

GEUTEBRÜCK

A&E Specifications

Security Information Management

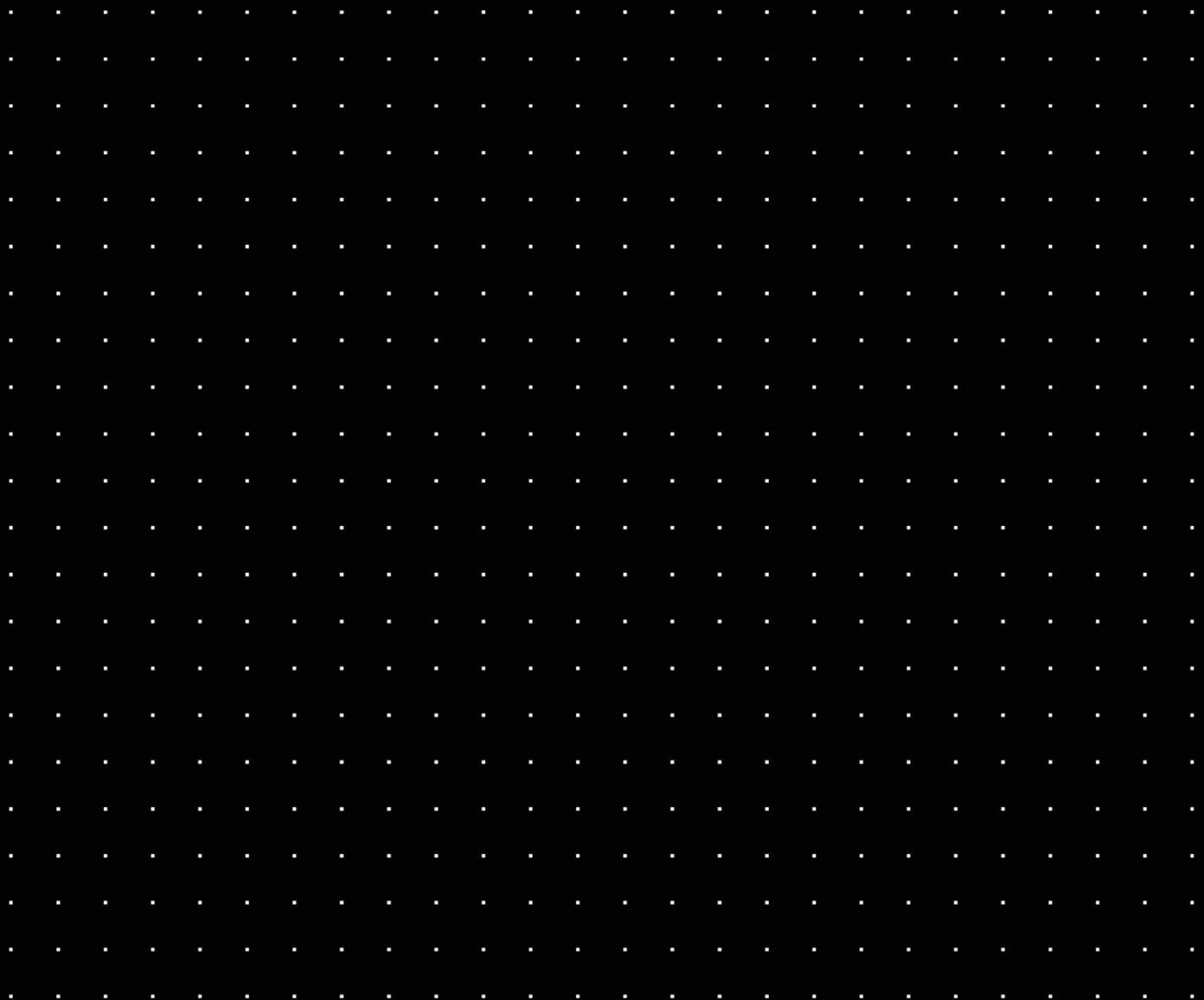
Software

G-SIM

Version: G-SIM 10.0

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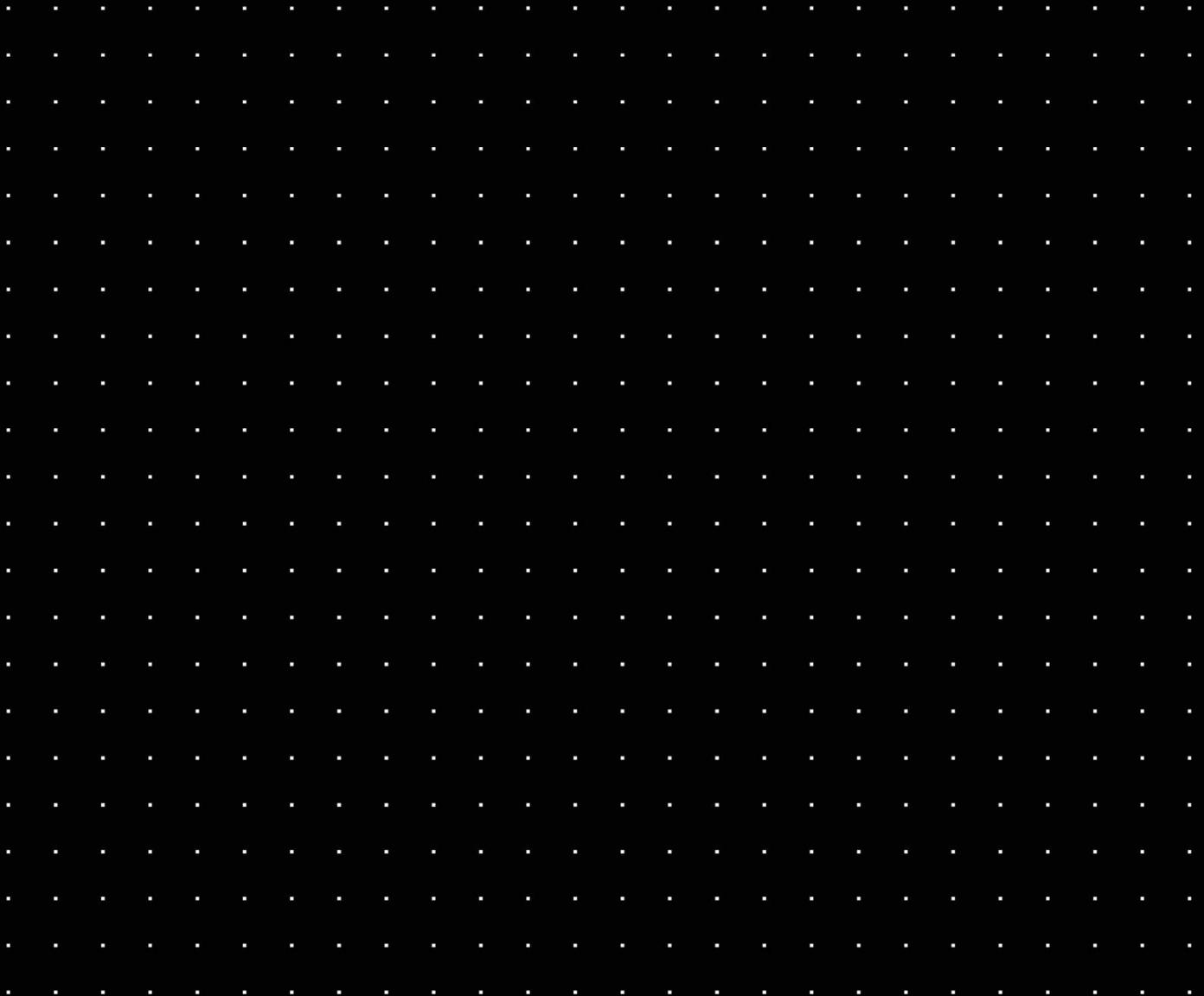
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# Section 28 51 00

## Security Information Management Software

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## 1 General

- a. The software used is a standard Open Architecture Platform which is updated and developed on an ongoing basis and used in the manufacturer's systems.
- b. The manufacturer shall have at least 40 years of experience in the manufacture of CCTV components and at least 20 years of experience in the development and worldwide operation of Security Information Management Software.
- c. The software shall be thoroughly tested and verified in real-life applications and daily use.
- d. The manufacturer's warranty shall be valid for a minimum of 24 months beginning with date of delivery. The manufacturer may at their discretion offer an optional warranty extension of 3 or 4 years.
- e. A technical hotline shall be provided by the manufacturer to one of the company's representatives and be available during normal workdays.
- f. The manufacturer shall commit to a ten-year strategy with updated software releases and support to ensure the functionality of the software.
- g. The manufacturer shall have standardized software upgrade plans that the user can schedule to receive automatically over the specified period of time.
- h. The SIM Software shall allow for functional upgrades via simple software license installation without hardware changes.
- i. The SIM Software shall be available with reduced functionality as freeware.
- j. The manufacturer shall, on a timely basis, offer standardized, staggered patch management packages in terms of performance and function that address discrepancies between Windows updates, the Security Information Management Software and the hardware.

- k. The manufacturer shall have its own, (not 3<sup>rd</sup> party private labeled) series-produced hardware platforms with performance and equipment specifically tailored to the customer requirements of the Security Information Management Software.
- l. The manufacturer shall provide documentation of the performance tests and certifications for the planned and used hardware on which the software will operate.
- m. The manufacturer offers regular maintenance of the system, individually adapted to the user, by trained specialists worldwide.

