

# IHI REPORT

Interim Report for 203rd Fiscal Year

April 1, 2019 to September 30, 2019



**Under the Group Management Policies 2019, the IHI Group will strive to achieve further growth while steadily addressing prevailing challenges.**

IHI Corporation

**Tsugio Mitsuoka** President and Chief Executive Officer

## Taking a look back at the first half of 2019, how was IHI's performance until September 30th, 2019?

On a consolidated basis for the first six months of the current fiscal year, the IHI Group reported net sales of ¥594.9 billion, operating profit of ¥10.5 billion, and loss of ¥4.8 billion.

Operating profit in the Social Infrastructure and Offshore Facilities Business Area was almost equal to that of the corresponding period of the previous fiscal year. However, it was significantly lower in the Resources, Energy and Environment Business Area, which generated lower profitability from construction work, and the Industrial Systems and General-Purpose Machinery Business Area, which encountered a temporary drop in unit sales of vehicular turbochargers in China.

In the Aero Engine, Space and Defense Business Area, we have been placing top priority on implementing stringent recurrence prevention measures to address inadequate practices that had occurred in the civil aero engine maintenance business, as conveyed in news releases since March. Although we are stringently engaging in strengthening our quality verification procedures, operating profit fell below that of the corresponding period of the previous fiscal year as a result of delays in resuming operations.

## What are your full-year consolidated forecasts of results for fiscal 2019?

We have revised our initial forecasts for operating profit and profit attributable to owners of parent to ¥65.0 billion and ¥20.0 billion, respectively, upon having conducted a detailed review of our full-year consolidated forecasts of results for fiscal 2019 taking into account results achieved over the six months ended September 30, 2019.

As for operating profit, we plan to record no less than ¥50.0 billion in the second half given that a considerable amount of high-revenue construction work will be carried over from the first half, which is in addition to the fact that profits had been initially estimated to be higher in the second half than in the

### Earnings Highlights

(Billions of yen)

Items	Six months ended September 30, 2019	FY2019 Full-year consolidated forecast
Orders received	616.0	1,400.0
Net sales	594.9	1,400.0
Operating profit	10.5	65.0
Ordinary profit	3.5	43.0
Profit attributable to owners of parent	(4.8)	20.0

first half. We are committed to meeting the expectations of our shareholders and enlist the entire IHI Group in efforts geared to achieving this operating profit target.

We have set the interim dividend for the six months ended September 30, 2019, at ¥30 per share. Our plan to pay a dividend of ¥40 per share as a year-end dividend remains unchanged.

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### **How do you intend to address issues involving the three business areas that have generated lower profits than those of the corresponding period of the previous fiscal year?**

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The business environment surrounding the IHI Group has been undergoing drastic transformation. Whereas our managerial approach had primarily centered on our respective business divisions, the need for us to address such changes means that we must shift to a managerial approach that aims for overall optimization of the IHI Group. Under our Group Management Policies 2019, we place emphasis on the notion of flexibly reorganizing our businesses commensurate with changes in the business environment. I will now explain how we intend to address issues faced by our respective business areas in light of these circumstances.

In the Resources, Energy and Environment Business Area, whereas management resources up to this point had been managed on a separate basis by the respective business divisions, we are now making progress in aggregating resources to the business areas and allocating them predominantly in vital areas beginning in the initial pre-order phase of projects. For instance, we have been allocating personnel to the task of monitoring to verify construction work estimates and checking work progress. Such initiatives have enabled us to promptly eliminate downside factors by appropriately identifying risks beginning in the estimation phase, even when it comes to small and

medium-sized projects that had previously been assigned insufficient labor resources. Upon having engaged in such efforts with respect to stringently monitoring a number of small and medium-sized projects, we have identified and accounted for factors underpinning higher costs, and consequently revised our forecasts of results. In addition to our efforts geared toward preventing deterioration of profitability, we are also working to increase profits in part by allocating personnel to after-sales services.

