

AUTONOMOUS CONTROL SYSTEMS LABORATORY



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“ACSL Accelerate” and relations to FY21/03 Q2

While the drone market shifts from a “Trial” phase to “Social Implementation” phase, new lifestyle and measures against infectious diseases and progression of Society 5.0 have brought great changes to our business environment.

ACSL has developed a set of mid-term management directions, goals and key milestones to ensure that all stakeholders involved, both internal and external, focus on common value creation for our clients and continuous corporate value growth:

- A **Masterplan** defining the “To-Be” State in 10 years, and
- A **Mid-term Management Direction (FY20-22)** to realize the masterplan
- **FY21/03 Q2 business promoted** in line with “ACSL Accelerate”

What ACSL will accomplish

MISSION

Liberate Humanity Through Technology

VISION

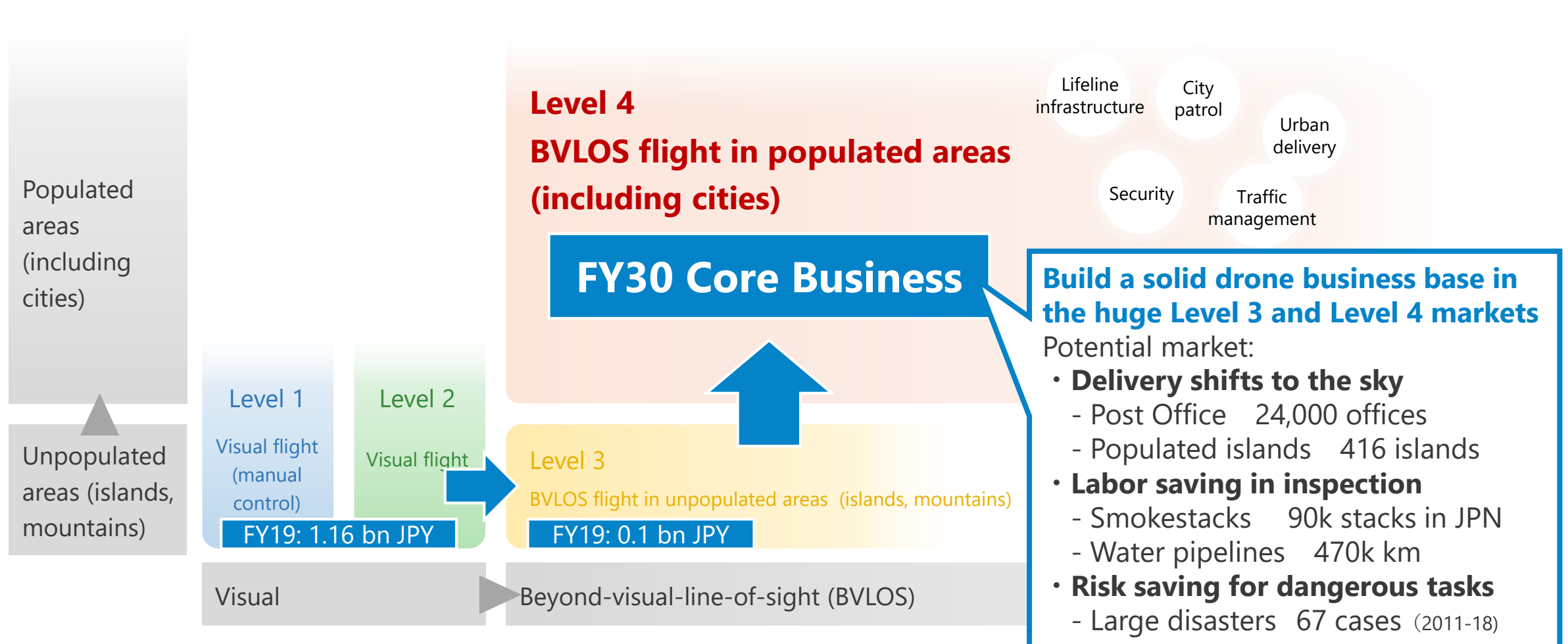
**Revolutionizing social infrastructure
by pursuing cutting-edge robotics
technology**

“To-Be” state in 10 years

- 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 (cerebellar and cerebral)
- 6 Nurturing the industry's most advanced and talented human resources
- 7 Constantly working to improve its corporate value and financial KPIs

Core areas of the drone business in the next 10 years

Master plan for the drone business in 10 years' time is to shift our core business area from visual-line-of-sight flight (Levels 1 and 2), which generated 1.16 billion yen in FY19, to the huge growth potential of BVLOS flight (Levels 3 and 4)



Business strategy highlight

Evolve from "prototype factory" that focused on demonstration testing and custom development to promote the development, production, and sale of mass-produced, application-specific drones to achieve rapid business expansion

New business strategy

Development of application-specific drones

Commercialization of small aerial drones (for government procurement and the private sector), medium logistics drones (Level 4 compliant), smokestack inspection drones, and enclosed environment inspection drones

Introduction of subscription model

Subscription-based fixed income/recurring sales model to be introduced to meet various customer needs, in addition to one-off drone sales

Full scale entry into ASEAN region

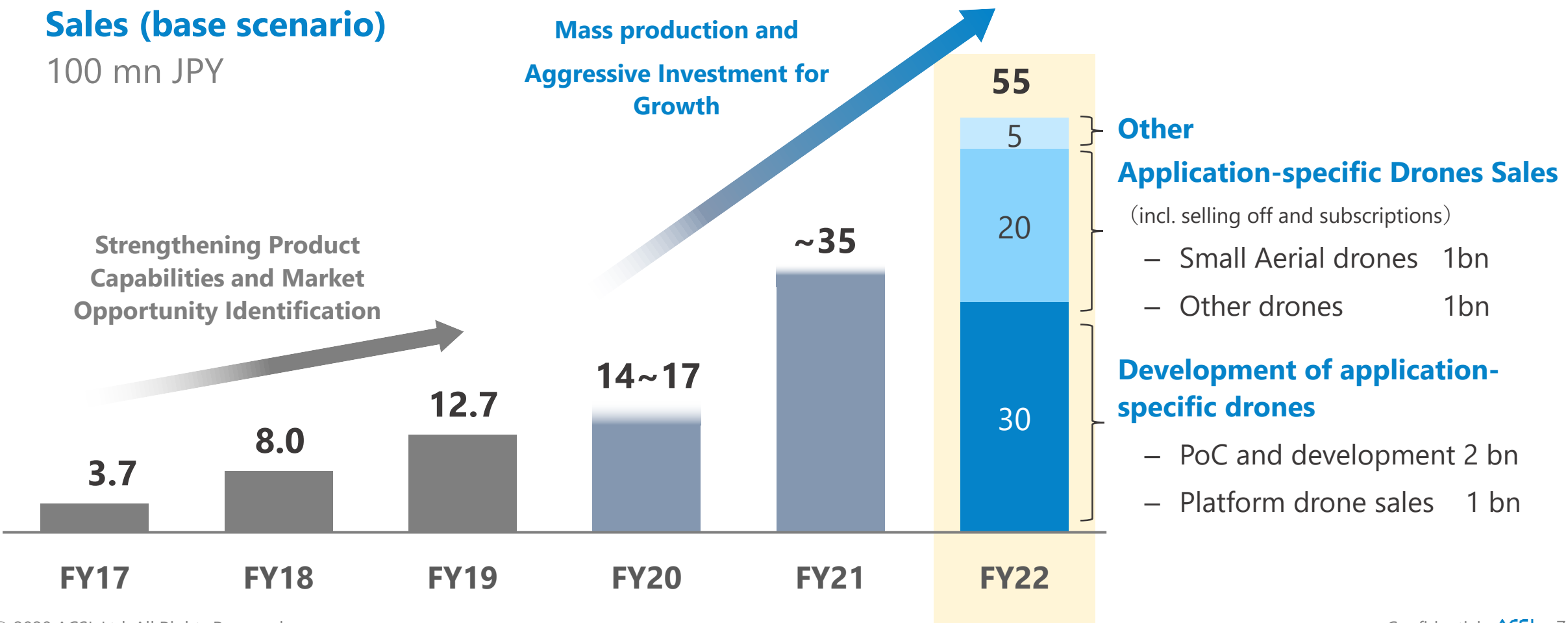
Establish an office in Singapore, the core city in the ASEAN region, and hire local talents to conduct development and sales activities, and begin full-scale overseas expansion

Technology procurement through CVC

Establish CVC (or equivalent function) and actively procure technologies with potential for technology synergies, such as AI, blockchain, security, image processing and sensors

Sales in Mid-term Management Direction

Aiming for sales of approximately 5.5 billion yen in FY22 in conjunction with the commercialization of application-specific drones from FY20, and steadily build up a pipeline for future sales of application-specific drones after FY22