## 1.1 Acronyms and Definitions

a.	SIM	Security Information Management
b.	CCTV	Closed Circuit Television
c.	SQL	Structured Query Language - database language
d.	NVR	Network Video Recorder
e.	ATM	Automated Teller Machine
f.	PTZ	Pan Tilt Zoom
g.	SNMP	Simple Network Management Protocol
h.	JOC	Joint Operations Center
i.	VM	Virtual Machine
j.	AD Groups	Active Directory groups
k.	OSD	On Screen Display
l.	MOS	Motion Search
m.	AD	Activity Detection
n.	VMD	Video Motion Detection
o.	CPA	Camera Position Authentication
p.	FTP	File Transfer Protocol
q.	RAID	Redundant Array of Independent Disks
r.	iSCSI	Internet Small Computer Systems Interface
s.	JPEG	Joint Photographic Coding Experts Group - compression of single images
t.	PNG	Portable Network Graphics

u.	GIF	Graphics Interchange Format
v.	BMP	Bitmap file (raster graphics image)
w.	ARGB	Color Space alpha red green blue
x.	UHD	Ultra High Definition - resolution 3840 × 2160 px
y.	Full HD	Full High Definition - resolution 1920 × 1080 px
z.	HD	High-Definition - resolution 1280 × 720 px
aa.	CIF	Common Intermediate Format - resolution 352 x 288 px
bb.	QCIF	Q Common Intermediate Format - resolution 176 x 144 px
cc.	2CIF	2 Common Intermediate Format - resolution 704 x 288 px
dd.	4CIF	4 Common Intermediate Format - resolution 704 x 576 px
ee.	D1	Digital Recording Video Standard - resolution 704 x 576 px (PAL), 704 x 480 px (NTSC)
ff.	MOS	Motion Search
gg.	ANPR	Automatic Number Plate Recognition
hh.	PDF	Portable Document Format
ii.	MHT	MHTML Document (MIME Encapsulation of Aggregate HTML Document)
jj.	RTF	Rich Text Format
kk.	XLS	Microsoft Excel Format
ll.	XLSX	XML based Data Format
mm.	CSV file	Comma-Separated Values file
nn.	MP	Megapixel, a unit of graphic resolution equivalent to one million or 1,048,576 pixels.
oo.	M-JPEG	Motion-JPEG (Joint Photographic Coding Experts Group)
pp.	MPEG-2	Moving Picture Experts Group 2 - compression of images + audio
qq.	MP4	Video container format
rr.	H.264	Differential video compression works with so-called P-Chains: I-Frame (reference image) - P-Frames (difference images) - new P-Chain: I-Frame (reference image) - P-Frames (difference images) ...

ss.	H.264CCTV	H.264 - compression format optimized by the manufacturer of the VMS
tt.	LAN	Local Area Network
uu.	IP	Internet Protocol
vv.	IP Address	The unique address of a computer or network interface
ww.	FIPS	Federal Information Processing Standard
xx.	GIS	Geographic Information System

## 2 Technical Specifications

### 2.1 Basic Specifications

- a. The Security Information Management Software shall manage complex recorder systems of the manufacturer as a master system across multiple locations by controlling, protocoling and processing image information.
- b. The SIM Software shall be compatible with Windows operating systems 10 and Server 2016 and 2019.
- c. The software shall be able to process an unlimited number of camera channels, recorders (NVR), sites and operator stations.
- d. The system shall provide the automatic qualification, sorting and processing of information of the different recorder systems and display them according to user specific operator requirements.
- e. Operation shall be based on an unlimited number of graphical user interfaces and site plans in which control elements can be integrated.
- f. The software shall provide access to all connected cameras and recorders and be able to display video live and recorded images in parallel without delay.
- g. The integrated alarm management shall manage all messages of the connected systems.
- h. By utilizing additional delegation and message tools, the system will be capable of organizing user collaboration even in the case of parallel events at many different operator stations.
- i. All system and operating activities in the entire system shall be automatically documented without gaps.

- j. The SIM Software shall have integrated redundancy and failover capabilities, which may be easily implemented by using additional hardware and software components.
- k. The software shall provide an audit trail function, providing the capability to create complex reports on navigation processes in maps, displaying video streams and controlling PTZ cameras in addition to processing alarms and thus review this entire process.
- l. The processing of the images shall be encrypted system-wide and image exports shall be stored in a tamper-proof format that may be used as evidence used in court.
- m. The software shall be able to control all third party systems connected via interfaces in the overall system.
- n. Security information from third-party systems shall be used without restriction for the control of actions and events.
- o. The SIM software shall be compatible with the Windows FIPS mode.

### **2.1.1 Fundamentals**

- a. The SIM Software shall consist of 5 component types: the server, communication agents, the database, operator consoles and management consoles.
- b. Microsoft SQL Server shall be used as the database program.
- c. The SIM software and the SQL database shall run on the same hardware and for smaller systems a standard desktop computer shall be sufficient as a minimum requirement.
- d. The software shall run in a standard IP network suitable for video live streaming.
- e. All image processing, storage and transmission shall be done by the connected NVR and their Video Management Software, so that the SIM server uses its performance exclusively for controlling the overall system.
- f. The software shall be able to take over the complete control of the user rights for all system components.
- g. The audit function of the SIM software shall provide the functionality to export raw data of all logged actions of the operators via XML. The raw data shall be used to enable a graphical representation in common table calculation / spreadsheet tools, e.g. Microsoft Excel.

## 2.1.2 Graphical User Interface

- a. The multilingual graphical user interface of the software shall be able to support up to four monitors.
- b. It shall be possible to display freely selectable display layouts:
  - Main screen with viewers and control elements,
  - several graphical site plans and a group of viewers,
  - multiple split screen layout with viewers or full screen displays.
- c. It shall be possible to display a camera list so that camera images can be displayed in a specific viewer by simply dragging them to an available tile with a mouse.
- d. Detailed information such as the classification or the type of connection to a camera as well as directly assigned control buttons shall be selectable by right-clicking the mouse.
- e. The locations of the cameras shall be dynamically linked to the graphical maps, so that when a camera is selected the correct map with the corresponding camera is automatically displayed.
- f. The SIM Software shall be equipped with an integrated map engine, which allows the insertion of self-designable symbols on any number of site plans with interactive functions for operation and status display.
- g. It shall be possible to create a direct link parameter between site plans using hotspots in order to be able to switch very easily between different site plans.
- h. An SNMP integration shall be available to be used to retrieve status information from third party systems and to display it on the basis of different symbol states in the site plans.

## 2.1.3 Alarms

- a. The SIM Software shall display alarms and alarm processing via a separate tab on the main screen (monitor).
- b. Alarms shall be configured as either Tab View (a new tab for each alarm) or Viewer Group alarms. Viewer groups can be configured to appear on one or more templates to distribute alarm visualization across multiple streams. In addition, multiple playback modes (live, paused, playback, loop) shall be supported for each camera individually.
- c. If several simultaneous alarms are received on tabs, an automatic cycle of 20 seconds shall be used by default to switch between the alarms. It shall be possible to stop this cycle manually in order to select certain alarm tabs.
- d. It shall be possible to configure individual alarm tones for specific alarms which will be used instead of the standard alarm tones. If there are several alarms simultaneously, the tone of the alarm with the highest priority is output.

- e. Alarms can be filtered so that only different combinations of alarms are displayed:
  - new unprocessed alarms,
  - own uncompleted alarms and
  - uncompleted alarms of other users.
- f. Filtered alarm queries shall be exported as reports in the output formats CSV, Excel, PDF and JPEG.
- g. The software shall provide the ability to bundle alarms, automatically generate pop-up windows with appropriate alerts for specific alarm types, configure predefined editing processes and display health monitoring alarms.
- h. The operator console shall play a configurable sound when the connection to the SIM server is lost.

#### **2.1.4 Tours**

- a. To create virtual guard tours, the software shall have adjustable camera tours, both the retrieval of pre-programmed fixed positions from PTZ cameras as well as the cyclic display of camera channels.
- b. PTZ positions shall be named with their own names, in order to be able to select them like a fixed camera - switching display of the camera image plus moving to the fixed position with one click.
- c. While a tour is running, it shall be possible to drag images from a particular camera into another viewer while the tour continues in the previous viewer.
- d. Camera tours shall have the ability be enabled for all users or only for single users (private).

#### **2.1.5 Central Control, distributed Use**

- a. The SIM Software shall have a separate management console with which the entire system can be configured without the user accidentally gaining access.
- b. The user rights for individual users, user groups or operating consoles shall be configurable centrally in the management console. The rights of individual users can be restricted by combining different authorization levels.
- c. Authorization levels shall make it possible to lock certain sites, cameras and functions of the software in an adjustable hierarchy. Changes to the authorization levels shall take effect immediately without a new logon or restart of the system.

- d. By assigning authorization levels, it shall be possible to supply several control rooms independently of each other like separate security systems from a single server.
- e. The SIM software shall include built-in filters for requesting events from the audit trail, which can be used to create, export or mail complex reports without SQL knowledge.
- f. In addition to defining time ranges, the filters shall also provide all possible activities and states in the system such as alarms, alarm severity, alarm line, station, camera, camera type, camera group, media source, user group and user as main filter criteria. Depending on each of these criteria, further detail filters should be available down to each individual function.
- g. The filter settings shall remain unchanged until the next filter change has been input.

### **2.1.6 Remote Consoles and Video Walls**

- a. The software shall include the ability to set up and control remote consoles. Remote consoles can be remotely controlled by an operator with the appropriate rights and are used to display video images, e.g. in public areas without local operating functions.
- b. For large-area display of camera images and site plans, e.g. in JOCs (Joint Operations Centers), the software shall support the connection to large video walls where the area of the video wall used can be adjusted for partial sections.
- c. Screen layouts for video walls shall be selectable using configurable templates and layouts, including support for borderless video walls switched to a large virtual screen.

### **2.1.7 Redundancy and Fail-Over**

- a. The manufacturer shall be able to offer partial or complete redundancy for all components of the system.
- b. The SIM Software shall offer manufacturer's own fail-over solutions, which are capable of transfer times of less than one second in case of unplanned failures. This shall include camera failover and server failover solutions as well as support of edge recording.

### **2.1.8 Global**

### **2.1.9 Versions**

- a. The licensing of the software shall be possible either via hardware dongle or software dongle.
- b. The SIM Software shall be fully operational in VM environments (virtual machine).
- c. The software shall be available in a "light version" which supports max. 10 users at one site.

### **2.1.10 Installation**

- a. The installation of the SIM Software shall be possible in different stages as full installation, server, operator, maintenance, communication agent installation, user-defined installation, export service or MapTiles service installation.

### **2.1.11 Upgrades**

- a. Upgrades of the software shall be carried out automatically without prior manual termination of individual services and shall have user guidance.

## **2.2 Setup**

### **2.2.1 Management Console**

- a. The management console of the software shall have a quick selection menu band for intuitive operation of the system configuration via interactive areas and buttons aside from the usual Microsoft Windows symbols for manipulating windows.
- b. The user interface shall consist of three parts:
  - The main configuration area consisting of Connection, Server Setup, Client Setup, User and security, Sites and Site Groups, NVR and Cameras, Alarms, Site Maps and Viewer Templates.
  - The configuration elements that are listed to match the preselection.

- The data area in which the editable values are displayed.
- c. The software shall use pop-up notifications to inform the logged-in user about changes, warnings and errors while working with the management console.
- d. The management console of the software shall have a setup change detection and conflict-resolve mechanism.
- e. The management console of the software shall have a setup validation that checks the setup for missing and incorrect configurations. Recognized validation errors shall be indicated at the appropriate location by colored markers and an error description.

