

# AX-PeCo

## User Manual



People counter

ENGLISH



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# 1 Introduction and software requirement

## 1.1 Manual contents

This manual contains detailed information about the installation, configuration and use of the AX-PeCo software. The AX-PeCo software is installed on an AXIS camera turning it into a people counter based on video. With a 95% daily average over a fixed area data, it distinguishes between inputs and outputs and several people passing at the same time.

The application analyses the camera images and gets counter statistics data that can be consulted in the application or through the PeCoGraph application it allow access to different counters and process its data.

The PeCoGraph application can be downloaded for free from our web: [www.visual-tools.com](http://www.visual-tools.com) or from the AX-PeCo application into the Log tab, please see the section 6 *Data exploitation* :

Please remember the default passwords to access to the AX-Peco and the PeCoGraph applications:

### DEFAULT ACCESS PASSWORDS

	User	Password	Data
Camera	root	pass	Administrator user
	axpeco	pecouser	Viewer user (1)
PeCoGraph	peco	pecouser	Peco user (2)

- (1) This user only has access to the logs, live video and count downloads. The password can be modified in the camera user configuration.
- (2) This is the PeCograph default user; the password can be modified in the AX-PeCo application into the **Advanced** tab.

## 1.2 Software requirements

The AX-PeCo application is installed on AXIS cameras. The access and configuration are carried out through web browsers: Internet Explorer, Google Chrome and Firefox.

## 2 AXIS camera network installation

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### 2.1 Compatible camera models

The AX-PeCo can be installed on the following AXIS cameras:

- a. M3006-V model: ARTPEC 4 processor
- b. M3014 model: ARTPEC 3 processor
- c. M3204 model: ARTPEC 3 processor
- d. M3203 model: ARTPEC 3 processor
- e. M3004 model: Ambarella A5Sprocessor.
- f. M3005 model: Ambarella A5S processor.

It's important to know the processor's model because the AX-PeCo application is different for each one.

Download the application file form our web: [www.videosafe.net/AX-PeCo\\_Index.html](http://www.videosafe.net/AX-PeCo_Index.html)

The file has the following format: AX-PeCo\_version\_procesador.EAP

**Note:** Check over the configuration that the camera firmware is **at least** the following:

- a. M3006: Firmware 5.40.13
- b. M3014: Firmware 5.40.9.2
- c. M3204: Firmware 5.40.9.2
- d. M3203: Firmware 5.40.9.2
- e. M3004 y M3005: Firmware 5.40.5.6 and upwards.

**Note:** It is highly recommended to use the cameras only for the AX-PeCo application, other uses as recording or connection to video recording units can affect seriously AX-Peco performance.

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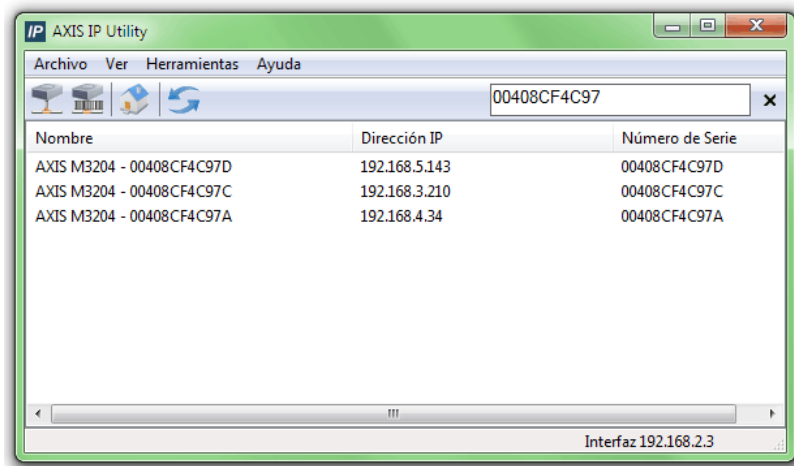
### 2.2 AXIS cameras Network installation

To install an AXIS camera it is necessary:

- A laptop with a **web browser** (Explorer, Chrome or Firefox).  
To connect to the camera and check it's operational.
- The **IPUtility.exe** application.  
This application allows you to configure the camera IP address; you can find it on the camera CD or download it from the AXIS web.
- **PoE power supply**.  
The cameras has PoE (IEE 802.3af) power, is a solution for powering to network video products. Use a PoE injector or ensure that the switch/router is PoE.

