



Business plan and Growth potential

ACSL Ltd (TYO: 6232)
March 27, 2024

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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	86 (as of Dec 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. **59**%

of Non-Japanese

Approx. **20**%

ISO

2

ISO9001 (Quality Management)
ISO27001 (Security)

Client

221

companies

1: Percentage of engineers and number of foreign employees are as of Dec 30, 2023. The number of customers is the total number of customers from FY19/03 to FY23/12 4Q. All figures do not include group companies

2: Voluntary retirement program was implemented in February 2024, and 24 employees are scheduled to retire at the end of March.



- 1. Business model and core competency**
- 2. Market overview**
- 3. Business plan**
- 4. Business highlights and current progress**
- 5. Risk information**

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

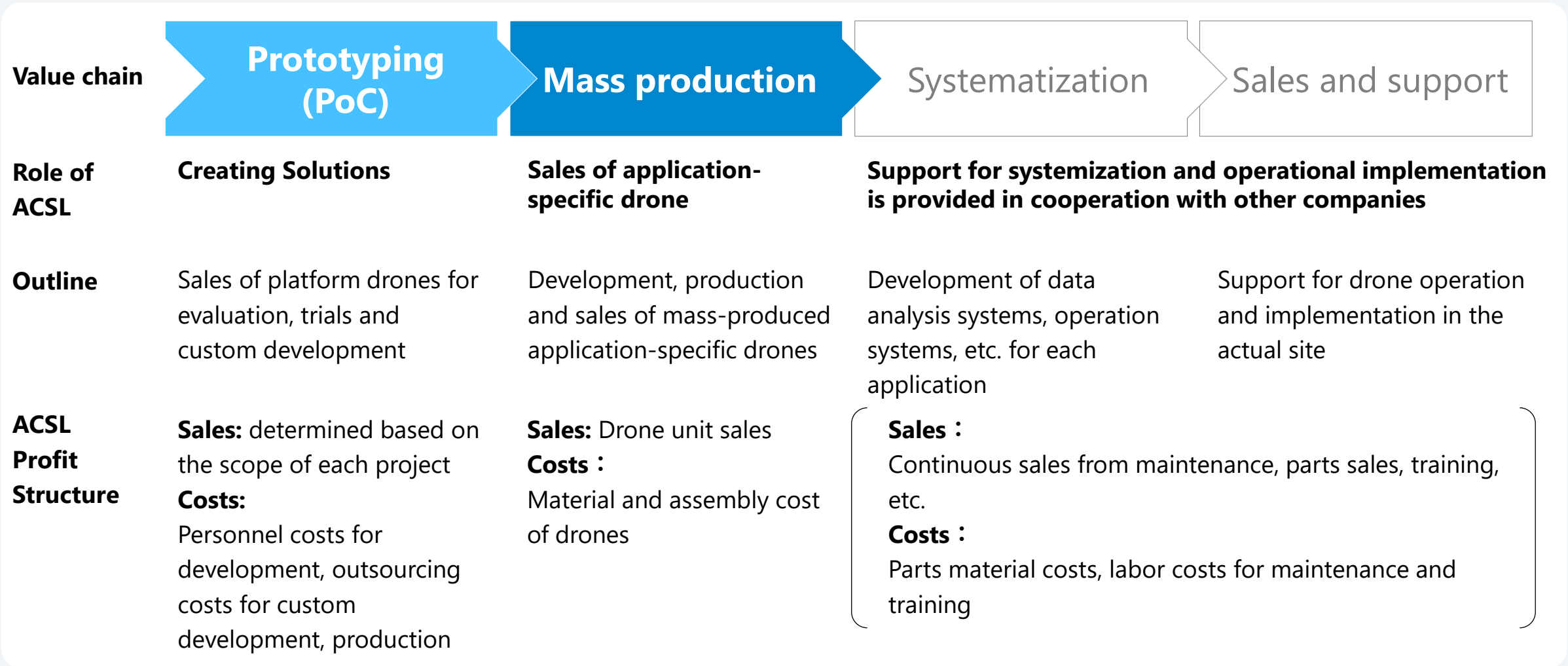
Control remotely

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

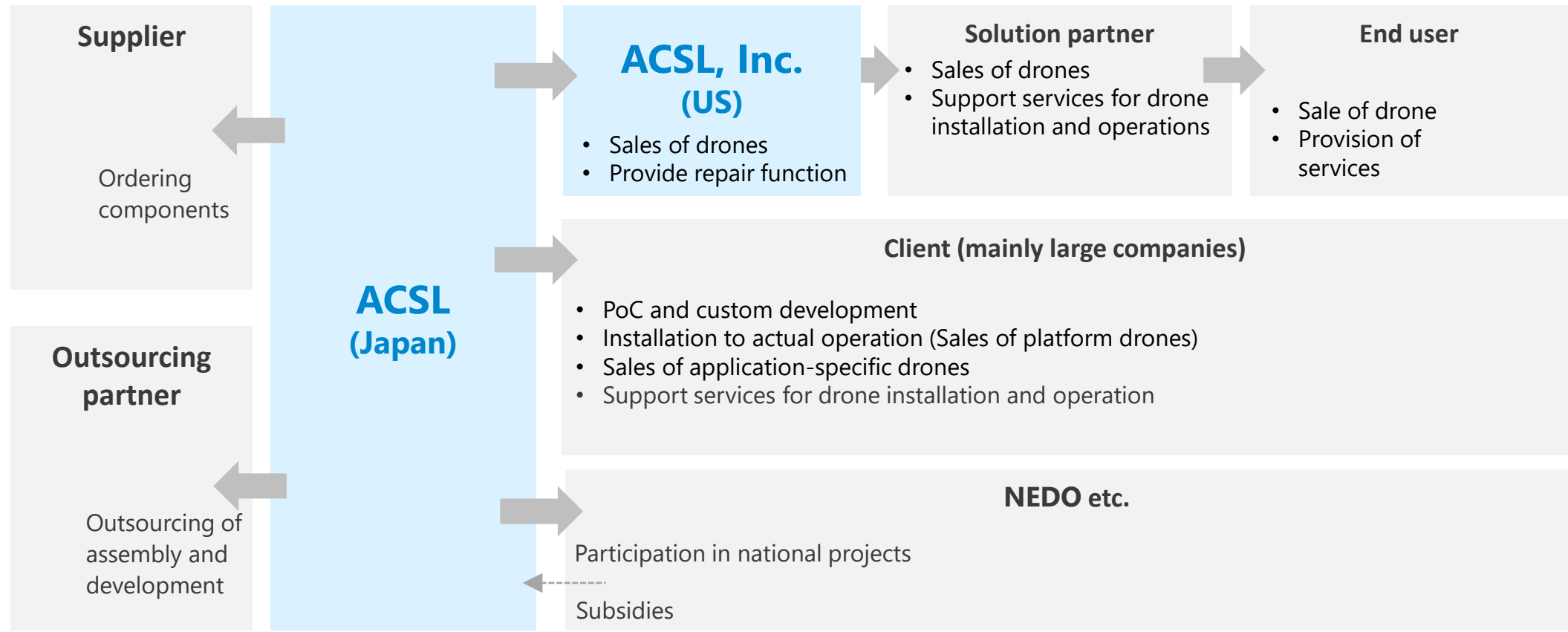
A global manufacturer that **update social infrastructure through realization of **autonomous control technology** and **co-existence of robotics and humans****

Drone market value-chain and where ACSL stands

ACSL can provide agile development required in the early stage and mass production required in the mature stage at the same time.



The main source of revenues is from the provision of demonstration services and the sale of drones our clients



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

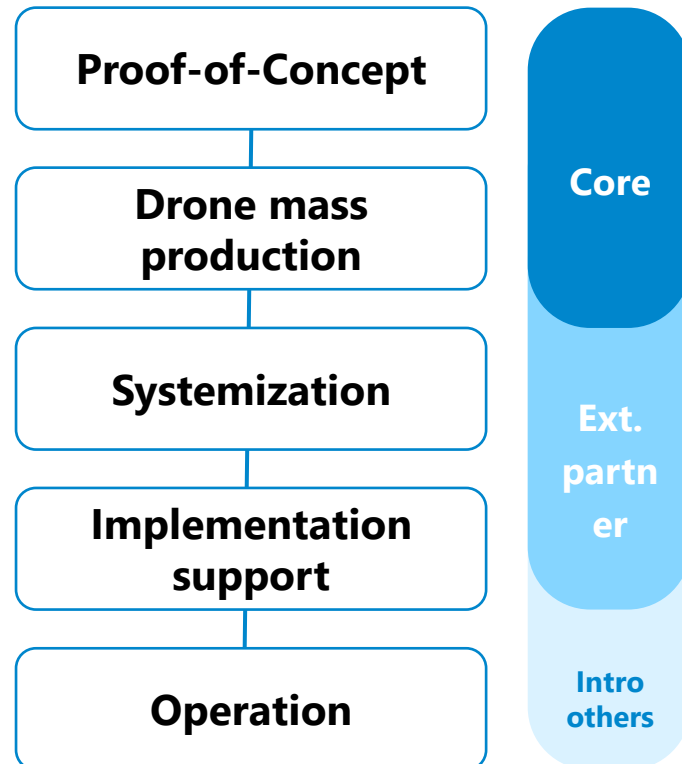
Need high quality drones durable enough for business operations

