Application Note

IP horn loudspeaker & IP amplifier module – Genetec Security Center integration – v1.1

This Application Note describes how to integrate the IP horn loudspeakers or the IP amplifier module into Genetec Video Management Software Security Center using ONVIF.

Related Products:
LHN-UC15L-SIP | LHN-UC15W-SIP | AMN-P15-SIP

Severity:
☐ Immediate action required
☐ Action strongly recommended
☒ Informative

Table of Contents

1. Introduction

This Application Note describes how the IP horn loudspeaker, and the IP amplifier module can be integrated into Security Center Video Management software (VMS). On the example of the wide-angle IP horn loudspeaker, it will be described how to do the configuration. The long throw horn loudspeaker and the amplifier module can be configured in almost the same way.

Products:

LHN-UC15L-SIP	=	IP horn loudspeaker 15W, long throw
LHN-UC15W-SIP	=	IP horn loudspeaker 15W, wide angle
AMN-P15-SIP	=	IP amplifier module 15W

The IP horn loudspeakers and the IP amplifier module can be used in Video Management Systems (VMS) which are based on the ONVIF standard. Main use is the audio support (live & trigger) from the VMS towards the IP horn loudspeakers and IP amplifier module, see below table for more details.

Audio Use cases / Features	**IP Horn**	**IP Amp Module**
1-way live audio from VMS	✔	✔
2-way live audio from and to VMS	✔	X (no microphone)
Start pre-recorded massage stored in the IP horn/amp without scripting (using ONVIF output)	✔	✔

Although ONVIF is a standard, there are differences on the actual support based upon the specific VMS. The VMS version tested together with the IP horn loudspeaker/amp module is Genetec Security Center 5.11.

2. Abbreviations

VMS	Video Management Software
ONVIF	ONVIF stands for Open Network Video Interface Forum and it is a standard for the communication between different IP-based security systems.
ONVIF Output	The ONVIF Output is a virtual control output in the Video Management System. It can be used to control the state of a virtual control input of the IP horn/amp via ONVIF.
ONVIF Streaming	Audio stream from the device (IP horn) to the VMS.
ONVIF Backchannel	ONVIF offers the option to send media back from the VMS to the client (IP horn loudspeaker/amp module).
Genetec Security Center Config Tool	Genetec VMS configuration software
Genetec Security Center Service Desk	Genetec VMS operator software

3. Preparing the IP horn/amp

This chapter describes how to prepare the IP horn/amp when using it in combination with Genetec Security Center Video Management Software.

3.1. Firmware

The firmware of the IP horn/amp needs to be updated to the firmware v2.0 (2.0.800) or later, to support ONVIF. It is recommended to use the latest firmware version. Please check the firmware release notes for more details about firmware compatibility.

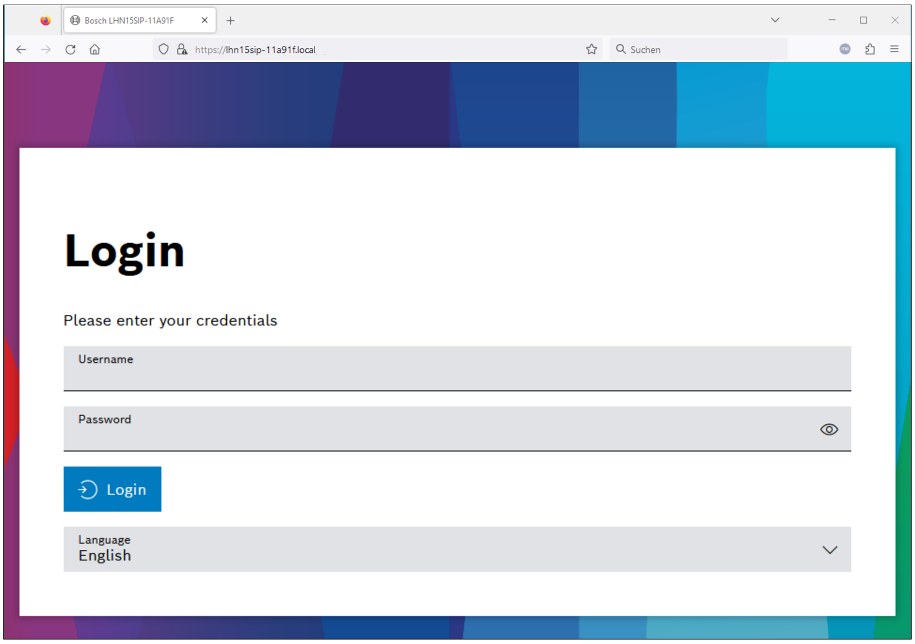
You can get the latest firmware from the product page at www.boschsecurity.com.

Notice!
More details about the firmware update can be found in the application note “IP horn loudspeaker & IP amplifier module – Getting started”.

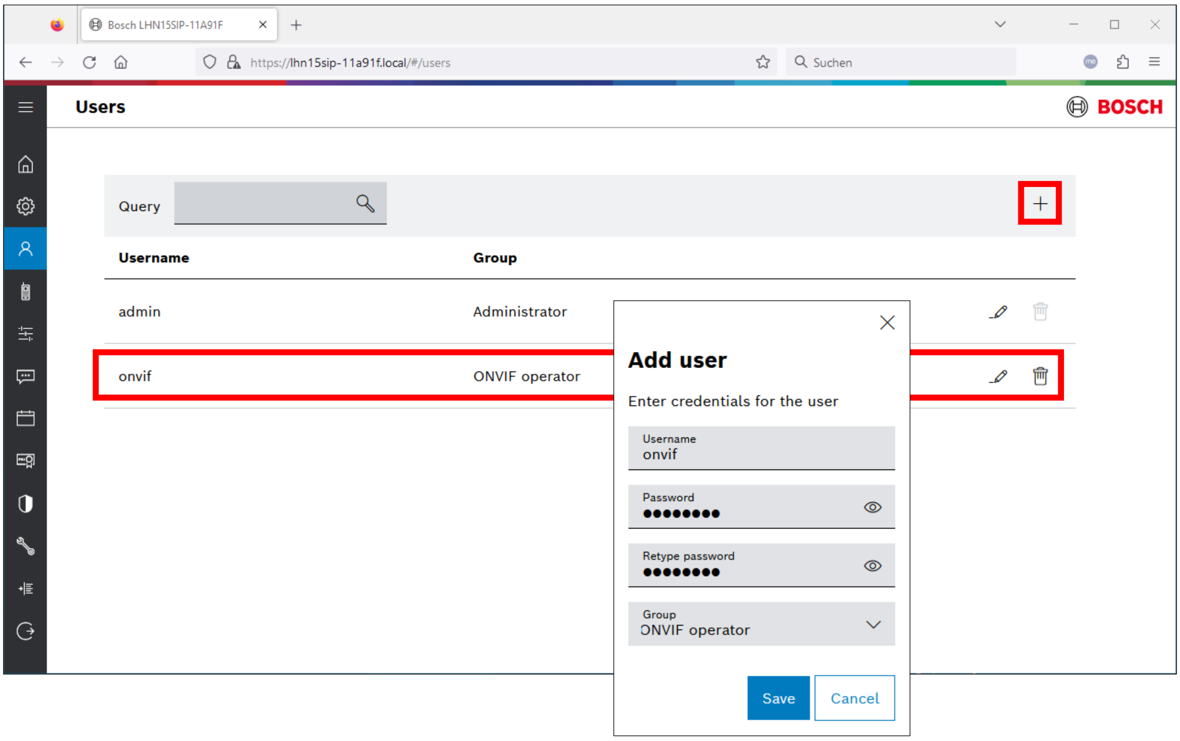
3.2. General Configuration

By default (factory reset) the speaker is not addable to the Genetec Security Center software. Below is described what needs to be prepared on the IP horn/amp side. The screenshots were made with the firmware v2.1 (2.1.869).

1. Connect to the speaker:
   Open a browser and enter the IP address (https://IPaddress) or the host name (https://HOSTNAME.local) of the IP horn/amp and login with Username and Password of the administrative account.



2. Adding a user:
   To activate the ONVIF interface, an ONVIF user needs to be added. Go to *Users* and add an *ONVIF operator* account dedicated for Genetec Security Center.



https://lhn15sip-11a91f.local/#/users

Users

Username	Group
admin	Administrator
onvif	ONVIF operator

Add user

Enter credentials for the user

Username: onvif

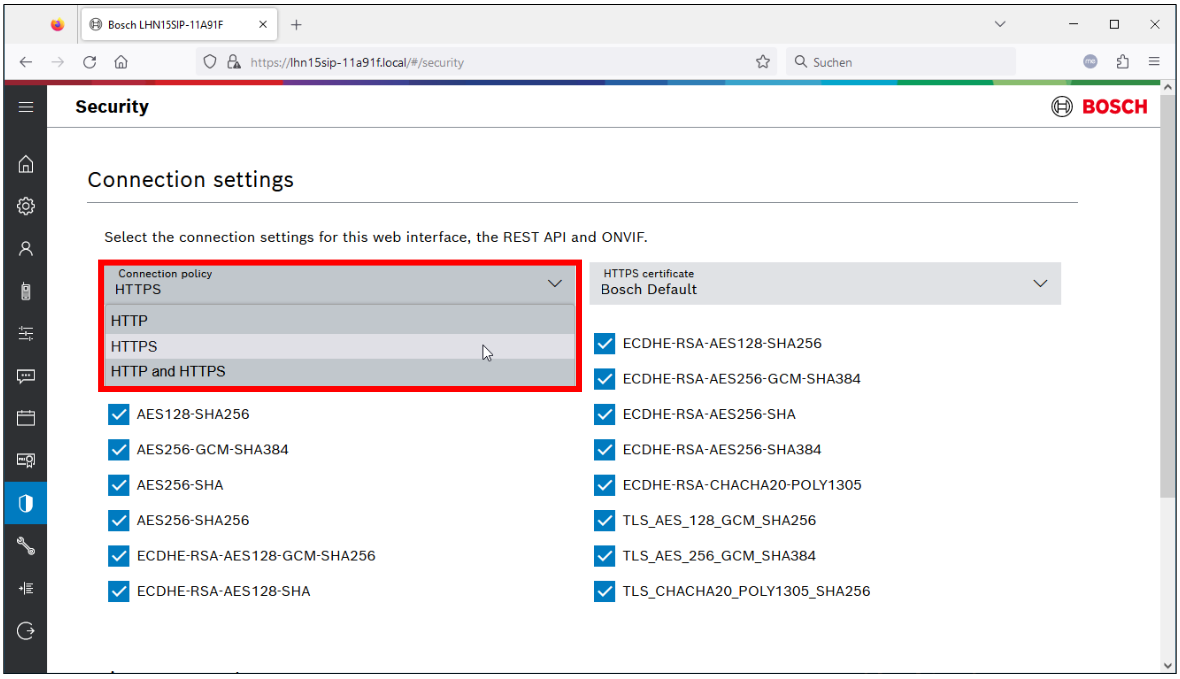
Password: ●●●●●●●●

Retype password: ●●●●●●●●

Group: ONVIF operator

Notice!
These credentials will be needed for authentication on VMS side.

3. Connection Policy:
   Both, Genetec Security Center and the IP horn/amp, support HTTP and HTTPS. By default, the IP horn/amp comes with HTTPS only enabled.
   The Connection protocol can be changed under *Security*.



https://lhn15sip-11a91f.local/#/security

Security

Connection settings

Select the connection settings for this web interface, the REST API and ONVIF.

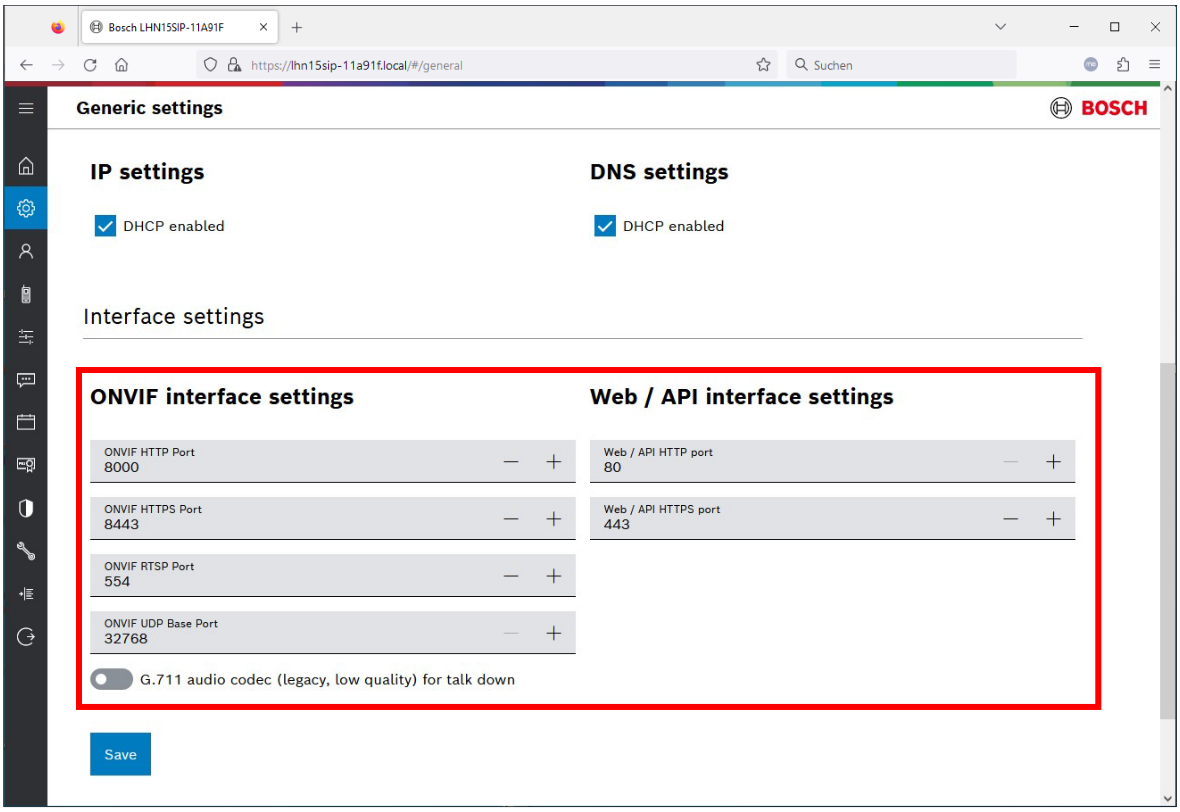
Connection policy: HTTPS
- HTTP
- HTTPS
- HTTP and HTTPS

HTTPS certificate: Bosch Default

☑ AES128-SHA256
☑ AES256-GCM-SHA384
☑ AES256-SHA
☑ AES256-SHA256
☑ ECDHE-RSA-AES128-GCM-SHA256
☑ ECDHE-RSA-AES128-SHA
☑ ECDHE-RSA-AES128-SHA256
☑ ECDHE-RSA-AES256-GCM-SHA384
☑ ECDHE-RSA-AES256-SHA
☑ ECDHE-RSA-AES256-SHA384
☑ ECDHE-RSA-CHACHA20-POLY1305
☑ TLS_AES_128_GCM_SHA256
☑ TLS_AES_256_GCM_SHA384
☑ TLS_CHACHA20_POLY1305_SHA256

4. ONVIF Interface settings:
   The ONVIF interface settings on the *Generic settings* page encompasses crucial fields including HTTP Port, HTTPS Port, RTSP Port, and UDP Base Port. Users have the authority to change these ports in case needed.
   Any alterations to these ports require the user to click the *Save* button, prompting a restart of the ONVIF process and the reopening of the designated ports.

   By default, the ONVIF interface and the Web / API interface use the same HTTP and HTTPS ports. In this example different ports for the ONVIF interface are used:



Bosch LHN15SIP-11A91F

https://lhn15sip-11a91f.local/#/general

Generic settings

IP settings

☑ DHCP enabled

DNS settings

☑ DHCP enabled

Interface settings

ONVIF interface settings

ONVIF HTTP Port: 8000

ONVIF HTTPS Port: 8443

ONVIF RTSP Port: 554

ONVIF UDP Base Port: 32768

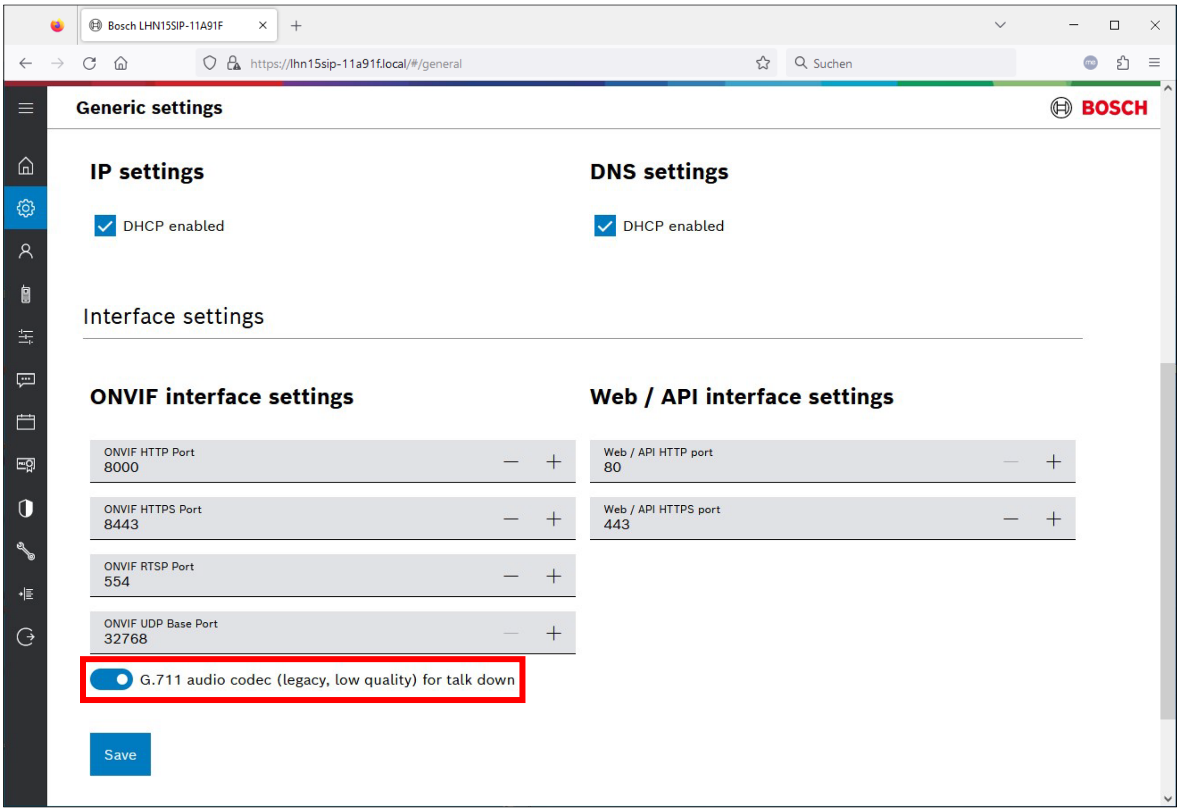
○ G.711 audio codec (legacy, low quality) for talk down

Web / API interface settings

Web / API HTTP port: 80

Web / API HTTPS port: 443

5. Activate G.711 audio codec for talk down:
   G.711 is by default deactivated (for talk down) on the side of the IP horn/amp due to its lower audio quality compared to AAC. Genetec is only able to distribute audio using G.711. So, if you want to use the speaker function of the IP horn/amp you need to active this on the *Generic settings* page, otherwise the speaker function will not appear in Genetec Security Center.



Generic settings

IP settings

☑ DHCP enabled

DNS settings

☑ DHCP enabled

Interface settings

ONVIF interface settings

ONVIF HTTP Port 8000

ONVIF HTTPS Port 8443

ONVIF RTSP Port 554

ONVIF UDP Base Port 32768

● G.711 audio codec (legacy, low quality) for talk down

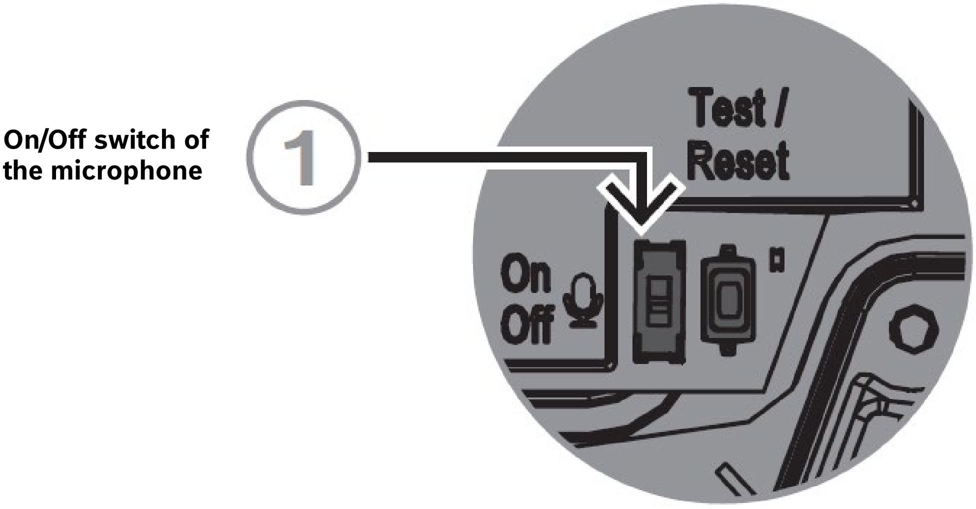
Web / API interface settings

Web / API HTTP port 80

Web / API HTTPS port 443

Save

6. Microphone:
   If you want to use the microphone of the IP horn/amp, make sure that the microphone is switched on. If switched off, the microphone function will not be added in Genetec Security Center.



