



Business plan and Growth potential

ACSL Ltd.
February 14th, 2023

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Company outline



Company outline

Corporate Name	ACSL Ltd.
Representative	Satoshi Washiya (President and Representative Director)
Established	November 2013
Location	3-6-4 Rinkai-cho, Edogawa-ku, Tokyo Hulic Kasai Rinkai Bldg. 2F
No. of Employee	72 (as of Dec2022)
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 foreigners
Approx. **19**

ISO
2
ISO9001 (Quality Management)
ISO27001 (Security)
(SOTEN is at the same standard as ISO 15408 (Security))

Client
196
companies

1: Percentage of engineers and number of foreign employees are as of December 31, 2022. The number of customers is the total number of customers from FY19/03 to FY22/12.

Agenda

- 1 Corporate overview, Core competency, and Business model**
- 2 Market overview**
- 3 Medium-term management policy “ACSL Accelerate FY22”**
- 4 Business highlights and current progress**
- 5 Risk information**
- 6 Appendix**

A scenic view of a city skyline at dusk, featuring a large suspension bridge and a body of water in the foreground. The sky is a mix of deep blue and orange, with scattered clouds. The city lights are visible, and the bridge is illuminated. The water is dark and calm, with some rocks in the foreground.

**ACSL aims to eliminate “severe labor shortage”
to realize a free, open and sustainable world**

The Problem– Disequilibrium in the Labor Market

Labor-savings and unmanned operations are an urgent social issues to solve, as demand and supply of labor force is becoming more and more imbalanced

Demand for Labor

50-yr old
infrastructure¹

x 2.5
(2018~2023)

Logistics flow²

x 5
(1988~2018)

Supply of Labor

Rate of population
decline³

-26%
(2020~2060)

Labor force⁴

-35%
(2020~2060)

1: Ministry of Land, Infrastructure, Transport and Tourism, "Social Infrastructure Today and in the Future, Social Infrastructure Today and in the Future"

2: Ministry of Land, Infrastructure, Transport and Tourism, "Fiscal Year 2018 Delivery Service Performance Data" (Japanese only)

3: "White Paper on Aging Society 2019" by the Cabinet Office

4: "White Paper on Aging Society (Entire Version)", Cabinet Office



MISSION

**Liberate humanity through
technology**

VISION

**Revolutionizing social
infrastructure by pursuing
cutting-edge robotics technology**

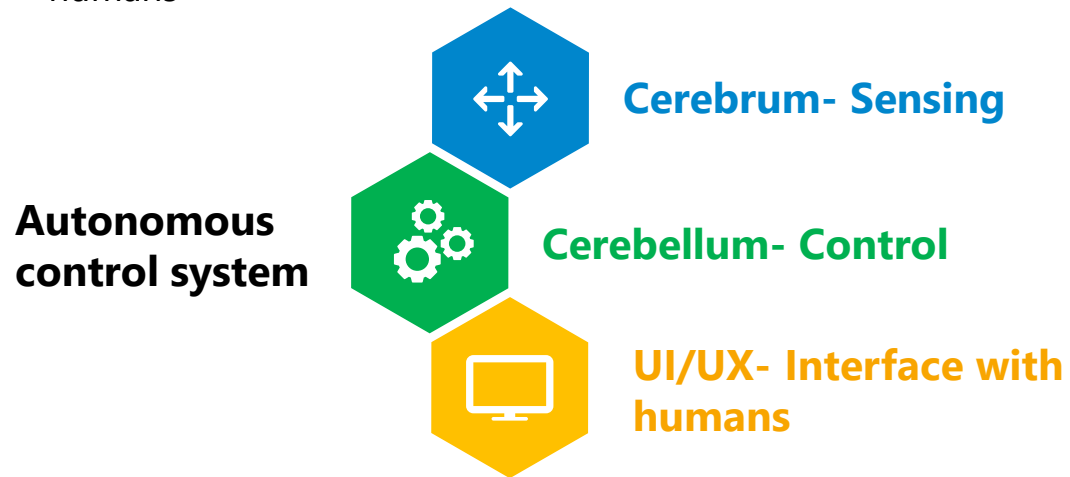
ACSL - a pioneer in drone manufacturing in Japan



ACSL manufactures application-specific drones using proprietary autonomous control technology, and upgrades operations at client site

Core technology: Autonomous Control System

Our proprietary control technology consists of the "cerebrum", which actively grasps the surrounding environment, the "cerebellum", which controls movement of robotics and "UI/UX" that serves as the interface with humans



Competitive advantage: Knowing our Client

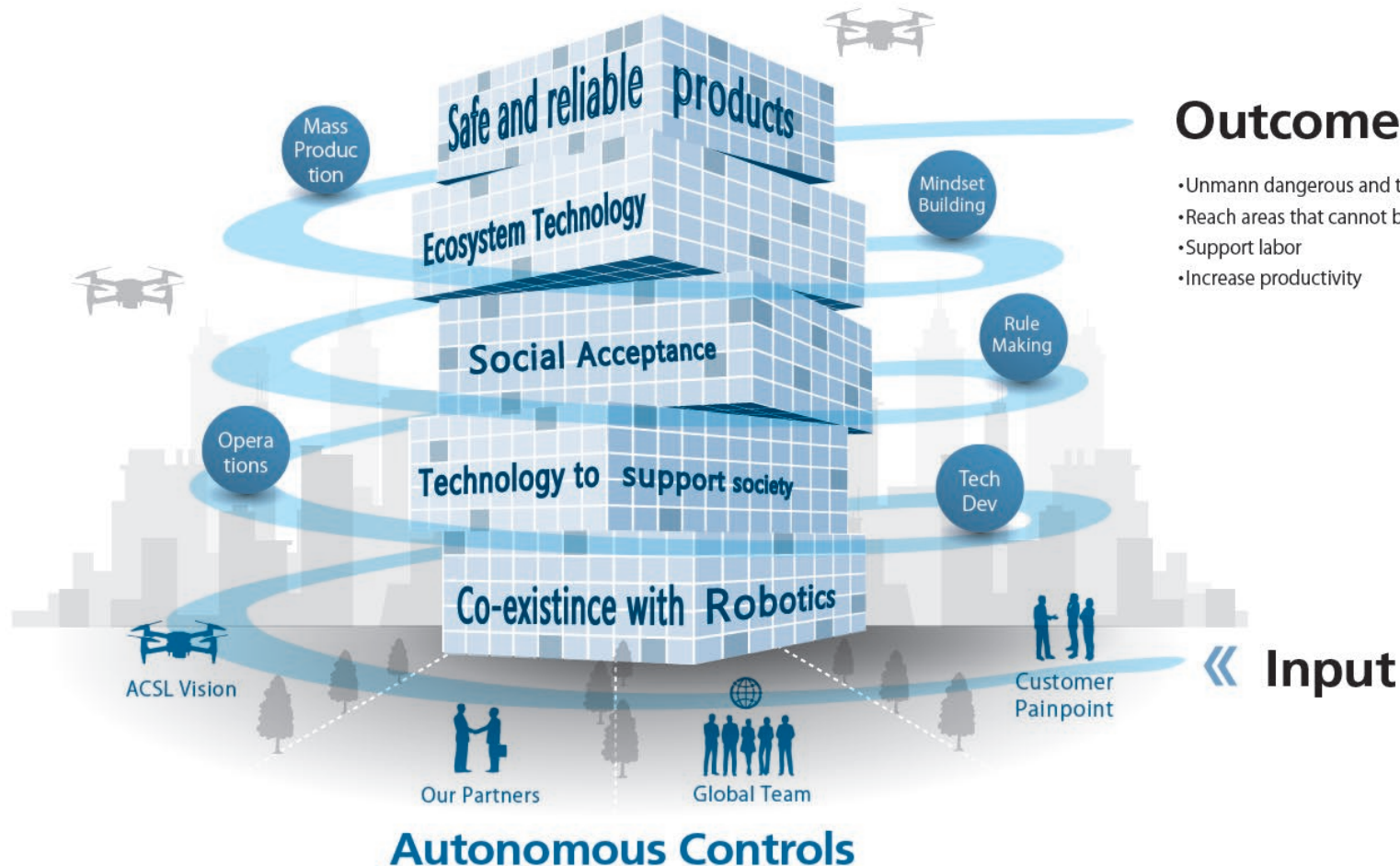
ACSL works closely with clients to understand their operations and the difficulties they face. We develop drones tailored to individual applications through trials and testing.



ACSL delivers safe and reliable drones to society through co-creation with our customers

Co-creation Approach

LIBERATE HUMANITY
THROUGH TECHNOLOGY



ACSL - What we do

Our business constitutes demonstration and sales of platform drones and promoting development, mass production, and sales of application-specific drones.



Solution development

Sales of evaluation and platform drones for technology verification, as well as proof-of-concept trials and custom development based on customer requests

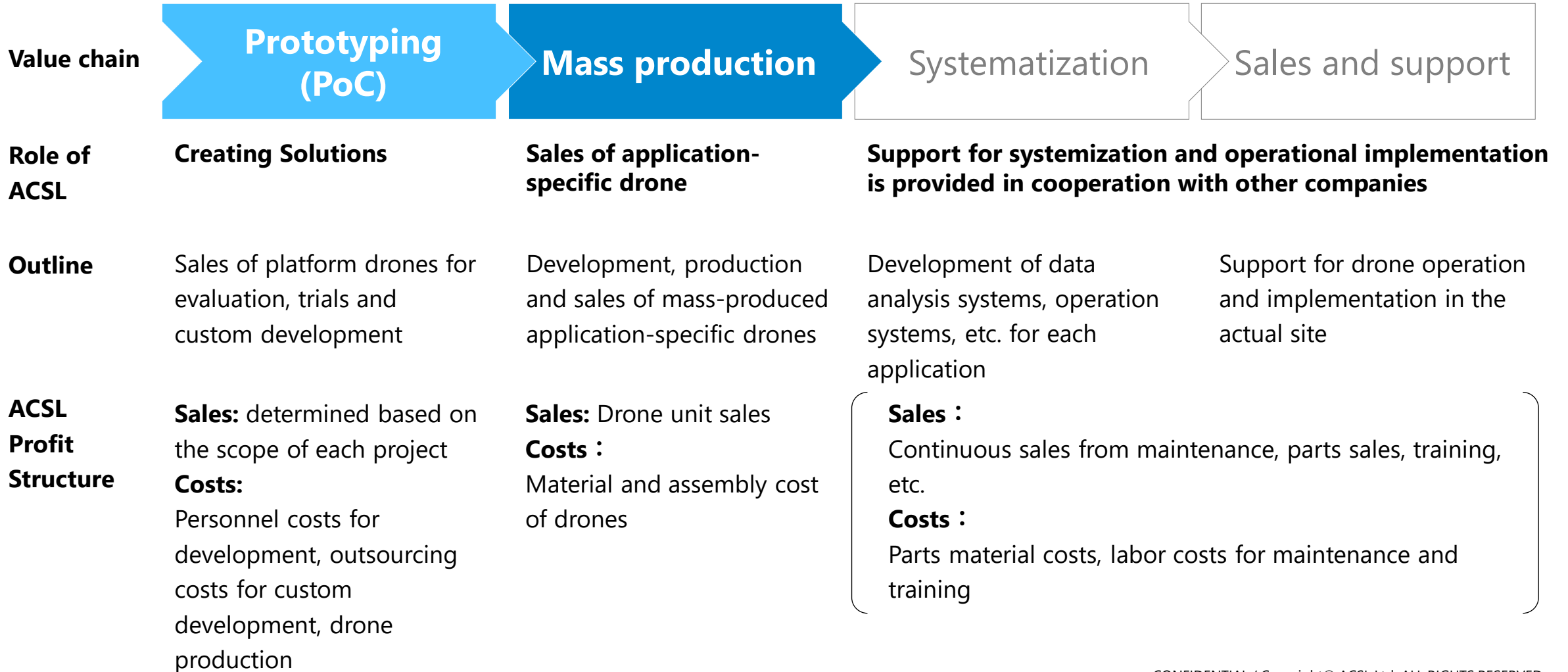


Sales of application-specific drones

Development, mass production, and sales of application-specific drones using the knowledge gained from demonstration tests

Drone market value-chain and where ACSL stands

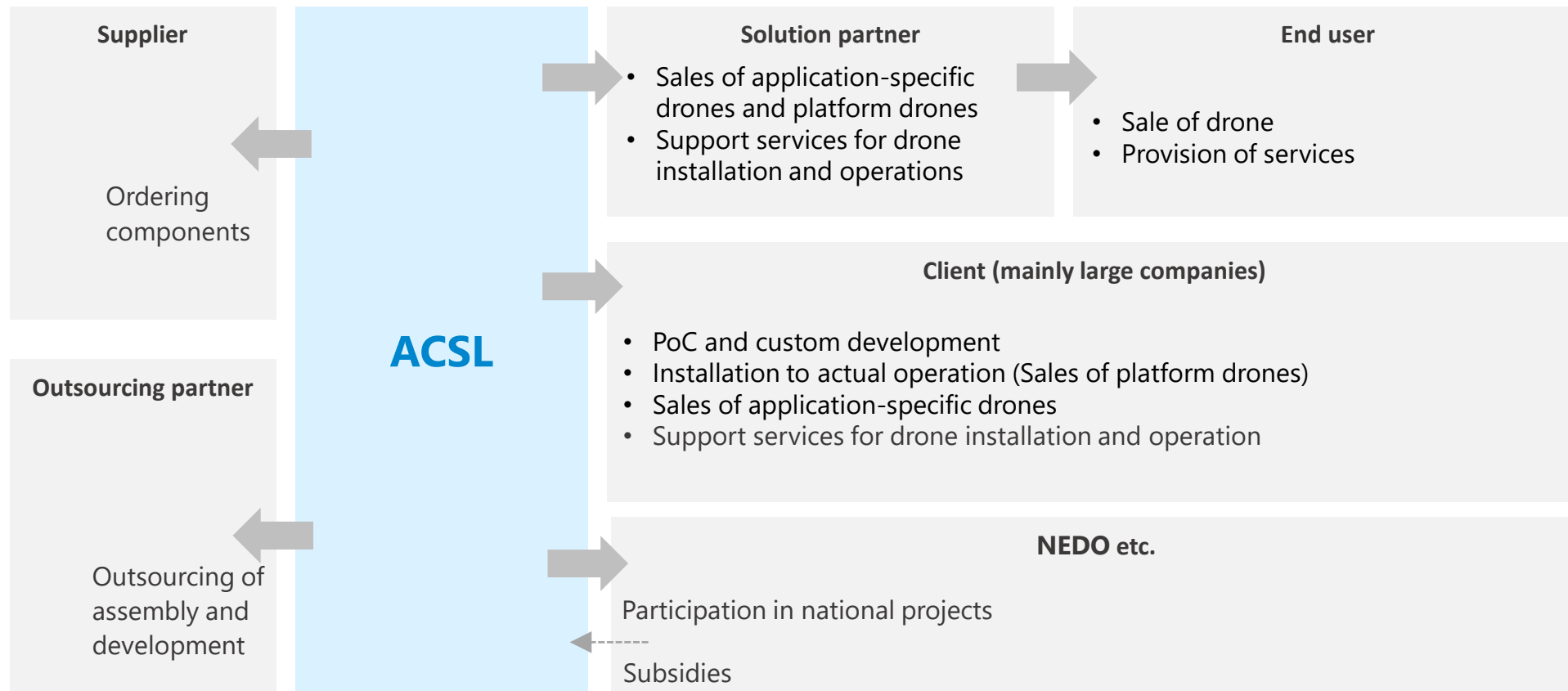
ACSL can provide agile development required in the early stage and mass production required in the mature stage at the same time.



