



Xovis AI plugins

Plugin installation procedure, licensing and APIs

## AI Functions Quick Guide : Staff Exclusion and Gender\* Statistics

*\* A note about the term "gender": Xovis respects and embraces all dimensions of diversity, including gender identity anywhere along or beyond the spectrum of gender expression. For technical reasons, the algorithm in the Xovis Gender Statistics feature recognizes only easily discernible, visual indications when determining whether a person is more likely to be female or male. A reliable detection of the biological sex of a person is neither possible nor intended. We intend no disrespect to the gender with which a person identifies. The counts are merely a statistical measurement of a large number of people.*

## Document History

Version	Date	Author	Comment
1.0	12.04.2019	Daniel Jokic	First version
1.1	23.04.2019	Daniel Jokic	Revised for BETA transition
1.2	27.05.2019	Daniel Jokic	Revised for second BETA version
1.3	19.06.2019	Daniel Jokic	Revised for RC version
1.4	21.06.2019	Daniel Jokic	Revised for final release version

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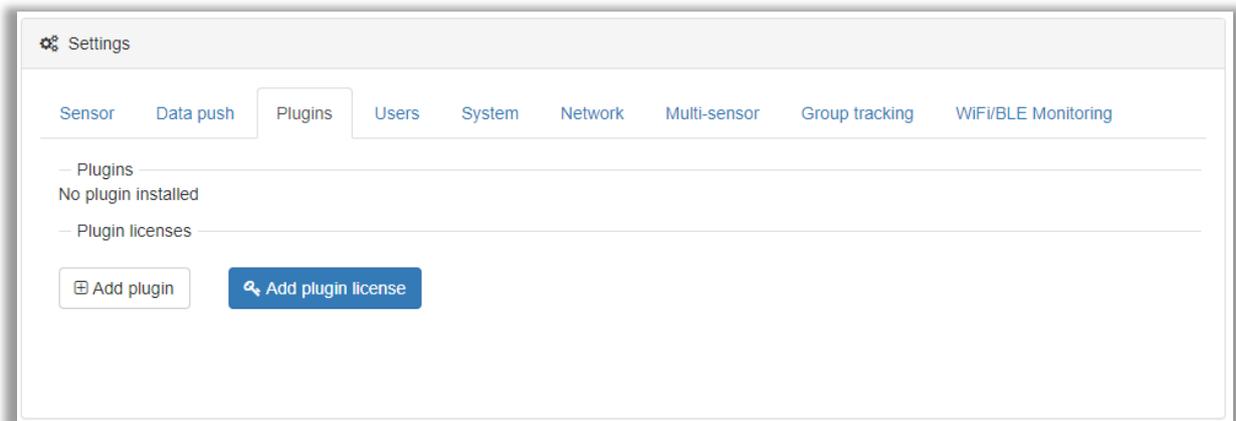
## Table of Contents

1	Plugin management.....	4
1.1	Activating a plugin.....	4
1.2	Disabling & (re)enabling a plugin.....	5
1.3	Deleting a plugin.....	6
1.4	Licensing mode.....	6
2	Gender Statistics plugin.....	8
3	Staff Exclusion plugin.....	11
4	AI-Plugin-specific API calls.....	14

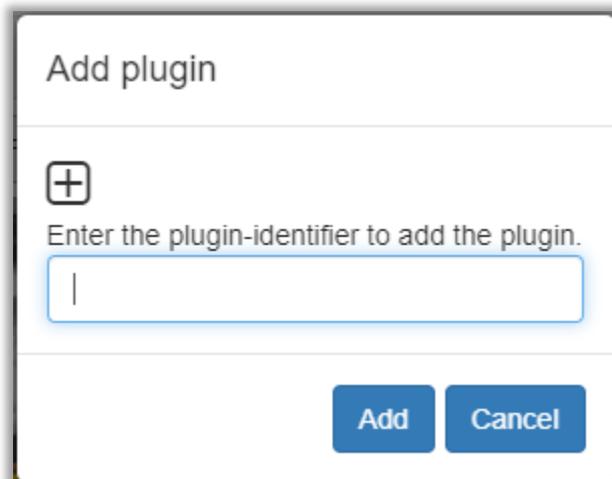
# 1 Plugin management

## 1.1 Activating a plugin

Navigate to the Config tab in the WebUI and open the subsection “Plugins”.



