eocortex

ABOUT EOCORTEX

Eocortex is a global provider of an open platform video management software with the strong intelligence of video analytics added. The software package is easy to layout, install, set up, and service. Regular updates and technical support are provided for free.

Eocortex Technical Specification aims to give an overview of the features that each Eocortex license type provides. Refer to the full Eocortex Documentation (available at www.eocortex.com) for a complete description of all Eocortex features.

LICENSING FEATURES

Single Eocortex license permits the connection of one IP camera, client software, mobile applications and Web-client are provided free of charge. There are three types of Eocortex licenses:

Eocortex ML is a great solution for creating smaller systems with up to 20 IP cameras. It allows building a system with one server and two monitoring workstations. ML version does not support intelligent modules but, if necessary, can be upgraded to LS or ST versions.

Eocortex LS is used to create an IP video surveillance system with up to 400 IP cameras. It allows combining up to 5 servers and 10 monitoring workstations into a single system; supports all intelligent modules. All modules for the LS version are available at an additional cost. If necessary, this version can be upgraded to ST.

Eocortex ST allows an unlimited number of IP cameras, servers and monitoring workstations to be connected to a video surveillance system. This version includes several free intelligent modules; all other video analytic modules are available at an additional cost.

Eocortex ULTRA allows an unlimited number of IP cameras, servers and monitoring workstations to be connected to a video surveillance system. This version includes 16 free intelligent modules; all other video analytic modules are available at an additional cost.

LICENSE KEY TYPE	USB KEY	SOFT KEY
Distribution kit	USB security key, Software installation package (available at Eocortex.com)	Soft key sent via email, Software installation package (available at Eocortex.com)

TABLE LEGEND
✓ free
+ optional
— not available

MAIN FEATURES	ML	LS	ST	ULTRA	DESCRIPTION
Cameras per one server	20	80	Unlimited		Maximum number of cameras on one server
Servers in the system	1	5	Unlimited		Maximum number of servers in the system
Remote workstations	2	10	Unlimited		Maximum number of remote workstations
Operating Systems	✓	✓	✓	✓	Windows (x86 and x64) 7 SP1 / 8 / 8.1 / 10 / Server 2008 R2 SP1 / Server 2012 / Server 2012 R2 / Server 2016; Windows Embedded (for Intel x86 and x64) with the full functionality of abovementioned Windows versions
Bitness	✓	✓	✓	✓	Windows 32-bit (x86), 64-bit (x64)
Video Stream Formats	✓	✓	✓	✓	MJPEG, MPEG-4, H.264, H.265, MxPEG
Supported IP cameras, IP video servers and IP video recorders	✓	✓	✓	✓	Over 5,500 models more than 170 manufacturers
Image resolution	✓	✓	✓	✓	Limited only by IP camera capabilities.
Audio Stream Formats	✓	✓	✓	✓	PCM, G.711U, G.711A, G.722.1, G.726, G.729A, GSM-AMR, AAC
Duplex Audio Mode	✓	✓	✓	✓	Sound transmission from the operator workstation to the camera's speaker or audio output
Centralized or Distributed Monitoring Solution	–	✓	✓	✓	Centralized: all cameras from different geographical locations stream to servers located at one place, Client application is fetching from one server. Distributed: servers located at multiple places are unified in one system, which allows cameras to be accessed via Client. The cameras' streams are requested straight from the servers they are connected to which happens in background.
CPU Load Reduction	✓	✓	✓	✓	Decode H.264 on GPU to reducing the CPU load during display. DXVA technology
Microsoft® Active Directory	–	–	–	✓	Support for installation, start and authentication with Microsoft® Windows or Microsoft® Active Directory accounts
Archive Mirroring (Backup Drives)	–	–	–	✓	Set simultaneous recording of the video archive and the database both on the mirror and main drives of the one server
Export and Frame Saving	✓	✓	✓	✓	Real-time and Archive Video Frame Export and Frame Saving (JPEG, PNG, BMP). Archive Video Export (AVI, MCM)
Object Plans	✓	✓	✓	✓	Place cameras, sensors and relays of the system on 2D object plans (maps); Create custom object plans with In-built Graphic Tool within Eocortex Interface; Make changes to the existing object plans
User-friendly GUI	✓	✓	✓	✓	Eocortex Graphical user interface is intuitive for any user and do not require any special administrator or programming skills
Interface Languages	✓	✓	✓	✓	Dutch, English, Italian, Polish, Russian, Spanish
Status info	✓	✓	✓	✓	Local Console Application used to notify a user about the current system state, to run and stop Eocortex Server service

