



MAGOS


MAGOS AREA SURVEILLANCE SOFTWARE (MASS)

User Guide



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1. INTRODUCTION TO THIS GUIDE

This guide is designed to aid users in the installation and operation of MASS (Magos Area Surveillance System). MASS is a multi-feature command and control software, developed and designed for use with Magos radar sensors as well as a variety of additional sensors and verification equipment (for example: cameras and indicative fences).

This guide is intended for both Magos administrators and users.

1.1 ABOUT MAGOS SYSTEMS

Magos was established in 2007 to realize its co-founders' vision of bringing advanced radar technology to the security and perimeter protection and detection market. We are Experts in Low cost, Low power consumption, High performance radars that can be easily integrated with existing VMS, PSIM and other control software and automatic PTZ slew-to-cue for an end-to-end cost effective and easily maintained solution of the customer's security requirements.

1.1.1 CONTACTING MAGOS SYSTEMS

Please contact us through the following channels:

Medium	Details
Email	info@magosys.com
Mail	Gad Feinstein 13 Office 225, Rehovot Israel 7638517
Website	www.magosys.com

1.1.2 CONTACTING MAGOS SUPPORT

Support is available to customers who have a trial version of a Magos product or who have purchased a Magos product and have a valid maintenance contract.

To contact Magos support, send an email to support@magosys.com.

2. INSTALLING MASS

MASS has two components: server side and client side. This chapter provides a system overview, specifies the measures needed for enabling installation, namely: installation prerequisites and required permissions, and provides instructions for the installation process.

2.1 SYSTEM OVERVIEW

MASS server operates in “Server-Client” methodology. The server-side software is typically installed on a server/computer that is active 24/7 and can be accessed via Ethernet by potential clients. Client software can also be installed on, and operated from, either the same computer where the server is running or another computer.

MASS is web-based, allowing cross-platform client side access with minimum system requirements. MASS client side is a browser-based application that depicts a bird's eye view of the protected area, thereby enabling you to set up, configure, and monitor all installed sensors and their output.

MASS is a full featured command and control software suite that allows real-time event management. When integrated with Milestone it also allows event logging and replay synchronized with relevant video streams.

For further details about related software and sensors, see section 2.4, Referenced Documents, on page 5.

2.1.1 SERVER SIDE

The server side is designed to run on a designated PC at the command and control center of the protected site. Server-side software is a pre-requisite for operating the system.

The software is designed so that server side typically requires one-time configuration on installation. Once the software installation process is complete and all sensors are connected to the server side, setting up sensors, configuring them, and all other command and control actions are accessible via the client side application.

2.1.2 CLIENT SIDE

The MASS client side offers a user-friendly and intuitive interface for viewing, managing, and controlling the various sensors installed.

The client side allows:

- Adding and editing sensors
- Viewing sensor outputs (detections, tracks, and so on) – Except for camera video outputs (for details on obtaining the camera video outputs see chapter 7, Configuring Integration with Milestone, on page 53)
- Positioning sensors and fences on the protected site map
- Creating and managing Ignore and Alarm zones

- Adding presets of map location

2.2 INSTALLATION PREREQUISITES

Before starting the installation of MASS ensure that your sensors are supported by MASS and that your system meets the system requirements, as specified in the following sections.

2.2.1 SUPPORTED HARDWARE

MASS currently supports the following sensors:

- SR500 – Area surveillance radar by Magos
- SR110 – Area surveillance radar by Magos
- Any ONVIF profile S camera that supports the Absolute Move command
- VIPER – Advance Perimeter Security System (electronic fence sensors) by EL-FAR

The SRxx0 radar sensors and ONVIF cameras are considered “native” to MASS and are referred to as “sensors” in this manual. The fence sensors by EL-FAR have been integrated into MASS and are referred to as “fences”.

2.2.2 SYSTEM REQUIREMENTS

This section specifies the system requirements on both the server and client sides.

2.2.2.1 server side

Installing MASS on the server side requires:

- Any computer that runs Windows 7/8/10.
- Administrator privileges - In case a security warning prompts you to confirm running the installation. For details, see section 2.5.2, Installing the MASS Server Application, on page 6.
- Meeting Milestone system requirements, if MASS is to be integrated with Milestone. For Milestone system requirements, check <https://www.milestonesys.com/support/resources/system-requirements/>.

2.2.2.2 client side

Because client side software is a web-based application, system requirements are virtually non-existent and consist only the following basic requirements:

- A supported Web browser, as specified in the list on <http://caniuse.com/#feat=websockets>
- An Ethernet connection to the MASS server. Link speed above 10mbps is required.

2.3 REQUIRED PERMISSIONS

Working with MASS is enabled by using several Magos permission levels. This section specifies these permissions, as well as the tasks that require Magos administrator privileges and the methods for setting and editing a password.

2.3.1 REVIEWING THE VARIOUS PERMISSION LEVELS

MASS allows logging in and operation with either of the following permission levels:

- **Magos administrator** - Authorized to view the entire system and to carry out certain tasks that involve making changes to the system. For further details see following section, Tasks Requiring Administrator Privileges.

The login details of a Magos administrator are:

- Username: Admin
- Password: password
- **User (Guest)** - Has no authorization to perform tasks that modify the system, and can be defined as having limited view of the system (for example, being able to see and monitor only an airport's runway instead of the entire airport), and have custom-tailored definitions based on area, connectivity to the Internet and so on. For further details, see Setting User-Specific Definitions on page 46.

The login details of a Guest are:

- Username: Guest
- Password: guest

2.3.2 TASKS REQUIRING ADMINISTRATOR PRIVILEGES

The tasks listed below can be carried out only with administrator privileges - either Windows administrator privileges, for the installation of MASS on the server, or MASS administrator privileges, for all tasks appearing under the Setting menu.

Windows Administrator

- **Installing MASS on the server**

In case a security warning prompts you to confirm running the installation. For details, see section 2.1.1, Server Side, on page 2.

MASS Administrator

- **All tasks appearing under the Settings menu**

The **Settings** menu is displayed only when using the system with administrator privileges. Therefore, administrative privileges are required for carrying out all tasks available only in this menu, such as:

- **All steps involved in setting up sensors** - Adding, positioning, and calibrating

For details, see section 3.2, Setting Up Sensors, on page 13.

- **All advanced configuration options:**

- Enabling map caching

- Setting profiles and interest areas
- Enabling/disabling Auto Tracking
- Setting Track History timeout
- Setting presets

For details, see chapter 5, Setting Advanced Configuration Options, on page 32

2.4 REFERENCED DOCUMENTS

While this guide is a complete document, including operation instructions and description of all client side and server-side software features, some operations required for setting up and running a MASS-protected site are not covered here as they must be handled through external software. Following is a list of referenced documents that provide additional details:

- SR500 Sensor User Guide – <http://magosystems.com/downloads/?type=manuals>. Includes detailed instruction on sensor HW installation and operation
- EL-FAR' Viper product page - <http://www.elfar.co.il/index.aspx?id=3087>. Includes a description of El-Far's VIPER - Advanced Perimeter Security System
- Milestone user guide - <https://www.milestonesys.com/support/manuals-and-guides>. Includes detailed description of installation, configuration and use.

For additional information regarding Magos products and technical support, see section 1.1, About Magos Systems, on page 1.

2.5 PERFORMING THE INSTALLATION PROCESS

This section contains step-by-step instructions for installing the MASS server application, as well as for carrying out the measures required for proper operation of the software.

Ensure that you read this section carefully and carry out all specified instructions before launching the application.

2.5.1 GENERAL

The installation process is divided into the following procedures:

1. Installing the application – Installing the various software components required for running the MASS server on your computer.
2. Adding permissions to the installation folder - Modifying permissions on the installation folder to add permissions to Everyone.
3. Activating and registering the software license– Activating your purchased software, registering the software, and acquiring the software's license.

2.5.2 INSTALLING THE MASS SERVER APPLICATION



IMPORTANT

Running MASS executable file (Mass2.exe) requires Windows administrator privileges. If you do not have such privileges, right-click the Mass2.exe file and select the command **Run as administrator**.

To install the MASS server application:

1. Download and save the installation file suitable for the OS of the command and control PC (either 32-bit or 64-bit) from <http://magosystems.com/downloads>. Alternatively, open the installation file from the USB flash drive, if you have one. The installation file is stored under <Drive_Letter>:\DOKMagos Menu\Software\MASS; for example, E:\ DOKMagos Menu\Software\MASS.
2. Ensure that you have Windows administrator privileges. If you do not have such privileges, right-click the *Mass2.exe* file and select the command **Run as administrator**.
3. Run the executable file.

Depending on the security settings of your system, a security warning may pop-up.

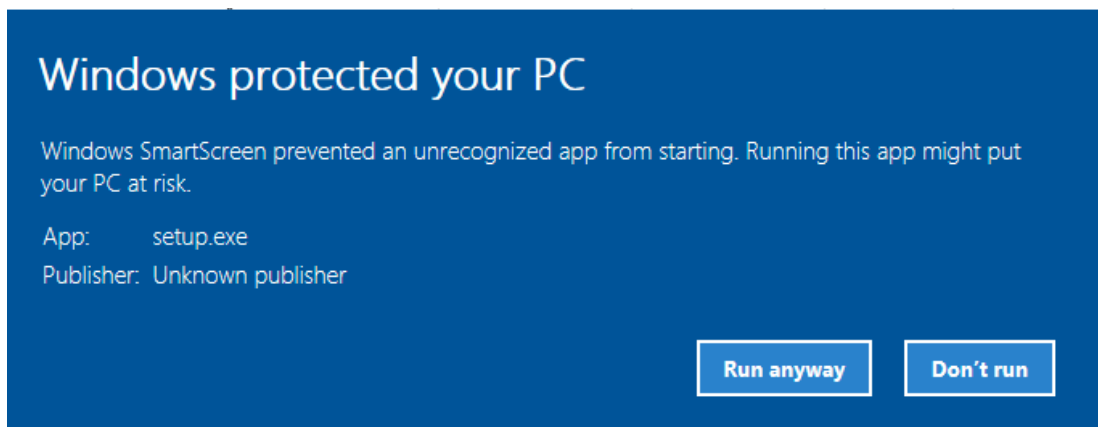


Figure 1: Installation Security Warning

4. Click **Run** (pre-Windows 10 versions) or **Run anyway** (Windows 10) to continue. The *MASS setup wizard welcome* screen appears.
5. Click **Next** to continue.

The screen *Select Installation Folder* appears.

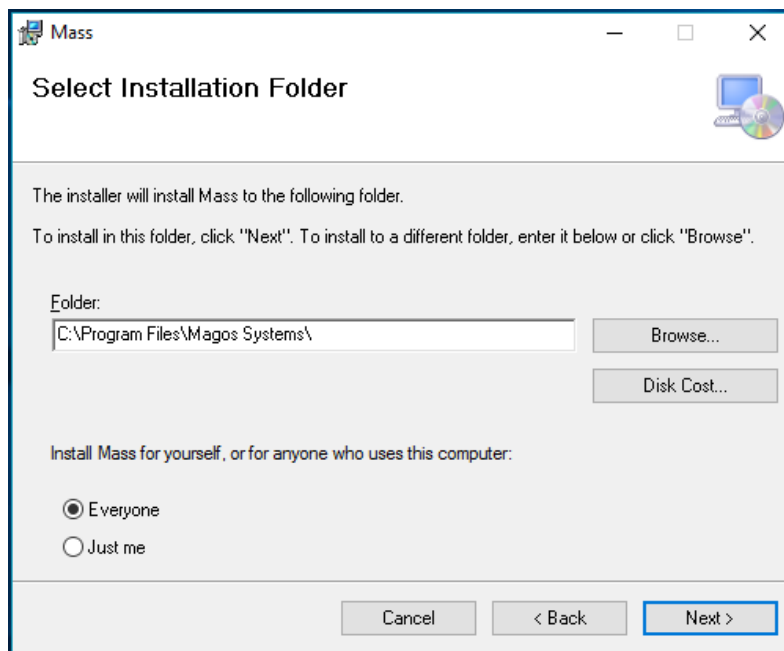


Figure 2: The Select Installation Folder screen

6. Use this screen to select the installation destination folder, and choose whether to keep the default option of installing MASS for Everyone (recommended), or Just me.
7. Click **Next** to proceed and install MASS
8. If User Account Control is active on the computer, the *Confirm Installation* screen appears, requesting you to confirm the installation of MASS on your computer. This screen appears every time the server is installed, namely: not only on first installation but also if the server had to be uninstalled and is later re-installed.
9. For agreeing on license components click “**I agree**” and continue the installation process by pressing **Next**.

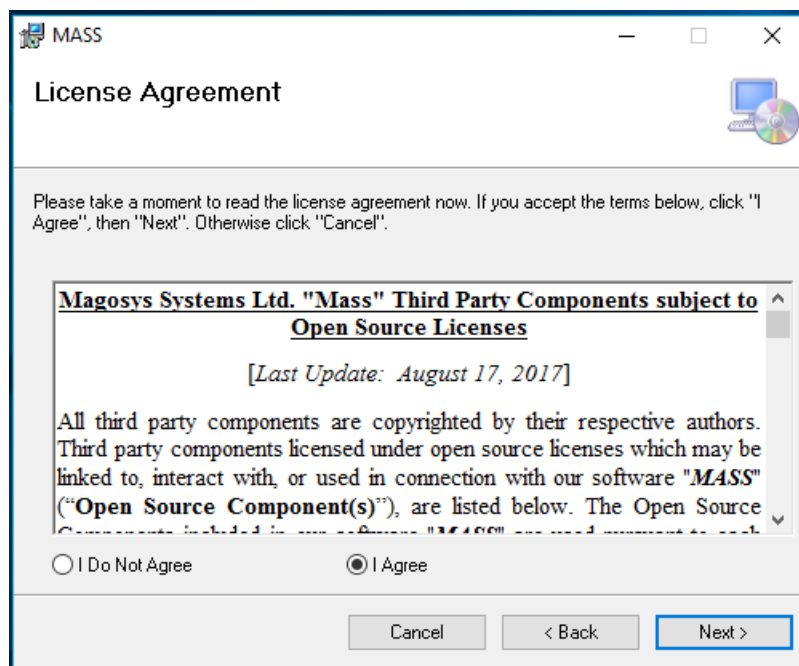


Figure 3: License agreement screen

10. Click **Next** to allow the installation to proceed.

The MASS server-side application and the MySQL database, which is required for MASS operation, are now installed.



NOTE

If you are running the installation on Windows 10, you are now prompted whether you want to allow the application to make changes to your system. Click **Yes** to confirm.

A command line window pops up for running several installation scripts; do not attempt to close it.

11. Click **Close** to exit the wizard. A shortcut for the MASS server application is created on the desktop.



Figure 4: Shortcut for the MASS server application

Do not yet start to work with MASS, because you need to add permissions on the installation folder, as specified to the next section.

2.5.3 ACTIVATING AND REGISTERING THE SOFTWARE LICENSE

Launching the MASS server-side application is enabled only after the license you purchased is activated and registered by filling an online form. This is done by issuing a request to Magos Systems, and once the request is processed a license file is issued.

To activate and register MASS license:

12. Start MASS by using either of the following methods:



- Double-clicking the MASS shortcut (`Mass2.exe`) on your desktop or
- Directly running the **Mass.exe** file from your selected installation path.

The dialog box Window Security Alert may appear, indicating that Windows firewall blocked some of the features of MASS. If the alert does not appear, proceed to step 15.



