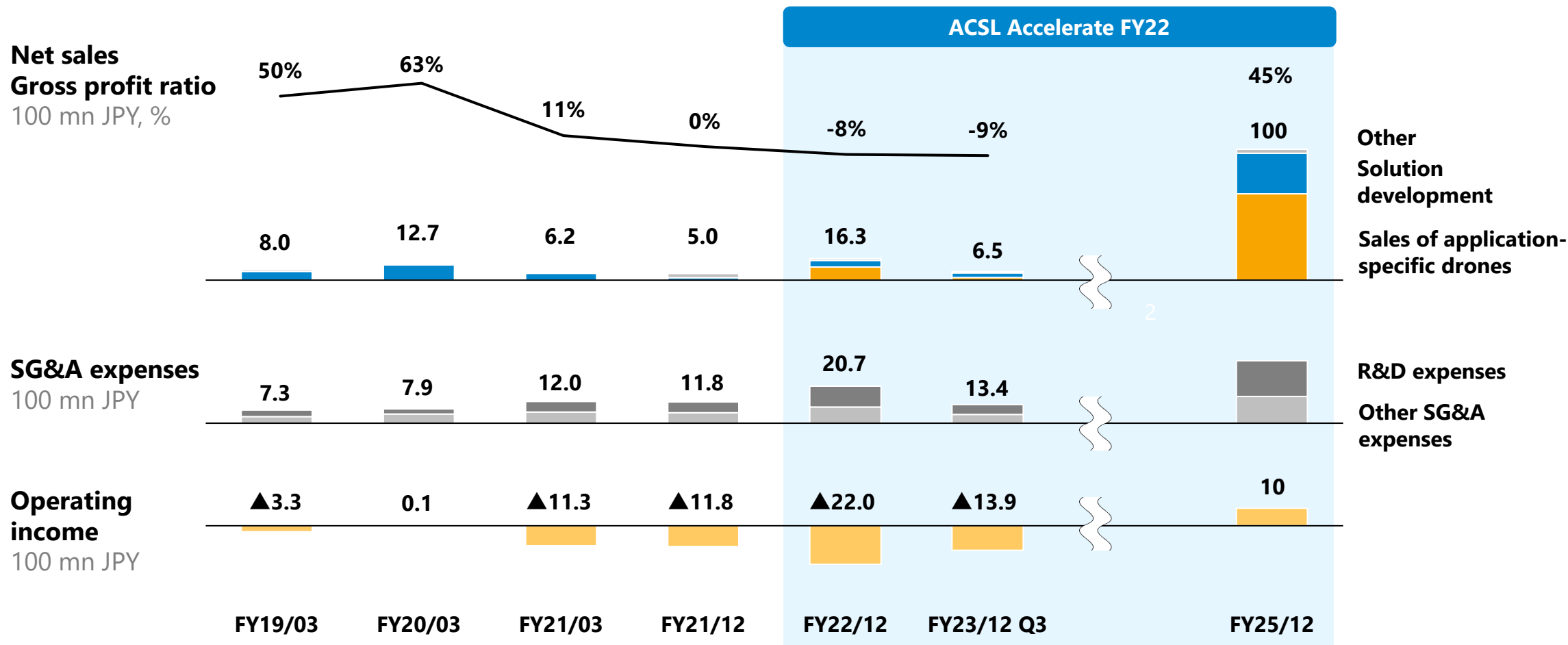
- Obtain export licenses and comply with local regulations for mass-produced drones to meet economic security needs and re-launch in North America, Asia, and India
- Focus on marketing and public relations to improve global presence
- Strategic MOU with local partners

Performance targets

- Domestic sales are expected to fluctuate toward the end of the year due to tenders from public agencies, etc.
- Overseas sales are currently in the process of applying for export and receiving orders for large projects in India, SOTEN sales in the U.S., etc
- We expect total domestic and overseas sales to be 1.63 bn JPY, the same as the previous year. However, since it is difficult to calculate appropriate and reasonable figures at this point, such as whether or not bids are received and export licenses are granted, specific earnings forecasts are not disclosed

