The Intelligent Surveillance Solution

NuFace

User Manual

Ver. 1.0.0.151015.00

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1. Introduction:

NuFace is a windows-based application aiming to provide advance face recognition analysis service to users with simplicity configuration and accurate result.

This application should be compatible with NUUO all product line with TCP/IP metadata connection:
NUUO Mainconsole v6.1 and above
NUUO Crystal v3.1 and above

1-1 Function

Nuface is a portable application which shall provide below functions:

- Get video streaming from WebCam or IPcam.
- Register faces as profile for recognition
- Face recognition analysis for profiled face
- Send recognition results(metadata) to NUUO product (via TCP/IP client)

2. Requirement:

2-1 Minimum Hardware Requirement

CPU	(CPU) Intel® Core™ i3 2.4GHz and above
OS	Windows XP, Windows 7, Windows Embedded
RAM	2GB
Storage size	20 GB

※ Turn off UAC is required when installing/executing application

※ Administrator privilege is required

2-2 Tested Capture Device:

Web Cam

Model	Logitech HD Webcam C910 and C920, Logitech Quickcam Pro 9000, Microsoft LifeCam Series
Environment	Indoor with bright light
Distance of Face	7 meters in 640x480 resolution

IP Cam

Brand	Axis, Vivotech, D-link, Basler
Environment	Indoor with bright light
Distance of Face	7 meters in 800x600 resolution

2-3 OS Requirement:

Windows 7:
Microsoft.NET Framework 4.0 or above
Microsoft Visual C++ 2010 (x86)

Windows XP:
Microsoft.NET Framework 3.5 and 4.0
Microsoft Visual C++ 2010 (x86)

2-4 Application Spec

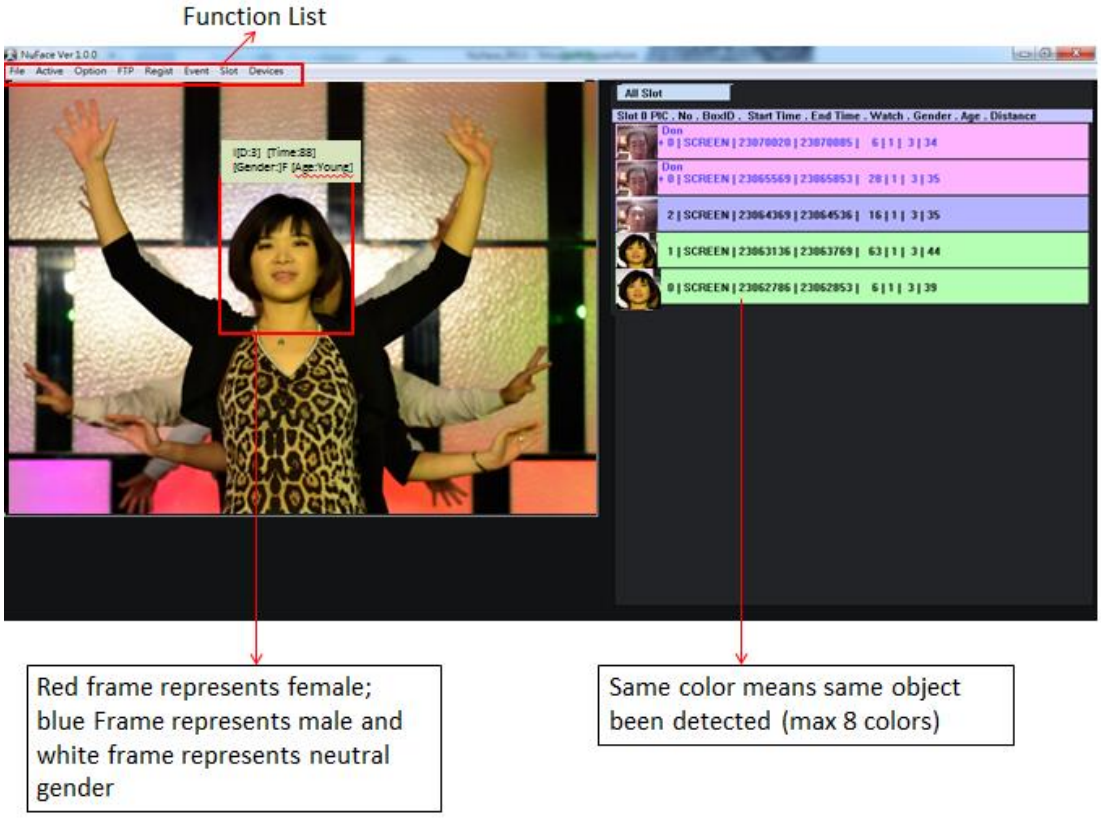
Features	
➢ Face recognition ➢ Black list ➢ Distance detection	➢ Gender detection ➢ Age detection ➢ Face Scramble
Specification	
Supported Video Source	Web Cam/USB Cam
	IP CAM (via CGI or RTSP)
Recommended Codec for analysis	MJPEG over HTTP MJPEG over RTSP
Max. analyzed channels per server	16 (depends on server and video quality)
The maximum quantity of faces to be detected per video source	64
The recommended quantity of faces to get recognition analyzed	8
Recommended pixel of face for recognition	100x100
Minimum pixel of face to be detected	20x20
Recommended angle for recognition	Within 15 degree
Recommended pixel for recognition	Minimum 100x100
Maximum album of faces	6,000
Maximum registered images in the profile	60,000
Face enrollment methods	Live capture
	History images

2-5 Other Requirement

- If project requires extreme accuracy; the recognition environment shall be setup. For example, object shall not wear glasses, hat or significant wearing; object shall stand in a predefined zone which the lighting and view angle is preset for recognition.

3. Interface and Operation:

3-1 Application UI



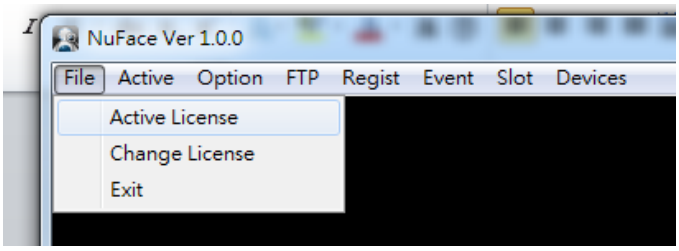
Feature Definition

Face detection and counting	Uses pattern detection to log and analyze the demographics of the people who see the visual messaging.
Age estimation	Counts and reports the age and age ranges of detected persons.
Gender estimation	Counts and reports the gender of detected persons.
Attention time	Detects how long each detected viewer looks at a message.
Viewer distance	Detects and estimates the distance between each detected viewer and the camera. (cm)

3-2 License Activation

NuFace is portable application.
How to activate license:

a. Open License.ini
b. Type in license serial number (42 digits) in License.ini
c. Close license.ini
d. Open NuFace.exe



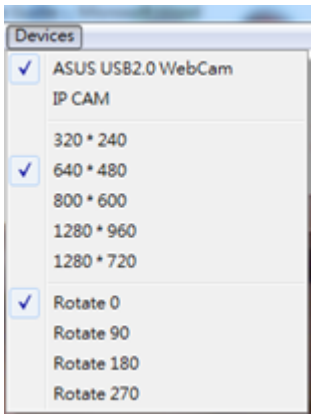
e. File Tab – Click Activate License

3-2-1 Notes of License activation

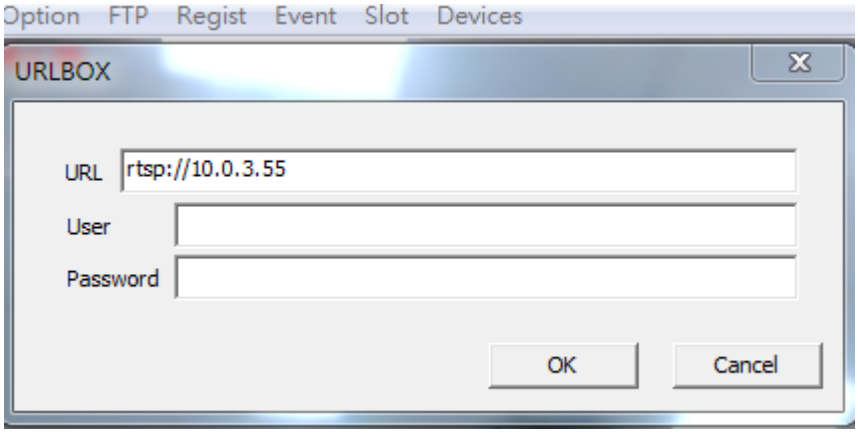
- First time Activate license or Change license requires WAN environment for license server.
- Only one license number is accepted in license.ini
- There is no transfer license feature in NuFace
- If server had 1ch license activated; and user want to use 4ch in this server. User has to put 4ch license serial number in license.ini and then click on Change license.
- The server time has to be accurate, if there is more than 15 mins difference between server time and standard time, the activation would fail.