Figure 5: Windows security alert

13. Select both check boxes on this dialog box, to allow MASS to communicate on private networks as well as on public networks.
14. Click **Allow access**.
15. Ensure that:
 - Your PC is connected to the Internet, to allow online registration.
 - MASS server is running, as indicated by a MASS icon that appears on your taskbar.



Figure 6: MASS server taskbar icon

16. Right-click the MASS icon on the task bar and select the command **Open**. Alternatively, open your preferred web browser (it is advisable to use Google Chrome) and enter the address *http://localhost:3000*.

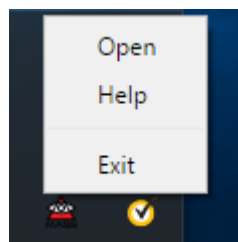


Figure 7: The MASS icon on the task bar

The MASS Registration and Activation web page appears.

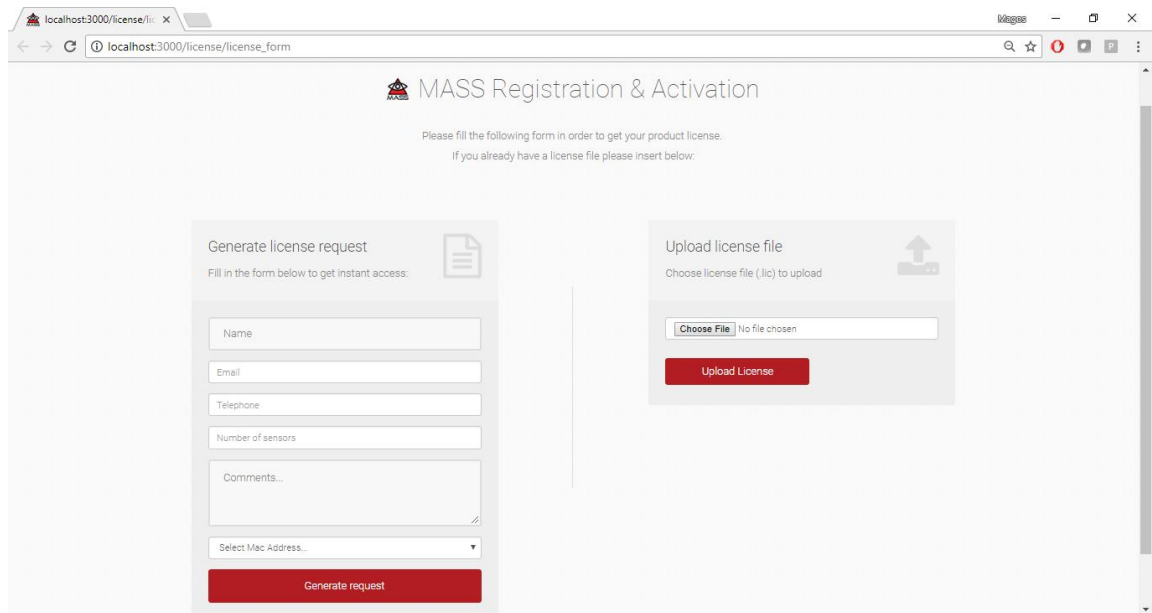


Figure 8: MASS Registration and Activation web page

17. Fill the form, while ensuring that you enter a name, and click **Generate request**.
18. Verify that the email message containing the verification request was successfully sent.

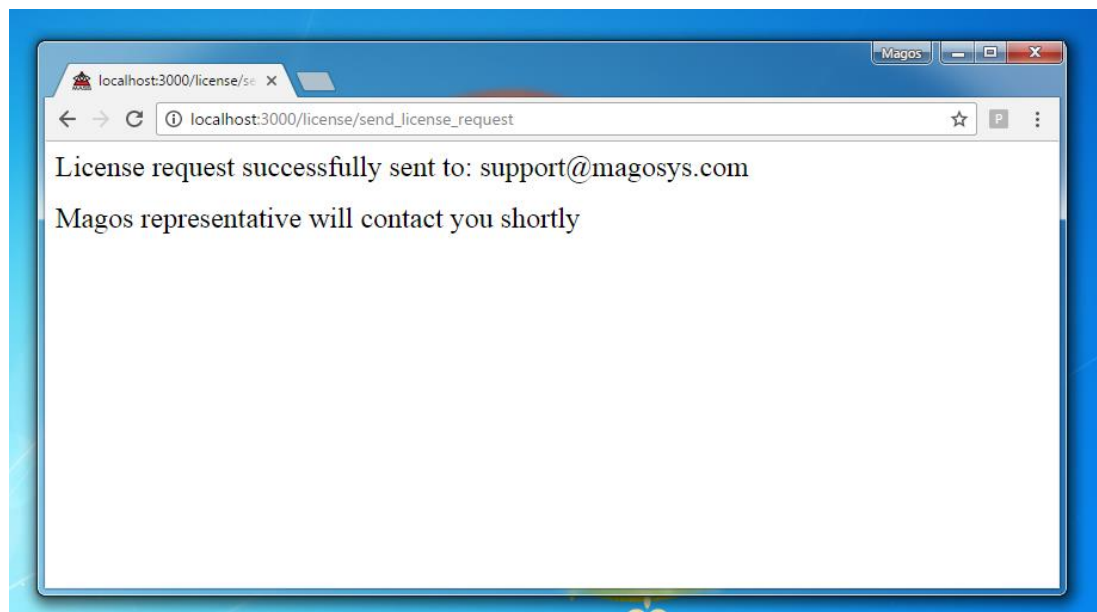


Figure 9: License Request successfully sent confirmation

If the send process failed due to lack of connection to the Internet or for any other reason, an error message is displayed.

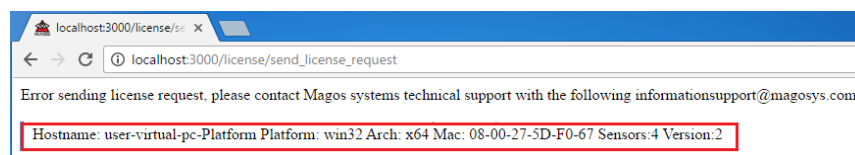



Figure 10: Error sending license request message

19. Send a request manually to support@magosys.com with the data line marked in red in the figure above, namely:
 - Hostname

- Platform
- Mac address
- Number of sensors
- MASS version

You should now receive an email message sent to the email address you provided during the request, with the license.lic file. As this could take some time, before proceeding

ensure that MASS is running, as indicated by the MASS icon on the taskbar (); if MASS is not running, follow steps 12-14.

If you would like to ensure that no errors were encountered during the license file generation, you can edit the license.lic file by using a text editor and ensure that all parameters mentioned above are defined properly.

20. Once you receive the license.lic file, open the MASS Registration and Activation webpage.
21. Use the Upload license file section to upload the license file by clicking **Choose file** to browse for the license file's location on your computer. Alternatively, drag the file to the intended section and click **Upload license**.

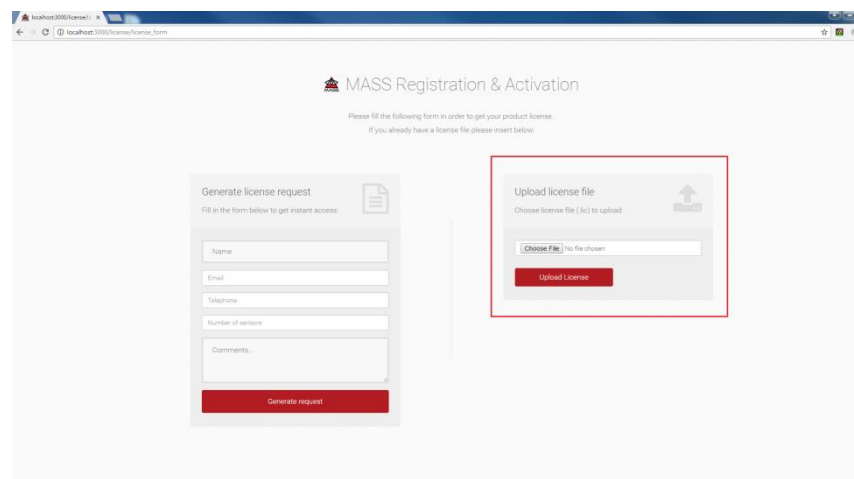


Figure 11: The Upload License form

Once the license file is uploaded successfully, the login page appears, allowing you to start working with MASS.



IMPORTANT

To see information about your licenses, go to http://localhost:3000/license/license_info.

For instructions about logging in to MASS and starting to work with the application, see chapter 3, Getting Started.

3. GETTING STARTED

Once the server-side software is installed and running, you can access MASS from any web -browser-supporting device, provided that both the server-running machine and the client side are connected to Ethernet or to the same LAN.

This chapter is designed to guide you in the first steps required for setting up, configuring, and adjusting MASS to customize it to a specific site. Specifically, this chapter defines the basic steps needed for acquiring a map/picture of the protected site, and for positioning the sensors within this zone.



Usually, these steps are only needed once per site/software installation, and are not required during day-to-day usage and handling of the software.

3.1 LAUNCHING THE APPLICATION

To launch MASS:

1. Before accessing the MASS server, ensure that your license is updated (see section 2.5.3, Activating and Registering the Software License, on page 8).



2. Run MASS server application by clicking its icon (), and ensure it is running in the taskbar ().
3. Right-click the MASS icon on the task bar and select the command **Open**. Alternatively, open your preferred web browser (it is advisable to use Google Chrome) and enter details in the address bar, as listed below.
 - If you are running the client side on the same computer as the server :
http://localhost:3000.
 - If you are running the client side on another computer:
http://[MASS_SERVER_ADDRESS]:3000, where [MASS_SERVER_ADDRESS] is the IP address of the computer running the MASS server application (for example, 192.168.1.207:3000).

The MASS login screen appears, prompting you to provide your credentials.

4. When accessing MASS for the first time enter the default login details, based on your permission level:
 - Administrator:
 - Username: Admin
 - Password: password
 - Guest:
 - Username: Guest
 - Password: guest

For descriptions of the authorizations of Magos administrator compared with a guest, see section 2.3.1, Reviewing the Various Permission Levels, on page 4.



IMPORTANT

When prompted whether you would like the browser to remember your password, do not confirm this operation because you may probably want to change your password later.

3.2 SETTING UP SENSORS

Based on our experience, setting up sensor communication is the most time-consuming process of every installation of software in a protected area, due to the delicate positioning and calibration required for achieving satisfactory target tracking results. Magos Systems took measures to assist users as much as possible in this process, and developed custom tools that allow speeding up and improving the process.



NOTE

The steps and menus described in this chapter require Magos administrator privileges.

3.2.1 ADDING A SENSOR


To continue with the setup process, the various sensors (radars and/or cameras) that are physically installed in the protected area must be registered within the MASS server. Magos Systems developed a sensor setup wizard that renders the process more intuitive and user-friendly.



NOTE

Sensor name must not contain spaces or “-” (Hyphen-minus).

To add a new sensor:

1. Click the  icon on the top left of the screen.
The Settings bar appears.

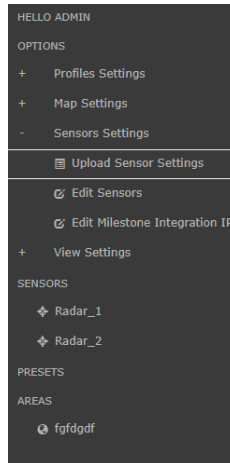


Figure 12: The Settings bar

2. Go to **Options > Sensor Settings > Upload Sensor Settings**.
A setup wizard opens, allowing you to define the system sensors.

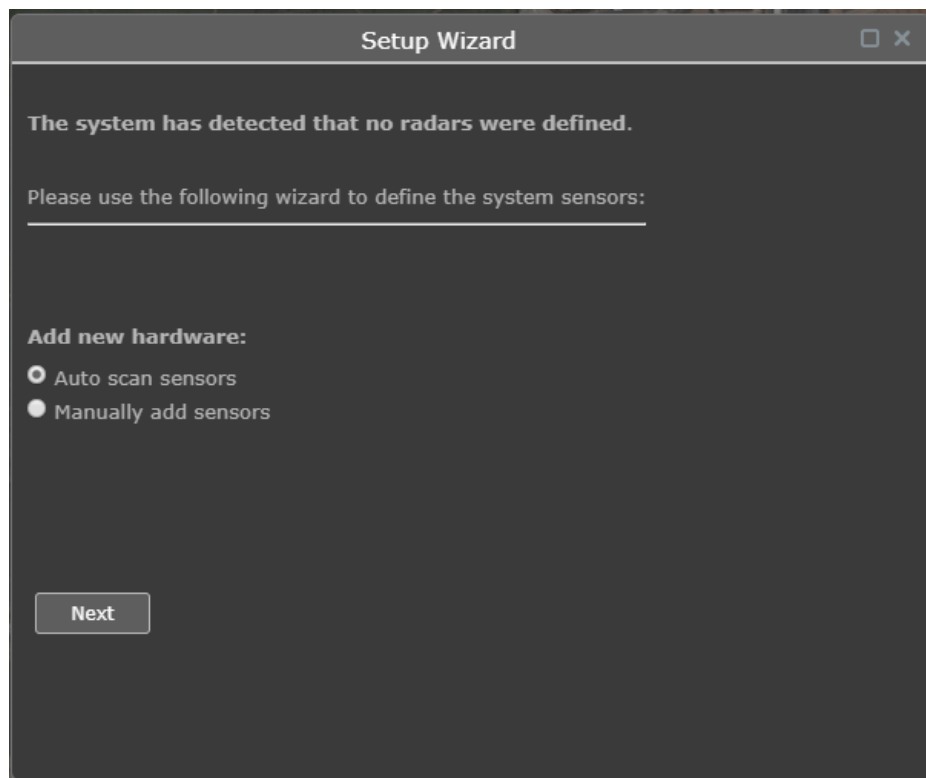


Figure 13: Wizard to allow defining system sensors

This wizard appears each time the system does not detect any sensors, also when sensors have already been defined; for example, if you had to uninstall MASS for some reason and are now re-installing it.

3. Select either of the methods below for adding sensors, and click **Next**.
 - Auto Scan - The MASS wizard automatically scans for any support sensor types that are connected to it. This method is preferable if you are running the wizard for the first time and all sensors are already powered, connected, and running.
 - Manually Add Sensores – Prompts you to add the IP addresses of the specific sensors. Choose this option if you would like to set up the software while some or all

of the sensors are still offline, or if you encountered a problem with the auto-detect method.

The Sensors screen appears.

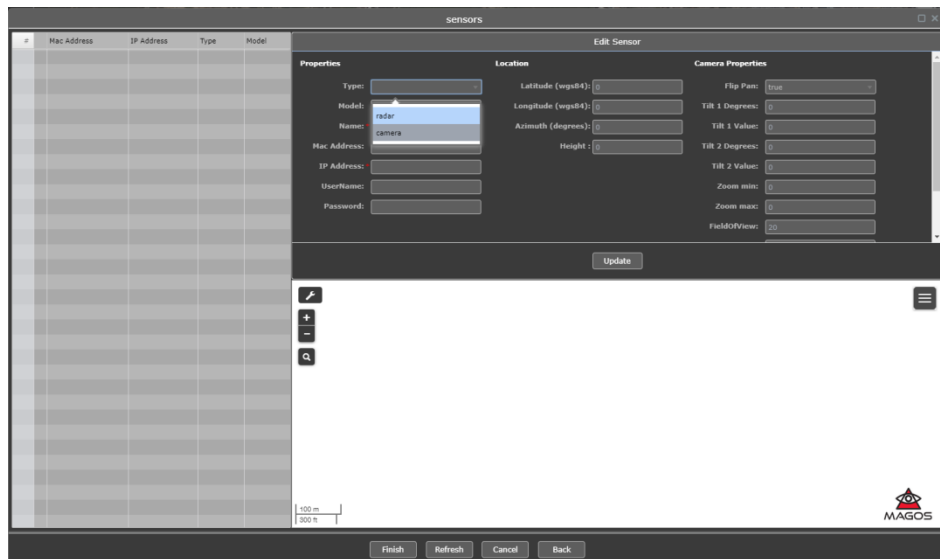


Figure 14: The Sensors screen

The left section of the screen contains a table that lists all known sensors, regardless if they were auto-detected or added manually. For each sensor, the following details are displayed:

- Number
- Mac address - The sensor's Mac address (not editable)
- IP address - The sensor's IP address (required)
- Type - either radar or camera
- Model - One of Magos' supported radars; detected automatically when auto-scan is performed.