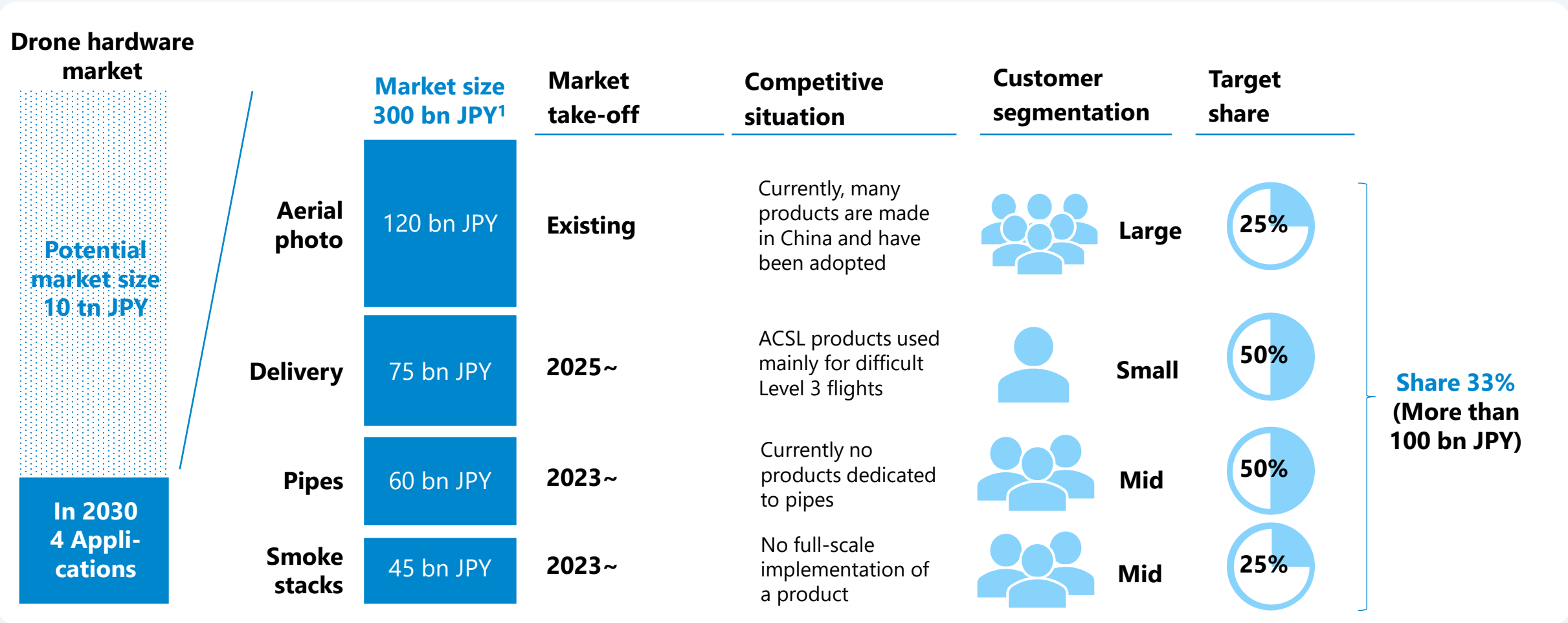
Sales and gross profit that ACSL targets by FY25