FY21/03 Q2 Highlights

- **Announced “ACSL Accelerate 2020”, a mid-term management direction**, in August
- **Promoted commercialization of application-specific drones**, in line with the mid-term direction
 - ✓ In response to **growing demands for data security**, the **Japanese government** has decided on a **policy to procure “secure” drones** from the next fiscal year and replacement of installed drones
 - ✓ **ACSL is developing “secure” drones** and aims to introduce **small aerial drones during next fiscal year**
 - ✓ Steady progress in **development and preparation for mass production** of other **application-specific drones**
- **Conducted demonstration** with a number of clients in inspection and disaster reconnaissance area to support development of **application-specific drones**
- Decided to establish CVC to **realize technological synergies and accelerate development** through investment
- While sales were delayed due to the expansion of COVID-19 in the Q2, **continued to promote collaboration and research and development activities related to core technologies.**
 - ✓ 78 MM JPY sales in Q2 YTD, and **310 MM JPY sales and high probable pipelines** as of end of September
 - ✓ **Accelerated R&D activities** as an **upfront investment** for the future, resulting in a net loss of 396 MM JPY
- While there is a **risk that the expansion of COVID-19 may postpone projects and delay new acquisitions**, this fiscal year forecast is **sales of 1.4 to 1.7 billion JPY and operating loss of 2.5 to 0 billion JPY**

Table of Contents

1 Business Highlights

2 FY21/03 Q2 Financial Results

3 FY21/03 Forecast

4 Appendix

Market change : Government policy on drone security risks

The Japanese government announced policy on security-backed drone procurement to response emerging requirement for cybersecurity risks of drones as IoT devices

February 2020

Regulation to promote drone security

Government passed legislation to promote adoption of drones and 5G, while ensuring cyber security of them¹

June 2020

"Secure" drone development for government procurement

NEDO has allocated 1.61 billion JPY² for development of a high-security, low-cost standard drone and a standard flight controller aiming for government procurement

September 2020

Government policy of procuring "secure" drones

Japanese government has announced that it will procure only "secure drones" and it will "promptly replace existing drones that are already in place"³

*1: "Outline of the Draft Law on Promotion of Development, Supply and Introduction of Specified Advanced Information and Communications Technology Systems" February 19, 2020 Ministry of Economy, Trade and Industry

*2: "Development of Basic Safety Drone Technology" June 25, 2020 New Energy and Industrial Technology Development Organization (NEDO)

*3: "Policy on the Procurement of Unmanned Aircraft by Government Agencies, etc." September 14, 2020 Liaison Conference of Relevant Government Agencies on Small Unmanned Aircraft

Market change : Government excludes Chinese drones

Drone Frontiers :

毎日新聞

Government agencies to exclude new purchases of Chinese drones, making it mandatory to prevent information leaks and taking over

The government has decided to increase security of drones purchased by the government to prevent data collected by drones from being stolen. They will be required to purchase equipment with features to protect against the external leakage of flight records and photos, and to prevent cyber-attacks from taking over. All ministries and all individual agencies will be covered. **This will effectively eliminate new purchases of Chinese drones.** Government agencies will be required to submit plans to the Cabinet Secretariat for review before purchasing drones. These include cases where there is a risk of obstruction to public safety and order, such as (1) security, (2) criminal investigations, (3) inspections of power plants, railways and other critical infrastructure, and (4) humanitarian relief. This also applies to cases where work is outsourced. The government has requested that the aircraft already in its possession be replaced within a year or two.
(ellipsis)

In 2018, the government put in place a system that effectively excludes products from China's Huawei and ZTE from products and services purchased by central government agencies and others. Even at that time, the system does not mention the two companies by name, but allows the government to restrict them if they pose a security threat. In order to prevent the system from becoming a diplomatic issue, the system again did not reveal the names of specific countries or manufacturers.

(ellipsis)

The Japan Coast Guard, which owns about 30 drones, most of which are made in China, has never used Chinese drones for security-related operations or investigations. The Ministry of Defense, which owns about 800 drones, also explains that they are being used with security in mind. Meanwhile, **the Ministry of Economy, Trade and Industry (METI) has allocated about 1.6 billion JPY in a fiscal 2019 supplementary budget for "Development of Basic Safety Drone Technology" to support domestic manufacturers in earnest.** They plan to build a small aircraft that can be used in a wide range of fields by the end of this fiscal year, saying that "it is impossible to say that Chinese drones are safe" (Office for Next-generation Air Mobility Policy). **They aim to adopt the drone as early as next year when it is purchased by the government.**

(September 26, 2020, The Mainichi newspaper)

Steps towards the launch of an ACSL application-specific drones

ACSL product launch follows three big steps – use case identification, technology development, and Go-to-Market preparation



Status of application-specific drone development

ACSL is proceeding various steps toward the launch in next fiscal year of the four application-specific drones announced in “ACSL Accelerate FY20” and progress is on track

Applications

Progress

Status



Delivery : Selected for Tokyo Metropolitan drone delivery project

Selected as an implementer of "Development of a Drone Delivery Service in Cooperation with Retail Stores" in "Project for Establishing a Business Model for Logistics Services Using Drones"

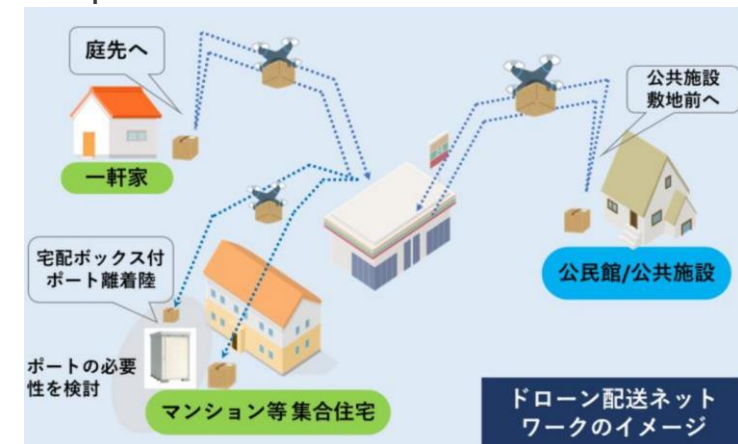
Building a logistics business with drones

- **Project based on the realization of Level 4** (BVLOS flight in populated areas (including cities)) **in 2022**.
- **Aiming for rapid social adaptation of drone delivery business** in manned areas
- Project Period: 2 years
- Project Implementer



Project Overview

- Consider building a drone delivery network around retail stores to create a **drone delivery service** as a **new infrastructure for local communities**
- Mainly aim to **build fast delivery service of products** after making order in web and **delivery service** including **package collection** in collaboration with other service providers



Delivery : Specialized curriculum for drone delivery operations

Started providing specialized curriculum on drone safety and safe operations for delivery with JUAVAC and AIRDs in order to utilize experience of BVLOS¹ flight

- ACSL has gained experience in demonstrating the transportation of goods in many unmanned areas (e.g., remote islands and mountainous areas) since the set up of BVLOS flight (Level 3) regulations
- In order to promote the social implementation of drone delivery, the safety of drones and the drone operator's knowledge regarding safe operations are particularly important,
- Collaborated with JUAVAC and AIRDs, which have strengths in drone operator education, to jointly develop curriculum for drone delivery operation
- Offered at the JUAVAC Drone Expert Academy nationwide from November 2020



ACSL delivery drone have been adopted by Japan Post Holding and ANA HOLDINGS

1: beyond-visual-line-of-sight

Delivery : Development of delivery drone with VFR

Started delivery drone development for full-scale social implementation with VFR

Aiming early development of drones with optimized functions and performance for delivery use case

Project background

- **ACSL was the first in Japan to acquire approval for unassisted BVLOS¹ flight (Level 3)** with Japan Post in November 2018, demonstrating transportation between post offices in Fukushima Prefecture
- **The Japanese government** announced that **it will realize BVLOS flight in populated areas (including cities) in FY22** and **start delivery drone service**
- **Payload and drone size Improvements are important** for the social implementation of delivery drone at Level 4
- In "ACSL Accelerate FY20", **development and mass production of delivery drones** is one of key strategies

Joint development with VFR

- Through **combination of knowledge and technical strengths of both companies**, ACSL and VFR aims to **develop delivery drones with optimized functionality** and performance for actual usage in delivery field
- Based on ACSL's experience at Level 3, aims to **develop drones for implementation in actual delivery field**
 - Expanding the payload to about 5kg
 - Improving the drone size for ease for ease of use

1: beyond-visual-line-of-sight

Delivery : Continuous flight test with Aerodyne in ASEAN

Started collaboration with Aerodyne, a leading company in the Asian market, for continuous flight tests in ASEAN to build industrial drone basic data for Level 4

Overview of Aerodyne

- Selected **Asia's No. 1 Drone Service Company**
- **Inspection and other services using drones for infrastructure**, such as electric wire networks and communication towers, are being offered **in more than 35 countries**.
- Aerodyne Japan is a Japanese subsidiary of the Aerodyne Group



Drone Maker



Drone Service Provider

Overview of the collaboration and expected benefits

- The collaboration to **accelerate ACSL's expansion into ASEAN** of medium-term management policy
- **Conducted up to 1,000 hours of continuous flight tests in Malaysia** on the ACSL-PF2 and Mini with Aerodyne
- **In order to achieve flight in a Level 4 environment, sufficient flight time and basic data** to assess the risk level and demonstrate safety and reliability **are particularly important**
- **Enormous flight time enables** the development of **secure and reliable drones**

Smokestack inspection : Exhibited at Japan Drone 2020

As smokestack inspection drones developed with KEPCO have been improved and gained positive results in demonstrations and disclosed Japan's largest international drone exhibition