This screen also allows selecting either of the following methods:

- Auto scan sensors - Select the relevant sensor from a list of all existing sensors (see Figure 15: Scanning from a list of existing sensors)
- Manually add sensors – Select the sensor type (see Figure 16: Selecting a sensor type)

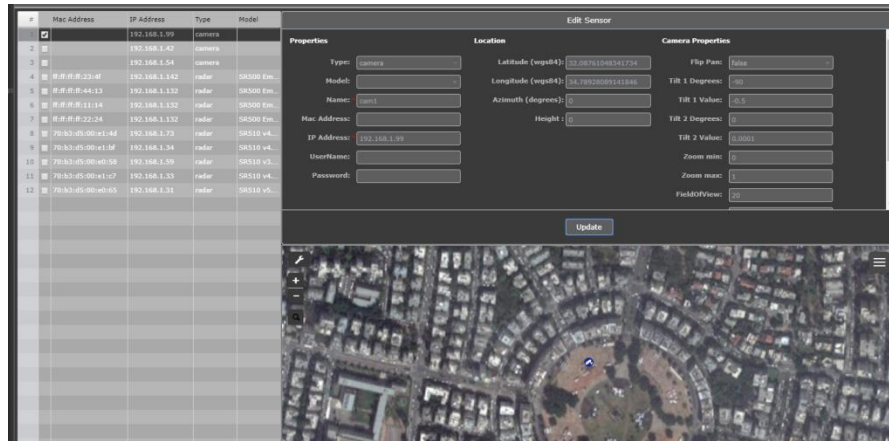


Figure 15: Scanning from a list of existing sensors

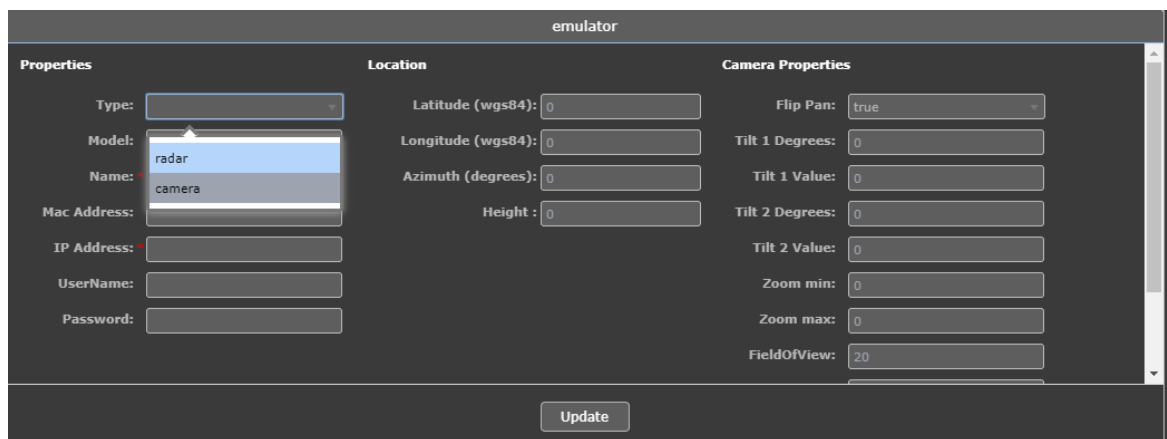


Figure 16: Selecting a sensor type

4. In the Edit Sensors section, use the Properties column to configure the sensor properties:
 - Type - Sensor type; applicable only when adding sensors manually
 - Name – A sensor name of your choice (required)
 - Mac address – The sensor’s Mac address (not editable)
 - IP address – The sensor’s IP address (required)

The following properties apply only to cameras:

 - Model – Allows selecting the camera’s model (Dahua/ Sony/ Flir)
 - Username – Used for logging in to the camera
 - Password – The password used for logging in to the camera
5. Use the Location column to set the location, by using any of the following methods:
 - Entering the sensor’s latitude/longitude coordinates in GEO decimal values
 - Entering the sensor’s address in the designated field
 - Dragging the sensor’s icon to the requested location
6. Review and, if required, change the sensor's azimuth and height, by entering the following parameters manually:
 - Azimuth - The sensor’s azimuth in degrees
 - Height – The sensor’s height in meters

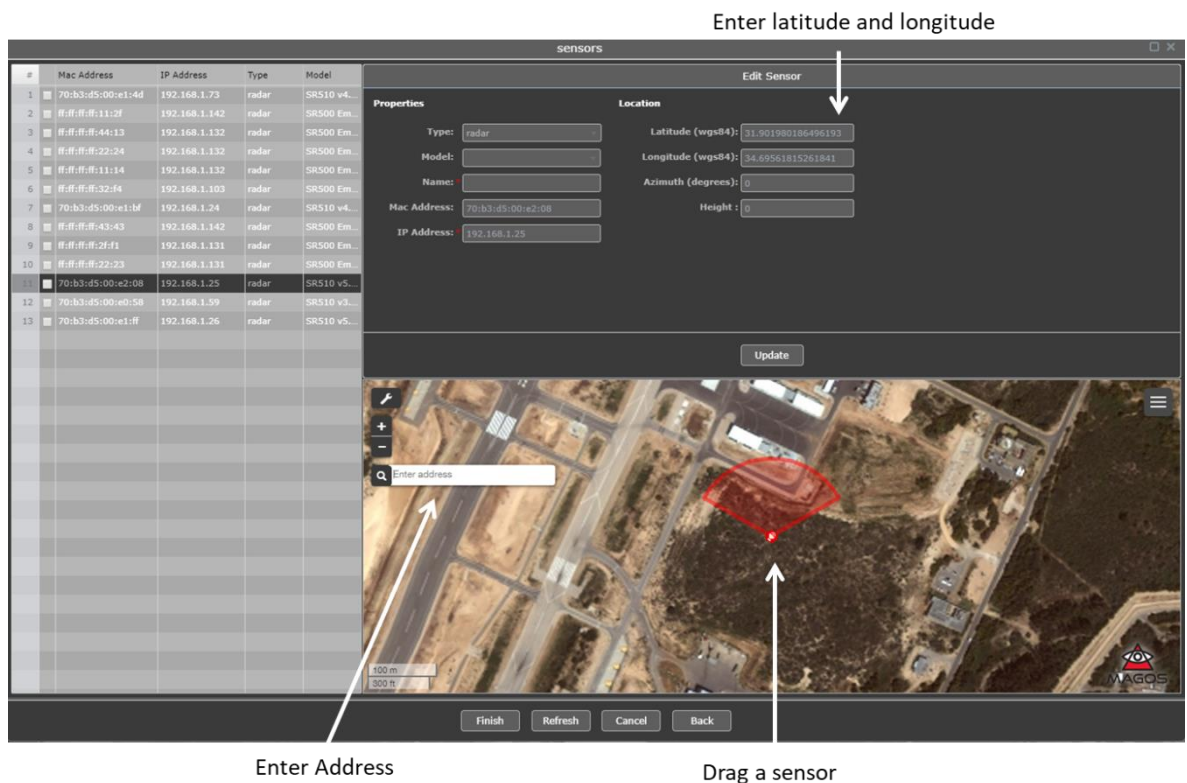


Figure 17: Setting a location

7. If the selected sensor is of type Camera, review and, if required, set the following properties:
 - Flip pan - camera rotation (true/false)
 - Tilt 1 degrees - minimum tilt angle at Tilt1Value in degrees; by default, -90°
 - Tilt 2 degrees - maximum tilt angle at Tilt2Value in degrees; by default, 0°
 - Tilt 2 value - maximum tilt value
 - Zoom min - camera minimum zoom value
 - Zoom max - camera maximum zoom value

If you would like to change the sensor's IP address, proceed to step 8; otherwise go to step 9.

8. To change the sensor's IP address, go to the **Properties** column > **IP address** section, and enter the new IP address.
9. Click **Update** to update the sensor's details.

10. Ensure that the sensor is checked on the list.

#	Mac Address	IP Address	Type	Model
1	<input type="checkbox"/> ff:ff:ff:ff:f4:2f	192.168.1.158	radar	SR500 Em...
2	<input checked="" type="checkbox"/> 70:b3:d5:00:e1:fc	192.168.1.26	radar	SR510 v5...
3	<input type="checkbox"/> 70:b3:d5:00:e1:fa	192.168.1.25	radar	SR510 v5...
4	<input type="checkbox"/> 70:b3:d5:00:e1:4d	192.168.1.73	radar	SR510 v4...

Figure 18: List of sensors with the requested sensor selected

11. Go back to the sensor list to edit another sensor, or click **Finish** to complete the process of setting the sensor.

Upon clicking **Finish** a pop-up appears, prompting you to save the changes.

12. Click **Yes** to confirm.

13. The screen Sensor Setup Completed Successfully appears, displaying the details of the newly configured sensor.

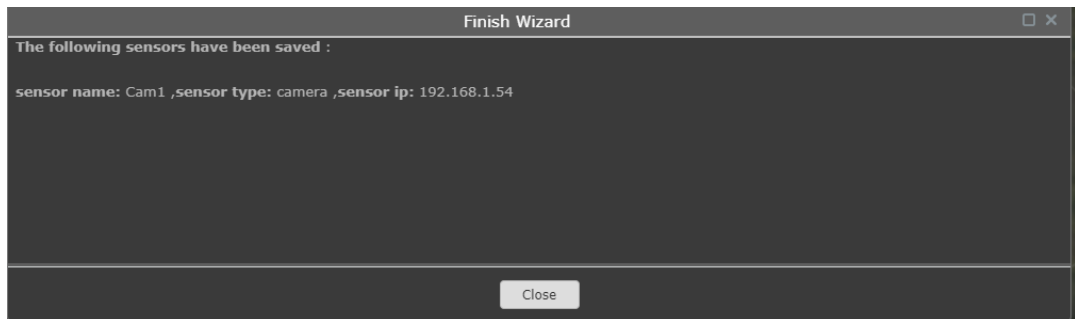


Figure 19: The screen Sensor Setup Completed Successfully

The newly added sensor is now displayed under the Sensors section.

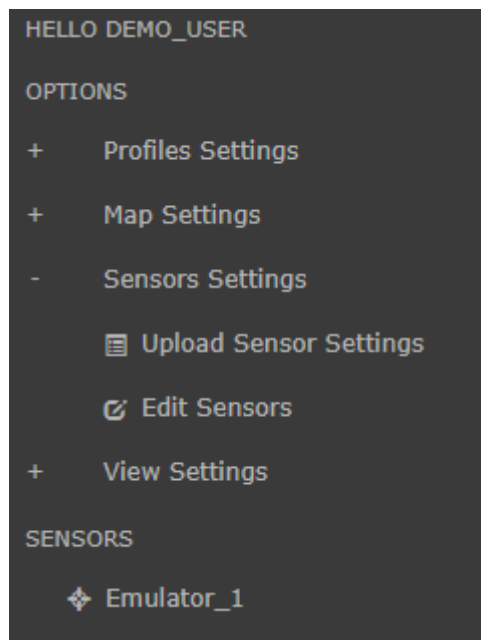


Figure 20: The Properties section displays the newly added sensor

3.2.2 PAIRING A MOBILE CLIENT

Magos application, currently available only on Android mobile phones, allows you to position your radar sensors (camera sensors are not supported) in a quick, efficient


manner. When you are near the sensors, in the field, you can download the Magos application to your phone.



IMPORTANT

Before pairing the mobile client, ensure that you receive and install the Magos application.

To pair a mobile client:

1. Click the  icon on the top left of the screen to open the **Settings** bar.

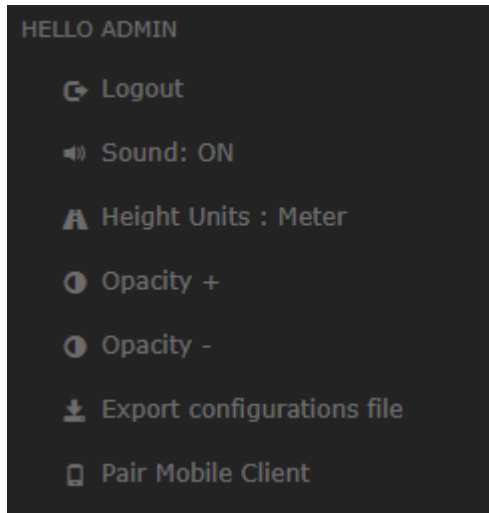


Figure 21: The Pair Mobile Client option

2. Click **Pair Mobile Client**.

The Pair Mobile Client screen appears.



Figure 22: The Pair Mobile Client screen

3. Use your Android mobile phone to scan the barcode.
Once the barcode is scanned successfully, the Magos mobile application identifies the barcode as associated with your PC and your MASS and the Pair Mobile Client option is no longer displayed.


The mobile phone can now be used at the actual location of your radars, by adding and saving the details of the radars to the Magos mobile application. When you later add to MASS the sensors of the radars whose details are saved in the mobile application, the system extracts the radar's values (latitude, longitude, and azimuth) automatically - regardless of your location - based on the radar's Mac address.

3.2.3 POSITIONING AND CALIBRATING A SENSOR MANUALLY

This process of positioning and configuring a sensor is required for receiving a correct picture of the state of the protected area. Because the software displays the radar detections and tracks on the map relative to their respective positions on the map, inaccurate positioning will result in misleading readings. Furthermore, the positioning of the cameras relative to the radars (and to the map) must be accurate, otherwise the automatic camera cueing will not function as expected and as a result, target verification (through video stream) will not be possible.

While this step can also be achieved through the sensor setup wizard (as explained in step 0 of section 3.2.1, Adding a Sensor, on page 13), it is advisable to use the wizard for initial "raw" positioning, based on GPS readings or map-based estimations, and then to further enhance accuracy by carrying out the steps described in this section. The advantage of using the procedure below is that it allows watching live input from the sensor, thereby enabling making adjustments while real (or reference) targets are monitored. For further recommendations and techniques for sensor position calibration, see chapter 4, Calibrating Sensor Positions, on page 30.

To define sensor positioning and other settings:

1. On the top left of the page, click the  button to open the **Options menu** on the left of the screen.
2. Click **Options**, or click the + sign next to it, to expand the **Sensor Settings** menu.

