HITACHI

Solution Profile

Hitachi Substation Monitoring Solutions

Secure and Monitor Critical Infrastructure



Ensure Secure Operations

Ensuring that aging infrastructure continues to function and remains secure at all times.

Bridge Skill Gaps

Working with a flat-to-declining supply of skilled labor to enable ongoing upkeep and on-site manual inspections.

Aid Governance

Accommodating changing rules about on-site activities with evolving rules around health and safety standards.

Intelligent Infrastructure Monitoring for Utility Substations

From roads and bridges to utility substations, critical infrastructure requires significant capital and labor to remain operational. New U.S. trillion-dollar policies aim to maintain, build, and modernize these assets to support growth and resilience. These pressures are especially acute in power generation, transmission, and distribution, where electricity must flow continuously.

Energy utilities face high fixed costs to keep infrastructure secure and functional while balancing regulatory limits and budget constraints, making modernization priorities difficult.

Without automation, monitoring, and predictive strategies, utilities often respond to incidents manually as they occur. They must balance rising downtime costs, safety, climate-driven maintenance pressures, cybersecurity demands, revenue growth, and customer satisfaction.

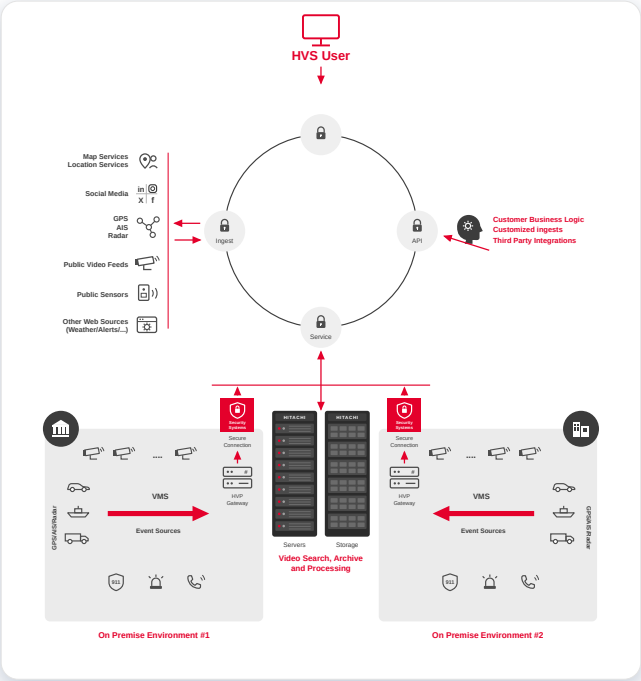
The Hitachi Solution

To improve operations, safety, and security, utilities need faster, more efficient data collection and analysis.

Hitachi solutions provide real-time information for safer, more predictive, remote-friendly operations and maintenance. This end-to-end solution supports remote inspection and monitoring of electrical substations with visual and thermal cameras, ruggedized PCs, edge and IT infrastructure, applications, and AI-powered analytics that increase autonomy and maximize sensor value.

Remote monitoring is achieved by utilizing network video and thermal equipment that allow remote connection to the different sites. Remote inspections are enabled using pan-tilt-zoom presets in the installed cameras that show the components and items under inspection in great detail.

An orchestrator application uses predefined camera presets and tasks to schedule autonomous data collection while monitoring user activity. Data stored in Hitachi Visualization Suite (HVS) is accessible via web, mobile app, or authorized API. Hitachi iQ supports AI model development with annotated images across varied conditions. As models mature, they learn normal states, flag lower-confidence events, expand defect and equipment-state detection, validate images, update KPIs, and surface dashboard trends.



Optimize Your Utility Substations While Improving Safety, Security and Operations

At Hitachi, we view the modern substation as a critical hub that requires consistent attention maintain consistent power delivery to its surrounding communities. Hitachi brings together people and technology through the power of data intelligence to achieve three basic goals:

- Enhance safety – not just for utility workers, but also for third-party vendors and unauthorized personnel.
- Increase resiliency – enabling utilities to understand weak points in their facility infrastructure from both a security posture and a maintenance perspective, to allow for a more proactive and predictive actions towards maintenance and operations.
- Operational efficiency – optimizing facilities team efforts, allowing them to prioritize their workloads and understand where they are needed right now to maintain maximum uptime for end users.

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