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INSTALLATION GUIDE

CliCK - Climate Camera Kit

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milestone

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Overview

CliCK is the acronym of Climate Camera Kit, a GPU powered edge AI appliance hosting advanced weather and environment analytics, with embedded IoT management tools.
This document illustrates how CliCK interacts and integrates with Milestone XProtect.
CliCK is a joint product of Waterview and Eurotech.

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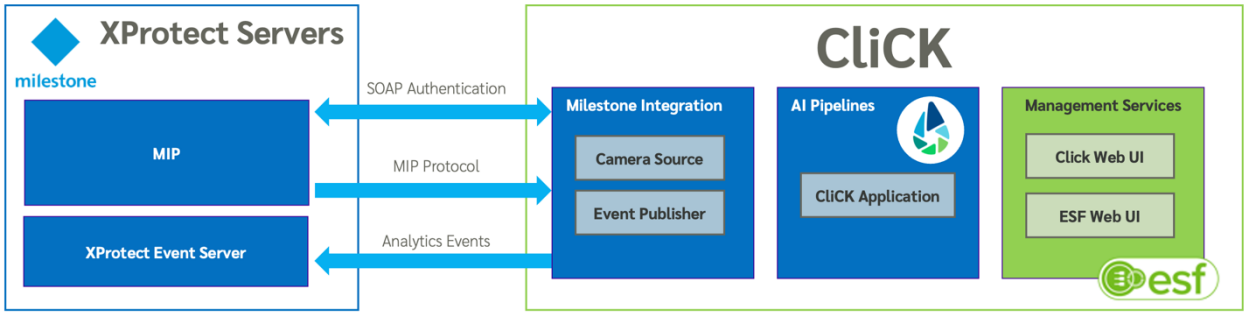
Versions support	
CliCK	Version >= 1.0
ESF	Version >= 7.2.0
XProtect	2023 R1

The CliCK integration is compatible with Milestone Integration Platform (MIP) supported Milestone VMS products. These are:

- XProtect Corporate
- XProtect Expert
- XProtect Professional
- XProtect Professional+
- XProtect Express
- XProtect Express+
- XProtect Essential+

Design

The integration between CliCK and XProtect is achieved using the Milestone Integration Platform. CliCK leverages APIs from the MIP Protocols to authenticate to the XProtect Servers, retrieve video streams from available cameras, perform realtime AI intelligence on the input streams, and generating events on XProtect Event Servers when needed.
The integration architecture can be summarized in the following picture.



The integration exposes several components:

- The Camera Source component can be configured to retrieve video streams from cameras available in the connected XProtect Servers;
- The Event Publisher component can be used to listen for events generated by the CliCK applications and send Generic, Analytics or Alarm events to the connected XProtect Event Servers;
- The CliCK Web UI can be used to easily configure the integration, both adding video sources and configuring events.

Requirements and Considerations

CliCK can be integrated with any XProtect Server, if the Server is accessible from the appliance. CliCK instantiates several TCP connections, on configurable ports. It is important for firewalls installed between CliCK and the XProtect Server to be correctly configured to route packets according to the configuration.

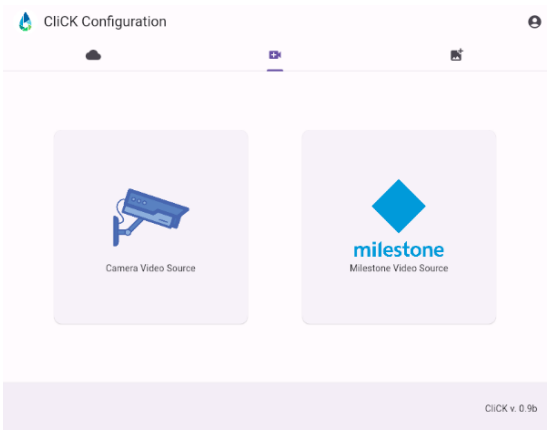
CliCK integration has been tested with MIP SDK 2023 R1.