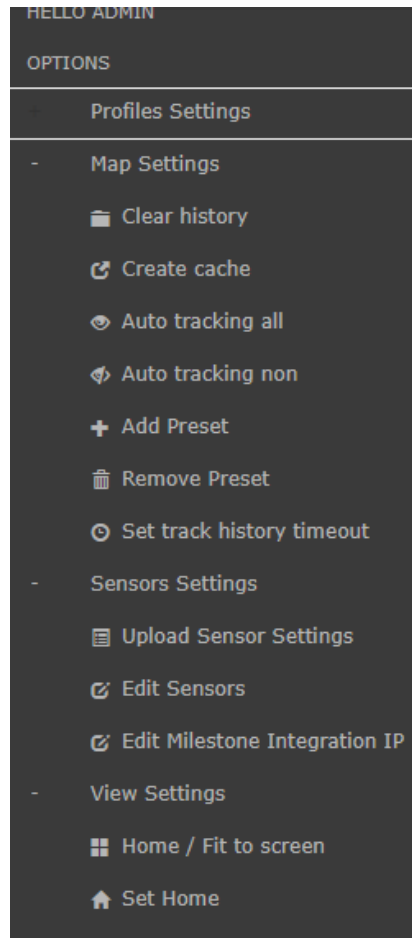


Figure 23: The Settings menu

3. Click **Edit Sensors**.



The icon appears on the top left side of map view.

4. Select the sensor to be configured, by using either of the following methods:
- Selecting the sensor name from the menu itself (Figure 24: Selecting the sensor's name from the menu)
 - Clicking the requested sensor icon in the map view (**Error! Reference source not found.**)

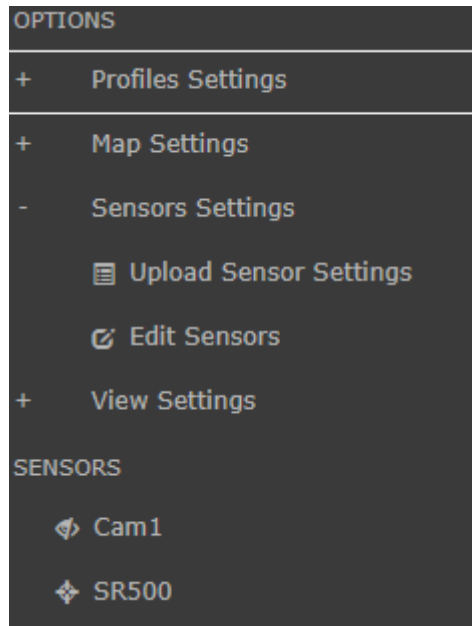


Figure 24: Selecting the sensor's name from the menu

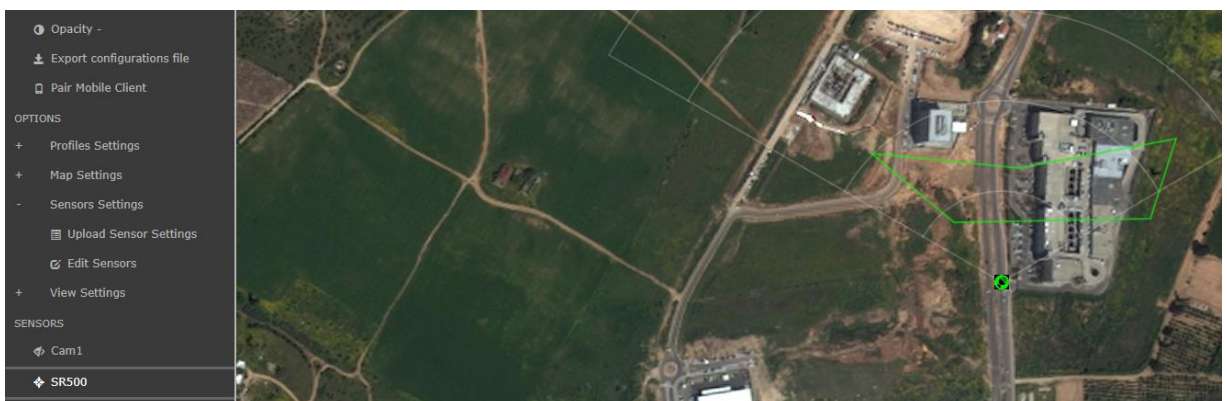


Figure 25: Selecting the sensor from the map view



NOTE:

When several sensors are positioned close to one another, their respective icons can overlap and even hide each other. In such cases, to select the requested sensor, right-click the group of icons to open a small selection window containing the list of available sensors, from which you can select the requested sensor.

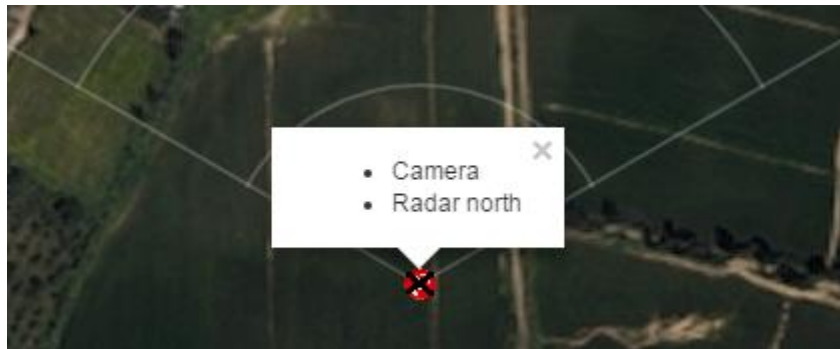


Figure 26: Overlapping Sensor Selection menu

The sensor configuration menu varies in accordance with the sensor type:

Radar:

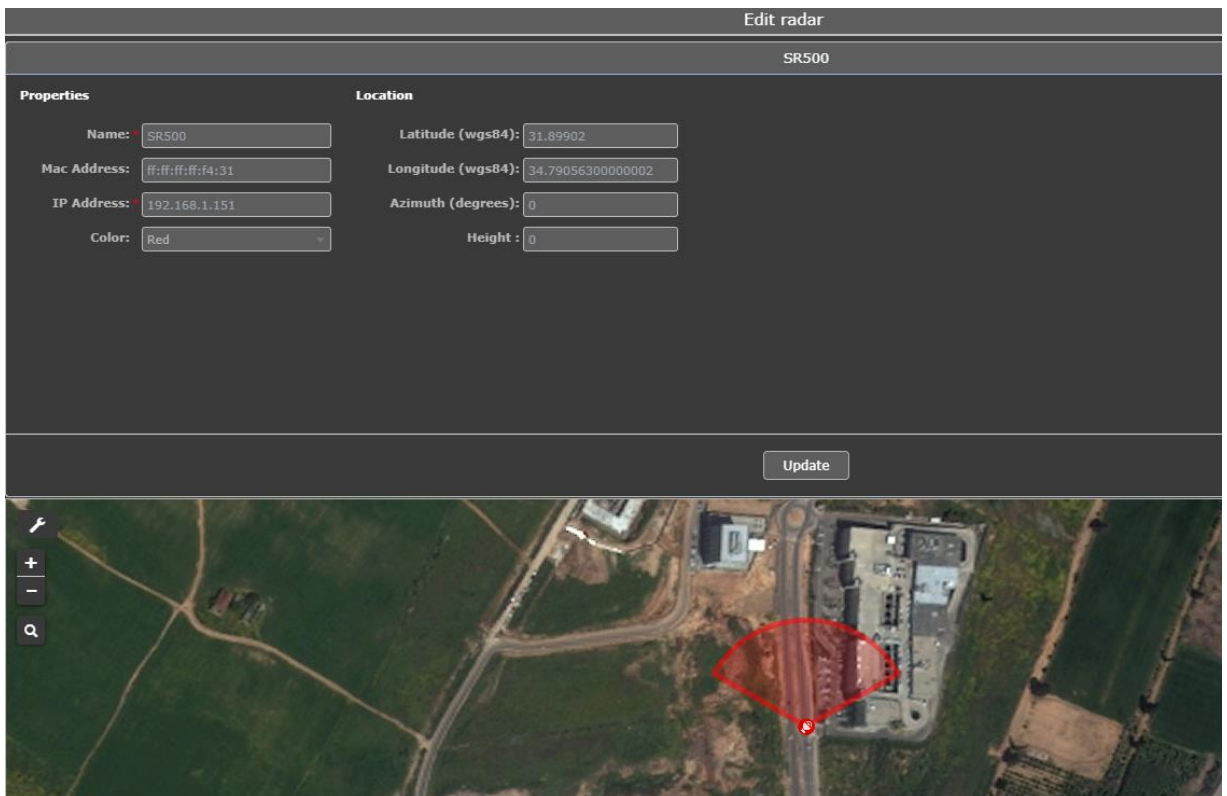


Figure 27: Radar sensor configuration menu

- ▶ Name - The sensor's name; by default, Radar.
- ▶ Mac address - The sensor's Mac address (not editable)
- ▶ IP address - The sensor's IP address (required)

- › Color – The color associated with the radar. This color is used for displaying the radar icon and for detections/tracks reported by the radar.
- › Radar Latitude/Radar Longitude – Radar latitude/longitude coordinates in GEO decimal degrees.
- › Radar Altitude – Altitude of installation relative to the monitored terrain, in meters.
- › Azimuth - Offset of the radar's mechanical zero axis, relative to the true north, in degrees.
- › Height - The radar's height in meters.

Camera:

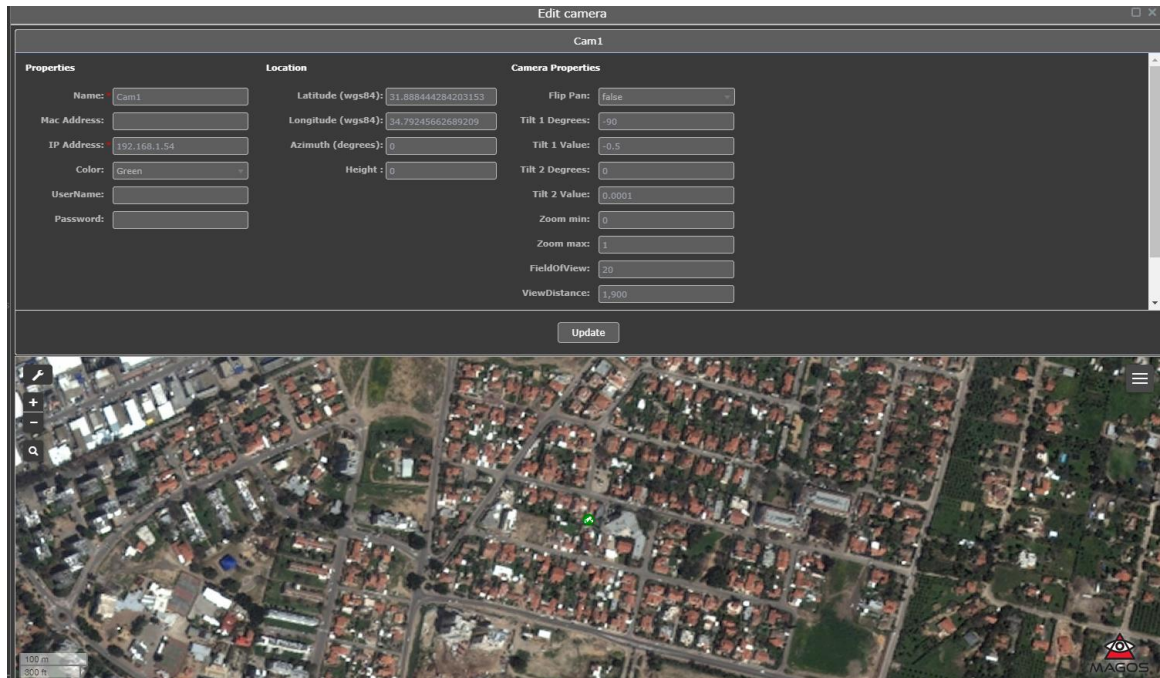



Figure 28: Camera sensor configuration menu

- › Camera – Camera latitude/longitude coordinates in GEO decimal degrees
- › Camera Altitude – Altitude of installation relative to the monitored terrain in meters
- › Camera Rotation Z – Offset of the camera's mechanical zero axis, relative to the absolute north, in degrees
- › Camera Field of View – The camera's widest field of view in degrees, based on its technical specifications (the camera's widest zoom-out angle)
- › Camera View Distance – The range of the target in which the operator would like the camera to apply maximum zoom
- › Camera Color – The color associated with the camera. This color is used for displaying the camera icon and the field of view trace on the map interface
- › Camera Flip Pan - Camera rotation (True/False)
- › Camera Tilt1 Degrees - Minimum tilt angle at Tilt1Value; ; by default, -90°
- › Camera Tilt1 Value - Minimum tilt value
- › Camera Tilt2 Degrees - Maximum tilt angle at Tilt2Value; by default, 0°
- › Camera Tilt2 Value - Maximum tilt value
- › Camera Zoom Min - Camera minimum zoom value
- › Camera Zoom Max - Camera maximum zoom value
- › Camera User Name - Camera login user name

- Camera Password - Camera login password
- 5. Sensor positioning can be achieved by using either of the following methods:
 - Entering the requested position and offsets in the configurations menu.
 - Using the following steps:

- a) Clicking the **Edit Layers** () icon.
- b) Clicking and dragging the sensor's icon to the requested position.
- c) Clicking the **Save** option next to the Edit Layers icon.

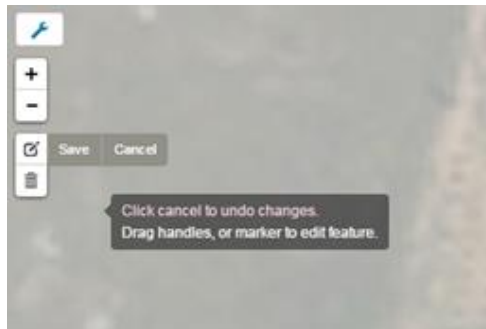



Figure 29: Saving and Exiting Edit Layers Mode

6. To remove sensor:

- a) click the delete icon () which appears on the top left side of map view.
- b) Choose the sensor by click on sensor name from the Sensors list at the menu or click the Sensor icon at the map.
- c) Click Save.

3.3BASIC MAP AND DISPLAY OPERATIONS

The first step when setting up a protected site is to place the map / satellite picture of the area as a background on top of which targets, sensors, and fences are displayed.

The map is automatically acquired from online mapping engines. By default, the map is centered around the geographical center of all sensors defined in the system, and zoom level is set to include all sensors within the view.


Prior to setting up the map on the client side, it is recommended to define the sensors' estimated coordinates will be defined. For instructions, see:

- Beginning of section 3.2.1, Adding a Sensor, on page 13- For defining coordinates when adding sensors
- Step 5 of section 3.2.1 (page 13) - For defining coordinates after the sensor has been added

3.3.1 SELECTING THE MAP IMAGE SOURCE

To select the map image source:

1. Ensure that the device running the server software is connected to the Internet, because most maps must be downloaded in real-time.

2. On the top right of the screen, move the mouse cursor over the  icon (or tap it when using touchscreen platforms) to open the **Display Options** menu.

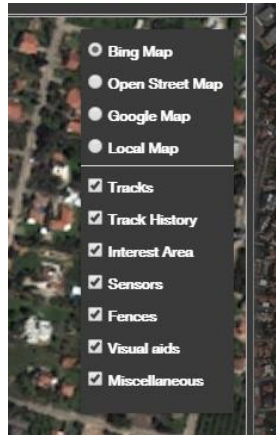


Figure 30: The Display Map Options menu

3. Select the requested map source from the following options:
 - Bing Map – Displays a satellite picture of the interest zone
 - Open Street Map – Displays a standard line plot map
 - Google Map – Displays a satellite picture of the interest zone
 - Local Map – Used for displaying the map that is stored in the local cache on the server; requires saving first the requested map format (Bing/Open Street/Google) to the local cache.

Use this option when the device running the server is not connected to the Internet. For instructions on creating a local cache on the server and performing map caching, see section 5.1, Enabling Map Caching, on page 32.

