News Release

FOR IMMEDIATE RELEASE

Hitachi Launches "Hitachi Global Data Integration," an IoT Service That Supports the Expansion of Companies' Global IoT Businesses

From preparing and managing telecommunications lines to providing platform for collecting, storing, and utilizing data, Hitachi provides a service that covers all system environments necessary for global IoT and supports swift business launch

Tokyo, June 18, 2020 – Hitachi, Ltd. (TSE: 6501, "Hitachi") today announced the systematization and launch of "Hitachi Global Data Integration" on June 30, as an IoT service that supports the expansion of companies' global IoT businesses.

The service is for companies aiming to expand their business globally using IoT technologies and takes the form of a subscription service that provides a range of infrastructure functions for collecting data from things and using it, including the preparation and management of communication lines and the provision and operation of system environments for collecting, storing, and utilizing data. By providing means to utilize data in a global environment as a comprehensive service menu that can keep initial costs down and facilitate easy small-scale startups, we support stronger business using IoT technologies on global markets in a variety of industries, including manufacturers shipping products and equipment across the world.

The service also makes use of OT knowhow accumulated over many years and the latest AI and other advanced digital technologies to offer Lumada[*1] solutions that accelerate our clients' digital innovation through the "Lumada Solution Hub"[*2], which enables Lumada solutions to be quickly and easily introduced.

In recent years, the development of IoT technologies for connecting all kinds of things to networks has exponentially increased the volumes of data accumulated, which is increasing opportunities to utilize that data to create new businesses and resolve social issues. In particular, companies that ship automobiles, industrial machinery, and other products and equipment globally seek to generate new value by improving efficiency in operations and maintenance as well as devising new services through the utilization of data collected from the operating status of each region.

Meanwhile, to collect and utilize data from products and equipment operating in various regions, a range of preparations are required, including surveying and concluding contracts for communication lines in each region as well as building and operating system infrastructure to manage IoT devices and collect, store, and utilize data in accordance with the local circumstances and laws of each country. Moreover, the

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system infrastructure needs to be able to expand in response to the exponential increase in number of devices and data volume, making it a major obstacle for analyzing and utilizing IoT data in a global environment.

This service addresses the various challenges that obstruct the use of IoT technologies in a global environment and provides a comprehensive system environment that supports the collection, storage, management, and utilization of data sent from communication devices[*3] that connect with the relevant equipment. More specifically, it consists of a "connection service[*4]" that manages the lines needed to utilize IoT technologies across national and regional borders, a "data collection and storage service" that collects and stores data globally in the cloud, and "data utilization solutions" that visualize operational data stored in the data lake and such.
Moreover, these services are provided through a subscription, which keeps down the initial cost and reduces the costs and load associated with developing and operating the system infrastructure needed to use IoT technologies. Since we can provide a range of system environments from line management to utilization, we can support easy PoC environment setup and plans to use IoT in business.

With the recent spread of COVID-19, people's movement is restricted and social activities are changing considerably. Hitachi is working to realize a business environment for our customers' new normal through our Hitachi Global Data Integration service.
Moreover, Hitachi will continue to enhance and expand services, such as those for new data utilization with 5G support, support our customers' expansion of IoT businesses globally, and contribute to creating innovation through the use of a diverse range of data.

*1 Lumada: General term for solution service technologies using Hitachi's advanced digital technologies to generate value from customer data and speed up digital innovation.
*2 Hitachi Launches "Lumada Solution Hub" to Advance and Facilitate Introduction of Lumada Solutions
   (March 18, 2019 news release)
   https://www.hitachi.com/New/cnews/month/2019/03/190318.html
*3 The communication devices used by customers need to be selected based on country of use, so please do not hesitate to inquire about our recommendations.
*4 Only in Japan. For overseas, we suggest the optimal networks for customers' IoT equipment and conditions of use.

Main Features of "Hitachi Global Data Integration"
<u>1. A Connection Service that Realizes Unified Line Control and Management Across National and Regional Borders</u>
We provide a "connection service" for connecting and managing lines by

comprehensively offering communication lines in the countries our customers are considering use, in cooperation with telecom providers. Conventionally, the use of communication lines for IoT use in countries around the world would require surveys and contracts with telecom providers in each country and region as well as the building of systems that support each telecom providers' connection interface (API[*5]), which is quite challenging in terms of man-hours and workload.

The "connection service" already has an API for telecom providers and quickly realizes centralized line control and management across national and regional borders. For example, the service reduces the load of line connection and management by enabling the opening, suspension, and communication status management of the SIM (subscriber identity module) lines of the products and equipment shipped overseas.

*5 API: Application programming interface

2. Highly Scalable System Platform for Data Collection and Storage as a Cloud Service

We provide highly scalable system platform for data collection and storage as a cloud service that can flexibly accommodate a huge number of devices and constantly growing data volumes. The service uses Hitachi Application Framework/Event Driven Computing[*6] ("HAF/EDC"), a framework capable of highly reliable and scalable distributed processing, to effectively adjust processing throughput when collecting and storing data in response to changes in the data volumes handled. Moreover, the "data collection and storage service" provides externally linked API to enable data linkage with various applications and in-house systems for various customers' visualizations and analyses.