and open Eocortex Configurator application

HIGH RELIABILITY AND FAILOVER	ML	LS	ST	ULTRA	
Additional Main Drives	✓	✓	✓	✓	Scalable directly attached storage space
Reserved Drives	✓	✓	✓	✓	In case the main drive breaks down or fails to do the recording, the channel will be recorded by the reserved drives
Multiserver Architecture	—	✓	✓	✓	Ensures high flexibility of the system and resiliency of its components
Hot Swap	—	✓	✓	✓	In case of server failure, real-time broadcast of channels and archive recording are performed by the reserved servers; Switching between failed and reserved servers takes up to 10 seconds
Cold Standby	—	✓	✓	✓	Cameras' settings protection in case the server breaks down
Archive Mirroring (Backup Drives)	—	—	—	✓	Set simultaneous recording of the video archive and the database both on the mirror and main drives of the single server.
Eocortex System Healthcheck	✓	✓	✓	✓	Self-diagnosis is the function aimed at the automatic search for the possible problems in a system. The users will receive the notifications of problem detections and will be able to solve the problems as soon as possible
Increased stability and safety of databases	✓	✓	✓	✓	The replication of the databases is done automatically. If a database is damaged, it will be automatically restored from the replication. Therefore, the Journal data is protected as well as the results of Suspect Search and Suspect Tracking
DEVICES	**ML**	**LS**	**ST**	**ULTRA**	
Parameters of video received from camera	✓	✓	✓	✓	Image resolution and FPS are limited only by IP camera capabilities
ONVIF™ Compliant Devices	✓	✓	✓	✓	Yes, Profile S
PSIA Compliant Devices	✓	✓	✓	✓	Yes, version 1.2
RTSP Compliant Devices	✓	✓	✓	✓	Yes
IP Network Connection	✓	✓	✓	✓	Connection via IP network to IP video cameras, network video recorders, video servers, encoders
IP Camera Auto Search	✓	✓	✓	✓	Yes, if the IP device supports ONVIF or UPnP
IP Camera Remote Preview	✓	✓	✓	✓	Perform camera IP-address setup, detect connectivity and functioning issues from Eocortex Configurator directly (without connecting to a camera web interface)
IP Camera Remote Configuring	✓	✓	✓	✓	Configure IP camera settings remotely from Eocortex Configurator: codec, resolution, frame rate, compression level; Preview the video stream from this camera before applying new settings
Camera Network Ports Setup	✓	✓	✓	✓	Specify camera network ports when using non-standard ports of cameras for video streaming
Device Settings Transfer	✓	✓	✓	✓	Copy settings of the devices and apply to the new ones: connection parameters, scenarios, schedules, video analytics (intelligent modules) settings