ACSL - Our Business Model



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



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Macro environment surrounding the Japan drone market is a tailwind



In addition to the increasing awareness to economic security, environment surrounding Japan drone market is favorable, supported by steady progress of Digital Rural City concept and the Aviation Law amended on schedule

01

Economic security Data security

Geopolitics increase the importance of economic security. Concerns around security and technology leaks becoming apparent as defense-related budgets increase, and demand for domestic production has emerged.

02

Revision of Aviation Law, Level 4

Beyond visual line-of-sight flight over manned areas (Level 4) is now permitted as Aviation Law amended on December 5, 2022.

03

Digital Rural City Smart City

Projects related to Digital Rural City concept being formed in various regions of Japan, accelerating regional development through implementation of drones for deliveries and disaster response.

04

Decarbonization, the clean energy

Emergence of O&M needs due to increased investment in clean energy facilities and the trend toward decarbonization through drone logistics

Regulations to allow Level 4 flight started, as Avian Law amended on schedule

Regulations to allow Level 4 flight started after Aviation Law to related to beyond visual line-of-sight flight (Level 4) was amended on December 5th 2022

June 2021	Revised Civil Aviation Law passed The Diet passed an amendment to the Civil Aviation Law to allow for Level 4 flights
June 2022	Mandatory drone registration / remote ID¹ Mandatory registration of unmanned aircraft, display of registration symbols and remote ID capabilities
July 2022	Cabinet approves December, as the enforcement date for the revision of the Civil Aviation Law.
Aug~Nov 2022	Public comments related to type certification of unmanned aircrafts MLIT conducting public comments on regulations to enable Level 4 flights
Dec 5 2022	Ministerial order to amend part of the regulations related to Civil Aviation law
~end Mar 2022	Realize Beyond-Visual Line of Sight flight over populated areas (Level 4)

Ministry of Land, Infrastructure, Transport and Tourism
Unmanned Aircraft Level 4 Flight Portal Site

Below regulation started from December 5, 2022

POINT
01



Aircraft Certificate

A certification system that inspects the strength, structure, and performance of unmanned aircraft to ensure their safety

[→ 詳しくはこちら](#)

POINT
02



Unmanned aircraft operator skills certification

A certification system that certifies the skills (knowledge and abilities) required to fly an unmanned aircraft

[→ 詳しくはこちら](#)

POINT
03



Operating Rules

Various systems related to operations necessary for flying unmanned aircraft

[→ 詳しくはこちら](#)

1: A device that remotely transmits drone identification information via radio waves

Source: Ministry of Land, Infrastructure and Transport Public Comments

Public-Private Consultative Meeting for Environmental Improvement Related to Small Unmanned Aircraft (18th meeting) "New Institutional Improvements, etc. Toward the Realization of Level 4 Flights".

Numerous drone delivery projects adopted under the Digital Rural City concept and decarbonization-related projects

Potential of drone delivery being recognized and numerous drone delivery projects related to the Digital Rural City concept and carbon dioxide emission control measures have been adopted by the Japanese government



デジタル田園都市国家構想
DIGIDEN

■ Digital Rural City National Concept Basic Policy

- Basic policy approved by the Cabinet in June 2022, using digital technology to solve social issues in rural areas.

■ Accelerating rural development by drones in various areas of Japan using project funds from the Digital Rural City Initiative

- Tsuruga, Fukui Prefecture: Directly connected drone logistics in urban and depopulated areas
- Sakai, Ibaraki: New smart logistics using drones and self-driving buses
- Kamishihoro, Hokkaido: Demonstration of fertilized egg transplantation using a drone



環境省
Ministry of the Environment

Subsidy for carbon dioxide
emission control project

■ Subsidy for carbon dioxide emission control project

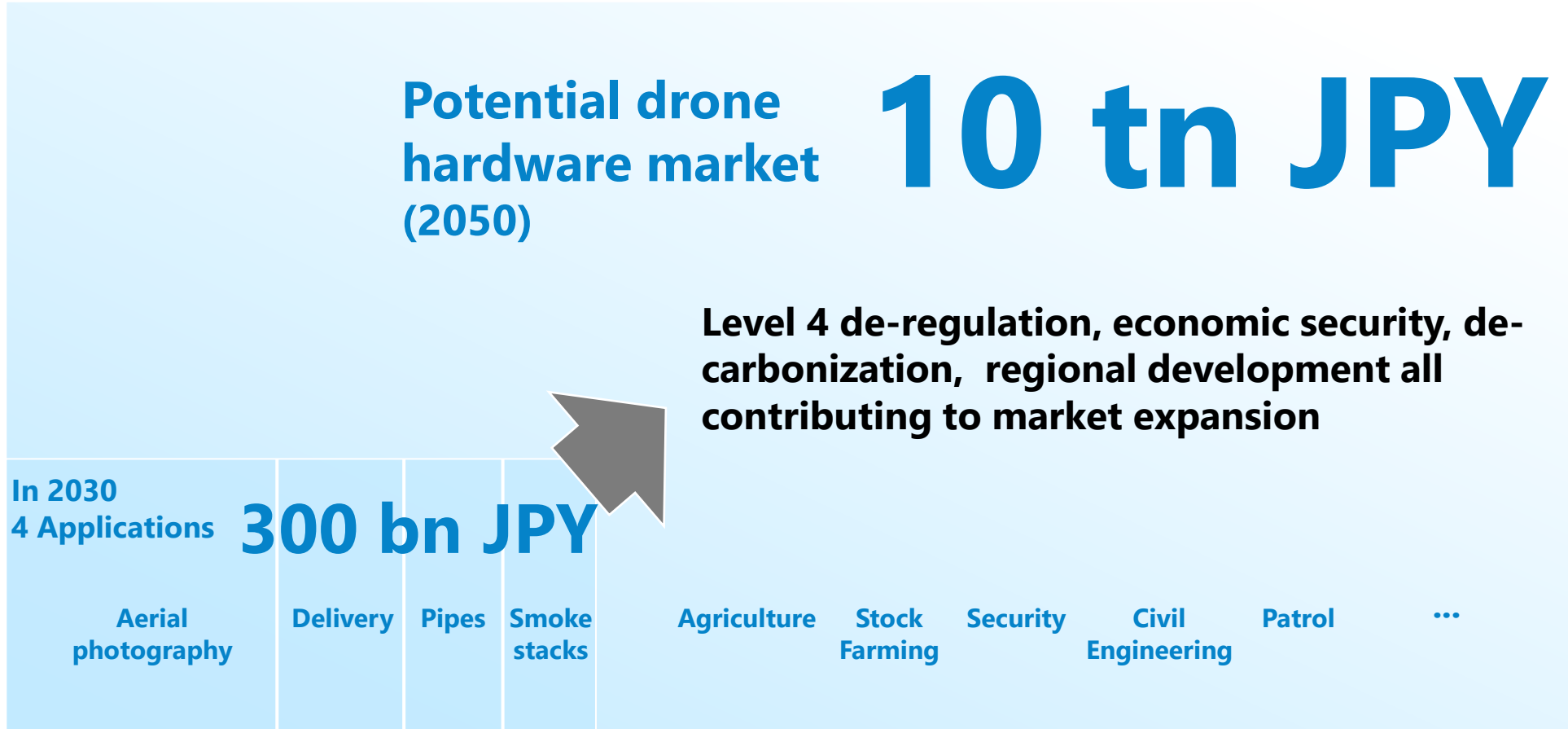
- Ministry of the Environment led a project to promote the introduction of advanced technologies to simultaneously achieve social transformation and decarbonization of logistics and transportation.

■ Subsidies to business plan development for the practical application of drone deliveries in depopulated areas

- 12 out of total 14 applications for practical use of drone deliveries in depopulated areas have been adopted as subsidized projects.

Macro environment around Japan drone market will support steady growth of the drone market

Macro environment will accelerate market creation against a potential drone hardware market of 10 trillion JPY, with 300 billion JPY market unlocked by 2030 in four major applications.



Note: 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"

Overseas drone market is at a tipping point, and economic security is of prominent importance

Overseas drone market has grown at a faster pace than Japan's but has reached a turning point starting with recent economic security concerns, and there is a growing movement to eliminate Chinese drones in the U.S., India, and other countries.

Macro environment surrounding the overseas drone market

Economic Security and Data security

Russian-Ukrainian War and the geopolitical situation increase the importance of economic security. Policies on national security, data security, and countermeasures against technology leaks are prominent.

Environmental awareness and robotics

Utility of drones as a solution to manpower saving, decarbonization, and clean energy is on the rise.

Drone market trends in each country



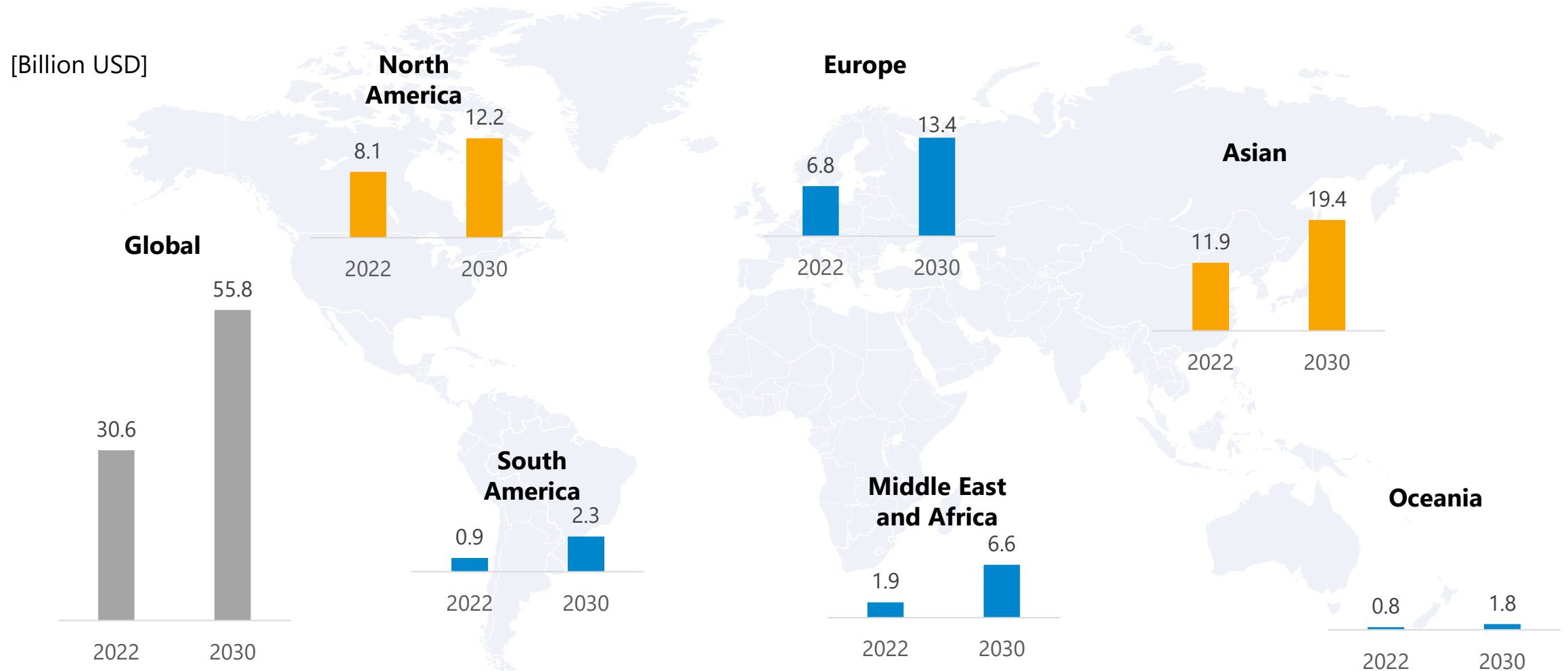
- The National Defense Authorization Act (NDAA) is in effect in the U.S. and prohibits government procurement of drones from Russia and China.
- Chinese drone manufacturer DJI was designated as a "China Military Corporation" by the Department of Defense in Oct 2022



- From Feb 2022, India has banned the import of foreign-made drones to promote Make-In-India (Drone Shakti Scheme).
- A Production Linked Incentive (PLI) of Rs. 26,058 crore has been structured over three years to promote Make-In-India. Drones also fall under this category.

Globally, North America is the second major drone market after Asia

Global drone market is estimated to be worth USD 30 Bn in 2022, with Asia, including India, as No.1 drone market, followed by North America as the No.2, indicating that the overseas drone market has great potential.



