TRASSIR®

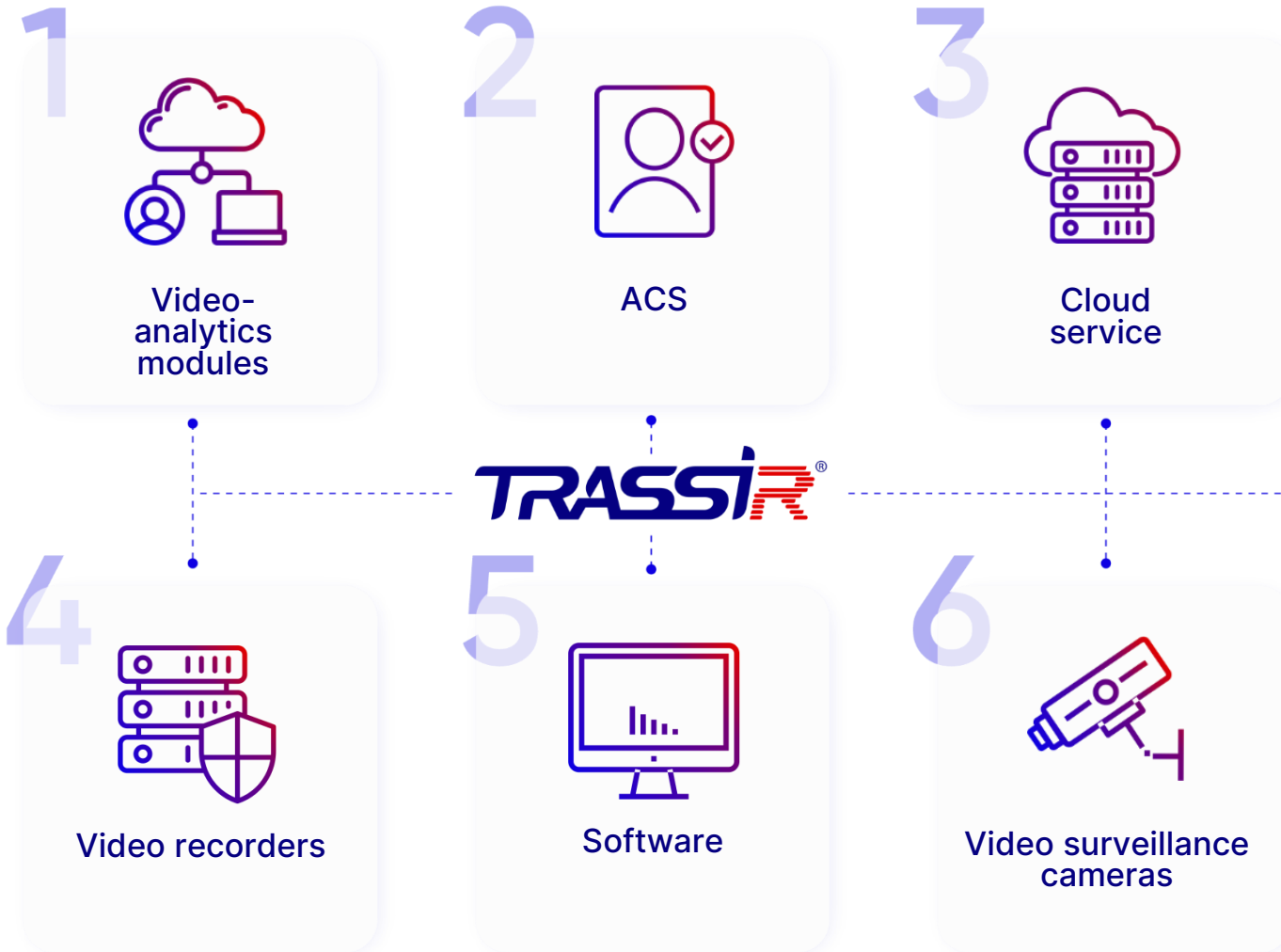# TRASSIR solutions for one of the largest petrol station chains

