SELEA
SMART CITY

EN

SOFTWARE SOLUTION

CPS 6.5

Software solution for
Law Enforcement Agencies

CERTIFIED
Privacy by Design
e Privacy by Default
ISDP 10003

SAVE MONEY
Exempt from subscriptions

- Road and city safety
- Suspicious vehicle alert
- Crime prevention
- Investigation
- Communication
- Integration
- Traffic analysis

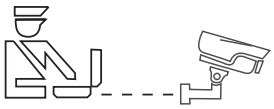
OCR-ANPR CAMERA MANAGEMENT FOR LICENCE PLATES READING

The first platform compatible with the most popular ANPR-OCR license plate reading cameras, ISDP:10003 certified, which integrates powerful algorithms for the recognition of brand, model, type of vehicle and colour. A complete, open, scalable solution, useful for the Police to implement an effective integrated urban security plan, aimed at combating crime and the repression of crimes.

Software with free updates and no fees

How it works

Operational Software Platform, for traffic control and the management of number plate reading devices, connected to **databases** (*Ministry of Transport*)**, that are open and compatible** with any type of standard LPR camera and that are designed to **interact** with the most popular digital VMS surveillance systems (*Milestone, Genetec, Exacq, Qnap*). CPS is complete with an APP for PC, Tablet and mobile phones, and expansion **video analisys modules** (*Make and Model, Color, Type of vehicles*) that are useful for the Police and Law Enforcement Agencies.The entire suite is supplied with an European ISDP 10003 Certification, which emphasizes the importance Selea has placed on data protection and compliance with GDPR regulations.



CONNECT DIFFERENT MAKES OF PLATE READING SYSTEMS

Simple Plug-in software from Selea can be used to connect heterogeneous systems so that they can communicate with one another, operate as a unified network of cameras (according to the responsibilities and permissions established between the parties) and (when necessary) extend sharing to the various Law Enforcement Agencies through CPS Manager.

This can create an extended and integrated security and crime prevention system for the entire area without having to modify existing systems (or replacing parts of them) and using your existing license plate reading software.

Control	Management	Comm	Investigations	Analysis	Integration
• Insurance • Roadworthiness • Black list • Maps	• Users and permissions • Communication • Notifications • Cameras	• LTE radio app. • Mobile Phone • Interagency • Alarms	• Dummies • Accomplice Search • Destination • Thefts	• Statistics • Distribution • Counts • Traffic	• Video surveillance • Cameras • Databases

Software solution integrated with the most popular VMS

milestone exacq Tyco Security Products QNAP Genetec

Control

- Insurance
- Roadworthiness
- Black List
- Accomplices
- Maps

In addition to detecting traffic offences, the CPS software solution also has the built-in function of monitoring the data connection between the software (operations centre) and cameras (accesses). The main controls carried out are:

- Automatic insurance coverage and roadworthiness certificate check by connecting to the Ministry of Transport and Infrastructure database.
- Monitoring the status of the cameras both from the panel and from the Map.
- Monitoring the live status of the cameras via the live function and check control (Live, CPS, FTP, VPN) for checking the operation of the entire system.
- Continuous monitoring of the data connection between the Selea cameras and the central CPS unit. Subsequent updating of the transits recorded in the internal camera memory in case of a temporary data communication fault.
- Possibility of connecting to other databases for carrying out manual checks.

Manage-ment

- Users and permits
- Communication
- Alarms
- Cameras
- Data

CPS is specialized in the management of alphanumeric codes, whether they come from number plate, container and/or dangerous goods plate reading cameras. This information is stored in a SQL database integrated in the software suite, which makes CPS extremely fast when searching for codes and associated images. The functions include:

- Access credentials and multiple user management (HTTPS) with separate permissions and user privilege specifications (alarms, cameras, competency lists) for each user.
- Access credentials and multiple user management (HTTPS).
- User management with privacy function to hide sensitive data.
- Multiple device management (PC, tablet, mobile phone).
- Multiple site/system management both in centralized mode with the allocation of resources and alarms to specific users.
- Multiple OCR device management:Number Plates, Container codes, Kemler-UN tables.
- List management (white/black list, no list) which can be imported or exported.
- Alarm management: email forwarding, snapshots, HTTP requests; relay activation; running external .exe programs; alarm bookmarks on VMS video recording software such as Milestone, Genetec etc.APP and TELEGRAM notifications; voice synthesis alerts on Motorola and Tetra (Hytera) radios.
- Privacy management via automatic deletion of image data after a specified period of time, as required by Data Protection Legislation.
- Management of recordings stored on a local server or remote NAS.
- HTTPS security management.
- Management of information stored in integrated databases (already installed) or on external MySQL databases.
- Automatic database backup management.
- List management (white/black list) with alarm function.
- Black List: multiple notifications on personal list, imported or downloaded from DB.
- Management of an unlimited number of lists.
- Possibility of importing databases in standard CSV (Excel) format.
- Management of one or more internal customized and/or proprietary DB.
- Multiple action alarm management.
- Possibility of customizing alarm forwarding by specifying the users and the accesses for which they are responsible.
- Possibility of alarm for non-compliant environmental class.
- Possibility of alarm for unauthorized vehicle type.
- Possibility of alarm for exceeding the speed limit.
- Possibility of alarm for plate that has never passed through the system before.
- Possibility of alarm for LOITERING (plate that passes "n" times in a specific time)
- Territorial subdivision: allows you to divide accesses by areas and users responsible for them, according to specific permissions based on the type of alarm.
- Export of transit information (codes/number plates) related to searches in CSV or PDF format and all the corresponding images (including context, where available).
- Save data to a local server or remote NAS.
- Possibility of customizing the storage location of the database on a dedicated disk.
- Synchronized recording of metadata, code/number plate and context image.

Commu-nication

- LTE radio.
- Tablet and smartphone.
- Police collaboration.
- Alarms

Communication is an important aspect of the CPS solution. The available APPs and functionality extension MODULES allow CPS to forward notifications to the users according to their area of responsibility. Communications can be sent to the following devices:

- Tablet
- Smartphone
- Smart Watch
- Portable and/or desktop PC
- VMS video surveillance software or third party applications
- Police radio

The CPS software does not just send audible alarms and images. Its voice speaker function also allows it to communicate the number plate and the type of alarm vocally.
Another highly valued function is the transmission of images and information directly to the screen of a smart watch. This is a practical multifunctional tool that allows you to be notified, for example, when stolen or reported vehicles enter an area.

- Possibility of forwarding the transit information to a second CPS server or a secure FTP server.
- Configurable notifications about the transit of specific dangerous goods.
- Possibility of forwarding transit information via TCP or HTTPS (GET/POST) to third-party software and customize the notification format (XML, JSON etc.).
- Possibility of reporting alarms on graphical maps showing the GPS position, highlighting routes and transit direction.
- Alarm-triggered transmission of the image associated with the captured number plate to remote devices (such as MOTOROLA and HYTERA mobile radio communication equipment, PC, Tablet etc.) with *vocal reception* of the number plate.
- Supports data compression for requests in order to use as little bandwidth as possible when transferring search results.
- Integrated engine optimized for high writing and high search speeds, both for FTPS and HTTPS connections.
- Tutor module that allows you to create virtual routes between two gates and receive reports in case of exceeding a set speed or exceeding the average time established to report any problems on the road section.
- Warning levels of PM2.5 and PM10 fine dust pollution exceeded.

