

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:
- [Autocode for VMS \(Parking, Traffic\)](#)



Notable projects

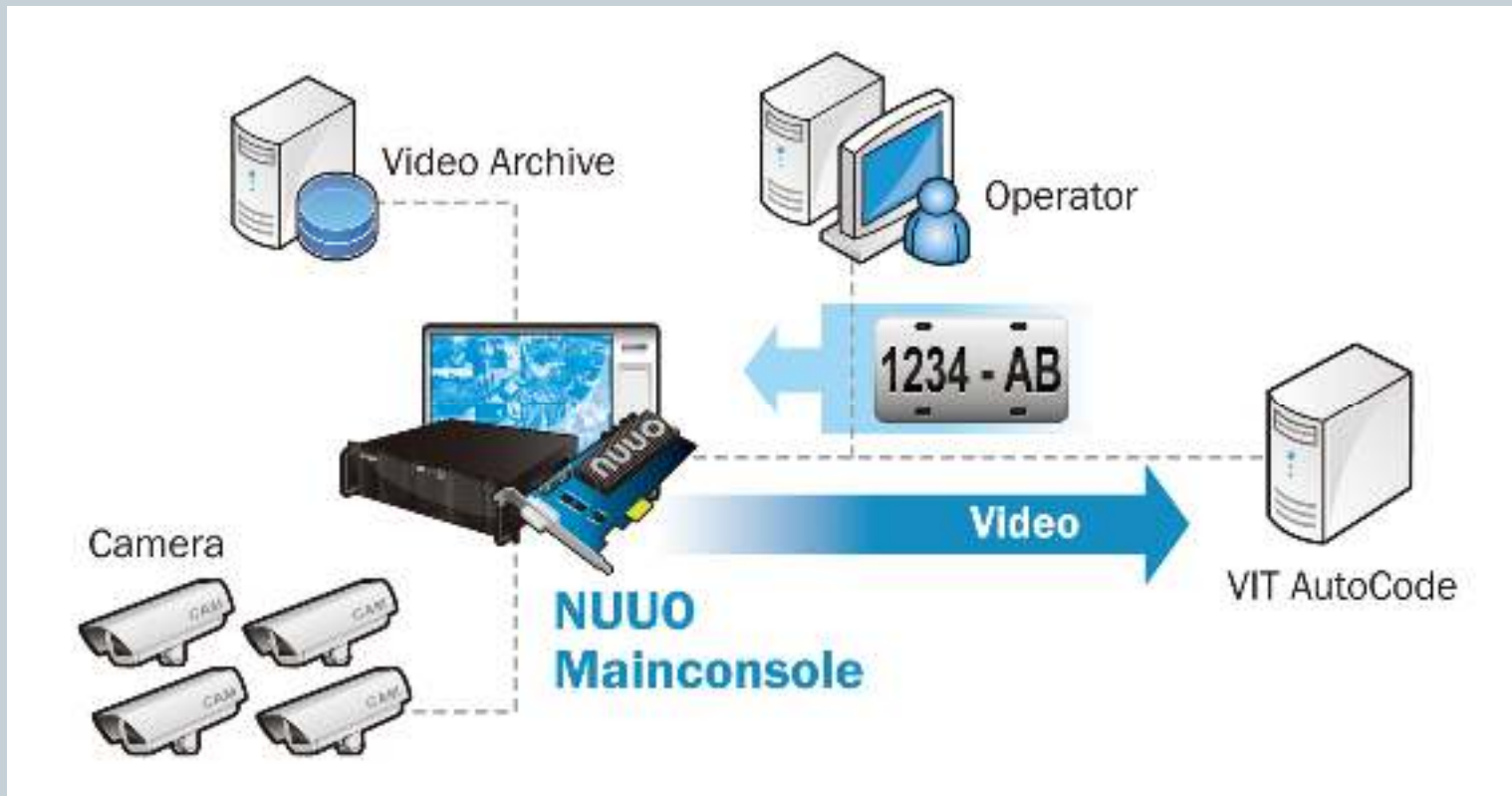


- Automatic entrance on customs, Ukraine
- Mobile recognition on police cars, Bogota, Colombia
- Automatic violation detection, Russia
- Parking in hotels chain, Ukraine
- Traffic surveillance, Spain
- More successful projects on public Wiki:
 - <http://en.docs.vit.ua>

Autocode for NUUO



- Integration of LPR system into NUUO Mainconsole



Supported cameras



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



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 business-processes 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
- 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
 - [The_camera_selection_guidelines.pdf](#)
- IR-light, white light (e.g. [KOMOTO](#))
- Inductive loops
- Servers selection recommendations
 - [Servers_selection_recommendations.pdf](#)



Servers selection recommendations



Comparison table

Computer configuration	Frame resolution				
	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.

user name	password
<input type="text" value="EN"/>	<input type="password"/>
	repeat password
	<input type="password"/>
surname	
<input type="text"/>	
name	patronymic
<input type="text"/>	<input type="text"/>
post name	
<input type="text"/>	