3-3 Video Devices

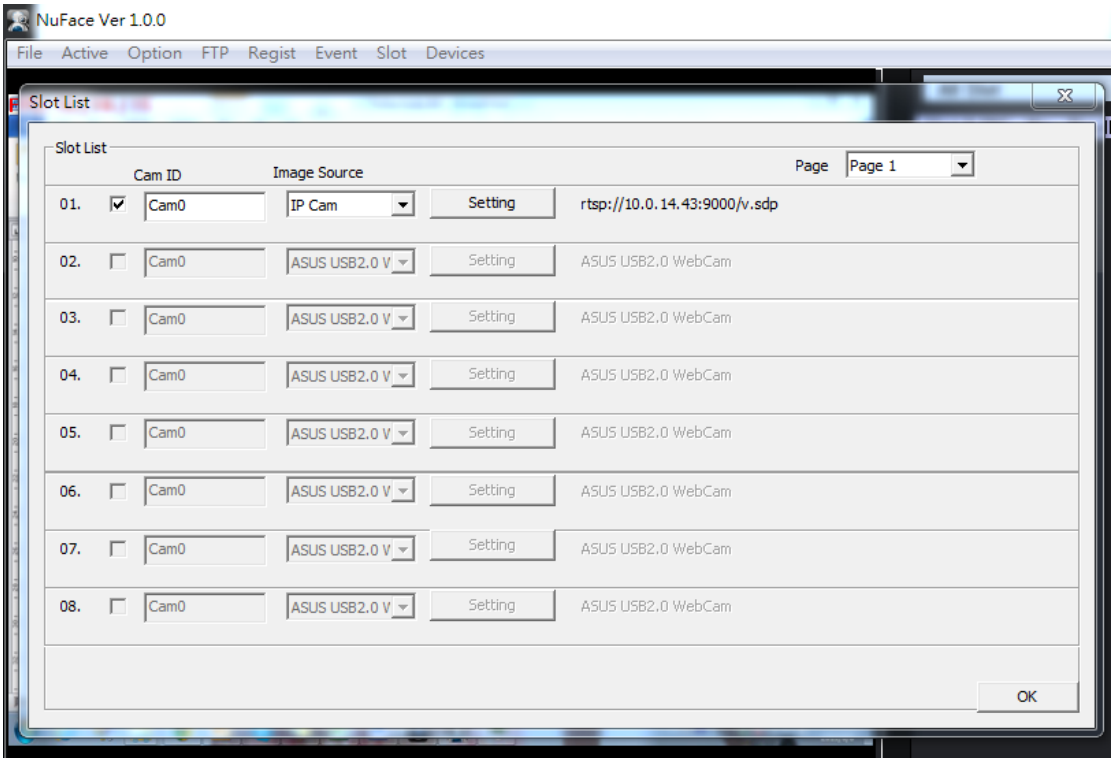
Click Devices on the function list to select webcam or IP cam and choose the resolution.



If IP CAM is selected, the setting window will pop-up.

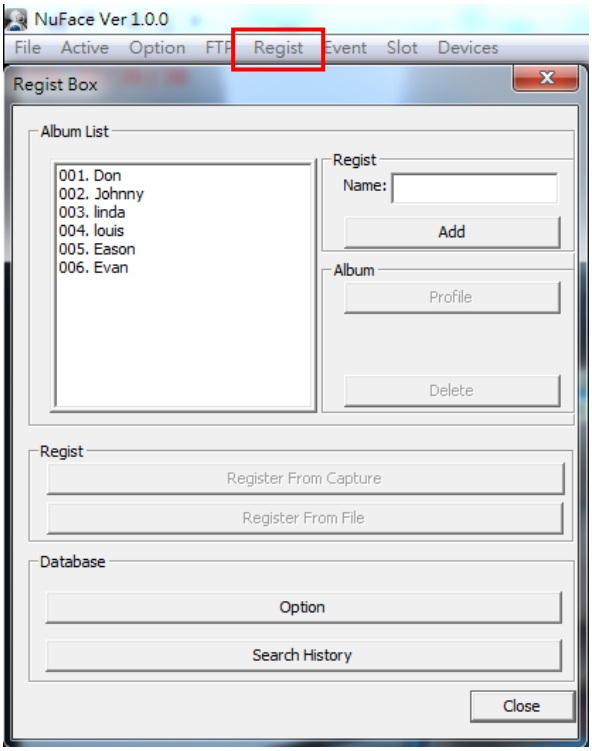


Go to Slot/Slot option
Change Image source



3-4 Registering Faces

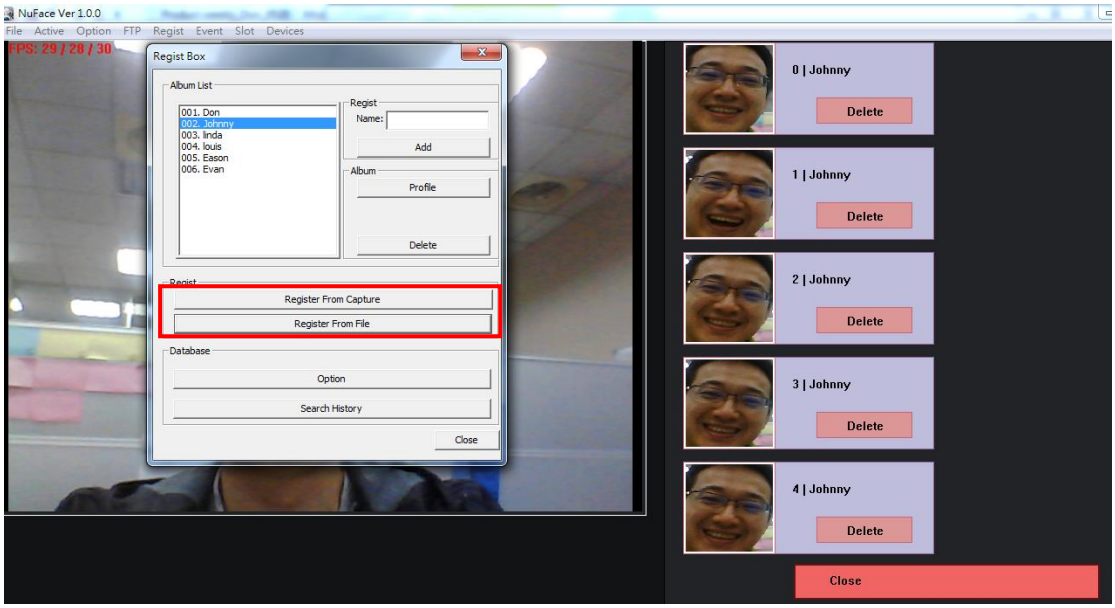
-Adding face profile – Regist



1. Click ”Regist” on the menu bar -> The Regist Box pops up
2. Enter “Name” for the ID -> Click “Add”
3. ID should be added to the Album List

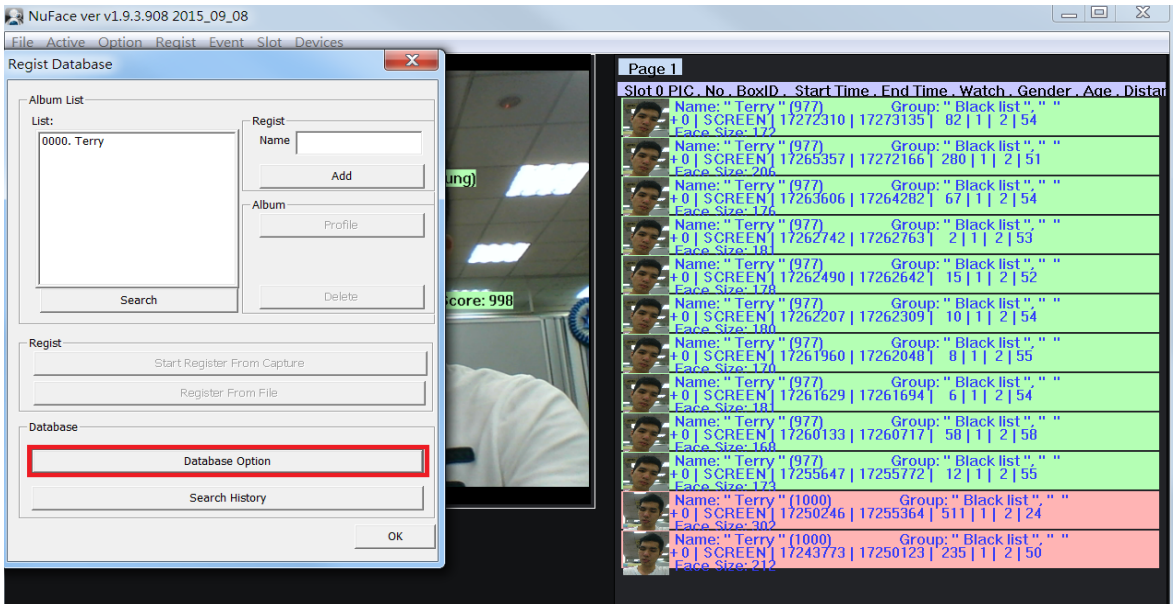
There are two ways to add album files
3-1 Register From Capture – directly capture face image from video device.
3-2 Register From File – add face image from existing picture.