In the vehicular turbochargers business, unit sales took a temporary downturn in the Chinese market due the nation's economic slowdown and its introduction of new exhaust emissions regulations. We believe this situation will have a limited effect on this fiscal year's earnings results given that the unit sales volume is expected to recover as we make progress in rolling out new models that comply with such exhaust emissions regulations heading toward fiscal year-end. On the other hand, it is necessary to note that growth of the automotive market is poised to slow somewhat over the medium term. In Europe, we are already seeing results emerge from flexible adjustments made to our production framework in accordance with the size of the market. In other regions we will similarly accelerate development of our production framework so that it is consistent with the size of those markets. It is also crucial that we secure new sources of revenue. To that end, we will enhance our after-sales services business and actively engage in technology and product development with our sights set on the electrification era.

In the Aero Engine, Space and Defense Business Area, we have been engaging in stringent efforts to prevent recurrence of inadequate practices. Our civil aero-engine maintenance operations also resumed in May and overhauled engines started being shipped out in July. We are currently encountering delays in the course of resuming operations amid a

situation where work efficiency has not returned to previous levels as we are carrying out operations with utmost precaution in accordance with enhanced procedures. During the current fiscal year, we aim to resume operations and have accordingly been working to streamline and optimize our verification procedures to ensure that accurate and swift on-site judgments are made, enlisting the close involvement of a significant number of engineers at manufacturing sites.

### What are your specific points of focus in achieving earnings targets for this fiscal year and the management targets set forth in the Group Management Policies 2019?

We have been exhaustively engaging in uncompromising efforts with respect to quality, compliance and safety, and have accordingly made such efforts a top priority in terms of ensuring business continuity and achieving our management targets.

This fiscal year, three initiatives of risk management have been made a priority theme: 1. reinforce compliance structure, 2. strengthen quality assurance structure, and 3. address key business risks. Moreover, we have been developing a framework for comprehensively addressing risk and taking a top-down approach in making improvements in that regard. This involves sufficiently making use of the functions of an organizational structure with three functional tiers: 1. business divisions acting as the front lines in coping with risk, 2. business areas providing instruction and supervision to such business divisions, and 3. headquarters divisions consisting of the Internal Audit Division and other corporate divisions.

As an example of specific initiatives taken under the priority theme of risk management, we have been conducting quality and compliance training on a Group-wide basis for the purpose of reinforcing the compliance structure and strengthening the

quality assurance structure. So far, more than 25,000 employees have taken part in this training that is available to our entire workforce including those working overseas. Going forward, we aim to keep developing a workplace culture whereby employees unwaveringly refuse to compromise on quality, compliance and safety by repeatedly engaging them in such training.

### To conclude, please give your comment on enthusiasm to achieve goals of the Group Management Policies 2019.

IHI has positioned the three years beginning with fiscal 2019 as a period for building new value for society and customers, and accelerating reform into a company that can enhance its own value in earnest. We will strive to ensure that profitability and business stability are achieved through initiatives that entail enlisting the entire IHI Group in efforts to stringently manage risk, accelerate implementation of measures geared to bringing about reform, and achieve our management targets. I express my heartfelt gratitude to all IHI shareholders, and look forward to their continued invaluable support in the future.

