Ocularis™ IS - Specifications Sheet

Version 3.0, April 2012

For full list of features, see the Ocularis Architecture & Engineering (A&E) document, available by request.

General

Ocularis is an IP-video surveillance and security platform which includes a full-fledged VMS, combined with comprehensive PSIM functionality. It provides:

- Integration and coordination of integrated physical security, content analytic and other detection systems;
- Full VMS functionality with centralized management of cameras, connected devices, recording servers and redundant servers, at multiple sites.
- Centralized event, end-user rights and video recording and distribution management.

The Ocularis Platform is offered in four feature sets – PS, IS, CS and ES – to meet the needs of organizations of all sizes and types.

The Ocularis IS Feature Set was designed for organizations operating at multiple locations with no size limitations. It supports integration with access control, video analytic and other 3rd-party systems, meeting the needs of organizations with dedicated resources for live monitoring and alerting.

Major System Components

Ocularis is a unified, modular software platform that consists of a number of components:

1. **Ocularis Base**: Provides system-wide management, user access, shared event management, alarm and event correlation, video access, and distribution rights.
2. **Ocularis Recorder Component (RC)**: provides video recording, storage management, video delivery to users and camera management.
3. **Ocularis Client**: Access to video, management of alerts and shared event handling is done through the unified Video Client software.
4. **Add-Ons and Integrated Applications** including:
    - Video Content Analytics
    - Forensic applications, including Ocularis VideoSynopsis
    - Integrated physical security solutions (access control, radiation detection, contact closure, among others)

System Highlights

- **Full-Fledged VMS with Physical Security Information Management (PSIM) Functionality**

  Ocularis manages video and event data received from cameras connected to multiple recording servers, as well as from physical security, content analytic, environmental detection, transaction and other enterprise systems.

- **Designed for Integration**

  Ocularis allows the integration of a host of add-on components, including access control systems and other physical security systems via integration tools including Data Link Integration events, TCP/IP events, API commands, Contact Closure and more. An optional Software Development Kit (SDK) enables integration of 3rd-party components.

- **Open-Architecture Non-Proprietary Technology**

  Ocularis runs on off-the-shelf PC hardware; and supports all leading manufacturers' cameras and devices (over 900 models) as well as all industry-standard compression formats (MPEG4, MJPEG, H.263 and H.264).

- **Per-Camera Configuration of Video Streaming, Recording and Archiving Parameters**

  Optimized system resources is enabled through per-camera configuration for compression level/format, image resolution, bandwidth, framerate, conditional recording, retention time, archiving frequency, archiving location and more.

- **Flexible storage allocation**

  Storage, based on either size or retention period, is allocated per camera or camera group, with prioritization of important cameras. Video can be stored on local or network drives, using a database structure that eliminates the distinction between 'live recording' and 'archived' video.

- **Central Management for Alerting, Shared Event Handling, Client Asset and User Authorization Data**

  All recording servers and Ocularis Client users are managed by the Ocularis Base, which coordinates all event and alert handling, manages users' rights to specific cameras and functions system wide (Active Directory supported), and distributes all shared assets.

- **Highly Intuitive Unified Video Client**

  Ocularis Client offers a user-friendly operator interface, that takes only minutes of training to for full proficiency.

- **Live Monitoring with Instantaneous Investigation**

  While monitoring live video feeds, users can perform basic investigation on individual cameras – playback, digital PTZ and optical PTZ (for PTZ cameras) - without the need to switch to a dedicated investigation mode.

- **Multiple Investigation Tools**

  Ocularis Client's investigation tools, include the Kinetic Motion Timeline, multi-parameter motion detection, the Time Slicer and the Motion Slicer, as well as the optional VideoSynopsis and Video Content Analytics add-ons.

- **Shared Event Handling**

  Recorded events are handled simultaneously by multiple operators, bookmarked and exported as evidence in multiple formats, all within minutes.

Detailed Features and Functionality

Ocularis Base

The Ocularis Base Application manages the flow of event, user and system status data from the various system components.

- **Event Management**

  All events within the Ocularis platform, as well as messages received from external devices and systems, are managed through the Ocularis Base administrator. These include camera connected I/O messages; motion detection events; camera status events and others.

