



**Security is changing**  
and so are we  
We are your future



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[www.ivisec.com](http://www.ivisec.com)

# About our product

See what we mean

Visit us at [www.ivisec.com](http://www.ivisec.com)



## History

IVISEC™ has been built on cutting edge technology and the latest trends as well as our almost twenty years of experience with these types of systems.

Our system is deployed in solutions that integrate tens to thousands of elements. The capital city of Prague has over 4,000 cameras with the capability of storing archive footage for six months, a GPS system with over 1,000 units, and approx. 145,000 elements of other technologies. Several hundred client stations work with this system simultaneously. Our new IVISEC™ system easily satisfies all of these requirements and in addition is faster, safer and has improved user accessibility and design.

## About us

Since the very foundation of our company we have been working in the area of surveillance as well as personal and property security. Our greatest strength has always been our ability to integrate different systems and technologies into a single user interface, with the emphasis placed on the robustness and security of the integration. Throughout our history we have worked with a wide variety of systems and technologies. Obviously, all of our valuable experience has been put to good use in our current IVISEC™ system.

## Our vision

We have always been keen to see our efforts come to fruition and this is still our main focus. In this respect, we consider even the smallest detail of the IVISEC™ system to be of vast importance. We are fully aware that the difference between a good and perfect product lies firmly in the detail. Simplicity, consistency, scalability, flexibility and reliability are the pillars IVISEC™ was built on.

Prague security control centers have been using our systems for **more than 10 years** and we are proud to be able to participate in improving the security of the capital city of the Czech Republic.





# Our solution

## Why we are different?

The core of our system is built around the handling and further processing of events from various technological sources.

In addition to this sophisticated core, we construct other components and technologies such as a video management system, GIS, ARC (Alarm Receiving Center) etc. Another important element is the simplification of the user interface. This is particularly evident when setting up complicated workflows and information processing as its connections are always presented by diagrams and other graphic components. In this way processing diverse information is much easier.

# Why **choose us**?

We have vast experience in the integration of various technologies, which are used in the fields of **security and automation**. We are a Czech company, offering its own, purely Czech products. We are flexible and can adapt the system precisely in line with the requirements of the client. We supply our clients with a product that serves them, not a product that they have to adapt to. The product is scalable according to the requirements of the client, from small installations in one box right up to extensive systems utilizing virtualization and load balanced solutions.



## Technology

The iVISEC™ system was designed with the emphasis placed on the ability to integrate any technology or system without limitation. Each technology is a source of information which is processed by the system.

## Information

Information received from the integrated technologies is categorized and stored as notifications and then it is forwarded to our system for further processing.

## Processing

Each notification is processed and evaluated by configurable conditions and rules, which conclusively define system responses from simple storing to the creation of new events. All occurring events are forwarded to client stations for processing.

## Reaction

The system can react to incoming notifications with automatic responses such as implementing preset actions, or, based on received notifications, it can offer a selection of actions which the user can choose from and manually implement.

## Solution

When a user is solving an event, the system can guide him step by step with a preset workflow. The workflow defines possible states for each type of event and the process by which such events can be solved.

## Evaluation

The history of received notifications and user actions within an event can be further analyzed and evaluated thanks to advanced reporting tools.



# Key features

## Concept of the system

The main goal of IVISEC™ is to offer a unified and user friendly interface for supporting the everyday activities and needs of users.

IVISEC™ offers tools which help the user to easily control integrated technologies in synergy from one place with one keyboard and one mouse. The system supports a multi-monitor layout and user definable content of each screen for the most effective access to the information and integrated technologies. In the case that the system is used more for automation and only casual superintendence it is possible to merely perform the basic configuration of automated activities and leave the rest to the system itself. When one of the defined states occurs, the system automatically notifies the user via the chosen communication channel.

## Platform independency

The system was designed as a multi platform solution from the very beginning and it is possible to use it on the most common platforms (MS Windows, Linux, Mac OS) and architectures (x86, x86\_64, arm). It is the user who dictates the technologies used, not the system itself.

## Integration and extensibility

IVISEC™ is a modular system which is easily expandable via integration with other technologies or client user interfaces. The system provides public API so it is possible to extend the system without relying on a contractor. With our extensive capabilities of integrating other technologies, it is possible to deploy the system using already installed technologies and thereby protect client investments.

## Intelligent evaluation of information

Information that enters the system from integrated technologies is processed according to preset rules and conditions. Therefore it is possible to specify exactly what information triggers which activity and to automate processes using different types of technologies.

## Event processing

With predefined rules it is possible to create an event which has to be resolved by the operator. The definable workflow with specified transitions between event states serves for this purpose. The system can also be used as a control center for solving various situations according to the requirements of the user.





# VMS and GIS

## Video management

An integral part of IVISEC™ is its own VMS with all of the standard features and support for IP cameras. Furthermore, it is also prepared for use with third-party VMS solutions. It provides the possibility of using and extending an already installed VMS from a third-party company, which saves your time and money.

