Eocortex 3.0

Technical Specification

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About Eocortex

Eocortex is a global provider of the open platform software with smart video analytics for creating video surveillance systems. The **Eocortex** video management software is easy to design, install, set up and operate. Regular updates and technical support are provided for free.

The present specification contains the overview and the comparison of the capabilities provided by each type of license.

More details on the capabilities of **Eocortex** can be found in the documentation posted on eocortex.com.

Overview of the licenses

A single **Eocortex** license permits the connection of one IP camera with the capabilities listed in the license documentation.

Client software, including mobile applications and Web client are provided free of charge.

The following types of **Eocortex** licenses are available:

- **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 client workstations. ML version does not support video analysis modules but, if necessary, it can be upgraded to **Eocortex LS** or **ST** versions.

- **Eocortex LS** is suitable for creating a video surveillance system with up to 400 IP cameras. It allows combining up to 5 servers and 10 client workstations in a single system; it supports the video analysis modules. All modules for the LS version are available at an additional cost. If necessary, this version can be upgraded to **ST**.

- **Eocortex ST** is designed for building scalable video surveillance systems with an unlimited number of IP cameras, servers and client workstations. This version is compatible with all video analysis modules. Several modules are included free of charge; others are available at an additional cost.

- **Eocortex ULTRA** is intended for creating scalable video surveillance systems with the enhanced list of features and an unlimited number of IP cameras, servers and client workstations. The software package supports the video analysis modules, 16 of which are supplied free of additional charge, others are available at a cost.
  (These licenses are supported only on servers working under Windows OS.)

Only the servers with the same type of licenses, taking into consideration the limitations of such licenses, can be united in a common multiserver system.

License protection methods:

- **Hardware USB key**: the hardware key must be connected to the USB port of the video surveillance server. The hardware key can be reinstalled on another server if required.

- **Software key**: at activation, the software key is tied to the specific computer and cannot be subsequently transferred to another video surveillance server.

Main features

FEATURE	VALUE	DESCRIPTION
Windows operating systems	Windows 7 SP1 / 8 / 8.1 / 10 Windows Server 2008 R2 SP1 / 2012 / 2012 R2 / 2016 Windows embedded for Intel x86 and x64 platforms, with full functionality of abovementioned Windows versions	Windows family operating systems that can be used for launching server applications of a video surveillance system
GNU/Linux operating systems	Ubuntu 18.04, 19.04 Astra Linux CE 2.12 Debian 9, 10 CentOS 7	GNU/Linux family operating systems that can be used for launching server applications of a video surveillance system Range of features of server applications launched under GNU/Linux is limited (see description of limitations below)
Video Stream Formats	MJPEG, MPEG-4, H.264, H.265, MxPEG	List of supported video codecs
Audio Stream Formats	PCM, G.711U, G.711A, G.722.1, G.726, G.729A, GSM-AMR, AAC	List of supported audio codecs
Standards	ONVIF (Profile S), PSIA (ver. 1.2), RTSP	List of supported video surveillance standards
Cameras and Devices	More than 6000 models of more than 180 manufacturers. The detailed list is posted on the web site.	List of supported cameras and devices
Resolution	Limited only by IP camera capabilities	Resolution of the image obtained from the cameras

✓ : available, included with the base license; ➕ : available at additional cost; ➖ : not available; ⊞ : available only on Windows servers

FEATURE	VALUE	DESCRIPTION
FPS	Limited only by IP camera capabilities	Framerate of the video stream received from the cameras
Interface Languages	Dutch, English, German, Italian, Russian, Spanish	Languages used in system settings and client applications

Variations in functionality depending on type of license

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Cameras per server	20	80	Not limited		Maximum number of cameras on one server
Servers in the system	1	5	Not limited		Maximum number of servers in the system
Workstations	2	10	Not limited		Maximum number of client workstations in the system
PTZ cameras	✓	✓	✓	✓	Support of PTZ camera features
Sound	✓	✓	✓	✓	Support of sound reception and transmission
Main video analytics (intelligent modules) ⊞	—[1]	+	+	✓	Processing of video using intelligent video analysis modules included in the base distribution kit
Additional video analytics ⊞	—	+	+	+	Processing of video using extra intelligent video analysis modules installed additionally
GNU/Linux	✓	✓	✓	—	Launching server applications under GNU/Linux