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.**

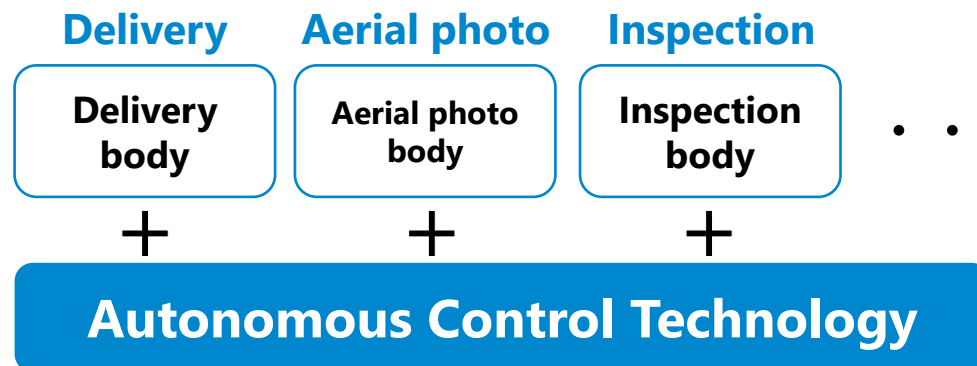
2. Sales of application-specific drones

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





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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

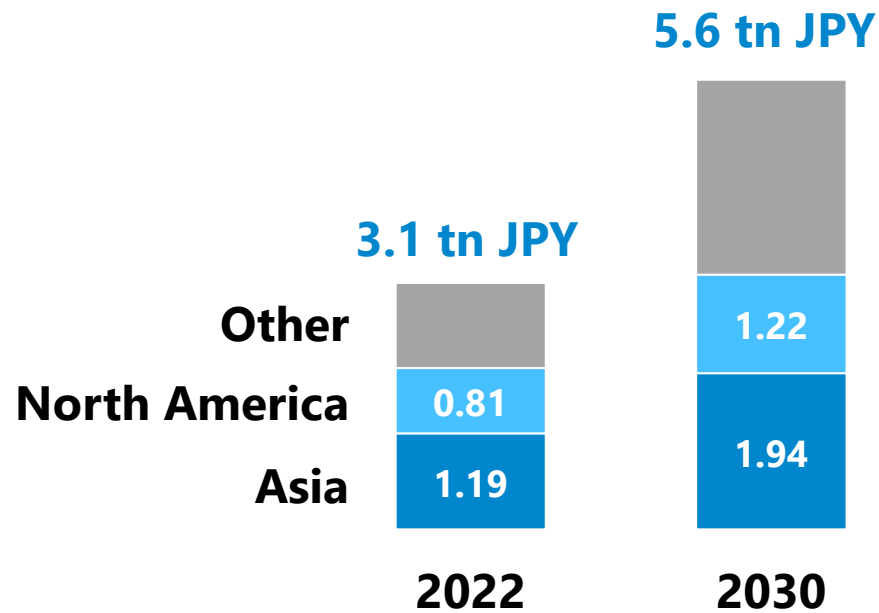
03

Decarbonization EV

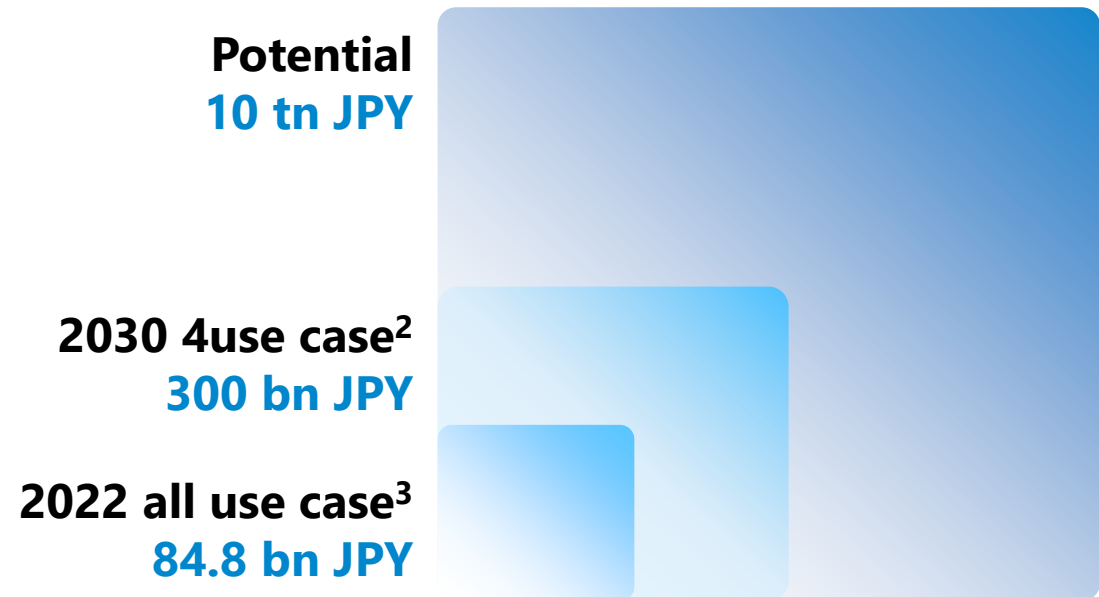
Drones recognized as a tool for decarbonation and EV. Drones are considered to work together with trucks in logistics field

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)

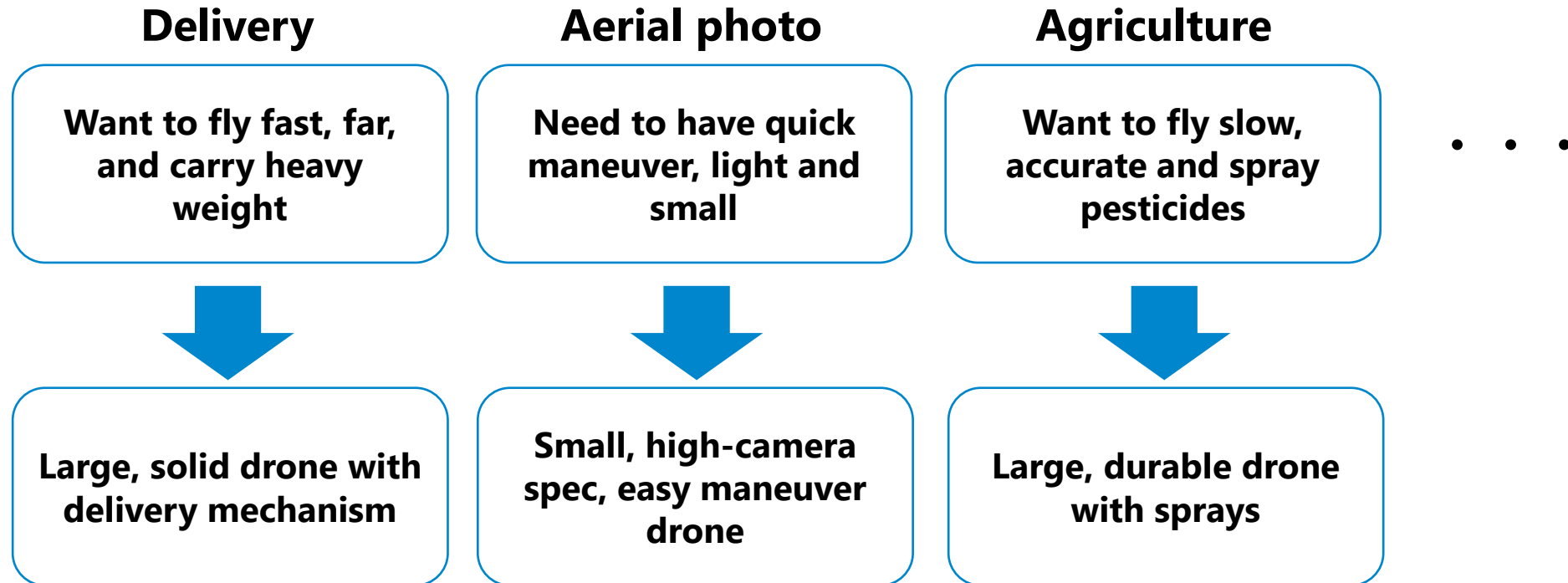
2: Company estimate based on assumptions to number of assets, total service values, service frequency, drone unit sales on the following information
 Ministry of Land, Infrastructure, Transport and Tourism, "Trends Surrounding Logistics"
 Ministry of Land, Infrastructure, Transport and Tourism, "Conditions 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



In many countries, Chinese drones are being replaced in industrial and government area

