



SOLUTIONS | ERA

NEWSLETTER
ISSUE 31, NOVEMBER 2015



For those who follow the trends in intelligent engineering solutions

Table of Content

➤ News feed	2 p.
➤ Electrification. Challenge posed by electric trains	2-3 p.
➤ This issue's them. At the border: we are watching you	4-7 p.
➤ Progress I. A licence plate is all you need	8-9 p.
➤ Progress II. Lost in a parking lot	10-11 p.
➤ Network. Data for science	12-13 p.
➤ Modern. Dolphinarium reborn, Modern heritage, Plans to develop an unmanned aircraft, A vision for security, Resident of Liepaja get chance to see work of a unique design	14-17 p.
➤ Perspective. A place where talent is born	18-19 p.

- **PARTNERSHIP.** Avaya, a global leader in business communication systems, has determined that FIMA meets the quality standards of Joint Service Delivery, as applicable to system installation and maintenance. The Lithuanian intelligent engineering solutions provider has successfully completed the assessment programme for Avaya service partners.
- **TIER.** Uptime Institute, an independent international body, has awarded a certificate of an accredited Tier designer to Sebastian Zasina, head of Project and Implementation Division of FIMA Polska, the Poland-based FIMA subsidiary. He is the second FIMA engineer to have received the certificate. Arūnas Jurkša is the only FIMA specialist in Lithuania to hold the certificate. This certificate proves that a designer is competent in the field of Tier certification requirements, applicable to data centres. Tier has a range of certificates to assess the reliability of data centres.
- **LEAN.** In order to improve efficiency and competitiveness, FIMA has started a project which aims to optimise the key problematic operating processes of a company which relies on the LEAN management method. LEAN management has allowed the restructuring of the operations of the company, ensured constant improvement of efficiency and quality of the activities, cutting of unnecessary costs and inefficient activities.
- **TENDER.** A proposal made by FIMA at a tender published by the National Institute of Geology of Poland for the project documents in a server room was rated the best tender, where a total of eight companies were competing. The tender also required letters of reference concerning the design of various documents intended for a server room, with an area of at least 200 m2, and with IT capacity of at least 300 kW.
- **PROJECT.** A new server room was installed at the Warsaw Children's Memorial Health Institute involving FIMA Polska. As a project subcontractor, FIMA was asked to design project documents, to adjust the existing premises for new purposes, to install an elevated floor, to install both power supply and telecommunications, to install a gas-based fire-fighting system – FM-200 – and to integrate these into the building's main systems.

Challenge posed by electric trains

Lithuania's railway infrastructure is being upgraded through some of the most ambitious projects in the history of the country including the electrification of the line from Naujoji Vilnia to the national border with Belarus. **This is the first such project since Lithuania regained its independence. The line between Vilnius to Kaunas was electrified 40 years ago.**



Artūras Šuliauskas, director of the Project Department at FIMA, said: "That is one of most complex projects we have ever undertaken, although we have considerable experience in modernising railway infrastructure in both Lithuania and Latvia. We were only able to work when traffic was not running

on the lines – which rather limited things – but we still had to meet the project's deadlines. As we were operating in the area close to the border, we had to secure a number of permits just to get there. On top of that, the landscape is rather challenging and includes a number of moorlands."

The catenaries for the power grid are nearly all in place at the substations in Naujoji Vilnia, Kyviškės and Kena while on the section from Kena to the Belarus border, the process of placing brackets on the catenaries is in progress; the brackets will support the grid. FIMA has brought in customised equipment to



complete the construction of the contact grid.

The works at Naujoji Vilnia are gaining pace, too, and, once complete, the substation will ensure the power supply for the entire contact grid. This is where the old machinery is disassembled and foundations for the new equipment are poured. The traction substation will include

also solutions allowing for cargo transport by electric trains.

The most challenging work is now in progress at the stations at Kena and Kyviškės, where the foundations for the catenaries are cast between the lanes. The pits for the foundations are dug manually so as not to damage underground communication cables. At the station at Kena,

FIMA has doubled the manpower and employed more machinery to speed up the work.

Challenging conditions aside, the work must be completed with great care and precision to ensure that the electric trains running on this section can travel safely at speeds of up to 160km/h.

About 1,400 catenaries will

be erected on a section of 28.6 kilometres. The foundations will take more than 5,000 tons of concrete, while the metal catenaries will use more than 3,000 tons of steel. The railway section will include approximately 138 kilometres of contact grid cable, more than 165 kilometres of bronze supporting cable and more than 2,000 other metal

constructions.

