

## SOLUTION BRIEF

Intel® DevCloud for the Edge



# Hitachi Speeds AI-Based Diagnostic Imaging with Intel® DevCloud for the Edge

## Developing targeted algorithms for advanced modality systems enhances healthcare at the edge

“Because developers can quickly evaluate the performance of their applications in multiple edge computing systems by using Intel® DevCloud for the Edge, they can not only shorten the inspection time to go to market, they can also expect tremendous benefits in terms of investment and maintenance in verification equipment.

“We are confident that Intel DevCloud for the Edge will accelerate and streamline operations and create new value for our customers.”

—Tomohiro Nagao, Senior Manager,  
Solution Business Division,  
Diagnostic Systems Division,  
Hitachi, Ltd., Healthcare Business Unit

The healthcare sector is experiencing significant changes—from aging demographics and a prevalence of lifestyle diseases to regional disparities in care provision and the rising cost of public healthcare. At the same time, continual growth in the already vast amount of healthcare data requires advanced compute performance and capabilities and more efficient processing, not just in the cloud and data center, but increasingly at the edge.

### Vision is at the core of much healthcare data

Healthcare use cases and services at the edge—combined with new digital care models supported by smart devices, cameras, network video recorders (NVRs), and sensors—are generating more and more unstructured visual data. Diagnostic and medical imaging also rely on visual compute technologies and AI inference for analysis. Increased use of analytics in healthcare networks requires more advanced, flexible ways of assessing and managing visual data to ensure clinicians and organizations are extracting maximum and timely value.

### Meeting new infrastructure demands

The need for broad collaboration between physicians, specialists, and pharma to help ensure a holistic view of patient care places new demands on existing edge computing infrastructure. Tightly coupled OS, firmware, and hardware can make adding or changing functions difficult and costly.

Diagnostic imaging systems, such as MRI and CT scans, have advanced significantly, featuring scanning technology with greater accuracy and sophisticated capabilities for data analysis and interface optimization.

### Bringing advanced analysis to modality systems

Hitachi is augmenting and enhancing image analysis and diagnostic features leveraging AI and deep learning algorithms for modality systems, including CT scan, MRI, X-ray, and ultrasound.

Hitachi initially considered using GPU-based systems for the AI enhancements, but a product feasibility study found a negative impact on cost and power/heat dissipation.

Hitachi sought to accelerate development time by leveraging AI and targeting smoother integration and fusion of AI and non-AI algorithms by Intel® Distribution of OpenVINO™ toolkit.

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## Intel® DevCloud for the Edge provides a sandbox for fast testing and prototyping

The company was able to accelerate prototyping and testing using Intel DevCloud for the Edge, a cloud-hosted sandbox, in order to refine their solutions, innovate, and speed time to market. The integrated Intel Distribution of OpenVINO toolkit provides Hitachi with a flexible software development environment for deep learning inference. This also gives the company the information to prepare hardware systems powered by the Intel® Xeon® Scalable processor family and the Intel® Core™ processor family to deliver the necessary scalability and performance.

The learning curve for Intel DevCloud for the Edge and the Intel Distribution of the OpenVINO toolkit is minimal. The company's developers are able to collaborate seamlessly—as if they are on Hitachi's internal development environment. Hitachi is completely confident in their decision to move the GPU algorithms to the Intel Distribution of the OpenVINO with no significant schedule disruption.

Testing using Intel DevCloud for the Edge enables Hitachi to optimize their solutions to lower costs and minimize long-term maintenance support while delivering the reliability and accuracy essential to the healthcare industry.

**Learn more about Intel DevCloud for the Edge at [software.intel.com/en-us/devcloud](https://software.intel.com/en-us/devcloud).**

**Explore the Intel Distribution of OpenVINO toolkit at [software.intel.com/en-us/opencvino-toolkit](https://software.intel.com/en-us/opencvino-toolkit).**

## Healthcare intelligence at the edge

Intel and its ecosystem partners are helping to transform healthcare with new edge computing solutions. These solutions complement cloud and data center resources with support for multiple edge devices, applications, and services on a single common platform. The results are giving healthcare provider organizations new levels of agility, reliability, and responsiveness for better operational performance and care delivery.

Innovations in infrastructure and connected medical devices can reduce patient hospitalization and lower costs. By improving diagnostics and imaging in the clinical setting, hospitals can expand the care delivery options for patients.

High-performance Intel® technologies, Intel DevCloud for the Edge, and the Intel Distribution of the OpenVINO toolkit help enable Hitachi to improve the quality of care by delivering intelligence at the edge to the healthcare sector..

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## About Hitachi, Ltd.

Recognizing that healthcare is an essential part of the infrastructure that supports society in the 21st century, Hitachi is developing innovative technologies and supplying the associated systems, solutions, and services to help create a society in which everyone can enjoy a healthy and secure way of life.

By collaborating with diverse partners, employing technologies from various industries, and drawing upon experience developing user-friendly healthcare products, Hitachi is helping to deliver healthcare services tailored to individuals at every stage of life and contributing to sustainable social systems suitable for each country.

Hitachi's global offering includes IT-related digital technologies such as artificial intelligence and big data analytics, as well as operational technology and products.

Learn more at [hitachi.com](https://hitachi.com).

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