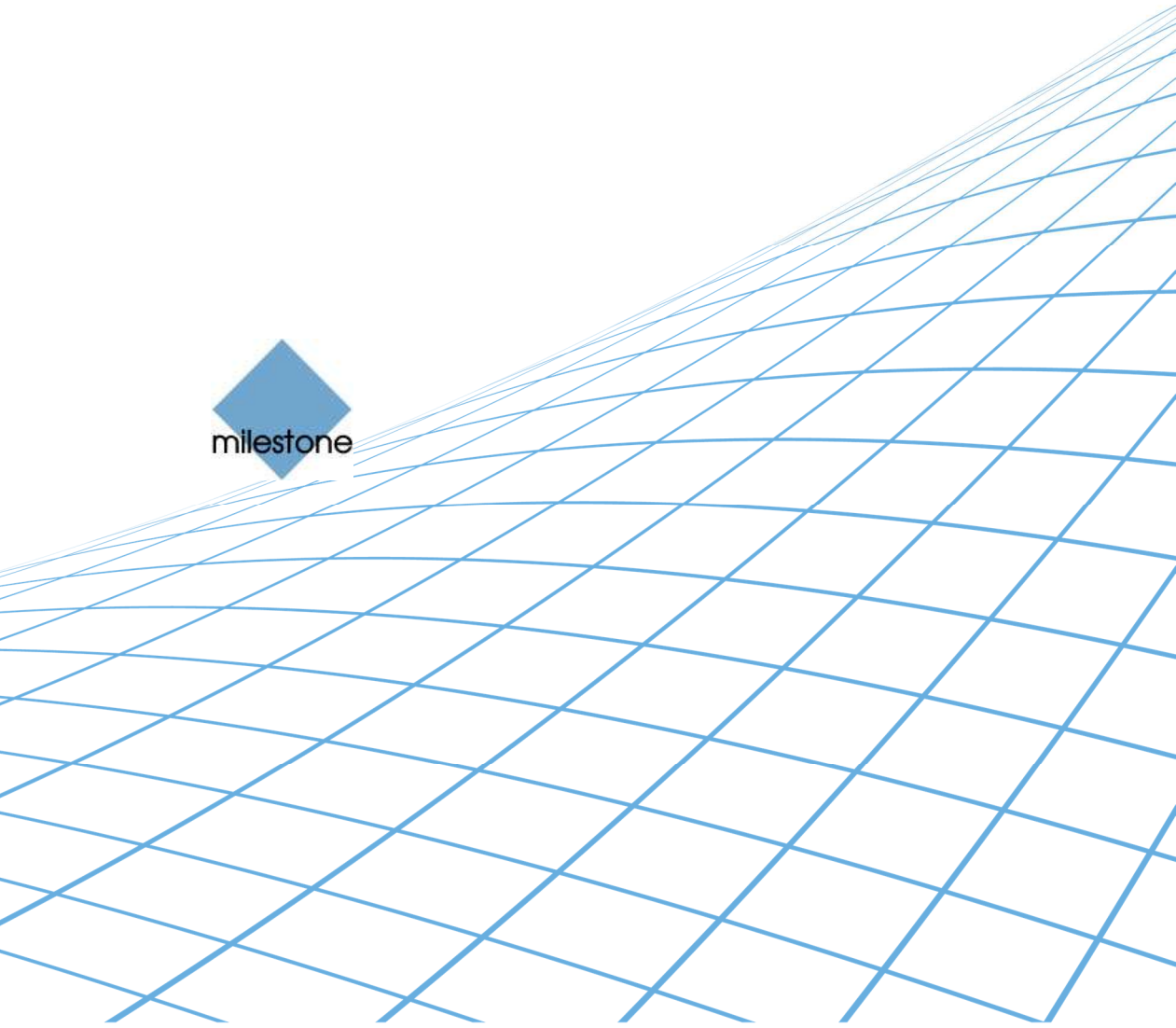




Milestone SMI Intrepid II Perimeter Module 1.1 User's Manual





Target Audience for this Document

This document is aimed at system users and provides descriptions on how to install and maintain the Milestone Perimeter Module for Southwest Microwave Inc. Intrepid II plug-in (SMI Intrepid II). The plug-in offers the possibility of getting status and alarm indications from the SMI Intrepid II system into the Milestone XProtect® video management system. The manual only covers the necessary configuration steps in the Milestone XProtect® video management system software but not how to configure the SMI Intrepid II system itself.

In order to benefit from this document, you should have a thorough knowledge of:

- The SMI Intrepid II system
- Milestone XProtect® video management software

Please refer to the manuals for these products for further information on how to configure and use these products.



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General Description

The Milestone Perimeter Module for Southwest Microwave Intrepid II plug-in makes it possible to get status and alarm indication from the SMI Intrepid II system. The plug-in is installed on the machine running the Milestone video management system. The plug-in is compatible with the following:

- Milestone XProtect Corporate 2014 or newer
- Milestone XProtect Expert 2014 or newer
- Milestone XProtect Enterprise 2014 or newer
- Milestone XProtect Professional 2014 or newer
- Milestone XProtect Express 2014 or newer

The Event Server of the video management system uses the plug-in and handles the communication with the SMI Intrepid II system hereby detecting alarms and controlling the site. The machine running the Event Server must be able to connect to SMI Intrepid II systems, either using a serial communication port or TCP/IP. The plug-in can handle multiple SMI Intrepid II systems, using either direct protocol communication (IPP – Internet Polling Protocol) or communication through the Southwest Microwave Intrepid Remote Polling Module (RPM). The same plug-in supports both communication protocols, and is able to use both communication protocols towards different systems simultaneously (however, for each system, one and only one communication protocol can be configured).

The configuration of the plug-in is done from the Management Client/Application of the video management system. Defining which elements of the SMI Intrepid II system to control and get status from is handled from these applications.

Multiple sites can be supported when utilizing the Milestone Federated Architecture that comes with Milestone XProtect Corporate. This allows multiple individual XProtect Corporate systems to be interconnected into a parent/child hierarchy. This also provides the possibility of controlling SMI Intrepid II systems in different locations to be centrally managed.

The Map feature of the XProtect Smart Client can be used for controlling and visualizing status of the SMI Intrepid II system elements. Also generated alarms or general system errors are listed and visualized.

Please note that the documentation has been written based on the functionality available when using the integration with XProtect Corporate VMS, and that the features available in general will depend on the feature set of the VMS software used – for instance, integration with the Rule system is only available in XProtect Corporate.



Installation

Prerequisites

Before you start, make sure that the following are available:

- Milestone XProtect® video management software (such as Milestone XProtect Corporate).
- A machine with TCP/IP or one or more serial communication ports connected to SMI Intrepid II systems. The Event Server of the video management software must be running on such a machine.

Installation Procedure

The Plug-in must be installed on the machine running the Milestone video management system. On a system with multiple machines the plug-in only has to be installed on the machines that are running the following applications:

- Milestone XProtect Event Server
 - Milestone XProtect Corporate/Expert Management Client
- or
- Milestone XProtect Enterprise/Professional/Express Management Application

The following describes how to install the plug-in:

1. Install the Milestone Perimeter Module plugin for SMI Intrepid II by running the following installer application:

SMI_IntrepidInstaller_x64.msi
2. Depending on your security settings, you may receive one or more security warnings. When this is the case, click the *Run* button.
3. When the installation wizard starts, click '*Next*' to continue.
4. Click '*Next*' to confirm the installation.
5. When the installation has completed, click '*Close*'.
6. Restart the machine or restart the Milestone XProtect Event Server service and the Management application.