## Installation process

1. Connect the camera to the installation router/switch, or PoE inject. When it is connected a red led is switched on, that means it has power on.
2. Give to the camera a static IP address. Open the IPUtility application and check the IP address by the serial number. The serial number is on the camera label.



Select the camera and press on the button  change the IP camera address depending on the network it's going to be installed.

3. Connect to a camera from a web browser and configure the basic values:
  - The 3006 model has the *Capture Mode* configured as: HDTV 1080p 1920X1080 (16:9) @ 30/25 fps
  - 50Hz frequency.
  - Configure the basic network values in the Basic Setup/TCP/IP menu:
    - o Disable DHCP
    - o Configure the subnet mask and the default router.
  - Configure the advanced values in the Basic Setup/TCP/IP/Advanced TCP/IP settings.
    - o Add the DNS servers: 8.8.8.8 y 8.8.4.4
    - o Add http port
    - o Save the configuration before exit
  - Configure date and time into Basic Setup/Date&Time Settings.
    - o Select the option: *Use the following NTP server address.*
    - o Configure the NTP server as poo.ntp.org
    - o Select the time zone: GMT+1 and active the Daylight saving option.
  - Configure the video stream.
    - o In Basic Setup/Video Stream menu, fix the resolution to 320x180 and the maximum frame rate limited to 4ips.

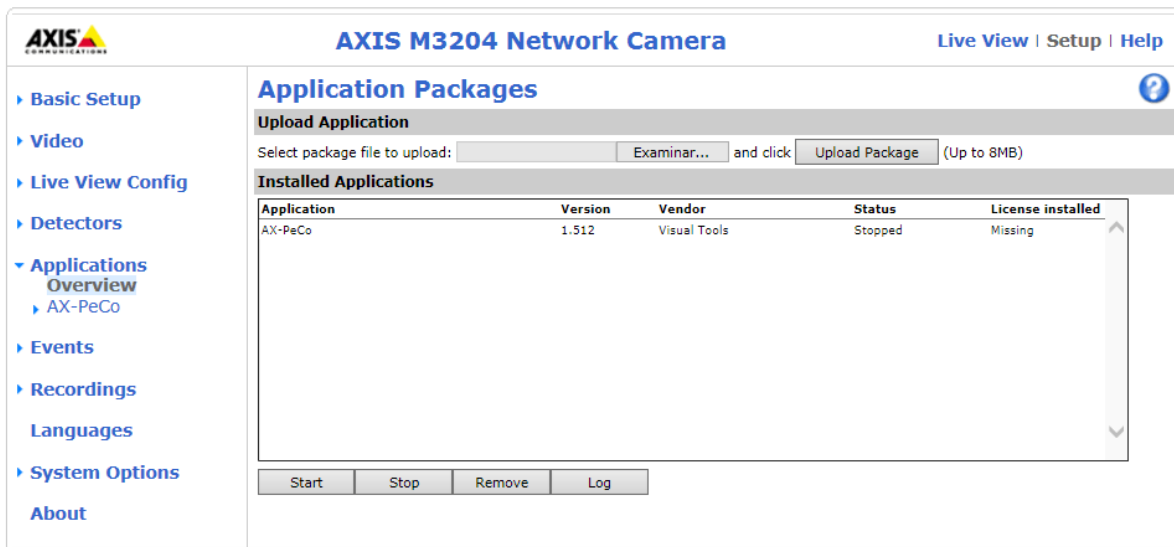
### 3 AX-PeCo Installation

You have to install the application on the camera starting on the camera's configuration screen, first select **Setup** in the top menu.

Second, inside **Applications** screen press the **Browse** button and select the corresponding EAP camera file, remind you can download the application file from our web:

[www.videosafe.net/AX-PeCo\\_Index.html](http://www.videosafe.net/AX-PeCo_Index.html)

The file has the following format: AX-PeCo\_version\_processor.EAP



Once the file is selected, click in the **Upload Package** button.

Finally, the AX-PeCo is installed; the following step is to install the license key.