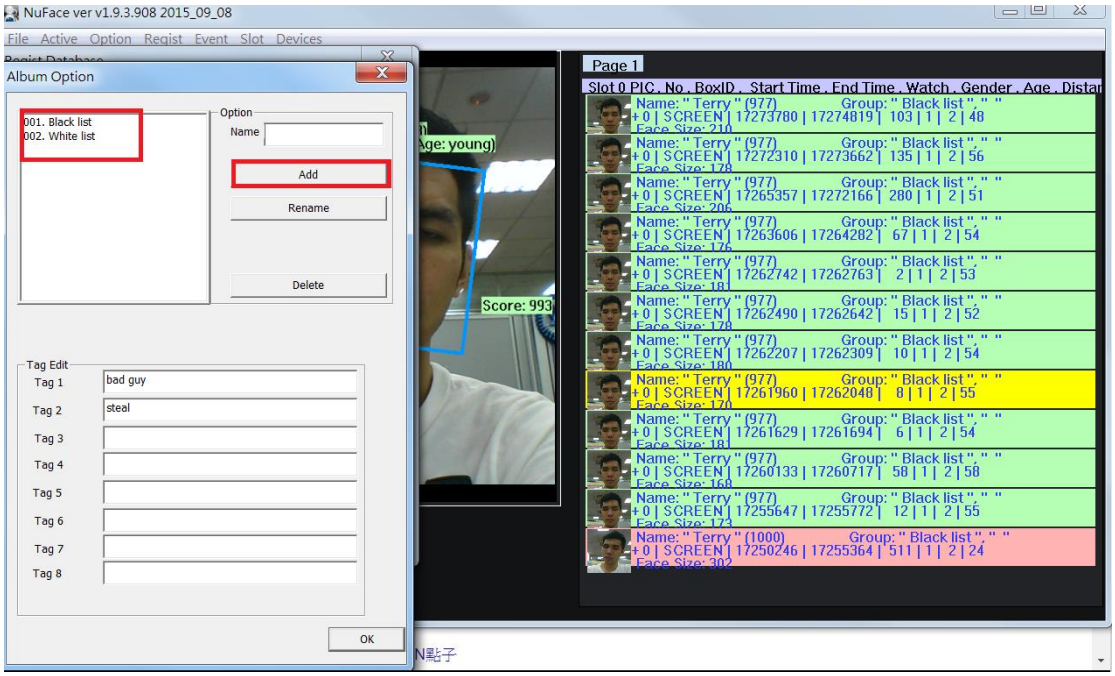
4. Adding faces with different angles for better performance
5. Click “close” when you finish the registration process



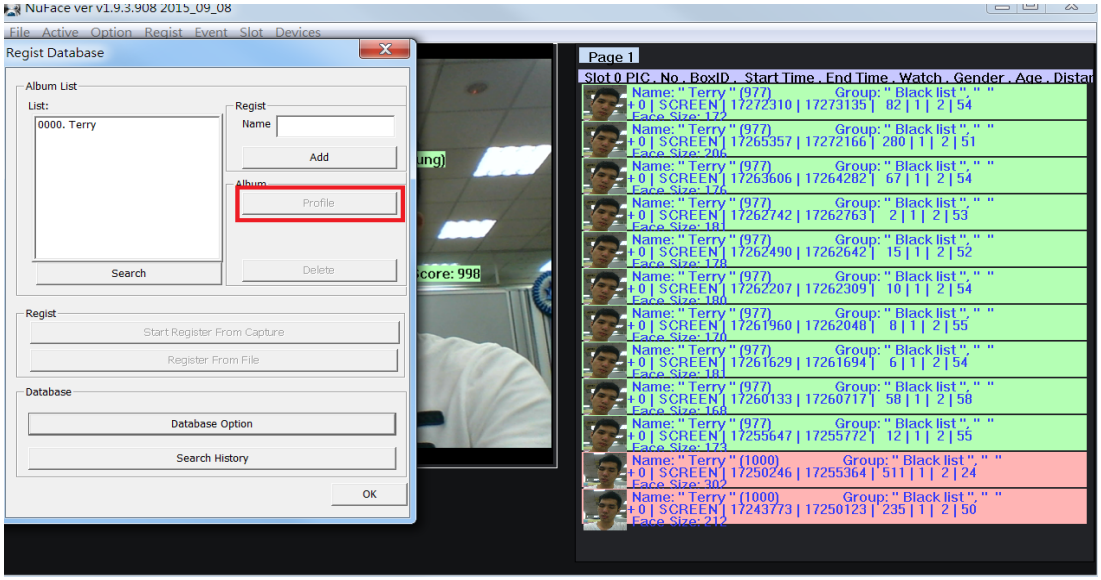
-Add group as Black and White list

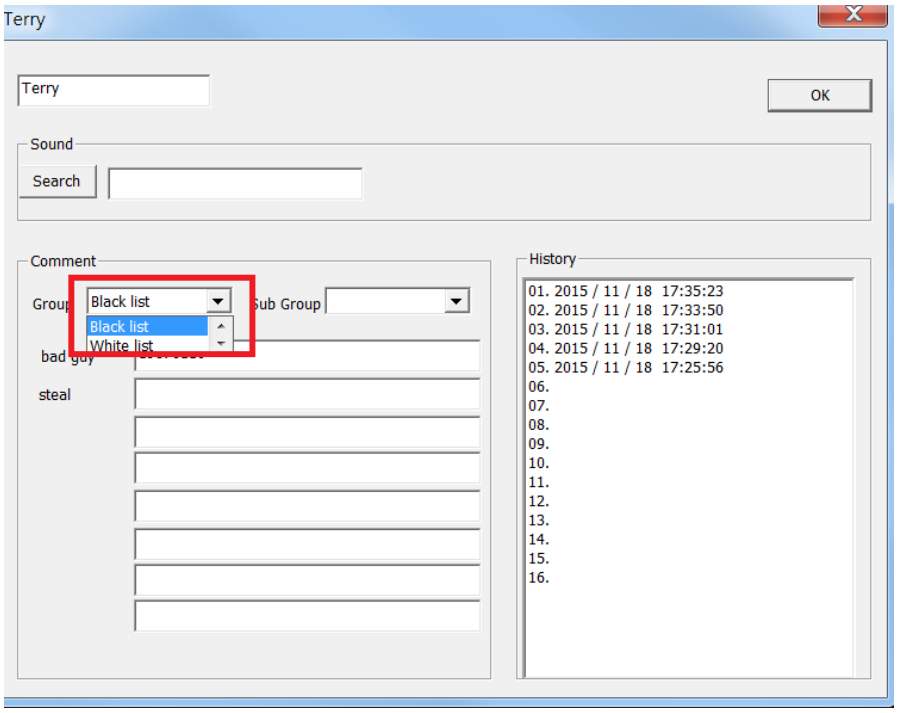
1.Regist a group from database option, you can make members in black group or white group .



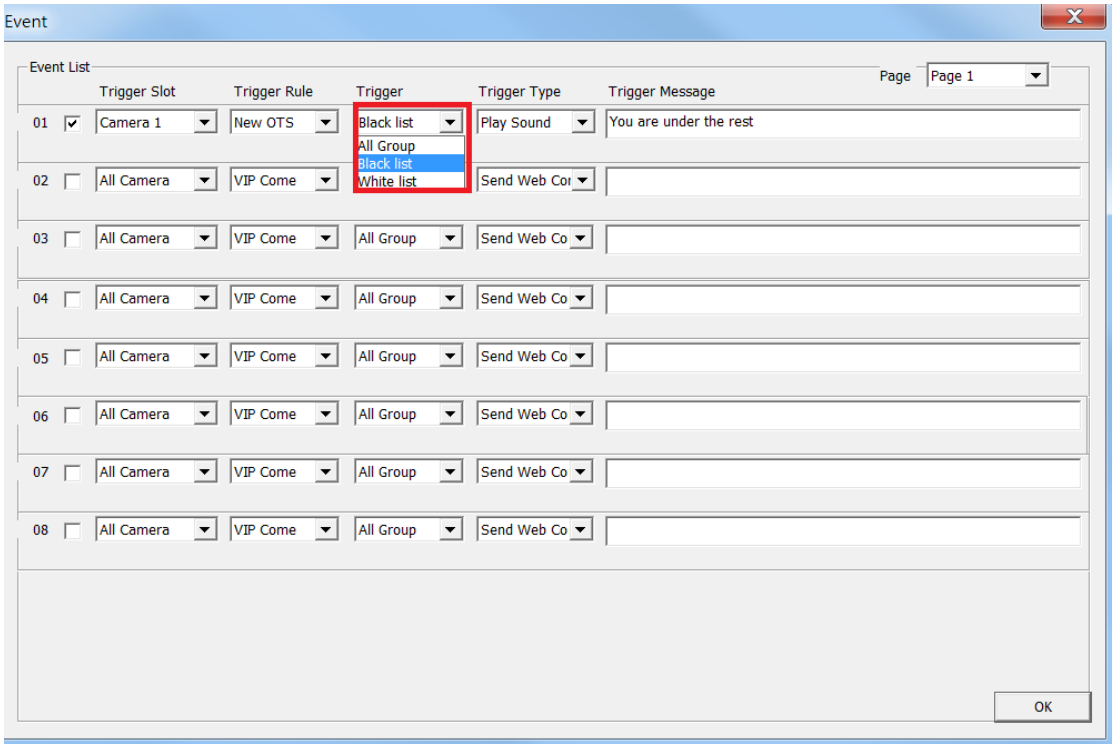


2. You can press the Album and assign the person to the group of black or white list .





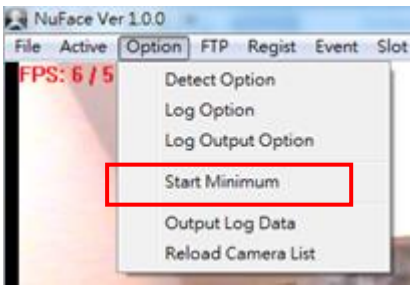
3. You can set up the event/action for the group which in the black list



3-5 Advance Setting

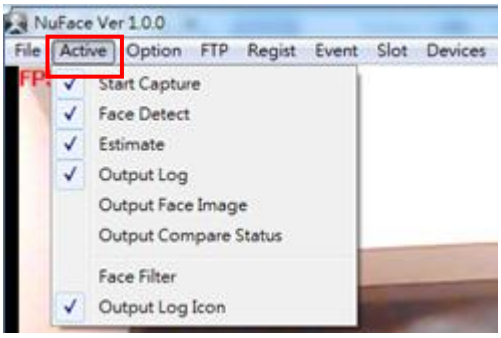
3-5-1 Mimimum Application

Click “Start Minimum” in the list of “Option” functions, NuFace will be minimized to the toolbar when running.



