# OptaSense

# Integration White Paper

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# 1. Introduction

This document indicates the features/abilities of OptaSense when integrated with CathexisVision software. Functionally, this integration will include the triggering of standard CathexisVision system events, based on information received from the device.

For instructions on installation or configuration of the integration, please consult the ***OptaSense Integration App-note***, available on the Cathexis website, and/or the ***CathexisVision Setup Manual***.

## 1.1 Integration Purpose

OptaSense uses distributed fiber-optic sensing (DFOS) to detect and process unique acoustic signals, identifying and locating threats in real time, with point-locating capabilities to 10m. This techonology has both industry and security applications, including perimeter security, border security, and strategic asset protection. Combined with OptaSense's advanced software algorithms, the Perimeter Intrusion Detection System (PIDS) detects activity and classifies on stealth approach, personnel, vehicles, manual and mechanical digging. This data is sent to CathexisVision, where alerts can be used to trigger CathexisVision system events, such as recording cameras or sending notifications.

## 1.2 Requirements

### 1.1.1 General Requirements

- CathexisVision 2017.2 and later.

### 1.1.2 License Requirements

| License | Name | Description |
|---------|------|-------------|
| COPS-2000 | OptaSense Device License | This license is the "base" license to integrate with the OptasSense system. It is applied to the server to which the OptaSense device is connected. It will allow for the connection of a single OptaSense system. |
| COPS-1001 | OptaSense Object License | These licenses apply to the sensors in the OptaSense system. The **COPS-1001** will license a single sensor, and may be added on a sensor-by-sensor basis. |
| COPS-3000 | OptaSense Bundle license - includes license and unlimited objects. | This license includes the **COPS-2000** OptaSense device license, and also provides support for unlimited **COPS-1001** object licenses. |

**Note**: In this integration, individual devices will require a license for each device.

**A NOTE ON CAMERA CHANNELS**

The CathexisVision software packages have **limits on camera channels**. A multi-sensor camera is physically a single device (camera) but it requires a camera channel for each one of the internal cameras. The same applies to an encoder: a 16-channel encoder will account for 16 camera channels on the CathexisVision software, even though it is a single device. Even when a camera or device only uses a single IP license, the camera channel limit will still apply.

## 1.3 Integration Components

All CathexisVision integrations have two component levels: **Device** and **Object**.

| | |
|---|---|
| **Device** | The device is CathexisVision software's interface, which handles all the interaction between CathexisVision and the integrated hardware. When an integration is added to the CathexisVision system, a device is added. The messages received from the device are called Device Events. |
| **Objects** | Objects are the individual pieces of hardware that comprise the integration. There may be multiple "object types" under the objects group. For example, the main controller and door nodes of an access control system are both objects. They are different types of objects. |

## 2. Features and Abilities

This section indicates the features/abilities of OptaSense when integrated with CathexisVision.

### 2.1 General Device Features

- CathexisVision receives event messages from the OptaSense software package.
- Device event messages can be used to trigger a CathexisVision system event.

### 2.2 Device Objects

| Object Type | | Abilities |
|---|---|---|
| General | | • This integration has OptaSense, Sensor, and Communication channel objects.<br>• Objects are automatically created as soon as communication between the CathexisVision unit and device is established.<br>• Device objects support overlays.<br>• Events on the software can be used to trigger CathexisVision system and map events.<br>• Objects may be linked to cameras to associate device events with video footage. |
| OptaSense Server | Object Properties | • Name<br>• Status |
| Sensor | Object Properties | • Name<br>• Licensed |
| Communication Channel | Object Properties | • Name<br>• Channel status<br>• Details<br>• Creation type<br>• Creation time<br>• Idle time |

## 2.3 Device Events

| Event Element | | Features/Abilities |
|---|---|---|
| **General** | | • Event messages generated by OptaSense will reflect in CathexisVision.<br>• Device event notifications populate both on the map and CathexisVision when a fence event is triggered.<br>• A device can be associated with a camera in order to view overlays.<br>• There is an overlay, with a configurable timeout, when an event occurs. |
| **Device Event Types** | **Alert** | • ID<br>• Time<br>• Alert ID<br>• Start time<br>• End time<br>• Alert type<br>• Alert level<br>• CPS number<br>• Start channel<br>• End channel<br>• Start optical distance (meters)<br>• End optical distance (meters)<br>• Start latitude<br>• Start longitude<br>• End latitude<br>• End longitude<br>• Scale point<br>• Zone name<br>• Speed (m/s)<br>• External type<br>• External ID |
| | **Miscellaneous** | • Time<br>• Type<br>• Notification |
| **CathexisVision Event Actions** | | • Events generated by the device are reflected in CathexisVision, and can be used to create CathexisVision system events. |

| | • The device and device objects cannot be controlled as part of the system events. |

## 2.4 Metadatabase

A unique metadatabase is created on the CathexisVision server for this integration. It is fully searchable, with configurable filters based on device event information (as above), and time stamping. The filtered event/s, and the associated video, will then be available for review in a new window from which an archive can be created and exported.

| Database Element | Features/Abilities |
| --- | --- |
| General | • All device events are databased.<br>• Database entries include the footage from cameras linked to device objects.<br>• Multiple cameras may be linked to multiple objects.<br>• Device event metadata is displayed where applicable.<br>• Databased device events may be viewed in the embedded video player, which includes the usual CathexisVision video review tools. |
| View Options | • Alert<br>• Miscellaneous |
| Sort Options | • Time |
| Easy Search | • Alert type<br>• Alert level<br>• CPS number<br>• Zone name<br>• External type<br>• External ID |
| Filter | • NVR time<br>• Alert ID<br>• Start time<br>• End time<br>• Alert type<br>• Alert level<br>• CPS number<br>• Start channel<br>• End channel<br>• Scale point<br>• Zone name<br>• External type |
| Export | Database entries may be exported in CSV and PDF format. |

## 3. Conclusion

This document was designed to deal specifically with this integration. For further information about the CathexisVision software, consult the main manual (http://cathexisvideo.com/).

For support, email support@cat.co.za.

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**USEFUL LINKS**

*To view **tutorial videos** on CathexisVision setup, visit https://cathexisvideo.com/resources/videos*

*Find answers to Cathexis **Frequently Asked Questions**: https://cathexis.crisp.help/en/?1557129162258*

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