ACSL can build a unique positioning in the overseas drone market

ACSL can build a unique positioning in the overseas drone market, where the need for economic security is on the rise. Key words for the positioning are: "economic security," "enterprise support," and "application-specific".

Economic security

- Experience in developing drones compatible with economic security concerns, incl. secure support and stable procurement of parts
- SOTEN is a drone designed with economic security targeted for Japanese government procurement

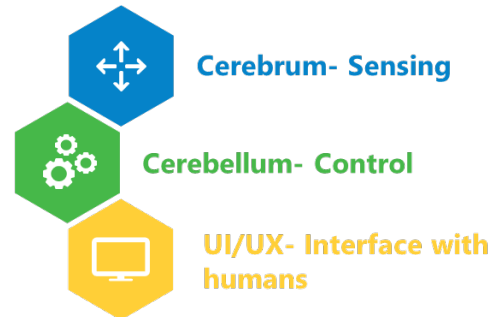


X

Enterprise support

- ACSL owns proprietary autonomous control system, which enables provision of customization for enterprise requirements
- ISO9001 and ISO27001 are available, and ACSL has experience in shipping and market supporting +600 units per year in Japan.

Autonomous control systems



X

Application-specific

- Develops application-specific drones rather than general purposes drones, which is niche but highly substitutable for business operations
- Safe and secure technical capabilities that enable the development of Level 4-compliant drones in Japan











ACSL competitive environment

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
<p>General Purpose drones Can be used for general purpose applications</p>	<p>Mainly inexpensive foreign (mainly Chinese) general-purpose drones</p>	<p> PF2 Other companies: Mostly foreign (mainly Chinese) general-purpose drones with GPS support</p>	<p> PF2 Other companies: Mostly large delivery drones such as foreign-made VTOL drones</p>	<p> PF2 Other companies: Mostly foreign-made (mainly Chinese) general-purpose drones</p>
<p>Application-specific drones Flight performance and characteristics optimized for each application</p>	<p>No application-specific drones for personal use</p>	<p> Aerial Photography</p> <p> Smokestack Inspection</p> <p> Pipe Inspection Other companies: Limited drones for each inspection application.</p>	<p> Medium Delivery Other companies: Very limited drones with Level 3 or higher safety performance</p>	<p> Aerial Photography Other companies: Drones with flight performance and safety features that can withstand disaster prevention applications are limited.</p>

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ACSL defined the “To-be” state in 10-years. Executing management policies to realize the goal

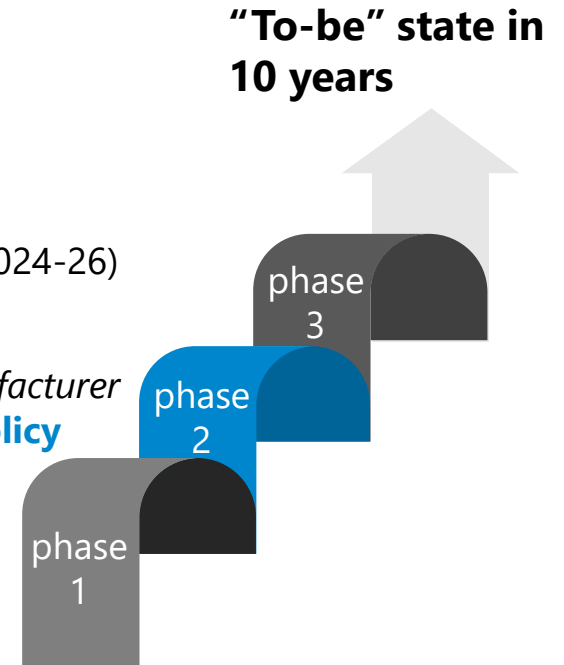
In August 2020, ACSL set forth its "Master Plan" of the “To-be” state in 10 years, and formulated a rolling mid-term management policy "ACSL Accelerate" to realize the Master Plan.

Master Plan

- 1 Global Pioneer in solving social infrastructure issues
- 2 More than 100 bn JPY sales, 10 bn JPY sales profit
- 3 Mass production manufacturer that produces 30,000 units/year
- 4 Supporting the country with de facto standards
- 5 Developing cutting-edge technologies for autonomous control
- 6 Nurturing the industry's most advanced and talented human resources
- 7 Constantly working to improve its corporate value and financial KPIs



- 3 ACSL Accelerate FY24 (planned; 2024-26)
- 2 ACSL Accelerate FY22 (2022-25)
Shift to a sustainable global manufacturer (Medium-term management policy after FY22/12)
- 1 ACSL Accelerate FY20 (2020-22)
From Prototype Factory to Mass Production Manufacturer



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 strip on the bottom of one of the arms. The lighting is soft and even, highlighting the textures of the plastic and metal components.

Shift to a sustainable global manufacturer

ACSL Accelerate FY22 Business Strategy and Goals

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

ACSL Accelerate FY22

Shift to a sustainable global manufacturer



Characteristics of the launched application-specific drones

Developed and launched 4 application-specific drones by the end of 2022. Total of 663 drone units sold in FY22, primarily led by SOTEN



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

Development of new application drones

ACSL will initiate development of additional application-specific drones based on intel gathered from various successful trials. Furthermore, all products will comply with the market security trends.

Demonstrated applications (examples)



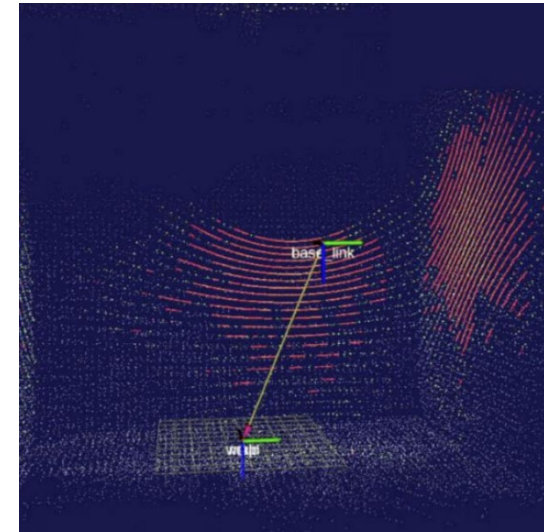
Wind turbines

Automated blade inspection for wind power generation



Indoor inspection

Automation of indoor inspection at construction sites, power plants, etc.



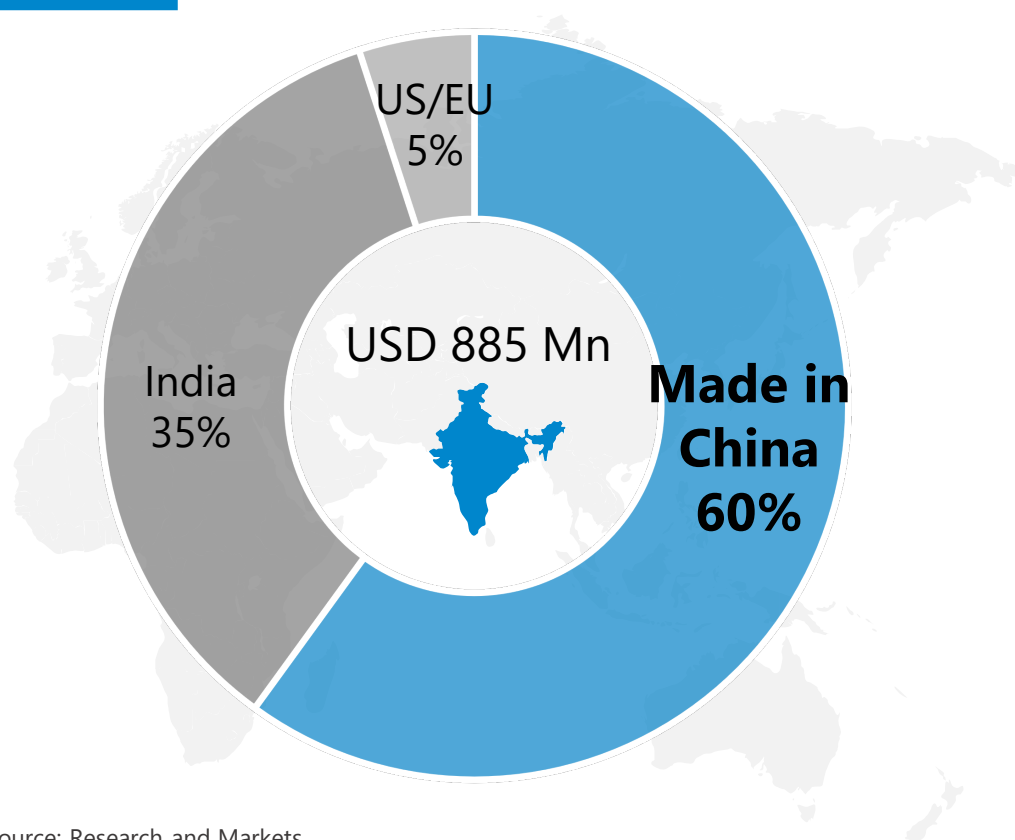
Ships

Cargo hold inspections for tankers and cargo ships

Full-scale launch into the Indian market

With increasing awareness for economic security, ACSL will partner with local companies to capture the replacement demand for Chinese drones.

Drone origin in the India Market (2021)



Launch of ACSL India, a local JV

Active recruitment of local talent and establishment of manufacturing, sales, and maintenance operations

Launch of secure drones, SOTEN and PF2

Obtain local sales certification (QCI) for SOTEN and PF2, both of which comply with the demand for higher security

Business collaboration with local companies

Build local use cases through collaboration with local companies and participate in major drone related exhibitions in India

Public affairs

Actively share information with local regulators to accelerate deregulation and technology adaptation of Japanese drones

Reinforcing ESG initiatives

To build our competitive advantage, ACSL will reinforce ESG initiatives that will ultimately contribute to upscaling clients' competitiveness and social resilience.

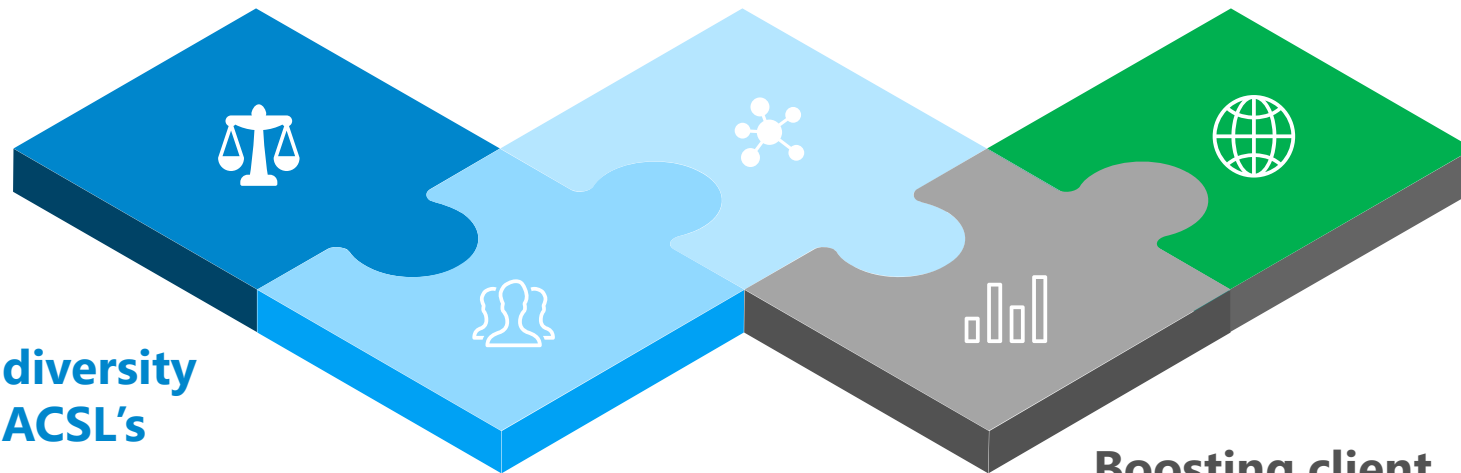
Adherence to Strong Governance

Maximize organizational robustness and boost governance as the foundation of ACSL's corporate activities

Technology for sustainability

- Regional revitalization and development
- Reinforce disaster prevention/response and environmental initiatives

Achieving a free, open and sustainable world



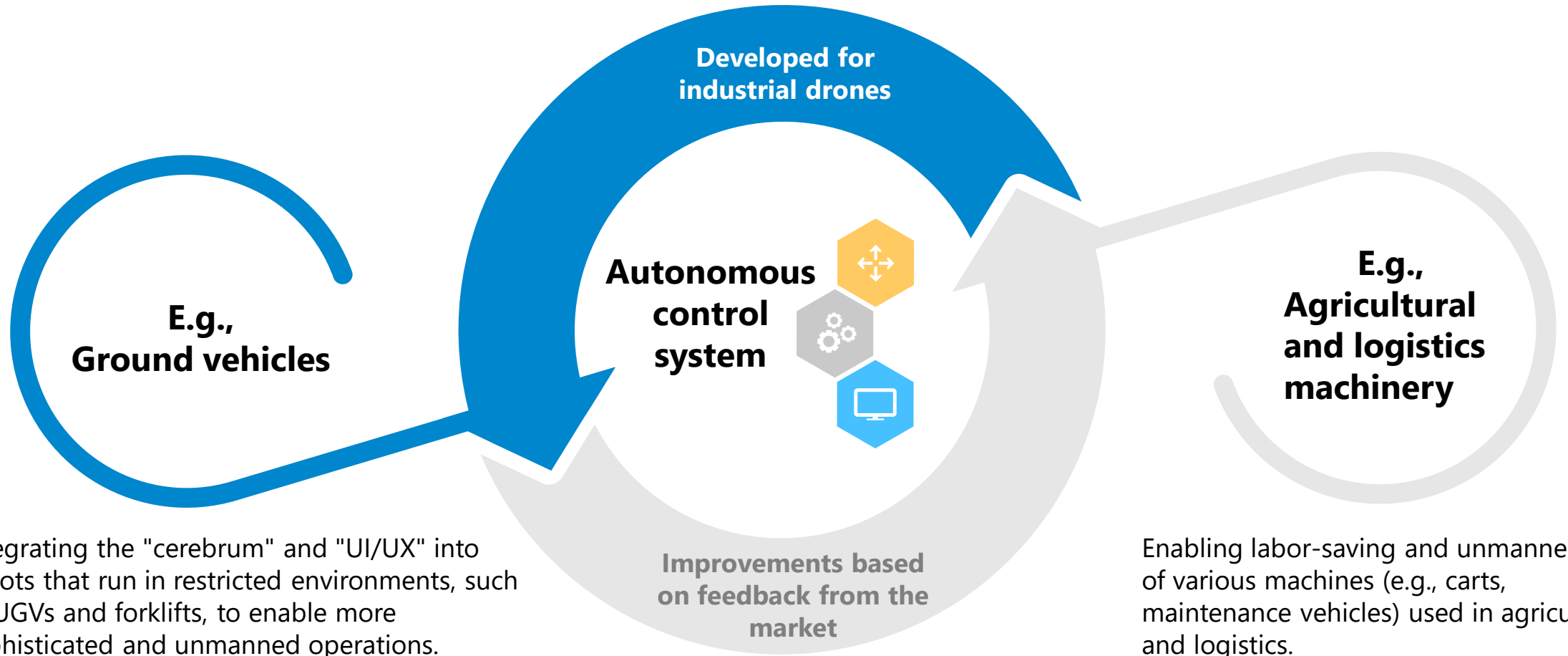
Leveraging diversity to enhance ACSL's competitiveness

- Broaden diversity
- Diversify work styles and further enhance career development

Boosting client competitiveness and social resilience

Exploring adaptation of autonomous control systems

ACSL will explore the adaptation of autonomous control systems through industrial drone development to other robotics to promote unmanned systems in other fields.



