



SOLUTIONS | ERA

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For those who follow the trends in intelligent engineering solutions

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News stream



► FIMA continues collaboration with Kaunas University of Technology student organisations as the main sponsor of the university's **"Days of Electricity"** event that was held in April. Over the course of a week, students learned the latest about Lithuania's energy sector. **At FIMA's invitation, the students visited the Kaunas railway station,** where the modern rail traffic control center is equipped, and learned about the microprocessor-based traffic control system that was installed by FIMA.

► In an effort to improve the safety of **TNT Lietuva's** shipping services, FIMA installed partner company **Morpho's automatic explosives and narcotics detection system.** The mobile equipment, which measures air composition and analyses microscopic particles found on packages, can detect a number of narcotic and explosive materials with a high degree of accuracy.

INTERVIEW

Having strengthened its regional position, **FIMA** is now planning to expand into the Scandinavian market

Having strengthened its position in the surrounding region in recent years, FIMA, a leader in electronic engineering solutions in Lithuania, is planning further expansion in the Baltic region. "Solutions Era" talked to **FIMA's development director, Vytautas Zinkevičius,** about the company's competitive advantages, its opportunities for expansion and its experience of foreign markets.

FIMA started its expansion in the Baltic region in 2006 when it founded a subsidiary company in Latvia. In 2010 you entered the Belarusian market and the Polish market a year later. What has prompted you to look at other international markets?

FIMA's strong position in Lithuania, our successful results in neighbouring markets and our partners' trust inspired us to continue expanding and look for new opportunities in foreign markets.

Lithuania has now emerged from the economic crisis and FIMA is currently benefitting from a rise in both public and private investment in the modernisation of the country's technological infrastructure.

The past year has been a very successful one for us in Lithuania with great sales figures and a record-breaking number of new contracts – with a total value of about 50 million Euros – being signed. Our sales portfolio is growing, and the new and interesting projects we're running demonstrate that when it comes to engineering solutions, we are the leader in Lithuania.

What are FIMA's aims in foreign markets?

For now, the company's primary focus when it comes to business projects and affairs is in Li-



“FIMA's strong position in Lithuania, its success in neighbouring countries and the trust of its partners are encouraging us to expand into foreign markets.”

V. Zinkevičius: "Our big international partners are offers us interesting opportunities and invites us to work on projects outside the Baltic region."

thuania. However, in 2012, we stated very clearly that not only do we want to be the engineering solutions leader in Lithuania, but also across the entire Baltic region.

We can be proud of the fact that we've grown stronger in the Belarusian market. In 2011, our projects were hampered by a deep financial crisis and currency devaluation. Now, however, FIMA is in a much more secure position in Belarus and we've signed quite a few new contracts. We've started work on a large project that's being financed by the Qatar Investment Fund which is worth about 4 million Euros. This is a good example of FIMA's Lithuanian and Belarusian teams working together to win a contract.

How are FIMA's subsidiaries in Poland and Latvia doing?

Our subsidiary in Poland is clearly strengthening its position. We've already achieved a number of the goals that we set for ourselves and we've strengthened our team with new staff. We're expanding and gaining new partners. We actively attend the relevant industry events and make new contacts with potential clients and partners. FIMA's subsidiary in Poland has been operating for a year now and we think that we've achieved good results.

The company has been recognised in the field of data centre infrastructure implementation. As is the case in Lithuania, we have orientated our operations towards railway projects and we are actively seeking challenges in this area where we see a huge amount of potential. However, because of the size of the Polish market, we do not aim to transfer out complete solutions portfolio preferring instead to focus on a number of specific solutions.

The Latvian market is very demanding and infrastructure modernisation projects tend to happen in Latvia after they do in Lithuania. The consequences of the economic crisis in Latvia were felt for quite a while. The number of projects FIMA was engaged on in Lithuania decreased during the crisis, but in Latvia it disappeared altogether. The private sector was totally passive

However, we are proud of the fact that we successfully installed data centre infrastructure for the Latvian State Radio and Television Centre and that we're continuing our work to install a second track on a railway project worth 17 million Euros. Latvia is only just beginning to renovate its rail infrastructure so I hope that FIMA's extensive experience in modernising Lithuania's railways will be of use when it comes to modernising

those in Latvia in the future.

Let's talk about your expansion plans. FIMA has turned its attention to Northern Europe and the Scandinavian market. What sort of opportunities do you think you will find in these highly-competitive markets?

We are interested in new opportunities in Scandinavia and we've already taken some steps.

