Milestone Parcel Tracking 3.1 User's Manual

Target Audience for this Document

This document is aimed at users of the Milestone XProtect® Smart Client Parcel Tracking 3.1 software. It describes how to use the XProtect Smart Client (with the XProtect Smart Client Parcel Tracking plug-in installed) to define routes, search for parcels, select a route, adjust the video for that specific route and export the video related to a tracked parcel to an AVI file. This document does not cover installation of standard Milestone software.

To benefit from this document, you should have a thorough knowledge of Milestone XProtect video management software including configuration of XProtect Transact.

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

Contents

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This product may make use of third party software for which specific terms and conditions may apply. When that is the case, you can find more information in the file *3rd_party_software_terms_and_conditions.txt* located in your Milestone video management system installation folder.

General Description

The Milestone XProtect Smart Client Parcel Tracking plug-in makes it possible to enable logistics centrals to search for parcels and export video evidence to a single AVI file containing all recorded video from multiple cameras of a parcel on a given route. The plug-in is installed on every machine running the Milestone XProtect Smart Client. The plug-in is compatible with the following:

- Milestone XProtect Corporate 2017 R3 or newer
- Milestone XProtect Expert 2017 R3 or newer
- Milestone XProtect Express+ 2017 R3 or newer
- Milestone XProtect Professional 2017 R3 or newer
- Milestone XProtect Professional+ 2017 R3 or newer

Solution overview

The Milestone XProtect Parcel Tracking 3.1 product is an XProtect Smart Client plug-in that requires Milestone XProtect Transact to collect data related to parcels identified at specific Transact sources at specific timestamps. This is typically achieved by using built-in connectors (TCP Client or Serial Port connectors) connected to the XProtect Transact server. Different type of transaction sources may be supported through custom connectors developed with the Milestone Integration Platform Software Development Kit (MIP SDK).

This document describes how to configure and operate the Milestone XProtect Smart Client Parcel Tracking 3.1 plug-in. For details of how to configure the Milestone XProtect Transact please refer to the documentation for this product.

Configuration of the Milestone XProtect Smart Client Parcel Tracking 3.1 plug-in is done in the options dialog where the route configuration is managed. A route contains a name, description, transact source and a series of cameras with time configuration of when the parcel enters and exits the cameras view area relative to previous camera on the route.

Side Panel

The Milestone XProtect Smart Client Parcel Tracking 3.1 plug-in is operated in a custom workspace named “Parcel Tracking”. The “Parcel Tracking” workspace contains a side panel with the Parcel Tracking MIP plug-in as well as one workspace with two views listing all cameras for the selected route. The side panel provides search capabilities for identifying the packet and selecting a specific instance and route as well as exporting the route when the route has been validated and possibly adjusted in the “Parcel Tracking” view item.

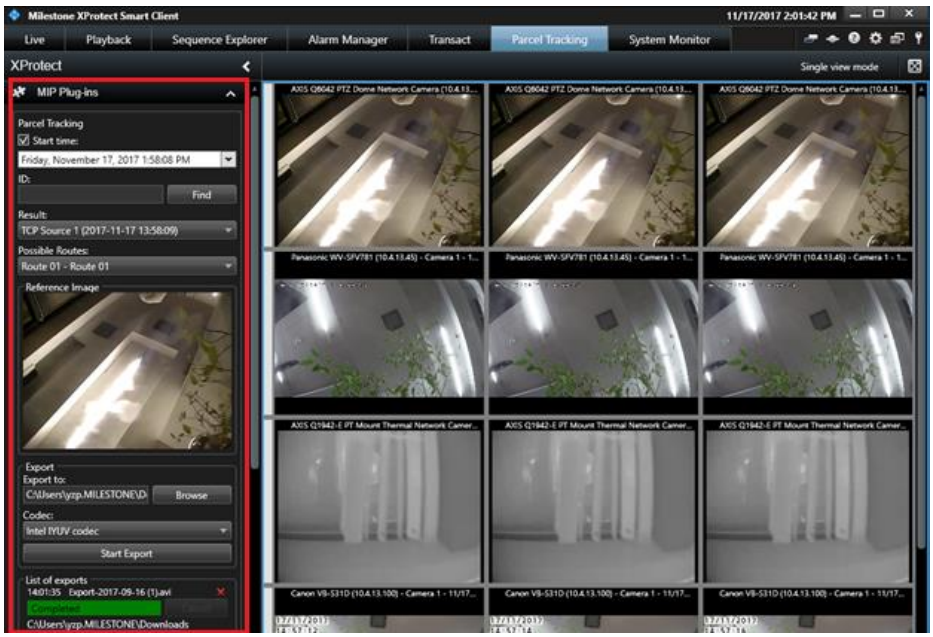


Figure 1: The side panel provides search capabilities for identifying the packet and selecting a specific instance and route as well as exporting the route when the route has been validated and possibly adjusted in the "Parcel Tracking" view item.