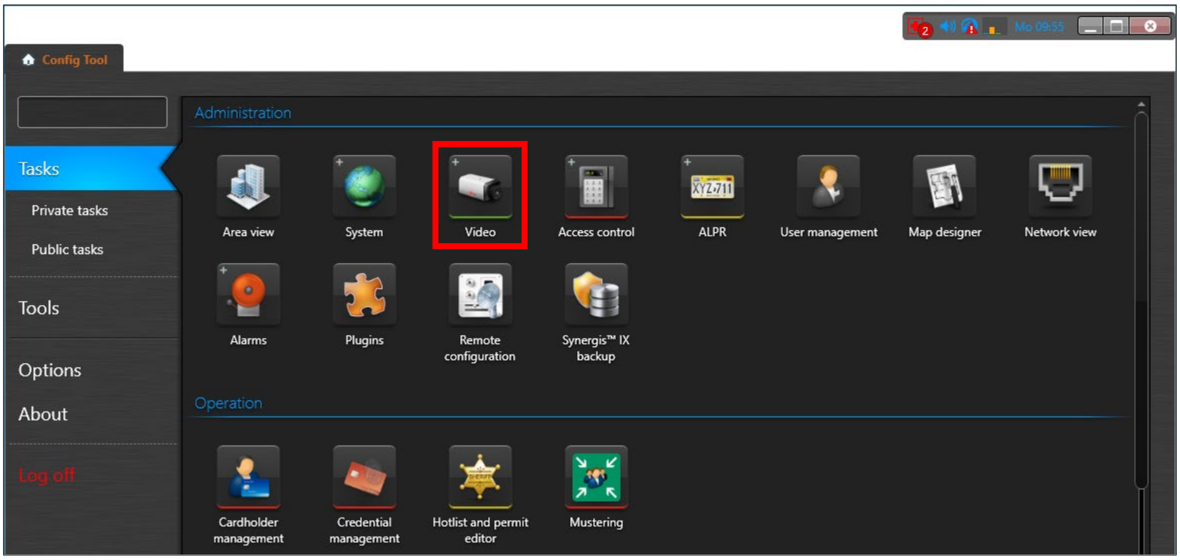
4. Integration into Genetec Security Center

4.1. Adding a loudspeaker to Security Center Config Tool

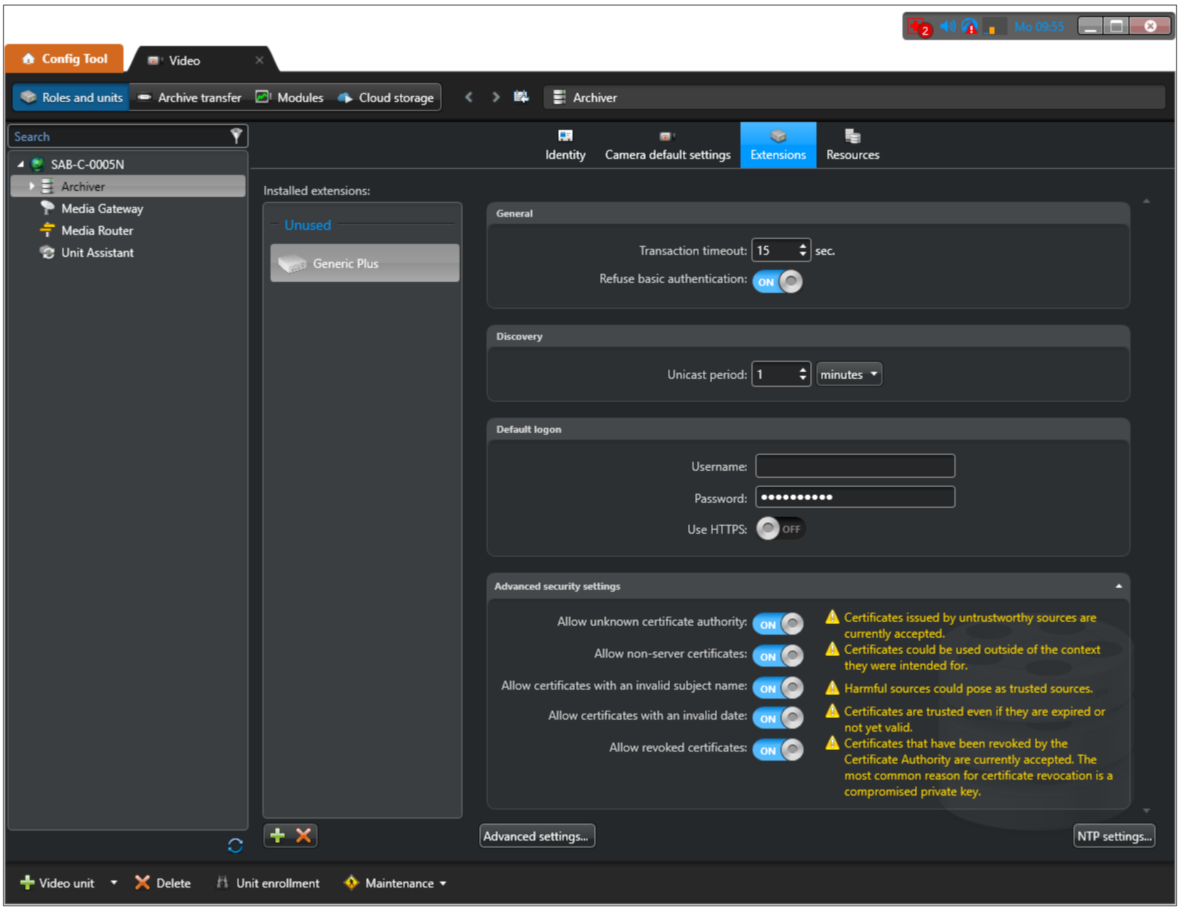
This chapter describes how to add the IP horn/amp to Genetec Security Center 5.11.

Open Security Center Config Tool:

1. Go to *Tasks* -> and click on *Video*



2. To communicate with the IP horn/amp via https, you need to make some settings:
- Go to *Archiver* -> *Extensions* and click on Generic Plus
- Set everything to ON in the Advanced security settings. This is to disable the certificate validation. If you want to use the certificate validation, you need to add a certificate to the IP horn/amp, so that the Ip horn/amp is considered as trusted.



General

Transaction timeout: 15 sec.

Refuse basic authentication: ON

Discovery

Unicast period: 1 minutes

Default logon

Username:

Password: ●●●●●●●●●●●

Use HTTPS: OFF

Advanced security settings

Allow unknown certificate authority: ON ⚠ Certificates issued by untrustworthy sources are currently accepted.

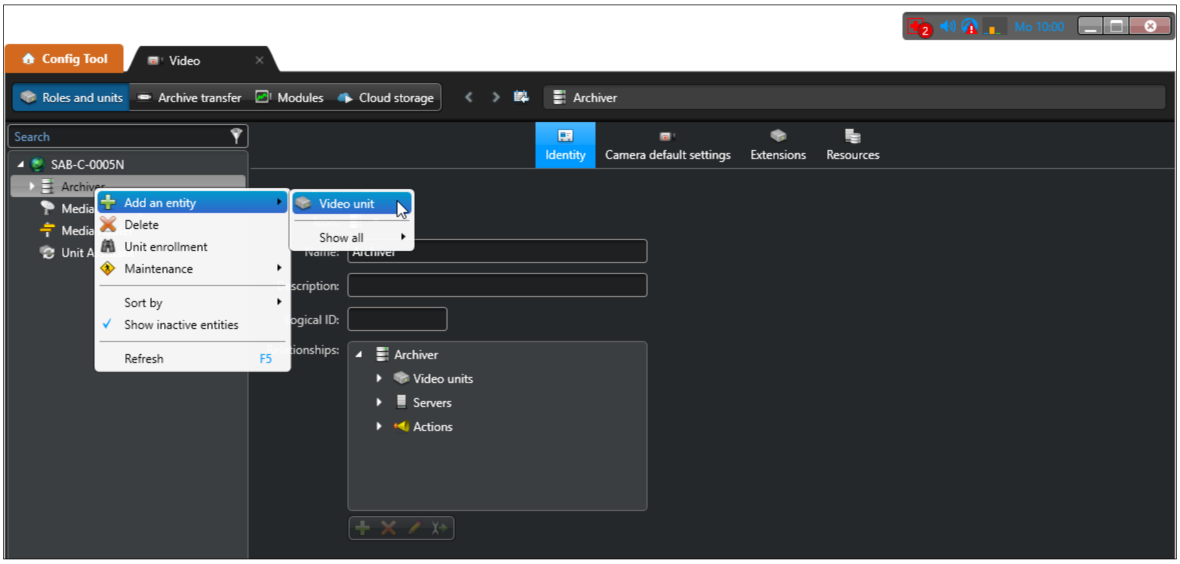
Allow non-server certificates: ON ⚠ Certificates could be used outside of the context they were intended for.

Allow certificates with an invalid subject name: ON ⚠ Harmful sources could pose as trusted sources.

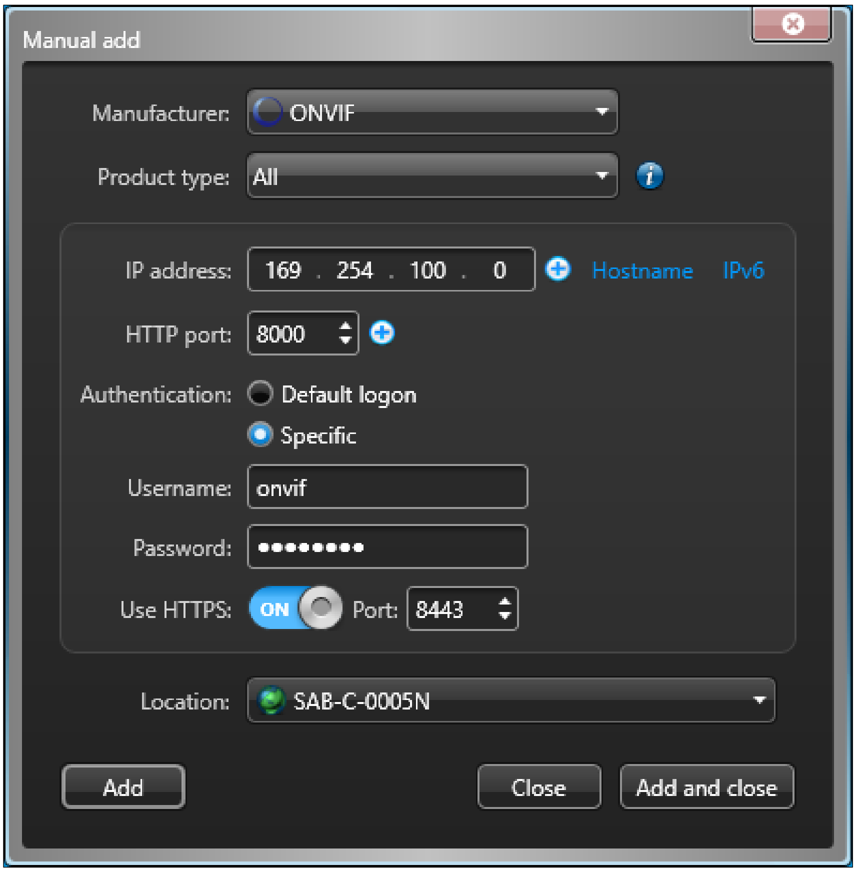
Allow certificates with an invalid date: ON ⚠ Certificates are trusted even if they are expired or not yet valid.

Allow revoked certificates: ON ⚠ Certificates that have been revoked by the Certificate Authority are currently accepted. The most common reason for certificate revocation is a compromised private key.

3. Right-Click on *Archiver* and click on *Add an entity -> Video unit.*



4. Choose as Manufacture ONVIF and type in the IP address of the IP horn/amp. Select *Specific* as Authentication and type in the ONVIF user credentials of the user created in the IP horn/amp and switch HTTPS to ON, if you want to use HTTPS. By clicking the *Add* or the *Add and close* button the IP horn/amp will be added.


Manual add

Manufacturer: ONVIF

Product type: All

IP address: 169 . 254 . 100 . 0 Hostname IPv6

HTTP port: 8000

Authentication: ○ Default logon ● Specific

Username: onvif

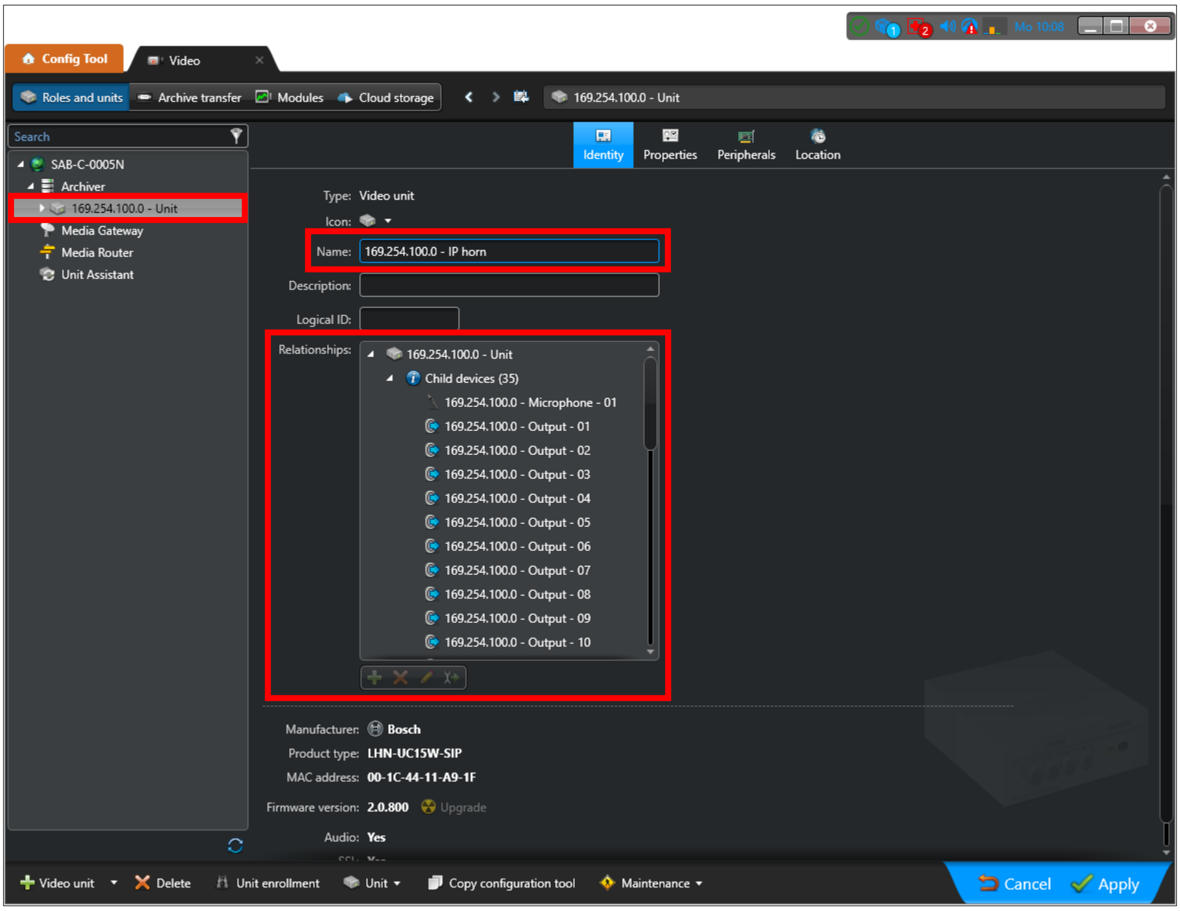
Password: ●●●●●●●●

Use HTTPS: ON Port: 8443

Location: SAB-C-0005N

Notice!
The process of adding the IP horn/amp may take some time as it is retrieving some basic information from the device about available capabilities (e.g. speaker, microphone, outputs, video stream).

5. Click on the added unit (IPAddress-Unit) under *Archiver*:
   - you can change the name of the added unit here and
   - by opening the drop down of the *Child devices*, you can see all capabilities of the IP horn/amp (1 Camera, 1 Microphone (only for the IP horn), 1 Speaker, 33 Outputs).



Type: Video unit

Icon:

Name: 169.254.100.0 - IP horn

Description:

Logical ID:

Relationships:
- 169.254.100.0 - Unit
  - Child devices (35)
    - 169.254.100.0 - Microphone - 01
    - 169.254.100.0 - Output - 01
    - 169.254.100.0 - Output - 02
    - 169.254.100.0 - Output - 03
    - 169.254.100.0 - Output - 04
    - 169.254.100.0 - Output - 05
    - 169.254.100.0 - Output - 06
    - 169.254.100.0 - Output - 07
    - 169.254.100.0 - Output - 08
    - 169.254.100.0 - Output - 09
    - 169.254.100.0 - Output - 10

Manufacturer: Bosch

Product type: LHN-UC15W-SIP

MAC address: 00-1C-44-11-A9-1F

Firmware version: 2.0.800 Upgrade

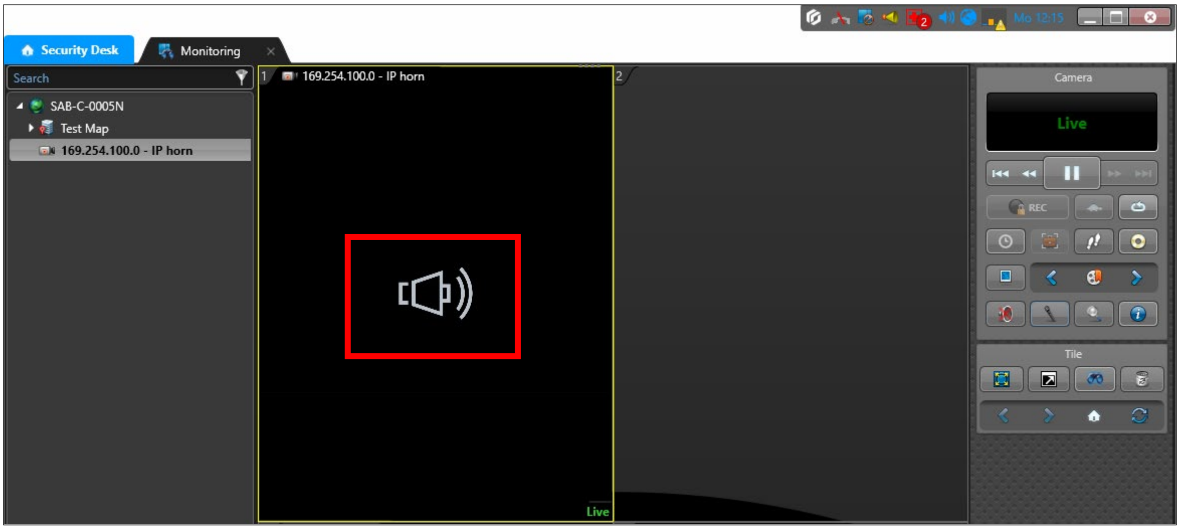
Audio: Yes

Notice!

If you have an IP amp or the microphone is disabled via the hardware switch, the microphone will not be part of the capabilities list of the device.

4.2. Video Stream of the IP horn/amp

The ONVIF standard does not have a device type specifically for audio only. Therefore, it is added as a camera. However, the icon displayed in the “Live Stream” clarifies that it is a speaker.

