Specification Macroscop

Version 2.0.

Technical Characteristics

Feature	Description
Operating Systems	Microsoft Windows: 7/8 Microsoft Server 2008 R2/2012 Microsoft Windows Embedded 8 Standard
Windows Versions	32-bit (x86), 64-bit (x64)
IP Camera, IP Video Server Brands, DVRs	3000+ models 140+ brands
Video Stream Formats	MJPEG, MPEG-4, H.264
Audio Stream Formats	PCM, G.711U, G.711A, G.722.1, G.726, G.729A, GSM-AMR, AAC
Supported Standards	ONVIF (Profile S), PSIA (ver. 1.2)
Resolution	Limited only by the camera
Frame Rate	Limited only by the camera

Feature	License Types		
	ML	LS	ST
Number of cameras on one server	Up to 20	Up to 80	Not limited
Number of servers in the system	1	Up to 5	Not limited
Number of remote workstations	Up to 2	Up to 10	Not limited

Functional features

Feature	Description
Interface Language	English, French, Polish, Portuguese, Russian, Slovak, Spanish, Turkish
Software Motion Detector	Detects movement in the frame, including by creating several detection zones and limiting the dimensions of detected events individually for each zone and has a configurable detection rate
Archival Storage Modes	Constant; at the operator's request; when motion is detected by the camera; when Macroscop's detector instructs it to; on a schedule (recording modes may be combined); upon a system event (scenario)
Archive Materials Storage Format	In the format received from the IP camera
Archive Size	You can create different archive sizes per any camera or any group of cameras.
Archive Browsing Modes	Browsing using a separate channel; several channels simultaneously; reverse playback
File Playback Speed	From single-frame playback up to x120 speed up
Real Time Surveillance	Directly on video surveillance server; from remote workstation connected to a server; from remote workstation connected to a camera

Feature	Description	
Screen Profiles	The ability to customize individual screen profiles, displaying a specific set of cameras in multiscreen mode	
Automatic change of screen profiles	The ability to change the screen profiles automatically	
Multiple monitors support on a single remote workstation	Limited only by the video card of a remote workstation	
Alert monitor	Using one of the monitors as an Alert Monitor for the displaying of video streams of the channels assigned under protection when there is an alert event on these channels The ability to automatically exclude channels from the grid after a specified period of time passes after the alert. The ability to display alerts only on the alert monitor.	
System and alarm event log	The list of system and alarm events, including missed alarms	
Two video streams support	Archiving: high-resolution stream (default) or low-resolution stream (adjustable.) Displaying in the multiscreen mode: low-resolution stream (default) or high-resolution stream (adjustable.) Displaying in the full-screen mode: high-resolution stream (default) or low-resolution stream (adjustable.)	
Decoding H.264 on GPU	Decoding H.264 video streams on graphic card to display video on the screen of remote workstation. It allows reducing the CPU load during display. The DXVA technology is used.	
Video Stream Buffering	Increases the smoothness of the display due to frames buffering	
Video Export	In AVI format; proprietary Macroscop format. Archive export via multiple channels (with the possibility of simultaneous browsing through exported fragments using a special tool)	
Digital Zoom	Zoom in real time and while viewing archive	
Auto Zoom	Displaying the separate enlarged area with moving objects	
Frame Export	Saving frame and zoomed frame segment in JPEG, PNG, BMP; printing frame/frame segment	
Audio Broadcast	Broadcast and archiving of audio from IP cameras	✓*
Duplex Audio Mode	Sound transmission from the operator workstation to the camera's speaker or audio output	
Support of camera signal inputs	Registration of alarm signals sent by camera	
PTZ cameras	Control of PTZ cameras using the client interface: camera rotation, zoom in/out (optical zoom), focus	✓*
Transition by presets	Transition by presets of PTZ camera	✓*
Auto patrolling (Tours)	Creation of own tours (routes of transition by presents)	✓*
MultiDome support	Support of the MultiDome function implemented in some cameras	✓*
AreaZoom support	Support of the AreaZoom function implemented in some cameras	✓*
Panoramic camera support	Support of various modes used in panoramic cameras	