The Norwegian market is especially interesting because of the number of potential projects and opportunities of working there. Instead of running headlong into a new market, we are going to start with certain specific projects. Norway is not a member of the European Union, so it has its own certification systems. Right now, we're working through a number of procedures to ensure that our employees' education documents are accepted in Norway.

Working in another country will require local employees but we want to rely on our own people wherever possible and let them work under good conditions. We would like to arrange the work in such a way that our employees could continue to live in Lithuania while working on a project in Norway.

Our big international partners are offering interesting opportunities which we are also consi-

FIMA's most important projects in neighbouring markets:

► Belarus:

- Electronic engineering infrastructure for a multi-functional complex including a five-star Marriott hotel
- Client access control and billing system, security and data communication solutions at a recreational water park in Minsk
- MAZ factory access control and video surveillance systems

► Poland:

- Low-current solutions for the Catholic University of Lublin
- Data centre for the Institute of Cardiology in Warsaw

► Latvia:

- Rail traffic control solutions on a second track on the line between Skriversi and Krustpils
- Data centre infrastructure for the Latvian State Radio and Television Centre

dering. Our partners value our capabilities and experience as they see how we work here in Lithuania. We are being invited to work on projects outside of the Baltic region in Turkey, Iran and Turkmenistan. So far, we've had to decline to take part in those projects because we have so much important work here and can't spare the staff.

In your opinion, what ensures FIMA's success?

Our constant desire to advance and improve has a huge impact on our success. Few local companies invest in new things as much as we do. We follow trends in global mar-

kets, attend international exhibitions, bring new solutions or create them ourselves and apply to our markets. That's our bread and butter. When our competitors start to copy our solutions and follow the road that we've taken then that only serves to prove our position as a market leader.

Another characteristic that greatly influences our success is the fact that we never give up. First we make sure that we understand all of our client's requirements and then we find the best solution for them. Perseverance is one of our main principles.

Strategically-important 110 km railway section in Lithuania finally upgraded

FIMA has completed the project to upgrade the infrastructure and traffic control systems on the railway section between Kaunas and Kybartai in Lithuania. The project took more than three years from start to finish. The modernisation of the section was the single biggest railway engineering project undertaken by a Lithuanian company.



“ The branch between Kaunas and Kybartai is the third of Lithuania's railway lines in Lithuania to be upgraded following upgrades to the lines between Kaišiadorys and Radviliškis and between Šiauliai and Klaipėda.

The railway line between Kaunas and Kybartai is a critical artery for the transit of freight.

More than 110 km of the line – including an 86 km section between Kaunas and Kybartai and the 25 km detour via Kaunas, Palemonas, Rokai and Jiesia along with eight stations and 33 level-crossings – were modernised.

The up-to-date computerised rail traffic control system which was installed on the IX D branch of the international transport corridor will improve both the safety and freight capacity of the line which connects Russia with its Kaliningrad Region and carries most of the freight that passes through Lithuania. The advanced technology has allowed the line speed to be in-

creased to 160 km/h and for rail traffic to be centrally-controlled from Vilnius. system and to strengthen Lithuania's competitive advantage in the field of freight transport, we have to upgrade the railway infrastructure so that it meets European standards in terms of technical parameters and safety," said the Director General of Lithuanian Railways, Stasys Dai-lydka.

Unique project

"While upgrading this strategic part of the country's rail infrastructure we relied upon our long experience and ability to implement state-of-the-art engineering solutions. We hope that the modernised section becomes an example for showing

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Faster trains, improved safety, more frequent traffic and increased freight – all these benefits will make a difference for both railway customers and the Lithuanian economy.

creased to 160 km/h and for rail traffic to be centrally-controlled from Vilnius.

Modernisation is vital

"Its geographic position means that Lithuania is crossed by two important international rail transport corridors. At present, about 60 per cent of freight moving through Lithuania is carried by rail but there is potential for more. In order to become an important link in the global railway

what is possible when you bring a country's rail infrastructure up to date. Faster trains, improved safety, more frequent traffic and increased freight – all of these benefits will make a difference for both railway customers and the Lithuanian economy," said FIMA's General Director, Gintaras Juknevičius.

He also pointed out the complexity of the project: "The completed project is unique in terms of scale as well as complexity



The modern microprocessor-based rail traffic control system has replaced the electrical and electromechanical systems that had been used for more than 30 years



The rail traffic on the line is controlled centrally

and the integrity of the engineering operations implemented. We had to hire more than 200 highly-qualified professionals and to closely coordinate their work to ensure the project went smoothly. All work had to be done without stopping regular rail traffic on this extremely busy transport link. This was an additional challenge.”