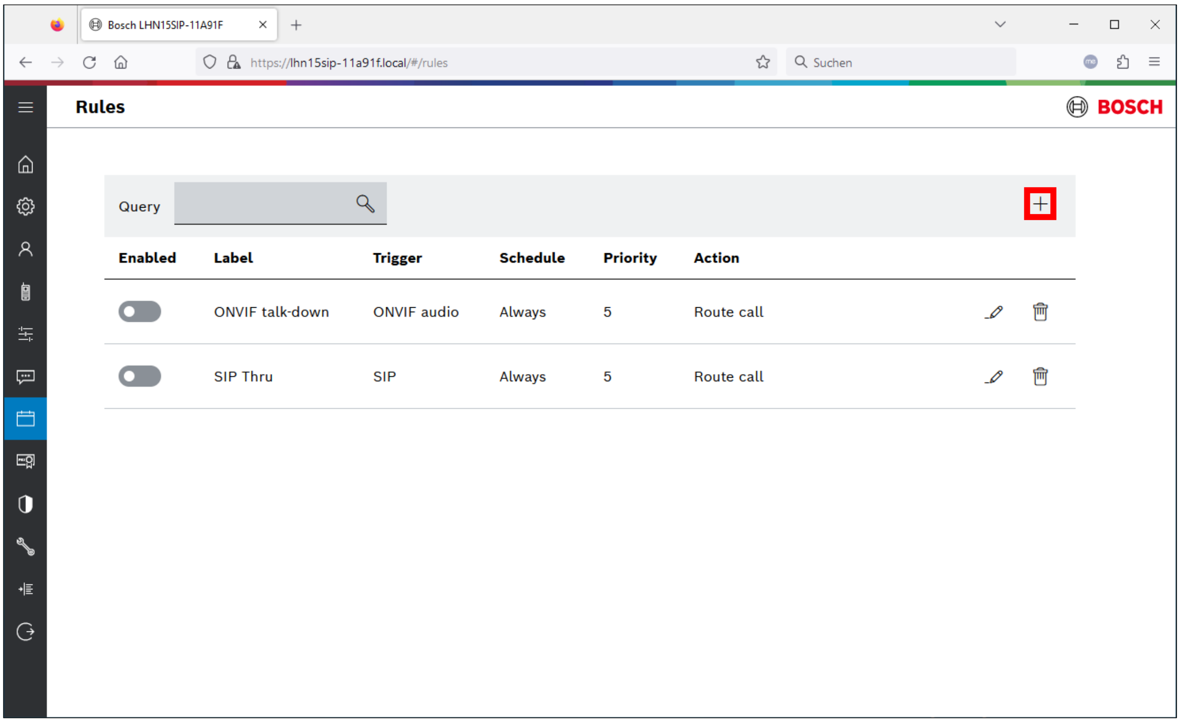


4.3. Start pre-recorded messages of the IP horn/amp via ONVIF Output

In Security Center there are 33 ONVIF outputs available. The first 32 outputs are virtual outputs and can be configured to trigger rules on the IP horn/amp. The 33rd output is the physical GPO of the IP horn/amp.

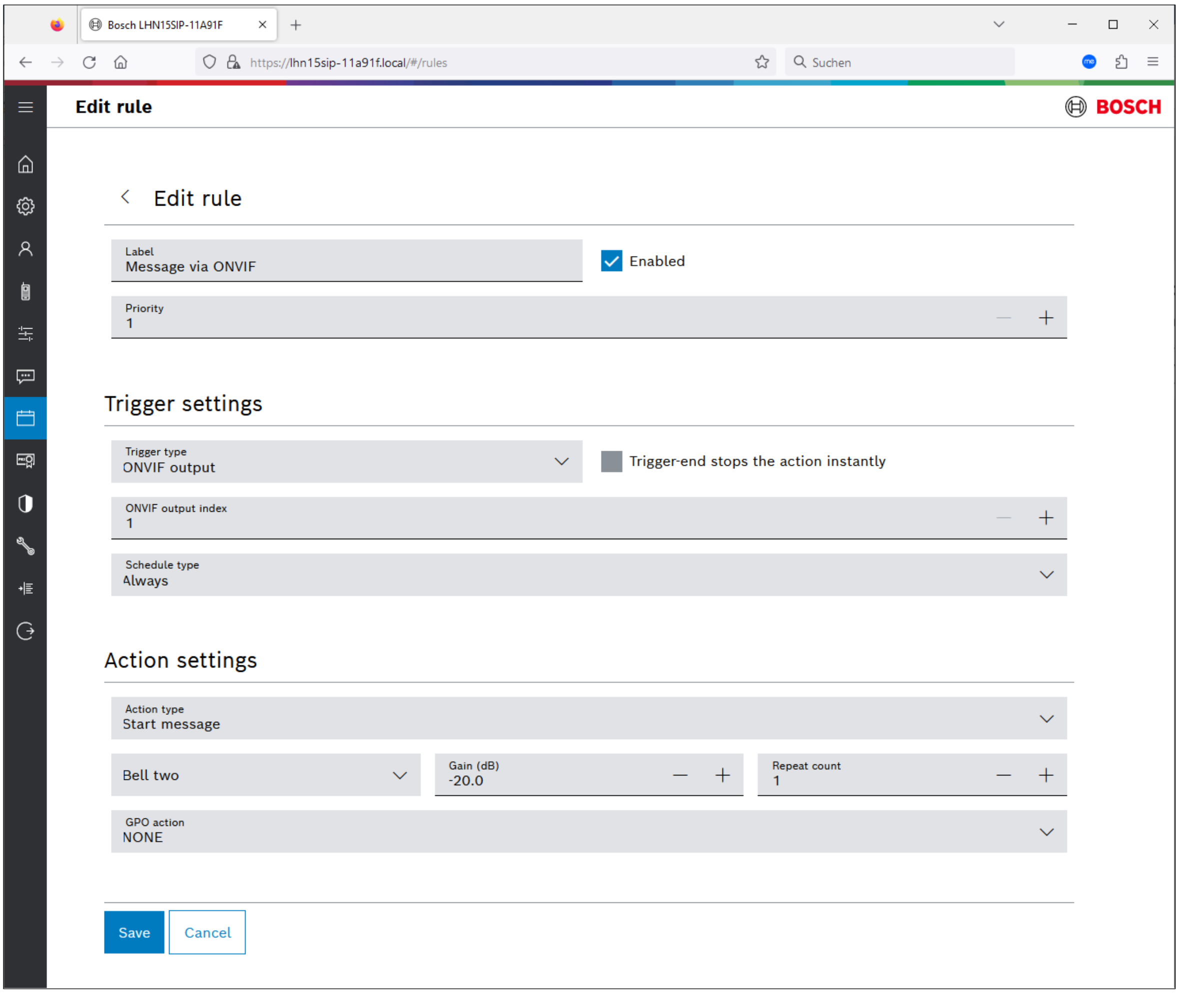
In this example ONVIF output 1 will trigger an audio file stored on the IP horn/amp.

1. Adding a rule for starting a message:
   Log into the IP horn/amp, go to *Rules* and click on + to add a rule.



Enabled	Label	Trigger	Schedule	Priority	Action
○	ONVIF talk-down	ONVIF audio	Always	5	Route call
○	SIP Thru	SIP	Always	5	Route call

2. Rule details
   - Trigger type: ONVIF output
   - Trigger-end stops the action instantly: If the message shall be played once to its end, let the checkbox unchecked and make the contact closure shorter than the message.
   - Action type: Start message
   - Repeat count: 1



Edit rule

Label: Message via ONVIF

☑ Enabled

Priority: 1

Trigger settings

Trigger type: ONVIF output

□ Trigger-end stops the action instantly

ONVIF output index: 1

Schedule type: Always

Action settings

Action type: Start message

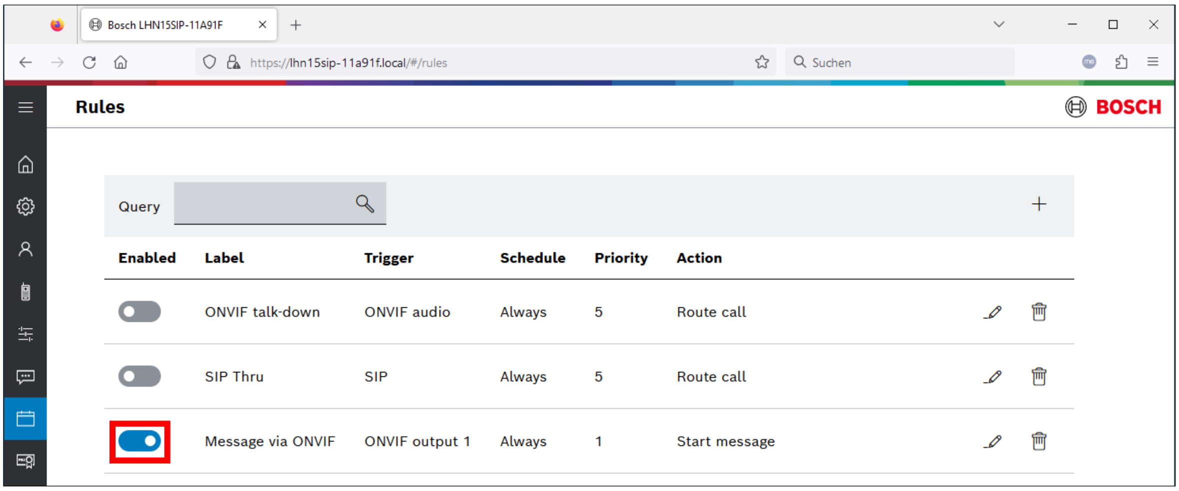
Bell two

Gain (dB): -20.0

Repeat count: 1

GPO action: NONE

Rule overview:
Make sure, that the rule is enabled.

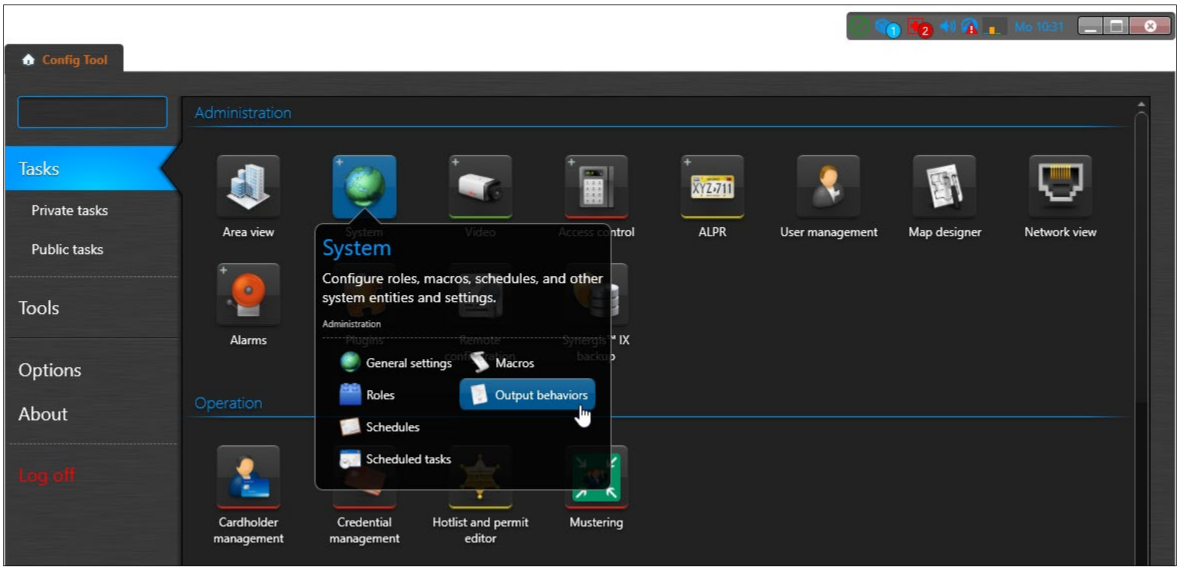


Rules

Enabled	Label	Trigger	Schedule	Priority	Action
○	ONVIF talk-down	ONVIF audio	Always	5	Route call
○	SIP Thru	SIP	Always	5	Route call
●	Message via ONVIF	ONVIF output 1	Always	1	Start message

How to test Output 1-32:
ONVIF Output 1-32 can only be used for triggering rules on the IP horn/amp. The IP horn/amp is configured with ONFIV output 1 starting a message (bell) in the IP horn/amp.

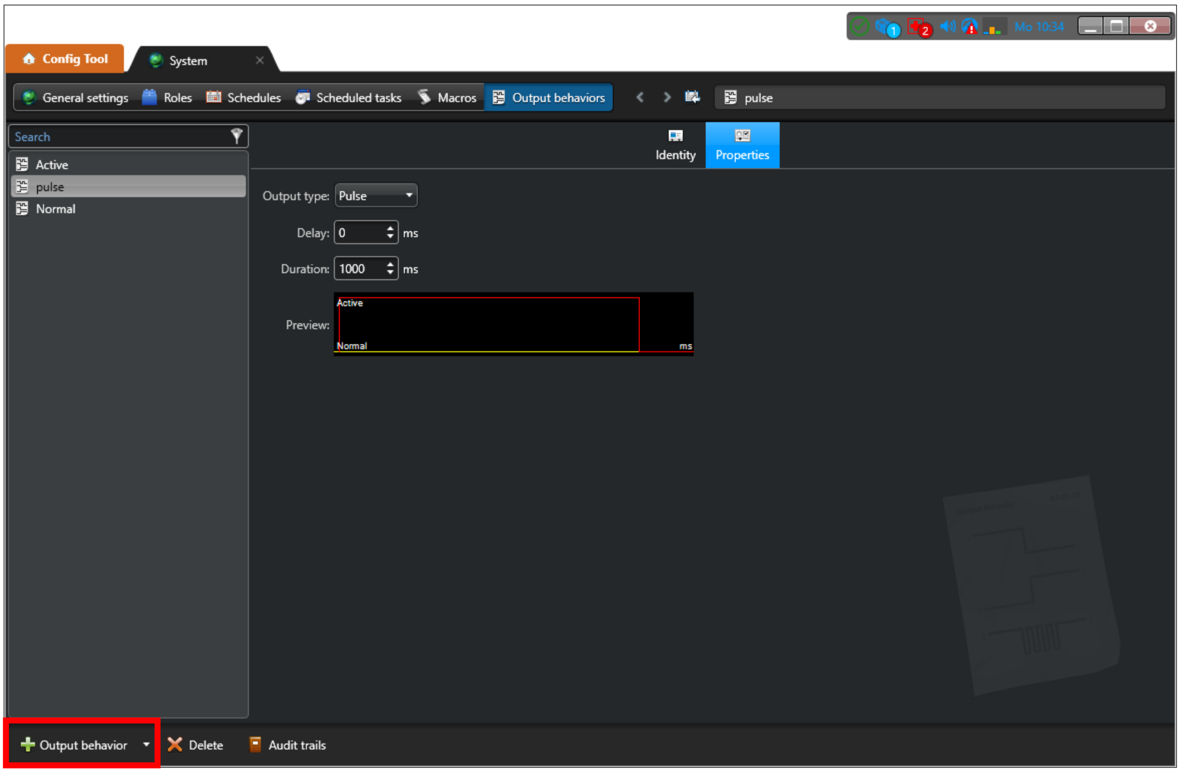
1. Go to *Tasks* -> *System* -> *Output behaviors*



System

Configure roles, macros, schedules, and other system entities and settings.

2. Add a new output behavior by clicking on + *Output behavior*:
- Identity: Enter a *Name* (e.g. pulse).
- Properties: Select Pulse as Output type and define the duration of the pulse. This defines how long the ONVIF output will be true. If you want the message to be played once, the duration of the ONVIF output needs to be shorter than the message.

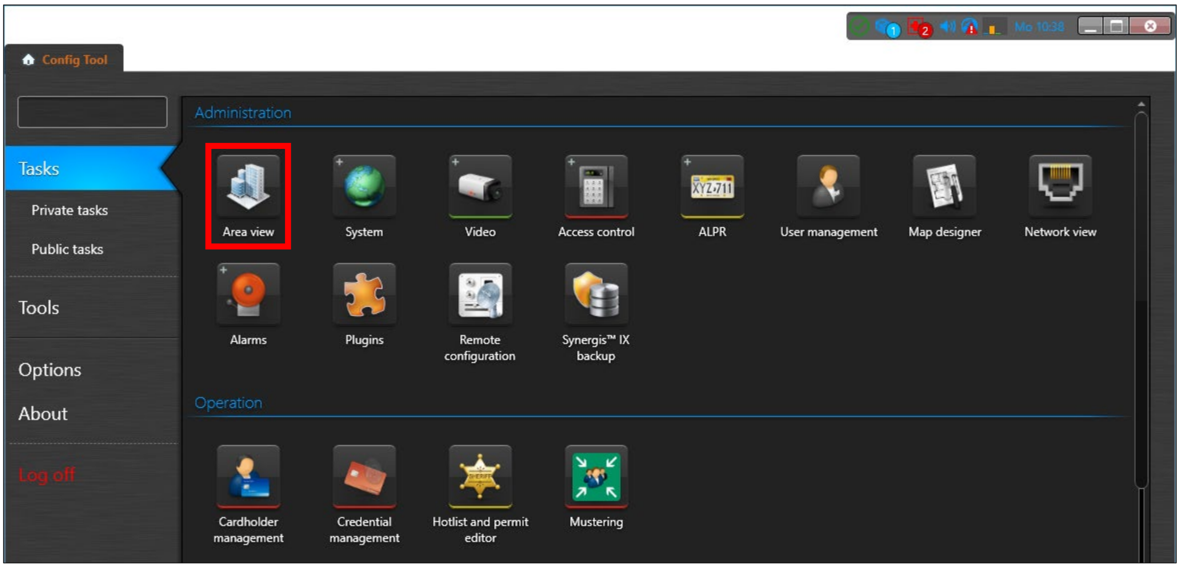


Output type: Pulse

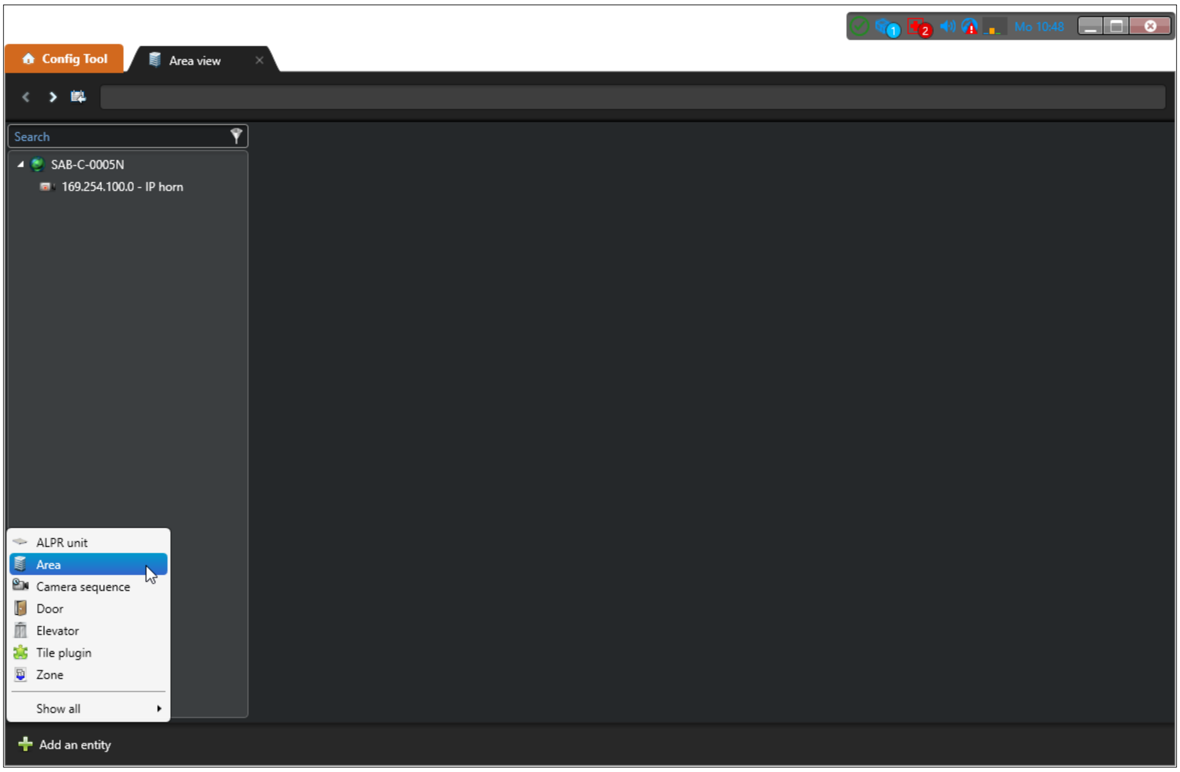
Delay: 0 ms

Duration: 1000 ms

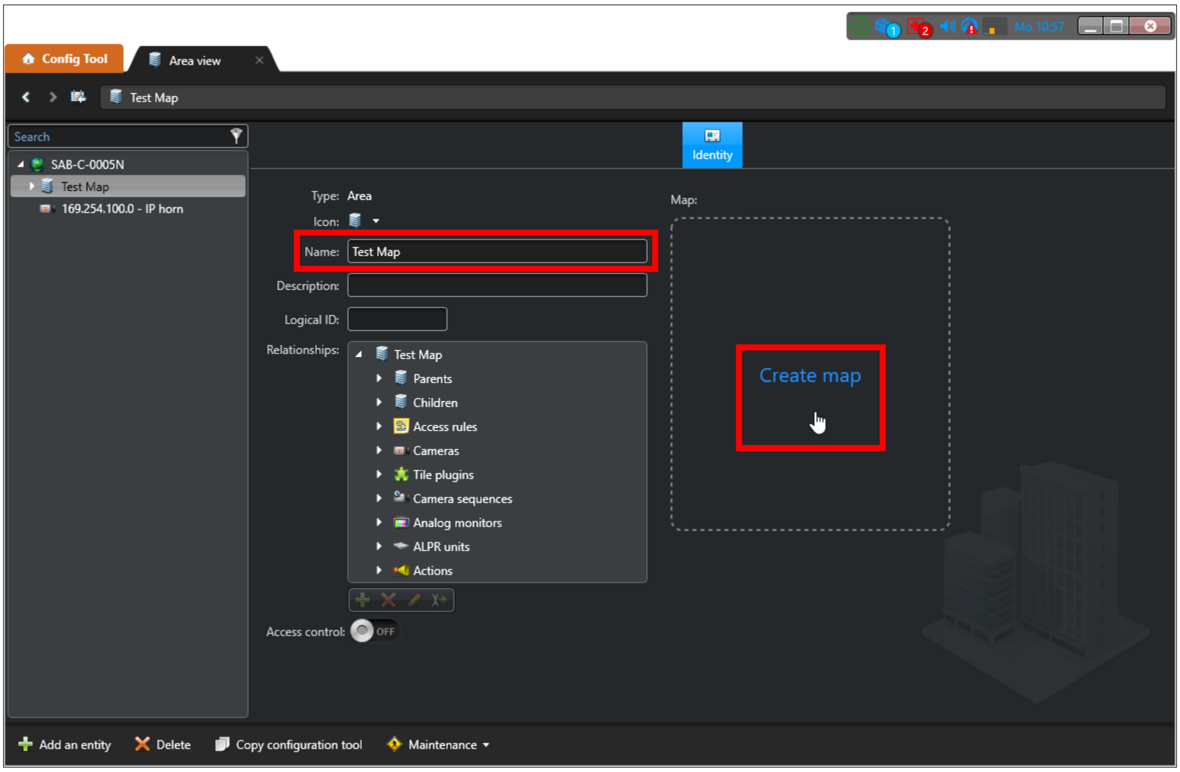
3. To test the GPOs a map needs to be added: Go to *Tasks* -> *Area view*



