



# **CITILOG INCIDENT MANAGEMENT SOLUTION**

**CT-Center Client** 

# Milestone XProtect Interface Guide



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# 1. INTRODUCTION

The purpose of this document is to describe the interface between the Citilog CT-Center and the Milestone XProtect Video Management System.

Integration has been validated with following products and versions:

- Milestone XProtect 2021 R1
- Citilog CT-Center V9.1R2E1 ('Milestone' option action is required when installing the Server).

By extension it should be compatible with above versions.

Citilog integration is using Milestone "Event Integration" feature and thus is compatible with following Milestone XProtect products:

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

Integration enables sending Automatic Incident Detections (AID) from Citilog system to Milestone XProtect.

Below is the typical list of traffic incidents that can be sent:

- Stopped vehicle detection
- Slow down detection
- Slow vehicle detection
- Wrong way vehicle detection
- Pedestrian detection on walkways and shoulders

In road tunnel environment, some additional incidents can be detected:

- fallen object / debris,
- loss of visibility (smoke)

In addition of incidents, metadata are transmitted to the VMS enabling to add an overlay on the video stream (e.g. a bounding box around the detection).

# 2. GLOSSARY

The following table gives an overview of Citilog Incident Management solution components and general terms used in this document.

Term	Definition
CT-Center Server	Citilog Server managing the communication between third party systems and CT-IM Analytic Servers
CT-IM Analytic	Citilog server-based Analytics
CT-IM Analytics Server	Server hosting a CT-IM Analytics application
AID	Automatic Incident Detection
URI	Uniform Resource Identifier

## **3.1. FUNCTIONAL DESCRIPTION**



The video stream is analyzed by the Citilog CT-IM Analytics.

If an incident is detected, then, the CT-Center will generate an Event with some metadata and will transmit them to Milestone XProtect through the CT-SDK.

Milestone XProtect receives the Event and the associated metadata. When analyzing the metadata, XProtect will check the content of the "*XProtect Analytics event name*" property sent by the CT-Center.

If the value contained by this field <u>matches exactly</u> with the name of an "*Analytics Event*" declared on XProtect, then, an alarm will be generated by the VMS.

This alarm will contain the same properties than the ones from the metadata sent by the CT-Center.

## **3.2. COMPONENTS DESCRIPTION**

#### 1. Citilog CT-IM Analytics

Hardware hosting **Citilog CT-IM Analytics** - a video analytic software that processes, in real time, video streams from road traffic monitoring cameras to automatically identify incidents and generate reliable traffic statistics.

## 2. Citilog CT-Center

Hardware hosting **Citilog CT-Center** -a configuration and operation software for the **Citilog CT-IM solution.** It centralizes the incidents and the traffic data coming from the **Citilog CT-IM Analytics** and provides it to the **Citilog CT-Center Client** or a 3<sup>rd</sup> party traffic management application.

The Milestone Interface is part of **CT-SDK** and implements the communication link to transmit AID alarms information to the Milestone VMS system.

## 3. Milestone XProtect

Milestone Video Management System.

## 4. Citilog CT-Center redundant server

If a Citilog CT-Center server redundancy is implemented, system components are logically connected to two CT-Center servers to ensure that the Video Detection process stays active and operational even if one of the CT-Center servers becomes inoperative. Main CT-Center has a Master role while the other server acts as a Slave.

The Milestone Interface will always run on the main CT-Center. The Slave Server Milestone Interface is inactive but ready to start in case of server switching to the Master role.

# 4. ALARMS AND ANALYTIC EVENTS

## **4.1. ANALYTIC EVENTS OR ALARMS?**

The CT-Center allows to transmit traffic incidents to XProtect with two different "formats":

- As an Alarm,
- As an Analytic Event.

An Alarm is something the end-user would like to visualize and manage on Milestone XProtect.

An **Analytic Event** contains a reference to a camera and additional information about the analysis. According to your configuration on the CT-Center, it might contain some additional properties, such as:

- **XProtect Analytics Event name**: Event Message that will be sent. <u>This field will be used to</u> <u>trigger an Alarm</u> on XProtect's side and based on the received Event,
- **Priority**: The importance of event with 1 being the highest value,
- Alarm, Type and Location: event properties,
- **Object**: allows to define a detected incident name or type.

These properties allow to define the Incident information to be displayed on Milestone XProtect.

## 4.2. RECOMMENDATION

Even if the Citilog CT-Center can send both "Alarm" and "Analytic Event", it is **not recommended to send alarm directly:** this will then by-pass the alarm definition configured by the end-user in Milestone XProtect. This integration should be used with care because the Milestone end-user's administrator will not be able to control or disable these alarms. Also consider that alarms in one system may very well be considered as events in the next system.