- In August 2020, Kansai Electric Power(KEPCO) announced that it will develop autonomous flight drones that can safely, efficiently and economically inspect the inside of smokestack at thermal power plants. ACSL-PF2 is provided as a base drone
- Making further improvements to smokestack inspection drones, with positive results, and had exhibited to the public and received positive feedback from visitors
- Drone is controlled to always position in the center of smokestack and can fly steadily even in GPS-denied environments. In addition, it is equipped with high intensity LEDs and a high-definition camera (60 million pixels), which enables to inspect interior walls and detect micro cracks in dark environments



Left : Smokestack inspection drone (ACSL – PF2)






Right : Using laser-based LiDAR technology, Realized drone to estimate its own location, even in dark, hard-to-recognize smokestacks

Other Business Highlights

Collaboration with existing and new customers in demonstration and development of application specific drones. Development and production systems for mass production is also in progress

Jul.	Started collaboration with Toko Tekko to develop and sell disaster prevention drones	
	Participated in demonstration of the practical application of BVLOS flight with Grid Skyway	Grid Sky Way
	Marine litter reduction project "Debris Watchers" disclosed the development progress of a coastal drifted litter detection system	
Aug.	Adopted in NEDO's project " Develop the operation control system for unmanned aerial vehicles and collision avoidance technology "	
	smokestack Kansai Electric Power developed autonomous flight drones that can inspect the inside of smokestack at thermal power plants . The ACSL-PF2 is provided as a base drone	
	Made business partnership with ACCESS for development and sales of drone software	
	VFR and ACSL used drones to survey damage from heavy rainfall in Nagano	
	Delivery Selected for Tokyo Metropolitan drone delivery project	
	Delivery 4D GRAVITY® License Agreement with AERONEXT	

Oct.	Delivery AIRDs and JUAVAC began offering specialized curriculum in drone delivery	
	Delivery Wind and Flow Platform selected as a "Specific Use Proposals"	
	Delivery Built a remote island model of telemedicine using drone logistics and other services in Goto City, Nagasaki, and ACSL provided delivery drones and operational support.	
	Inspection of river revetments degradation with Yachiyo Engineering	
Nov.	Selected for Open and Free Satellite Data Demonstration Project	
	Delivery Started collaboration with Aerodyne for continuous flight in ASEAN	
	Decided to establish corporate venture capital for technology synergies	
	Delivery Started delivery drone development for social implementation with VFR	
	Started supporting for disaster areas with ACSL drones	

Partnership with ACCESS for development of drone software

Business partnership with ACCESS for development and sales of high-security industrial drone software in the areas of logistics, infrastructure inspection and disaster prevention

Business partnership with ACCESS

- **ACSL collaborates its UI development experience** to reflect the required functions for each specific application, accumulated through customer demonstration, with **ACCESS' knowledge and expertise in UI/UX in IoT and embedded software development**
- Through consolidating both experience and knowledge, **ACSL aims to improve high security and reliability, usability** in industrial drones

High value-added software features

1. Embeddable to any industrial drone with high security features
2. Pursuing further usability improvements in user interface
3. Improvement of quality and reliability through professional development



4D GRAVITY® License Agreement with AERONEXT

Signed a joint development agreement for development of an industrial drone with 4D GRAVITY®, structural design technology, and a license agreement for manufacturing

Development and sales of drones using 4D GRAVITY®

- ACSL becomes AERONEXT's **"1st Licensee" of 4D GRAVITY®** and **acquires rights to develop, manufacture and sell 4D GRAVITY®-powered drones**
- Development of drones with improved stability, efficiency and mobility **using 4D GRAVITY® as an option for delivery drone field**
- **Improved basic performance such as flight safety and wind resistance** by utilizing 4D GRAVITY®

エアロネクストとACSL、4D GRAVITY®を搭載した用途特化型ドローンの共同開発と量産に向けライセンス契約を締結

2020.08.31



株式会社エアロネクスト（東京都渋谷区、代表取締役CEO：田路 圭輔、以下エアロネクスト）と株式会社自律制御システム研究所（東京都江戸川区、代表取締役社長 兼 COO：鷺谷 聡之 以下 ACSL 証券コード6232）は、この度、ドローンの基本性能を向上させるエアロネクストの機体構造設計技術4D GRAVITY®を搭載した産業用ドローンの共同開発契約と、開発機体の製造・販売に関する4D GRAVITY®特許群のライセンス契約を締結しましたので、お知らせいたします。両社は、ACSLが開発中の用途特化型機体の中でも、物流領域に特化したドローンへ、エアロネクストの4D GRAVITY®を活用することで、安定性・効率性・機動性を向上させたドローンの開発を行います。エアロネクストとACSLは、今後もドローン市場の拡大とドローン産業の発展に寄与してまいります。

SOURCE : AERONEXT

Inspection of river revetments degradation with Yachiyo Engineering

Conducted inspection of river revetments degradation with Yachiyo Engineering and demonstrated efficiency improvement than traditional inspection by human

Objectives of drone usage

- **Inspections of river revetments requires close visual inspection** by inspection engineer
- **A huge amount of time and effort** is required due to the length of the inspection area, and **the results of the survey vary** depending on inspection engineers' experience
- **Realizing autonomous flight in GPS-denied environment** and AI-based image analysis **for efficient inspection**
- Aiming to expand river revetments inspection drones in Japan



Achievement

- **Autonomous drone efficiently took pictures** of inspection images at river revetments that **cannot be captured or accessed by humans**
- Inspection images were acquired even on **concrete revetments where GPS accuracy is low**
- Demonstrated drone usage for inspection of river revetments degradation **improves efficiency of inspections than traditional inspection by human**



Selected for Open and Free Satellite Data Demonstration Project

Verify the effectiveness of drones using SLAS¹ with the aim of expansion in drone market such as government procurement for disaster response, infrastructure inspection, and monitoring and search

Objectives of the demonstration experiments

- **Verify the effectiveness of drones using SLAS for government procurement where advanced flight** is required, such as disaster response, infrastructure inspection, and monitoring and search
- Develop and demonstrate **applications that combine open and free satellite data with other ground data**

Project Overview

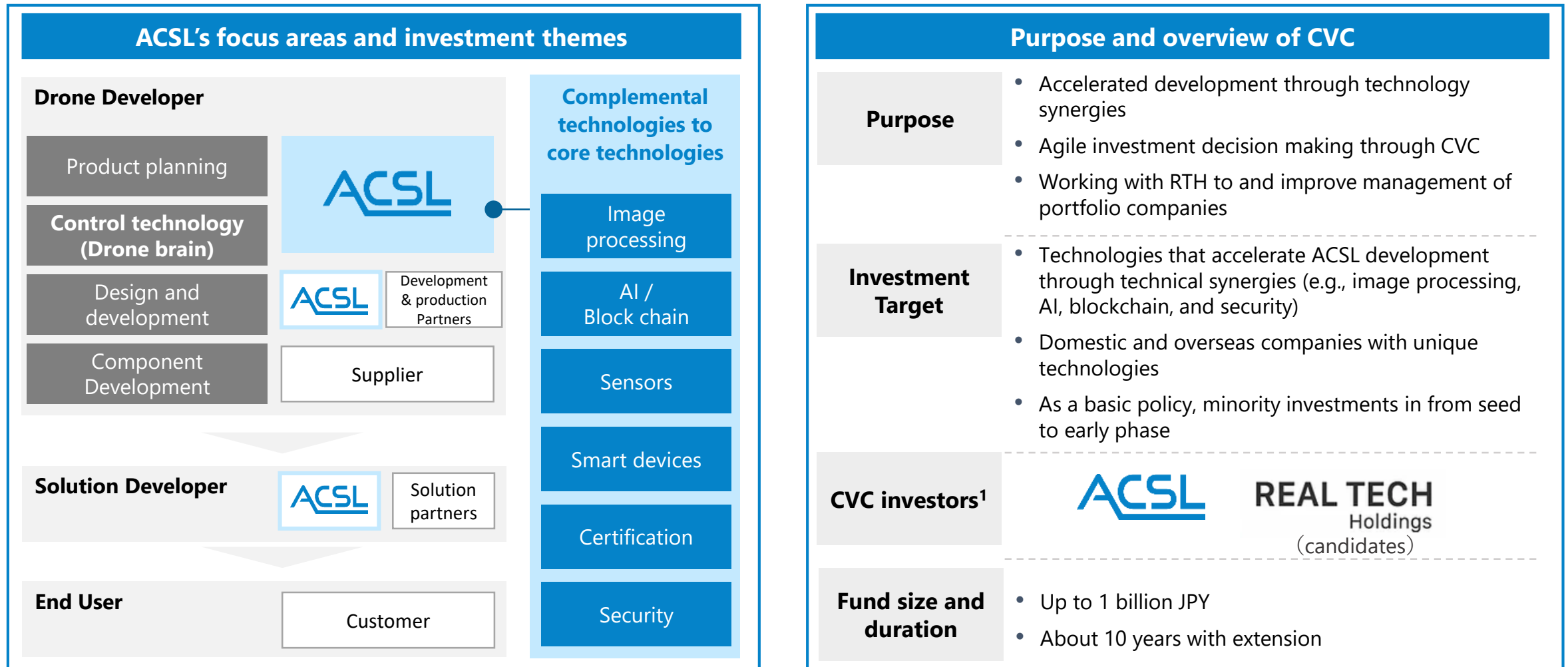
- **Development of drone capable of SLAS positioning** and verification of positioning accuracy in takeoff and landing
- Verification/comparison the difference in landing accuracy **between GPS and SLAS** and **how it effect missions achievability in each field**



1: Sub-meter Level Augmentation Service

Corporate venture capital for technology synergies

Decided to establish a corporate venture capital (CVC) to realize technological synergies and accelerate development through investment in domestic and overseas companies



Started supporting for disaster areas with ACSL drones

Started supporting disaster areas through free offer of ACSL's disaster drones.

