Facial Recognition/ Herta

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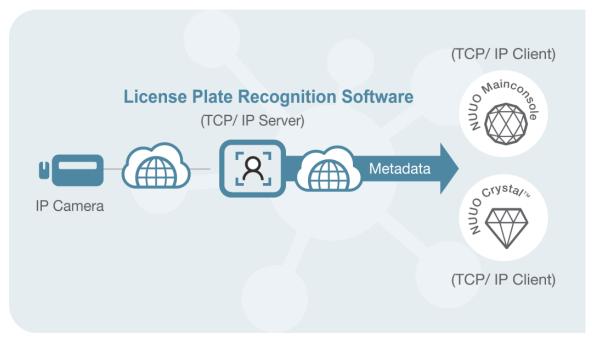
#### I. Facial Recognition Solution

Furthering its dedication to be a top Video Surveillance solution provider, NUUO is pleased to announce its new strategic partnership with Herta, a globally recognized facial recognition software provider.

NUUO and Herta are now working together to provide the most cutting edge facial recognition solutions for under both NUUO Crystal<sup>TM</sup> and NUUO Mainconsole (NVR IP+, Hybrid NDVR, and DVR card) platforms. The suite ensures that our clients always have access to the most advanced facial recognition solution in the market.

A. System Architecture

NUUO metadata server will query and update the facial recognition analysis results from Herta Facial Recognition Windows-based application in specified time period. With this information, users can create a pre-defined Blacklists and Whitelists and take appropriate actions such as opening a gate or generating an alert.



#### B. Compatible Versions

Herta Version	Product	Server Version	<b>Client Version</b>	Plugin Version
Herta 3.0	Crystal <sup>™</sup>	v.3.10.0	v.3.10.0	v.2.3.0.0
BioSurveillance	Mainconcolo	V7 9 0	v7 0 0	w2200
Solution	Mainconsole	v7.8.0	v7.8.0	v.2.3.0.0

#### II. Herta Facial Recognition System Installation

#### A. Trial Version

For trial, please reach out to Herta Customer Success Team by creating a case via <u>https://hertasecurity.com/en/support</u>.

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#### B. Herta Facial Recognition Server Set-up

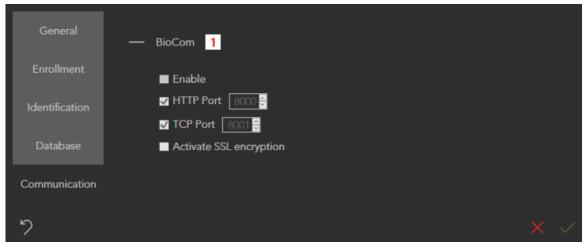
Please refer to the hardware requirements and user guide for details.

#### **III. NUUO Server Configuration**

- A. Crystal<sup>™</sup>
  - a. To use this feature, please upgrade your Crytal<sup>™</sup> Server firmware and Client application to v.3.10.0 or above version. Also, please <u>download</u> the plugin for Herta Facial Recognition System in NUUO's official website and install it in the "Plugin Overview" tab.

	Cite View	Playback	Config Syster	n Overview 🙎	admin ? 🗕 🗖 🗙						
	Live View <ul> <li>Live View</li> <li>Live View</li> <li>Live View</li> <li>NVR Management Server</li> <li>Recording Server</li> <li>NVR Recording Server</li> <li>Recording Failover Server</li> <li>Metadata Server</li> &lt;</ul>	Playback		m Overview Source Overview Version 2.3.0.0 2.3.0.0 2.3.0.0 2.3.0.0 2.3.0.0 2.3.0.0 2.3.0.2							
			LPR VIT	2.3.0.0							
									AC Soyal Client	2.3.0.0	
								LPR NeuralLabs	2.3.0.0		
			POS TCP Server	2.3.0.0							
	+-1 🗄 🛱 🦻 🖓 🗟	+ -									
Date: 2019	/3/29   Time: 11:48:49   Server Address:	10.0.3.16:525	50   CPU Loading:9%   1	Memory Usage: Total 10112MB Fr	ee 4617MB   Network: Dis 🔒						

b. Open the Herta Facial Recognition application and setting for Herta Plugin. Herta Setting: Settings > Communication > BioCom, "Enable" and "HTTP Port" must be checked, then assign an available HTTP port.

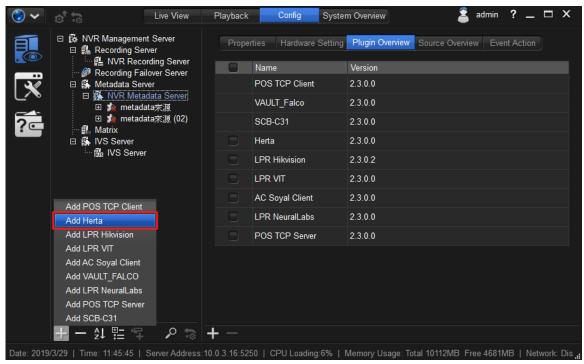


The statement for connection setting in the user guide Herta > BioCom:

- Enable: Herta Server send alarms configured to an external application using the BioCom module automatically.
- HTTP Port: Setting the HTTP port where to send the alarms.

