

IVA Pro Privacy with FW 9.40

Whitepaper

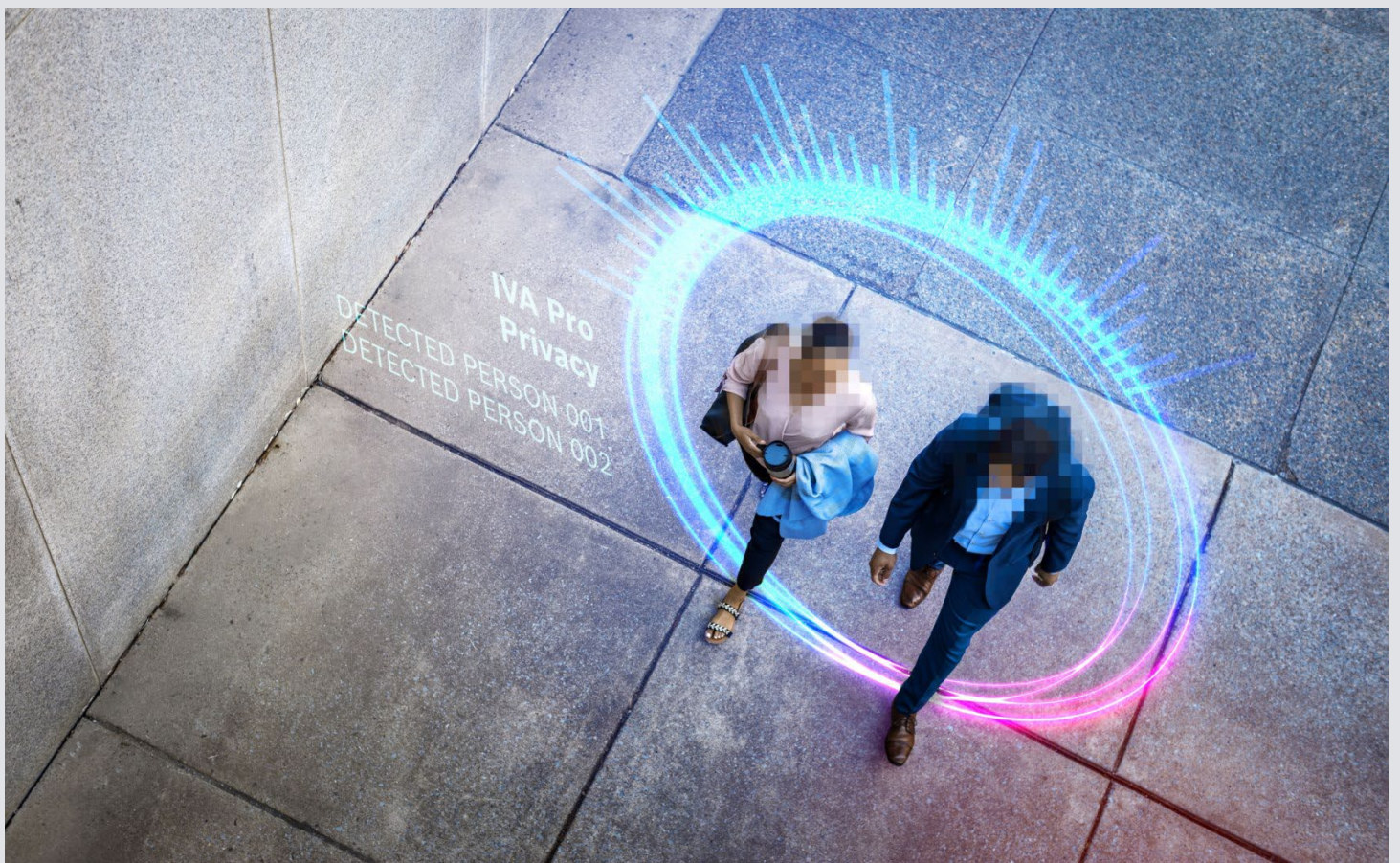


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1 Introduction

Privacy protection is important to ensure personal rights and to conform to the legal requirements and corporate regulations. IVA Pro Privacy supports with this by automatic “AI-based blurring” of people, faces, vehicles or general IVA objects as soon as they are detected, or by hiding the video fully while still providing anonymized metadata. Thus, IVA Pro Privacy provides full details of the scene to maintain security or gather statistics without revealing potentially sensitive information.