Click “Add Plugin”.

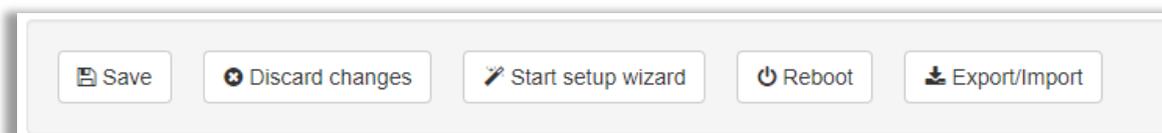


Type in the corresponding code for the plugin to be added:

PIGES : Xovis Gender Statistics plugin

PISTE : Xovis Staff Exclusion plugin

Then click “Add” and then click on “Save” in the bar on the top.

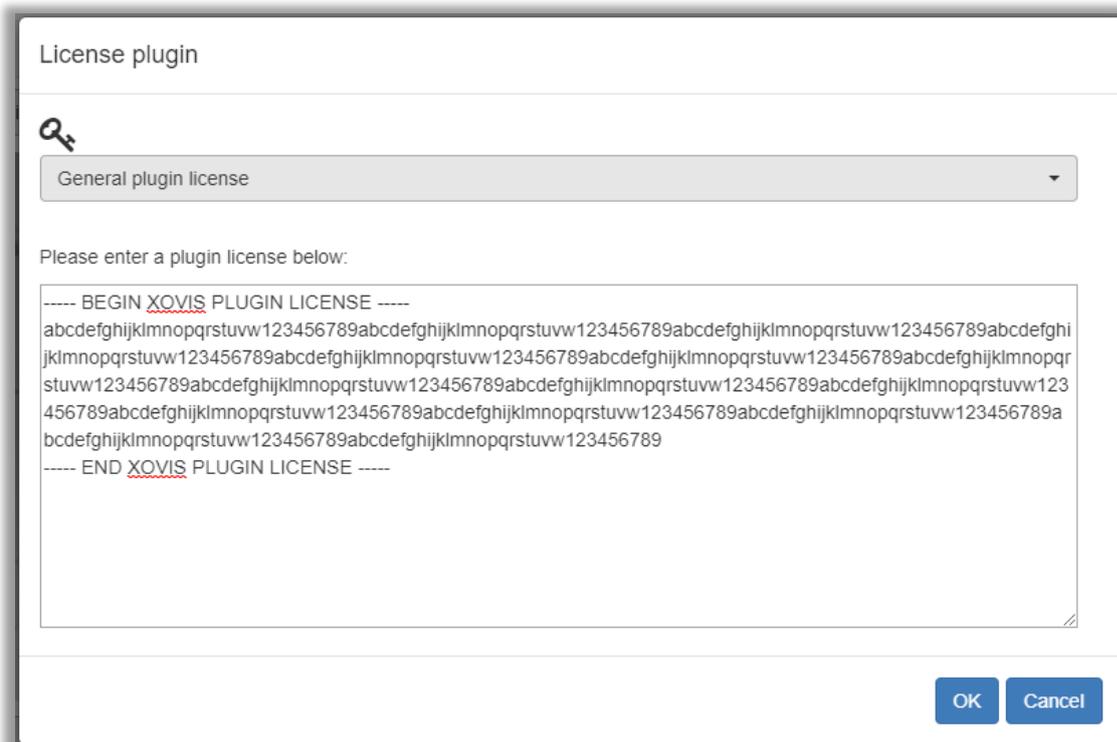


The 30-day trial period starts immediately. It is suspended, if you disable the plugin.

To fully activate a plugin, click on “Add plugin license”.

