VIT Autocode for NUUO

LICENSE PLATE RECOGNITION MODULE FOR NUUO MAINCONSOLE

Structure

- About "Video Internet Technologies" Ltd.
- Integrated solutions for NUUO Parking and Traffic
- Autocode and Mainconsole Configuration
- Possibilities of Autocode for NUUO
- Licensing system
- Contacts and technical support
- Questions

About VIT

- Founded in 2000, Kiev, Ukraine
- Video analytics since 2005
- Partnership with NUUO since 2012:
- <u>Autocode for VMS (Parking, Traffic)</u>



Notable projects

- Automatic entrance on customs, Ukraine
- Mobile recognition on police cars, Bogota, Colombia
- Automatic violation detection, Russia
- Parking in hotels chain, Ukraine
- Traffic surveillance, Spain
- More successful projects on public Wiki:
 http://en.docs.vit.ua

Autocode for NUUO • Integration of LPR system into NUUO Mainconsole Video Archive Operator 234 - AB Video Camera VIT AutoCode NUUO **Mainconsole**

Supported cameras

• All cameras, supported by NUUO (more than 90 manufacturers), both analog and IP:

SINGURE SANYO SEOTIM SHANY SONY MUT GUITELL TechSon Techter
ZAVIG 🔊 3S

Autocode for NUUO. Features

- Recognition rate for most of countries is over 90%
- Unlimited number of license plates on one frame
- Up to 16 recognition channels on one server
- Display Live View from camera from Mainconsole
- Creating reports in Excel, HTML, PDF, export of settings
- Sending events to NUUO Mainconsole
- 2 versions: Parking and Traffic

Autocode Parking for NUUO

- System is created for automation of businessprocesses at access control points
- System does LPR and sends Entry/Exit events to NUUO Mainconsole, including such events as "Car in group" and "Car let"
- Possibility to create and edit unlimited number of groups and clients

Autocode Parking. Typical installations

Typical installations

- Automatic parking for business
- Weighbridge connection to scales, truck weight measurement
- Automatic pass documents printing and scanning





Autocode Traffic

• Features

- Recognition on up to 180 km/h speed
- o ANPR time ≤2 milliseconds
- Card file with possibility of "Wanted" groups
- Possibility to integrate with radar systems
- Integration with alarm systems and NUUO event system
- Collecting traffic statistics

Autocode Traffic. Typical installations

Typical installations

- Highway for speed measurement
- For automatic charge on toll gates
- Mobile installation on the roof of the police car





Comparison chart

	Autocode Parking for NUUO	Autocode Traffic for NUUO
Purpose	Access control	Traffic control
Open/close gate	+	-
«Black lists»	-	+
Frame processing	6 fps	25 fps
Maximal speed*	40 km/h	180 km/h or more

* Depends on camera and shutter possibilities

Cameras and servers

- Supports all camera types from Mainconsole
- Cameras selection recommendations
 - o The_camera_selection_guidelines.pdf
- IR-light, white light (e.g. <u>KOMOTO</u>)
- Inductive loops
- Servers selection
 - recommendations
 - o Servers_selection_recommendations.pdf



Servers selection recommendations

Comparison table

	Frame resolution					
Computer configuration	720x288	720x576	1360x512	1360x896	2336x1752	
Intel Core i5-2500 3.3Ghz 2Gb RAM	240	128	68	38	10	
Intel Xeon DP Quad-Core E5620 8Gb RAM	274	180	94	54	*	
Intel Core i7-2600 3.4Ghz 8Gb RAM	386	220	102	66	20	
Intel Core i7-3930K 3.2Ghz 16Gb RAM	642	370	192	110	32	
2* Intel Xeon X5650 2.66GHz 12Gb RAM	1034	569	299	*	54	

* testing for such configuration was not conducted

Processor is loaded most in number plate recognition process, the amount of used RAM is 2GB.

