TRASSIR Queue Detector
Smart queue counting module

Live video analytics to improve customer service and optimize work processes

TRASSIR Queue Detector

Smart video analytics module for monitoring queue lengths, analyzing statistics and notification management in response to critical situations.

It is designed to allow the organization managers to:

- monitor queue lengths;
- respond to incidents in a timely manner;
- use statistics to optimize work processes.

How does it work:

- The head counting algorithm allows you to accurately count people even when they are densely crowded

Queue Detector usage scenarios

Increasing the capacity of facilities

Management notification in the event of exceeding critical values, distribution of customers to less busy points by means of information panels and audio messages.

Optimization of staff workload

Planning of peak workload of personnel, redistribution of labor resources to perform other tasks in case of low workload

Increased turnover at retail outlets

The use of video queue control can increase the profitability of large grocery outlets by 10% per month. Elimination of customers exiting the queue without completing the purchase, elimination of losses associated with leaving perishable goods at the cash register

Additional advertising opportunities

Advertising a facility as the most efficient point of service, demonstration of live video feed and data on busyness online in order to distribute customers to most available outlets

Eliminating customer dissatisfaction

Reducing waiting time in queues, eliminating conflict situations associated with long waiting times, maintaining customer loyalty

Additional KPI for employees

Improving the efficiency of the service point, assessing the productivity of employees

Exclusion of material losses and shortfalls in profit

Avoiding customers leaving the queue without buying in case of congestion, eliminating losses associated with leaving perishable goods at the cash register

Solution architecture. How does it work?

Video camera → Video → Video server → Queue detection → Video → Operator
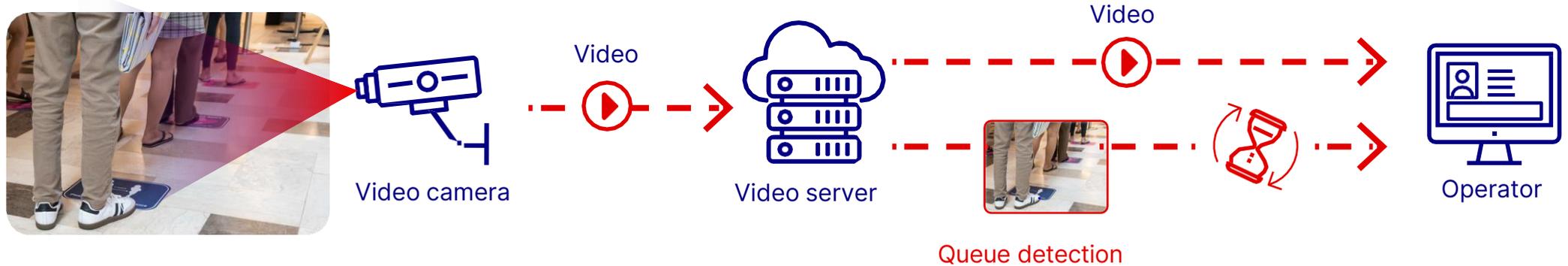
Reaction scenarios:

1 **Notifications in the Trassir interface**

2 **Report export:**
Queue length
Rate of queue emergence
Waiting time in queues

3 **Integration with on-site systems:**
API integration
Data export in XLSX and CSV
Data access using SQL
Option to customize notifications and reports using Python

4 **Notifications:**
SMS-notifications
Email-notifications
Telegram

Solution functionality. How does it work?

1 The detector automatically identifies the presence and number of people in the specified area

2 As soon as the number exceeds the permissible value, the persons responsible are notified and/or the requested events are triggered

3 Measures are taken to eliminate problems that may have occurred

6 Managerial decisions are made to optimize the operation of the service point

5 Reports are generated

4 Data on the busyness of service points and recorded events are entered in the statistics

Areas of application

Airports

Gas stations

Railway and road stations

Hotel and restaurant business

Pharmacies

Fast-food restaurants

Cultural and sports facilities

Customs and border control

Bank industries

Food oriented retail

Non-food oriented retail

Solution benefits

Precision and efficiency

The option to conduct analysis even with dense crowds of people makes it possible to achieve an accuracy of over 95%, which, in turn, makes it possible to reduce the queue lengths by half

Benefits and investmen

Proven increase in trade turnover, allowing for a quick payback for the solution

Data backup

Option to back up important data on a remote server via the TRASSIR Cloud service

Operator interface

Enables monitoring of the situation in real time, as well as receiving prompt notification of critical situations and generation of reports

Cloud service

Option to manage all video surveillance systems in the absence of a corporate network via the TRASSIR Cloud service

Manageability

Option to manage all video surveillance systems with the help of TRASSIR VMS, a professional software for building multi-level security systems installed in a company network

Modification

Option to expand functionality and create customized solutions

Independence

Option to use the module with most third-party equipment

Integration

The necessary set of mechanisms for integration with hardware

You may also be interested in:

1 Heat Map on Map – TRASSIR add-on for mapping the movements of people in a selected area and identifying where they stay the longest

2 Staff Tracker – a module to assess the quality of staff performance: (salespeople, promoters or managers in offline retail)

