HVS User guide

The guide describes the features of Hitachi Visualization Suite and provides step-by-step instructions for using it.

Overview

Hitachi Visualization Suite is a state-of-the-art software solution that provides geospatial mapping of data from multiple sources to provide operational insights. Visualization Suite provides comprehensive integration capabilities with video and data devices, analytics, and private entities. The integrated event data is visualized over the map for easy access to realtime data. Visualization Suite integrates with all major law enforcement systems, including third-party video management systems, computer-aided dispatch (CAD) or 911 systems, license plate readers, gun-shot detection, and third-party sensors. This solution benefits both public safety officials and private entities.

Geospatial visualization of data from multiple sources

In today’s digitized world, both public and private organizations must analyze a large amount of data coming from a multitude of sources. For these organizations, accessing, correlating, and analyzing the data can be a challenging task. Visualization Suite provides a “single pane of glass” for geospatial visualization to gain the situational awareness required to better respond to problems or even prevent them from occurring.

Cloud and on-premises solutions

Visualization Suite offers multiple deployment options. You can use Visualization Suite as software as a service (SaaS), software deployed on premises, or hybrid to match your IT infrastructure strategy.

Video surveillance interoperability

The Visualization Suite video connectors allow you to integrate with the existing video management systems (VMSs) and Hitachi Video Management Software (HVMS), which gives a comprehensive, all-in-one solution that simplifies video system deployment and management.

Intelligent inspections

Hitachi Intelligent Infrastructure Monitoring (HIIM) solution helps in remote inspection and monitoring of infrastructures. HIIM includes thermal and visual spectrum cameras, rugged computers, edge and cloud applications, video and data analytics, and HVS inspection engine service. The HIIM solution is integrated with HVS using the Inspection Automation feature. HIIM automates remote monitoring tasks, including temperature tracking, digital and analog gauge readings, and overall health. It ensures that critical components function optimally and within normal operating ranges. This real-time monitoring helps identify potential issues before they escalate into major problems, thereby minimizing downtime and enhancing infrastructure safety and efficiency. For more information, see Administer intelligent inspections.

Incident management and Standard Operating Procedure (SOP)

An incident is an event that is unplanned and can adversely affect an organization and its business. For example, flooding of a building, fire accident, or system failure. Incident management in Visualization Suite enables you to create a process that can help in restoring the normalcy within the designated SLA and, thereby minimize the impact on the business operations. You can classify incidents into the right incident type and manage incidents based on the assigned priority, severity, and SOPs. See Manage incidents (on page 91) for more information. Visualization Suite allows you to create SOPs or guided responses for every incident type. These step-by-step instructions help workers responsible for incident management to carry out the routine operations while following the necessary protocols. SOPs helps to achieve efficiency and uniformity in performance, while reducing miscommunication. See Standard Operating Procedure for more information.

Dashboards

The Dashboard feature provides visualization of historical event data and allows you to analyze event statistics. A custom dashboard add-on (available in release 6.0.0) extends the native analytics capability of Visualization Suite by allowing organizations to leverage Pentaho, Hitachi's industry-leading business intelligence software, to generate and publish custom reports to Visualization Suite. See Overview of Basic and Custom Dashboards for more information.

Entity management

Organizations rely on a variety of data from disparate sources in real time to improve situational awareness. Visualization Suite lets you tailor geospatial mapping of different types of data, or entities. For example, you might want to view gunshots only within the past 12 hours, instead of all gunshots that have ever been reported. On the other hand, stationary entities, such as buildings and cameras, are persistently visualized as they provide important data points to improve situational awareness.

Data integration

Visualization Suite integrates data from multiple sources, including analytics applications and sensors. The majority of events are ingested data that is aggregated automatically in Visualization Suite, eliminating the need for manual entry of each event. Events such as computer aided dispatch (CAD) events coming directly from 911 calls, gunshot detections coming from directory sensors, license plate recognitions, and social media events are immediately available from the map view.

Data mapping

Using the Data Mapping feature, HVS can seamlessly integrate with IoT sensors and process real-time data from various sources. For example, external sensors that detect alerts can transmit their data to the HVS ETL engine using either the HTTPS or MQTT protocol.

The source data is then translated into HVS data using a data map created by the administrator, eliminating the need for a dedicated connector. This enables external IoT devices to send their data to HVS in real-time. This flexibility helps administrators to make data available on HVS independently.