Settings. Start Network Service in Mainconsole



- Settings->Network Service



Settings. Start Network Service in Mainconsole



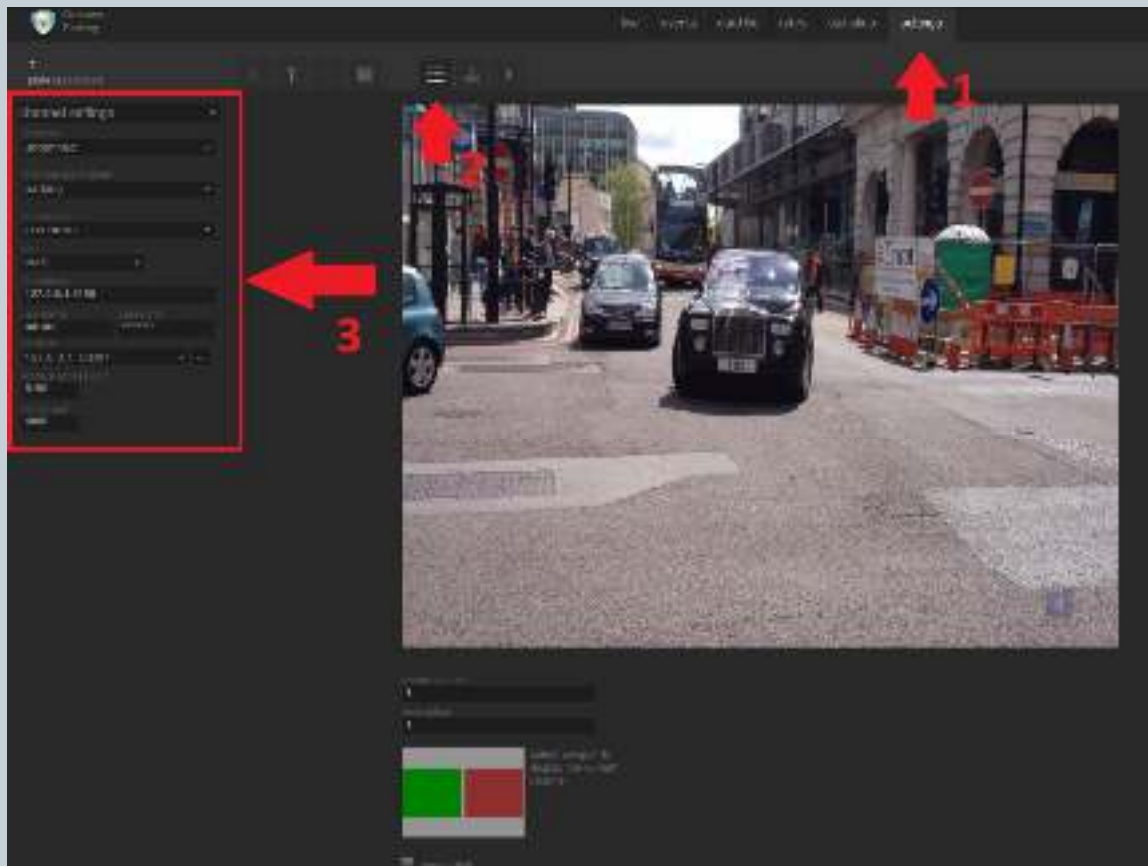
- Live Streaming->Start (port - 5150)
- Remote Playback->Start (port - 5160)



