



# Southwest Microwave Intrepid POE Integration White Paper

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# 1. Introduction

This document indicates the features/abilities of the Southwest Microwave Intrepid POE Fence Detection System when integrated with CathexisVision. 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 ***Southwest Microwave Intrepid POE Fence Detection Integration App-note***, available on the Cathexis website, and/or the ***CathexisVision Setup Manual***.

**Note:** There is an app-note for an older Southwest Microwave Intrepid integration, using a different SDK, and both an IP connection and serial communication support. The new integration uses POE (polling-over-ethernet) and has only an IP connection, and no serial connection setup.

## 1.1 Integration Purpose

This integration consists of a number of devices from Southwest Microwave. The microwave sensors, together with relay output modules and Micropoint™ POE processor module, comprise Southwest Microwave's buried cable intrusion detection system for applications where covert perimeter protection is required. It uses a volumetric, terrain-following sensor that reliably detects and precisely locates walking, running, cutting, or crawling intruders along a facility's perimeter. Fence detection events on the can be used to trigger CathexisVision system events such as alarms or video recording, and data can be sent to the CathexisVision system.

## 1.2 Requirements

### 1.2.1 General Requirements

- CathexisVision 2022.2
- Cathexis NVR 64-bit version
- Windows 10 or Linux

**Note:** For information regarding the regular operation of Southwest Microwave Intrepid devices, please consult the relevant Southwest Microwave documentation.

## 1.2.2 CathesisVision License Requirements

| License          | Name  | Description  |
|------------------|---|--|
| <b>CSIP-2000</b> | Southwest Microwave Intrepid device license | This license is the “base” license to integrate with the Southwest Microwave perimeter intrusion detection system. It is applied to the server to which the device is connected. This licence will allow for the connection of a single Intrepid integration device. |
| <b>CSIP-1001</b> | Southwest Microwave Intrepid node license   | These licenses apply to the nodes in an Intrepid perimeter intrusion system. The <b>CCPS-1001</b> will license a single node, and may be added on a node-by-node basis.  |
| <b>CSIP-3000</b> | Southwest Microwave Intrepid bundle         | This license includes one <b>CSIP-2000</b> Intrepid perimeter intrusion device license, and also provides support for unlimited <b>CCPS-1001</b> node licenses.  |

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

## 1.1.3 Third-Party Device Information

This integration was tested on:

|  |   |
|--|---|
| <b>Third-party product name</b>                | <ol style="list-style-type: none"> <li>1. Intrepid Relay Output Module</li> <li>2. MicroPoint™ POE Processor Module</li> <li>3. Intrepid Microwave Sensor</li> </ol>  |
| <b>Hardware name</b>                           | <ol style="list-style-type: none"> <li>1. Intrepid ROM-POE-S</li> <li>2. Intrepid Micropoint PM-POE-S</li> <li>3. Intrepid Model 334R-POE-S and Intrepid Model 334T-POE-S (transmitter and receiver)</li> </ol> |
| <b>Firmware as tested</b>                      | Rev O (1.0.7385)<br>Rev O (1.07693)<br>334 model Rev O (1.0.7385)   |
| <b>Third-party software name</b>               | IST-Installation Service Tool   |
| <b>Third party software license/s required</b> | None  |

## 1.3 Integration Components

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

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|                |  |
|----------------|--|
| <b>Device</b>  | The device is CathesisVision software's interface, which handles all the interaction between CathesisVision and the integrated hardware. When an integration is added to the CathesisVision system, a device is added. The messages received from the device are called Device Events. |
| <b>Objects</b> | 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 the Southwest Microwave Intrepid POE Fence Detection system when integrated with CathexisVision.

### 2.1 General Device Features

- CathexisVision receives event messages from the Intrepid devices.
- Intrepid device event messages can be used to trigger a CathexisVision system event.