The concept of "petrol station as a shop"

6-IN-1 VIDEO SURVEILLANCE SYSTEM

1 Video-analytics modules

2 ACS

3 Cloud service

4 Video recorders
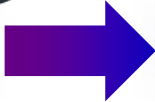
5 Software

6 Video surveillance cameras

The concept of the TRASSIR video surveillance system is the deep integration of all its constituent products among each other

Retail 4.0 at petrol stations

Petrol station → Retail 4.0

Objectives

Security challenges

- Object detection in the frame
- Decrease in thefts
- Protection of property from damage
- Ensuring the safety of visitors and staff
- Theft protection
- Preventing staff fraud
- Incident investigation

Business objectives

- Collecting customer data
- Data analysis
- Data visualization
- Transaction report
- Customer traffic analysis
- Central control of entries and exits

Objectives

Cash desk area

- Cashier fraud prevention
- Staff errors minimization
- Cash discipline control
- Reputation losses reduction
- Queue management
- Cashier schedules optimization
- Outlet capacity increase

Trading floor

- Display supervision
- Staff supervision
- Marketing analytics acquisition
- Theft prevention
- People flow behavior analysis
- Data collection for merchandising planning
- Compliance monitoring in a pandemic management
- Ensuring safety

Entrance

- Conversion counting
- Unique and repeat people flow counting
- Target Audience defining
- Store window marketing promotions evaluation

Parking and entry area

- Car access control arrangements
- Parking space counting
- Special vehicle operating procedures control

Warehouse

- Theft and damage of goods prevention
- Warehouse supervision operations
- Staff supervision
- Working hours tracking
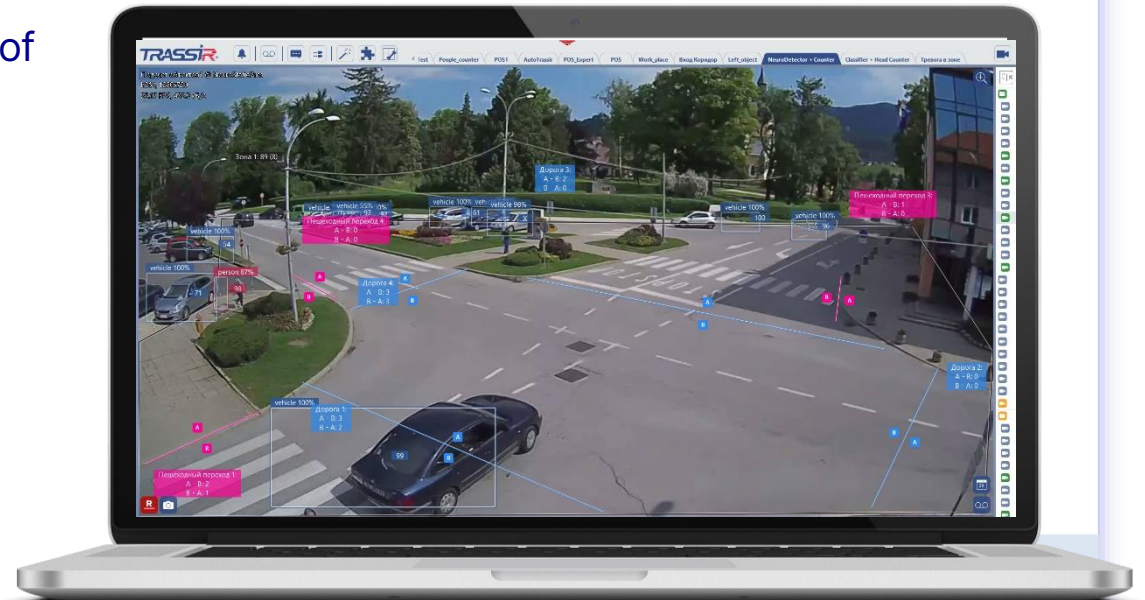
TRASSIR®

Neuro Detector

Neural Network Object Detector is a video surveillance tool for automatic object detection and recognition with the ability to trigger preconfigured event responses. It functions on the basis of trained neural networks which provide high accuracy in module triggering.