## Video analysis

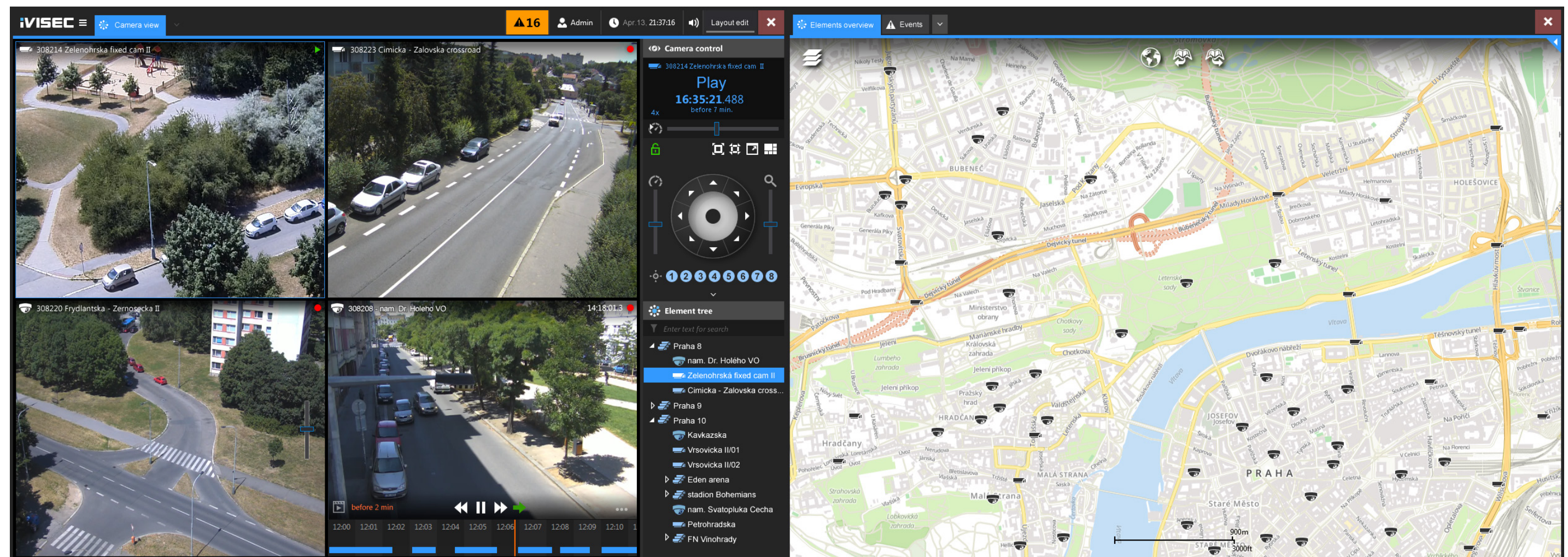
Video analysis tools are an essential element in increasing security while using cameras. Nowadays we can no longer rely on the fact that the operation of the camera system alone will solve all situations. It is necessary to think proactively and prevent the incidents from occurring. For this purpose we have designed advanced algorithms to detect non-standard situations from a video image and to notify the operator of such an occurrence. This facilitates the work of the operator and saves time and money.

## Metadata

Video analysis output is information that the system continuously processes and stores. It is used to quickly locate specific events recorded by cameras.

## Active overview map

Because the system integrates many technological elements, it is necessary to keep track of their status and position. Maps and diagrams are made for this purpose, from these it is possible to draw the individual elements and thus create a clear picture of the current situation. The system supports the creation of multiple maps and links between them. This allows easy processing of even large installments in several rooms spread among different buildings and floors. The elements can also be checked directly on the map. Maps can be created with raster images, vector images, online tile services or according to the requirements of the client it is possible to use maps stored on the ESRI ArcGIS Server.





# Response to information

## Evaluation

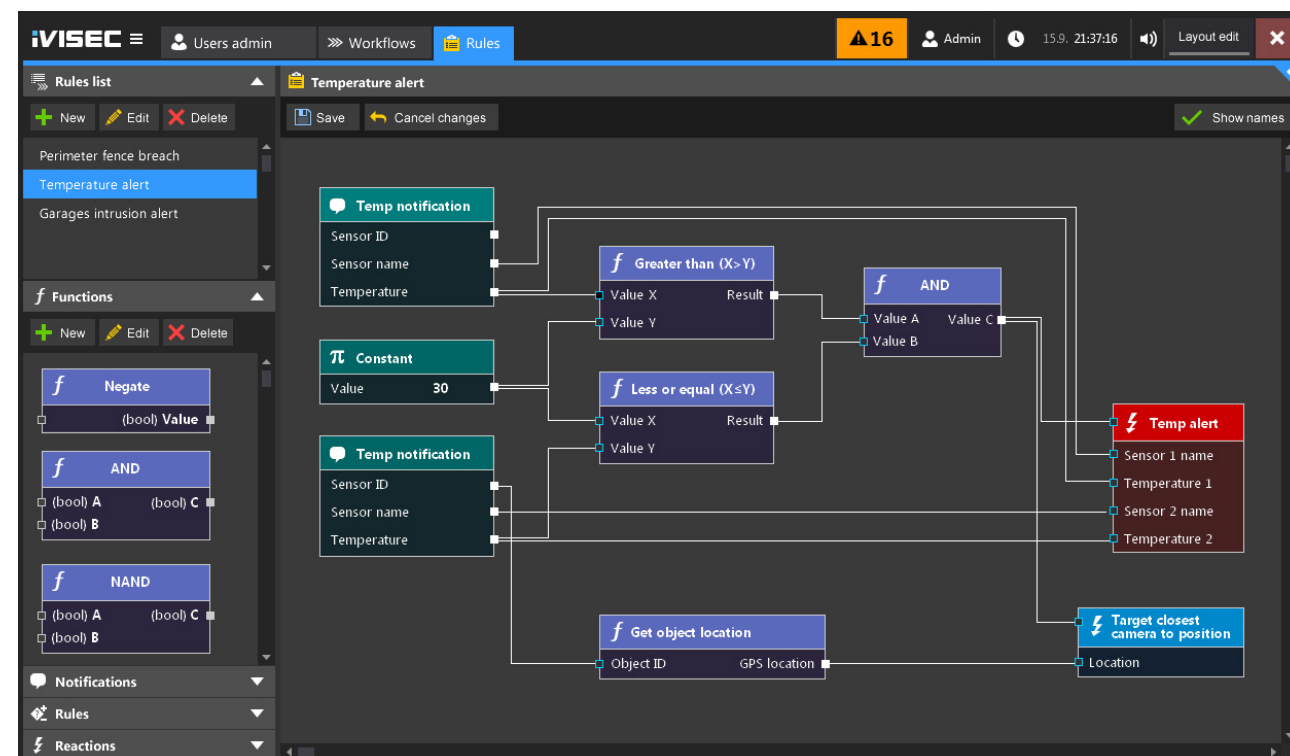
All incoming information into our system is evaluated based on set rules and conditions. It is for example possible to set it to process information regarding temperature only when the temperature exceeds a certain level.