DEVICES	ML	LS	ST	ULTRA	
Device Group Settings	✓	✓	✓	✓	Apply settings to the groups of devices: connection parameters, scenarios, schedules, video analytics (modules) settings
Drag and Drop IP Camera Transfer Between Servers	✓	✓	✓	✓	Transfer IP camera from one server to another in a few seconds
Two Video Streams Parameters	✓	✓	✓	✓	Receives up to two video streams from IP camera, each stream with customizable parameters: codec, frame rate, resolution
IP Camera Motion Detector	✓	✓	✓	✓	Employ in-built IP camera motion detector
Camera signal I/O Functionality	✓	✓	✓	✓	System management using I/O functionality of the camera
DVR, Video Server and Video Decoder Support	✓	✓	✓	✓	Real-time broadcast and archiving of the video and audio streams received from IP and/or analog cameras connected to video decoders, video recorders and video servers; Support of PTZ functionality of such cameras
Devices Internal Archive Support	✓	✓	✓	✓	Archive viewing at DVRs (devices must support data transfer in MJPEG, MPEG-4 or H.264); Access to the internal archives of DVR and IP Cameras placed at SD-card, in-built HDD, etc.
Panoramic, Multi-Lens Camera Modes	✓	✓	✓	✓	Support of various modes used in panoramic and multi-lens cameras, including broadcasting of video streams received from different lenses on different channels (for certain camera models only)
IP Audio Encoders	✓	✓	✓	✓	Real-time broadcasting and archiving of individual audio channels (for certain devices only)
IP Intercom Support	✓	✓	✓	✓	Support of the two-way audio channel and access control system (for certain devices only)
DriverPack Support	✓	✓	✓	✓	Provides backward compatibility of IP cameras and devices - after the Server Application upgrade
PTZ CAMERA MANAGEMENT	**ML**	**LS**	**ST**	**ULTRA**	
PTZ Camera Interactive Control	✓	+	+	✓	Control of PTZ cameras: camera rotation, zoom in/out (optical zoom), focus, I/O ports, wiper; Employ joystick, PTZ control panel, mouse or keyboard; Can be done manually with the client interface and automatically upon a system event (scenarios) or on a schedule
Virtual PTZ Joystick	✓	+	+	✓	Manage with the help of virtual PTZ joystick with custom rotation speed
Transition by Presets	✓	+	+	✓	Transition by presets of PTZ camera
Auto Patrolling (Tours)	✓	+	+	✓	Create customized preset tours (routes of transition by presets); Stop auto patrolling while operating manually; Connect custom axes and buttons of PTZ joystick and PTZ control panel to the presets and tours
PTZ Zoom of Selected Area	✓	+	+	✓	Use zoom in/out functionality for the selected area in the frame (zone)
PTZ Camera Management for Panoramic Cameras	✓	+	+	✓	Use PTZ camera management emulation for panoramic cameras
AreaZoom	✓	+	+	✓	Support of the AreaZoom function implemented in some cameras

CLIENT APPLICATION	ML	LS	ST	ULTRA	
Eocortex Client Application	✓	✓	✓	✓	Operate in the video surveillance system with Eocortex Client Application; Access all the video surveillance features in several clicks: video real-time and archive video, configure and manage IP cameras, view events, employ video analytics (intelligent modules); Set custom settings for a number of parameters
Real-time Viewing Modes	✓	✓	✓	✓	Directly from a server; via remote workstation connected to a server; via remote workstation connect to a camera directly
User-friendly GUI	✓	✓	✓	✓	Eocortex Graphical User Interface (GUI) is intuitive for any user and do not require any special admin or programming skills
Full-screen and Grid Modes	✓	✓	✓	✓	Use full-screen and various grid modes
Multiple Monitor Support on a Single Workstation	✓	✓	✓	✓	Use multiple monitors operating from a single remote workstation
IPv4 and IPv6 Support	✓	✓	✓	✓	Connecting cameras to IPv4 and IPv6 addresses, including auto search for such cameras in a network
Multicast Broadcasting	✓	✓	✓	✓	Send one single video stream from the camera, regardless of the number of recipients
CPU Load Reduction with Decoding H.264 on GPU	✓	✓	✓	✓	Decode H.264 on GPU to reducing the CPU load during display. DXVA technology
Video Stream Proxy Support	✓	✓	✓	✓	Use one of the servers to broadcast video streams to remote workstations from other video servers
Video Stream Buffering	✓	✓	✓	✓	Increases the smoothness of the display due to frames buffering
Client Auto Update	✓	✓	✓	✓	Set automatic updates of client software when connected to a server
SCREEN PROFILES. VIDEO WALL	ML	LS	ST	ULTRA	
Screen Profiles Configuring and Automation	✓	✓	✓	✓	Perform centralized customization of the screen profiles in a few clicks; Display a specific set of cameras placed on a grid template in multiscreen mode; Configure automatic grid change sequences with a custom period for display; Set default screen profiles; Create unlimited number of templates and lists of profiles; Display up to 262 cameras on a single screen
Drag and Drop IP Camera Transfer Between Screen Profiles	✓	✓	✓	✓	Transfer IP camera from one screen profile to another in a few seconds
Digital Zoom Support	✓	✓	✓	✓	Zoom in real-time and while viewing archive, expand selected area to the full-screen
SCREEN PROFILES. VIDEO WALL	ML	LS	ST	ULTRA	
Custom Frame Dimensions	✓	✓	✓	✓	Set various frame dimensions during display: dimensions by default, stretching the cell size, automatic selection; Set custom frame dimensions for each cell individually
Camera HTML-page Support	✓	✓	✓	✓	Open HTML-page of the camera in browser