Successful partnership with Czech partner

FIMA carried out the modernisation of the line in partnership with technology provider Czech AŽD Praha. The upgrading of the IX D branch made use all of FIMA and AŽD Praha’s engineers’ skills and professionalism. One of the tasks was to install a microprocessor-based rail traffic control system meeting the highest safety requirements

(SIL4). This replaced the electrical and electromechanical systems that had been in use for more than 30 years.

The engineers also installed a staff warning system to alert people working on the track of approaching rail traffic and an automatic points heating system, assembled track signalling and train positioning equipment, replaced power supply lines and installations and installed a remote operation and control system along with new automatic diesel generators and upgraded telecommunications, security and surveillance systems at level-crossings as well as installing other systems.

Important link for international transport

The railway line between Kaunas and Kybartai is a critical

artery for the movement of freight. It is part of the IX corridor of the European Rail Network, which connects the Baltic Sea, the Black Sea and the Mediterranean. The IX D branch is the main line connecting the Russian Federation with its Kaliningrad Region and dominates the transport market.

Modernisation of this line was committed to in the Lithuanian national strategic railway transport development plan. The modernisation project was implemented under the EU Cohesion Fund’s 2007-2013 funding programme.

In 2012, Lithuanian Railways transported 49 million tons of freight, including almost 12 million on the line between Kaunas and Kybartai.

Kaunas to Kybartai rail section upgrade facts:

110	km railway line
8	railway stations
33	automatic control systems at level-crossings
430	traffic lights
200	electric points heating systems
20	10kV transformer substations
100 km	10kV overhead and cable lines
2000 km	cabling

The project took **1,279 days** to complete.

TEAMWORK



Artūras Šuliauskas
Director of FIMA's
Project Implementation
Department Manager for
the project to modernise
the line between Kaunas
and Kybartai

The project to upgrade the railway line between Kaunas and Kybartai has been a success thanks to the professionalism and commitment of FIMA’s specialists and those of its partners. However, there is no doubt that much of the credit for the success of this work must go to the staff of Lithuanian Railways. I can say without hesitation that during this project we have learned a lot from our customer. The Lithuanian Railways’ team has a huge amount of knowledge about this kind of project and were happy to share their experience. Working hand in hand with the customer’s professional team was of enormous value to us because it was the key to getting the work completed smoothly and on time.

FIMA technology to safeguard **one of the largest solar power plants** in Lithuania

An **integrated site security and video surveillance system installed by FIMA** will safeguard a solar plant owned by Renerga from vandalism and theft. **The plant is one of the largest in Lithuania.**

Perimeter security, video surveillance and alarm systems and a sensor cable were installed on the 3.5 hectare site in Kretinga. The cable runs along the entire length of the perimeter fence and, because it is accurate to within three metres, is able to provide the ultimate in precision when it comes to pinpointing the site of a break-in.

“The solar plant’s new integrated security and video surveillance system will enable remote control of on-site floodlights and video cameras, the transmission of public address messages and a prompt response to potential break-ins,” said FIMA’s project manager, Vytautas Lukšys, who supervised the installation.

The security system installed by FIMA will be integrated with an overall security solution, also installed by FIMA, at the nearby wind turbine park operated by Renerga.



For more information about EATON 93PM UPS click on the link [MORE INFORMATION](#)

News UPS solution offers superior efficiency

FIMA has introduced 93PM UPS – the new uninterruptible power supply unit from its partner, **EATON**, a global leader in power supply security. This compact and extremely efficient hardware will save floor space in the server room and substantially reduce power consumption **with annual savings of more than EUR 3,000.**

What's so special about the new UPS?

- It ensures 96.7% power usage efficiency in double conversion.
- The energy saver system delivers even superior (99%) efficiency across the typical UPS operating range.
- The 50 kW/50 kVA equipment occupies just 0.5 m² of floor space.
- This UPS comes with a touchscreen, which allows you to monitor and configure its parameters. The display shows how connected devices are using energy and the power usage efficiency of the UPS itself.

Infrared cameras to ensure safety at Lithuania's first waste-to-energy plant

Now that it is operating at full capacity, the waste-to-energy plant at Klaipėda is the first power plant in the Baltic States to generate heat and electricity from the incineration of waste. **To ensure fire prevention** at the plant operated by Fortum Klaipėda, **FIMA specialists have used the latest in advanced technology – infra-red, heat-detecting video cameras.**



FIMA's electronic engineering solutions allow operators to control the plant's technological processes remotely

It is the first time that thermal imaging cameras have been used to guarantee fire safety at an industrial facility in Lithuania, according to the specialists from intelligent engineering solutions company FIMA.

The surveillance system has been installed in the fuel bunker – the section of the plant which is at the greatest risk of spontaneous ignition. This is where a thick layer of biofuel and waste is stored before entering the incineration process.