## Automation

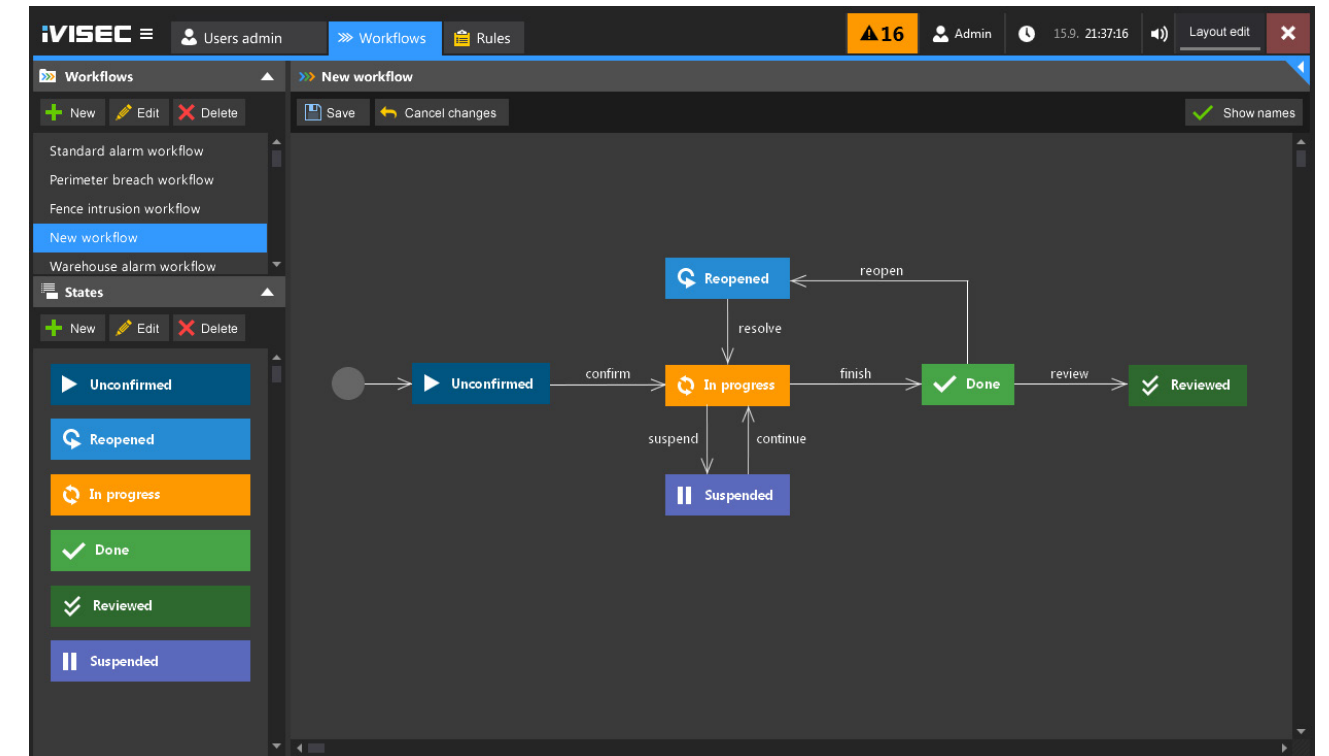
The system allows full automation. For example if the temperature exceeds a certain level, the system can automatically send an email or switch on a relay which will turn on the air-conditioning unit.

## Flexibility

The system allows you to customize almost any reaction to information that the system received, in the form of diagrams, functions, conditions and rules.



# Workflow



## Custom event processing

With a simple diagram it is possible to prepare for every event in the system, based on it's type, from which state to what event it can go and if during that transition any action should be implemented or whether dialog window should be shown to the user so he can fill in the necessary information.

## Planning

Users are able to plan in which way certain types of events can be solved thanks to the simple graphic representation of workflows.