3.3.2 SELECTING THE MAP SIZE ON THE SCREEN

By default, when you enter the option the map you see fits your screen, namely: all sensors monitored by your system are displayed on the map, regardless of their layout.

In this display the map is resized automatically upon any addition of a new sensor; for example, if you only had sensors in a small area in Italy and you had just added a new sensor in Brazil.

You can change the map size by setting a Home map, which allows you to focus on a specific area, and then selecting the Home display.

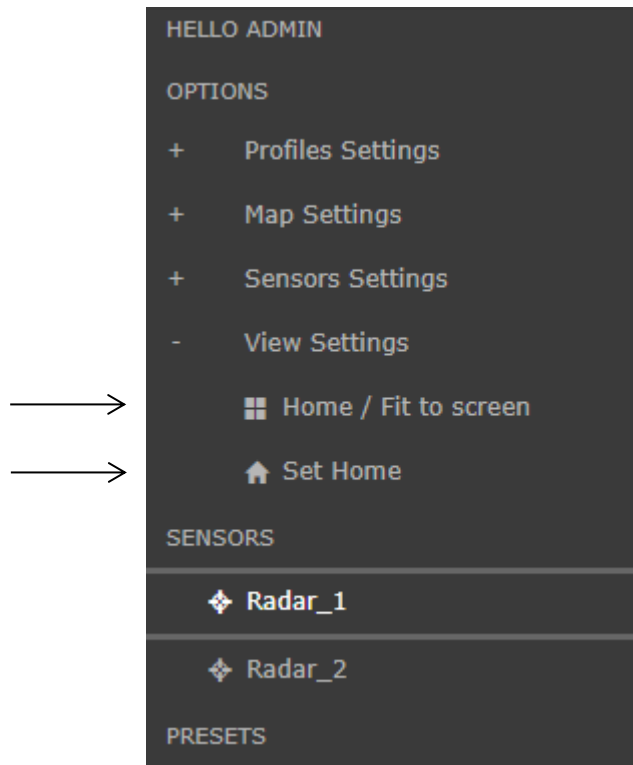




Figure 31: The Fit to screen/Home option

To set and display a Home map:

1. Select the requested map size, by using the Zoom in/Zoom out () buttons.
2. Click **Set Home**.
You are now prompted to confirm the change of your Home map.
3. Click **Yes** to confirm.
4. Click **Fit to screen/Home** to toggle the display to show your user-defined Home map.
5. Another option to set **Home** is by clicking on the  icon on the map

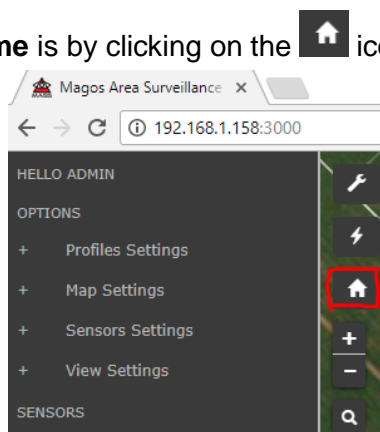



Figure 32: Home setting option

3.3.3 REVIEWING ADDITIONAL DISPLAY OPTIONS

The Display Options menu (see Figure 33: MASS optional data display on page 29) also allows hiding/displaying various data:

- Tracks – Lines indicating the movement course (track) of a currently active target. The black dot at the end of the line indicates the most current position of the target, as detected by the radar (marked with a dashed blue circle in **Error! Reference source not found.**). The color of the line matches the color assigned to the sensor that reported the track.
- Track History - Allows enabling/disabling the display of tracks on the on-screen map.




If you would like to clear the tracks from the screen, you need to click the  button on the left of the screen to open the Options menu, and then double-click the **Clear history** command.

- Interest Areas – Ignore/Alarm zones defined by the user (for details see section 5.3 on page 32, Setting Profiles and Interest Areas.

Interest areas are semi-transparent green colored (marked with black dashed rectangle in Figure 34: MASS optional data display on page 32).

- Sensors – Icons representing the various sensors. Each sensor type is assigned a different icon.

Each sensor can be assigned a different color. The location of the icon indicates the geographical position of the sensor associated to it on the map. The available icons are:

- Radar:  Radars can be assigned a color by using the Radar sensor configuration menu; for details, see the description below Figure 27: Radar sensor configuration menu on page 23. When communication with the radar is down, the icon is colored in gray.
- Camera:  Cameras can be assigned a color by using the Camera sensor configuration menu; for details, see the description below Figure 28: Camera sensor configuration menu on page 24. When communication with the radar is down, the icon is colored in gray.
- Fence: 

Fence sensor icons are invisible, with the exception of the following states:

- Fence edit mode (see chapter 6: Setting User-Specific Definitions, on page 46) - Fence sensor icons are visible and their color is dark blue.
- A fence sensor raises an alarm The fence sensor becomes visible in any mode, and its color is red.
- Communication with the fence sensor is down - The icon becomes visible in any mode and its color changes to orange.
- Fences – Lines representing the location of an electronic fence. These lines are used for visualization only, as the real sensor position (used for camera cueing) is marked by the fence icon itself.

- Visual Aids – A blue semi-transparent triangle originating from camera icons and representing the camera's current field of view (angle and zoom).
- Miscellaneous – Reserved for future use.



Figure 33: MASS optional data display

3.3.4 USING THE MAP

For simplicity, the displayed map is always oriented with the north pointing to the top of the screen. MASS offers a simple and intuitive interface for navigating within the map.

- **Panning:** To move the map, press the Ctrl key while clicking and dragging the map to the requested position. In touchscreen systems use two fingers for dragging the map to the requested position.
- **Zooming:** To zoom in or out, click the icon. Use the + or - for zooming in or out respectively. In touchscreen systems use standard two finger gestures for zooming in or out.

4. CALIBRATING SENSOR POSITIONS

As previously mentioned, accurate sensor positioning is imperative for proper operation of the control software and for receiving reliable readings from the sensors.

In multi-sensor systems, the process of calibrating the sensors position is somewhat tricky. The following sections offer a recommended procedure for simplifying this process.

4.1 CALIBRATING RADAR POSITIONS

Prior to starting this procedure, start by entering the estimated coordinates of each radar, as taken from a GPS device; and the “rotation Z”, as taken from an electronic compass reading when the compass is pointed to the radar’s absolute zero axis.

To calibrate radar positions:

1. Draw a small inclusion area on the map in a remote section where there is no traffic or no sensor coverage. For details on how to do this, see section 5.3.3, Applying a Preconfigured Profile.
2. Associate all sensors to the newly defined inclusion area, except for the first radar to be positioned.

This ensures that any track displayed on the map interface is originated from the radar that is to be positioned

3. If the monitored area contains real-time targets moving on paths or next to objects that can be identified in the map interface, fine-tune the sensor position and angle (for details, see section 3.2.3, Positioning and Calibrating a Sensor, on page 20) until the displayed track is positioned over these paths (for example, if there is a car/human traffic on a road within the coverage area). Otherwise, a person can be sent to move over such roads or next to these objects.

Ensure that the target used for calibrating the sensor position is moving along a course that is not purely radial or tangent to the radar; alternatively, the target can start with a radial course then turn right/left at a known position.

4. Repeat this procedure with all other radars. If two or more radars have overlapping coverage areas, after fine-tuning the first radar position by using the above procedure, the other radars can be positioned by moving them so that the reported target track overlaps that of the first radar (as long as the target is reported by both radars).

4.2 CALIBRATING CAMERA POSITION

Prior to starting this procedure, start by entering the estimated coordinates of each camera, as taken from a GPS device; and the “rotation Z”, as taken from an electronic compass reading when the compass is pointed to the radar’s absolute zero axis.

In addition, ensure that the positions of all radars are calibrated.

To calibrate camera position:

1. Check whether the camera is within the coverage area of one of the radars, in which case proceed to step 2, or outside the coverage area, in which case proceed to step 3.
2. If the camera is within the coverage area of one of the radars:
 - Send a person to walk up to the camera. Once this person reaches the camera, move the camera position to the location of the reported detection.
 - Calibrate the rotation Z axis by changing the value until the video stream shows the target when it is a few meters away from the camera.
3. If the camera is outside the coverage area of the radar, some fine-tuning is required:
 - a) Ensure that the camera is automatically cued to a test target positioned as far from the camera as possible.
 - b) Fine-tune the position and angle until the video stream from the camera is centered around the target.
 - c) Repeat this at different target locations (at least two).

4.3 CALIBRATING THE FENCE SENSOR POSITIONS



IMPORTANT

If the fence sensor is not within line of site of the camera, position fine-tuning is not needed because it has no meaning – in other words, position calibration is required only if camera cueing is needed for target verification of fence sensor detections.

To calibrate fence sensor positions:

1. Enter the estimated coordinates of each fence sensor, as taken from a GPS device.
2. Ensure that all cameras' positions are calibrated.
3. Send a person (test target) to each of the fence sensors.
4. Ensure that the person sent activates the sensor and that one of the cameras is cued to that sensor's position.
5. Adjust the sensor position on the map until the cued camera's video stream is centered around the person.

5. SETTING ADVANCED CONFIGURATION OPTIONS

In addition to the various basic display and configuration options described in section 3.3, Basic Map and Display Operations, MASS provides a set of more advanced configuration options to fine-tune the perimeter protection system to your specific needs. This chapter reviews all additional configuration options.



NOTE

Except for applying a preconfigured profile (see section 5.3.3), all steps and menus described in this chapter require Magos administrator privileges.


5.1 ENABLING MAP CACHING

The MASS map interface is constantly updated, based on an online mapping engine. In some cases, you may prefer to store the map data locally on server. Such a configuration is ideal for installations where the server's connection to the Internet is of low bandwidth or non-existent.

To enable map caching:

1. Ensure that the server is connected to the Internet.



2. Click the  icon at the top right corner of the screen.

The Map Options menu appears.

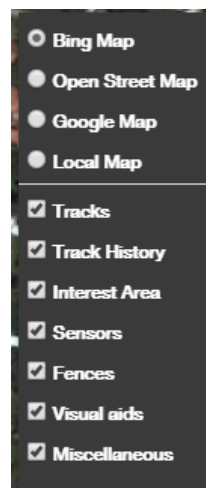



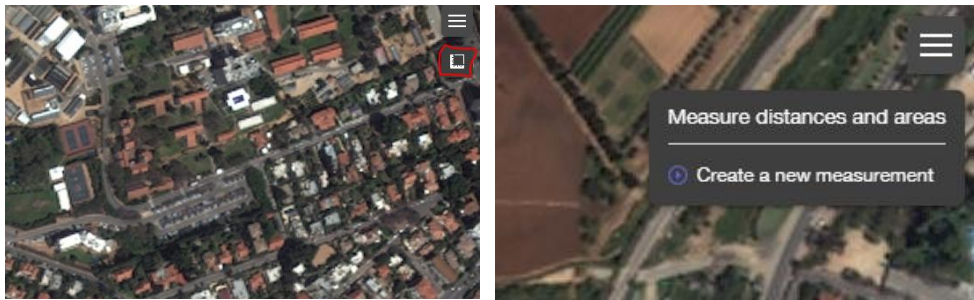
Figure 34: MASS optional data display

3. Ensure that:
 - The map source currently in use is the source you would like to use offline.
 - The map displays only items you would like to see offline (sensors, fences and so on); clear the check boxes near items you do not need offline.
4. On the top left of the page, click the  button to open the Options menu on the left of the screen.
5. Double-click **Settings**, or click the + sign next to it, to expand the Settings menu

6. Click on **Create cache**. Once caching is complete, the Internet connection is no longer required.
7. On the client side, select the Local Map option from the MASS Display Options menu. For details, see section 3.3.1, Selecting the Map Image Source.

5.2 MEASUREMENT TOOL

1. On the right side of the screen there is a ruler icon (marked in red) and a window menu will be opened
2. When standing on the ruler icon – a window “Measure distances and areas” will



be opened.

Figure 35: MASS ruler tool display

3. Press on “create a new measurement”.
4. A window will be opened and you can start creating the measured area by adding points.

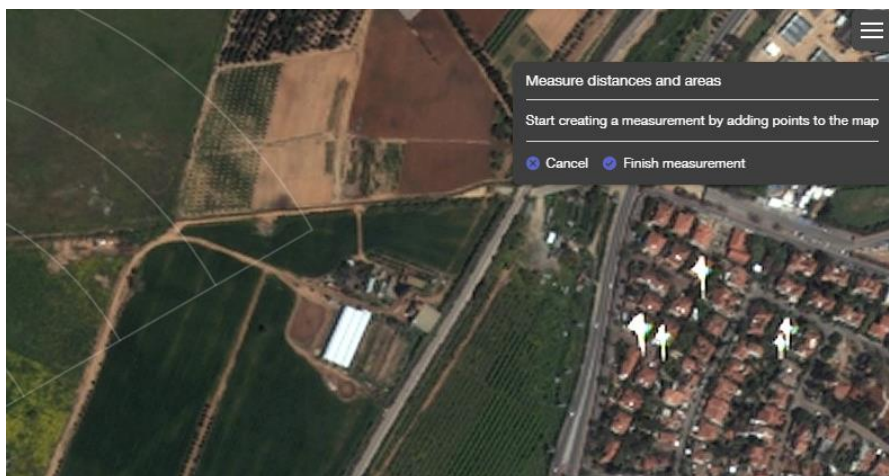


Figure 36: Measurement starting button

5. When standing on the first point and LEFT Clicking - a green pointer will be seen on screen - A measurement point has been added.
6. The coordinates appear on the right side of the screen where the ruler is.



Figure 37: Coordinates on map

7. Click on the second point you wish to add and a path will connect the two points
8. The path's measurement can be seen on the ruler's icon.



Figure 38: Drawing a polygon

9. When finishing setting coordination points – the area will be measured by both perimeter (distance) and square meters/Acres.
10. Click on “Finish measurement” and a summary will appear on spot.

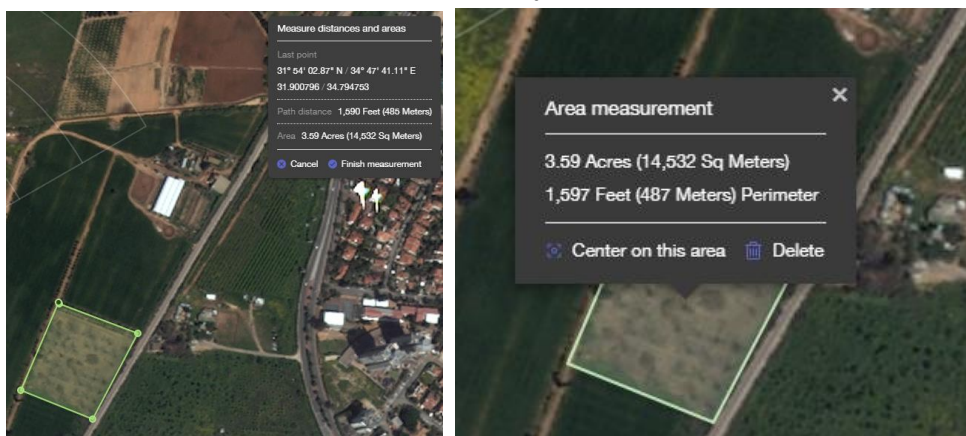


Figure 39: Measured area's properties

11. For measuring another area just return to map and mark another point or draw a

polygon.



