

BRIDGE REPORT



		Autonomous Control Systems Laboratory Ltd. (6232)
President Satoshi Washiya	CEO Hiroaki Ohta	

Corporate Information

Exchange	TSE Mothers
Industry	Machinery (Manufacturing)
Representative	Hiroaki Ohta, Satoshi Washiya
Address	Hulic Kasai Rinkai Building 2F, 3-6-4 Rinkaicho, Edogawa-ku, Tokyo
Year-end	March
URL	https://www.acsl.co.jp/en/

Stock Information

Share Price	Shares Outstanding (End of term)		Total Market Cap	ROE (Actual)	Trading Unit
¥2,538	10,899,675 shares		¥27,663 million	-42.6%	100 shares
DPS (Estimate)	Dividend Yield (Estimate)	EPS (Estimate)	PER (Estimate)	BPS (Actual)	PBR (Actual)
0.00	-	-62.85~26.15	-	¥325.92	7.8x

*Share price as of closing on May 26. Each number is based on FY 3/2021 earnings results.

Non-consolidated Earnings Trends

Fiscal Year	Net Sales	Operating Income	Ordinary Income	Net Income	EPS	DPS
Mar. 2018 (Actual)	370	-542	-454	-460	-72.02	0.00
Mar. 2019 (Actual)	807	-330	-176	-183	-19.42	0.00
Mar. 2020 (Actual)	1,278	15	231	239	23.00	0.00
Mar. 2021 (Actual)	620	-1,139	-1,081	-1511	-139.54	0.00
Mar. 2022 (Estimate)	2,500~3,000	-700~-300	-680~-280	-685~-285	-62.85~-26.15	0.00

* The earnings forecast is that of the company. Unit: Million yen

* The company has shifted to consolidated accounting from 3Q of FY 3/21.

This Bridge Report reviews fiscal year March 2021 earnings results and fiscal year March 2022 earnings estimate of Autonomous Control Systems Laboratory.

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Key Points

- For the term ended March 2021, sales decreased 51.5% year on year to 620 million yen. In response to the prolonged spread of Covid-19 and the declaration of a state of emergency, the company carried forward acceptance of orders to the next fiscal year, suspended demonstration experiments at its own judgment, and transferred these experiments to the next fiscal year. This has caused a six-month delay in sales. On the other hand, as a result of aggressive R&D as a prior investment to prepare for the market expansion, the company recorded operating, ordinary, and net losses.
- The sales for the term ending March 2022 are expected to be 2.5 to 3 billion yen. In addition to a significant increase in platform drone sales, sales of application-specific drone will start contributing this fiscal year. The company will continue to actively conduct R&D to expand its business in the future, but the company expects to reduce its operating loss from the previous fiscal year to 700 to 300 million yen due to an increase in sales.
- Although the company produced a profit in the term ended March 2020, sales decreased in the term ended March 2021 due largely to the effects of Covid-19, resulting in a significant loss. Although it is unlikely that the impact will disappear completely during this fiscal year, the need for drone use in various aspects will expand and won't decrease.
- The four priority strategies in the company's Medium-Term Management Policy “ACSL Accelerate” are also making steady progress, and this fiscal year, when sales of “application-specific drones” are recorded for the first time, is likely to be an epoch-making year, the first year of full-fledged market development, although it will not be a turnaround in profitability due to continued aggressive R&D investment. Not just the medium- and long-term perspectives, it would be interesting to keep an eye on the company for its progress of quarterly sales this fiscal year.

1. Company Overview

A manufacturer of industrial drones, specializing in developing application-specific drones through on-site inspections, dialogues, and demonstrations in order to provide drones that replace and evolve the operations of its customers with proprietary control technologies as the core technologies.

The company targets the fields of “infrastructure inspection,” “logistics and mail transportation,” and “disaster prevention and control,” in which high-level autonomous flying is frequently demanded. The drones of the company work on behalf of human workers in these fields. Accordingly, the business of the company is to not merely manufacture and sell machines, but also offer solutions for streamlining business operation, automating business processes, and adopting IoT. The company's main feature is dealing with tasks from planning, system development and installation, to after-sales services on a one-stop basis.