## Guidance

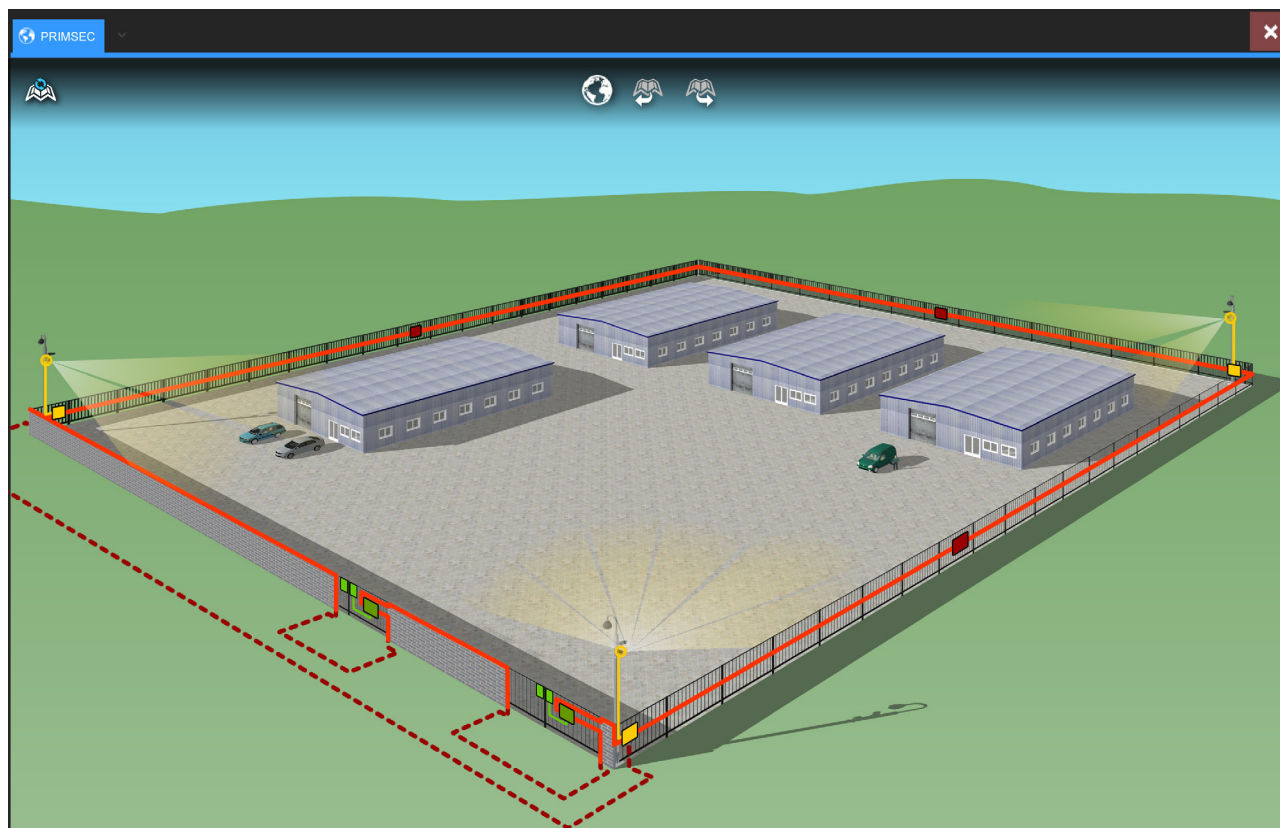
In order for a user to know how to react to certain events, he is guided step by step by the preset workflow which simplifies the whole process of solving the situation.

# PRIMSEC™ & PERISA™

## PRIMSEC™ - Perimeter protection system

A revolutionary, cost-effective solution for protecting perimeters with a length of up to 2000m per segment, enabling highly accurate detection and localization with a precision which can be measured in centimeters.

Primsec is a perimeter system for protecting areas against unauthorized entry. This technology can be used for example in warehouses, factories, resorts, solar power plants, prisons, detention centers, houses, etc.



## Benefits

- **Patented technology**, the best and most advanced in its category.
- **Early detection of intruders** with the ability to eliminate false alarms.
- **Very precise detection** in units of cm in **all climate conditions**.
- **Invisible perimeter protection** - installation in the ground is possible due to the extreme resilience of the product.
- **Easy installation with no mounting** - quick installation and putting into operational state, automatic calibration.
- **Maintenance free** - no maintenance costs.

- **Durable and weather resistant** sensing cable with certifications: environment class IV, temperature range from -25 °C up to +60 °C, IP 68 - the maximal degree of IP protection marking.
- **It is possible to combine all types of fencing** or concrete and underground installation in different parts of one sensing cable.
- **Unique system** of signal evaluation in all **3 axes**.
- **Modularity** - the sensing cable can be used also as a **communication line for other integrated systems** (e.g. VMS, wireless communication modules, RS 232, RS 485, RS 422, etc.).
- **Lowest price available in the highest category of security** - certified by the National Security Authority of the Czech Republic to security level 4 - objects of national importance.

## PERISA™ - System for effective seismic detection

The PERISA system is used to protect unbounded perimeters. It is a ground screw, operating on the same principle as a seismic detector. With advanced analysis of the detected signal it is able to provide information about the presence of an intruder behind an obstacle, whether the intruder is close to the detector or moving away from it and also about the direction of the intruder's movement.