On Milestone XProtect, it is possible to trigger an alarm when receiving an Analytic Event.

Then, recommendation is for most cases:

- To activate only the "Analytic Event" option on the CT-Center
- On Milestone XProtect, trigger an "Alarm" based on the received "Analytic Event"

# **5. CT-CENTER CONFIGURATION**

Milestone XProtect communication settings

Click on *Milestone* in the Interface panel of the CT-Center Administration tab to open Milestone XProtect communication settings window:

Milestone XProtect server	rinformation		Came	ra(s)				Incid	lent(s)			
Communication activatio	on On			CT-Center camera name	Activated	XProtect source name	^		Citilog Incident type	Activated	XProtect name for incident	í
Server Uri	http://10.10.0.4		•	1 - Cam1		Cam1		•	StopF	X	StopF	
User name	christophe			2 - Cam2		Cam2			SlowDown	X	SlowDown	
Password	••••			3 - Cam3		Cam3			StopC	X	StopC	
Domain name				4 - Cam4		Cam4			SlowVeh	X	SlowVeh	
				1					WrongWay	X	WrongWay	
Analytics									Pedestrian		Pedestrian	
Generate events	On								Debris		Debris	
Generate alarms	Off								Queue		Queue	
									Visibility		Visibility	
Send bounding box	On						~		OverSpeed		OverSpeed	
XProtect Analytics even	nt name CT-IM			1		1		-	and the set of set of set		,	
XProtect Alarm / Event	properties							Ifd	smit nitered incident	U		
			Help	et Analytics event name	no: comercende to th	a Appheice quart pom	•					
Priority	1	-	If you	want to create alarms	in XProtect interface	without generating it fr	e. om Citilog	CT-Ce	nter, you must declare a	n Analytics event wit	h exactly the same na	me
Alarm(*)	%I		(case :	ensitive) in XProtect	configuration interfac	e. The event name will	appear v	vith the	property « message » o	f events and alarms.		
Туре	AID		Alarm /	Event properties: co properties can be cut	responds to the « Al tomized as per your	arm / Event » propertie need and depending o	s on XPr	otect's : age on	side. Milestone XProtect.			
Location(*)	%C - %L		(*) Indi	cates that you can us	e Wildchars to dynan	ically name the proper	ty.					
Object(*)	Traffic Incident		Wildch %C = 0 %I = In %L = L	ars: Camera name (when u cident name (when u ane ID	sed the value is trans sed the value is trans	lated in XProtect as pe lated in XProtect as pe	er the tab r the tab	above) above)				
Save Load	d		%L = L	ane ID	auto e la tranue la trans	and an Arrotota ds pe	a are tob	000ve)			Ok Ca	ano

#### **Configure your XProtect server information**

- 1. Switch the "Communication activation" button to On
- 2. Enter you Milestone XProtect "Server Uri". Typically, it is the XProtect server IP address.
- 3. Fill in "User Name", "Password" and "Domain" with Milestone XProtect server Windows credentials.



#### **Configure your Analytic event**

- 1. Switch the "Generate events" button to On
- 2. Let the "Generate alarms" button to Off, Alarms will be managed from Milestone XProtect as per the recommendation above.
- 3. Switch "Send bounding box" button to On
- 4. Fill in the "XProtect Analytics event name" field
- 5. Fill in the remaining fields (*Priority, Alarm, Type, Location, Object*) according to your project requirements Optional

IMPORTANT:	<i>"XProtect Analytics event name"</i> is THE most important parameters as it will be used in Milestone XProtect to identify the event coming from Citilog CT-IM.
NOTE :	Fields with a (*) accept wildchars.

Here is the interface for an alarm on Milestone XProtect's side with the matching with "Citilog" properties from the CT-Center Client configuration GUI.

XProtect alarm	n properties	Citilog event properties					
	Assigned to: State: Priority: Category: ID: Source: Alarm:	I: New       I: Priority       XProtect source name       Alarm       YProtect Apply tics over the men					
	Type: Rule:	Type					
	Tag:   Vendor:   Object:	Docation					

#### Chose for the camera(s)

- 1. Activate the incident transmission for the camera by ticking on the corresponding "*Activated*" box.
- 2. Modify the "XProtect source name" to match with the camera name defined on XProtect's side.

NOTE :"XProtect source name" is a crucial field when it comes to interface the CT-<br/>Center and XProtect.To be handled, an Incident must be associated to a camera declared on<br/>XProtect.The "XProtect source name" is the camera name transmitted by the CT-<br/>Center and it must be the same than as it is declared on XProtect.