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- **NUUO**®
- TCP Port: Setting the TCP port where to send the alarms.
- Activate SSL Encryption: It can encrypt your shipments by SSL encryptio. Notice:
- "Enable" and "HTTP Port" must be checed for metadata.
- Metadata Server Port: Please make sure you assign an available "HTTP Port" for receiving the metadata from Herta Facial Recognition System. Using occupied port may lead to receive unnecessary metadata from other metadata source.
- **c.** Add a metadata source of Herta Facial Recognition System and input the assigned server IP and port, then setting the Metadata "Polling Interval" in millisecond.



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Ive View       Playback       Config       System Overview       2 admin ? _ C ×         Ive View       Playback       Config       System Overview       2 admin ? _ C ×         Ive View       Playback       Config       System Overview       2 admin ? _ C ×         Ive View       Playback       Config       System Overview       Event Action         Ive NVR Recording Server       Ive NVR Recording Server       Ive NVR Metadata Server       Ive NVR Metadata Server       Ive NVR Metadata Server         Ive Metadata Server       Ive metadatatab@       Ive metadatatab@       Ive Metadata Source       Ive Metadata Source         Ive Matrix       Ive Matrix       Ive Matrix       Ive Matrix       Ive Matrix       Ive Matrix         Ive NVS Server       Ive Server       Connection test:       Ive Matrix         Ive NVS Server       Ive ta Server IP:       127.0.0.1         Herta Server IP Prot:       3000       Ive ta Server										_	
<ul> <li>Recording Server</li> <li>Recording Failover Server</li> <li>Metadata Server</li></ul>	🔊 🗸	et te	Live View	Playback	Config	System Overview	adn	nin '	? _		×
Polling Interval in millisecond : 1000		<ul> <li>■ Recording Ser</li> <li>■ Recording Fai</li> <li>■ NVR Reco</li> <li>■ Recording Fai</li> <li>■ Metadata Ser</li> <li>■ NVR Metada</li> <li>■ NVR Metada</li> <li>■ metada</li></ul>	rver Irding Server Iover Server ver data Server ata來源 tadata設備 ata來源 (02) ata source tadata channel	N Herta Se	letadata Sourc Plugin typ Source typ Nam Descriptio Connection tes Herta Server IF erver HTTP Por I in millisecond	e: ✓ Enable e: Herta e: Herta e: metadata source n: t:					

Whitelist

d. Users can add corresponding metadata channels and define "Channel ID" for receiving the detection results from multiple channels. (The "Channel ID" is defined by Herta Facial system named "Camera Source", "Channel ID" and "Camera Source" setting string must totally equal.)

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Image: Second	rr ing Server M ver Server M ta Server 來源 Jata設備 來源 (02) source Jata chan	Properties letadata Channel: Name: Description: Cannel ID : eaming schedule: Retention day: Copy schedule:	metadata       Source1       Time zone       Priority       1       +       7	-	Property 🖍	Server): UTC Description test descript		
Date: 2019/3/29   Time: 12:04:09   Se	• ••	.16:5250   CPU L	.oading:6%	Memory Usage: T	otal 10112MB	Free 5075MB	Network: Disp	P.::

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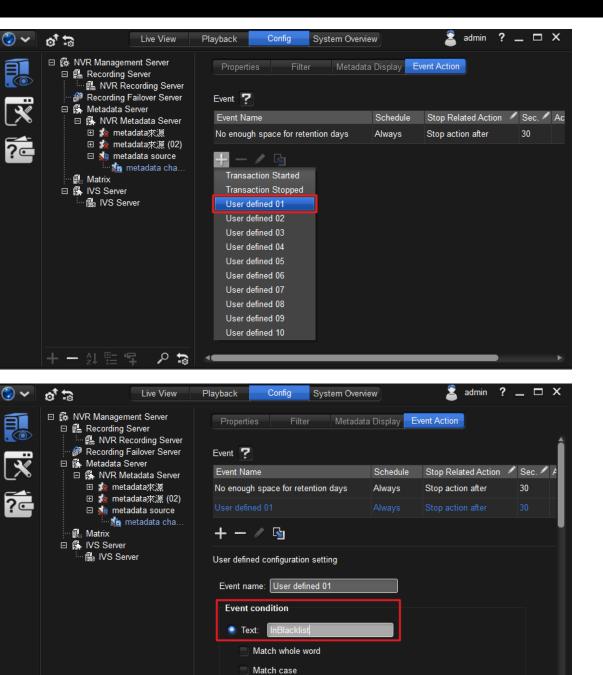
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e. For Blacklist and Whitelist applications, input the relevant license plate numbers into the blacklist and whitelist column in the "Properties" tab. All the metadata channels under the metadata source will share the same blacklist and whitelist for flexible system design. Then, setup a specific action for blacklist or whitelist by User Defined Event in metadata channel > Event Action and modify the text of the event condition to "InBlacklist" or "InWhitelist" (Please use the correct case for each letter. The comparison is case-sensitive). Once set-up is complete, the Crystal Server will automatically compare the receiving license plate numbers with those in the list and do instant responses. (The character limit of each list is up to 250,000 characters)