Any approach by an intruder sends out small seismic vibrations that are transmitted via the ground and are not in any way interrupted. The detection radius is up to 30 000 square meters (in the case of a truck), or up to 300 m2 in the case of a person on foot.

This technology can be used for example for guarding machinery on construction sites and forests, guarding forests against unauthorized logging, guarding vineyards, orchards, etc.

## Features

- **Wireless solution.**
- **Durable, rugged construction** (works flawlessly even in heavy rain, wind, snow or fog).
- **Operates in temperatures from -40 °C up to +70 °C.**
- **Invisible detectors** (aboveground part of the detector can be easily camouflaged).
- **Energy efficiency** (extremely low power consumption ~ 2mW).
- **Communication in GSM, Sigfox, Lora** (according to requirements and possibilities).



VESYS, PRIMSEC and PERISA are trademarks of VESYS s.r.o.



# FOSSS-100

## Intrusion detection in large perimeters

OPTOKON FOSSS-100 is a technology based on analyzing signals in a fiber optic cable, which changes characteristics based on the vibration in its area. One segment of this technology is capable of detecting noise and vibration at distances of up to 100 km.

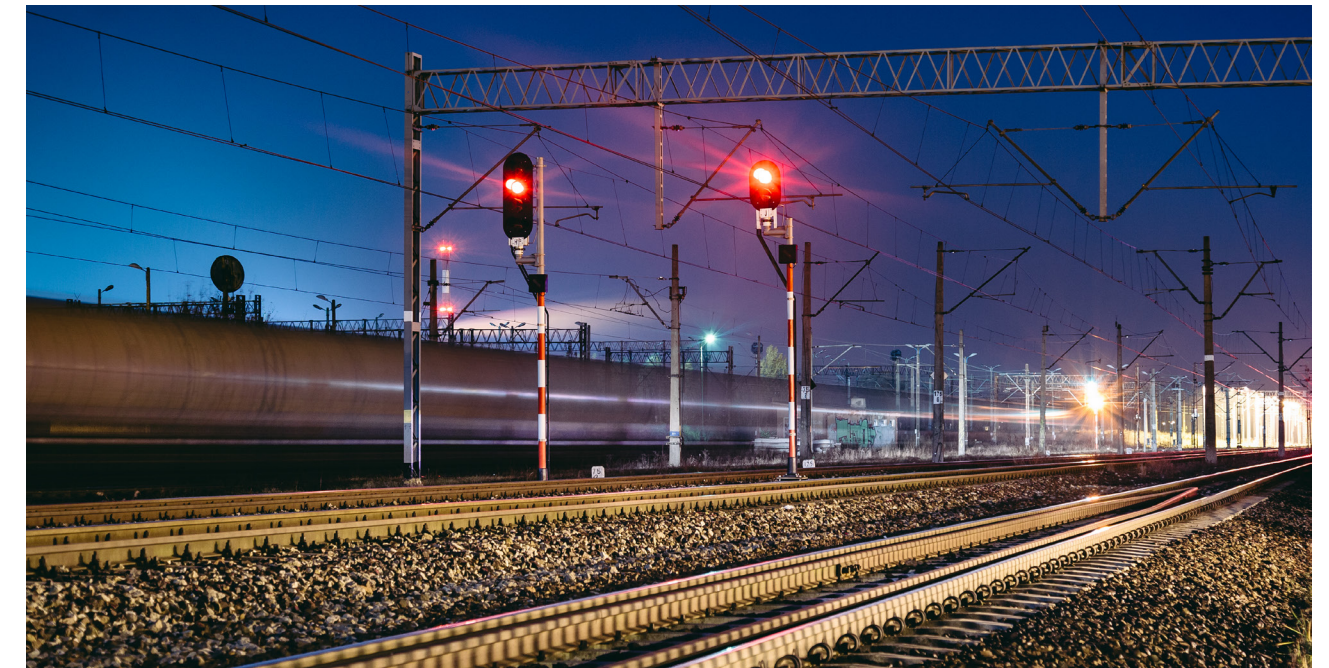
By integrating FOSSS-100 in IVISEC™ we can take advantage of both solutions and deliver a customized system tailored to the needs of the investor. By analyzing the acquired data we can classify them (identify what kind of situation occurred - e.g. that a car drove by, rabbit moved around the fence, somebody climbed over the fence, excavation work began, etc.) and adequately respond to these situations. A typical example of the benefits that our system brings is the ability to respond to emerging situations at the time of their occurrence, and thus prevent much larger problems, as subsequent solutions are always considerably more expensive than when dealing with the problem promptly.

## Areas of use

- **Large perimeter protection - e.g. state borders, airport areas, military bases, drinking water sources, railroads, highways, pipelines, etc.**
- **Detection of failure and sabotage on long lines - gas and oil pipelines, EHV lines, railroads, highways.**
- **Monitoring the movement of vehicles along the sensor cable - e.g. determining the position of a train in real time.**
- **Unusual situation detection - events such as an emergency brake being used on a train, accident on the highway, detection of traffic jams.**



The FOSSS-100 product was developed within the project of the Ministry of Industry and Trade of the Czech Republic and is the property of OPTOKON a. s. and VÚT Brno. OPTOKON and FOSSS-100 are trademarks of OPTOKON a. s.