By FY25/12, achieve 45% gross profit rate incl. improvement in semicon and FX



Aiming for net sales of 100 bn JPY in 2030

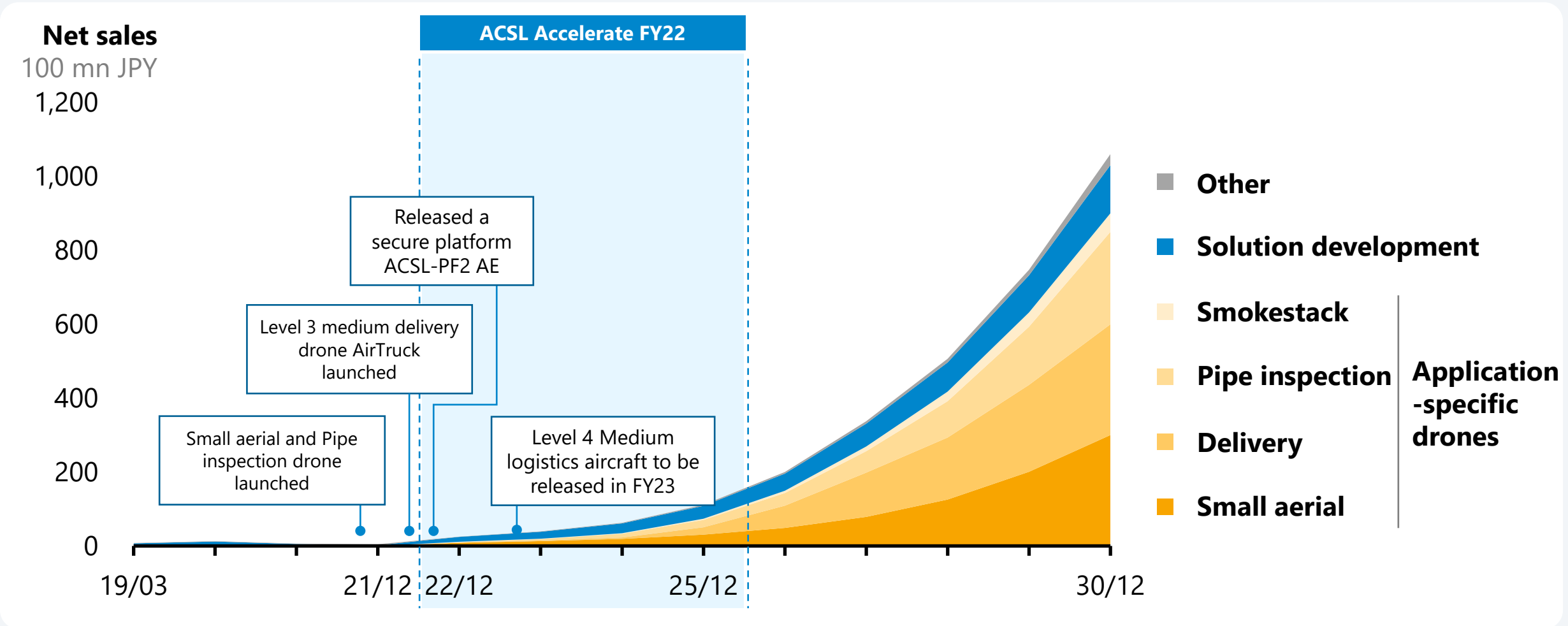
Achieve 33% market share in 2030 and realize 100 bn JPY in 4 applications



1: Estimated by us based on the total number of equipment, facilities, and services for each use, frequency of use, and unit cost of aircraft.

Rapid revenue growth achieved by shifting to drone sales

Early growth led by SOTEN and Fi4. Delivery will start growing from 2025



A drone is shown in flight against a clear blue sky, positioned in the upper left quadrant of the slide. Below the drone, a series of misty, layered mountain ranges stretch across the horizon, creating a sense of depth and atmosphere. The overall color palette is dominated by various shades of blue and white.

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Item	Question	Answer
Macro	Will the expected global expansion of military and defense demand have an impact on the Company?	We recognize that the market for attack drones for military use is different from that for industrial drones, and there is no direct impact on the Company. It is our policy not to develop or provide technology for drones used for offensive purposes. On the other hand, it is expected that drones used for defense purposes such as reconnaissance and patrol will either be produced domestically or procured from allied countries.
Macro	Will semiconductor shortage continue to have impact this year?	In 2022, the shortage of semiconductors and price hikes will continue to have a negative impact of about 600 mn JPY on gross profit. The marginal profit margin recovered in 2023 as a result of measures such as design changes.
Outlook	What is the outlook for sales and profit in FY23/12?	Domestic sales for the current fiscal year are expected to vary depending on the availability and timing of tenders from government and other public offices. Orders from overseas are worth approx. 2 bn JPY, and deliveries are expected by the end of this year, with export licenses, etc. Although aiming for a domestic and overseas total equal to or greater than FY22/12 (1.63 bn JPY), it is difficult to appropriately forecast the existence and timing of tenders and the progress of export procedures, etc. at this point, and it is difficult to calculate reasonable figures regarding earnings forecasts; therefore, specific earnings forecasts are not disclosed. Marginal profit margin is expected to improve and gross profit margin is expected to recover from last year. R&D expenses are expected to be reduced by 20~30% compared to last year. In addition to aggressive investment in the development of new products such as next-generation logistics drone, investment in overseas expansion will be made flexibly in accordance with market opportunities.
Overseas	Specific target countries for overseas expansion, target sales amount, and timing	In addition to countries such as the U.S., India, and Taiwan, whose policies are pro-China, some European countries, South America, and Southeast Asia will also be covered. In the U.S., a subsidiary was already established in California, and MOUs signed with two distributors to sell a total of more than 100 units. Currently applying for export and aiming for sales by the end of this fiscal year, but target amount is not disclosed due to difficulties in calculating a reasonable figure.
Overseas	What is the content of the 13.6 mn USD transaction to India?	Signed MOU with Aeroarc to collaborate on projects totaling 30 mn USD (4.05 bn JPY) by 2024. As one of the projects in the MOU, an order was received for a project to procure and supply ground-based robots at a cost of 13.6 mn USD (1.83 bn JPY). Currently, export licensing procedures and risk assessment are underway, with the aim of starting delivery by the end of this year.