Security & Privacy

- HTTPS
- FTPS
- SD encryption
- Password
- User permissions

CERTIFIED
Privacy by Design
e Privacy by Default
ISDP 10003

Data security and privacy have always been central to Selea product development. The voluntary ISDP 10003 certification demonstrates this and emphasizes the importance Selea has placed on data protection and compliance with GDPR regulations. This certification makes the work of the DPO easier when drawing up data the protection impact assessment (DPIA). Data and image security are ensured by the CPS software through:

- HTTPS encryption.
- FTPS (FTP over TLS/SSL) encryption.
- MicroSD memory encryption.
- Automatic deletion of data and images after a specified period of time.
- Creating a log of FTPS requests and incoming HTTPS requests in order to monitor the system.
- Client-server communication management using HTTPS.
- Data reception support via secure FTPS protocol available on various models of Selea cameras.
- System security is also ensured by sending notifications regarding system faults, expired passwords, unreachable cameras, disk full.
- Adding a privileged user who is an operational user who can act on cameras, users,

Security & Privacy

lists, actions and modify the configuration at a high level [SECURITY]
- Ability to enable two-step authentication for users on email or Telegram.
- Strength indicators for passwords.
- Setting mandatory password expirations for greater security.
- DIGEST authentication also for all client/server communications.
- Updated OpenSSL encryption libraries to use more secure encryption algorithms.
- Possibility of eliminating only sensitive data from the DB (GDPR) to have statistical data even for long periods.
- Automatic security check and verification through penetration testing and vulnerability assessment tools.
- DNS-over-HTTPS protocol to improve connection to Selea connectivity services.
- AgID qualification.
- CSA STAR CAIQ qualification.

Investi-gations

- Search for accomplices
- Cross-searches
- Destination
- Make and Model
- Nationality
- Colour
- Theft

When a system, such as a plate reading system, generates an enormous amount of transit data (millions of pieces of data), two fundamental aspects should be considered when carrying out investigative work:
- the accuracy of the OCR reading cameras.Poor quality cameras generate hundreds of thousands of incorrect or missing pieces of data. These errors can mislead investigators and prevent useful information from being used.
- the speed with which it is possible to receive an alarm and search for data, for effective crime prevention and emergency response.

The Selea TARGA-CPS system offers high accuracy and high information transfer speeds.
The software can offer the following features that are useful for carrying out investigations:
- Search for **"Accomplices"** linked to the number plate of the vehicle involved in a crime.
- Notification of black listed vehicles owned by **"Dummies"** (ref art. 94 bis).
- Search by vehicle **Make and Model**.
- Search by vehicle **Class**.
- Search by **Nationality**.
- Search by vehicle **Colour**.
- Multiple filters usually for codes/number plates (even partial), date, time, access point, direction, lists or notifications.
- Complex filters that cross-check the plate numbers obtained from two or more different parameters (for example by time period or access point).This function extracts all the plates that appear in both groups.
- Aggregation filter for the various types of data on a daily/weekly/monthly basis and/or between the various active access points.
- Search by type (even partial) of code/number plate, date/time etc. using logical expressions.
- Search for cross-checked number plate by day, time band, access point etc.
- Search by vehicle owner.
- Search for number plates on connected remote servers.
- Advanced search interface with instant previews.
- Search for license plates that have never passed through the system before.
- Search for license plates that have passed through multiple gates/zones.
- Search for license plates that have passed through one or more gates at a short time distance (anti-drug function).

Statistics Analysis

- Representations
- Distribution
- Counts
- Traffic
- Estimates

CPS includes an integrated analysis and statistics function that makes it possible to display the multiple information that can be obtained from a license plate reading system and connected databases in a graphical form. In addition to being useful for generating traffic statistics, this information is also useful for analysing criminal activity, crime prevention, road safety and the analysis of road traffic offences. This enables you to check the effectiveness of any of the corrective actions that were put into place to counteract them. The analysis module includes the following features:

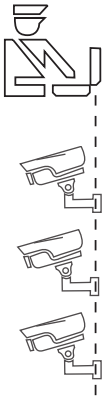
- Transit count and graphical representation.
- Notification count and graphical representation.
- Transit count and graphical representation of uninsured vehicles.
- Transit count and graphical representation of vehicles without roadworthiness certificate.
- Transit count and graphical representation of stolen vehicles.
- Transit count and graphical representation of statistics relating to special databases lists.
- Transit count and graphical representation of vehicles carrying Dangerous Goods (KEMLER).
- Count and graphical representation of the category of the vehicles that transited.
- Count and graphical representation of the province in which Italian vehicles that transited are registered.
- Count and graphical representation of the Nationality of the vehicles that transited.
- Count and graphical representation of the maximum speed limit alarms that were exceeded.
- Count and graphical representation of the Provinces of registration of transited vehicles (available for Italian, German, Spanish, Lebanese provinces).
- Classification and graphical representation of the make and model of the vehicles.
- Classification and graphical representation of the vehicle type:
  - Cars
  - Motorcycles
  - Trailers
  - Mopeds
  - Heavy goods vehicles
  - Vans and mini Vans
  - Buses
  - Law Enforcement Vehicles
  - Square plates
- Statistical representation of the estimated average transit speed at access points.
- Statistical representation of the average travel time between access points.
- Estimated speed and average journey time.
- Traffic starting point/destination distribution.
- Management of automatic reports (csv or png format) of statistics.
- Possibility of transmitting data in real time to external analysis systems with hidden sensitive data.

Integration

- Video surveillance
- Cameras
- Software
- Databases
- Special databases

CPS is an open system that allows the integration of **third party OCR cameras** and can work as a stand-alone solution with any other third party number plate reading system. The CPS system uses special SDKs and plugins to allow you to interact with the most popular VMS video recording software.

- Integration plug-in for Milestone XProtect VMS.
- Integration plug-in for Genetec Security Center VMS.
- Integration plug-in for Tyco Exacq VMS.
- Integration for QNAP VMS.
- Each OCR camera can be associated with up to three external IP context cameras from the best known brands (Axis, Bosch, Hikvision, Mobotix, Sony, Avigilon, etc.).
- Compatible with any type of IP context camera as long as it can be accessed via GET HTTP.
- Integration with third party ANPR-OCR cameras that are able to send FTP notifications.
- Possibility of creating protected integrated multi-server and multi-client systems.
- Possibility of allowing different makes of Municipal number plate reading systems, with different types of software and cameras, to communicate with one another. CPS Manager also makes it possible to connect all Districts to Police Headquarters, provincial Carabinieri Command Stations and Prefectures without having to send notifications to all of them.
- Possibility of integration with third-party solutions, through simple GET HTTP or specialised Plug-ins according to requirements.



CONNECT
DIFFERENT MAKES OF PLATE READING SYSTEMS

Simple Plug-in software from Selea can be used:

- To connect **heterogeneous systems** so that they can communicate with one another, operate as a unified network of cameras (according to the responsibilities and permissions established between the parties).
- To extend sharing to the various Law Enforcement Agencies through CPS Manager.

This can create an extended and integrated security and crime prevention system for the entire area without having to modify existing systems (or replacing parts of them) and using your existing license plate reading software.

Certification

- ISDP 10003
- both Cameras and Software
- Privacy dy Design
- Privacy dy Default

As a demonstration of the care and attention that always has been paid in the development of its solutions, Selea was the first company in Italy to certify its products (both the **CPS** suite and the license plate reading **cameras**) according to the European ISDP10003 scheme, in order to comply with all the requirements of the GDPR regarding Data protection in compliance with the principle of ***Privacy by design and Privacy by default***.

Unlike the other solutions on the market, Selea has obtained the ISDP10003 certification **of the entire CPS + TARGA system** which includes both the entire software suite supplied and the Selea OCR-ANPR cameras for reading license plates.

General

- Windows
- Linux
- Web server
- Network

The CPS software suite allows to increase the number of cameras indefinitely by adding additional connections to the base version.

- CPS works with the following operating systems:
  - **Windows** Desktop 10 or later.
  - Windows Server 2012 R2 or later.
  - Debian **Linux** distribution.
  - Devices that use the QNAP operating system.
- Compatible with any make or model of TCP/IP context camera as long as it can be accessed via GET HTTP.
- Compatible with any make or model of ANPR-OCR number plate reading camera as long as it can send notifications via standard FTP mode and not a proprietary mode.

