SOLUTIONS | ERA

NEWSLETTER
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FIMA

For those who follow the trends in intelligent engineering solutions

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News stream

- FIMA is introducing a security system at the **liquefied natural gas (LNG) terminal at Klaipėda State Seaport**, including access control, video surveillance, fire alarm and automatic fire extinguishing systems. Hardware is being installed in the buildings and along the embankment and preparations are underway to programme the system.

- FIMA continues to improve its data centre expertise in Latvia. Its daughter company, **SIA FIMA, signed a contract with Riga Technical University to design and equip a 200 Kw data centre**. As part of the project, the company will install an automated gas-based fire extinguishing system, access control, security and video surveillance, air conditioning and power supply systems along with data networks and other solutions. Fifty research institutes which are in the register of research establishments will have access to the data centre.

- **FIMA signed a contract with Lithuanian Railways to electrify the section of railway between Naujoji Vilnia and the border with Belarus.** FIMA and its Latvia-based daughter company, SIA FIMA, will complete the works on the track between Naujoji Vilnia, Kyviškės, Kena and the Belarus border by the end of March 2016.

- **FIMA and its long-term partner, EXTREME NETWORKS, treated its customers to an amazing event – EXTREME Academy** – in late August. Timo Leppiniemi and Mikael Holmberg of EXTREME NETWORKS and FIMA's Telecommunications Project Manager, Jonas Prapuolenis, gave an update on the latest market trends and developments before all the participants set out on an exciting leisure adventure in Anupriškės Woods for a real team-building exercise.

SUPPORT SPACE TECHNOLOGY

FIMA sponsors international conference on space technology and business, **SEMWO'2014**

In October, Vilnius hosted "Space Economy in the Multipolar World" (SEMWO'2014), the international conference on space technology and business, which was held for the fifth time. SEMWO gives **entrepreneurs from small countries or new entrants into the space market and major players in space technology the opportunity to discuss current developments and trends in the commercial aerospace market,** get updated on innovation and technology and develop opportunities for investment and closer cooperation.

Vytautas Zinkevičius, FIMA's Development Director. "FIMA promotes innovation and the spread of technology and science. The opportunity to be part of our country's growing presence in space technology is extremely important to us and we support both experts and enthusiasts in this area."

"FIMA promotes innovation and the spread of technology and science. The opportunity to be part of our country's growing presence in space technology is extremely important to us and we support both experts and enthusiasts in this area. We sponsored the launch of Lithuania's first satellite, LituaniaSAT-1, and we have been in close contact with the conference hosts – scientists from the Faculty of Mathematics and Informatics of Vilnius University (VU), who are currently preparing for the Lituanica-Sat-2 mission. We have been enthusiastic supporters of this event, as well," FIMA's Development Director, Vytautas Zinkevičius said.

The event included presentations on space research with more than 20 speakers from Lithuania, the USA, Saudi Arabia, the UK, Italy, Ukraine and other countries who invited the participants to join discussions and shared their views on the future prospects of space economy. The speakers included Jeffrey Manber, who directs Nanoracks, the provider of commercial flights to the International Space Station (ISS); Harry Partridge, a researcher from NASA's Ames Research Centre; and Jaroux Belgacem, who represents the European Space Agency. Lithuanian satellite developers also gave an account of the country's first space mission.

Innovative cooling solutions cut costs for data centres

Data centres around the world are facing ever-higher energy efficiency standards. **Providers of data centre infrastructure hardware believe that cooling and energy supply will be the areas that show the most potential when it comes to savings on costs.** More and more manufacturers are now offering innovative solutions where outside air temperature is used for cooling. The Lithuanian climate is favourable in this respect, but one has to consider whether hardware should be adapted to seasonal fluctuations in temperatures and humidity.

Lithuania offers a favourable climate for cooling data centres, but seasonal fluctuations in temperatures and air humidity must be taken into account.

FIMA professionals visited one of the world's most influential specialist exhibitions on data centre technology in London – "Data Center World" – in search of contemporary solutions that they could apply in Lithuania.

"Manufacturers of cooling and energy supply systems were an obviously dominant group because these two areas "eat up" the bulk of data centres' costs. Many ideas are out there on further savings of data centres' electricity costs and ways of using the heat produced, and yet efficient ventilation remains a major focus. However, not all that's good for the UK is good for Lithuania. Lithuanian data centres are simply too small for some of the exciting technologies out there, but we have noted that data centres which are of normal size at EU level are starting to appear in Lithuania," FIMA's Data Centre Project Director, Arūnas Jurkša said after he returned from the exhibition.

Hardware is developing

Major manufacturers of cooling systems are improving hardware which uses the outside air temperature to cool the air inside

FIMA DC project manager Arūnas Jurkša: "The energy efficiency of data centres is one of their vital indicators as far as infrastructure is concerned. An efficient use of energy is crucial when it comes to operating costs."

