

TRAFFIC ANALYTICS SOLUTION APPLIED TO:

SECURITY

- Uninsured vehicle detection
- Stolen vehicles
- Terrorist search
- Forensic investigation
- Car characteristics not matching government records
- Police car

MOBILITY

- Vehicle counting
- Route tracking (origin-destination)
- Transit distribution and density, vehicle category, speed statistics.

ENFORCEMENT

- Red light enforcement
- Stop sign enforcement
- Illegal turn
- Pedestrian zone management
- Wrong direction
- Traffic restriction
- Pollution management
- Illegal stop

ITS

- Section control / radar.
- Speeding.
- Tolling.

NEURAL SERVER CITY & ITS

TRAFFIC AND ITS SOLUTIONS FOR CITIES



- **NEURAL SERVER®** uses **Neuronal technology** and **Deep Learning** to perform **Traffic Analytics** in a fast and efficient way, whatever the target scenario: police cars, fixed cameras, etc.
- **It can recognize license plates** continuously, from vehicles in movement (Free-Flow) or stopped (Stop & Go).
- It detects **make, color, speed, traffic direction** and **lane**, and **classifies vehicles**.
- It allows to use cameras from different brands and protocols in the same system.

NEURAL - VCOP for police cars



MINIMUM REQUIREMENTS

CPU

- Intel Atom (1 camera)

MEMORY

- 2 GB RAM

HD

- 500 GB

OPERATING SYSTEM

Windows Server 2012 R2,
Windows 8, Windows 7,
Windows 10

COMPATIBILITY SUPPORTED PROTOCOLS

- RTSP
- H264
- Motion JPEG
- JPEG
- Gige Vision
- IDS-IMAGING
- AVI
- IDS-IMAGING
- POINT GREY

SUPPORTED VMS

- MILESTONE
- AVIGILON CONTROL CENTER
- HUAWEI
- INDIGOVISION
- BOSCH BVMS
- MIRASYS
- SCATI LABS
- TYCO (Exacq)
- PELCO (VideoExpert)
- 3xLOGIC
- OnSSI

SUPPORTED CAMERAS

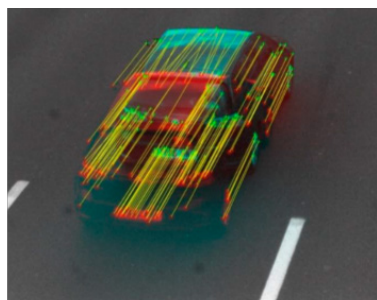
Vivotek, AVT, Axis, Avigilon,
Bosch, Huawei, IDS,
IndigoVision, JAI, JVC, Mobotix,
Pelco, Sony, Vicon, HikVision,
Messoa, Dahua among others.

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MAIN FEATURES

- More than 70 supported countries.
- Open architecture.
- Neural Labs proprietary technology.
- Camera and VMS agnostic (independent).
- It supports **ADR** plates (dangerous goods).
- Grammar control.
- Repeated plates filter.
- Image pre processing for shadow filter.
- Perspective correction.
- Real time recognition modes, by external trigger and motion detection.
- For **each vehicle** it registers:
 - **Recognized plates.**
 - Reliability per reading.
 - Color of the car.
 - Make of the car.
 - **Direction** detection.
 - Type of vehicle (**classification**).
 - **Speed** of vehicle (NL SPEED).
 - **Lane** of vehicle.
 - Images of vehicles.
 - Date and time, GPS position, camera ID, etc.
 - Country of the plate.
 - License plate position in the image.
- Easy integration from third party software
- Allows centralized, distributed or mixed architectures.



SYSTEMS THAT WORK, USE NEURAL LABS TECHNOLOGY

We advise you on your
specific project.

We recommend you
the most suitable
hardware for your
project in order to
guarantee the best
results.

Contact us for
personalised attention.

LEARN MORE IN



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Includes Operator Software Neural Viewer

- Historical search by: plate, make, color, classification, time, direction, lane, etc.
- Multiple user management.
- Real time display of the last plate read by each camera
- Multi list management and associated actions.
- Alerts to operators.
- Configurable pre / post event video recording.
- Excel / pdf export.
- Automated reports.
- Fine management and Enforcement.
- Pre-Validation module.

NEURAL VIEWER v. 4.0.0.0

Buscar incidencias Gestión de lista Monitor Cámaras Alarmas Configuración Secciones Programaciones

Modo: **Historico** Criterios de búsqueda: Cámara: **TODAS** Color: **TODOS** ☐ Filtrar Velocidad

Desde: **14/11/2019 00:00:00** ID: **TODOS** Metros: **TODOS** Entre: **0** y **255** km/h

Hasta: **14/11/2019 23:59:59** Zona: **TODAS** Listas: **TODAS** Entre: **0** y **255** conf.

