

# METRICI LPR INTEGRATION WITH LAN CONTROLLER FOR BARRIER

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## **CHAPTER 1 PRESENTATION**

The integrated solution **Metrici LPR** can be used for opening a barrier when a license plate is recognized as being in the database.

The versatility of **Metrici** software let the user choose a number of actions depending on the technical solution. The program can be integrated with a **LAN Controller with PoE**, with a **Barix** device or in a **combination with an inductive loop**. In this user guide we will explain the different technical solutions and action settings for a plate introduced in **Action List** database (see LPR User Guide).

For opening a barrier, the software can be integrated with a PoE LAN controller from ATS. The device has a 220V / 10A relay, which can be linked directly to the command input of the barrier.



The settings for this command are to be found in

**Metrici LPR Web Interface** . In the menu **LPR menu,** section **Action**/ **List,** one can set different reactions when detecting a "familiar" plate (Fig1)

metricí 🔹 🗸 🗸	FILTER SEA	ARCH BY NUMBER		ADD PLATE		export 🛓 imi Plates 🗖 Pl	PORT 💄 ATES 🗖	PLATES IN DATABASE	53				
Find Q	Plate	Info	Locations & Cameras	Time Tables	Active	Only if it is vehicle	Open Barrier	Traffic light	Send Email	Show Pop-up	Expires	Group	Actions
Vehicles	*		Cluj / 2 benzi	All the time	~	×	×	×	×	×	Never	N/A	🗃 Delete
■ Vehicles flow ↓Live view	B046915			Weekend	×	×	*	×	~	×	Never	Dragos 22	🗑 Delete
내 Reports > ☆ Actions >	B05LMI			Weekend	×	×	~	×	~	×	Never	Dragos 22	🗑 Delete
- I≣ List	BOGEMU		Bucharest / Gate 1	All the time	*	×	*	×	×	×	Never	N/A	🗑 Delete
E Groups	B06EMU		Bucharest / Gate 1	All the time	~	×	×	~	×	×	Never	N/A	🗑 Delete
Alarms	B100DRA		Bucharest / Gate 1	Weekend	~	×	~	×	×	×	Never	N/A	💼 Delete
Settings	B100LSI	Test Vlad	Bucharest / Gate 1	All the time	~	×	×	×	×	×	Never	N/A	🗑 Delete
🔛 QR Code 🔹 🔸	B101AFH	asas	Bucharest / Gate 1	All the time	~	×	×	×	×	×	Never	N/A	🗑 Delete
P Parking for LPR	B111ZZZ	÷		All the time	~	×	~	×	×	×	Never	N/A	🛅 Delete
\$ Toll station for LPR >	B155RDI	÷	Bucharest / Gate 1	All the time	~	×	*	×	×	×	02020-11-04 06:08:00	N/A	🗑 Delete
4 Weighing for LPR	B171RAI	ZXCXZC	Bucharest / Gate 1	All the time	~	x	x	x	x	x	Never	N/A	🗑 Delete
A Parking Place Detector >	B222CIL	ā.	Bucharest / Gate 1	All the time	*	×	*	×	×	×	02020-11-0406:09:00	N/A	🛅 Delete

In **Action List** you set the license plate, location and camera where a certain action must be executed. Also, a time table will be chosen. Next you will specify what action is to be done when this license plate is recognized: open a barrier, change a traffic light, send an e-mail and the time when this options will no longer be valid (**Expires** option).

Metrici LPR can also be integrated with Barix Barionet 50 LAN controller, in which case the user has more options for setting the detection (see Chapter 3).

### CHAPTER 2 ATS LAN CONTROLLER SETTINGS

A LAN Controller can be used in combination with **Metrici LPR** for opening a barrier.



To use this device and **Metrici LPR** together, go to **Metrici Control Panel** detection application, in camera **Settings (Fig.2)** 

So, if IP address of LAN controller is such as 192.168.1.100, the settings will be as follows:



At the **Barrier and Traffic Lights** tab, you fill in the next URL: (Fig.3)

**Open Barrier URL**: http://admin:admin@192.168.1.100/outs.cgi?out0=0

Close Barrier URL: http://admin:admin@192.168.1.100/outs.cgi?out0=1

**Delay before closing barrier** box will be filled in with the time interval, in seconds, in which the barrier to remain open



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	tinput stream view	LPR engine working mode & External trigge	r	
No results!		LPR input stream		
		Companion stream		
		Detection window		
© 2016 Matrici I PP. All rights reserve		Live view		
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		Plates		
		Car tracking		en Last seen Prb
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		Barrier and traffic aynt		
		Open barrier URL:	1in:admin@192.168.1.10-0/outs.cgi?out0=0	
		Close barrier URL:	1 in:admin@192.168.1.10-0/outs.cgi?out0=1	
		Delay before closing barrier (seconds):	10	
	COMING	Traffic light ON ON-		
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Fig.3

# **CHAPTER 3**

### **Metrici LPR INTEGRATION with Barrix Barionet 50**

**Barionet 50 is a LAN** controller produced by **Barix**. Together with the **Metrici** software may represent a versatile solution for the user. First of all can be used to open a barrier when a license plate from **Action List** is recognized. Also, it can generate a trigger to launch the plate number detection when a vehicle passes over an inductive loop.