### **2.2.2 Connection**

- a. The software shall provide the capability to connect additional servers to the system via a simple dialog.
- b. The software shall be able to hold multiple server connections at the same time.
- c. The software shall provide the capability for the user to select between the active server connections.
- d. The management console and the server of the software shall support the simultaneous login of multiple administrators.
- e. The SIM software provide the capability of being synchronized Windows user groups.
- f. The software shall provide the capability to export the existing management console setup or import existing setups into the management console.

### **2.2.3 Server Setup**

- a. The system settings of the SIM software shall be centrally configurable and adjustable for the following components:
  - Connection manager
  - SIM server
  - Event recording
  - Operator console
  - Management console
  - User management
  - Health monitoring
  - Web browser management

- b. The SIM Software shall offer an integrated license request function, via which additional licenses of SIM components can be ordered from the manufacturer.
- c. An overview page (dongle dialog) shall list all software licenses (software options) contained in the complete system.
- d. The SIM Software shall have a health monitoring component for the generation and management of health alarms and messages.
- e. To monitor the operability of individual system components, the software should have communication agents that transmit current values of various system parameters, error history and stability, as well as performance data of the various system components from different locations to the SIM Software.
- f. Communication agents shall be configured with the following parameters:
  - Agent name
  - Agent password
  - Sites to be monitored
  - Plugin management (plugins to be loaded by the communication agent)
  - Alarm management (selection of alarms to be generated by the communication agent)
- g. Specialized health monitors (plug-ins) shall be selectable from a library for the capturing of the functional data of each individual system component. Health monitors send the captured functional data to the respective communication agent.
- h. Health monitoring shall work in a flexible plug-in architecture and provide information on video sources (NVR and camera information), information on storage devices as well as information on health monitor plug-in parameters.
- i. Health monitoring shall be able to generate the following alarms and messages:
  - Synchronization interference and camera malfunctions (camera does not send signal)
  - CPA Event
  - Login error (wrong username or password)
  - System error or system crash (NVR failure)
  - Errors and warnings from RAID (hard disk failures, overheating, etc.)
  - User-defined alarms
- j. Sites shall be transferable to another communication agent with all associated alarm parameters.
- k. The software shall have a redundancy mode, whereby a primary server and an additional secondary server may be utilized to support the failover function.
- l. The failover function shall be available as an additional software license.
- m. It shall be possible to operate the communication agent in dual mode on both servers.
- n. Global

## 2.2.4 Client Configuration

- a. Operator consoles shall be centrally configurable and include the following settings:
  - Login screen
  - Alarm sounds
  - Viewer design, colours, frames, headers, text, backgrounds
  - OSD text insertions
  - MOS recognitions
  - Definition of keyboard shortcuts
  - Time / Date formatting
  - Language pack 1, language pack 2
  - Wildcard functions
- b. In addition to personalized user rights, adjustable authorization levels shall make it possible to lock (remove) groups of operating functions (e.g. the complete playback control) at certain operator consoles (operator stations) independently of the user rights of the logged in operator.
- c. The software shall provide for remote consoles that may be grouped together, which makes it possible to remotely control image displays at unmanned display stations (e.g. in a foyer).
- d. The SIM Software shall support an unlimited number of operator stations (operator consoles).
- e. An operator console shall be remotely controllable independent from the logged in operator.
- f. It shall be possible to assign rights to an operator console to manage all cameras and other components of the linked consoles.
- g. A remote console shall be able to display any combination of video signals in any predefined screen settings. In addition, it shall be possible to display camera sequences, site plans, live alarm images, alarm freeze frames, alarm information or instructions for action.
- h. For each monitor connected to an operator or remote console, it shall be possible to select various predefined viewer layouts (templates) that can be modified or blocked and used for alarm displays. It should be possible to define one of the monitors as the primary screen.
- i. Advanced configuration options shall allow the administrator to set up visualization (OSD) for camera name, viewer number, event text, viewer text output, date/time with font and colour options for operator and remote consoles. A preview dialog shall be available in which the administrator can place the elements into the viewer with the mouse.
- j. The user shall then be able to adjust the visibility of each OSD setting individually:
  - Show / hide camera names, viewer text output and date / time on OSD display.
  - Show activity areas that determine the visibility of MOS, AD, VMD, and G-TECT frames.

- Show / hide event data / event descriptions.
  - Global device/camera numbers:  
Show / hide the global number.
  - Viewer number:  
Show / hide the viewer number.
- k. The SIM Software shall make it possible to create cut lists of video recordings.
- l. It shall be possible to define and create up to 10 types of cutting lists.
- m. Each operator console shall be able to use its own custom buttons.
- n. The right to use these buttons may be deactivated at any time by the administrator.
- o. It shall be possible to create own custom buttons as pushbuttons or a switching button, whereby the control function (action) can be selected from lists of all functions possible in the system and assigned to a recorder or a camera or a contact.
- p. Custom buttons shall be combined in groups with freely defined names and assigned to individual users or user groups.
- q. Custom buttons / groups shall be displayed in the operator console in the toolbar and when selected e.g. the assigned camera it shall be displayed in the viewer.
- r. Each console shall have the ability to define a specific export location (directory).
- s. With restrictions of the authorizations, users, user groups or consoles can be prohibited from accessing certain elements of their particular installation.
- t. The following restriction types shall be selectable:
- Alarm instances
  - Alarms
  - Camera access restriction
  - Camera group access restriction
  - Camera group restriction
  - Cameras
  - Export locations
  - Map object types
  - Map object types – additional states (execution only)
  - Operator consoles
  - Process data filters
  - Process data filters - sites
  - PTZ control of cameras
  - PTZ control of camera groups
  - Remote consoles
  - Sites
  - Viewer templates
- u. The SIM Software shall make it possible to search for associated video recordings based on process data.

- v. Predefined process data filters shall be available for this search:
  - Cash Management data filter
  - ATM Transactions data filter
  - Number Plate Recognition data filter
  - FaceRec
  - Barcode data filter
  - Door access process data filter
  - Gas station data filter
  - Shop process data filter
- w. Predefined process data filters shall be added to a "Quick Search" selection, which then appears in the operator console under the menu item process data search.
- x. It shall be possible to name and create each user's own process data filters which can be assigned to certain event types. It should be possible to determine which search parameters with wild card, in combination with other predefined data as well as calendar windows and time specifications are allowed as search criteria.
- y. The SIM software shall be able to use single viewers as web browsers and thus display information and pages from other systems with web interfaces or from the internet within the software.
- z. The web pages shall be predefined as bookmarks with name and description and can be made accessible to defined users or user groups.
- aa. For each bookmark there shall be individual settings, which define the display of the browser window and other navigation options on the displayed website.
- bb. It shall be possible to define security and audit functions for the browser function centrally in the system settings and individual for each bookmark.
- cc. It shall be possible to add an individualized certificate to the SIM software with a MEF plugin to perform client authentication of the websites.

### **2.2.5 Users and Safety**

- a. The users of the software shall be sorted into user groups in order to assign similar rights and tasks to individual users.
- b. It shall be possible to prioritize the list of user groups in order to determine which user group has the priority when controlling a PTZ camera.
- c. The SIM Software shall allow for an access hierarchy of authorization levels. All actions and action groups are authorized according to the authorization levels of the logged in user. In the management console, all actions are controlled by user authorization levels. Users at the highest level (system administrators) may configure permission levels for the management console themselves.
- d. Users shall be able to be created with the following personal data:

- Name, first name.
  - Short name (for use in the operator console)
  - Login name
  - Password
  - User group
  - Security group
  - Service number
  - Position
  - Physical position
  - Telephone number
  - Email address
  - Active or locked (selection)
  - User photo
  - User authorization levels (selection)
- e. The rights structure of the software shall be divided into authorization levels, authorizations and restrictions. The controls of the operator console shall be displayed or hidden automatically according to the rights.
- f. Authorization levels shall be the highest level of differentiation that determines whether a user is allowed to access a protected resource. If a user does not have the permission level to view cameras, there is no need to check whether he can access a particular single camera.
- g. The following authorization levels shall be selectable for users, user groups and consoles:

#### Administrative Authorizations (Management Console)

- Administrator
- Access connection manager settings
- Access user and security settings
- Access sites and maps
- Access to media sources and cameras
- Access to status details and alarms
- Access viewer templates
- Access to tools
- Alarm simulator
- Manage alarm simulations
- Add / manage plugins
- Manage alarm actions
- Access client data settings
- Restrictions and permissions on access
- Limited users

#### Standard rights

- Overwrite standard rights

## General Information

- Allow use of own custom buttons
- Allow change password
- Show the customize menu

## Sites

- View sites
- Allow sending actions from maps
- Viewing interaction objects on maps
- View sitemap
- Show critical status: site

## Cameras and Video

- View camera
- Watch live video
- Playback control
- View archived videos
- Show camera on map
- Block camera
- PTZ control
- PTZ restricted cameras can be enabled
- May share PTZ control with other users
- Allow recall of PTZ pre-sets
- Allow storage of PTZ pre-sets
- Manage reference frame
- Export video to preconfigured location
- Export video to any location
- Export frame to preconfigured location
- Export frame to any location
- The user can create a new export directory
- Overwrite console restrictions
- Video / Audio playback
- Show Activity Detection in video
- Show Video Motion Detection in Video
- Show all Video Analyses (G-TECT) in Video
- Show action text on video
- Show failover overview screen
- Can disable privacy protection for other users
- Allow camera check
- Process SetClientVCA action
- Enable bookmark functionality
- Allow face recognition enrolment
- Process viewer actions
- Show the "Viewed by" table

- Show the template selector
- Override console location configuration
- Allow high resolution channel export
- Allow forensic search

#### Alarms

- View alarms
- Handle alarm
- Forward alarm
- Fast processing of alarms
- View alarms of others
- Play audio for untreated alarms
- View all alarms
- Allow Alarm Auto View
- Consider alarms that have been accepted by others but not yet ...
- Take and view alarm

#### Tours

- View public tours
- Edit public tours
- Edit / view public tours

#### Investigation

- Motion Search (MOS)
- Process data

#### Remote Console + Remote Control

- Determine remote console layout
- Delete remote console
- Remote console content determination
- Set view unit to remote operator console
- Restart remote operator console

#### User

- Display tab "User"

#### Cut Lists

- Create cut list
- Export cut lists

- Delete cut list of other users

Web browser

- Show browser tab
- h. It shall be possible to use the Windows Authentication for the user login.
  - i. A user (operator) shall only be able to see pixelated images if Motion Privacy, Client Privacy Zones, etc. has been configured before. With a Two Man Rule a second logged in user (operator) can be authorized to display the images without pixelization for both users. An automatic time out can be determined for this.
  - j. It shall be possible to define "Privilege Groups" which can assign these rights to two user groups.
  - k. Both users shall only be able to determine together whether video images can be exported with no pixelization.
  - l. Authorizations are granted for individual elements of the software. If users have authorization for an object, they have access to its functions.
  - m. Restrictions are used to define in the system what a user is not allowed to do. If certain cameras are configured as "Restricted" for a specific user, the user cannot access those cameras.
  - n. The management console shall have a time adjustable, forced logout that automatically disconnects the server connection with a one minute warning time.

