
COMPLETEVIEW 20/20 A&E SPECIFICATION OVERVIEW & DIFFERENTIATORS

COMPLETEVIEW 20/20 v5.2

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Introduction

Salient Systems provides a suite of materials and resources to aid in project design and specification. This document provides an overview of those resources and a listing of CompleteView 20/20 software differentials which can aid in identifying the CSI spec items that set CompleteView 20/20 apart from alternative products.

Design Resources Listing

Resources for assistance in system designs are located in both the Support and Reseller Login sections of salientsys.com. Materials include:

- CompleteView 20/20 ONE, Pro & Enterprise A&E CSI specifications available in Word and PDF format.
- CSI A&E specifications for Salient's line of NVR servers.
- CompleteView 20/20 End User license Agreement
- CompleteView 20/20 Supported Cameras List
- CompleteView 20/20 & Salient NVR hardware Data Sheets.

In addition, Salient's *Design Tool Wizard* is available for consultants and system designers. For a user account to access the Design Tool Wizard, which additionally provides MSRP pricing on Salient servers and software, please send a request to info@salientsys.com.

CompleteView 20/20 A&E Specification Highlights

Listed in this section are specification items available in the CompleteView 20/20 A&E CSI specs which differentiate CompleteView 20/20 from the majority of alternative VMS products. Product Differentiators listed are based on CompleteView 20/20 Enterprise specification, however, the majority of differentiators apply to CompleteView 20/20 ONE and Pro products. The section and text of the spec item is included for easy reference and is followed by a description of the feature and its benefit.

2.2 VIDEO MANAGEMENT SYSTEM COMPONENTS

B. Video Management System Concept of Operation

16. The VMS shall provide a Video Proxy capability allowing for a designated server to be a single point of client connection requests for video recording to any of multiple Recording Servers.

CompleteView 20/20 Enterprise includes the Video Proxy. A Video Proxy server is used to provide video from many CompleteView 20/20 servers through a single web interface. This allows administrators to reconfigure CompleteView 20/20 servers, IP addresses and other network configuration without affecting the user experience. Additionally, outside organization can access video from a multi-server CompleteView 20/20 deployment without the need to open network access to each individual CompleteView 20/20 server.

17. The VMS shall support QuickTrack recording allowing a user to custom record a series of cameras being focused on. This provides the ability to record the cameras of interest when tracking a suspect across multiple cameras.

CompleteView 20/20 supports the configuration of 'QuickTrack' camera recording. In CompleteView 20/20's Live View, users can dynamically select any camera they have permission to access into a QuickTrack recording as a custom video feed. An operator would begin QuickTrack recording on a given video feed, then click each subsequent video feed as the action occurred. For instance, in a retail store, the Loss Prevention professional could use QuickTrack to record the tracking of a suspect as the suspect moves from camera to camera. Later the QuickTrack video feed can be searched and reviewed like any other camera making it easy to review important live investigations.

C. Licensing

1. IP camera license shall not be tied to a hardware address (MAC Address).
2. The VMS Server software shall not be tied to the server hardware.

4. Client applications can be installed an unlimited number of times and may be running simultaneously without additional licensing cost.

CompleteView 20/20 is licensed only by the number of cameras connect to the CompleteView 20/20 server(s). Client applications can be installed any number of times without the need to obtain licenses or incur additional costs.

5. Licensing for directly connected analog cameras shall include for no additional cost, PCI or PCIe, connected encoding hardware. The VMS manufacturer shall allow for trade in or conversion of the encoding hardware for the equivalent number of IP camera licenses in the future allowing the user to switch from analog cameras to IP cameras without incurring additional licensing cost.

CompleteView 20/20 is a true hybrid VMS platform. Salient Systems provides encoding hardware for analog cameras, at no additional cost, with camera licenses. When licensing CompleteView 20/20, cameras licenses are purchased as 'analog' or 'IP'. The per-camera cost of the licenses are the same, however analog licenses are purchased in groups, not individually. The analog licenses come with a PCI or PCIe capture board, which eliminates the need for a separate IP encoder to connect analog cameras to the VMS. This saves substantial cost for users with existing analog cameras.