Settings. Video Sources in Autocode



- Server port – target port for Metadata



channel settings

direction
undefined

channel assignment
parking

source type
ip camera

type
VMS

ip address
127.0.0.1:5150

username
admin

password

camera
127.0.0.1_Cam1

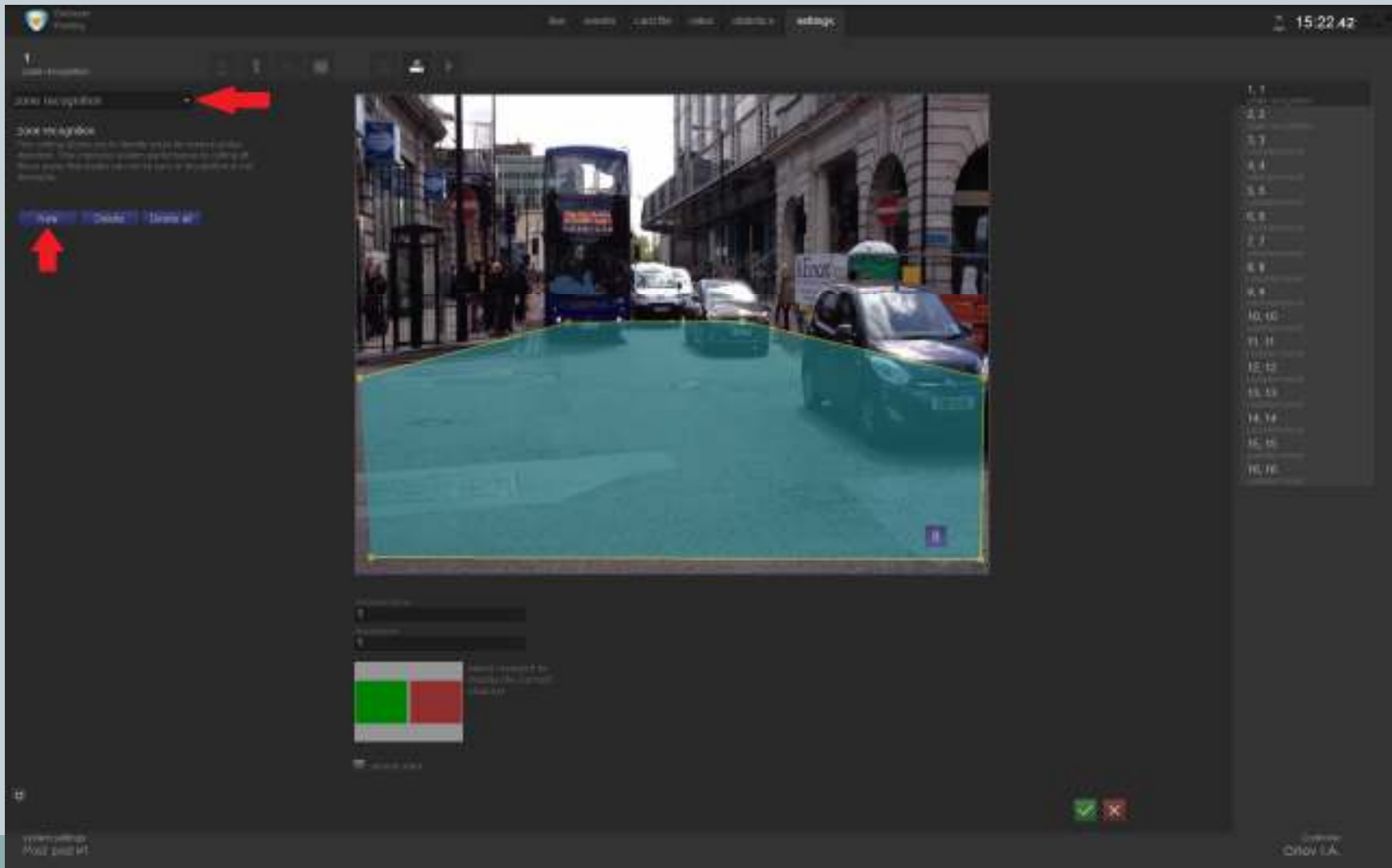
archive access port
5160

server port
