Inovonics Wireless Devices and Sensors

Integration with Milestone XProtect

User Guide

Enhance the safety profile of Inovonics wireless devices by integrating Inovonics devices events with your Milestone XProtect camera network

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Summary

This document provides a basic overview as well as installation and operating instructions for the Inovonics wireless device and sensor integration with Milestone XProtect.

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1. Inovonics Wireless Sensor / Milestone XProtect Integration

1.1. Product Summary

This integration enhances the safety profile of Inovonics devices by connecting Inovonics device events with your wider Milestone XProtect video and security network.

The integration uses App-Techs' Bridge-to-XProtect (BTX) middleware to transform Inovonics device events into Milestone Alarm Records with video bookmarks.

BTX integrates any number of Inovonics devices connected to a EN6080 Gateway with Milestone XProtect. Inovonics devices that can be integrated with XProtect include motion detectors, panic buttons, duress pendants, window/door open sensors, glass break, water, temperature/humidity, and third-party compatible sensors such as OPTEX beam break & perimeter sensors.

1.2. Basic Data Flow

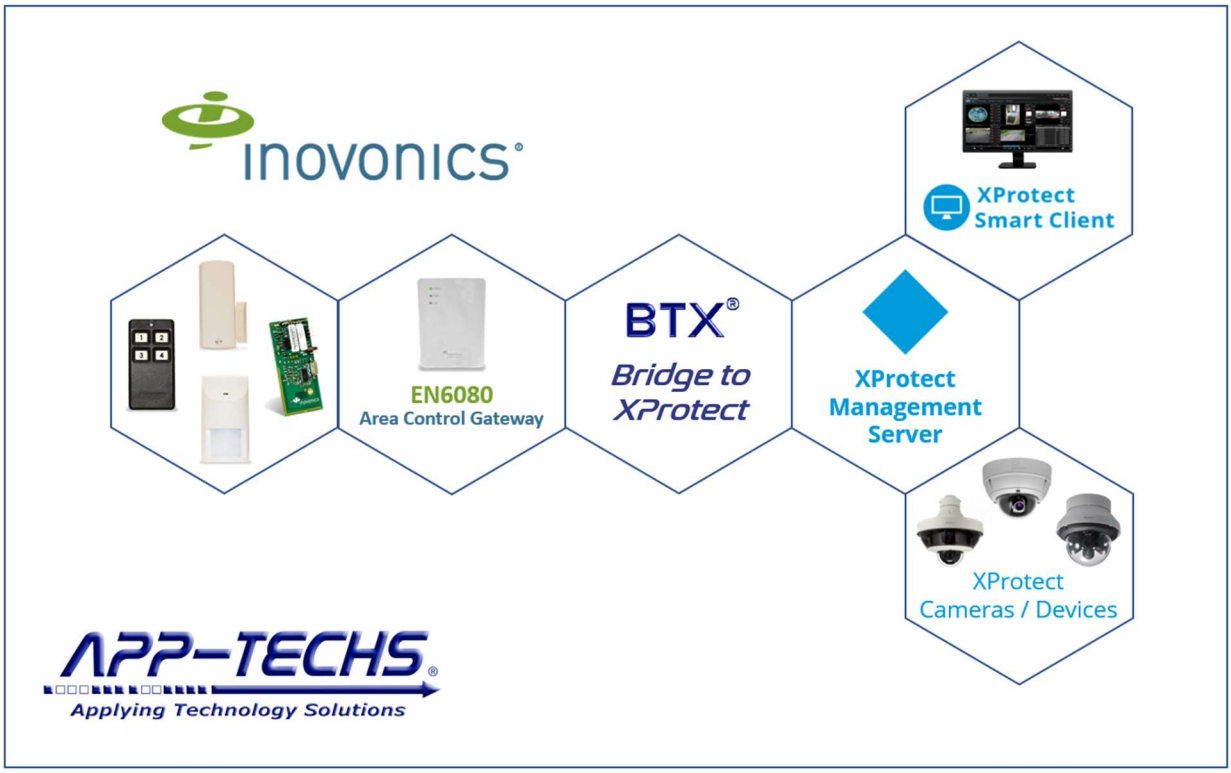
Inovonics edge device events are shared across the Inovonics wireless network, and the EN6080 Area Control Gateway provides an output to send device events and other wireless network events to third-party systems.

BTX uses a sub-system called the "BIX (Bridge-to-Inovonics) Listener" to establish a secure connection with the EN6080 Area Control Gateway. "BIX" is a small piece of software that receives and transposes Inovonics event data into an XProtect-friendly format. "BIX" forwards the transposed event data to BTX.

BTX filters the alarm messages by keyword and other user-defined settings, associates Inovonics device IDs with XProtect cameras/and devices, and generates XProtect event and/or alarm records with video bookmarks.

BTX also provides the user with the option to activate PTZ pre-sets, live matrix views, and XProtect user-defined events with minimal configuration required in the XProtect Management Client.

1.3. Data Flow Diagram



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1.4. Integration Features

The Inovonics integration with BTX provides the following functionality for use with Milestone XProtect:

- **ASSOCIATE** Inovonics devices and sensors with XProtect cameras and devices.
- **GENERATE** event and/or alarm records with Video Bookmarks when a device event occurs.
- **FILTER** Inovonics device events by type, source, and schedule.
- **TRIGGER** XProtect user-defined events to activate rules, notifications, announcements, strobes, and other security actions.
- **DISPLAY** XProtect Smart Client live matrix views when a device is activated.
- **ACTIVATE** PTZ commands (point cameras to the scene of a device event).
- **RENAME** alarms with site-specific information to alert operator to device event type, location, severity, priority or other.
- **INITIATE** access control commands (lock & unlock doors, etc.) in response to Inovonics device events.
- **MONITOR** the battery health of Inovonics devices.