The device has 4 digital outputs with a relay, each one of them can be connected to the command input of a barrier or a traffic light. It also has 4 digital inputs and each one of them can host the output of an inductive loop controller.

One can command up to 4 barriers independently, by using a similar number of LPR applications, set in **Metrici Control Panel**. Any other device can be integrated instead of barrier: for example, Barix can send a signal toward an electronic billboard with available parking spaces. Or can send a signal toward a radar or a weighing device.

For parameters settings, network and functions, login to web interface of the Barix LAN controller (Fig.4)



Fig.4



#### Settings for barrier opening

Connect one of the relay digital outputs to the command interface of the barrier, start **Metrici Control Panel** detection application, **Settings** and **Barrier and traffic light** tab. Here you can set **Open barrier URL** and **Close barrier URL (Fig.4 and Fig.5)**, by using the next formats:

*Open Barrier*:http://IP\_ADDRESS/rc.cgi?o=ID\_DIGITAL\_OUTPUT,1 *Close barrier*: http://IP\_ADDRESS/rc.cgi?o=ID\_DIGITAL\_OUTPUT,0 Where ID\_DIGITAL\_OUTPUT can take values between 1 to 4

For example, if a barrier is connected to output 2, and the Barionet has the IP address 192.168.1.100, the settings will be as in Fig.5:

Http:// 192.168.1.100/rc.cgi?o=2,1

http:// 192.168.1.100/rc.cgi?o=2,0



Metrici LPR v4.	.6 - Settings	×
LPR engine working mode & External trigger		
LPR input stream		
Companion stream		
Detection window		
Live view		
Reporting and check action		
Plates		
Car tracking		
Countries		
Barrier and traffic light		
Open barrier URL:	http://192.168.1.100/rc.cgi?o=2,1	
Close barrier URL:	http://192.168.1.100/rc.cgi?o=2,0	
Delay before closing barrier (seconds):		5
Traffic light ON URL:		
Traffic light OFF URL:		
Delay between ON/ OFF signals for traffic light (seconds):		10
GPS		
	Cancel	Save

## **CHAPTER 4**

### SETTINGS FOR TRIGGER WITH AN INDUCTIVE LOOP

As we explained, Barionet can be used to generate a search (trigger) of a license plate in **Action list** database when a vehicle passes over an inductive loop. This will generate an electric impulse to the Barix.



The impulse toward the Barix that will generate the

search for a license plate can come not only from an inductive loop, but also from a laser scaner, an infrared sensor, or a movement sensor.

After you connect the inductive loop controller to one of the digital inputs, login to Barionet web interface, access **SETTINGS**, and **CONTROL** tab.(Fig.6)

BARIX Barionet configuration	1 – + ×
🗣 ← Back → → ∽ +	
BAR WAR BARIONET DEVICE CONFIGURATION THINK FURTHER SETTINGS DEFAULTS (REBOOT)   UPDATE   APPLICATION SETUD HOME	
SETTINGS	Help <u>GENERAL</u>
	WEB server port Defines the webserver port of the device. If set to "0" the default HTTP port (80) is used. Default: "0"
WEB server port 80	BCL Program Name
BCL Program Name	Enter the name (up to a characters windou extension(x) for the BCL application to be started at power on or after rebot. If left empty the default BCL application (barionet.tok) is started.
Lockdown mode	Lestular
Modbus/TCP timeout 0 seconds   COMMAND API 0 0	Locks different protocol access to the device (command port, web access etc.). See manual for details. If set to "0" all access is granted. Default: "0"
TCP command port 0 Timeout 0 seconds	Modbus/TCP Timeout Defines the time in seconds after which a Modbus/TCP connection on port 502 will be closed due to inactivity. Enter '0' for no timeout (default).
UDP info send to 192 . 168 . 1 . 2 (0.0.0.0 for no info)	Enter "7" to "255" to enable the Timeout.
UDP destination port 3500	COMMAND APT
UDP interval 0 seconds	as via TCP.
TCP Initial I/O state subscriptions None	UDP command port UDP port for the command API. Value "0" disables the UDP command API.
TCP add I/O state subscriptions None	Barix uses the port "12301" on other products. Default: "0"
SYSLOG       Sysiog Server     0     .     0     .     0	TCP command port TCP port for the command API. Value "0" disables the TCP command API. Barix uses "1/2302" on other products. Default: "0"
Syslog Debug Level 1 V Flags 0	Timeout After the defined number of seconds of inactivity on the TCP command port, the Barlond 50 automatically disconnects the poor

#### Fig.6

Section **I/O STATE INFO** will be filled in with IP address of **Metrici LPR** server, in **UDP info send to** and **UDP destination port** boxes.