	 Japan	 US	■ Our Expansion Other
consumers	Mainly hobby drones made in China.	Mainly hobby drones made in China. U.S.-made drones are also deployed.	
Industry			
Aerial photography	Foreign products (mainly made in China) are the mainstream. Replacement with domestic products as a security measure is gradual.	Chinese-made drone were used, but "Non-China" is proceeding. U.S. and French manufacturers have not become mainstream, and ACSL receive high evaluation	 India A market is in the process of being formed. Import of foreign-made drones is prohibited, and Indian manufacturers exist but on a small scale.
Delivery	ACSL has the most experience in Japan; only ACSL has experience in Lv4; most Lv3 and Lv3.5 flights are ACSL aircraft	US-made VTOL (fixed-wing) aircraft predominate for long-distance flights.	 Taiwan As in the U.S., the trend is toward de-China. Local companies exist, but they are small, and Western manufacturers are less focused.
government	Foreign-made drones (mainly made in China) are the mainstream. ACSL has recently been used by the Ministry of Defense and other organizations.	Chinese drones are being eliminated at the regulatory level. U.S. and French-made drone have not been mainstream, and ACSL plans to expand in the future.	
Millitary	Included in the above for government	U.S. and French manufacturers are most focused	



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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**

Review of Business Strategies of Medium-term Management Policy

ACSL Accelerate FY22

Strategy in the mid-term management policy

Development and commercialization of four application-specific drones

Productization of small aerial, mid-sized delivery (Level 4), smokestacks, and pipes

Development of new application drones and compliance with security

Identifying new applications to develop and making all drones secure compliant

Full-scale launch into the Indian market

Establishing an office in India, hiring local talents and initiating commercial activity and local production

Reinforce ESG initiatives

Strengthening current ESG initiatives and communicating qualitative info externally

Exploring potential adaptation of autonomous control systems to other fields

Exploring areas to expand the core technology autonomous control system

Financial target

Target 10 bn JPY in sales and 1 bn JPY in operating income by 2025, for the Master Plan (2030) of 100 bn JPY in sales and 10 bn JPY in operating income

Main progress at present

- **SOTEN started mass production in 2022** and was expected to be a growth driver, but **sales declined in 2023**. Three other applications did not reach mass production, but finished development and released products.
- As part of its overseas expansion, the company **received an order for a large-scale project worth 1.8 billion JPY in India. In 2023, U.S. subsidiary was established and began selling SOTEN products in the U.S.**
- ACSL will participate in a **large national project** for technology development in 2023, with a grant of 2.6 billion JPY as SBIR and up to 1 billion JPY in total for the K Program.
- In terms of profitability, sales grew to **1.6 billion JPY in 2022**, but **profitability was deteriorate** due to soaring semiconductor prices and foreign exchange rates, **resulting in an operating loss of 2.2 billion JPY**. In 2023, sluggish growth in SOTEN, with **sales of 0.9 billion JPY and an operating loss of 2.1 billion JPY**.

Financial targets and prerequisites for achievement

- To achieve the financial targets, currently there is a large gap. While it is **challenging to achieve**, we will **continue to aim for the target**.
- Achievement requires **significant shift in the business environment**
 - Domestic: Acceleration of replacement of Japanese drones in the aerial photography market, early launch of delivery market after 2025
 - Overseas: Expand into the government market in the U.S. market in 2024 and continue to receive large orders in Indian market after 2024.

Understanding of the current situation

- Macro environment are in support for economic security, DX and decarbonization becoming a tailwind for robotics. However, change in external environment such as rise in semicon prices, weak JPY and global inflation has suppressed profit
- SOTEN was expected to be the growth driver, however, increased market standards for performance and changing domestic landscape led to slower traction of SOTEN sales. Additionally, macro environment has lead to weak cost competitiveness, making the product not attractive
- In order to secure growth, market entry to countries accelerating China ban, such as US and Taiwan, has begun and country-wide demonstrations to rebuilt SOTEN reputation is being conducted, however this has not lead to clear resolution of the current situation



Conduct transformation with focus on sales and profitability to improve corporate value

Overview

- **Select and focus** the widely offered market (application) and products based on profitability
- **Optimize resource** and transform to a profitable cost structure not relying on huge sales growth

Growth

Select and focus regions, applications, customers and products to where ACSL can compete and be profitable

Profitable

Negotiate and collaborate with key suppliers for cost reduction, and appropriate pricing based on individual customers

Optimize

Reduce R&D expenditure based on the selected domain, rationalize work, and optimize human resource

Select and Focus : Target domain with strong competitiveness

Conduct immediate focus on domains with strong competitiveness and profitability

	Current activity	Competitiveness	Focus
Domain 1 Aerial photo 	SOTEN (launched) Development of next gen aerial photo drone (SBIR ending FY26)	Drone development that meets economic security demand One of the very few mass manufacturer in Japan for aerial photo drone	Japan : Defense and Disaster (public agency) Overseas : Focus on US and Taiwan that has shown strong China ban. Start with inspection and expand to defense and disaster
Domain 2 Delivery 	Partnership with Japan Post Development of Postal delivery drone Continuous trials for social implementation	High technical capability that achieved the only Level 4 type certificate Abundant record of successful delivery trials in Japan In-depth technical and operational team setup with Japan Post	Japan : Continue development with Japan Post, and establish operations for social implementation

Optimize resource: Transform in sync with domain focus

Optimize structure based on domain focus, and improve FY24 operating profit by ~400 mn JPY

		Initiatives for transformation	Remark	
Growth		Focus resource on aerial photo and delivery	60% of resource is currently allocated to aerial photo and delivery	Annualized impact of ~800 mn JPY. FY24 realize is ~400 mn JPY for operating profit ¹
		Stop other application dev		
Profitable		Continue with minimum resource customer projects that has solid demand and can secure profitability (PoCs)	Mainly improve SOTEN profitability	
		Negotiate and collaborate with key suppliers for cost reduction		
Optimize	Human Resource	Appropriate pricing based on individual customers	Max 50% reduction vs today	
	Expense	Optimize Japan headcount to focus on aerial photo and delivery		
			Increase human resources for US subsidiary	
		Reduce external expenditure based on select and focus	Stop excessive cost	
	Reduce service expenditure based on headcount reduction	Reduce service usage based on headcounts		

1: FY24 realize impact calculated on timing and one time expense for labor cost and expenditure

FY24 financial plan after transformation (consolidated)

Complete current business transformation to achieve solid revenue and profit improvement. In addition, India large project and SBIR will be booked.

[mn JPY]	FY23/12 Full year	FY24 After transfor- mation	India large project	SBIR (Gov project)	FY24 Full year	Remark
Net sales	896	1,500	+1,840	-	3,340	<ul style="list-style-type: none"> Focus on SOTEN and delivery and achieve solid revenue of 1.5 bn JPY in FY24 Additional India large project to be booked in FY24
Gross profit	▲235	70	+40	-	110	<ul style="list-style-type: none"> Improve gross profit by completing the profitability initiative and book 70 mn JPY
Gross profit ratio	▲26%	5%	-	-	3%	<ul style="list-style-type: none"> India large project contributes additional 40 mn JPY
SG&A (inc. R&D, US subsidiary)	1,836	1,570	-	+1,600	3,240	<ul style="list-style-type: none"> Current business SG&A to reduce down to 1.43 bn JPY. Re invest into US subsidiary. In addition to current biz, additional 1.6 bn JPY for R&D for SBIR national project (fully funded)
Operating profit	▲2,071	▲1,500	+40	▲1,600	▲3,060	<ul style="list-style-type: none"> 1.6 bn JPY to be booked under SG&A for SBIR. the expenditure up to the third quarter is expected to be recognized as non-operating income of 1.2 bn JPY.
Ordinary profit	▲2,102	▲1,500	+40	+1,200 (Non operating income)	▲1,860	

1: Income recognition to be booked for non-operating income as a subsidy at the timing when the expenditure amount is confirmed after inspection by the METI.

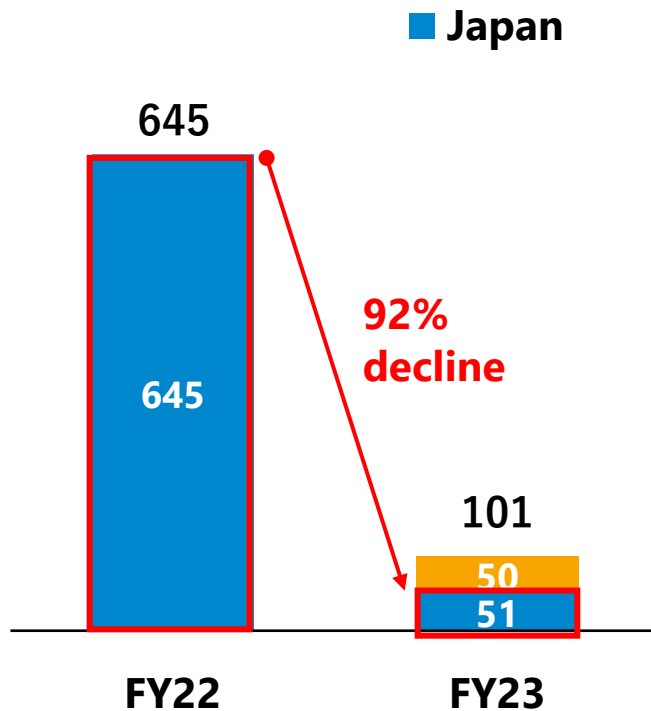
In FY24, the expenditure by FY24/Q3 is planned to be booked. Expenditures from FY24/Q4 to be booked after 2025. The current net profit is undisclosed due to the impact amount of headcount optimization is undetermined.