Performs the following functions:

- Detecting objects in the frame
- Form incident alarm notifications, notify operators in case of intrusion into specified zones
- Filter out extraneous objects, eliminate false alarms
- Control of employee visits to certain areas at specified intervals

How it works:

✔ Extracts relevant image for identification, makes the most reliable hypothesis for classification.

✔ Forms a response to the threat based on the resulting categorization or ignores it as a false alarm.

AutoTRASSIR

Accounting and Control:

• Logging and event search;

• Database formation;

• Support of external and internal lists;

• Identification and recognition of cars of petrol station visitors

• Control of access of cars to the closed territory;

• Automation and acceleration of cars access to the closed territory by lists;

• Control and management of the possibility of parking on the territory (in case of using the Parking script);

• Investigation of accidents in closed areas and car parks;

• Counting and restricting the entry of certain types of vehicles into the territory;

•Elimination of theft in collusion with the guard.
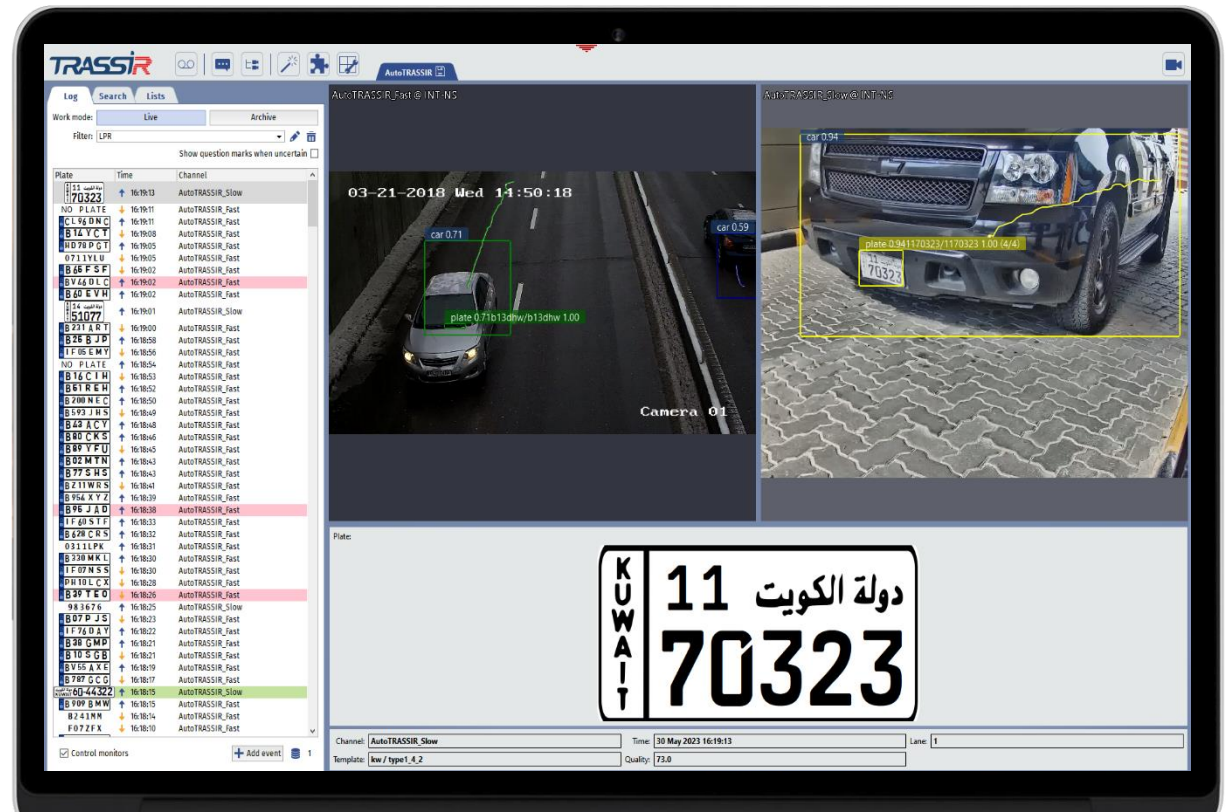
ActivePOS
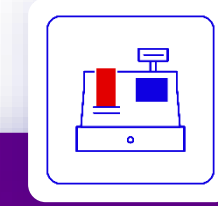
Smart cash register control module