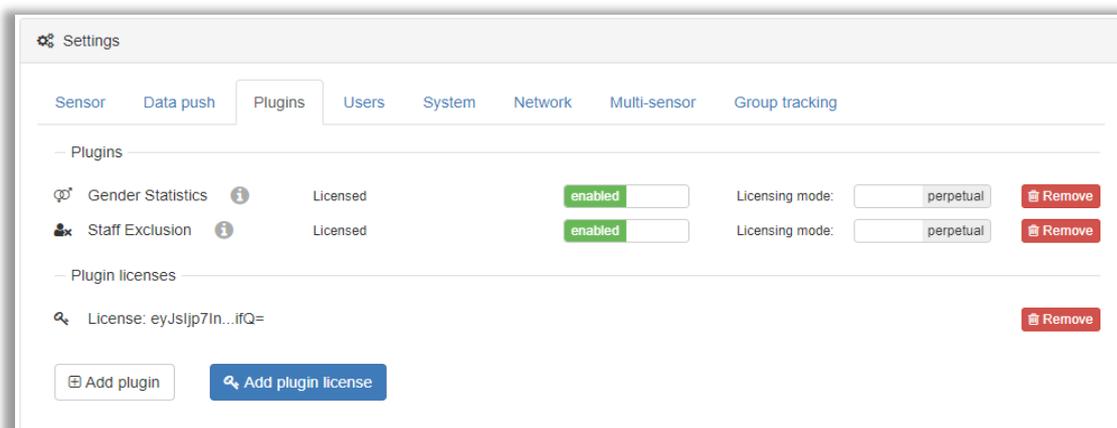


Then enter the license code provided to you by Xovis in the appearing text field. Please make sure the dropdown is set to “General plugin license” and that you copy the entire string, including “----- BEGIN XOVIS PLUGIN LICENSE -----” and “----- END XOVIS PLUGIN LICENSE -----”. Then click “OK” in the modal and “Save” in the bar on the top of the Config page.



## 1.2 Disabling & (re)enabling a plugin

Navigate to the Config tab in the WebUI and open the subsection “Plugins”.



To disable a plugin, click the green “enabled” switch and press “Save” in the bar on top of the page.

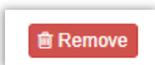


To reenable a plugin, click on the grey “disabled” switch next to the corresponding plugin and press “Save” in the bar on top of the page.

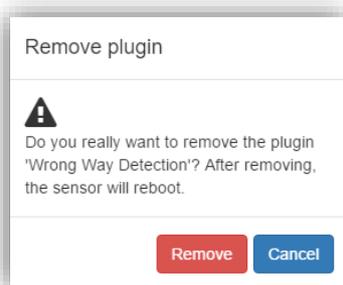
## 1.3 Deleting a plugin

Navigate to the Config tab in the WebUI and open the subsection “Plugins”.

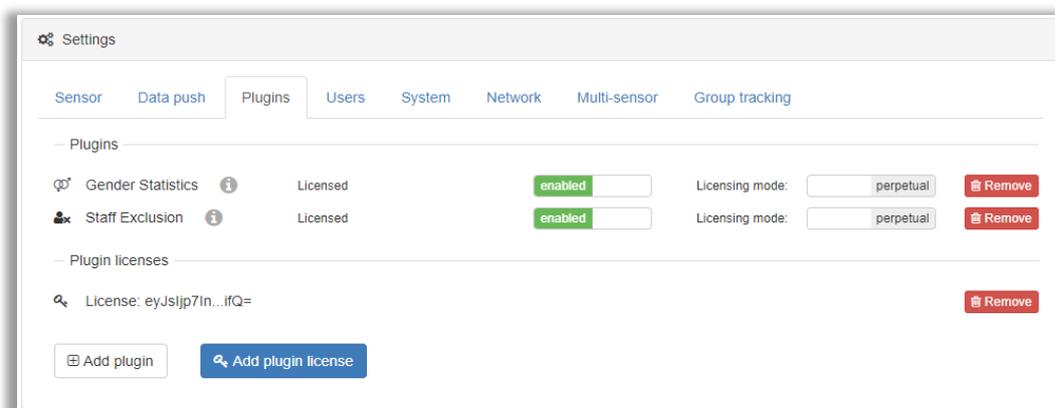
Then click on the red “Remove” button next to the plugin you want to delete.