#### Interim Dividend

¥30  
per share

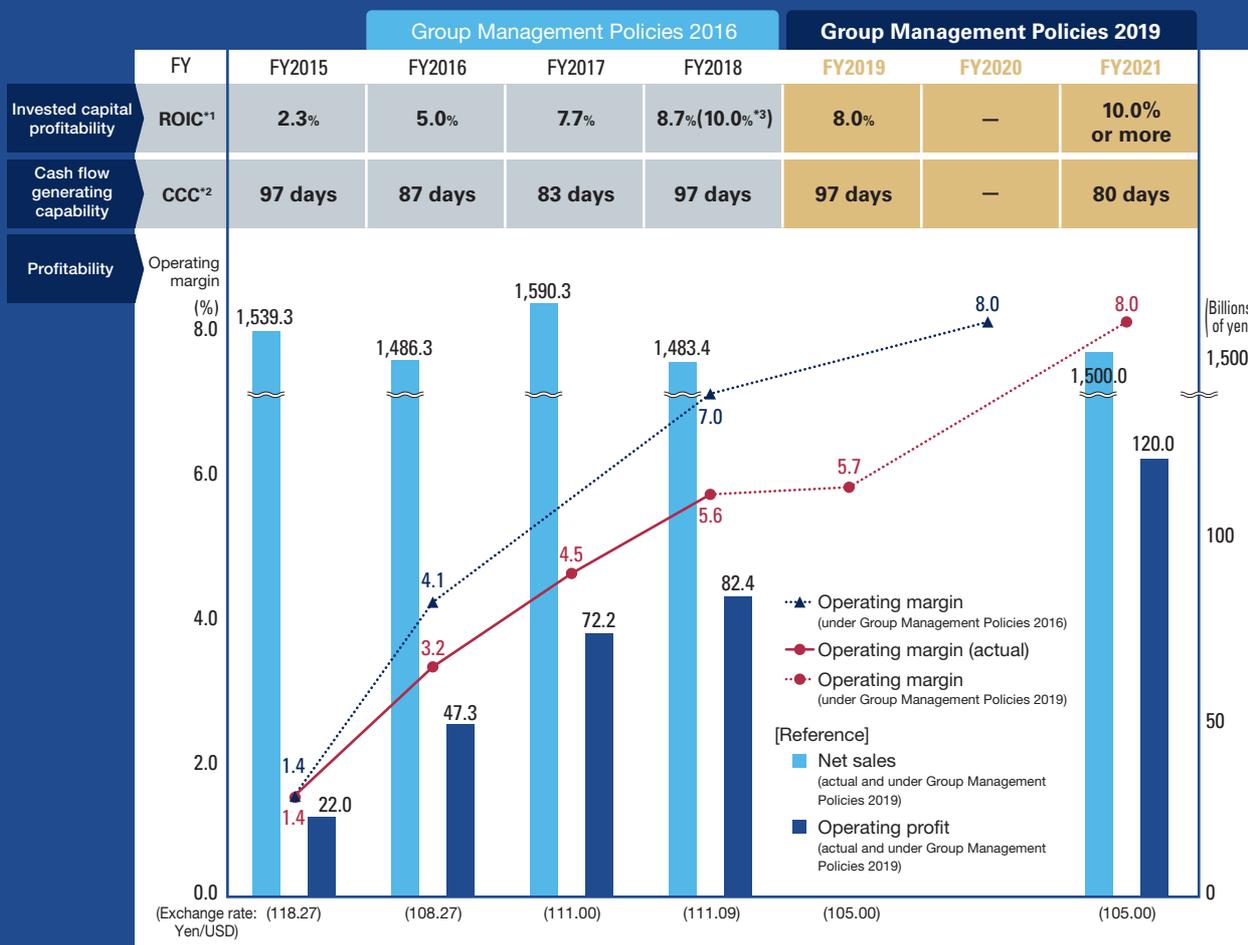
We have set the interim dividend for the six months ended September 30, 2019, at ¥30 per share.

We plan to pay a dividend of ¥40 per share as a year-end dividend for the fiscal year ending March 31, 2019.

## Overview of Group Management Policies 2019

The IHI Group has embarked on its Group Management Policies 2019, effective from fiscal 2019. Under our Group Management Policies 2019, we have defined the IHI Group's "approach" of helping to achieve social sustainability over the long term, taking into account changes of the social environment in which IHI operates. Furthermore, in order to realize goals of our "approach," we have positioned this three-year period as one during which we will fully transform the IHI Group into an enterprise that creates new value by directly tackling the issues faced by society and our customers, reorganizing our businesses, and engaging in initiatives to reform our businesses.