50%
reduced cash loss

100+
types of irregularities

Compatibility with most cash registers

✔ Reduced losses due to cashier errors/ misconduct

✔ Increased compliance with cash discipline and warning of potential fraudsters

✔ Easy monitoring of several stores using statistical reporting

✔ Reduced time to investigate incidents

✔ Conversion counting to purchase (in conjunction with the **Neuro Detector** module)

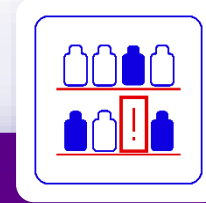✔ Forecasting demand for goods

Shelf Detector

Automated control of shelf space and merchandise display

5+ revenue per category of goods

- ✓ Control of merchandise display
- ✓ Notifications of empty shelves
- ✓ Forecasting demand for goods
- ✓ Generating reports
- ✓ Increasing product turnover
- ✓ Merchandise inventory planning
- ✓ Adjusting baking plans

Heat Map on Map

Multicamera customer-flow 'heat map' for the retail space

- **Retail space management**
- **Checking stock conversions**

✔ Diagram traffic intencity and direction on a dashboard

✔ Collection of marketing and statistical data on customer behaviour

✔ Optimising and placement

Face Recognition & Face Analytics

Biometric recognition module

VIP know your customer

8 key parameters to identify the TA

- ✔ Marketing analytics and data collection

- ✔ Counting % of repeat purchases and unique visitors to the outlet

- ✔ Creating a base with demographic segmentation

- ✔ Defining the Target Audience

- ✔ VIP customer identification

- ✔ Personalising in-store offers

- ✔ Timekeeping accounting and attendance monitoring

- ✔ Integration with access control systems ACS

INFO

Male