Installation

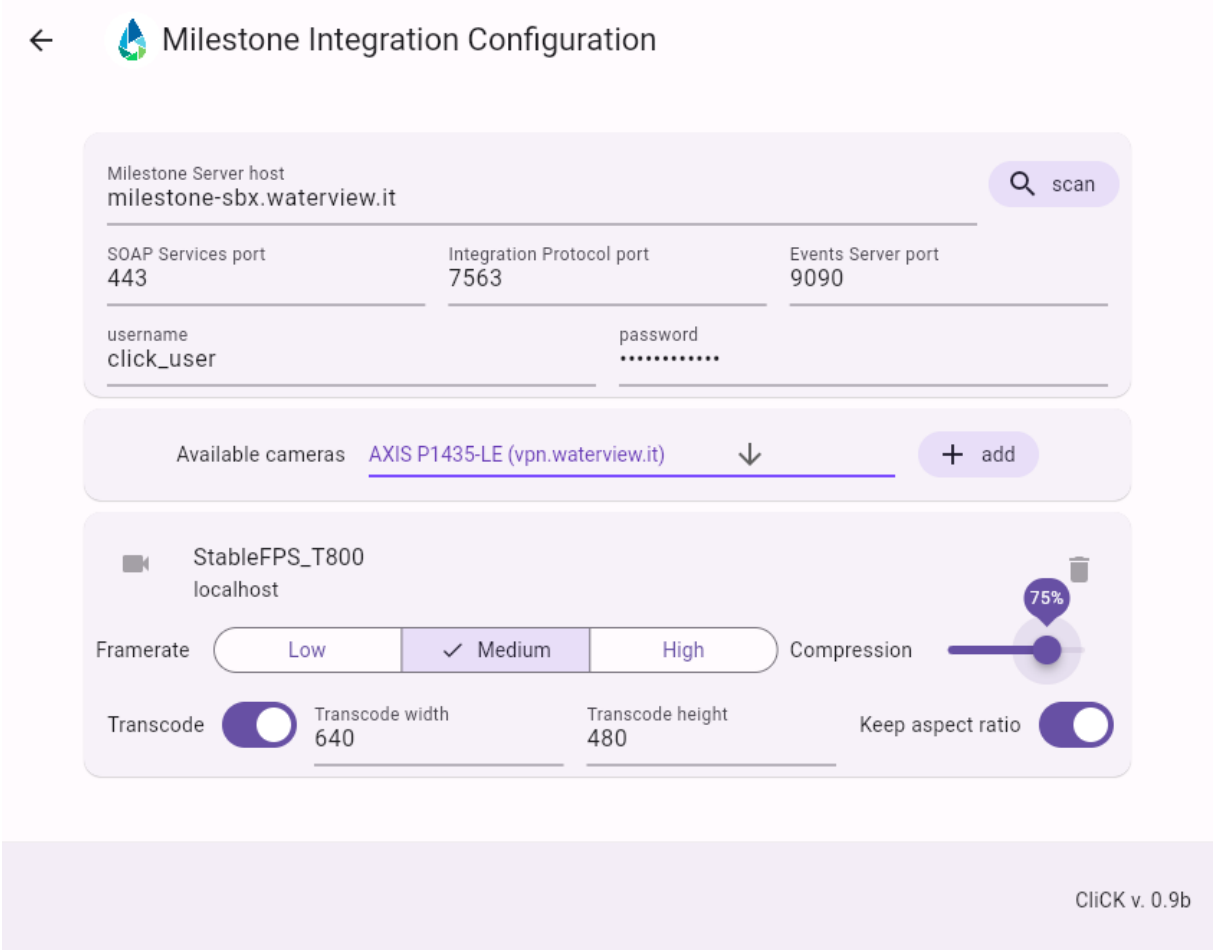
CliCK is distributed with the Milestone integration components already available and ready to use. No installation step is needed to enable integration with Milestone products.