Contribute development of small aerial drones and delivery drones to support disaster areas

- Decided to start supporting disaster areas through free offer of disaster prevention and disaster-specification drones in order to solve the problems faced by local governments and other organizations
- ACSL has a proven track record transporting emergency supplies based on a request from the Tokyo Metropolitan Government in October 2019
- Despite clear benefits of using drones, some organizations give up purchase due to issues such as maintenance costs
- Small aerial drones and delivery drones, highlighted in "ACSL Accelerate FY20," are used in disaster management and supporting disaster areas



Emergency supplies transported in Tokyo in October 2019
(Tokyo Metropolitan Government, "Providing Relief Supplies by Using Drones")

Table of Contents

1 Business Highlights

2 FY21/03 Q2 Financial Results

3 FY21/03 Forecast

4 Appendix

Impact of Infection Expansion of COVID-19

Delay in booking sales due postponement of project implementation in Q2, while gradually recovering from Q1. Demand for unmanned and labor-saving system is expected to continue

Customer

Potential risks

- Delays in implementing projects such as demonstration at customers site due to restrictions on work attendance
- Postponement of project implementation due to uncertainty about the client's business outlook
- Reduction of customers' investment budget for new technologies such as drones due to economic and business downturn

Recent situation

- Sales were delayed due to the postponement of project implementation at customers-site in Q1 and Q2.
- Implementation of some projects will be postponed due to customer circumstances, while demand will continue
- Considering response in case of the infection spread towards Q4, when most sales will be booked

Operation

- Procurement difficulties due to supply chain disruptions
- Suspension of sales and business development activities due to the infection expansion

- While supply chain delays in some parts, procurement delays have been gradually resolved
- Implementing safety measures such as remote work and continuing business activities with a restricted number of office attendees

Finance

- Decrease in cash due to lower sales
- Impairment risk caused by sluggish business activities of portfolio companies

- Sufficient cash holdings (approx. 3.2 billion JPY)
- Continues cost control at portfolio companies

Financial Highlights

Sales decreased from the previous fiscal year due to the postponement of project implementation and booked 78 MM JPY in Q2. Profit posted net loss of 396 MM JPY due to a decline in sales

[MM JPY]

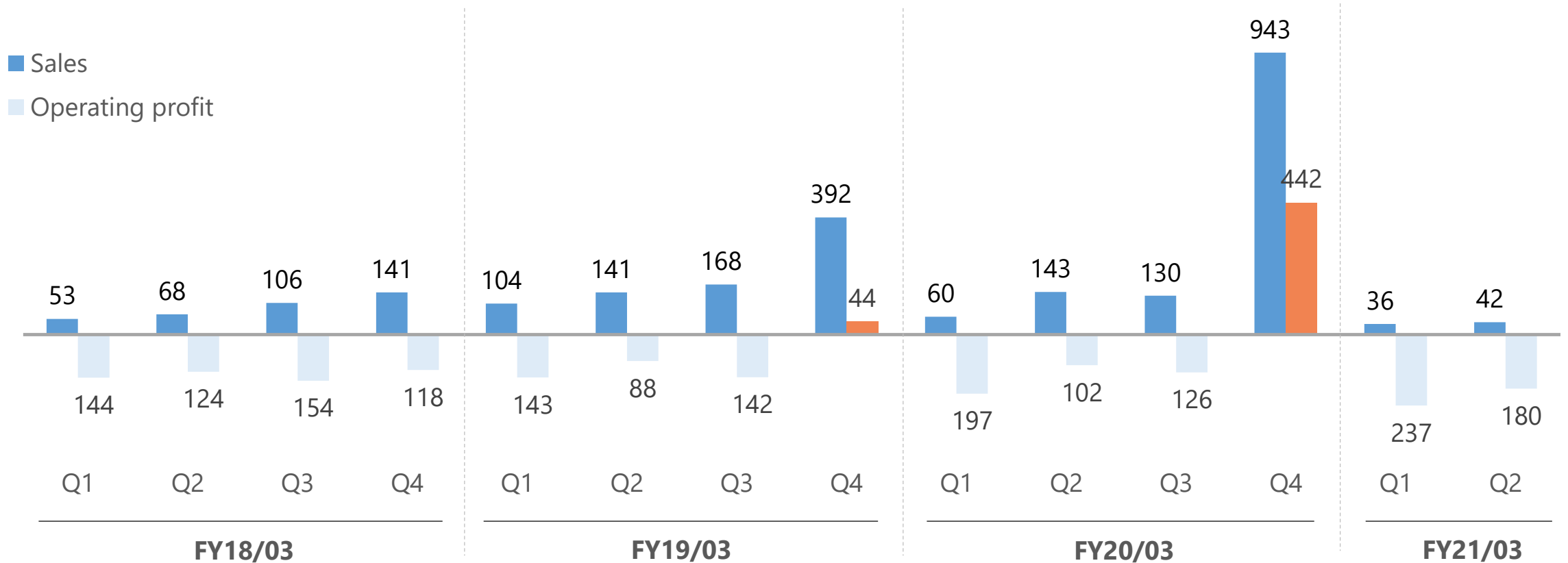
	FY21/03 Q2		FY20/03 Q2	FY20/03 Annual
	Actual	YoY Increase/Decrease	Actual	Actual
Sales	78	▲61.4%	204	1,278
Gross profit	▲13	-	77	808
Gross profit margin	▲17.2%	▲55.1ppt	37.9%	63.2%
Operating income	▲417	-	▲299	15
Ordinary income	▲360	-	▲82	231
Net income	▲396	-	▲84	239

Sales and Operating profit by quarter

As is typical YoY, sales is small in Q1-Q3 and tend to be biased toward Q4.

The seasonality would be exacerbated this fiscal year due to the impact of COVID-19

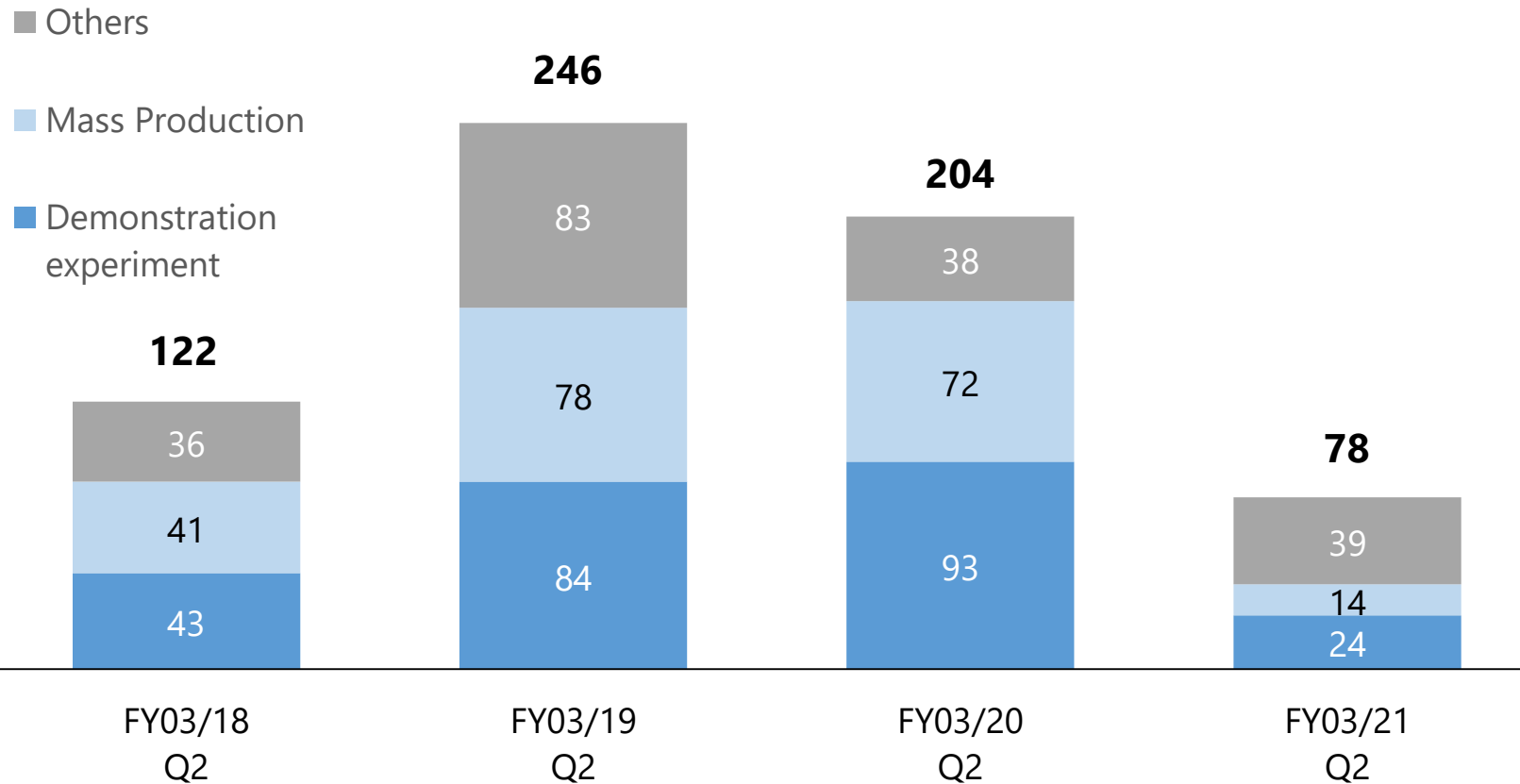
Sales and Operating profit by quarter
[MM JPY]