The electrification of the line between Naujoji Vilnia and the state border with Belarus is scheduled for completion in 2016. Once Belarus railways electrifies the section from the Lithuanian border to Molodecno, fast electric trains will travel between the neighbouring capitals in just a couple of hours.

At the border: **we are watching you**

If the latest surveillance equipment is installed on every section of the Lithuanian external border, **this investment will pay for itself as the rate of smuggling and number of illegal immigrants would drop and operation of the State Border Guard Service would improve significantly.**





Vidas Mačaitis, chief of the Vilnius Frontier District of the State Border Guard Service

This is the opinion of Vidas Mačaitis, chief of the Vilnius Frontier District of the State Border Guard Service (SBGS). Those sections that had stationary border surveillance systems installed in 2014 saw the numbers of cigarettes smuggled drop in multiples (rather than a percentage change).

Currently officers can see any activity at the border on their monitors at a border checkpoint instead of having to go on patrol on foot or attempt to ambush

transgressors, making an attempt to cross the border undetected on those sections impossible. The SBGS has installed the border surveillance systems in cooperation with FIMA, the company which provides intellectual engineering solutions.

Mr Mačaitis was delighted with the work done by FIMA. This company has delivered the equipment and met all technical requirements, installed it and trained the specialists, all on time. Mr Mačaitis is convinced

that “ongoing cooperation with the company is important. We are happy with the maintenance we receive because FIMA specialists resolve any malfunctions in the equipment in a timely and professional manner and have an in-depth understanding of the devices we rely on.”

Smuggling has been wiped out

For years, the section with of the Lithuanian border with Kaliningrad (Russia) was one of

the most vulnerable border sections. It was intersected by main routes followed by smugglers.

Thanks to EU external border programmes enacted in 2007 to 2013, which have been funded by the EU, the latest technologies have been introduced for border guards. These have also delivered a decisive blow against the offenders and smugglers.

Since July 2013, when an integral surveillance system at the Vileikiai border checkpoint of Pagėgiai Frontier District of the SBGS (Šilutė district) was introduced, modern electronic devices have been employed to monitor and control the entire section of the State border from Smalininkai to Rusnė following the Nemunas River.

According to the information available to the SBGS, the installation of the systems has led to a fall of more than 300% in the number of instances of illegal crossings of the Russian and Lithuanian border.

According to Rimantas Timinskas, chief of the Pagėgiai Frontier District of the SBGS, the surveillance systems now in place have enhanced security on the section of the Pagėgiai frontier district that the service is responsible for and have significantly improved the situation at the State border because since virtually no border crossing offence now goes undetected.

The State border is monitored from surveillance centres

installed at the border checkpoints, while other services are active at the border section. These are able to respond immediately to any offences reported by the system at the State border as well as other offences at the border section.

The equipment used to monitor the section of the Russian border was chosen to suit its particular characteristics because this area here is particularly open with little forestation and a number of access roads.

FIMA has installed radars, video and thermovisual cameras on the section which transmit visual information to the control centres. The border control officers can now monitor the entire section on their monitors at border checkpoints and send a response team in the event of any offence, instead of waiting in ambush.

The war is over

The system was installed at the Pagėgiai Frontier District of the SBGS by the Nemunas River checkpoints because this section recorded one of the highest number of offences in the period between 2006 and 2008.

Mr Timinskas said: “The number of offenders trying to cross the border drops annually. We intercept any offenders bringing smuggled goods and they now smuggle a significantly smaller amount than before. There is almost no pursuit of smugglers



and no instances where firearms are used.

According to the information available to Pagėgiai Frontier District, no illegal immigrants have been arrested over the last few years but the current international situation means that the threat of illegal migration at the State border with the Russian Federation persists and this issue remains on our agenda.”

Along the entire section entrusted to Pagėgiai Frontier District in 2015, just four offenders were intercepted trying to cross the border. They brought with them 12,000 packs of smuggled cigarettes. In contrast,

there were more than 2 million cigarette packets intercepted in 2006, 1.7 million packs in 2007 and more than 0.5 million packs in 2008. At that time, the systems were not in place.

Always looking for new ways

As soon as latest measures were employed on the border with Kaliningrad, the smugglers starting looking for new ways to reach Lithuania. Because of its accessible geographical location, the smuggling routes moved to the Padvarionys and Lavoriškės border checkpoints in eastern Lithuania.

Mr Mačaitis added: “Here, the distance from the border area to Vilnius where the main market for smuggled goods is just 30 to 40 kilometres away. Because of a well-developed system of access roads on both Lithuanian and Belarus side, this is where organised criminal bands work with smugglers and illegal migrants. It’s getting to the point where we can say that the war has moved from the Russian border to the Belarus border.”