DATABASES

Optional module to connect Law Enforcement and government databases to CPS, which allows the operators to receive alerts in real time for any kind of information, such as the transits of stolen or uninsured vehicles or those under investigation, foreign number plates, etc.

SELEA BOT- POLICE COMMUNICATION

In the hands of the Police, it is the most effective tool available for receiving information **in real time** about **critical events** concerning public safety. The Selea Telegram Bot (usable with *Windows, Linux, Android, iOS*) transforms any type of mobile phone, tablet or portable PC into an audible and visual signalling device for critical events, using a secure and encrypted connection between Local Police, and Investigative Units to provide an integrated urban video surveillance system. **Unlike** all other Bots, it **does not leave any trace of data** and images on remote servers, not even on the Telegram server.

CPS MONITOR

To view transits, receive reports, alarms or carry out search, Selea provides two different types of CPS MONITOR: one that uses a normal browser *(Firefox, Chrome)* and the other based on an APP for Android tablets and mobile phones (*available on Google PlayStore*).

PLUG-IN

Selea has developed and develops plugins that allow the integration of the CPS within the VMS video surveillance platforms of the major manufacturers on the market such as Milestone Systems, Genetec, Exacq and Qnap. The Plug-ing allows, in real time, to associate a "bookmark" to the recorded video stream to the passage of a license plate/code, so as to be able to review (by typing in the license plate number/code) the video clip relating to the transit of that specific vehicle.

TUTOR

Module for estimating the average speed of one or more vehicles between one entrance point and another. Useful for traffic analysis and evaluation of journey times in a section of road.

ADDITIONAL MODULES

(Optional)

LICENCE PLATE RECOGNITION CAMERAS

Module for integrating ANPR-OCR number plate reading cameras made by other manufacturers into the CPS platform.

MAKE & MODEL

Deep learning module (video analysis) for recognising the make and model of the vehicles from the images taken by the cameras. The algorithm has been trained to recognize over **9000 vehicle models** and more than **400 car manufacturers** with an **accuracy of over 95%**(1) and a response time of less than 0.3 sec. The make and model data is associated with that of the number plate to retrieve full data.The characteristic of this module is that it resides within the CPS platform as a single module. This means that the algorithm is applied and extended, without limits, to all the plate reading cameras connected to the platform. The module recognizes the make and model of cars and commercial vehicles like Ducato maxi and Daily vans. Heavy vehicles such as box vans, buses, trucks, articulated lorries are not included.This function can be applied to all OCR cameras for license plate reading, including those of third parties.

COLOUR & CLASS

Video analysis algorithm (deep learning) for the recognition of vehicle colour and class. The algorithm is trained to recognise **12 colour classes** and **11 vehicle classes**, with **accuracy up to 93%** (1) and response times of less than **0.5 sec**. The colour and class data are associated with those of the license plate for a complete retrieval of vehicle information.This function is applicable only to Selea OCR cameras for reading plates with integrated context sensor and without video analysis on the camera.

OCR SYSTEMS INTEGRATION

Special plug-in useful for **connecting** the license plate reading systems (gates) of different brands, scattered throughout the territory, so that the Security Operators and the Law Enforcement can exploit these **resources distributed throughout the territory**, aggregating them together for prevention of crimes and the suppression of crimes. **The peculiarity** of this solution is that it neither interferes nor replaces the existing license plate reading software solution in use in the individual municipalities. It simply integrates for data exchange. In other words, it functions as a "collector" of the license plate reading gates. *For more information, contact the Selea technical staff.*

(1) - the degree of confidence depends on the local lighting conditions and installation conditions.

About us

SELEA is specialized in the manufacture of number plate reading solutions, both for vehicle access control and for territorial security and traffic control. All of our products are developed and manufactured entirely in Italy. This means that our customers benefit from continuous and comprehensive technical support.

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