The plug-in is installed in a common plug-in subfolder called MIPPlugins, typically:

c:\Program Files\Milestone\MIPPlugins\SMI_Intrepid_II\

Before doing any configuration of the plug-in, please read the Licensing section of this document.



Licensing

The plug-in has a build-in license check that is locked to the software license code (SLC) of the VMS installation of which it is part.

As mentioned in the General Description, the plug-in is able to use both IPP and RPM communication. Each communication protocol is controlled by a separate license file, and each of these license files can be replaced without impact on the communication licensed by the other license file.

The license files are called 'SMI_Intrepid_II.lic' (for IPP) and 'SMI_Intrepid_II_RPM.lic' (for RPM) and must be placed in the installation folder of the plug-in. These files are not included in the installation and must be copied manually and must be available on every plug-in installation. When the license is in place, restart the Event Server and Management Client/Application. If only one of the license files is in place, the communication protocol licensed by this file will still be available – both files need not be present.

The license files are provided by the distributor. In order to generate a file, the distributor must know the SLC of the VMS system where the plug-in has been installed. Collect the SLC and send it to the distributor, preferably via email.

The license file includes a number of licenses, which controls the number of SMI Intrepid II systems that can be used in a setup using the given communication protocol. One connection to a SMI Intrepid II system counts as one license if the system is enabled in the Management Client. If the number of created systems exceeds the number specified in the license file then all SMI Intrepid II communication using the given communication protocol is disabled, but it is still possible to configure SMI Intrepid II using the UI, and to use the other communication protocol if it is licensed.

The status of the license is available from the *SMI Intrepid II Plug-in* page and from the Event Server log file. Information such as validation error, invalid license or expiry date is displayed. Also the SLC of the VMS is shown on this page.

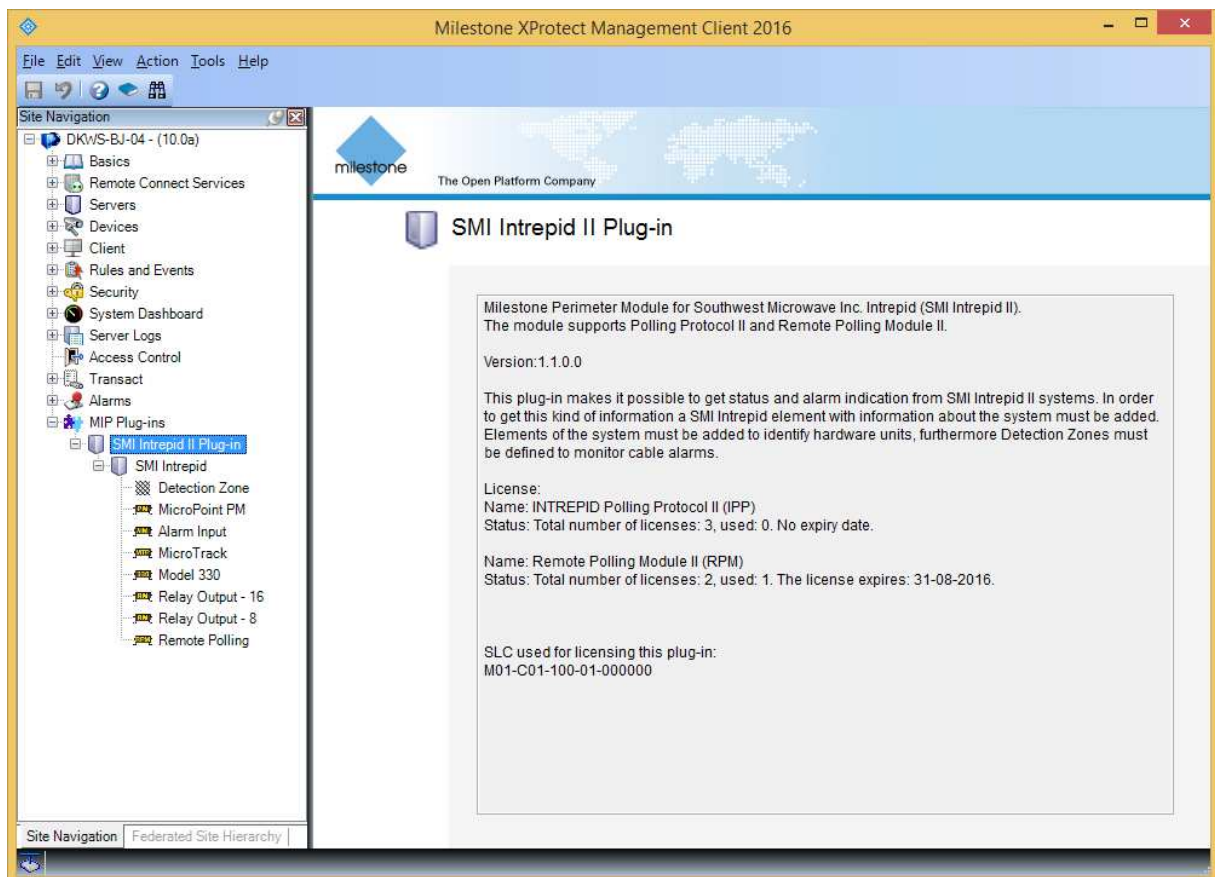


Figure 1: SMI Intrepid II plug-in page in XProtect Corporate



Setup

Depending on the version of the video management system the configuration is done using either of the management applications:

- Milestone XProtect Corporate/Expert Management Client
- Milestone XProtect Enterprise/Professional/Express Management Application

In the following sections the Milestone XProtect Corporate Management Client is used. Using the Management Application that comes with other versions of the video management system for configuring the plug-in is very similar. The main difference is that the panel in the middle showing the created elements is not available; instead they are listed in the Navigation pane.

SMI Intrepid II system

In order to establish a connection to the perimeter system a SMI Intrepid II system must be added.

To add a connection to a SMI Intrepid II system, do the following:

1. Open the Milestone XProtect Corporate Management Client
2. From the *Site Navigation* panel locate the node called *MIP Plug-ins* and expand it. Navigate to the node called *SMI Intrepid II Plug-in* and select its sub-node called *SMI Intrepid*.
3. In the *SMI Intrepid* panel right-click the *SMI Intrepid* node and select 'Add New...'

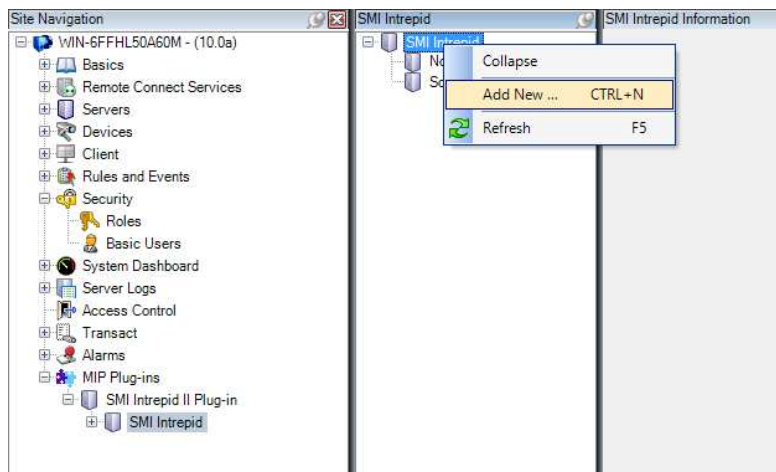


Figure 2: Adding an SMI Intrepid II system



- Fill out the right hand-side panel called *SMI Intrepid Information* with information about the SMI Intrepid II system.

