Examples of Rule-Making and Standardization Initiatives
Mitsubishi Electric Group

1. International standardization for high-precision positioning
2. International standardization to respond to digitalization
3. Leading the development of the IEC White Paper on power semiconductors
4. International standardization for space batteries
5. International standardization of dynamic signs

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Examples of Rule-Making and Standardization Initiatives
「International standardization for high-precision positioning」

In Japan, the Quasi-Zenith Satellite System (QZSS) is used to provide the Centimeter Level Augmentation Service (CLAS), a national infrastructure service for high-precision positioning. Mitsubishi Electric Group is involved in developing this system.

To improve international interoperability, Mitsubishi Electric Group is promoting the standardization of high-precision positioning through its activities in ICG*1 and RTCM*2. The CLAS data format has been adopted as a 3GPP™ *3 *4 5G international standard, leading the way for global adoption.

This standard will contribute to market development and solutions to social challenges in areas such as autonomous driving, smart agriculture, and disaster prevention.

*1 International Committee on Global Navigation Satellite Systems
*2 Radio Technical Commission for Maritime Services
*3 Third Generation Partnership Project
*4 3GPP™ is a registered trademark of ETSI (European Telecommunications Standards Institute)

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Examples of Rule-Making and Standardization Initiatives
「International standardization to respond to digitalization」

As digitalization connects all kinds of products and services, the Mitsubishi Electric Group is promoting international rule-making in conjunction with research and development and intellectual property.

International standardization of next-generation communications technology: Positioning 6G as an important technology supporting integrated solutions, we are participating in projects by the XG Mobile Promotion Forum, the Beyond 5G New Business Strategy Center, NEDO*1, and NICT*2, and working on the international standardization of the 6th generation mobile communication system (6G).

Effective use of radio waves in daily life: We are developing radio frequency sharing technology that prevents radio interference between wireless LAN used by home IoT devices and smart meters, taking the lead in establishing standards within IEEE 802.

Contributing to decarbonization through smart factories: To improve productivity through data linkage between companies, we are participating in an IAF*3 project and have proposed SMKL*4 to ISO/IEC.

*1 New Energy and Industrial Technology Development Organization
*2 National Institute of Information and Communications Technology
*3 Industrial Automation Forum
*4 Smart Manufacturing Kaizen Level

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Examples of Rule-Making and Standardization Initiatives
「Leading the development of the IEC White Paper on power semiconductors」

Mitsubishi Electric Group served as project leader on the IEC White Paper “Power semiconductors for an energy-wise society” published by the IEC in October 2023. The white paper compiled a series of recommendations on the need to establish and expand international standards and certification systems for power semiconductors.

Power semiconductors, which are one of Mitsubishi Electric Group’s mainstay products, reduce electricity consumption and contribute to the efficient use of energy through efficient power transformation. This means they are key devices for realizing carbon neutrality by 2050, and, recently, there have been expectations of further market expansion and technological advancements.

Mitsubishi Electric Group will contribute to realizing carbon neutrality by taking the initiative in activities aimed at international standardization for power semiconductors area.



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Examples of Rule-Making and Standardization Initiatives
「International standardization for space batteries」

In parallel with promoting the development of products that use lithium-ion batteries to further reduce the size and weight of aerospace batteries on satellites and space probes, we are also working toward international standardization to improve the quality appeal and market presence of our batteries in the aerospace market.

Leading the establishment of international standards: We have been leading the development and publication of ISO standards through discussions with ESA*1, NASA*2, and overseas battery manufacturers.

Results in the global market: By establishing reliability through our standardization activities, we have won a share of the commercial aerospace battery market. Furthermore, we have also received orders from JAXA*3 related to lithium-ion batteries for space applications for the crewed lunar orbiting base Gateway, following orders for the Habitation and Logistics Outpost and the International Habitation module under the Artemis Program, the U.S.-led crewed moon exploration program.

*1 European Space Agency
*2 National Aeronautics and Space Administration, U.S.
*3 Japan Aerospace Exploration Agency

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Examples of Rule-Making and Standardization Initiatives
「International standardization of dynamic signs」

We have conducted technological development on dynamic signs, a technology to display highly visible signs on the floor with optical animation, jointly with the National Institute of Advanced Industrial Science and Technology, a national research and development agency, taking into consideration how the signs will spread due to international standardization. We proposed an international standard for this technology to ISO in 2018, and the standard was published in 2021*1 .

Based on this ”dynamic sign” technology, we have commercialized the sign system ”Terasu Guide,” which provides intuitive and easy-to-understand guidance and alerts for facility users. It is used to support the smooth movement of diverse facility users, including the elderly, wheelchair users and people who do not speak Japanese.

Through our technological developments and international standardization activities, Mitsubishi Electric Group will contribute to realizing a society in which everyone can enjoy achieving their potential.

*1 ISO 23456-1(Dynamic signs in physical environments — Part 1: General requirements)

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