4. Create a new area by clicking on *+ Add an entity* -> *Area*



5. Enter a Name for the Area and click on *Create map*.



Type: Area

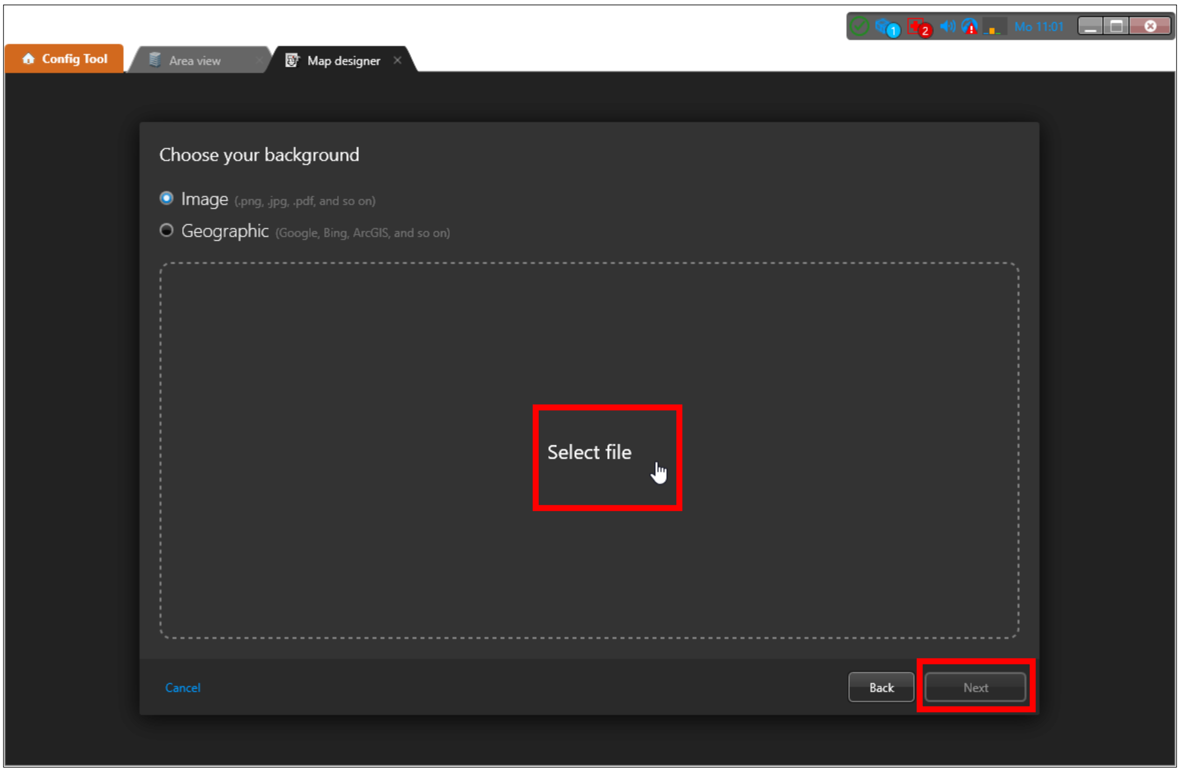
Name: Test Map

Description:

Logical ID:

Access control: OFF

6. Click on *Select file* or drag and drop your map into the dotted frame. Once your map is displayed click *Next*.

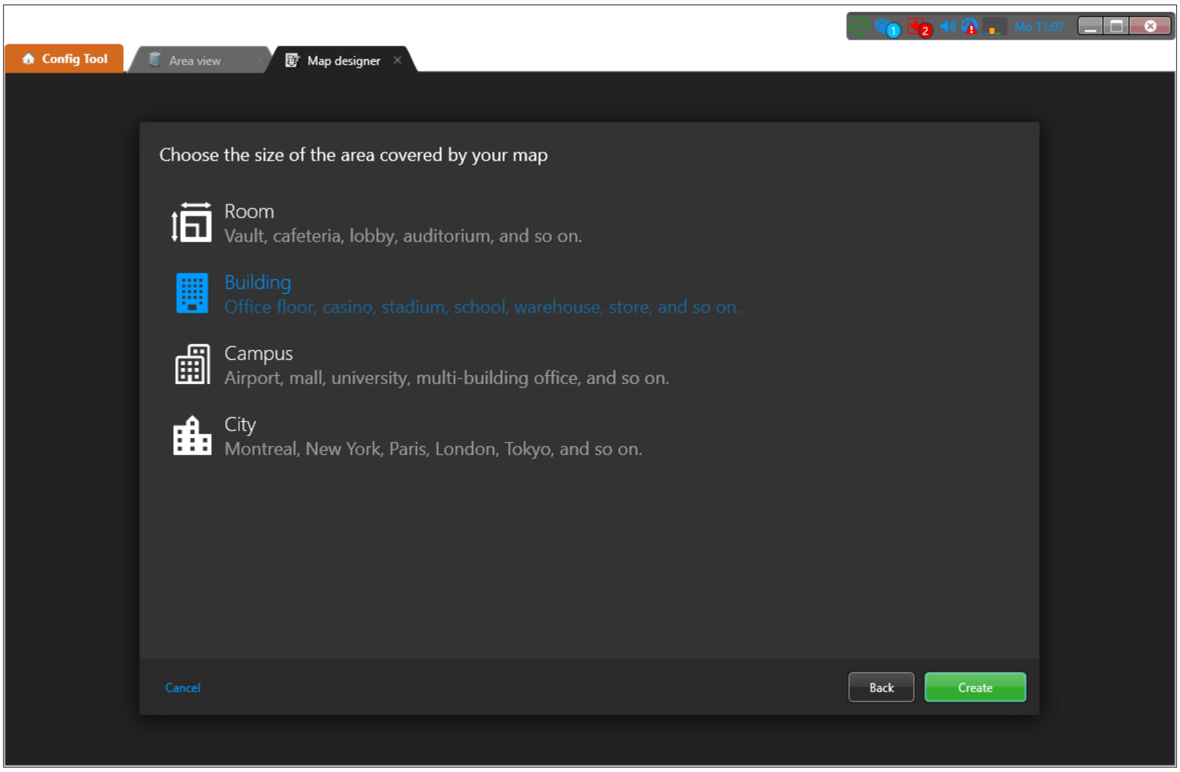


Choose your background

● Image (.png, .jpg, .pdf, and so on)

○ Geographic (Google, Bing, ArcGIS, and so on)

7. Choose the size of the are covered by your map and click on *Create*.



Choose the size of the area covered by your map

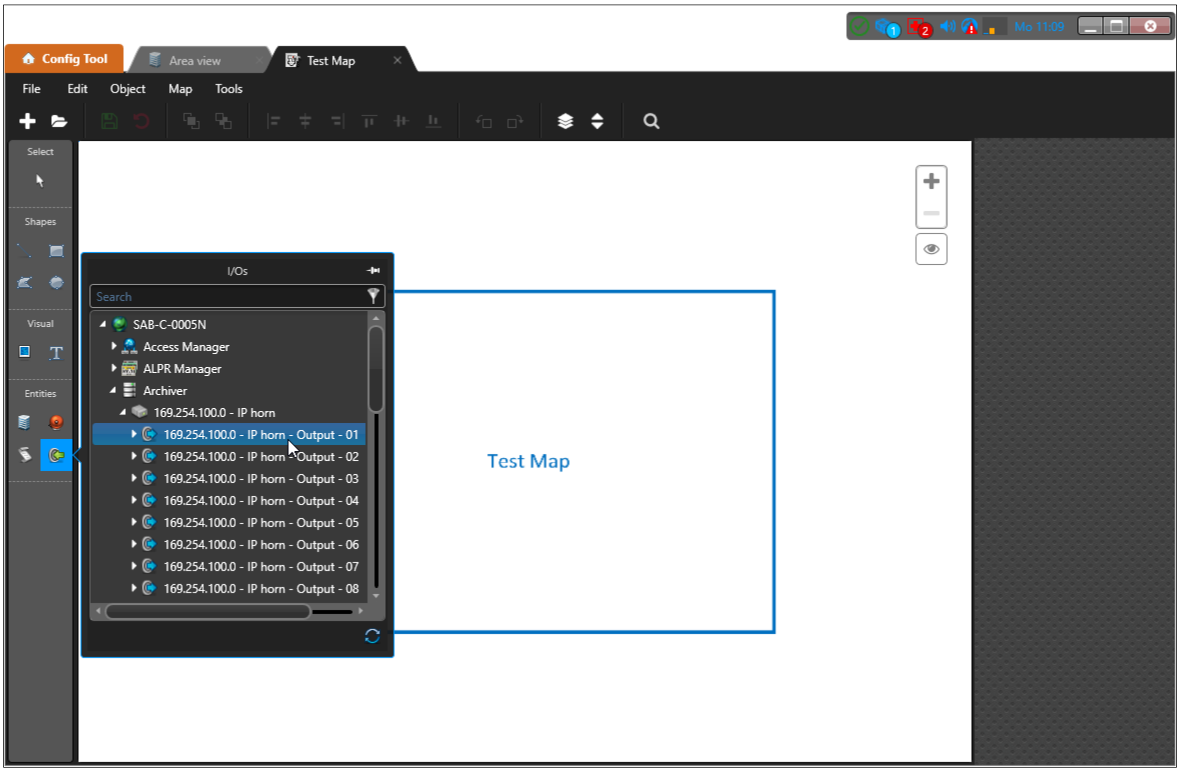
Room
Vault, cafeteria, lobby, auditorium, and so on.

Building
Office floor, casino, stadium, school, warehouse, store, and so on.

Campus
Airport, mall, university, multi-building office, and so on.

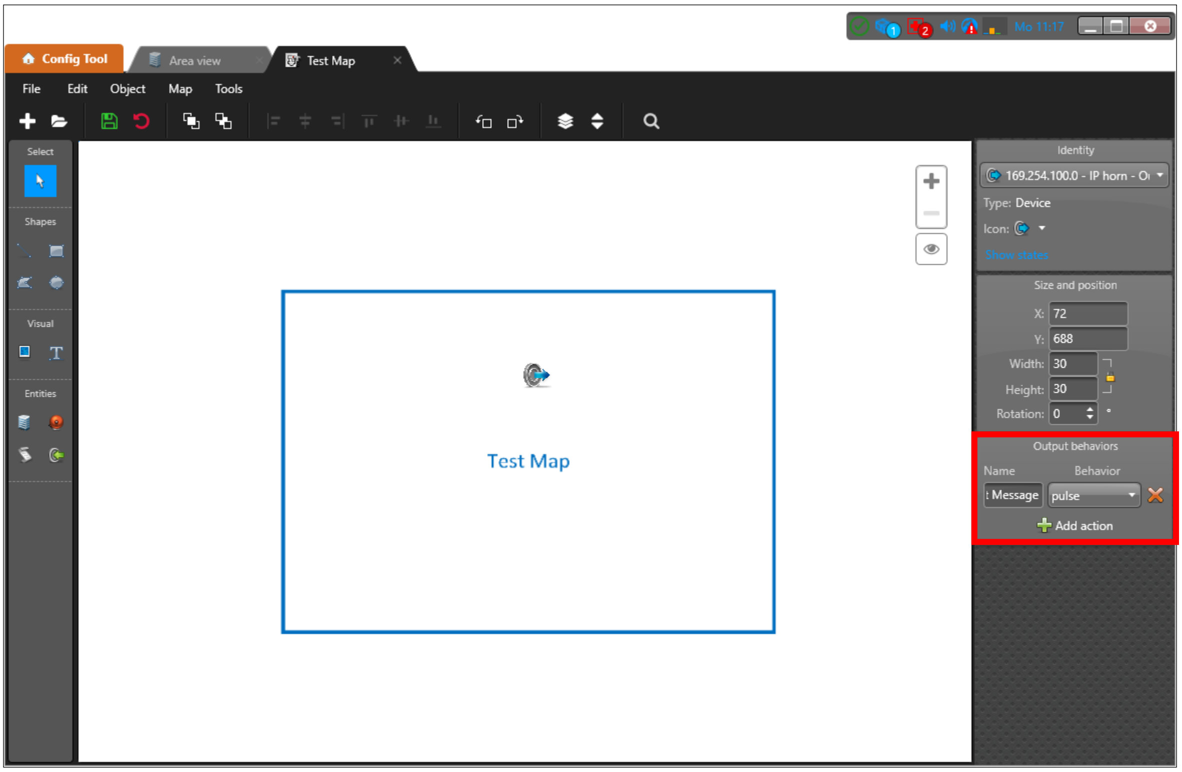
City
Montreal, New York, Paris, London, Tokyo, and so on.

8. Go to *Entities* and click on the I/Os icon and drag and drop Output 01 on the map.



Config Tool
Area view
Test Map
File
Edit
Object
Map
Tools
Select
Shapes
Visual
Entities
I/Os
Search
SAB-C-0005N
Access Manager
ALPR Manager
Archiver
169.254.100.0 - IP horn
169.254.100.0 - IP horn - Output - 01
169.254.100.0 - IP horn - Output - 02
169.254.100.0 - IP horn - Output - 03
169.254.100.0 - IP horn - Output - 04
169.254.100.0 - IP horn - Output - 05
169.254.100.0 - IP horn - Output - 06
169.254.100.0 - IP horn - Output - 07
169.254.100.0 - IP horn - Output - 08
Test Map

9. Click on + *Add action* (e.g. Name: Start Message) and select pulse as Behavior.



169.254.100.0 - IP horn - O

Type: Device

Icon:

X: 72

Y: 688

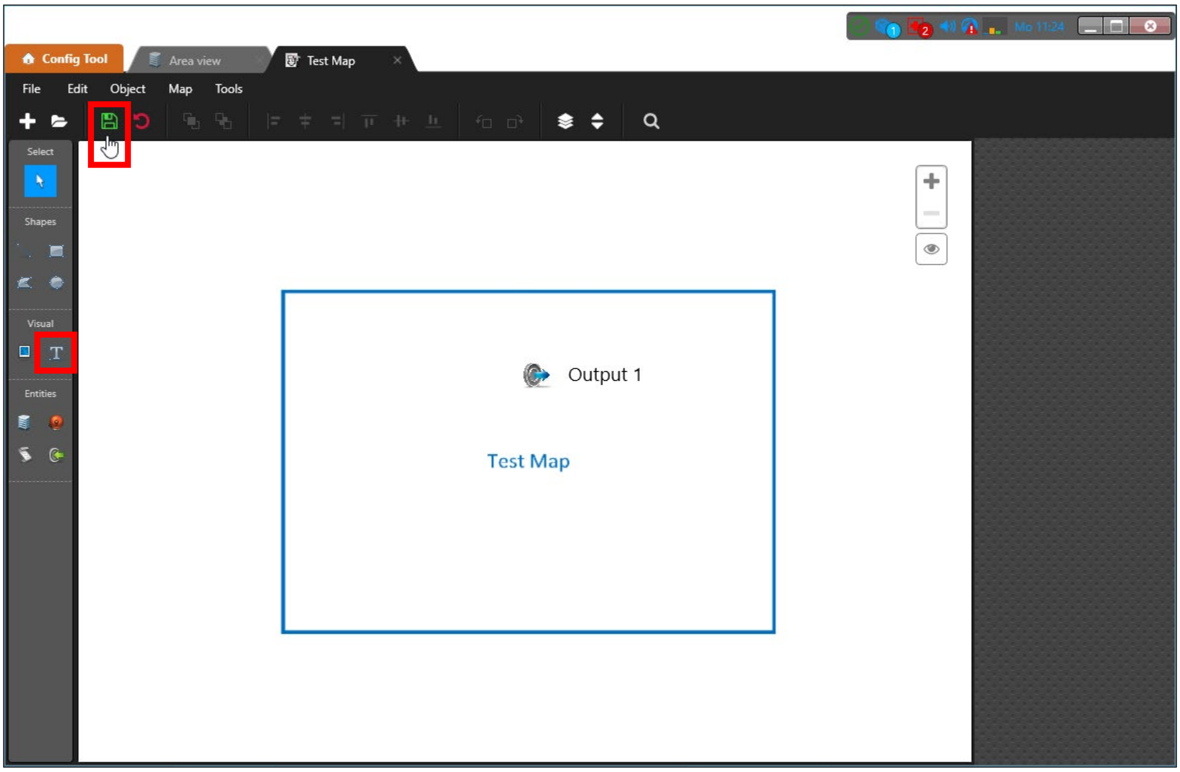
Width: 30

Height: 30

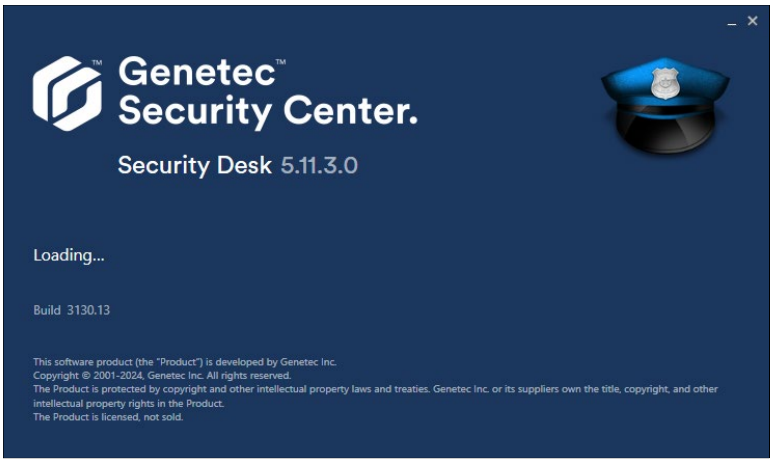
Rotation: 0

Name	Behavior
: Message	pulse

10. Now you can label the output by a adding a text field and then save the map to activate it.



11. Open the Security Desk software to test if the button works.



Loading...