#### Select the incident(s)

- 1. Activate the incident(s) to be transmitted to XProtect by ticking on the corresponding "Activated" box.
- 2. Modify "XProtect name for incident" as you want to see it on XProtect's side Optional

# 6. MILESTONE XPROTECT CONFIGURATION

#### **6.1. XPROTECT MANAGEMENT CLIENT**

#### **Enable Analytics Events**

First of all, you have to make sure the Analytics events engine is activated.

- 1. Go to Tools > Options > Analytics Events
- 2. Tick the "Enabled" as below:

Options							×
Network Analytics I Enal Port: 9090	Bookmark events bled	User Settings	Evidence Lock	Audio Messages	Access Control Settings	Analytics Events	<
Security Events a All n Spe	illowed from: etwork addre: cified network	sses addresses:					
•	Address						

#### **Define Sources**

If the video sources haven't been declared in Milestone XProtect yet, you have to do it so that events can be associated with them.

- 1. Go to "Site Navigation" and then Servers > Recording Servers.
- 2. Right-click on the server's name in the Recording Server column and select "Add Hardware".
- 3. Follow the prompts, applying a default configuration.

**IMPORTANT:** Make sure the name of the name of the stream #1 of your camera matches with the **name used in CT-Center (defined in "XProtect source name").** 

#### Your camera should appear in the Preview section at the bottom of the window.

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o e m				
ngasion - 3 × Pr	ecording Server		Properties	
Basics A E	D Recording Servers	~	Recording server information	
License Information	B B INNO-VH02		Name	
Site Information	G C AXIS P1367 Network Camera (10.40.0.102)		[11110] 10400	
Remote Connect Services	AXIS P1367 Network Camera (10.40.0.102) - Camera 2		Intra-winter	
Axis One-click Camera Connection	19 AXIS P1367 Network Camera (10.40.0.102) - Camera 3		Description:	
Servers	2005 P1367 Network Camera (10.40.0.102) - Camera 4			
d' Recording Servers	The AVE DISC Network Comera (10.40.0.102) - Camera S			
Failmar Servers	The AVID P1367 Metwork Centers (10.40.0.102) - Centers 7			
Mobile General	The AVIS P1367 Network Camera (10.40.0.102) - Camera 8			
P Devices	SR Tunnel01			
(De Connes	AXIS P1367 Network Camera (10.40.0.102) - Microphone 1		1000	
0.10	AXIS P1367 Network Camera (10.40.0)		Host name:	
- Microphones	AXIS P1367 Network Camera (10.40.0) Add Hardware		- O ×	
Topeakers	ANS P1367 Network Camera (10.40.0	Construction from the first of all		
T Metadata	dg A005 P1367 Network Camera (10.40.0	Add Hardware		
do Input	- C AXIS P1367 Network Camera (10.40.0			
- Output	Q AX0S P1367 Network Camera (10.40.0	This winard halve you detect and ast un hardware.		
Client	- G AXIS P1367 Network Camera (10.40.0			
- III Smart Wall	- 🥁 AXIS P1367 Network Camera (10.40.0			
View Groups	- 😪 AJQS P1367 Network Camera (10.40,0	Hardware detection method:		
Smart Client Profiles	A30S P1367 Network Camera (10.40.0	Express (recommended)		3. Pare
Management Client Profiles	AXIS P1367 Network Camera (10.40.0	Automatically detects hardware on the recording server's local network		
Matrix	AXIS P1367 Network Camera (10.40.0			
Dular and Events	AXIS P1367 Network Camera (10.40.0.	O Attent man untering		
	AND P1367 Network Camera (10.40.0	Scans defined retunk address ranses and detects hardware models		
Hues	AXIS PT36/ Network Camera (10.40.0			
Time Profiles	A005 P1367 Network Cemera (10.40.0	the three with the tr		
Notrication Profiles	AND P1367 Network Camera (10.40.0	O Manual		
User-defined Events	AVE P1267 Network Cemera (10.40.0	Detects hardware models for manually entered IP addresses and host names		
Analytics Events	AVIS P1367 Network Camera (10.40.0	The state of the second s		
- Seneric Events	AXIS P1367 Meterork Cemera (10.40.0			
C Security	AXIS P1367 Network Cemera (10.40.0	Add hardware		
- Soles	AXIS P1367 Network Camera (10.40.0	Page indicative connected the entities connect and the		
2 Basic Users	AXIS P1367 Network Camera (10.40.0 milestone			
System Dashboard	- G AXIS P1367 Network Camera (10.40.0			
Current Tasks	G AXIS P1367 Network Camera (10.40.0			
System Monitor	G AXIS P1367 Network Camera (10.40.0			
Sustem Monitor Thresholds	AXIS P1367 Network Cemera (10.40.0 Help	- 1 Dark	Trest > Cancel	
9 Evidence Lock	AXIS P1367 Network Camera (10.40.0			
Configuration Reports	AXIS P1367 Network Camera (10.40.0.102) - Output 26			
Comparation reports	A005 P1367 Network Camera (10.40.0.102) - Output 27			
Derver Logs	AXIS P1367 Network Camera (10.40.0.102) - Output 28			
Metadata Use	AXIS P1367 Network Camera (10.40.0.102) - Output 29			
Metadata Search	A005 P1367 Network Camera (10.40.0.102) - Output 30		1.1 million (1.1 m	
Access Control	A005 P1367 Network Camera (10.40.0.102) - Output 31		A lefe Storage TFailover 4 M	Uticast 11 Network
C Transaction	Va. AXIS P135/ Network Camera (10.40.0.102) - Dutout 32	*		