As a result, programmes funded by the EU have allowed the installation of the latest border surveillance systems at Padvarionys, Lavoriškės and partial

implementation at the Gintaras Žagunis border checkpoint, operating in the so called Dieveniškės loop, which is surrounded by the territory of Belarus.

Once the work was finished, the amount of smuggling fell by several multiples at the Belarus border, but another trend became apparent: the offenders have moved to sections towards Ignalina and Druskininkai where no monitoring systems have yet been installed.

Mr Mačaitis said: “The installation of these systems has allowed us to review our operating tactics. Previously, our officers would patrol the border section

on foot or in vehicles and would monitor the territory from observation towers or respond to intelligence information they received.

“We can now position our response teams in a much more focused way. As we get information earlier, sometimes even before the offenders reach the border section, we are ready to respond quicker. Naturally, even the latest technologies have backup facilities. Any attempt to cross the section monitored by the latest technology undetected is now virtually impossible”.

He is convinced that smart border surveillance systems pay

for themselves thanks to the drop in the amount of smuggling and the number of illegal immigrants as well as improved efficiency for the State border guard service.

Technology pays for itself

Padvarionys, Lavoriškės and a partial installation at the Gintaras Žagunis border checkpoint (in the border section entrusted to Vilnius Frontier District) use different border surveillance hardware. Stationary border surveillance systems include day

in real time and analyse any offences based on their nature. They can then choose the best tactics to intercept illegal activity.

In the period between July 2014 and July 2015, 125 State border offenders were intercepted in the section entrusted to Vilnius Frontier District. This represents a 40% increase compared with a year earlier.

According to the chief of Vilnius Frontier District of the SBGS, “the number of offenders we intercept depends on the flows of illegal migrants and this number

is subject to a number of factors. The stationary video surveillance system has made combating illegal migration easier because it al-

lows for offences to be recorded and illegal migrants to be intercepted. Once the system was put in place, organised criminal groups dealing with illegal migration moved to other border sections and other countries, such as Latvia.”

The rate of cigarette smuggling at the Vilnius border checkpoint has fallen sharply with the number of smuggled packets of cigarettes intercepted at the Padvarionys border checkpoint falling by more than eight times compared with the previous year.

and night monitoring cameras with positioning devices, underground and ground level sensor cabling as well as stationary and mobile control centres.

The system also includes seismic sensor which determine the trajectory or reflecting direction and speed of a moving object. The systems rely on different principles and supplement each other.

Stationary border surveillance systems including integrated video cameras and offer the ultimate in efficiency. Officers can now monitor the situation

Stationary border surveillance systems including integrated video cameras and offer the ultimate in efficiency. Officers can now monitor the situation in real time and analyse any offences based on their nature. They can then choose the best tactics to intercept illegal activity.

HOW DOES IT WORK?

Giedrius Valužis, director of FIMA Project Implementation Office:

- There is no single universal solution for the protection of the entire national border. It depends on natural and geographic condition – whether the border follows a river or crosses forest, swamps or mountainous areas. Some systems are installed in open areas while others will be preferred in areas with forestation. All of these factors must be taken into account when installing border protection solutions.
- Another challenge lies in the huge distances and poor accessibility of many areas. The perimeter of an airport or a large factory can extend over 10 kilometres, while at the border, the scale is completely different.
- Modern surveillance systems usually include sensors that use particular technologies to record any movement in a protected area, as well as software to process the signals and recognise their nature, i.e. the size of an object, course of its movement and whether it is a human, an animal or a vehicle. Other video surveillance systems include those that transmit the view from the location of an offence to the displays.
- Integrated systems, combining signals and visual information, are the most efficient. A number of signals transmitted by sensors have no reference to actual offenders at the border, as responding each time would be too great a burden. Video and thermovisual cameras mean that the threat can be assessed as to whether it is real before deciding on a course of action.
- Border protection uses the latest technology. Some of the innovations include infrared cameras (thermovisors). These had previously been too expensive and did not have sufficient capabilities capability, but they are now in regular use and are often the first choice for border surveillance because they allow monitoring on an area 24/7. Video cameras are continually developing as their resolution and sensitivity improves, and the governing software can examine the view and forward it to the duty officers at the border checkpoints.
- Mobile seismic centres are placed on the side of major paths or access roads to record any activity in a protected area.
- Some of the latest technologies include sensor cables buried underground. These cables are highly sensitive and record surrounding sounds, distinguishes between man-made and mechanical sounds and can accurately pinpoint the location of any activity.
- The more that these technologies are used the better the protection level. Investment opportunities however are limited or the same of funding has to be used to protect longer border sections. Therefore, we must choose the best solutions to make sure the systems are installed and operated efficiently.