### 2.2 Device Objects

Objects are populated automatically as soon as communication between the Southwest Microwave Intrepid POE devices and CathexisVision is established.

| Object Type   |              | Abilities   |   |
|---|--------------|---|---|
| <b>General</b>  |              | <ul style="list-style-type: none"> <li>• This integration has Relay, Node, Cable, Cable section, Microwave sensor objects.</li> <li>• Objects are automatically created as soon as communication between the CathexisVision unit and device is established.</li> <li>• Relay, cable, and cable section objects can be commanded as an action of a CathexisVision system event.</li> <li>• Events on the device can be used to trigger CathexisVision system and map events.</li> <li>• Node, Cable, Cable section, Communication channel, Microwave sensor, and Relay objects support overlays.</li> <li>• Objects may be linked to cameras to associate device events with video footage.</li> </ul> |   |
| <b>ROM-POE-S<br/>Relay output<br/>module</b>            | <b>Relay</b> | <b>Object<br/>Properties</b>  | <ul style="list-style-type: none"> <li>• Name</li> <li>• State</li> <li>• ID</li> </ul>                       |
|   |              | <b>Commands</b>   | <ul style="list-style-type: none"> <li>• De-energize</li> <li>• Re-energize</li> </ul>                        |
| <b>PM-POE-S:<br/>Micropoint II<br/>processor module</b> | <b>Node</b>  | <b>Object<br/>Properties</b>  | <ul style="list-style-type: none"> <li>• Mac address</li> <li>• Node address</li> <li>• Connection</li> </ul> |

|  |               |                       |   |
|--|---------------|-----------------------|---|
|  |               |                       | <ul style="list-style-type: none"> <li>Type</li> <li>Tamper alarm</li> <li>Service alarm</li> <li>Low voltage alarm</li> <li>Remote test status</li> <li>Relay test status</li> <li>Remote test status</li> <li>Certificate expired</li> <li>ID</li> <li>Name</li> <li>Protocol version</li> <li>Hardware version</li> <li>App software version</li> <li>App Software build date</li> <li>App software build time</li> <li>Boot software version</li> <li>Boot software build date</li> <li>Boot software build time</li> <li>Alarm type info</li> <li>Function_code</li> </ul> |
|  | Cable         | Object Properties     | <ul style="list-style-type: none"> <li>Name</li> <li>Alarm</li> <li>Fault</li> <li>Test</li> <li>Enabled</li> <li>Calibration Status</li> <li>Alarmed cells</li> <li>Disabled cells</li> <li>Next section ID</li> <li>State</li> <li>ID</li> </ul>  |
|  |               | Command               | <ul style="list-style-type: none"> <li>Create cable section</li> </ul>  |
|  | Cable section | Object Properties     | <ul style="list-style-type: none"> <li>Name</li> <li>Cable</li> <li>Start cell</li> <li>End cell</li> <li>State</li> <li>ID</li> </ul>  |
|  |               | Command               | <ul style="list-style-type: none"> <li>Create cable section</li> </ul>  |
|  |               | Communication Channel | <ul style="list-style-type: none"> <li>Name</li> <li>Channel Status</li> <li>Details</li> <li>Creation type</li> </ul>  |

