


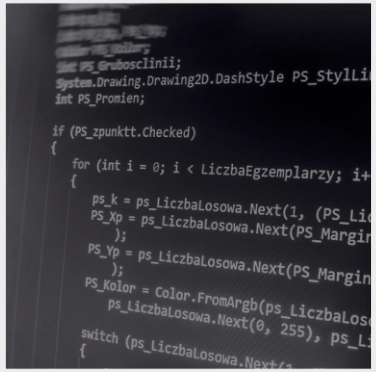


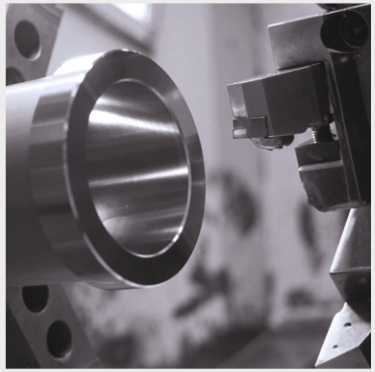

TRANSPORT SAFETY SYSTEM

ROSANT
MULTIFUNCTIONAL CONCERN

OUR CUSTOMERS

FEDERAL GUARD SERVICE (RUSSIA)

MINISTRY OF DEFENCE (RUSSIA)

FEDERAL AIR TRANSPORT AGENCY (RUSSIA)

FEDERAL ROAD AGENCY (RUSSIA)

MINISTRY OF TRANSPORT (RUSSIA)

FEDERAL MIGRATION SERVICE (RUSSIA)

COMMITTEE FOR TRANSPORTATION OF SAINT-PETERSBURG GOVERNMENT

FEDERAL SECURITY SERVICE (RUSSIA)

HUINDAI (RUSSIA)

FSUE “ROSMORPORT”

RUSHYDRO

SURGUTNEFTEGAZ (RUSSIAN GAZ & OIL COMPANY)

ROSENERGOATOM

TRANSNEFT

ROSATOM

RUSSIAN RAILWAYS

LENENERGO

VLADIVOSTOK FISHING SEA PORT

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RAILWAY SAFETY SYSTEM

The railway is a large infrastructure spatially distributed object, the safety of which is an important task. Wagon rail crossing, bridges, railway stations, fuel depots, communication centers, water and power supply sources should operate smoothly and trouble-free. It is important to ensure the safety of life and health of passengers, since on the railway even hooliganism can lead to deplorable consequences.

The Integrated Railway Safety System should provide reliable protection of citizens against terrorist acts, vandalism, hooliganism and accidents, automatically detect dangerous situations, function in all weather conditions, promptly inform law enforcement agencies and emergency services of possible threats.

The Integrated Railway Safety System should unite a multilevel information and management facility, an unlimited number of geographically remote local security and operation support systems for railway facilities (stations, bridges, administrative buildings, etc.), and support an unlimited number of users. When building the Safety System of railway facilities, the coordinated operation of all equipment is required.

THE INTEGRATED RAILWAY SAFETY SYSTEM SHOULD MEET SUCH GENERAL REQUIREMENTS:

- Data collection, processing and presentation, monitoring and management unified system;
- Modularity and open standards;
- No restrictions on dimensions of a protected facility and an unlimited number of users;
- Video of a response point for an operator to make a decision in real time;
- The system data quantity and quality should be sufficient to make decisions;
- A round-the-clock, all-weather protection in all weather and climate conditions;
- Resistance to the influence of external factors (animals and birds, swaying trees, sources of electromagnetic radiation, lightning discharges, etc.);
- No blind zones.

THE INTEGRATED RAILWAY SAFETY SYSTEM INCLUDES THE FOLLOWING ELEMENTS:

01 • TRAIN SURVEILLANCE SYSTEM

02 • RAIL CROSSING MONITORING SYSTEM

03 • RAILWAYS AND LOCAL FACILITIES SAFETY SYSTEM

04 • CABLE PIT SECURITY SYSTEM

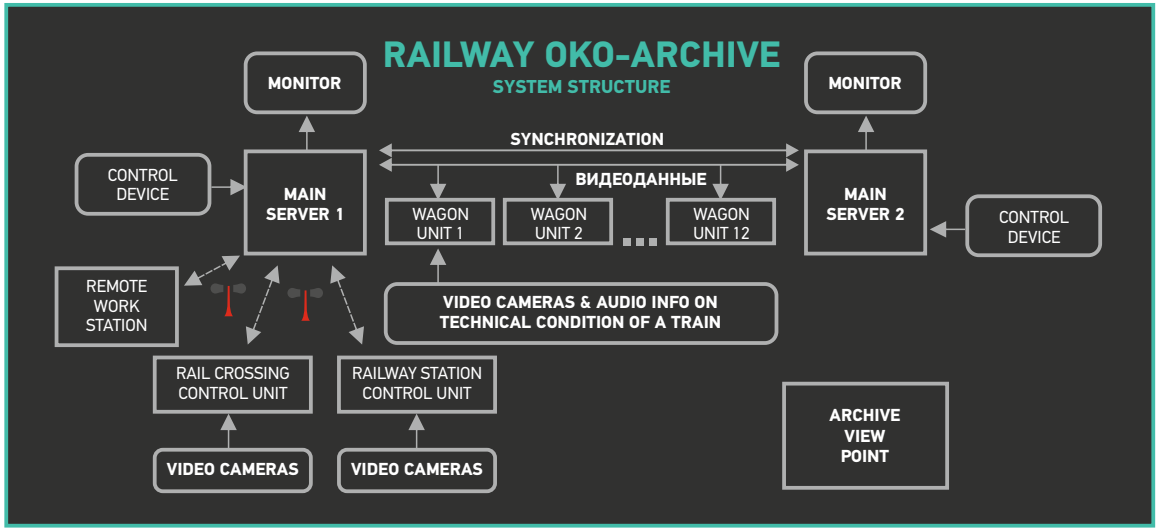
05 • VIDEO ANALYTICS BASED PRODUCTS AND SOLUTIONS

06 • VPI-NAVIGATOR SYSTEM

RAILWAY
SAFETY SYSTEM

01 TRAIN SURVEILLANCE SYSTEM

A special solution for video surveillance on railway and underground vehicles. The system allows for continuous video monitoring of train wagons, timely detection and prevention of offenses, and rapid inestigation of crimes and acts of vandalism in railway transport. This system increases the discipline of passengers and employees of the transport company, helps to fight bribes when paying for travel to controllers by stowaways.