### Management Objectives



\*1 ROIC = (Operating profit + Interest income and dividend income) after tax / (Equity + Interest-bearing liabilities)

\*2 CCC (Cash Conversion Cycle) = Working capital ÷ Net sales x 365 days

\*3 Targets under Group Management Policies 2016

**IHI's ideal vision for the coming 10 years is net sales of about two trillion JPY and stable operating margin of at least 10%, based on which appropriate interim targets have been formulated for FY2021.**

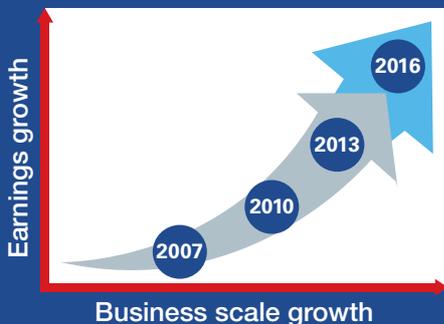
Long-Term Approach

## Tackle social and customer issues with customers and create new value

Contribute to social sustainability



Contribute to society, primarily by supplying hardware



Further evolve initiatives of Group Management Policies 2016 to address increasing social issues

“Group Management Policies 2016”  
“Strengthening the earnings foundations”

Three initiatives for transformation

- Concentration and selection through new portfolio management
- Boost profitability by reinforcing project implementation structure
- Employ common Group functions to transform business model

Three initiatives over three years

To realize IHI Group's ideal vision from a long-term perspective, the three years beginning in FY2019 are positioned as the period for fully launching IHI's business transformation. During this period, IHI businesses will be reorganized flexibly and appropriately in accordance with changes in the environment and the expectations of society. The objectives are to create new value for society and customers and to fully launch IHI's transformation to become a company that enhances its value through its own initiatives. As the foundation for this transformation, and to ensure that "safety and quality" remain our top priorities, initiatives will be implemented with a risk-management approach that focuses on profitability and business stability. Additionally, IHI's human resources will be further cultivated to help drive the transformation and respond to environmental changes with flexibility and speed.

Three initiatives for transformation

Strengthen business foundations	Build a robust operational structure	Accelerate preparations for tomorrow
<p><b>Accelerate aftermarket business development with customers from lifecycle perspectives</b></p> <p>Focusing on overall lifecycles, we will align closely with customers' operations, accelerate our deployment of after-market business, and help customers find solutions for their key issues.</p>	<p><b>Create a lean and flexible operational structure</b></p> <p>We will optimally allocate resources, such as employees and funds, to growth areas and other strategic areas, and build a corporate structure that is resilient to change.</p>	<p><b>Transform our business model to create value</b></p> <p>To help realize a sustainable society, we will accelerate our transformation to a business model that generates new value for the future.</p>