A licence plate is all you need

Licence plate scanning systems will soon be common while the information they provide **will bring benefit to both police officers in their efforts to crack down on breaches of the law as well as to drivers.**



Rokas Šlekys, manager of the Solutions Department at FIMA, said: "Licence plate recognition technologies offer a number of opportunities and, more importantly, this modern equipment can be customised to perform several functions simultaneously rather than just one at a time."

A section of the Via Baltica highway near Kaunas is now being used to test the first ever experimental system that measures average vehicle speed in Lithuania. It covers almost five kilometres. The system records both the licence plate and the time it took for a vehicle to travel the distance.

A growing number of parking lots are using licence plate

scanning technology in which the barriers only open when a vehicle plate has been scanned. Palanga municipality has also announced plans to employ this technology to levy a charge on vehicles entering the town.

The Lithuanian Road Transport Authority has, for a number of years, been discussing implementing control points on key roads across the country which

would also record a car's licence plate. This would allow instant identification of cars which should not be on public roads including those not covered by mandatory third party liability insurance or those lacking a valid technical inspection certificate.

FIMA, acting on a commission from the Customs Department, has implemented standalone licence plate recognition

systems at three border crossing points and related equipment in 13 vehicles used by the Customs Office. The system has been integrated into the licence plate and container code recognition system. The software compares the scanned plates with a list of suspect ones. In the event that any suspect licence plate is identified, the software automatically sends a message to customs officials so that they can monitor the traffic more effectively and act quickly.

Complex solutions available

Rokas Šlekys, manager of the Solutions Department at FIMA, said: "Licence plate recognition technologies offer a number of opportunities and, more importantly, this modern equipment can be customised to perform several functions simultaneously rather than just one at a time. It is therefore of the utmost importance to design as broad a project as possible and to install integrated systems that record average speed, identify vehicles not covered by insurance and technical inspection and would further allow for prompt monitoring and the display of automatic information to

drivers on traffic conditions and congestion. It would also contribute to the safety of both drivers and their passengers."

Mr Šlekys believes that these kinds of safety systems are welcomed by the public on road sections of between 10 and 20 kilometres, such as on the Vilnius to Kaunas highway.

Foreign experience, however, suggests that such systems work best on much shorter sections where drivers are required to slow down, for instance close to schools, in built-up areas or around accident black spots.

On the other hand, standard speed cameras are invaluable in places where vehicles must slow down before a pedestrian crossing or at a road junction so it makes sense to adapt them to specific needs.

Mr Šlekys believes that licence plate recognition technologies in Lithuania are, at the moment, used rather narrowly and that this approach does not take into account or make full use of the opportunities offered by such systems. However, he said, this is to be expected given that the first systems of this kind are only now being implemented in Lithuania. Individual public authorities are responsible for



“ The system records the licence plates of multiple vehicles cars at one point and then the same vehicles further on – allowing it to inform drivers of the time expected to travel from one point to another as well as information about traffic congestion.

choosing the type of system depending on their requirements. However, the added value would be much greater if all these systems were integrated and local authorities could share the information available.

For instance, Stockholm, the capital of Sweden, has implemented a complex video surveillance and licence plate recognition system that carries out a number of useful functions simultaneously. The system also collects a toll for vehicles entering the city. Another function is the monitoring of traffic conditions. The system records the licence plates of multiple vehicles

cars at one point and then the same vehicles further on – allowing it to inform drivers of the time expected to travel from one point to another as well as information about traffic congestion.

These technologies that are only in their early stages in Lithuania but have been used for a number of years in developed countries and cities across the world. They ensure traffic safety, monitor traffic conditions in cities, record traffic violations, collect charges, and inform drivers about traffic jams and other hazards.

Careful installation is ad-

visable

Despite their advantages, licence plate recognition systems also have some drawbacks. At present, no single system is able to recognise each licence plate without some errors. This is still dependent upon the quality of licence plates and weather conditions.

For instance, the licence plate recognition system employed during the winter in Lithuania cannot operate as reliably as it does in the summer simply because licence plates get covered with dirt when driving in severe weather conditions.