4000

Settings. Recognition. Step 1



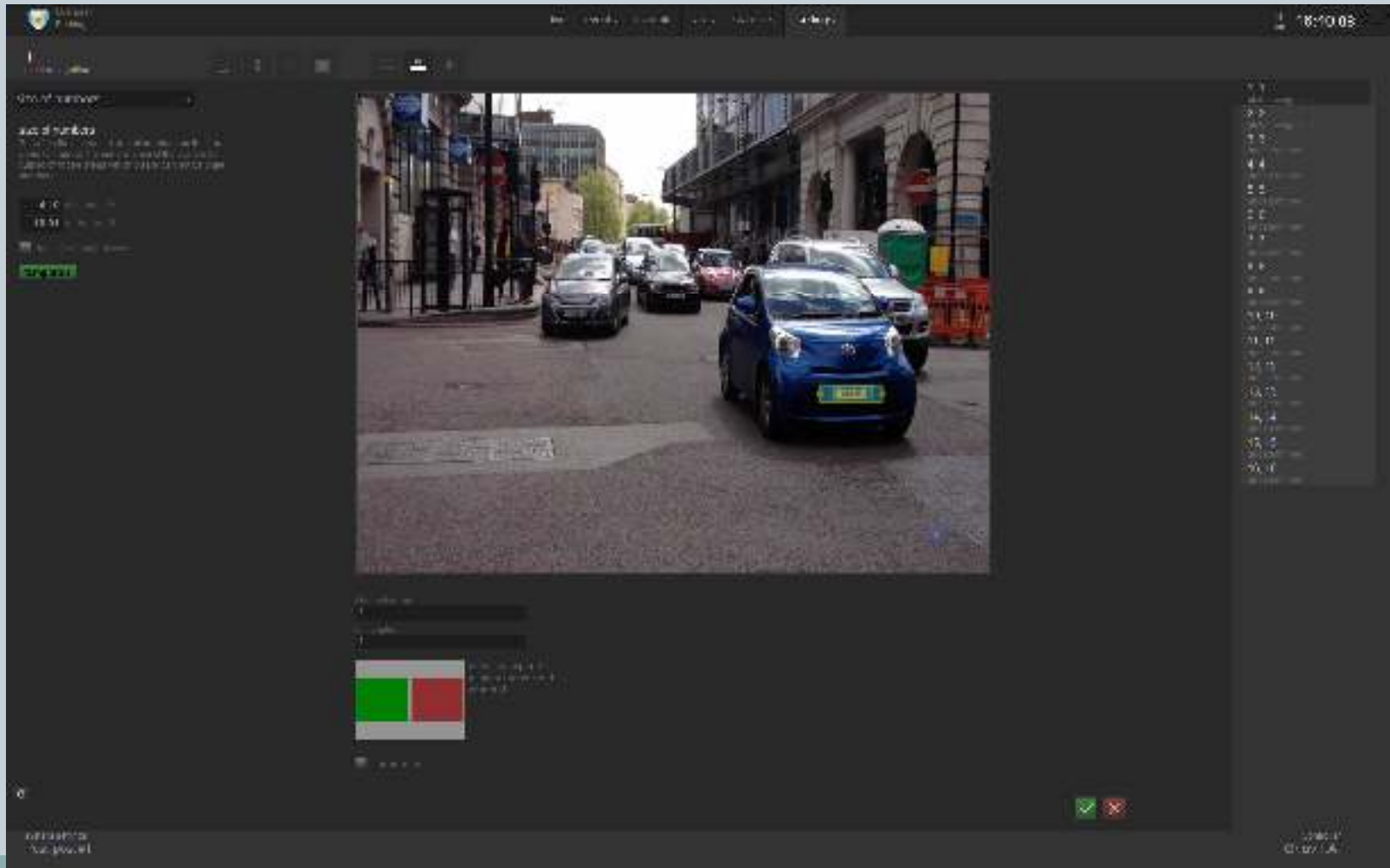
- Zone of recognition



Settings. Recognition. Step 2



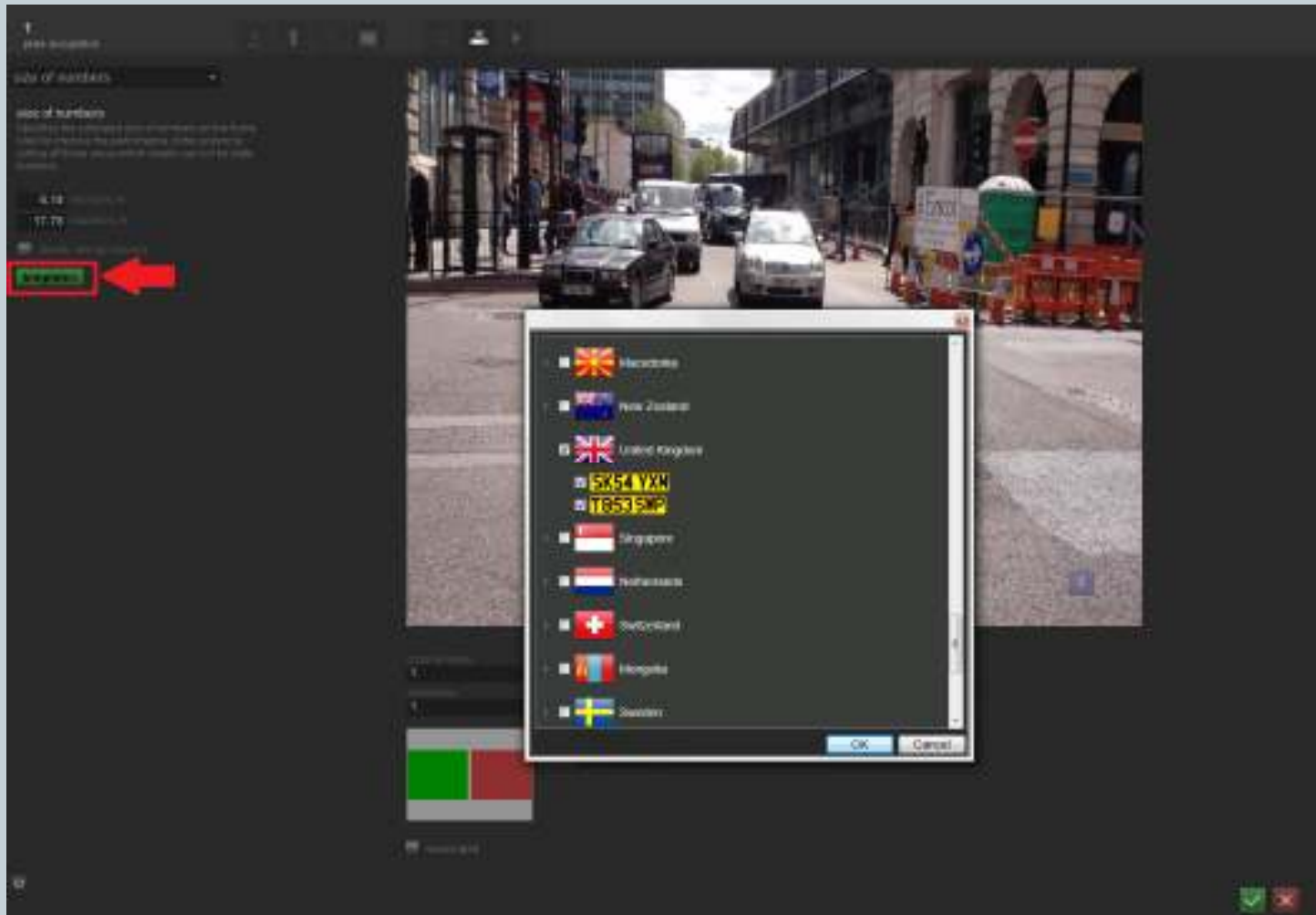
- Plate size



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



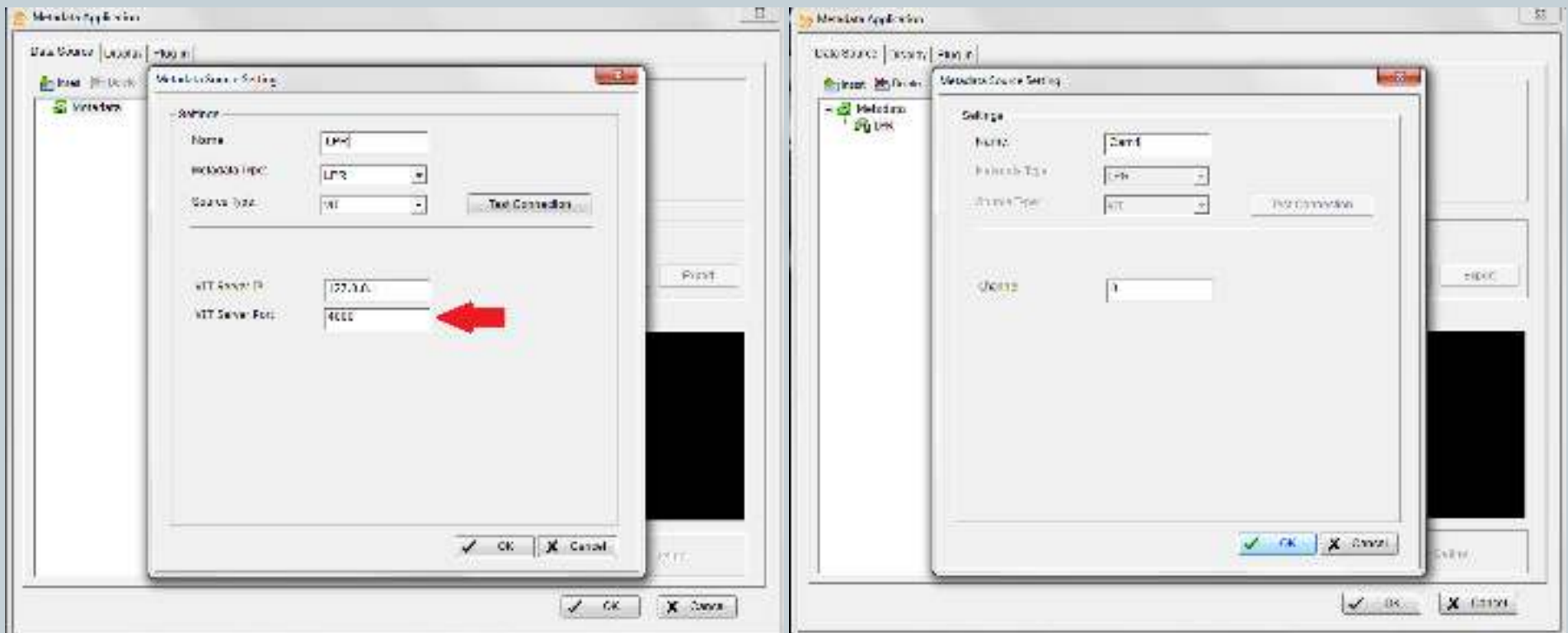
- Settings->Metadata Application->Insert