- **Composite Events ('Event Fusion')**

  Composite Events are created by linking two camera events or alerts, configured by sequence order, time interval and logical conditioning (e.g. 'If Door A opens, but no motion detection on Camera N, within 15 seconds'). Composite Events can be fused with other events to create complex detection scenarios, and assigned priority for push video and handling by Ocularis Client operators.

- **Automatic Push Video Alerting (Blank Screen Monitoring)**

  Upon event, a push-video alert of the camera that triggered the alert, or any other camera, can be sent to users running the Ocularis Client application. In addition, the alert can be configured to trigger alarms or send notifications to users.

- **Management of Users, User Groups and Authorizations**

  Users are assigned to Active Directory-supported authorization groups, granting users rights for cameras, assets and operations (including PTZ controls and presets, accessing recorded video and initiating recording for specific cameras).

- **Schedule-Based Distribution of Events to Users**

  Multiple activity ranges for each day of the week, as well as for overriding holidays, are configured through a simple GUI.

- **Camera Array Views for Video Client User**

  By logging in to the Ocularis Base, users gain access to Views – arrays of different dimension and pane size combination, containing camera streams, hotspots, carousels, web pages and images, and push-video panes. View panes can be configured for image resolution, framerate, carousel dwell time, etc.

- **Repository for Shared Assets System-Wide**

  Shared asset management, including maps for easy navigation to cameras, icons and events tagging/classification tables.

RC-I Recorder

- **Scalable Architecture**: unlimited number of cameras, connected to multiple recording servers (up to 64 cameras per server) at multiple sites; support for MJPEG, MPEG4, H.263 and H.264 compression formats as well as the ONVIF and PSIA standards; support for analog cameras via a wide range of IP video encoders.
- **Recorder Administrator Application**: all RC-I recording servers are configured via a single administration utility for setup and configuration of cameras and I/O devices, camera event settings, archive settings, scheduling, and soft buttons for manually triggered events.
- **System Configuration Wizards:** Used for adding cameras, configuring video, scheduling recordings, adjusting of motion detection, and user configuration.
- **Device Discovery and Detection:** Cameras and other devices are automatically discovered and detected based on user preferences (Universal Plug and Play, Broadcast and IP Range scanning)
- **Batch Device Configuration:** Settings for cameras, connected to multiple recorders, can be configured as a batch action.
- **Export/import of configuration data**: allows backup of recorder configuration files for fast recovery. Configuration data can be set off-line, allowing the configuration of the system prior to physical installation.
- **Set automatic system restore points**: Restore Points are created each time a configuration change is confirmed. Current and previous five sessions are stored and can be reapplied.
- **Recording and Archiving**: Unlimited recording with per-camera configuration for compression format (for multiple format cameras); image resolution; frame rate; image parameters (brightness, contrast), archiving retention time, and archiving location. Multiple archiving instances per day can be set to automatically and transparently to the user move video to networked drives.
- **Maintenance-Free, Transparent Archiving**: Multiple archiving instances per day on local or remote (network) drives. The archive for each camera is stored in a separate database. No down-time during transfer for video to archive.
- **Recording Viewer:** Dedicated application for viewing exporting multi-camera video databases.
- **Multi-streaming for optimized bandwidth and hardware utilization:** Optional monitoring and recording at two different frame rates and image resolution settings.
- **Recording Settings**: Individual cameras can be configured for recording on motion, continuous recording, or either based by schedule; and for pre- and post-recording (buffer) on motion/event. Optional speed-up recording on event.
- **PTZ Preset Settings**: 50 presets per PTZ camera, controllable from each camera's view pane in Ocularis Client.
- **Audio**: Two way audio (from camera/IP device-connected microphones and to camera/IP device-connected PA system); audio from cameras is recorded and included in export of evidence (as AVI file, using RC-I only).
- **Networking**: Support for Multi-Network operation; Network Addressing Translation (NAT); and SNMP (for camera status and camera event alerting).
- **Network Topology**: Support for segmented (VLAN or dedicated network) or shared networks, for physical network separation between the camera and the recording servers and video clients.
- **Outside Network Access**: the RC-I administrator is able to allow/prevent access from outside the local IP address range. The configuration settings allows selecting an Outside IP Address, Outside IP Port, Local IP Ranges, Maximum Number of Clients.
- **User Authentication:** Via MS Active Directory user accounts and groups/Windows accounts; user administration via Ocularis Base.
- **Logging:** Detailed logging, including Overall System log, Event log and Audit log
- **Virtualization:** Support for VMware and MS Virtual PC®
- **Background Operation**: RC-I runs as a Windows® service, with no need for user login. Service can be stopped/started, and provides system status and logging information.