Age 31

No moustache
Dark, short hair
No headwear
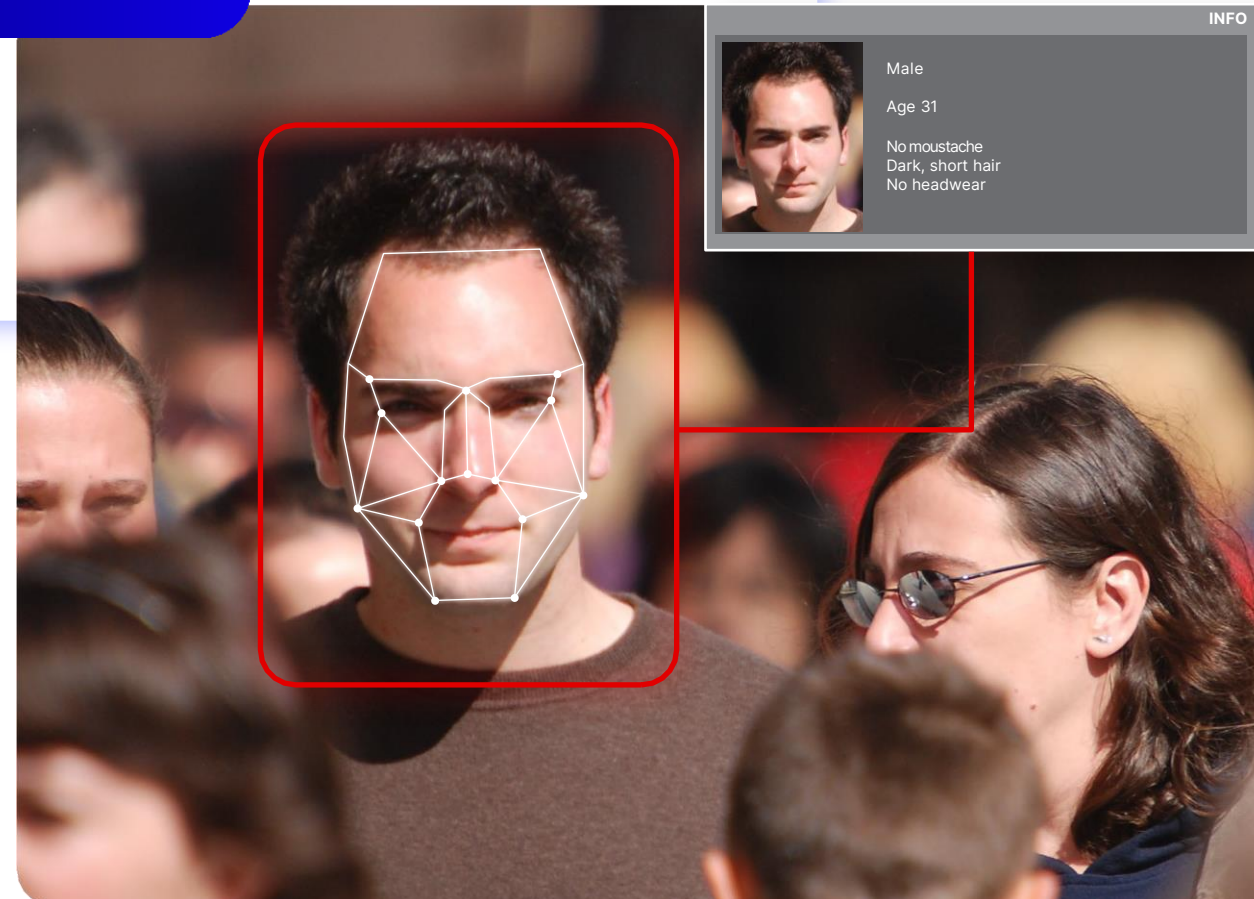
Queue Detector

Smart queue control module

9% increase in the number of receipts per cash register

2x reduction in the number of complaints and queues

by 10% reduction in refusal rates

- High accuracy > 99%
- Increase loyalty and repeat purchase %
- Optimise cashier schedules
- Increase outlet capacity
- Statistical records

Neuro Counter

Visitor counting module

+99,9% counting accuracy

16 zones crossings to count visitors in the frame

- Unique object counting based on neural network
- Excludes employee counting
- Estimating traffic flow
- Counting conversions to sales
- Evaluating the conversion rate of marketing promotions
- Displacement analysis
- Alerting about homeless people, about a fallen person, about suspicious actions of visitors, characteristic of intruders
- Offload analytics possible

Outstretched arms and shooting stance | Arms raised above the head | Squatting person |
Fallen person | Person holding on to handrails | Fighting postures

Staff Tracker

Wear Detector

Staff control module

99%
Recognition accuracy

- Monitoring the availability of staff in the service areas
- Monitoring the implementation of work procedures
- Tracking KPIs
- Record of visitors served and neglected
- Report on the speed of service

Control of compliance with uniforms and employee visits to specific areas


- Identifies and classifies people wearing uniforms of a particular colour
- Generates reports
- Monitoring of safety and sanitary standards
- Control of staff visits to specific areas at specified intervals