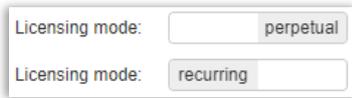
Before the plugin is removed, confirm the warning dialog:



## 1.4 Licensing mode



The Gender Statistics and Staff Exclusion plugins are offered either as a one-off, perpetual licence or as a recurring Xovis Cloud license. Depending on which offer you purchased from Xovis, you can switch each plugin to either mode by clicking the corresponding toggles:



Licensing mode:

Licensing mode:

**“Perpetual” mode:** Using this mode, you will need to purchase a one-off licence from Xovis. Please contact your Xovis sales contact person. The activation then works as documented in chapter 1.1.

**“Recurring” mode:** In this mode, the license maintenance is done by Xovis through the Xovis Cloud. Please contact your Xovis sales contact person to opt for a monthly Xovis Cloud subscription. Once you get confirmation from Xovis about the order, switching to “recurring” will launch the process of activation in the background. Simply click “Save”.

**Please note:** A steady connection to the internet is needed for using the Xovis Cloud. Failing to reconnect within 30 days will lead to a cease of operation of the plugin until the next successful connection to the Xovis Cloud.

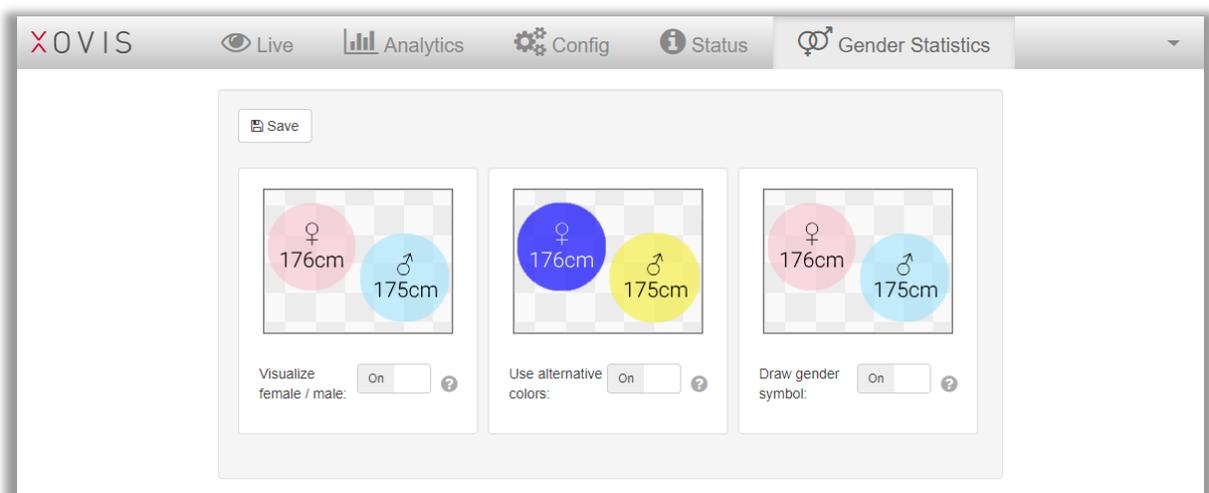
## 2 Gender\* Statistics plugin

*\* A note about the term “gender”:* Xovis respects and embraces all dimensions of diversity, including gender identity anywhere along or beyond the spectrum of gender expression. For technical reasons, the algorithm in the Xovis Gender Statistics feature recognizes only easily discernible, visual indications when determining whether a person is more likely to be female or male. A reliable detection of the biological sex of a person is neither possible nor intended. We intend no disrespect to the gender with which a person identifies. The counts are merely a statistical measurement of a large number of people.

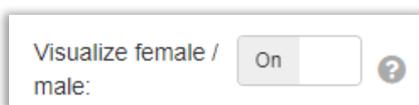
Once the plugin has been activated in the plugin section of the Config tab, a new tab “Gender Statistics” is added to the main tab bar of the Xovis WebUI.



Click on the tab to see the settings.

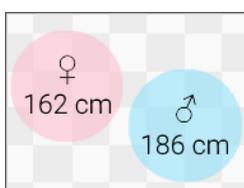


There are 3 switches and one Save-button. These are their functions:

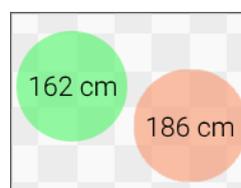


**Visualize female / male:** When active, the visualization of male or female detected people in the WebUI Live tab is switched on. Depending on the other settings, this will look similar to this:

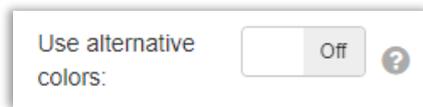
If set to ON (colors may vary):



If set to OFF (colors may vary):



**Please note:** If switched ON, an orange or white bubble means the sensor could not detect whether the person is male or female. Also note, that when the privacy level is set to 1 or higher, no female or male color coding is used at all.



