## savVi™ Version 5.3

savVi™ is a unified video analytics software solution that offers a wide variety of analytics functionalities through a single, easy to use platform that integrates with existing or new surveillance systems. Featuring real-time event detection, video search and business intelligence applications, savVi provides a complete solution to the diverse video analytics requirements of multiple vertical markets.

The tables below list the major technical features and functionalities of savVi. The data presented can be used to assist in responses to bids, preparation of proposals or as a general source of information for design purposes.

## Product Characteristics

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| Architecture | Distributed analytics, Server analytics |
| Minimal Hardware Requirements | Intel i5 or comparable CPU, 8GB RAM, 500GB/100GB of free disk space for production/demo environment respectively, Graphic card compatible with HD hardware acceleration such as Intel HD Graphics or any of the NVIDIA and ATI Radeon HD cards<br>For project-specific hardware requirements, complete this form |
| Supported Operating Systems | Windows 2012 and 2012 R2 (64-bit), Windows Server 2008 R2 SP1 (64-bit), Windows 7 SP1 (64-bit), Windows 8.1 (64-bit) |
| Supported Databases | MS SQL Server Express Edition (bundled with savVi), MS SQL Server 2012 (Standard and Enterprise editions), MS SQL Server 2008 R2 (Standard and Enterprise editions) |
| Supported Camera Types | Fixed, PTZ, Panoramic |
| Supported Camera Sensor Types | CCD, CMOS, Thermal |
| Supported Cameras & Encoders for Optimized Offering | Axis, Cisco, Hikvision, IQinVision, Samsung Techwin, Verint, Vivotek<br>For complete and up-to-date information on supported devices, click here |
| Supported Video Management Systems (VMSs) | Cisco, Genetec, ISS, Milestone, OnSSI, Pelco, Verint<br>For complete and up-to-date information on supported VMSs, click here |
| Supported Video Alarm Management Software | SureView Systems<br>For complete and up-to-date information on supported vendors, click here |

## Management & Administration

| Enterprise Grade Features | |
|---|---|
| Centralized Management | All configuration and setup is performed on a single central server |
| High Availability | Complete high availability and failover support of all server components |
| Automatic Set-up & Calibration | Automatic calibration and camera configuration via the Automatic Scene Learning tool (ASL) |
| Bulk Camera Management | Cameras can be configured as a group |
| Automatic Camera Discovery | Cameras can be automatically added to the server without manually specifying their IP address |
| Automatic Mapping to VMS Cameras | Cameras with embedded Vi-Agents can be automatically linked to the corresponding cameras within the VMS |
| Complete Flexibility | Enables deployment of any combination of video analytics applications on every camera with no restrictions |
| Deploy in Any Environment | All analytics capabilities can be used both indoors and outdoors |
| Video Quality Monitoring | |
| Obscuring | Automatic alert when the video feed is obscured |
| Camera Shifted | Automatic alert when the camera's field of view (angle) is changed |
| Saturation | Automatic alert when the saturation of the camera increases beyond a specified level |
| Low Light | Automatic alert when the light decreases beyond a specified level |
| Camera Disconnection | Automatic alert when communication with the camera is lost or there is no live video stream |
| Low Frame Rate | Automatic alert when the frame rate drops beyond a specified level |
| Database | |
| Redundancy / Failover | Deploy redundant servers to eliminate any single point of failure |
| Backup & Restore | Ability to backup the database and restore the database from a backup when required |
| Automatic Archiving | Automatically archives the database and frees space when it reaches a predefined size |

| API | |
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| Web Service Interface | Offers a web service interface that enables third party video viewing and management applications to integrate with savVi |
| License Information | |
| SKU | License | Description |

| SKU | License | Description |
|---|---|---|
| VIRDNT | Redundant Server & VAP License | Redundancy package with failover support for analytics server (per server) and/or VAP |

## Real-Time Detections & Alerts

savVi delivers highly accurate real-time event detections, eliminating the need to rely on the alertness or response discipline of the surveillance system's operator. Users define potential events of interest in advance and receive alerts when such events occur, enabling rapid responses to incidents, as they emerge.