【1-1 Corporate Philosophy】

The following missions and visions are what ACSL is aiming to achieve.

MISSION	Liberate Humanity Through Technology
VISION	Revolutionizing social infrastructure by pursuing cutting-edge robotics technology

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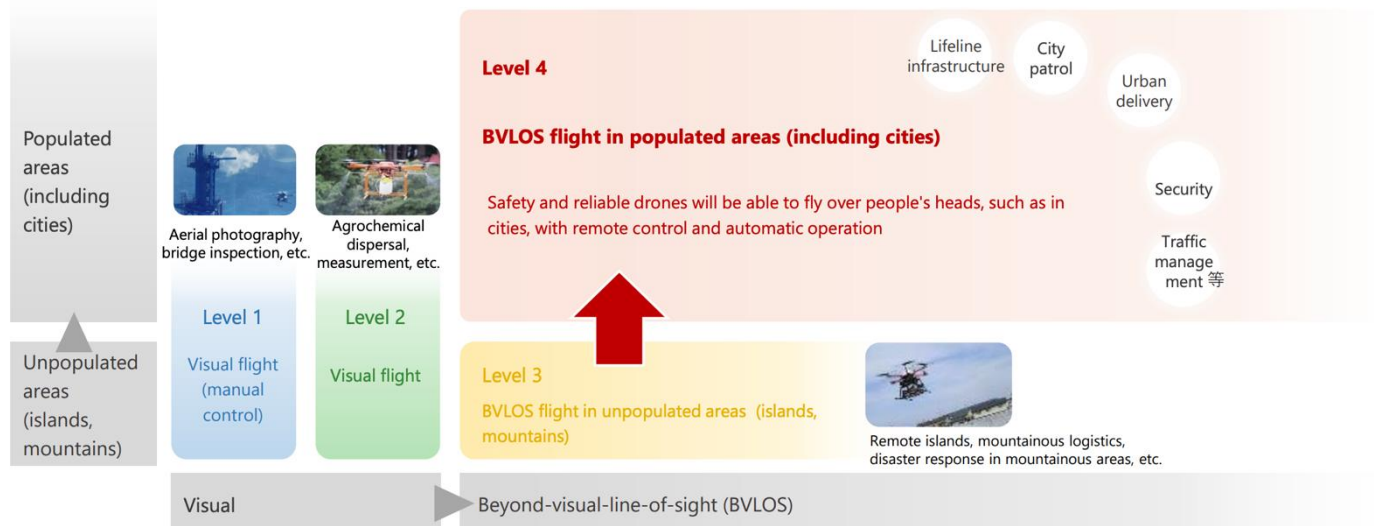


【1-2 Market environment】

As for Levels 1 and 2, which have already been put into practical use and are driving the current market, the social implementation of drones is progressing as the requirements for market expansion are being prepared.

The necessary environment for Level 3 is also steadily developing. In addition to this, the regulations for out-of-visual flights (Level 4) in residential areas (including cities) are projected to be in place in 2022, which will finally create a huge space that can be used by drones and markets in Japan.

Industrial Drones Market Classification



1: Beyond-visual-line-of-sight
SOURCE: Roadmap for Small UAV Utilization and Technological Development (April 28, 2016, Public-Private Sector Council for the Improvement of the Environment for Small UAVs)

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(Taken from the reference material of the company)

On the other hand, in order to make drones more popular, it is essential to improve the security environment.

In May 2017, the Japanese government released its first Roadmap for the Industrial Revolution in the Sky, and has launched an initiative to implement Level 4 by the end of 2022.