*6 HAF/EDC: Event driven system development infrastructure and application implementation infrastructure created with the aim of high-speed processing of large volumes of data in distributed environments.

3. Providing Standard Functions for IoT Data Utilization

The "data utilization solutions" provide highly demanded functions for data utilization including location tracking, operation monitoring, and alert management as standard. We support the creation and expansion of new business by providing system environments necessary for data utilization in the form of standard functions that include mapping the position information of products and equipment shipped overseas on map data, summarizing devices' operation status (pressure, temperature, etc.) by region in list or graph form, and supporting swift maintenance responses by detecting and alerting about irregularities.

Overview of "Hitachi Global Data Integration"
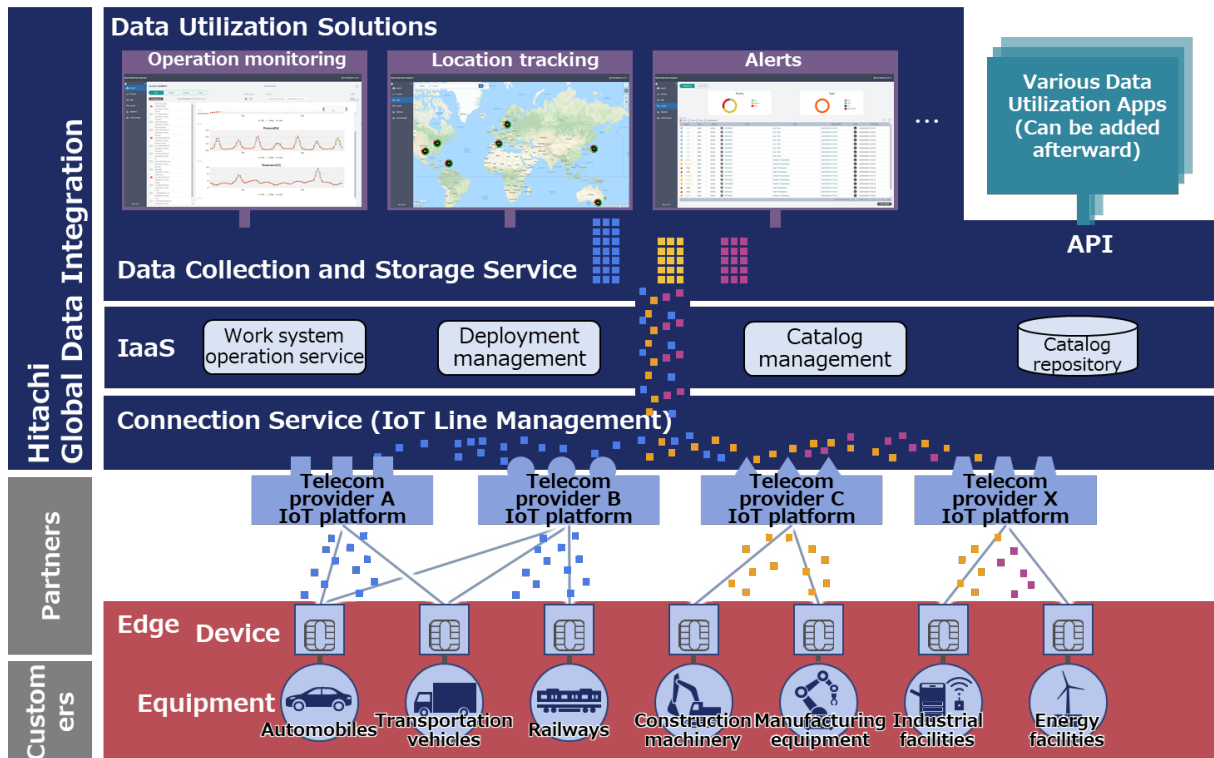
Prices and Start Date for "Hitachi Global Data Integration"

Type	Service name	Outline	Price (excl. taxes)	Start date
Standard services	Connection service	Offering and initial setting of SIMs, mobile lines, and public networks	Initial cost 500,000 yen Monthly 396,000 yen *7*8	July 31
	Data collection and storage service	Provision and initial setting of gateways, data storage infrastructure, APIs, and GUIs		
	Data utilization solutions	Provision and initial setting of operation monitoring, location tracking, and alert detection		
Options	Individual system integration service	Developing original specifications based on standard services	Individual quote	
	Consulting service	Provision of consulting services for IoT business development from PoC to all aspects of actual operations		
	Data analysis support service	Suggestions based on data analysis and analysis results		

Customers may select functions and services according to their needs and existing assets.

*7 Includes communication fee for 10MB/device and month. An additional fee is charged if 10MB is exceeded.

*8 Basic monthly fee. Uniform fee up to 200 devices. It costs 1,980 yen/device and month for the 201st device and up.

About Hitachi, Ltd.