The side panel also holds the reference image placeholder where the parcel image is displayed, and it is taken from the center image viewer of the first row in the Triple view mode. To open the reference image in a standalone pop up screen use mouse right button and click on the reference image placeholder. As a result, a pop up screen of the parcel image appears on the screen. It is possible to move and resize the standalone screen to be convenient for the user.

The "Parcel Tracking" workspace consists of two view modes.

Triple view mode

Here each camera on a route is displayed in 3 image viewers in a row. The image viewer to the left displays the first image of the parcel, the center image is the main control displaying the "center image" and the image viewer to the right displays the last image of the parcel. Each image viewer for all cameras can be adjusted to identify the exact relevant video for the specified route before export.

Single view mode

Here each camera on a route is displayed in a single image viewer in a sequence, as each presents the center of the parcel or the exact time, when the entire part of the parcel is shown.

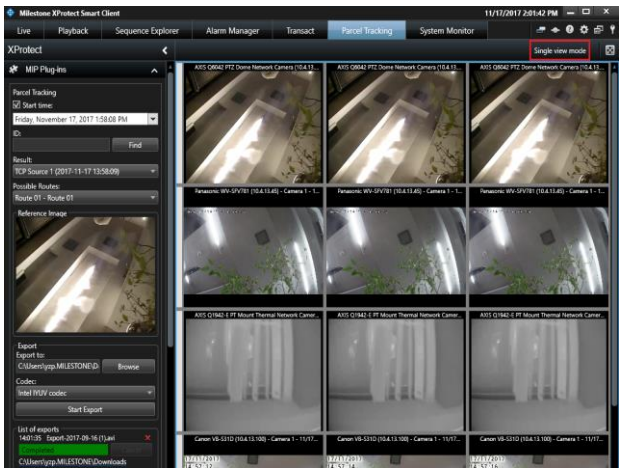


Figure 2.1: Triple view mode. It is possible to switch view modes, by clicking on "Single view mode"

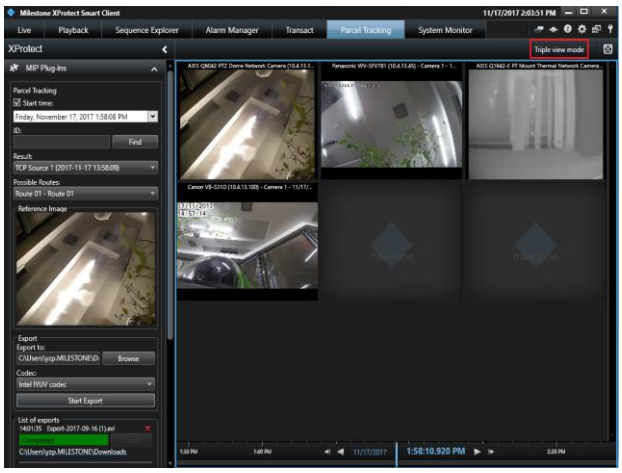


Figure 2.2: Single view mode. It is possible to switch view modes, by clicking on "Triple view mode"

Installation

Installation Procedure

The Plug-in must be installed on the machine running the Milestone Smart Client.

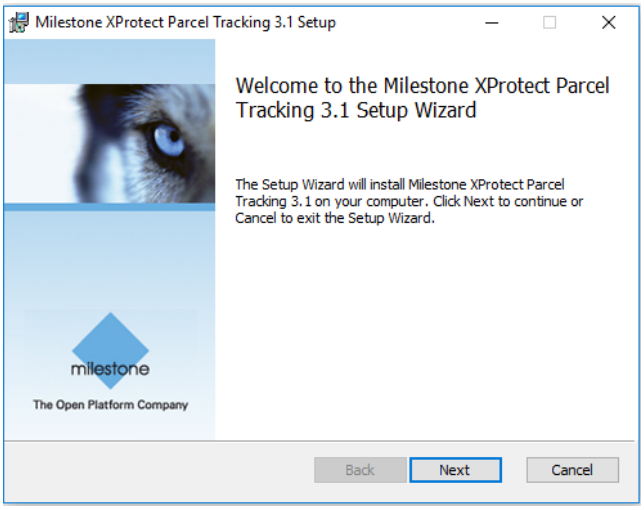
The following describes how to install the plug-in:

1. Install the Milestone XProtect Parcel Tracking 3.1 plug-in by running the following installer application:

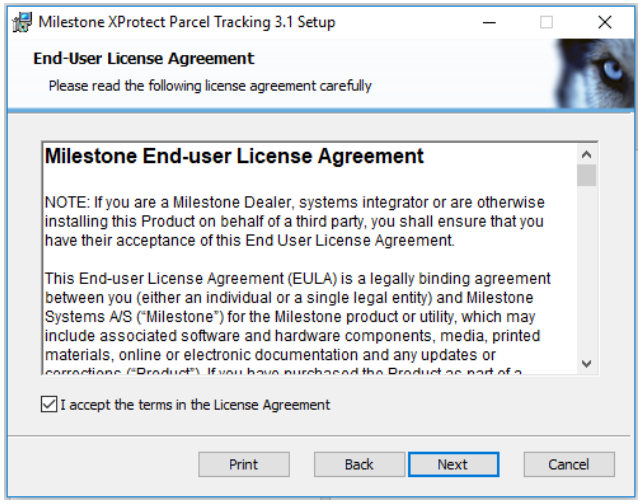
   ParcelTrackingInstaller.msi

2. Depending on your security settings, you may receive one or more security warnings. When this is the case, click the *Run* button.