1.5. Installation

BTX and the BIX Listener are typically installed on the Milestone XProtect Management Server.

After installing BTX, the BIX Listener can be found in the following directory:

- C:\App-Techs\BTX\Third-party\Inovonics

To configure, run “BIX.exe” as a desktop application.

BTX and the BIX Listener require a valid license to receive Inovonics device events and send them to Milestone XProtect. No separate purchase is required; BIX Listener licensing is included with the purchase of a BTX license.

Contact App-Techs to request license keys.

1.6. Run the Inovonics integration as a Windows Service

After being configured, BTX and BIX run in the background as Windows Services.

- To install BTX as a service, use the Windows Start Menu icons, and navigate to the following:
  - App-Techs → Bridge to XProtect → 3. Setup → 1a. Install BTX Service (Admin)
  - Optionally, it can be installed from the command line.
    - `C:\App-Techs\BTX\sys\BTX_util.bat InstallSrvc \App-Techs\BTX\sys`

- To run BTX as a service, use the Windows Start Menu icons, and navigate to the following:
  - App-Techs → Bridge to XProtect → 2a. Start BTX Service (Admin)
  - App-Techs → Bridge to XProtect → 2b. Stop BTX Service (Admin)
  - BTX can also be started and stopped in Windows “Services”.

- To install the BIX Listener as a service, use the Windows Start Menu icons, and navigate to the following:
  - App-Techs → Bridge to XProtect → 5. Third-party → 1. Inovonics Interface → 3a. Install Inovonics Event Listener Service (Admin)
  - Optionally, it can be installed from the command line.
    - `C:\App-Techs\BTX\Third-party\Inovonics/ivn-in.bat InstallSrvc \App-Techs\BTX\Third-party\Inovonics`
      (one line … without the carriage return)

- To run the BTX Code Blue Listener as a service, use the Windows Start Menu icons, and navigate to the following:
  - App-Techs → Bridge to XProtect → 5. Third-party → 1. Inovonics Interface → 2a. Start Inovonics Event Listener Service (Admin)
  - App-Techs → Bridge to XProtect → 5. Third-party → 1. Inovonics Interface → 2b. Stop Inovonics Event Listener Service (Admin)
  - BTX can also be started and stopped in Windows “Services”.

- NOTE: BTX and the BIX Listener cannot have an instance of each program running simultaneously (Windows service + desktop application). If configuration changes need to be made in either BTX or the BIX Listener, first stop the service, and then open as a Desktop application. Once changes are made, close the desktop application, and restart the Windows service.
  - BTX application .exe is found in the following directory:
    - `C:\App-Techs\BTX\sys\BTX.exe`
  - The BTX Code Blue Listener application .exe is found in the following directory:
    - `C:\App-Techs\BTX\Third-party\Inovonics\ BIX.exe`

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2. BIX (Bridge-to-Inovonics) Listener Setup and Configuration

The BIX Listener is a sub-system designed to establish a secure connection with the Inovonics EN6080 Area Control Gateway. After a connection is established, BIX receives Inovonics event data in real-time and extracts information useful to the integration with Milestone XProtect. BIX then relays the formatted data to BTX via TCP connection.

BIX transposes and forwards all Inovonics wireless network events to BTX. BTX provides the user-interface to filter events by type and source and associate Inovonics edge devices to XProtect cameras.

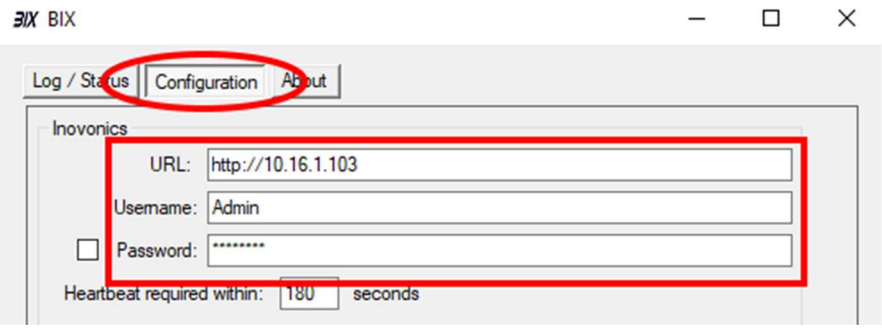
2.1. Configure the BIX Listener connection to the Inovonics EN6080 Area Control Gateway

Open the BIX Listener as a Desktop application.

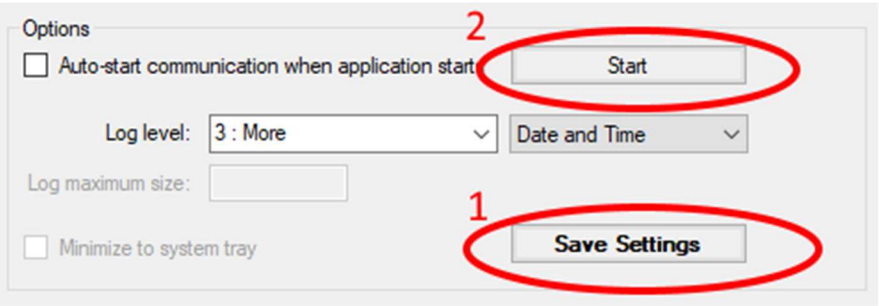
- `C:\App-Techs\BTX\Third-party\Inovonics\BIX.exe`

In the BIX Listener, go to the “Configuration” tab.

In the “Inovonics” section, enter the IP address, user and password of the Inovonics EN6080 Area Control Gateway.