Item	Question	Answer
Application-specific	Progress on application-specifics other than SOTEN?	While pipe inspections has been slower to deploy than expected, the delivery drone (AirTruck) has been adopted by a number of Digital Rural City Initiative-related projects across the country. Co-developed drone with Japan Post targeted for launch within FY23.
Financial affairs	What is ACSL perspective on mid-term goal?	The company continues to aim for sales of 10 bn JPY and operating profit of 1 bn JPY in 2025. 10 bn JPY was assumed to be achieved only in the domestic market in 2022, but at present the company is aiming for 10 bn JPY in sales, including a portion of sales contribution from overseas markets.
Competitive environment	Chinese drone manufacturers have a high market share, but how to compete against them?	<p>We recognize that although Chinese manufacturers have a large share of the consumer market, there is no clear dominant player in the industrial drone market. In addition, we have three competitive advantages over Chinese manufacturers: (1) technological standards for industrial drones (autonomous control technology, application-specific drones tailored to each use case, and drone certification), (2) understanding customer operations and building a support system to meet local customer requirements, and (3) providing secure and reliable drone to exclude security concerns.</p> <p>Recently, due to growing security concerns, some overseas countries have explicitly banned the import or use of Chinese drones, a situation that we recognize is favorable to us.</p>
Competitive environment	The possibility of emergence of competitors as drone manufacturers?	<p>Companies that possess autonomous control system technology at the source code level, especially those that have commercialized the advanced model-based control technology that we employ, are rare worldwide.</p> <p>The development of autonomous control systems for industrial drones requires verification in the field. We have a strong customer base, and we can enhance our competitiveness by promoting development in response to actual demand for each application through dialogue with customers and verification in actual environments.</p>

Item	Question	Answer
Sales structure	What is the sales structure in overseas market?	Depending on the situation in each country, in the U.S., a subsidiary was established with a sales function. In India, we have established a JV with a local partner company. In each of these regions, we believe that local sales and support functions are important, and we will work to deepen cooperation with local companies.
Risk	What are the biggest perceived risks?	We recognize that major accidents involving drones, including those involving drone manufacturers other than our company, are a major risk. Stricter laws and regulations on drones due to serious accidents, deterioration of public trust in drones, and other factors are expected to delay the commercialization of drones and delay the introduction of drones by customers, slowing the speed of the ACSL's business development.
Manufacturing System	Is there a potential shortage of manufacturing capacity?	As a fabless manufacturer, we outsource production to an external partner in Japan and can handle increased manufacturing capacity.
Acquisition of human resources	Is there a risk of loss of core personnel such as research personnel?	By requiring only English as a requirement for R&D personnel, ACSL is attracting mainly foreign nationals with cutting-edge technology. The personnel evaluation system is also designed to provide incentives by preparing career tracks not only for management roles but also for expert roles for engineers.
Performance	How seasonality in sales occurs?	For delivery of drones, sales are recorded when all the drones have been delivered and inspected by the client; for trial projects, sales are recorded when the entire project is completed. For large projects, sales are often recorded from January to March, depending on the budget cycle of the client company. On the other hand, sales are usually small from April to June. However, the recent supply side has had an impact on drone sales, and the concentration of sales in the January-March period tends to be less than in the past.

