

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
- NT Witness (Network Optix)
- Wisenet WAVE (Hanwha)
- Digifort
- DW Spectrum
- Avigilon Control Center
- Huawei
- IndigoVision
- Bosch BVMS
- Mirasys
- Tyco(Exacq)
- Pelco (VideoExpert)
- 3xLOGIC
- OnSSI

SUPPORTED CAMERAS

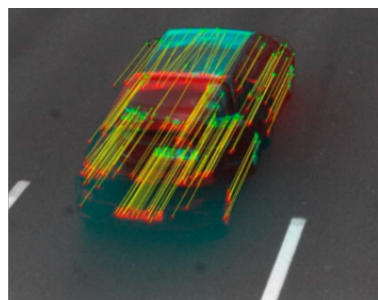
Vivotek, AVT, Axis, Avigilon,
Bosch, Huawei, IDS, IndigoVision,
JAI, JVC, Mobotix, Pelco, Sony,
Vicon, HikVision, Messoa, Dahua
among others.

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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.



A. I. FOR SMART CITIES

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

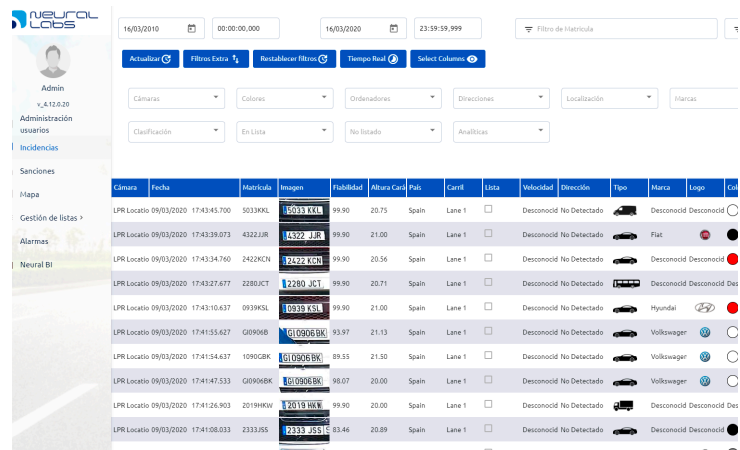


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Includes Operator Software Neural Viewer

- 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.



| Cámara | Fecha | Matrícula | Imagen | Habilidad | Altera Cas | País | Carril | Lista | Velocidad | Dirección | Tipo | Marca | Logo | Col |
|------------|------------|-------------|--------|-----------|------------|-------|--------|--------------------------|------------|--------------|------|------------|------------|-----|
| LPR Locato | 09/03/2020 | 1743-45.700 | | 99.90 | 20.75 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Desconocid | Desconocid | ○ |
| LPR Locato | 09/03/2020 | 1743-39.073 | | 99.90 | 21.00 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Flat | | ● |
| LPR Locato | 09/03/2020 | 1743-34.760 | | 99.90 | 20.56 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Desconocid | Desconocid | ● |
| LPR Locato | 09/03/2020 | 1743-27.677 | | 99.90 | 20.71 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Desconocid | Desconocid | ● |
| LPR Locato | 09/03/2020 | 1743-10.637 | | 99.90 | 21.00 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Hyundai | | ● |
| LPR Locato | 09/03/2020 | 1741-55.627 | | 93.97 | 21.13 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Volkswagen | | ○ |
| LPR Locato | 09/03/2020 | 1741-54.637 | | 89.55 | 21.50 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Volkswagen | | ○ |
| LPR Locato | 09/03/2020 | 1741-47.533 | | 98.07 | 20.00 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Volkswagen | | ○ |
| LPR Locato | 09/03/2020 | 1741-26.903 | | 99.90 | 20.00 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Desconocid | Desconocid | ○ |
| LPR Locato | 09/03/2020 | 1741-08.033 | | 2333.05 | 83.46 | Spain | Lane 1 | <input type="checkbox"/> | Desconocid | No Detectado | | Desconocid | Desconocid | ● |

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, Messo, 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 |
| | NX Witness (Network Optix) | Wisenet WAVE (Hanwha) |
| | Digifort | DW Spectrum |
| | 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 |