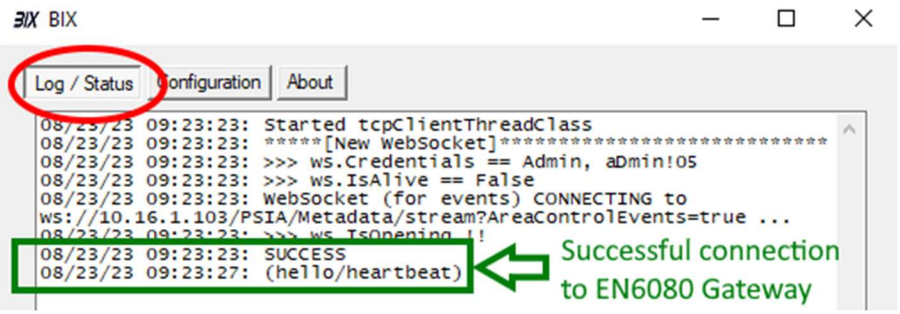
Click “Save Settings.” To test connection with the EN6080 Area Control Gateway, click the “Start” Button.



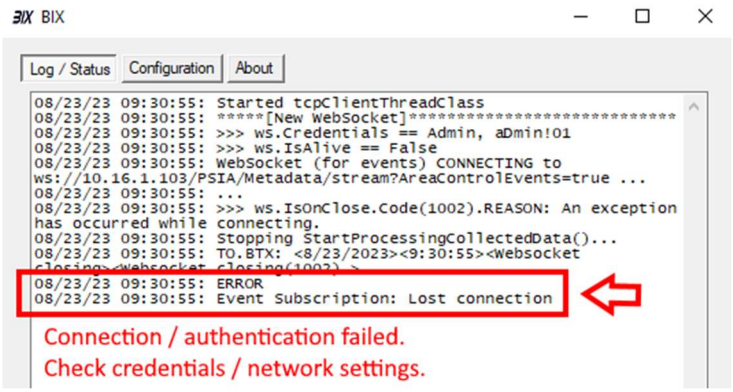
Confirm a successful connection by navigating to the “Log / Status” tab.

If the connection is successful, the log entries will report a SUCCESS message. This will be followed by (hello/heartbeat) message.

Heartbeat message are sent by the Inovonics EN6080 Area Control Gateway every five seconds to maintain and confirm connectivity.

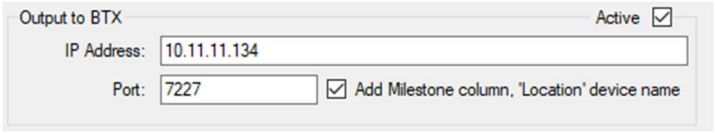


If the connection fails, the log will report a Lost Connection message. Check your IP address, device credentials, and network / firewall and retry.



2.2. Configure connection to the BTX (Bridge-to-XProtect)

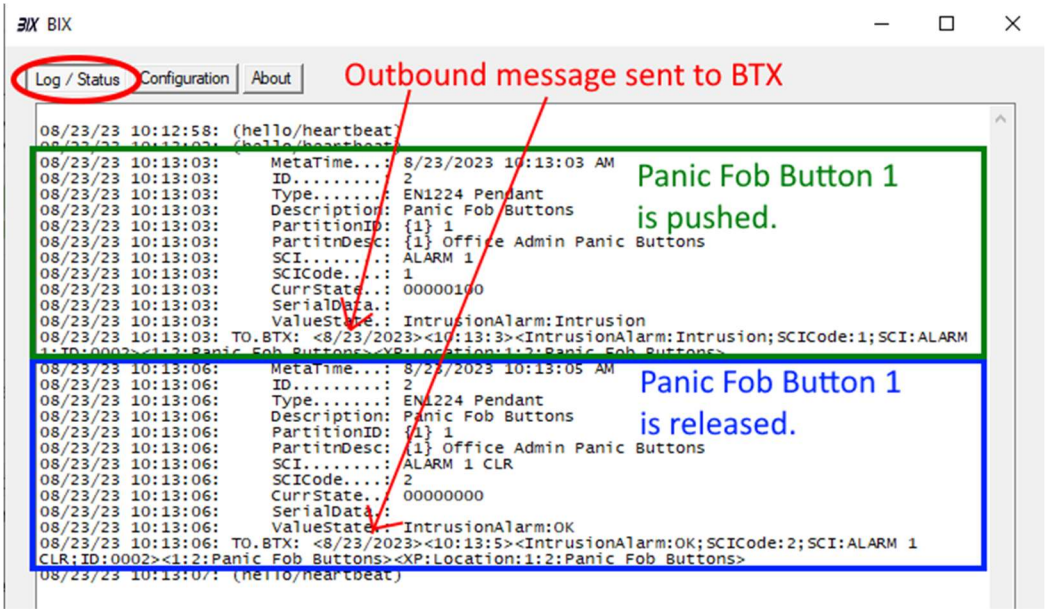
In the "Output to BTX" section, enter the IP address of the server where BTX is installed (typically 127.0.0.1. Default BTX port is 7227).