[1] The ML license allows to use two modules of the main video analytics

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Reliability and failover

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Backup drives	✓	✓	✓	✓	One or more drives may be assigned to operate as backup drives: they will be used for recording only in case of failure of all the main drives; at that, once one of the main drives becomes available, the recording to the backup drives will stop.
Archive backing up ⊞	—	—	—	✓	Simultaneous recording of the video archive and database to the main and backup drives installed on the same server
Hot backup of servers	—	+	+	✓	In case of a server failure, the cameras assigned to it will be processed by other servers, including the broadcasting of the real-time video and the recording to the archive. In case of fast backing up, the switching to the redundancy server happens within 10 seconds from the moment of losing the connection with the main server
Cold backup of servers	✓	✓	✓	✓	In case of failure of the server with the USB protection key, it is posible to transfer the USB key to a cold redundancy server with the pre-installed Eocortex application, then activate the current license bound to the USB key on the given server. In a multiserver system, it is sufficient to connect the new server to the system and assign the cameras of the failed server to it; at that, all the camera settings will be saved. In the single-server system, it will be required to use the camera configuration file saved before
System health check	✓	✓	✓	✓	In the course of operation, the video surveillance system components perform automatic self-diagnostics, informing the users about the issues encountered and giving recomendations regarding their rectification
Increased database reliability	✓	✓	✓	✓	Automatic creation of backup copies of the database and automatic restoration of the database after failures

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Cameras and devices

FEATURE	DESCRIPTION
Connection to IP cameras and devices	Network connection to IP video cameras, network video recorders, video servers, encoders
IPv4 support	Connecting cameras using IPv4 addresses, including auto search for such cameras in the network
IPv6 support ⊞	Connecting cameras using IPv6 addresses, including auto search for such cameras in the network
Audio stream reception	Reception of sound from cameras
Duplex audio mode ⊞	Transmission of sound from the operator's workstation to the loudspeaker or audio out of the camera
ONVIF™	ONVIF™ Profile S support
PSIA	PSIA version 1.2 support
Auto search for IP cameras	Automatic search for cameras that support ONVIF or UPnP in the local network
Remote configuring of IP cameras	Camera setup using Eocortex Configurator application without connecting to the camera web interface. Available for a limited list of cameras. Depending on the model, the following settings may be available: IP address, codec, resolution, framerate, compression rate

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FEATURE	DESCRIPTION
Utilization of user ports	Possibility to use non-standard network ports of cameras and devices that are used by the specific models of such devices
Support of two streams from one camera	Possibility to receive two video streams from an IP camera, each with its particular parameters: codec, framerate, and resolution
Camera in-built motion detector	Use of built-in motion detector of the IP camera
Camera archive	Access to the archives located on the memory cards of the cameras, including simultaneous viewing of the archives of several cameras, synchronization of the Eocortex archive with the camera archive (e.g. if the camera was working without connection with the Eocortex server for some time)
Video from video recorders, servers and encoders	Reception of real-time video from analog and IP cameras connected to video recorders, servers and encoders
Archive of video recorders and servers	Access to the internal archives of the video recorders and video servers, including the following capabilities: simultaneous viewing of the archives of several channels of the video recorders and servers; synchronization of the Eocortex archive with the archive of a video recorder or a server (e.g. if the video recorder or server worked for some time without connection with the Eocortex server)
Sound from video recorders, servers and encoders	Reception of real-time audio from analog and IP cameras connected to the video recorders, servers and encoders, as well as recording the sound captured by these devices
PTZ via video recorders, servers and encoders	Control of analog and IP PTZ cameras connected to video recorders, servers and encoders
Panoramic and multi-lens cameras	Support of various modes used in panoramic and multi-lens cameras
Audio devices	Support of sound transmitting IP devices (for a limited list of devices)