Figure 40: A polygon and a second coordinate

12. Note: for deleting the measured area click "DELETE"

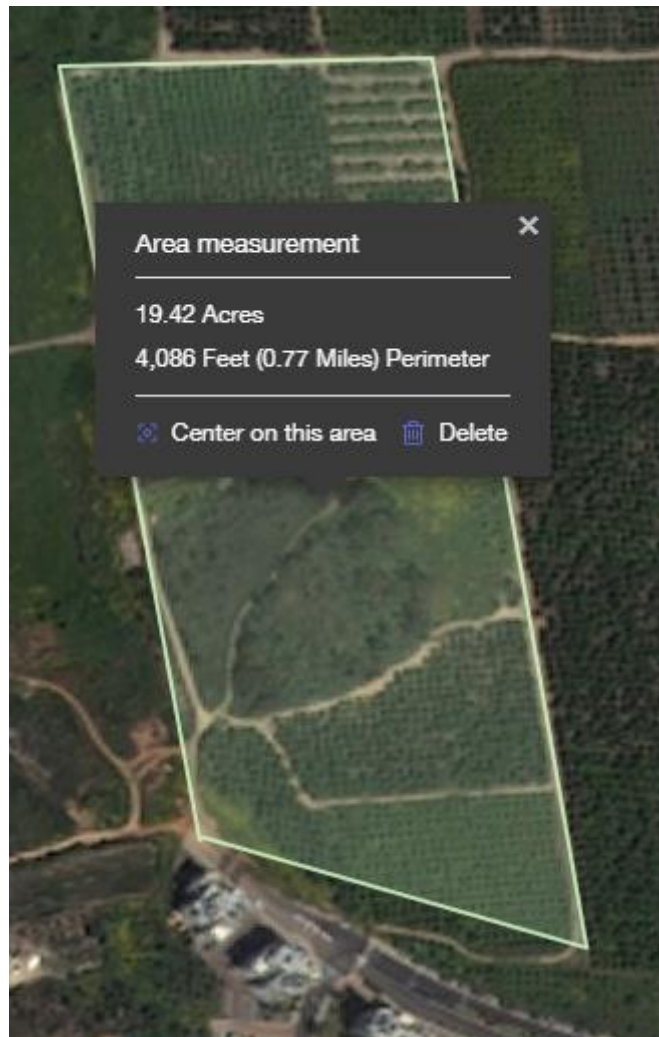


Figure 41: Deleting option of polygons or any measurements

5.3 SETTING PROFILES AND INTEREST AREAS

Profiles are a set of user-defined inclusion/exclusion areas. These areas can be used for controlling sensor behavior as follows:

- **Inclusion area:** A user-defined polygon, within which targets are tracked. Inclusion areas can be associated with radars and/or cameras. When the zone is associated with a radar, only targets whose current position is within the polygon are reported to the user. As soon as the target leaves the inclusion area its track will disappear from the map (even though the radar might still detect it). When associated with a camera, the camera will be cued only to targets whose current position is within the polygon.



NOTE

An un-associated inclusion zone applies to all cameras and radars.

- **Exclusion area:** A user-defined polygon, within which targets are ignored. Just like inclusion areas, exclusion areas can be associated with radars and/or cameras. When the zone is associated with a radar, targets whose current position is within the polygon will not be reported to the user and a track will not be displayed for them. As soon as the target leaves the exclusion zone, its track will appear (or reappear) on the map. In some cases the track history of a target might appear within the exclusion zone, because the current position (the black dot leading the track) is outside the polygon and target (a car, a person and so on) had just moved out of the exclusion area. When associated with a camera, the camera will not be automatically cued to positions/targets within the exclusion zone.



NOTE



Exclusion zones supersede inclusion zones. This means that if you defined two polygons with some (or complete) overlap between them, the overlapping areas will be treated by MASS as exclusion zones.

Inclusion/Exclusion areas are created and edited by using the Edit Profile option, described in section 5.3.1, Editing a Profile.

5.3.1 CREATING A PROFILE

MASS supports an unlimited number of profiles, which can be added by following the instructions described in this section.

To create a profile:

1. Go to **MASS options > Settings > Edit Profile** (see steps 1-3 on section 5.3).
2. Select either of the following options for creating a new profile:
 - Click **New Profile** () to start with a clean profile.
 - Click **Copy Profile** () to create a new profile based on a copy of the profile selected from the dropdown menu.

After selecting either option, you are prompted for the new profile name.

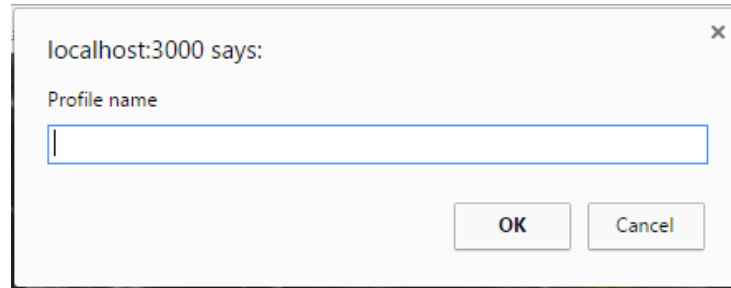



Figure 42: Profile Name message box

3. Enter a name of your choice and click **OK** to confirm the operation.
The newly created profile now appears under the profile list (dropdown box).

5.3.2 EDITING A PROFILE

To edit a profile:

1. On the top left of the page, click the  button to open the MASS options.
2. Double-click Settings or click the + sign next to the Settings option.
3. Click Edit Profile to open the Edit Profile menu at the bottom left of the screen.

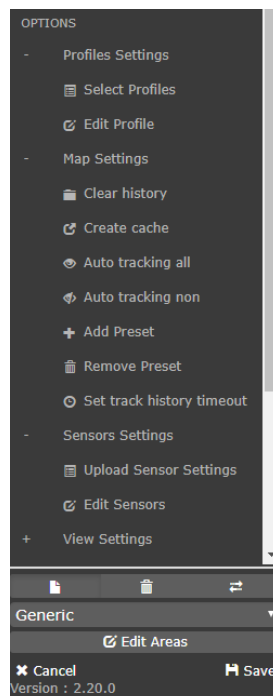





Figure 43: The Edit Profile menu

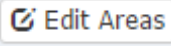
4. Select any of the following options for modifying the profile:
 - **Cancel** – Discard any changes made
 - **Save** – Save changes made to the profile
 - **New Profile** () – Create a new profile
 - **Copy Profile** () – Creates a new profile based on a copy of the profile selected from the dropdown menu
 - **Delete Profile** () – Deletes the profile currently selected in the dropdown

menu




NOTE

The Generic profile cannot be deleted.
 Profile name must not contain spaces or “-“ (Hyphen-minus)

- **Edit Areas** () – Opens a side menu that allows creating and editing inclusion/exclusion areas.

5.3.3 APPLYING A PRECONFIGURED PROFILE

To apply a preconfigured profile:

1. On the top left of the page, click the  button to open the MASS options.
2. Click **Profiles** to open the Current Profile selection box at the bottom left of the screen.

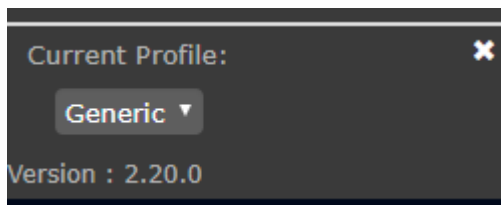


Figure 44: Current Profile selection box

3. Select the requested profile from the selection box.

5.3.4 DEFINING AND EDITING INTEREST AREAS

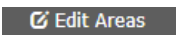
MASS supports an unlimited number of profiles, which can be added by following the instructions described in this section.



IMPORTANT

Prior to defining areas, ensure that the Interest Area check box in the Display Options menu is selected (see section 3.3.3, Reviewing Additional Display Options on page 27), otherwise the areas will not be visible.

To define and edit interest areas:

1. Go to **MASS options > Settings > Edit Profile** (see steps 1-3 on section 5.3.2 on page 37).
2. Use the dropdown menu to select the requested profile for editing/assigning areas.
3. Click  to add the icons shown below to the display on the top left side of the map interface.

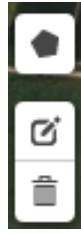


Figure 45: Edit Areas side menu


4. Click **Draw a polygon** () to draw a new zone
 - a) Click the map at the location of the polygon that defines the zone of interest. Each click adds a vertex to the polygon.
During this stage the polygon defined by the vertexes (mouse clicks) is temporarily filled in semi-transparent red, solid red lines define the borders of the polygon, and the dashed line represents the next border-line that is to be drawn.




Figure 45: Drawing a new zone of interest

At any stage while drawing, before clicking on the first point and closing the polygon, you can select an option from the auxiliary menu:

- › **Cancel** – Discards all vertexes drawn
- › **Delete last point** – Discards the last vertex drawn (can be used repeatedly up to the first vertex)



Figure 46: Polygon Drawing Auxiliary menu

- b) When finished, click the first point of the polygon. The mouse cursor's shape changes from cross-hair (+) to a point hand () icon when hovering (moving over) the first point, to indicate that this operation closes the polygon.
Once the polygon is complete and closed, it will be displayed as the drawn shape, filled with semi-transparent light red and bordered by a solid light red line.

Proceed to the next step in order to edit the area properties.

5. While in Area Edit mode, move the mouse over the requested area (painted green for pre-defined Inclusion areas, red for pre-defined Exclusion areas or light red for newly defined areas), and click it to open the **Area properties** menu on the bottom left side of the screen.



Figure 47: Area Properties Menu




NOTE

In places where two or more areas overlap each other, right-clicking the opens a pop-menu with the list of overlapping area names, allowing you to select the area to be edited.

This menu contains the following options:

- ▶ **Cancel** – Discards all changes made for the area. For newly defined polygons this operation deletes the entire polygon, while for existing/pre-defined polygons all changes made since the polygon was last saved are discarded.
- ▶ **Save** – saves all changes made. For a newly defined polygon this operation turns the polygon into an applicable area, thereby changing its fill color from light red to green.
- ▶ **Area type** – Include/Exclude. For the definition of available area types, see section 5.3, Setting Profiles and Interest Areas.
- ▶ **Attached sensors** – Select the check boxes next the radars/cameras that are to be associated with the area. For details on the meaning of associating sensors with an area see section 5.3, Setting Profiles and Interest Areas.
- ▶ **Area Name** – User-defined name for the area. By default, the system assigns an arbitrary name to each area.

To edit the vertex positions or add new vertexes to existing polygons, click the  icon from the **Edit Areas** side menu.

All areas are now displayed as light red-filled semi-transparent polygons. The edges are marked with dashed light red lines and the pre-defined vertexes are indicated by small white squares. In addition, semi-transparent white squares appear on the center of each edge.



NOTE

Area name must not contain spaces or “-“ (Hyphen-minus).

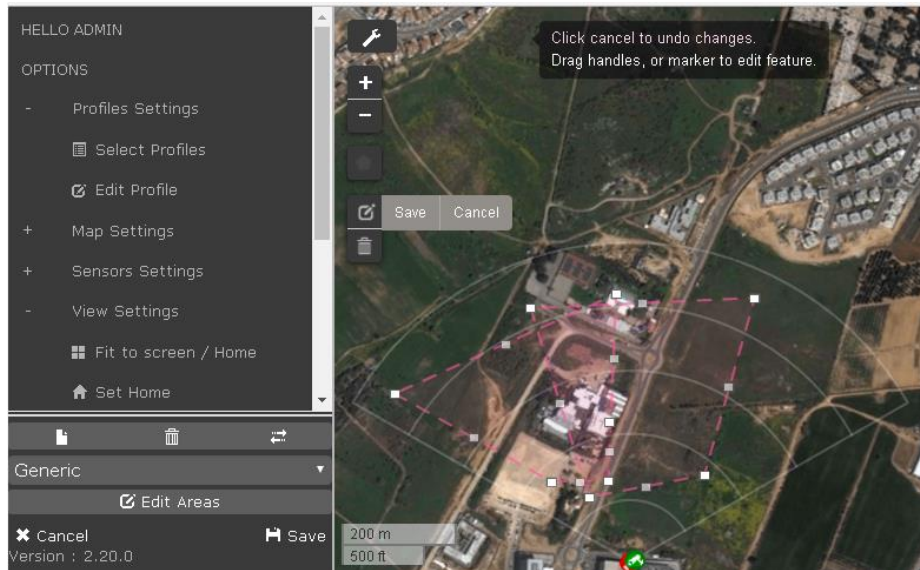



Figure 48: Edit Polygons mode

- › To move the position of an existing vertex, click and drag the white square indicating the vertex's position to the requested new position.
 - › To add a vertex, click and drag the semi-transparent squares from the center of the requested edge to the requested position of the new vertex.
- Use any of the options in the auxiliary menu available while in this mode.



Figure 49: Polygon Editing auxiliary menu

6. When you are done applying the requested changes, click Save. Alternatively, you can discard your changes by using either of the following options:
 - Reverting to the previous state by clicking **Cancel**.
 - Deleting fully-drawn polygons (whether newly defined or existing), by clicking the  icon and then clicking the areas to be removed.

When in this mode, an auxiliary menu is available.




Figure 50: Polygon Deleting auxiliary menu

5.4 ENABLING/DISABLING AUTO TRACKING

The autotracking feature refers to automatic camera cueing by the radar, namely: whenever a fence or a radar declares a detection or a target, the nearest camera is pointed to it (provided that the target is within the camera's coverage area). This feature is enabled by default. However, in some cases you may want to override the automatic cueing and manually control the camera.

To enable/disable automatic cueing:

1. On the top left of the page, click the  button to open the MASS options menu.
2. Click **Set auto tracking all** or **Unset auto tracking non**, to enable or disable automatic tracking.

5.4.1 ENABLING/DISABLING AUTOTRACKING FOR ALL CAMERAS

If you have multiple camera sensors installed, by default AutoTracking is enabled for all of the sensors.

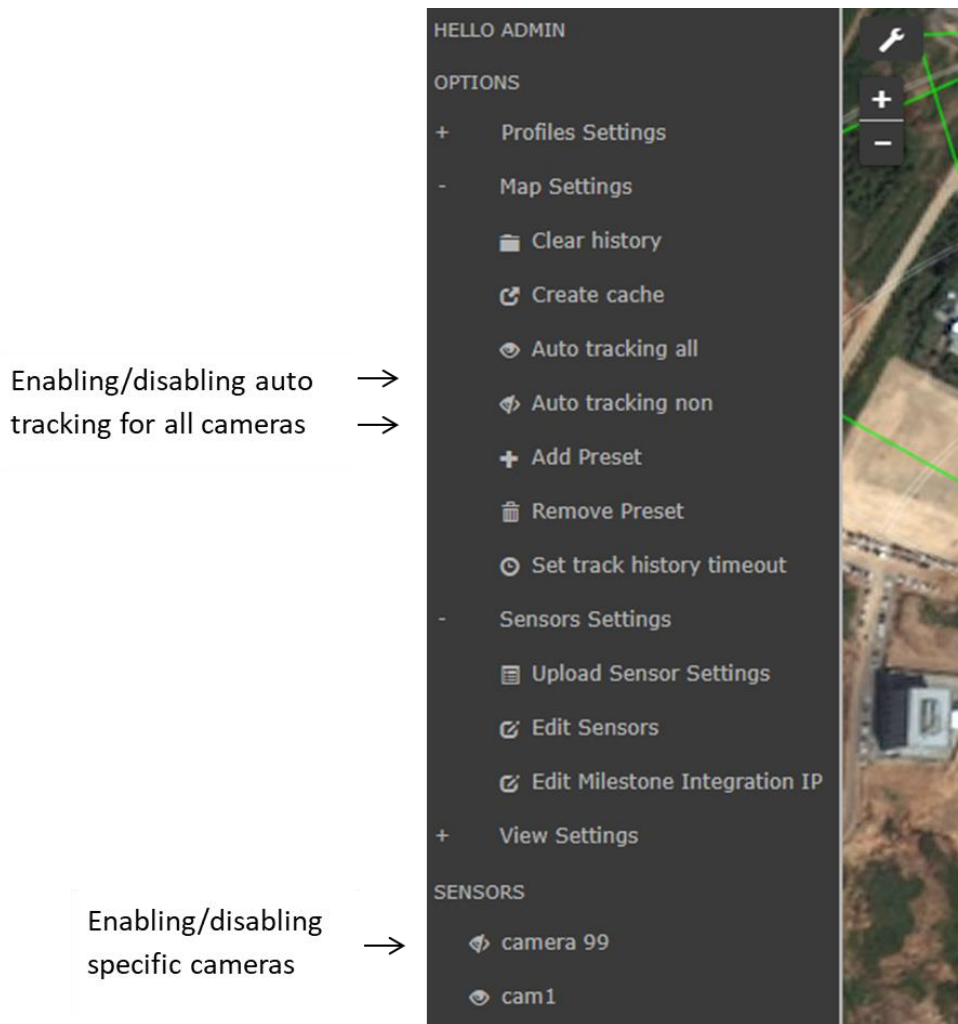


Figure 51: The Auto Tracking feature, enabled by default for all cameras

To disable auto tracking for a single camera, see instructions on the next section.

