Case Study

# Otopeni Airport Railway Terminal


**Location**

**Bucharest, Romania**

**Systems**

**Video:**
**American Dynamics**
- victor
- VideoEdge

**Illustra cameras**

**Access: CEM Systems AC2000**

**Fire detection: Zettler**

**Intrusion: DSC Neo**

## The Client

Compania Națională de Căi Ferate "CFR" – SA, the state railway carrier of Romania, has invested in an integrated security and safety solution from Johnson Controls, to protect passengers travelling on a new railway link from Otopeni Henri Coandă International Airport to Bucharest Nord main railway station.

The 2.95 km link, which was planned to facilitate the large number of fans travelling from the airport to attend the Bucharest hosted EURO 2020 football matches and was completed in just 14 months from the design stage at a cost of approximately 120m Euros, is now being increasingly used by business travellers and tourists who wish to visit the city.

The contract to design and execute the entire project was won as part of a competitiveness tender process by the Arcada – ISPCF – DB Engineering consortium. Alfred Net, a systems integrator which specialises in designing and implementing turn-key security, telecommunication and network solutions, was subsequently tasked to provide the new railway terminal's safety and security systems, as well as the passenger communications and information systems.

## The Challenge

"We were very pleased to have the opportunity to use our experience of providing sophisticated solutions for complex and mission critical applications in order to contribute to the success of this important project", said Alex Vladutoiu, Managing Director & Solutions Architect at Alfred Net.

"With the new link terminating within the airport, we immediately realised that any security and safety solution that we recommended to the consortium would need to meet the demanding requirements of airport security, as well as railway related EU regulations and directives. This meant that as well as being robust, ultra-reliable and cyber secure, the various component parts of the solution would need to be deeply integrated with each other so as to provide control room operators with a high level of situational awareness which would enable them to react quickly and effectively to any incidents".

"With this in mind, our previous experience led us to recommend that all the security and safety products should be single sourced from the Johnson Controls' access control, fire, intrusion and video surveillance brands. Simply put, we knew these various brands could collectively provide us with everything needed to put together an effective solution for this project. Importantly, we were confident that the various products, which to a large extent are 'plug & play', could be easily integrated without the time-consuming process of developing new drivers and interfaces".

## The Solution

The Alfred Net design team specified that the Johnson Controls victor security management platform should be at the heart of the safety and security solution. In addition to helping control room operators manage and monitor the images captured by Illustra high-definition IP network cameras, victor's graphical user interface (GUI) alerts operators in real-time as to any fire or intrusion events, as well as any access control activity.


The design of the security and safety solution was based on a rigorous Risk Assessment Report which took into account the worst case scenarios in terms of the threat to the safety of passengers, disruption and the protection of assets.

"By providing a unified solution which can manage the combined data captured by the intrusion detection, access control, fire detection and video surveillance systems, victor offers authorised users all the information they need to monitor and strictly control the movement of passengers.

## The Products

- **Video Surveillance & AI Analytics:** In addition to the Johnson Controls Illustra cameras and VideoEdge video recorders, which have been deployed to monitor the railway terminal proximity, mission critical machinery, platforms and areas open to the public, control room operators are also able to take advantage of video analytics to help them quickly detect any suspicious activity or danger. Tripwire detection, for example, can generate an alert if a passenger oversteps a platform's safety line, whilst people counting analytics can alert security personnel to overcrowding. It can also be used by operations personnel to help them make best use of human resources by having a greater understanding of which parts of the station are busy at different times of the day.


- **Access Control:** A CEM Systems AC2000 access control software platform, together with CEM eDCM 350 OSDP protocol IP door controllers, are supporting smart card readers and encrypted cards to limit access to sensitive areas throughout the railway, such as communications, signalling, staff and locker rooms. As a highly scalable solution, AC2000 enabled Alfred Net to implement access control throughout expansive areas of the railway. By utilising RS485 serial communications with strong AES 128 encryption between the eDCM 350 intelligent door controllers, the OSDP readers and the smart cards, the railway is protected against the threat of controller signal cloning,

as well as the threat of personnel card cloning.

- **Fire Detection:** Zettler Profile Flexible addressable panels, flame detectors and smoke sensors have been installed throughout the station terminal to ensure mandatory compliance with EU fire regulations. Integration with the station's PAVA system means that pre-recorded announcements are automatically broadcast when a fire related event occurs.
- **Intrusion:** A DSC PowerSeries Neo intrusion system is providing protection for areas which may be left unattended, such as cash handling areas with integrated panic buttons ensuring there is a rapid reaction to any intrusion alarm.



## Success

Alfred Net worked closely with the Johnson Controls' pre-sales team to ensure the best products were specified for each location and application and the comprehensive security and safety solution was installed alongside the station's iPIS communications and information software.

"This was without doubt the most complex project that the client has been involved with and reflects its determination to invest in the latest technology to ensure maximum operational efficiency and to protect its passengers and assets", said Alex Vladutoiu. "This has resulted in diverse solutions, such as video analytics and flame detection based on video technology interacting with laser detection, RGB LED displays, digital signage, Text-to-Speech and many other state-of-the-art technologies, to deliver a highly effective total solution".

Since December 2020 when the new link became operational, the highly complex and integrated security and safety solution from Johnson Controls has been playing a key role in ensuring the smooth operation of the train station and the running of 72 trains per day, (36 pairs), which arrive and depart every 20 minutes from and to the airport.

*"As a solution architect, Johnson Controls is indeed my preferred security provider for integrated projects. As a unified solution the suite of security products are almost 'plug and play' and give you everything you need to build up an integrated system without spending additional time or money on developing other interfaces. We were delighted to have designed and implemented the new Otopeni Airport Railway Terminal project in less than one year and we look forward to our continued partnership with Johnson Controls".*

*Alex Vladutoiu, Managing Director & Solutions Architect at Alfred Net.*

## About Johnson Controls

At Johnson Controls, we transform the environments where people live, work, learn and play. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most. We deliver our promise in industries such as healthcare, education, data centers, and manufacturing. With a global team of 105,000 experts in more than 150 countries and over 130 years of innovation experience, we are the power behind our customers' mission. Our leading portfolio of building technology and solutions includes some of the most trusted names in the industry, such as Tyco®, YORK®, Metasys®, Ruskin®, Titus®, Frick®, PENN®, Sabroe®, Simplex® and Grinnell®.

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