Configuration

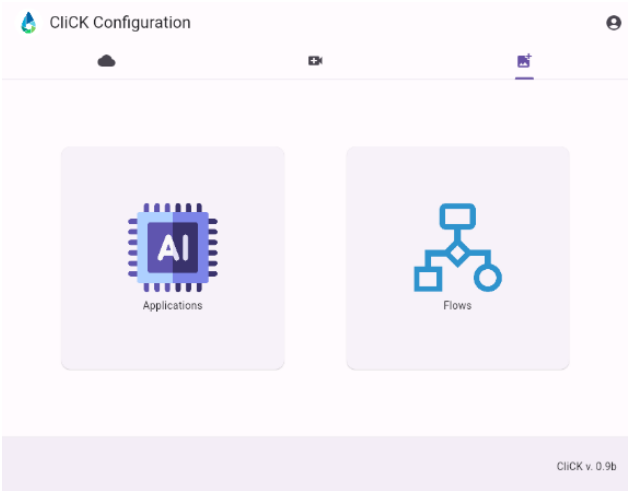
CliCK provides a configuration Web UI, exposed directly by the appliance, which can be used to configure the integration. Once connected to the configuration UI (https://CliCK.local), navigate to the Milestone configuration page and add a Milestone Video Source (second tab in the figure on the right). The UI will present the controls needed to add a new Milestone Camera. From this page the user can connect to a Milestone XProtect Server and scan for available cameras.



Once a source is added from the list, it can then be configured to retrieve a video stream from the camera, at a specific framerate and compression rate, possibly activating transcoding, if needed.