3 Neuro Counter – a module for measuring the number of visitors passing through a given boundary. Analysis of visitors activity by reports for a given time interval

4 Social distance detector – a module for monitoring compliance with social distancing

5 Face Mask Detector – a module for monitoring compliance with face mask requirements in public places

6 Theft Prevention – software for reducing/reimbursing losses from shoplifting

7 Face Recognition – a TRASSIR software add-on for recognizing and searching people using a preconfigured face database, as well as for counting unique faces and their demographic analysis

Queue Detector. Stories of success

In 2019, one of the largest grocery retailers in Russia installed a TRASSIR Queue Detector. The solution was tested and compared for hypermarket and minimarket grocery outlets

Industry: Food retail

Key objectives of the project:

- Detect queues with at least 95% reliability
- Record events about the presence and absence of queues during the outlet's working day, store and generate statistics
- Predict the occurrence of queues using the collected statistics
- Plan the workload and monitor the productivity of employees
- Play audio messages in the checkout area
- Send messenger messages to responsible employees when incidents occur

Implementation results:

- The solution shows reliability results over 95% and exceeds the needs of the business customer
- The average customer's trade turnover for all pilot sites equipped with TRASSIR solution has increased by 2.4% per week
- The target average traffic growth rate per week for all pilot sites equipped with TRASSIR solution is 2.0%
- For the hypermarket format, the maximum reduction in the number of queues was recorded – by 54% on average
- Estimated payback for hypermarket format was 1 month

Queue Detector. Stories of success

An international chain of large shopping centers (up to 10,000 square meters) designed for wholesale of food and non-food products for businesses in Germany, Poland, Romania, and Russia has come to realize the ineffectiveness and obsolescence of the current system

Industry: Retail Romania

Key objectives of the project:

- Business analytics
- Security function

Implementation results:

- Cash registers suffer less load during peak hours
- The optimal number of cashiers is deployed, which helps the company to save money
- The remaining cameras inside the store help resolve many disputed situations, such as unintentional damage to merchandise or misconduct by security guards

CONCLUSION:
A combination of solutions powered by the Queue Detector module and other analytical modules designed to optimize the company's security service helps the store network solve many local problems.

The company's investment in TRASSIR solutions for business intelligence and security paid off after only one year of operation.
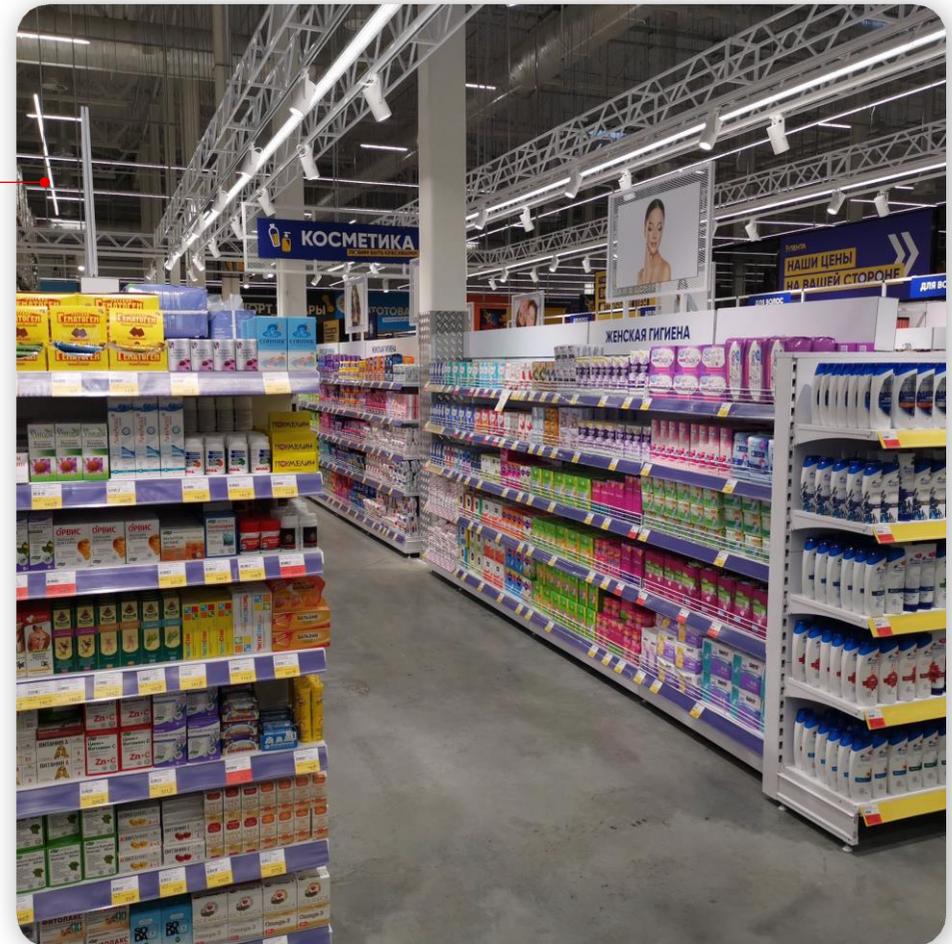
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