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SOTEN started US expansion, but Japan sales struggled. 92% decline vs last year

SOTEN unit sales



Major initiatives taken in FY23

Japan demo Conducted demo at 10 locations across Japan. Total of 269 participants

US expansion Established US subsidiary ACSL Inc. Build US distributor network, achieved export permit and made first sales



Opportunities for further sales expansion

Flight performance Continuous improvement in performance around video capture and flight based on market feedback

Price Price competitiveness improvement with design changes and procurement improvement

Win of large project orders

Received a large order for "SOTEN" by the Defense Equipment Agency, an external bureau of the Ministry of Defense¹



Orders received	SOTEN, a small aerial photography aircraft
Order amount	370 million JPY
appointed day of delivery	December 2024 (scheduled)

1: The impact of the order on business performance has been factored into the full-year forecast for FY12/2024 announced on February 14, 2024.

Provided drones to trials as the only certified Lv4 drone

**PF2-CAT3 drone received the first Tier-1 type certification in Mar 2023.
All Level 4 related trials are using ACSL drone as the only certified one.**

Japan Post

- Provided PF2-CAT3 to the demonstration by **Japan Post in Mar 2023 to conduct drone postal delivery**
- 4.5km with 1kg payload. Flight was 9 min (**40% improvement vs Level 3**)



Drone for Postal Delivery

ANA holdings

- ANA Holdings demonstrated at **Okinawa in Nov 2023**
- Delivered food to **residents located 2.3km away as part of last mile delivery**



Drone used at demo

KDDI Smart Drone

- KDDI conducted the **first medical drone delivery with Level 4**



Drone landing

MOU signed for 400 unit sales globally, and over 5 bn JPY sales of drone and robotics project across FY23~FY25. Portion has already begun shipment.

US Started sales

- Export permit received in Nov 2023 for SOTEN. Sold 50 units to distributors
- Started sales to end user from Dec 2023
- 5 MOUs signed and started selling across US with 8 distributors from FY 24

Taiwan Built sales network

- MOU signed in Aug 2023 to achieve 1 bn JPY drone project by FY25
- Evaluated highly by end users through exhibits and demonstration
- Signed distributor agreement in Dec 2023

India Delivering on 1.84 bn JPY project

- MOU signed for 30 mn USD robotics project with local partner
- 1.84 bn JPY project initiated as portion of the MOU
- Export permit received and started shipment. Sales will be booked in FY 24

Started sales of SOTEN in the US from Dec 2023. Strategic MOU signed in infrastructure companies. Expanding distributor and dealer network.

MOU signed in the US



Distributor leading the US drone market



Drone solution provider to infrastructure companies



Drone service provider to mining and infrastructure companies



Largest utility company in Missouri. Listed at Fortune 500.



Global agri and infra company with footprint in 21 countries

Distributor and dealer network in the US

Expanding US with wide coverage

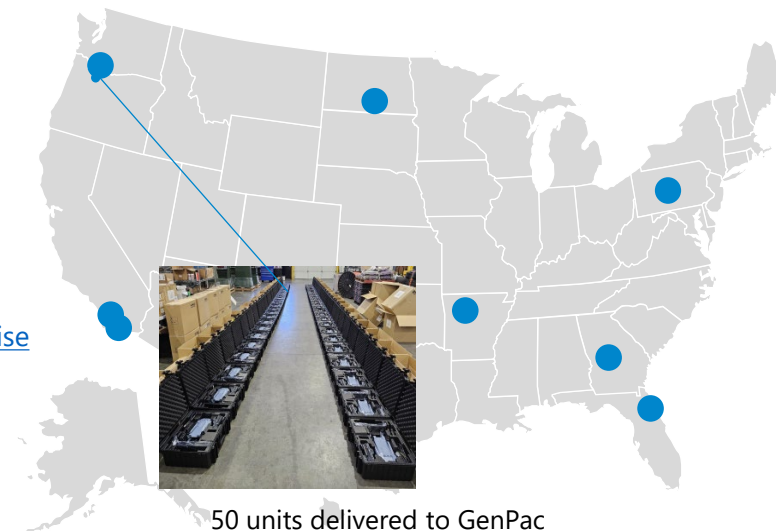
[Blue Skies Drones](#)
Washington

[General Pacific](#)
Oregon

[Frontier Precision](#)
North Dakota

[Advexure Enterprise](#)
California

[DronesMadeEasy](#)
California



[Volatus Drones](#)
New York

[Unmanned Vehicle Technologies](#)
Arkansas


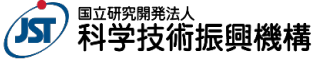
[Gresco Utility Supply](#)
Georgia

[Frontier Precision](#)
Florida

50 units delivered to GenPac

Awarded 2 national projects for technical development

Award SBIR to develop next generation of aerial photo drone with budget of 2.6bn JPY. Additional 1bn JPY by taking part in K program.

	Project Summary	ACSL Role	Period / Value
 <p>SBIR (Small Business Innovation Research program)</p>	A large-scale technology demonstration project to promote research and development by small and medium-sized enterprises and quickly bring innovative and superior technology to social implementation.	<ul style="list-style-type: none">■ Development of a new high-performance compact aerial photography drone that takes economic security and security into consideration■ Utilizing the knowledge gained through the development of SOTEN and feedback from the market, we will respond to the demand for small aerial photography drones in Japan and overseas.	<ul style="list-style-type: none">■ Period : Nov 2023 ~Dec 2025■ Subsidy : Max 2.6 bn JPY
 <p>K Program (Economic security important technology development program)</p>	Developing cutting-edge and important technologies that are essential for Japan to maintain a firm position in the international community	<ul style="list-style-type: none">■ Research and development of control technology and system construction that can realize autonomous group flight in harsh environments■ Development of technology for multiple drones to estimate and understand their own spatial position and share■ Establishment of distributed control technology that enables highly autonomous flight and group flight even in unknown environments where GPS is not available.	<ul style="list-style-type: none">■ Period : Dec 2023 ~Mar 2028■ R&D subsidy : Max 1 bn JPY²

1: Multiple drones flying simultaneously and in collaboration
2: Value will be determined based on discussion with funding parties

Raised funds to strengthen financial base to accelerate overseas expansion, etc.

	Summary	Time	Amount raised	Usage of funds
third-party allotment	<ul style="list-style-type: none"> Third-party allotment to CVI Investment, Inc. Issued new shares, convertible bonds (CBs) and fixed exercise price warrants ¹ 	<ul style="list-style-type: none"> New shares and CBs paid in February 2023 Redemption date of the CBs is February 27, 2015. 	Total 3.56 Bn JPY Common stock: 340 MM JPY, CBs: 1.39 Bn JPY, stock acquisition rights: 1.83 Bn JPY	<ul style="list-style-type: none"> Development and evaluation of drone Working capital for overseas business expansion Development of TAKEOFF software ²
International offering	<ul style="list-style-type: none"> Offering of common stock in overseas markets, primarily in Europe and Asia (excluding North America) 	<ul style="list-style-type: none"> Paid in November 2023 	Paid-in amount: 1.31 Bn JPY	<ul style="list-style-type: none"> R&D expenses for drones and business investments related to mass production Working capital for overseas business expansion
Long-term debt	<ul style="list-style-type: none"> Long-term loan from JFC at fixed interest rate Equal principal repayment starting in 5 years (2029) 	<ul style="list-style-type: none"> 10 years from January 2024 	Loan amount: 1.44 Bn JPY	<ul style="list-style-type: none"> Working capital for overseas business expansion
Setting Commitment Lines	<ul style="list-style-type: none"> Commitment Line Contract with Resona Bank, Ltd. 	<ul style="list-style-type: none"> 7 months from March 2024 	Borrowing limit: 1 Bn JPY	<ul style="list-style-type: none"> Working capital for the implementation of the SBIR

1: May not be able to raise funds if subscription rights are not exercised

2: Proprietary ground station software for autonomous drone flight

Overview of third-party allotment



	Common stock	Convertible bond (Bonds with subscription right)	Private warrants
Allottee	CVI Investment, Inc.		
Amount to be procured	0.34 Billion JPY	1.39 Billion JPY	1.83 Billion JPY ¹
Total amount to be raised	3.56 billion JPY		
Number of (potential) shares	Common stock of the Company 220,500 shares	700,000 shares – 1,680,169 shares (Lower limit conversion price~ Upper limit conversion price)	Common stock of the Company 920,500 shares
vs. number of shares outstanding ²	1.8%	5.7% - 13.6%	7.4%
Pricing ³	Issue price 1,539 JPY (93% of the closing price on the day preceding the resolution date)	Conversion price Initial 1,985 JPY (120% of of the closing price on the day preceding the resolution date) Upper limit conversion price: 1,985 JPY Lower limit conversion price: 827 JPY	Exercise price 1,985 JPY (120% of of the closing price on the day preceding the resolution date)
Period	-	Redemption date: February 8, 2027	February 7, 2023 - February 8, 2027
Lock-up	No fundraising involving an issuance of shares, excluding third-party allotment to strategic partners for 180 days after the closing date of this transaction		
Conditions for Revision of Exercise Price	-	The conversion price will be revised every 6 months (8 times in total) to 90% of the lowest daily VWAP during 10-consecutive trading days immediately prior to August 6 of each year from 2023 through 2026, and to February 6 of every year from 2024 through 2027	No exercise price revision will be made. (See next page)

1: The sum of the initial paid-in amount and the total amount to be paid upon exercise of warrants. The amount of funds raised will decrease if the Stock Acquisition Rights are not fully exercised within the exercise period, or if the Company purchases and cancels some of the Stock Acquisition Rights

2 : As of December 31, 2022

3: Both the issue price and conversion price are rounded up to the nearest one JPY.