CONDITIONS:

- 1. Processor is busy with recognition only
- 2. Processor is loaded on 80-90%
- 3. XVID or MJPEG format of the input video for recognition module

Settings. License and registration

- Demo 30 days after installation
- Registration in the system

It is the first launch of the application. Please fill out all fields of the system administrator account.							
E E	N I						
	save cancel						

Settings. Start Network Service in Mainconsole

Settings->Network Service



Settings. Start Network Service in Mainconsole

- Live Streaming->Start (port 5150)
- Remote Playback->Start (port 5160)

Live Streaming	Client Count	0 Kill Kill All
Remote Playback	State IP	Camera Bitrate (Kbps)
3GPP Service	Service Server Status: Stopped	Start
Remote Desktop	Options Port:	5150 Default
Central	Vise Default Web Server Port:	8888
Management	✓ Save Log✓ Enable Audio	LiveServer.log
Push Notification		

Settings. Video Sources in Autocode

• Server port – target port for Metadata



channel settings			•
undefined			•
parking			
ip camera			•
VMS	•		
127.0.0.1:5150			
admin	*******		
127.0.0.1_Cam1		•	
archive access port 5160			
server port 4000			

Settings. Recognition. Step 1

Zone of recognition



Settings. Recognition. Step 2

• Plate size



Settings. Recognition. Step 3

Templates



Supported countries

- More than 100 countries (including all from South America)
- Process of adding a new country takes 2-3 weeks
- Complete list of supported countries can be found here:

https://www.dropbox.com/s/tkoxga7hmywykfz/supported_countries_2.4.9_en.pdf

Settings. Receive Metadata in Mainconsole

• Settings->Metadata Application->Insert



Settings. Receive Metadata in Mainconsole

Add metadata source and channels

A Metadata Application	Metadata Application
Data Source Display Plug-in]	Data Source Display Plug-in
Settings Name: Metadata Type: LPR Source Type: VIT VIT Server IP 127.0.0.1 VIT Server Port 4000 Cmark Cancel Define	Settings Name: Cam1 Metadata Type: PR Source Type: VIT Channel 0 Channel 0 Channel 0 Define Define
V OK X Cancel	

Settings. Metadata filters

- Delivered with Autocode
- Latin characters
 - LPR_all_fields_en_utf8

C Last for 10 Secon	ıds
Tag Filter Default Default LPR_all_fields_en_utf8 LPR_all_fields_ru_utf8 LPR_all_fields_ru_win1251 A&LPR_VIT	Import Export
CAM01 Cam1	AIESZ
	Tag Filter Default DPR_all_fields_en_utf8 LPR_all_fields_ru_utf8 LPR_all_fields_ru_win1251 A&LPR_VIT SCAM01 Cam1 ■ CAM02 cam2

Metadata information. Event types

• Event types :

Plate detected
Plate lost
Car in group ***
Car let



11 reaction types in NUUO

- On-screen display
- Play sound
- Send email
- Phone call
- PTZ Preset go
- Signal digital output
- SMS messages
- FTP
- Pop up e-map
- Send to central server
- Push notification

Configure reaction in Mainconsole

- Details: <u>http://www.nuuo.com/WikiDetail.php?sid=0065&product=0002</u>
- Event and action configuration
- Reaction by keyword



Metadata Event Rule - Use	er Defined 1
Event Name:	MyEvent
Alert Condition	
Text	
Keyword	Car let
Match case	
Match whole word	
🗌 Using regular exp	ression
C Numeric value	
Prefix text:	
Condition:	< -
Value:	
Postfix text:	
C External rule	
,	
Frequency	
Count: >=	1
Count period:	1
C Deceteration	
 Reset count of each 	cn transaction
Reset every	10 mins 💌

Configure reaction in Mainconsole

For each Metadata camera



Metadata Search

- License plate search by keyword
- Rich filtering possibilities: time, number, channel etc.