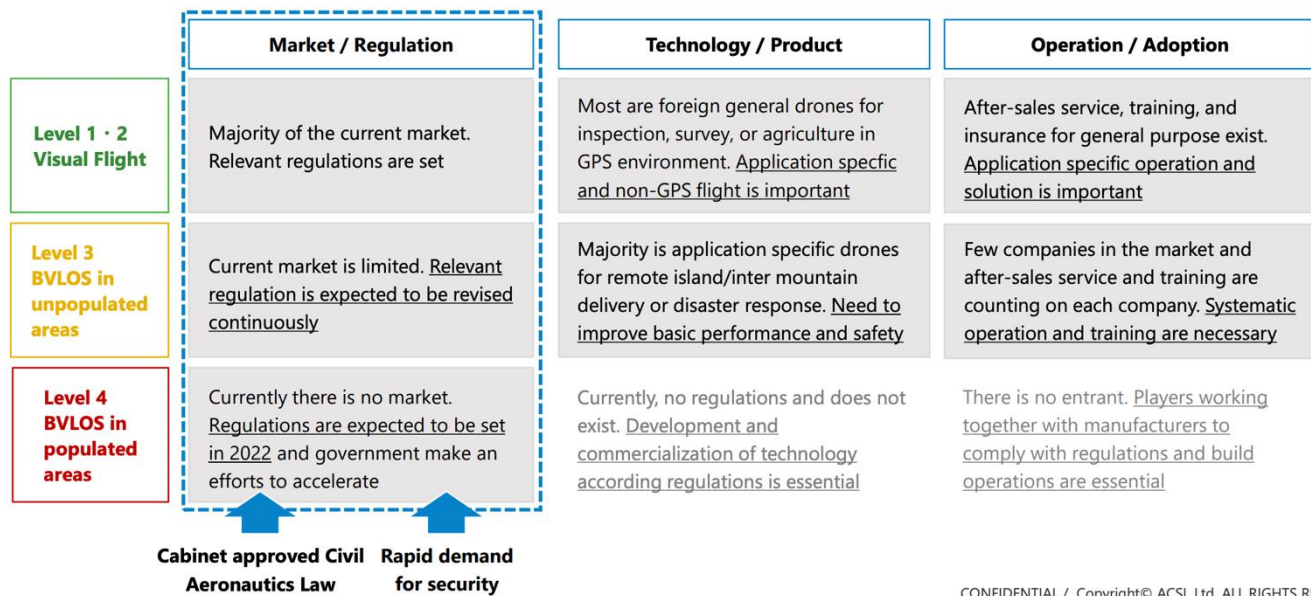
In response to this, a bill was passed in February 2020 to promote the adoption of 5G and drones while ensuring cybersecurity. In June 2020, NEDO (New Energy and Industrial Technology Development Organization) budgeted about 1.6 billion yen for the development of a standard base for high-security, low-cost standard drone and flight controllers for the supposed government procurement.

The government also announced a security-enabled drone-procurement plan in September 2020. In response to this, ACSL announced that it will launch, in October 2021 or later, a small aerial photography drone for government procurement that was being promoted by the NEDO project in April 2021.

In addition, in the term ended March 2021, the market environment and regulations were greatly improved, with the Cabinet amending the Aviation Law in March 2021 to achieve Level 4.

The demand for secure is becoming apparent worldwide, as the U.S imposed the embargo on China's DJI, the largest drone manufacturer. This will be to back up the spread of drones.

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2. Medium-term Management Policy “ACSL Accelerate”

Under this business environment, in August 2020, ACSL formulated “ACSL Accelerate” – a “master plan” that establishes what to aim for in 10 years’ time – and in order to realize this, it produced the Medium-term Management Plan (FY 3/21 – FY 3/23) and is promoting the business to achieve the plan.