When the analog cameras are eventually replaced with IP cameras, the capture board encoding hardware can be traded in or 'converted' for an equivalent number of IP camera licenses at no cost. The customer never loses their investment in the Video Management System even as they change camera technology.

Using Salient's Gen II capture card technology, the cards do not need to be sent back to Salient for IP licenses. A software setting allows any analog camera port to be converted to an IP camera channel.

2.4 SYSTEM SOFTWARE CHARACTERISTICS

A. Recording Servers

15. The VMS shall include a built-in archiving feature for the purpose of moving recordings from their original storage volume to a different local or network-attached storage volume on an administrator-defined schedule. The VMS shall be capable of separately archiving video marked as motion recordings, external alarm recordings and scheduled recordings or any combination of those types.

CompleteView 20/20 has a built in archiving feature. The CompleteView 20/20 administrator can define a schedule for video to be moved from the primary storage volume(s) to any secondary storage volume(s) for long term retention. Supported storage types include Direct Attached, NAS and SAN storage. A unique characteristic of the feature allows the administrator to specify only Motion recordings, Alarm recordings or Scheduled recordings, or any combination of those, to be archived. An example configuration may be to keep all Scheduled and Motion recordings on the local storage volume for 10 days, then archive only the motion recordings to long term storage.

16. The VMS shall provide a stable recording environment via a modular video storage and data management architecture to minimize common database corruption situations. Video and audio storage shall be stored outside of a database in a flat file structure. This reduces the potential of video/audio data corruption and allows rapid database rebuilding with no restart required in the event of system failure.

The Backup feature in CompleteView 20/20 has the same capabilities as the Archive feature but copies recordings instead of moving them. Backup makes a copy of the original video on a schedule and allows the administrator to define the type of recording to be copied.

17. The VMS shall provide “Dynamic Resolution Scaling” to minimize bandwidth sent to displays for either live or recorded video. While video sent from the camera is recorded in its original resolution, the server automatically resizes the video stream sent to the display based on the size of the display window. The viewing pane can be resized at any time and the server will automatically adjust accordingly with no user intervention required to adjust the video stream. This provides for the lowest possible bandwidth consumption without sacrifice of display quality.

Dynamic Resolution Scaling automatically resizes the resolution of video feeds to the size needed by a client application for display on the screen. This prevents very high resolution video from being transmitted to and processed by a client computer, saving bandwidth and processing

18. The VMS shall provide “Dynamic Video Decoding” to intelligently decide when server-side processing of video streams is necessary. Dynamic Video Decoding shall enable video processing dynamically when users begin live viewing video streams, to enable Dynamic Resolution Scaling, or when server-side motion detection is used or when the user requests other system features requiring server side processing of video streams.

Dynamic Video Decoding (DVD) monitors which camera feeds are currently being viewed in Live Mode. Feeds that are not being actively viewed are not processed for live viewing by the server, significantly reducing CPU load.

19. The VMS shall provide “Dynamic Frame Throttling” which allows the VMS to dynamically toggle the number of frames streamed to clients live-viewing video when the NVR is under heavy processing load. Dynamic Frame Throttling will prevent video latency under heavy NVR processing conditions.

When Dynamic Frame Throttling (DFT) is enabled, CompleteView 20/20 Server monitors incoming video queue length. When queue length exceeds a certain threshold, DFT engages and processes only key video frames until the queue length is restored to normal levels. This helps reduce video latency, maintain video quality, and reduce CPU load.

CompleteView 20/20 is capable of interfacing with select models of Samsung and HikVision NVRs (Network Video Recorder) and DVRs (Digital Video Recorder)*. CompleteView 20/20 can access both live and recorded NVR video.

C. Desktop Client

The VMS shall provide a Desktop Client software component, wherein all configuration, live viewing, playback, maintenance, alarm, and system monitoring functions shall be accessible by authorized users from within one, unified interface.