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FEATURE	DESCRIPTION
Door phone support	Interaction with call panels of door phones connected via IP: video reception, reception and transmission of sound, unlocking door locks (for a limited list of devices)
Self-sufficient driver packages ⊞	Self-sufficient driver packages (DevicePack) for ensuring backwards compatibility of IP cameras and devices after updating the server application
Camera diagnostics	Diagnostics of cameras from Eocortex Configurator application in order to identify issues with their connection and functioning

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PTZ cameras

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Basic PTZ functions	✓	✓	✓	✓	Support of basic PTZ camera features: turning and tilting with adjustable speed of movement, zoom in/out (optical zoom), manual and automatic focusing
Service PTZ functions	✓	✓	✓	✓	Support of service features of PTZ cameras: lens washing, wiper
Signal I/O ports	✓	✓	✓	✓	Support of camera signal I/O ports
Presets	✓	✓	✓	✓	Transition between preset PTZ camera positions
Automatic patrolling (tours)	✓	✓	✓	✓	Creating customized transition sequences (tours)
AreaZoom	✓	✓	✓	✓	Support of AreaZoom feature implemented on some of the cameras: camera positioning and optical zoom of the area selected by the user on the screen using a mouse or touch-based
PTZ emulation for panoramic cameras	✓	✓	✓	✓	Similation of PTZ control for panoramic cameras
Interactive control of PTZ cameras	✓	✓	✓	✓	Manual PTZ camera control using a mouse, a touch screen, a keyboard, a game joystick, as well as the specialized PTZ consoles and joysticks
Priorities for interactive ⊞ PTZ camera control	—	—	—	✓	Assignment of priorities for interactive PTZ camera control: user with higher priority can override the user with lower priority
Virtual PTZ Joystick	✓	✓	✓	✓	Pan and tilt control of the camera using virtual joystick displayed on screen allows to change rotation speed and return camera to home position

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FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Automatic PTZ camera control	✓	✓	✓	✓	Control of PTZ cameras according to schedule and upon occurrence of a certain event
User setup of joystick and PTZ console	✓	✓	✓	✓	Assigning joystick axes and user actions to joystick and PTZ console buttons

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Windows-based Client application

FEATURE	DESCRIPTION
Windows-based Client application	Eocortex Client Windows application with user-friendly interface ensures access to all the video surveillance features with just a few clicks: watching real-time video, viewing archive, controlling PTZ cameras, viewing events, using video analytics, seting up the system
Direct connection to cameras	Direct connection to cameras from the operator's computer
Connection to cameras thru server	Connection from the operator's computer to the servers to which the cameras are bound
Connection to cameras thru proxy server	Connection from the operator's computer to one proxy server that, in its turn, is connected to the servers to which the cameras are bound.
System event log	Event Log contains information about all events registered in the system, including starting and stopping server applications, information about connections to cameras, changes of settings, user actions, alarms, video analytics results and other events. To make it easier to find events in the log, it is possible to filter and sort them by various criteria
H.264 decoding on video card	Decoding of H.264 on a video card in order to reduce the CPU load and increase the speed of video stream processing. The video card with DXVI support is required.
Opening cameras in browser	Possibility to open HTML pages of the cameras in the browser
Automatic update of Windows-based Client application	Automatic updating the Eocortex Client application when connecting to the Eocortex server