Overview of the international offering



Class and Number of Shares to be Offered

1,500,000 shares of common stock of ACSL Ltd

Markets

Overseas markets, mainly in Europe and Asia (excluding the United States and Canada)

Issuance Resolution Date

November 13, 2023

Pricing Date

November 27~28, 2023

Payment Date

November 29, 2023

Delivery Date

November 30, 2023

1.44 bn JPY financing completed from Japan Finance Corporation in Jan 2024 for overseas expansion

Raised amount

1.44 bn JPY

From

Japan Finance Corporation

Interest rate

Fixed rate

Period

10 years

Repayment method

Equal principal payment after 5 years (2029)

Use

Working capital for overseas expansion

Summary

US expansion progressed but **Japan sales struggled for SOTEN**. India large project will be booked in FY24, and sales declined

Gross profit declined with inventory write-down

Sales

Q4	Full year
239 mn JPY	896 mn JPY
YoY -50%	YoY -45%

Struggled Japan sales. India large project will be booked in FY24. Backlog for FY24 is 207 mn JPY

Profit rate

Gross profit rate
(full year)

-26%

YoY -18pt

Marginal profit rate
(full year)

49%

YoY +15pt

Marginal profit rate improved. Gross profit declined vs last year due to booking of inventory write-down

Operating income

Full Year

-207 mn JPY

YoY +132 mn JPY

Though sales declined, operating income improved compared to last year due to reduction in R&D expense

FY23/12 Q4 results (consolidated)

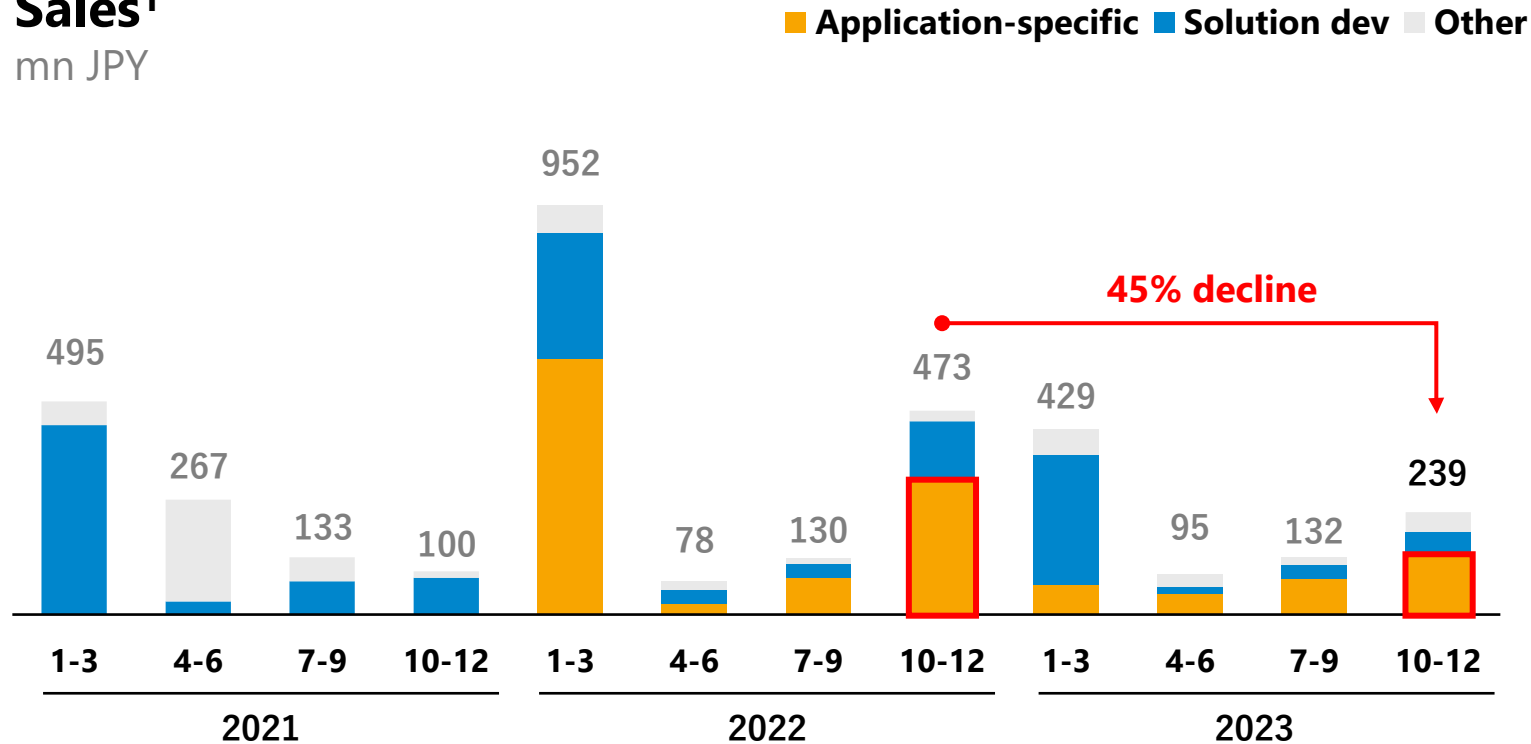
Sales declined due to struggle in Japan sales. Gross profit worsened due to inventory write-down. Improved income by reducing R&D expenditure.

[mn JPY]	FY23/12 Full year	Last year	YoY	Summary
Net sales	896	1,635	▲738	<ul style="list-style-type: none"> Japan sales struggled with SOTEN. India large project slided and will be booked in FY24. Total sales declined compared to last year. Backlog for FY24 sums up to 2.07 bn JPY
Gross profit	▲235	▲124	▲110	<ul style="list-style-type: none"> Though sales declined, impact of marginal profit improvement overwhelmed.
Gross profit ratio	▲26%	▲8%	▲18pt	<ul style="list-style-type: none"> Total gross profit declined due to recording inventory write-down of 139 mn JPY
R&D expense	759	1,168	▲409	<ul style="list-style-type: none"> R&D investment curbed in FY23/12 from the previous year as major R&D investment completed. 35% reduction for full year
Operating income	▲2,071	▲2,203	132	<ul style="list-style-type: none"> Improved operating and net income though sales declined, by controlling cost reduction
Net income	▲2,544	▲2,593	48	<ul style="list-style-type: none"> Booked write-down of investment securities

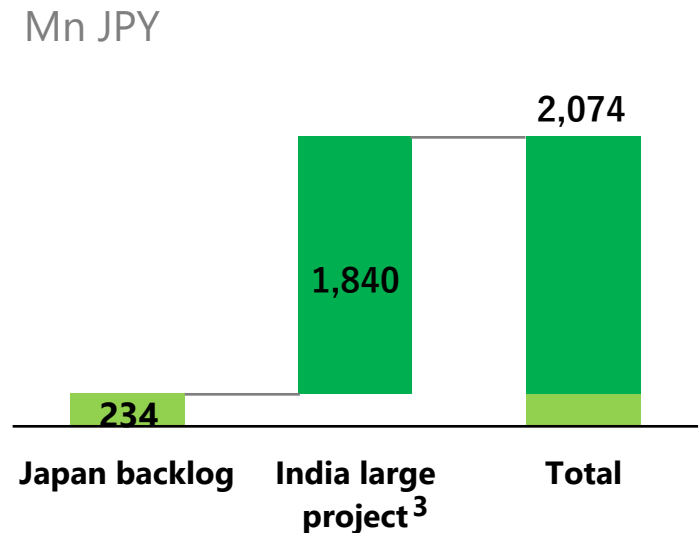
Quarterly sales and backlog

Struggled Japan sales of SOTEN. Total declined by 45% vs last year. Backlog tallies up to 2 bn JPY

Sales¹
mn JPY



Dec end backlog²
(Will be booked in FY24)