**Use alternative colors:** If the colors of the female and male bubble representations collide with local cultural standards or taste, the color of the bubbles for these detection types can be switched to an alternative color scheme.

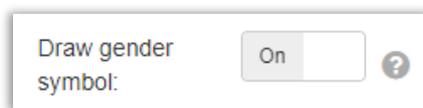
If set to ON:



If set to OFF:

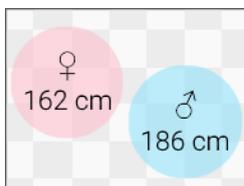


**Please note:** If switched ON, a white bubble means the sensor could not detect whether the person is male or female. Also note, that when privacy level is set to 1 or higher, no male or female coding is used at all.

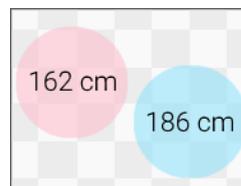


**Draw gender symbol:** The symbols ♀ or ♂ can be switched on or off for visualization in the WebUI Live view.

If set to ON (colors may vary):



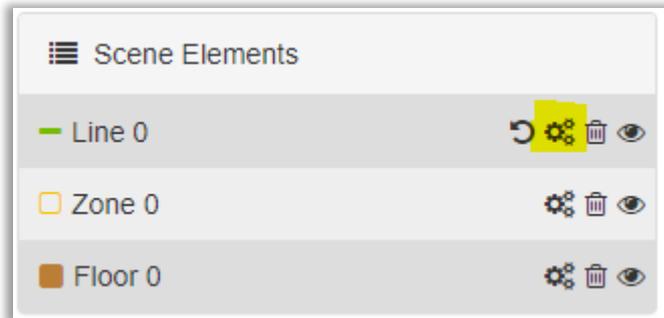
If set to OFF (colors may vary):



To save the configuration, click the "Save" button on top of the page.



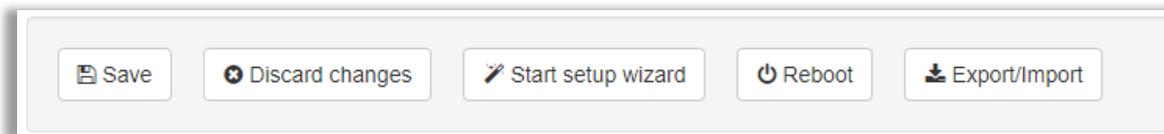
To use the Gender Statistics plugin productively, go to the Config tab and draw a count line in the scene window. Click the  cog wheel symbol next to the entry of the count line in the “Scene elements” box:



In the appearing modal, activate the “Recognize gender” switch:



Then click “Close” to close the modal. After that, click “Save” in the bar on the top of the page:

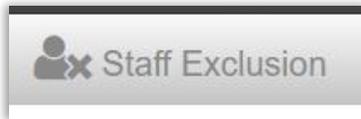


Depending on the privacy level (visible only in level 0) and the settings in the “Gender Statistics” tab, the female and male detections will now be visualized in the “Live” tab view. The percentage of female and male traffic is shown in the forward and backward counts of the “Counts” box:

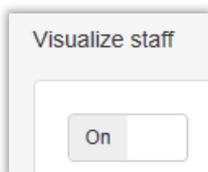
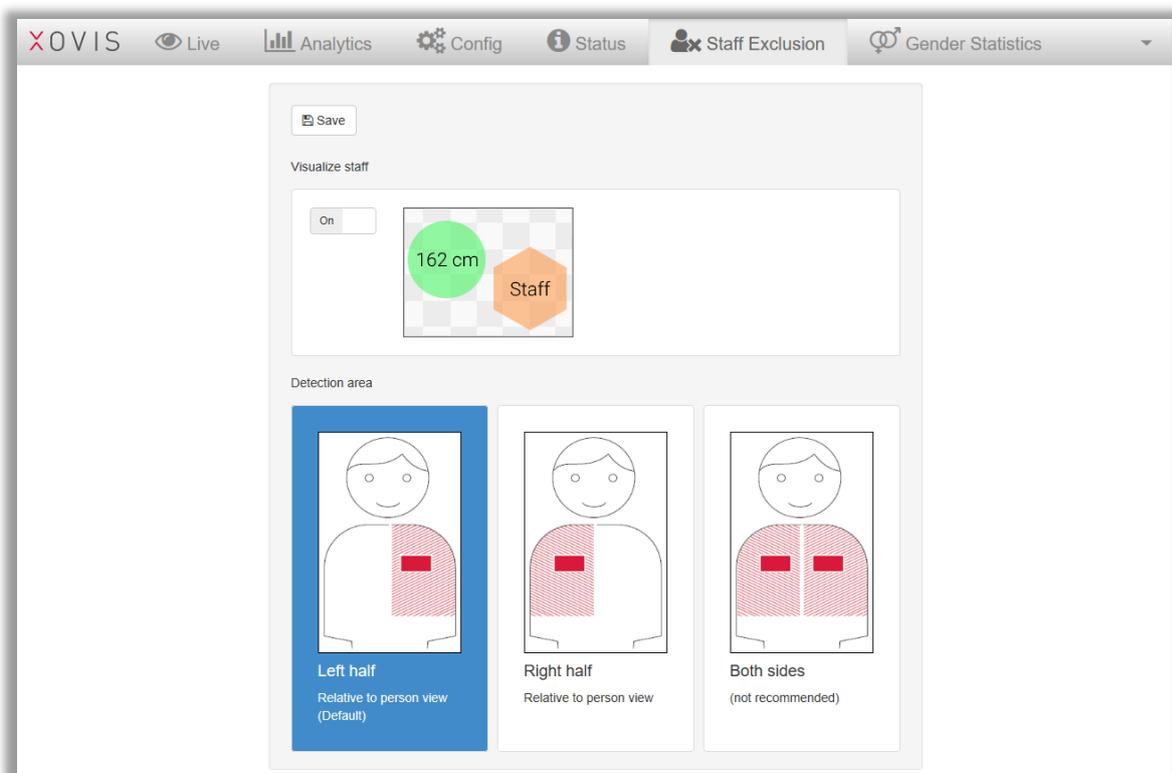


## 3 Staff Exclusion plugin

Once the plugin has been activated in the plugin section of the Config tab, a new tab “Staff Exclusion” is added to the main tab bar of the Xovis WebUI.

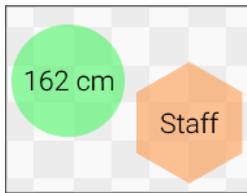


Click on the tab to see the settings.



**Visualize staff:** If set to ON, all people wearing a Xovis Staff Exclusion name tag (see separate documentation) detected by the sensor, will be highlighted as a staff member and thus excluded from counting.

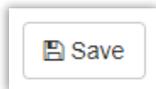
If set to ON (colors may vary):



If set to OFF (colors may vary):

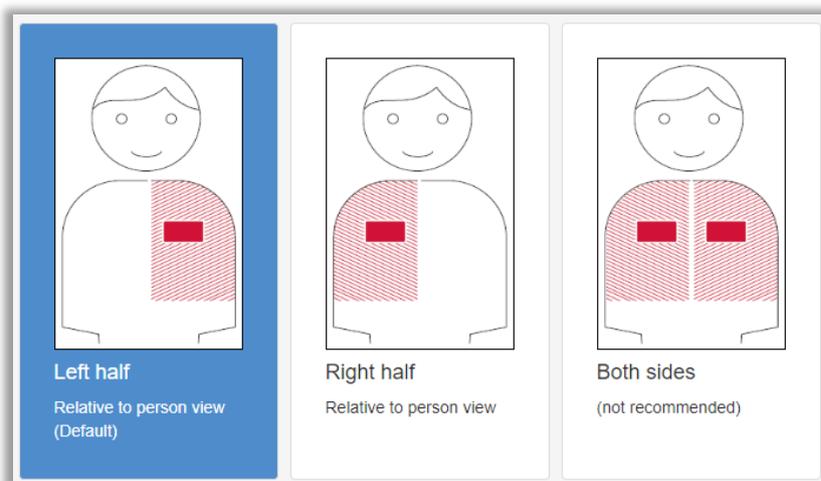


To save the configuration, click the “Save” button on top of the page.