Characteristics of the launched application-specific drones

Developed and launched 4 application-specific drones by the end of 2022



SOTEN

(Aerial photography)

- Secure drones targeting government procurement, etc., in the context of economic security
- Four types of cameras can be hot-swapped, and the drone is wind-resistant, dustproof and waterproof



Fi4

(Pipe inspection)

- Drone capable of flying in pipes such as water and sewage pipes, co-developed with NJS
- Screening surveys can be conducted to narrow down the scope of detailed surveys



Smokestack inspection

- Autonomous flight to capture highly accurate inspection images of smokestacks, boilers, and water control tanks at factories and power plants in dark locations where it is GPS-denied



AirTruck

(Delivery)

- Delivery drone capable of flying 20 km with 5 kg payload
- KDDI SmartDrone and Aeronext form AirTruck Starter Pack to expand nationwide

Industrial drones need to have a capability and characteristics sufficient to be adopted to specific operations, making general-purpose drones difficult to introduce to industrial operations.

Major drone markets and key models

Drones we deploy

Personal use (B to C)

Industrial applications (B to B)

Aerial photography

Inspection


Delivery


Disaster prevention

General Purpose drones
Can be used for general purpose applications

Mainly inexpensive foreign (mainly Chinese) general-purpose drones

 **PF2**
Other companies: Mostly foreign (mainly Chinese) general-purpose drones with GPS support

 **PF2**
Other companies: Mostly large delivery drones such as foreign-made VTOL drones

 **PF2**
Other companies: Mostly foreign-made (mainly Chinese) general-purpose drones

Application-specific drones
Flight performance and characteristics optimized for each application

No application-specific drones for personal use

 **Aerial Photography**

 **Smokestack Inspection**

 **Pipe Inspection**

Other companies: Limited drones for each inspection application.

 **Medium Delivery**

Other companies: Very limited drones with Level 3 or higher safety performance

 **Aerial Photography**

Other companies: Drones with flight performance and safety features that can withstand disaster prevention applications are limited.

Balance Sheet

mn JPY	FY23/12 Q2		FY22/12	FY22/12 Q2
	Actual	YoY change to same period previous year	Actual	Actual
Current assets	2,987	+8%	3,572	2,771
Cash	693	▲46%	1,356	1,273
Fixed assets	1,484	▲24%	1,403	1,955
Current liabilities	1,055	+173%	2,003	386
Fixed liabilities	1,453	+2,087%	34	66
Total liabilities	2,508	+454%	2,037	453
Net assets	1,962	▲54%	2,938	4,274
Total assets	4,471	▲5%	4,976	4,727

KPI Results

Indicator		FY19/03	FY20/03	FY21/03	FY21/12 (9 months)	FY22/12	FY23/12 Q3
		Actual	Actual	Actual	Actual	Actual	Actual
Sales of application-specific drones							
Small aerial photography drone (Low ASP)	Units					645	42
	Amount (100 mn JPY)					9.3	1.2
Other application-specific drone (High ASP)	Units	-	-	-	-	18	16
	Amount (100 mn JPY)					0.7	0.8
Solution development¹							
PoC and Development	Projects	81	112	82	41	71	42
	Amount (100 mn JPY)	2.9	8.6	3.7	1.2	3.9	2.9
Sales of Platform/ Evaluation drone ¹	Units	106	101	46	18	27	11
	Amount (100 mn JPY)	3.8	3.0	1.4	0.6	1.0	0.5
Number of shipments ¹		136	128	71	25	42	17

1: The number of Sales of Platform/Evaluation drones represents drone sold in the platform sales (former STEP 3 and 4), and the number of shipments represents the total number of drones shipped including the demonstration experiments (former STEP 1 and 2)

Quarterly Sales Trends



Fiscal Year ¹		FY20/03				FY21/03				FY21/12				FY22/12				FY23/12		
Quarterly Results		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	
Demonstration experiment² • Proof of Concept • Custom development	Sales mn JPY	27	65	102	671	1	22	22	323	14	42	67	252	16	25	103	262	5	28	
	Num. of projects	14	22	21	55	2	11	15	54	6	14	21	34	2	12	23	28	4	10	
Sales of platform drone³ • Sales of standard and general-purpose drone • Drone modified for customers based on the standard drone	Sales mn JPY	24	48	19	212	4	10	13	116	15	34	17	42	17	7	37	39	9	3	
	Num. of units	6	12	9	74	1	3	5	37	6	6	6	8	4	2	13	7	3	1	
Other⁴ • Sales of parts • Fuselage repair service • Some national projects	Sales (of which national projects) mn JPY	9	29 (18)	9	59	30 (21)	8	10	55	237 (219)	55 (50)	15	64	20	11	24	59 (16)	30	16	