1. There shall be no software-imposed limitations on the number of clients installed.
2. The client shall utilize either application specific credentials or integrate with Active Directory for authentication.
3. The configuration of the appearance and functionality of the client shall be customizable and follow the user from workstation to workstation.

E. Client Configuration

2. The Configure tool shall allow the administrator to configure a hierarchical organization (Structured View) to contain view layouts and maps within. The hierarchy may consist of sites including Regions, Country, State, City, Building, School, and Store used to organize individual or multiple view layouts and maps.
 - a. Sites shall be able to contain View Layouts and Maps.
 - b. The VMS shall have no software imposed limit to the number of sites which can be configured.
 - c. Each site shall have a customizable name, allowing for easy identification of what the structure represents.
 - d. Each site shall have individual user and group access rights. Users or groups of users who are not permissioned to view a given site shall not see the site or any other sites contained within a non-permissioned site.

CompleteView 20/20 Enterprise provides the 'Structured Views' feature allowing administrators to organize view layouts and maps into a hierarchy. This is similar to how Windows allows files to be organized into folders. Organizations with many view layouts and maps can organize them by geography, department, category or any other means using Structured Views.

4. The Configure tool shall allow the configuration of unlimited tiled view layouts for the display of live video for a given Recording Server. Tiled view layouts can be configured per user or group. Up to 100 cameras can be auto setup for viewing on a target display in configurable grid arrangements.

CompleteView 20/20's Desktop Client has no software imposed limitation on the number of cameras that can be displayed on a screen. View layouts can be configured from templates, custom drawn or auto configured up to a 10x10 layout. CompleteView 20/20's Dynamic Resolution Scaling feature means client computers do not need excessive processing power or a high bandwidth connection to display view layouts containing high numbers of video feeds.

5. The Configure tool shall allow for the setup of map based display of video. Unlimited site maps can be configured per user or group.
 - g. Each camera can be configured with a cone representing the camera's field-of-view. Cone angle, width and length may be controlled.

In addition to hierarchical map based display of video, CompleteView 20/20's Desktop Client can display a cone representing the camera's Field of View. The FOV cone is drawn by the administrator at the time of setup and helps the system operator identify the camera's exact direction and range. The FOV cones also change color to indicate motion or alarm activity on the camera.

6. The Client Configuration tool shall allow the administrator to set which live viewing elements will be accessible to the user. The administrator shall be able to enable or disable the display of live view layouts, maps, Sites/Zones or servers & cameras from the VMS client user.

The CompleteView 20/20 administrator can customize what elements of the security system are displayed in the Desktop Client on a user-by-user basis. Any combination of servers and cameras, view layouts, maps and Structured Views can be displayed or hidden from the operators view.

F. Live View Capabilities

- a. The system shall be capable of displaying any number of live cameras concurrently per monitor. Video can be displayed on multiple monitors by opening multiple tabs within Live View. There shall be no software imposed limitation on the number of client applications open simultaneously.

In addition to the support of any number of cameras per monitor, CompleteView 20/20's Desktop Client can be opened any number of time per computer. This allows for a customized multi monitor display. Combined with CV SpotLight, control room display can be easily customized to the user's needs.

H. Pan-Tilt-Zoom Controls (PTZ) & Fisheye Camera Controls

8. The VMS shall provide an "Automated Attendant" feature. This allows programming of fixed cameras that detect motion to direct a PTZ camera to move and focus on a preset location. This flexibility provides security coverage in multiple locations with multiple views. Parameters include:
 - a. The system can give "high priority" status to important locations so the view is maintained despite activity in lower priority areas.
 - b. Provide 10 (ten) motion zone priority levels.
 - c. Adjustable Hold Time prior to responding to a lower priority alarm.
 - d. Adjustable Dwell Time before cycling to a motion alarm with the same priority.
 - e. Zone Cycling which, when motion detection is detected in multiple zones with the same priority level, will alternate between the alarmed presets.

I. Motion Detection/External Alarms Capabilities

7. The VMS shall provide a "CV GeoView" feature, which, upon a camera alarm, shall automatically display the live video feed from the activated camera in one video tile, and the relevant map in its own tile, provided the "Worldmap" is currently loaded.