Feature	Description	
Expansion of a spherical image from the FishEye camera.	Expands an image from the FishEye camera in three versions: as a pie pan, in simulation PTZ mode, in 4x90 mode. Expansion in real time and while playing archive	✓*
SD card archive support	Access to files located on the camera SD card, incl.: synchronous archive viewing from SD cards of multiple cameras; synchronization of video server archive with an SD card (for example, if a camera worked offline for some time, without server connection)	
Active Directory Integration	Support of authentication with Active Directory accounts	
Access rights differentiation	Differentiation of access rights of users to specific functions and cameras	
Site plans support	2D visualization of site; binding cameras, sensors and relays to a site plan; binding external sensors to camera signal inputs; binding external devices to camera signal outputs; displaying camera fields of view; displaying data from certain intelligent modules on camera fields of view	
Web-based interface	Surveillance of real time video and archive viewing through any browser with Silverlight support	
Mobile client	Surveillance of real time video and archive viewing through devices based on iOS, Android, Windows Phone. iOS and Android clients support sound broadcast and PTZ control	
User scenarios	The ability to customize the system response to various events: archiving management, notifications by e-mail and SMS, signals to the outputs of cameras, external applications launch, etc.	
Cameras auto search	The ability to automatically search for cameras that support ONVIF or UPnP detection protocol in a local network	
Camera IP-address setup	The ability to perform camera IP-address setup from Macroscop, without connection to a camera interface	
Camera network ports setup	The ability to specify camera network ports (when using non-standard ports of cameras for video streaming)	
Archive replication	Automatic replication (duplication) of an archive to a dedicated replication server	✓*
Server backup	Hot backup: in case of server failure, recording is redirected to a backup server	✓*
Video streams proxy	The ability to use one of the servers to broadcast video streams to remote workstations from other video servers	✓*
System health monitoring	Tracking the current status of various parameters of video servers and camera connections (server monitoring)	
IP audio co-encoders support	Rea time archiving and playback of individual audio channels (currently only supported by CSA "Echolot")	
Version compatibility	Interaction of client software with server software of other versions (other than the client software version)	
Client software auto-update	Automatic auto-update of client software when connected to a server (adjustable)	
Driver package for cameras and devices (DevicePack)	It provides backward compatibility of devices and cameras drivers	

Feature	Description
DVR, video server and video decoder support	The ability to view and archive video and audio from cameras (including analog) connected to video decoders, video recorders and video servers in real time; support of PTZ functions of such cameras. The ability to view DVR archive (devices must support data transfer in MJPEG, MPEG-4 or H.264; limited number of devices)
IPv6 support	Connecting cameras to IPv6 addresses, including auto search for such cameras in a network.
Multicast	The ability to broadcast by server separate channels
Broadcast to the Cloud	The ability to broadcast video streams from a server to the Cloud built on the basis of Macroscop Cloud

⊘*   Specified features are not available for all types of licenses or require special additional licenses.

Intelligent Modules

Feature	License Types		
	ML	LS	ST
Interactive Search in Archive: Search by position in frame, size, form, object color, by signs; including object search by multiple cameras and search for people in groups	–	⊘*	⊘
Object Interception Module: object interception by photo, pattern.; including interception by several cameras	–	⊘*	⊘
Inter Camera Tracking: tracking moving objects in the field of view of multiple cameras, with the possibility of constructing object movement route on site plans	–	⊘*	⊘
Tracking Module: tracking moving objects in a camera's field of view. Alert generation on crossing lines and borders (one way or both ways), entering the dedicated zone, long stay in the zone, alert search in archive; interactive archive search on crossing lines set by an operator	–	⊘*	⊘
People Counting Module: counting the number of entered and left visitors in real time — either through one or several inputs; creating reports	–	⊘*	⊘*
Face Detection Module: face detection in the frame	–	⊘*	⊘
Face Recognition Module: face detection and person's identification using the face database.	–	⊘*	⊘*
Car Plates Recognition Module for 91 countries: detection of car plates in the frame; events archive; maintaining a database of car plates with different settings for each car plate; maintaining multiple lists; interception of car plates by the list; barrier control by the list or by an operator command; export to Excel; determining the movement direction; output of car plates on bases of different color, depending on groups; differentiation of access rights; import of car plates databases using external files	–	⊘*	⊘*
Crowd Detection Module: detects crowds of people in the frame	–	⊘*	⊘*

Feature	License Types		
	ML	LS	ST
Sabotage Detection Module: detects camera defocusing, turnaway, illumination and overlap	✔	✔	✔
Heat Map Module: creates heat maps based on traffic in different areas of the frame	—	✔*	✔*
Lost Luggage Detector: detects left objects and highlights them up on the screen	—	✔*	✔
Queue Control Module: counts people in queues. if necessary — notifies the operator should the quantity of people exceed an indicated limit in a given queue, allows to build temporary reports	—	✔*	✔*
Loud Sound Detector	✔	✔	✔
Personnel Activity Control Module: allows to monitor activity time of staff at the workplace	—	✔*	✔*
Smoke and Fire Detection Module: detects the presence (emergence) of smoke and/or fire	—	✔*	✔*

✔* These features require additional licenses.

Integration with other systems

Feature	License Types		
	ML	LS	ST
Open **SDK for developers:** contains a list of API, Json- and XML-requests, as well as examples in C #; allows integrating Macroscop with various applications	✔	✔	✔
Flash-component for web-sites: allows broadcasting video and audio on a website, as well as controlling PTZs via the site	✔	✔	✔
Integration with Siemens DMS8000 access control and fire alarm system	✔	✔	✔

✔* These features require additional licenses.