Build 3130.13

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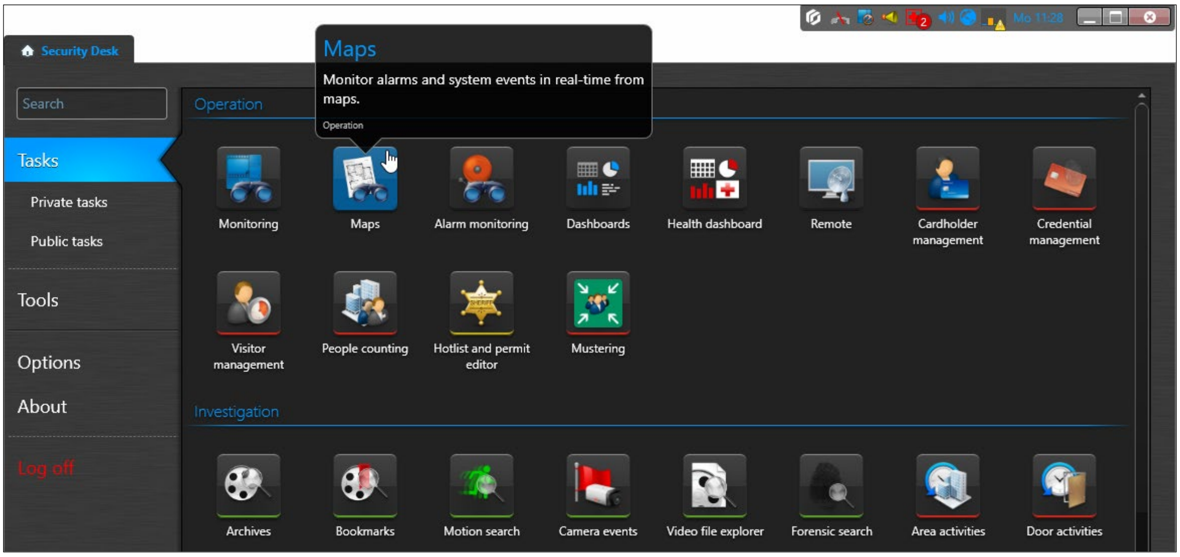
12. Go to the Maps page.

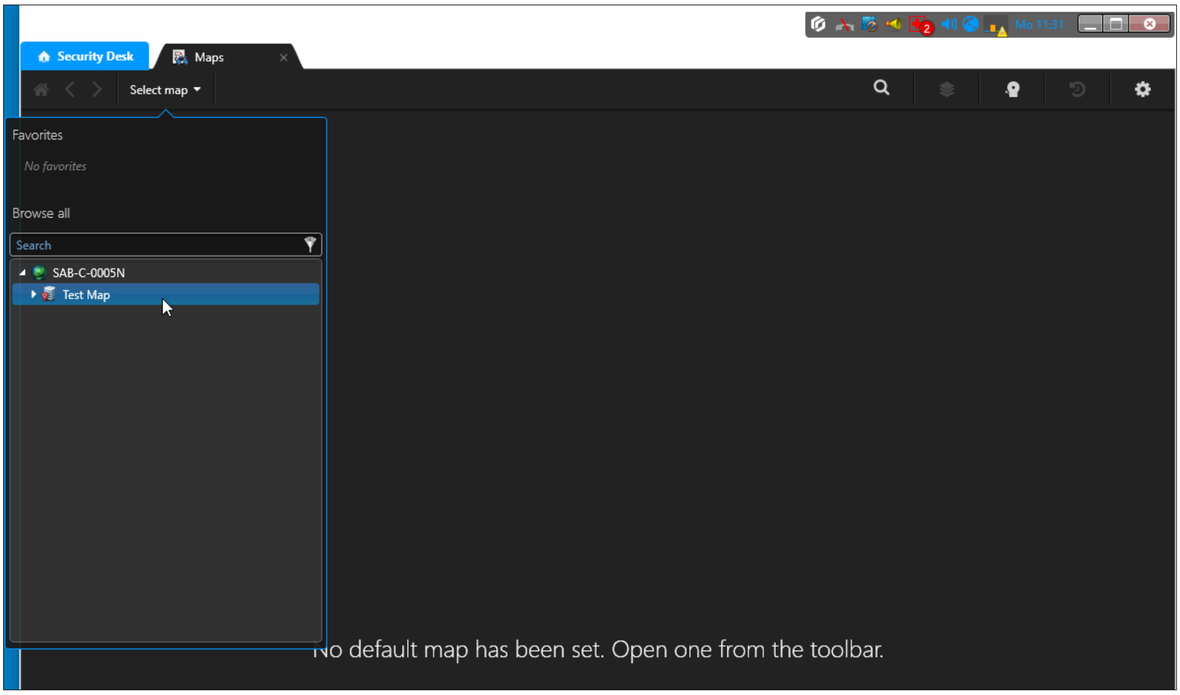


Maps

Monitor alarms and system events in real-time from maps.

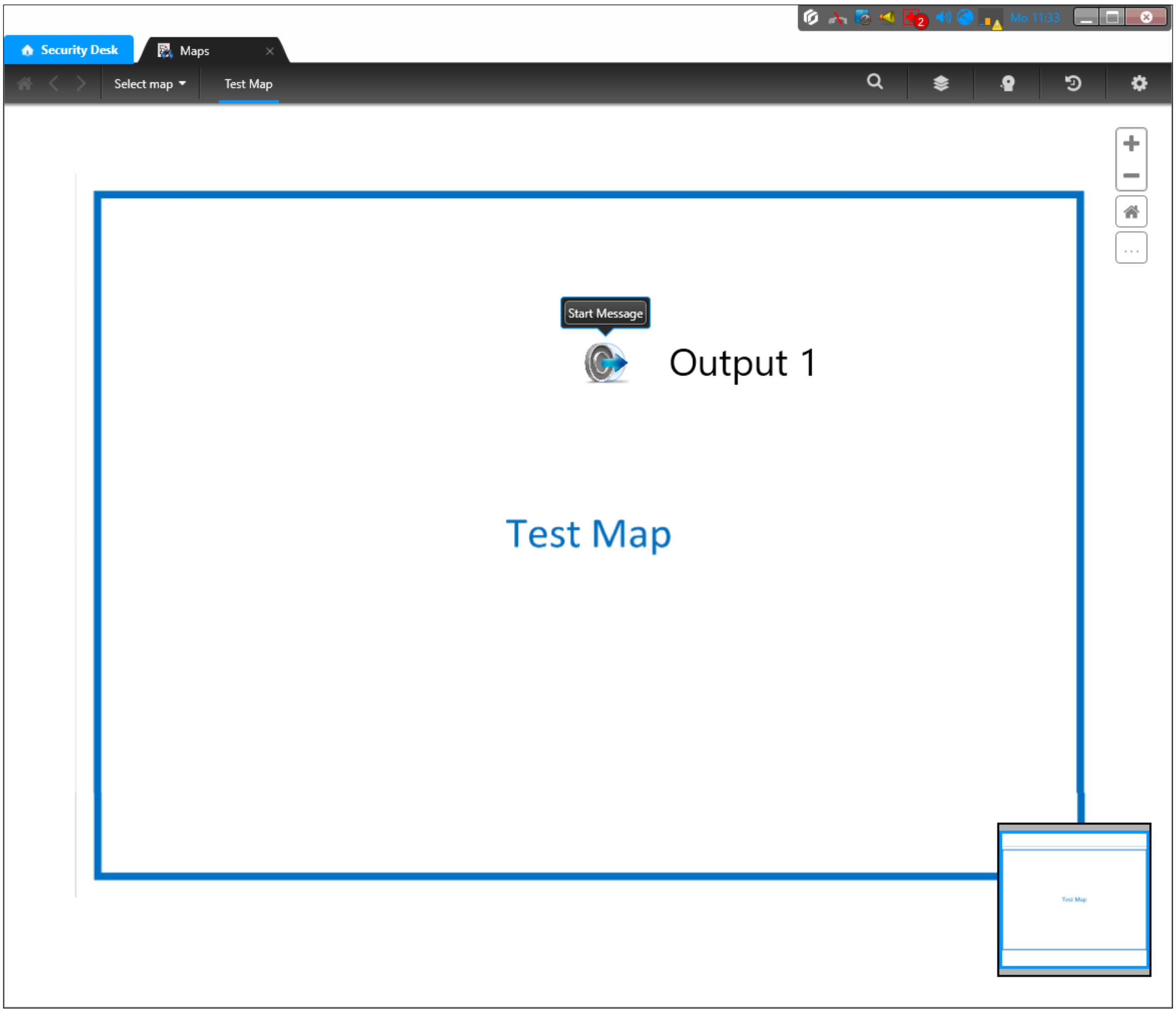
Operation

13. Select the configured map.

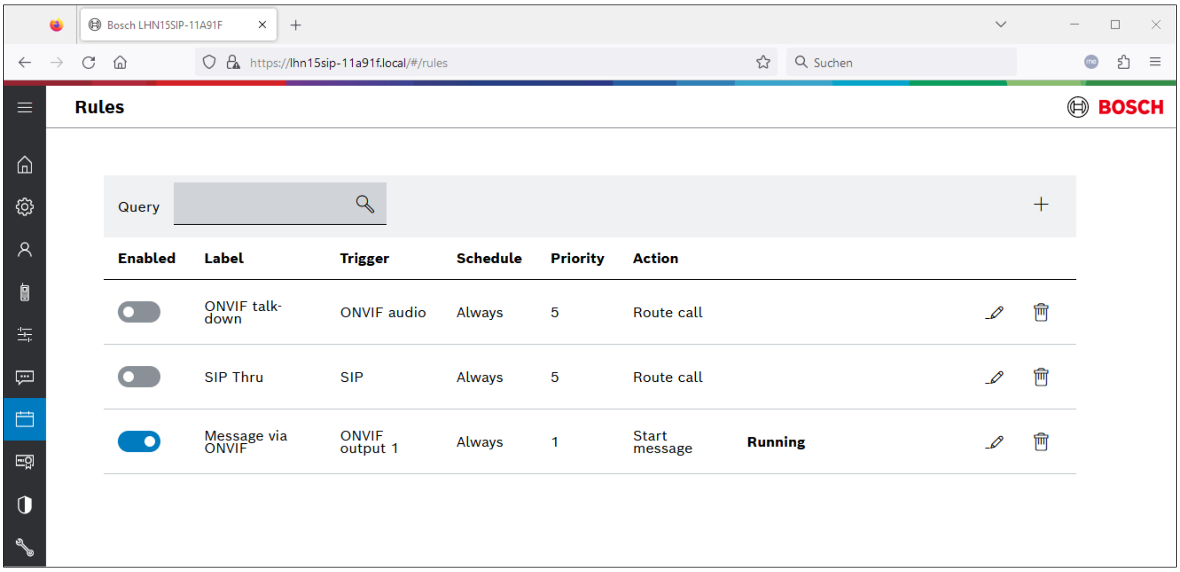


No default map has been set. Open one from the toolbar.

14. Click on the Output 1 icon and press the Start Message button.



15. Go to the *Rules* page of the IP horn/amp to check if the message is active. Here you can see that the rule is *Running*, and the message is playing.

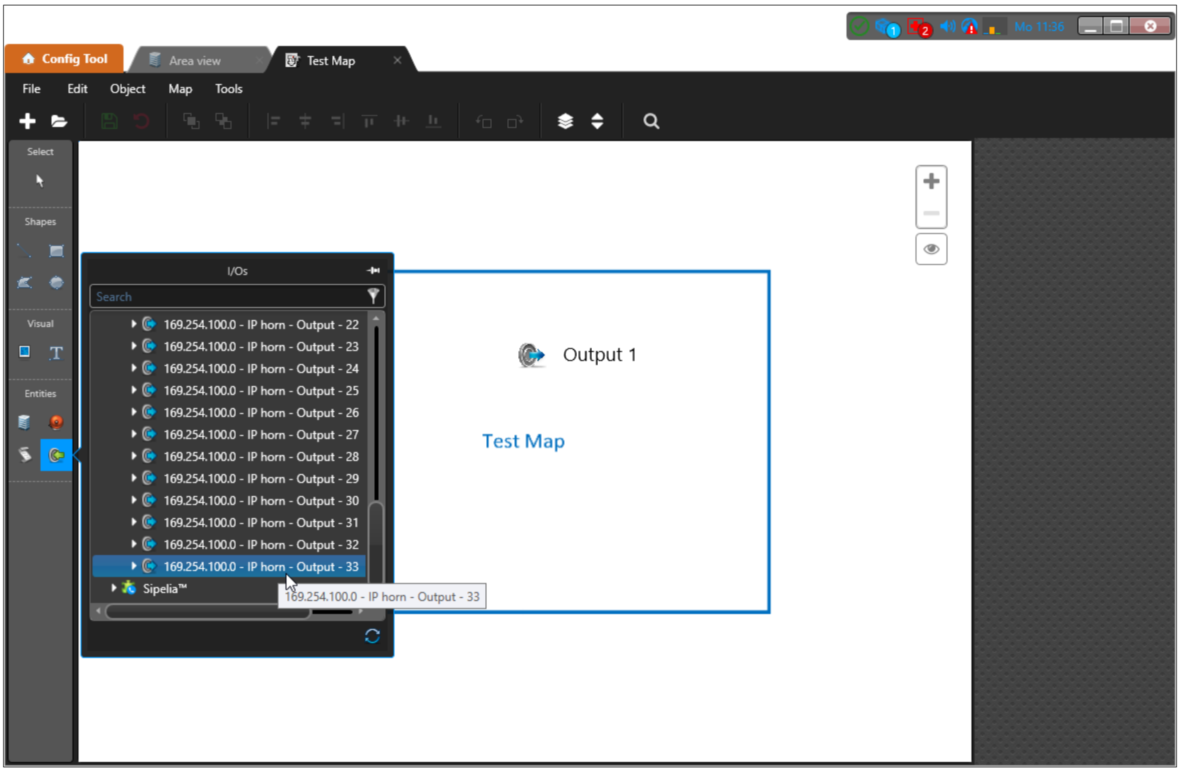


Rules

Enabled	Label	Trigger	Schedule	Priority	Action	
○	ONVIF talk-down	ONVIF audio	Always	5	Route call	
○	SIP Thru	SIP	Always	5	Route call	
●	Message via ONVIF	ONVIF output 1	Always	1	Start message	**Running**

How to test the 33rd output:

1. Drag and drop the 33rd output on the map.



169.254.100.0 - IP horn - Output - 22
169.254.100.0 - IP horn - Output - 23
169.254.100.0 - IP horn - Output - 24
169.254.100.0 - IP horn - Output - 25
169.254.100.0 - IP horn - Output - 26
169.254.100.0 - IP horn - Output - 27
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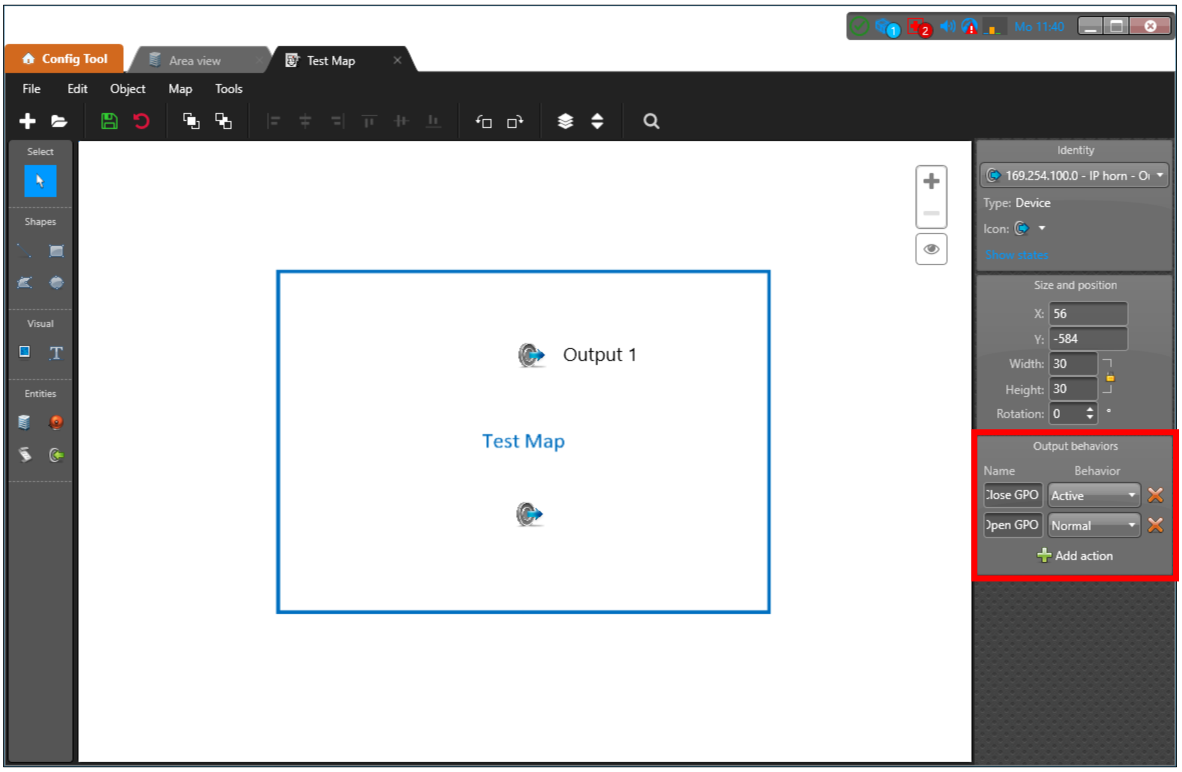
169.254.100.0 - IP horn - Output - 29
169.254.100.0 - IP horn - Output - 30
169.254.100.0 - IP horn - Output - 31
169.254.100.0 - IP horn - Output - 32
169.254.100.0 - IP horn - Output - 33
Sipelia™

169.254.100.0 - IP horn - Output - 33

2. Click on + *Add action* and add the following two actions:
   - Name: Close GPO, Behavior: Active
   - Name: Open GPO, Behavior: Normal

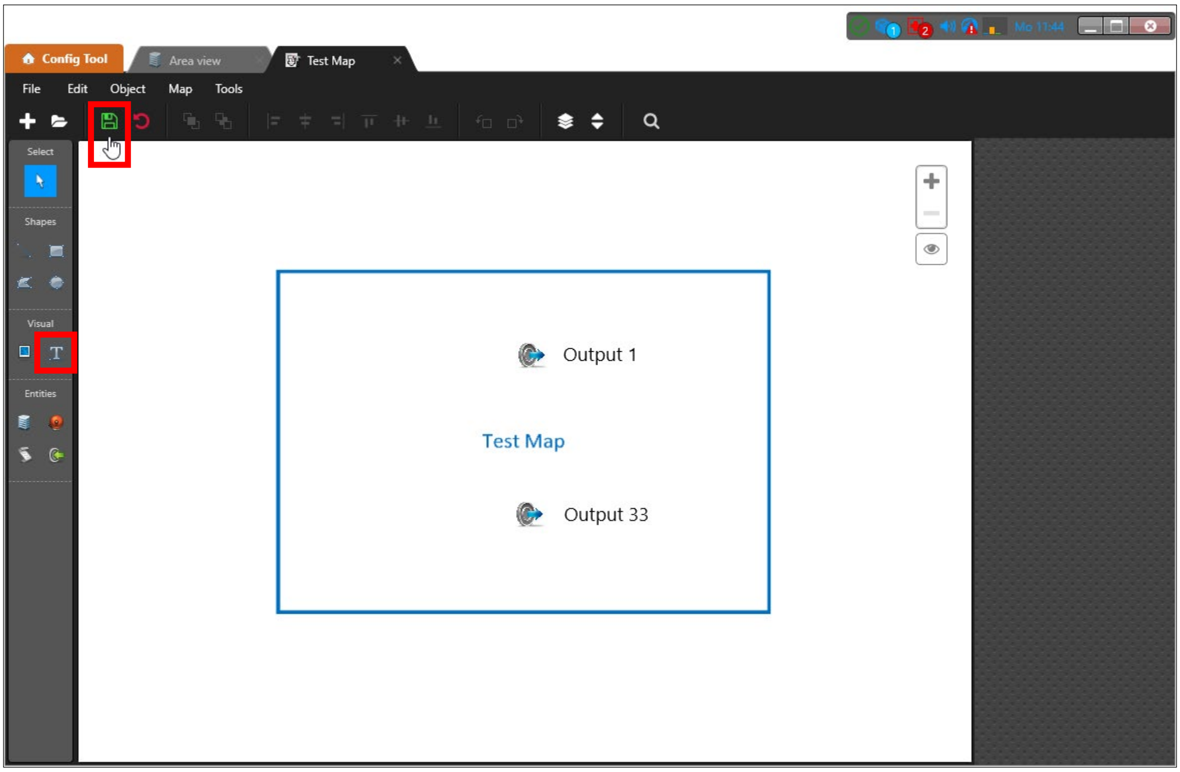


169.254.100.0 - IP horn - O
Type: Device
Icon:

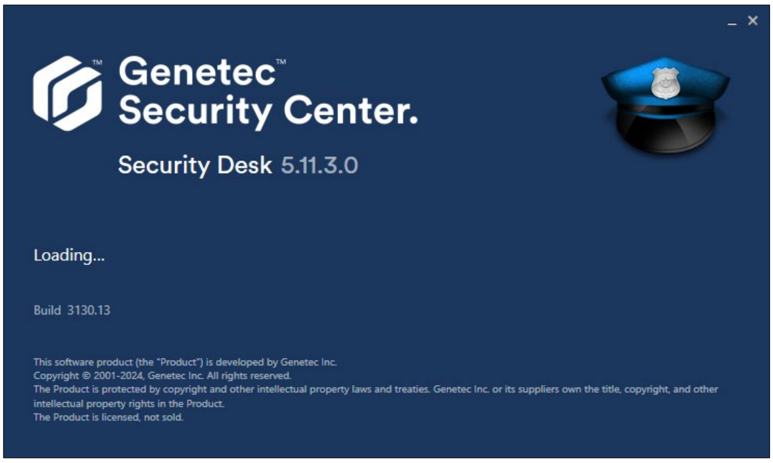
X: 56
Y: -584
Width: 30
Height: 30
Rotation: 0

Name	Behavior
:lose GPO	Active
)pen GPO	Normal

3. Now you can label the output by a adding a text field and then save the map to activate it.



4. Open the Security Desk software to test if the button works.


Genetec™ Security Center.