Feature	ML	LS	ST	ULTRA	Description
Manual Recording	✓	✓	✓	✓	Manual recording by operator for selected channels
Digital Zoom Support	✓	✓	✓	✓	Zoom in real-time and while viewing archive, expand selected area to the full-screen
Screen Profiles Configuring and Automation	✓	✓	✓	✓	Perform centralized customization of the screen profiles in a few clicks; Display a specific set of cameras placed on a grid template in multiscreen mode; Configure automatic grid change sequences with a custom period for display; Set default screen profiles; Create unlimited number of templates and lists of profiles; Display up to 262 cameras on a single screen
Drag and Drop IP Camera Transfer Between Screen Profiles	✓	✓	✓	✓	Transfer IP camera from one screen profile to another in a few seconds
VIDEOWALL	**ML**	**LS**	**ST**	**ULTRA**	
In-built Video Wall	–	–	–	✓	Create a video wall of any number of monitors without any external devices. Refer to ULTRA VMS for this functionality
ARCHIVE PLAYBACK	**ML**	**LS**	**ST**	**ULTRA**	
Independent Archive Playback in Selected Cells	✓	✓	✓	✓	Run independent archive playback in selected cells, while real-time broadcasting in the other cells simultaneously
Synchronized Archive Playback of Multiple Cameras on a Single Monitor	✓	✓	✓	✓	Run time-synchronized archive playback on a single monitor; Supports up to 25 cameras simultaneously
Custom Control and Navigation Parameters	✓	✓	✓	✓	Customize the variety of control and navigation parameters: timeline, calendar, playback speed, play / pause, forward / back; Use timeline to define the presence of archive, move to the certain archive fragment
Archive Calendar	✓	✓	✓	✓	Use visual calendar to select archive recordings created at the particular date and time
Archive Playback Speed	✓	✓	✓	✓	Playback speed from x0.01 to x120. Key frame playback support
Digital Zoom Support	✓	✓	✓	✓	Zoom in selected area of the frame, expand to full-screen
Devices Internal Archive Support	✓	✓	✓	✓	Archive viewing at certain DVRs (certain devices must support data transfer in MJPEG, MPEG-4 or H.264); Access to the internal archives of DVR and IP Cameras placed at SD-card, in-built HDD, etc.
Smooth Playback of Combined Archives	✓	✓	✓	✓	Enjoy smooth automatic switch between the archives located on the server and the camera in case the archive is available on the camera only
Archive Bookmarks Support	✓	✓	✓	✓	Mark fragments with Archive Bookmarks, range bookmarks by importance and categories, add comments to the bookmarks; Filter Archive Bookmarks in the Event Log based on date and time, channels, importance and categories; Run archive playback from the bookmark in preview window from the Event Log, switch playback to the main window manually
Reports on archive depth	✓	✓	✓	✓	Users can get a report on the archive depth showing the archiving for particular days and cameras. The function will help to monitor the problems with cameras and the network. The report will be especially useful for large scale systems

EXPORT AND PRINTOUT	ML	LS	ST	ULTRA	
Real-time and Archive Video Frame Export and Printout	✓	✓	✓	✓	Make a screenshot in real-time or archive video; Save the image to the selected location; Print out the image or selected area of the frame
Frame Export Formats	✓	✓	✓	✓	JPEG, PNG, BMP
Archive Video Export	✓	✓	✓	✓	Export selected video fragments from archive
Video Export Formats	✓	✓	✓	✓	AVI, MP4 (with or without timestamps), MCM (proprietary Eocortex format); Export time-synchronized video fragments from multiple channels (MCM only)