> *"There are many ideas on how to achieve further savings on data centre electricity costs and ways of using the heat that they produce, and yet efficient ventilation remains a major focus.*

a data centre. The only thing that differs is the cooling technology itself. From a technological point of view, as long as the climate conditions permit, outside air can be fed directly into a room following filtration and additional humidification or drying. Elsewhere, heat exchangers are used to cool the circulating indoor air using outside air without directly feeding it into the room. Adiabatic refrigeration technology, which employs the water evaporation effect, can be used in either case both as a complementary and as a primary cooling solution.

Until recently it was common practice to use an intermediate heat transmission level which is usually filled with special liquid. It takes heat from the room's heat exchanger and transmits it to the outside heat exchanger which is already being cooled by outside air. Now, as they improve technology, manufacturers are skipping the intermediate heat transmission level. In new installations, inside air goes directly to the heat exchanger, reducing the losses which occur at intermediate points.

The choice of a system depends as much on the purpose, size and capacity of a data centre as it does on reliability criteria and climatic conditions.

"Cooling of premises involves many issues which need to be sorted. For example, in the UK, which does not see very large seasonal fluctuations in air temperatures and humidity, filtered outside air can be directly used for cooling. We can't apply this in Lithuania where cold, rather than heat, is an issue. In winter, when it's cold and cooling is supposed to be the most efficient, the air becomes extremely dry and is thus unsuitable for a data centre's micro climate. The cooling system would simply be incapable of preserving an adequate humidity level for such a large amount of outside air. We can and should make use of low outside air temperatures but need to separate outside and inside air, i.e. invest in heat exchangers.

Systems which use water for cooling don't work everywhere, either. Water freezes at low temperatures, so there is one more issue to resolve: preparing the cooling system before each season. Maybe it's not a major problem, but in Lithuania day and night temperatures often range from plus to minus within the same 24 hours. Although the weather conditions seem favourable, we can't use the adiabatic cooling level because of the risk of freezing," Mr Jurkša said.

For this reason, systems which employ adiabatic cooling and direct feeding of outside air will not be as efficient in Lithuania as manufacturers claim. In addition, hydraulic systems present an additional risk when it comes to a data centre's reliability.

Living up to commitments

Innovative technology helped FIMA to win a contract to equip BDC – one of Lithuania's largest data centres which is owned by Teo LT. "Our initial quote was not the lowest one, but we provided detailed calculations on how we could cut electricity costs efficiently. After consulting the hardware providers, we made a commitment that if the data centre uses more electricity than we had indicated in the bid, we would cover the loss. We haven't had to make a single payment," Mr Jurkša said, explaining the benefits behind efficient technology.

BDC cooling system's annual PUE annual PUE (Power usage effectiveness) is 1.09. The PUE rate shows the proportion of energy which is used for serving infrastructure, not the servers. The lower it is the better. At BDC, only 9 per cent of energy used by its servers each year goes on cooling. During the peak temperatures of the summer this ratio can reach 1.5 on several days – then half of the energy is used for cooling, but it has little effect on overall annual energy costs.

"What we focused on when choosing technology for the data centre was the investment, operation and electricity costs over the planned operational period, efficiency (PUE), reliability and environmental issues.

We opted for an innovative

solution which met all these criteria and was the best investment solution with the highest PUE on offer. In addition, the provider assumed contractual obligations over a guaranteed energy efficiency ratio. The PUE that they have indicated in the contract matches and even exceeds the actual one," the head of TEO LT's IT operation management division, Vakaris Stakauskas, said.

> *"After consulting the hardware providers, we made a commitment that if the data centre uses more electricity than we had indicated in the bid, we would cover the loss. We haven't had to make a single payment.*

The data centre has also been equipped with additional technical solutions which allow heating the building's other premises during the cold season. The rooms are heated with outside air which is warmed up by the data centre's heat exchanger without incurring any additional cost.

"The reasons that these investments pay for themselves faster than planned were a better than expected PUE and the building heating solutions that were introduced," Mr Stakauskas noted.

Pilot systems

According to Mr Jurkša, customers who publish invitations to tender for hardware installation are generally only concerned with the bottom line, i.e. the one with the lowest bid wins. However, the situation is starting to change and there are customers who consider not only the installation costs but also operation and maintenance costs. Estimations are made on how much a data centre would cost in 10 years or more.

The size of data centres also counts. In simplified terms, it can be assumed that as long as their overall IT capacity does not exceed 50-100 kW, simpler cooling systems are sufficient as the cost and benefit effect is not high. In large data centres where capacity is counted in megawatts or tens of megawatts, advanced cooling solutions help to cut energy costs substantially.

"Now there also exist pilot installations where servers are simply immersed in special liquid which does not conduct electricity. Liquid takes heat at the point where it is produced, which is much more efficient and the whole room does not need to be cooled. However, this hardware is still in its pilot stage. The innovation will be of relevance when it comes to powerful server cabinets which may no longer use regular air cooling," Mr Jurkša said.