😪 🗸	et 10	Live View	Playback	Config	System Overview	🙎 admin	? _	□ ×
	Precording     Known Metadata     Known Metadatata     Known Metadatatatatatatatatatatatatatatatatatat	g Server Recording Server J Failover Server Server Metadata Server etadata來源 metadata說備 etadata來源 (02) etadata source metadata channel er erver	Herta S Polling Interv	Metadata Source Plugin type Source type Name Description Connection tes Herta Server IP Server HTTP Port val in millisecond Blacklist Whitelist	e: ✓ Enable e: Herta e: Herta e: metadata source n: f: 0: 127.0.0.1 1: 1000 John Brown ::: Janet Huang			
Date: 2019/	13/29   11me: 12:08:3	I Server Address:	10.0.3.16:5250	LCPU Loading:4	4%   Wemory Usage: Totar 10112MB	rree 5026M		K. DISpla .

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Advance setting

f. Metadata channel Filter: Every tag of data transaction is start with "<TRANSACTION\_START>" and end with "TRANSACTION\_END" 

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#### 🙎 admin ? \_ 🗗 🗙 ج 🎧 a<sup>†</sup> to Live View Playback ver: NVR Management Server (10.0.4.7-5250) VD M-Filter Metadata Display Event Action Properties NVR R - + - 🕵 🕵 Default Transaction Filter ?⊂ 10 D D D D Filtered data nal data F # X ☆ 1 Filter configuration rity Action type 🖋 Match opti 🖊 Data 🖉 Result Plain text End Plain text <TRANSACTION END: - End

Note:

Please make sure you upgrade the client version to 3.10.0.

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- For blacklist and whitelist, please use the correct case for each letter (The comparison is case-sensitive) and spilt them by new line.
- Please make sure you setup both start and end in the filter for the system to define a complete detection result.

#### B. Mainconsole

- **a.** To use this feature, please <u>download</u> and put the .dll plugin file for Herta Facial Recognition System into the corresponding installation directory.
  - For 32bit Mainconsole, please download the 32bit .dll plugin file and put it into the C:\Program Files (x86)\NUUO\SCB\_IP\PluginPack\MetadataModelHerta.
  - For 64bit Mainconsole, please download the 64bit .dll plugin file and put it into the C:\Program Files (x86)\NUUO\SCB\_IP\x64\PluginPack\MetadataModelHerta.

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🎦 Update					
Brand	Model	Туре	Version	*	
AC Soyal Client		Nu-connection	2.3.0.0		
AC TCP Client		AC	2.1.1.0		
Herta		Nu-connection	2.3.0.0		
LPR TCP Client		LPR	2.0.1.0	=	
NuFace		Nu-connection	2.0.0.7		
Visec		LPR	1.0.8		
Tyco Client		AC	1.0.8		
UDP		IVS	1.0.8		
Soyal		AC	1.0.8		
VAULT_FALCO		AC	1.0.8		
Micros Gateway		POS	1.0.8		
VIT <		LPR	1.0.8	*	

b. Open the Herta Facial Recognition application and setting for Herta Plugin. Herta Setting: Settings > Communication > BioCom, and "Enable" and "HTTP Port" must be checked, then assign an available HTTP port.

General	— BioCom <mark>1</mark>	
Enrollment	Enable	
Identification	✓ HTTP Port 8000 € ✓ TCP Port 8001 €	
Database	Activate SSL encryption	
Communication		
っ		

The statement for connection setting in the user guide Herta > BioCom:

- Enable: Herta Server send alarms configured to an external application using the BioCom module automatically.
- HTTP Port: Setting the HTTP port where to send the alarms.
- TCP Port: Setting the TCP port where to send the alarms.
- Activate SSL Encryption: It can encrypt your shipments by SSL encryptio. Notice:
- "Enable" and "HTTP Port" must be checed.
- Metadata Server Port: Please make sure you assign an available "HTTP Port" for receiving the metadata from Herta Facial Recognition System. Using occupied port may lead to receive unnecessary metadata from other metadata source.