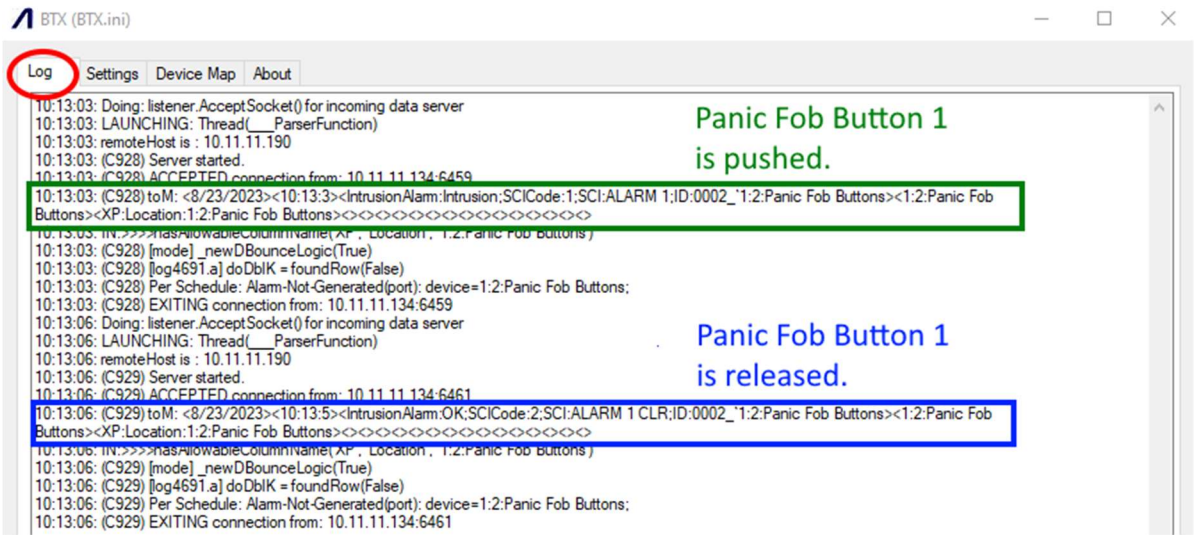
Save settings.

2.3. Send a TEST Inovonics device event to confirm Gateway → BIX Listener → BTX connection.

Activate an Inovonics edge device with an event (e.g. motion, panic, open window) to check log to confirm successful configuration.



To confirm the device event is successfully forwarded to BTX (Bridge-to-XProtect), open BTX and check the log window. With proper configuration, the BTX log window will also display the event data as it received from BIX in real-time.

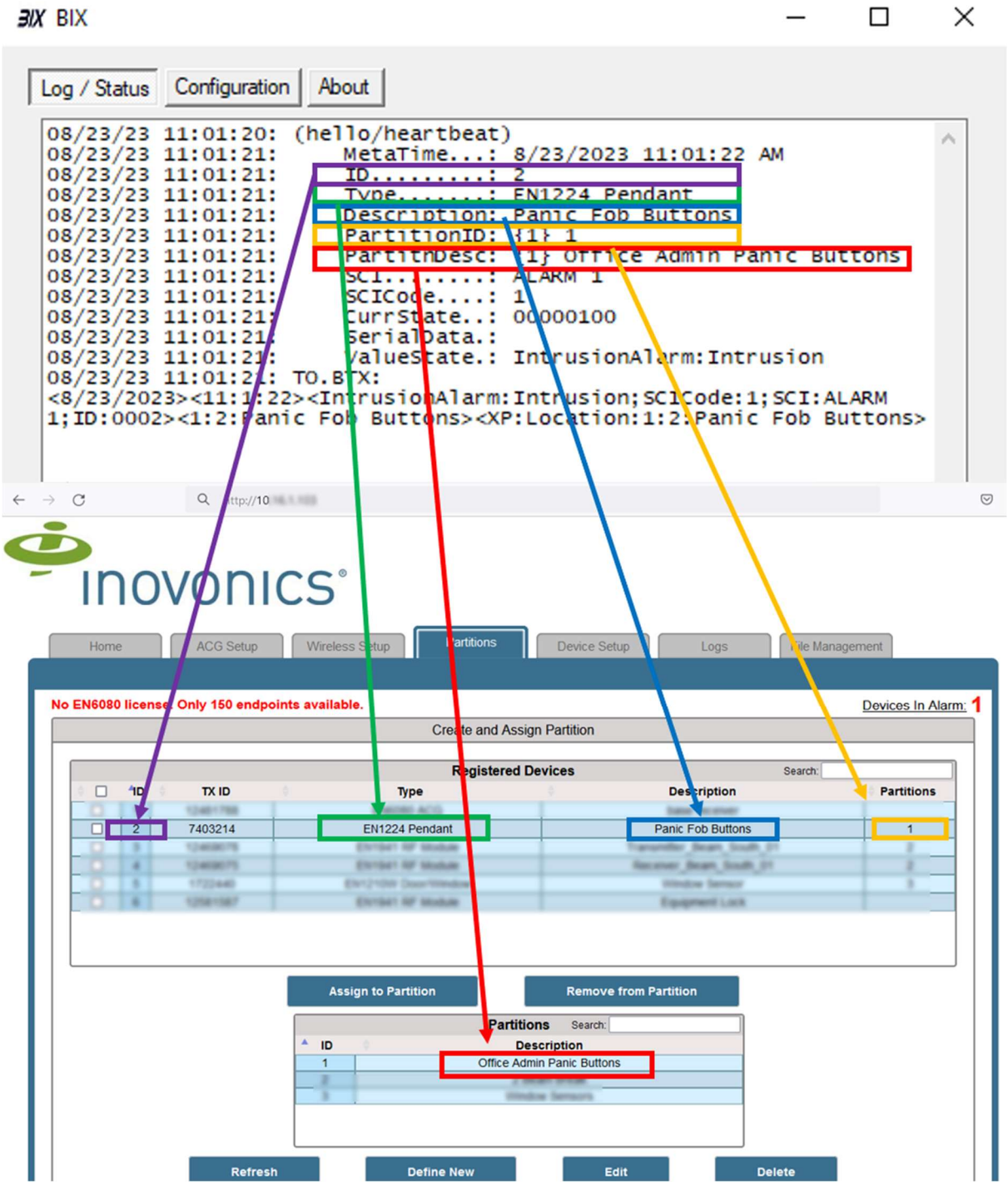


3. Explanation of Inovonics Event Data

The Inovonics EN6080 Area Control Gateway uses a series of codes and conventions to communicate device event information. BTX includes handling to make this data understandable and usable. The section covers typical events on the commonly deployed Inovonics devices. Contact App-Techs if you seek to map less common Inovonics devices and/or event types into XProtect.