OBJECT PLANS	ML	LS	ST	ULTRA	
Object Plans Support	✓	✓	✓	✓	Place cameras, sensors and relays of the system on 2D object plans (maps); Define the cameras' surveillance coverage; Bind external sensors to camera signal inputs; Bind external devices to camera signal outputs; add intelligent modules in cameras' surveillance coverage
Camera Video Stream Display	✓	✓	✓	✓	Display field of view coverage of all the cameras of the system at the single object plan; Display the frames received from the certain camera at the object plan; Display video analytics data at the object plan; Display real-time video by pointing the certain camera of the object plan
Object Plans Import Formats	✓	✓	✓	✓	JPG, PNG, BMP
In-built Graphic Tool	✓	✓	✓	✓	Create custom object plans within Eocortex Interface; Make changes to the existing object plans
Alarm Events Display	—	—	—	✓	Display alarm events at the object plan

USER SCENARIOS. SCHEDULES	ML	LS	ST	ULTRA	
User Scenarios Configuring and Automation	✓	✓	✓	✓	Create automated action sequence in response to various events: archiving management, notifications by e-mail and SMS, signals to the outputs of IP cameras, launch of external application, etc. (more than 40 scenarios available); Configure rules, parameters, filters, periods, and other conditions for certain events and actions.
Schedules Configuring and Automation	✓	✓	✓	✓	Create single automatic action sequence based on a certain date; Create recurring automatic action sequence with a custom period, months, dates, weekdays; Configure rules, parameters, filters, periods, and other conditions for certain events and actions

ALARM MANAGEMENT	ML	LS	ST	ULTRA	
Enhanced Alarm Management	✓	✓	✓	✓	Process Alarm events (registration, generation, notification) within scenarios and event log; Configure Client Application for advanced signal and alarm management, including alarm generation by operators; Develop your own signal and alarm generation mechanisms with Eocortex API and SDK
Visual, Audible Alarm Signaling	✓	✓	✓	✓	Notify the operators on the alert event instantly with visual and audible alarm signaling system

Alarm Monitor Configuring and Automation	✔	✔	✔	✔	Set one of the monitors as an Alarm Monitor to display alarm events; Exclude certain channels from the Alarm Monitor's grid when a specified period passes after the alarm; Configure and display alarms on the Alarm monitor only
Alarm Cells Support	✔	✔	✔	✔	Use Alarm cells for certain channels to display alerts and alarms when the event is happening
Guard Mode Support	✔	✔	✔	✔	In Guard mode, the user is notified (in Eocortex Client) if the alarm has been generated; This certain channel switches to the Alarm mode; Guard mode can run on schedule or manually
Alarm Button Support	✔	✔	✔	✔	Enable user alarm for certain channels with Alarm button; Alarm button display is configured by the system administrator
Notifications	✔	✔	✔	✔	Send emails, SMS and push-notifications to alert the recipients about the alarms and other system events; Send frames as email attachments
System and Alarm Event Log	✔	✔	✔	✔	Event Log called Journal provides data on Server Application audit and users actions, data on camera connections, alarms (including missed alarms), video analytics results and other events
Event Log Filters	✔	✔	✔	✔	Search in Event Log by filters: events, user actions, actions, archive bookmark
STORAGE OPTIMIZATION	**ML**	**LS**	**ST**	**ULTRA**	
Archive Replication	—	✔	✔	✔	Duplicate archive data received from the defined IP cameras to a dedicated replication server; Set custom parameters for the archive stored at replication server
Archive Browsing Modes	✔	✔	✔	✔	Browse using a separate channel; several channels simultaneously; backward playback
Archive Storage Location on Logical Drives	✔	✔	✔	✔	Server archive is stored on the logical drives defined by the operating system: HDD and SSD, RAID-arrays, external disk storage, network drives and their combinations
Archive Storage Format	✔	✔	✔	✔	In the format received from the IP camera
Archive Recording Optimization	✔	✔	✔	✔	Speed of archive recording and display is limited by the hardware resources only; Cyclic recording: the oldest records are replaced when reaching the disk space overflow; Pre- and post-recording periods can be set based on motion detection event; When using multiple logical drives, the recording is conducted on all available logical drives to enhance the performance; Separate drives can be set for recording of video archive and metadata base
Storage Modes Available	✔	✔	✔	✔	Continuous; at the operator's request; when motion is detected by the camera; upon Eocortex motion detector; on a schedule; upon a system event (scenario). Recording modes can be combined
Archive Size Optimization	✔	✔	✔	✔	Size is limited only by the drive storage and operating system; Various archive size limits can be set for each IP camera/group of cameras; Storage limits can be set for the each logical drive: maximum storage size, minimum allowable free space. Frame skipping reduces the storage space when no motion is happening; With H.264 reference frames can be chosen to be archived when no motion is noticed; Switching of Archiving from Alternate stream to the Mainstream allows to switch archive recording from an alternative stream (low quality, small archive volume) to the Mainstream (high quality, large archive volume) when certain system events occur (or scheduled)
Archive Synchronization	✔	✔	✔	✔	Synchronization of archives between IP camera and server. Allows to import absent fragments from IP camera to the