【“To-Be” state 10 years】

- (1) Global pioneer in solving social infrastructure issues
- (2) More than 100bn 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

【2-1 Business strategy】

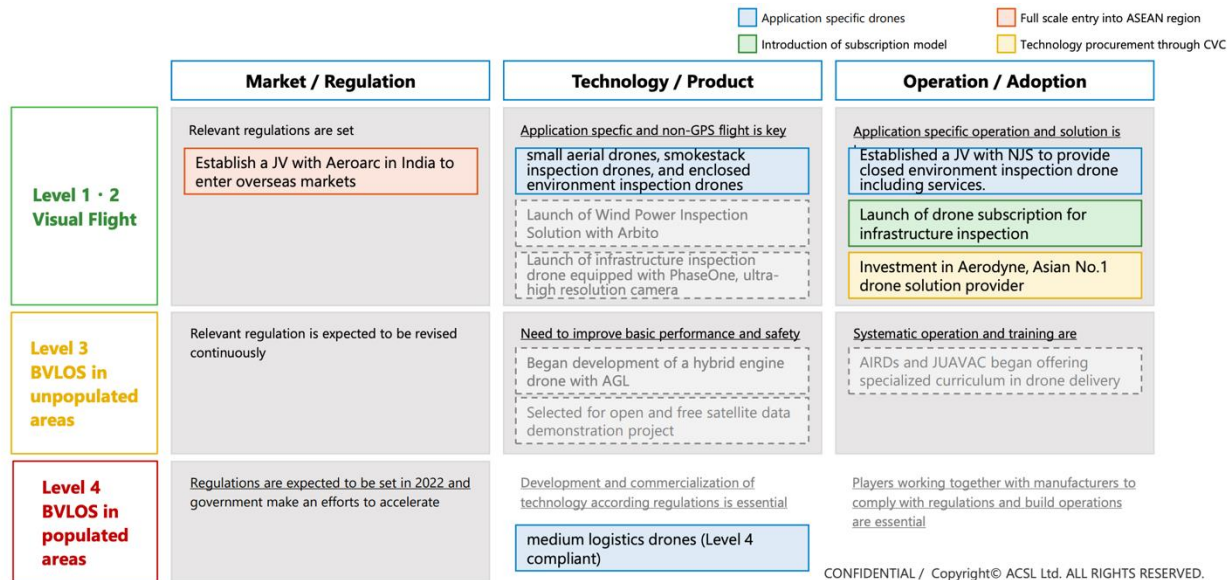
Along with the shifts in core business areas, the company has set out the following four business strategies with the goal of shifting from being a “prototype factory,” which was focused on conventional demonstration experiments and custom development, to a “mass production manufacturer” that develops, produces, and sells application-specific mass-produced drone.

Development of application-specific drones	Commercialization of small aerial drones (for government procurement and the private sector), midsize logistic drones (Level 4-compliant), smokestack inspection drones, and enclosed environment inspection drones
Introduction of a 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 the ASEAN region	Establish an office for development and sales activities in Singapore, the core city in the ASEAN region, and expand overseas in earnest with hiring local talents.
Technology procurement through CVC	Establish a CVC (or equivalent function) and actively procure technologies with the potential for technology synergies, such as AI, blockchains, security, image processing, and sensors.

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In addition to the measures set out in “ACSL Accelerate,” the Medium-term Management Policy, the company has implemented a wide range of measures and achieved results in order to meet the requirements for market and customer expansion. The company plans to continue its strategic efforts through FY 3/23.