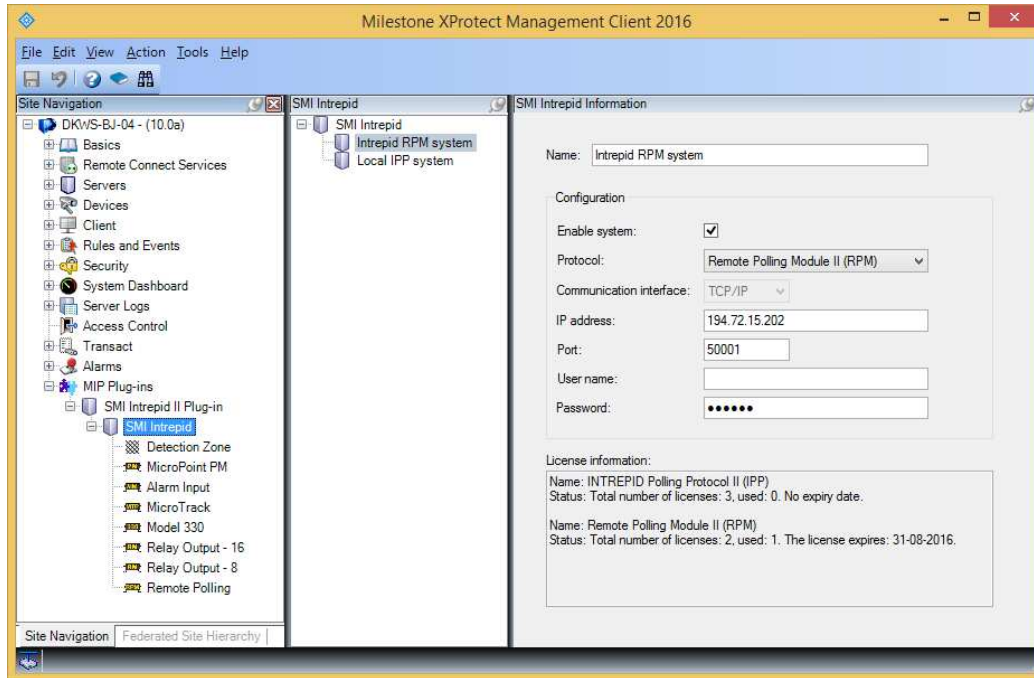


Figure 3: SMI Intrepid II information (RPM communication)

- **Name:** Enter a unique name for the system.
- **Enable System:** This is enabled by default when generating a new system. Unchecking this disables the communication to the SMI Intrepid II system and releases the COM Port (for serial communication). Use this feature in cases where configuration tools need access to the SMI Intrepid II system, or when insufficient licenses are available.
- **Protocol:** The communication protocol used. Can be either “Remote Polling Module II (RPM)” or “Polling Protocol II (IPP)”
- **Communication interface:** Must be “TCP/IP” for RPM communication. For IPP, either “TCP/IP” or “Serial” must be chosen.
- **COM Port number:** (For “Serial” communication interface only) Select the communication port that is used for connecting to the SMI Intrepid II system. This is the port number on the machine running the Event Server, each system must have a unique communication port.
- **IP address:** (For “TCP/IP” communication interface only) The IP address of the SMI Intrepid II system.
- **Port:** (For “TCP/IP” communication interface only) The IP port of the SMI Intrepid II system.
- **User name:** (For “TCP/IP” communication interface only) The user name authenticated for communication with the SMI Intrepid II system.
- **Password:** (For “TCP/IP” communication interface only) The password of the user, authenticated for communication with the SMI Intrepid II system.

Note: Remember to save settings using the disk icon in the tool bar, when navigating to another item in the *Site Navigation* panel the client will prompt for approval of the changes that has been made to the system. Select ‘Yes’ to save the changes.

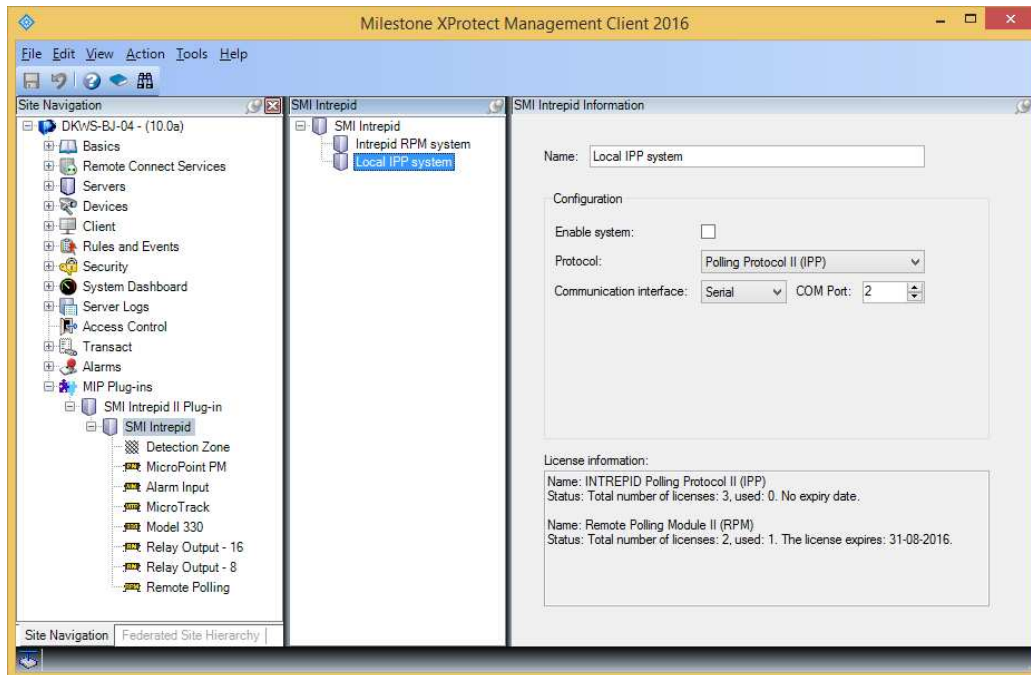


Figure 4: SMI Intrepid II information (IPP communication). Note that the disabled system does not add to the count of used licenses.

Removing the SMI Intrepid II system entirely is done by right-clicking the system and selecting *Delete*. This will remove all configurations that have been made for this system. Updates to the system configuration will be detected by the Event Server and take effect within a few seconds.



SMI Intrepid II elements

The plug-in provides the possibility of getting alarms and status indication from elements of the SMI Intrepid II system. In order to get alarms or status the element that represent the hardware or logical unit of the SMI Intrepid II system must be added as part of the configuration. Elements are grouped in accordance to their type and the system they represent. The following elements can be added:

- SMI system elements:
 - MicroPoint Processor modules (PM)
 - MicroTrack Processor modules (MTP)
 - Model 330 systems (330)
 - Alarm Inputs Modules (AIM)
 - Relay Output Modules (ROM-8 and ROM-16)
 - Remote Polling (RPM)
- Logical system elements:
 - Detection Zones (DZ) – detection zones are logical units in the plug-in, representing one or more cable cells in one or more PM or MTP processor modules.

Note: Relevant modules (PM or MTP) must be created on the system before their cable cells can be used in Detection Zones.

To add an element such as the Detection Zone (DZ) do the following:

1. Open the Milestone XProtect Corporate Management Client
2. From the *Site Navigation* panel navigate to the sub-node of the SMI Intrepid II Plug-in called *Detection Zone*
3. In the *Detection Zone* panel navigate to the SMI Intrepid II system for which to add a Detection Zone. Right-click the SMI Intrepid II system and select 'Add New...'