3-5-2 Feature Enable/Disable

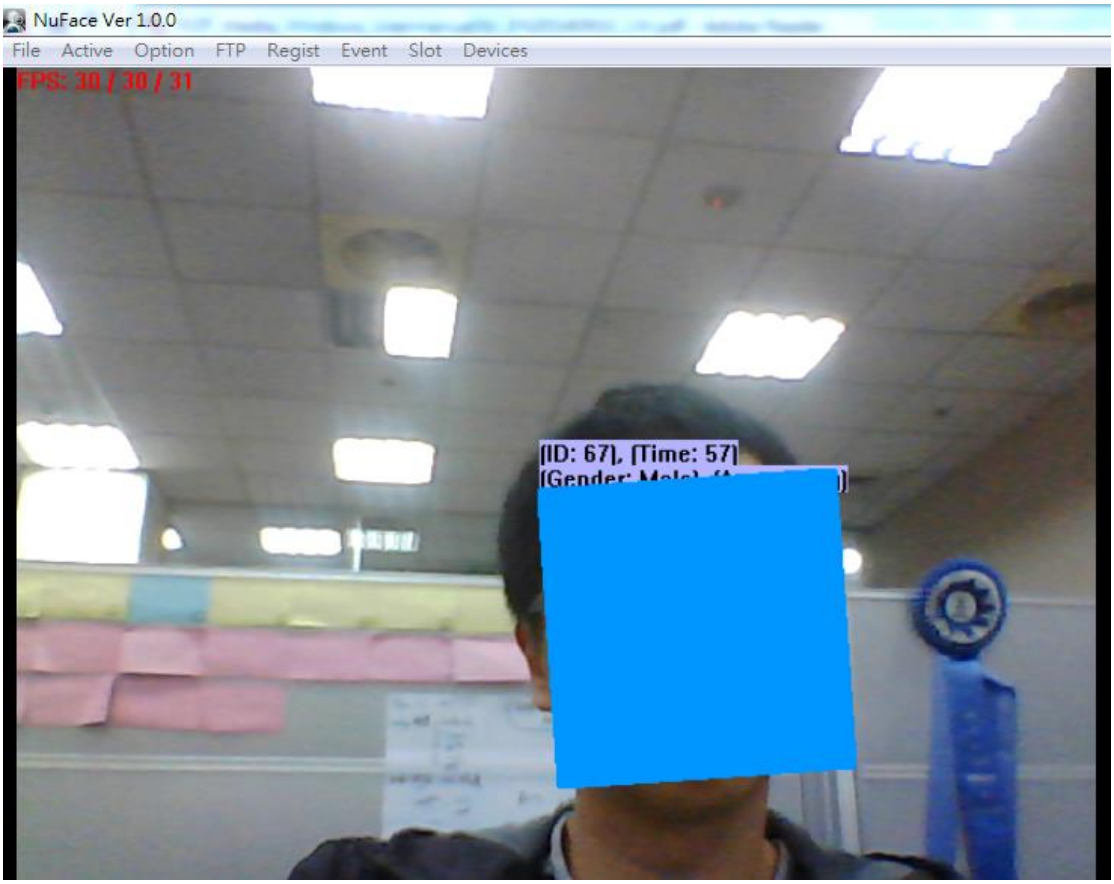
Click “Active” on the function list and enable/disable the feature.



Feature	Action
Start Capture	Starts the camera capture
Face Detect	Detects faces shown on the screen
Estimate	Estimate age and gender
Output log	Export log file
Output Face Image	Export face image
Face Filter	Mosaic the faces shown on the screen
Default setting: “Start Capture”, “Face Detect”, “Estimate”, “Output Log” are enabled.	

3-5-3 Face Filter

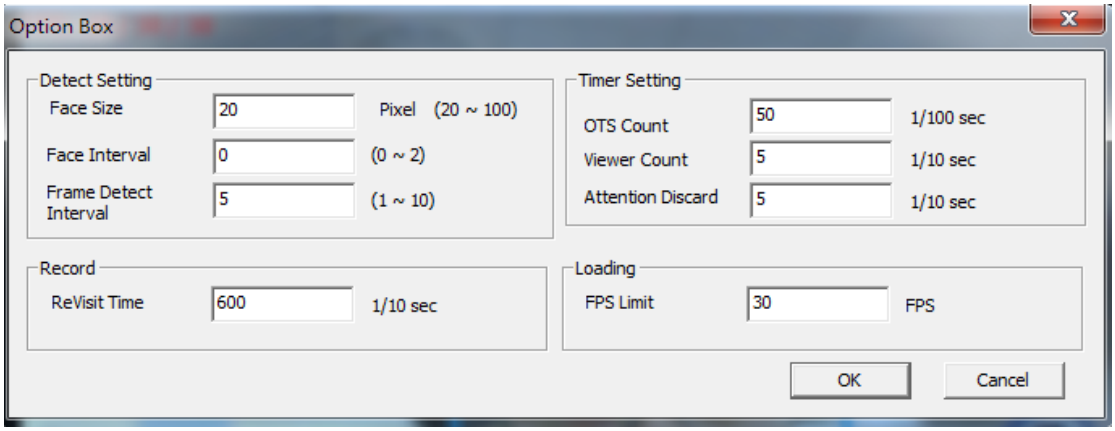
Click “Active” on the function list and enable “Face Filter”, the face will be scrambled.



3-5-4 Detection Setting

Click “Option” on the function list and select “Detect Option”

The parameter setting will be shown as below:



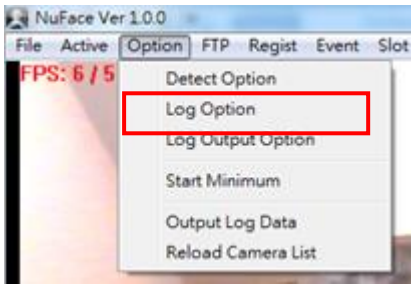
Parameter	Definition and Description	Scale	Default
Face Size	The minimum face resolution to be detected.	20-100	20
Face Interval	The allowed tolerance of distance between viewers. The smaller the value, the closer the distance between two faces that can be detected and vice versa.	0-2	0
Frame Detect Interval	The parameter is to set the number of frames between each identification. The default setting of “5” means 5 frames between each identification. The larger the value, the lower the loading time, but with a slower refresh on screen.	1-10	5
OTS Count (1/10 seconds)	Determines the opportunity-to-see by setting up a minimum viewing time	0-999	5
Viewer Count (1/10seconds)	Determines a qualified viewer by setting up a minimum viewing time.	0-999	5
Attention Discard (1/10 seconds)	The allowable time determining a non-view	0-999	5

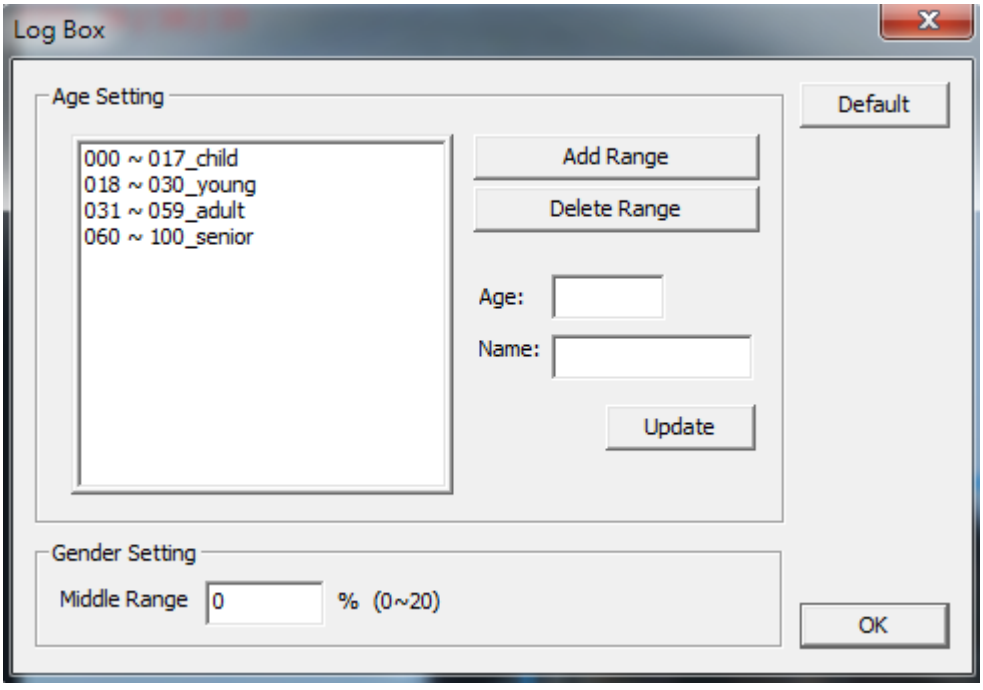
1 OTS stands for opportunity-to-see. OTS is used for defining the audience that has been detected with/without age/gender estimation.

2 Viewer is used for defining the audience whose age/gender has been estimated and viewing time is sufficient.

3-5-5 Age Range Setting

Click “Option” on the function list and select “Log Option” to set the range of age.