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**c.** Add a metadata source of Herta Facial Recognition System and input the assigned port, then setting the Metadata "Polling Interval" in millisecond.

🔆 Metadata Application		x
Data Source Display	Metadata Source Setting	
🔄 Insert 陆 Delete 🍵	Settings	
- 🚮 Metadata	Name: Herta Facial Recognition	
	Metadata Type: Nu-connection 💌	
Data Source Display	Source Type: Herta  Test Connection	
	Server IP 127.0.0.1	
	Server HTTP Port 8000	
	Polling Interval(ms) 1000	Export
	Blacklist File blacklist.txt	
	Whitelist File whitelist.txt	
		er Define
	V OK X Cancel	
		X Cancel

d. Users can add corresponding metadata channels and define "Channel ID" for receiving the detection results from multiple channels. (The "Channel ID" is defined by Herta Facial system named "Camera Source", "Channel ID" and "Camera Source" setting string must totally equal.)

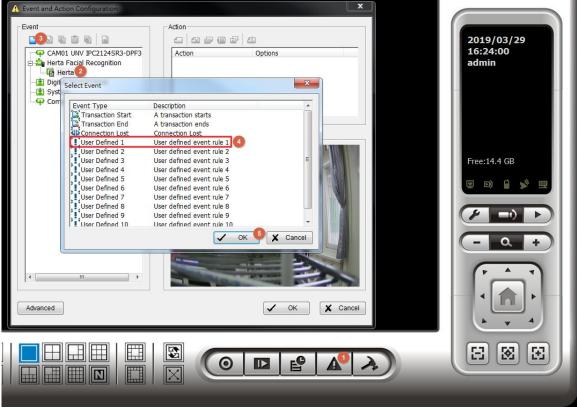
🔆 Metadata Application				x
Data Source Display Plug-in	Metadata Source Setting		×	Ì
🐑 Insert 🔭 Delete 📑 Config	Settings			
🖃 🚮 Metadata 🖹 🚔 Herta Facial Recogi	Name:	Herta		
Herta	Metadata Type:	Nu-connection 👻		
	Source Type:	Herta	Test Connection	
	Cannel ID	Source1		
				Export
				e
			K 🗙 Cancel	Cancel

For Blacklist and Whitelist applications, create and input relevant license plate numbers into a blacklist and whitelist .txt file and put the files into the corresponding plugin installation folder (C:\Program Files (x86)\NUUO\SCB\_IP\PluginPack\
 MetadataModelHerta 32bit or C:\Program Files (x86)\NUUO\SCB\_IP\x64\PluginPack\

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MetadataModelHerta for 64bit). Then, setup a specific action for blacklist or whitelist by User Defined Event in Smart Guard > 3rd Party Facial Recognition Event > Event Action and modify the text of the event condition to "listType=blacklist" or "listType=whitelist" (Please use the correct case for each letter. The comparison is case-sensitive). Once set-up is complete, the Mainconsole will automatically compare the receiving data with those in the list and do instant responses. (The character limit of each list is up to 1,000,000 characters)

Metadata Application			×
Data Source Display	Metadata Source Setting	×	
📩 Insert 🔚 Delete 🝵	Settings		
Metadata	Name:	Herta Facial Recognition	
	Metadata Type:	Nu-connection 💌	
	Source Type:	Herta  Test Connection	
	Server IP	127.0.0.1	
	Server HTTP Port	8000	
	Polling Interval(ms)	1000	Export
	Blacklist File	blacklist.txt	
	Whitelist File	whitelist.txt	
	-		
			er Define
		✓ OK X Cancel	X Cancel
_			



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Alarm Event Configuration	×
Basic Advanced	
Metadata Event Rule - User De	efined 1
Event Name:	User Defined 1
Alert Condition	,
Text	
Keyword	listType=blacklist
Match case	
Match whole word	
Using regular expression	ssion
C Numeric value	
Prefix text:	
Condition:	< _
Value:	
Postfix text:	
C External rule	
,	
- Frequency	
Count: >=	1
Count period:	
<ul> <li>Reset count of each</li> </ul>	transaction
C Reset every	10 mins 👻
	V OK X Cancel

#### Note:

- For blacklist and whitelist, please use the correct case for each letter (The comparison is case-sensitive) and spilt them by new line.
- Please make sure you setup both start and end in the filter for the system to define a complete detection result.

#### C. Metadata Display

The plugin will receive the .xml file sending from the Herta Facial Recognition System Server, and transform the data into a human readable format displayed in the interface of NuClient and Mainconsole. Users can omit those unwanted data by setting the regular expression in metadata channel > Filter (<u>Crystal</u>/<u>Mainconsole</u>).