Sales transition

Demonstrations and platform drone sales decreased from the previous fiscal year due to delays in project implementations. "Others", including national projects, remained the same

Sales by STEP¹
[MM JPY]

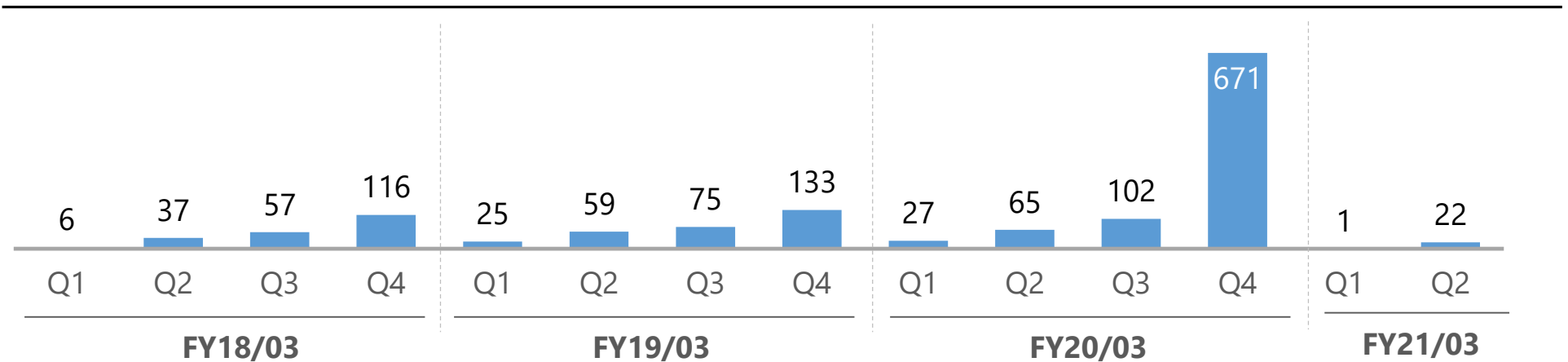


1: Solution development (STEP1, 2) and Mass production (STEP3, 4) were respectively renamed as demonstration experiment and platform drone sales from FY21/03 Q1.

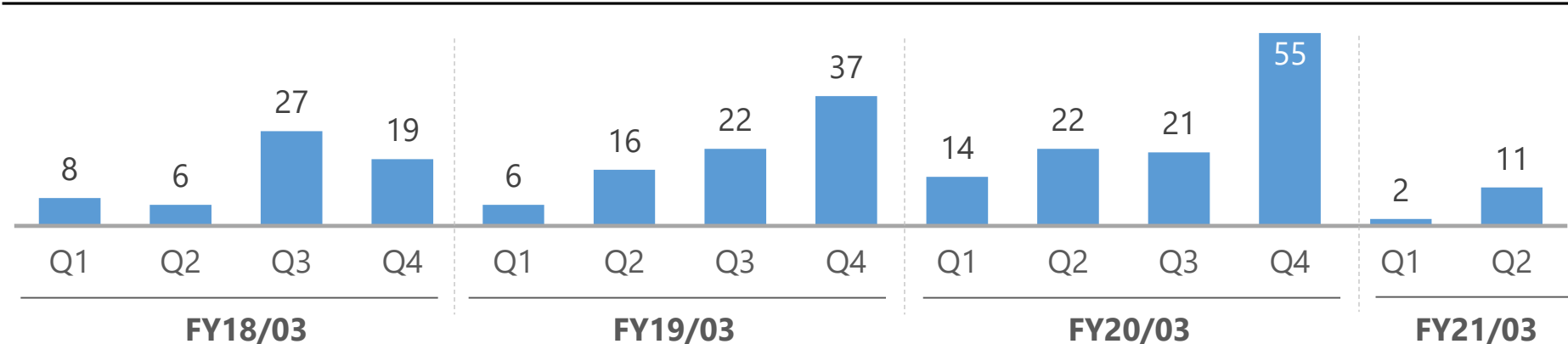
Quarterly change in the demonstration experiments

As is typical YoY, sales were small in Q2, and demonstration experiments were postponed in Q2 due to COVID-19, resulting in a decline in revenue from the previous fiscal year

Quarterly sales (MM JPY)



Quarterly number of deals



Demonstration experiment ¹

Proof of Concept

- Private concept verification (PoC) of feasibility of drone use ideas
- Use of ACSL platform drones

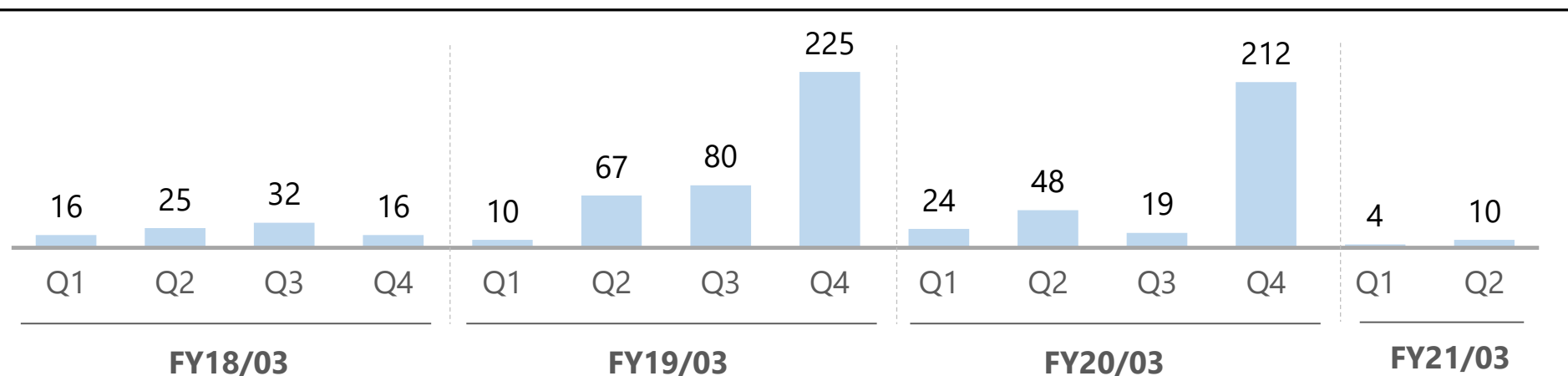
Customized development

- Detail test designs
- Development of customized drones and systems

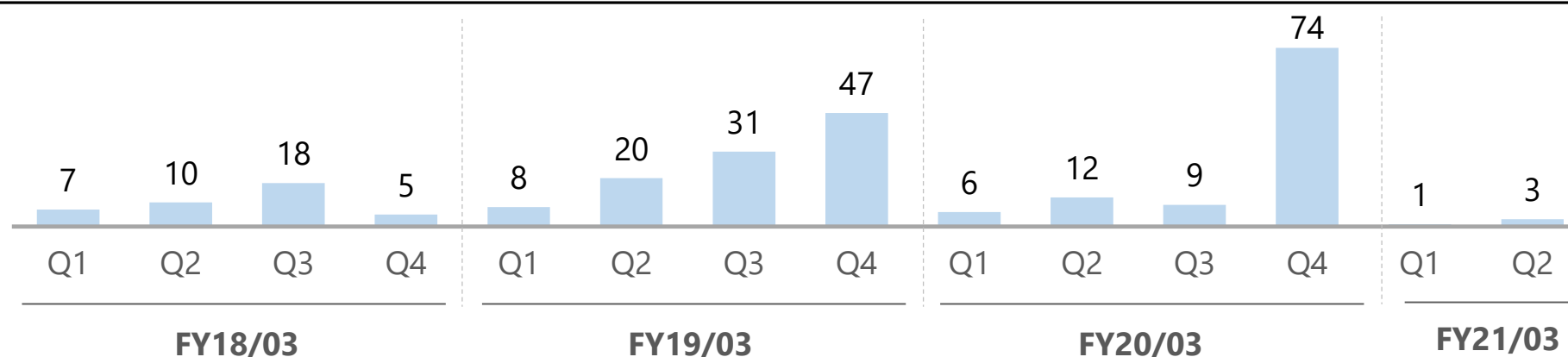
Platform drones sales

Sales are usually small in Q2 of each year, and sales in Q2 of the current fiscal year were lower than in the previous fiscal year due to delays in shipments to customers caused by COVID-19