ACSL will continue to target the end goal of ACSL Accelerate FY22 with 10 Bn JPY in net sales and 1 Bn JPY in operating income



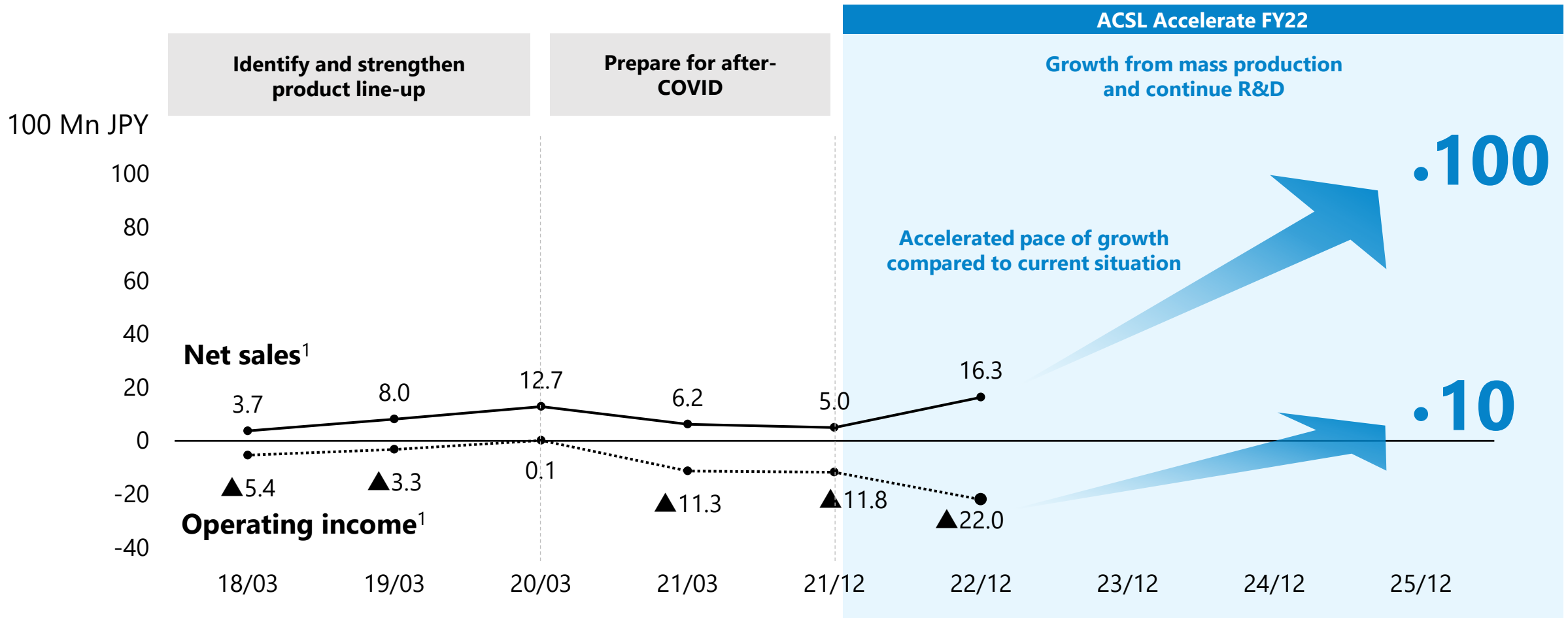
In order to achieve the goal set forth in the "Master Plan", ACSL will continue to achieve the 2025 target that was set in the ACSL Accelerate FY22 – net sales of 10 Bn JPY and operating income of 1 Bn JPY

	Current term 2022	ACSL Accelerate FY22 2025	Master plan 2030
Net sales	1.63 Bn JPY	10 Bn JPY	100 Bn JPY
Operating income	▲2.2 Bn JPY	1 Bn JPY	10 Bn JPY

Accelerated growth required to achieve the numerical targets in ACSL

Accelerate FY22

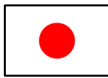
In order to reach the numerical targets for 10 Bn JPY net sales and 1 Bn JPY operating income, accelerated growth from the current pace is essential. Additional initiatives required in addition to the current strategy.



1: Actual results up to FY 22/12, FY 21/12 is irregular 9-month results

Keywords for FY23 strategic policy are “Steady Japan growth” and “Rapid overseas growth”

In FY23, ACSL will leverage its strength to meet the increasing economic security needs to achieve steady growth in Japan as well as fully expand overseas, including India and the U.S., to achieve rapid growth



Steady Japan growth



Rapid overseas growth

Strategic policy

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

- US: Obtain export licenses and comply with local regulations for SOTEN to meet extremely strong economic security needs, and launch in the US
- India: Leveraging the advantage of being a Japanese manufacturer and enable local production to meet the Make-in-India policy, and models already launched in Japan will be re-launched in India.
- Focus on marketing and public relations to improve global presences

Performance targets

- Japan net sales equal to or greater than the net sales of 1,635 mn JPY in FY22/12

- In terms of overseas net sales, though there are high demand created due to economic security and ACSL has already received backlogs of 140 Mn JPY from India, it is difficult to make a reasonable forecast at this point due to uncertain time frame for complying with laws and regulations and obtaining export licenses in each country

Specific earnings forecasts are not disclosed as it is difficult to calculate appropriate and reasonable figures at this time due to anticipated large fluctuations in performance caused by macroeconomic environment changes such as semiconductor price hikes, component shortages, and exchange rate.

Announced fundraising of 3.56 Bn JPY on Jan 20 for "Rapid Overseas Growth" in FY23



Raised 1.73 Bn JPY at the time of issuance through the issuance of common stock and convertible bonds, and will raise additional 1.83 Bn JPY while reducing the impact of dilution through the issuance of fixed exercise price private

	Common stock	Convertible bond (Bonds with subscription right)	Private warrants
Allottee		CVI Investment, Inc.	
Amount to be procured	0.34 Billion yen	1.39 Billion yen	1.83 Billion yen ¹
Total amount to be raised		3.56 billion yen	
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 yen (93% of the closing price on the day preceding the resolution date)	Conversion price Initial 1,985 yen (120% of the closing price on the day preceding the resolution date) Upper limit conversion price: 1,985 yen Lower limit conversion price: 827 yen	Exercise price 1,985 yen (120% 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 yen.

Investment to following areas is important to capture the tailwind



Development and evaluation of application-specific/platform drone

■ Drone development and evaluation

- Development and evaluation of application-specific drone for aerial photography (SOTEN), pipe inspection and smokestack inspection
- Secure and Level 4 compliant for platform drones
- Development and evaluation of drones for new application

■ Mass production

- Mass production design, manufacturing process design and procurement setup, etc.

1,919 Mn JPY by 2024 December

Working capital including R&D expenses for overseas business expansion

■ India and US market

- Customization of drones for local compliance, support for local radio systems, integration to flight management systems and functional development for export control

■ Establishment of commercial team and structure

- Selection of local partners, establishment of sales structure including inventory management, and development of customer support system

1,000 Mn JPY by 2024 December

Development of TAKEOFF app

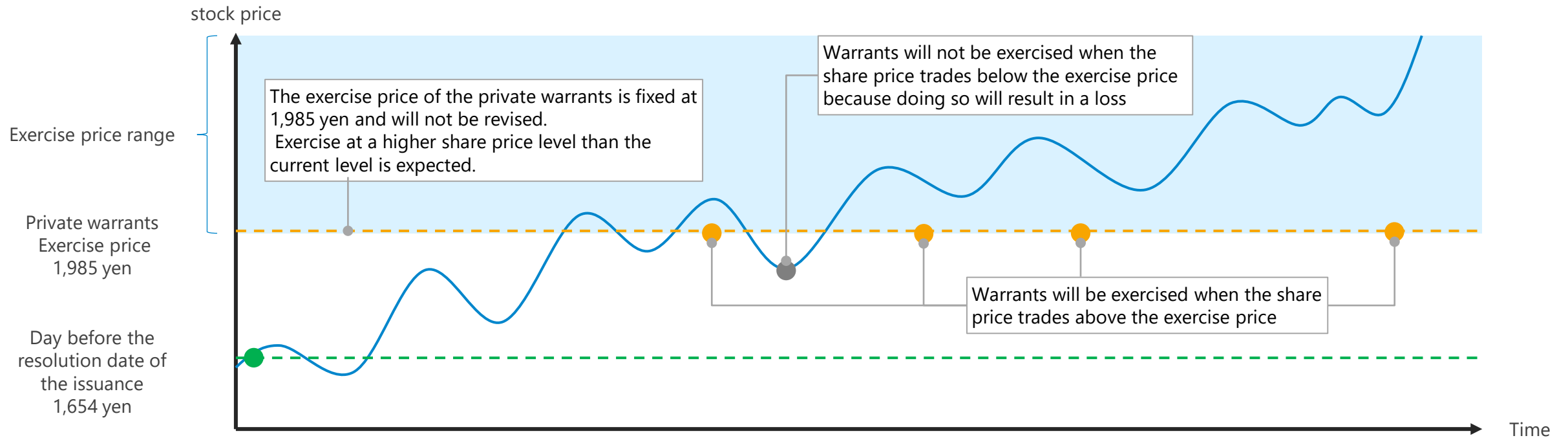
- TAKEOFF is the proprietary ground station software for autonomous drone flight
- Further development of TAKEOFF application functionality, user interface, user experience, and development of linkage to external systems

500 Mn JPY by 2024 December

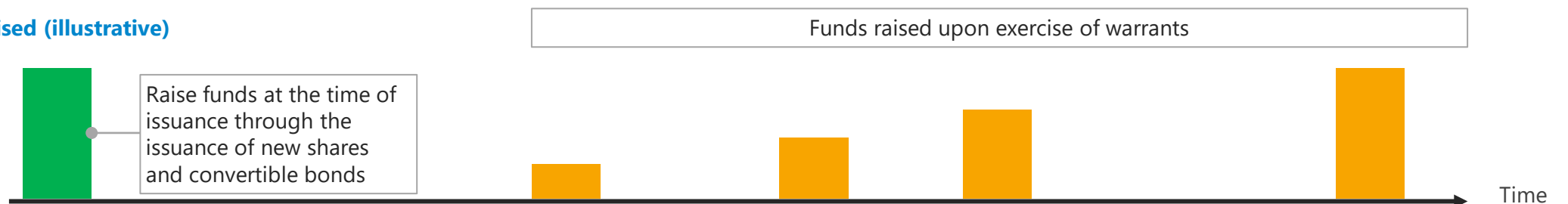
Financing Mechanism

Raise a fixed amount at the time of issuance while reducing the impact of dilution by fixing the number of shares to be issued upon exercise of warrants