Ocularis Client and Ocularis Viewer

Ocularis Client

- **Unified Client for Ocularis**: Ocularis Client is the main video client for all OnSSI Ocularis solutions.
- **Unlimited Concurrent Users**: No limit on the number of concurrent client users, and no incremental cost for additional Ocularis Clients.
- **User Authentication**: Basic or Windows Active Directory-supported
- **Touchscreen-Enabled, Intuitive Interface**: Ocularis Client's intuitive, touchscreen-enabled GUI reacts to the user's actions, presenting only the controls and tools required by the current mode of operation.
- **Multiple Screen Support**: for dual-screen and quad-screen monitoring workstations.
- **Mixed Content Views**: Users can select among unlimited private or administrator-configured pane arrays of different sizes (up to 8x8 panes), consisted of camera streams, carousels, hotspots, web browser/static image/flash animation (requires file support on client machine), and panes for receiving automatic (on-event) and manual (peer-to-peer) push-video alerts.
- **Personalized display attributes:**
    - Display mode (windowed or full screen)
    - Select active local monitors
    - Set framerate for peripheral cameras (other than the selected camera)
    - Set interface language (English, French, Spanish, Portuguese, Arabic, Italian, German, Dutch, Finnish, Russian and Swedish)
    - Manage video streaming attributes for MPEG4/H.264 cameras.
    - Set joystick (physical and virtual) sensitivity to eliminate unintentional joystick positioning data from being sent to the client.
- **Pane View/Full Screen Toggle:** Any view pane can be toggled between pane and full-screen viewing modes.
- **Live Monitoring Assisted by Instantaneous Investigation**: A-synchronous live monitoring, with per-camera controls for: Playback, Pause/live, Digital PTZ, Optical PTZ controls and PTZ presets (for PTZ cameras)
- **360-Degree Cameras**: Dedicated parsing controls for cameras equipped with 360-degree (Panomorphic) lens.
- **Digital PTZ**: Applicable in all viewing modes, and assisted by PIP (Picture-in-Picture) for easy orientation. Control methods include draw rectangle, mouse wheel zoom in/out, and dragging selected PTZ region in PIP window.
- **Unified Optical PTZ Control**: All PTZ cameras are manipulated using the same controls, regardless of make/model. Controls include:
    - Mouse wheel (zoom in/out)
    - Variable zoom ribbon
    - Zoom in/out buttons
    - Click-to-center
    - Click-draw zoom rectangle
    - PTZ preset list (unlimited presets)
    - Virtual joystick
    - Physical joystick.
- **PTZ Prioritization**: Users, within user groups, are assigned priority levels for controlling PTZ cameras.
- **360-Degree Lens Controls**: Special controls are provided for parsing views from fixed cameras equipped with 360-degree (Panomorphic) lens. The parsed view emulates a PTZ camera, with simulated pan, tilt and zoom. 360-degree parsing is available for both wall or ceiling mounted cameras, in single or quad view within a single camera pane, with playback and digital zoom controls. Settings for Panomorphic lens-equipped cameras are done on the Ocularis Administer.
- **Camera Offline Notification**: On event that a camera goes offline (lost communication or other camera failure), a visual alert in the form of a prominent red 'X' will immediately appear, overlaying the last received frame.
- **Change Cameras on the Fly**: In all viewing modes, the current camera can be instantly replaced by selecting another camera from a drop-down list. The camera list is equipped with a quick-access filter, which displays only the camera names that include the entered alphanumeric combination.
- **Smart Carousel Monitoring**: Carousel panes, displaying cameras in a predefined sequence, include controls for pause/restart rotation, next and previous camera.
- **Create Carousels on the Fly**: any camera pane can be turned into a carousel by adding cameras from the camera list.