3.1. Understanding Inovonics device event source data

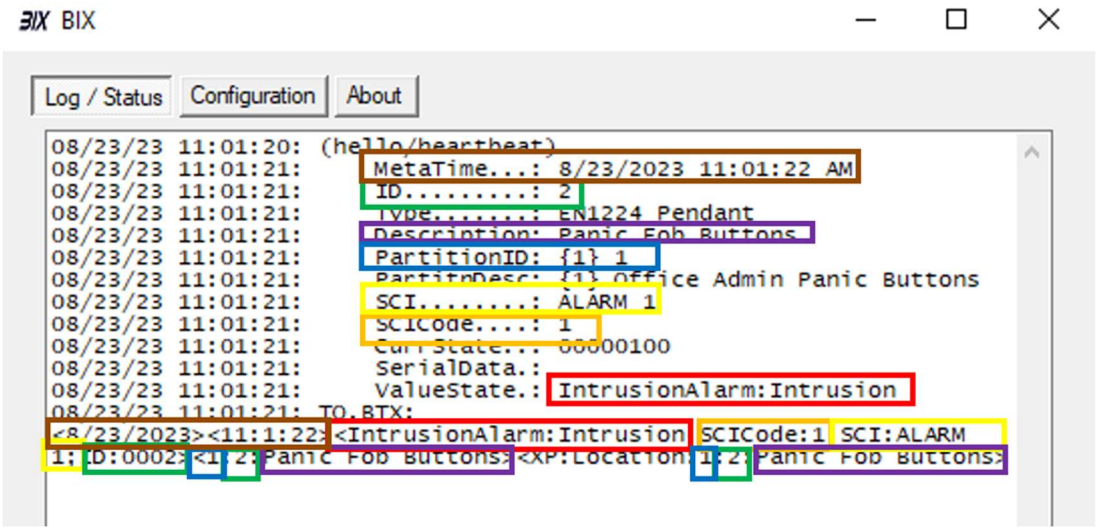
As shown below, Inovonics device data is displayed in the BIX log window when a device event occurs.



3.2. Understanding Inovonics event type data

BIX transposes and formats event and device data necessary to integrate Inovonics devices event with Milestone XProtect.

The image below shows the data points that are included in the BIX Listener output that is forwarded to BTX.



Below is a brief description of Inovonics data fields included in the outbound event messages to BTX.

MetaTime - Date/time of as reported by the Inovonics EN6080 Area Control Gateway.

ID – Edge device ID as entered in the Inovonics web user-interface.

Description – Edge device "Description" as entered in the Inovonics web user-interface.

PartitionID – Device partition ID as assigned in the Inovonics web user-interface.

SCICode – A coded description of the device event type.

Inovonics edge device event codes (partial list)

1	Alarm1	9	Device inactive	17	Maintenance required
2	Alarm1 has cleared	10	Device inactive clear	18	Maintenance cleared
3	Alarm2	11	Tamper activated	21	Device Reset
4	Alarm2 has cleared	12	Tamper cleared	25	Device configuration fail
5	Alarm3	13	EOL tamper activated	26	Device configuration success
6	Alarm3 has cleared	14	EOL tamper cleared		
7	Alarm4	15	Low battery		
8	Alarm4 has cleared	16	Low battery cleared		

ValueState – A coded description to further differentiate the device event type. Common values states are shown below.

TAG	VALUES
IntrusionAlarm	OK, Other, Panic, Tamper, Intrusion, Fire, Duress, Technical
Tamper	OK, Other, Tamper
Power	OK, Other, Failed, LowBattery
IntrusionTrouble	OK, Other, Trouble

4. Configuring BTX to Integrate Inovonics Device Events with Milestone XProtect

This section provides a basic configuration walk-through on how BTX associates Inovonics device events with XProtect cameras and generates alarm records with video bookmarks.

For detailed configuration instructions, refer to the BTX User Manual, which can be found in the following directory:

- C:\App-Techs\BTX\doc

4.1. BTX Overview – Receiving Alarm Data

BTX receives incoming Inovonics event data (and other third-party alarms) using the following format:

<DATE><TIME><NATURE OF EVENT><DEVICE NAME><OTHER EVENT METADATA>

Below is an example of an Inovonics device event message sent by the BIX Listener to BTX:

- `<8/23/2023><13:08:41><IntrusionAlarm:Intrusion;SCICode:1;SCI:ALARM 1><1:2:Panic Fob Buttons><XP:Location:1:2:Panic Fob Buttons>`

From the output, two key pieces of information are used to generate a Milestone XProtect alarm record:

- The Inovonics edge device event is reported as **IntrusionAlarm:Intrusion;SCICode:1;SCI:ALARM 1**
- The Inovonics edge device name is reported as **1:2:Panic Fob Buttons**

The sections below detail how to take these (2) data points to complete the integration with Milestone XProtect.

Note: Other data points contained in the Inovonics event message can be used to filter alarms and trigger a host of BTX features. See the BTX User Manual for additional information.

4.2. Connect Bridge to XProtect (BTX) with Milestone XProtect– "Settings" Tab

Open Bridge to XProtect (BTX), or BTX.exe.

Go to the "Settings" tab. Enter the Milestone XProtect Management Server credentials. The XProtect user must have administrative privileges.

Click "Save."

Close BTX, and re-open it to force it to re-authenticate with the new settings. (The BTX log window will indicate if authentication to the XProtect Management Server is successful).