Slew to cue

The automated workflows, "slew to cue," enable a sequence of actions triggered by an event. For instance, in the event of a gunshot, HVS can quickly locate the nearest camera, direct it to the scene, bookmark the event, and send a list of nearby cameras to the field responder. When the responder logs into the system, the

camera is already focused on the incident scene, eliminating the manual process of finding and moving the camera. With one click, responders can play back the scene from 10 seconds prior. This feature is crucial in urgent situations where every second counts, allowing responders to act swiftly and effectively. Additionally, the bookmark feature enables investigators to identify and analyze the event later.

Advanced configurable workflow

Advanced configurable workflow helps HVS administrators to build custom conditions and select actions triggered by HVS entities. Each organization has unique assets and situations to manage, whether it is responding to gunshots, detecting intruders, or monitoring data anomalies during inspections. The highly configurable workflow accommodates these differences, enabling administrators to create conditions tailored to their specific needs. Administrators can use 'and' or 'or' conditions and group by expressions to build and execute actions when conditions are met. This automation streamlines processes and saves time compared to manual methods. For example, an operator will be notified when a gas meter anomaly is identified, a field responder will be alerted when a gunshot is detected, or an HVS entity will be pushed to an external system when emergency events are detected.

Identity management

Hitachi Visualization Suite users are now managed by a common identity management service that enables single-sign on across other Hitachi applications. In addition, this service enables integration with the customer’s active directory service. The existing HVS user management service is still used for service accounts for third party system integrations.

Role-based user permissions

HVS role-based permissions are highly configurable. You can use groups to associate users by organization and control their access to specific entities and actions within HVS domain. For example, a police department group can have cameras located within their district, with no visibility outside of that area. Some officers might have live viewing capabilities, while investigator officers might only have playback access to view past incidents. Field responders might have access to car accident scenes, while operators within a building might have visibility over building management assets and events, such as stolen cards or broken doors. This allows each operator to focus on their specific responsibilities. To set this up, you first define rules that specify the level of access users will have to various entities, and then assign these rules to each group.

Timeline feature

The Timeline feature can be used to view historical data. Using Timeline, you can go back and view a snapshot of entities (events, inspections, incidents) for a specific time of day. Timeline also gives easy access to archived footage and event data, enabling you to view scenes for a specific time around the event. See View entity timelines.

Search capabilities

Visualization Suite allows you to search for particular events and objects by setting a search area. For example, you can look for all burglaries and CAD calls for the last three days within the city limit. Results that match these criteria are displayed on the map view and the list view. For details, see Use search.

Language options

The HVS user interface is designed to be globally accessible, offering support for multiple languages. This ensures that users from diverse linguistic backgrounds can easily navigate and utilize the software. For more information about how to select your preferred language, see User preferences.

Security

Visualization Suite is designed with advanced security features to ensure the safety and security of the sensitive data. Because the data processed by the visualization system can be classified, all data going from the client network to Visualization Suite is unidirectional. Traffic going from behind the client secure network to the encrypted HVS Cloud Services is secured through Hitachi Vantara LLC Visualization Platform (HVP). See Security overview for details.

Gateways

Hitachi Vantara LLC Edge Gateway for Video is an intelligent edge device that integrates third-party video systems and performs transcoding for optimal cloud livestreaming and recording. Edge Gateway for Video also acts as a data ingestion service for external sensor data. Depending on the number of simultaneous livestreams anticipated from the source systems, several gateway options are available. A gateway combined with the Visualization Suite software enables a seamless integration into private-entity security assets. For details about the Visualization Suite video gateway, see the Installation Guide using the OVF templates.

End-to-end IoT solution for smart cities

As one of the Hitachi's Smart Spaces and Video Intelligence solution offerings, Visualization Suite gives end-to-end, adaptable, and intelligent solutions for smart cities. These solutions use integration of big data, including video feeds, event data, and social media, to give realtime analytics that public safety officials can act on.

![End to end IT solution for smart cities](../assets/images/End to end IT solution for smart cities.png)

All solution components in the Smart Spaces and Video Intelligence solution stack are modular, functioning as building blocks for smart cities. They help all areas and organizations become safer and more effective, so they can thrive. The following video intelligence solutions are available for integration with Visualization Suite or for standalone deployment:

- Hitachi Video Analytics (HVA)
- Hitachi Video Management Software (HVMS)
- Hitachi Video Management Software Base (HVMS Base)