Mr Šlekys said: “Whenever

OPPORTUNITIES OFFERED BY LICENCE PLATE RECOGNITION CAMERAS:

- Monitoring types of vehicle in lanes where they are prohibited (such as bus lanes);
- Recording an illegal manoeuvre (such as making a left turn or U-turn at a traffic intersection, unless this is permitted);
- Monitoring of cars making unauthorised stops;
- Recording distances between vehicles;
- Controlling cars entering and stopping at an intersection;
- Recording offenders who jump red lights;
- Controlling railway level crossings;
- Recording overtaking in places where it is prohibited.

the system is used to identify offenders, it must be as accurate as clockwork. Recording of licence plate and traffic offences alone is not sufficient. Besides, there are some considerable technical challenges associated with the correct recording of a licence plate on a car travelling at high speed.”

He believes this requires additional equipment to record every vehicle travelling at high speed. For instance, the system would record both front and rear licence plate. Other sensors are used to record the size of a vehicle and can distinguish between a passenger car, a minivan or

an SUV. The speed camera also takes a picture of a given vehicle in order to identify its make.

Mr Šlekys said that, on the positive side, although licence plate recognition implementation is still at an early stage in Lithuania, we must remain very professional. What counts is the reliability of such systems, the opportunities to integrate them and any other redundant systems, the way to use the data stored by the systems not only for recording offenders but also to provide useful information to drivers and traffic regulators and the opportunities to expand these systems in the future.

Lost in a parking lot

Nothing is more frustrating than turning up late for a meeting because you had to waste 10 minutes searching for a parking space on a street or in a multi-storey parking lot. Once you get to a place like a shopping centre or a concert hall or a stadium, your first impression is formed in the parking lot. **So, what can we do to ensure a trouble-free experience?**



Sokol, the sports and leisure centre in Minsk (which includes a five-star Marriott hotel) features a four-storey high parking lot for 300 cars. It is a special system since it integrates both car ac-

cess and payment methods.

Every convenience focused on guests

Hotel guests can access the parking lot by bringing their

room card to the gates. Visitors at the fitness centre can also use their subscription card, which is different from the hotel key card. Those drivers who make daily trips to the complex have their

licence plates entered into the system and are recognised by integrated licence plate scanning equipment.

Individual guests can also press a button found at the

gates, collect their receipt and pay for the parking either within the complex or at several automatic payment outlets situated within the multi-storey parking lot.



Simonas Šidlauskas, project manager at FIMA, said: "Although there is a range of solutions, it is highly likely that combining a number of systems that use different technologies provide the best results".

Simonas Šidlauskas, project manager at FIMA, the intelligent engineering solution company, said: "The parking lot features almost every access control system available; they supplement each other and offer more convenience to both guests and building administration teams. This was what our clients wanted. Simple parking lots simply

do not need all these technologies, while this decision was taken taking into account the diverse needs of the guests and while seeking to provide the utmost convenience."

Meanwhile, an "escorting system" is also installed to help guests. As soon as a driver enters the parking lot, a display panel lights up, indicating num-

ber of vacant spaces on each of the four levels.

There are LED indicators installed above each and every parking space; they indicate whether a parking space is vacant or not. This allows a driver to spot a vacant parking space and get ready to park right away.

Mr Šidlauskas added: "A visitor can enter different areas of the building from different storeys, allowing him or her to see in advance the most convenient parking space and to be told of further vacant spaces on the other levels. This means faster parking and cuts the walking distance to a preferred parking space".

The "escorting service" is supplied by Schick Electronic, a Swiss company, while Green Center, a Czech company, has delivered the payment and access control system.

Outdoor parking lots under consideration

Despite these exciting developments, the developers of parking systems are looking even further ahead. A new challenge is to find ways to implement smarter and more convenient outdoor parking lots as well as on-street parking. In both these cases, there are no simple solutions.

Parking lots adjacent to shopping centres don't usually require either gates or access control systems. However, re-

cording of cars and providing assistance to drivers looking for vacant spaces are important and saves time by telling motorists when every space has been taken.

FIMA has already come up with smart parking solutions in a neighbouring country. Each parking space has a wireless electromagnetic sensor embedded in the asphalt which records a vehicle. Special receivers placed on poles scan the information transmitted by sensors. Information on the number of parking spaces available in each row thus appears on the parking lot's display panels.

Mr Šidlauskas said: "There are several challenges here. Firstly, the equipment must be heat, cold, and moisture-resistant. Its installation is complicated because there is no ceiling to attach the sensors to and lay cable – just asphalt. We therefore have to rely upon standalone sensors with an operating lifespan of up to 10 years.

"There will be no LEDs to tell drivers of vacant spaces since placing additional structures in the parking lot would make its maintenance more complicated, for instance, preventing access to snow removal vehicles. A driver will, however, see the number of parking spaces available in each row."