TRASSIR ACS

Access control and management system for rule-based security arrangements

- **Biometrics**
- **Mobile access**

- **1 server for ACS and video operation**

✔ Personnel management

✔ Setting access levels

✔ Flexibility of work schedules

✔ Photo verification of passageways

✔ Object monitoring and manual control of devices

✔ Event log

✔ Working time record

✔ Mobile remote access
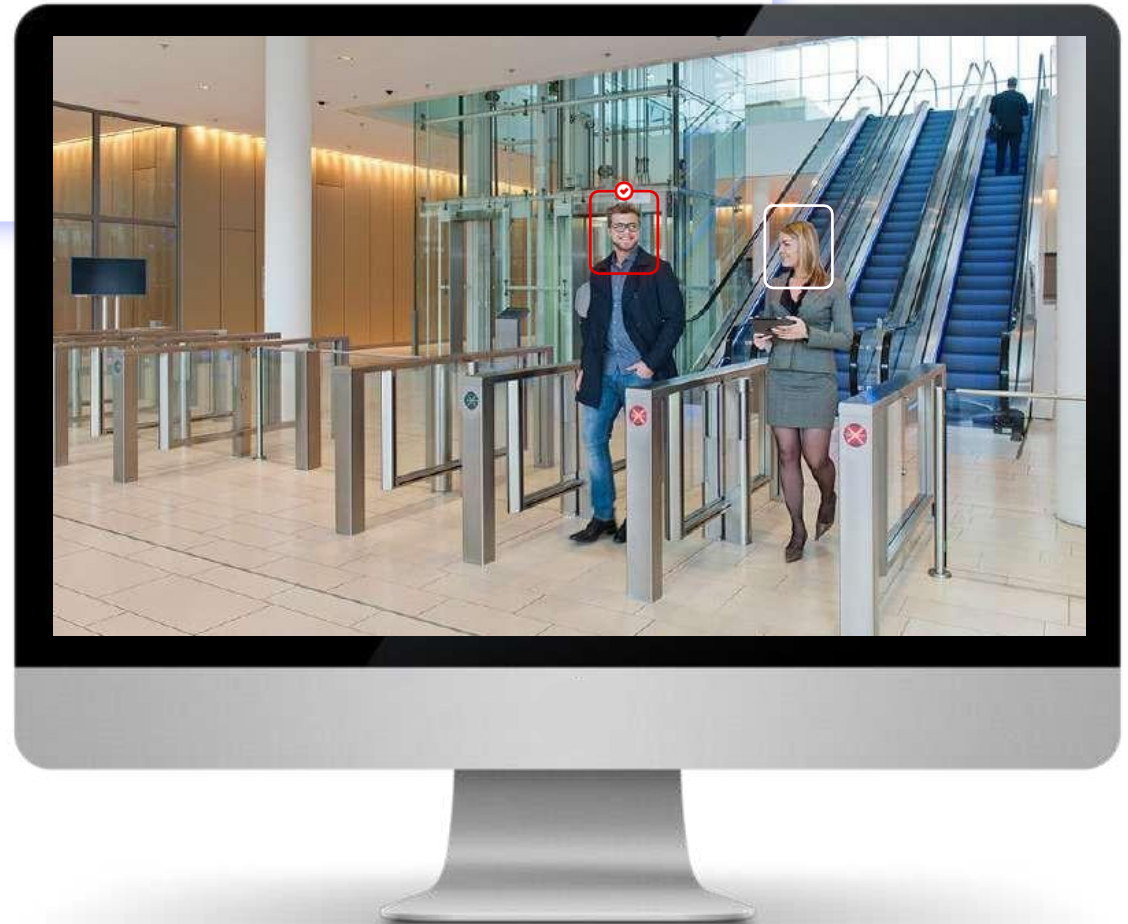
Cross-camera tracking

Building a trajectory of human movement and identifying location with visualization on the site plan

Cross-camera tracking: security and tracking tasks

What tasks does cross-camera tracking speed up and solve automatically without manual work?