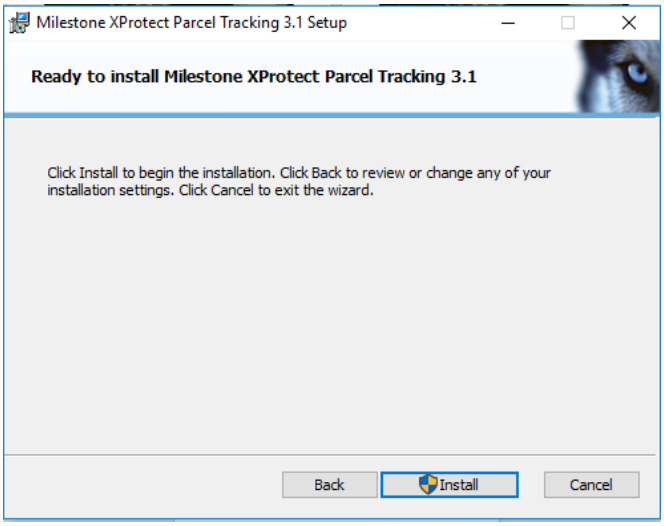
3. When the installation wizard starts, click *'Next'* to continue.



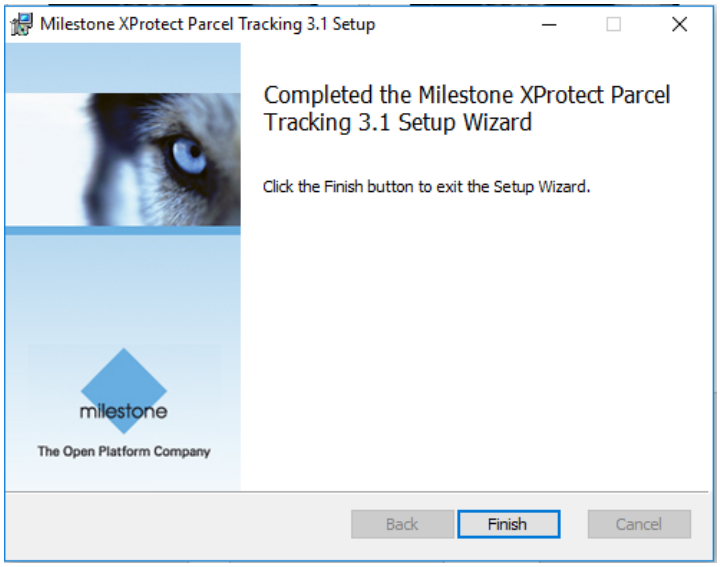
4. To proceed read the Milestone End-user License Agreement and if this can be accepted check the checkbox "I accept the terms in the License Agreement". Click *'Next'* to confirm the installation.



5. When the installation wizard is ready to install Milestone XProtect Parcel Tracking plug in, click *'Install'* to begin the installation.



6. The installation is now completed. Click 'Finish' to close the installer.



7. Run or Restart the Milestone XProtect Smart Client application.

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

C:\Program Files\Milestone\MIPPlugins\ParcelTracking\

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

Licensing

The Milestone XProtect Smart Client Parcel Tracking 3.1 plug-in requires a valid MIP licensing in order to work. The license is based on the SLC of the Milestone XProtect video management software. Initially, a trial period of 30 days is automatically granted along with installation of the plug-in.

That is, for testing purposes, anyone can install and immediately start testing the Milestone XProtect Smart Client Parcel Tracking plug-in as a fully functional product for the following 30 days.

To obtain a permanent license; however, the distributor must know the SLC of the Video Management System (VMS) system on which the plug-in has been installed. Collect the SLC and send it to the distributor, preferably via email.

Once the license is added onto the SLC by Milestone Systems, the corresponding XProtect VMS system must be re-activated for the license to take effect.

Configuration

Configuration of the Milestone XProtect Smart Client Parcel Tracking 3.1 plug-in is done in the Options dialog.

To open the Options dialog, click on the gear icon in the top right part of the Smart Client.

Figure 3: Gear icon marked by a red square

In the Options dialog select “Parcel Tracking” in the left part of the dialog where the following settings can be configured.

