Edge-to-edge technology

Smart pairing of Axis devices

November 2024

AXIS
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1 Introduction

Edge-to-edge is a technology that facilitates the connection between different types of Axis devices. It enables smart pairing, which makes it easy to add extra functionality to your camera, radar, or intercom.

This white paper describes how edge-to-edge technology works and how it is used.

2 What is edge-to-edge?

An *edge device* is typically a data-producing device. It is a networking device that is located close to the user (or to the client device), rather than being in the backbone of the network. Axis is an expert provider of edge devices for security. Our comprehensive portfolio includes video cameras, speakers, microphones, intercoms, radars, and sensors, which are all IP based.

Based on the definition of edge device, *edge-to-edge technology* enables edge devices to connect with each other, or *pair*, without having to communicate with the core of the system.

3 Feature flexibility

With edge-to-edge, you can choose cameras that fit your need when it comes to visual surveillance but don't necessarily have all other features you might like. Features enabled by additional hardware such as speakers, microphones, intercoms, or radars could instead be flexibly added to the cameras of your choice. You can place the added devices where they're needed the most and change your preferences without having to reinstall or move cameras.

From the system's point of view, the feature that was added through pairing seems to be integrated in the camera. The paired device doesn't have to be connected to the VMS, which means you have the flexibility to use a VMS that doesn't support, for example, Axis speakers — as long as it supports Axis cameras with audio-out functionality.

But the main device doesn't have to be a camera. You could just as well pair a camera with an intercom in order to add video to the intercom's features. Or pair a speaker with a radar to provide the radar with audio-out functionality.

4 Pairing devices with a camera

When an Axis camera is paired through edge-to-edge technology with a network-connected speaker, radar, or microphone, the device's features will be integrated in the camera GUI (graphical user interface) together with the camera's original features. This means that after you have paired a camera that doesn't have audio capability, with a speaker, you can control the audio settings directly in the camera GUI. The

camera will identify itself to the VMS (video management software) as a camera with integrated audio output and redirect any played audio to the speaker.
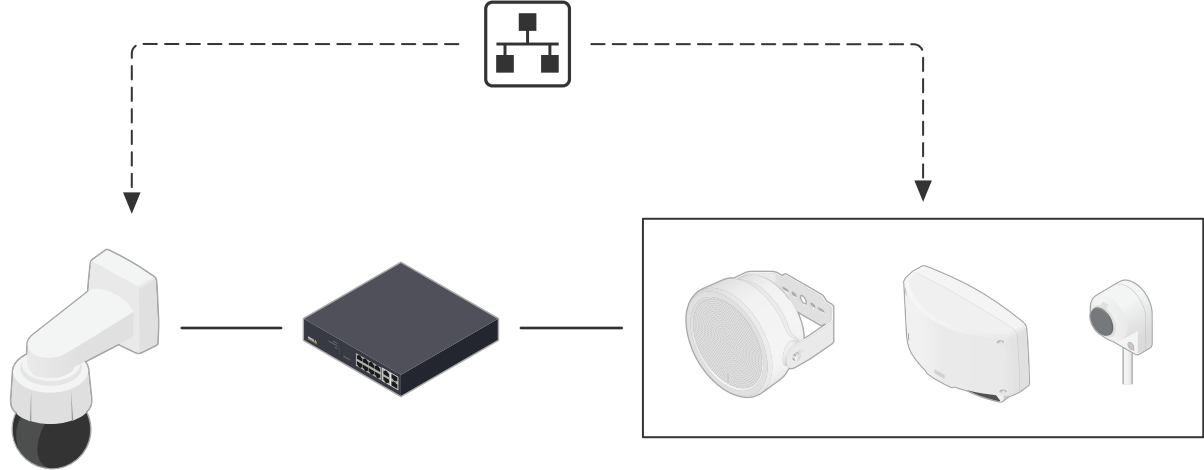

Figure 1. Edge-to-edge technology enables an Axis camera to pair with another Axis device, typically a speaker, radar, or microphone, to obtain seemingly camera-integrated features from that device.

5 Pairing devices with an intercom

Camera pairing through edge-to-edge enables you to add video functionality to an audio intercom. When paired, the intercom will fetch the camera's video stream and send it to recipients in VMS calls or SIP calls. You can control the camera from the intercom as if it was built-in.
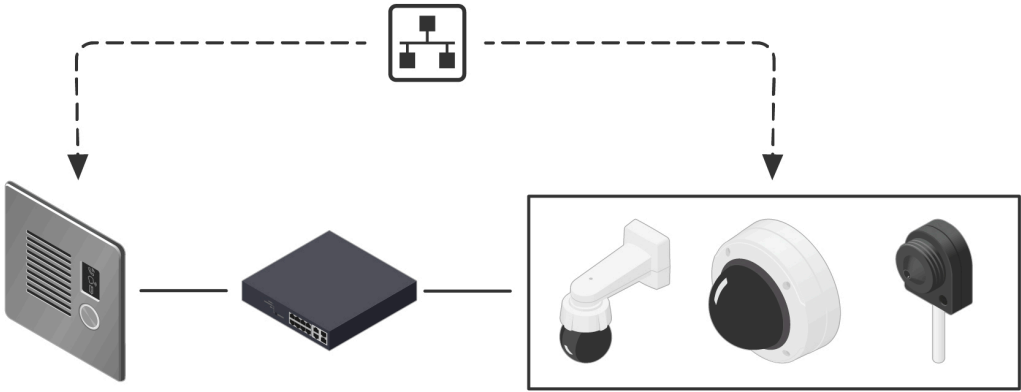

Figure 2. Edge-to-edge technology enables you to add video functionality to an Axis intercom by pairing it with an Axis camera.

6 Pairing devices with a radar

You can add video or audio functionality to a radar through camera pairing or audio pairing. Audio pairing allows you to use a compatible Axis network speaker as if it was part of the radar. Once it's been paired you can control the speaker from the radar's web interface and play audio clips and transmit sound.

Along with device pairing, the service radar autotracking is also based on edge-to-edge. This service is built-in in Axis radars and can be used when a PTZ camera and a radar are mounted very close together. It creates an edge-to-edge solution where the radar directly controls the camera.

7 Prerequisites

Both devices must be on the network and the main device must be equipped with edge-to-edge support in the device software. You can pair devices directly in the main device's web interface by entering the other device's IP address, username, and password.

If you pair a device and a camera, you must pair them before connecting the camera to the VMS. This is in order to ensure full compatibility. You can also pair devices by calling the JSON APIs (application programming interface) directly from the VMS.

8 Edge-to-edge compared with portcast

Since a few years back, Axis offers a hardware product that provides similar functionality as edge-to-edge. *Portcast* provides an audio and I/O interface to any device to which it is attached.

Portcast, however, comes with some limitations. Portcast is designed for analog audio, which means it can't be used with Axis speakers unless you also add another piece of hardware for analog-to-digital conversion. In addition, the portcast device is only for indoor use and it consumes power. Edge-to-edge is a handier solution that requires no extra hardware or power and can be used with both indoor and outdoor products.

About Axis Communications

Axis enables a smarter and safer world by creating solutions for improving security and business performance. As a network technology company and industry leader, Axis offers solutions in video surveillance, access control, intercom, and audio systems. They are enhanced by intelligent analytics applications and supported by high-quality training.

Axis has around 4,000 dedicated employees in over 50 countries and collaborates with technology and system integration partners worldwide to deliver customer solutions. Axis was founded in 1984, and the headquarters are in Lund, Sweden

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