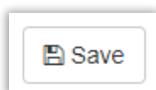


**Detection area:** The area on the frontal upper torso of a person, where the algorithm is searching for the Xovis Staff Exclusion pattern can be switched. There are three choices:

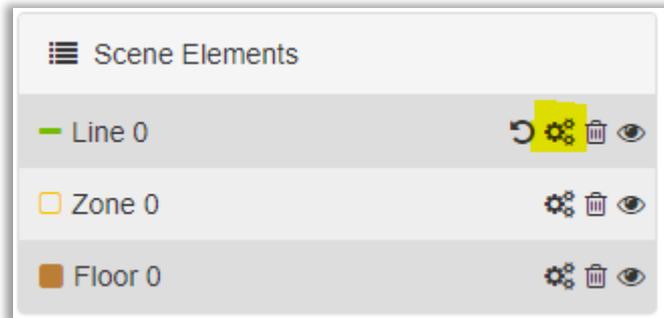
- *Left half:* The default setting places the detection area on the left upper frontal torso, from the middle towards the left armpit and from the lower ribs to the shoulders
- *Right half:* Sets the detection area on the right upper frontal torso, from the middle towards the right armpit and from the lower ribs to the shoulders. This setting is advisable if some staff members have a pacemaker (interference from magnetic name tag holder) or if a uniform does not allow placement on the left.
- *Both sides:* Sets the detection area to the whole upper frontal torso, from the left towards the right armpit and from the lower ribs to the shoulders. The tag can be worn on either side. **Please note:** this setting can reduce overall system performance and might lead to more false positive detections with customers standing close to staff.



To save the configuration, click the “Save” button on top of the page.



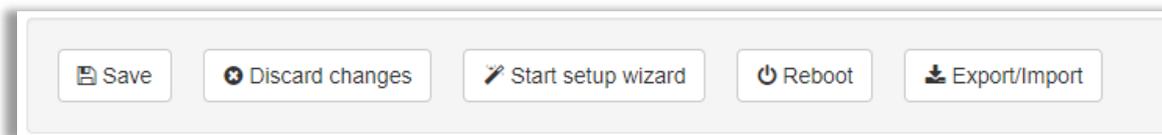
To use the Staff Exclusion plugin productively, go to the Config tab and draw a count line in the scene window. Click the  cog wheel symbol next to the entry of the count line in the “Scene elements” box:



In the appearing modal, activate the “Exclude staff” switch:



Then click “Close” to close the modal. After that, click “Save” in the bar on the top of the page:



Depending on the privacy level (visible only in level 0) the staff detections will now be visualized in the “Live” tab view. These bubbles/staff members will be excluded from counting.

## 4 AI-Plugin-specific API calls

API call	New from version 4.2.x	since
Coordinate Push & Object stream	Information about gender or staff tags →see changes in protobuf files provided separately.	4.2.0
Line count data Data Push	<p>For lines configured for gathering gender data, the XML/JSON document now includes information about female- and male-specific counting:</p> <pre> &lt;measurement&gt;   &lt;from&gt;2019-03-28T16:32:00+01:00&lt;/from&gt;   &lt;to&gt;2019-03-28T16:33:00+01:00&lt;/to&gt;   &lt;values&gt;     &lt;value label="fw"&gt;0&lt;/value&gt;     &lt;value label="bw"&gt;0&lt;/value&gt;     &lt;value label="maleFwPercentage"&gt;50&lt;/value&gt;     &lt;value label="maleBwPercentage"&gt;65&lt;/value&gt;     &lt;value label="femaleFwPercentage"&gt;50&lt;/value&gt;     &lt;value label="femaleBwPercentage"&gt;35&lt;/value&gt;   &lt;/values&gt; &lt;/measurement&gt; "measurement": [   {     "from": "2019-03-28T18:30:00+01:00",     "to": "2019-03-28T18:31:00+01:00",     "value": [       {         "value": 0,         "label": "fw"       },       {         "value": 0,         "label": "bw"       },       {         "value": 50,         "label": "maleFwPercentage"       },       {         "value": 65,         "label": "maleBwPercentage"       },       {         "value": 50, </pre>	4.2.0