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Screen and video wall

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Display modes	✓	✓	✓	✓	A variety of display modes: full-screen mode and many screen grids with various quantities of cells (up to 262)
Drag and drop of cameras	✓	✓	✓	✓	Dragging and dropping cameras from one screen grid to another using a mouse or a touch screen
Digital zoom	✓	✓	✓	✓	Zooming in real-time and archived video to the whole cell of a grid or to full screen
Frame aspect ratio control	✓	✓	✓	✓	Choosing various ways of diplaying video in a screen grid cell: keeping proportions of the video transmitted by the camera; stretching the image to the cell size; with automatic selection of optimal display mode. In addition to the default mode for all cells, it is possible to set a separate display mode for each cell
Video stream buffering	✓	✓	✓	✓	Increasing the smoothness of the image due to frame buffering
Screen profiles (views)	✓	✓	✓	✓	Simplifying and accelerating the process of video surveillance by means of choosing the centrally adjusted screen profiles (views) - screen grids with preset sets of cameras. It is possible to set up an unlimited number of screen profiles
Automatic switching of screen profiles	✓	✓	✓	✓	Automating the process of video surveillance by means of automatic switching the screen profiles (views) on the display. The sequences of the automatic switching of views are set centrally. It is possible to set up an unlimited number of such sequences
Several displays	✓	✓	✓	✓	Supporting several displays on a single workstation

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FEATURE		ML	LS	ST	ULTRA	DESCRIPTION
Video wall	⊞	—	—	—	✓	Capability of creating a videowall using the software. The videowall can consist of any number of monitors connected to a computer with the Eocortex Client software running

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Archive playback

FEATURE	DESCRIPTION
Archive playback in a separate cell	Playing back the archived videos in a selected screen cell simultaneously with real-time video broadcasting in other cells
Simultaneous playback of the archives of several cameras	Starting simultaneous playback of video from several cameras on the same screen. It is possible to simultaneously play back video from up to 25 cameras
Archive playback tools	Availability of various video archive playback control tools: interactive timeline showing the presence of an archive; a calendar showing days for which the archived videos are available; selection of speed (from 0,1x to 120x) and archive playback direction
Playback of combined archives	Automatic switching between playing back the archives stored on server and on camera in cases when the archive is only available on camera
Archive bookmarks	Marking archive fragments with bookmarks. Creating user categories of archive bookmarks. Filtering archive bookmarks using various criteria

Export and printout

FEATURE	DESCRIPTION
Frame saving	Saving a frame of its fragment on a disk as a JPEG, PNG or BMP file
Frame printing	Printing out a frame or its fragment
Video archive export	Exporting a video archive fragment to AVI, MP4 and Eocortex proprietary format. Export to MP4 can be performed with or without time stamps

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Site plans

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Site plans	✓	✓	✓	✓	Displaying two-dimensional site plans with cameras placed on them. Superimposing the fields of view of the cameras on the site plans
Sensors and relays on site plans	✓	✓	✓	✓	Displaying sensors and relays connected to signal inputs and outputs of the cameras on the site plans. Visualizing the status of sensors and relays placed on the site plans
Video analytics on site plans ⊞	—	+	+	✓	Visualizing data of individual video analysis modules on the fields of view of the cameras placed on site plans

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Automation

FEATURE	DESCRIPTION
Scheduled actions	Executing actions or sequences of actions on schedule. Creating flexible schedules ranging from a single run to regular runs, with various periods: in set number of seconds, minutes, hours, days; at the preset time, week days, dates of a month, and using some other parameters
Actions by events	Executing actions or sequences of actions by occurrence of the preset events. It is possible to set flexible conditions of the execution of actions
Actions performed by user command	Performing actions or sequences of actions by a client application's user command. Available for users of client apllications for Android, iOS and Windows
Automation actions	Available automation actions: Turn on recording; Turn on washer; Turn on autofocus mode; Disable recording; Alarm generation; Add an event to door phone log; Run external application on server; Change the video stream to be recorded to archive to the main one; Disable decimation when recording to archive; Send HTTP or HTTPS request to an external system with HTTP API; Send Push notifications to mobile devices; Send to messenger; Send report by email; Send notification by email; Send notification by SMS; Pause; Send signal to Camera output; Save frame; Set camera position
Automation events	Available automation events: Large number of people in queue; Large crowd of people; Fire; Call over the door phone; Loud sound; Motion; Smoke; External alarm start; Motion started; Inactive zone; License plate detected; Face detected; Face detected (Face Recognition module); Loss of connection with analog camera; Loss of connection with camera; End of external alarm; Motion stopped; Abandoned object; Tracking of moving objects; No connection with camera; No hat; User alarm; Video suveillance sabotage; Signal to camera input; Honeywell Pro-Watch event; Siemens DMS8000 event; External system event; Request to close gate; Request to open gate; Connecting to analog camera; Establishing connection with camera