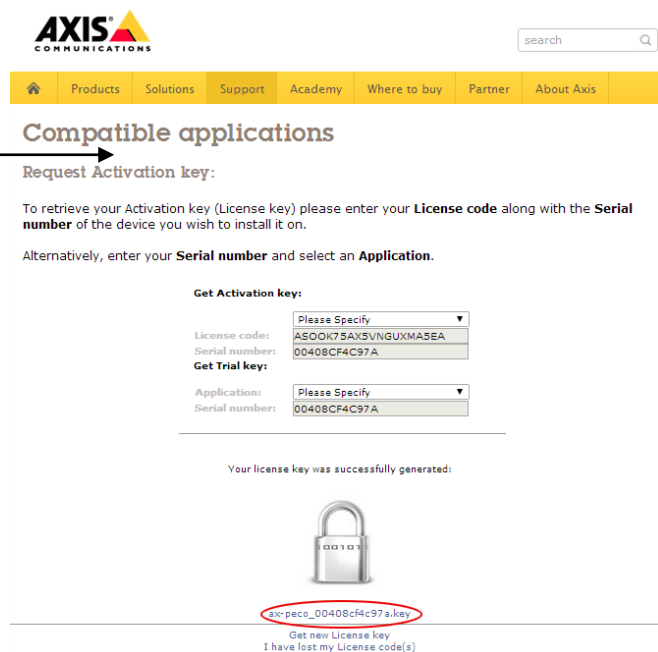
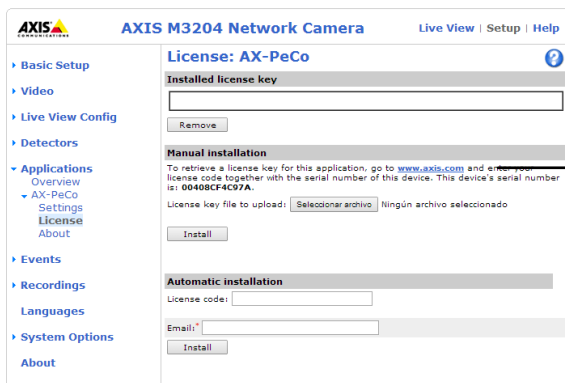
## 4 AX-PeCo license

To use the AX-PeCo application integrated in AXIS cameras it is necessary to buy and active a license per camera,

### 4.1 Steps to purchase a license code and get the activation key.

These are the steps:

- A. **Buy a license:** contact to your distributor, remember that each camera should have its own license. The distributor will provide a license code for each camera you wanted to use.
- B. How to get the **AX-PeCo Activation Key**. Open the camera configuration, select **Setup** in the top right menu, in the left menu selects **Applications** and the **AX-Peco** option, in the drop down menu click in **License**.



Click in the link on the **Manual Installation** section ([www.axis.com](http://www.axis.com)), it will connects to the AXIS license service ([http://www.axis.com/techsup/compatible\\_applications/](http://www.axis.com/techsup/compatible_applications/)). Insert the license code and the camera's serial number.

The serial number is in the **product label** and in the **Basic Setup** screen as **MAC address**.

Press the **Confirm** option and you will be informed of the successful generation of your license key. You can download the license key by clicking the link under the lock icon.

- C. The link has the **license key file name**, it identifies the application and the camera serial number , for example: **ax-peco\_00408cdc0533.key**



D. Considerations

If you try to get a license key of camera that has been activated already with a different license, it will appear a warning message to avoid spending a license needlessly on a camera with one already.

If you don't remember the license code used to activate the camera, Visual Tools can provide this information knowing the camera license.

There is no problem, if you have lost the camera license key or you have to activate it again, with the license code and the camera serial number you can generate the license key.

E. Trial License. You can also request for a **Trial License** which will allow you to **test the application for 30 days**.

After this period it will stop working. To get a trial license connect to the AXIS license service ([http://www.axis.com/techsup/compatible\\_applications/](http://www.axis.com/techsup/compatible_applications/)), and select the option **Get Trial Key**, choose from the list the AX-PeCo application and enter the camera serial number where it is going to be installed, press **Confirm** to end the process.

F. It appears the message: "Your license key was successfully generated", the link to download the license file it is placed under the padlock image.

G. License key installation. Go to the camera and select the menu **Setup/Applications/AX-Peco/License**. Click the **Browse** button to select your license key file and then press the Install button to install the license.

H. Final check. Click again on the **Applications** menu, select the **AX-PeCo** application in the list and check that it is running and that the license is installed (if the application is stopped, click on the Start button to make it run)

## 5 Counter configuration

To install a camera with the AX-PeCo, remember:

- The camera must be placed in an **overhead position**, perpendicular to the floor over the counting area.
- The **count line** is the imaginary line set to count people crossing in both directions.
- The camera must be placed as the virtual **Count Line** it's seemed as a horizontal line on the image.