Computer: **TODOS**

Semáforo: **TODOS**

Carri: **TODOS**

Tipo Vehículo: **TODOS** Fiabilidad: **0** y **255**

Marca: **TODOS** Alt. Carri: **0** y **255**

Nombre Cámara	ID	Fecha	Placa	Imagen	Fiabilidad	Confidence Tipo Vehículo	Confidence Marca Vehículo	Confidence Color Vehículo	Altura Caracter	Nombre País	Nombre Carri	Lista	Dirección	Tipo Vehículo	Marca Vehículo	Color Vehículo
NLGH0ST1	9649	14/11/2019 17:23:32.87	1950HGC		99.9	0.98	99.9	74.94	20.14	Spain	LANE 2	☐	1	VAN	FORD	BLACK
NLGH0ST1	9648	14/11/2019 17:23:31.2...	8690JGK		99.9	1	99.9	99.64	22.57	Spain	LANE 2	☐	1	CAR	SKODA	WHITE
NLGH0ST1	9647	14/11/2019 17:23:28.8...	7978BVW		99.9	0.92	99.9	99.29	22.43	Spain	LANE 2	☐	1	VAN	UNKNOWN	WHITE
NLGH0ST1	9646	14/11/2019 17:23:26.8...	8030HMC		99.9	1	99.9	98.52	22.71	Spain	LANE 2	☐	1	CAR	TOYOTA	WHITE
NLGH0ST1	9645	14/11/2019 17:23:24.9...	4191DOP		99.9	1	99.9	77.82	23.57	Spain	LANE 2	☐	1	CAR	RENAULT	GREY
NLGH0ST1	9644	14/11/2019 17:23:23.67	1651HNM		96.69	1	99.9	97.89	23.5	Spain	LANE 2	☐	1	CAR	RENAULT	WHITE
NLGH0ST1	9643	14/11/2019 17:23:21.5...	6325GTY		99.9	1	99.9	99.93	23.12	Spain	LANE 2	☐	1	CAR	SKODA	WHITE
NLGH0ST1	9642	14/11/2019 17:23:20.6...	4550HCX		97.27	1	99.9	69.91	22.12	Spain	LANE 2	☐	1	CAR	TOYOTA	GREY
NLGH0ST1	9641	14/11/2019 17:23:16.0...	7814JBB		99.9	0.99	99.9	69.62	23.29	Spain	LANE 2	☐	1	CAR	TOYOTA	BLACK

232 Alertas Recibidas: 0

neural
LABS

FINE MANAGEMENT

- **Section control** (average speed between 2 points).
- **Pedestrian zone** management.
- **Wrong direction** detection.
- **Red light** enforcement.
- **Vehicle counting**
- **Wrong turn**
- **Illegal Stop**

NEURAL SERVER TECHNICAL SPECIFICATIONS

Processing time	20 to 150 ms	
Recognition rate	98%* (depending on the acquisition quality and country of the plate).	<i>This is a minimum value. It can be higher when using the adequate hardware and configuration.</i>
Images per second/camera	Stop & Go version	5 (depending on the PC or server)
	Free Flow version	10 to 20 (depending on the PC or server)
Maximum number of cameras	Unlimited, depending on the PC or Server	
Vehicle maximum speed	250km/h (using the adequate camera and lighting)	
Supported protocols	MJPEG	JPEG
	H264	AVI
	RTSP	Gige Vision
	IDS Imaging	DirectShow
	Point Grey	
Supported cameras	AVT, Axis, Vivotek, IndigoVision, Bosch, Avigilon, HikVision, Huawei, Dahua, Messoa, IDS-IMAGING, PointGrey, Vico, Basler, JAI, JVC	Mobotix, Pelco, Sony, etc. (specific models of each brand).
Other video sources	Avi Files	
	Jpeg, Bmp files	
Integrated video recording systems	Milestone (Express version, minimum)	Pelco
	Axxon Soft, Indigo Vision	Avigilon Control Center
	Bosch BVMS, Nuuo	3xLOGIC, Huawei
	Exacq (Tyco), Mirasys	OnSSI
2 lines license plates	Yes	
Motorcycle license plates	Yes	
Diplomatic license plates	Yes	
Operative system	Windows 7, Windows Server 2012 R2, Windows 8, Windows 10, all 64 bits	
Database	MS SQL Server Express	<i>Standard and Enterprise versions supported, but not included</i>
Included analytics (no extra cost)	Number Plate Recognition Direction Detection Lane Detection	
Optional analytics (Extra cost)	Make Detection Color Detection	Speed Calculation Vehicle classification
Traffic offence detected (Extra cost)	Wrong turn Red light run Pedestrian zone management	Wrong way Section speed control
Working modes (per camera)	Free Flow By an external trigger By motion detection	
Third party Integration	XML messages via Socket or JSON SQL Server database access	
Supported countries	More than 70 countries	Ask you sales agent