Sales by quarter (MM JPY)



Unit by quarter (Units)



Platform drone sales ¹

- Sales of standard and general-purpose aircraft
- Production and supply of improved aircraft to customers based on standard aircraft

Others

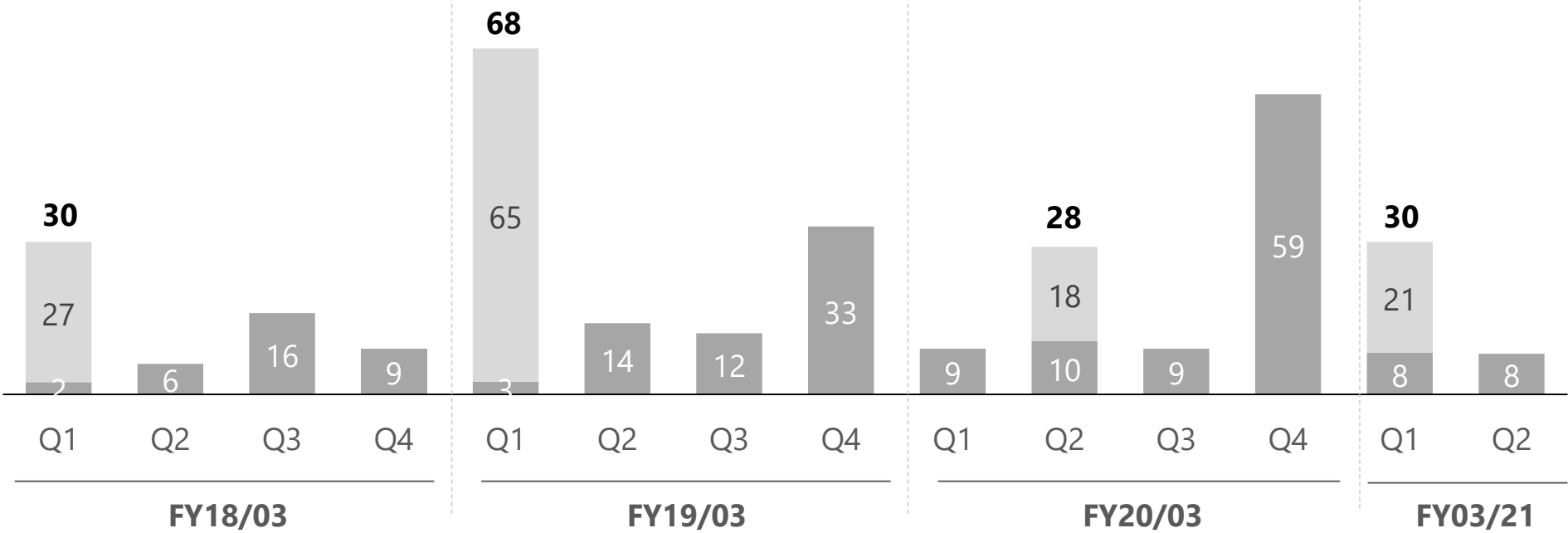
Sales of the national project by Q2 was 21 MM JPY. Maintenance services remained at the same level as the previous year.

Other Sales (MM JPY)

- National Projects
- Maintenance services, etc.

Others¹:
Maintenance services

- Sales of drone components and modules
- Repair service
- Some national projects

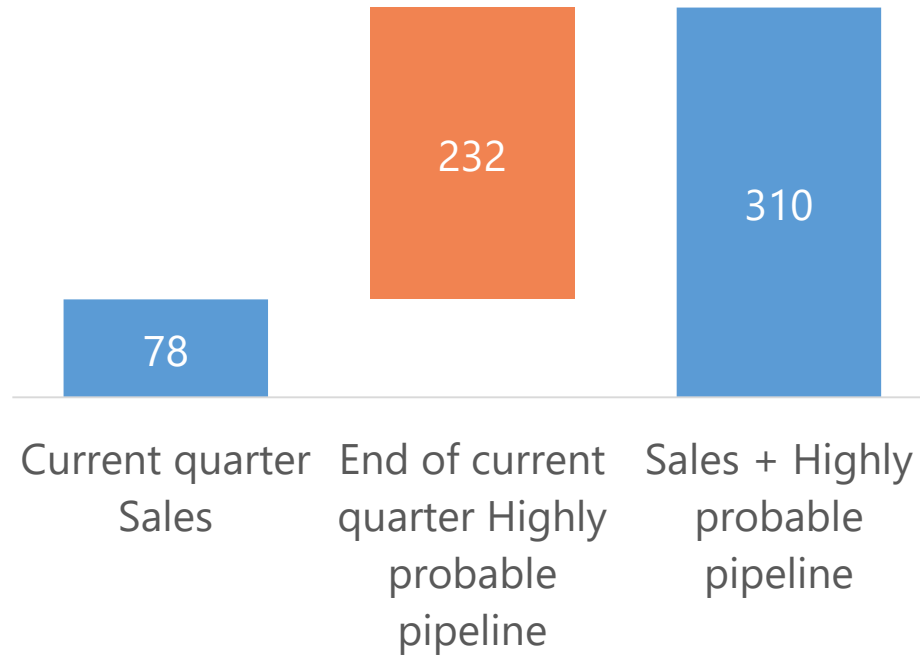


1: For national projects, subsidies received are generally posted as non-operating income. On the other hand, some projects whose main purpose is to conduct commissioned experiments are recorded as sales.
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Status of projects for the current fiscal year as of the end of Sep

As of Q2, booked sales and highly probable pipeline¹ is 310 MM JPY. Promoting the acquisition of projects through development of new customers in addition to approach to existing customers

Sales and Pipelines as of end of FY21/03 2Q
[MM JPY]



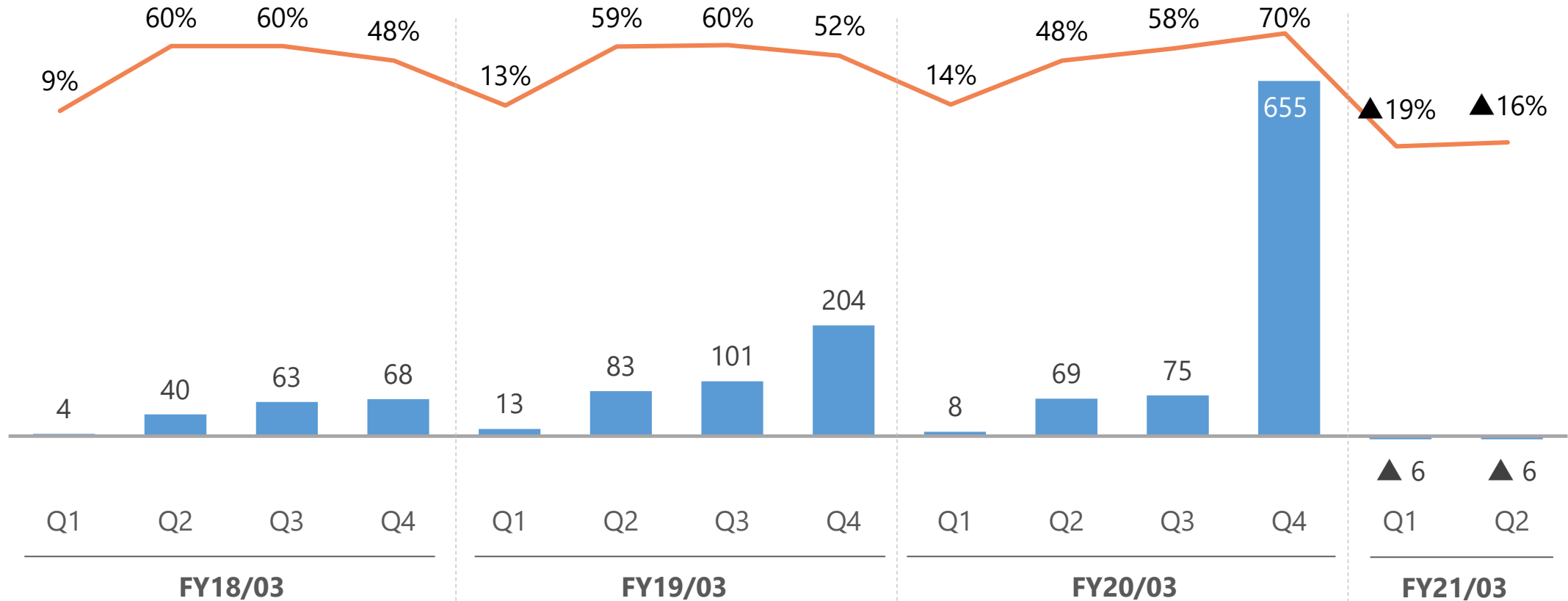
- Acquired approximately 232 MM JPY as projects of this fiscal year (Q3 to Q4) as of the end of Q2
- Some projects postponed from Q2 due to the spread of COVID-19 infection
- As large-scale projects will be booked toward the end of the fiscal year, sales will be concentrated in the 4Q