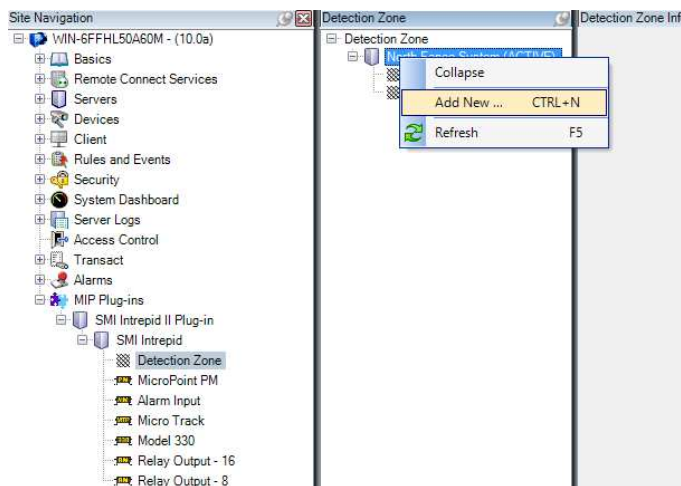


Figure 5: Adding a Detection Zone



- Fill out the right hand-side panel called *Detection Zone Information* with required information, *Name* and *Segments*.

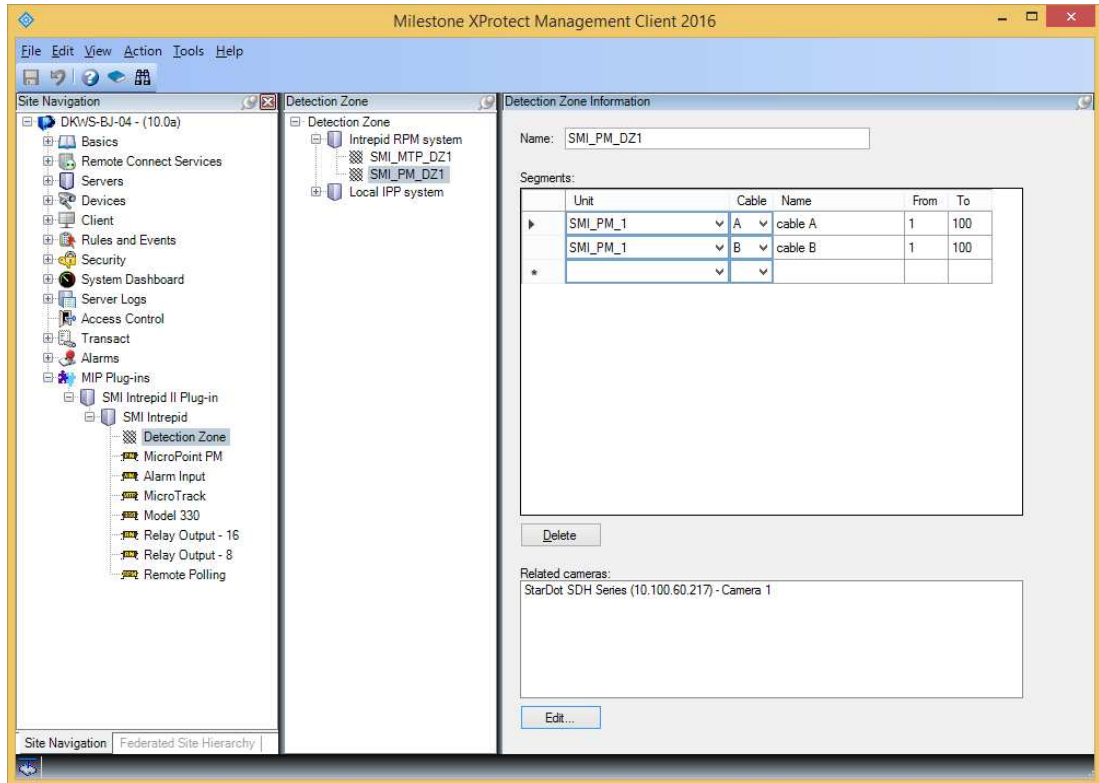


Figure 6: Detection Zone creation

- Name**, when adding an element a temporary name is auto generated. Enter a unique name for the element.
- Segments**, is a set of cable cells segments, each specified with
 - Unit:** The module, to which the cable is attached.
 - Cable:** Cable selection.
 - Name:** The name of the user-defined segment.
 - From:** The starting cell id for the segment.
 - To:** The end cell id for the segment.

Both the 'From' and the 'To' cell id is included in the segment range.

Each detection zone can have any number of segments, and if an event is registered on one or more of these segments the parent detection zone will be triggered.

- Related cameras**, the cameras associated with the detection zone. These cameras will be used as related cameras in relation to the alarms originating from the SMI Intrepid II system.



A note on Remote Polling elements

In order to receive events from the Remote Polling hardware unit itself, it is necessary to add a Remote Polling element to the system through which it is reached. These elements are only relevant for systems configured for RPM communication.

When adding a Remote Polling element, an address will be configurable in the configuration dialog. Please note that the configured value is NOT used. Regardless of the value configured, the plug-in will ensure communication using the hardcoded address of the RPM, which is 254.

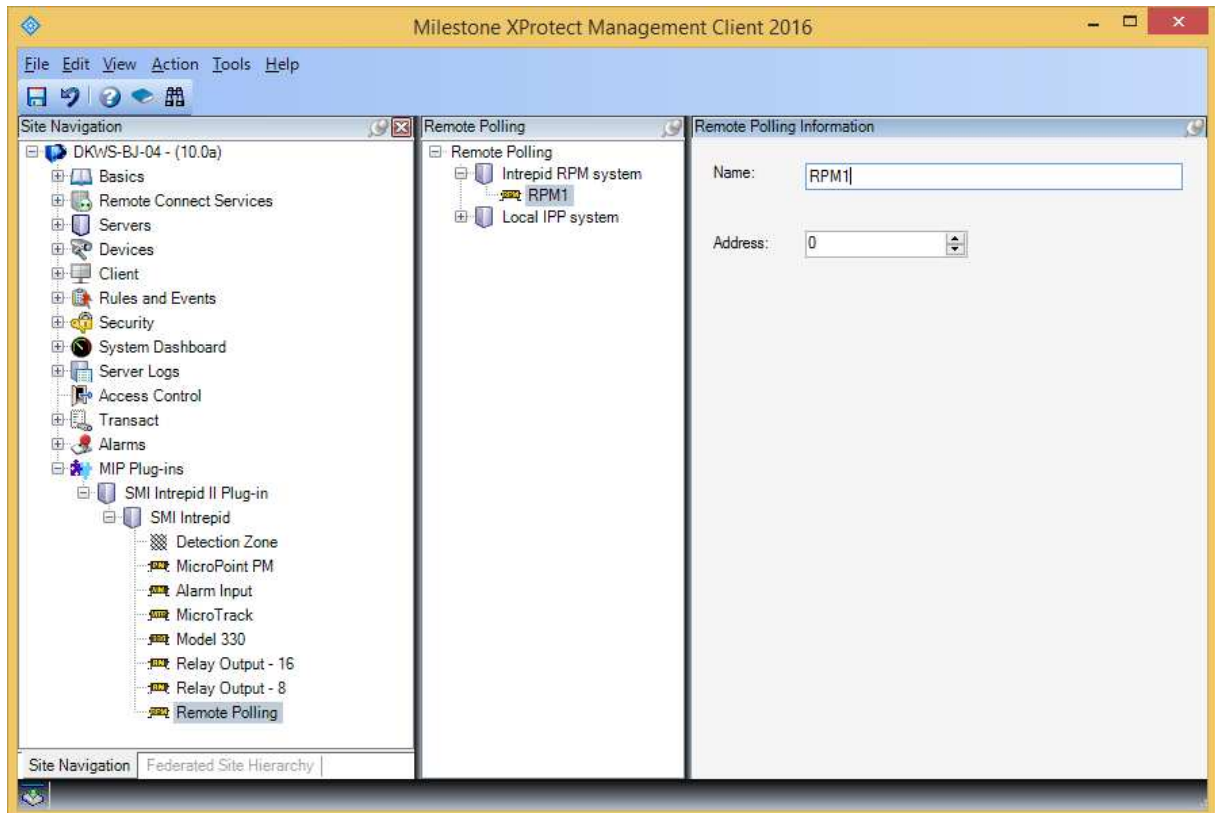


Figure 7. Configuration of the Remote Polling element.