- Transmitting an alarm to the security service in case of intrusion
- Identifying people
- Creating a trajectory of movement on the site
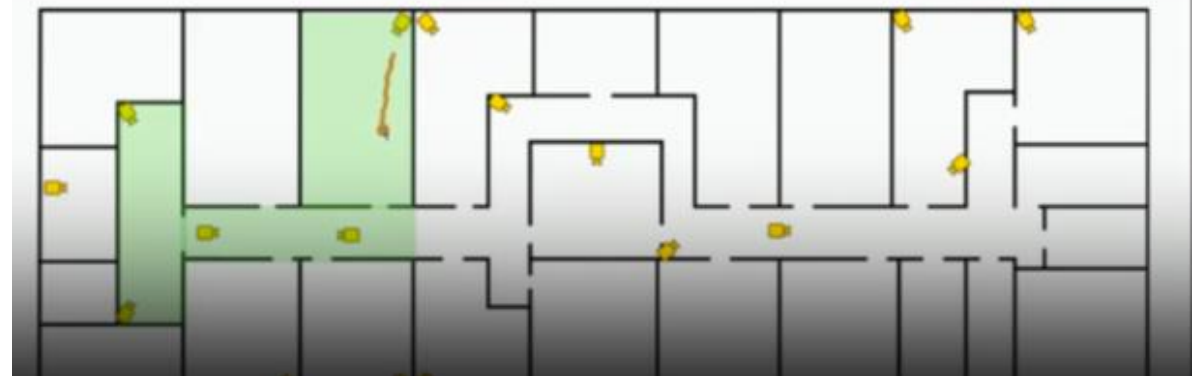- Speed up theft investigations with quick video archive searches
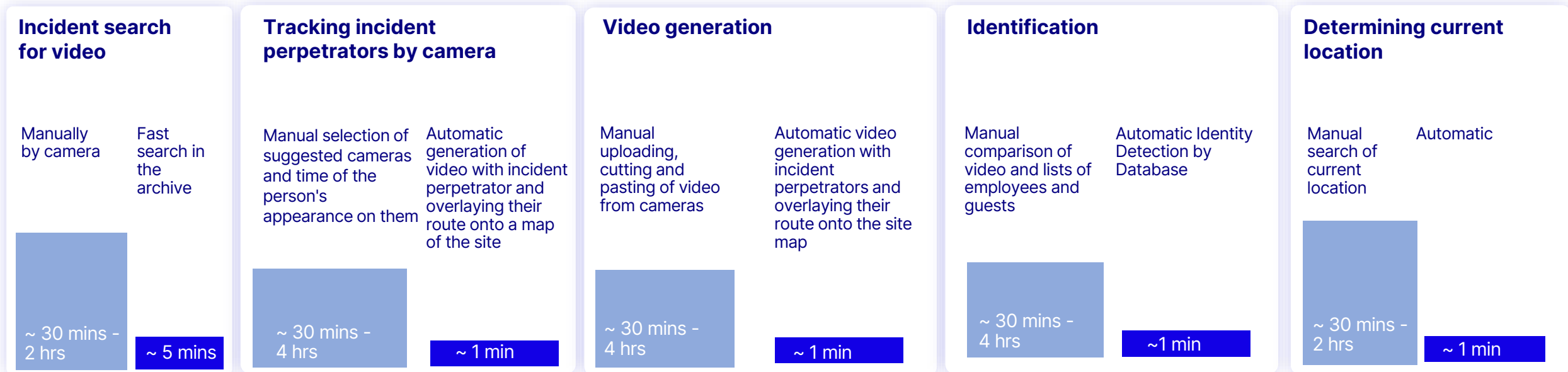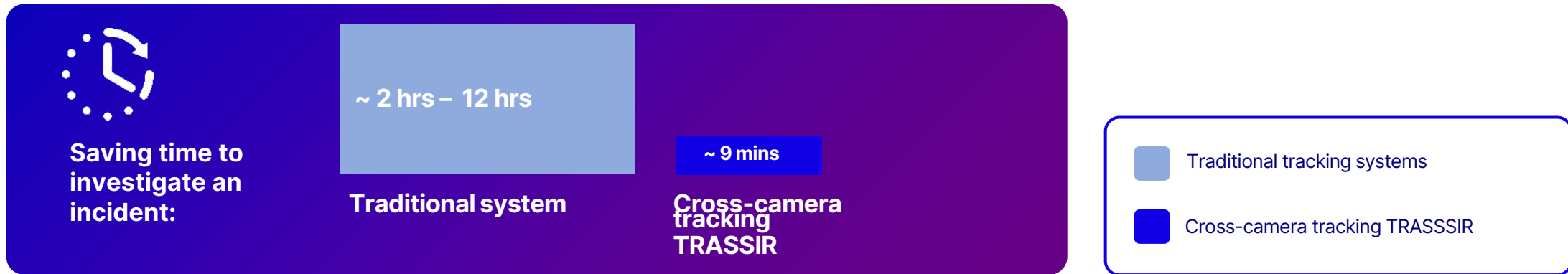- Strengthens access control
- Locating the alleged perpetrator on a map and tracking his route at the facility
- Investigates incidents