## Advantages of FOSSS-100

- Localization of the detected event with an accuracy of approx. 10 meters at a distance of up to 100 kilometers.
- Securing distances up to 200 km from one location (2 sections up to 100 kilometers long leading from one service point).
- Classification of the type and importance of the detected event with self-learning capability. The system has the ability to distinguish signal sources, such as: incoming persons, approaching motor vehicles, type of activity near the sensor (digging, drilling, cutting, breaching a fence), system failures, malfunctions, etc.
- Data from the sensing cable are displayed realtime in the form of a "Waterfall" diagram.
- Possibility of listening to sounds directly from the location of the event in the case of the operator needing verification of the situation.
- Quick and easy to install and set up with automatic calibration.
- Sensing cable can be installed anywhere, e.g. on a fence, wall or below ground.
- Possibility of controlling the sensitivity of each zone along the whole cable length
- Possibility of rapid mechanized installation 0.5 meters below ground in natural soil.
- Sensing cable is undetectable by conventional methods (does not contain metallic parts).
- Free lines of optic cable can be used for data transfer, including video.
- There is no need for power lines along the sensing cable.
- It is possible to upgrade the already installed (classic) single-mode fiber optic cables with one free optic line to the sensing cable.
- Resistance to electromagnetic discharges, radiation, chemicals, high and low temperatures, humidity and mechanical resistance, high stability and long life.
- This is a joint project of the OPTOKON a.s. and Z.L.D. s.r.o. companies and therefore it is possible to comply with the various requirements of the investor.





## Internet of things

IoT is nowadays a set of massively emerging technologies that aim to make our lives better, our daily activities easier and to improve production efficiency and other human activities. IoT is all about data collection, their analysis and evaluation, and this is precisely the area where our integration platform IVISEC™ stands out.

Due to the drivers for various communication protocols and communication channels that IoT uses, our system provides the possibility of aggregating and analyzing information from all the “things” and the possibility of controlling them.

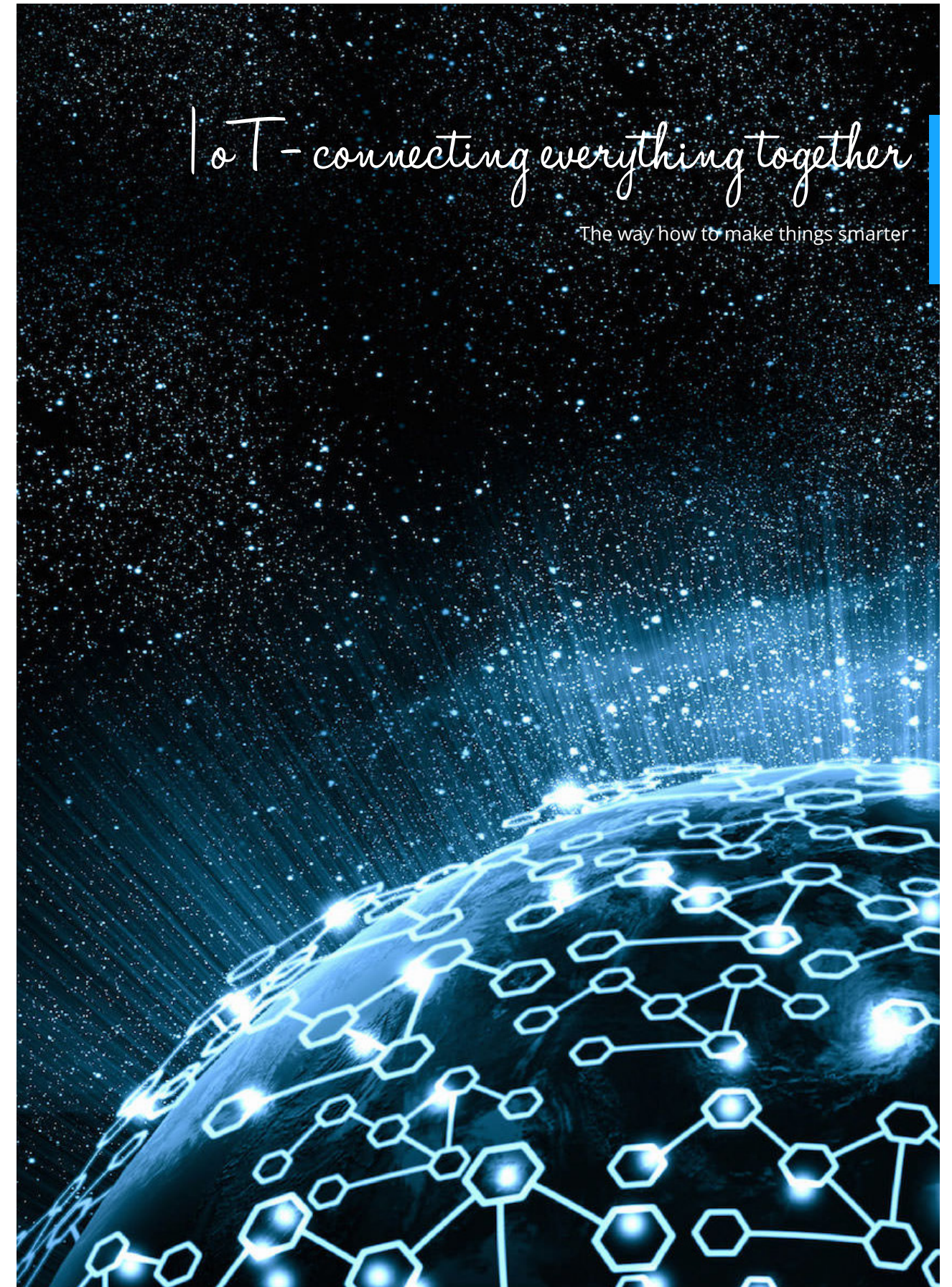
By using a configuration tool for building specific responses for each type of information entering our system, you can implement almost any idea that combines several different technologies into one comprehensive system.