Security Desk 5.11.3.0

Loading...

Build 3130.13

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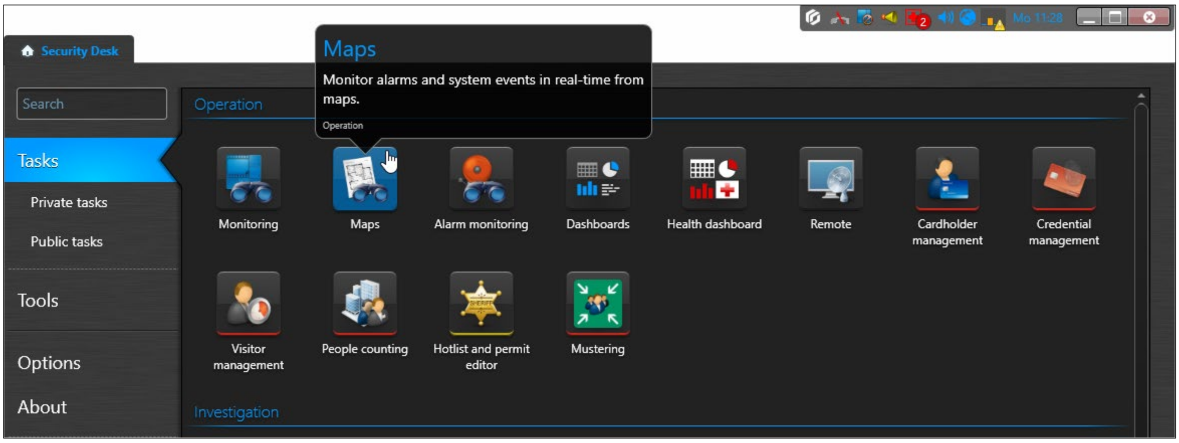
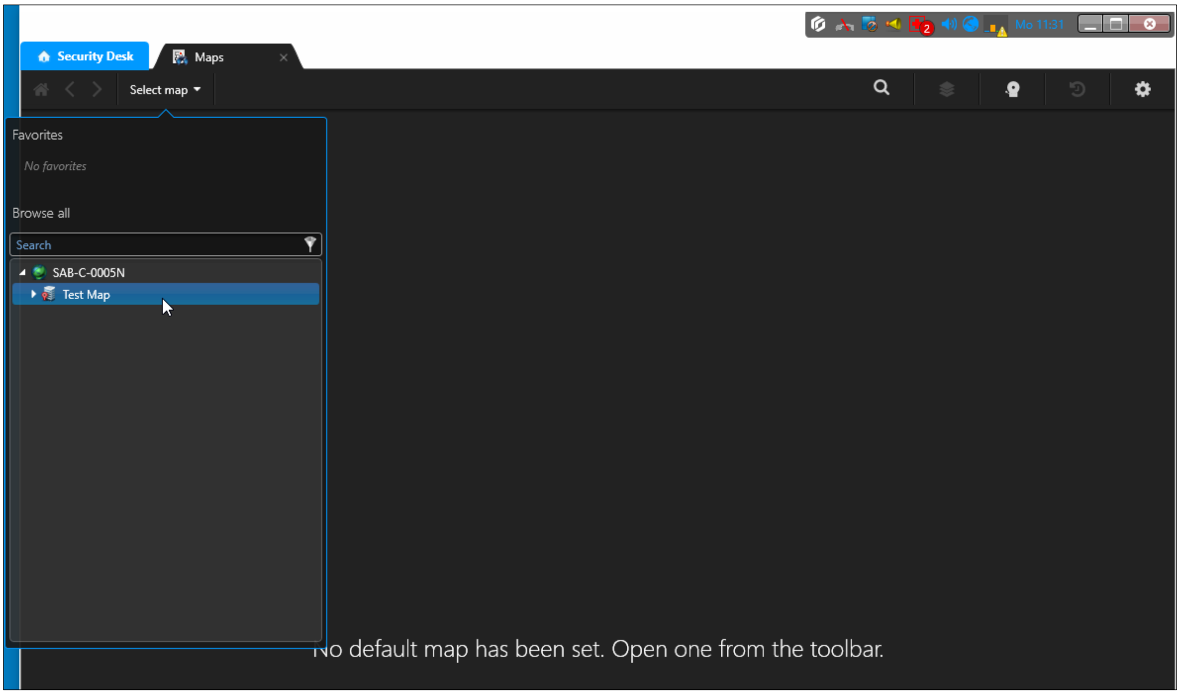
5. Go to the Maps page.


Maps

Monitor alarms and system events in real-time from maps.

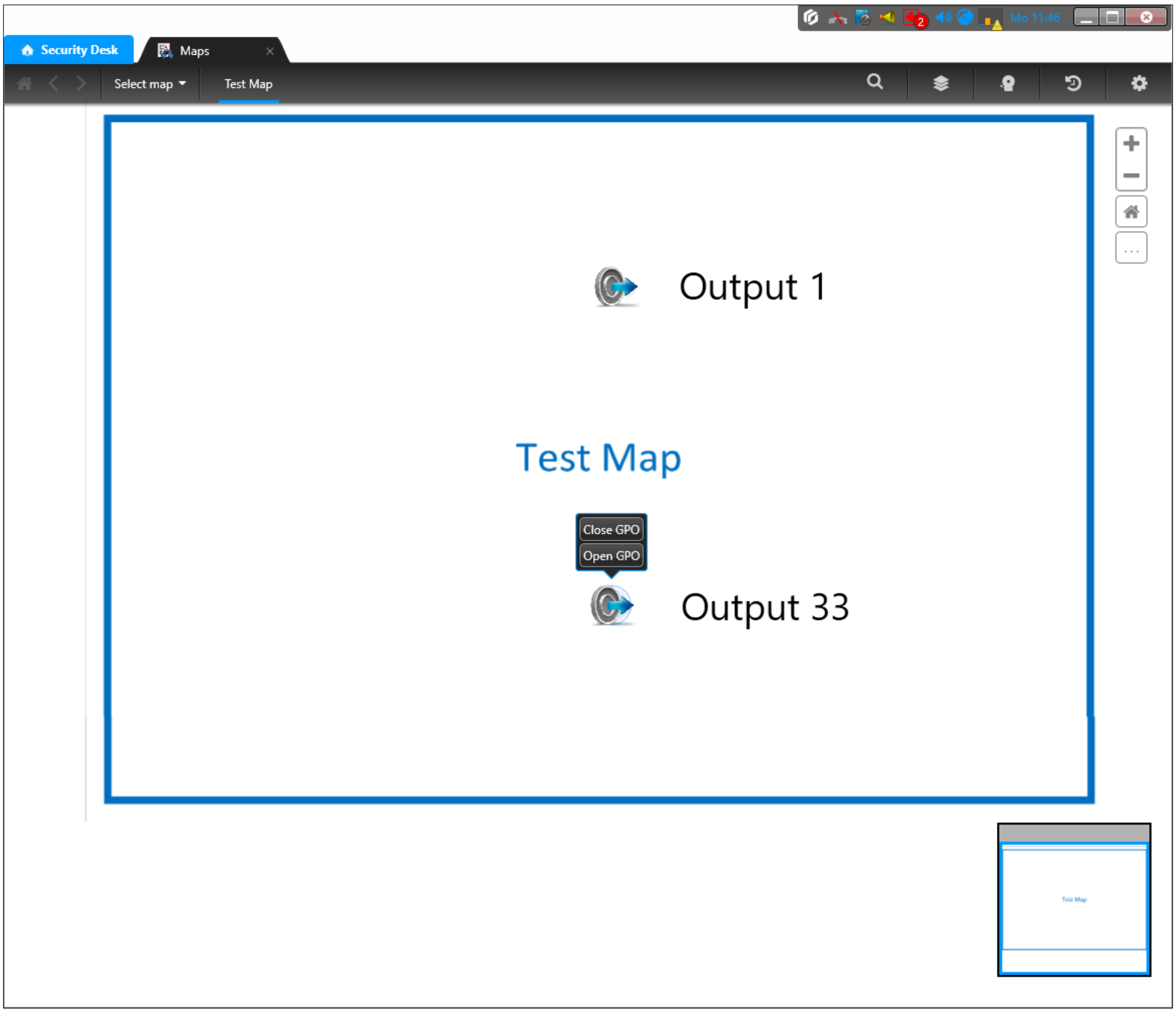
Operation

6. Select the configured map.

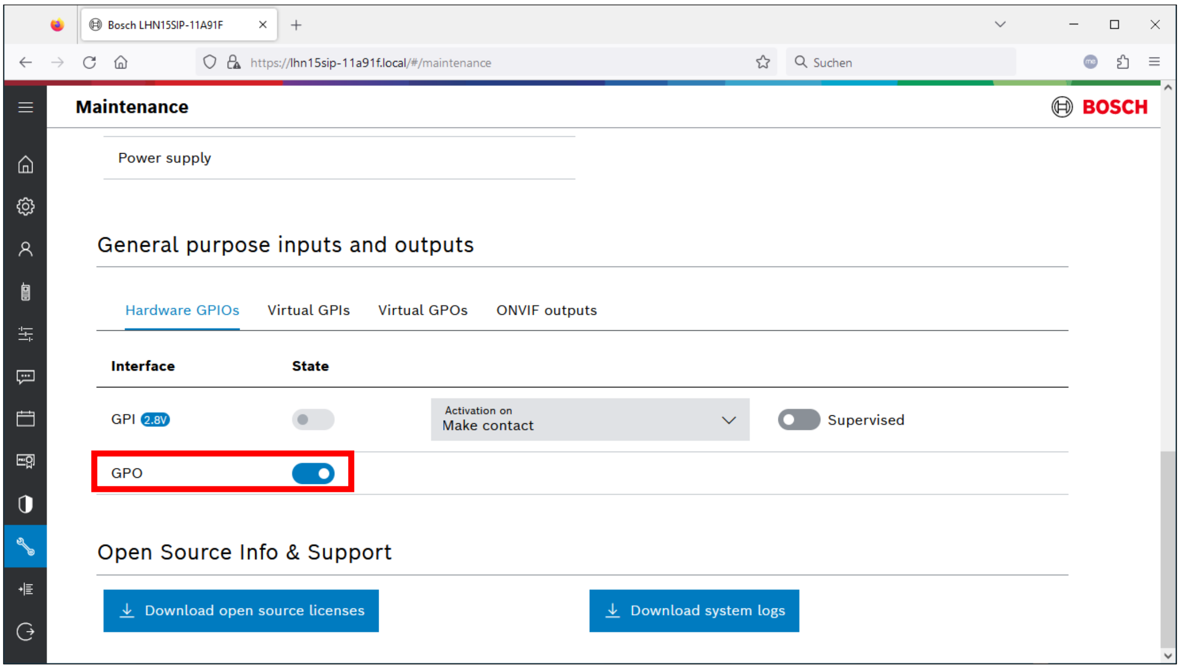


No default map has been set. Open one from the toolbar.

7. Click on the Output 33 icon and press *Close GPO* to close the physical GPO of the IP horn/amp or *Open GPO* to open it.



8. On the *Maintenance* page of the IP horn/amp you can check the state of the GPO.



Bosch LHN15SIP-11A91F

https://lhn15sip-11a91f.local/#/maintenance

Maintenance

Power supply

General purpose inputs and outputs

Interface	State		
GPI 2.8V	○	Activation on Make contact	○ Supervised
GPO	●		

Open Source Info & Support

4.4. Audio from the IP horn to the VMS via ONVIF Streaming

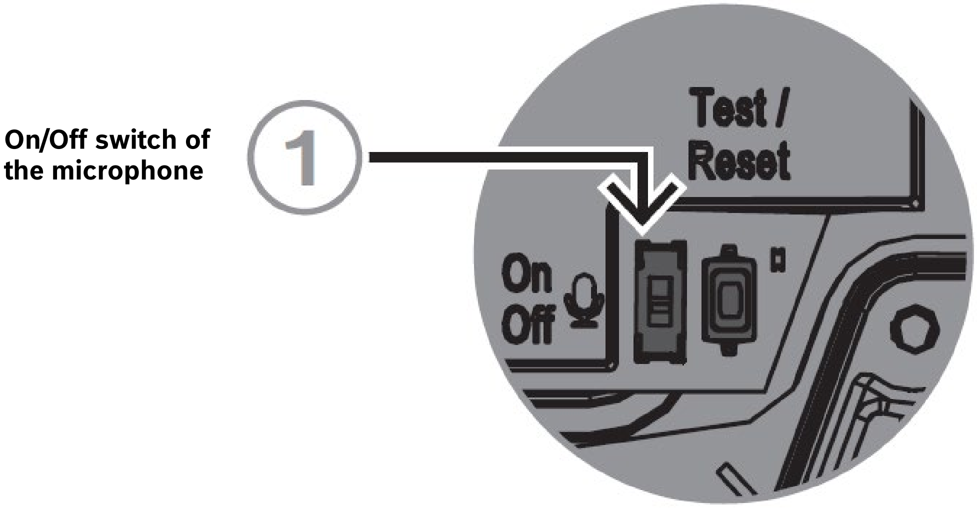
This part describes how to configure and test the audio from the IP horn to the VMS.

Notice!
This function is only available for the IP horn.

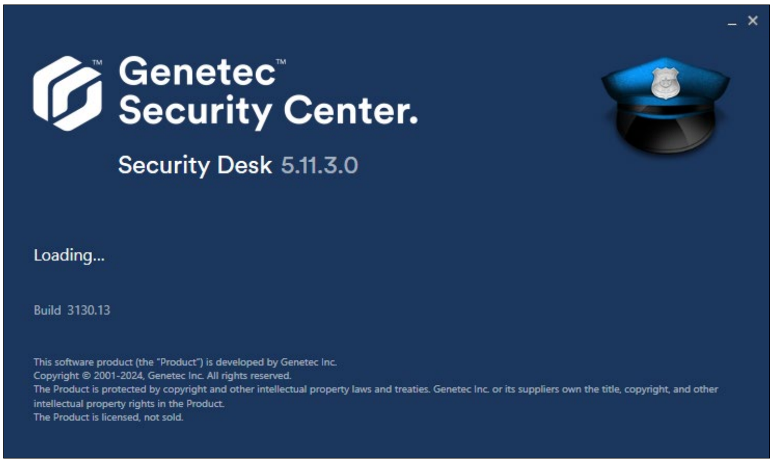
Setting up the Microphone in Genetec Security Center Config Tool and testing the Microphone Stream in the Security Desc application:

The Microphone is not bound to the rule engine. There is no need to activate the ONVIF Stream via the rules page. Thus, recording without interruption by a rule is possible. As soon as the credentials for the ONVIF operator are set, the microphone stream can be opened via the VMS, and you can retrieve and listen to it.

1. Make sure that the microphone of the IP horn is activated.



2. Open the Security Desk software.



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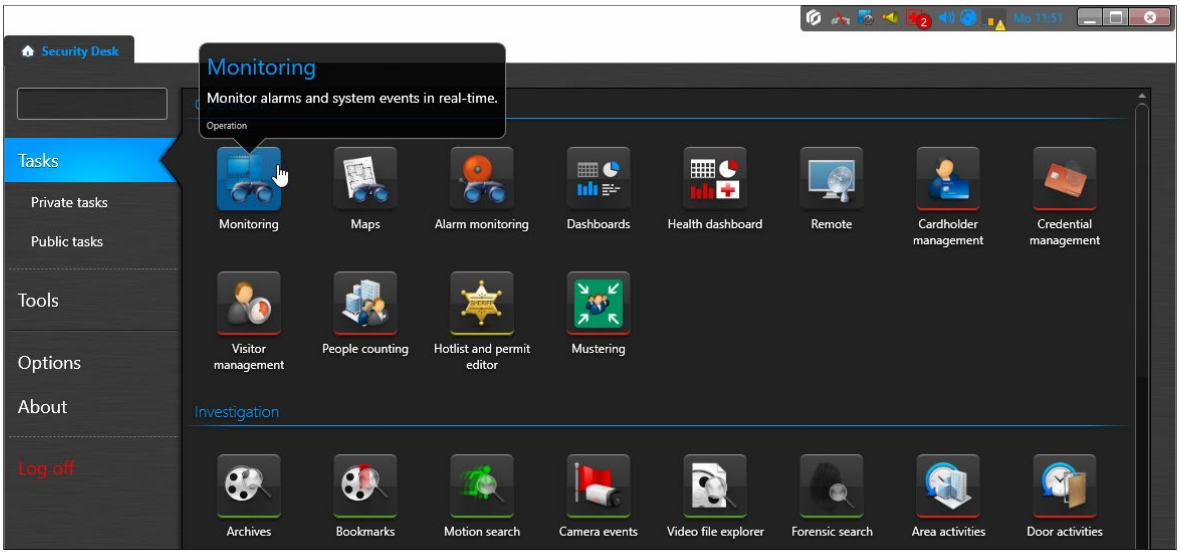
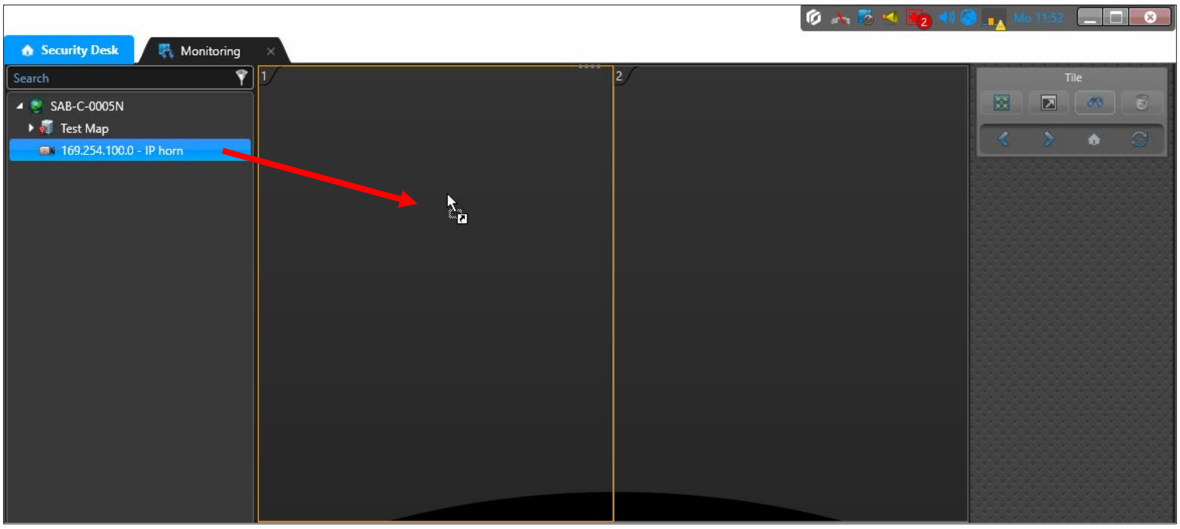
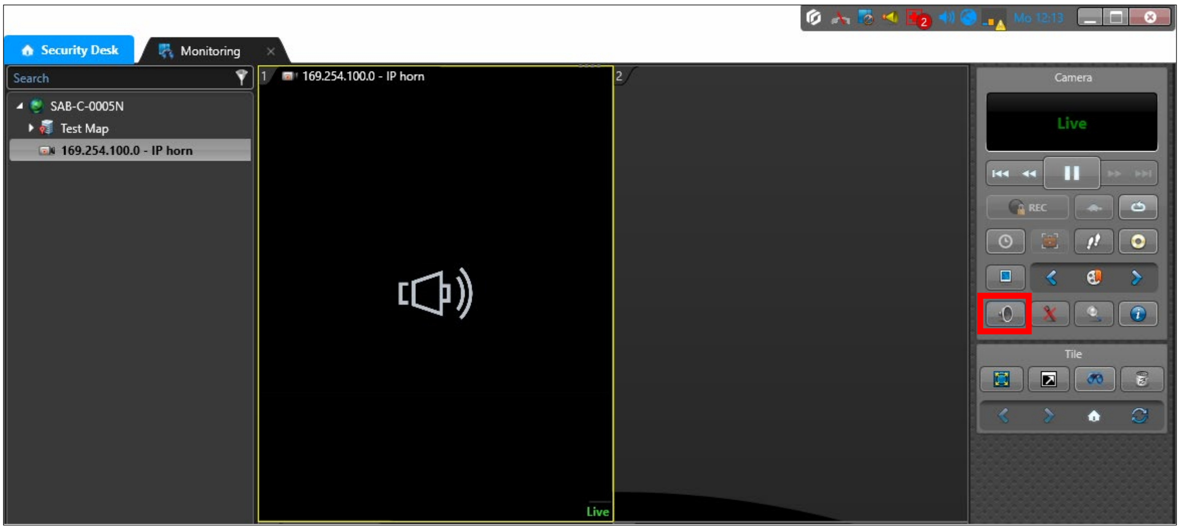
3. Go to the Monitoring page.