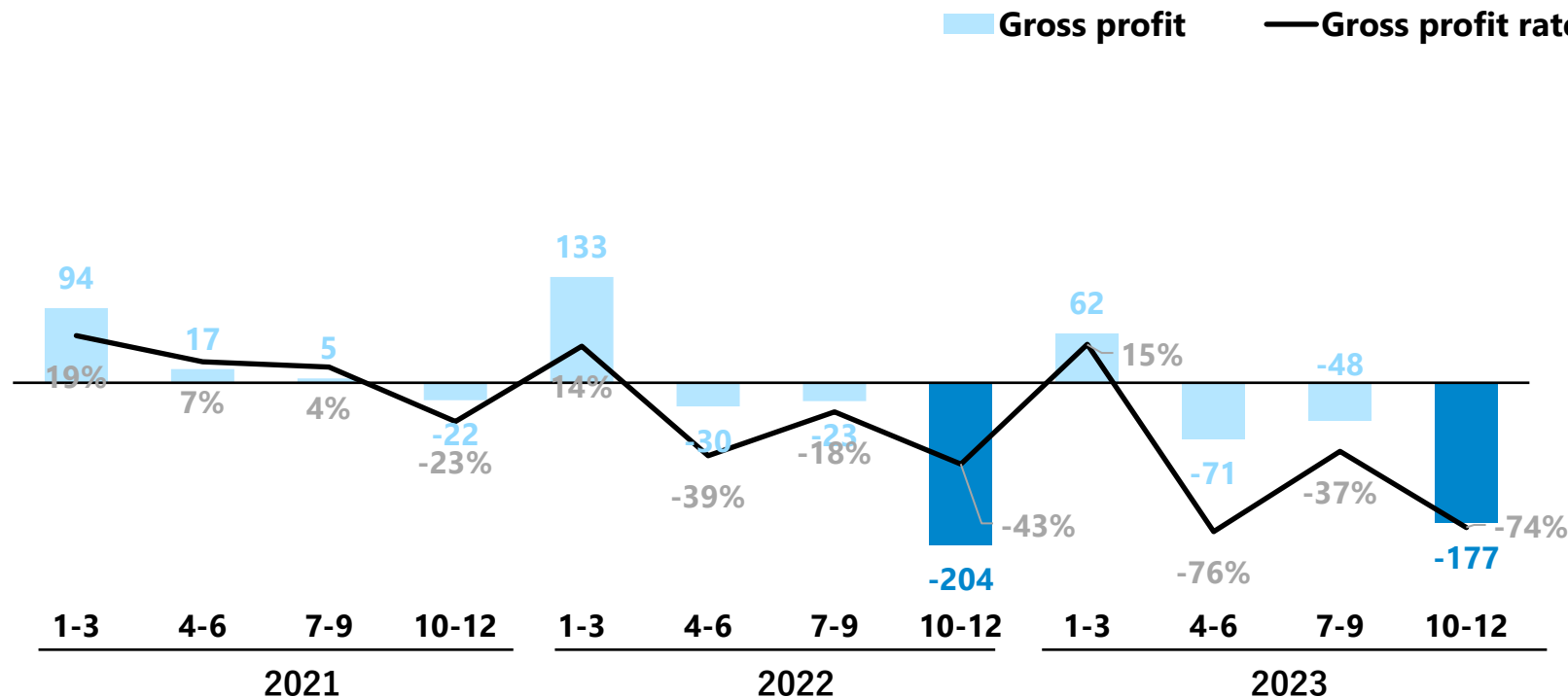
1: The fiscal year ended March 31, 2021, and the following fiscal year ended December 31 2021 is a 9-month irregular accounting period from
 2: Order backlogs 234mn JPY is the total value of projects with a purchase order or similar documents at the end of Dec 2023, excluding large projects in India
 3: The amount of sales and the timing of recording sales are currently being reviewed (1 USD = 135 JPY)

Gross Profit and Gross Profit Ratio

Gross profit improved for Q4. Full year was lower than last year due to booking of inventory write-down

Gross Profit and Gross Profit Ratio¹

mn JPY



- **Gross profit rate of Q4 improved compared to last year**
- **Booked one-time impact of inventory write-down (1.4 Oku JPY)**
- **Full year lower by 18 pts compared to full year last year**

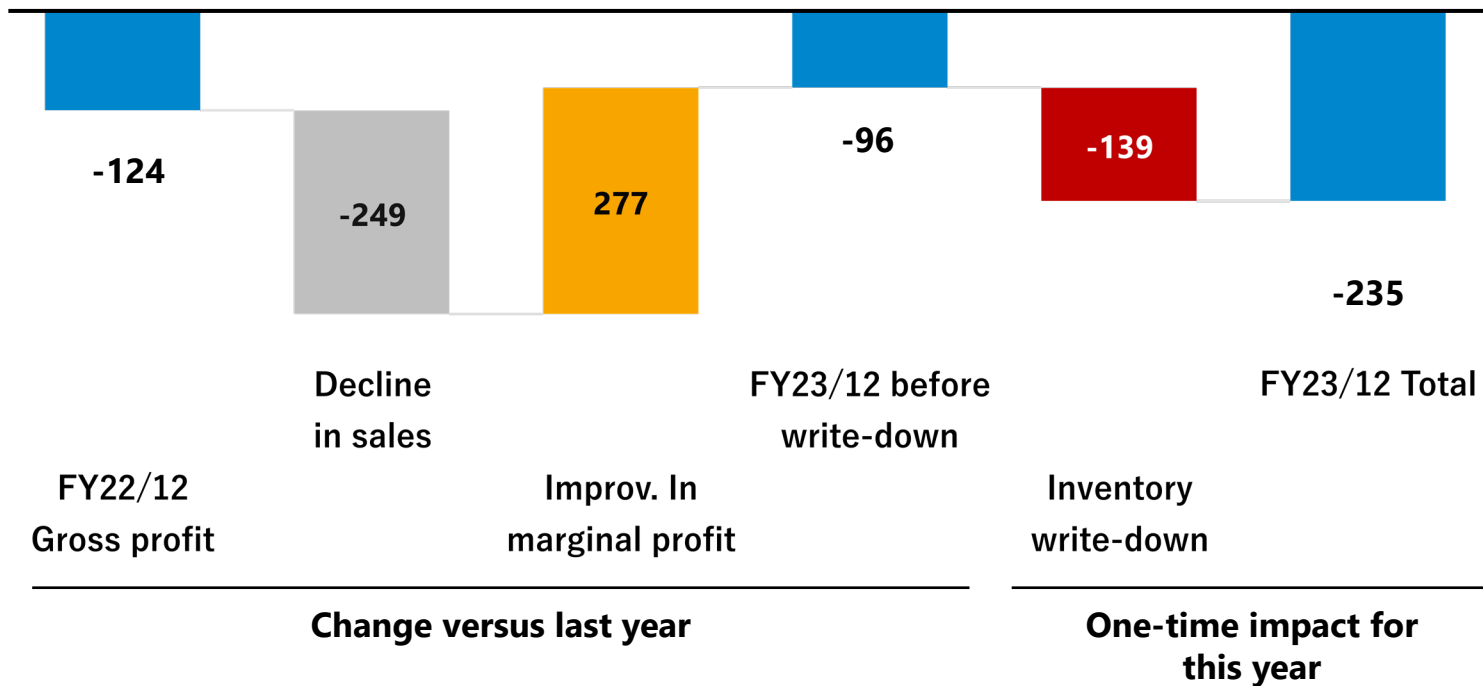
1: Fiscal year ending in March until FY21/3. FY21/12 is irregular with 9 months between 21/04~21/12. FY22 onward is fiscal year ending December

Change in gross profit for FY22 to FY23

Though sales declined, impact of marginal profit improvement overwhelmed. Total declined due to recording inventory write-down

Gross profit

Mn JPY



- Gross profit declined 2.5 Oku JPY due to decline in sales
- Marginal profit improved by 16%, improving gross profit by 2.8 Oku JPY
- Booked inventory write-down of camera, booking one-time loss of 1.4 Oku JPY