## 2.2.6 Sites and Site Groups

- a. The SIM Software shall work with a site model to divide NVRs and their respective cameras into logical groups. Sites are used to group together related NVRs and to monitor their joint operability as one unit.
- b. Different sites shall be able to be grouped together, where a group colour and sorting order can be specified.
- c. When configuring a site, it shall be possible to specify the name of the site, the connection type (connection performance), the maximum number of connections allowed, and the link to a site map.
- d. With an additional export service, it shall be possible for certain user groups to store video data and also single frames in the network at a preconfigured location within a quick export, single frame export and cut list export.
  - In addition, it shall be possible to specify an FTP server and create directories for synchronization with Google Drive or Dropbox.
  - The configured export service shall be automatically available in the operator console for all export functions.

- e. When configuring a site, it shall be possible to configure the amount of connections to this site.
- f. When configuring a site, it shall be possible to configure whether the console is treated as local (on-site) or non-local (remote).
- g. When configuring a site, it shall be possible to configure the search options for event data.
- h. When configuring a site, it shall be possible to search by default all event data related to the media source of the site in the default MSSQL event database of the SIM software.
- i. When configuring a site, it shall be possible to search all event data related to a selected media source using the provided MSSQL database connection of the connected video management software

### **2.2.7 NVR and Cameras**

- a. The SIM Software shall only display the sites with the corresponding cameras rather than the individual recorders.
- b. Cameras shall be able to be assigned to camera types during installation - analog / low resolution or high resolution. For high resolution cameras, a virtual PTZ function is automatically activated and 360 degree cameras are supported providing de-warping functions.
- c. Cameras shall be able to be grouped into camera groups, with the possibility to define a color scheme for the camera group.
- d. The SIM Software shall be able to manage one NVR as a global replacement recorder or several NVRs in a pool of replacement recorders also across sites and control them as failover NVRs.
- e. Replacement recorders shall automatically take over the function of primary recorders in case of failure. If a replacement recorder fails, another replacement recorder from the pool shall take over its function automatically.
- f. In the operator console, there shall be a failover overview showing the operator which primary recorder is assigned to which spare recorder.
- g. The SIM software shall be able to automatically search and find media sources (NVRs) in the network as well as allowing manual input.
- h. It shall be possible to create a public guard tour from a collection of cameras, which is available for all users in the operator console. The cameras shall be displayed in a viewer one after the other in a loop with defined switching times.
- i. The tour list shall have two adjustable filters, which can limit the total list according to the following criteria:

- Site
  - Site Group
  - Camera Status
  - Camera Group
  - Camera Status
- j. It shall be possible to add cameras from different sites and PTZ cameras (for different positions) several times to a tour.
- k. The dwell time of each camera or of all cameras in the turn-on cycle of a tour shall be adjustable in seconds.
- l. Predefined PTZ presets for PTZ cameras shall be selectable.
- m. It shall be possible to define camera lookup types to which selected cameras can be assigned.
- n. Offset and duration shall be adjustable for the selected cameras.
- o. Camera monitoring function, shall allow the creation of one or more sites and their cameras with the following criteria:
- Name - to differentiate between the service instances.
  - Hostname - hostname of the server on which the service is running.
  - Check Interval - time after which the service compares the reference image with the live image.
  - Threshold - threshold value for the CPA algorithm.
  - Max Time to Receive Image - max. time for image reception.
  - Site
  - Selected Cameras
  - Report Folder

### 2.2.8 Alarms

- a. The SIM Software shall receive alarm information from device-specific plug-ins that can be configured with global and local (site specific) parameters.
- b. When configuring alarms, it shall be possible to add text placeholders to the alarm information that are automatically filled by the system:
- Name of the location
  - Description of the site
  - Name of the media source
  - Name of the camera (media channel)
  - Description of the camera
  - Name of the device (system component)
- c. The following additional parameters shall be set for each alarm:

- Severity - critical, non-critical, informative
  - User group to which alarms of this type are to be forwarded.
  - Seconds before alarm (prehistory) - shows video recording before alarm is triggered
  - Minutes lifetime - the amount of time an alarm must exist before it is handled as an expired event.
  - Camera / system component alarm - technical alarm e.g. in case of camera malfunction
  - Auto View Alarm - alarm is automatically displayed on the operator console.
  - Override sound
  - Quit G-Core event
  - Enforce Playmode Live on Review
  - Loop time
  - Enable fast process of alarm
- d. The configuration of an Auto View Alarm shall make it possible to assign a separate viewer matrix with several camera connections and an alarm map, whereby e.g. the alarm triggering is displayed as a still image, the alarm sequence as playback of the recording with previous history, neighboring cameras in live mode and a map with marked alarm camera and action instructions.
- e. The additional option "forced live mode in review" shall not display the video images from the alarm triggering time, but the current live images of the alarm camera.
- f. The SIM Software shall have the following proprietary alarm types:
- Blacklist
  - Camera failure, parameterizable - Synchronization error, time window, frequency in time, test period
  - Controlled client server timeout
  - Camera Position Authentication Alarm
  - Emergency call message (digital input or camera contact)
  - NVR maintenance / site maintenance
  - Fence
  - FRC alarm - Failure of storage device
  - Emergency telephone alarm (digital input or camera contact)
  - Lost connection to server
  - NVR failover alarm
  - Possible cluster failover
  - Possible DVR failure, set by parameter - Timeout, Live Check, Live Check Period
  - SNMP trap, set by parameter - errors and warnings from RAID systems
  - Security breach
  - GeViSoft Alarms / Events
  - GeViSoft connection alarm, parameterizable - Timeout, alarm, event, test period
  - GscEvent recording failed
  - Hard drive failure
  - Server dongle error

- Tamper alarm
- g. Alarms and messages shall be classified by level of severity which will determine if information is forwarded directly (critical), forwarded at the next synchronization (non-critical) or forwarded only at query (information).
  - h. It shall be possible to define alarm response types that can be used by the operator during alarm acknowledgement to assign predefined alarm descriptions to the alarm.
  - i. The SIM Software shall include an integrated alarm simulator which can be used to test system alarms and health alarms with user-defined properties.
  - j. The administrator shall be able to define "Alarm instances" to link several cameras to a single alarm.
  - k. Alarm instances shall be configured with the following parameters:
    - Monitor sites (monitored sites)
    - Plugin management (plugins to be monitored)
    - Alarm logic (configure alarms that need to be logically compared with strings received from hardware components)
    - Filter criteria
    - Filter expressions (filter expressions are configured for SNMP alerts) - all these words, exactly this phrase, at least one of these words, none of the mentioned words, trigger after x consecutive matches, suppress x minutes
    - GeViSoft event / alarm
    - G-Core events
    - Map displayed
    - System component
    - Alarm logic range (selection action type)
  - l. The SIM software shall have an alarm setup wizard for linking events from connected NVRs to select predefined configurations for automatically displaying alarms.
  - m. It shall be possible to create new alarm templates or edit existing alarm templates using the alarm setup wizard.
  - n. It shall be possible to retrieve the events of the connected NVRs and use them to create alarm instances.
  - o. The alarm setup wizard shall create a communication agent and add the default plugins to it, as well as all the sites that shall be controlled by this agent. If there is already a communication agent in the SIM software, the alarm setup wizard should activate the default plugins of the NVRs for this agent.

## 2.2.9 Site Maps

- a. The SIM Software shall have an integrated, graphical site map control and display, which allows navigation to the video sources / cameras and in which alarm states for the location and the cameras are visually signalled. Maps display information in the

form of objects. Map objects can be cameras, alarm instances, general alarms, video motion alarms, CPA alarms and clickable hotspots for navigation.

- b. It shall be possible to insert hotspots into site plans for manual switching between site plans. Hotspots shall be able to be saved and selected as templates, whereby the colour values can be defined in ARGB format (A = alpha channel, transparency).
- c. It shall be possible to create image file groups in an image repository, in which the map objects can be sorted by type.
- d. Site maps shall be stored on the SIM server and always loaded in the current version by the operator consoles. When creating a site map, the minimum zoom scale, maximum zoom scale, standard zoom scale and zoom factor should be adjustable and it shall be possible to lock the zoom function for users.
- e. The software shall have an integrated, self-explanatory map editor, in which map objects, camera labels or hotspots can be interactively positioned and linked in location plans oriented to a grid.
- f. Controlled by actions from subordinate, manufacturer's own Video Management Systems, it shall be possible to open or clear a site map stored in the action with name in a viewer.
- g. In order to show and hide certain symbols (cameras, etc.) in a sitemap manually, buttons with a specific function shall be integrated into site plans and assigned to certain symbols. Buttons shall be able to be saved and selected as templates, whereby the colour values can be defined in ARGB format (A = alpha channel, transparency).
- h. Map objects that are restricted for a user, user group, or operator console shall be removed from the map so that the user can only see objects that are available to him.
- i. Map objects (jpg, png, gif and bmp) shall be archived in a system file or a user-defined image file and automatically integrated into the setup.
- j. Map objects shall be able to be assigned to four different states - on, off, alert on and alert off plus additional alarm camera on / off. According to each state it shall be possible to assign an image, e.g. to display a camera alarm with a red camera symbol or a manual selection with a green camera symbol.
- k. In addition, it shall be possible to configure a trigger type for a map object that can be assigned to the function "Alarm", "Alarm Instance", "Camera", "None" or "System Component".
- l. Further additional display rules shall be selectable: "Normal" for informative purposes, "Cycle" cyclic change between on and off pictures and "Toggle" for switching between two states.
- m. It shall be possible to assign click rules and display rules to map objects so that actions are triggered in the system when the object is clicked.
- n. It shall be possible to reset map objects in order to delete all active alarm states on the server.