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, is focused on its Social Innovation Business that combines information technology (IT), operational technology (OT) and products. The company's consolidated revenues for fiscal year 2019 (ended March 31, 2020) totaled 8,767.2 billion yen ($80.4 billion), and it employed approximately 301,000 people worldwide. Hitachi drives digital innovation across five sectors – Mobility, Smart Life, Industry, Energy and IT – through Lumada, Hitachi's advanced digital solutions, services, and technologies for turning data into insights to drive digital innovation. Its purpose is to deliver solutions that increase social, environmental and economic value for its customers. For more information on Hitachi, please visit the company's website at https://www.hitachi.com.

Appendix

"Hitachi Global Data Integration" Application Examples

(1) Application in Manufacturing (Transportation Equipment)

Using this service, data from transportation equipment in operation in different regions around the world is acquired in real time. This enables comprehensive management of the operation data from each region and improves efficiency for the discussion of maintenance plans, for instance, by visualizing operation status.
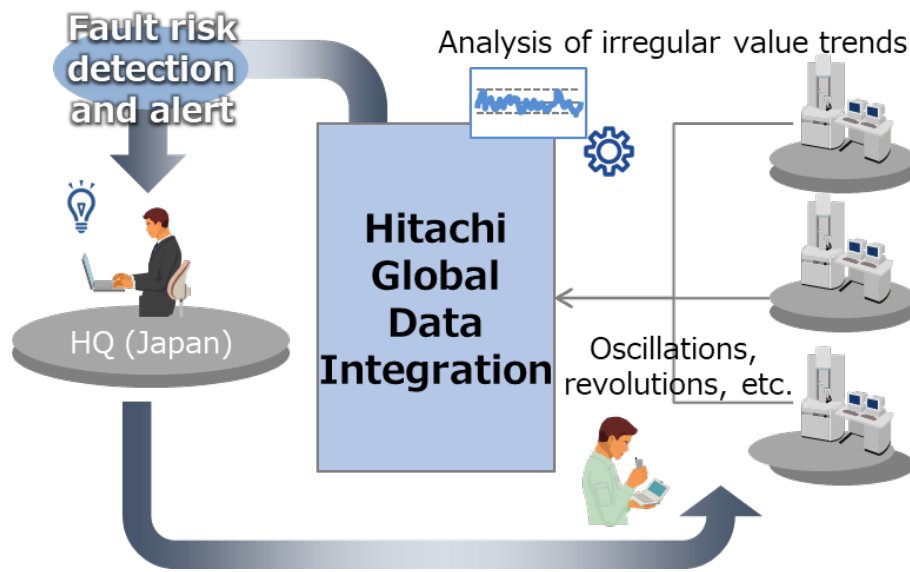
We can also provide comprehensive system environments for supporting data collection, storage, and utilization to customers who only plan to use it inside Japan.
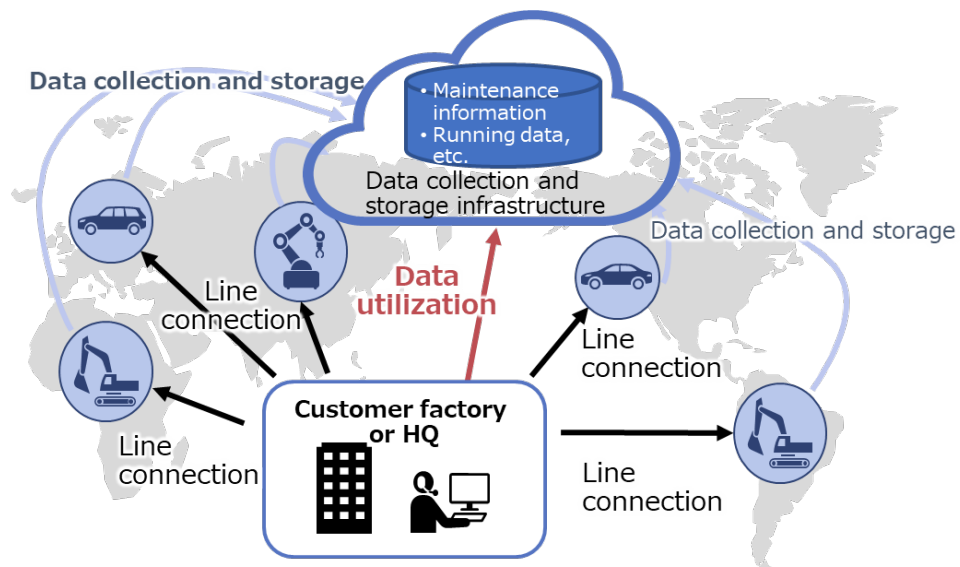
Hitachi Global Data Integration

(2) Application in Manufacturing (Industrial Equipment)

Data such as oscillations and revolutions of device components is acquired from industrial equipment that needs to operate at all times, analyzing trends in irregular values. This reduces downtime by detecting fault risks in advance by tracking irregularities.

Fault risk detection and alert

Analysis of irregular value trends

Hitachi Global Data Integration

HQ (Japan)

Oscillations, revolutions, etc.

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