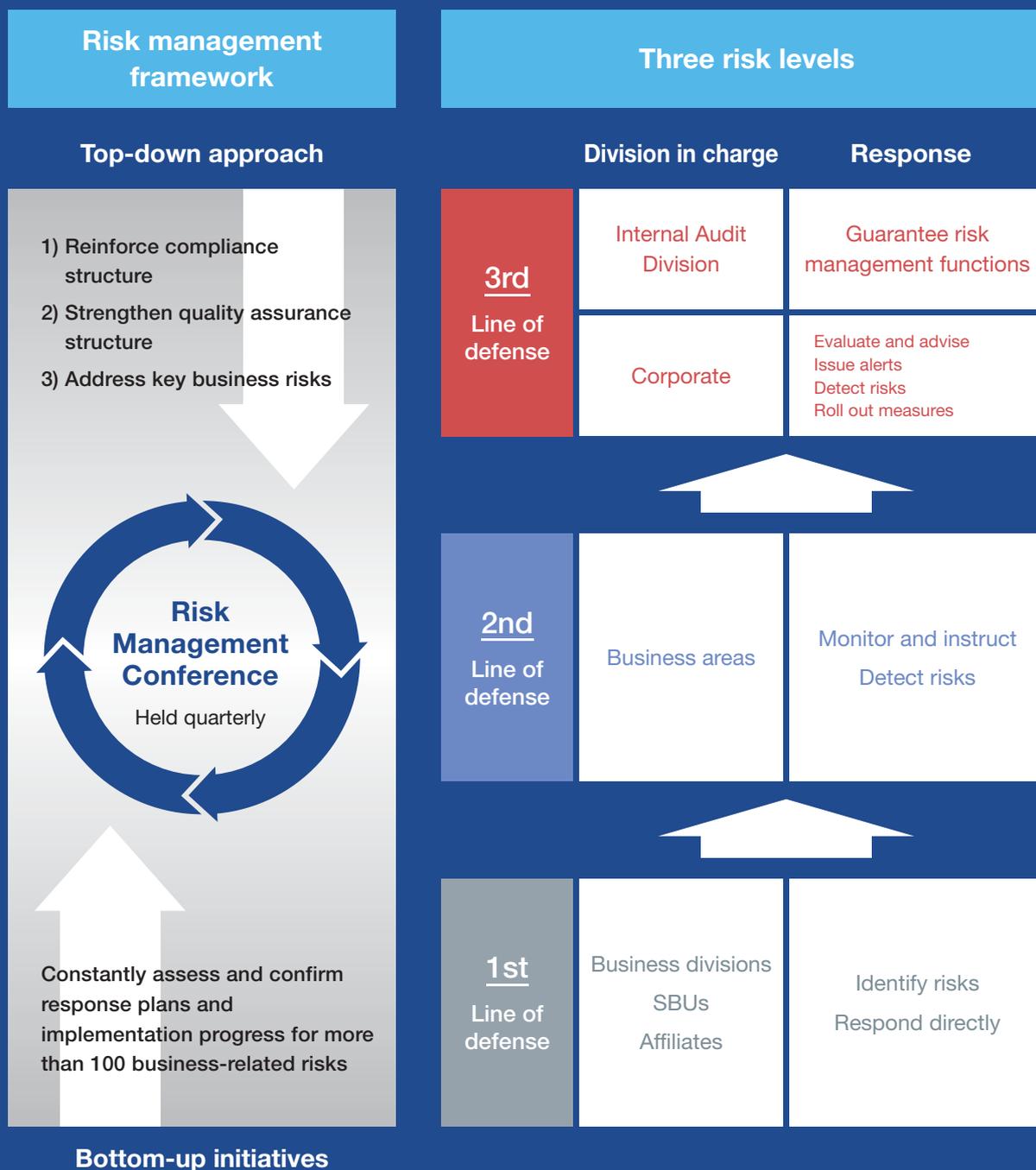
Cultivate human resources as a driver for change

Safety and quality

Risk management

Enhancing the risk management system

The IHI Group regards risk management as a top business priority and accordingly strives to enhance its risk management on a Group-wide basis. This fiscal year we have started building a three-tier risk management system, under which we hold meetings of the Risk Management Conference on a quarterly basis with respect to each of the tiers.





Resources, Energy and Environment Business Area

## Consecutive agreement on Long Term Service Agreement for power plant boilers in Morocco

IHI, in cooperation with IHI Group company Steinmüller Engineering GmbH (SE), concluded a Long Term Service Agreement (LTSA) pertaining to large-scale coal-fired power plant boilers for a period of six years, with Safi Energy Company (Safi EC), a power generation company in the Kingdom of Morocco.

The LTSA pertains to services involving Africa's first Ultra-Super Critical\* coal-fired power plant boiler (2 boiler units × 693 MW) which were delivered by IHI in 2018 to the Safi Power Station operated by SafiEC. The services include supplying of parts for the boilers, technical consultation, and dispatch of technical advisors.

IHI has supplied a total of four units of large-scale coal-fired power plant boilers to Morocco thus far, which includes the two boiler units delivered to the Safi Power Station. This agreement marks the conclusion of LTSAs covering all four boilers, thereby enabling IHI to provide support for long and stable operations of the power stations in Morocco.

Morocco continues to achieve rapid economic growth and social development, and accordingly faces a critical need for stable supplies of power amid the nation's surging demand for electricity. Under this LTSA, IHI will contribute to industrial development in Morocco by providing services in partnership with SE, which has a profound technical knowledge of boilers for thermal power generation.

Going forward, the IHI Group will continue to leverage its abundant knowledge and technology pertaining to large-scale coal-fired power plant boilers both in Japan and abroad, and will also endeavor to achieve the dual aims of providing stable supplies of electric power and reducing environmental loads.



\* Ultra-Super Critical: The steam condition of over 593°C temperature and over 24.1 Mpa pressure.