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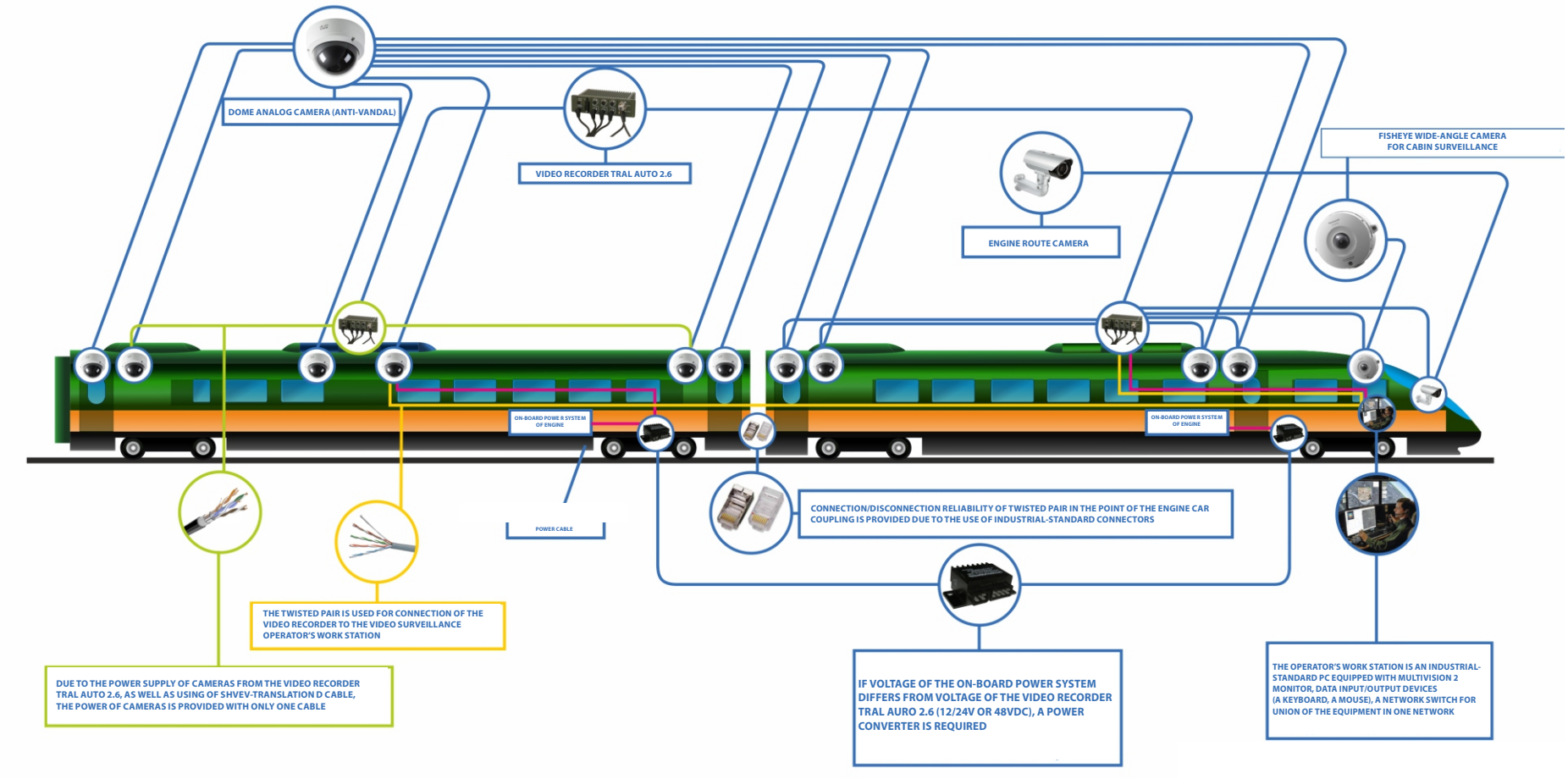
RAILWAY VEHICLE VIDEO SURVEILLANCE DIAGRAM (DIGITAL VIDEO RECORDER TRAL AUTO 2.6)



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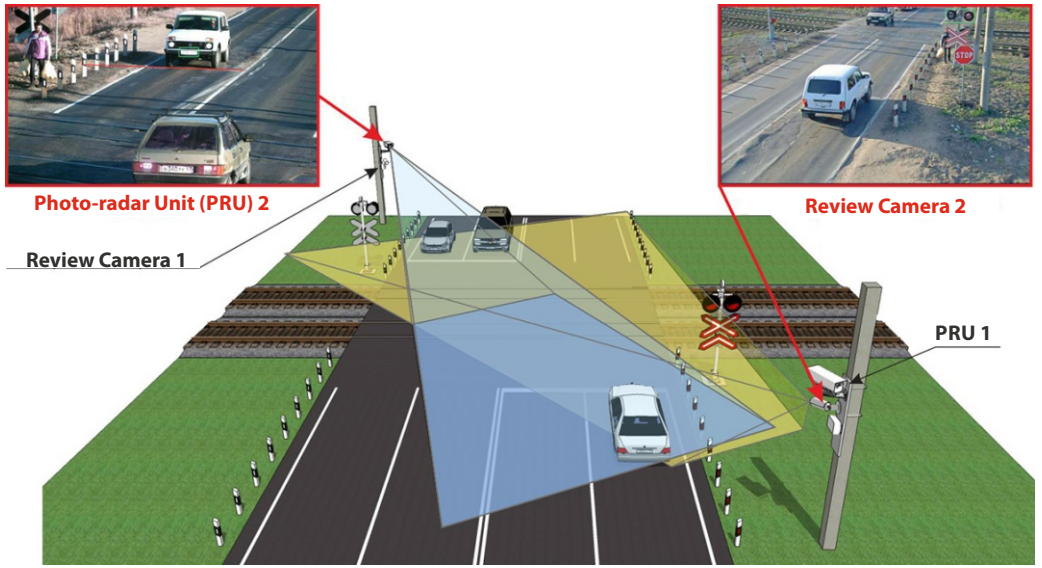
02 RAIL CROSSING MONITORING SYSTEM

The system is intended for photo-video recording of the following violations of the passage rules at intersections or railway crossings, as well as the data transfer to the central server (or to the driver of the approaching train, if necessary):

- Passage of an intersection, railway crossing or an adjustable pedestrian crossing when the traffic light turns red;
- A stop-line crossing when the traffic light turns red;
- Crossing over into the lane of oncoming traffic;
- A stop or accident at a railway crossing;
- People or foreign objects at a railway crossing.