server - to restore the server after a loss, to recover camera connection, to store the archive received from standalone or mobile camera on the server

CENTRALIZED CONFIGURATION AND MANAGEMENT	ML	LS	ST	ULTRA	
Centralized or Distributed Monitoring Solution	–	✓	✓	✓	Centralized: All cameras from different geographical locations stream to servers located at one place, Client application is fetching from one server. Distributed: Servers located at multiple places are unified in one system, which allows cameras to be accessed via Client. Desired cameras' streams are requested straight from the servers they are connected to, all this happens in background
Microsoft® Active Directory	–	–	–	✓	Support for installation, start and authentication with Microsoft® Active Directory accounts
Applications Auto Start	✓	✓	✓	✓	Configure automatic start of Eocortex application after the start of operating system; Configure automatic authentication after the application start
Versions Compatibility	✓	✓	✓	✓	Compatibility of client software with server software of other versions (other than the client software version)
Centralized update of all the servers in a system	✓	✓	✓	✓	"Update the server" button allows to update all the servers in one window. The servers can be updated from a remote workstation as well as downgraded to the previous version. The update should be downloaded only once
System Health Monitoring	✓	✓	✓	✓	Monitor the current state of the video surveillance system components
Server Monitoring	–	–	–	✓	Monitor the current state of Eocortex server parameters: accessibility, status, CPU usage, memory usage, analysis system usage, archiving system usage, client-server system usage, network usage, hard drives status, connected cameras status; Monitor the current state of multiple servers simultaneously
Monitoring Alarms	–	–	–	✓	Customize alarms generated on the events: server out of reach, excessive CPU usage, excessive memory usage, excessive network usage, alarm status of camera digital inputs, camera failures; Receive custom alarm notifications for the events by email, SMS, messenger or SNMP trap
Centralized Setup	✓	✓	✓	✓	All configuration settings are made from the Eocortex Configurator Client with remote or local connection to the server
Individual Server Settings	✓	✓	✓	✓	Each server stores its own configuration parameters: archive settings, network settings, and mobile connection parameters
Main and Reserved Servers Individual Settings	–	✓	✓	✓	By default, one server in the system is assigned as the Main Server, and the others are Reserved. System configuration parameters are stored on the Main Server: user rights, roles of the servers, channel settings (including the connection parameters, scenarios, schedules and video analytics parameters), channels distribution settings, backup and archive replication settings, screen profiles, object plans; Each Reserved Server stores the backup of system configuration parameters
User Rights Management	✓	✓	✓	✓	Perform centralized or distributed management of all User rights in the system; Customize User rights for the variety of actions available in the system; Differentiate user rights basing on the groups of users; Customize User access rights to the certain IP cameras in the system, Differentiate User rights for real-time broadcasting and archive viewing for each IP camera; Main server of the system provides centralized authentication and user permissions checks; Cameras will not be

displayed in the Client Application, if the user does not have rights to view them

	ML	LS	ST	ULTRA	
Support of Active Directory	−	−	−	✓	Support of Users and User Groups in Microsoft® Active Directory
Internal Chat	−	−	−	✓	Exchange messages, screen profiles and certain settings between the users. Refer to ULTRA VMS for this functionality