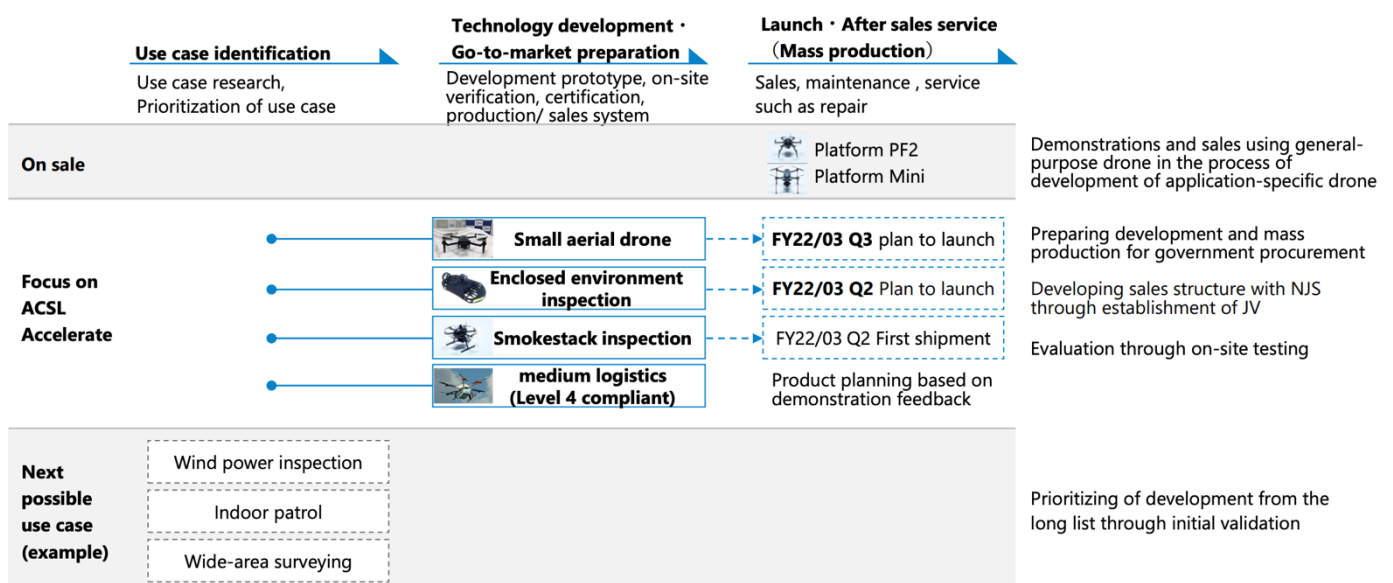
(Taken from the reference material of the company)

The initiatives and progress of the four business strategies are as follows:

① Development of drone for each purpose of use

After unearthing and prioritizing a number of applications, the company is developing application-specific drone in cooperation with its major customers, and is building production, sales, and operation systems for launch.

The progress toward sales of the four kinds of drones specializing in “small aerial photography,” “closed environment inspection,” “chimney inspection,” and “medium-sized logistics,” respectively, listed in the Medium-term Management Plan is smooth.



(Taken from the reference material of the company)

Progress in the development of each drone

* Small aerial photography

The NEDO project, in which the company is participating as a consortium leader, is developing a small aerial photography drone that ensures “safety and security.” The company announced that it would release the prototype drone in April 2021, and after the NEDO project ends, it will be introduced to the market in October 2021 or later.

The prototype weighs 1.7 kg and is about 65 cm wide, has excellent dustproof and waterproofing, and has a wide range of scalability, including one-touch switching of cameras and standard communication protocols. In addition, security measures against flight data, shooting data, communication, etc. are also fully implemented, and it is characterized by the user interface that adopts user feedback by agile development.



(Taken from the reference material of the company)

* Medium-sized logistics

In December 2020, in cooperation with ANAHD and others, the company conducted on-site demonstrations in the real environment of a medium-sized logistics drone principle prototype with a payload of 5 kg. In total, 65 flights were successfully made in four days, with a total length of more than 160 km.

The payload of conventional ACSL drones is about 3 kg, but for social implementation, it is important to transport about 5 kg and to have a flight distance of about 20 km.

Based on the results of this verification, the company will develop a medium-sized logistics drone prototype with a 5 kg payload. The company will continue the on-site verifications of its medium-sized logistics drone principle prototypes and aim to develop logistics drones that can be implemented in the society.

* Chimney inspection

In addition to the safety risks of high-level works, chimney inspection by human has other issues such as the need for several weeks to work.

In August 2020, the company provided its ACSL-PF2 as the base drone for autonomous flight drone development for inspection of the inside of chimneys at Kansai Electric Power’s thermal power plant and continues to demonstrate in the real world and obtain good results. The company is building an evaluation and production system for initial shipments in 2Q of FY 3/22.

In addition, by applying chimney inspection drones, the company has developed a “non-GPS compatible autonomous flight drone” for pressure-controlled-tank inspection for Hokkaido Electric Power Company and hydroelectric power plants.