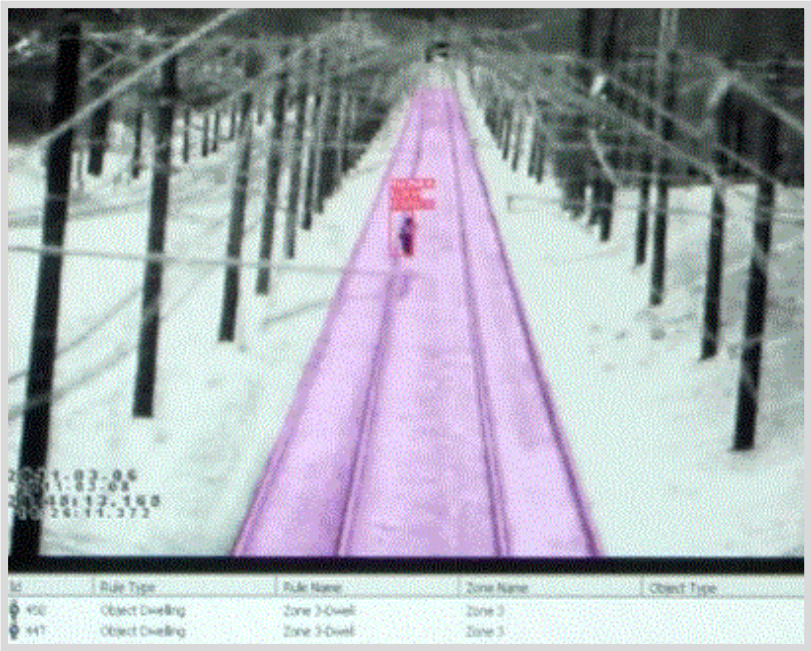
03 RAILWAYS AND LOCAL FACILITIES SAFETY SYSTEM

To protect the railway midpoints, bridges, overpasses, stations, depots, etc., we use Optical-Thermal Surveillance Systems. The Optical-Thermal Surveillance Systems with analytics are designed for round-the-clock, all-weather protection of objects and approaches to them by automatic detection and recognition of targets (people and cars) with real-time transmission of video information about the occurrence of abnormal situations to the operator.

The Optical-Thermal Surveillance Systems with computer vision automatically detect potentially dangerous situations (for example, the appearance of a person, fire, smoke, throwing an object through a fence, a left object, etc.) and signal to the operator , as well as a view of a fixed and rotary cameras.

Due to this, a large number of security personnel are not required even at the largest protected area or facility if the latter is equipped with hundreds of video cameras.

The Optical-Thermal Surveillance Systems with analytics record all the actions of the operator, which allows you to exclude the influence of the human factor, collusion of operators with violators.



The modern Optical-Thermal Surveillance Systems with analytics are able to work as part of the Integrated Safety System in conjunction with perimeter security means automatically displaying a video image from a section of the railway, where the perimeter (well) guard sensor has triggered. In this case, the video information received from the corresponding camera is displayed on the operator's screen.

THE OPRICAL-THERMAL SURVEILLANCE SYSTEMS WITH ANALYTICS IS ABLE TO DETECT IN REAL-TIME:

- People on the approaches to the permanent ways;
- Vehicles stopped at railway crossings;
- Long-term presence of people on the railway tracks;
- A left object on the platform and railway;
- Fire and smoke.