|   |                  |   |  |
|---|------------------|---|--|
| Model xxR-POE-S<br>& xxT-POE-S<br>Transmitter and<br>Receiver |                  |   | <ul style="list-style-type: none"> <li>• Creation time</li> <li>• Idle time</li> <li>• ID</li> </ul>   |
|   | Node             | Object Properties   | <ul style="list-style-type: none"> <li>• Mac address</li> <li>• Node address</li> <li>• Connection</li> <li>• Type</li> <li>• Tamper alarm</li> <li>• Service alarm</li> <li>• Low voltage alarm</li> <li>• Remote test status</li> <li>• Relay test status</li> <li>• Remote test status</li> <li>• Certificate expired</li> <li>• ID</li> <li>• Name</li> <li>• Protocol version</li> <li>• Hardware version</li> <li>• App software version</li> <li>• App Software build date</li> <li>• App software build time</li> <li>• Boot software version</li> <li>• Boot software build date</li> <li>• Boot software build time</li> <li>• Alarm type info</li> <li>• Function_code</li> </ul> |
|   | Microwave sensor | Object Properties   | <ul style="list-style-type: none"> <li>• Name</li> <li>• State</li> <li>• Target alarm</li> <li>• Path alarm</li> <li>• Wrong channel alarm</li> <li>• Jam alarm</li> <li>• Channel switch error</li> </ul>  |
|   | Input            | Object Properties   | <ul style="list-style-type: none"> <li>• Name (Configurable. Default is ID).</li> <li>• State</li> <li>• Type</li> </ul>   |
| State   |                  | <ul style="list-style-type: none"> <li>• Active</li> <li>• Clear</li> </ul>                                 |  |
| Type  |                  | <ul style="list-style-type: none"> <li>• Alarm input</li> <li>• Auxiliary input</li> <li>• Clear</li> </ul> |  |



## 2.3 Device Events

The CathesisVision Intrepid POE integration generates Node, cable, Cable Section, Connection, Relay, Input, and Microwave Sensor Events, which are triggered on the device and reflected in CathesisVision.

| Event Element                       |  | Features/Abilities  |       |       |      |  |        |  |      |   |             |   |  |
|-------------------------------------|--|---|-------|-------|------|--|--------|--|------|---|-------------|---|--|
| <b>General</b>                      |  | <ul style="list-style-type: none"> <li>Events triggered on the device are sent to CathesisVision.</li> </ul>  |       |       |      |  |        |  |      |   |             |   |  |
| <b>Device Event Types</b>           | <b>Node</b>  | <ul style="list-style-type: none"> <li>Connection and service</li> </ul>  |       |       |      |  |        |  |      |   |             |   |  |
|                                     | <b>Cable</b>   | <ul style="list-style-type: none"> <li>Active, Clear and Alarmed cells</li> </ul>   |       |       |      |  |        |  |      |   |             |   |  |
|                                     | <b>Cable section</b>   | <ul style="list-style-type: none"> <li>Alarm and Normal</li> </ul>  |       |       |      |  |        |  |      |   |             |   |  |
|                                     | <b>Connection</b>  | <ul style="list-style-type: none"> <li>Online or offline</li> </ul>   |       |       |      |  |        |  |      |   |             |   |  |
|                                     | <b>Relay</b>   | <ul style="list-style-type: none"> <li>De-energized or energized</li> </ul>   |       |       |      |  |        |  |      |   |             |   |  |
|                                     | <b>Input</b>   | <table border="1"> <thead> <tr> <th>Field</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Time</td> <td> <ul style="list-style-type: none"> <li>Time that the event occurred</li> </ul> </td> </tr> <tr> <td>Object</td> <td> <ul style="list-style-type: none"> <li>Name of the input object</li> </ul> </td> </tr> <tr> <td>Type</td> <td> <ul style="list-style-type: none"> <li>Input alarm</li> </ul> </td> </tr> <tr> <td>Description</td> <td> <ul style="list-style-type: none"> <li>Active</li> <li>Clear</li> </ul> </td> </tr> </tbody> </table> | Field | Value | Time | <ul style="list-style-type: none"> <li>Time that the event occurred</li> </ul> | Object | <ul style="list-style-type: none"> <li>Name of the input object</li> </ul> | Type | <ul style="list-style-type: none"> <li>Input alarm</li> </ul> | Description | <ul style="list-style-type: none"> <li>Active</li> <li>Clear</li> </ul> |  |
| Field                               | Value  |   |       |       |      |  |        |  |      |   |             |   |  |
| Time                                | <ul style="list-style-type: none"> <li>Time that the event occurred</li> </ul>   |   |       |       |      |  |        |  |      |   |             |   |  |
| Object                              | <ul style="list-style-type: none"> <li>Name of the input object</li> </ul>   |   |       |       |      |  |        |  |      |   |             |   |  |
| Type                                | <ul style="list-style-type: none"> <li>Input alarm</li> </ul>  |   |       |       |      |  |        |  |      |   |             |   |  |
| Description                         | <ul style="list-style-type: none"> <li>Active</li> <li>Clear</li> </ul>  |   |       |       |      |  |        |  |      |   |             |   |  |
| <b>Microwave Sensor</b>             | <ul style="list-style-type: none"> <li>Connection: Offline and online</li> <li>Jam status: Active and clear</li> <li>Wrong channel status: Active and clear</li> <li>Intruder alarm: Active and clear</li> <li>Path alarm, channel switch error, and Normal: Active and clear</li> </ul> |   |       |       |      |  |        |  |      |   |             |   |  |
| <b>CathesisVision Event Actions</b> |  | <p>A cable, or cable section object may be controlled via a CathesisVision event action to perform one of the following commands:</p> <ul style="list-style-type: none"> <li>Relay: Energize or de-energize</li> </ul> <p>Events generated by the device are reflected in CathesisVision, and can be used to create CathesisVision system events.</p>   |       |       |      |  |        |  |      |   |             |   |  |