1: Highly probable pipeline is the total amount of sales for projects with a purchase order and related documents at the end of September

Gross profit

Q2 Gross profit is ▲6 MM JPY. Gross profit margin tends to remain low due to the small sales

Quarterly gross profit and gross profit margin
[MM JPY]



R&D Expenditure

Even under the influence of COVID-19, core R&D activities continued and posted more R&D expenditure than last year. The ratio to sales increased due to the decrease in sales

Quarterly R&D Expenses and Sales Ratio
[MM JPY]

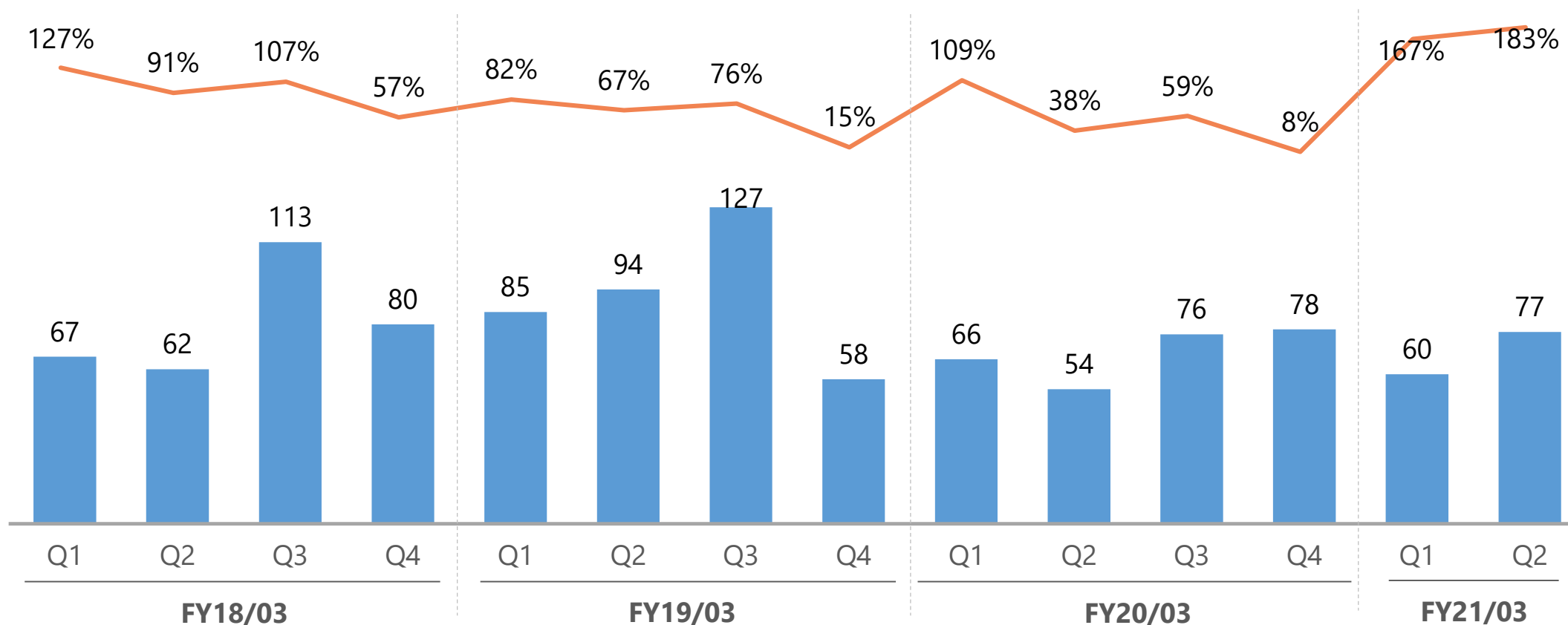


Table of Contents

1 Business Highlights

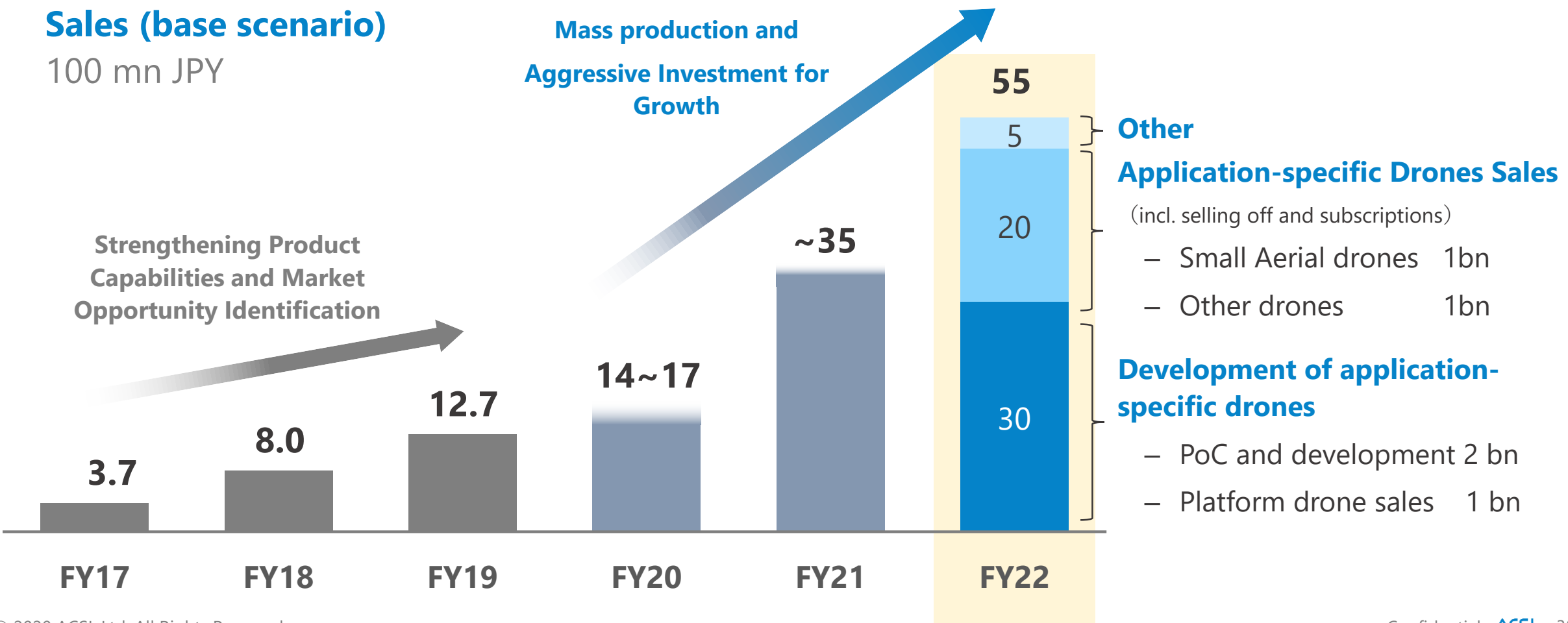
2 FY21/03 Q2 Financial Results

3 FY21/03 Forecast

4 Appendix

Sales

Aiming for sales of approximately 5.5 billion yen in FY22 in conjunction with the commercialization of application-specific drones from FY20, and steadily build up a pipeline for future sales of application-specific drones after FY22



Numerical targets

By commercializing small aerial photo drones, ACSL aims to achieve a solid business foundation of 5.5 billion yen in sales and 750 million yen in operating income by FY22, despite a decline in profit margins due to the rapid increase in sales

	FY17	FY18	FY19	FY20		FY22
Revenue [JPY]	370 mn	800 mn	1.2 bn	1.4~1.7 bn		5.5 bn
Gross profit	48%	53%	63%	57%		50%
R&D	320 mn	360 mn	270 mn	410 mn		800 mn
Sales profit	▲540 mn	▲300 mn	10 mn	▲250~0 mn		750 mn

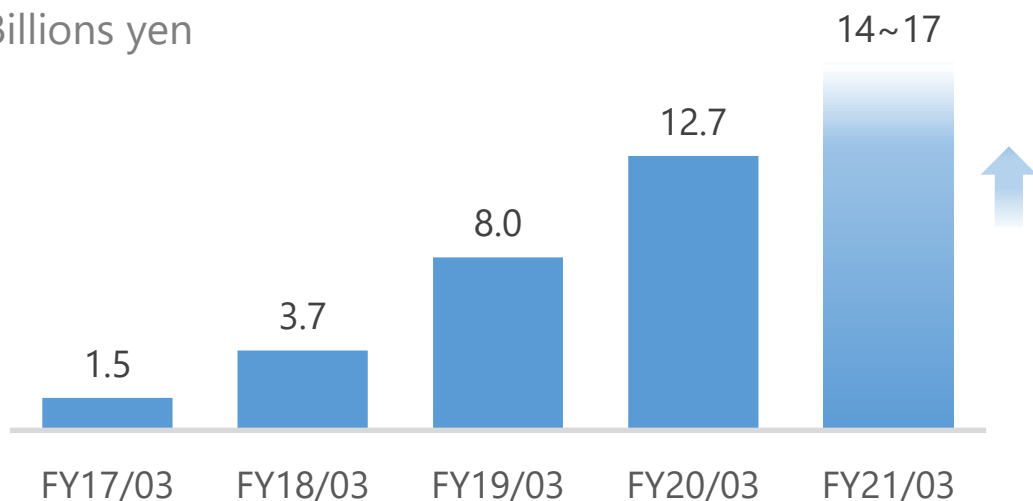
In FY22, the commercialization of small drones for public and private sector will help build a solid sales profit, despite a decline in gross margin.