Route Definition

Route represents predefined sequence of cameras, which track already identified moving direction of a exact parcel. Each Route is consistent with one transact source and it could be composed of as many cameras as possible, to describe a parcel itinerary. When crossing routes are defined it is possible the parcel to be scanned by more than one transacts source.

Routes Operation

Displays a list of configured routes. Each route can be edited, deleted or copied by selecting the route in the list by clicking on the “Edit”, “Delete” or “Copy” button. New routes can be added by clicking on the “Add” button.

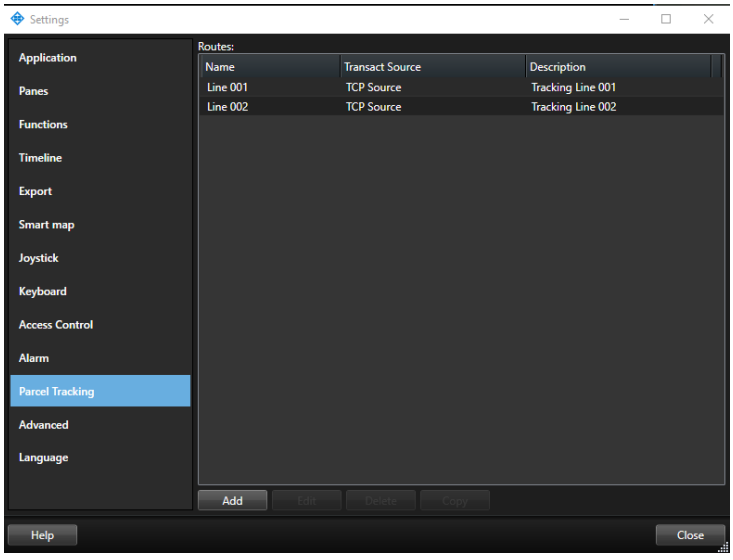


Figure 4: Options dialog displaying routes for the Parcel Tracking plug-in

When a new route is added or an existing route is edited the Add/Edit Route dialog will be displayed to add or edit the data of the specific route (the name of the form will be either “Add Route” for a new route or “Edit Route” for editing an existing route).

In the Add/Edit Route dialog the following settings can be configured.

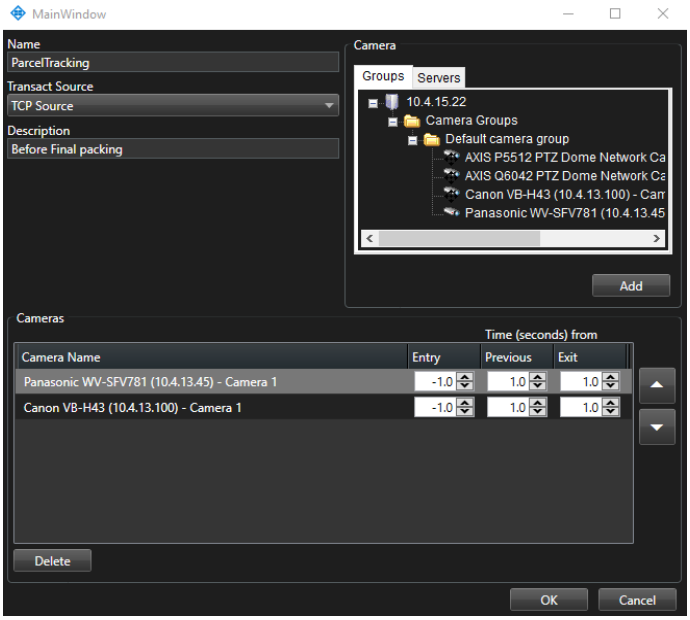


Figure 5: Add/Edit Route dialog

Name: The name of the route.

Transact Source: The available sources on the XProtect Transact server will be listed and the source that identifies the parcel for this specific route should be selected.

Description: The description of the route.

Camera: Select a camera from the tree (based on Groups or Servers) to add to the route.

Cameras: A list of all the Cameras covering the route.

Time configuration for the cameras should follow the rules below:

- For the first camera in the list, the column “Previous” marks the number of seconds that elapses from a parcel is scanned until it reaches the center of the view angle of the camera. This column must be a number (a negative number indicates that the parcel is scanned after appearing at the center of the view angle of the first camera).
- For each of the following cameras in the list, the column “Previous” marks the number of seconds that elapses from a parcel was in the center of the view angle of the previous camera until it reaches the center of the view angle of this camera. This column must be 0 or a positive number.
- For all cameras in the list, the column “Entry” marks the number of seconds from a parcel enters the camera’s view angle until it reaches the center of the view angle. This column must be 0 or a negative number (as the parcel enters the camera’s view angle before it gets to the center of the view angle).
- For all cameras in the list, the column “Exit” marks the number of seconds from a parcel is in the center of the camera’s view angle until it exits the camera’s view angle. This column should be 0 or a positive number.

The  button will move the selected row one up.

The  button will move the selected row one down.

The “Delete” button will delete the selected row.