- o. The SIM software shall enable the use of georeferenced map material from Open Street Maps and Google Maps and the display of the cameras or other objects on this map material.
- p. GIS maps shall be marked in the map list with the suffix [GIS].
- q. When creating a GIS map, the starting point of the map view, the minimum and maximum zoom scale and the default zoom scale shall be adjustable.
- r. It shall be possible to define an allowed map area for users.
- s. It shall be possible to set the size of map objects and to enable clustering of map objects.
- t. In the map editor of the GIS map, the starting point and current center of the map view as well as the set allowed map area shall be marked in color.
- u. When creating a GIS map, it shall be possible to add individual objects to the map. The objects should be selectable from a list (if geographic coordinates are stored) or should be able to be placed directly on the map.

### **2.2.10 Viewer Templates**

- a. Viewer templates shall be sortable in template groups. Predefined templates and self-created templates can be stored in separate template groups.
- b. The software shall have predefined viewer templates or scenes and additionally offer the possibility for the user to configure their own templates in order to easily display video images, maps, instructions, lists and menus on the operator consoles.
- c. The size, position and number of the individual viewer windows shall be manually adjustable by means of an adjustable grid or automatically adjusted by the wizard.
- d. It shall be possible to configure predefined scenes in which viewers with permanently assigned cameras and viewers with globally valid names can be included, e.g. to remotely display cameras of other locations in case of alarms.
- e. Predefined scenes shall be limited to single consoles or users, so that different consoles react differently to the same received activity.
- f. The software shall contain the function "Linked Layouts", with which it is possible to switch between linked viewer templates with different displayed camera channels by mouse click.
- g. The following switching parameters shall be available for the linked layouts:
  - Explicit link (Drop-down menu to select shortcut to configured layouts)
  - Primary link (Quickly switch to the linked layout using the viewer menu)
  - Play mode
  - Sync mode
  - Locked

- h. In the user interface of the operator console, it shall be possible to select linked layouts via a template selector.
- i. By means of the primary link, a left click in the viewer menu shall switch to the subsequent layout.
- j. With the additional software option "Video Track & Trace" (VTT), it shall be possible to provide linked viewers with a temporal offset (seconds) in order to be able to play back images of different cameras in parallel with a time delay.
- k. Viewers shall be able to be grouped into viewer groups, with the possibility to define a colour and the behaviour in case of alarms.

## 2.3 Operator Console

- a. As a user interface, an operator console shall have the following rights-dependent basic functions:
  - Configurable user interface in which maps, videos, lists and information can be arranged anywhere on the screen.
  - Customizable maps.
  - Rapid access to live video from any connected camera from multiple sites.
  - Playback of stored video recordings of any cameras from different sites.
  - PTZ control of selected cameras.
  - Create and retrieve cyclic camera sequences (tours).
  - Flexible alarm processing of different alarm types.
  - Assign or forward tasks to other users or user groups.
  - Messaging features.
  - Graphical display of alarms, system statuses and processing specifications.
  - Documentation of user and system events in the audit log.
- b. The home screen of the operator console shall contain the user login for entering the user name and password, an icon for exiting the SIM Software (Cancel Login) and an icon for setting the language.
- c. After entering the wrong user login six times (this number may be adjusted by the administrator), the user account shall be blocked and can only be unblocked by the administrator.
- d. If desired, the operator console should allow for automatic login using Windows Authentication.
- e. The software shall be able to restrict the use and modification of passwords:
  - History of Enforce Password:  
The user cannot use the last password to create a new password.

- Maximum Password Age:  
The period (days) in which a password can be used before the user has to change the password.
  - Minimum Password length:  
Minimum number of characters.
  - One-time login:  
One-time password with limitation of the number of logins.
- f. With the appropriate rights users shall be able to change their password. Without these rights the user shall be notified when their password expires or that a new password has to be changed.
- g. The home screen shall be able to display the viewer layout previously saved by the user as the standard layout (including viewer content, cameras, etc.) or the latest used layout or the first layout from the viewer layout templates.
- h. After a logoff, the system shall switch back to the previous state when logging in again.
- i. Automatic logoffs shall take place in the following states:
- After the waiting time for inactivity has expired (default value = 1 minute, can be changed in the management console).
  - A time for the forced logoff has been defined.
  - Changing of the system language.
  - Performing a software update of the operator console.
- j. The user interface with toolbar, viewers and tabs for lists shall always be displayed on the main monitor (1st monitor). Only additional viewers shall be displayed on the optional monitors 2 - 4.
- k. A status bar below the tabs shall display the name of the logged in user, the license status, and the date and time.
- l. It shall be configurable that a user is only allowed access to the recordings (database search) of one, several or all cameras when he fills in a comment. The comment shall be saved in the audit log.
- m. Users shall be able to change their password in the login screen of the operator console.
- n. The Operator Console shall be equipped with an Auto Login function, which executes the login after a preset time if Windows Authentication is activated.
- o. It shall be possible for a certain user group (with corresponding rights) to assign the temporary control of a certain number of PTZ cameras to another user group for a configurable period of time, regardless of the setup configuration (PTZ locked).
- p. The user interface shall offer the possibility to set and retrieve bookmarks.

### 2.3.1 Toolbar

- a. The main toolbar shall contain the following buttons:
  - Template - to select the viewer templates.
  - Customize - for various customizations of the operator console to the current user.
  - Remoting - for the control of remote consoles.
  - Reporting – report creation dialog.
  - Failover - dialog that displays the states of all NVRs in the system.
  - Quick Export - for the dialog to easily export images, cut lists, etc.
  - Mute - switch alarm tone on / off
  - Video Sound - volume control for video sound.
  - Sync - for time synchronization of viewers.
  - Select All
  - Activity areas - to display activity areas.
  - OSD - switch text insertions on / off.
  - Timeline - to show or hide a timeline below the viewers.
  - Search Mode - displays additional elements for the search in the timeline area.
  - Custom
  - Tabbed Lists - to show or hide the tabs for lists.
  - Alarms – show / hide the alarm screen when alarms with automatic display are present.
  - Camera Check - dialog that displays the result of the camera check.
- b. Under the menu item "Template" layouts for the user interface shall be selectable:
  - Screen Templates - for selecting empty viewer templates that have been created by the administrator and can be used for different purposes (work screen, video walls, auditing, etc.).
  - Populated Screen Templates - for the selection of previously configured compilations of viewers and maps with defined contents.
  - Linked Layouts - for the selection of linked viewer layouts.
  - Favorite Layouts - to store specific sets of viewers and maps with defined content under a different name as a favorite.
- c. The following settings shall be possible under the menu item "Customize":
  - General Setup - general settings of language, text size, display of menu tabs, Alarm Auto View Screen.
  - Devices - display of GeViSoft connections.
- d. Under the menu item "Remoting" it shall be possible to configure screen layouts for remote consoles.
- e. Here it shall be possible to select templates for the screen settings, to show and hide alarm displays and viewer headers and to delete the screens.
- f. It shall be possible to dock a remoting list to a viewer in order to be able to use a copy of the list in the viewer.

g. Detailed reports with the following filter settings shall be created under the menu item "Reporting":

- Alarm Severity
  - High
  - Medium
  - Low
- Alarms
  - ANPR
  - Blacklist Alarm
  - Camera Failure
  - Controlled Client Server Timeout
  - CPA Alarm
  - Duress Alarm
  - DVR Maintenance
  - Fence Detection
  - FRC Alarm
  - GeViRaid Failure
  - GeViSoft Connection Alarm
  - GSC Event Recording Failed
  - Hard Drive Failure
  - Help Phone Alarm
  - Lost Connection to Server
  - Possible Cluster Failover
  - Possible DVR Failure
  - Scan
  - Security Breach
  - Server Dongle Error
  - Tamper Alarm
- Site Group
- Site
- Camera Type
  - 16:9 (Fisheye)
  - 16:9 (normal)
  - 16:9 (PTZ)
  - 4:3 (normal)
  - 4:3 (PTZ)
  - Fisheye
- Camera Group
- Cameras
- User Group
- User

h. The filter settings of a report shall be limited in time:

- Date / Time / Range
- Specific Month
- Last X minutes / hours / day

i. The report shall be combined to a table where the columns can be selected by the main filters.

- j. Filtered reports shall be able to be printed and exported as PDF, MHT, RTF, XLS, XLSX, CSV, text or image file or sent by email.
- k. The states of all NVRs in the system shall be displayed in a graphical view:
- (C) - Connected - the recorder is connected or not.
  - (A) - Available - the recorder is a replacement and is ready to failover.
  - (F) - Failover - another recorder is in a failover state and is handled by this recorder.

- l. Under the menu item "Quick export" there shall be a dialog for easy export of images where the following functions can be selected:
- The Quick Export dialog displays all cameras that are currently active in the viewers and allows the selection of individual or all cameras for export.
  - With the function "Select a time range" it shall be possible to select the start time via time and date and the duration of the video recordings for the export.
  - Furthermore, the format (GBF or MPEG), the location where the export file should be saved, the name of the export file and optional a description text should be defined.
  - With the command "Add to Cut List" a cut list shall be created for the export and the export shall be started.

The export of the images shall run in the background without having to leave this menu open.

- m. The SIM Software shall include a camera check that allows live images to be compared with previously stored reference images and the status of the cameras to be displayed:

- Camera name
- Site name of the camera
- Camera status okay
- Camera status failed
- Camera status unknown
- Camera status offline
- Information about the selected camera
- Manual check

- n. The user interface of the operator console shall contain a central menu bar for the standard operation of the video viewer with the following functions:

- Fast rewind database (speed adjustment via slider)
- Rewind
- Frame by frame rewind
- Stop
- Forward image by image
- Forward
- Fast forward database (speed adjustment via slider)
- Live streaming / images from database

- o. By pressing the "Search Mode" button, the following additional search functions shall be activated in this menu bar:

#### Event Search

- Start of database
- First event
- Last event
- End of database

#### Section

- To the beginning of the selection - Set start of selection
- Set end of selection
- Reset selection
- Dialog for configuring a time range

#### MOS Motion search

- Start of database
- MOS backward
- MOS forward
- End of database

- p. The user interface of the operator console shall have a timeline that can be set from 1 minute to 24 hours. It shall be possible to shift this time line over the entire recording area in order to quickly select images from the recording history and alarms, events or bookmarks.
- q. The SIM software shall allow smooth playback of H.264 recordings, decompressing and replaying the entire GOP. This configuration is done from the operator console or remote console.
- r. The software shall be able to use a transcoding server to transmit video images from remote locations over low bandwidth connections. The operator should be able to switch between a low bandwidth stream and a high-resolution stream within the operator console to receive transcoded detail images.