Forecast FY20/03

Sales are expected to be 1.4 to 1.7 billion JPY, more than last fiscal year. While sales is expected to grow operating loss is expected to 0 to 250 MM JPY due to upfront investment

Sales¹

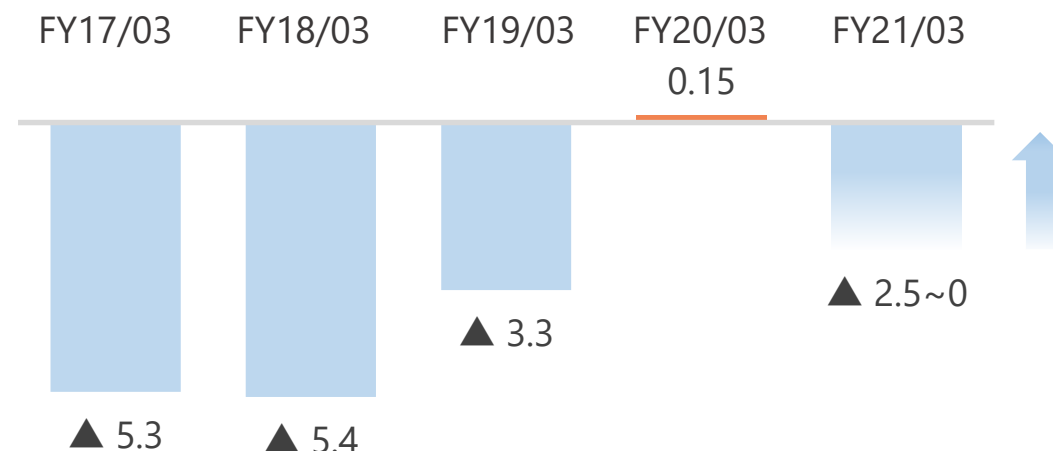
Billions yen



- Including the risk of a sales decline due to the impact of COVID-19, the forecast is JPY1.4 to JPY1.7 billion
- The number of projects for demonstration experiment is expected to remain at the same level as the previous fiscal year. (112 cases) Unit price is expected to decline due to the impact of the elimination of large-scale project in FY20/03
- Platform sales are expected to increase by more than the previous fiscal year (~200 units) in line with MINI sales. Unit price is expected to decline due changes in the product mix.

Operating income

Billions yen



- Gross profit target of 55~60%
- R&D expenses, which are the main SG&A expenses, are expected to be 410 MM JPY
- Operating loss is expected to 250 to 0 MM JPY given COVID-19 risks

1: Solution construction (STEP1, 2) and Mass production (STEP3, 4) were renamed to Demonstration experiments and platform drone sales from Q1 FY21/03

	指標	FY17 (18/03)	FY18	FY19		FY20		FY22
Sales of application-specific drones								
Small aerial photo (low ASP)	Unit	-	-	-		-		1,000~
	Value (100mn JPY)							10
Other (high ASP)	Unit							300~
	Value (100mn JPY)							10
Development of application-specific drones								
PoC and Development	# of project	60	81	112		-		-
	Value (100mn JPY)	2.1	2.9	8.6		7.5~10		20
Sales of Platform/Evaluation drones	Unit	40	106	101		~200		~300
	Value (100mn JPY)	9.0	3.8	3.0		~5.0		10

Table of Contents

1 Business Highlights

2 FY21/03 Q2 Financial Results

3 FY21/03 Forecast

4 Appendix

Management Team



CEO

Dr. Hiroaki Ohta

Ph.D. from Kyoto University. Assistant professor at Department of Aeronautics and Astronautics, Kyoto University, followed by research scientists at University of California, Santa Barbara. Also served as Technical Advisor for a start-up in Silicon Valley. McKinsey & Company from 2010. Joined ACSL as in July 2016.



**President
& COO**

Satoshi Washiya

M.S. of Architecture from Waseda University. Served both domestic and multinational companies in corporate wide transformation projects at Tokyo and Stockholm office of McKinsey & Company. Joined ACSL in July 2016.



CFO

Kensuke Hayakawa

M.S. of 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.



CTO

Dr. Chris Raabe

Ph.D. from University of Tokyo. Embedded software engineer at Boeing from 2006. Assistant professor at Department of Aeronautics and Astronautics, University of Tokyo from 2014. Joined ACSL as CTO in April 2017.

**External
Director**

Masanori Sugiyama

**External
Director**

Shinichi Suzukawa

**Audit & Supervisory
member**

Akira Ninomiya

**Audit & Supervisory
member**

Hideki Shimada

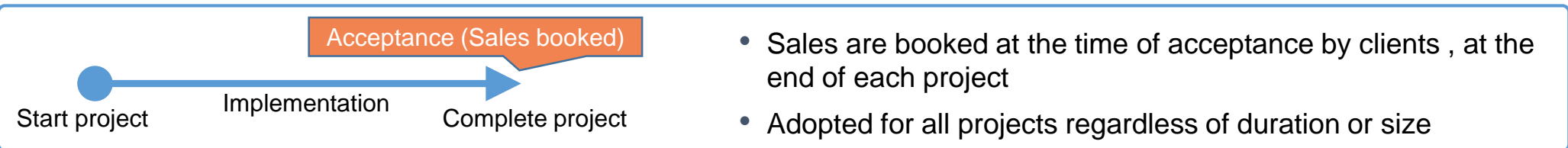
**Audit & Supervisory
member**

Takeshi Ohnogi

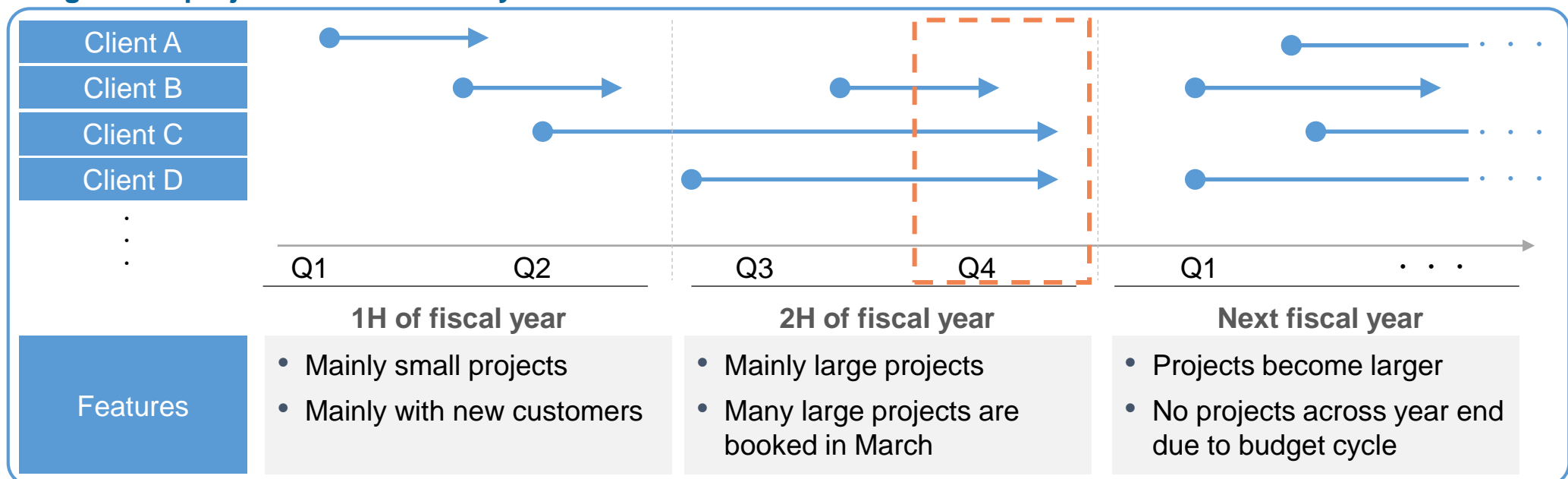
Sales Recognition and Seasonality

Sales are booked upon acceptance by client (at end of project). Seasonality increases towards 4Q driven by large-scale projects, mainly from existing customers

Sales Recognition



Large-scale projects and seasonality



Balance Sheet

[MM JPY]

	FY21/03 End of Q2		FY20/03 End of Q2	FY20/03 End of the fiscal year
	Actual	YoY Increase/Decrease	Actual	Actual
Current Assets	3,696	▲16%	4,375	4,818
Cash	3,173	▲22%	4,063	3,775
Fixed Assets	1,070	+184%	377	449
Total Assets	4,767	+0%	4,752	5,268
Current Liabilities	108	+27%	85	233
Long-term Liabilities	0	-	0	0
Total Liability	108	+27%	85	233
Net Asset	4,658	▲0%	4,666	5,034
Total Asset	4,767	+0%	4,752	5,268

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