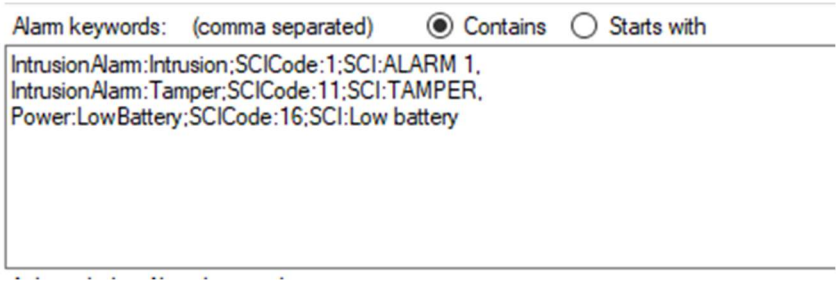
- 13:02:09: Milestone login SUCCESSFUL. remoteHost==10.1.15.100

4.3. Specify Inovonics Alarm Keywords in BTX

Return to the BTX "Settings" tab. In the "Alarm keywords:" field, indicate which Inovonics alarm keywords will be used to generate a XProtect alarm.

Samples below. The keywords entered in this field depend on which Inovonics device events will be sent to Milestone XProtect. BTX logs and ignores device events that do not contain a keyword match.

Click "Save."



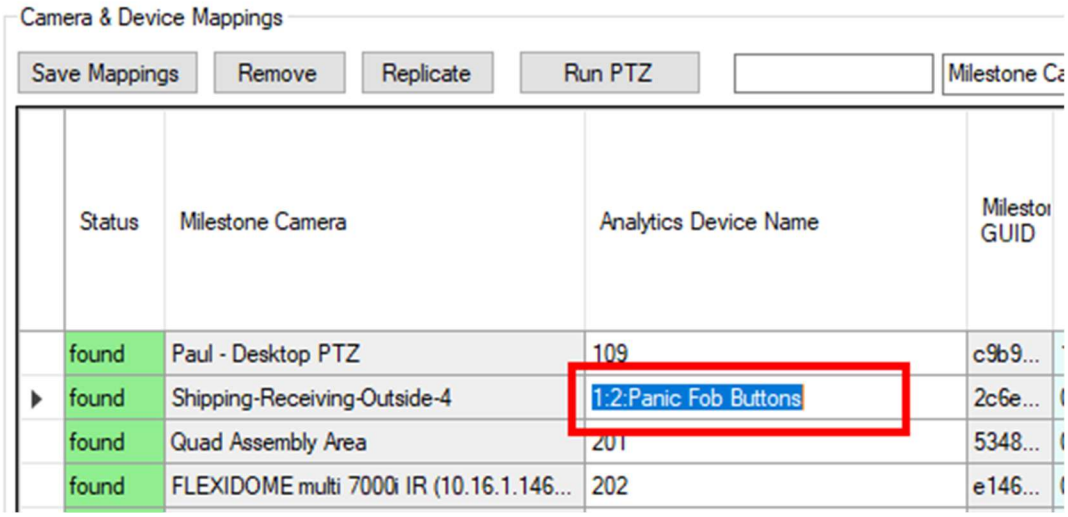
4.4. Map the Inovonics Device ID with XProtect cameras/devices– "Device Map" Tab

To associate Inovonics edge devices with Milestone XProtect cameras, go to the BTX "Device Map" tab.

In the "Analytics Device Name" column, type in the Inovonics **<DEVICE NAME>** in the cell that corresponds to the Milestone XProtect camera row you wish to map.

This will associate the Inovonics edge device with a Milestone XProtect camera/device.

- Sample Inovonics device event: <8/23/2023><13:08:41><IntrusionAlarm:Intrusion;SCICode:1;SCI:ALARM 1><**1:2:Panic Fob Buttons**><XP:Location:1:2:Panic Fob Buttons>



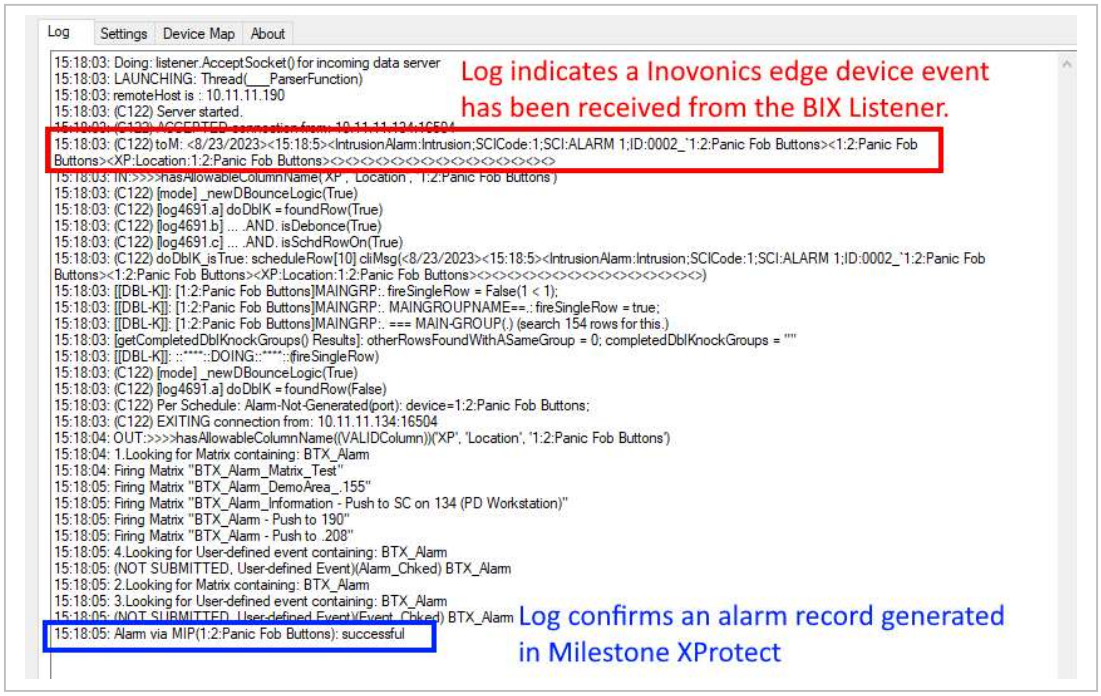
Click "Save Mappings."