In order to find out the **UDP Destination port**, open **Metrici LPR Control Panel**, choose the camera you want, **Settings** menu. Select **LPR engine working mode & External trigger**.



Select Barix Barionet (input 1, 2, 3 sau 4) in **Trigger** 

**device and type** section, and the application will show the UDP port where it can receive trigger from LAN controller.

The number of this port will take the form such as **3500** + **id** of the application in **Control Panel**- that means values of **3500** -**3509**. (Fig.7).

This value generated by Control Panel will be later filled in UDP destination Port box from Barix menu

**NOTE: UDP Port** is a number generated by **Metrici LPR** and can not be changed

<u> </u>	metricitest [Runn	ing] – Oracle VM VirtualBox	_ 0 ×
File Machine View In	put Devices Help		
You have the Auto capture	e keyboard option turned on. This will cause the Virtu	al Machine to automatically ${f capture}$ the keyboard every time $t\overline{he^l}\widehat{V}M$	f window is 🏾 🖤 🙆 🔯
The Virtual Machine reports	s that the guest OS does not see	integration in the current files mode. You need to capture the mo	use (by clicking 🛛 🔞 🚫
nput stream view	.rR engine working mode & External trigge	er in the second se	
	LPR engine working mode:	Started by TRIGGER	
	Trigger device and type:	Barix Barionet 50 (input 3) 🗸 UDP port 3500	
	How many seconds to analyze after the trig	ger is received: 2	
	LPR input stream		en Last seen Pr
DIC	Companion stream		
	Detection window		
	Live view		
	Reporting and check action		
	Plates		
	Car tracking		
	Countries		
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11 Camera1 - Metrici LP	PR v4.7 Metrici Control Panel v1.6		1/4 🚺
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**Metrici LPR** detection application can work as

#### Continuous, without trigger

Metrici LPF	R v4.6 - Settings ×
.PR engine working mode & External trigger	
LPR engine working mode:	CONTINOUS
Trigger device and type:	None
LPR input stream	
Companion stream	
Detection window	
Live view	
Reporting and check action	
Plates	
Car tracking	
Countries	
Barrier and traffic light	
GPS	
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In this mode, **Metrici LPR** tries to detect and recognize license plate in every frame of the videostream from IP camera (Fig.10). For this mode, in **LPR engine working mode & External trigger** choose option *Continuous* and *None* 

This working mode is useful especially where it is not possible to install an inductive loop (as on highways)....



#### Continuous with trigger

Metrici LPR v4.6 -	Settings		×
LPR engine working mode & External trigger			
LPR engine working mode:		CONTINOUS	•
Trigger device and type:	Barix Barionet 50 (inp	ut 1) 🔻 UDP	port 3500
How many seconds to analyze after the trigger is received:		[	2
LPR input stream			
Companion stream			
Detection window			
Live view			
Reporting and check action			
Plates			
Car tracking			
Countries			
Barrier and traffic light			
GPS			
	<u>(</u>	Cancel	Save



For this type of working mode, the detection and recognition of license plates will be executed frame by frame, as in the first mode, but the application can receive a trigger from an inductive loop. When the trigger is received, if no license plate can be detected, the application will still record the event in database, with an image and plate **UNKNOWN**.



#### Detection and plate recognition at trigger

Me	rici LPR v4.6 - Se	ettings		
LPR engine working mode & External trigge				
LPR engine working mode:			Started	by TRIGGER 🔻
Trigger device and type:		Barix Barionet 50 (ir	nput 3) 🔻	UDP port 3500
How many seconds to analyze after the trigge	is received:			2
LPR input stream				
Companion stream				
Detection window				
Live view				
Reporting and check action				
Plates				
Car tracking				
Countries				
Barrier and traffic light				
GPS				
			<b>C 1</b>	
			Cancel	Savo

#### Fig.10

This type of working mode, the application makes the detection and recognition ONLY when it receives the trigger and ONLY during the time specified in Metrici Control Panel application.

As in the first two types, the software can recognize more plates in the same frame. If no plate can be recognized, an event will be recorded in database, with an image and plate number as UNKNOWN.



This kind of working mode is very useful when inductive loops can be set, so to reduce processing power necessities: detections and recognitions are only made at trigger, during a limited time period (Fig.10).