Relationship between Stock Price and Financing

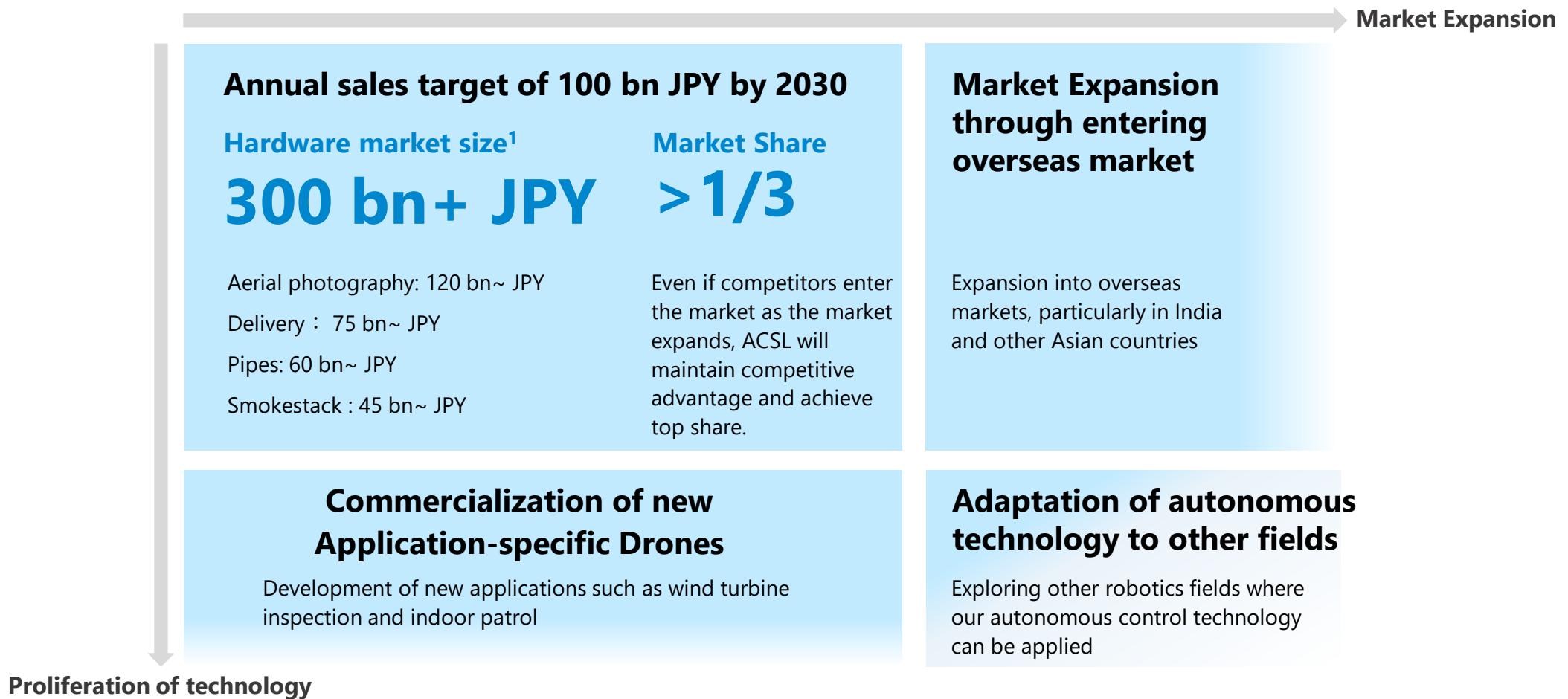


Total amount of funds raised (illustrative)



Further expansion through successful initiatives

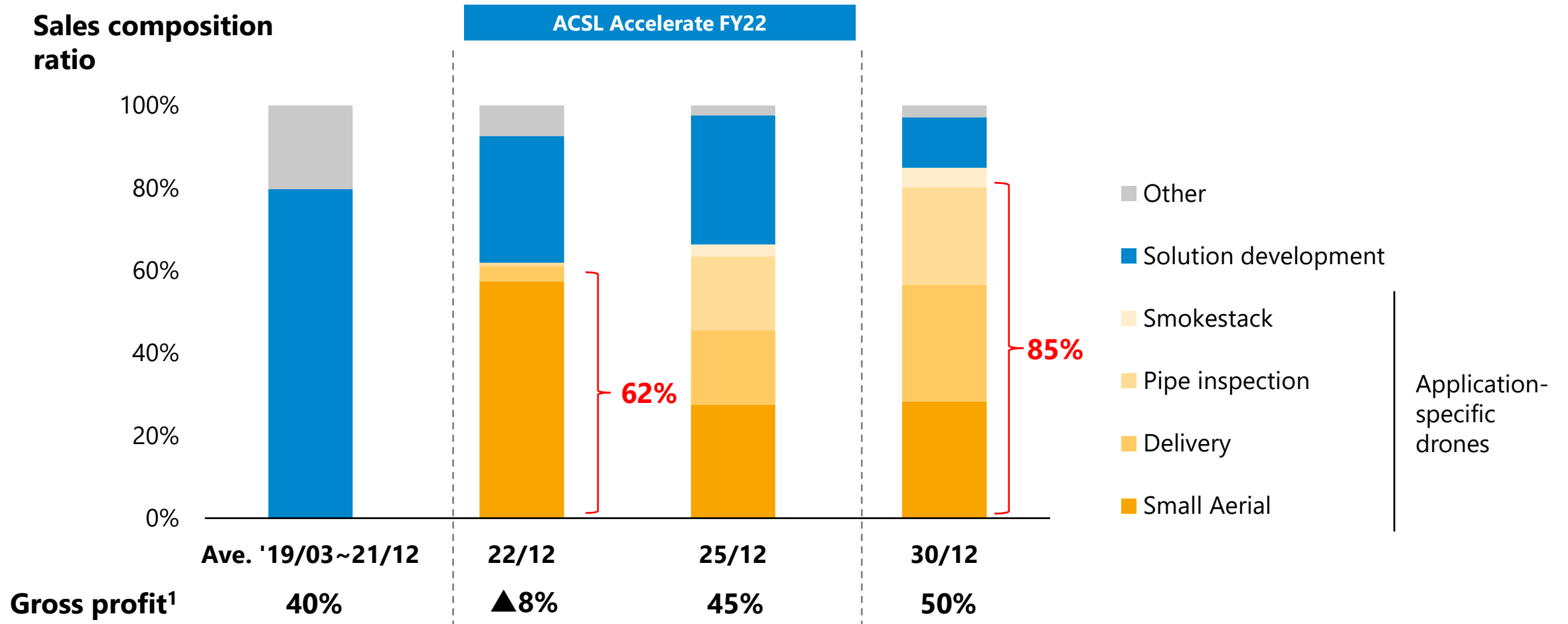
Overseas market entry, development of new applications, and adaptation of autonomous control systems to other fields will provide opportunities for further growth.



1: ACSL estimate

Accelerate overseas expansion toward FY25 and change sales composition to mainly drone unit sales

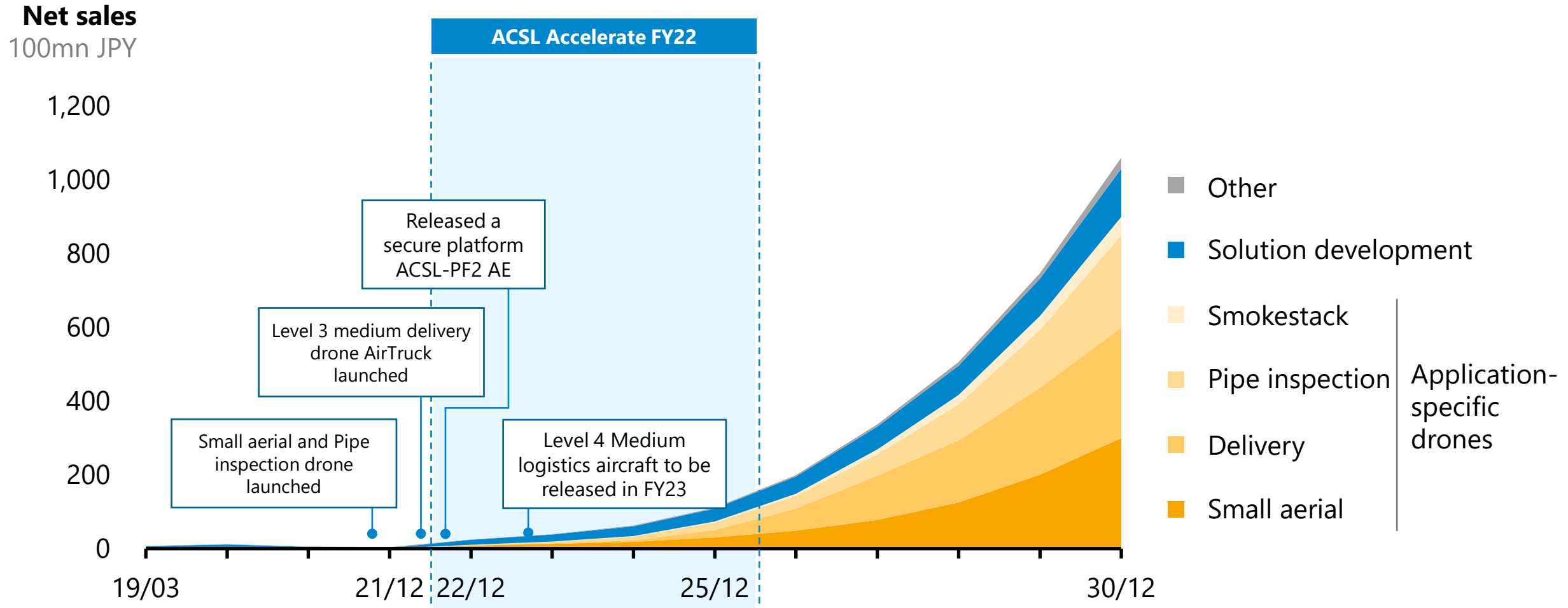
Application-specific sales increased significantly in FY22/12 to divert away from a man-power based sales to drone unit sales, targeting 85% of total sales in FY30/12. Further change to a drone unit sales-oriented business by fully ramping up overseas.



1: Actual results through FY2010/12, target figures in ACSL Accelerate for FY2015/12 and beyond

Rapid revenue growth achieved by shifting to drone sales

Early growth will be led by small aerial SOTEN and pipe inspection Fi4. Deliver will start growing from 2025



Aiming for net sales of 100 Bn JPY in 2030

In 2030, ACSL aim to achieve sales of 100 Bn JPY or more by mass-producing and socially implementing the four applications identified in the current business strategy

Drone hardware market



In 2030
4 Appli-
cations

	Market size 300 Bn JPY ¹	Market take-off	Competitive situation	Customer segmentation	Target share	
Aerial photo	120 bn JPY	Existing	Currently, many products are made in China and have been adopted	Large	25%	} More than 100 Bn JPY
Delivery	75 bn JPY	2025~	ACSL products used mainly for difficult Level 3 flights	Small	50%	
Pipes	60 bn JPY	2023~	Currently no products dedicated to pipes	Mid	50%	
Smoke stacks	45 bn JPY	2023~	No full-scale implementation of a product	Mid	25%	

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.

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FY22/12 Business highlights



Steadily executing on the 5 strategies set forth in the ACSL Accelerate FY22

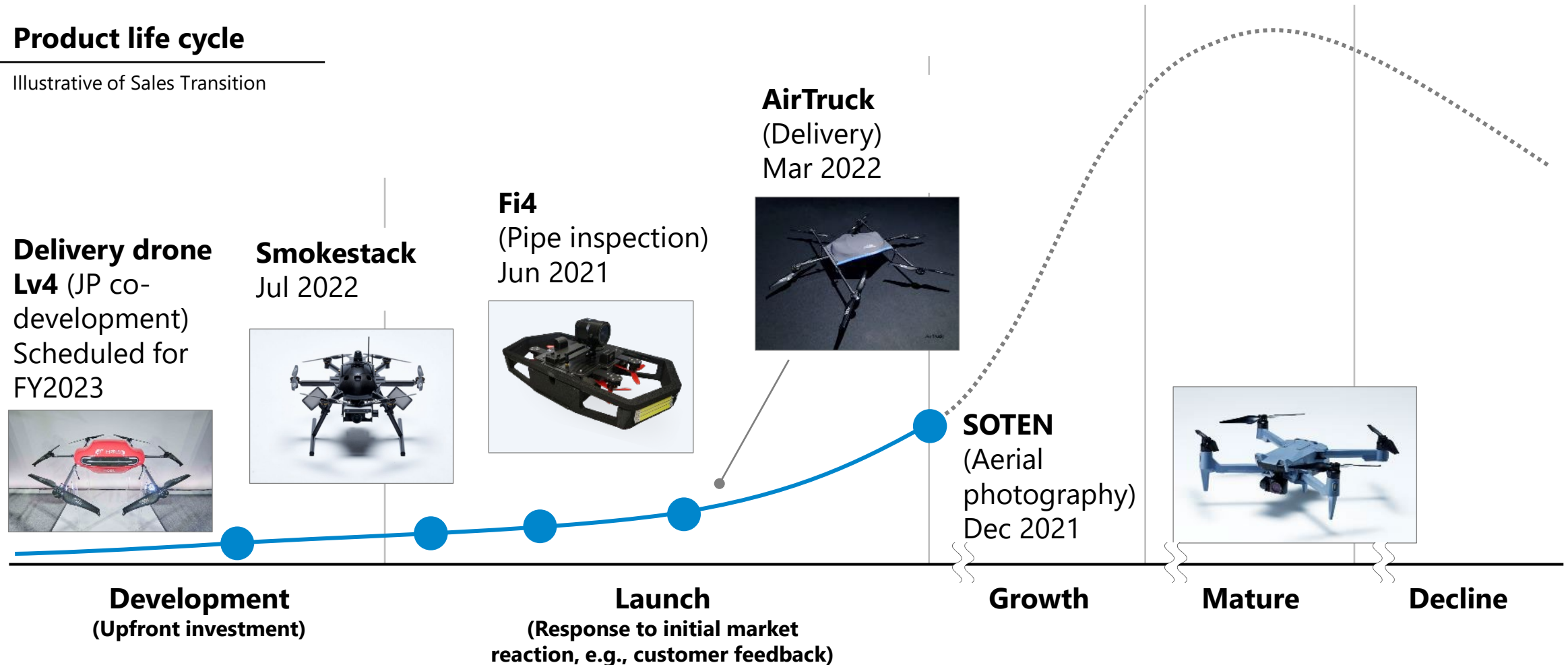
	Strategy in the mid-term management policy	Progress
Development and commercialization of four application-specific drones	Productization of 4 application specific-drones : small aerial, mid-sized delivery (Level 4), smokestacks, and pipes	All 4 application-specific drones have been released. SOTEN (small aerial) and AirTruck (delivery) grew significantly, driving revenue growth
Development of new application drones and compliance with security	Identifying new applications to develop and making all drones secure compliant	Released platform drone PF2-AE (advanced edition) that is secure compliant. Numerous proof-of-concept trials to explore new application in progress
Full-scale launch into the Indian market	Establishing an office in India, hiring local talents and initiating commercial activity and local production	Active commercial activities via JV established in India. Exhibiting at expos and customer demos resulted in winning 140 mn JPY project
Reinforce ESG initiatives	Strengthening current ESG initiatives and communicating qualitative info externally	Published an integrated report both in English and Japanese. Continuing to empower diversity and governance
Exploring potential adaptation of autonomous control systems to other fields	Exploring areas to expand the core technology autonomous control system	Acquired 40% share in a UGV manufacturer out of Utsunomiya university. Starting to expand autonomous control to UGV field

ACSL has launched most application-specific drones and development investment phase is near complete

Majority of application-specific drones have left the development investment phase, and now are transitioning to a new phase to launch and response to initial market reaction (e.g., customer feedback)

Product life cycle

Illustrative of Sales Transition



Released aerial photography drone “SOTEN”

Released aerial photography drone “SOTEN” and started to receive orders. Significant market reaction to the secure and reliable drone

- 1 Secure:** Data security, domestic and reliable components, encryption, etc.
- 2 Usability:** One-touch interchangeable camera, clip-on propellers
- 3 Flight performance:** Max 15m/s wind tolerance, SLAS/SBAS QZSS accuracy
- 4 Peripherals:** Offline map, Secure LTE network, extension mounts



SOTEN

Continuous functional update to SOTEN based on customer demand

Compatible with Pix4D software, which is used globally in aerial and disaster surveys, and LTE communication functionality also implemented

■ Compatible with leading global Pix4D software

- Integrated with Pix4D's software for creating high-precision 2D / 3D data. This enables more secure, high-definition data acquisition and data analysis
- PIX4Dmapper is used by professionals in Japan and abroad for a wide range of applications from surveying and construction to infrastructure mgmt
- PIX4Dreact has been installed in more than thousands of fire, police, and NPO

■ Implemented LTE communication support to enable flight in areas with no radio reception

- Enabled video and status monitoring using LTE network, making it possible to fly in areas with no signal coverage and to land safely using LTE communications in the event of a signal interruption

PIX4Dmapper



PIX4Dreact



Provided by Pix4D

“Fi4”, a pipe inspection drone for environments such as water pipes

Reduce the burden of inspection work associated with the aging of ~480,000 km of sewer pipes throughout Japan.