	<pre>                 "label": "femaleFwPercentage"             },             {                 "value": 35,                 "label": "femaleBwPercentage"             }         ]     } ] </pre>	
<p>/api/count-data/select/csv</p>	<p>For lines configured for gathering gender data, the CSV document now includes information about female- and male-specific counting:              timestamp, forward-count, backward-count, male-forward-percentage, male-backward-percentage, female-forward-percentage, female-backward-percentage</p> <p>Example:              1553245140000,0,0,24,35,76,65</p>	<p>4.2.0</p>
<p>/api/count-data/select</p>	<p>For lines configured for gathering gender data, the XML document now includes information about female- and male-specific counting:</p> <pre> &lt;value&gt;   &lt;time&gt;2019-03-22T09:59:00+01:00&lt;/time&gt;   &lt;fw-count&gt;0&lt;/fw-count&gt;   &lt;bw-count&gt;0&lt;/bw-count&gt;   &lt;male-fw-percentage&gt;1&lt;/male-fw-percentage&gt;   &lt;male-bw-percentage&gt;64&lt;/male-bw-percentage&gt;   &lt;female-fw-percentage&gt;99&lt;/female-fw-percentage&gt;   &lt;female-bw-percentage&gt;36&lt;/female-bw-percentage&gt; &lt;/value&gt; </pre>	<p>4.2.0</p>
<p>/api/count-data</p>	<p>For lines configured for gathering gender data, the XML document now includes information about female- and male-specific counting:</p> <pre> &lt;ns2:line name="Line 0" id="0" sensor-type="SINGLE_SENSOR"&gt;   &lt;fw-count&gt;23&lt;/fw-count&gt;   &lt;bw-count&gt;19&lt;/bw-count&gt;   &lt;male-fw-percentage&gt;50&lt;/male-fw-percentage&gt;   &lt;male-bw-percentage&gt;65&lt;/male-bw-percentage&gt;   &lt;female-fw-percentage&gt;50&lt;/female-fw-percentage&gt;   &lt;female-bw-percentage&gt;35&lt;/female-bw-percentage&gt; &lt;/ns2:line&gt; </pre>	<p>4.2.0</p>

/api/data/historical/line/count	<p>For lines configured for gathering gender data, the XML document now includes information about female- and male-specific counting:</p> <pre>&lt;measurement&gt;   &lt;from&gt;2019-03-28T16:32:00+01:00&lt;/from&gt;   &lt;to&gt;2019-03-28T16:33:00+01:00&lt;/to&gt;   &lt;values&gt;     &lt;value label="fw"&gt;0&lt;/value&gt;     &lt;value label="bw"&gt;0&lt;/value&gt;     &lt;value label="maleFwPercentage"&gt;50&lt;/value&gt;     &lt;value label="maleBwPercentage"&gt;65&lt;/value&gt;     &lt;value label="femaleFwPercentage"&gt;50&lt;/value&gt;     &lt;value label="femaleBwPercentage"&gt;35&lt;/value&gt;   &lt;/values&gt; &lt;/measurement&gt;</pre>	4.2.0
/api/data/live	<p>For lines configured for gathering gender data, the XML document now includes information about female- and male-specific counting:</p> <pre>&lt;live-data&gt;   &lt;time&gt;2019-03-28T17:02:31+01:00&lt;/time&gt;   &lt;values&gt;     &lt;value label="fw"&gt;21&lt;/value&gt;     &lt;value label="bw"&gt;18&lt;/value&gt;     &lt;value label="maleFwPercentage"&gt;0&lt;/value&gt;     &lt;value label="maleBwPercentage"&gt;0&lt;/value&gt;     &lt;value label="femaleFwPercentage"&gt;0&lt;/value&gt;     &lt;value label="femaleBwPercentage"&gt;0&lt;/value&gt;   &lt;/values&gt; &lt;/live-data&gt;</pre>	4.2.0