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Alarms

FEATURE	DESCRIPTION
Guard mode	Using special mode of camera operation that implies generation of an alarm as a reaction to certain events. The camera may be set to the guard mode both manually and automatically, on schedule of by occurrence of an event
Alarm generation	Setting up automatic alarm generation when certain events occur on cameras put on guard. Generating alarms by operators. Developing customer alarm generation mechanisms using Eocortex API and SDK
Registering and processing of alarms	Registering alarms in an event log. Setting up actions and sequences of actions to be executed when an alarm is registered, including sending alarm notifications
Alarm announcements	Immediately notifying the operators about the registered alarms using audio and visual alerts
Alarm monitor	Using one of the monitors for displaying the video from the cameras where the alarm was generated. The possibility to set automatic removal of a camera from the alarm monitor upon expiration of the specified period of time since the moment of commencement of the alarm. Possibility to display alarms on the alarm monitor only
Alarm cells	Using some of the cells of a standard monitor to display images from the cameras where an alarm was triggered
User alarm on-screen button	Operator turning on and off user alarm on specific cameras using the alarm button on the screen

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Archive management

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Modes of recording to archive	✓	✓	✓	✓	Recording to the archive can be made continuously, by the operator's command, by the camera motion detector, by Eocortex software motion detector, by any video surveillance system event, as well as on schedule, including the possibility to combine other recording modes with the scheduled one
Organization of archive	✓	✓	✓	✓	The archive of each server stores the recordings of only those cameras that were bound to it at the moment of the recording. The archive is stored on the server's logical drives that are determined by the operation system. It is possible to use any acceptable devices as storage media: HDD, SSD, RAID, external storage drives, network drives, as well as their combinations. Video and audio data are stored in the archive in the format received from an IP camera. The rate of recording and playback of the archive is only restricted by the hardware. To increase performance while using several logical drives, the recording is made to all the available drives simultaneously. If one of the drives becomes unavailable, the recording of new data to it stops and is redistributed to the available drives. Reciprocally, when the drive becomes available, the recording to it resumes. The archive has a circular structure: when the space allocated for it becomes fully used up, new archive files start to replace the oldest ones, overwriting them, taking into account the archive depth parameters set for each camera

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FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Archive size optimization	✓	✓	✓	✓	The size of the archive is limited only by the drive capacity and the operating system. Storage limits can be set for the each logical drive: maximum size of archive, minimum allowable free space. Various archive size limits can be set for all and for each IP camera. Additional options allowing to reduce the size of the archive are available: skippig of frames without motion, storing key frames only, switching archive recording between low and high-resolution streams
Archive decimation ⊞ after the preset period of time	—	—	—	✓	Reducing the number of frames in the archive after the preset time interval. It is possible to set up the decimation in two stages: after the first interval, the number of frames in the archive is reduced to one preset value, and after the second interval the additional reduction of the number of frames takes place
Archive replication	✓	✓	✓	✓	Dedicated replication server allows to copy the archives of the set cameras from other servers. The archive depth of the replication server may be different from the original one
Archive depth report	✓	✓	✓	✓	Creating reports regarding the archive depth allowing to monitor the availability of the archive per camera and per date