### Licensing Options for Real-Time Detections & Alerts

| SKU | License | Description |
| --- | --- | --- |
| SAVRT1 | Real-Time Events License – 1 Rule | Enables 1 rule type for real-time events (per camera) – see list of "Real-Time Detection Rules" below |
| SAVRT2 | Real-Time Events License – 2 Rules | Enables 2 rule types for real-time events (per camera) – see list of "Real-Time Detection Rules" below |
| SAVENT | Real-Time Events License – Enterprise | Enables all rule types for real-time events (per camera) – see list of "Real-Time Detection Rules" below |
| SAVSET | Real-Time Events License – PTZ Presets | Enables multiple rule types for real-time events on PTZ presets (per camera) – see "Real-Time Detections on Presets" below |
| SAVPTZ | Real-Time Events License – PTZ Enterprise | Enables multiple rule types for real-time events on PTZ presets and target tracking (per camera) – see "Real-Time Detections on Presets" & "Autonomous Tracking" below |
| SAVCOR | Real-Time Events + Video Search License – Corporate | Enables all rule types for real-time events and video search (per camera) |

### Real-Time Detection Rules

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| --- | --- |
| Moving in an Area (Person / Vehicle) | Detects a person / vehicle moving in a predefined area |
| Crossing a Line (Person / Vehicle) | Detects a person / vehicle crossing a predefined line |
| Tailgating (Person) | Detects a person that crosses a predefined line within a predefined time interval after the person that crossed previously |
| Tailgating (Vehicle) | Detects a vehicle that crosses a predefined line within a predefined time interval after the vehicle that crossed previously |
| Loitering | Detects a person sojourning inside a predefined area for longer than a predefined time period |
| Crowding | Detects a crowd if the density of people in a predefined area exceeds a predefined threshold (%) for a predefined time period |
| Occupancy | Detects a group if the number of people in a predefined area exceeds a predefined threshold (number) for longer than a predefined time period |
| Stopped Vehicle | Detects a vehicle that stops in a predefined area for longer than a predefined time period |
| (Vehicle) Speed Analysis | Detects if the average vehicle speed in a predefined area drops below a predefined threshold for longer than a predefined time period |
| Suspicious Object | Detects a static object that has been left unattended in a predefined area for longer than a predefined time period |
| Asset Protection | Detects a predefined static object removed or obscured from a camera's field of view for longer than a predefined time period; Up to 20 static objects can be defined in a camera's field of view |
| Lighting Detection | Detects a light (signal) appearance in a predefined area of the camera's field of view for longer than a predefined time period |

### Real-Time Detections on PTZ Cameras

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| --- | --- |
| Real-Time Detections on Presets | Enables detections on the following rules on preset positions of a PTZ camera's virtual tour:<br>- Person / vehicle moving in an area<br>- Person / vehicle crossing a line<br>- Stopped vehicle<br>- Suspicious object |
| Autonomous Tracking | Locks a PTZ camera onto a detected moving target (person / vehicle) by controlling the camera's Pan Tilt Zoom, and tracks that target |

| | |
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| **Real-Time Detections on Panoramic Cameras** | |
| Real-Time Detection Rules on Panoramic Cameras | - Moving in an Area (Person)<br>- Crossing a Line (Person) |
| **Performance** | |
| Number of Rules per Camera | Unlimited |
| Number of Detected Targets | Unlimited |
| Number of Detection Areas | Unlimited |
| Number of Rule Schedules | Unlimited |
| **Rule Management** | |
| Rule Scheduling | Activate / deactivate rules according to predefined schedules |
| Configurable Rule Parameters | Wide range of advanced parameters to suit various scenarios and environments including: Interval between Events, Camera Type (CCD/CMOS/Thermal), Masking Level and Video Quality Monitoring settings |
| Rule Testing & Optimization | Improves the detection and performance of a selected analytics rule by analyzing its previous detections, comparing rule settings and selecting the optimized configuration |
| Rule Chaining | Ability to create a sequence of detection rules by configuring a specific rule to activate / deactivate other rule/s |
| Event on Non-Detection | Alert when an activated rule does not detect the target after a specific time threshold |
| Configurable Sensitivity | Determines the sensitivity of detection according to the physical conditions of the scene; Set to a higher value to improve probability of detection if no events are being generated; Set to a lower value if too many false alarms are being generated |
| **Event Dispatcher** | |
| Event Notification | Events can be sent to external applications, such as designated video alarm management software, email (SMTP), SMS, MMS etc. |

## Video Search

savVi boasts automatic and effortless retrieval and analysis of recorded video, replacing cumbersome, labor-intensive, manual searches. Users define parameters regarding the event / object of interest and receive matching search results within seconds, enabling rapid access to specific video segments buried in the stored video.