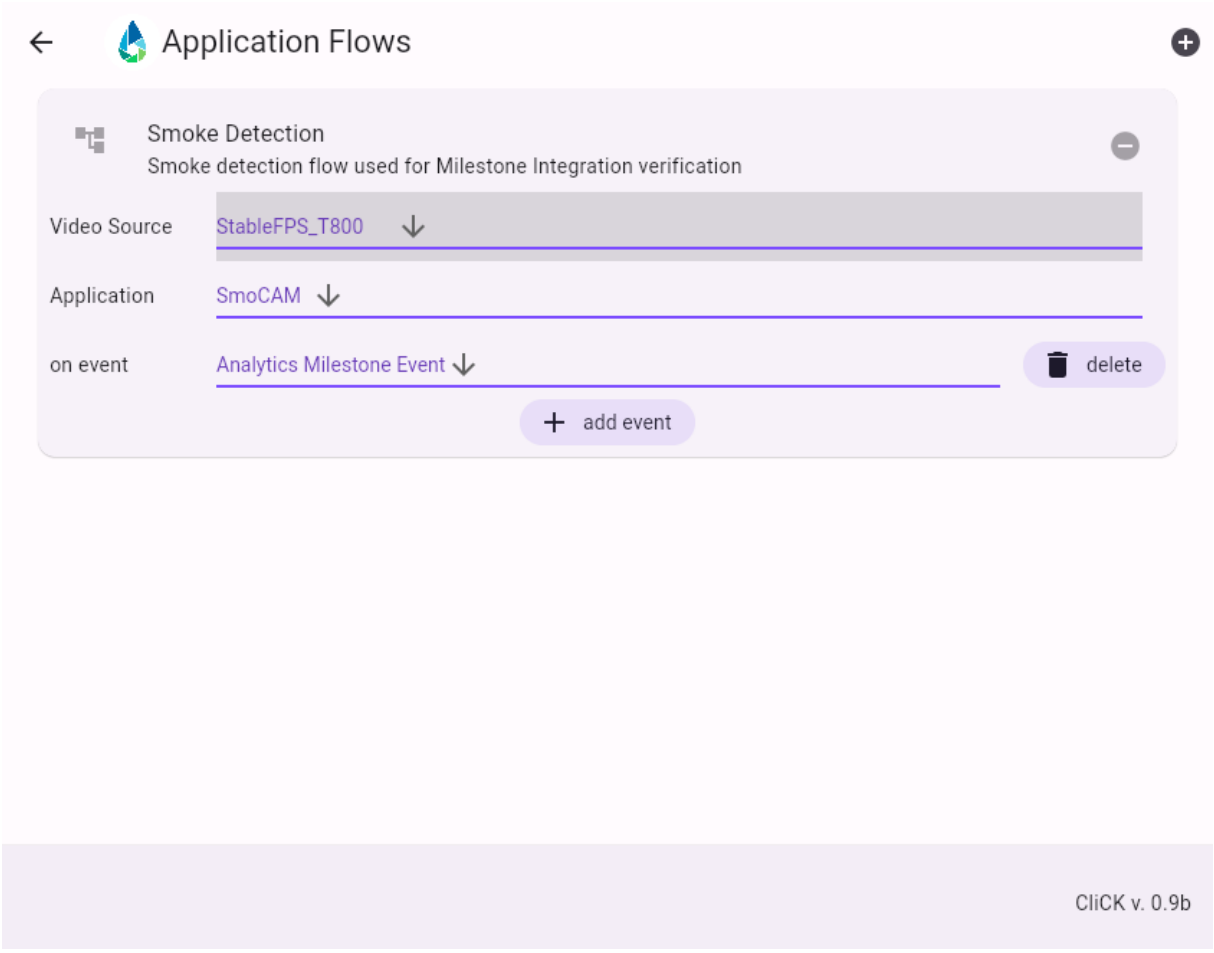


Once the video sources have been added to the configuration, Application Flows can be configured accessing the proper page on the Applications section.



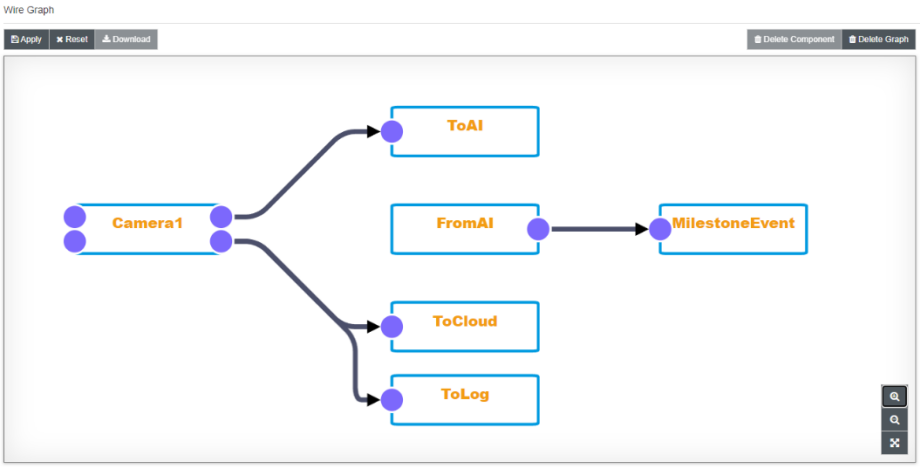
CliCK supports several AI Applications, based on the provisioned configuration. In the Application Flows setup page (third tab in the figure on the left), a user can add a new Flow configuration, give it a name and a description and associate a Camera Source with a specific AI Application. Finally, a user can create Events based on the result of the AI Applications (AI applications configuration is described in dedicated documents).

Events will be triggered by the AI Application (usually when a preset threshold is passed, i.e. a smoke plume greater then the 15% of a region of interest defined in a camera view) and will be routed to Milestone XProtect according to the configuration.



Optimization

The wide variety of possible configuration options can lead to complex integration use cases, which may require a more in-depth management of the configuration. In these cases, it is always possible to configure the system using the Everyware Software Framework configuration Web UI, available at https://CliCK.local/admin. After authentication and authorization (Refer to the CliCK manual for details) the configuration of the integration can be manipulated using the ESF Wires Graph:

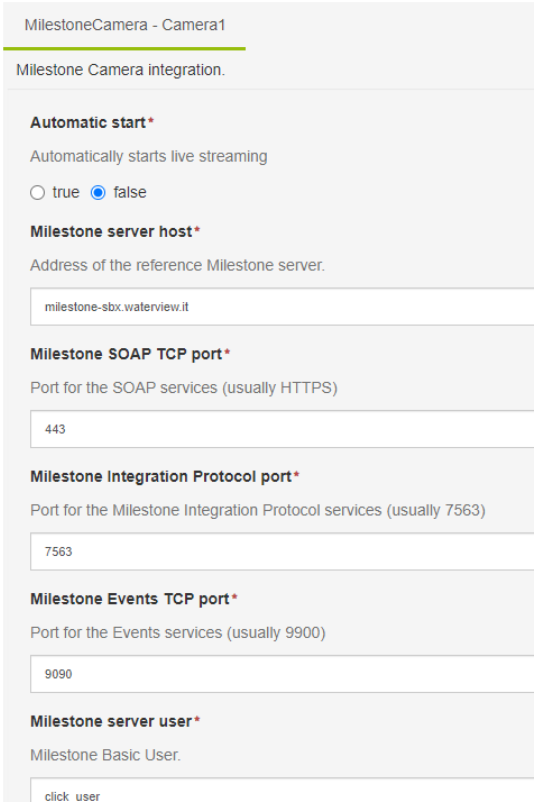


Configuration of the Wire Components can be edited to change specific parameters, not available in the default CliCK UI. The Wire Graph contains a flow like the one shown in the picture above for each Application Flow configured using the CliCK Web UI. Although details on the configuration are indicated in the CliCK User Manual, the parameters needed to manipulate the integration with XProtect are exposed in two different components.

Milestone Camera Component

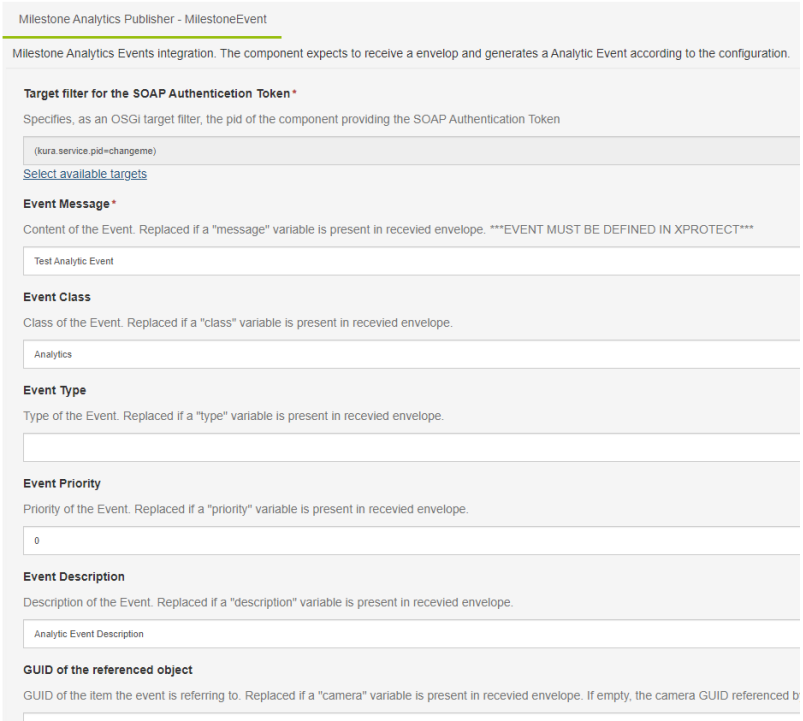
This component exposes the configuration of every Milestone Camera Video Source. It can be configured with a specific Milestone XProtect Server host, connection parameters, Camera UID and transcode configuration.

The system will keep track of each specific camera, maintaining a MIP Protocol Session and taking care automatically of authentication tokens and session renewals.