Example applications include:

- ▶ Masking vehicles for privacy conform traffic monitoring
- ▶ Anonymize workers in manufacturing plants
- ▶ Anonymize employees and guests in buildings

2 Features

- ▶ Semi-transparent privacy mask: IVA Pro Privacy uses a semi-transparent privacy mask, ensuring anonymization while still getting insights about moving objects in the area.
- ▶ IVA Pro behind privacy mask: IVA Pro Privacy offers the option to mask the camera image fully or partially, but still allowing other IVA Pro versions to run in these areas, obtaining anonymized metadata, counting statistics and alarm events while protecting the privacy of the people involved.
- ▶ Masking IVA Pro objects: IVA Pro Privacy offers to dynamically mask all of the objects detected by other IVA Pro variants, ensuring their privacy while giving the operator an unhindered view of the rest of the scene.
- ▶ Synchronized video & metadata: IVA Pro Privacy synchronizes video stream and IVA Pro objects for best anonymization performance.
- ▶ Selectable per stream: IVA Pro Privacy can be configured individually per encoder stream, allowing anonymization of people in the live view but still conserving evidence in a recorded stream which can be restricted to a tighter user group. All of the IVA Pro Privacy options can be combined in each stream to best suit the targeted application and required privacy levels.
- ▶ Combinable with other IVA Pro versions: IVA Pro Privacy can be added to any IVA Pro variant that detects and tracks objects like IVA Pro Buildings, IVA Pro Perimeter, IVA Pro Visual Gun Detection, IVA Pro PPE and IVA Pro Appearance.
- ▶ Class-based privacy protection: Select which IVA Pro objects should be masked. Either mask all IVA Pro objects, or only faces, only persons or only vehicles. For example, decide that in your application it is enough to mask the persons heads to preserve their anonymity, but show the rest of their bodies for production monitoring.

3 Limitations

- ▶ Only available on CPP14
- ▶ 3100i series cameras are not supported
- ▶ FLEXIDOME multi is not supported
- ▶ Dewarped modes in FLEXIDOME panoramic are not supported
- ▶ 60fps is not supported. Note that while the encoder will automatically use 30fps instead, other parts of the camera may still use 60fps resulting in further limitations. Best set to 30fps directly.
- ▶ IVA Pro Privacy can be used together with IVA Pro Buildings, IVA Pro Perimeter, IVA Pro Traffic, IVA Pro Visual Gun Detection, IVA Pro PPE and IVA Pro Appearance.
- ▶ Head/face detection only available with IVA Pro Buildings, IVA Pro Traffic, IVA Pro PPE and IVA Pro Appearance
- ▶ Person and vehicle detection only available where IVA Pro supports these classes.
- ▶ The synchronization delays the video by 7 frames. If metadata is delayed more than 7 frames, then object-based blurring will not happen. Metadata may be send out before the video, and as live view shows what is available, will appear to “move” before the objects. This is similar to the delay of metadata which happens in the asynchronous normal modes.
- ▶ 4k / 9MP cameras are not able to deliver full frame rate with IVA Pro Privacy active, and their jpegs are not always anonymized correctly.

- ▶ 4/5 MP cameras may drop the framerate when 90/270° rotations are enabled.
- ▶ When burring is activated in the cameras installer menu, the following encoder stream limitations apply:

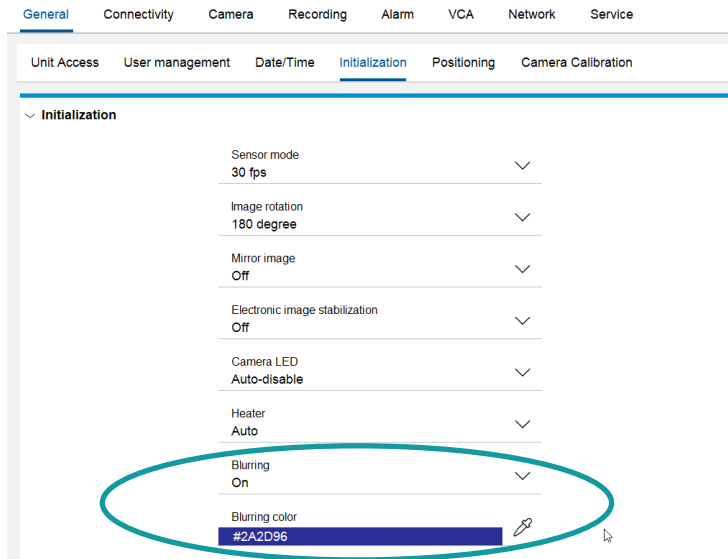
INPUT	STREAM1	STREAM2	STREAM3	STREAM4
1920 X 1080	1920 x 1080	1280x720	copy	copy
2592 X 1944	1920 x 1440	640 x 480	copy	copy
3840 X 2160	3264 x 1840	copy	copy	copy
	2688 x 1512	copy	copy	copy
	1920 x 1080	1280x720	copy	copy
2688 X 1520	2688 x 1520	768 x 432	copy	copy
	1920 x 1080	1280x720	copy	copy
2688 X 1520 60FPS + ROTATE	1920 x 1080	copy	copy	copy
3008X3008	2112x 2112	copy	copy	copy
	1792 x 1792	1024 x 1024	copy	copy
2112X 2112	2112x 2112	copy	copy	copy
	1792 x 1792	1024 x 1024	copy	copy