### 2.3.2 Tabs

- a. It shall be possible to display and edit all operating data of the SIM Software in lists depending on the rights. These lists should be accessible via the following tabs:
- Alarms
  - Sites
  - Cameras
  - Tour

- Cut Lists
  - Process Data
  - Archive
  - Users
  - Tasks
  - Messages
  - Audit
  - Browser
- b. These lists shall have a similar structure and each show one element in a single line. The most important information is displayed for each element. Clicking on an element opens the corresponding detail information for that element.
  - c. The status values (is displayed to user XX, lock status, availability status) of the list elements shall be indicated by symbols. Different text colours of list elements indicate (e.g. camera lists) the different camera positions.
  - d. Camera status values are displayed as follows:
    - Viewed - this camera is currently being viewed by a user.
    - Viewed by me - you yourself (the logged in user) are currently viewing this camera.
    - Locked for me - the camera has been locked by another person and you cannot view the camera at this time.
    - Locked by me - you (the logged in user) have locked this camera.
    - Status values of the list elements shall be divided into columns, which can be sorted by clicking the column headers (View, site, etc.).
  - e. List elements shall be easily drag-and-drop by the operator to other areas by mouse. Examples: Camera entries can be dragged into viewer, users can be dragged into messages or tasks.
  - f. Each tab shall have adjustable filters that can filter list entries according to the structure of the database.
  - g. Filtering shall be incremental with each filter option further limiting the selection.
  - h. Filtered lists shall be able to be printed and exported as PDF, MHT, RTF, XLS, XLSX, CSV, text or image file or sent by email.

### 2.3.3 Sites Tab

- a. In the tab "Sites" all sites shall be listed in site groups to which the current user has access. Each site shall contain a compilation of the cameras installed there.
- b. Symbols shall be displayed beside each site entry:
  - whether connections to this site are active,
  - if the health check is overdue,

- whether some or all of the cameras are not available.
- c. It shall be possible to dock a site list to a viewer via buttons displayed in the list and to display the overview map of the system.
- d. The site list shall have two adjustable filters, which can limit the total list according to the following criteria:
- Site Group
  - Status Filter
    - Sites with active alarms
    - Sites with open video connections
    - Sites with blocked cameras
- e. By clicking on a site, the following detailed information shall be displayed:
- Last health check (date / time)
  - Availability check (date / time)
  - Site description
  - Connection type
  - Connection count
  - List of the cameras
- f. The following operating functions (buttons) shall be activated with the detailed information:
- View all cameras
  - Unblock all cameras
  - Block all cameras
  - Camera list (List of cameras on this site)
  - Locate on map
  - Site based populated layouts
- g. It shall be possible to drag graphical overview maps and via hotspots hierarchically linked maps for each site into a viewer. In the viewer a map can be moved with the mouse and zoomed over with the mouse wheel.
- h. On the site maps, it shall be possible to interactively display and operate the cameras of the site as well as any elements of other safety devices with symbols and labelling. For example, cameras can be dragged from the site map directly into Viewer.
- i. In the site map viewer, a toolbar shall provide the following operating functions:
- Home - switch to overview map
  - Back - to the previous map
  - Next - in the chronicle of the displayed site plans switch to the next site plan
  - Overview Map Position - to define in which corner of the viewer the overview map should be displayed.
- j. Symbols on the site plans shall be able to show the state of the respective element (e.g. a camera) by different colours:

- Normal condition
  - Symbol (e.g. camera) marked
  - Alarm status (symbol flashes)
  - Offline
- k. The viewer of a GIS map shall display the following information:
- Center of the current map view
  - Allowed map area
  - Map objects and their current states
  - Name of the map provider, zoom scale and current zoom level
- l. It shall be possible to assign a GIS map to a site.
- m. It shall be possible to include a GIS map in an alarm.
- n. When using GIS maps, it shall be possible to display alarm details of objects on the map directly on the map.
- o. It shall be possible to add a GIS map to an alarm template.
- p. Each GIS map shall have its own map related alarm control.

### 2.3.4 Cameras Tab

- a. In the tab "Cameras", all cameras of the system to which the current user has access shall be listed by location and camera group.
- b. In addition to the individual camera entries, the following states shall be indicated by symbols:
- Viewed
  - Viewed by me
  - Displayed in tour
  - Displayed by me in tour
  - Locked to me
  - Locked by me
  - Deactivated
- c. The site list shall have two adjustable filters, which can limit the total list according to the following criteria:
- Site Group
  - Site
  - Camera Group
  - Camera Type
    - 16:9 (Fisheye)
    - 16:9 (normal)
    - 16:9 (PTZ)

- 4:3 (normal)
  - 4:3 (PTZ)
  - Fisheye
  - Camera Status
    - Disabled cameras
    - Cameras blocked for me
    - Cameras blocked by me
    - Being viewed
    - Viewed, or in guard tour
    - Viewed in guard tour
    - PTZ controlled
- d. It shall be possible to dock a camera list to a viewer via a button displayed at the top of the list and to unlock all cameras locked by current users.
- e. With a mouse click on a listed camera entry the following detailed information shall be displayed:
- Reference image (preview image) of the camera
  - Name of camera
  - Site Group
  - Camera Type
  - Connection
- f. The following operating functions (buttons) shall be activated with the detailed information:
- Block camera
  - Share camera
  - Task - create camera task
  - Key frame – select a camera reference image
  - Locate on site map
  - View – view live
  - Show linked layouts
  - Add camera to tour
- g. In order to be able to view camera images in a viewer, the following operating possibilities shall be available:
- Drag a camera from a camera list into a viewer.
  - Drag a camera from a map into another viewer.
  - Drag the video content of a running camera tour into another viewer. The tour should be continued normally. The new viewer displays the image of the camera that was currently on the tour when dragging.
  - "Live Video" button in detailed information in the tabs.
  - Drag detailed information from a tab into Viewer.
- h. In the header of each viewer, the play mode shall be indicated by a symbol.
- i. The following functions shall be available to control a viewer:
- Activate viewer for control - click on Viewer

- Zoom - rotate mouse wheel
  - Switching full screen / original size - double-click on the viewer
  - Move image - drag with pressed left mouse button
- j. Viewers shall include additional buttons to open the menu for PTZ control, brightness, contrast and saturation adjustment of the image, and single image export (JPEG, BMP).
- k. A right click of the mouse button in the viewer shall open a popup menu with the functions:
- Block camera
  - Create camera task
  - Add camera to cut list
  - Single frame export
  - Locate on map
  - Show the linked layouts
- l. The active viewer shall be synchronized with other selectable viewers in order to be able to view the images of several cameras simultaneously.
- m. To be able to jump to certain interesting events, it shall be possible to add a currently marked frame to a bookmark, which can be used to select this point in time afterwards.
- n. Marked cameras (viewers) shall be able to be added to a synchronous group to navigate simultaneously with the video controls in the selected video recordings.
- o. The video playback control shall also be possible via keyboard commands, whereby the function keys F4 to F12 correspond to the functions of the video control bar in the same order.
- p. It shall also be possible to control the video playback with the manufacturer's own operating terminal. The softkeys of the device should cover the following functions:
- Switch between full screen display and multiple viewers
  - Variable return (variable speed of return)
  - Synchronous rewind (rewind speed corresponds to recording speed)
  - Stop
  - Synchronous playback (playback speed corresponds to recording speed)
  - Variable feed (variable feed speed)
  - Live
- q. The rights to control PTZ cameras shall be controlled hierarchically via the user groups. A user with higher rights should be able to remove control from a user with lower rights at any time in order to exclusively take control of the PTZ.
- r. Once a user has taken control of a PTZ camera, the viewer of all users who have opened that camera should display the name of the user who is currently taking control.
- s. A user shall hold the control of a PTZ camera until:

- he himself releases the controls,
  - another user with the same or a higher user level takes control,
  - another viewer is selected,
  - the waiting time expires (the default waiting time is 1 minute, this parameter can be adjusted),
  - the user logs off or the connection to the server is terminated.
- t. PTZ cameras shall be controlled by movements of the mouse with pressed left mouse button in the video image of the viewer, whereby the mouse wheel takes over the zoom function.
- u. It shall also be possible to control PTZ cameras using the numeric keypad of the PC keyboard.
- v. PTZ cameras shall also be controlled by the manufacturer's own control unit, which has a joystick for Pan and Tilt as well as buttons for focus and zoom adjustment.
- w. PTZ cameras shall be able to be assigned preset points (fixed positions) with a short description by simply saving the previously selected camera perspective.
- x. Fixed positions of a camera shall be saved in a selection list and can also be retrieved by other users.
- y. Fixed positions of PTZ cameras shall also be displayed and called up in site maps.
- z. The software shall be able to display system-related messages in a text strip with a grey background before the start of video streaming and during playback:
- Connecting - the viewer waits for the connection to the DVR to be established.
  - Access denied - rights to view the selected camera are missing.
  - Site not available - no connection could be established to the DVR.
  - Site in use - the maximum number of connections to the site has been exceeded.
  - Video locked - the camera was locked by another user.
  - No data available - video recordings have already been overwritten or never saved.
  - Network error - a network error occurred when connecting to a DVR.
  - Connection error - the connection to a DVR is allowed, the operator console still cannot establish a connection.
  - Audit log of the cameras viewed - all camera display and playback actions are stored in the audit log. Users with the required rights can not only see what other users have seen, but they can also play the same video recordings in exactly the same order.
- aa. A user with appropriate rights shall be able to set bookmarks when viewing video images. The bookmarks should contain the appropriate camera name and timestamp.
- bb. Bookmarks shall be stored in a bookmark list, in which the bookmarks of all cameras are listed and can be retrieved by mouse click.

- cc. Bookmarks shall be exported to a cut list where all bookmarks or single bookmarks can be selected. If no existing cut list is selected for editing, a new cut list shall be created automatically.
- dd. All camera display and playback actions shall be stored in the audit log. Users with the required rights can not only see what other users have seen, but they can also play the same video recordings in exactly the same order.