Operations

Operation of the Milestone XProtect Smart Client Parcel Tracking 3.1 plug-in is done in the “Parcel Tracking” workspace.
To open the “Parcel Tracking” workspace click on the workspace in the workspace list of the Smart Client.

Figure 6: Parcel Tracking workspace marked by a red square

The “Parcel Tracking” workspace contains a side panel and two view grid modes. The side panel enables the operator to search for a specific parcel and select a route. The side panel also presents the reference image of the parcel.

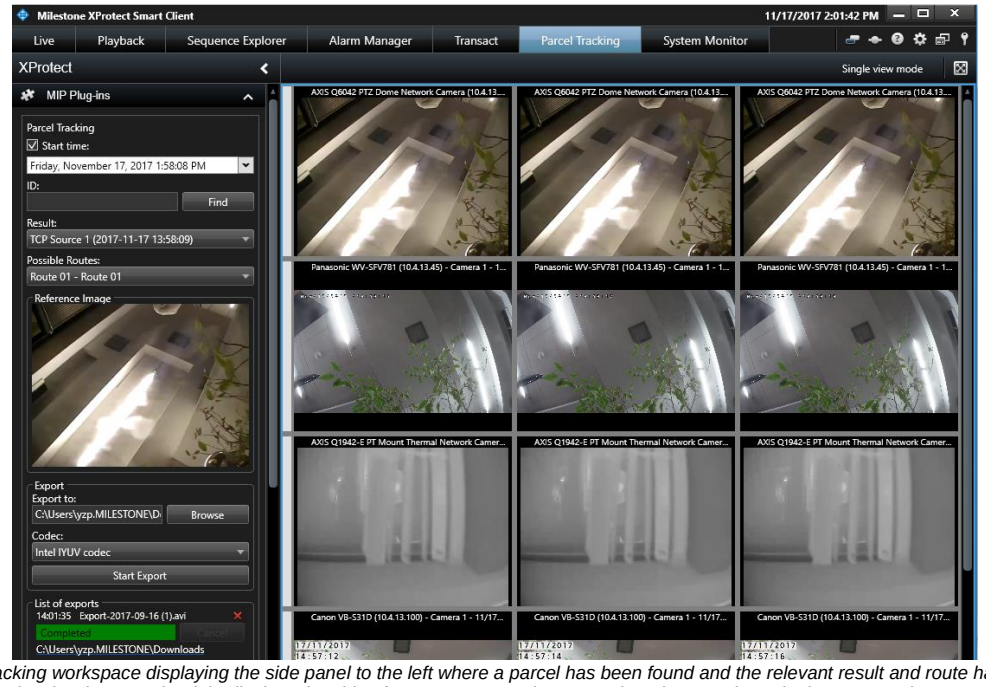


Figure 7: Parcel Tracking workspace displaying the side panel to the left where a parcel has been found and the relevant result and route has been selected for the view items to the right displays the video from cameras on the route when the parcel was in the camera view area

The search option enables the operator to limit the timespan of the search and specify a full parcel ID, wild-card or a subpart. When the “Find” button is pressed the results of the search is shown in the "Result” drop down. Here a result can be selected where after the “Possible Routes” dropdown box will be populated with the possible Routes the parcel can have traveled. When a route has been selected, the given parcel at the given route will be presented in the workspace Triple view mode. If only one route is available this will be selected by default.

Toggle between view modes

When a parcel has been selected from the side panel all assigned cameras for the route are presented in the “Triple view mode” (default view). To switch between the both view modes the operator should press “Single view mode” button at the right-top side in the workspace. To switch back to “Triple view mode” should press the button again.

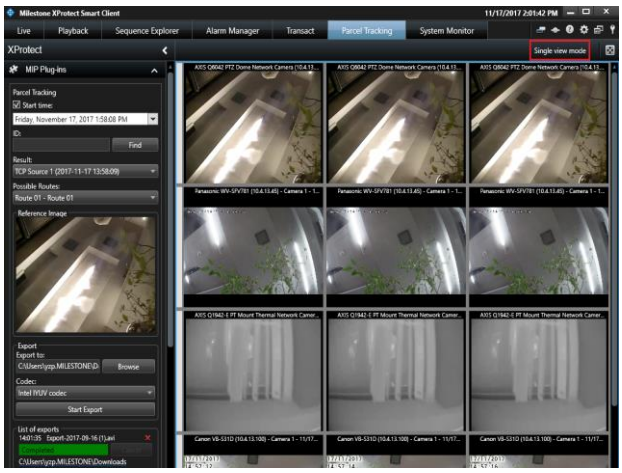


Figure 8.1: Triple view mode. It is possible to switch view modes, by clicking on “Single view mode”

