

Edge-to-edge technology

Smart pairing of Axis devices

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1 Introduction

Edge-to-edge is a technology that facilitates the connection between Axis cameras and other Axis devices. It enables smart pairing, which makes it easy to add extra functionality to cameras.

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, such as a camera, a speaker, or a sensor. 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, radars, and sensors, which are all IP based.

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

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 does not have audio capability, with a speaker, you are able to 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.

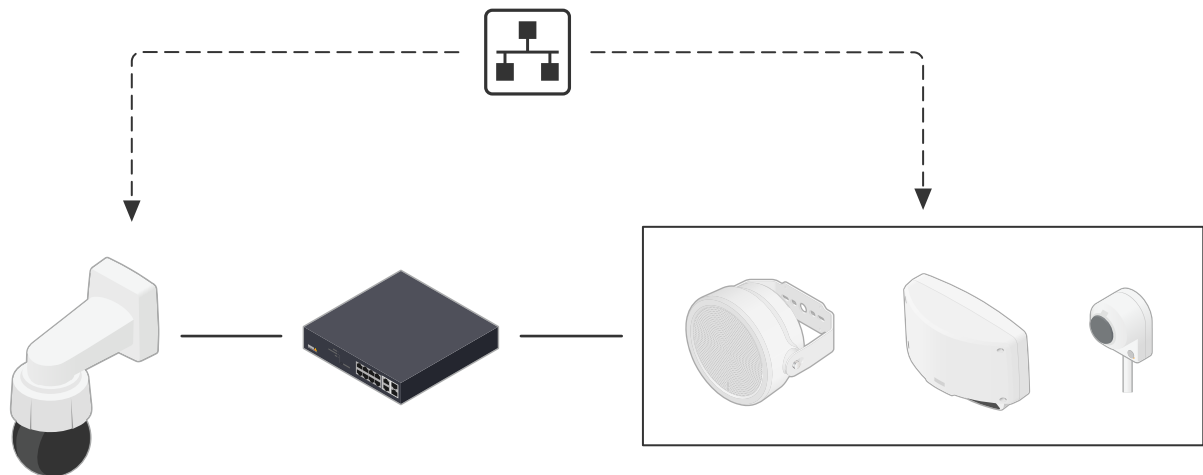


Figure 1. Edge-to-edge technology enables an Axis camera to pair with another Axis device, typically a speaker, radar, or microphone, to obtain seemingly camera-integrated features from that device.

3 Feature flexibility

With edge-to-edge, you can choose cameras that fit your need when it comes to visual surveillance, but which do not necessarily have all the other features you might like. Features enabled by speakers, microphones, or radars could instead be flexibly added to the cameras of your choice. You can place the

paired devices where they are 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 is integrated in the camera. The paired device does not have to be connected to the VMS, which means that you have the flexibility to use a VMS that does not support, for example, Axis speakers — as long as it supports Axis cameras with audio-out functionality.

4 Devices to pair

Along with speaker pairing, radar pairing, and microphone 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.

Camera pairing is also available, for adding camera functionality to a radar.

5 Prerequisites

Both devices must be on the network and the camera must be equipped with edge-to-edge support in the firmware. You can pair devices directly in the camera GUI by entering the other device's IP address, username, and password. Note that, in order to ensure full compatibility, you must pair the devices before connecting the camera to the VMS. You can also pair devices by calling the JSON APIs (application programming interface) directly from the VMS.

6 No extra hardware required

Since a few years back, Axis offers a hardware product that provides mainly the same functionality as edge-to-edge. *Portcast* provides an audio and I/O interface to any device to which it is attached, but this comes with some limitations. Portcast is designed for analog audio, which means it cannot 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