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Setup and control

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
System setup tools	✓	✓	✓	✓	All system settings are made in the Eocortex Configurator application with remote or local connection to one of the Eocortex servers
Eocortex Status Info utility ⊞	✓	✓	✓	✓	Eocortex Status Info utility is designed for launching and stopping Eocortex Server application, as well as for setting up and performing diagnostics of Eocortex video surveillance system. The utility is launched automatically at the start of the operating system and is displayed in the task bar on the computer where the Eocortex Server is running. The system status and diagnistics notifications are displayed in the utility's window
Preview without saving changes	✓	✓	✓	✓	Watching video stream from camera with the preset configuration
Adding cameras with the same parameters	✓	✓	✓	✓	Possibility to add cameras with the settings similar to those of the already connected cameras to the system
Group setup of cameras	✓	✓	✓	✓	Possibility to simultaneously set up common parameters for a group of cameras
Dragging and dropping cameras between servers	—	✓	✓	✓	Switching cameras from one server to another with several clicks
Multiserver systems	—	✓	✓	✓	Unifying several servers, including those geographically distributed, in a common system via local and global TCP/IP networks
Centralized setup of distributed video surveillance systems	—	✓	✓	✓	To set up a multiserver system, it is sufficient to connect to one of the servers of the system
Automatic starting of applications	✓	✓	✓	✓	Possibility to automatically start Eocortex applications after the start of the operating system. Configuring automatic authentication after an application has started

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FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Compatibility of versions	✓	✓	✓	✓	Compatibility of client software with server software of earlier versions
Centralized update of all the system's servers ⊞	—	✓	✓	✓	Capability to remotely update all the system's servers from one application; it is also possible to roll back to the previous version remotely
System health monitoring ⊞	—	—	—	✓	Monitoring the current state of the video surveillance system components: current status of servers, including their accessibility, CPU and memory load, operability of video analytics and archiving subsystems, network and HDD state, camera connection status as well as monitoring certain other parameters. The monitoring subsystem allows to send notifications regarding critical events via email, SMS or SNMP in accordance with the list and levels of control parameters set by the user

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Video analytics

FEATURE		ML	LS	ST	ULTRA	DESCRIPTION
Motion detector		✓	✓	✓	✓	Detecting movement in the frame using real-time video stream analysis. The possibility to set several detection zones, with an option of limiting the dimensions of objects to be detected in each zone. It is possible to limit the frequency of the analysis in order to reduce server load
Automatic zoom	⊞	✓	✓	✓	✓	Displaing a separate zoomed-in area of the frame where moving objects are present
Loud sound detector		—	+	+	✓	Registering the sound whose level is in escess of the limit preset by the user
Fire and smoke detector	⊞	—	+	+	✓	Detecting the presence of smoke and open fire
Abandoned object detector	⊞	—	+	✓	✓	Detecting the objects that are left without motion for a preset period of time
Hard hat detector	⊞	—	+	+	✓	Detecting people not wearing hard hats. The folowing colors of hard hats are supported: white, yellow, green, red, orange, blue
CCTV sabotage detector	⊞	✓	✓	✓	✓	Detectig camera defocusing, turning the camera away from the predetermined direction, flaring and overlapping
Crowd detector	⊞	—	+	+	✓	Calculating the quantity of people in crowds, notifying the operator about the exceedance of the preset threshold values. It is possible to set up to 6 control zones with individual threshold values for each zone. Reports creation is available

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FEATURE		ML	LS	ST	ULTRA	DESCRIPTION
Interactive search	⊞	—	+	✓	✓	Interactive search for a moving object in the archive using the following attributes: • in the selectable rectangular area of the frame • objects within the preset maximum and minimum dimensions • by proportions: vertical, horizontal or square • by preset color or color combination Interactive search for people in the archive using the following attributes: • any people • by the color of clothes • by the samples from the video archive or image file
Personnel activity monitoring	⊞	—	+	+	✓	Monitoring personnel activity on the selected workplaces. Allows to set up to six control zones with individual threshold values for each zone. Reports creation is available
Cross-camera tracking	⊞	—	+	✓	✓	Chronologically bound search on several cameras using interactive search, with the possibility to create a video clip from the fragments found; it is also possible to create a route on the site plans if the cameras with the found fragments are present there
Shelf fullness check	⊞	—	+	+	✓	Shelf Fullness Check. Helps to fill the shelves on time upon their emptying
Face detection	⊞	—	+	✓	✓	Detecting faces in the frame
Counting people in queue	⊞	—	+	+	✓	Counting people in queues. Allows to specify up to six control zones with individual threshold values for each zone. Creating reports with a possibility of sending them according to a time schedule
People counting	⊞	—	+	+	✓	Counting the number visitors entering and existing thru one or several entrances. Creating reports with a possibility of sending them according to a time schedule

