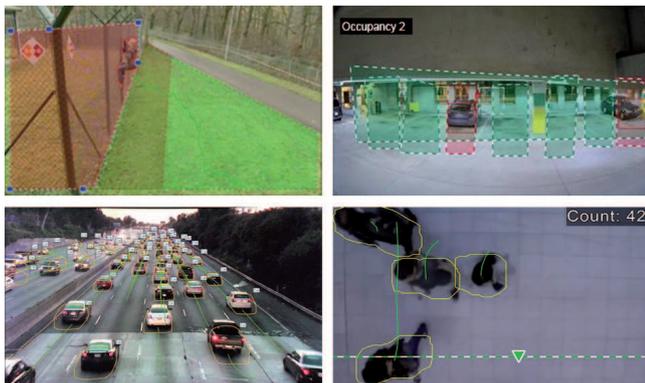


## Intelligent Video Analytics 8.10



Intelligent Video Analytics 8.10 from Bosch is the guard-assistant system of choice when you need mission-critical, long-distance intrusion detection in extreme weather conditions, traffic monitoring at intersections, highways or tunnel, high-performance people counting or other high-performance video analytics.

Intelligent Video Analytics 8.10 includes state-of-the-art artificial intelligence (AI) based detectors for video analysis that reliably detects, tracks, and analyzes moving objects while suppressing unwanted alarms from spurious sources in the image.

Advanced tasks like multiple line crossing, route following, loitering, idle and removed object detection, counter flow detection, crowd density estimation and people counting are available. Object filter based on size, speed, direction, aspect ratio and color can be defined. Latest artificial intelligence based detectors for persons, cars, trucks, busses, motorbikes and bicycles allow for high performance even in dense traffic or crowds.

Intelligent Video Analytics 8.10 allows you to record all of the object information and change the rules even after the fact for fully configurable forensic search.

### Functions

#### Mission-critical, long-distance intrusion detection

Intelligent Video Analytics 8.10 is continuously developed in-house by the Bosch research group and brings the latest level of intelligence to the Intelligent Video Analytics.

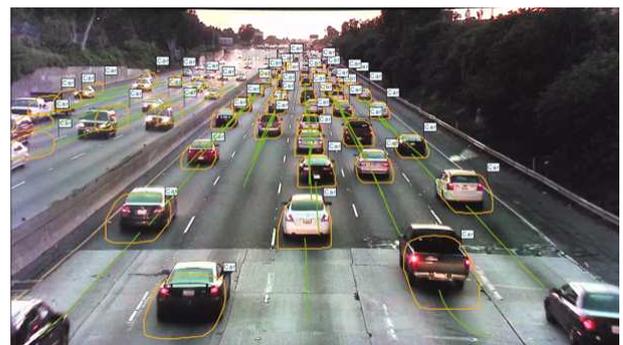


- ▶ AI based detectors for object detection and classification in crowded scenes
- ▶ Mission-critical, long-distance intrusion detection in extreme weather conditions
- ▶ Traffic monitoring for intersections, highways and tunnels
- ▶ High-performance people counting and asset protection
- ▶ Live alarming and forensic search

Intelligent Video Analytics 8.10 intelligently adapts to difficult conditions like changes in lighting or environment such as rain, snow, clouds, and leaves blowing in the wind. It also compensates automatically for camera shaking.

#### Traffic monitoring for intersections, tunnels and highways

Intelligent Video Analytics 8.10 comes with new artificial intelligent detectors for cars, trucks, busses, motorbikes, bicycles and persons, allowing for traffic monitoring at intersections, tunnels and highways including traffic light queue length detection and accurate counting statistics even in dense traffic.



#### High-performance people counting

Intelligent Video Analytics 8.10 offers high-performance people counting. Recommended are top-down views for minimal inter-person-occlusion. In other fields of view, new artificial intelligent detectors for persons detect and separate these for accurate counts.

### Tamper detection

The built-in tamper detection generates alarms on camera hooding/masking, blinding, defocusing, and repositioning.

### Dedicated tracking modes

Intelligent Video Analytics 8.10 includes dedicated tracking modes optimized for the following tasks:

- Intrusion detection
- Indoor people counting
- Asset protection (do not touch!)
- Tracking of ships

### Alarm and statistic tasks

The following alarm and statistic tasks are available:

- Detect objects within, entering, or leaving a single area or up to 3 areas in a specified order
- Detect multiple line crossing from single line up to 3 lines combined in a specified order
- Detect objects traversing a route
- Detect loitering in an area related to radius and time
- Detect objects which are idle for a predefined time span
- Detect removed objects
- Detect objects who's properties such as size, speed, direction, and aspect ratio change within a configured time span according to specification (for example something falling down)
- Count objects crossing a virtual line
- Count objects within an area and alarm if a predefined limit is reached
- Detect a certain crowd level in a predefined field
- Detect specified motion direction and speed even in crowds (for example a person moving the wrong way in a one-way gate)
- Detect objects that move contrary to the motion of all other objects in the scene, even in crowds
- Take snapshots of frontal faces
- Combine tasks using scripts

### Filters

To enhance robustness, Intelligent Video Analytics 8.10 can be configured to ignore specified image areas and small objects. For calibrated cameras, Intelligent Video Analytics 8.10 automatically distinguishes between upright persons, cars, trucks, busses, motorbikes and bicycles. Furthermore, object size, speed, two-way direction, aspect ratio, and color filters can be used in any combination to create specific detection rules for exactly the objects you are looking for. Statistics on object properties are stored and can be displayed for fine-tuning the object filters. Object properties can also be defined by selecting an appropriately similar object in the video.