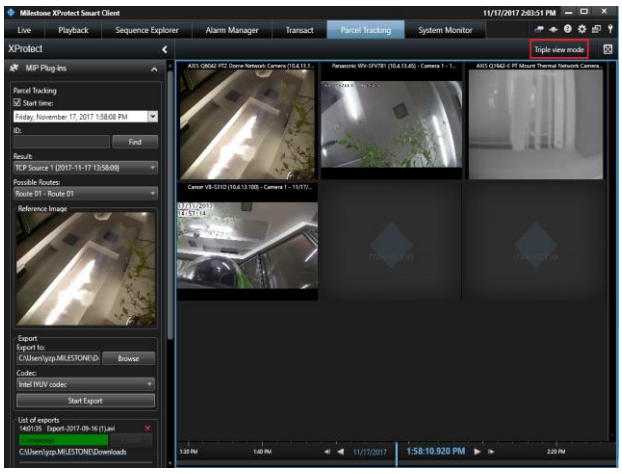


Figure 8.2: Single view mode. It is possible to switch view modes, by clicking on “Triple view mode”

Triple view mode

Triple view mode displays three image viewers in a row for each camera on the selected route. The image viewer to the left displays the frame of the camera when the parcel enters the cameras viewing area. The image viewer in the middle displays when the parcel is in the center of the cameras viewing area. The image viewer to the right displays the frame where the parcel is leaving the cameras viewing area.

By clicking in a viewer, it is possible to manually adjust the specific timestamp for when the parcel was either entering, in center or leaving the camera view area. The relative timespan between entry and center as well as center and exit will be kept constant when playing the video from the center image viewer.

When the timestamp of the center viewer is updated this will reflect the timestamp of all following camera rows so that these keep the relative time delay from the configuration. This is convenient, if e.g. the conveyor belt stops and introduces a delay.

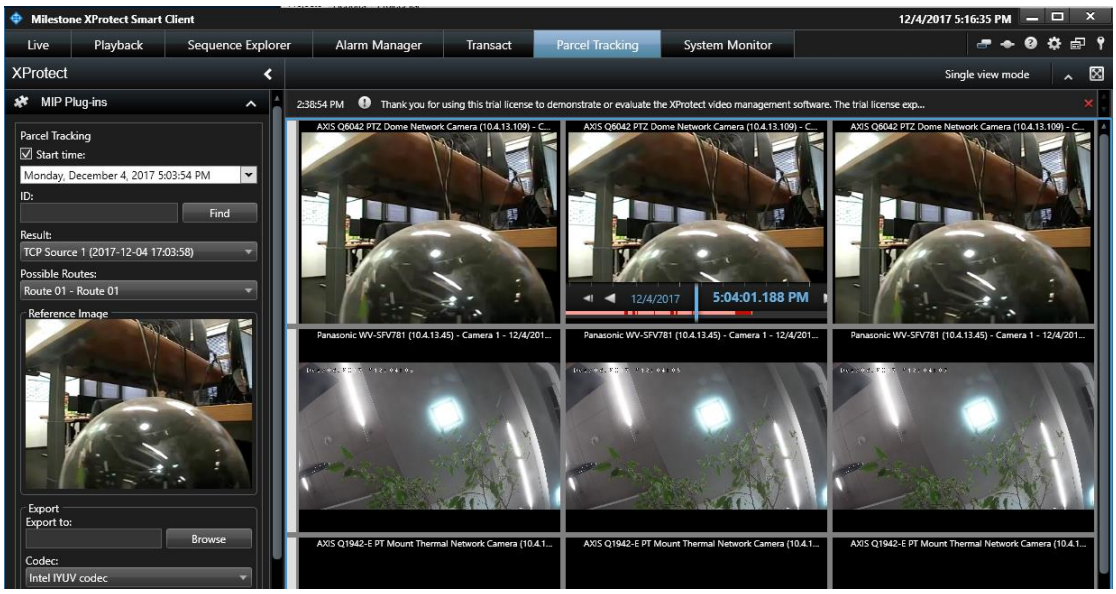


Figure 9: By clicking in a viewer, it is possible to manually adjust the specific timestamp for when the parcel was either entering, in center or leaving the camera view area. When the timestamp of the center viewer is updated this will reflect the timestamp of all following camera rows so that these keep the relative time delay from the configuration.

To further adjust the video for the specific parcel, cameras can be removed or added by right clicking in the grey area to the left of the camera row. This will provide a context menu containing the following three menu items:

Delete: Will delete the camera row where the context menu was activated.

Insert Above: Will provide a camera selector dialog for selecting the camera to insert. After the camera has been selected a camera row will be added to the control above the camera row where the context menu was activated. The new camera row will be added with a center time one second before the current row and the image viewer to the left will display the frame one second before the center time and the image viewer to the right will display the frame from one second after the center time.

Insert Below: Will provide a camera selector dialog for selecting the camera to insert. After the camera has been selected a camera row will be added to the control below the camera row where the context menu was activated. The new camera row will be added with a center time one second after the current row and the image viewer to the left will be display the frame one second before the center time and the image viewer to the right will display the from one second after the center time.