BTX will now generate an XProtect alarm record when the edge device is triggered.

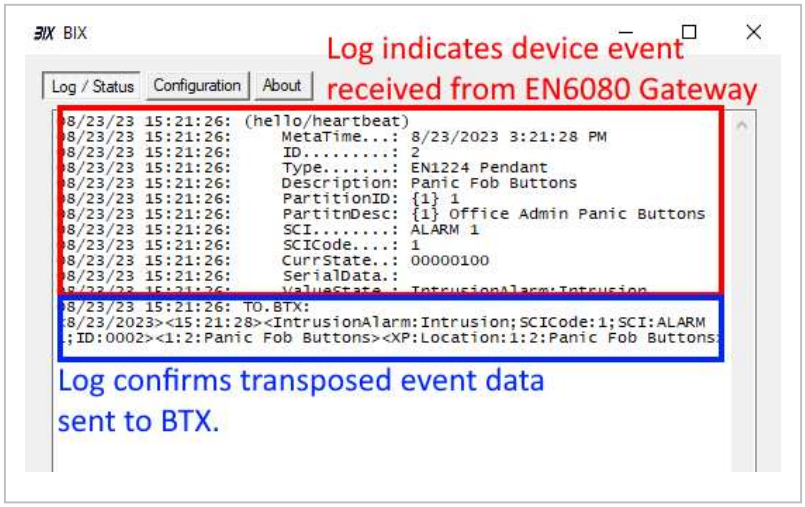
BTX can also be used to fire Matrix views, user-defined events, and PTZ presets. Consult the BTX User Manual for more information.

4.5. Confirm Successful Code Blue Alarm Forwarding to XProtect – "Log" Tab

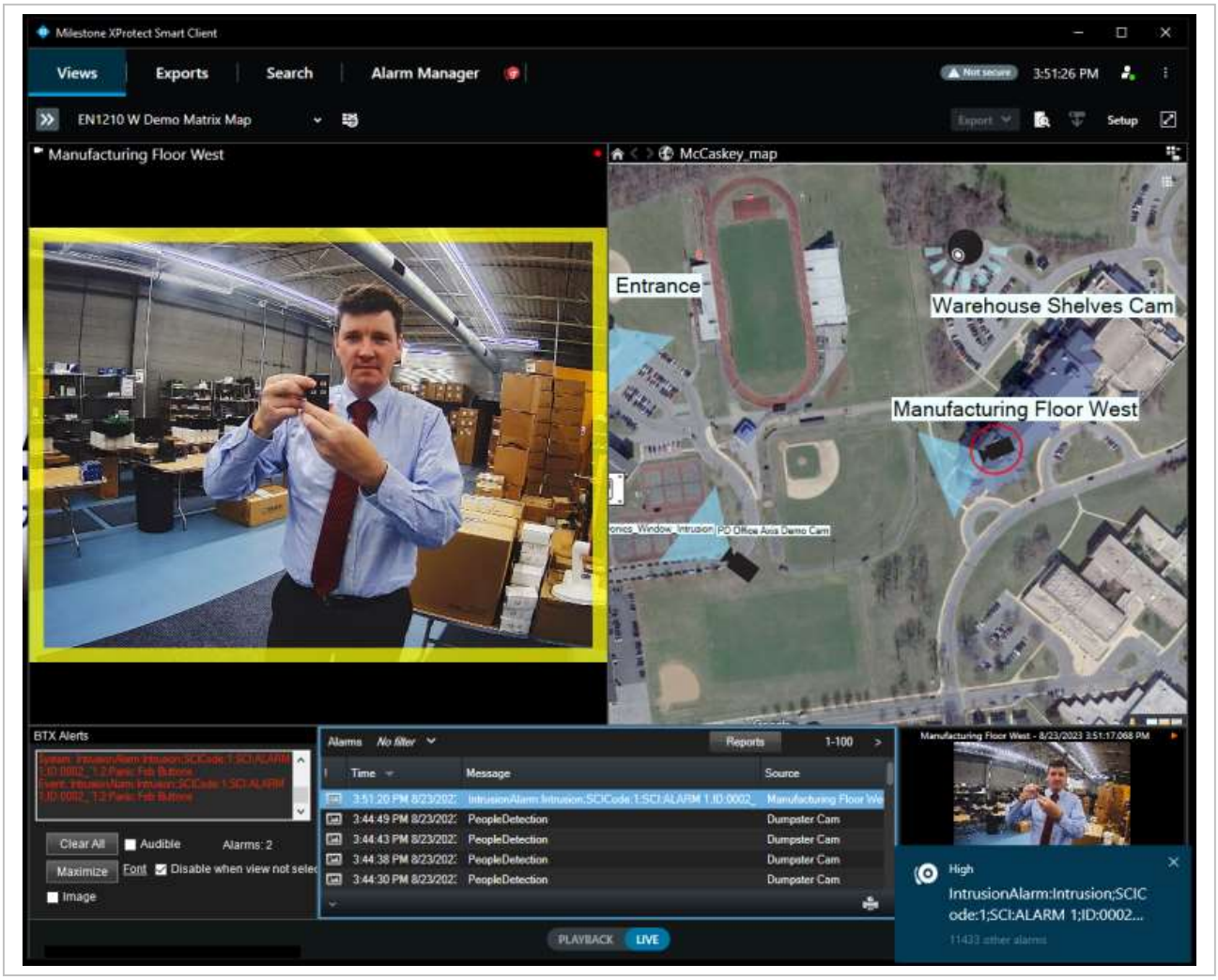
The "Log" tab provides useful information on what alarm messages are being received by BTX, and also what actions BTX executes based on its current configuration. The "Log" tab is the primary way to verify test and verify device and keyword mappings.



The BIX Listener also displays all incoming and outgoing events in the log. Use the log to verify when Inovonics events occurred and verify that messages are being properly received and formatted.