- 1 Stable flight:** Optimal materials such as light and strong carbon core ensure flight performance
- 2 Dust and waterproof:** IP55 dust and waterproof to withstand harsh survey environments
- 3 Usability:** A dedicated app allows operation in real time while checking the inside of the pipes
- 4 Easy maintenance:** A part of the drone frame is made of foamed material, which is separated from the core where the control board and other components are installed, making it easy to replace.



Launch of the pipe inspection drone

Launched pipe inspection drone “Fi4”, an outcome of a jointly developed project with NJS and established a JV with NJS to provide services, including support.

Background and objectives

- **The total length of sewerage systems in Japan is approximately 480,000 km¹**, and the burden of inspection work due to aging is a serious issue
- **Jointly developed a pipe inspection drone with NJS since 2015**, and improved its durability, maintainability, and usability for actual field use through demonstration tests
- **Establishment of a JV in May 2021** to provide services, including support



Joint investment



FINDi

Provision of inspection and other services using closed environment inspection drones

Launch of Fi4 pipe inspection drone

- **Launch of the new Fi4**, a package that includes an airframe designed for harsh research environments and a dedicated operating application with improved usability
- Based on the images taken by the drone, **data analysis and functional diagnosis services to determine abnormalities such as deterioration status** are also provided at the same time
- In the future, the JV will **expand lineup of drone** to include pipeline facilities with flowing water, external inspections of facilities, and other application scenarios



Air Slider **Fi4**



Released UI/UX for smokestack inspection drone for smokestacks, boilers, and pressure regulating tanks

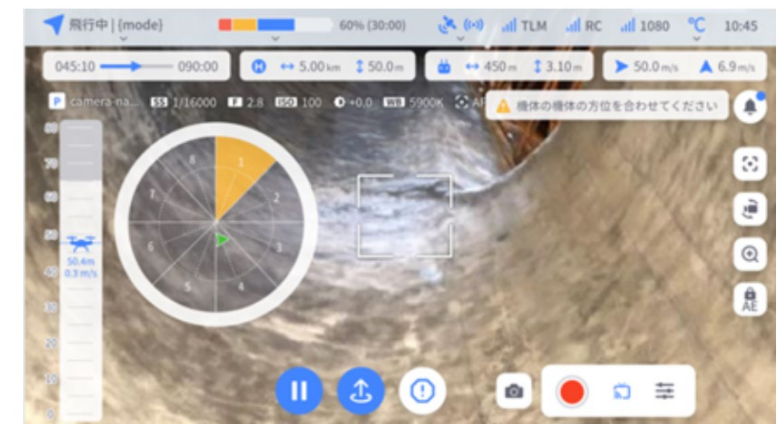
Capable of capturing highly accurate inspection images by autonomous flight in dark areas where GPS is not available.

1 Autonomous flight: Laser (LiDAR) self-position estimation in non-GPS environment

2 Stable inspection images: Images are captured at preset speeds and intervals

3 Safety: Pilot can operate outside the smokestack

4 Usability: Easy flight route design and automatic flight photography at the touch of a button with dedicated GCS and UI



Released mass-produced delivery drone "AirTruck"

"AirTruck," Japan's first mass-produced delivery drone which is designed to solve the manpower shortage problem in the logistics industry and to facilitate last mile delivery.

- 1 Stable flight:** 4D GRAVITY® center-of-gravity control technology to reduce cargo sway
- 2 High flight performance:** Aerodynamic optimization through aerodynamic simulation and wind tunnel testing
- 3 Remotely controllable:** Equipped with LTE communication, FPV camera, etc., suitable for Level 3 flight.
- 4 Improved load capacity:** Payload expanded to 5 kg
- 5 UX design:** easy-to-load from the top of the body



AirTruck

"AirTruck" won the top prize at the 2022 Nikkei Superior Products and Services Awards

AirTruck, launched in Mar 2022 aims to become the de facto standard for drone delivery, and was the first drone to win the Nikkei Superior Product and Service Award

■ Nikkei Superior Product /Service Award

- The Nikkei Superior Products and Services Awards, now in their 41st year, are awarded to the 20 most outstanding new products and services launched in a given year.

■ First drone to receive the award

- ACSL is the only start-up company among the eight award-winning companies in the production goods category
- This is the first time a drone has won this award.

■ Recognized as a product that responds to social issues

- AirTruck already has 5 implemented areas and 14 trial areas, aiming to become the de facto standard for drone delivery



AirTruck adopted by Digital Rural City Initiatives across Japan

AirTruck and SkyHub®, promoted by Seino HD and Aeronext, are adopted in projects related to the Digital Rural City Initiative led by local governments nationwide



Tsuruga, Fukui Prefecture

On-demand drone delivery as fast as 30 min, shopping service, and food delivery as a model for "connecting urban areas and depopulated areas"



Sakai, Ibaraki

Experiment initiated as of Oct 2022 to target practical application of new smart logistics using drones and self-driving buses



Kamishihoro, Hokkaido

Successful demo of drone transplantation of fertilized cow eggs (non-frozen fresh eggs) collected at the ET Laboratory to farmers' homes in Kamishihoro



Delivery trial and unveiling of a new delivery drone in development conducted under the capital and business alliance with Japan Post

ACSL provided delivery drone and operational support for Japan Post’s “Trials on delivering mail by drones” in Dec 2022, and also unveiled a new Level 4 compliant delivery drone in development which it aims to be put into practical use in FY23 or later.

Unveiling of a Level 4 compliant delivery drone

On Dec 6, 2022, Japan Post and ACSL unveiled a Level 4 compliant delivery drone that aims to be put into practical use in FY23 or later.

The drone aims for flight performance that achieves a distance of 35 km, 3.5 times greater than the previous model, and a payload of 5 kg, 2.5 times greater than the previous model.



Unveiling ceremony



Dedicated delivery drone unveiled

Trials on delivering mails by drones

Delivery to residential households and nearby-delivery points in Iruka Post Office delivery zone in Kumano, Mie Prefecture, from Dec 5, 2022 to Dec 23, 2022.

Verification of a manpower-saving by introducing innovative delivery models in mountainous areas, such as delivery of mail from a drone to drop-off box.



Drone delivery



Drop-off box

Applied for Level 4 Tier-1 Type Certification and conducted numerous proof-of-concept trials to develop new applications

ACSL started procedures for conformance to Level 4 Tier-1 Type Certification, which began on Dec 5, 2022. In order to explore new marketable applications, numerous proof-of-concept trials conducted to identify customer pain points and marketability.

Level 4 Tier-1 Type Certification

- Type Certification System is a certification system that inspects the strength, structure and performance of a drone to ensure that the **design and manufacturing process conforms to safety and uniformity standards**, and to ensure safety and uniformity
- ACSL **applied for Tier-1 Type Certification for delivery drone** on Dec 5, the same day the Aviation Law was amended
- Scheduled to obtain type certification and **conduct Level 4 flights** by the end of Mar 2023.



Drone applied for type certification



Testing for certification

Proof-of-Concept trials to develop new applications

■ Wind Power Generation Inspection

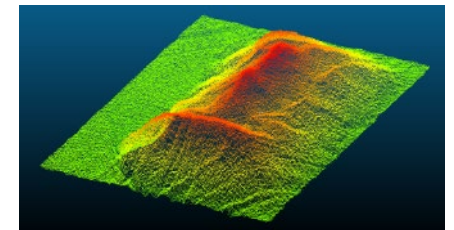
- Reduced access time and improved safety, e.g., accessing high locations
- Wind power inspections are easily configured for automatic flight with a dedicated app



Automated blade inspection for wind turbines

■ Surveying (volume calculation)

- Improved productivity in volume calculations by achieving a wide range of measurements in a short period of time



Acquire 3D point cloud and calculate sediment volume

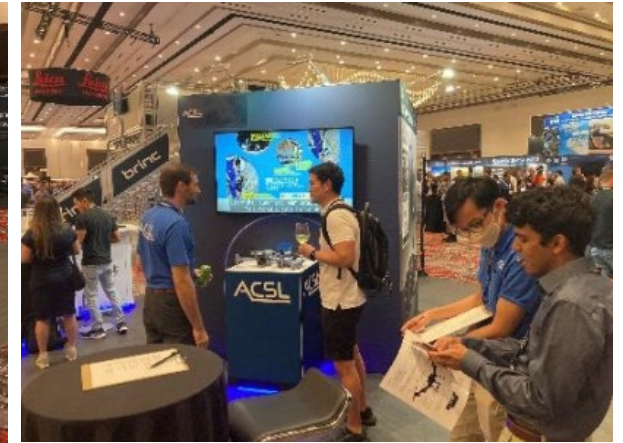
Confirmed that there are economic security needs that ACSL can take advantage of in the US market

Confirmed extremely strong economic security needs in both government and private sectors at U.S. trade shows, and identified strong interest in purchasing ACSL drones at multiple customer site roadshows.

- **SOTEN exhibited at the Commercial UAV Expo in the U.S.** following the AUUVSI XPONENTIAL 2022 in April. SOTEN was highly evaluated for its use in inspection and surveying at the world's leading commercial drone exhibition.

- With the **National Defense Authorization Act (NDAA) now in effect in the U.S.** and the Department of Defense designating DJI as a China Military Company, government and social infrastructure companies are eager to make the switch as soon as possible.

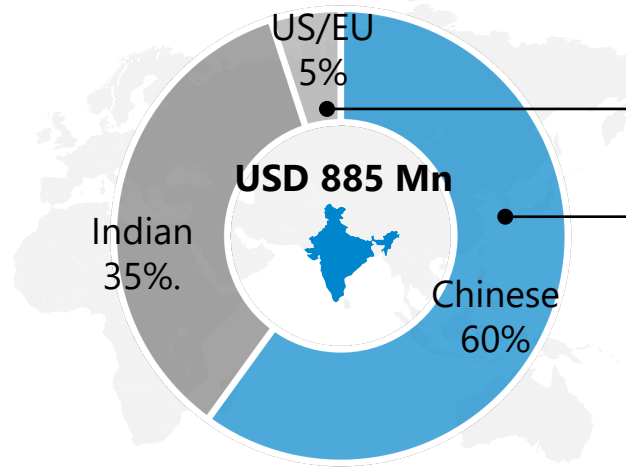
- **Conducted roadshows at several customers in October 2022 and January 2023** to evaluate the feasibility of practical application and confirmed their desire to purchase the product.



Received a large order of approx. 140 mn JPY in India by realizing local production

Rs. 80 million deal to provide Made-In-India drones that are also compliant with Indian government policy.

India Market (2021)



- **Import of foreign-made drones banned in India** from Feb 2022 to **promote Make-In-India** (Drone Shakti Scheme)

- In order to sell drones in India, they must be manufactured in India and have type certification.

- **ACSL established a local joint venture, ACSL India, to promote Make-In-India compliant activities.** In addition, ACSL India promotes sales promotion activities with local service partners.

- **Recently awarded a major contract worth Rs. 80 million** to provide platform drones compliant with Make-In-India, with production to be carried out at ACSL India.



Prime Minister Modi and ACSL India Managing Director Arjun (rightmost photo) visit the ACSL India booth at the Drone Festival of India 2022.

First drone-related company in the world to join the Universal Postal Union

ACSL became the first drone-related company in the world to join the Consultative Committee of the Universal Postal Union (UPU) in Nov 2022.

■ Universal Postal Union

- A specialized agency of the United Nations with 192 member countries whose purpose is to promote communications among peoples through the effective operation of postal services and to contribute to international cooperation in the cultural, social, and economic fields.

■ Highly recognized for the continuous drone postal delivery with Japan Post since 2018 when the Aviation Law was amended

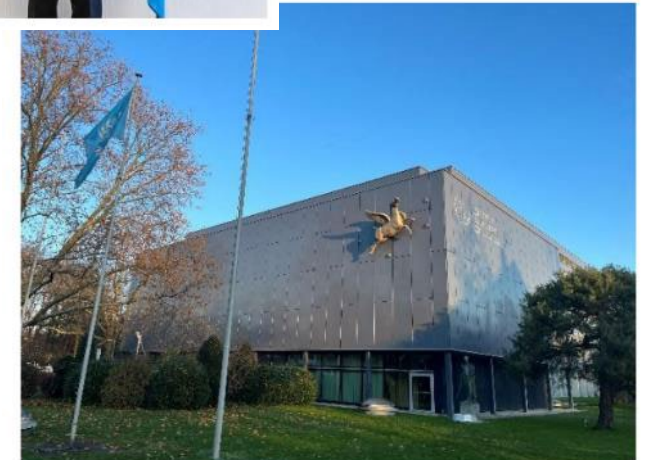
- First Level 3 flight (unassisted BVLOS flight in unmanned areas) in Japan in 2018
- In Dec 2022, a new delivery drone compliant with Level 4 announced.