## 2.4 Metadatabase

A unique metadatabase is created on the CathesisVision 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  |
|---------------------|---|
| <b>General</b>      | <ul style="list-style-type: none"> <li>• All device events are databased.</li> <li>• Database entries include the footage from cameras linked to device objects.</li> <li>• Multiple cameras may be linked to multiple objects.</li> <li>• Device event metadata is displayed where applicable.</li> <li>• Databased device events may be viewed in the embedded video player, which includes the usual CathesisVision video review tools.</li> </ul> |
| <b>View Options</b> | <ul style="list-style-type: none"> <li>• All</li> <li>• Cable</li> <li>• Cable section</li> <li>• Microwave sensor</li> <li>• Input</li> <li>• Relay</li> <li>• Node</li> </ul>   |
| <b>Sort Options</b> | <ul style="list-style-type: none"> <li>• Time</li> </ul>  |
| <b>Easy Search</b>  | <ul style="list-style-type: none"> <li>• Object</li> <li>• Type</li> <li>• Description</li> </ul>   |
| <b>Filter</b>       | <ul style="list-style-type: none"> <li>• Time</li> <li>• Device event</li> <li>• Object</li> <li>• Type</li> <li>• Description</li> </ul>   |
| <b>Export</b>       | Database entries may be exported in CSV and PDF format.   |

## 2.5 Maps

The CathesisVision GUI provides for configurable site maps that feature multi-layered, hierarchical, interactive interfaces providing representation and control of a site and its resources.

| Map Element                | Features/Abilities  |
|----------------------------|---|
| <b>General</b>             | Device objects can be embedded in a site map, which offers multiple action options when messages are received from the device, the device triggers an event, and/or the user manually initiates a map action. |
| <b>Map Action Triggers</b> | <ul style="list-style-type: none"> <li>• All device objects may be set to trigger a map action if the user <b>left-clicks</b> on map.</li> </ul>  |

- Some device objects may be set to trigger a map action if a **state change** message is received from the device.
- All device objects may be set to perform a map action if **any event** occurs on the device.
- Device objects, which can be configured to trigger CathexisVision events, may also be set to perform a map action when specific CathexisVision events are triggered.

**Map Actions Options**

When triggered (see above), objects may perform the following map actions (where applicable):

- Connect to a site.
- Perform an animation.
- Go to a camera preset.
- Load a map.
- Set a PTZ relay output.
- Show a popup menu.
- Set a relay output.
- Show an HTML block.
- Show a block of text.
- Show a device popup menu.

## 3. Conclusion

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

For support, email [support@cat.co.za](mailto:support@cat.co.za).

### USEFUL LINKS

To view **tutorial videos** on CathesisVision setup, visit <https://cathesisvideo.com/resources/videos>

Find answers to Cathesis **Frequently Asked Questions**: <https://cathesis.crisp.help/en/?1557129162258>