

PixelPro GXi Imbedded Intelligence FAQ v1.0.1

Frequently Asked Questions

What are the most important factors that contribute to a successful PixelPro GXi w/ Imbedded Intelligence installation?

- Camera position. If the camera can't see; it can't detect.
- Lighting. If there is glare and or reflections, the camera will 'see' objects and generate a false alarm.
- Reasonable expectations – if a scene is too busy, or too distant, or unclear, the camera will not be able to detect and analyze the video it is being presented with.

What is the difference between video motion detection and video analytics?

Video motion detection (VMD) is a way of defining activity in a scene by analyzing the differences that occur in a series of images. This is usually done by pixel matching or frame referencing. Any change between frames is regarded as a 'detection'. The functionality can either be built into a network video product or made available with video management software. An in-picture alarm feature will allow users to define specific areas of a screen where any visual changes should be detected

Video Analytics analyzes live or recorded video and generates data for pre-emptive action or data mining purposes. It is generally regarded as superior to video motion detection as it identifies items of interest, eliminates the cause of many false alarms, and can provide more useful information.

Although the capability of Video Analytics software offered by various manufacturers differ, the general functionality is in most cases based on 'rules', 'filters', or 'algorithms' which can be embedded in cameras, PC video capture cards, Network Video Servers and other video hardware.

What does a user get with the Imbedded Intelligence standard 'Presence' level of Video Analytics?

The Imbedded Intelligence 'Presence' level offers tracking of up to 100 moving and stationary targets, with up to 40 overlapping detection zones and lines which detect activity and create alert events. Alert events can be e-mailed to designated personnel, and used to trigger sirens, transmit audio messages and lock doors, as well as generate pop-up messages on control room monitors.

The software can be configured to filter out the effects of foliage movement, shadows and change in weather conditions as well as to compensate for camera shake. A camera tamper feature is also included to alert if there is blur, loss of video or a scene change.

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What's the difference between VCAproIP-01 and the other Imbedded Intelligence packages?

The Imbedded Intelligence software is available in modular form which provides customers with the option to only pay for the appropriate level of functionality as and when it is required.

There are a range of Imbedded Intelligence packages to choose from, including VCAproIP-01.

In addition to the features of the standard 'Presence' package, additional rules or filters are available such as entry, exit, appear, disappear, dwell/loitering, stopped, direction, abandoned and removed objects, tailgating, counters, color filters, stabilization, and fog and smoke enhanced viewing.

VCAproIP-01 also provides a different tracker specially designed to track people taking advantage of spatial symmetry and color information to continue tracking people accurately through occlusion and people standing still for long periods of time.

Calibration is available for 3D modeling to determine speed and for object classification. There is a non-tracking vehicle or people counting line with shadow and size filters to increase accuracy. Count Report Manager program allows the user to aggregate counts and develop real time reports, charts, and graphs.

Information on the various Imbedded Intelligence packages can be found at: www.ganzsecurity.com.

When should I purchase an Imbedded Intelligence package?

Either at the time of purchase of a Ganz PixelPro GXi camera, or at a later date, when an analytics license, greater than Imbedded Intelligence "Presence" is required.

What are the minimum frame rates I can use for recording video if I am using the Imbedded Intelligence embedded in a camera or video encoder?

There are no minimum recording rates from the camera as the analysis is always carried out prior to encoding and transmission. From an encoder, a minimum of 10 fps is required. We would however recommend 15 fps.

Can I setup the analytics without ActiveX?

No, the Imbedded Intelligence software requires Active X.

Is there a discovery tool for your cameras?

Yes. The Admin tool can be found on the included CD, and at www.ganzsecurity.com. When you open this tool, it will find all cameras and devices on the local network.

PixelPro GXi

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What is the minimum number of pixels on target to identify a type of object?

It depends on the algorithm being used. In most cases the algorithm can detect an object that is less than 0.1% of the image area.

What is the difference between the counters used by the rules and the counters used by the “counting rule”?

The counters are the same but operate differently. The “rules counters” increment, decrement, or maintain counts based on occupancy and are driven by rules, violations or events. The counting line uses the counters to add instances of objects, e.g. cars or people, which cross the counting line.

What is the maximum number of Imbedded Intelligence rules I can run on a camera?

Theoretically there is no limit to the number of Imbedded Intelligence rules that can be run on a camera or IP device. The maximum number of zones and lines that the user can create is 40. However, one of the most important elements to bear in mind is the processing performance of the cameras and what might already be loaded on it. For example, approximately 75-80% of the processor will be utilized if an H.264 video stream is running at 30fps at D1 resolution. The device will therefore fail if the user tries to run two video streams. It is nevertheless practical to simultaneously run two or three rules and one or two video streams by managing the codecs and frame rates of the video streams.

How accurate is Imbedded Intelligence of the PixelPro GXi?

It depends greatly on what comparison or measurement is being made. The UK Home Office Scientific branch certified that the analytics engine used by the Imbedded Intelligence passed a battery of tests in which the analytics were correct greater than 95% of the time. In several counting scenarios, accuracy in the 98%+ range has been attained. Accuracy is highly dependent on camera position, lighting, quality, and application scenario. In general, by applying the analytics and tuning them for the application scenario, the results are very accurate and a significant improvement over what was in place before the video analytics were applied.

Do you have to re-create the rules every time you upgrade the firmware or change the camera?

No, you can store all the rules and settings for a specific view in a database and then re-install them after the change. We strongly recommend that a user takes a look at the scene to make sure the boundaries are still accurate and the scene is exactly what is required.

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What is metadata?

Metadata is 'data about data'. In the field of Video Analytics, it means the output created by the software. Metadata sent with a video stream describes the motion and properties of objects in the video scene on a frame-by-frame basis, together with events, counts and other status and debug information. Metadata for a specific alarm event would include information about the event or alarm being triggered by the rule violation. It consists of the object pixel information (boundary box and trails), location, status, event or rule notification associated with the alarm, and the values of any pre-configured counters.