5. Sample Output to Milestone XProtect Smart Client



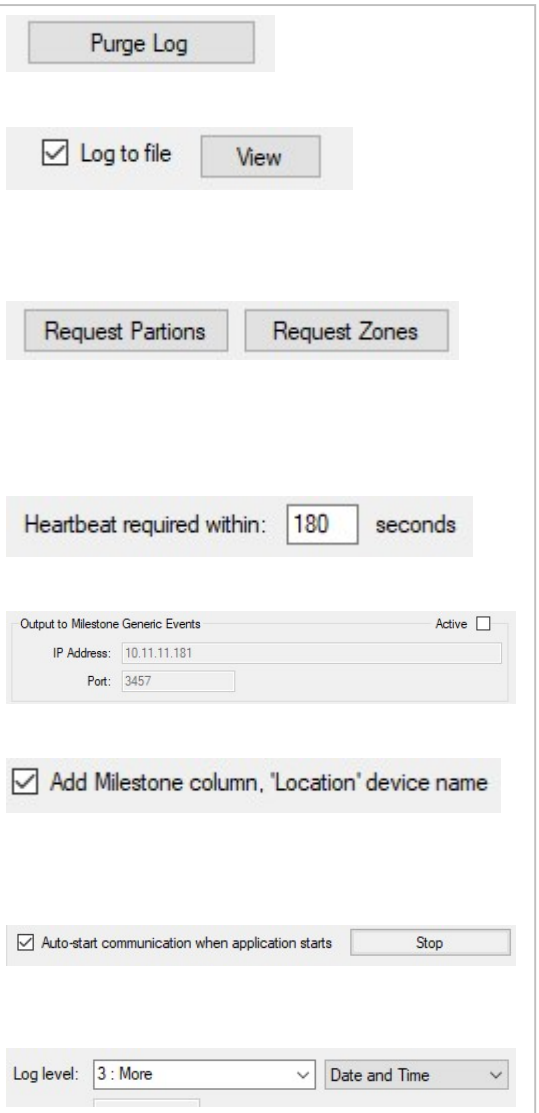
BTX includes several features to improve the display of Inovonics alarm records in the Milestone XProtect Smart Client.

- BTX can rename XProtect Smart Client alarm messages to include site-specific information about the nature of the alarm.
  - Ex. Substitute *"IntrusionAlarm:Intrusion;SCICode:1;SCI:ALARM 1"* and easily change it to ... *"Panic Button Push at App-Techs Manufacturing Floor West Warehouse."*

- BTX can trigger live Matrix views, PTZ Presents, and in XProtect with minimal setup required.

6. BIX Listener Settings

6.1. Other Settings options explained



Purge Log (Button) – Clears the on-screen log window to facilitate troubleshooting and testing. This DOES NOT erase or remove log files.

Log to file (Checkbox) – Log all data received into the log file. Default is checked. Without logging there is no method to verify if events have been received.

View (Button) – View current day's log file in Notepad.

Request Partitions (Button) – Request partition data from the EN6080 gateway. Data can be accessed by opening the log file.

Request Zone (Button) – Request zone data from the EN6080 gateway. Data can be accessed by opening the log file.

Heartbeat required within: x seconds – The BIX Listener will send a message to BTX indicating the connection to the EN6080 Gateyway is lost / disrupted. Users have the open to then send this message to Milestone XProtect as an alarm, event, or user-defined event (to trigger notification rules).

Output to Milestone Generic Events– Optionally send Inovonics device to XProtect directly as generic events.

Add Milestone column, 'Location' device name (Checkbox) – This feature provides a method to have individual Inovonics devices trigger individual XProtect user-defined events. Also, by adding this field, the Inovonics source device name (as reported by the EN6080 Gateway) can be displayed in the Milestone XProtect Smart Client Alarm List.in the "Location" column.

Auto-start communication when application starts (Checkbox) – Important. Without activating this feature, the BIX Listener will not automatically establish a connection to the EN6080 Gateway while running as a Windows service. I

Log Level – Control the amount of data stored in the log file.

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7. FAQ

7.1. Can the integration run in the background?

A: Yes. Section 1.6 above includes instructions on how to run BTX and BIX as Windows services.

7.2. Can I map multiple Inovonics Devices to a single XProtect camera/device?

A: Yes. In BTX, go to the "Device Map" tab and simply replicate a row that corresponds to the XProtect camera device in question and add to the second Inovonics device to the newly-created row. Click save. You can also map PTZ presets for each device. See the BTX User Manual for additional information.

7.3. The Inovonics event codes are confusing. What does "IntrusionAlarm:Intrusion;SCICode:1;SCI:ALARM 1" mean?

A:. When setting up your integration with XProtect, the easiest method to determine what an event code means is to set up a test device and trigger test events. Trigger an event, and look at the BIX Listener logs to see how it is reported by the EN6080 Gateway.

Note: When configuring your camera associations in BTX, the camera row on the "Device Map" tab contains a field called "Alarm Keyword Replacement." When BTX forwards an alarm to XProtect, use this field to substitute "IntrusionAlarm:Intrusion;SCICode:1;SCI:ALARM 1" with a preferred alarm name.

This will make the alarm user-defined, site-specific, and understandable to an operator who may be unfamiliar with the Inovonics event codes.

8. Legal

8.1. Surveillance Privacy

Always use discretion when installing video and / or surveillance equipment especially when there is perceived privacy, or an expectation of privacy. Inquire regarding federal, state and / or local regulation applicable to the lawful installation of video and / or audio recording or surveillance equipment. Party consent may be required.

8.2. Disclaimer

App-Techs has made every effort to provide accurate and reliable information. However, App-Techs does not warrant that the contents of this document will meet your requirements; or that the operation of your system will be uninterrupted or error free before, during or after execution of any instructions; or that the content itself is in fact accurate or reliable.

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