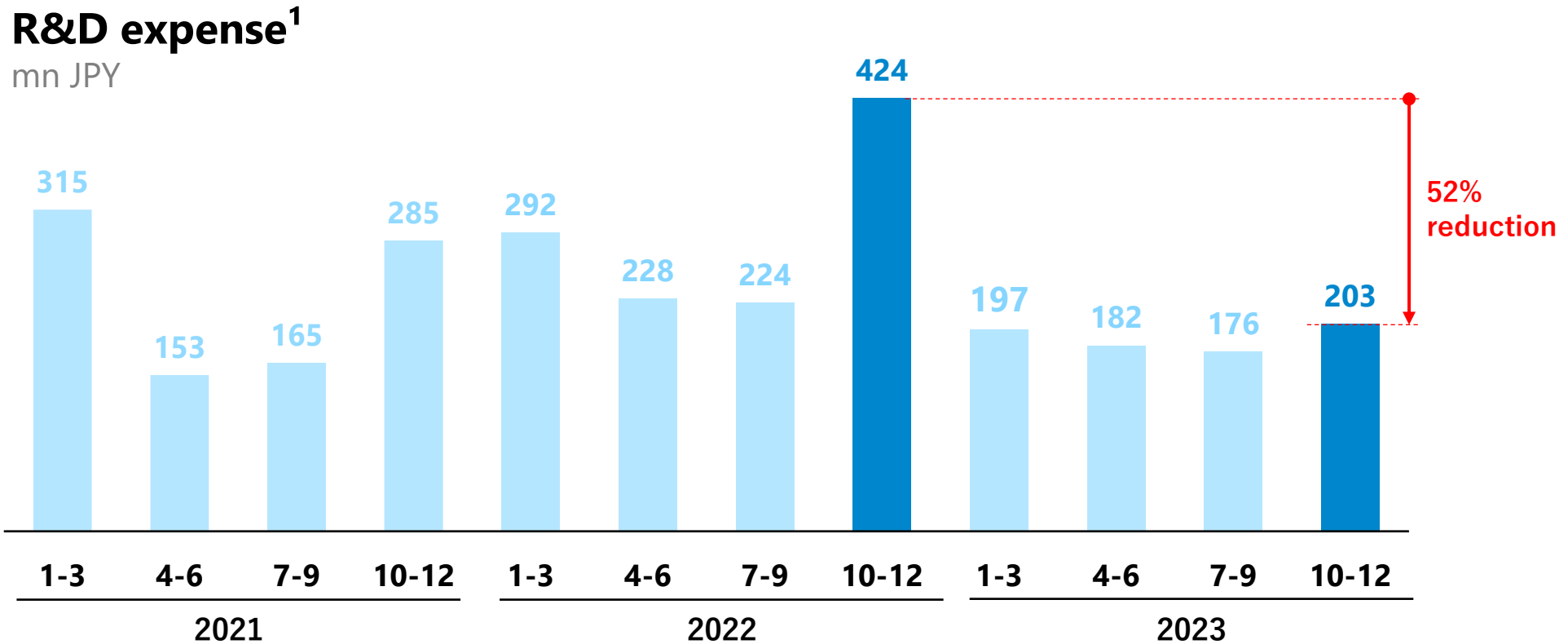
Marginal profit ratio by segments¹

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

		FY22/12 full year		FY23/Q3 full year
SOTEN (Aerial photography)	Sales (100 mn JPY)	9.3		2.0
	# of drones (units)	645		101
	Marginal profit ratio (%)	20	➔	46
Solution Development (Proof-of-concepts trials, sales of prototype drone)	Sales (100 mn JPY)	5.0		3.3
	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. 52% reduction for Q4, 35% reduction for full 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

Indicator		FY19/03	FY20/03	FY21/03	FY21/12 (9か月)	FY22/12	FY23/12
		Actual	Actual	Actual	Actual	Actual	Actual
Sales of application-specific drones							
Small aerial photography drone (Low ASP)	Units					645	101
	Amount (100 mn JPY)					9.3	2.0
Other application-specific drone (High ASP)	Units	-	-	-	-	18	26
	Amount (100 mn JPY)					0.7	1.3
Solution development¹							
PoC and Development	Projects	81	112	82	41	71	52
	Amount (100 mn JPY)	2.9	8.6	3.7	1.2	3.9	3.3
Sales of Platform/ Evaluation drone ¹	Units	106	101	46	18	27	15
	Amount (100 mn JPY)	3.8	3.0	1.4	0.6	1.0	0.6
Number of shipments ¹		136	128	71	25	42	23

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		FY21/03				FY21/12			FY22/12				FY23/12			
Quarterly Results		1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Demonstration experiment² <ul style="list-style-type: none"> • Proof of Concept • Custom development 	Sales mn JPY	1	22	22	323	14	42	67	252	16	25	103	262	5	28	40
	Num. of projects	2	11	15	54	6	14	21	34	2	12	23	28	4	10	10
Sales of platform drone³ <ul style="list-style-type: none"> • Sales of standard and general-purpose drone • Drone modified for customers based on the standard drone 	Sales mn JPY	4	10	13	116	15	34	17	42	17	7	37	39	9	3	15
	Num. of units	1	3	5	37	6	6	6	8	4	2	13	7	3	1	4
Other⁴ <ul style="list-style-type: none"> • Sales of parts • Fuselage repair service • Some national projects 	Sales (of which national projects) mn JPY	30 (21)	8	10	55	237 (219)	55 (50)	15	64	20	11	24	59 (16)	30	16	46

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	FY21/03				FY21/12			FY22/12				FY23/12			
Quarterly Results	1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Net sales mn JPY	36	42	46	495	267	133	100	952	78	130	473	429	94	132	239
Gross profit mn JPY	▲6	▲6	▲13	94	17	5	▲22	133	▲30	▲23	▲204	62	▲71	▲48	▲177
Gross profit ratio	▲19%	▲16%	▲28%	19%	7%	4%	▲23%	14%	▲39%	▲18%	▲43%	15%	▲76%	▲37%	▲74%
SG&A expense mn JPY	230	173	315	488	325	348	515	535	442	431	670	419	451	469	495
Of which R&D expenses mn JPY	60	77	129	315	153	165	285	292	228	224	424	197	182	176	203
R&D Expenses ratio to sales	167%	183%	278%	64%	57%	124%	285%	31%	290%	172%	90%	46%	192%	133%	85%

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.

Balance Sheet

Mn JPY	FY23/12		FY22/12	FY21/12
	Actual	YoY change to same period previous year	Actual	Actual
Current assets	4,203	+18%	3,572	4,117
Cash	1,499	+11%	1,356	2,759
Fixed assets	891	▲36%	1,403	1,537
Current liabilities	1,603	▲20%	2,003	287
Fixed liabilities	1,227	+3,472%	34	8
Total liabilities	2,830	+39%	2,037	295
Net assets	2,264	▲23%	2,938	5,419
Total assets	5,094	+2%	4,976	5,715



1. Business model and core competency
2. Market overview
3. Business plan
4. Business highlights and current progress
- 5. Risk information**

Key risks and management for them

Item	Key Risks	Risk Management	Possibility	Impact
Drone Safety	<ul style="list-style-type: none"> In the event of a serious drone crash, not only at ACSL(the Company) but also at other companies, public trust in the safety of drones may be eroded, leading to a decline in demand from customers and a slowdown in market growth due to stricter regulations, which may affect the Company's business and earnings. In this case, our business and business performance may be affected. In the unlikely event that a drone manufactured by our company crashes and causes damage to people, property, etc., there is a possibility that our business and business performance will be affected due to significant product liability compensation, large payments and expenses due to a recall, and loss of public trust. 	<ul style="list-style-type: none"> We are striving to realize drones that can coexist safely with people without causing accidents. ACSL became the first company in Japan to obtain a Type 1 Certificate for Unmanned Aerial Vehicles, which was initiated in December 2023. The Type Certification System is a system that inspects the strength, structure, and performance of unmanned aircraft to ensure that the design, manufacturing process, and status of the aircraft conform to safety standards.. In preparation for any eventuality, we are working with insurance companies to develop dedicated insurance for drone and operations to cover liability and expenses incurred in the event of a serious accident. 	Middle	High
Drone Safety	<ul style="list-style-type: none"> In the event that security is compromised by malicious hackers, etc., the drone may become uncontrollable, causing damage to people and property, or data leaks may cause damage to users, etc., which may have an impact on our business and business performance due to large payments and expenses for serious product liability compensation and recalls, and loss of public trust. 	<ul style="list-style-type: none"> Our company places a high priority on safety in the selection of components related to data security, and we are working on the advancement of security technology on the drone side, such as communication encryption to prevent hijacking. In addition, we have selected solution partners and clients and are able to identify all of our direct transactions with our customers. 	Low	High
Laws and regulations surrounding the drone business	<ul style="list-style-type: none"> With regard to the Product Liability Law, since we manufacture products such as drones, if a victim proves that they have suffered life, body, or damage due to a defect in our products, etc., a claim for damages may be recognized. 	<ul style="list-style-type: none"> With regard to the Civil Aeronautics Law and the Radio Law, we have obtained permission and approval based on the said laws. To mitigate risks, we have had our instruction manuals reviewed by an external technical writer and have worked with an insurance company to develop a dedicated insurance policy. We have also acquired ISO 9001 certification for quality management and airframe certification from the Japan Unmanned Aircraft Manufacturers Association (JUAV). 	Low	High
Laws and regulations surrounding the drone business	<ul style="list-style-type: none"> With respect to the Foreign Exchange and Foreign Trade Law, some of the products and parts sold by the Company may be subject to regulations. In the future, it is assumed that unexpected regulations may be enacted, revised or abolished, or that planned deregulation may not proceed as planned. In such cases, if the Company is unable to flexibly respond to the relevant laws and regulations, the Company's activities may be restricted due to the revocation of permits and licenses, which may affect the Company's business and earnings. 	<ul style="list-style-type: none"> When we export drones or provide related technologies to overseas markets, we comply with the Law and strive for appropriate export control. We have established a system to check compliance with laws and regulations not only internally, but also with outside experts such as legal counsel. 	Low	High

※ Among the contents of "Business and Other Risks" in the Annual Securities Report, major risks that may affect the execution of the business plan and the realization of growth are extracted and described. For other risks, please refer to "Business and Other Risks" in the Annual Securities Report.