Click Default to restore te default system settings.

Default Age Setting

Age	Bracket Name
0-17	Child
18-30	Young

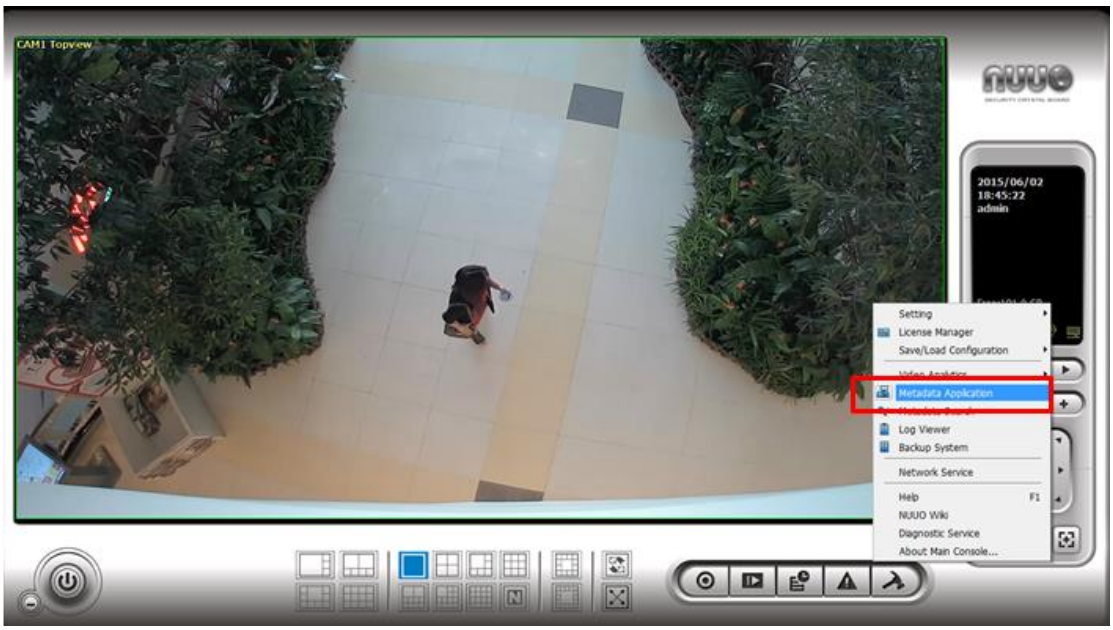
31-59	Adult
60-100	Senior

Parameter

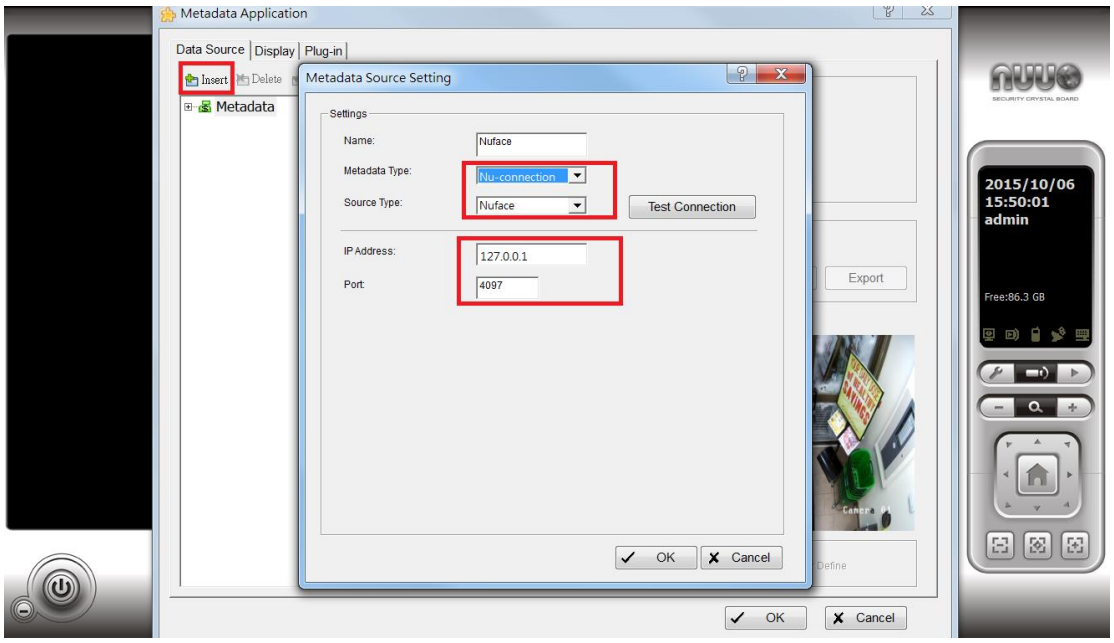
Parameter	Definition and Description	Scale	Default
Middle Range	Neutral gender range: the higher the scale, the greater the range for neutral gender allowance.	0-20	0

4. Metadata connection guide (Mainconsole)

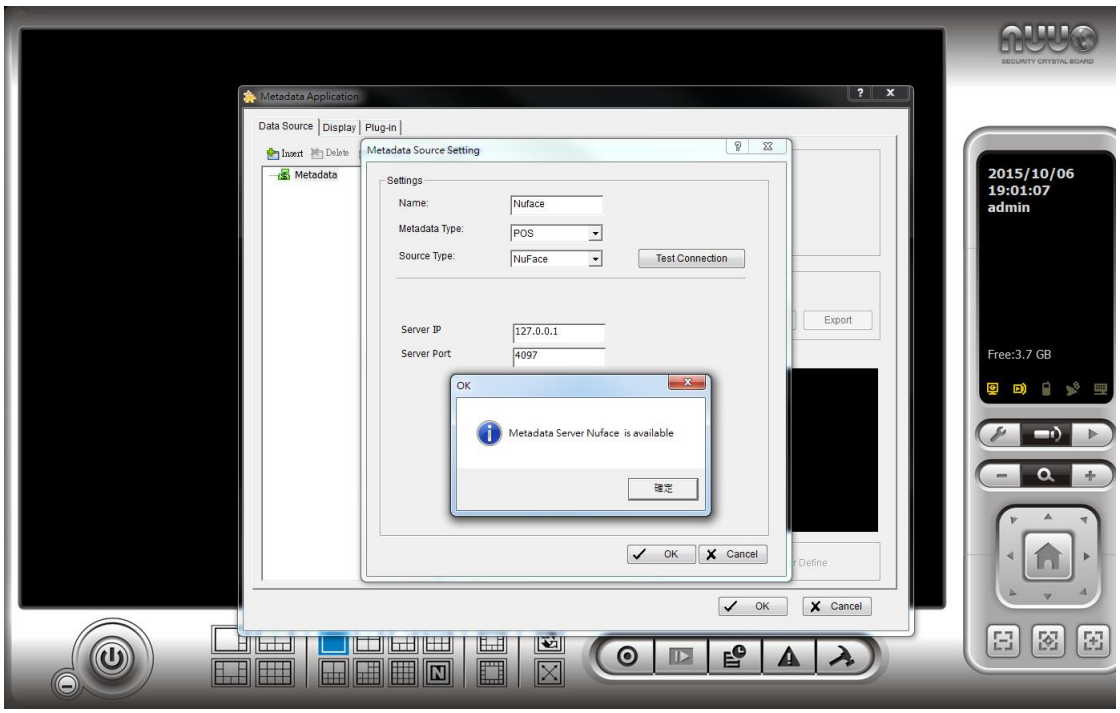
1. Open NUUO Main Console, go to General Setting> Metadata Application



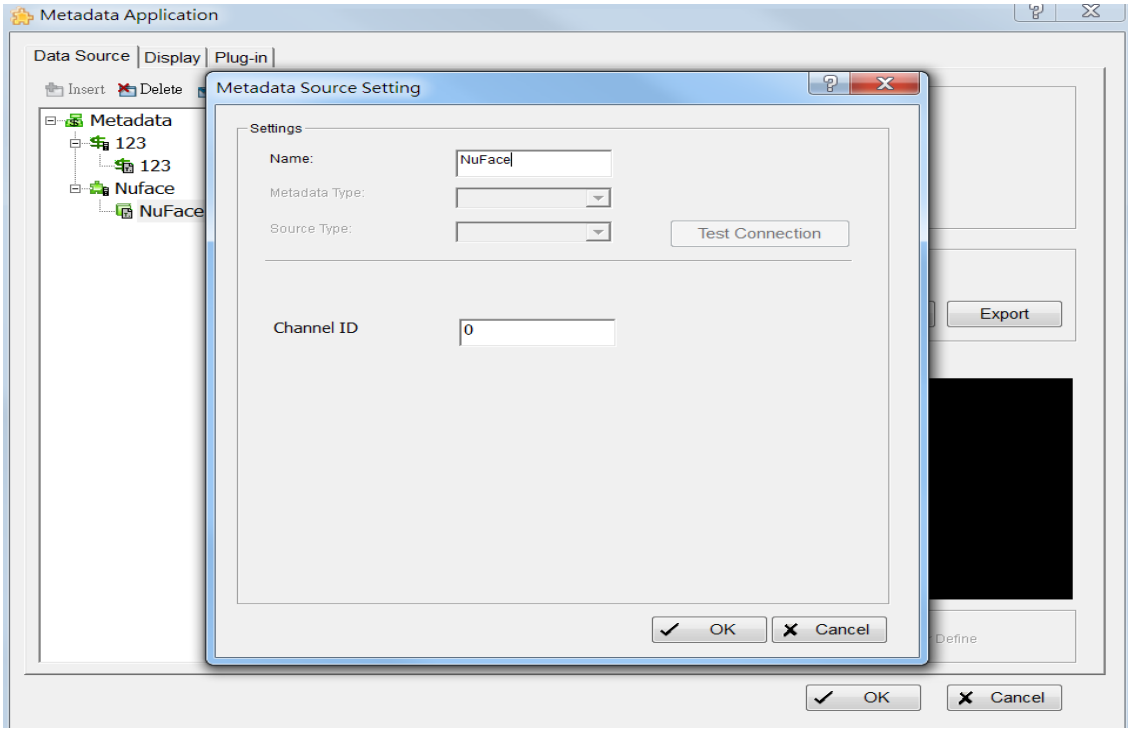
2. Click on “Insert” to add new source; the Metadata type is Nu-connection, the source type should be Nuface, the port for NuFace is “4097”.