#### **Define Analytic Events**

To be able to use events sent by Citilog system, you first have to declare them in Milestone XProtect.

- 1. Go to "Site Navigation" and then Rules and Events > Analytics Events.
- 2. Right-click on Analytics Events in the Analytics Events column and select "Add New".
- 3. Enter the name and add the description if needed.

IMPORTANT: The name of the "*Analytics Event*" defined on Milestone XProtect <u>must</u> <u>match with</u> the value of the "*XProtect Analytics event name*" defined on the CT-Center.



#### **Define Alarms**

Once events have been defined, you can use them to generate alarms.

1. Go to "*Site Navigation*" and then *Alarms > Alarms Definitions* CT-IM\_Milestone\_XProtect\_Interface\_guide-RevA.docx

- 2. Right-click on Alarms Definitions in the Alarms Definitions column and select "Add New".
- 3. Check "Enable" box, enter the name.
- 4. Select "Analytics Events" as "Triggering event"
- 5. Select the Sources (typically, the AID cameras).



### **6.2. XPROTECT SMART CLIENT**

#### **Supervising Alarms**

- 1. Connect to Milestone XProtect Smart Client
- 2. Go to Alarm Manager tab to see all the received alarms.

Milestone XProtect Smart Clier	e									08/07/2021 08:39:29 -	. 🗆 🗙
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## 7.1. CT-CENTER V9.1 WITH MILESTONE XPROTECT

The CT-Center V9.1.R2E1 has proven compatibility with:

- XProtect 2021R1
- XProtect 2020R3
- XProtect 2019R1
- XProtect 2016R3

It is also expected to work with:

- XProtect 2020R1 and 2020R2
- XProtect 2019R2 and 2019R3
- XProtect 2018Rx
- XProtect 2017Rx

# 7.2. HOSTING A CITILOG CT-CENTER AND MILESTONE XPROTECT ON THE SAME HARDWARE

Even if the installation of both systems on the same server seems to be feasible, this operation is **NOT** supported by Citilog.

# 8. CYBERSECURITY

#### **8.1. CYBERSECURITY CONSIDERATION**

Connecting a CT-Center with Milestone requires to declare the Windows credentials from the machine hosting Milestone XProtect.

Even if it's probably very easy and tempting to use an account with "Administration" rights, a good practice is to create a user account with basic rights for the connection between the CT-Center and XProtect.

Citilog recommends using a dedicated user account to connect XProtect to the CT-Center.

#### **8.2. CONFIGURING MILESTONE XPROTECT**

The first step will consist in creating a User Account on the Windows system of the machine hosting Milestone XProtect. This account must be with the "standard" type (no administration rights). Once the new account is created, you must add it to the "Operators" role on XProtect.

To do so,

- 1. Open Milestone XProtect Management Client
- 2. Go to: < Your Server Name> \ Security \ Roles
- 3. Select "Operators (Default role created by the installer)",
- 4. Go to "Users and Groups" tab and push the "Add" button.



5. Add a "Windows user" by entering the name of the previously created account in the field below:

Select Users or Groups		×
Select this object type:		
Users, Groups, or Built-in security principals		Object Types
From this location:		
INNO-VM02		Locations
Enter the object names to select ( <u>examples</u> ):		]
My_Basic_Account		Check Names
Advanced	ОК	Cancel

6. Push the "Check Names" button and, if everything is correct, push "OK".

**Note:** If you have an error message, you need to double-check the spelling of the user account name previously created and repeat the operation again.