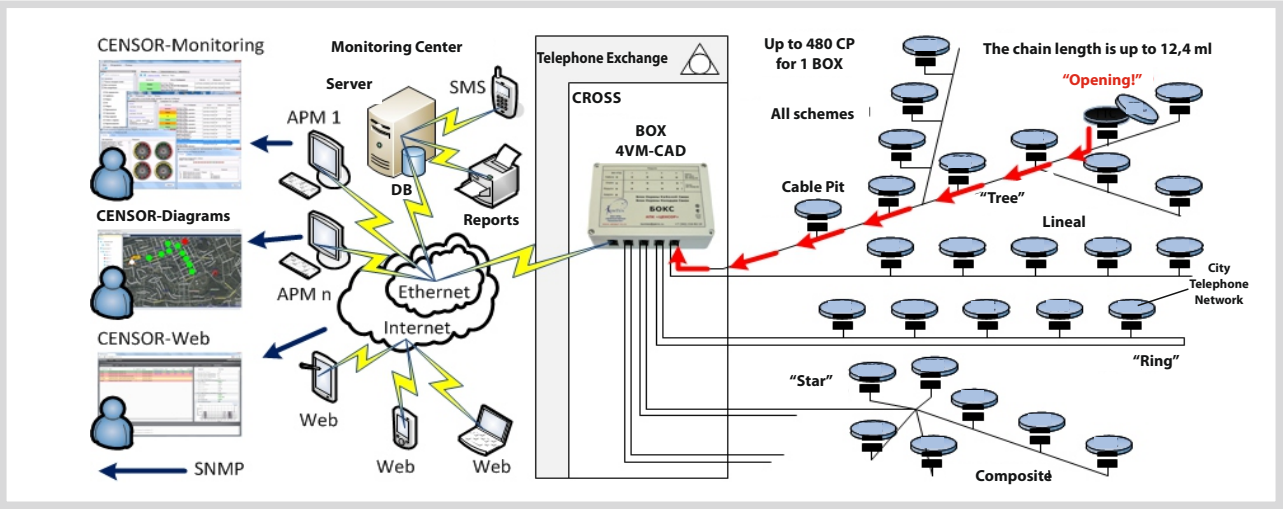
Thus, the modern safety systems can improve the efficiency of railroad and railway transport security, for example, prevent terrorist attacks, automate the security system management from a single situational center, and provide an opportunity for operational interaction with law enforcement agencies, security centers and emergency services.

04 CABLE PIT SECURITY SYSTEM

The Cable Pit Security System is designed to provide the Operator with a complex operational control over the state of linear-cable facilities, underground communications and cable networks.

THE CABLE Pit SECURITY SYSTEM IS USED TO:

- Provide guard for manhole covers;
- Prevent the cutting of copper and optical communication cables;
- Counteract vandalism (pogroms, arsons, etc.);
- Protect pits from penetration by unauthorized persons (homeless people, hooligans, etc.);
- Protect communication lines from illegal routing of cables by third-party operators;
- Prevent the threat of terrorism (the laying of explosive devices);
- Prevent accidents and injuries among pedestrians (especially children) in open manholes.