### 2.3.5 Tours Tab

- a. The SIM Software shall contain functions to save, edit and retrieve camera tours (guard tours).
- b. A tour shall be a collection of cameras which are displayed in a viewer one after the other in a loop with defined switching times. Cameras from different sites and PTZ cameras (for different positions) can be entered several times.
- c. The tab "Tour" shall list stored camera tours for users with corresponding rights.
- d. The tour list shall have two adjustable filters, which can limit the total list according to the following criteria:
  - Site Group
  - Site
  - Camera Group
  - Cameras
  - Status Filter
    - My private guard tours
    - Public guard tours
- e. To edit camera tours, the following controls shall be available in the tour tab:
  - Create new tour
  - Changing the order of cameras
  - Remove camera
  - Edit tour
  - Delete tour
  - Activating a tour in the viewer
- f. To configure a new tour, the "New Tour" button shall be used to display the detailed view of the tour and to automatically activate the edit mode for this tour. It shall be possible to assign a name to this tour and it shall be possible to mark it as "public" or as "private" only for this user.
- g. To add cameras and fixed positions of PTZ cameras to a tour, these elements shall simply be dragged from a viewer, the camera list or a site map into the currently edited tour.
- h. The dwell time of each camera or of all cameras in the turn-on cycle of a tour shall be adjustable in seconds.

- i. All assigned cameras and if available the fixed positions shall be listed in the detailed tour view.
- j. It shall be possible to dock a tour list to a viewer in order to be able to control a copy of the list in the viewer.
- k. The status of the tours in the tab shall be indicated by the following symbols:
  - Private tour
  - Viewed
  - Viewed by me
  - Edit mode
- l. To display a camera tour, it shall simply be possible to drag it from the tab into a viewer even if a viewer is already occupied by other information.
- m. To operate a tour, it shall be possible to select a dwell mode that pauses the current tour and displays live images from the current camera.
- n. An additional stop mode should display a frozen image of the current camera when the tour is paused.
- o. It shall be possible to switch between cameras in a pop-up menu in the viewer during a running tour by clicking on a desired camera in the displayed tour list. The tour should then continue from the selected camera.
- p. All tour actions shall be automatically saved in the audit log. Users with the required rights can see which tours were displayed to other users.

### **2.3.6 Cut Lists Tab**

- a. The SIM Software shall enable the user to easily edit, save and export cut lists of recordings of several cameras for a definable period of time.
- b. The tab "Cut Lists" shall contain saved cut lists for users with corresponding rights.
- c. The tab "Cut Lists" shall have two adjustable filters, which can limit the total list according to the following criteria:
  - Time / Date / Duration
  - Type of event
    - Alcohol / Drugs
    - Attack
    - Harassment
    - Unlawful behaviour
    - Unauthorised stay
    - Suspicious behaviour
    - Theft
    - Illegal trespassing
    - Vandalism

- Other
  - Site Group
  - Site
  - Camera Group
  - Cameras
  - User Group
  - User
  - Cut List Status
    - Private
    - Pending
    - Exported
- d. It shall be possible to dock a cut list to a viewer in order to be able to control a copy of the list in the viewer.
- e. The states of the cut lists in the tab shall be indicated by the following symbols:
  - Private cutting list
  - Considered
  - Viewed by me
  - Edit mode
- f. To edit cut lists, the following controls shall be available in the tab cut lists:
  - Create a new cut list
  - Empty list
  - Arrange chronologically
  - Edit cutting list
  - Delete cut list
  - Video export
  - Show the active camera on the map
  - Show the selected camera in a viewer
  - Show all cameras in viewers
- g. To configure a new cut list, the "New Cut List" button shall be used to display the detailed view of the cut list and the editing mode for the cut list shall be activated automatically. It shall be possible to assign an event type, a description and notes to this cut list and it shall be able to be marked as "public" or as "private" only for this user.
- h. To add a video recording of a camera to a cut list, the desired time range shall be set in the timeline of the viewer. Then the viewer shall simply be dragged into the detail view of the cut list.
- i. To view a video recording saved in the cut list later, the desired cut list may simply be dragged into a viewer.
- j. With the export function, it shall be possible to export cut lists to any location, whereby the following settings can be made:
  - All items in the list
  - Only the selected type

- Target folder
- File name
- Cut list file
  - Block re-export
  - Bandwidth limit
  - Include viewer
  - Encrypt backup file
- MP4 / MPEG4CCTV
  - Create file for each cut list item
  - Insert text
  - Fast motion
  - Size of the first image
  - Size split
  - Size: UHD, Full HD, HD, 4CIF or CIF
- H.264 raw
  - Create file for each cut list item
  - Insert text
  - Fast motion
  - Size of the first image
  - Size split
  - Size: UHD, Full HD, HD, 4CIF or CIF

### 2.3.7 Process Data Tab

- a. The SIM Software shall have extensive functions for handling process data. Process data includes vehicle license plates, scanned barcodes, Point-of-Sale / retail transactions, ATM transactions, etc.
- b. In the tab "Process Data", it shall be possible to list all stored process data with the linked video recordings for users with corresponding rights on the basis of filters.
- c. The tab "Process Data" shall have four adjustable filters which can limit the total list according to the following criteria:
  - Time / Date / Duration
  - Site Group
  - Site
  - Camera Group
  - Cameras
  - ANPR
    - Country
    - Restriction (not used / unspecified / black listed / white listed)
    - Licence plate
  - ATM
    - ATM
    - Account
    - Card number
    - TAN

- Bank code
  - Amount
  - Door Access
    - Name
    - Panel No.
    - Access granted
    - Batch No.
  - Gas Station
    - Name
    - Pump No.
    - Amount
    - Price
    - Status (filling completed / filling started)
  - Cash
    - Safebag No.
  - Events
  - Shop
    - Units
    - Article name
    - Price
    - Article
    - Name
    - Price per unit
  - Barcode
    - Scanner
    - Barcode
- d. To be able to view a saved video recording linked to process data later, the desired entry shall simply be able to be dragged into a viewer.
- e. With the button "Locate" it shall be possible to display the corresponding camera in the site map.
- f. A video recording linked to process data shall be exported from a viewer like other recordings with the usual system parameters.

### 2.3.8 Archive Tab

- a. The SIM Software shall have an archive in which all exported video recordings can be listed that have been exported in the manufacturer's own format (GBF).
- b. The tab "Archive" shall have four adjustable filters which can limit the total list according to the following criteria:
- Time / Date / Duration
  - Site Group
  - Site
  - Camera Group

- Cameras
  - User Group
  - User
- c. To be able to view an exported video recording later, the desired entry may simply be dragged into a viewer.
- d. Exported video recordings shall be authenticated by the system.

### 2.3.9 Alarms Tab

- a. In the tab "Alarms" all alarms of the system shall be listed for users with corresponding rights by means of filters. A red signal indicator on the tab indicates that there are new alarms in the alarm list.
- b. It shall be possible to select 3 separate lists for preselection:
- New - new, not yet processed alarms.
  - Mine - current alarms processed by the current user.
  - Other - alarms accepted by other users.
- c. The tab "Alarms" shall additionally have four adjustable filters, which can limit the selected list according to the following criteria:
- Time / Date / Duration
  - Alarm severity (critical / non-critical / information)
  - Alarms
    - ANPR
    - Blacklist alarm
    - Camera failure
    - Controlled client server timeout
    - CPA alarm
    - Duress alarm
    - DVR maintenance
    - Fence detection
    - FRC alarm
    - GeViRaid failure
    - GeViSoft connection alarm
    - GscEvent recording failed
    - Hard drive failure
    - Help phone alarm
    - Lost connection to server
    - Possible cluster failover
    - Possible DVR failure
    - Scan
    - Security breach
    - Server dongle error
    - Tamper alarm

- Others can be defined by the administrator.
  - Site Group
  - Site
  - Camera Type
  - Camera Group
  - Cameras
  - User Group
  - User
- d. The severity of alarm elements in the list shall be indicated by a coloured box (red - critical / yellow - not critical / blue - informative). Further status information are indicated by status symbols:
  - Alarm was accepted by the current user,
  - has been delegated to this user,
  - has not yet been completed,
  - pending for more than 24 hours or expired automatically.
- e. It shall be possible to dock an alarm list to a viewer in order to be able to control a copy of the list in the viewer.
- f. Clicking on an alarm entry shall open detailed information in which the user can select the following functions:
  - Take and complete
  - Take
  - Take similar
  - Locate on map
  - View alarm
  - View camera
- g. When a user accepts an alarm (assumes responsibility), this alarm is copied to the "Mine" list. Here the alarm is handled or can be delegated to another user.
- h. A delegated alarm shall automatically remain the responsibility of the delegating user until the other user has taken the alarm.
- i. Different alarm types shall be signalled with different alarm sounds.
- j. Different alarm types shall have their own alarm handling procedures, whereby an alarm cannot be completed until a conclusive alarm response and optional alarm comments have been entered.
- k. In the alarm list "Mine", alarms shall be marked by the following symbols:
  - My alarm - I am responsible for this alarm.
  - Alarm is locked.
  - The alarm has been delegated to another user.
  - The alarm is active since more than 24 hours.
  - The alarm has expired (lifetime exceeded).

- l. Alarms shall be automatically displayed on a new page with all linked information and video images via the button "Alarm display". Multiple alarms shall be selectable via separate tabs.
- m. The following functions shall be selectable in an alarm display:
  - Show / hide alarm display
  - Repeating the alarm
  - Play live
  - Search in the list
  - Accept
  - Close
- n. With authorization by the administrator, certain users shall be able to use the button "Fast Process" with which an alarm can be accepted and closed in one step.
- o. AutoView alarms shall be automatically displayed on the user's screen when the alarm is triggered.
- p. Using an additional plug-in, it shall be possible to store alarm information in a separate database.
- q. It shall be possible to create alarm reports for certain time periods, which can also be displayed as graphs by defining the occupancy of the X-axis and the time interval.
- r. The Motion Search (MOS) integrated in the SIM Software shall make it possible to mark an area in the live video by drawing up a rectangle in which movements are detected automatically. A cutting list shall be created automatically, in which the recordings of the movements are recorded.

### **2.3.10 User Tab**

- a. In the tab "Users" all users of the system shall be listed.
- b. The tab "Users" shall additionally have two adjustable filters which can limit the total list according to the following criteria:
  - User Group
  - Status (logged-in users)
- c. It shall be possible to dock a user list to a viewer in order to be able to operate a copy of the list in the viewer.
- d. In the list view, the name of each user, the short name (alias) and the login status (login) shall be displayed.
- e. In the detail view, the following information shall be displayed next to a photo of the user:
  - Name

- Login Status
  - Position
  - User Group
  - Service Number
  - Name of the workstation
  - Overview of all cameras and tours that the user is currently viewing.
- f. The cameras and tours displayed in the overview may be dragged into the viewers of other users in order to observe these scenes as well.
  - g. In the detail view, it shall be possible to add a new task to the task list via the button "Add task" and to assign it to the respective user. Tasks may also be able to be assigned to users who are not currently logged in.
  - h. In the detail view, it shall be possible to add a new message to the message list via the button "Send message" and to assign it to the respective logged-in user.