CompleteView 20/20 provides an Automated Attendant feature which automatically controls Pan Tilt and Zoom cameras based on events.

P. Video Wall Monitoring

1. The VMS shall be capable of pushing and displaying tiled video feeds, View Layouts, and Maps from one or more Recording Servers to remote workstations connected to one or more monitors.

CompleteView 20/20's Video Wall can take video streams, Views, and Maps from one or more Recording Servers and span the information across multiple monitors in remote locations.

Q. Video Proxy

1. The VMS Video Proxy shall be a Windows server service which can be a single point of Web Client connection requests for video from to any of multiple Recording Servers.
5. The VMS Video Proxy shall allow for per-user customization options, allowing for custom web interface branding for each user. Customizable web interface elements shall be:
 - i. Page title
 - ii. Header text and logo

- iii. Error message
- iv. Display of Recording Server detail.
- v. Display name of Recording Servers.

CompleteView 20/20's Video Proxy allows administrators to customize many elements of the Web Interface to CompleteView 20/20. Elements such as the page title, header text, logo graphic and error message can be customized on a per user basis. This feature can be used in several ways:

- To assist users in identifying the location of cameras.
- Outside organizations, like a 911 dispatch, can easily identify the security system they're accessing.
- An organization can brand the interface with their name and logo.
- Error text can specify different numbers to call or administrators to contact when problem occur.

S. Network Bandwidth Control

1. The VMS shall allow configuration of certain communications between its components to deliver data only when requested in order to reduce bandwidth consumption across networks. Configurable elements shall be:
 - i. Status enquiry period between the selected Recording Server and Management Server/Desktop Client
 - ii. On-demand event notification between the selected Recording Server and Management Server/Desktop Client

CompleteView 20/20 allows for the configuration of individual Recording Servers to operate in low-bandwidth environments, such as found on oil-platforms, Ranger stations, and other remote locations where connectivity may be restricted. Administrators may increase the time interval between Management Server polls of a given Recording Server thus reducing bandwidth consumption. In addition, event notification may be configured for on-demand only delivery, also reducing bandwidth consumption.

T. ProxyCast

1. The VMS shall allow a single local Recording Server to deliver live video from multiple remote Recording Servers associated with the same Management Server to clients in order to limit bandwidth and/or processing loads on those servers.
2. The ProxyCast server shall pull resolution and frame rate capped video from the other Recording Servers.
3. The ProxyCast server may work in conjunction with Network Bandwidth Control as configured to deliver video only on demand.

ProxyCast allows a single Recording Server to deliver live video from multiple remote Recording Servers associated with the same Management Server to desktop, web, or mobile clients. This feature is especially useful in reducing bandwidth demands on Recording Servers in areas of constricted connectivity or when a Recording Server regularly operates under a heavy CPU load.

Web Client

Beginning with CompleteView 4.5™, the Web Client streams H.264 video in any browser compatible with Microsoft™ Silverlight, eliminating the need for proprietary APIs, such as DirectX.

Additional Resources

Visit the Salient website, www.salientsys.com, for additional support and CompleteView 20/20 training:

- **Manuals & Documentation** (<https://support.salientsys.com/hc/en-us/categories/115000292747-Knowledge-Base>) – Includes Administrator’s Manual, Client User Manuals (including Video, Alarm and Web clients), How To Guides and Tips.
- **Online Tech Support** (<https://support.salientsys.com/hc/en-us>)– Get quick access to online tech support modules that cover the most frequently asked product questions, such as “Adding and Moving IP Camera Licenses.”
- **Training** (<https://support.salientsys.com/hc/en-us/categories/115000302988-Training>)– we offer both online and classroom training.
 - CompleteView 20/20™ Online Certification - Register online for access to interactive training modules covering the Video, Alarm, Mapping and Web clients.
 - CompleteView 20/20™ Classroom Certification - Our traditional classroom training is available throughout the United States. Please visit the Salient website for link to online training, training calendar, agenda and registration.

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