Alarms based on SMI Intrepid II events

The plug-in reads events generated on the SMI Intrepid II system and transfer them into the video management system so they can be used as i.e. source for alarms or rules. An event is always related to an element of the SMI Intrepid II system, which must be defined as the source of the event. The element must furthermore be added as part of the system configuration in order to use it as an event source.

The following is an example on how to setup an alarm which is triggered if a detection zone event is detected on any configured detection zones in the system:

1. From the *Site Navigation* panel locate the node called *Alarms* and expand it. Select the sub-node called *Alarm Definitions*.
2. In the *Alarm Definitions* panel either select an existing node or right-click the *Alarm Definitions* node or select 'Add New...'

Note: For detailed description on how to configure *Alarm Definitions* do consult the Administrator's manual for the video management system being used.

3. On the *Properties* page locate the group of settings called *Trigger*.
4. From the *Triggering event* dropdown menu select *SMI Intrepid Events* at top level, and the appropriate event. See Table 1 for plug-in related events.

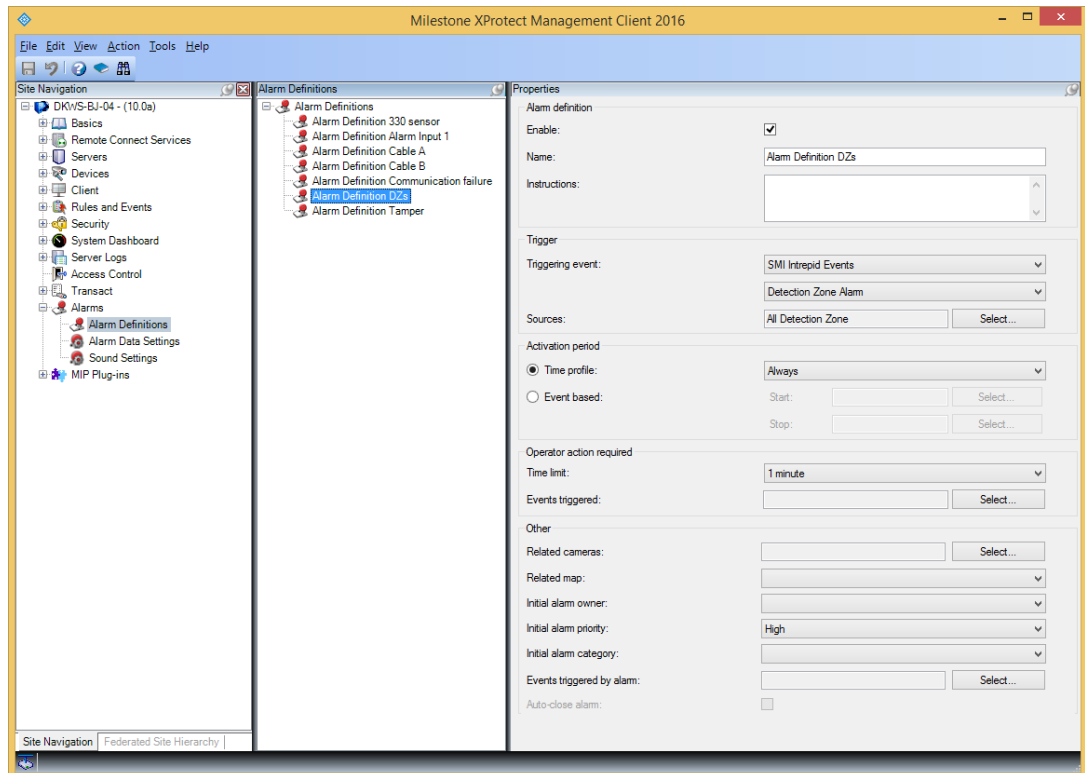


Figure 8: Alarm Definition creation



- From the *Trigger* group open the *Sources* by selecting *Select...* this opens the *Select Sources* dialog. Navigate to the SMI Intrepid system and select the element(s) that should be used as trigger source for the event.

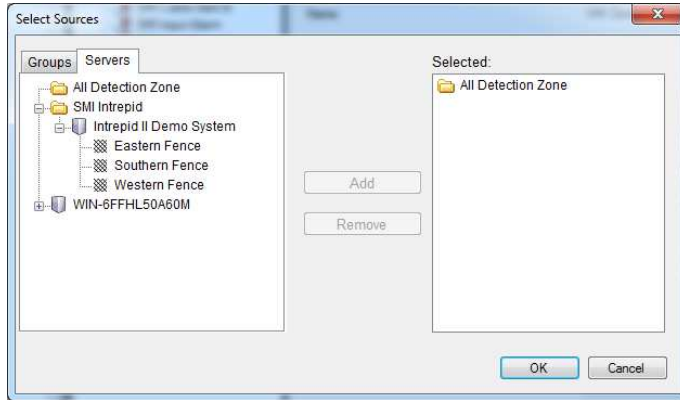


Figure 9: Source selection

Note: If elements of the plug-in just have been created they might not appear in the *Alarm Definition source* section. Refresh the configuration of the XProtect Management Client/Application in order to reload the sources.

When configuring the *Source* of an *Alarm Definition* ensure that the relation between *Sources* and *Event message* are in line with the relation listed in Table 1. This table lists the relation between Source and Event message for the SMI Intrepid II plug-in.

Source	Event
Detection Zones	Detection Zone Alarm
Micro Point PM	Communication Failure Cable A Fault Cable B Fault Enclosure Tamper Software Trap Input 1 Input 2 Input 3 Input 4
Alarm Input	Communication Failure Enclosure Tamper Input 1 Input 2 Input 3 Input 4 Input 5 Input 6 Input 7 Input 8 Line Status Alarm 1 Line Status Alarm 2 Line Status Alarm 3 Line Status Alarm 4 Line Status Alarm 5 Line Status Alarm 6 Line Status Alarm 7 Line Status Alarm 8
Micro Track	Communication Failure Cable A Fault Cable B Fault



	Enclosure Tamper Software Trap
Model 330	Communication Failure Sensor Alarm Enclosure Tamper Input 1 Low Input Voltage Alarm Path Alarm Software Trap
Relay Output 8/16	Communication Failure Enclosure Tamper
Remote Polling Module	Communication Failure Low Input Voltage Alarm Line Break Alarm

Table 1: SMI Intrepid II plug-in event messages

Rules based on SMI Intrepid II events

Other than generating alarms based on events from the SMI system, these events can also be used to trigger rules. This functionality is not dependant on any alarm generation, but the procedure is very similar.