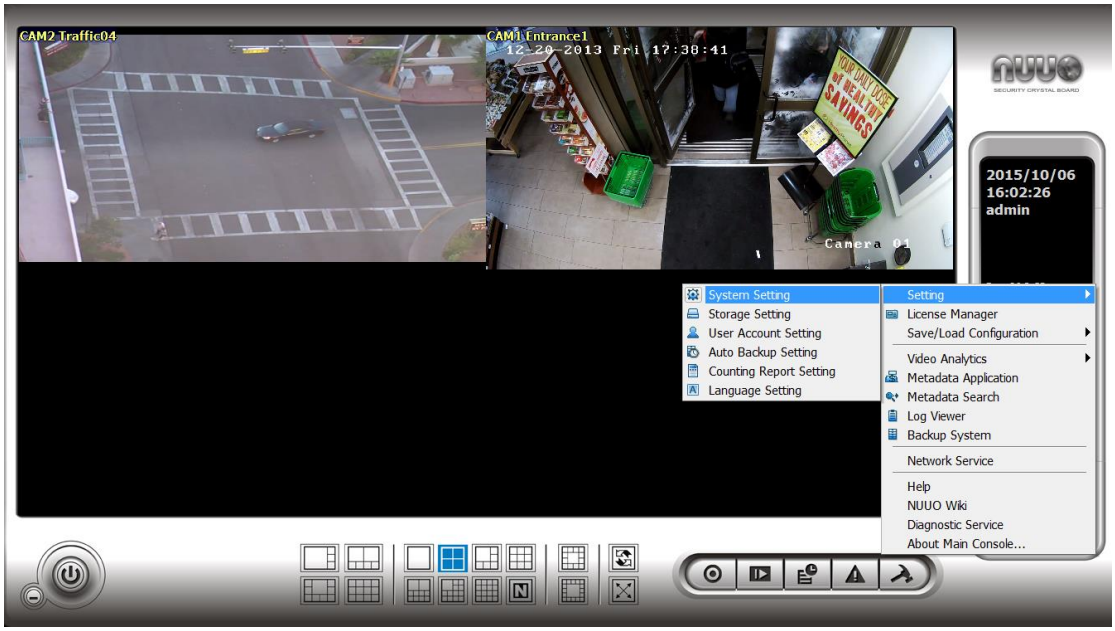
3. Test connection



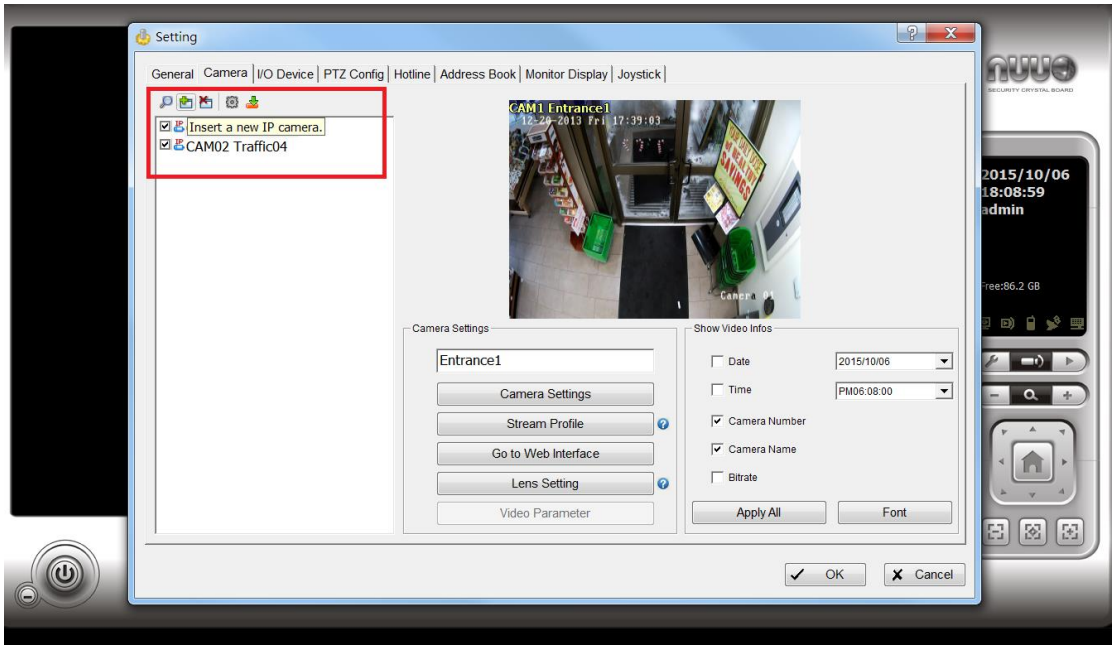
4. Go to Metadata Source Setting page and enter the Channel ID correspond to the related Camera



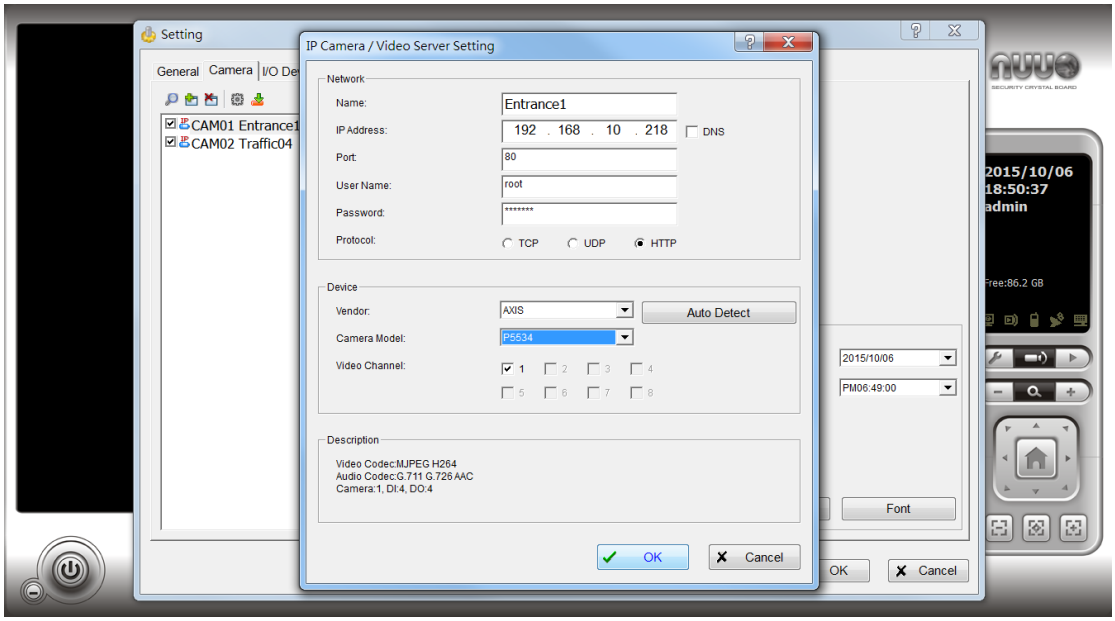
5. Back to Main page，Go to General Setting > Setting > System Setting



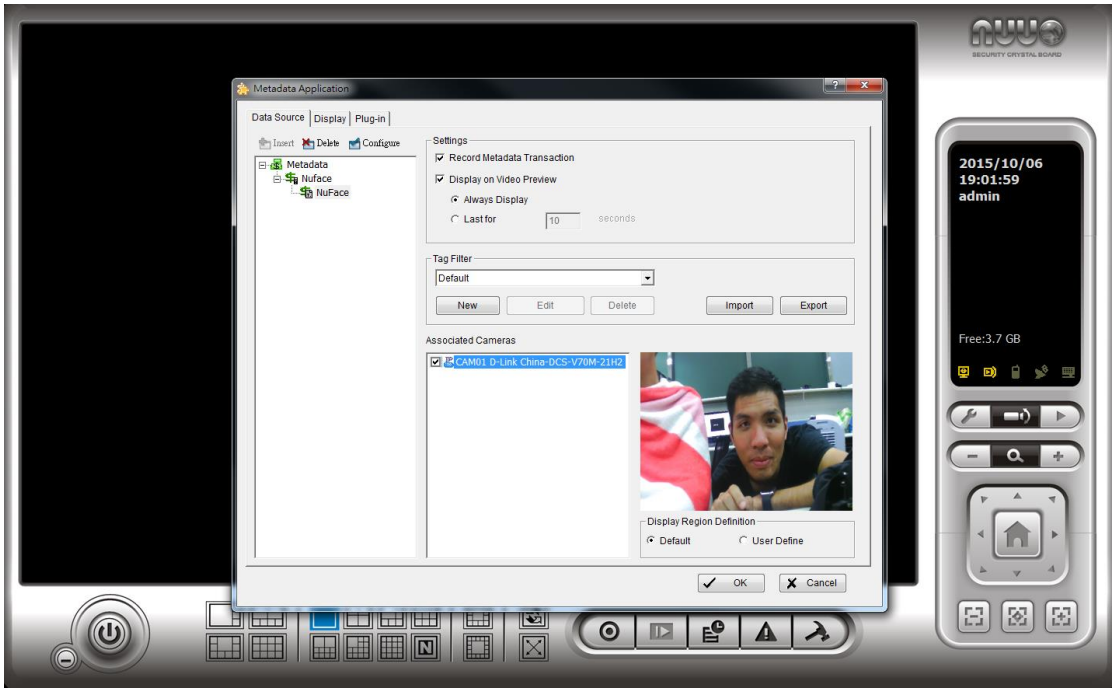
6. Select Camera > Insert a new IP camera