INTEGRATION WITH OTHER SYSTEMS	ML	LS	ST	ULTRA	
Open SDK for Developers	✓	✓	✓	✓	Contains a list of API, Json- and XML-requests, as well as examples in C #; allows integrating Eocortex with various applications
Flash-Component for Web-sites	✓	✓	✓	✓	Allows real-time audio and video broadcasting, as well as controlling PTZ cameras
Integrations	✓	✓	✓	✓	Integrate Eocortex with Fire Alarm and Access Control systems
Integration with messengers	✓	✓	✓	✓	This service connects the Eocortex servers and the popular messengers, allowing to receive the images from the cameras, event notifications, server status reports and other information via the messengers

VIDEO ANALYTICS (INTELLIGENT MODULES)	ML	LS	ST	ULTRA	
Eocortex Motion Detector	✓	✓	✓	✓	Detect movement in the frame by real-time video stream analysis; Set limiting dimensions of detected objects in the frame (Basic Mode); Set several detection zones and limiting dimensions of detected objects for each zone (Expert Mode); Use Motion Detector metadata both to start the archiving and for further video analysis
System Load Reduction	✓	✓	✓	✓	Decrease the frame rate received from camera to reduce the system load
Computational Load Reduction with Partial H.264 Decoding	✓	✓	✓	✓	Enable partial H.264 decoding to reducing the computational load during motion detector usage for video streams in H.264 (additional to MJPEG)
Suspect Search	−	+	✓	✓	Interactive object search in archive by uploaded photograph or by object's characteristics: color, dimensions/size, position in the frame, shape
Suspect Tracking	−	+	✓	✓	Tracking moving objects in the field of view of multiple cameras
PTZ Camera Control	✓	+	+	✓	Control of PTZ cameras using the client interface: camera rotation, zoom in/out (optical zoom), focus, etc.
Fisheye dewarping	−	+	+	✓	Expand a spherical image from the Fisheye camera in three ways: double panorama, in simulation PTZ mode, in 4x90 mode. Expansion in real time and while playing archive
License Plate Recognition	−	+	+	+	Available for 91 countries: detection of license plates in the frame; events archive; maintaining a database of license plates with different settings for each license plate; maintaining multiple lists; interception of license plates by the list; barrier control by the list or by an operator command; export to Excel; determining the movement direction; output of license plates on bases of different color, depending on groups; differentiation of access rights; import of license plates

				databases using external files
Audio stream processing	✓	+	+	✓	Broadcasting and archiving of audio from IP cameras
Loud Sound Detection	—	+	+	✓	Detect an excessive audio level registered by the camera microphone
Smoke and Fire Detection	—	+	+	✓	Detect the presence (emergence) of smoke, fire
Tracking	—	+	✓	✓	Track moving objects in a camera's field of view. Alert generation on intersecting lines and borders (one way or both ways), entering the dedicated zone, prolonged stay in the zone, alert search in archive; interactive archive search on intersecting lines set by an operator
People Counting	—	+	+	✓	Count the number of entering and existing visitors — either through one or several inputs; create customized reports
People Counting in Queue	—	+	+	✓	Count people in queues; if necessary — it notifies the operator should the number of people exceed a preset limit in a given queue, allows building temporary reports
Crowd Monitoring	—	+	+	✓	Notifies the operator should the quantity of people exceed an indicated limit
Face Detection	—	+	✓	✓	Detect faces in the frame
Face Recognition	—	+	+	+	Detect faces and compare it with person's identification using pre managed database
Heat Map	—	+	+	✓	Create heat maps based on traffic in different areas of the frame
Abandoned Object Detection	—	+	✓	✓	Detect abandoned objects and highlights them up on the screen
Personnel Monitoring	—	+	+	✓	Perform remote monitoring of the staff activities at workstations
Sabotage Detection	✓	✓	✓	✓	Detect camera defocusing, panning away from pre-defined view, illumination and overlapping
3D people counting	+	+	+	+	Hardware/software solution for high-precision visitor counting
Hard Hat Detection	—	+	+	✓	Detect people not wearing hard hats

Refer to the full Eocortex Documentation (available at www.eocortex.com) for a complete description of all Eocortex features.