Key risks and management for them

Item	Key Risks	Risk Management	Possibility	Impact
Intellectual Property Rights	<ul style="list-style-type: none"> There is a possibility that intellectual property rights of which we are not aware have already been established, or that new intellectual property rights of third parties may be established, and it is extremely difficult to completely eliminate the risk of such infringement. In the event that the Company is involved in a legal dispute with a third party in the future, the Company will consult with lawyers and patent attorneys and consider specific measures to be taken depending on the details of the dispute. However, the Company may incur a large human or financial burden to deal with the dispute, and in some cases may be subject to claims for payment of damages, etc. or injunctions against the manufacture and sale of products, etc., which may affect the Company's business and business performance. 	<ul style="list-style-type: none"> With regard to intellectual property rights such as patent rights related to our business, we have not received any indication of infringement of intellectual property rights from a third party, and we will continue to manage our intellectual property rights appropriately in order to prevent any infringement. We will continue to invest in patent development as we expand our business. 	Low	Middle
Procurement, pricing, and inventory of parts and materials	<ul style="list-style-type: none"> The Company procures most of the parts and materials necessary for its production and R&D activities from external suppliers. However, in the event of interruptions in supply from suppliers or supply shortages due to a rapid increase in product demand, various activities may be restricted, which may have an impact on the Company's business and earnings. In the event of quality problems, problems with the production system and quality control system at the supplier of the procured products, or other events that may have a significant impact on our business operations, our business performance may be affected. There is a possibility of opportunity losses and lost profits due to inventory shortages, or additional expenses such as inventory management costs and impairment due to excess inventory, which may occur due to demand being different than initially expected. 	<ul style="list-style-type: none"> In the procurement process, we carefully conduct quality checks and other incoming inspections. Inventory will be maintained at an optimal level in line with product plans and sales scale with regular revision according to the demand forecast. We conduct regular audits of our major business partners to confirm the status of their production, development and other activities. 	Middle	Middle

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Key risks and management for them

Item	Key Risks	Risk Management	Possibility	Impact
Product Quality	<ul style="list-style-type: none"> In the unlikely event that a product defect occurs, depending on the nature of the defect, it could result in the incurrence of significant costs and loss of trust, which could have a negative impact on our business performance and financial position. Specifically, if the incidence of product defects within the warranty period exceeds our expectations, or if unforeseen defects occur, we may incur after-sales service costs, free repair costs, recall costs, and other expenses. In the event that a victim proves that they have suffered damage to life or limb due to a defect in one of our products, etc., there is a possibility that a claim for damages will be approved based on the Product Liability Law. In the event that our response to these risks is prolonged and exceeds the scope of coverage by our insurance, our business activities may be hindered and our business performance and financial position may be affected. 	<ul style="list-style-type: none"> We have established quality assurance management rules and production management rules, and are striving to maintain and improve the quality of our products through manufacturing and quality control in accordance with these rules. We will continue our efforts to improve the quality of our products, especially with regard to continuous improvement against defects, promotion of product designs that are less prone to defects, reinforcement of testing during development and prior to shipment, including the introduction of reliability testing, continued development of emergency countermeasure functions for our products, establishment of rules for operations such as flight and drone management, and strengthening of processes for handling customer complaints, malfunctions, and crashes. 	Low	High
Uncertainty about business performance	<ul style="list-style-type: none"> Sales volume may fall short of expectations due to a mismatch with customer needs, changes in epidemics, the emergence of competitors, economic fluctuations, restrictions on economic activities due to the spread of new coronavirus infections, etc. In addition, budget approval and execution timing on the part of customer companies may also affect our performance trends. The Company was established in November 2013 and has been in business for only about eight years. Therefore, the operating results of the Company for the past fiscal years are not sufficient to make comparisons between periods, and the operating results for the past fiscal years alone may not be sufficient information to judge the future performance of the Company. If we are unable to keep up with the rapid evolution of technology, or if we are unable to introduce new products or technologies that will win the support of our customers and the market, and if our R&D activities are not fully effective, we may incur expenses related to investments that exceed our expectations. In such cases, the Company may not be able to achieve the plan it is aiming for, or it may take time to return to profitability in operating income, etc., which may affect the Company's financial position and operating results. As a result, there is a possibility that the numerical targets set forth in the medium-term management plan policy will not be achieved due to various factors, including the risks described in "Business and Other Risks." 	<ul style="list-style-type: none"> For continuous growth, we are engaged in research and development of hardware and software for drones as autonomous control robot systems. Based on the idea that it is necessary to continue research and development activities that are essential for the development of new products or technologies, we have been actively investing costs related to research and development expenses, and will continue to promote research and development activities in the future. Our policy is to build a system that can generate sustainable profits and cash flow through sales growth. Together with internal and external stakeholders, all parties involved will work as one to create customer value and enhance corporate value. 	Middle	Middle

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Key risks and management for them

Item	Key Risks	Risk Management	Possibility	Impact
Risks related to fluctuations in business performance	<ul style="list-style-type: none"> The Company uses the acceptance inspection standard for both demonstration experiments, platform aircraft sales, and application-specific aircraft sales. With regard to demonstration experiments, deliverables related mainly to large-scale projects tend to be highly individualized. As a general rule, sales are recorded when the customer accepts that the specifications required by the customer have been met. However, if the acceptance inspection is delayed beyond the original schedule due to the individual nature of the project, the recording of sales will be delayed, which may affect our group's business performance. In addition, revenues from national projects in which our group participates are recorded as sales or non-operating income based on the nature of the project, but if the individual nature of the project prevents our group from recording the revenues in the categories we expect, our group's business performance may be affected. However, the Group's business results may be affected in cases where the individual nature of a project prevents the Group from recording sales in the expected categories. In addition, if the acceptance inspection of a project scheduled near the end of the fiscal year is postponed to the next fiscal year due to unfavorable weather or other reasons on the part of the client, the Group's business results may be affected. 	<ul style="list-style-type: none"> We are working to improve the transparency of our business performance by disclosing the order backlog as supplemental information for each quarter with respect to sales estimates. In order to improve the transparency of our full-year business results, we have changed our fiscal year end (the last day of the fiscal year) to December 31, starting from the 10th fiscal year, so our accounting period is from January 1 to December 31. 	High	Low
Securing working capital	<ul style="list-style-type: none"> Since our main business flow involves the purchase of parts, development, manufacturing, sales, acceptance inspection, and collection of funds, working capital tends to increase in conjunction with business expansion, and cash flow from operating activities may be negative. In addition, the Company participates in various projects through industry-academia-government collaboration to develop cutting-edge technologies, and receives subsidies and grants from the government. Receipt of such subsidies, etc., will be credited after the amount is fixed after the audit by the competent authorities is completed, but funds for conducting R&D activities will be required during the implementation period, and R&D expenses will be incurred upfront. 	<ul style="list-style-type: none"> We will strive to secure working capital by securing profits through improvement of our profit structure and efficiency of working capital, as well as borrowing from financial institutions when it becomes necessary to raise funds. 	Middle	Low

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Key risks and management for them

Item	Key Risks	Risk Management	Possibility	Impact
Overseas Expansion	<ul style="list-style-type: none"> In order to expand our business in overseas markets, we are collaborating with local companies to promote overseas development, mainly in Asia and the United States. In India, we have established a joint venture with a local company. However, in the event of unexpected social or political changes, changes in taxation systems or rates, or other changes in economic conditions in India, such events may have a negative impact on our business development. In addition, the Company's business development may also be adversely affected by changes in policies and laws and regulations in each country or economic zone, including import and export regulations and environmental protection regulations, in connection with the procurement of parts from foreign companies and the sale of the Company's products or technologies to foreign companies. 	<ul style="list-style-type: none"> It is our policy to work closely with local companies so that we can respond immediately to any changes in policies and regulations in each country or economic zone. 	Low	Middle
Investment Activities	<ul style="list-style-type: none"> As part of our growth strategy, we will actively consider corporate acquisitions, business alliances, and strategic investments, including those of overseas companies. In addition, the Company has established ACSL No. 1 Limited Liability Partnership as a corporate venture capital (CVC). In the event that the financial condition or business performance of the investee deteriorates due to changes in the business environment or preconditions, the Company's financial condition and business performance may be affected. In addition, for assets recorded in connection with investments, etc., if the expected cash flow cannot be generated due to deviations from future performance plans or changes in the market, an impairment loss may be recorded. 	<ul style="list-style-type: none"> The Company and CVC will make decisions on investments, etc., after giving due consideration to investment risks, etc., and will periodically check the possibility of recovering the investment value. In promoting business in each country, we have established a check system including specialists by collaborating with local attorneys. 	High	Low
Management system in a small-scale organization	<ul style="list-style-type: none"> As of December 31, 2022, the Company operates as a small-scale organization with 5 directors (2 of whom are outside directors), 3 corporate auditors (1 of whom is a full-time corporate auditor), and 72 employees, and the internal management system is in line with the size of the organization. In the event that we are unable to strengthen our workforce as planned, or in the event that unforeseen circumstances arise in the core personnel of our business that hinder the execution of operations, our business activities may be hindered and our business and business performance may be affected. 	<ul style="list-style-type: none"> In response to the future expansion and diversification of our business, we plan to increase the number of personnel and further enhance our internal management system. With regard to personnel involved in development, which is the core of our competency, we are actively recruiting from a broad pool of human resources, both domestic and overseas, in order to acquire personnel with global and cutting-edge knowledge. 	Low	High

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Key risks and management for them

Item	Key Risks	Risk Management	Possibility	Impact
Risks Related to Business Interruption	<ul style="list-style-type: none"> The Group has formulated a business continuity plan (BCP) to prepare for the suspension of business activities due to unpredictable earthquakes, tsunamis, storms, and other natural disasters; accidents such as fires and power outages; epidemics; information system outages caused by computer viruses; and terrorist acts and other illegal activities. However, if business activities are suspended for an extended period of time or significant costs are incurred to repair facilities, there may be an adverse impact on business, business performance, and financial conditions. 	<ul style="list-style-type: none"> In addition to formulating a BCP, the Company is preparing for the suspension of business activities by utilizing remote work and cloud services. 	Middle	Low

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The next disclosure of this document will be made around the time of the announcement of these financial results.

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