Note: Rules are only supported by Milestone XProtect Corporate or Expert.

In this example a rule is generated, which starts a recording on a camera if a detection zone alarm is detected.

1. From the *Site Navigation* panel locate the node called *Rules and Events*, select the sub-node called *Rules*.

2. Right-click the *Rules* node and select 'Add New...'

Note: For detailed description on how to configure *Rules* do consult the Administrator's manual for the video management system being used.

3. On the first page of the Wizard, click on 'Event' and navigate to the 'SMI Intrepid II Plug-in' node, select detection zone alarm as shown here:

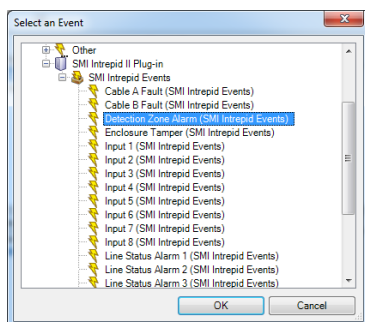


Figure 10: Selection of 'Detection Zone' as event type



- Also select a source for the event, in this case a specific detection zone (Eastern Fence) has been chosen:

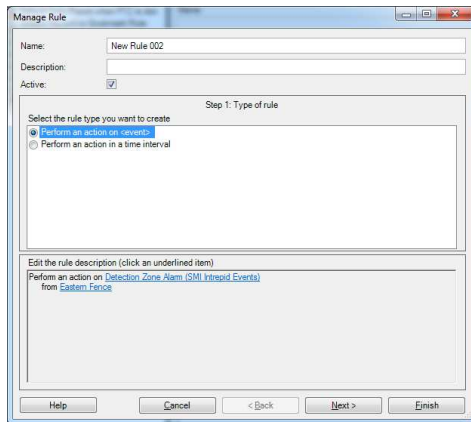


Figure 11: Final event and source selection

- Proceed to create the rule as normally ending with an action to begin recording as shown here:

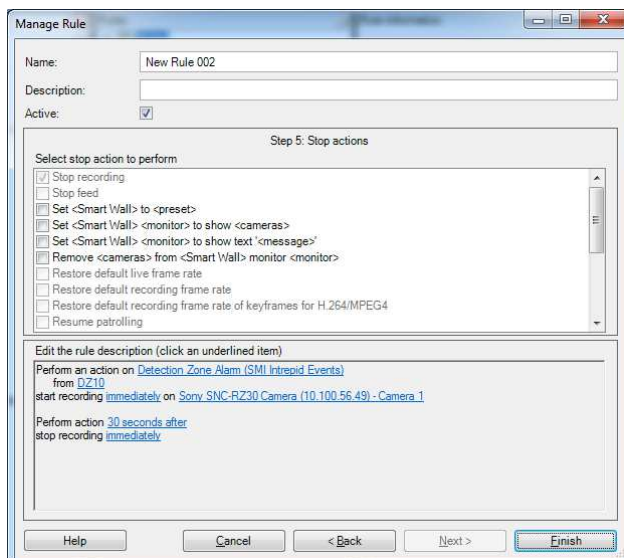


Figure 12: Final rule configuration

Note: If elements of the plug-in just have been created they might not appear in the *Alarm Definition source* section. Refresh the configuration of the XProtect Management Client/Application in order to reload the sources.



SMI Intrepid II actions

As part of the rule engine, it is also possible to trigger actions on the SMI Intrepid II system. The available actions are:

- Activate output with a given output number on a given ROM
- Deactivate output with a given output number on a given ROM

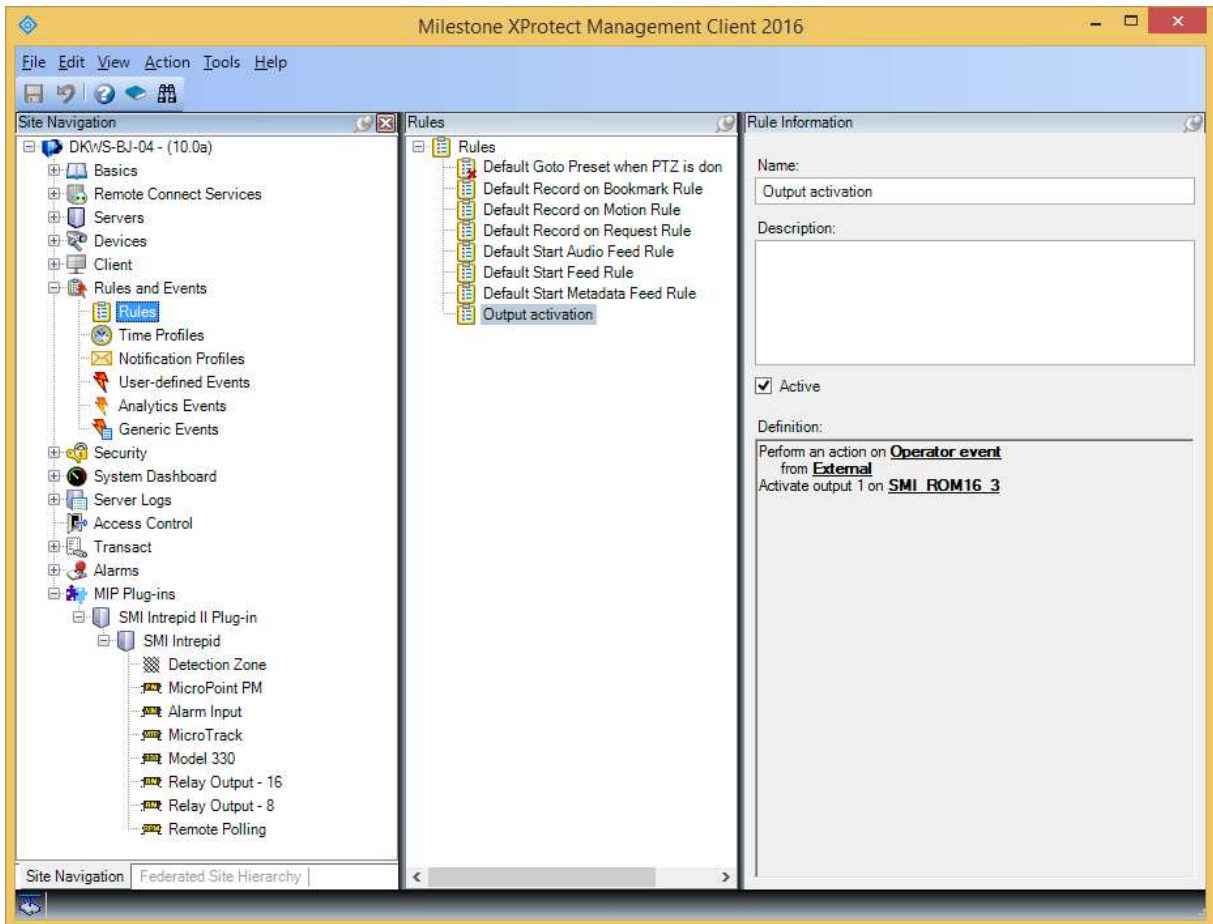


Figure 13: Example of a rule, activating an output on a Relay Output Module



Access Rights

With the SMI Intrepid II plug-in comes the possibility to control the access rights of users towards the integration using the MIP tab in the Roles node of the Site Navigation tree.