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FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Unique visitor counting ⊞	—	+	+	+	Creating the unique visitor counting reports based on face detection and recognition, including the reports regarding age and sex pattern. It is possible to exclude certain groups from the calculation to avoid, for example, counting employees
Fisheye dewarping	—	+	+	✓	Software dewarping of Fisheye camera images

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FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Licence Plate Recognition (Complete) ⊞	—	+	+	+	Vehicle license plate recognition. Module's capabilities: • Recognition of license plates of moving vehicles in real time • Recognition of license plates of 150 states • Recognition of license plates of vehicles moving with the speed of up to 150 kmh (up to 20 kmh for Parking type license) • Recognition of up to 10 license plates in the frame • Saving a recognized number in the archive, including the information regarding the date and time of recognition, as well as th reference to the corresponding video frame • Comparing recognized license plates with the license plate database in real time and generating an alarm in case a license plate is in the group with the Interception attribute • Working with the internal license plate database: adding and editing license plates, additional information about the vehicles (color, owner, etc.) • Possibility to import the data into the license plate database from a CSV file • Creating the groups of license plates, including those for intercepting and for the automatic opening of a rising arm barrier; adding a number in one or more groups • Searching for the recognized license plates in the archive by date, time and by the additional information in the database • Downloading the list of recognized license plates as Microsoft Excel or CSV file • Automatic sending of the lists of the recognized license plate numbers by email • Rising arm barrier control

✓ : available, included with the base license; + : available at additional cost; — : not available; ⊞ : available only on Windows servers

FEATURE		ML	LS	ST	ULTRA	DESCRIPTION
Licence Plate Recognition (Light)	⊞	—	+	+	+	License plate recognition. Capabilities of the module: • Recognizing the license plates of moving vehicles in real times • Recognizing the license plates of 33 states • Recognizing license plates of vehicles moving with the speed of up to 150 kmh (up to 30 kmh for Parking type license) • Saving a recognized license plate in the archive, including the information about the date and time of recognition and the link to the corresponding frame • Comparing recognized license plates with the license plate database in real time and generating an alarm in case a license plate is in the group with the Interception attribute • Working with the internal license plate database: adding and editing license plates, additional information about the vehicles (color, owner, etc.) • Possibility to import data into the license plate database from a CSV file • Creating groups of license plates for interception, for automatic opening of a rising arm barrier, etc; adding a number to one or more groups • Searching in the archive for the recognized license plates by date, time and by the additional information from the database • Downloading the list of recognized license plates as Microsoft Excel or CSV file • Automatic sending of the lists of the recognized license plate numbers by email • Rising arm barrier control
Face Recognition (Complete)	⊞	—	+	+	+	Recognizing faces using a database. Determining sex and age of recognized persons. Recognizing faces using an archive. Creating reports. High performance video cards (GPUs) are always used for recognition; at that, all the appropriate video cards installed on the server will be used

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FEATURE		ML	LS	ST	ULTRA	DESCRIPTION
Face Recognition (Light)	⊞	—	+	+	+	Recognizing faces using a database. Creating reports. It is possible to use a high-performance video card (GPU) for recognition
Traffic density heat map	⊞	—	+	+	✓	Visualizing traffic intensity in different areas of the frame, both in real time and during a specified interval. It is possible to superimpose the heat map on the field of view of the camera placed on a site plan. Creating reports
Tracking (tracking of moving objects)	⊞	—	+	✓	✓	Tracking moving objects in the camera's field of view. Generating alerts on intersecting lines and borders, entering the dedicated zone, prolonged stay in the zone. Interactive search in the archive for an event of crossing the line set by the operator