Settings. Receive Metadata in Mainconsole



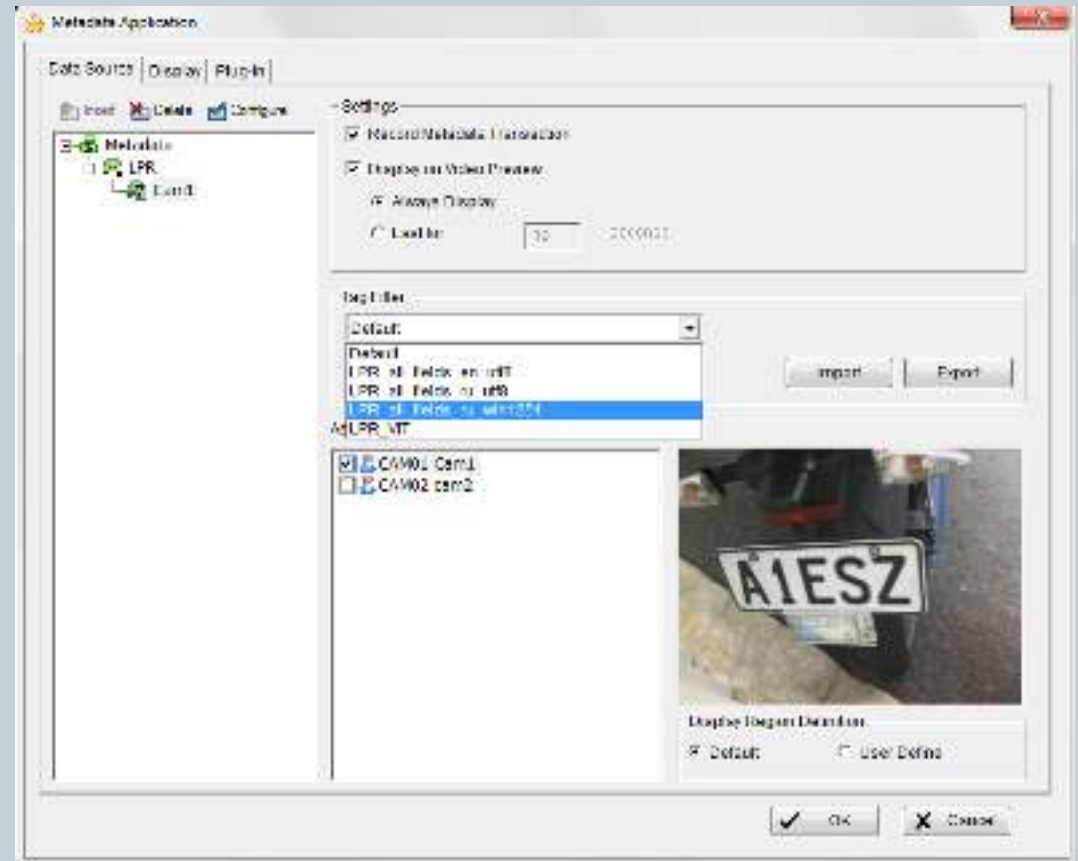
- Add metadata source and channels



Settings. Metadata filters



- Delivered with Autocode
- Latin characters
 - LPR_all_fields_en_utf8



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

A screenshot of the 'Alarm Event Configuration' dialog box. The dialog has two tabs: 'Basic' and 'Advanced'. The 'Basic' tab is selected. The title bar reads 'Metastandard Event Rule - User Defined 1'. The 'Event name' field contains 'MyEvent'. Under the 'Alert Condition' section, the 'Text' radio button is selected. The 'Keyword' field contains 'Car lot'. There are checkboxes for 'Match case', 'Match whole word', and 'Using regular expression', all of which are currently unchecked. Below this, there are fields for 'Prefix text', 'Condition' (with a dropdown menu showing '<= >'), 'Value', and 'Postfix text'. The 'External rule' checkbox is also unchecked. At the bottom, there is a 'Frequency' section with a 'Count' field set to '1' and a 'Count period' dropdown menu set to '10 mins'. There are two radio buttons for 'Reset count of each transaction' (unchecked) and 'Reset every' (checked). The dialog ends with 'OK' and 'Cancel' buttons.

Configure reaction in Mainconsole



- For each Metadata camera

The screenshot displays the 'Event and Action Configuration' dialog box. The 'Event' pane on the left shows a tree view with 'CAM01 Cam1' and 'CAM02 cam2' selected. The 'Action' pane on the right shows 'D/D/O' selected. A 'Video Preview' window shows a street scene. A sub-dialog 'D/D/O' is open, showing a table for 'Digital Output to Signal'.