## Smart City

Another strong theme that is closely related to the IoT is Smart City. Information gathered from the IoT can be used to help cities and municipalities to improve services for its residents and improve their quality of life. For example, information about parking availability, air quality, noise maps, intelligent public transport terminals, smart lighting, smart waste receptacles, traffic information, reporting problems, the needs of citizens themselves and many more options accessible via web or mobile client directly by residents of counties, cities and municipalities.

## Benefits

- Processing information from the sensors.
- Support of communications networks Sigfox, LoRa.
- Support of M2M communication protocols - MQTT, AMQP, CoAP, LWM2M and others.
- Visualization of elements and their current status in the map.
- Tracing the history of the movement of items in the map.
- Configuration of reactions - “if this then that”.
- Connecting IoT with other integrated technologies to one complex solution (e.g. automatic display of information on information boards, sending bulk SMS in affected areas, etc.)
- Aggregation of values.
- Prediction of values (machine learning).
- Analysis of values (BigData).
- Possibility of processing information in the form of events when entry conditions are met (e.g. when a fault occurs, critical values, etc.).





## Drones

### Quick overview of the situation

In situations where it is necessary to cover large territories, classic VMS can be extremely expensive. Integration of drone technology allows you to cost effectively solve these cases and acquire an overview of the situation in remote perimeter locations, where it would otherwise be difficult to obtain an image or video verification.

In the case of the detection of an unusual event an automatically piloted drone is sent to the site from the nearest docking station to stream images or video of the situation to the dispatcher for further assessment of the situation.

### Automated response to unusual events

- Automatic selection of the drone closest to the event.
- Waking up the drone from standby mode and sending it to the event based on GPS coordinates and then piloting it on site.
- Automatic provision of an image and video recording of the situation.
- Online streaming of images or video to the dispatcher.
- Possibility of manual control of the drone (flying, providing images and videos).
- Drone automatically returns to the docking station after the images or video are provided, after an operator gives the command or when the battery has low status.
- Definition of no-fly zones - places that the drone purposely avoids.
- Patrol planning - automatic flyovers along a preset trajectory.

### Benefits

- Quick overview of a situation, providing images and a video record in areas of the perimeter not covered by an ordinary VMS.
- Cost-effective solution for large areas.
- Visual control on site before the patrol is called in.
- Cost saving by eliminating false alarms.
- Faster evaluation of the situation and ability to respond quickly and adequately.
- Guards are familiar with the given situation so they can make adequate preparations.

*The fastest way to discover  
what is happening*





# RFID localization

## Locating and tracking people and objects

When integrating a system based on active RFID (RTLS) it is possible (in areas where it is not possible to use satellite navigation systems - e.g. warehouses, factories, airports, mines, etc.) to track the movement and location of persons and objects equipped with an RFID tag in real time.

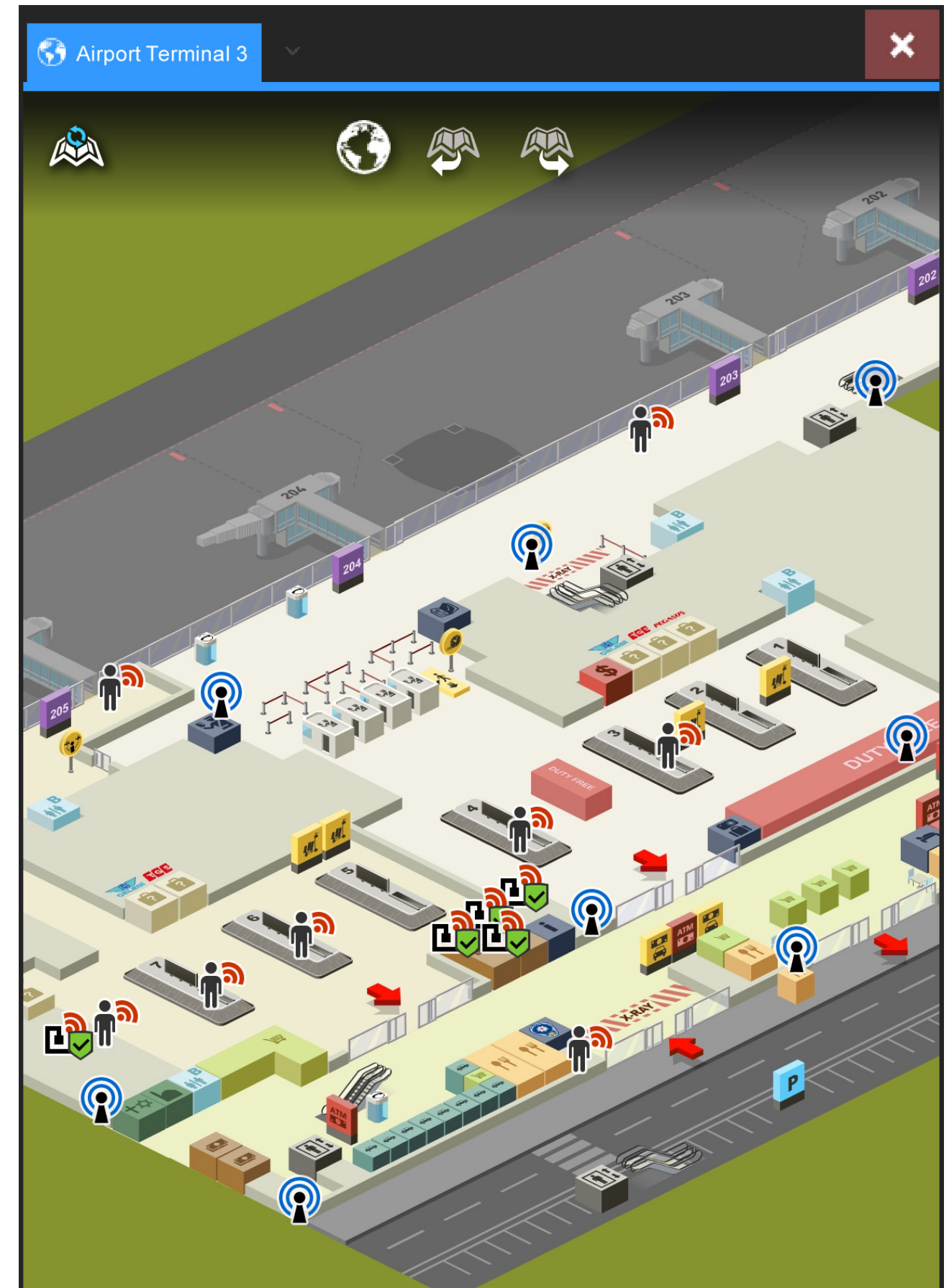
Optimally situated LAN connected terminals are placed in a monitored area to evaluate the current position of active RFID tags in it. Information about the location of the tags is then transmitted to IVISEC™ for further processing and evaluation of the events.