- ▶ Privacy masks and other orientation-related parameters must be checked and eventually re-assigned after rotating a camera.
- ▶ With electronic image stabilization (EIS) enabled:
 - As privacy masks are applied to the sensor image, privacy masks may jump depending on the corrections induced by EIS and not exactly match with the drawn area.
 - Privacy masks might not match the drawn area depending on the EIS state since the masks are applied before image stabilization. It might be advised to slightly enlarge the privacy mask areas to ensure privacy.
 - The virtual movement of privacy masks and the resulting unveiling of background around the masks might cause false motion detection.

4 Configuration

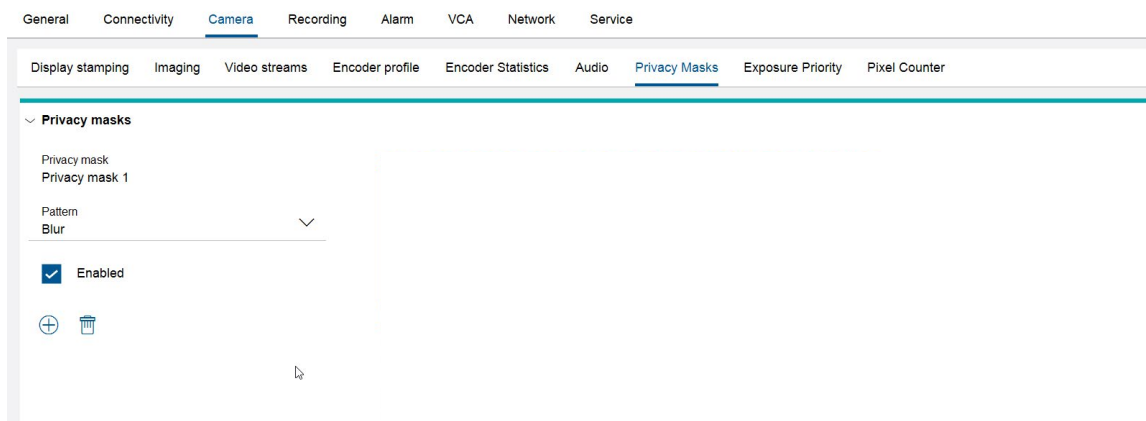
4.1 Enable the “blurring”

In the Configuration Manager, go to **General** -> **Initialization** and set **Blurring** to **On**. You can also configure the color of the blurry mask there.



Once this is enabled, the video is buffered half a second in order to synchronize video image and metadata, to ensure the anonymization will happen at the right location and the right time.

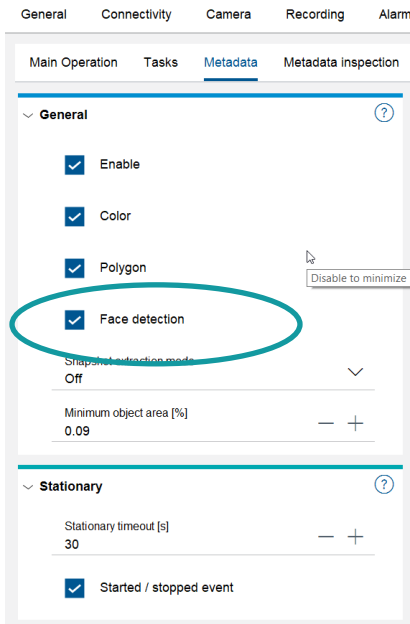
4.2 Stationary privacy masks / IVA behind privacy masks



For masking out stationary areas, or to fully mask the video while still obtaining metadata. In the Configuration manager, go to **Camera** -> **Privacy Masks** and draw and enable a new privacy mask. Ensure that the Blur pattern is selected, otherwise IVA Pro cannot generate metadata behind the privacy mask.