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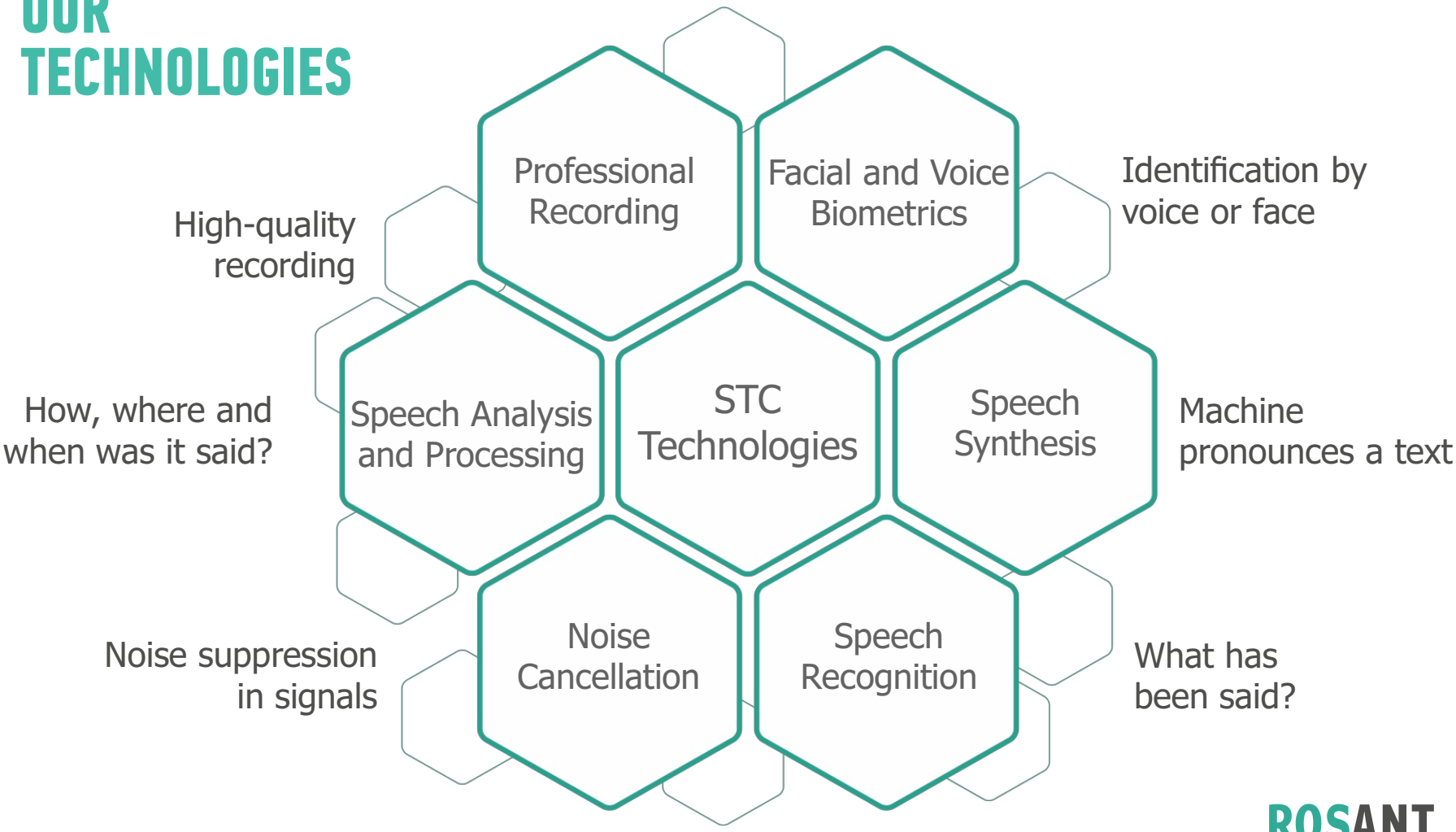
05 VIDEO ANALYTICS BASED PRODUCTS AND SOLUTIONS

OUR TECHNOLOGIES



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STC VOICE ANALYSIS CAPABILITIES

Automatic:

- Language ID
- Emotional State
- Gender
- Key word search
- Audio enhancement

Expert:

- Recording device
- Authenticity analysis
- Educational background
- Sicknesses
- Body features