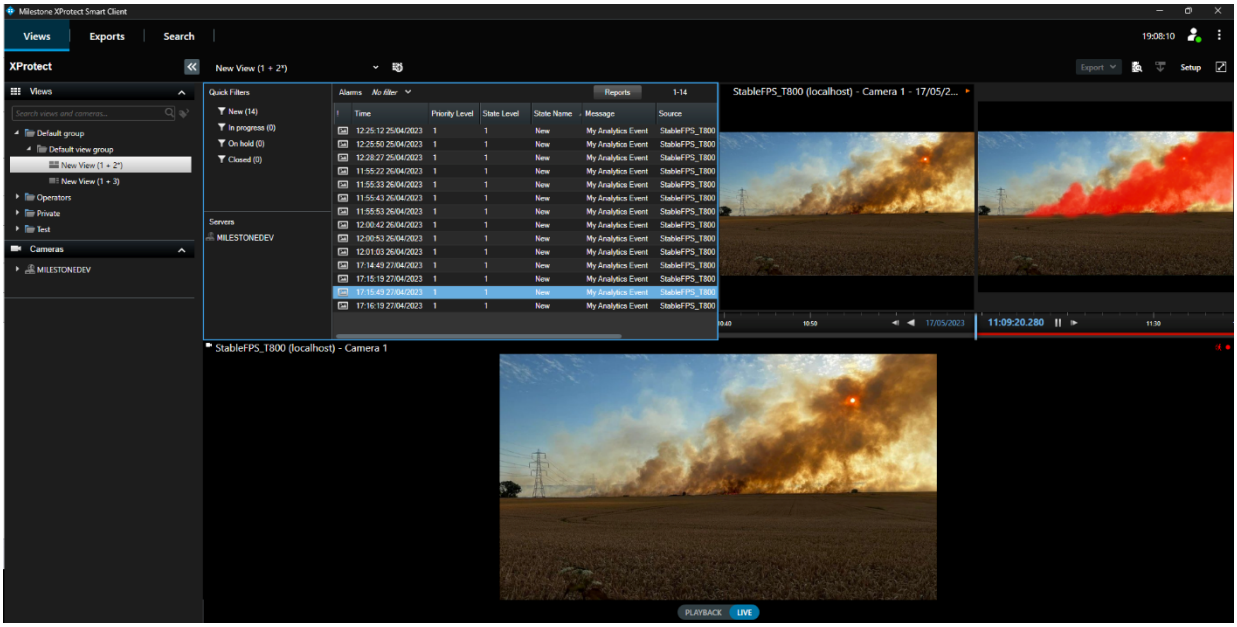
Milestone Analytics Publisher Component

This component listens for events raised by a connected AI Flow and generates a Milestone Analytics Event according to its configuration.
The component can be configured to generate Generic, Alarm or Analytics event types, associate specific Video Sources to the event and even associate a snapshot to the generated event, when the AI Flow doesn't provide one.



Operations

Integration with CliCK is transparent to the end user.
After an Application Flow has been correctly configured and an event is sent from CliCK to XProtect, the end user will experience the event according to the configuration of the XProtect Smart Client.
In the example below, a Camera Flow patrolling a wheat field detects a smoke plume and shows an alarm in XProtect Smart Client.



Troubleshooting

For any issue, please contact us at info@waterview.it

ABOUT WATERVIEW

WaterView blends expertise in fields such as meteorology, hydrology, environmental modeling, computer vision and AI to look at what the rest of the world considers simple cameras from a completely new perspective. By combining these ubiquitous digital eyes with our cutting edge computer vision technologies, we can turn cameras into non-dedicated multivariable sensors, thus providing new resources to face the challenges of a climate changing world.

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ABOUT EUROTECH

Eurotech is a multinational company that designs, develops, and supplies Edge Computers and Internet of Things (IoT) solutions – complete with services, software and hardware – to system integrators and enterprises. By adopting Eurotech solutions, customers have access to IoT building blocks and software platforms, Edge Gateways to enable asset monitoring, and High Performance Edge Computers (HPEC) created also for Artificial Intelligence (AI) applications.

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ABOUT MILESTONE

Milestone Systems is a leading provider of open platform video management software; technology that helps the world see how to ensure safety, protect assets and increase business efficiency. Milestone enables an open platform community that drives collaboration and innovation in the development and use of network video technology, with reliable and scalable solutions that are proven in more than 150,000 sites worldwide. Founded in 1998, Milestone is a stand-alone company in the Canon Group.

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