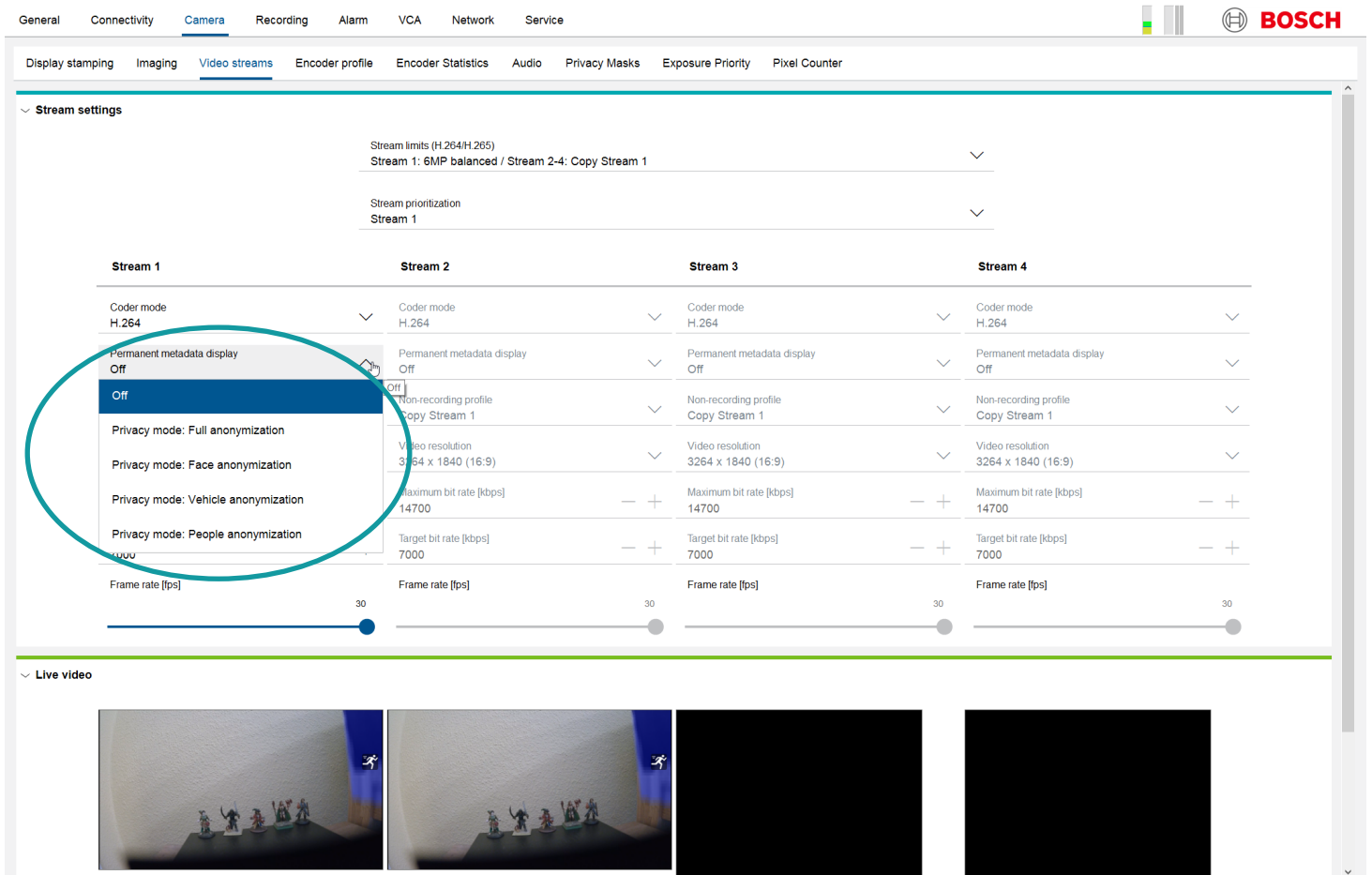
4.3 Enable face detection

Face anonymization is available with IVA Pro Buildings, IVA Pro Traffic, IVA Pro PPE and IVA Pro Appearance. Activate it by going to **VCA**->**Metadata** and set face detection to on.



4.4 Anonymization of moving objects

For masking out IVA Pro objects, go to **Camera -> Video streams** and set the **Permanent metadata display** to mask out the desired objects. Depending on the camera and IVA Pro version, different options may be shown.



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