### Intelligence-at-the-edge concept

Intelligent Video Analytics 8.10 is available in Bosch cameras and encoders. This intelligence-at-the-edge concept allows a decision which videos are captured

based on video content analysis. By only selecting alarm video for streaming or recording, less bandwidth and storage is used.

Alarm conditions can be signaled by a relay output on the unit or an alarm connection to stream video to a decoder or video management system. Alarms can also be transmitted to a video management system to start extended alarm scenarios.

As well as creating alarms, Intelligent Video Analytics 8.10 produces metadata that describes the content of the analyzed scene. This metadata is sent over the network and can also be recorded together with the video stream. The metadata includes the geolocation of objects, the position of tracked objects in map coordinates.

### Forensic Search

The recorded metadata can be used for a full forensic search where the rules can be changed even after the fact within the Bosch Video Management System or the Bosch Video Client. New tasks can be defined and adapted for each search, and the recorded metadata is then scanned and evaluated accordingly.

Forensic Search is very time efficient and can scan a huge recording database for events within seconds.

### Intuitive graphical user interface

Setup is available using the device web page or the Configuration Manager program. A wizard-based graphical user interface guides through the configuration and provides all the necessary tools to set up Intelligent Video Analytics 8.10 and specify detection or counting tasks. All configuration options are visualized exemplarily as overlays for feedback and can directly be manipulated for intuitive configuration. When motion is detected, the object is outlined in yellow on the display and its motion is displayed as a green trajectory. If an object and its motion match the rule conditions defined for one of the detector tasks, an alarm is created and the object outlines are switched to red. Additionally, an idle object is marked with an [I] and a removed object with an [X].

### Support for specific use cases

Intelligent Video Analytics 8.10 offers easy setup by providing optimal default values for several applications. Calibrate the camera, then simply select the desired use case and adapt the offered alarm fields and lines to your field of view. This is available for the following scenarios:

- Intrusion detection (smaller area, single alarm field)
- Intrusion detection (long distance, 2 alarm fields must trigger)
- People counting
- Traffic monitoring (automatic incident detection with wrong way detection, pedestrian detection, slow vehicles, stopped vehicles and dropped objects)
- Traffic monitoring (wrong way detection)

### Automatic calibration

Perspective can be taught to Intelligent Video Analytics to give Intelligent Video Analytics the power of 3D understanding of the scene, resulting in real sizes, object speed, automatic object classification and best-performance long-distance detections and people counting.

The latest generation of Bosch IP cameras includes sensors automatically detecting the angle of the camera to the ground. If the camera has a predefined lens, whether fixed or varifocal, the calibration will also know the focal length of the lens. Thus teaching Intelligent Video Analytics 8.10, perspective can often be done by simply entering the elevation of the camera.

### Configuration complexity on demand

In the minimal configuration, Intelligent Video Analytics 8.10 will alarm on any object in the scene. More complex setups are supported as well: Up to 8 independent tasks can be set up in the GUI, and the alarm objects for each task can be restricted according to their properties. Camera calibration can be added for perspective correction and to obtain object properties in metric or imperial systems. Half-automated calibration wizards are available to support the calibration. A task script editor is available for fine-tuning and combining predefined tasks, and additional 8 tasks can be set up there.

### Installation/configuration notes

Bosch IP cameras are grouped by their common product platform (CPP) generation. Intelligent Video Analytics 8.10 is available on Bosch IP 7000 - 9000 cameras with CPP6, CPP7, CPP7.3, CPP13 and CPP14.

Artificial intelligence based detectors for high-performance traffic monitoring and people counting are available on dedicated INTEOX cameras with CPP13. For further details, refer to the INTEOX camera datasheets.

The Configuration Manager program is available for download from the Bosch website. The Configuration Manager program can be installed as often as required on any PC that is used to configure Intelligent Video Analytics 8.10 and the products themselves.

### Technical specifications

#### Common product platform (CPP)

Intelligent Video Analytics 8.10	Available on Bosch IP 7000 - 9000 cameras with CPP6, CPP7, CPP7.3, CPP13 and CPP14.
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#### Common product platform (CPP)

#### Ordering information

##### MFT-IVA Intelligent Video Analytics

Intelligent Video Analytics 8.10 software available on Bosch IP 7000 - 9000 cameras with CPP6, CPP7, CPP7.3 and CPP13.

Order number **MFT-IVA | F.01U.363.062**

##### MVC-CT-PTZ License for PTZs

Camera Trainer license for Intelligent Video Analytics 7.10 on PTZ cameras. Free-of-charge software module.

Order number **MVC-CT-PTZ | F.01U.365.079**

##### MVC-CT-FLX License for FLEXIDOMES

Camera Trainer license for Intelligent Video Analytics 7.10 on FLEXIDOME cameras. Free-of-charge software module.

Order number **MVC-CT-FLX | F.01U.365.080**

##### MVC-CT-DIN License for DINIONS

Camera Trainer license for Intelligent Video Analytics 7.10 on DINION cameras. Free-of-charge software module.

Order number **MVC-CT-DIN | F.01U.365.081**

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