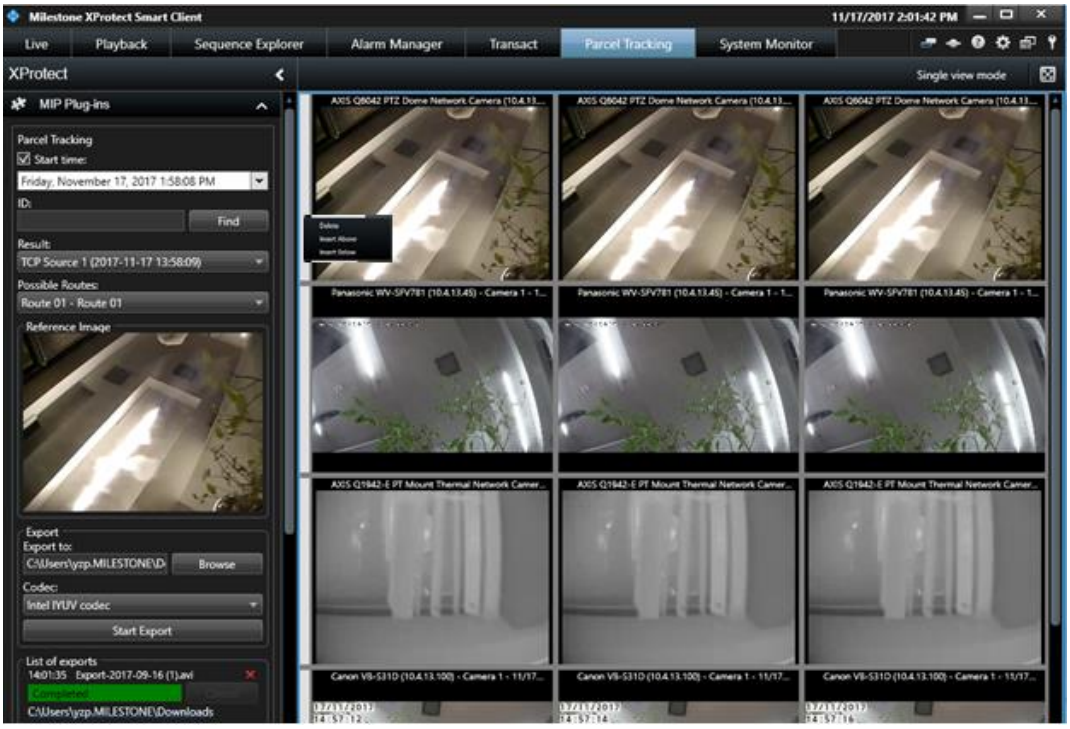


Figure 10: Parcel Tracking workspace with the context menu activated for the first camera on a route enabling the operator to delete or insert cameras

When the operator has finished adjusting the view item to display all video for the found parcel it is possible to export the video into a single AVI file. The export is done in the side panel where the Export path should define the path of where to export the video. The “Browse”-button can be used to select the folder. Finally the codec should be selected in the ”Codec” dropdown box and after the “Start Export” is clicked the video will be exported asynchronously enabling the operator to continue the operations with other parcels.

While the export runs, a status message is displayed in the ”List of reports” area below ”Export” section inside the Site Panel in Smart Client.