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Mobility

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Web Client	✓	✓	✓	✓	Viewing of real-time and archived video in any browser with HTML5 support. Possibility to perform authorization using an Active Directory account
Mobile Client for Android	✓	✓	✓	✓	Viewing of real time and archived video on Android devices, including listening to camera audio and controlling PTZ cameras
Mobile Client for iOS	✓	✓	✓	✓	Viewing of real time and archived video on iOS devices, including listening to camera audio and controlling PTZ cameras
Internal Chat ⊞	—	—	—	✓	Exchanging messages, screen profiles and certain settings between the users
Messengers	✓	✓	✓	✓	The service that connects the Eocortex video surveillance systems with the popular messengers, allowing to receive the images from the cameras, event notifications, server status reports and other information via the messengers

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Security

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Access management	✓	✓	✓	✓	Flexible system of user rights to access objects and features of the system, including the limitation of access to the specific cameras and differentiation of rights for viewing real-time video and playing back the archive. The rights are assigned to the security groups. The authorization is made on the level of specific users with their individual passwords; each of these users in included into one of the security groups. The users and the security groups are the integral elements of the video surveillance systems
Control of access to system settings ⊞	—	—	—	✓	Limitation of access of different user groups to the individual system settings, including the access to the settings of certain servers and cameras. At that, it is possible to deny access to all settings for certain user groups on all types of licenses
Support of Microsoft® Active Directory ⊞	—	—	—	✓	Supporting authorization using Microsoft® Windows or Microsoft® Active Directory accounts. Using Microsoft® Windows or Microsoft® Active Directory groups as security groups
Secure connections	✓	✓	✓	✓	Using TLS and SSL security certificates for encoding data transmitted between cameras and Eocortex servers, as well as between the servers and client applications, including mobile and web ones, and also the Eocortex Configurator application

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Centralization and scaling

FEATURE	ML	LS	ST	ULTRA	DESCRIPTION
Adding of drives	✓	✓	✓	✓	Scalable drive space for video archive storage
Multiserver architecture	—	✓	✓	✓	Ensuring high flexibility of the system and resiliency of its components
Main and subordinate servers	—	✓	✓	✓	By default, one server in the system is assigned as the main server, and the others as subordinate. The system parameters are stored on the main server. Each subordinate server stores a backup copy of the system parameters. Such architecture ensures the integrity of the system, providing, at the same time, the fault tolerance in cases when the subordinate servers lose connection with the main server. Moreover, in case of a failure of the main server, any subordinate server can be assigned as the main one without losing the system settings
System integration	—	✓	✓	✓	To connect another multiserver system to the current video surveillance system, it is sufficient to connect one of the servers of this system; the other servers will be connected automatically
Disconnection of servers	—	✓	✓	✓	When a server is disconnected from the multiserver system, all the cameras bound to it are disconnected as well; the camera settings are preserved. Thus, the simple and trouble-free migration of servers between multiserver systems is ensured

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Integration

FEATURE	DESCRIPTION
Open SDK	The set of libraries and code samples in C # not only ensure seamless integration of third-party products with Eocortex, but also allow to develop proprietary video surveillance system components
Open API	Contains a set of documented API, Json- and XML requests, ensuring interaction with the components of the Eocortex video surveilance system
Flash component for web sites	A Flash component that ensures broadcasting of real-time video and audio streams from the cameras connected to the Eocortex servers on the site, as well as controlling the PTZ cameras via the site
Integration with Honeywell's Pro-Watch® comprehensive security platform	Receiving events from Honeywell's Pro-Watch®, setting response to these events, and viewing the received events in the Events Log of the Eocortex Client application
Integration with Siemens DMS8000 access control and security and fire alarm system	Receiving events from Siemens DMS8000, setting response to these events, and viewing the received events in the Events Log fo the Eocortex Client application

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