### Licenses for Video Search

| SKU | License | Description |
|---|---|---|
| SAVVSQ | Video Search License | Enables video search queries (per camera) – includes all the capabilities listed below |
| SAVCOR | Real-Time Events + Video Search License – Corporate | Enables all rule types for real-time events and video search (per camera) |

### Search Criteria

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|---|---|
| Camera Selection | Apply search on selected / all cameras |
| Time Period Specification | Search according to specific time period or recurring time periods |
| Target Type | Search for specific target type (Person / Vehicle / Static Object) |
| Target Behavior | Search according to the specific behavior / state of the target |

| Target Type | Behavior |
|---|---|
| Person | Moving in an area for a specified duration, Crossing a line, Occupancy, Crowding |
| Vehicle | Moving in an area for a specified duration, Crossing a line Stopping in a specified area |
| Static Object | Suspicious object, Asset removed |

| | |
|---|---|
| Target Color | Search according to specific target color |
| Target Size | Filter according to specific target size |
| Dwell Time | Search according to interval of dwell time |
| Similar Targets | Select a vehicle or person and then search for similar looking targets |
| Search Sensitivity | Controls the tolerance of the search query by selecting the sensitivity level to include / exclude similarities / proximities |

### Search Results - Viewing Options

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|---|---|
| Thumbnails | Displays each search query result in a thumbnail image showing the found target (person / vehicle / object). Users can play back the results. Provides automatic zoom in on the detected target based on the available recorded video resolution. |
| Video Summary | Displays all search query results in a single clip, as segments, allowing quick review of the video footage for all detected events. |
| Target Path / Location | Displays the motion paths of found moving targets (persons or vehicles). Alternatively, a graphical overlay is displayed indicating the locations of found targets (static objects) that were added to or removed from a field of view or to / from a predefined area within a field of view. Users can play back each motion path / found target. |
| Site Map | Visualization of motion data gathered from individual cameras deployed at one site onto a complete site map. By using "Site Map" view, a user can see the "Target Path / Location" on a larger map, showing multiple camera displays in one view. |

### Search Query / Results Management

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|---|---|
| My Queries | Save a search query definition as a preset for future use |
| My Search Results | Save selected items from the search results for future use |
| Video Clip Export | Export selected event footage from the search results as an independent video file |

| Video Search on Panoramic Cameras | |
|---|---|
| Video Search Criteria for Panoramic Cameras | Target behavior of:<br> - Person moving in an area<br> - Person crossing a line |
| Performance | |
| Number of Cameras for Simultaneous Search | Unlimited |
| Number of Detected Targets | Unlimited |
| Number of Detection Areas | Unlimited |
| Query Time | ~5 seconds per camera per 24 hours of recorded video |

## Business Intelligence

savVi offers automated statistical analysis to present traffic volumes, movement trends and motion patterns, enabling effortless extraction of operational data from surveillance video. Equipped with such information, facility managers, marketing leaders and business owners can make educated decisions regarding various operational and resource allocation aspects at their facility.

| License for Business Intelligence | | |
|---|---|---|
| SKU | License | Description |
| SAVVBI | Business Intelligence License | Enables business intelligence rule types and generation of statistical information (per camera) |
| SAVBIP | BI Portal License | Enables one year access to the BI Portal (license required for every camera enabled with SAVVBI) |

| Business Intelligence for Statistics Reports Application | | |
|---|---|---|
| Statistics Reports Application | | savVi's built-in reporting tool which enables the generation of statistics reports |
| Business Intelligence Rules for Statistics Reports Application | Counting (People / Vehicles) | Counts people / vehicles crossing a predefined line/s (bidirectional) |
| | Speed Analysis (Vehicles) | Vehicle speed data is continuously gathered and collated |
| | Occupancy (People) | Occupancy information is continuously gathered and collated |
| | Crowding (People) | Crowding information is continuously gathered and collated |

| Query Results – Viewing Options | |
|---|---|
| Statistics Analysis | Presents graphs showing count results, obtained after performing a search, per camera and / or per timeframe. |
| Target Path / Location | Displays the motion paths of found moving targets (persons or vehicles). Users can play back each motion path. |
| Heat Map | Displays visualization of traffic areas ("hot zones") within the camera's field of view. Users can play back each heat map value to show the customer traffic at that location. |
| Site Map | Projects motion data (pulled from "Target Path / Location" view or "Heat Map" view) from individual cameras at one site onto a complete site map. |

| Business Intelligence on Panoramic Cameras | |
|---|---|
| Business Intelligence Rules on Panoramic Cameras | Count People |
| Business Intelligence Queries on Panoramic Cameras | All queries using the target behavior of:<br>- Person moving in an area<br>- Person crossing a line |

| Business Intelligence for BI Portal | |  |
|---|---|---|
| BI Portal | A cloud-based portal which allows aggregation, analysis and presentation of data acquired from surveillance systems at different locations through a single, web-based interface | |
| Business Intelligence Rules for BI Portal | Counting (People / Vehicles) | Counts people / vehicles crossing a predefined line/s (bidirectional) |
| | Speed Analysis (Vehicles) | Vehicle speed data is continuously gathered and collated |
| | Occupancy (People) | Occupancy information is continuously gathered and collated |
| | Crowding (People) | Crowding information is continuously gathered and collated |
| Connectivity Requirements | https-based connectivity from savVi to BI Portal is required | |