

FOR IMMEDIATE RELEASE

**Hitachi Power Solutions and Eurotech Agreement on Joint
Development of Predictive Diagnostics System “HiPAMPS-Edge” in
Edge Computing Environment**

Tokyo, June 29, 2016 - Hitachi Power Solutions Co., Ltd. (Hitachi Power Solutions), a wholly owned subsidiary of Hitachi, Ltd.(TSE: 6501), and Eurotech S.p.A. (Eurotech) of Italy today announced that they have concluded an agreement to jointly develop HiPAMPS-Edge, which incorporates edge computing technology from Eurotech, into Hitachi Power Solutions' HiPAMPS predictive diagnostics system to improve its real-time performance. This will involve porting the HiPAMPS predictive diagnostics engine (including a learning function) to an IoT (Internet of Things) gateway*¹ from Eurotech, to develop a service that complements existing server- and cloud-based predictive diagnostics by being able to perform simple predictive diagnostics on gateways located at the site where the machinery is installed. This service is scheduled to be launched in the global marketplace, including Japan, in October 2016.

The proliferation of networked devices and applications in recent years has been accompanied by an increase in data volumes. This has raised concerns that constrictions in communication capacity will result from the increased quantities of data associated with the strong trend toward production innovations, productivity improvements, and similar measures that draw on ICT and the IoT. In place of the existing practice of transmitting information from users (from the machinery) via a network, processing that information on a remotely located system, and then sending the result back to users via the network, edge computing technology has started to be adopted whereby equipment is installed to enable the processing of information on the user's machinery so that a certain amount of information can be processed without being sent over the network and the results sent to users as feedback.

As a member of the Hitachi Group, Hitachi Power Solutions possesses considerable know-how relating to machinery and its care and maintenance, having since its formation operated service businesses for industry, IT, and various other forms of social infrastructure, especially electric power and energy. This includes the HiPAMPS predictive diagnostics system, launched in Jun 2013, which monitors machinery to prevent unanticipated downtime with ICT and Data mining*² technology. HiPAMPS is one of applications of Hitachi's Lumada IoT platform.

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Headquartered in Italy, Eurotech supplies system integrators and other companies around the world with IoT integration solutions that include cloud-based services, software, and hardware. Eurotech has also been designated as an ecosystem partner of the Hitachi Insight Group through which Hitachi promotes IoT-related businesses across the globe, and has a strategic marketing arrangement with Hitachi High-Technologies Europe GmbH, a HiPAMPS sales partner.

In response to customer requirements such as reducing data transfer volumes and market developments such as the wider adoption of edge computing, Hitachi Power Solutions and Eurotech have agreed to jointly develop HiPAMPS-Edge, which incorporates edge computing, by drawing on their respective strengths. The intention is to contribute to improving customer equipment utilization by expanding strategic global partnerships involving solution businesses that utilize the IoT through services provided via HiPAMPS-Edge.

Note: *1 Gateway: A device that has functions for forwarding data collected from connected equipment or sensors to a server

*2 Data mining: A multi-variable data analysis technique for the extraction (mining) of new knowledge by the mathematical analysis of large quantities of data

■ HiPAMPS-Edge features

1. Flexibility to support customer requirements

It improves the real-time performance of on-site preventive maintenance of machinery complementing existing server- and cloud-based processing with simple predictive diagnostics on gateways. This also helps optimize the communications infrastructure by reducing data transfer volumes.

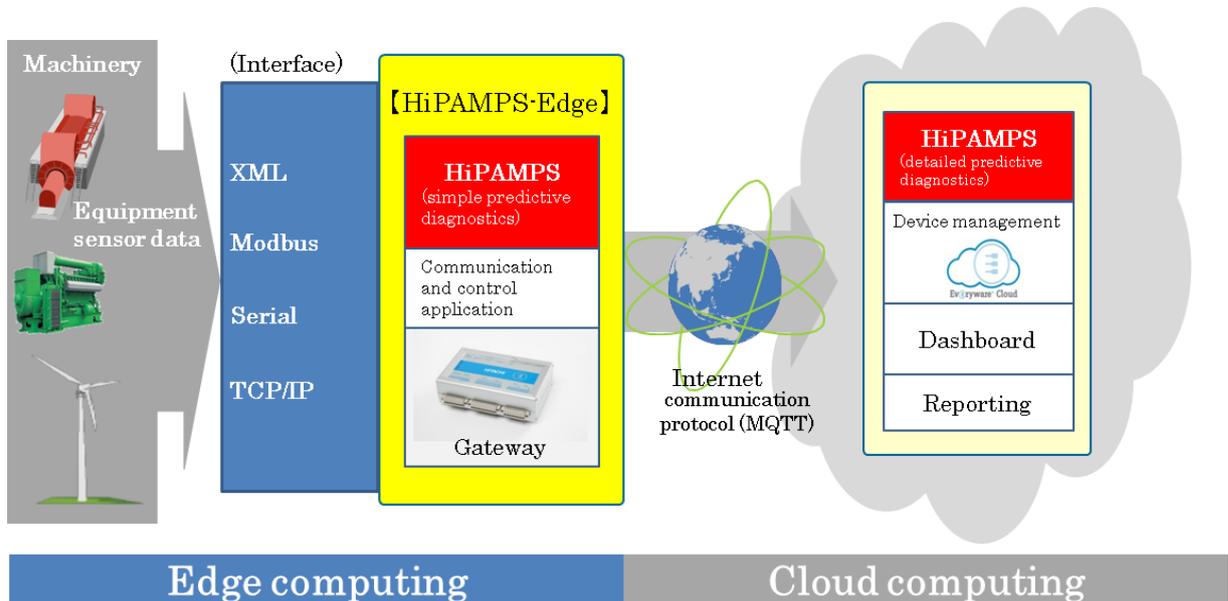
2. Improves system adaptability

It improves system adaptability, including reducing equipment modifications and the associated costs at the time of installation, by diversifying the methods available for connecting to predictive diagnostics systems using the gateway functions.

3. Improves security

Using edge computing to analyze operational data and perform simple predictive diagnostics it eliminates the need to take user data off-site. It provides remote management functions protected by robust security on the gateways to monitor the operation of gateways and predictive diagnostics systems, and can upgrade the diagnostics engine and keep systems up to date with an automatic update function.

■ System block diagram



MQTT: Message Queuing Telemetry Transport (a technique whereby the sender temporarily stores data to be sent in a buffer so that it can continue with subsequent processing without waiting for the receiver to complete reception)

■ Hitachi Power Solutions website

<http://www.hitachi-power-solutions.com/products/>

■ Eurotech S.p.A website

<https://www.eurotech.com/jp/>

Japan subsidiary: Advanet Inc. (part of Eurotech Group)

<http://www.advanet.co.jp/>

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