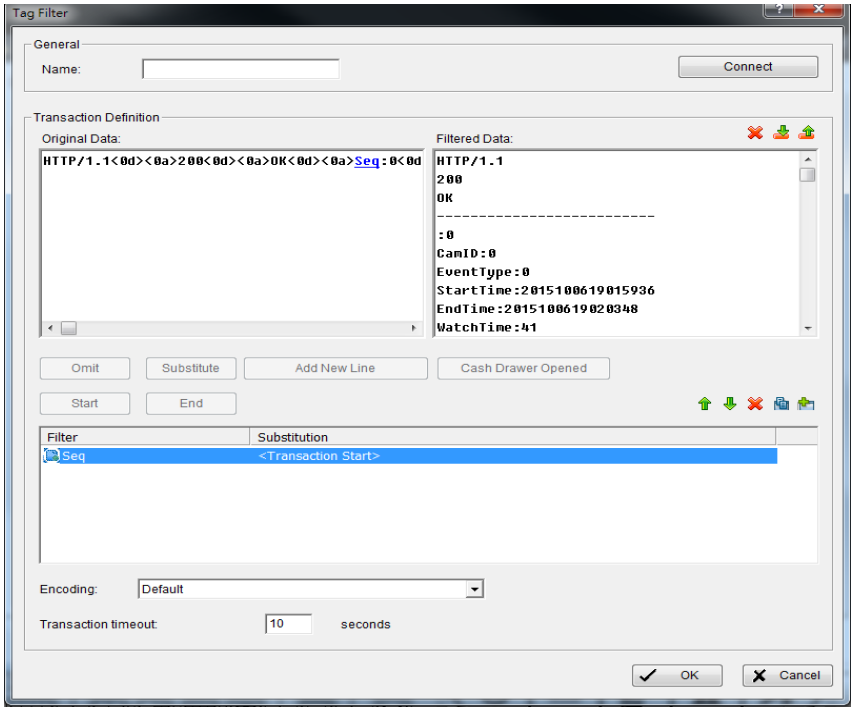
7. Enter IP Cam's IP address、port、user account、password，customize name, please also select the IP CAM's manufacturer and model name .



8. Go back to Metadata application page，select the IP camera you just added and choose the Nuface Filter accordingly .



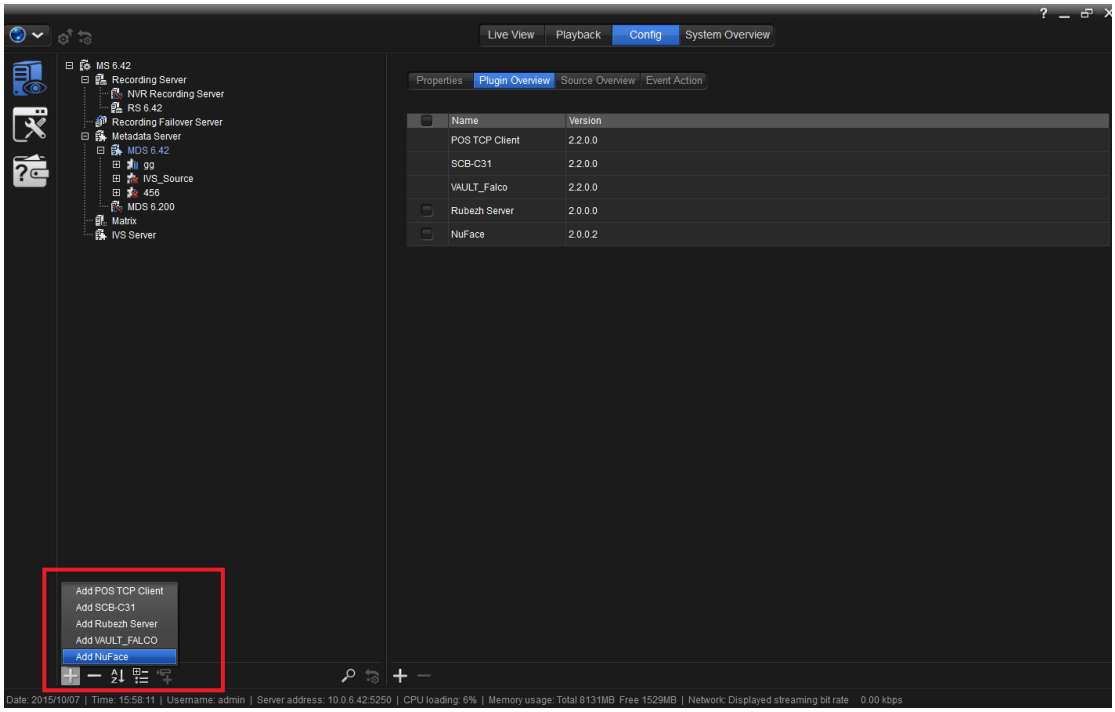
9. Enter a customize name for Nuface，press “ OK” and choose the new build data filter in the metadata filter list .



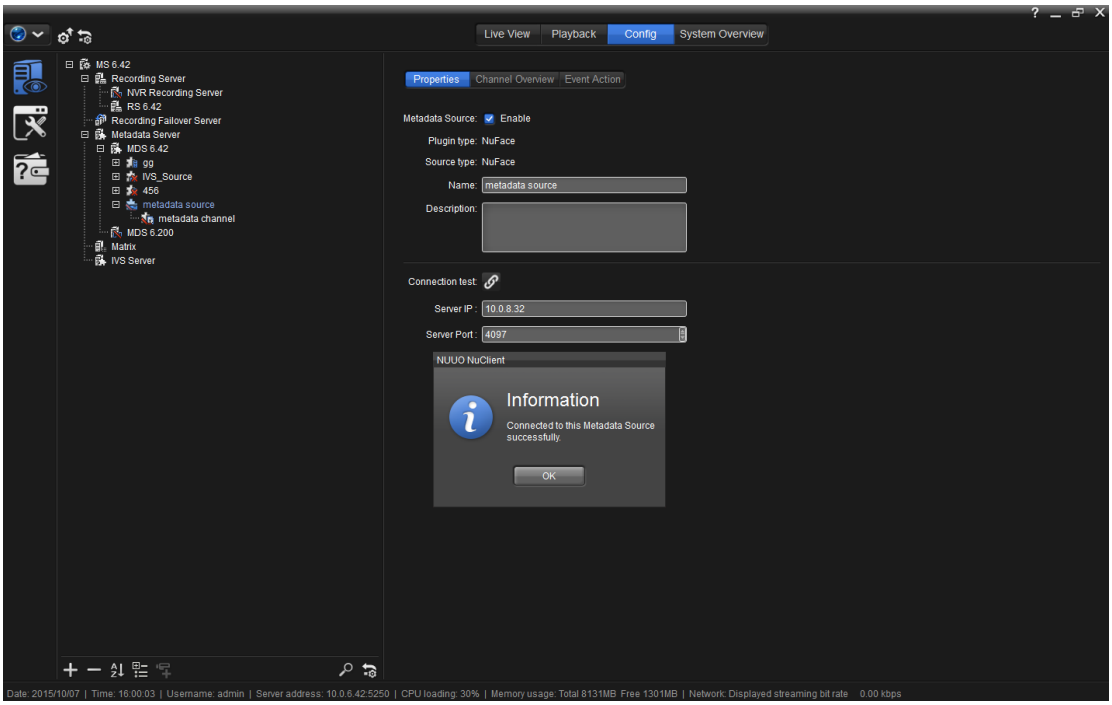
10. Go back to Main Page, the Nuface Metadata will show up in the screen if the link is successful.