For further information please consult the [technical note with the camera selection table based on the passage width and the available height](#) in our web [www.visual-tools.com](http://www.visual-tools.com)

### 5.1 Counter configuration

To configure the AX-PeCo application you must connect to the AXIS camera through a web browser (Explorer, Chrome, Firefox). Select **Live view** in the camera menu and click on the link **Visual Tools People Counter** at the bottom left corner.

Follow these steps:


1. Select the **Configuration tab**, on the screen there is an image of an overhead person, click on the **Refresh** button when a person is under the camera and centered in the field of view. This will help estimating the person size as viewed by the camera.

The screenshot displays the AX-PeCo web interface. At the top, the title 'AX-PeCo' is visible, along with system information: SN: D0408CE981EA, AX-PeCo version: 1.511, Camera model: M3006, Firmware version: 5.55.1.1, Status: RUNNING, Schedule: Working hours, and IP: 192.168.1.13. The interface has several tabs: Live, Log, Configuration (selected), Counting Schedule, and Advanced. The Configuration tab is active, showing a live video feed of a person walking through a doorway. The video feed has a timestamp of 2014-03-21 10:50:38 and the text 'IN' and 'OUT' with arrows indicating direction. A red horizontal line is overlaid on the video, representing the count line. A green rectangular area is overlaid on the video, representing the detection area. The configuration panel on the left has the following settings: Unit Name: TGPCorredor-Axi; Count Line Cursor position: (-, -); Origin X: 7, Y: 53; Width: 84; Person Width: 15; Input Direction: Upwards; Legend: Person (yellow circle), Count line (red line), Detection area (green area). At the bottom of the configuration panel, there are buttons for Refresh, Undo All, and Save. The Visual Tools logo is at the bottom center.

2. Count Line Configuration. On the left menu, use the arrows in the **Count Line** section to set up the people traffic line in the image. To define the **counting zone** use the arrows at the **Width** option.
3. Person Size Configuration. Use the arrows in the **Person width** section to match the **pink silhouette** to the actual person image.
4. Input/Output Configuration. Choose the **passing direction** in **Input Direction**, press the **Toggle** button to change the selection.


**Count Line**

Cursor position: (-, -)


Origin: 

X:

Y:

Width:  

**Person Width**

Width:  

**Input Direction**

Direction:

Finally don't forget to **save** the configuration; a message will appear confirming the configuration has been saved correctly.

## 5.2 Set a schedule

In this screen you can visualize and modify the establishment timetable where the camera is installed.

Select the **Counting Schedule tab** to set up a timetable. You can specify up to five different periods per weekday. Don't forget to **save the changes** before you leave the screen.