Social Infrastructure and Offshore Facilities Business Area

## Yanba Dam construction: Final phase toward completion



\* "Initial impoundment": A test run carried out when a dam reservoir is initially filled with water for the purpose of double checking that the dam will operate safely. The testing involves measuring and monitoring the dam body by initially filling the reservoir to its maximum water level under normal conditions (normal water level), and subsequently draining the reservoir to its lowest low water level.

In August 2014, the Kanto Regional Development Bureau of the Ministry of Land, Infrastructure, Transport and Tourism awarded a contract for construction of the Yanba Dam in Gunma Prefecture to a joint venture consisting of IHI group company IHI Infrastructure Systems Co., Ltd., Shimizu Corporation, and TEKKEN CORPORATION. The companies have been proceeding with construction of the project. In October 2019, initial impoundment\* was commenced by actually storing water in order to verify safety of the dam body and the area surrounding the reservoir, carried out as a trial run prior to starting full-scale operations of the dam. Construction remains underway with completion slated for March 2020.

Located in the middle reaches of the Agatsuma River of the Tone River system, the Yanba Dam is a multipurpose structure that will be used for ensuring flood control to reduce flood damage in the Tone River basin, securing a new source of water supply for the public and industry, and generating hydroelectric power.

By completing the Yanba Dam, which will stand as one of the largest dam facilities in Japan, the IHI Group will consolidate its position as a top-ranking manufacturer of water gates and will continue its contribution to the development of safe and secure infrastructure by drawing on its technological expertise amassed thus far.



Industrial Systems and General-Purpose Machinery Business Area

## Development of automated driving and automated parking systems for use in parking facilities and related services

The remarkable technological innovations emerging in the field of automated driving also extend to parking facilities that form a part of our social infrastructure, which in turn calls for the development of innovative technologies that meet a diverse range of needs. IHI Group company IHI Transport Machinery Co., Ltd. (IUK) works to create automated driving and parking technologies used in parking facilities (automated valet parking) and develops related services.

IUK has been conducting research to develop the requisite equipment and technologies in partnership with Keio University, having set up a facility equipped to implement demonstration tests of automated driving and parking systems tailored to the self-driving parking facilities situated on the grounds of its own factory located in Numazu City, Shizuoka Prefecture. IUK conducted successful trial runs of automated valet parking in a self-driving tower parking facility without relying on GPS navigation during the previous fiscal year. Furthermore, IUK has also been working to come up with map generation technology for use in parking facilities this fiscal year. IUK has also been conducting demonstration tests of distribution sites by using the rooftop of the parking facility as a drone port. In accordance with the Agreement for Cooperation in case of Disasters concluded with Numazu City, by providing access to the facility it also acts as a temporary evacuation site for community residents and as a backup logistics supply base should a disaster strike,

IUK continually seeks solutions involving the next generation of parking facilities, and is striving to provide optimal solutions that meet diverse needs of parking facilities.



Demonstration test facility



Aero Engine, Space and Defense Business Area

## Successful operation of asteroid probe Hayabusa2 impactor and other components

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Three seconds after operation of the impactor (debris flying upon the creation of the crater)

In April 2019, an impactor installed on the asteroid probe Hayabusa2 developed by Japan Aerospace Exploration Agency (JAXA) was deployed toward the asteroid “Ryugu” and successfully created an artificial crater on the asteroid. Video footage of the mission was transmitted to earth.

IHI Group company IHI Aerospace Co., Ltd. is involved in developing and operating the impactor's mechanical components such as devices for enabling detachment and safe ignition. Meanwhile, Meisei Electric Co., Ltd., also an IHI Group company, undertook development of a digital camera for scientific observation built into the DCAM3 detachable camera to capture images of the flying debris caused by the impactor upon creating the artificial crater. In addition, Meisei Electric Co., Ltd. developed a wireless communications system to transmit the image data captured by the DCAM3 to the Hayabusa2 asteroid probe.

Going forward, we will continue to leverage the IHI Group's technologies with respect to providing services consistent with needs of society and new solutions for space exploration.



DCAM3 detachable camera



#### Inquiries regarding administrative procedures for stocks

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