5. Metadata Connecting Guide (Crystal)

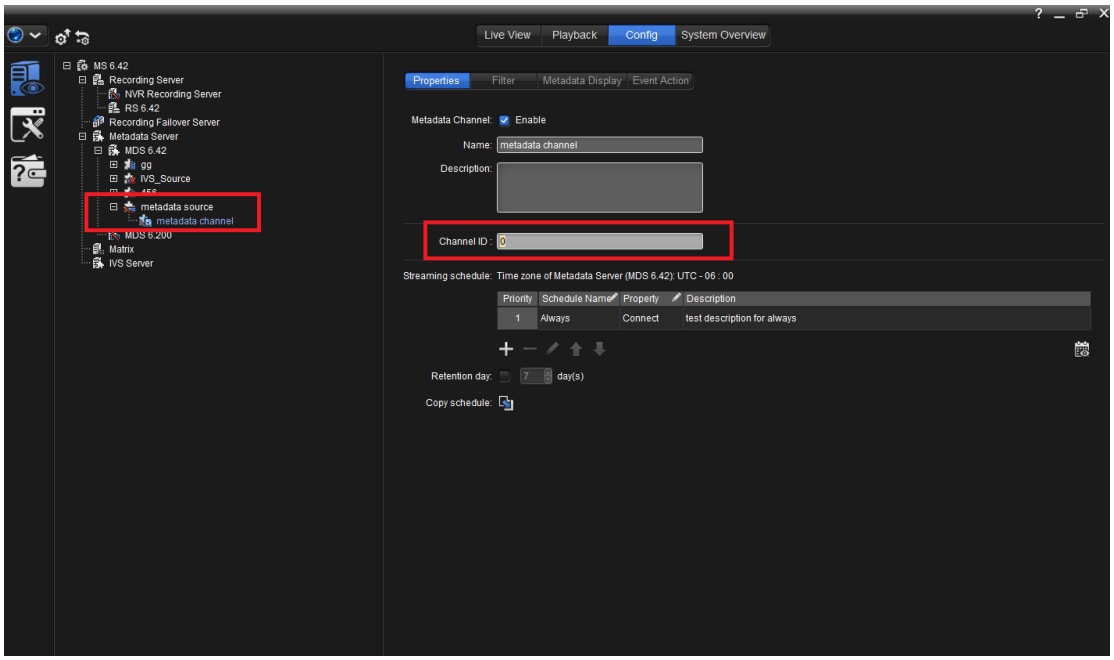
1. Download “NUUO_Nuface_Plugin.zip” from NUUO Website.
2. Upload “NUUO_Nuface_Plugin.zip” to Metadata Server.
3. Click on “Add NuFace” to add new source



4. Go to metadata source > Properties, enter Server IP (Nuface software’s IP address) , the port for NuFace is “4097”, then press “Connection test” to make sure the connection is alive.

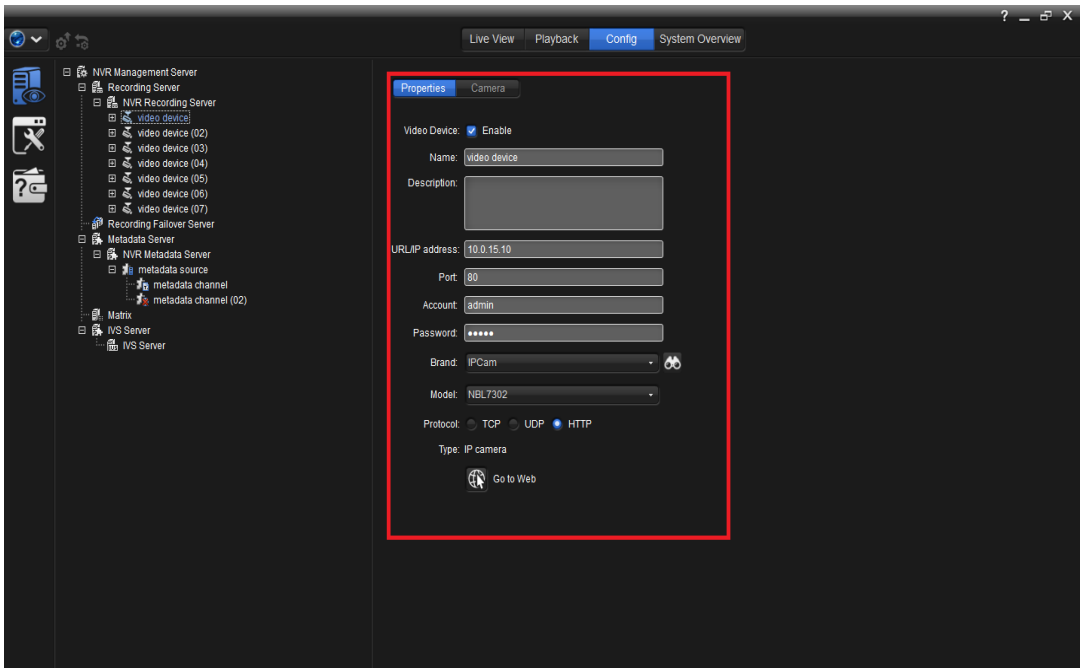


5. Add metadata channel, go to properties and enter Channel ID accordingly. (Ex : First will be 0 , second will be 1, etc …)

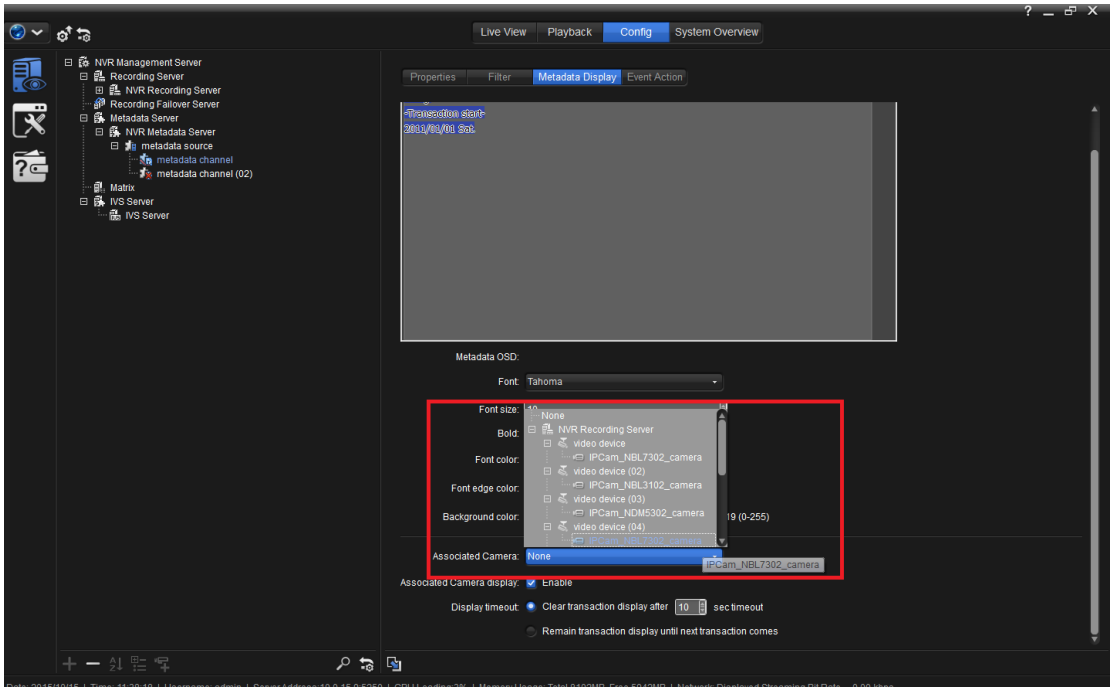


6. Select Camera > Enter IP Cam's IP address、port、user account、

password，customize name, please also select the IP CAM’s manufacturer and model name .

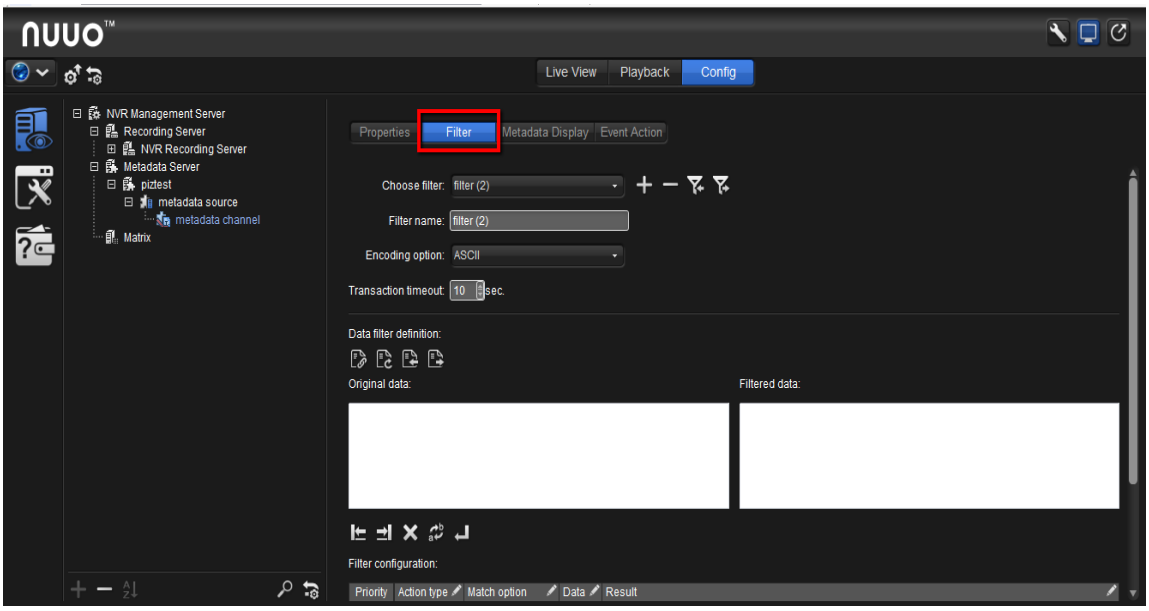


7. Go back to Metadata application page > Metadata Display，select the IP camera you just added related to the metadata .



8. Enter a customize name for Nuface，press “ OK” and choose the new

build data filter in the metadata filter list .



9. Go back to Main Page, the Nuface Metadata will show up in the screen if the link is successful.