A puzzle for the municipalities

Parking and providing information about it pose a huge challenge to Lithuania's municipalities. Drivers who cannot get information on what parking spaces are available – for instance, in the city centre, are often compelled to waste time looking for one, thus causing traffic jams, air pollution, and, frequently, parking their cars in inconvenient places.

These challenges are shared by a number of cities. A number of international exhibitions already offer certain smart solutions for providing information to drivers on what parking spaces are available. It is more difficult to install sensors or other systems to recognise vacant parking spaces in city streets.

However, radars are employed for this purpose – by scanning a particular street section, for instance – or other integrated systems, monitoring not individual parking spaces but rather the number of cars entering and leaving a street section with parking spaces.

Mr Šidlauskas added: "Although there is a range of solutions, it is highly likely that combining a number of systems that use different technologies provide the best results. We must not forget that city traffic is a rather dynamic phenomenon and those going into the city centre need to be informed of parking spaces available well in advance.

Data for science

The latest data transfer network for academics has just been unveiled in Latvia and connects the IT resources of more than 20 higher education institutions in the country, opening up new opportunities for Latvian scientists to collaborate with their colleagues across Europe. FIMA was an important partner to the system's developers.



Dolphinarium reborn

Following a five-year reconstruction, Klaipėda Dolphinarium has been able to expand into new space. The reconstructed building now has three times the water surface area that it had before. Dolphin shows can now be run outdoors while the new facilities also include a dedicated centre for disabled people to receive dolphin therapy.



The dolphin therapy centre comprises two small wings at the side of the old building. It houses both pools for keeping the dolphins and three pools for dolphin therapy (each of different size). An open pool, known as Sun-bay, will host dolphins and sea lion shows. It will also accommodate dolphins in the

summer season.

The new Sea hall will have windows giving visitors views of dolphins and sea lions. It will accommodate both educational events and conferences.

The reconstruction of the dolphinarium took place in two stages. Part of the building was reconstructed, while another

was demolished, to house new wings. After reconstruction by FIMA, the dolphinarium features security and access control, fire alarm, smoke removal and fire-fighting, video surveillance, building management systems and computer networks.

Tadas Rušinskas, project manager at FIMA Klaipėda di-

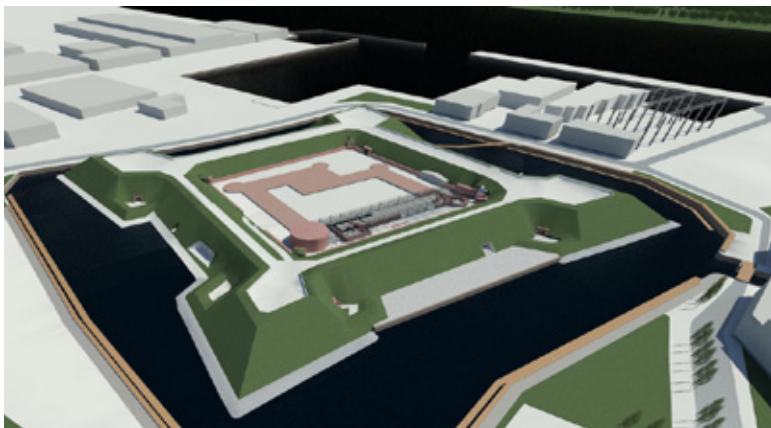
vision, said: "The dolphinarium as it stood before our work contained a number of flaws. Certain systems required for a building of such a great public importance were not provided. We suggested the installation of a fire warning and smoke removal system."

The key benefits from FIMA's

work include provision of a way to monitor and control every engineering system in the building, e. g. heating, ventilation, and power supply, all from a single work space, featuring customised software. This will facilitate maintenance of the building and reduce its energy costs.

Modern heritage

Klaipėda castle, which is currently undergoing restoration, will soon showcase both history and the latest technologies. In October, the Eastern contour of the castle site will include a dam, the old warehouses will be restored and adapted to the museum's purposes, while underground a conference centre with latest technologies will be built.



FIMA is to install the latest systems in this historic building and to link the historic site with modern technology.

Ričardas Raudys, project manager at FIMA Klaipėda division, said: "The key issue was installation of communications in warehouses which date back to the German occupation, in order to adapt these for the museum purposes. These warehouse walls are concrete and are extremely tough. Installation of communications in new buildings is a lot easier".

Once restored, Klaipėda castle and bastions will be adapted to accommodate the Lithuania

Minor history museum and public events. The works contract for this project was awarded to a consortium formed by Pamaro Restauratorius, FIMA, and Virmalda.

Once the project is completed, the castle site will attract more local residents and visitors from the city. They will be able to explore the city's history thanks to the latest technologies while Klaipėda will benefit from a modern conference centre.