- **Manual Push-Video Alerting**: users are able to send a live push-video alert to other Ocularis Client users (selectable from a drop-down list). Pushed video alerts can be investigated using playback, digital PTZ and Optical PTZ controls.
- **Copy Current Camera View to Clipboard**: users are able to copy live or recorded camera views, for pasting in other documents or editing using image editing software. Copies performed while digitally zoomed will copy only the zoomed-in portion of the video.
- **Live and Playback Audio**: Audio is available in both live and playback mode
- **Start Recording Control**: Users are able to initiate the recording of a live-monitored camera, for the time period specified in the recorder application.
- **Toggle PTZ Patrolling**: Users are able to toggle a PTZ camera's patrolling directly from the Ocularis Client application.
- **Switch Audio Streams**: Audio streams from camera-connected microphones can be switched on and off, selectable from a menu list.
- **Activate Outputs**: I/O devices can be activated directly from Ocularis Client, including visual and audio alarms, contact closure, etc.
- **Investigation and Access to Events**: Multiple tools are provided for quickly accessing and investigating video:
    - **Synchronous Camera View**: Current live monitoring view will carry upon transitioning to Browse mode, with synchronous playback, skip to next/previous event and skip to next/previous event sequence.
    - **Go to Time/Date**: Through 'odometer'-style control
    - **Kinetic Motion Timeline**: scalable horizontal timeline, with kinetic variability (responding to the momentum and speed of the user's 'swiping' movement). Allows reviewing extended periods of recorded video in a short time, with color indicators for recorded video and detected motion.
    - **Highly Configurable Motion Detection**: calibrated for percentage of changed pixels within the motion detection zone; sensitivity and detection sampling time interval.
    - **'Time Slicer' Tool Set**: The Time Slicer tool set auto-generates thumbnails, for rapid drill-down to the moment of an event, based on time interval, motion detection, camera alerts and alert sequences. All Time Slicer tool enable the application of digital PTZ to all slices, by drawing a region in the Timeslicer main pane.
- **Shared Event Handling**: All events generated within the Ocularis system, or detected by external/add-on devices, are entered in a dynamically-updated, shared among all authorized users. Users are able to access, investigate and handle events directly from a dedicated event handling interface, with an on-map indicator of the camera that triggered the event and dual video panes displaying the recorded event and a live stream. Handled events may be accessed by the administrator for continued handling.
    - Users are able to set the maximum number of events in displayed in the events page based on age, number and frequency, as configured per event, per camera.
- **Event Bookmarking and Export of Evidence**:
    - Segments of video for bookmarking and exported are graphically selected on the Kinetic Motion Timeline.
    - Bookmarks are tagged, classified and commented by users, and copied into a Bookmark database. Bookmarked events are presented along all event information and thumbnail of the incident.
    - Video evidence is exported as:
        - annotated still image report
        - multiple still frames
        - audio-included AVI file (using RC-I only) with annotated preamble; optionally export only the zoomed-in portion of video pane
        - court-admissible, multi-camera video database package, which can be played back directly from the export media using the Ocularis Viewer (see below).
    - Video export tasks are performed seamlessly in the background; tools include job status (% and bar graph) and cancel button.
- **Map-based Navigation**: cameras and entire views are accessible through a map-based interface, used also for displaying video on in a local video wall configuration (for displays connected to the same machine as the Ocularis Client application).
    - Multiple maps, with hyperlinked icons to other maps, cameras and views. Map images are scalable and movable.
    - On-map live preview windows of cameras and camera groups, with full playback, digital PTZ and optical PTZ (where available) controls.

    - Cameras, as well as entire views (consisted of live cameras, push video alert panes, automatic push video alert panes and HTML/graphics) are pushed to local displays by simple drag-and-drop. Cameras displayed on local video walls are located on their respective maps via a Locator control. Note that Hotspot panes (used for displaying a camera in full resolution and framerate) are not supported.
- **Private View Configuration**: users are able to configure private views, from within the client, combining camera streams, carousels, push video alerts (automatic and manual), hotspots and webpage/image panes.
- **Keyboard Shortcuts for commonly used controls**: Users can configure keyboard shortcuts for a large number of commonly used controls, including pan, tilt and zoom; go to presets; next/previous image; playback; toggle between minimized and maximized view pane; minimize application and more.
- **Memory usage indicator:** provides information for memory and graphics card resources usage.
- **Event Coordinator status indicator:** if the OnSSI Event Coordinator Service on the Ocularis Base machine stops, an additional icon will appear in the Application Control section on all logged in Ocularis Client screens.

Ocularis Viewer

- The Ocularis Viewer is a standalone application that allows viewing multi-camera video databases, without the need for an installed video client application. The Viewer is uploaded to, and runs directly from, the portable media used for exporting video evidence.