■ International presence, overseas trial opportunities

- Recognized as a delivery drone manufacturer by an authority organization, which has a leverage effect on overseas business development.
- Opportunities for overseas trials with the cooperation of UPU



With Mr. Meitoki,
Secretary General of UPU

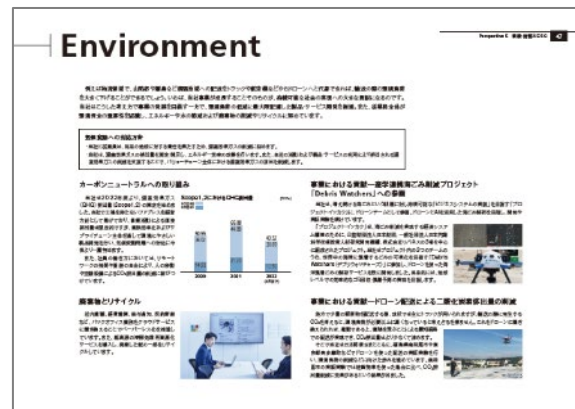


Exterior view of the UPU headquarters in
Bern, Switzerland

ESG initiatives being actively promoted. ACSL published its first integrated reports in English and Japanese to strengthen stakeholder communication

Integrated reports including qualitative information are published in English and Japanese to strengthen communication of ESG-related initiatives to diverse stakeholders. In particular, the report highlights ACSL's global corporate culture and diversity.

Integrated Report 2022



- **ACSL publishes its first integrated report** in both English and Japanese. ACSL's vision and initiatives are systematically introduced to a diverse range of stakeholders, including investors, clients, and partners.

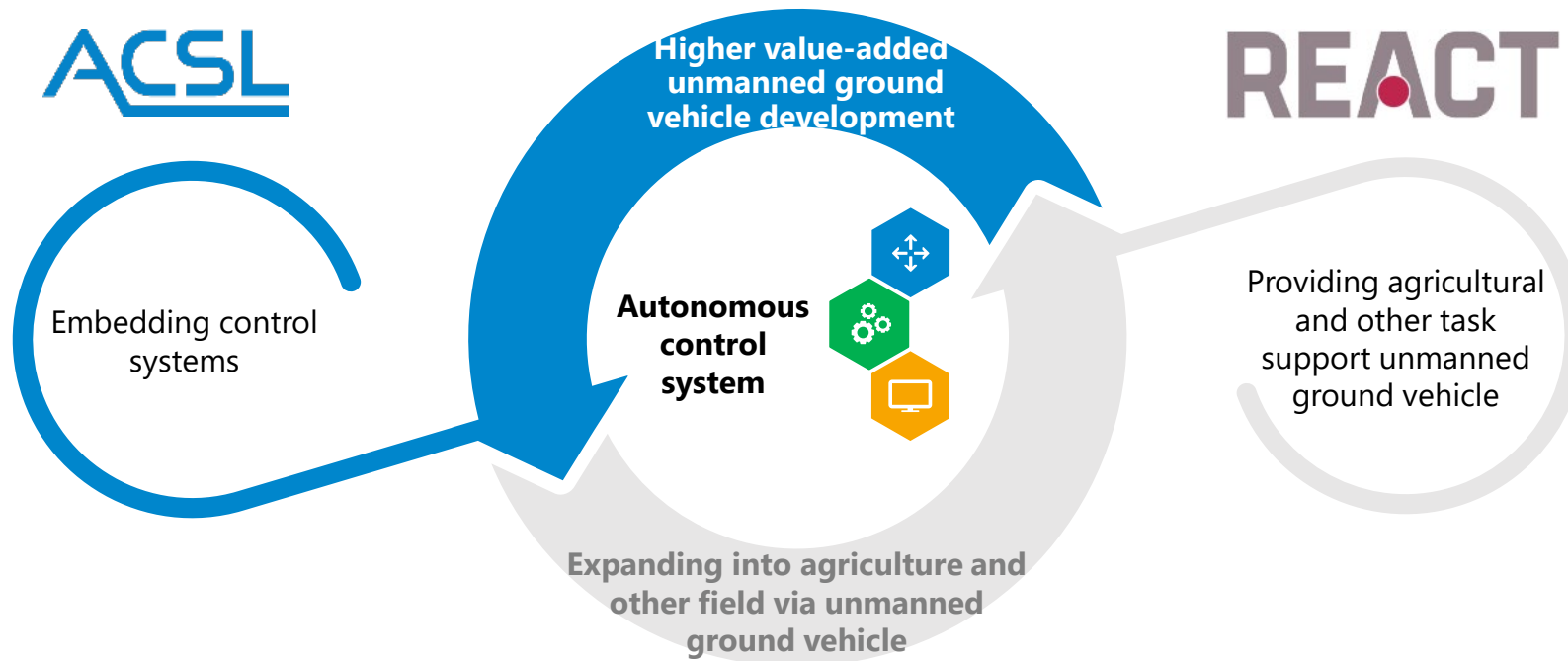
- **The Integrated Report consists of five sections**

- ACSL's vision and mission
- ACSL core technologies and product lines
- Markets, customers and our history
- Values, corporate culture, work style, diversity
- Business performance, financials, ESG

Invested into REACT to expand ACSL's core technology "autonomous control system" to other fields beyond drones

ACSL's core technology – autonomous control system – is effective in other robotics field. As a first step to expand beyond drones, ACSL entered into a capital and business alliance with REACT, a developer of unmanned ground vehicles

Outline of Capital and Business Alliance



Outline of REACT (formerly I-EAT)

- Started robot-related business in 2016 as a venture from Utsunomiya University
- A technology that first won the 7th Robot Awards, Minister's Prize of the Ministry of Education, Culture, Sports, Science and Technology
- Production, development and sales of agricultural support robots
- Possesses technology for autonomous mobility and human tracking



Agricultural unmanned vehicles by REACT

REACT will first advance UGV through proof-of-concept projects in the agricultural sector

Development and trial project of smart agriculture technology

- Systematization of smart agricultural technology in pear cultivation
- Mobile robot and on-board work module to reduce labor intensity and labor hours in harvest transportation, weed control, and pruning and branch collection.



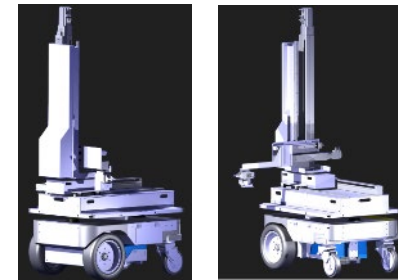
Herbicide spray



Branch collection with branch collection module

Smart agriculture trial project

- A mobile robot equipped with a strawberry harvesting actuator and a mobile robot that transports harvested strawberries work in tandem to shorten harvesting time and reduce harvest loss rate.



Strawberry harvesting and transport robot



Overall picture of the trial

Trial of mobile robot operation in an apple orchard

- Demonstration of mobile robot in actual apple orchard work to see if it can improve work efficiency, etc.



Human-following by robots



Crop haulage

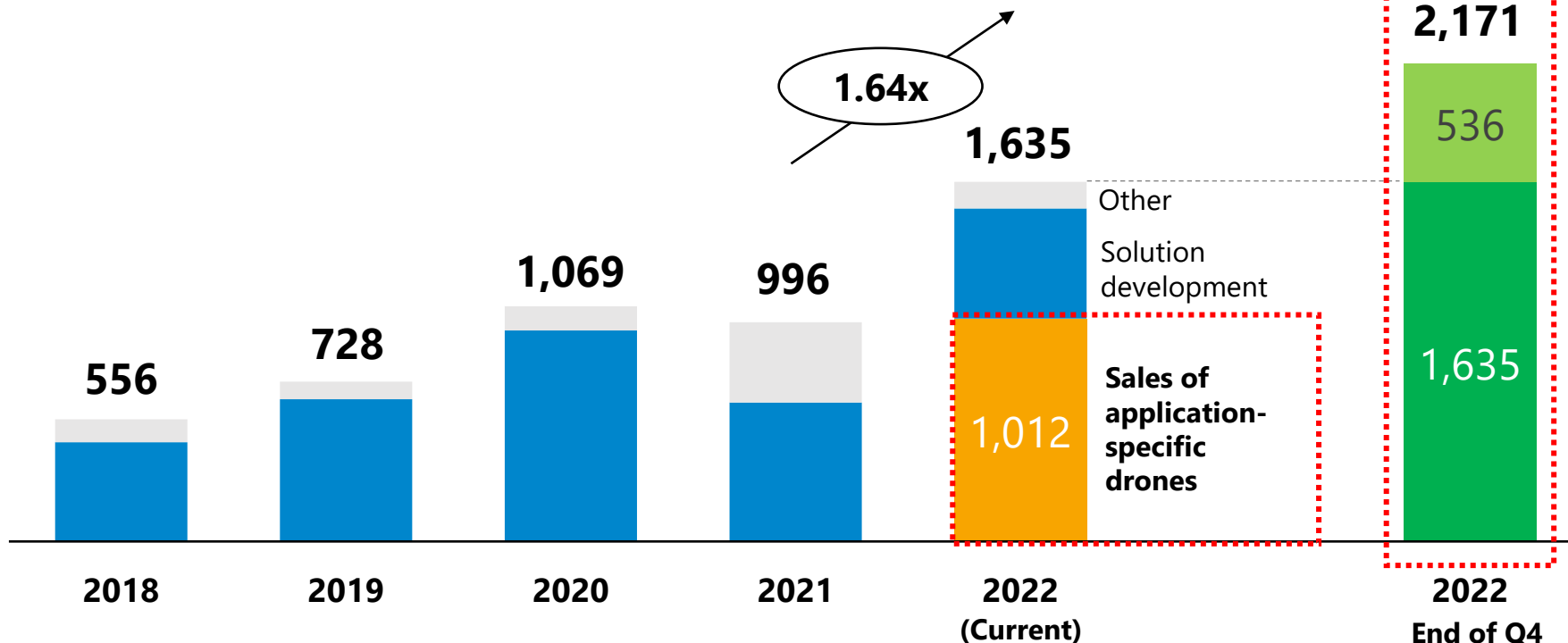
FY22/12 Q4 sales increased 64% y/y and reached a record high.

Overseas orders also received

Sales were up 64% over the same period last year, marking a record high for the full year. More than 1 billion of those sales were application-specific aircraft sales, and the company also succeeded in changing its sales mix to mass-production manufacturers.

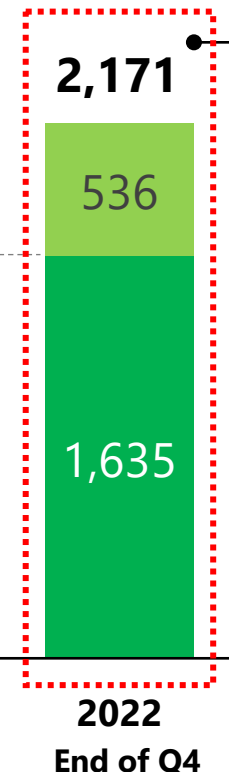
Jan~Dec Net sales¹

Mn JPY



Total of net sales and order backlog at end Dec²

Mn JPY



Record high; FY22/12 Q4 cumulative sales and order backlog combined totaled 2,171 Mn JPY

Order backlogs of 80 Mn rupees also from India (approx. 140 Mn JPY)

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 21/04~21/12. Above is the total for 12 months from Jan~Dec for each year.

2: Order backlogs is the total value of projects with a purchase order or similar documents at the end of Dec 2022

Both SOTEN and Solution Development secured a certain level of marginal profit ratio

645 units shipped and booked 930 Mn JPY for SOTEN, but was below initial target. Marginal profit ratio¹ reached 20%.

Solution Development fell far short of initial target. Marginal profit ratio improved from Q2 onward, achieving 54% for full year.

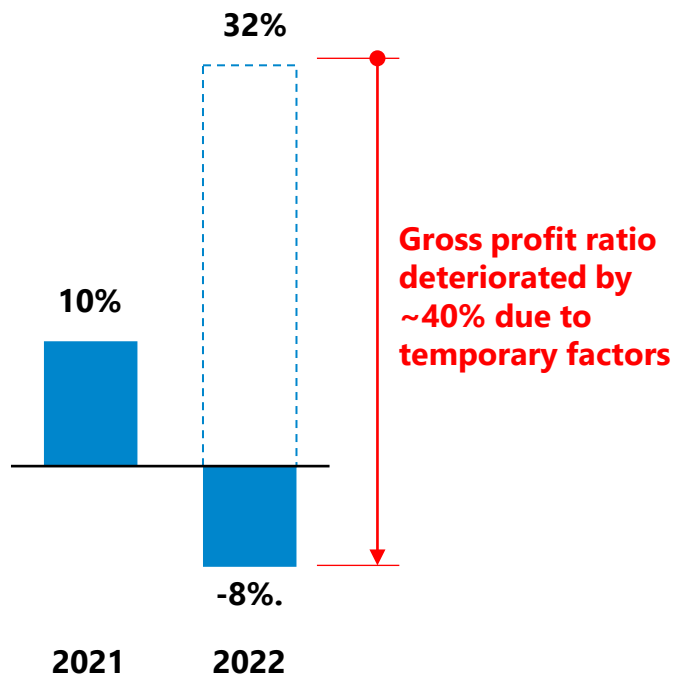
		Q1 Results	Q2 Results	Q3 Results	Q4 Results	Full Year Results	Initial target
SOTEN (Aerial photography)	Net sales (bn JPY)	5.9	0.2	0.2	3.0	9.3	10
	# of drones (units)	475	6	7	157	645	1,000
	Marginal profit ratio (%)	18	39	40	21	20	15 or more
Solution Development (Proof-of-concepts trials, sales of prototype drone)	Net sales (bn JPY)	2.9	0.3	0.3	1.4	5.0	12
	Marginal profit ratio (%)	44	74	69	64	54	60 or more

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.