4. Drag and drop the IP horn on a video patch.

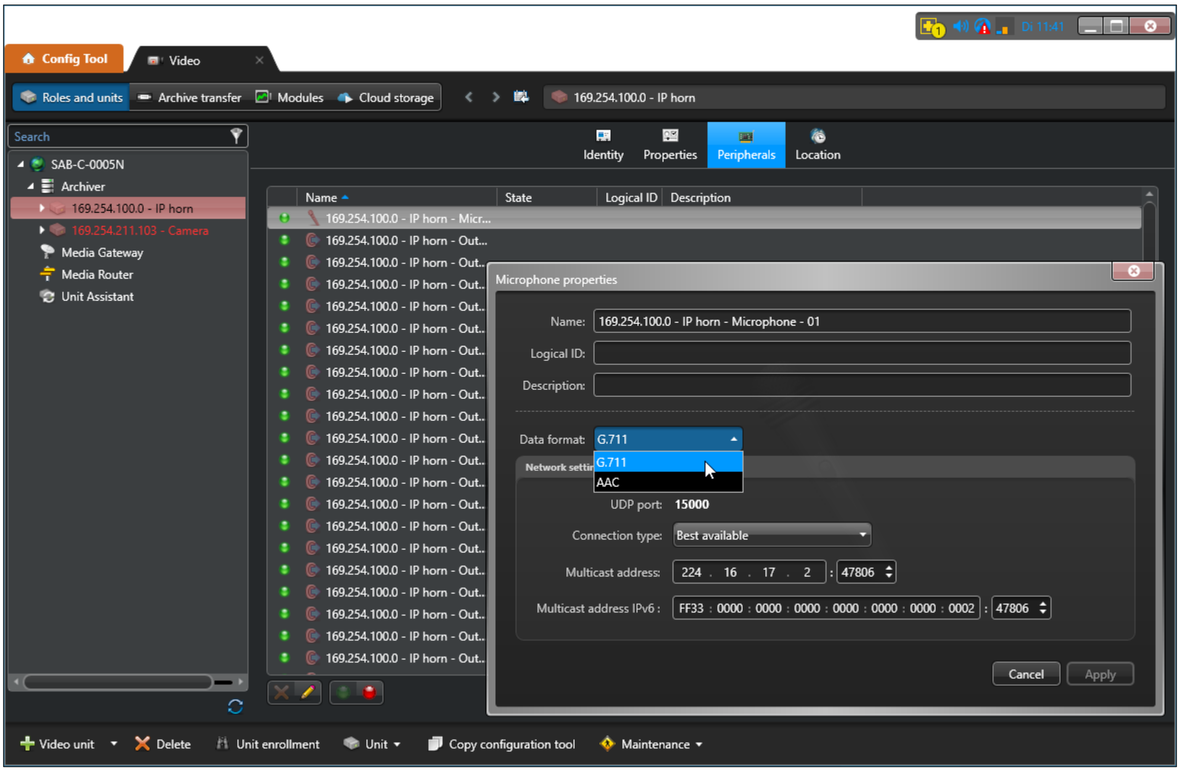


5. By pressing the loudspeaker icon button, you can listen to the microphone of the IP horn (ONVIF Stream).



Notice!
The IP horn supports audio codecs like AAC (preferred) and G.711(legacy, lower audio quality) for the ONVIF Stream. By default, G.711 is used.

How to change the audio codec for the ONVIF Stream:
- Open the Genetec Config Tool Software
- Go to *Video* -> *Archiver* -> *IP horn* -> *Peripherals*
- Double-click on the Microphone to open the Microphone properties
- Change the Data format



Microphone properties

Name: 169.254.100.0 - IP horn - Microphone - 01

Logical ID:

Description:

Data format: G.711 (G.711 / AAC)

UDP port: 15000

Connection type: Best available

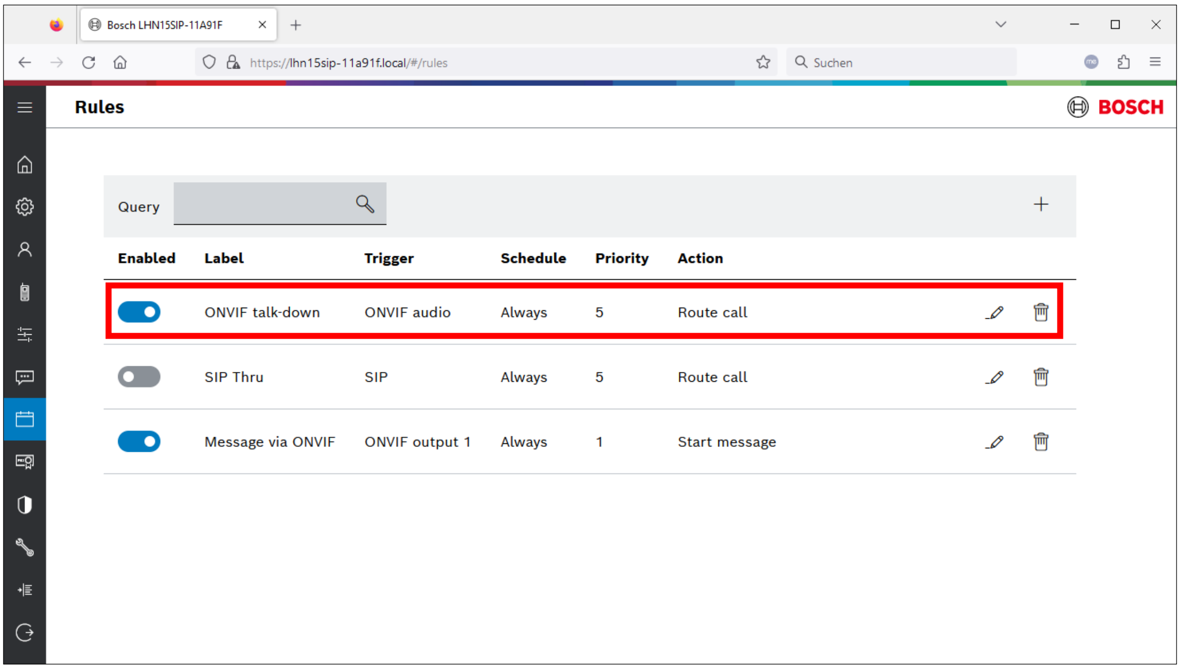
Multicast address: 224 . 16 . 17 . 2 : 47806

Multicast address IPv6 : FF33 : 0000 : 0000 : 0000 : 0000 : 0000 : 0000 : 0002 : 47806

4.5. Audio from the VMS to the IP horn/amp via ONVIF Backchannel

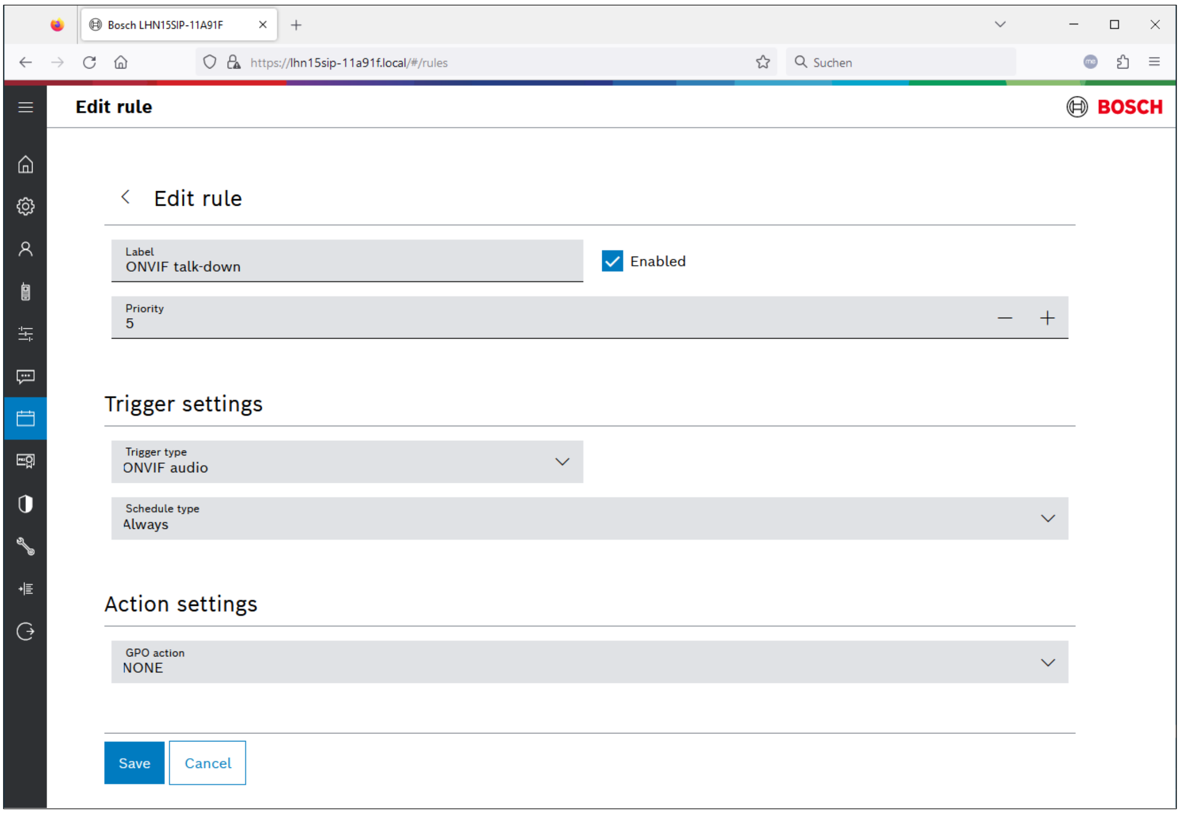
This part describes how to configure and test the audio from the VMS to the IP horn/amp. To send audio to the IP horn/amp an ONVIF operator and a rule need to be configured.

1. Adding a rule for ONVIF talk-down (audio from the VMS to the IP horn/amp via ONVIF backchannel):
   By default there is the “ONVIF talk-down” rule available, which needs to be activated to be able to route audio from and to the IP horn/amp through the VMS. The pre-defined rule is just there for quick and easy configuration. But depending on the project needs either this rule or another rule can be used.



Enabled	Label	Trigger	Schedule	Priority	Action
●	ONVIF talk-down	ONVIF audio	Always	5	Route call
○	SIP Thru	SIP	Always	5	Route call
●	Message via ONVIF	ONVIF output 1	Always	1	Start message

Details of the default rule:



Edit rule

Label: ONVIF talk-down ☑ Enabled

Priority: 5

Trigger settings

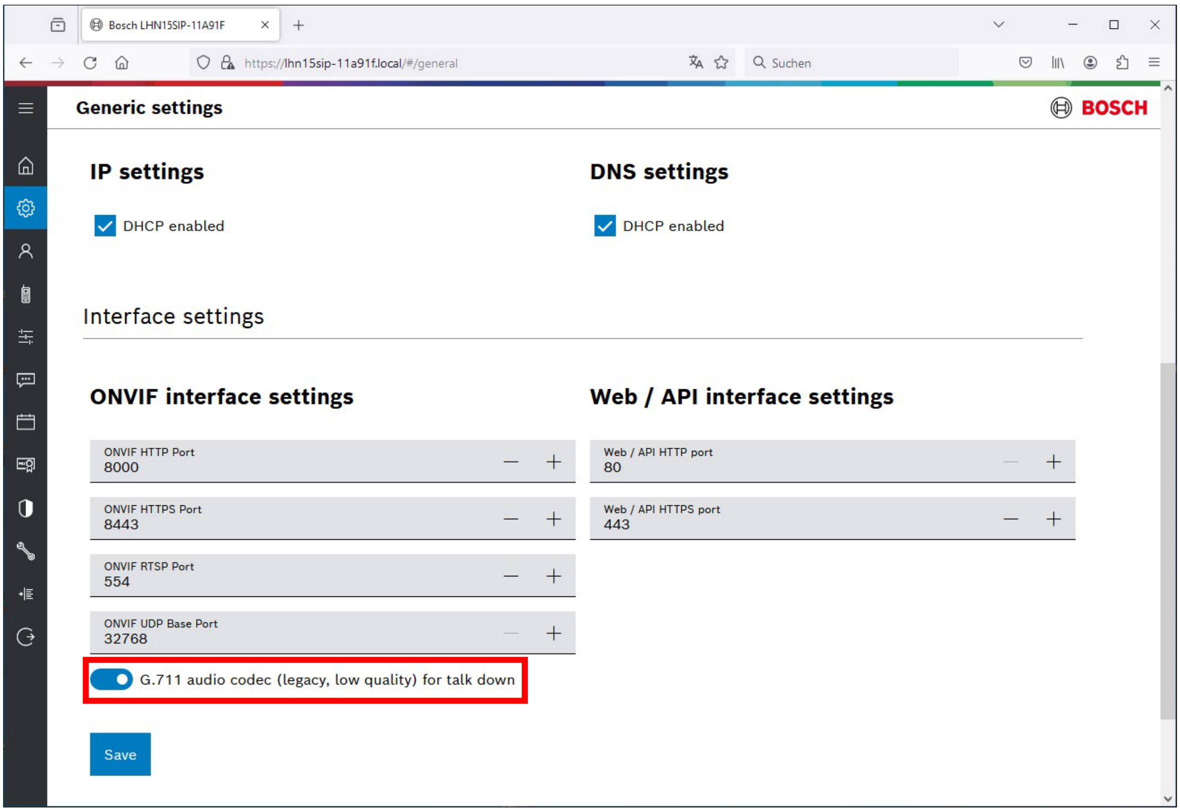
Trigger type: ONVIF audio

Schedule type: Always

Action settings

GPO action: NONE

Notice!
G.711 is by default deactivated for talk down on the side of the IP horn/amp due to its lower audio quality compared to AAC. Genetec is only able to distribute audio using G.711. So, you must activate this on the *Generic settings* page of the IP horn/amp.



Bosch LHN15SIP-11A91F

https://lhn15sip-11a91f.local/#/general

Generic settings

IP settings

☑ DHCP enabled

DNS settings

☑ DHCP enabled

Interface settings

ONVIF interface settings

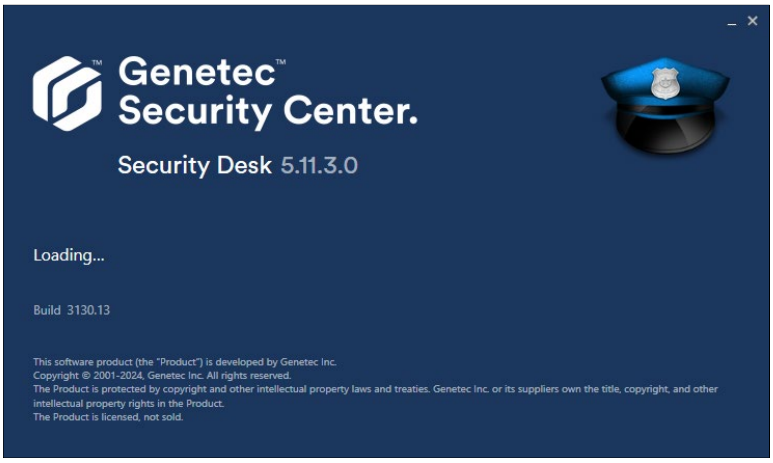
ONVIF HTTP Port	8000
ONVIF HTTPS Port	8443
ONVIF RTSP Port	554
ONVIF UDP Base Port	32768

G.711 audio codec (legacy, low quality) for talk down ●

Web / API interface settings

Web / API HTTP port	80
Web / API HTTPS port	443

3. Open the Security Desk software.



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Security Desk 5.11.3.0

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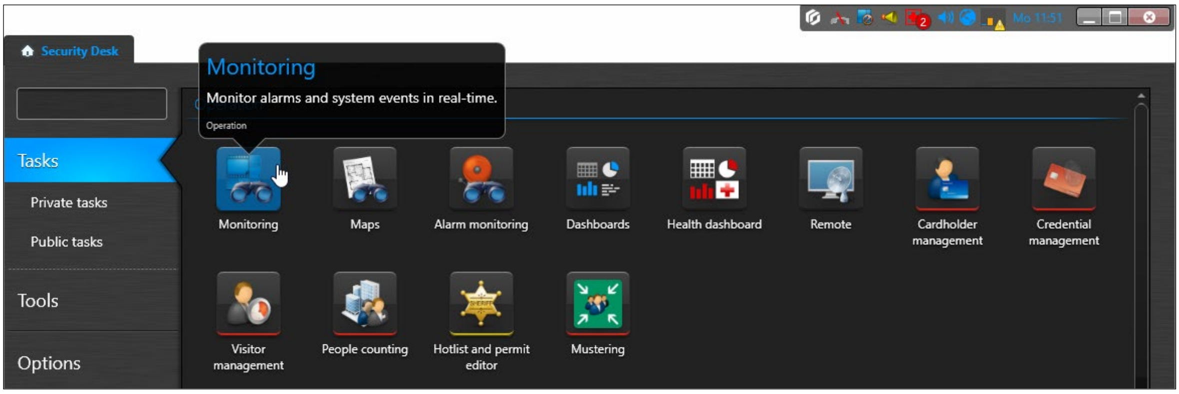
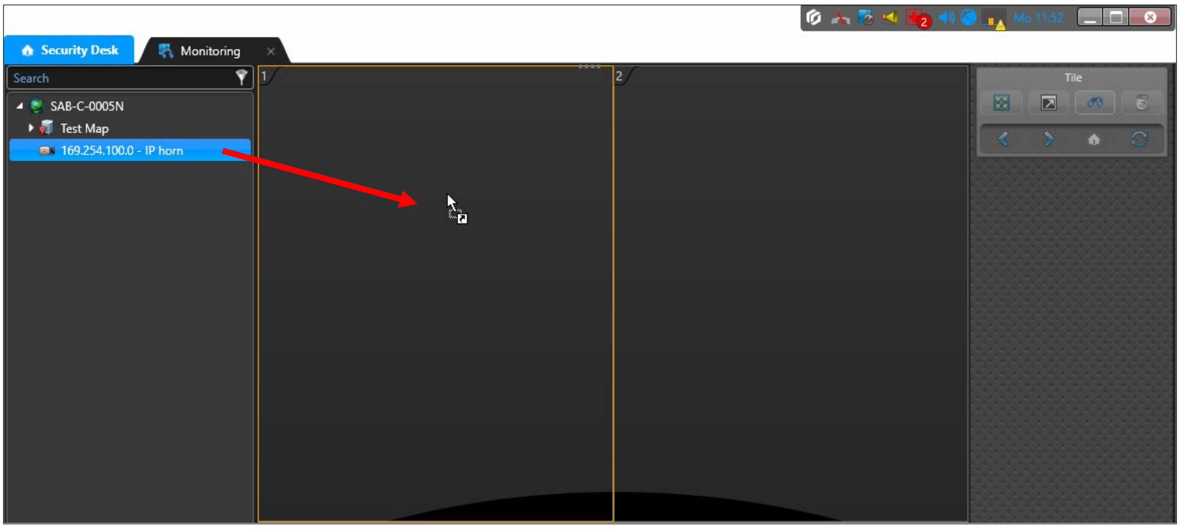
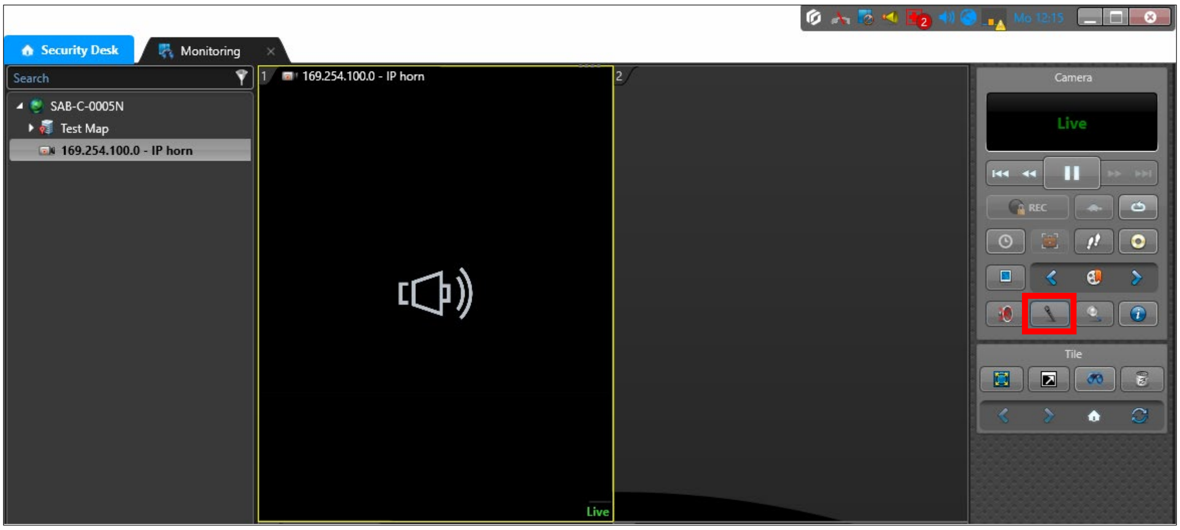
4. Go to the Monitoring page.