In order for the inspection of the walls inside the pressure-controlled tanks, the workers have to hang from the top and directly confirm the deterioration status, which can be problematic in terms of safety and work efficiency like the chimneys.

The company has developed the drones that can fly autonomously in a non-GPS and dark pressure tank by applying an application-specific drone. Using the structures in the pressure-controlled tanks as a landmark, the drone repeatedly flies horizontally as well as laterally while calculating its own position and photographs the entire inner-wall surfaces. The captured images then enable the workers to check the conditions of the inner walls.

*** Closed-environment inspection**

The company and NJS (TSE 1st Section, 2325), a water supply and sewerage consulting firm, established JV with an eye to full-scale mass production of closed environmental inspection drones, which have been jointly developed since 2015 with NJS. ACSL has a 10% stake and NJS, 90%.

The total length of sewerage nationwide is about 480,000 km, and the burden of inspection work due to the aging infrastructure is becoming a serious problem.

With the aim of streamlining sewerage inspection works and promoting full-scale commercialization, and with an eye to mass production sales from 2Q of FY 3/22, the company established JV to provide services, including not only production but also support.

② Adoption of subscriptions

In May 2021, in addition to the conventional sell-out model, the company launched a subscription service for inspection drone that lowered the initial introduction hurdle for customers.

The initial costs for adopting infrastructure inspection drones can be greatly reduced. Cameras and other aspects can be selected according to the environment and application, and the available contract periods are 3 months, 6 months, and 12 months.

The company expects to gain a potential customer base.

③ Full-scale expansion into ASEAN countries

In the second quarter of the term ended March 2021, the company plans to establish the JV “ACSL INDIA” in India with the local partner Aeroarc to win a huge market in India, where Chinese drones are expected to be replaced. ACSL has a 49% stake while Aeroarc, 51%.

The company aims to leverage Aeroarc’s customer base to monetize as soon as possible.

④ Technical procurement by CVC

In May 2021, CVC, which was established with the aim of accelerating its business, voted to invest in Aerodyne (Malaysia), the world’s second-largest drone service provider and Asia’s No. 1 drone service company.

Since its establishment in 2014, Aerodyne has been using drones to provide faster, lower-cost, high-quality, and safe infrastructure inspection and monitoring services. Aerodyne’s services have been deployed to leading infrastructure companies in a variety of industries, including Fortune Global 500-listed oil company Petronas and Tenaga Nasional Berhad, South East Asia’s largest publicly traded electric power company.

Through this investment, ACSL will further accelerate cooperation, including further improvement of its own control technology and overseas business development, including expansion in India.

【2-2 Effects of Covid-19】

Since the creation of “ACSL Accelerate,” there has been no changes to drone industry trends or the company’s strategy, but the impact of Covid-19 has been felt longer than initially expected, limiting its activities.

Under such a situation, sales of small aerial photography drone may be expected to increase more than initially expected, and the company expects to sell other application-specific drones and general-purpose drones as expected.

On the other hand, it has proven more difficult to conduct the demonstration experiments than initially expected due to the effects of Covid-19.

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Sales breakdown		Sales (100mn JPY)		FY23/03 (Mid-term Management Direction)	Impact of changes in assumptions on the Mid-term Management Direction	
		FY20/03 Actual	FY21/03 Actual			
Sales of application-specific drones						
Small aerial photo (low ASP)	small aerial photo to the government			10	Increasing demand for security not only from governments but also from the private sector	➡
Other application- specific drones (high ASP)	Delivery (Level 4) Smokestack inspection Enclosed environment inspection	-	-	10	Development of application specific drone is on track.	➡
Development of application-specific drones						
PoC and Development	PoC and development of drone and systems at customer sites	8.6	3.7	20	Demonstration delayed due to COVID-19	➡
Sales of Platform/ Evaluation drones	Sales of platform drone (PF2, etc.)	3.0	1.4	10	Continue to utilize platform drone	➡
Other	Maintenance National projects	1.0	1.0	5	No impact on maintenance, national projects	➡