Gross profit ratio suffered significantly due to temporary semicon price hikes, foreign exchange rates, and inventory valuation loss

FY22 gross profit ratio suffered due to shortage and price hikes in semicon and electronic component, inventory write-downs, and yen depreciation resulting in ~40% gross profit ratio loss. Actions taken for FY23 to cope with component price hikes.

Jan~Dec Total
Gross profit ratio¹



Temporary factors contributing to gross profit ratio loss

Shortage and price hikes of semicon and electronic components

- Shortage and price hike of components including semicon due to COVID-19, making it difficult to procure at reasonable prices (e.g., power IC from 500 JPY to 70,000 JPY)
- Production needed to be maintained to meet existing delivery commitments to customers, such as gov procurement, and reflection to product price could not be done
- Purchased components from secondary market in bulk ahead of time to maintain production. Design changes made within reasonable limits for parts that are in short supply or have become expensive to reduce down COGS.
- Approx. 400 Mn JPY impact including the following foreign exchange impact

Foreign Exchange

- R&D projects and component procurements that are ordered in USD were procured at higher prices than when contracted due to weakening of the yen (from an assumed 110 JPY/USD to a maximum of 140 JPY/USD).
- Procurement of overseas parts from allied countries exists since those are difficult to obtain in Japan (e.g., NVIDIA GPUs, Texas Instrument power ICs)

Inventory write-downs

- Parts inventory at higher-than-planned prices to ensure continued production
- Write-down of approx. 250 Mn JPY for inventory related to SOTEN held as of Dec 2022, based on future sales prices plans.

1: FY21/12 is an irregular 9-month accounting period from 21/04 to 21/12.

The total effect of semicon price hikes, foreign exchange rates, and inventory write-downs total ~650 Mn JPY to the gross profit results of FY22/12.

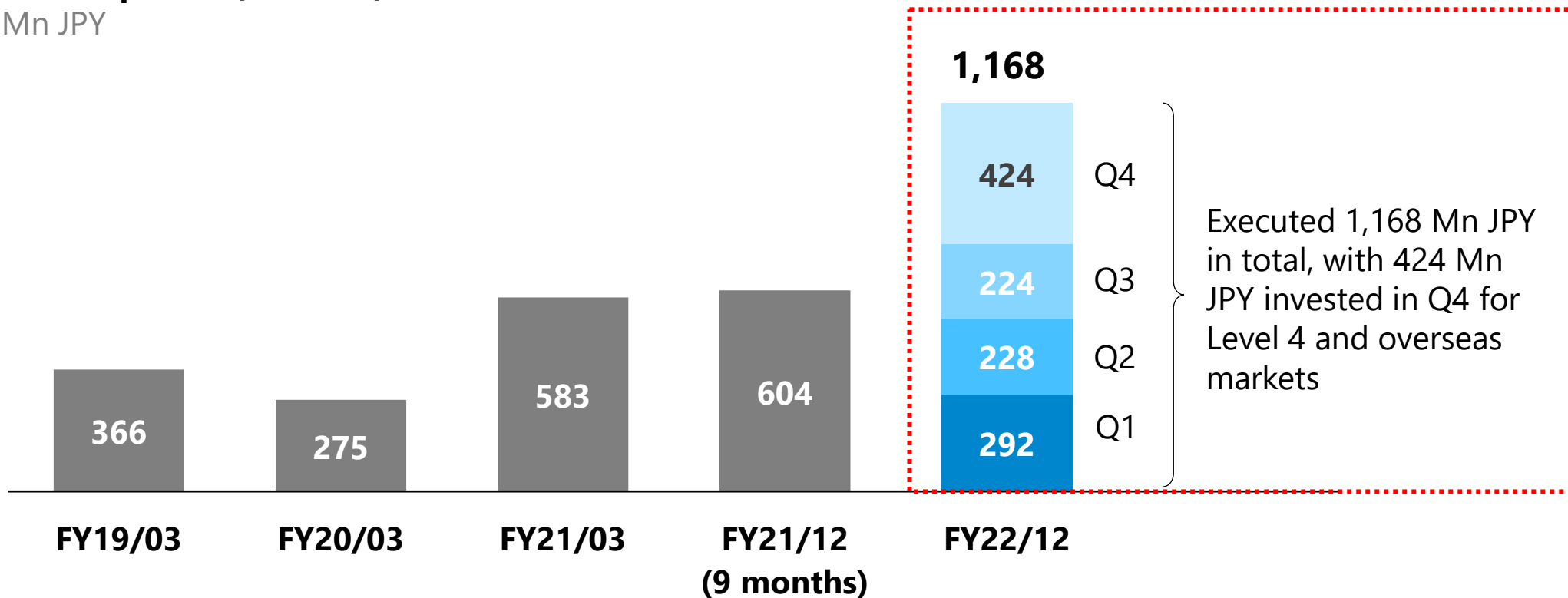
Approximately 650 Mn JPY (40%) compared to net sales of 1.63 Bn JPY are temporary factors.

R&D expenses actively invested for Level 4 compliance and overseas markets

R&D for Level 4 and overseas markets were strengthened in Q4, and totaled 1.16 Bn JPY as upfront investment. Majority of the application-specific drones have completed the investment-heavy development phase and have been successfully launched.

R&D expenses (Full Year)

Mn JPY



Results versus the numerical target for FY22/12

Though FY22/12 resulted in large loss incl. R&D investment, FY23/12 onward expects revenue and profit growth

	22/12 target	22/12 actuals	Difference	Outlook
Net sales	2.5 Bn JPY	1.63 Bn JPY	Though demand captured with mass production of SOTEN, soaring semicon price limited possible supply. Expect SOTEN to be adopted in FY23/12	Expect market growth for SOTEN. Currently developing commercial plan for overseas market
R&D expense	600 Mn JPY~	1.16 Bn JPY	Aggressive investment to be compliant with Level 4 function development and certification activity. Additional up-front investment for overseas market	Continue to achieve type certification for Level 4 compliance. Detailing out upcoming R&D investment for overseas market expansion
Ordinary income	▲650 ~ ▲350 Mn JPY	▲2.58 Bn JPY	In addition to the strategic R&D investment, soaring semicon price impacted gross profit significantly. Write-offs of investment portfolio also conducted	Countermeasures against soaring semicon price taken for FY23/12, thus expect improvement in gross profit ratio

Cumulative results of FY22/12

Record cumulative net sales of 1,635 mn JPY and net income of -2,583 Mn JPY.

(Mn JPY)	FY22/12 cumulative (Jan~Dec 2022)			Cumulative of same period of the previous year ¹ (Jan~Dec 2021)	Cumulative of FY21/12 (Apr-Dec 2021)
	Actual	YoY change to same period of previous year	YoY change to cumulative FY21/12	Actual	Actual
Net sales	1,635	+639	+1,134	996	501
Gross profit	▲124	▲220	▲125	95	0
Gross profit ratio	▲8%	▲17 pt	▲8 pt	10%	0
R & D	1,169	+248	+564	920	604
Operating income	▲2,203	▲621	▲1,014	▲1,582	▲1,188
Ordinary income	▲2,593	▲667	▲1,367	▲1,925	▲1,226

1: Figures for the third quarter of the fiscal year ending March 31, 2021 and thereafter are based on consolidated financial statements; figures for earlier quarters are based on non-consolidated financial statements.

Balance Sheet



mn JPY	FY22/12		FY21/12	FY21/03
	Actual	YoY change to same period previous year	Actual	Actual
Current assets	3,572	▲14%	4,177	3,257
Cash	1,356	▲51%	2,759	1,891
Fixed assets	1,403	▲9%	1,537	751
Current liabilities	2,003	+598%	287	432
Fixed liabilities	34	+295%	8	3
Total liabilities	2,037	+589%	295	436
Net assets	2,938	▲46%	5,419	3,572
Total assets	4,976	▲13%	5,715	4,008

KPI Results



Indicator		FY19/03	FY20/03	FY21/03	FY21/12 (9 months)	FY22/12	FY22/12 Financial Forecast (as of Jan. 2022)		
		Actual	Actual	Actual	Actual	Actual	Forecast	Difference	
Sales of application-specific drones									
Small aerial photography drone (Low ASP)	Units	-	-	-	-	645	1,000~	While the value base is generally in line with the plan, the volume is facing supply issues due to soaring semicon prices.	
	Amount (100mn JPY)					9.3			10
Other application-specific drone (High ASP)	Units					18	100~		Delivery drone (AirTruck) grew more than expected, but pipe inspections did not expand as much as expected.
	Amount (100mn JPY)					0.7	2		
Solution development¹									
PoC and Development	Projects	81	112	82	41	71	-	SOTEN, AirTruck, and other drone sales expansion led to accelerated resource investment in application-specific sales, resulting in lower orders for solution development than originally planned.	
	Amount (100mn JPY)	2.9	8.6	3.7	1.2	3.9	7		
Sales of Platform/ Evaluation drone ¹	Units	106	101	46	18	27	-		
	Amount (100mn JPY)	3.8	3.0	1.4	0.6	1.0	5		
Number of shipments ¹		136	128	71	25	42	~150		

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		FY19/03				FY20/03				FY21/03				FY21/12			FY22/12			
Quarterly Results		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q
Demonstration experiment² • Proof of Concept • Custom development	Sales mn JPY	25	59	75	133	27	65	102	671	1	22	22	323	14	42	67	252	16	25	103
	Num. of projects	6	16	22	37	14	22	21	55	2	11	15	54	6	14	21	34	2	12	23
Sales of platform drone³ • Sales of standard and general-purpose drone • Drone modified for customers based on the standard drone	Sales mn JPY	10	67	80	225	24	48	19	212	4	10	13	116	15	34	17	42	17	7	37
	Num. of units	8	20	31	47	6	12	9	74	1	3	5	37	6	6	6	8	4	2	13
Other⁴ • Sales of parts • Fuselage repair service • Some national projects	Sales (of which national projects) mn JPY	68 (65)	14	12	33	9	29 (18)	9	59	30 (21)	8	10	55	237 (219)	55 (50)	15	64	20	11	24

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	FY19/03				FY20/03				FY21/03				FY21/12			FY22/12			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q
Quarterly Results	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q
Net sales mn JPY	104	141	168	392	60	143	130	943	36	42	46	495	267	133	100	952	78	130	473
Gross profit mn JPY	13	83	101	204	8	69	75	655	▲ 6	▲ 6	▲ 13	94	17	5	▲22	133	▲30	▲23	▲204
Gross profit ratio	13%	59%	60%	52%	14%	48%	58%	70%	▲19%	▲16%	▲28%	19%	7%	4%	▲23%	14%	▲39%	▲18%	▲43%
SG&A expense mn JPY	157	172	244	159	205	171	201	213	230	173	314	488	325	348	515	535	442	431	670
Of which R&D expenses mn JPY	85	94	127	58	66	54	76	78	60	77	129	315	153	165	285	292	228	224	424
R&D Expenses ratio to sales	82%	67%	76%	15%	109%	38%	59%	8%	167%	183%	278%	64%	57%	124%	285%	31%	290%	172%	90%

1: Figures are based on consolidated financial statements from 3Q FY2009/3 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.

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- 1 Corporate overview, Core competency, and Business model
- 2 Market overview
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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. In addition to promoting intrinsically safe design based on risk analysis, we are developing drones that can fly safely even in environments where GPS cannot be reached or in bad weather by utilizing some of our technologies. 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 are able to identify all of our sales partners through 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

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Risks related to fluctuations in business performance	<ul style="list-style-type: none"> As the Company sells drone and provides proof-of-concept (PoC) services mainly to large corporations or projects related to public offices, sales tend to be concentrated in March, which is the end of the fiscal year for many customers. The reason for the high weighting of the accounting period from January 1 to March 31 is that the Company's sales are concentrated in this period. The reason for the higher weighting of the accounting period from January 1 to March 31 is that it is linked to the budget spending cycle of many of our clients, and the acceptance inspection of annual contracts is concentrated at the end of the accounting period for many of our clients. In addition, there are many cases in which we conclude large contracts, such as annual contracts, with government agencies, public institutions, and companies engaged in large-scale projects, in which case the acceptance inspection period falls at the end of the fiscal year, such as February and March. Therefore, due to such seasonal fluctuations, the Company's business results at a single point in time may not provide sufficient information for the analysis of full-year business results. 	<ul style="list-style-type: none"> The Company changed its fiscal year end (the last day of the fiscal year) to December 31 from the 10th fiscal year in order to improve the transparency of full-year business results, and therefore the accounting period will be 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. 	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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Impact of the spread of the new coronavirus infection	<ul style="list-style-type: none"> However, delays in vaccination and the spread of mutated strains of the virus may cause prolonged stagnation of economic activities, which may lead to restrained new investments by our customers, a decline in our business activities, and an impact on our supply chain. In particular, from January to March is the months when sales are concentrated. In particular, if economic activities are curtailed due to restrictions on movement or the declaration of a state of emergency from January to March, when sales are concentrated, the financial position and operating results of the Group may be affected. 	<ul style="list-style-type: none"> We will continue to promote our business activities, including the use of remote work in our research and development. By further promoting these efforts, we are working to ensure the safety and security of our employees and continue to provide services to our customers without delay. 	Middle	Low

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Management Team (as of September 30, 2022)

President	Satoshi Washiya	CFO	Kensuke Hayakawa	CTO	Dr. Chris Raabe
	M.S. in Architecture from Waseda University. Served both domestic and multinational companies in corporate wide transformation projects at the Tokyo and Stockholm office of McKinsey & Company. Joined ACSL in July 2016.		M.S. in Management of Technology from Tokyo institute of technology. Implemented operational improvement/transformation of portfolio companies at KKR Capstone. Joined ACSL as CFO in March 2017.		Ph.D. from University of Tokyo. Embedded software engineer at Boeing. Assistant professor at Department of Aeronautics and Astronautics, University of Tokyo. Joined ACSL as CTO in April 2017.

External Director	Masanori Sugiyama	Audit & Supervisory	Akira Ninomiya
External Director	Tadaharu Shimazu	Audit & Supervisory	Hideki Shimada
		Audit & Supervisory	Takeshi Ohnogi

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

ACSL