The latest features at the castle museum and the conference centre include a huge screen (23 x 6 meters) connected to three Full HD resolution projectors

to form panoramic views. This is where a unique 7.1 spatial sound system will be installed, including THX-certified screen loudspeakers made by Martin Audio (United Kingdom).

One conference hall will feature a modern micro-line array sound system including Martin Audio Omniline acoustic modules. Special software will then pick the system size, number and positioning of the modules.

Such an acoustic system will ensure that the sound is broadcast to the exact spots that were planned during on-site programming of the acoustics. It will also allow the sound to be directed to certain spaces precisely allowing the audience to hear perfect sound.

For the conferences and other events, a system of simultaneous interpreting into three languages will be installed and this will serve up to 200 guests.

FIMA has also been put in charge of the fire alarm and security, e-communication and automatic process management within the premises.

Plans to develop an unmanned aircraft

R&D Consulting Company, in cooperation with the Centre for Physical Sciences and Technology and FIMA Company, will take part in a tender published by the Agency for Science, Innovation and Technology (MITA) for the development of a remotely controlled aircraft. **The winning bidder will then have 30 months to develop an innovative mini unmanned aircraft system, RPAS SPYFOX.**



MITA has extended funding to three research and experimental development projects. The support extended to each project amounts to EUR 300,000.

The R&D consulting team will use unmanned aircraft to install technical solutions, based on latest accomplishments of Lithuanian scientists and researchers in the field of material science, laser technologies and aerodynamics. The solutions to be developed during the course of the project will be protected by two patent applications.

Once these projects are complete, engineering and production technology will be developed for serial production of unmanned aircraft systems.

A vision for security

FIMA uncovering a vision for the future of video surveillance systems at DSS ITSEC 2015, annual international security conference hosted in Riga.



For the sixth time now, the annual international conference in 2015 bears the symbolic title Building a digital fortress. 700 participants convened at the Latvian National Library to hear the presentations relating to the safety of cloud computing and mo-

bile devices, critical infrastructure in the industry, security data encoding, cyber security legal framework, e. voting reliability, and other topics. The conference proved to be a meeting point for 70 experts from the Baltics and Lithuania.

Šarūnas Pavilionis, an engineer and expert of FIMA, a company offering intelligent engineering solutions, presented trends in the sector of video surveillance cameras.

According to Mr Pavilionis, “2 key trends have now emerged

in the field of video surveillance technologies. Camera definition is but one of these. Some action-packed films display effects where a video camera can zoom-in on a completely bloated image, and make it perfectly crisp, as if coming from

sci-fi. This fantasy is now at the point of turning into reality. Most sophisticated cameras can now recreate a crisp image even under challenging settings.”

Another important trend relates to image processing. Intelligent image analysis software



has advanced so much it can now replace a duty officer.

According to Mr Pavilionis, speaking at the international conference, “needless to say, man still is in charge; but try to imagine efforts required of a duty officer as he is watching the surrounding environment in several monitors. This intelligent equipment can now identify an intruder and send an alarm. It can distinguish between a movement of a man and an animal when in its field of surveillance. Or, it can be programmed to

distinguish certain objects on a behavioural basis, thus ignoring common passers-by, while spotting an object whose movement causes suspicion”.

The conference focused on the security aspect of information and communications technologies in the Baltics, Nordic countries, and throughout Central and Eastern Europe. The participants of the event discussed trends in the industry, were open for new partners, shared their experience, and cutting-edge technologies.

Resident of Liepaja get chance to see **work of a unique design**

SIA FIMA, which is responsible for the modernisation a section of railway in Liepaja, Latvia, has given the local community a surprise. **The company has erected some unique outdoor benches, based on wooden cable reels, at Beberlini Park in Liepaja.**



SIA FIMA turned to Studio Vulgaris, Latvian industrial designers, and Kurk aplinkā pats (Make your own environment) society. These eco-friendly works fit perfectly in the surroundings which provide an area for camping. Beberlini Park is now being developed on a site that once hosted a military port.

Mr Vilmanis, director of SIA FIMA, said: “We are really delighted to see these items made use of again. The modernisation of Liepaja station has involved laying a number of cables. The wooden cable reels that had been finished with were stored in a warehouse, which gave us the idea to make them fit in with the environment. The designers have helped us to develop several prototypes to show possible uses for these reels. We are glad the idea did not go unnoticed and that the benches found their way to the camp site at Beberlini Park which is now being run by some forward-thinking people.”

Mr Vilmanis believes that this provides an excellent example of business making a contribution to the wellbeing of society. The company expects to take this idea further with a further 100 wooden reels that are being stored.