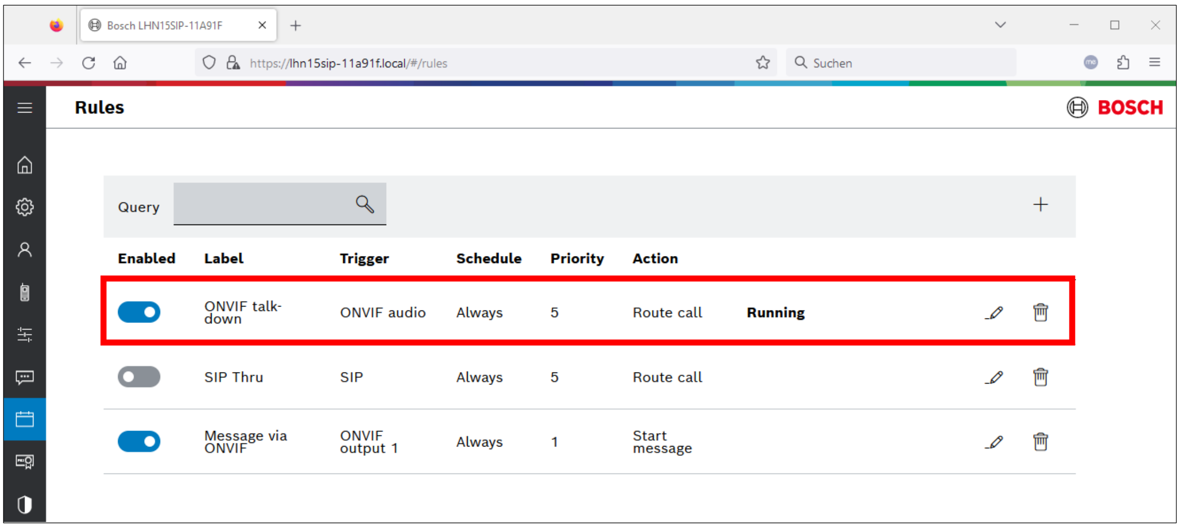
5. Drag and drop the IP horn on a video patch.



2. By pressing the telephone icon button, you can send audio to the IP horn/amp.



3. On the Rules page of the IP horn/amp you can check if the audio is routed:
   - Go to *Rules.*
   - The state of the *ONFIV talk-down* rule changes to **Running.**



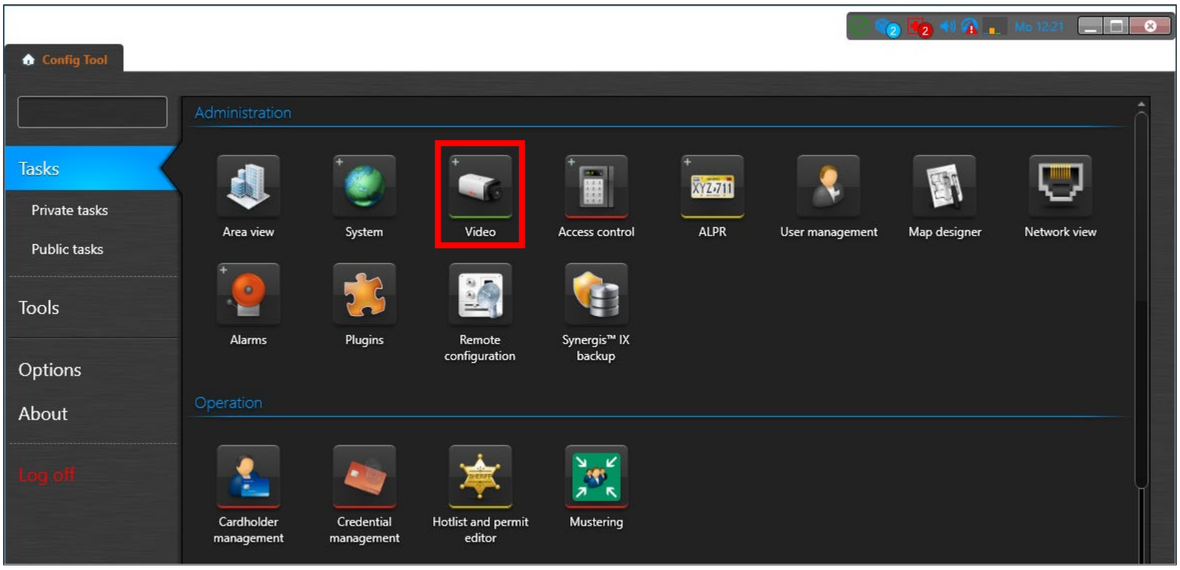
Rules

Enabled	Label	Trigger	Schedule	Priority	Action	
●	ONVIF talk-down	ONVIF audio	Always	5	Route call	**Running**
○	SIP Thru	SIP	Always	5	Route call	
●	Message via ONVIF	ONVIF output 1	Always	1	Start message	

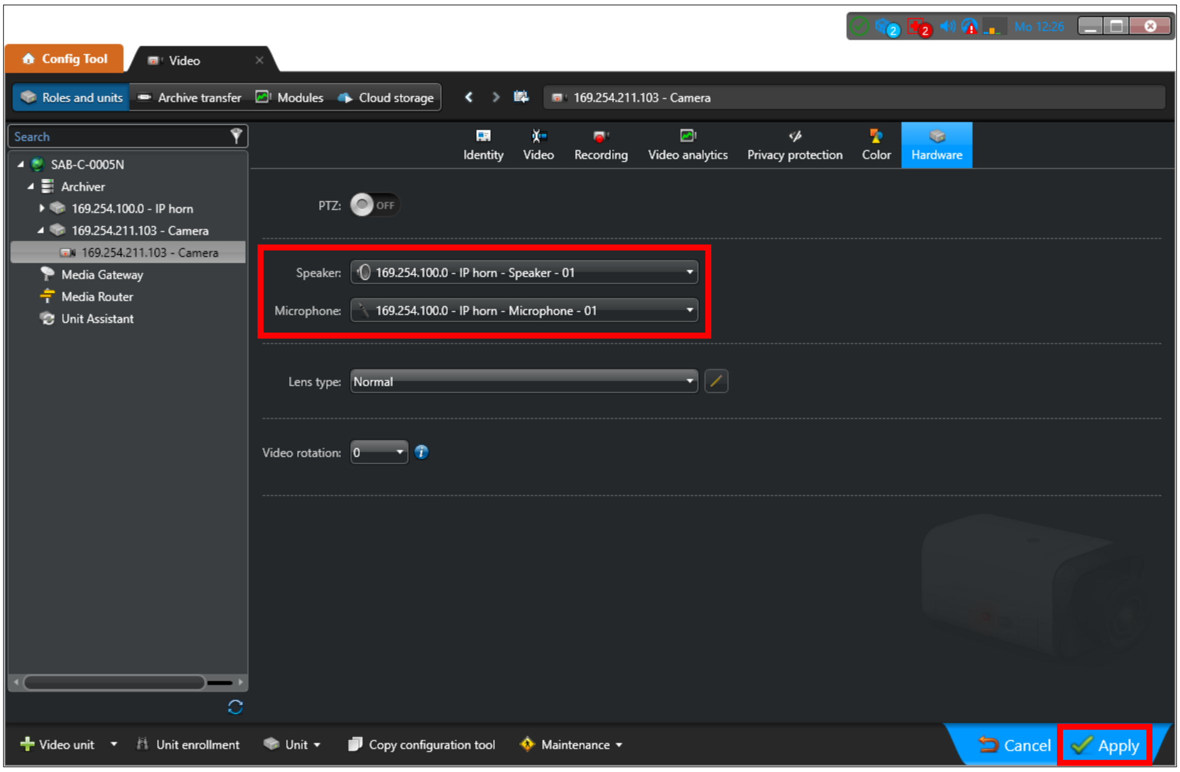
4.6. Assign the IP horn/amp to a specific camera

This chapter describes how to assign an IP horn/amp to a specific camera.

1. Open Security Center *Config Tool* -> go to *Tasks* -> click on *Video*



2. Click on a *Camera -> go to the Hardware* tab and select the *Microphone* and the *Speaker* of the IP horn/amp and click *Apply*.



PTZ: OFF

Speaker: 169.254.100.0 - IP horn - Speaker - 01

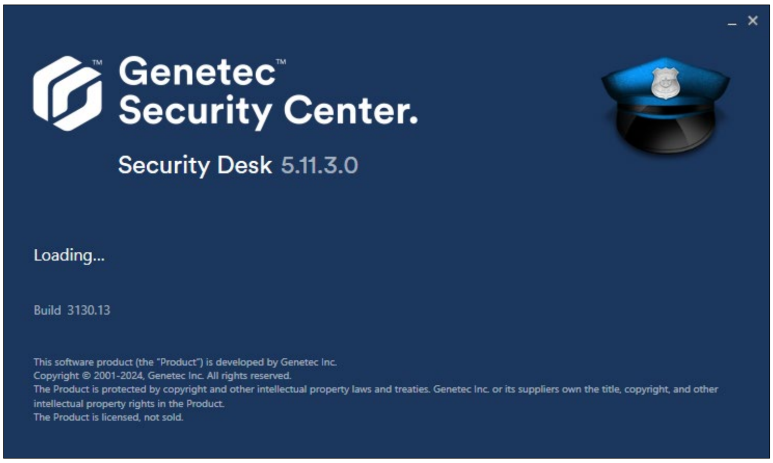
Microphone: 169.254.100.0 - IP horn - Microphone - 01

Lens type: Normal

Video rotation: 0

Notice!
There is no microphone displayed for the IP amp.

4. Open the Security Desk software.



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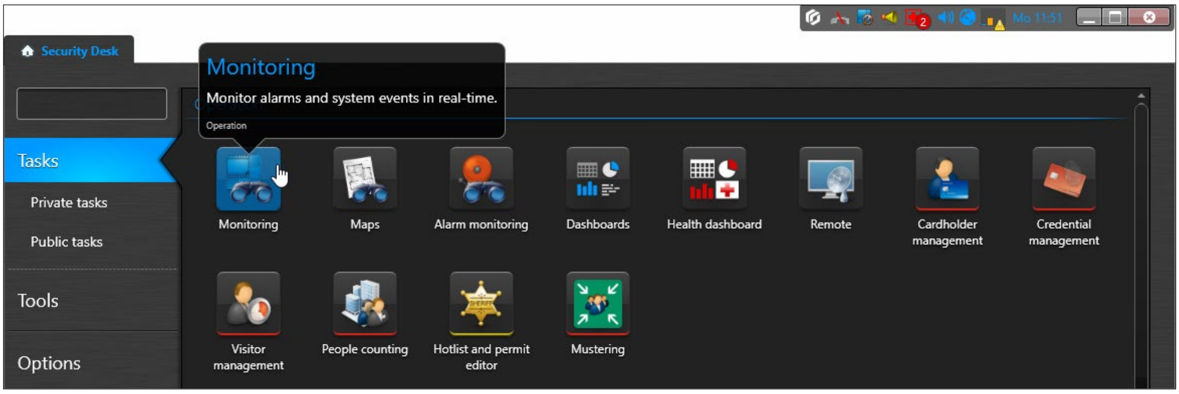
5. Go to the Monitoring page.

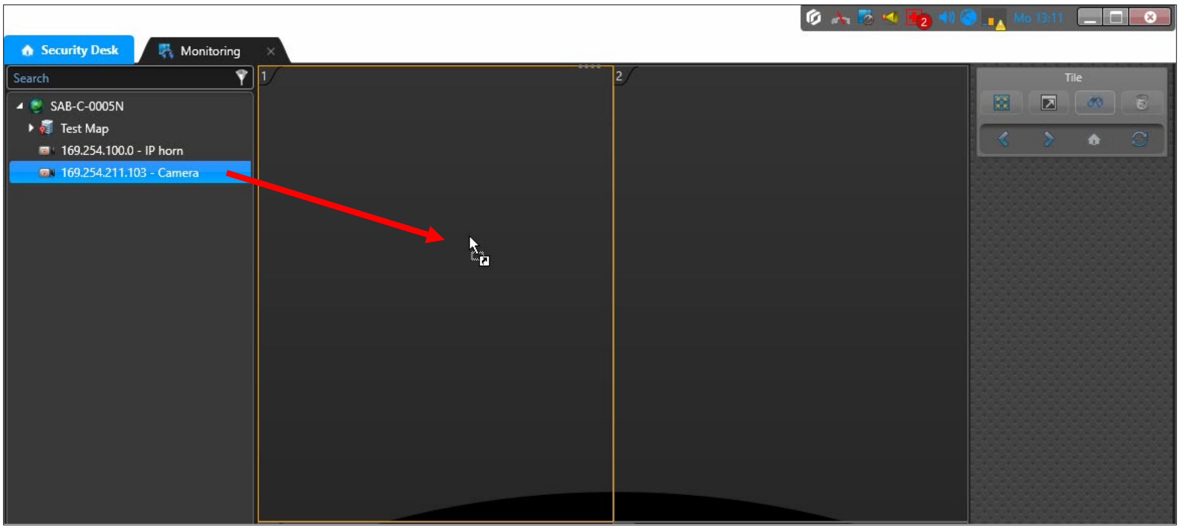


Monitoring

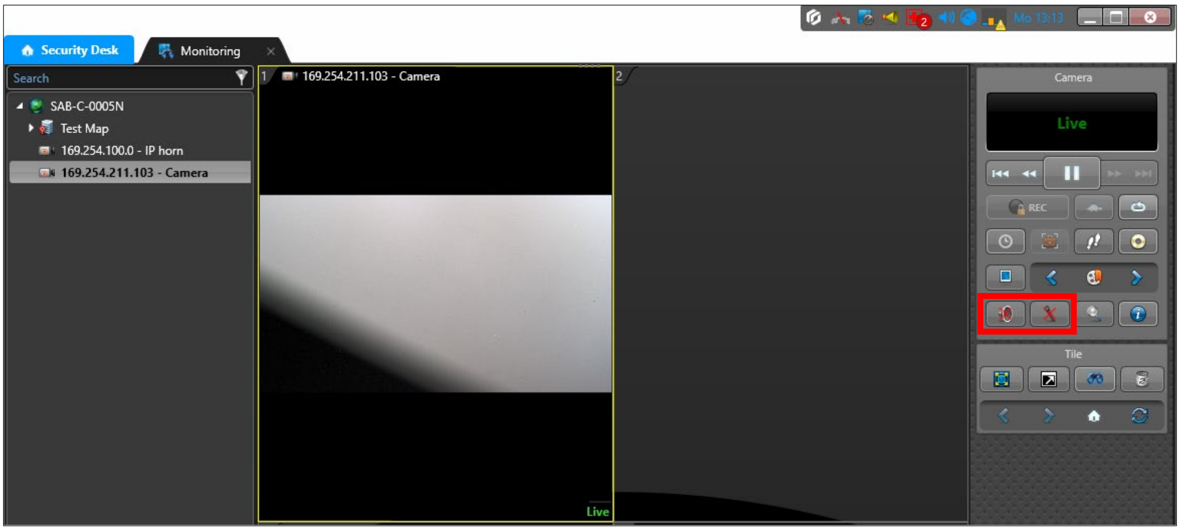
Monitor alarms and system events in real-time.

Operation

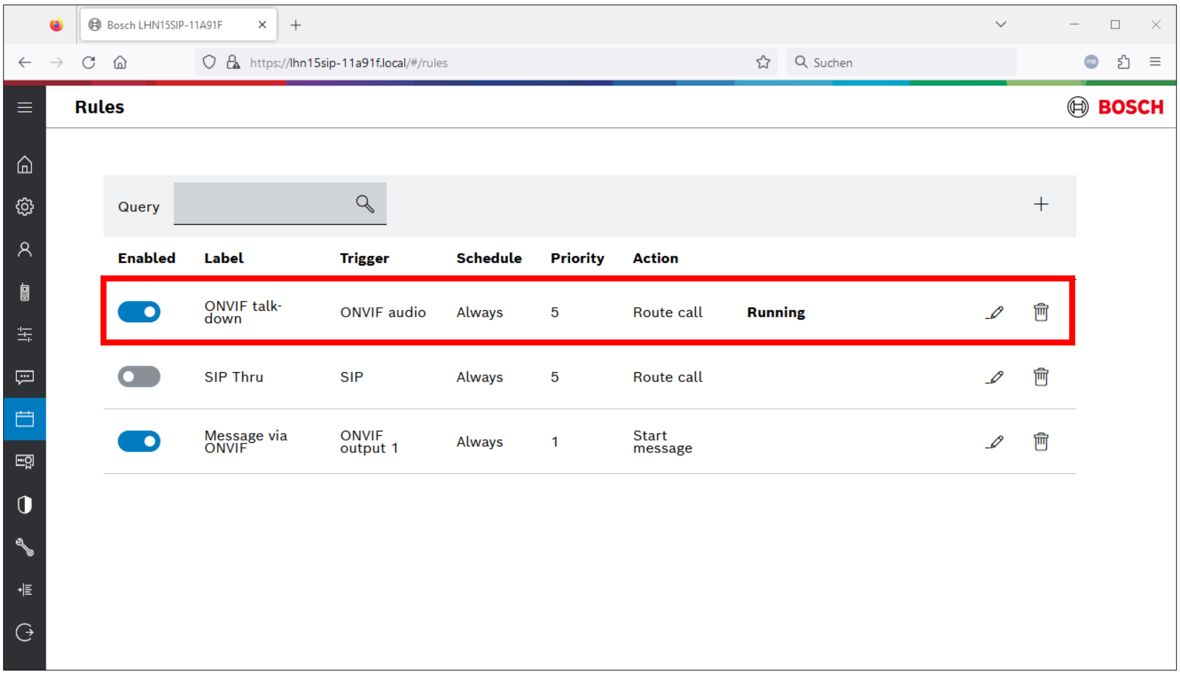
6. Drag and drop the Camera on a video patch.



3. Testing Audio connections:
   - By pressing the telephone icon button, you can send audio to the assigned speaker.
   - By pressing the loudspeaker icon button, you can listen to the microphone of the assigned speaker.



4. On the Rules page of the IP horn/amp you can check if the audio is routed to the IP horn/amp:
   - Go to *Rules*.
   - The state of the *ONFIV talk-down* rule changes to **Running.**



Enabled	Label	Trigger	Schedule	Priority	Action		
●	ONVIF talk-down	ONVIF audio	Always	5	Route call	**Running**	
○	SIP Thru	SIP	Always	5	Route call		
●	Message via ONVIF	ONVIF output 1	Always	1	Start message		

5. Document history

Release date	Documentation version	Reason
2024-02	v1.0	1st edition
2024-05	v1.1	Some screenshots have been updated to be compatible with IP horn/amp FW v2.1

6. Notice of liability

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Bosch Security Systems B.V.
Torenallee 49
5617 BA Eindhoven
Netherlands
www.boschsecurity.com