To disable auto tracking for all cameras, click **Unset auto tracking all cameras**.

5.4.2 DISABLING AUTO TRACKING FOR A SINGLE CAMERA

To disable auto tracking for a single camera:

1. Locate the camera sensor under the sensor list (see Figure 51: The Auto


Tracking feature, enabled by default for all cameras).

2. Toggle the sensor to Off, to disable auto tracking.

5.5 SETTING TRACK HISTORY TIMEOUT

The Map Options feature refers to track history and allows increasing/decreasing the amount of time, in seconds, for which the history of each detected item appears after the item is no longer displayed on the screen. By default, the value of track history timeout is 0.

To change track history timeout:

1. On the top left of the page, click the  button to open the MASS options menu.
2. Click **Map Settings** to open the Track History Timeout field at the bottom left of the screen.

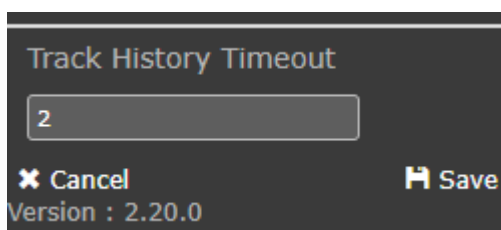


Figure 52: Track History Timeout

3. Insert the requested timeout value, in seconds.
4. Click **Save**.

5.6 TRACKS LIST

MASS allows debriefing past tracks alongside live tracks by defining a “tracks recording” list and then following up each.

To operate tracks list:

1. Click on the icon and **Start Tracks List**

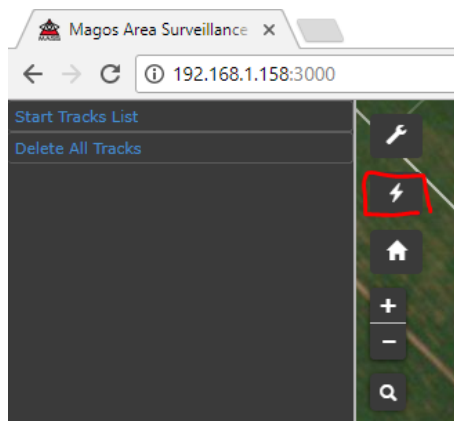


Figure 53: Start Track List

2. MASS will record all tracks and show them in order of appearance where each

name is related to a sensor where detected. Red tracks are live while past tracks are marked in gray but can still be debriefed.

- When clicking Stop Tracks the list will still be available but not updated until restarting list.

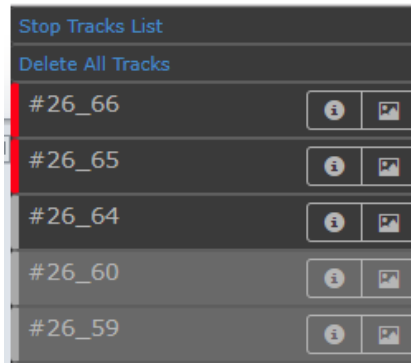



Figure 54: Past and Live Track List

- For viewing details on a track click  and a window will be opened showing which sensor was the track detected at, distance from camera and location.
- When the track is live – information will be live updated.

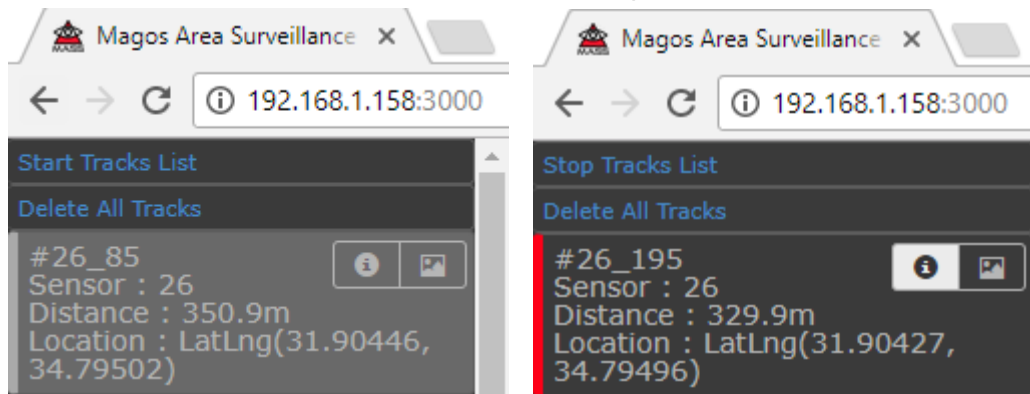


Figure 55: Tracks Details

- For showing track on the map click . Live track will be shown in red, past tracks will be showed in black and time-outed tracked in white.

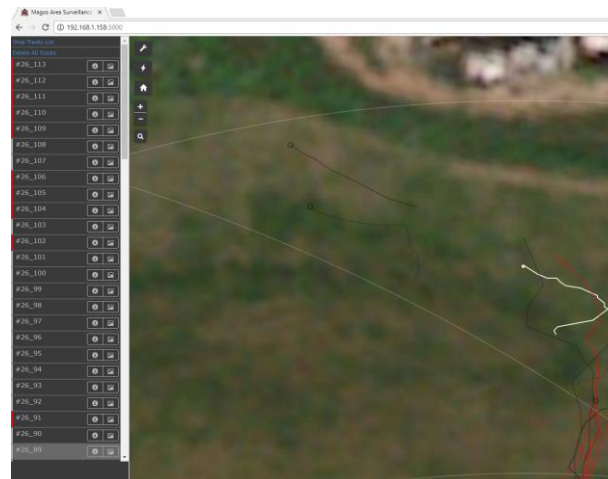


Figure 56: Tracks on Map

5.7 SETTING PRESETS

MASS allows adding and removing user-defined presets, which can be customized to fit the permission level and needs of specific users. For details, see section Setting User-Specific Definitions, on page 46.

6. SETTING USER-SPECIFIC DEFINITIONS



NOTE


The tasks described in this chapter require Magos administrator privileges.

In certain scenarios, you may need to set custom-tailored definitions, based on the conditions and permission levels of specific MASS operators. For example, you may want to allow one operator to monitor only the southern area of your property, or to use a different map source for the local cache.

The following sections provide instructions for setting user-specific definitions.

6.1 ADDING AND REMOVING USER-DEFINED PRESETS

To add a user-defined preset:

1. On the top left of the page, click the  button to open the **Options** menu on the left of the screen.
2. Double-click **Map options**.

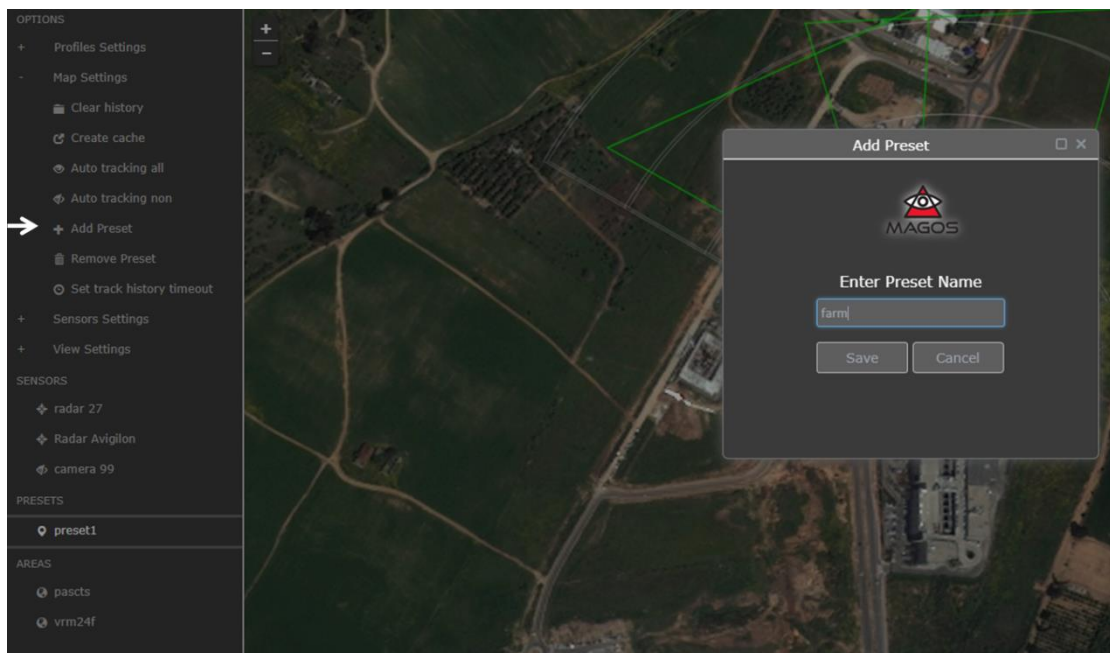


Figure 57: The Add Preset option

3. Click **Add Preset** to open the Add Preset dialog box.
4. Enter a name of your choice and click **Save**.

The newly created preset - in the example below, Southern Gate - is now displayed under the Presets section.



NOTE

Preset name must not contain spaces or “-“ (Hyphen-minus).

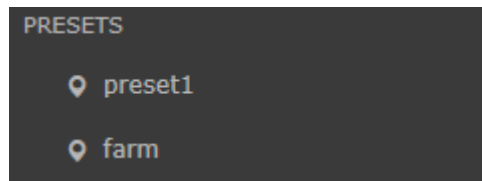


Figure 58: The Presets section with a newly created preset

To remove a user-defined preset:

1. Click **Remove Preset** to open the Delete Presets dialog box.
2. Select the preset you would like to remove.
3. When prompted whether you are sure you want to delete the selected preset, click **Yes**.

The deleted preset will be removed from the Presets section.

6.2 SETTING USER-DEFINED LOCAL CACHE

You can define settings that are custom-tailored to the needs, geographic location, permission level and so on of a specific user, before taking a snapshot of these settings to be used as local cache.

With the exception of "Home map or entire screen (Fit to screen)", all following settings, which can be fit to a specific user, require administrator privileges:

- Image map source - Bing/Open StreetMap/Google Maps
- Items displayed on the map (sensors, fences and so on)
- Track History timeout
- Auto Tracking settings (On/Off and tracking single camera/multiple cameras)
- Preset - Display the the preset(s) custom-tailored for the user, if any, and no additional presets

For further details, see chapter 5, Setting Advanced Configuration Options, on page 32 Setting Advanced Configuration Options.

6.3 SETTING AUTO TRACKING

If you would allow an operator to monitor only part of the cameras detected in the system, you can disable one or more cameras individually. For details see Enabling/Disabling AutoTracking for All Cameras on page 42.

6.4 SETTING UP FENCES

MASS can be easily integrated with additional sensors. One such example is EL-FAR fence sensors solutions. This chapter describes the setup procedure and basic available operations for the fence sensors.

For more details about these sensors, how to install them and how to connect them to the server-side software, refer to EL-FAR software/hardware user guides (<http://www.elfar.co.il/index.aspx?id=3087>).

To set up fences:


1. Click the  button to open the MASS options menu.
2. Double-click **Settings** or click on the **+** sign next to it, to expand the Settings menu.
3. Click **Edit Fences** to enter the fence edit mode. A side menu appears on the left side of the map interface.



Figure 59: Edit Fences side menu

Fences are only visual aids, designed to display the physical position of installed positions to the operator.

6.4.1 DRAW FENCES BY CARRYING OUT THE FOLLOWING STEPS:

- a) Click at the physical location of the fence (starting point/vertex). Each click creates a vertex/corner in the fence. After each click, a tooltip displays the linear distance of mouse location from the most recently drawn vertex/corner, and a solid red line is drawn to indicate the fence position between drawn vertexes/corners.

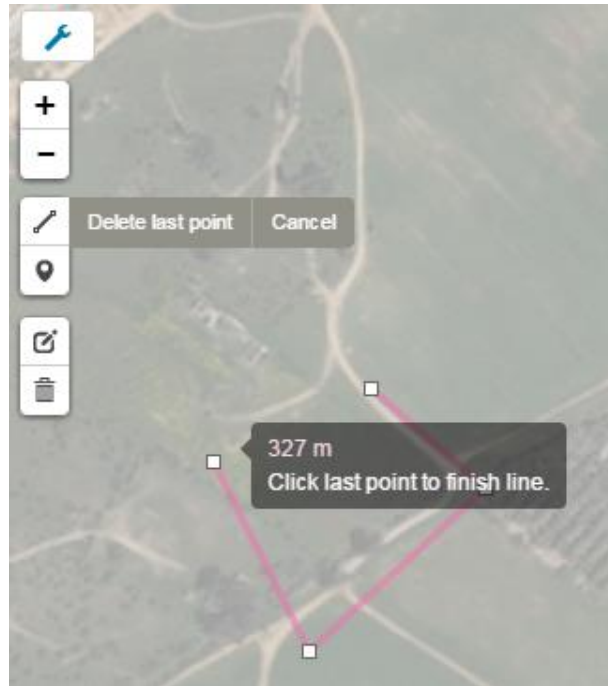




Figure 60: Edit Fences - Draw Fences mode

- b) While drawing the fence, click **Delete last point** (next to the  icon) to remove the last vertex/corner draw, or **Cancel** to discard all changes in the current fence.
- c) When finished, click the last vertex/corner. Unlike interest areas, fences do not require that the shape drawn be a closed polygon. Fence elements are the actual sensor placed on the fence. Each element has a ULZ (Unit Line Zone) identifier.

6.4.2 ADD FENCE ELEMENTS TO THE MAP, BY FOLLOWING THESE STEPS:

- d) Click the  icon.
- e) Use the mouse cursor to position the fence element at the requested location and click on the map to place it.
- f) Upon each mouse click, a message box prompts you to enter the sensor identifier, including the IP address and port of the EL-FAR sensor controller.

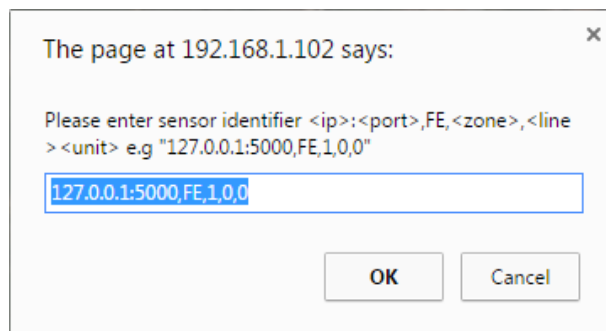



Figure 61: Sensor Identifier prompt message box

- g) Click  next to the  icon when done placing the sensors.