1: FY21/03 fiscal period is from April to March of the following year; FY21/12 is an irregular fiscal period from April to December; FY22/12 fiscal period is from January to December

2: Solution development (STEP 1 and 2) changed to demonstration testing from FY21/03 1Q

3: Drone sales (STEP3, 4) changed to platform drone sales from FY21/03 1Q

4: National projects generally record subsidies received as non-operating income. On the other hand, some projects whose main purpose is to conduct commissioned experiments are recorded as revenues

Major financial items by quarter



Fiscal Year ¹	FY20/03				FY21/03				FY21/12				FY22/12				FY23/12		
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	
Quarterly Results	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	
Net sales mn JPY	60	143	130	943	36	42	46	495	267	133	100	952	78	130	473	429	94	132	
Gross profit mn JPY	8	69	75	655	▲6	▲6	▲13	94	17	5	▲22	133	▲30	▲23	▲204	62	▲71	▲48	
Gross profit ratio	14%	48%	58%	70%	▲19%	▲16%	▲28%	19%	7%	4%	▲23%	14%	▲39%	▲18%	▲43%	15%	▲76%	▲37%	
SG&A expense mn JPY	205	171	201	213	230	173	315	488	325	348	515	535	442	431	670	419	451	469	
Of which R&D expenses mn JPY	66	54	76	78	60	77	129	315	153	165	285	292	228	224	424	197	182	176	
R&D Expenses ratio to sales	109%	38%	59%	8%	167%	183%	278%	64%	57%	124%	285%	31%	290%	172%	90%	46%	192%	133%	

1: Figures are based on consolidated financial statements from 3Q FY21/3 onward, and figures for earlier quarters are based on non-consolidated financial statements. FY21/12 is an irregular accounting period from Apr. to Dec. FY22/12 is an irregular accounting period from Jan. to Dec.

Potential Risks and Responses



Item	Major Risks	Our Perceptions and Risk Response Measures
Macro	<ul style="list-style-type: none"> ▪ Shortage of materials procurement against production plan due to semiconductor shortage and price hikes, material cost to sales ratio, and increased development costs ▪ Increase in prices of products procured from overseas due to the weak yen and strong U.S. dollar 	<ul style="list-style-type: none"> ▪ Semiconductors used for high-power output shortages and price hikes continue to be a constant. As a result of design changes made in consideration of procurement stability, we expect a certain level of cost reduction effect from 2023 ▪ Overseas parts procured from domestic suppliers were partially affected by foreign exchange rate fluctuations which increased costs
Overseas deployment (e.g. military forces)	<ul style="list-style-type: none"> ▪ Risk of being outperformed by overseas competitors in terms of competitiveness ▪ Potential impact of laws and regulations and local business practices ▪ Necessity of upfront investment for overseas expansion 	<ul style="list-style-type: none"> ▪ In overseas markets, economic security and unmanned needs may be stronger than in Japan, and demand for secure drones is expected to be significant.. SOTEN's demonstration in the U.S. market and subsequent inquiries have shown that SOTEN has sufficient competitiveness ▪ A certain amount of man-hours may be required to comply with local laws, regulations, and business practices. In addition, depending on the location, it is necessary to consider local partner cooperation and collaboration parts ▪ Possibility of aggressive upfront investment to acquire sales in overseas markets, including development of functions for local markets, export support, and initial customer acquisition
Regulation	<ul style="list-style-type: none"> ▪ Impact of the Civil Aeronautics Act, etc. on our business 	<ul style="list-style-type: none"> ▪ ACSL has managed to get Tier-1 type certification for Level 4 flight. No impact foreseen by Civil Aeronautics Act in the coming years
Performance	<ul style="list-style-type: none"> ▪ Uncertainty and seasonality of revenue recognition and cost execution ▪ Need for aggressive investment in R&D 	<ul style="list-style-type: none"> ▪ Japan sales are expected to be at least the same as the previous year, while overseas sales will be announced once a reasonable estimate is made. Seasonality will continue to be affected by customers' budget cycles, but sales of SOTEN and other products may fluctuate depending on supply ▪ Flexible investment policy in R&D and other areas for product development, overseas expansion, and other high-potential initiatives

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