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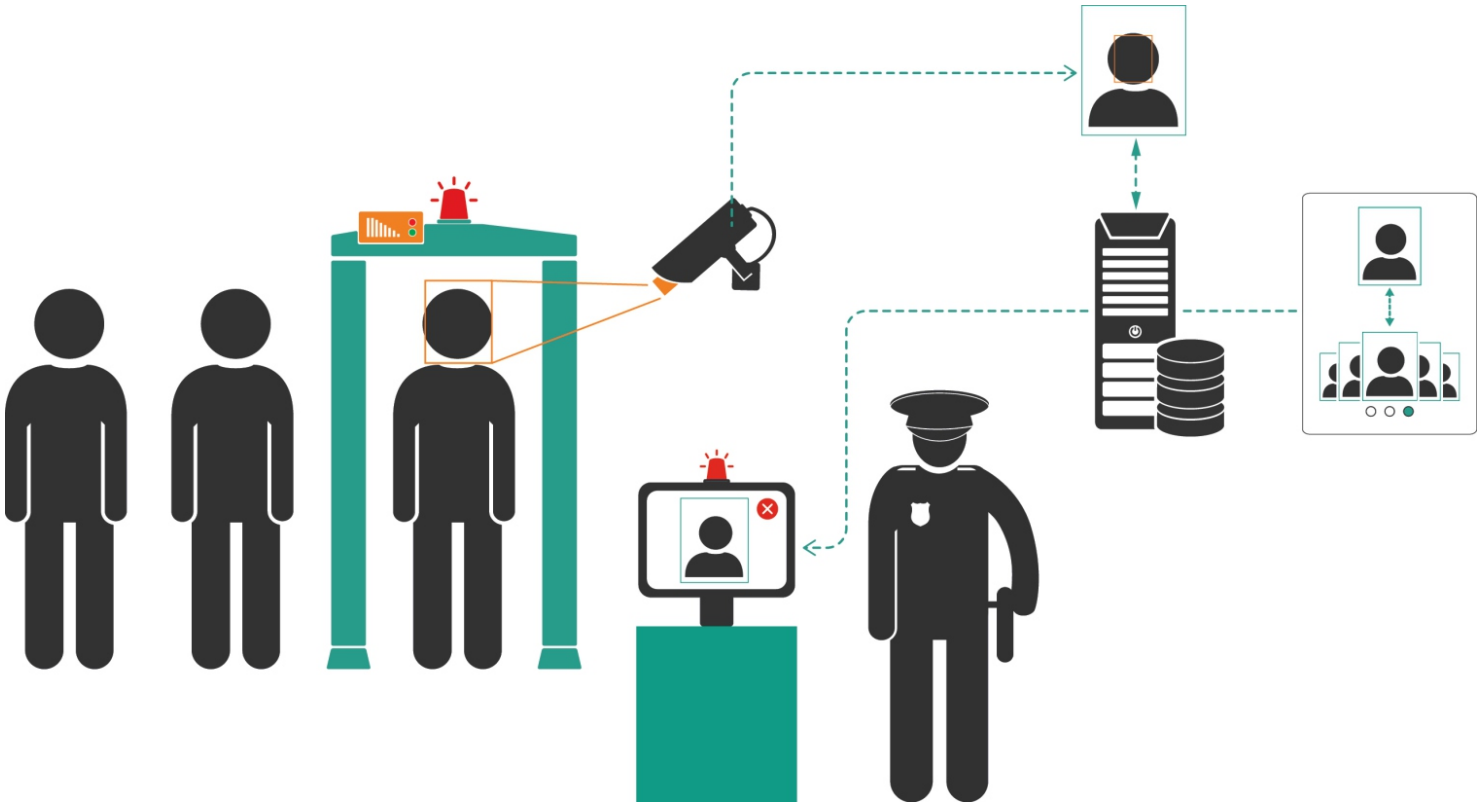
SMARTTRACKER.FRS

mass facial recognition in a video stream

3 base use cases

- Criminal detection
- Door Access Control
- Creating visitors list



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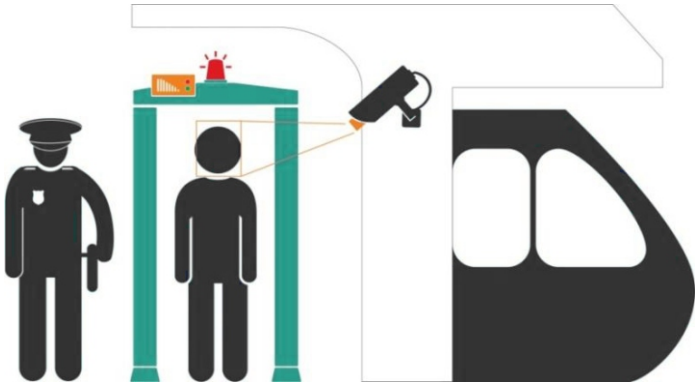
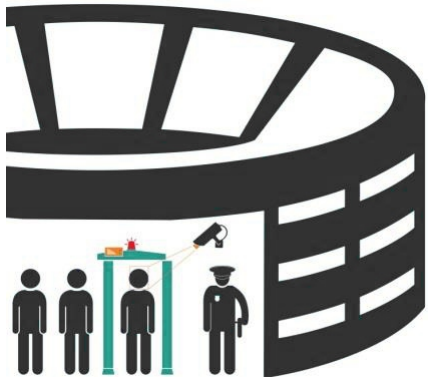
SMARTTRACKER.FRS