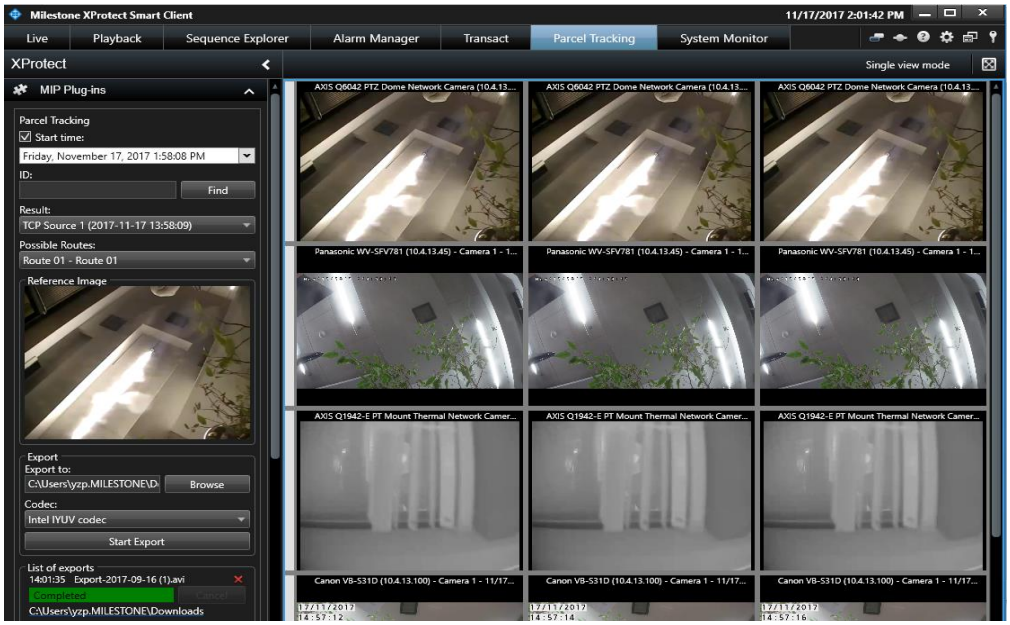


Figure 11: Smart Client displaying the status of an AVI export

Single view mode

Single view mode displays a grid with single image viewer for each camera on the selected route. The image viewer displays the parcel when it is in the center of the cameras viewing area.

By clicking in a workspace viewer, it is possible to play back and forth manually, to follow the parcel along the whole route. The workspace grid consists of each camera, that were already predefined in the Triple view mode.

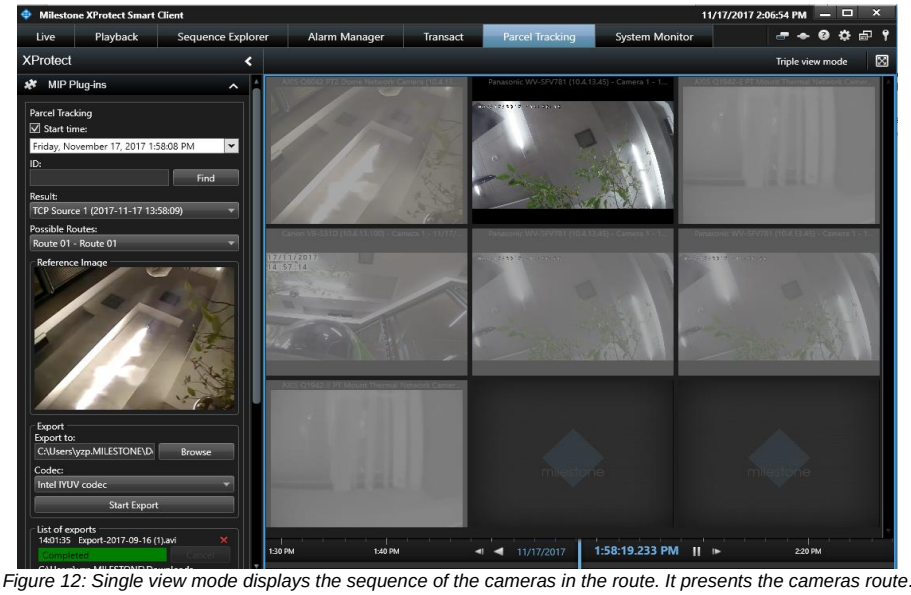


Figure 12: Single view mode displays the sequence of the cameras in the route. It presents the cameras route.

The reference image placeholder in the toolbar is where the parcel image is displayed. It is taken from the center image viewer of the first row in the “Triple view mode”. When clicked on, a pop up window of the parcel image appears on the screen. The standalone pop up window has the same size as the image viewer size in the workspace. When close the window it will remember its last position. After re-open it the reference image window will appear at the same position, where it was closed previously.

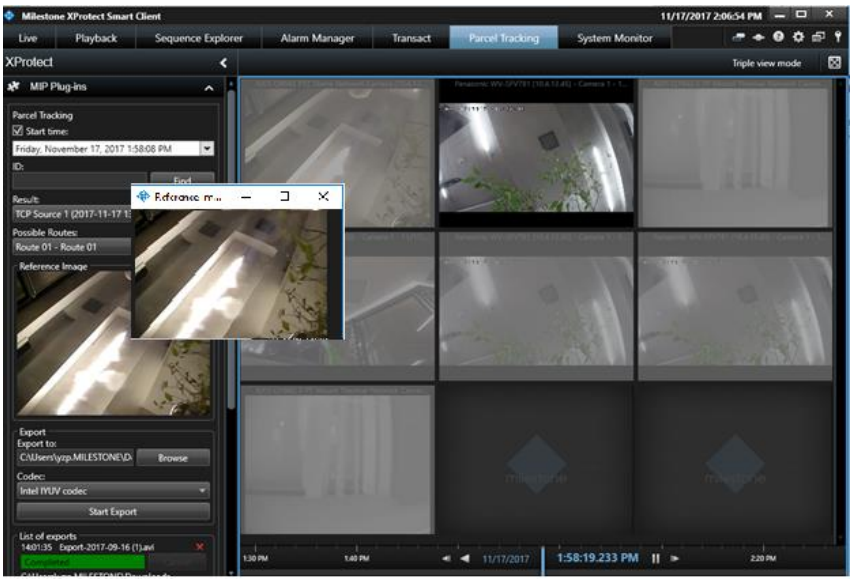


Figure 13: When clicked on, a pop up window of the parcel image appears on the screen.