(Taken from the reference material of the company)

3. Overview of the results for the term ended March 2021

3-1 Non-consolidated Results

	FY3/20	Ratio to sales	FY3/21	Ratio to sales	YoY	Ratio to forecast
Net Sales	1,278	100.0%	620	100.0%	-51.5%	+20
Gross profit	808	63.2%	68	11.0%	-91.5%	-
SG&A expenses	792	62.0%	1,207	194.6%	+52.3%	-
Operating income	15	1.2%	-1,139	-	-	+61
Ordinary income	231	18.1%	-1,081	-	-	+68
Net Income	239	18.8%	-1,511	-	-	-211

*Unit: Million yen. From the third quarter of FY 3/21, consolidated accounting is shifted to. YoY is the ratio compared to the non-consolidated results and is for reference. Ratio to forecast is increase/decrease to the earnings results announced in February 2021.

Sales decreased and deficits were recorded.

For the term ended March 2021, sales decreased 51.5% year on year to 620 million yen. In response to the prolonged spread of Covid-19 and the declaration of a state of emergency, the company carried forward acceptance of orders to the next fiscal year, suspended demonstration experiments at its own judgment, and transferred these experiments to the next fiscal year. This has caused a six-month delay in sales. On the other hand, as a result of aggressive R&D as a prior investment to prepare for the market expansion, the company recorded operating, ordinary, and net losses.

The sales are almost same to earnings forecasts announced in February 2021. As SG&A expenses were partly reviewed, operating income was higher than expected. Net income was lower than expected due to about 300 million of impairment of investment securities for AutoModality, Inc. of the United States, which was invested in August 2019

3-2 Financial Conditions

◎Main Balance Sheet Items

	End of March 2020	End of March 2021		End of March 2020	End of March 2021
Current Assets	4,818	3,257	Current Liabilities	233	432
Cash, Equivalents	3,775	1,891	Accounts payables	24	139
Receivables	815	349	Total liabilities	233	436
Fixed Assets	449	751	Net Assets	5,034	3,572
Tangible Fixed Assets	27	-	Total Liabilities, Net Assets	5,268	4,008
Intangible Fixed Assets	35	75	Equity Ratio	95.5%	88.6%
Investments, Others	387	675			
Total Assets	5,268	4,008			

*Units: ¥mn The numbers of End of March 2020 are non-consolidated. Those of End of March 2021 are consolidated.

4. Forecast of the result for the term ending March 2022

◎Earnings Results

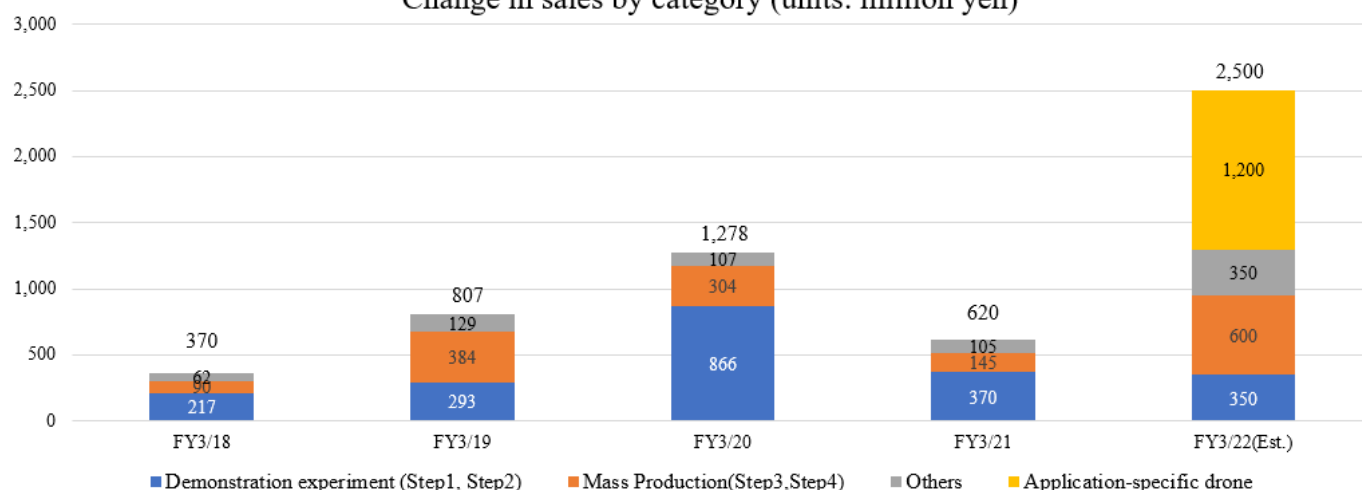
	FY 3/21	FY 3/22 (Est.)
Net Sales	620	2,500~3,000
Gross profit rate	11.0%	~40%
Operating income	-1,139	-700~-300
Ordinary income	-1081	-680~-280
Net Income	-1,511	-685~-285