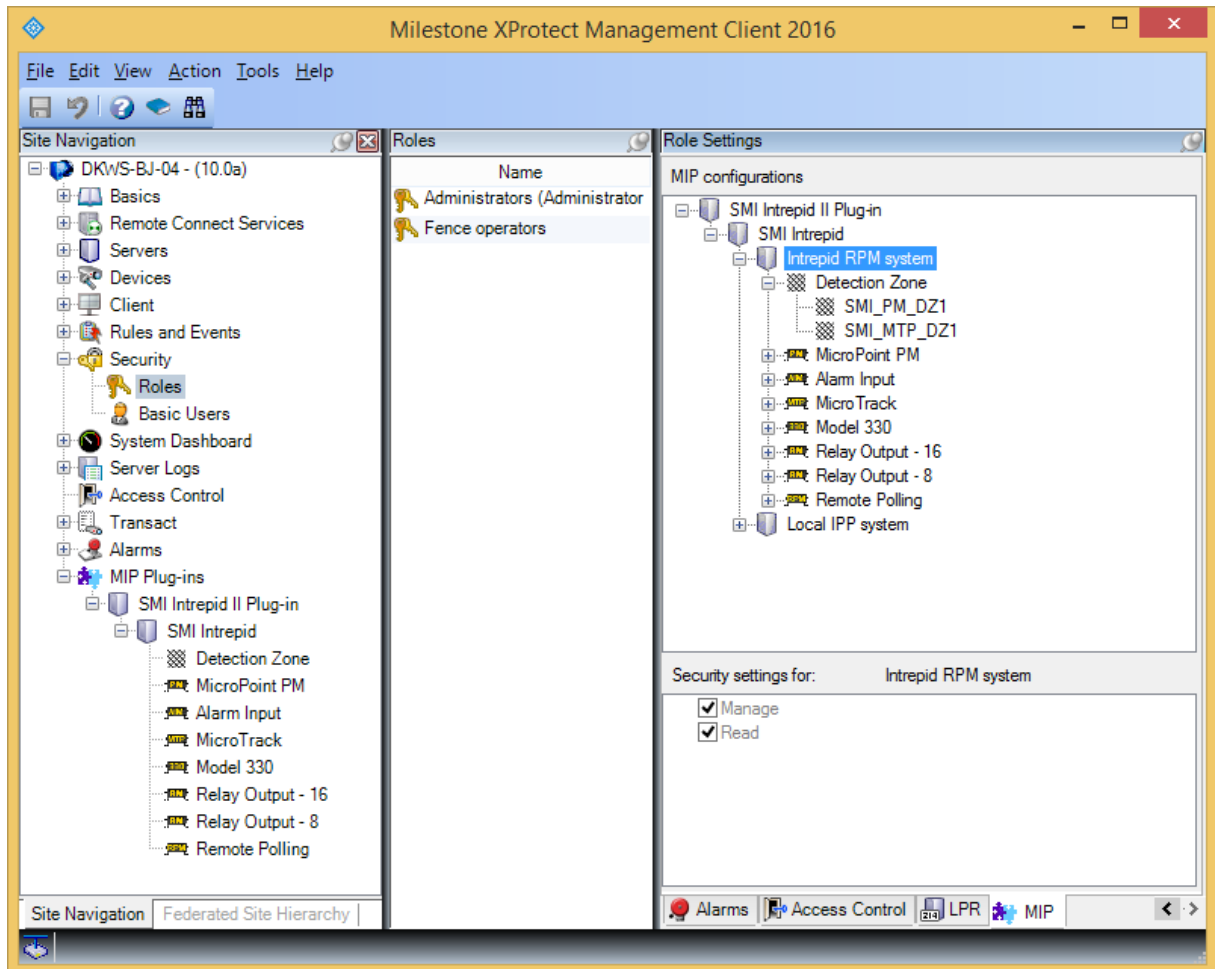


Figure 14: Security settings for an SMI Intrepid system

It is possible to limit access in two ways. Only users with “Read” access will be allowed to view status from the system, and only users with “Manage” access will be able to manipulate the system, e.g. by arming or disarming a system or parts hereof. The Access Rights are independently configurable for different SMI Intrepid II systems.



Map elements

The elements of the plug-in integrate with the Map feature of the XProtect Smart Client. A visual representation of a SMI Intrepid II system can be made using this feature. Elements are simply dragged onto the map. Placing an element such as a Detection Zone could represent a part of a fence section on the map.

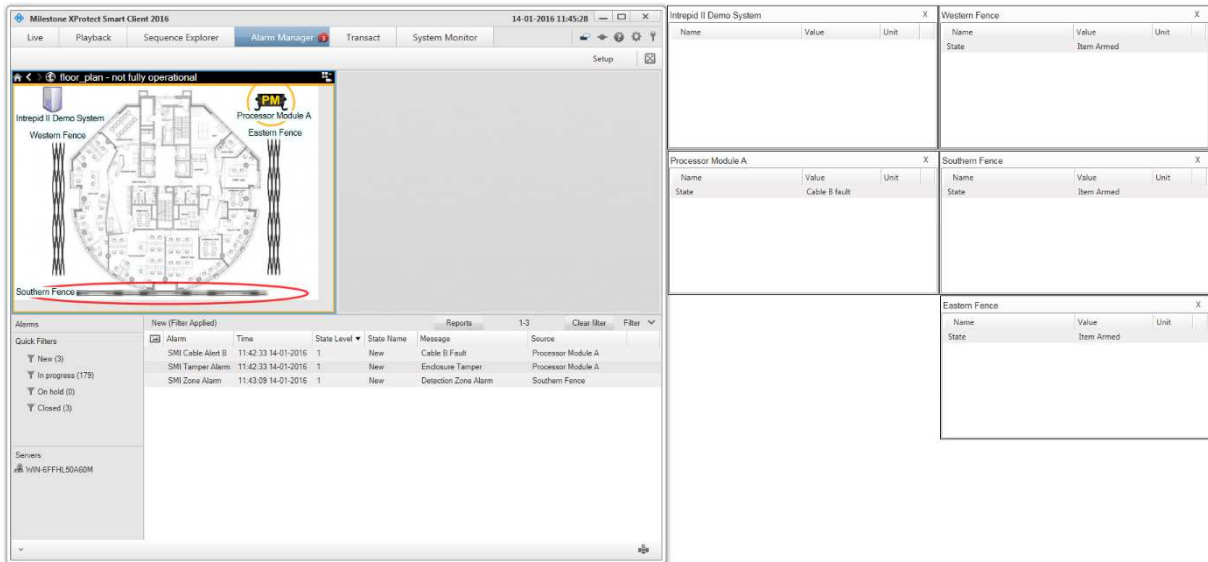


Figure 15: Example of a Map containing SMI Intrepid II elements with status details visible

The above sample MAP shows 5 SMI elements, three Detection Zones, one Processing Modules and a System element. As shown the processing module is marked by an orange circle indicating that the element is not fully operational (due to the 'Cable B fault' which is shown by the status details of the element). The red circle marking the 'Southern Fence' indicates that an alarm is active on the detection zone. Other states are described in the following paragraph.

Status

When an element has been placed on the map and the XProtect Smart Client is running in live mode, the status of the element will be provided. An irregular condition of the element is visualized by a circle surrounding the element. The following table describes the corresponding states of the SMI Intrepid II system, along with the *Status Visualization* option dialog of the XProtect Smart Client for configuring the desired visualization:

State	Description
Attention needed	The element indicates inactive mode, could be related to communication failure or incorrect address configuration.
Not operational	The element indicates a detected SMI device failure, see below table for details of specific device types.
Alarm	An alarm involving the element has been generated and listed with the <i>Alarm List</i> of the XProtect Smart Client.
Disabled	The element has actively been disabled and entered the <i>Disarmed</i> state.