## Benefits

- Real time positional tracking of authorized personnel in monitored areas.
- Real time positional tracking of goods and other items.
- Access control
- Remote record-keeping of inventory in the monitored area.
- Detection of movement, drop or tilt of the object
- Integration with other systems and technologies in IVISEC™ and configurable responses for incoming notifications allows you to use RFID localization to automate some processes (e.g. automatic door opening, switching on lights, loading and unloading goods in the external system, employee attendance system, property inventory, camera angles on approaching persons, etc.)
- Checking the presence of persons in the area (e.g. in the case of evacuation)
- Generating statistics of movement of persons and objects in monitored areas.
- Generating a heatmap of movement of persons and objects in real time.

## System parameters

- Encrypted communication and jamming resistance.
- Support for multiple communication frequencies.
- Ability to determine a position within a radius of approximately 1m.
- Battery life of the unit is measured in months or even years.
- Possibility of adding additional sensors and buttons to an RFID tag - such as a button for calling for help, motion detector, pulse control, temperature sensor etc.
- Self-diagnostic system.





## Our clients

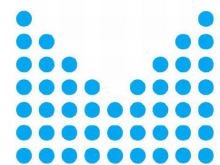
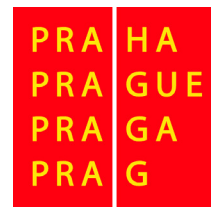
### About our clients

We always adhere to the principles on which our company was founded. Our main goal is to keep our clients happy and cooperate with them in an effort to constantly improve our system.

The proof that we have managed to fulfill our goals, are our satisfied clients from many different fields, such as government, local authorities, major industrial corporations and small business partners.



**Ministry of defence**  
of the Czech Republic



MINISTRY OF THE INTERIOR  
OF THE CZECH REPUBLIC



**Raiffeisen**  
**BANK**



**ŠKODA**



Some requests from our clients might appear at first to be a challenge. Particularly requests that involve new technologies, unusual integration requirements or specific requirements for adapting a system to our client's environment. We take great satisfaction in meeting these challenges and fulfilling these requests, it is the reason why we love our work and why we carry it out to the highest standard we can achieve.

## Our key partners







## Typical areas of use

Thanks to the vast possibilities for customizing the IVISEC™ system it can be used in a variety of fields. Here are some examples of the areas where our system can be used.



### Security

*The most common use for our application is in the field of security. It can be a simple or sophisticated VMS client, guarding buildings or securing perimeters and other areas, but it can also be used to help provide security in cities, airports, trains etc, where there are many systems and technologies that must work together through one common user interface.*



### Business Intelligence

*In the business sector there are many ways of using our system. By converting raw data into meaningful and useful information for business analysis purposes we are providing you with the possibility of being more effective and economical. You can use statistics, reports, package tracking, heatmaps in video etc., and also make use of the opportunity to anticipate events rather than react to them after they have occurred.*



### Internet of Things (IoT)

*Today the IoT is something that we view as a great opportunity. The IoT is based on gathering information and the interconnection of integrated technologies. Thanks to this you can for example process and share information such as how many free spots there are in a car park or when the waste receptacle is full. These technologies have huge development potential and our system is completely ready for it.*



### Automation

*The possibility of defining custom conditions and rules for processing incoming information as well as planning and reacting to processed data gives IVISEC™ an advantage in being able to function in smart buildings and households, transportation, industry, agriculture, and many other areas.*