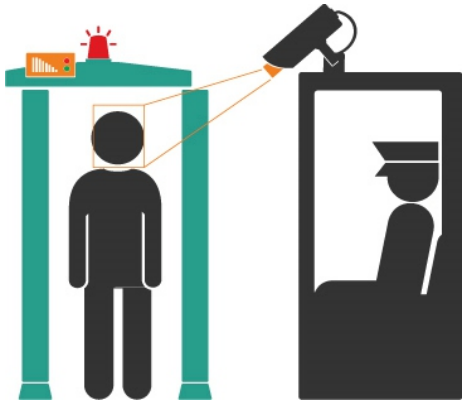
location examples



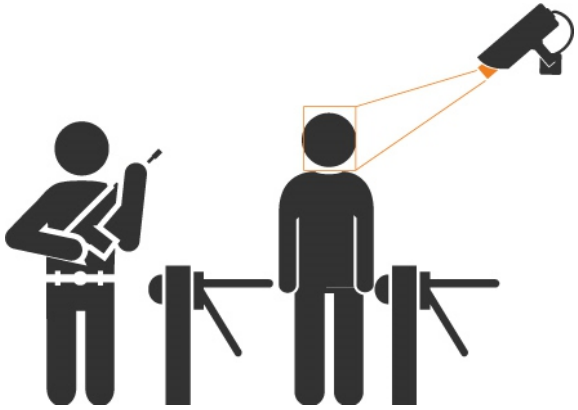
TRANSPORT



CROWDED PLACES



GOVERNMENT FACILITIES



SENSITIVE FACILITIES

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RAILWAY
SAFETY SYSTEM

06 VPI-NAVIGATOR SYSTEM

Safe and comfortable travel in a train is only possible on tracks lying in the correct geometrical position. Railway infrastructure needs to be repaired regularly. Now we have many mechanisms and machines to help us to repair the railway track. But all of them should know where and how much to move track in the certain place.

VPI-Navigator system was designed to manage different tamping machines according to the previous measurement by the special trains and designed correct track lying.

In idea to connect measurement and temping we use special RFID electronic marks, placed on sleepers of a track each 100 m. These electronic marks allows to identify the place of measurement all of the parameters and make possible to design new lying and all movements of the track.

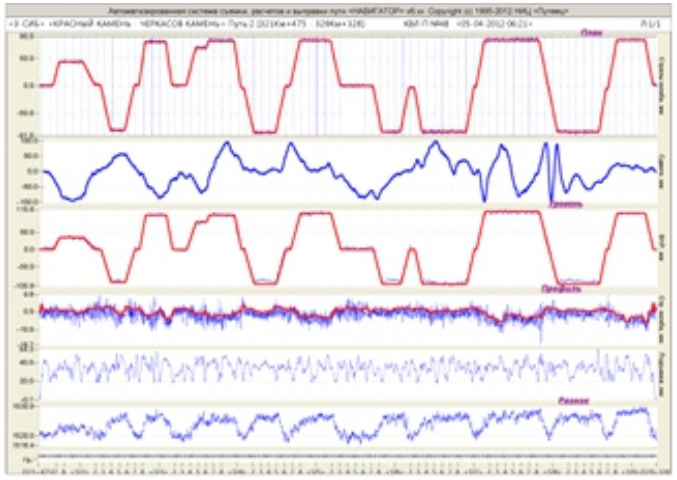
All necessary measurement of railway track geometry sends special measurement cars. They goes through all track each two weeks and gives detailed information about quality of track. Thanks to special antennas they read all electronic marks on sleepers and write information about track and marks to special file.

Specialists calculate all necessary movement of the track and design all track position in the machine codes. During the calculation the system checks all physical and normative parameters and restrictions.

After designing specialist is sending these program task to a tamping machine. It may by different type of machines, like Duomtic 09-32, Duomatic Dynamic 3X, etc. These machine should have the special antenna and installed system VPI-Navigator also.

Tamping machine should work immediately after coming to the work place, without any measurement movements through the working place.

The machinist should only watch after the machine, all necessary movements will be made automatically.



THE VPI-NAVIGATOR TECHNOLOGY PROVIDES:

- automatic calculation of plan and profile track;
- optimization of the track parameters in the current content;
- reducing material costs for tamping and maintenance of track;
- automated calculation of the track parameters;
- formation of the electronic software for setting the machine;
- saving the track maintenance time due to lack of measuring trip;
- monitoring and analysis of the driver's actions.

THANKS
FOR ATTENTION

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