I/O Module	Pin	Name	Life Cycle
<input checked="" type="checkbox"/> Cam1	0	Output 0	Event d...
<input type="checkbox"/> Cam1	1	Output 1	Event d...
<input type="checkbox"/> Cam1	2	Output 2	Event d...
<input type="checkbox"/> Cam1	0	Output 0	Event d...
<input type="checkbox"/> Cam1	1	Output 1	Event d...
<input type="checkbox"/> Cam1	2	Output 2	Event d...

Automatically popup I/O control panel

OK Cancel

Metadata Search



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

The screenshot displays a video surveillance interface. On the left, a street scene is visible with a silver car in the foreground and a motorcycle in the middle ground. On the right, a 'Metadata Search Dialog' window is open, showing search criteria and results.

Metadata Search Dialog

Channel Selection:

- LPR1-Cam1
- LPR1-Cam2
- VIT LPR-Test
- LPR3-Cam3
- LPR2-Cam2

Date Time Period:

Start Time: 2013/05/01 00:00:00
End Time: 2013/05/11 17:16:19

Search:

Keyword:
 Using regular expression
 Search within result

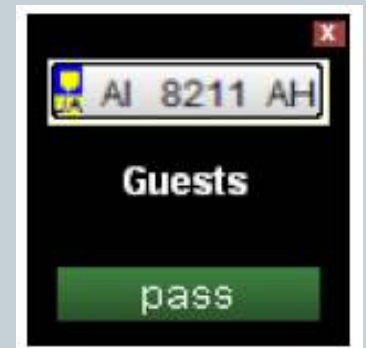
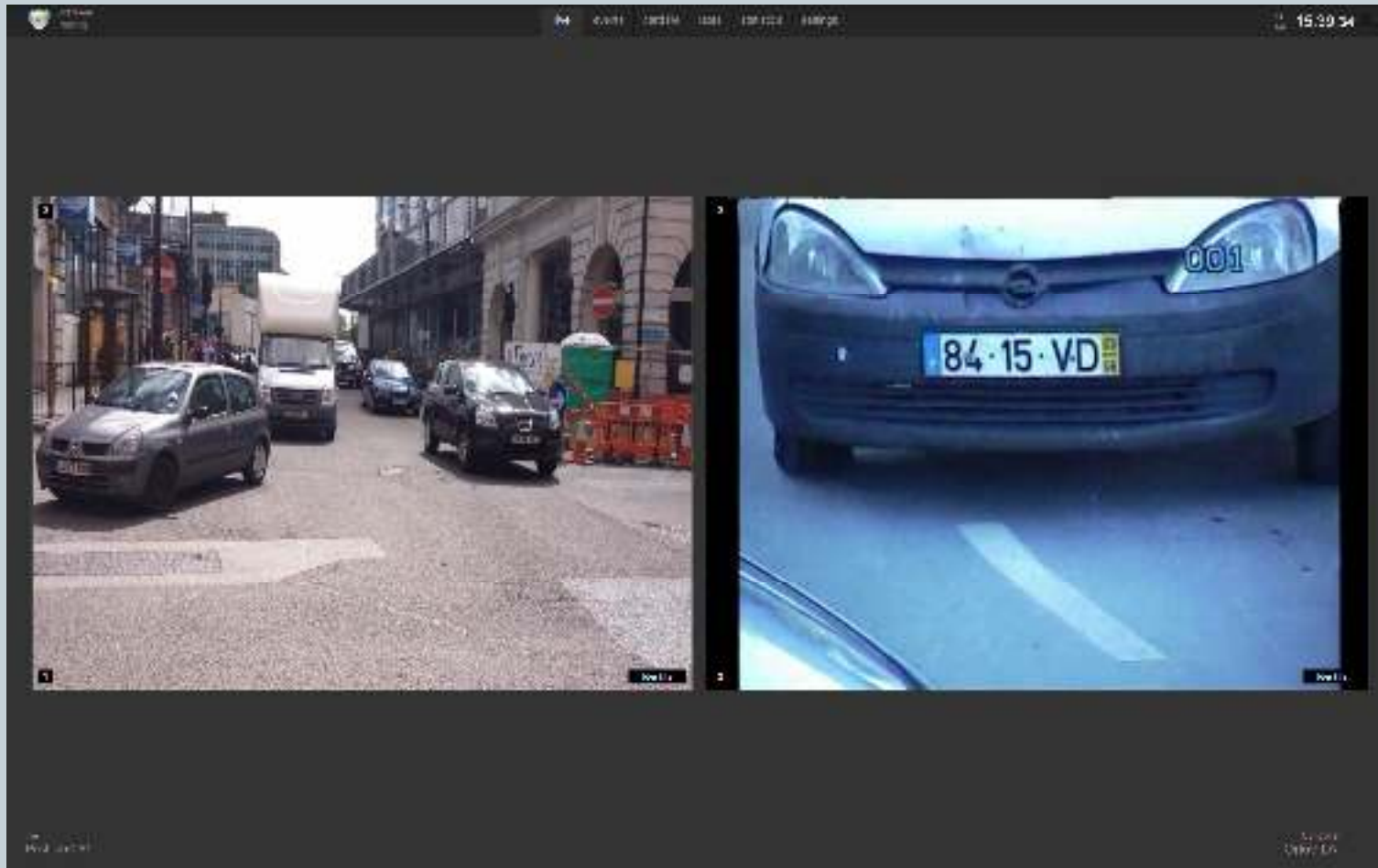
Transaction Table:

Date Time	Metad.	Transaction
2013/05/03 18:21:01	VIT LP	Plate number: RR447Event confiden...
2013/05/03 18:21:01	VIT LP	Plate number: ZL131Event confide...
2013/05/03 18:21:01	VIT LP	Plate number: ZL131Event confide...
2013/05/03 18:21:01	VIT LP	Plate number: DM1304Event confide...
2013/05/03 18:21:01	VIT LP	Plate number: DM1304Event confide...
2013/05/03 18:21:02	VIT LP	Plate number: GL*58Event confidenc...
2013/05/03 18:21:02	VIT LP	Plate number: QC103Event confiden...
2013/05/03 18:21:02	VIT LP	Plate number: QC103Event confiden...
2013/05/03 18:21:03	VIT LP	Plate number: FP*91Event confidenc...
2013/05/03 18:21:03	VIT LP	Plate number: FP*91Event confidenc...
2013/05/03 18:21:03	VIT LP	Plate number: YC599Event confiden...
2013/05/03 18:21:03	VIT LP	Plate number: YC599Event confiden...
2013/05/03 18:21:05	VIT LP	Plate number: DLU655Event confide...

Transaction Details:

Plate number: FP*91
Event confidenc: 42
Event time: 2013-05-03T18:21:01.327+03:00
Post post #1
Camera info: <@*=127.0.0.1->@*=GlobalID=0+>
Event type: [Car in position](#)
Info: Channel info 0
-PostId=2085048+PostId+EventId+E248900

Tabs in Autocode. Live



Tabs in Autocode. Events



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

The screenshot displays the Autocode Events interface. On the left, a list of events is shown with columns for event ID, date, and license plate. The top event is highlighted in green. On the right, a detailed view of a car is shown, including the license plate '47-CQ-44' and the KIA logo. The car is a white KIA, and the license plate is blue with white text. The interface also shows a search bar and a filter icon.

Event ID	Date	License Plate
10001	10/10/10	10001
10002	10/10/10	10002
10003	10/10/10	10003
10004	10/10/10	10004
10005	10/10/10	10005
10006	10/10/10	10006
10007	10/10/10	10007
10008	10/10/10	10008
10009	10/10/10	10009
10010	10/10/10	10010
10011	10/10/10	10011
10012	10/10/10	10012
10013	10/10/10	10013
10014	10/10/10	10014
10015	10/10/10	10015
10016	10/10/10	10016
10017	10/10/10	10017
10018	10/10/10	10018
10019	10/10/10	10019
10020	10/10/10	10020

Tabs in Autocode. Card file



Overseer Parking

live events **card file** rates statistics settings

28 Mar 17:28:34

guest

Guests

Visitors

Casino

Cinema

owner

Van

Diga

vehicle

BZL643

additional information

Car Brand Is Unknown

BZL643

BZL-643

card file Post 1

Controller 1.1.1.

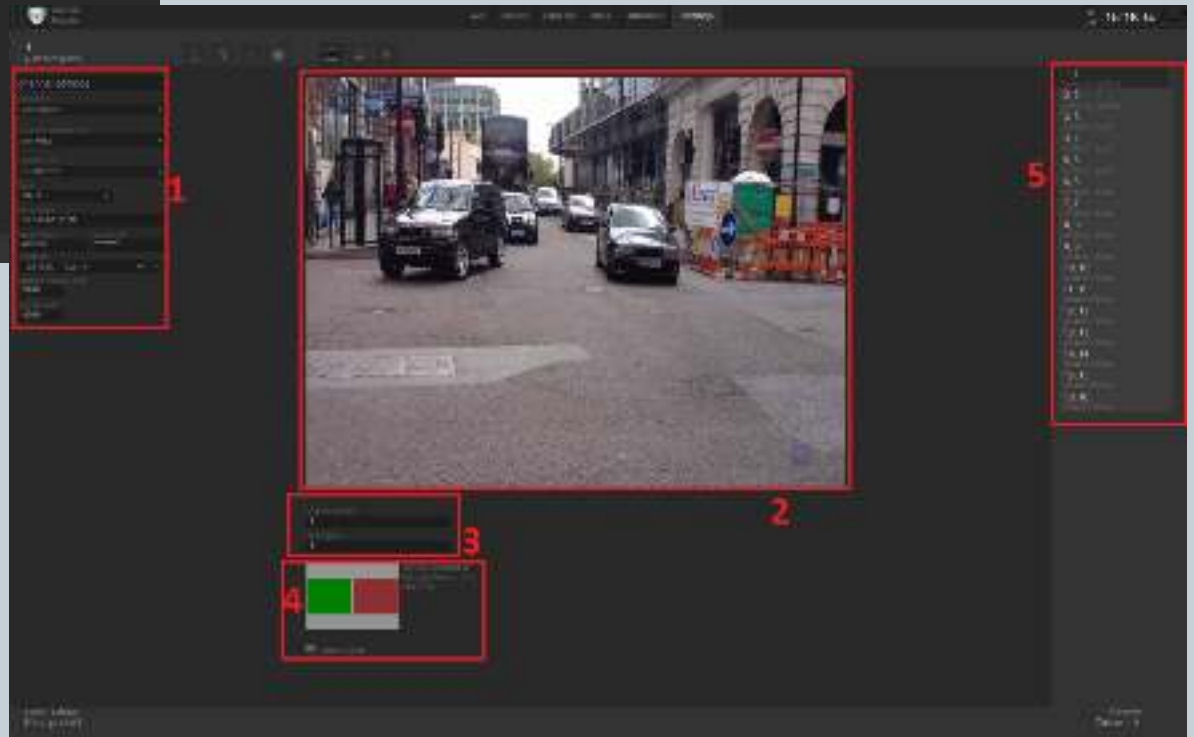
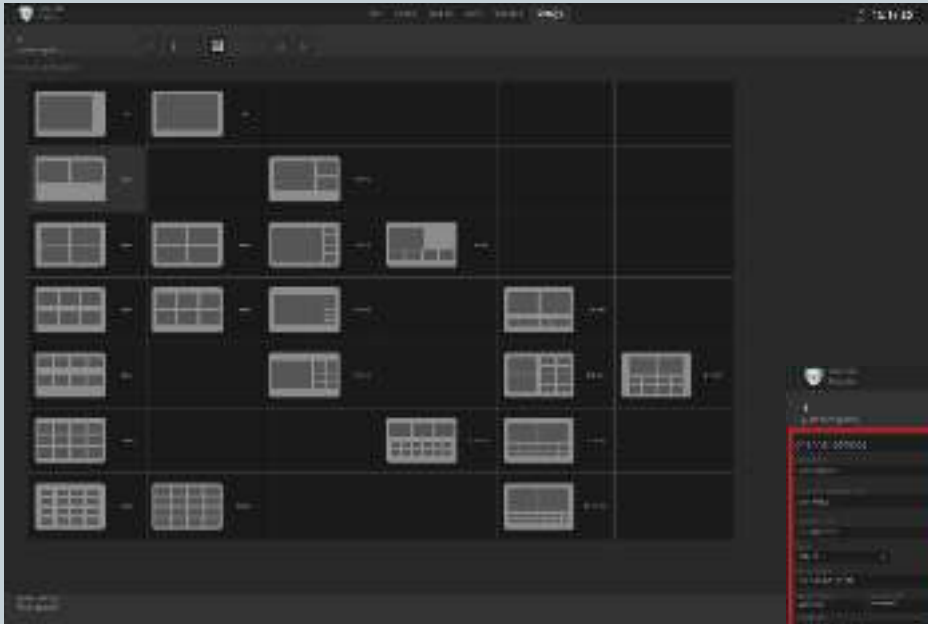
Tabs in Autocode. Statistics