  Video database export is used typically where an AVI file is not acceptable as evidence, or for exporting multiple camera streams within the same file.
- Features of the Video Database Viewer include:
    - Comprehensive set of playback controls: play, frame-by-frame, skip to end/beginning of video or go to specific time stamp. Playback is synchronous for all cameras displayed.
    - Scalable timeline, color coded for motion activity and areas of recorded video. The timeline can be dragged to control multi-camera synchronous playback.
    - Digital PTZ (pan, tilt & zoom).
    - Export video of selected camera as AVI file, optionally preceded by a preamble including video and camera data as well as user's annotations.
    - Export still-image (.jpg) annotated incident report, or multiple-frame still-image folder.
    - Video quality can be set to Low, Medium or High to optimize performance.

Ocularis Analytics (optional)

- Ocularis Analytics, an optional add-on for Ocularis, provides automated detection of targeted movements and behaviors by people and vehicles. Analytics-generated alerts can be pushed automatically to users' Video Clients, together with a graphical metadata overlay indicating the object or movement that triggered the event.
- Multiple detectors, for a variety of behaviors, can be applied to a single camera.
- Compatible with on-edge processing, providing the advantage of processing raw (pre-compression) video data.
- PTZ Analytics functionality, including PTZ tracking and motion detection on PTZ presets
- Detection, alerting and reporting modules for a variety of human & vehicular behaviors, including movement in zone, line crossing, crowding, tailgating, loitering, grouping, object counting, stickiness, moving water vessel, object left behind, stopped vehicle, road obstacle and asset protection.

Hardware Requirements for Ocularis v3.0 Components

Ocularis Base Server

- CPU: Intel Xeon (Dual Core or better recommended)
- RAM: 4 GB
- Hard Drive: 500 GB or more for large systems utilizing extensive Video DB Bookmarking
- Operating System: Microsoft® Windows® Server 2003/2008 (32 or 64-bit). Note that 32bit OS support will be discontinued in a future release.
- Software: Microsoft .NET 3.5 SP1 Framework; IIS 6.0 or newer

Ocularis Administration Client

- CPU: Intel Core2 Duo (Similar or better)
- RAM: Minimum 4 GB
- Operating System: Microsoft® Windows® XP Professional SP3, Windows Vista Business, Ultimate or Windows 7 Professional or Ultimate (32 or 64-bit)
- Graphics Adapter: Adapter: PCI-Express, 128 MB RAM, Direct 3D supported

Note: the Ocularis Administration Client does not require a dedicated PC.

RC-I

- CPU: Dual Core Intel Xeon (Quad Core recommended)
- RAM - Minimum 4 GB
- Hard Disk Space: Minimum 100 GB free (depends on number of servers, cameras, rules, and logging settings).
- Operating System: Windows Server 2003 (32 & 64 Bit), or Windows Server 2008 (32 & 64 Bit).
- Software: .NET 3.5 SP1 Framework; IIS 6.0 or newer

Visit OnSSI's online hardware and storage calculator for custom specifications.

Ocularis Client

- CPU: Intel Core2 Duo (Similar or better)
- RAM: Minimum 4 GB
- Operating System: Windows XP Professional SP3, or Windows Vista Business, Ultimate, Enterprise (32 & 64 Bit), or Windows 7 Professional, Ultimate or Enterprise (32 & 64 Bit)
- Graphics adapter: PCI-Express, minimum 256 MB RAM, Direct 3D supported. Guidelines for Video RAM Requirements:
    - 20 simultaneous Video Channels: 512 MB
    - 35 simultaneous Video Channels: 1 GB
    - 50 simultaneous Video Channels: 1.5 GB
    - 64 simultaneous Video Channels: 2 GB

Video RAM requirements are regardless of number of attached monitors. Additional factors may affect video RAM requirements, including megapixel cameras, compression format, as well as video card and other system hardware specifications

Ocularis Viewer

- CPU: Intel® Core 2 Quad CPU 2.8 GHz
- RAM: Minimum 2 GB
- Operating System: Microsoft® Windows® XP Professional SP2 or Vista, both 32 bit
- Graphics Adapter

Note: For demonstration purposes or trial systems (supporting less than 8 cameras), all software components can be run on one workstation provided the appropriate hardware specifications are met.