A place where talent is born

In August, the National Student Academy (NSA), a further education institution for those with a gift for science and music, called on students to convene at a summer session in Nida. This was an opportunity for university professors as well as professionals from the worlds of business, culture, and sport professionals to share their knowledge and experience. FIMA, a regular sponsor of the NSA, has made it possible for gifted students to attend the event.



Leonas Narkevičius, director of the National Student Academy (NSA) said that the contribution of the business community to the development of gifted students was of the utmost importance. This support opens the door to gifted students who would otherwise not have the opportunity to take their studies further.

What is the goal of the National Student Academy?

Some students demonstrate at school that they have superior capabilities and ambition. These set them apart from their classmates and we want to share our knowledge and experience with them – things which would be out of reach in regular classes.

It is not easy to gather

top-level lecturers and professionals from diverse fields to deliver a unique lecture to a single class and to all of our students; On top of this, some students do not find it interesting!

In turn, we gather some of the brightest students, those that our lecturers enjoy working with because they are eager, are not shy about asking ques-

tions and look for the answers to some very complicated questions.

Tell us about the students enrolled in the Academy

The Academy is now in its 12th year and, to date, has about 350 of the brightest students from across the country. These are senior students.

Their social status, the place they come from or their gender should not bar gifted children from a good education.

We run sessions three times a year and these feature some extraordinary lecturers – including recipients of the National Award – businessmen and professionals from a variety of sectors.



What is the role of business in the development of talented children?

NSA sessions are expensive and some gifted students cannot afford to pay the full rate. This is where business steps in. But Lithuania still does not yet have the right foundations for gifted children – as are common across Western Europe – in place.

This is how business makes its contribution to the development of gifted individuals, leaders in business or society. Even if a student we have supported does not choose to work in a given company, the added value should not be underestimated. What Lithuania needs are smart and educated people, the leaders who will innovate in business or lead our nation in the future.

But many don't have this option – not because they lack the skills, but because they have limited access to education.

A responsible business seeks more than just profit: it also aspires to educate society and to contribute to the wellbeing of our country. This is a moral obligation for each and every one of us.

NEWSFEED



- **TIME.** A tower clock in Smiltene in Northern Latvia will now display time with greater accuracy. FIMA has replaced the clock mechanism. Because of the area's varied climate, a modern GPS-based clock synchronising system was installed. This has had not changed the appearance of the clock but the new mechanism will mean that it will be able to run for longer and with greater reliability.
- **CUSTOMERS.** FIMA has introduced its customer and sales projects management system in its Latvian subsidiary, SIA FIMA. The same system will also be introduced in the Polish and Belarus-based FIMA subsidiaries shortly. Lithuania has been running this customer and sales projects management system since 2014.
- **PRESENTATIONS.** FIMA, a representative of Barco – a global technology company operating in Lithuania – is offering a unique conferencing solution by this well-known manufacturer. Barco ClickShare is a wireless system for video presentation and co-operation, allowing anyone attending a meeting to transfer an image from a computer to the meeting's main screen or a conference hall with a single click.
- **SMART CITY.** For the second year, FIMA is contributing to the Smart City project which is run by Structum magazine. The competition promotes co-operation between professionals in the construction sector as soon as they enter university. Participants in the competition (including university students studying architecture, construction, engineering and related programmes) will present an authoritative assessment of their visions and solutions for the modernisation of particular areas (or parts) of



About FIMA companies



Solutions Era is a quarterly publication covering intelligent engineering news. It has been published by FIMA since 2006 and is available in Lithuanian, English, Russian and Latvian. Back issues can be downloaded at www.fima.lt.

LITHUANIA
UAB FIMA
www.fima.lt

LATVIA
SIA FIMA
www.fima.lv

POLAND
FIMA Polska Sp. Z o.o.
www.fimapolska.pl

BELARUS
OOO FIMA BR
www.fima.by

FIMA is the leading electronic engineering systems integrators in Baltic countries, offering telecommunications, security, automation and data center solutions as well as individually tailored solutions for transport and energy sectors.

The company implements intelligent engineering solutions for businesses and governmental organisations in the Baltic states and Belarus and is continuously involved in projects of technological innovation. In two decades of operation, FIMA has carried out several thousand projects of a various scale and degree of complexity.

FIMA's headquarters are based in Vilnius, Lithuania. The company has subsidiaries in Latvia, Poland, Belarus.

Do you have ideas, suggestions or comments? Email us at solutions.era@fima.lt.

Information contained in this publication may be published exclusively with the indication of the information source *FIMA newsletter Solutions Era*.