### 2.3.11 Tasks Tab

- a. The tab "Tasks" shall list tasks for users with the corresponding rights.
- b. A task shall be a simple instruction to be accepted, processed or rejected by the recipient. When jobs are completed, a reply is sent to the sender.
- c. It shall be possible to select 3 separate lists for preselection:
  - Mine to do
  - From me
  - All pending
- d. The tab "Tasks" additionally shall have two adjustable filters, which can limit the selected complete list according to the following criteria:
  - User Group
  - Status Filter
  - User
- e. It shall be possible to dock a task list to a viewer in order to be able to operate a copy of the list in the viewer.
- f. Tasks shall be arranged chronologically. The oldest order is at the top. For the individual task elements, the short name (alias name) of the respective sender and recipient as well as a part of the task description should be displayed.
- g. When creating a new task, it shall be possible to link a camera or a site map to the task in addition to the task description for the selected user.
- h. A new task shall be saved with the button "Complete" in the task list. With the button "Send" the task shall be sent to the recipient.

- i. When a new task is received, a red indicator shall light up in the user's tab.
- j. The following functions shall be available in the detailed view of a task:
  - Accept a task
  - Refuse a task
  - Transfer a task
  - Complete task
  - Live video of the linked camera
  - Check camera, if rights are enabled for it
- k. A recipient shall be able to comment about a task even if he rejects it.
- l. The following status displays of the tasks shall be displayed in the task list by means of symbols:
  - New task
  - Task accepted
  - Task rejected
  - Task completed
  - Transferred task
- m. The task to monitor a certain camera shall be forwarded easily in the viewer via the button "Create camera task".

### **2.3.12 Messages Tab**

- a. The SIM Software shall have message functions for logged-in users, which allow to communicate with each other across sites with written texts.
- b. In the tab "Messages", the message exchange between users / user groups, sorted in the form of "conversations", shall be listed until logout. Messages shall not be stored, but shall be logged in the audit log.
- c. In the message list, all messages received since logging in shall be displayed with the name of the communication partner and the time of the first message of the conversation.
- d. Messages shall be marked as unread or read in the list.
- e. It shall be possible to dock a message list to a viewer in order to be able to control a copy of the list in the viewer.
- f. A new message shall be opened by clicking on the button "new message" and after selecting the logged in recipient the message shall be formulated in a text field and then sent by mouse click.
- g. When a new message is received, a red indicator shall light up in the user's tab.

- h. A received message shall be easily answered by editing the reply text field and sending the message.

### 2.3.13 Audit Log Tab

- a. In the tab "Audit Log", an audit list (audit path) with the following possible events shall be listed (documented) chronologically:
  - All server-related changes
  - Changes to the system layout
  - Login and logoff procedures
  - All playback operations of live video images and stored video recordings (including tours)
  - All alarm processing and order-related actions
  - All exchanged messages
  - All export-related events
- b. By default the user's own events of the last two hours shall be listed with the columns Time, Log Type, Action and Agent (user).
- c. It shall be possible to sort this list according to column types.
- d. It shall be possible to dock an audit list to a viewer in order to be able to control a copy of the list in the viewer.
- e. With additional rights, a user shall also be able to see the events of other users.
- f. The tab "Audit Log" shall additionally have two adjustable filters, which can limit the total list according to the following criteria:
  - Time / Date / Duration
  - Site Group
  - Site
  - Camera Group
  - Cameras
  - User Group
  - User
  - Type of event
    - Server related
    - System setup changes
    - Log-in / Log-out
    - Alarm related
    - Video related
    - Camera related
    - Guard tour related
    - Task related
    - Message related
    - Video export
    - Unlock video playback
    - Unlock PTZ control

g. Filtered lists shall be able to be printed and exported as PDF, MHT, RTF, XLS, XLSX, CSV, text or image file or sent by email.

h. The following events shall be logged automatically by the SIM Software:

- User:  
User has logged in or logged out.
- Two Man Rule User:  
Two-man rule user has logged in or logged out.
- Server Service:  
Server service was started or stopped.
- Block / Unblock PTZ Control:  
The PTZ control of the camera has been locked or unlocked for the user.
- Block / Unblock Camera:  
The camera has been locked or unlocked for the user.
- Text Message:  
Text message was sent to the user.
- Video Footage:
  - Camera or site was viewed.
  - Camera or site view was rejected.
  - The camera or site was viewed in the time domain (after the view was stopped).
- Guard Tours:
  - Guard tour was visited.
  - Guard tour was rejected.
  - Guard tour was deleted.
  - Guard tour was observed in chronological order X.
- Tasks:
  - Task has been sent to user.
  - Task status has changed.
- Set Reference Frame:  
The reference frame for the camera has been set by the user.
- Camera PTZ control:
  - Start PTZ
  - Stop PTZ
  - Pan Tilt Zoom
  - PTZ was controlled in the XY time range.
- Alarm:
  - New alarm received.
  - Alarm acknowledged.
  - Alarm forwarded to user.
  - Alarm completed.
- Dongle Error:  
Dongle error has occurred.
- User Password changed:  
User changes his password in operator console.
- Export Video:  
The video material was exported.
- Export Image:  
An image has been exported.

- Map Interaction:  
The interaction on a map has taken place.
  - Set Client VCA:
    - Client VCA was deactivated.
    - Client VCA was activated.
  - Camera playback unlocked:  
The camera playback has been unlocked.
  - Configuration changes:  
Configuration has been changed.
- i. In the detail view of an entry, the following functions shall be available in addition to the name of the user, the event and the computer name:
- Request detail:  
Retrieve any linked data from video images.
  - Locate on map
  - View camera
- j. For certain events, playback of live video images or saved video recordings with start and end times shall be logged in the audit log. In addition, possible return and jump processes shall be taken over.
- k. Audit entries that are linked to videos shall be easily dragged into viewers in order to be able to exactly reproduce the content and controls viewed by the user.
- l. It shall be possible to export the linked videos / video recordings in order to use them as evidence.

### 2.3.14 Browser Tab

- a. The "Browser" tab shall contain a list of browser bookmarks, for users with the appropriate rights.
- b. It shall be possible to sort the bookmark list by name, description or group name.
- c. The Browser tab shall have a quick filter "All" in the form of a text search box.
- d. The Browser tab shall have regular filters to filter bookmarks by group name.
- e. The website linked to a bookmark shall be accessible by dragging and dropping it onto an unlocked viewer of an Operator or Remote Console.
- f. It shall be possible to filter the audit for the web browser activity according to the following criteria:
  - Site Group
  - Site
  - Camera Group
  - Cameras

- User Group
  - User
  - Type of Event
- g. Browser bookmarks shall be able to be displayed in the remote console via the Remote Control Module.

## 2.4 Remote Consoles

- a. The SIM Software shall contain an extensive, rights-dependent remote control of unmanned playback stations (remote consoles), video walls but also manned operator stations (operator consoles) for sharing information.
- b. The “Remoting” menu shall display the screens of the shared remote consoles, monitor walls and operator consoles with thumbnails of the currently displayed content.
- c. By simply dragging and dropping any viewer content, it shall be possible to fill the viewers of the remote controlled places.
- d. Additional control functions such as pause, fast forward, jump to time, jump to PTZ preset point and adjust brightness / contrast / saturation shall be possible.
- e. With corresponding rights it shall be possible to also change viewer-arrangements of remote controlled stations.
- f. In operator consoles, it shall be possible to enable only certain viewers for remote control, e.g. to display alarm images of other users.
- g. Remote consoles and video walls shall be controllable from multiple operator consoles at the same time.
- h. Multiple remote consoles shall be able to be grouped so that users can synchronously control an entire group.
- i. Content shall also be dragged back and forth between different remote viewers or dragged into a local viewer.
- j. With necessary privileges, it shall be possible to reboot a remote console from afar.

## 2.5 Maintenance

- a. For maintenance purposes, the SIM Software shall be able to write performance indicators into the Windows performance monitoring.
- b. The performance indicators shall be provided via Email and SMS from the Windows task scheduler.

- c. The SIM Software shall have an integrated updater service that also informs geographically distant installations when updates are available and can be installed from a central site.

## 2.6 Licensable Software Components / Options

- a. As a software option, a module for the multi-tenancy functionality of the SIM Software shall be available. The multi tenancy functionality separates created SIM users into user groups, so that, for example, different customers can be created in their own user groups on the system, but cannot see each other in the operator console.
- b. As a software option, a module shall be available which activates the failover function of a recorder camera channel. If a recorder fails, the camera channels for which this option is enabled are taken over by a failover server.
- c. As a software option, a module shall be available which activates the failover function of the SIM server. If one server fails, its functionality - e.g. rights, connections and functions - is taken over by a second server - the failover server.
- d. As a software option, a module (VTT - Video Track & Trace) shall be used for applications in logistics, which can display different camera images in several viewers with an adjustable time offset between the viewers in parallel. The time offset between viewers can be adapted to the speed of a parcel conveyor so that the throughput of a parcel can be viewed simultaneously at different camera locations.
- d. Global
- e. A module (Active Directory) shall be available as software option, which establishes the connection between the user groups from Windows with the user groups of the SIM Software. Windows authentication is activated and a SIM password is no longer required.
- e. As a software option, a module shall be available which, as a control server, enables access to all functions and resources of all connected SIM systems from a central site.
- f. As a software option, a module (Control Server Connect) shall be available that connects a SIM client with a central control server.
- g. As a software option, a module (Cam Check) shall be available, which immediately alerts if the live images of a camera, compared to a stored reference image, are manipulated e.g. by turning the camera.
- h. As a software option, a module (upgrade) shall be available which grants the owner an extension of the right to software upgrades for one year after the official termination of the Software Upgrade Plan period.
- i. As a software option, a module (Web Browser Integration) shall be available that enables the use of single viewers in the operator console as web browsers and thus to display information and pages from other systems with web interfaces or from the internet within the software. The web pages of external systems that can be added

via bookmarks enable a quick expansion of functions including authorization control through the user management and auditing of the SIM software.

- j. As a software option, a module (GIS Maps) shall be available that enables the use of georeferenced map material from Open Street Maps and Google Maps and the display of the cameras or other objects on this map material. If coordinates are already stored with a camera, this (or all selected objects) can be switched to the correct position.

## **2.7 Connections to further Manufacturer's own System Components**

- a. The SIM Software shall include a system connection to the manufacturer's own Video Management Software with the help of which any number of video management systems at distributed sites can be managed as a networked overall system and operated from different workstations with overlapping rights.