*Units: ¥mn

It is forecasted that sales increase and loss width will shrink.

The sales for the term ending March 2022 are expected to be 2.5 to 3 billion yen. In addition to a significant increase in platform drone sales, sales of application-specific drone will start contributing this fiscal year. The company will continue to actively conduct R&D to expand its business in the future, but the company expects to reduce its operating loss from the previous fiscal year to 700 to 300 million yen due to an increase in sales.

Change in sales by category (units: million yen)



* The forecast of FY 3/22 is the lower limit of the range of forecast.

5. Conclusions

Although the company produced a profit in the term ended March 2020, sales decreased in the term ended March 2021 due largely to the effects of Covid-19, resulting in a significant loss. Although it is unlikely that the impact will disappear completely during this fiscal year, the need for drone use in various aspects will expand and won't decrease.

The four priority strategies in the company's Medium-Term Management Policy "ACSL Accelerate" are also making steady progress, and this fiscal year, when sales of "application-specific drones" are recorded for the first time, is likely to be an epoch-making year, the first year of full-fledged market development, although it will not be a turnaround in profitability due to continued aggressive R&D investment. Not just the medium- and long-term perspectives, it would be interesting to keep an eye on the company for its progress of quarterly sales this fiscal year.

< Reference: Regarding Corporate Governance >

◎Organization type, and the composition of directors and auditors

Organization type	Company with internal auditors
Directors	6 directors, including 2 outside ones
Auditors	3 auditors, including 3 outside ones.

◎Corporate Governance Report (Updated on July. 7, 2020)

Basic Policy

Under the mission of "Liberate Humanity through Technology," we have a vision of " Revolutionizing social infrastructure by pursuing cutting-edge robotics technology." Under this corporate value, we believe that our duty is to foster and maintain trusting relationships with all stakeholders (i.e., including shareholders, clients, business partners, employees, creditors, and local communities) and conduct business administration putting importance on the interest of every stakeholder. To that end, it is essential for our business to achieve stable and lasting development, and we recognize that enhancing corporate governance with the aim of improving management soundness and transparency is one of the most critical management challenges. Thus, we are working to improve and enhance our corporate governance. Concretely, we are striving to enrich general meetings of shareholders, upgrade the functions of the boards of directors and auditors, carry out timely, appropriate information disclosure and IR activities, and tighten internal control systems, to enhance corporate governance further.

【Reasons for Non-compliance with the Principles of the Corporate Governance Code】

Autonomous Control Systems Laboratory Ltd. has implemented all the Basic Principles of the corporate governance code.

This report is intended solely for information purposes, and is not intended as a solicitation to invest in the shares of this company. The information and opinions contained within this report are based on data made publicly available by the Company, and comes from sources that we judge to be reliable. However, we cannot guarantee the accuracy or completeness of the data. This report is not a guarantee of the accuracy, completeness or validity of said information and or opinions, nor do we bear any responsibility for the same. All rights pertaining to this report belong to Investment Bridge Co., Ltd., which may change the contents thereof at any time without prior notice. All investment decisions are the responsibility of the individual and should be made only after proper consideration.

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