6.4.3 EDIT FENCES AND SENSORS BY CLICKING THE ICON:

- h) To change the position of a fence sensor, click and drag it to the sensor to the desired requested position.
- i) To edit fence lines, click and drag the solid white squares (representing the vertexes), or add new vertexes by clicking and dragging the semi-transparent squares on the center of the fence lines.
- j) Click the  icon to delete fence elements, then click the elements to be deleted (either fence sensors or fence lines). When done, click **Save** to apply changes or **Cancel** to undo them.

6.5 CONFIGURING ONVIF CAMERAS

As part of the sensor setup you need to set the camera properties, such as flip pan and tilt 1 degrees; for details, see page 13 under section 3.2, Setting Up Sensors.

To configure the camera's absolute movement:

1. Download and install Onvif Device Manager: <http://sourceforge.net/projects/onvifdm/>.
2. After logging in to the camera in Onvif Device Manager, go to PTZ control.

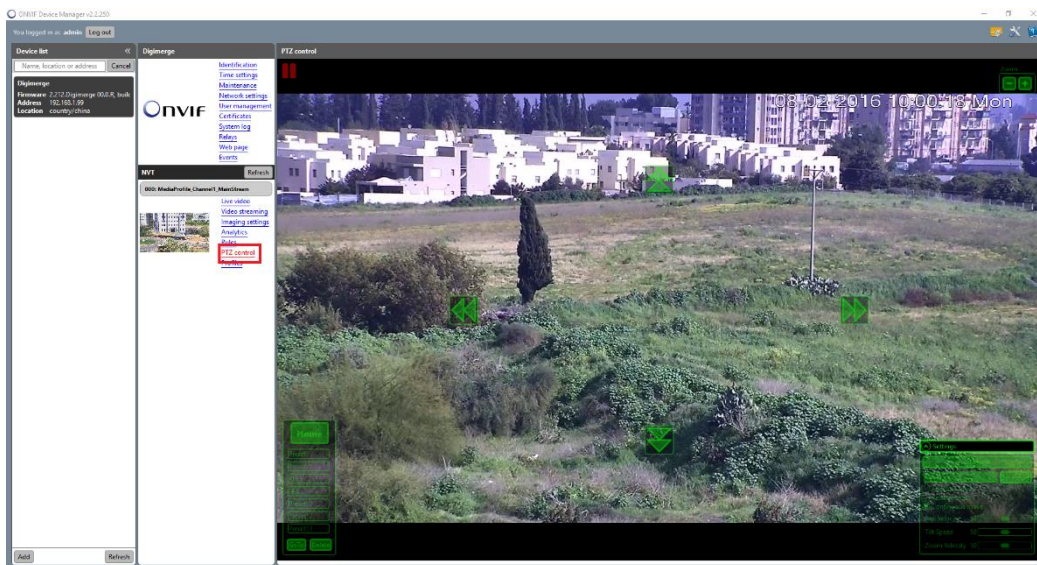


Figure 62: Onvif Device Manager Main Screen

3. Select *Absolute move*.



Figure 63: Absolute move setting on Onvif Device Manager

4. Check the camera rotation direction by changing the pan values.



Figure 64: Pan Configuration

If the camera rotates at the opposite direction from the pan values, change the value of the Camera Flip Pan parameter from False to True in MASS (see page17).

5. Check the minimum and maximum tilt and zoom values.



Figure 65: Tilt and Zoom configuration

6. Insert the upper and lower limits of tilt values. For details, see section 3.2.1, Adding a Sensor, on page 13. For example, see figure below.

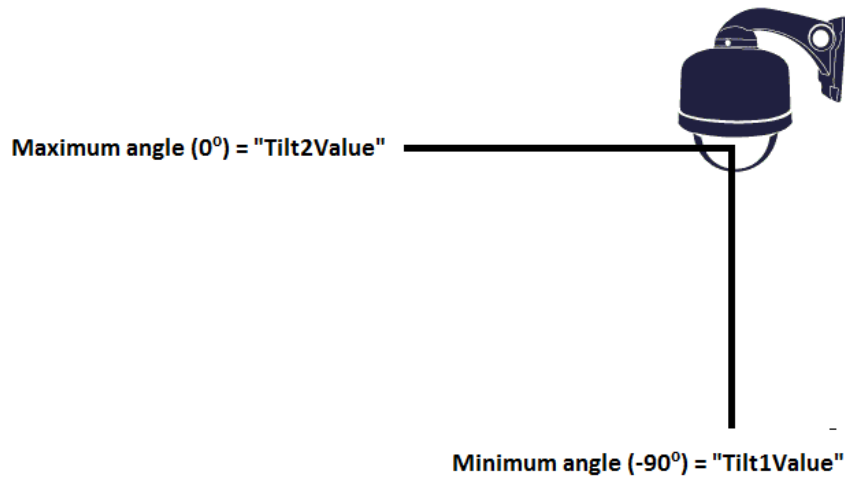


Figure 66: Tilt range

7. CONFIGURING INTEGRATION WITH MILESTONE

MASS application has been integrated with the Milestone XProtect® Smart Client software to create a full-feature platform that suites the user’s needs.

Milestone provides complete video management for the cameras controlled by MASS, and in addition it offers an extensive event management and logging platform that allows “post-mortem” analysis of any intrusion event at the protected site.

7.1 ENABLING INTEGRATION

To enable integration with Milestone:

1. Set the requested settings on Milestone; for details, see the Milestone XProtect® Smart Client user guide under <https://www.milestonesys.com/support/help-yourself/manuals-and-guides/>.

Once integration is enabled in Milestone, the option of editing Milestone Integration’s IP address appears on the **Settings** menu.

2. Go to **Configuration > Settings** and click **Edit Milestone Integration IP**.

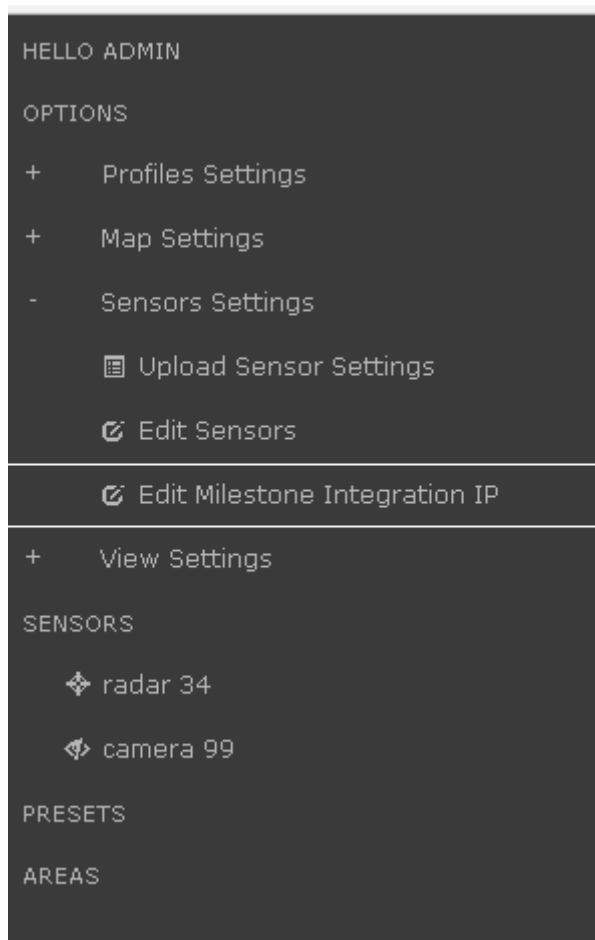


Figure 67: Edit Milestone Integration IP

The Milestone Integration field appears at the bottom left side of the screen.



Figure 68: Milestone Integration field

3. Set the IP address of the computer that runs the Milestone server and click **Save**.

7.2 ENABLING MASS-MILESTONE ON-SCREEN INTEGRATION

MASS is a fully web-based application; once server-side software is installed and running, you can access MASS from any web browser-supporting device, provided that both the server-running machine and the client side are connected to Ethernet or to the same LAN.

As a result, integration with Milestone is a straightforward process; MASS can be opened as a browser window within Milestone XProtect® Smart Client, thereby enabling all MASS operation features within the context of XProtect® Smart Client. In addition, by using the Milestone built-in screen-capture, it is possible to include video captions of the MASS screen as if they were a video stream from a camera, and use them for event logging and interrogation.

7.3 LOGGING EVENTS TO MILESTONE

MASS can be configured to send various types of events to Milestone XProtect® Smart Client. These events can be used for various features, including advanced event management (defining rules and operations in Milestone that are triggered by events sent from the MASS), logging events, and interrogating events.

To enable the event logging, see the Milestone XProtect® Smart Client user guide (<https://www.milestonesys.com/support/manuals-and-guides>).

Once the link is properly configured, the events below will be sent to the Milestone system, under the category Generic event.



IMPORTANT

Define the events in the Milestone so that they match the names listed below.

- *AreaEnter_[AreaName]* - A target entered a predefined inclusion area.
[AreaName] is the user-defined name, as explained in step 5 of section 5.3.4, Defining and Editing Interest Areas, on page 38.
- *AreaExit_[AreaName]* - A target exited a predefined inclusion area.
- *TargetNew* – A new target has been detected by one of the radars.
- *TargetEnd* - A monitored target is no longer detected and reported by the radar.

- *CameraMove_[CameraName]*- MASS automatically cued the specified camera to a detection. [CameraName] is the user-defined name of the camera, as explained in section 3.2.1, Adding a Sensor, on page 13.
- *Fence_[Fence detector Number]* – A specific fence detector raised an alarm. [Fence detector Number] is the user-defined sensor number, as explained in step 6.2 above of chapter 6, Setting User-defined Local Cache, on page 47.

8. TROUBLESHOOTING

This chapter has been produced to describe the most common support issues arising with Magos Area Surveillance Software, and to provide ways to approach diagnosing and troubleshooting these issues.

This chapter will continue to be revised by Magos as new information becomes available and can be shared.

8.1 GENERAL TROUBLESHOOTING ADVICE


8.2 DEFAULT SETTINGS USED IN MASS

8.3 GENERAL ISSUE NO. 1

8.3.1 NO FENCES ARE VISIBLE ON THE MAP IN OFFLINE MODE

The item Fences may not have been selected before the local map cache was created.

To verify that the requested items were selected for map caching:

1. Ensure that the server is connected to the Internet.
2. Click the  icon at the top right corner of the screen.
The Map Options menu appears.

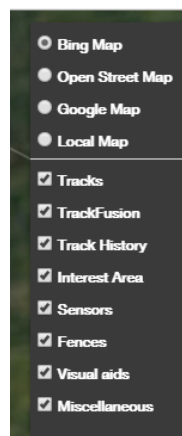


Figure 69: MASS optional data display

3. Ensure that:
 - The map source currently in use is the source you would like to use offline.
 - The map displays only items you would like to see offline (sensors, fences)

and so on); clear the check boxes near items you do not need offline.

8.3.2 THE MAP TYPE IN OFFLINE MODE IS NOT THE ONE I WANT

It is possible that you accidentally selected another map source.

To verify that the requested map source was selected for map caching:

1. Ensure that the server is connected to the Internet.



2. Click the icon at the top right corner of the screen.

The Map Options menu appears.

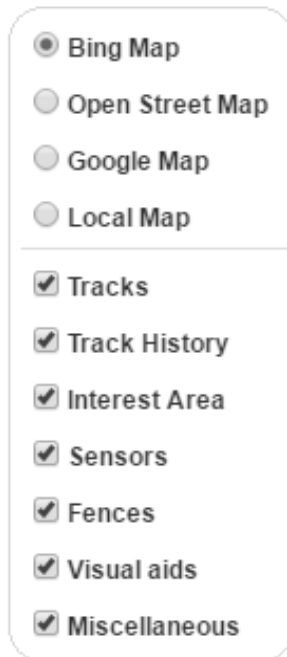


Figure 70: MASS optional data display

Ensure that:

- The map source currently in use is the source you would like to use offline.
- The map displays only items you would like to see offline (sensors, fences and so on); clear the check boxes near items you do not need offline.

8.4 GENERAL ISSUE NO. 2

8.4.1 I DO NOT SEE MY SENSOR ON THE MAP

When several sensors are positioned close to one another, their respective icons can overlap and even hide each other

To select the requested sensor:

1. Right-click the group of icons to open a small selection window, which contains the list of available sensors.
2. Select your sensor from the list.

9. FAQ

This chapter specifies frequently asked questions and provides responses.

This chapter provides answers to some of the most common questions about installing and using MASS with the relevant hardware - sensors and radars.

If your MASS issue is not addressed in this chapter, you can file a Magos support request on the Magos support site.

The frequently asked questions are divided to the following categories:

- MASS Installation
- Sensor Positions
- Auto Tracking
- Integration with Milestone

9.1 MASS INSTALLATION

1. Do I need to upgrade to the latest version of my browser to install MASS?

There is no need to upgrade to the latest version. Just ensure that your browser is included in the list of supported browsers, available under <http://caniuse.com/#>.

9.1.1 ARE ALL VERSIONS OF WINDOWS 7 SUPPORTED?

Yes, they are.

9.2 SENSOR POSITIONS

9.3 AUTO TRACKING

9.4 INTEGRATION WITH MILESTONE

10. GLOSSARY

Camera panning. A horizontal camera movement, in which the camera points left or right from a fixed location such as a tripod.

Camera tilt. A vertical camera movement, in which the camera points up or down from a fixed location such as a tripod.

Magos administrator. The highest permission level in MASS. A Magos administrator is authorized to view the entire system and to carry out certain tasks that involve making changes to the system.

Map caching. The process used for storing the map data locally on server. Such a configuration is ideal for installations where the server's connection to the Internet is of low bandwidth or non-existent.

Mobile client. A mobile phone - currently only Android-based - that has Magos application installed. Magos application allows you to position your radar sensors (camera sensors are not supported) in a quick, efficient manner.

PTZ Auto-tracking. <http://www.networkwebcams.com/ip-camera-learning-center/2008/06/16/cctv-ptz-auto-tracking/>

PTZ. <http://www.networkwebcams.com/ip-camera-learning-center/2008/07/08/glossary-term-pan-tilt-zoom-ptz/>

Panning. <http://www.networkwebcams.com/ip-camera-learning-center/2008/07/08/glossary-term-pan-tilt-zoom-ptz/>

PTZ Slew to Cue. "Slew to Cue" refers to the integration of a radar or other target detection device, which instruct and electro-optic or infra-red surveillance PTZ camera where to point. The detection sensor - a radar, in the case of MASS - is designed to detect the target and pinpoint its location, then transmit that information to the PTZ camera which in turn auto-tracks, identifies and recognizes the target. Slew to cue is considered the best solution for long 24/7 security and surveillance, due to a radar's ability to provide 360-degree coverage and detect vehicle-sized targets up to 40km away for marine, ground or aerial targets day or night, even in bad weather conditions. The day/night PTZ surveillance cameras can then recognize and identify the targets that are detected.

Tracks. Lines indicating the movement course (track) of a currently active target. The black dot at the end of the line indicates the most current position of the target, as detected by the radar. The color of the line matches the color assigned to the sensor that reported the track.

Zooming. Zooming is the process of adjusting the focal length of a camera lens to make a subject appear close or far away, based on the setting. Zooming is carried out by using a zoom lens, as opposed to a fixed focal length (prime) lens.

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