Cross-camera tracking: saving time in comparison with traditional tracking systems

Saving time to investigate an incident:

~ 2 hrs – 12 hrs

Traditional system

~ 9 mins

Cross-camera tracking TRASSIR

Traditional tracking systems

Cross-camera tracking TRASSSIR

Incident search for video

Manually by camera

Fast search in the archive

~ 30 mins - 2 hrs

~ 5 mins

Tracking incident perpetrators by camera

Manual selection of suggested cameras and time of the person's appearance on them

Automatic generation of video with incident perpetrator and overlaying their route onto a map of the site

~ 30 mins - 4 hrs

~ 1 min

Video generation

Manual uploading, cutting and pasting of video from cameras

Automatic video generation with incident perpetrators and overlaying their route onto the site map

~ 30 mins - 4 hrs

~ 1 min

Identification

Manual comparison of video and lists of employees and guests

Automatic Identity Detection by Database

~ 30 mins - 4 hrs

~1 min

Determining current location

Manual search of current location

Automatic

~ 30 mins - 2 hrs

~ 1 min

PETROL STATION

Video surveillance in the field

Priority tasks are: ensuring security on the territory and perimeter, prevention of theft, damage to equipment, observance of safety by personnel and control of labour discipline.

Project Objectives

To implement a video surveillance system that is stable, simple and easy to use, with customisable archive depth, providing a quick search for events to resolve conflict situations. You need quality software and a combination of overview and rotating cameras to ensure the following.

- Security on the territory of the petrol station and on the perimeter;

- Accounting of the number of vehicles serviced;

- Quality control of personnel work;

- Reduction of errors and abuses on the part of employees

Project Results

The customer highly appreciated the efficiency of the implemented solution. The security of the petrol station territory was ensured. Financial losses caused by fraudulent actions of employees are minimised. A significant amount of money is saved every month, while before the introduction of video surveillance the losses "ate" a significant part of the profit. Discipline has improved and staff errors have been reduced. Employees behave more politely with petrol station customers, and the quality of service and loyalty of motorists has increased.

Project Solution

To organise the video surveillance system, the following were used:

- PTZ cameras;

- PC-based video server with TRASSIR software installed;

- TRASSIR ActiveDome+ intelligent video analytics module.

PETROL STATION

Video surveillance in the field

Priority tasks are: ensuring security on the territory and perimeter, prevention of theft, damage to equipment, observance of safety by personnel and control of labour discipline.

Project Objectives

To implement a low-cost video surveillance system that is stable, simple and easy to use, with customisable archive depth, providing a quick search for events to resolve conflict situations or employee fraud. It is necessary to ensure:

- Security on the territory of the petrol station and on the perimeter;

- Accounting of the number of serviced cars;

- Quality control of staff work;

- Reduction of errors and abuses on the part of employees

Project Solution

To organise the video surveillance system were used:

- IP-cameras of various manufacturers;

- TRASSIR miniNVR video server.

Project Results

The video surveillance system ensured security in the petrol station territory and perimeter. Financial losses caused by fraudulent actions and employee errors were minimised. Revenues increased several times after the installation of the video surveillance system, thanks to the detection of fraudulent actions of the petrol station employees. General discipline has increased. The petrol station staff behaves more politely with customers, the quality of service and the loyalty of motorists has increased. In six months of use, the video surveillance system has fully paid for itself.