Tabs in Autocode. Events

• Filtering by event type, date, channel, license plate

9				live events					¹¹ 14:55.14
teste	channel r	time	owner	group / plate	plate type	0			A IN
	2	14:54:58 11 Jul	No data	47CQ44	Undefined Portugal	-	and the local division of		001
-	2	14:54:49 11 Jul	No data	1850TT	Undefined Portugal				
	2	14:54:49 11 Jul	No data	1855OT	Undefined Portugal				la la
-	2	14:54:46 11 Jul	No data	I 11111	Undefined Portugal				1
	2	14:54:38 11 Jul	Sumame Name Patronymic	27AB29 GUESTS	Undefined Portugal				6
•	2	14:54:35 11 Jul	No data	5871LS	Undefined Portugal		(a)		1.50
-	2	14:54:30 11 Jul	No data	*433448	Undefined Portugal				
	2	14:54:30 11 Jul	No data	4348PO	Undefined Portugal				
-	2	14:54:27 11 Jul	No data	0673KK	Undefined Portugal	-		47·CQ·44	
•	2	14:54:27 11 Jul	No data	6733LE	Undefined Portugal				- E /
-	2	14:54:15 11 Jul	No data	870*CD	Undefined Portugal				-
•	2	14:54:15 11 Jul	No data	70CO44	Undefined Portugal				
-	2	14:54:14 11 Jul	No data	700Q04	Undefined Portugal				
•	2	14:54:05 11 Jul	No data	57700Z	Undefined Portugal		channel plate number 2 47·CQ·44	er 4 Undefined Portugal	
•	2	14:53:50 11 Jul	No data	9484XX	Undefined Portugal		¹¹ 14:54.58		
	2	13:37:22 10 Jul	Sumame Name Patrony mic	010101	Undefined				
•	2	13:34:35 10 Jul	Sumarre Name Patronymic	010101	Undefined	-			
					export				

Tabs in Autocode. Card file



Tabs in Autocode. Statistics

👽 Overseer Parking	live events card file rates statistics	settings	¹¹ Jui 15:15.25 佘_×
owner			
Surnare Nerre Petrony mic	010101	10.07.13 13:32 1d 01h 44m	0 102 0.00 USD 15 anyon mit total bot the percon
000000	000000 GUESTS	10.07.13 13:27 1d 01h 49m	
ттиш	CTTTUUUUU GUESTS	10.07.13 12:18 1d 02h 57m	
001	001 QUESTS	10.07.13 12:17 actual: 0d 00h 20m 10.07.13 12:36 ^{rated:} 0d 01h 00m	
P172ET97		1 28.06.13 12:11 actual od 01h 00h 12m actual od 02h 12m rated:	
P803VC90		1 28.06.13 12:11 actual: 0d 031 00m 0d 02h 12m rated:	
0370MC90	0370 MC 90	1 28.06.13 11:58 Od 03h 00m	
M567EX177	M567 EX 177	1 28.06.13 11:57 13d 03h 19m	
T7938C62		1 📑 🖬 28.06.13 11:57	
C125/E99		1 28.06.13 11:57 actual: 3d 02h 02m	
FUR684	FUR684	1 26.06.13 16:23 14d 22h 53m	
GL/588	GLF568	1 25.06.13 9:34	
U542	UJ542 GUESTS	1 25.06.13 9:34	
FSB475	FSB475 QUESTS	1 2 5.06.13 9:34 16d 05h 41m	
YZ6931	YZ6931 GUESTS	1 25.06.13 9:34	
G48740	GAB740 GUESTS	1 📕 🖬 25.06.13 9.34 16d 05h 42m	
MM400	MM400 GUESTS	1 25.06.13 9.33	
		export	



Licensing system

• Licenses needed:

VIT LPR Parking license or VIT LPR Traffic license
NUUO Mainconsole (IP+ or DVR card) license
SCB-IP-P-LPR license



No hidden costs!

- Pay only for 3 licenses mentioned, no hidden costs
- Support and upgrade to new version are free



Contacts

VIT

- Igor Orlov
 - Skype: igor_orlov92
 - o Email: <u>io@vit.ua</u>

NUUO

- Natalia Chen
 - Skype: nataliachen0922
 - o Email: <u>natalia_chen@nuuo.com</u>