Temperatures measured regularly

"The cameras constantly scan the surface of biofuel and waste, displaying a thermal image to the system operator with the hottest areas and their temperatures displayed on a screen. Once the system has detected

the ignition to be located and for staff to take appropriate action to bring the temperature down quickly. The steps that can be taken include stirring the waste at the site of ignition or using remotely-controlled jets of water.

Focus on safety

A fire alarm system that offers the ultimate in reliability has been installed in other parts of the plant and can detect indoor temperature changes, smoke and naked flames. In the case of fire, the system will control the fire extinguishing, evacuation and ventilation systems it is integrated with.

According to director of Fortum Klaipėda, Juozas Doniela, every type of security is of the highest priority at the plant. "The security of the most advanced power plant in the Baltic Sta-

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The Fortum Klaipėda plant is the first industrial facility in Lithuania where thermal imaging cameras will be used to ensure fire safety.

a high temperature, it automatically alerts the staff with an audio signal, and if the temperature continues to rise, triggers the fire alarm," said FIMA's project manager, Ričardas Raudys.

The image displayed on screen allows for the exact source of

tes is ensured at every stage of the waste's transformation into energy: from it is first delivered to the site through to smoke treatment. The fire prevention system installed by FIMA specialists is a reliable part of the plant's overall security system," said Mr Doniela.



Video cameras allow operators to monitor the entire journey of fuel through the plant

Key processes on display

The operational security of the Fortum Klaipėda plant will also be ensured by an advanced access control and video surveillance system – also installed by FIMA specialists. In addition to providing site security, the video surveillance system is used to control the technological processes within the plant.

Operators are able to monitor the entry of vehicles bringing bio-fuel and waste in to the site on displays in the control centre and are able to control the weighing and waste unloading processes. Cameras also provide staff with the opportunity to monitor the entire journey of fuel through the plant from it entering the fuel bunker through to the final emptying of cinder from the boiler, even including the interior of the boiler.

To produce heat for Klaipėda

- Situated in the Klaipėda free economic zone, the new power plant is expected to generate about 40 per cent of the port city's annual need for heat (400 GWh) and about 120 GWh of electric power. Some 50 per cent of fuel burned at Fortum Klaipėda will be domestic refuse brought from landfill sites in the region, 20 per cent will be industrial waste and the rest biofuel.
- Using waste to generate energy is an advanced and environmentally-friendly way of disposing of rubbish and solves many issues including landfill problems, energy dependence and high energy prices. There are more than 400 of these types of power plant operating in Europe.



FIMA has installed infra-red cameras for fire prevention in the plant's fuel bunker

From analogue to digital: effortlessly and economically upgrade your video surveillance system

Many companies still use analogue video surveillance systems despite their lower quality and limited functions because upgrading to an IP-based system traditionally required a substantial investment. **Over the past few years, however, there have been a number of highly innovative solutions which have seen costs fall significantly.**

“The latest solutions mean that the system can be upgraded by replacing the analogue cameras with IP equipment without having to replace the cables. The result is exactly the same: you get an IP system with all of its benefits, but save money, time and human resources,” said FIMA’s expert engineer, Šarūnas Pavilionis.

Benefits of an IP system

The move towards IP-based video surveillance systems is inevitable. Analogue cameras are a thing of the past and all newly-installed video surveillance systems are now IP-based. “There are many benefits to IP systems over old analogue technology. IP cameras provide much higher image resolution and a greater number of functions. In addition to capturing images, these ca-

” “Most organisations in Lithuania installed their video surveillance systems at least a decade ago. The pressure to modernise these systems has come from not only the necessity to upgrade the hardware, but also from the need to start using more advanced IP-based video cameras.

meras can also be integrated with video detection systems,” added Mr Pavilionis.