AX-PeCo

SN: 00408CF4C97A      Status: **RUNNING**

AX-PeCo version: 1.512      Schedule: Working hours

Camera model: M3204      IP: 192.168.4.34


Firmware version: 5.50.3

Axis Setup

Live
Log
Configuration
Counting Schedule
Advanced

Camera time: **2014-03-28 11:56:51**

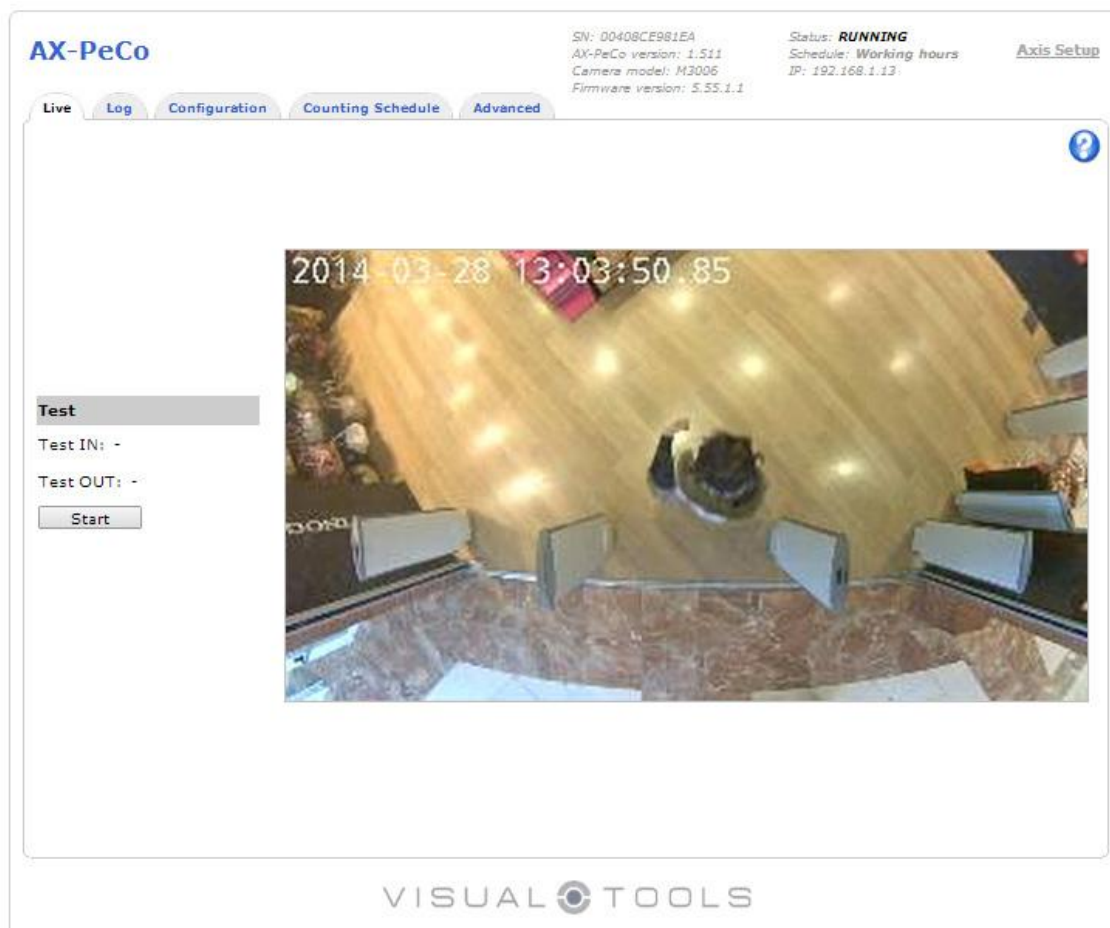
	From hh:mm	To hh:mm	Mo	Tu	We	Th	Fr	Sa	Su
Shift 1	<input type="text" value="00:00"/>	<input type="text" value="24:00"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Shift 2	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shift 3	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shift 4	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shift 5	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## 5.3 Check the counter is working

The AX-PeCo application has a test option to check when the counter is working properly.

Go to the **Live tab** to check that the AX-Peco is counting properly. Press the **Start** button and check that the counts are updated when people cross the counting line. Press **Stop** to end the test.



## 6 Data exploitation

The AX-PeCo application generates in the **Log** tab information of the in/ out daily counts and the weekly counts.

AX-PeCo 117

SN: 00408CF4F6E2  
 AX-PeCo version: 2.0  
 Camera model: M3004  
 Firmware version: 5.50.5.1

Status: **RUNNING**  
 Schedule: Working hours  
 IP: 192.168.5.131

[Axis Setup](#)

Live
Log
Configuration
Counting Schedule
Advanced

Camera time: **2014-12-16 12:43:15**

**Daily Counts**

	Hour																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
<b>IN</b>	0	0	0	0	0	0	0	0	1	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-
<b>OUT</b>	0	0	0	0	0	0	0	0	2	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-

**Weekly Counts**

	Day						
	Wed 10	Thu 11	Fri 12	Sat 13	Sun 14	Mon 15	Tue 16
<b>IN</b>	-	-	-	-	-	4	1
<b>OUT</b>	-	-	-	-	-	7	2

**Download logs**

From:

To:

Download here the counting management software PeCo-Graph  
[http://www.videosafe.net/PeCo-Graph\\_Index.html](http://www.videosafe.net/PeCo-Graph_Index.html)

You can download daily counts and five-minute counts per complete days. The information is stored on a zip file.

This information can be analyzed by the PeCo-Graph application, it allows you to get, visualize and analyze the AX-PeCo count data.

The PeCo-Graph application is free and available at the screen bottom link and our web: [www.videosafe.net/PeCo-Graph\\_Index.html](http://www.videosafe.net/PeCo-Graph_Index.html).

E.g.: Analysis screen of trend counts.





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