The screenshot displays the Oracle EBS Autocode interface. The main window shows a list of tabs with the following columns: Tab Name, Tab Code, and Statistics. The statistics column includes a bar chart and numerical values. The interface is in Arabic, with the top navigation bar showing 'الرئيسية', 'التقارير', 'البيانات', 'العمليات', and 'المساعدة'. The top right corner shows the time '11:15:26' and the user 'AS'. The bottom left corner shows the user 'AS' and the role 'root post:21'. The bottom right corner shows the Oracle logo and 'Oracle I.A.'.

Tab Name	Tab Code	Statistics
010101	010101	11/21/11 11:15:26 11:01:44
0000	000000	11/21/11 11:15:26 11:01:44
1111111	1111111	11/21/11 11:15:26 11:01:44
001	001	11/21/11 11:15:26 11:01:44
1172	1172	11/21/11 11:15:26 11:01:44
803	803	11/21/11 11:15:26 11:01:44
1170	1170	11/21/11 11:15:26 11:01:44
587	587	11/21/11 11:15:26 11:01:44
793	793	11/21/11 11:15:26 11:01:44
125	125	11/21/11 11:15:26 11:01:44
RU384	RU384	11/21/11 11:15:26 11:01:44
BU568	BU568	11/21/11 11:15:26 11:01:44
1247	1247	11/21/11 11:15:26 11:01:44
FSD475	FSD475	11/21/11 11:15:26 11:01:44
YV651	YV651	11/21/11 11:15:26 11:01:44
CAB740	CAB740	11/21/11 11:15:26 11:01:44
M590	M590	11/21/11 11:15:26 11:01:44

Tabs in Autocode. Settings



Licensing system



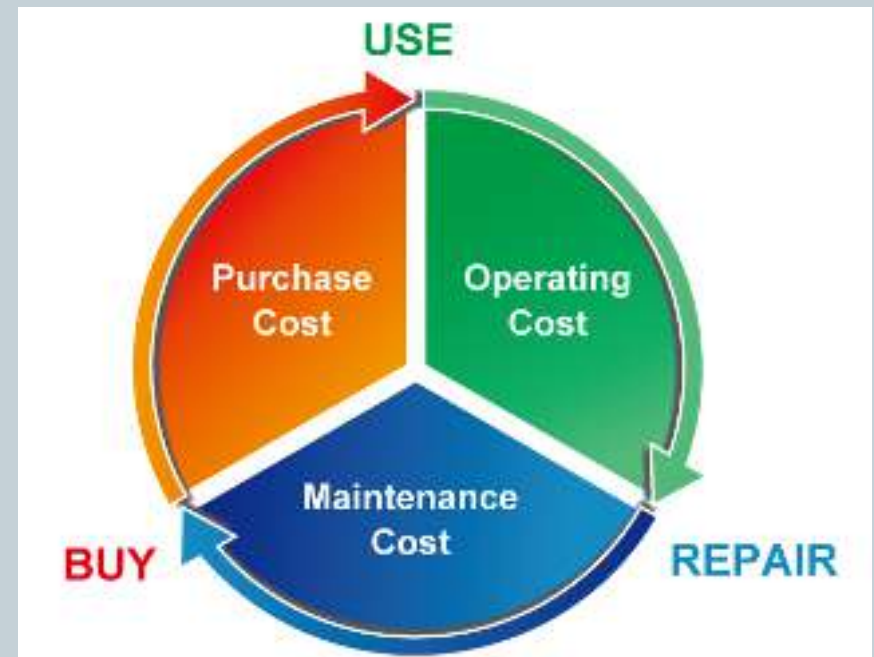
- Licenses needed:
 - VIT LPR Parking license or VIT LPR Traffic license
 - NUUO Mainconsole (IP+ or DVR card) license
 - SCB-IP-P-LPR license



No hidden costs!



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



The end



Thanks for attention!