No need to replace cables

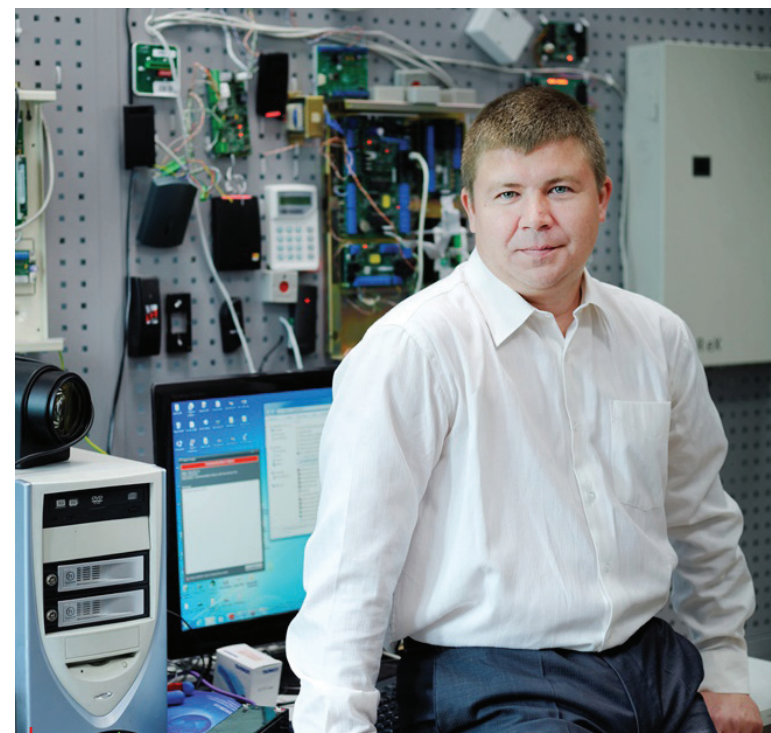
During any video surveillance system upgrade, replacing the cable infrastructure represents a substantial portion of the costs. The 75 ohm coaxial cables used in analogue video surveillance systems are usually incompatible with IP signal transmission, so when replacing the cameras with digital equipment, the entire cabling systems had to be replaced, too.

“Now the market offers much easier methods to install

IP cameras without having to replace the cables. The US manufacturer that we represent, Veracity, has introduced special equipment which allows signals from an IP camera to be transmitted over a standard coaxial

cable. All you have to do is install converters at both ends of a cable previously connected to an analogue camera. These convert the digital signal suitable for transmission over a CAT5 cable into a signal transmittable over a coaxial 75 ohm cable, and vice versa,” Mr Pavilionis explained.

The introduction of the new technology makes particular financial sense in facilities where laying new cables is complicated from a technical perspective – for example in places where the bulk of cabling is buried under plaster. “The cost of converters



Š. Pavilionis: “Video surveillance system can be upgraded by replacing analogue cameras with IP equipment without having to replace the cables.”

is much lower compared with the necessary construction work in these places so the savings are clear. In addition, converters will deliver a much quicker system upgrade,” said FIMA’s representative.

No longer limited to 100 metres

Another issue faced by people who design video surveillance systems is that the maximum length of the switching cable (CAT5 or CAT6) is 100 metres.

“One hundred metres is the standard cable length limit of an IP system. For longer sections, you need to install additional switches and where this is physically impossible, use an optic cable with optic converters. An optic cable is a rather expensive solution, and, compared with copper, requires additional skills for it to be installed. Veracity offers solutions that allow you to run both a coaxial and a category cable from up to 500 metres away and to connect with a camera without additional converters. This barrier can be overcome when Veracity’s special hardware is installed at both ends of the cable.”

FIMA gives practical help to students at Vilnius University of Applied Engineering Sciences

The design and build of an integrated security system test bed was chosen by Aleksandras Miltienis, a foreman in FIMA's Installation Division, for his final thesis while studying at Vilnius University of Applied Engineering Sciences. It took him a month and a half to design, build and then justify his project and resulted in the awarding of an excellent grade. **The test bed will now help other students with their studies after FIMA donated it to the university.**

At just 120 x 90 cm in size, the test bed is exceptionally functional because it integrates virtually every type of security system including access control, video surveillance and a fire alarm. Each system can be controlled wirelessly or by using an integrated LCD keyboard.

Mr Miltienis said: "The system mimics real life situations and students will be able to use it to gain practical experience and skills in how to design, install, develop and control security systems. The test bed is equipped with the most up-to-date systems, meaning that students will get the opportunity to work with the latest in technology." The project features a total of 26 security elements, all of which have been supplied by FIMA.

The gift was great news to the Electrical Engineering Department where Aleksandras used to study. The head of the department, Bronė Mitkienė, said: "Training establishments are in great need of practical teaching aids, but never have enough. Technology is constantly changing but teaching aids are expensive and not all training establishments can afford them, so we were delighted that FIMA has given this test bed to the university."

We will use it as a teaching aid for laboratory assignments. The test bed will be available to more than 100 full-time and vocational students per year and will help them develop their knowledge and skills.

Specialists from FIMA have also committed to maintaining the test bed for five years and will perform the relevant programming and replace faulty parts as and when needed.



A. Miltienis: "The system mimics real life situations and students will be able to use it to gain practical experience and skills in how to design, install, develop and control security systems."



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About Fima companies

Fima is the leader in intelligent engineering solutions in the 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.

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