Table 2: SMI Intrepid II plug-in system status indication

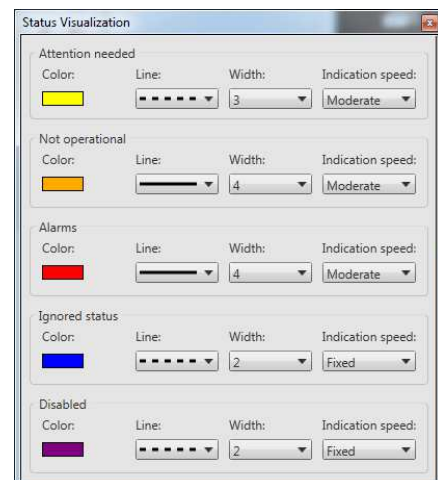


Figure 16: Map element states



All of the elements support the states: *Alarms* and *Attention needed*. The states: *Not operational* and *Disabled* are only supported by a few of the elements, the following table lists these element types along with an additional description of the cause of the state:

Element type	State	Description
Micro Point PM Micro Track	Not operational	Device tamper or cable A/B fault state detected.
Alarm Input	Not operational	Device tamper or when supervised mode has been enabled, the Line Status indication for an input will activate this state.
Model 330	Not operational	Device tamper faults detected, such as tamper, path or service alarms.
Relay Output 8/16	Not operational	Device tamper.
Remote Polling Module	Not operational	Device tamper or Line break state detected.
Detection Zone	Not operational	A dependent device is not operational, Micro Point/Track.
Detection Zone	Disabled	The Detection Zone has been disarmed.

Table 3: SMI Intrepid II plug-in element states

Status Details

Detailed status information for each of the elements is available by right-clicking an element (icon) and selecting *Status Details* from the right click menu, this opens a window with state information. State information will provide useful information of each element and is available on all SMI Intrepid II element types.

Example status information from a Processor Module and a Detection Zone:

SMI_PM_1 X		SMI_PM_DZ1 X	
Name	Value	Name	Value
Cable A	Ok	Dependencies	SMI_PM_1
Cable B	Ok	Faulty modules	None
Communication	Ok	Parent system	Intrepid RPM system
Enclosure tamper	Ok	State	Armed
Parent system	Intrepid RPM system	Status	Ok

Figure 17: Status Details examples



Site Control

When working with SMI Intrepid II map elements, the main system elements provides the control commands 'Arm system' and 'Disarm system' for enabling/disabling status updates and alarm generation from related Detection Zones. These commands are available directly on the map by right-clicking the required system element as illustrated here.

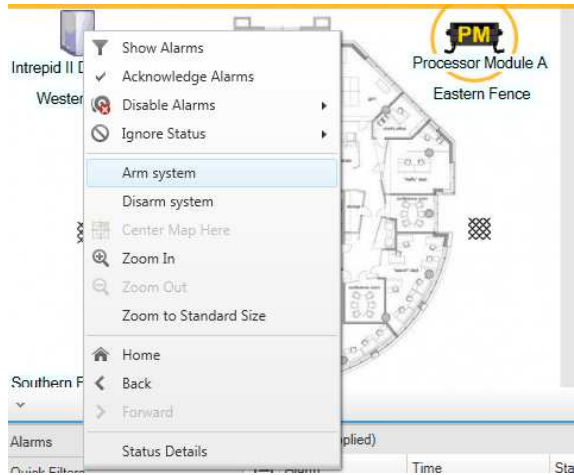


Figure 18: SMI Intrepid II system right-click menu

If a system has been disarmed then alarms and status updates will be ignored and no alarms, rules or status updates occurs. The Map will show the system and all related system elements as disabled. Selecting 'Arm system' will re-enable the system and return to normal operation for the entire system.

The sub-elements of a system detection zones can all be set to 'Armed' or 'Disarmed' so it's possible to only ignore communication from some parts of a system, i.e. if there's a faulty piece of hardware generating false alarms. An alternative to disarming an element is to select the specific element and ignore status, which is a part of standard Map functionality.



Troubleshooting

This section provides information, which helps the administrator solving cases where the plug-in fails to work. For detailed troubleshooting the XProtect Event Server log should be inspected, see section Event Server log.

Case: Plug-in is not showing in the XProtect Management Client/Application

Cause	Action
The version of the Milestone video management system does not support MIP SDK based plug-ins.	Upgrade the Milestone video management system is required, see General Description section for details about supported versions.
The Client/Application has not been restarted after installation of the plug-in.	Restart the Client/Application.
The location of Milestone surveillance components are not side-by-side of the MIPPlugins folder that contains the plug-in.	Inspect the installation folders and verify that the Milestone Surveillance (Enterprise, Professional or Express) or XProtect Management Client (Corporate or Expert) and XProtect Event Server are side-by-side of the MIPPlugins.

Cases: Status or alarms are not detected. Control commands (Disarm/Arm) have no effect on an element. Map displays many errors/warnings.

Cause	Action
Event Server is not running.	Open Windows Services window and check the status of Milestone XProtect Event Server, if not running then try to start it. If it fails to start then inspect the log file of the Event Server.
Plug-in is not loaded by the Event Server.	Inspect the log file of the Event Server, look for an entry resembling: "Plugin loaded: SMI Intrepid II Plug-in v1.0.104.1 - Milestone Systems A/S" Note that this only occur while starting the Event Server. If no log entries containing SMI_IntrepidPlugin are found then verify that the plug-in has been installed correctly. It should be typically located in: c:\Program Files\Milestone\MIPPlugins\SMI_Intrepid_II\
System not enabled or connection error while connecting to a SMI Intrepid II system.	Inspect the log file of the Event Server, look for entries that contains the following: "Loadconfiguration: Failed while initializing SMI Intrepid system" This line contains additional information describing the specific problem which should help in troubleshooting. Also check that the system information is in line with the hardware in use and that the <i>Enable System</i> setting is checked. Check the physical connection to the hardware (Processor Module) and that it is online.
Missing license file or other license issues.	Inspect the log file of the Event Server, look for entries that contains the following: "SMIntrepidLicenseCheck:CheckLicense()" This line contains additional information of the license status.



Event Server log

The plug-in is driven by the XProtect Event Server and initializes whenever the server is restarted. This server produces logging information, which also includes status and error messages from the plug-in. The log-file is typically located in the following folder:

C:\ProgramData\Milestone\XProtect Event Server\logs\MIPLogs

A new log-file is created on a daily basis and named following this format: MIP<date>.log. The content of the file can be viewed using a simple file viewer such as Microsoft Notepad.

Status/error messages for this plug-in are identified by "SMI_IntrepidPlugin", which is followed by an indication of which function that has been executed. The message following describes shortly what caused the status/error update.

Log details

The level of details being logged in the log file can be controlled from a configuration file, which is included with the plug-in. The configuration file is located in the installation folder, the file is called:

"VideoOS.SMI_IntrepidPlugin.dll.config"

The file can be edited with a simple text editor such as Notepad. The configuration includes a setting called 'logLevel'. The content of the configuration file is the following:

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <appSettings>
    <add key="logLevel" value="2" />
  </appSettings>
</configuration>
```

The logLevel setting consists of a key, which identifies the parameter and a value which has the value for the parameter. The value specifies the level of logging information, range is 1 – 3 where 3 gives the most details, this level is not recommended when running in a production environment, but is intended for detailed troubleshooting.

IMPORTANT:

Whenever changing the 'logLevel' setting the XProtect Event Server must be restarted in order to load the new setting.

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