Exciting prospects

FIMA's DC project manager Mr Jurkša can see exciting prospects in developing data centres in Lithuania. FIMA is currently preparing infrastructure offers for a number of large data centres and intends to apply the most innovative solutions which are the best for the Lithuanian situation.

"Lithuania is favourable for setting up data centres. It offers a suitable climate – apart from up to 20 extreme days a year, the air temperatures are favourable for ensuring a micro climate on the premises almost to the point where no extra energy is needed for actual cooling.

In addition, we have very good data communications and perfectly-developed infrastructure. We don't need to resolve issues that companies setting up data centres in London face: where to site data centres in such a large conurbation and were to get the electricity supply from. In Lithuania, data centres can be built in locations with developed infrastructure and are easily accessible, and we don't face problems with insufficient energy either. Once we have established electricity links with Poland and Scandinavia, the price we have to pay for electricity will be the same as for the rest of Europe. Furthermore, Lithuania has a workforce which is qualified and available," Mr Jurkša noted as he commented on the prospects.

FIMA's partnership with data centres

- FIMA signed a contract with Vytautas Magnus University (VDU) to equip a data centre. It will not have a high capacity but will stand out for having particularly high energy efficiency.
- Since 2012, FIMA has been involved in a project to install infrastructure for the data centre at the Latvian National Television and Radio Centre (LNTRC). The company has installed gas-based fire extinguishing, power supply and server cooling systems as well as security alarm and access control and video surveillance systems. In addition, a special room was equipped to protect information systems from direct exposure to fire and water. LNTRC is is one of the most advanced and reliable data centres in the Baltic states.

Other FIMA projects:

- Baltic Data Center with high energy efficiency
- A backup data centre for Lithuanian Railways
- The data centre of the Institute for Mathematics and Computing of Latvian University
- The data centre of the Warsaw Cardiology Institute in Poland
- The data centre of the Centre of Europe Technology Park in Katowice (Poland)

- FIMA has been involved in the installation and upgrading of more than 10 other data centres for enterprises and organisations in Lithuania and abroad.

PROJECT

A fully-functional fire station set up at Vilnius Airport

Vilnius Airport (VNO) has undergone extensive renovation with its fire fighting facilities having recently been upgraded and re-equipped. **FIMA has implemented advanced engineering solutions and equipped the station with a modern data centre.** This will ensure better operation of the airport's information systems, improve the safety of staff and passengers and open up new development opportunities.

Built more than 20 years ago, the airport's old fire station was inefficient in terms of energy use and no longer met international standards. "The decision to build a new station was based on the need to modernise and develop the airport and particularly on lengthening the taxiway to ensure faster and safer access of aircraft to the parking zones and to shorten their paths to the runway. For this reason, rebuilding the existing fire station was not considered an option," the director of Vilnius Airport which is part of the Lithuanian airport chain, Artūras Stankevičius, said.

The new fire station was built following an assessment of the airport's long-term needs. Special emphasis was placed on the building's functionality, information systems, security and possibilities for expanding it in the future. The bulk of the project's investment was in advanced engineering solutions. In the new building, the company's specialists equipped a modern data centre, expanded the internal communication system and installed video surveillance and access control systems, a computer network and an automation system.

A functional data centre

Until recently, VNO was using a number of small server rooms to store key IT hardware and software, including flight registration and control, passenger registration and information, video surveillance and security and passenger flow control systems and other information systems vital to the airport's activities. All of these will soon be moved to the new data centre which was designed and equipped by FIMA engineers to the highest data security, energy efficiency and flexibility standards. The centre is complete with state-of-the-art cooling, electricity supply and monitoring systems.

"Once the entire IT infrastructure is moved to a single site,

Sigitas Truncė, FIMA's project manager. "The modular structure chosen for the data centre reduces the time and cost of repairing faults and keeps operating expenses to a minimum. In addition, the modular solution will allow the centre to be expanded as the airport's needs for IT resources grow."

its supervision will become easier and more efficient. Access to the hardware will be strictly controlled to ensure maximum data security at the airport. It was decided to build the data centre based on a modular structure because it reduces the time and cost of fault repair and keeps operating expenses to a minimum. In addition, the modular solution will allow the centre to be expanded as the airport's needs for IT resources grow," FIMA's project manager, Sigitas Truncė, said.

A unique internal communication system for emergency communication

As part of the project, FIMA specialists expanded and upgraded VNO's internal dispatcher communication system which is designed for internal communication between emergency services staff including security, customs, fire brigade, etc. "It is a highly reliable communication system that can be integrated with all types of communication including radio and telephone. It will help the staff at the fire station respond rapidly to emergencies and to distribute work evenly," Mr Truncė said.

FIMA completed the construction of VNO's new fire station in under a year and the continued operation of the airport was unaffected by the work. The project was co-financed by the European Union Structural Funds.

FIMA has been co-operating with VNO since 2006 and has introduced a whole range of other electronic engineering systems to ensure the airport's uninterrupted and secure operation:

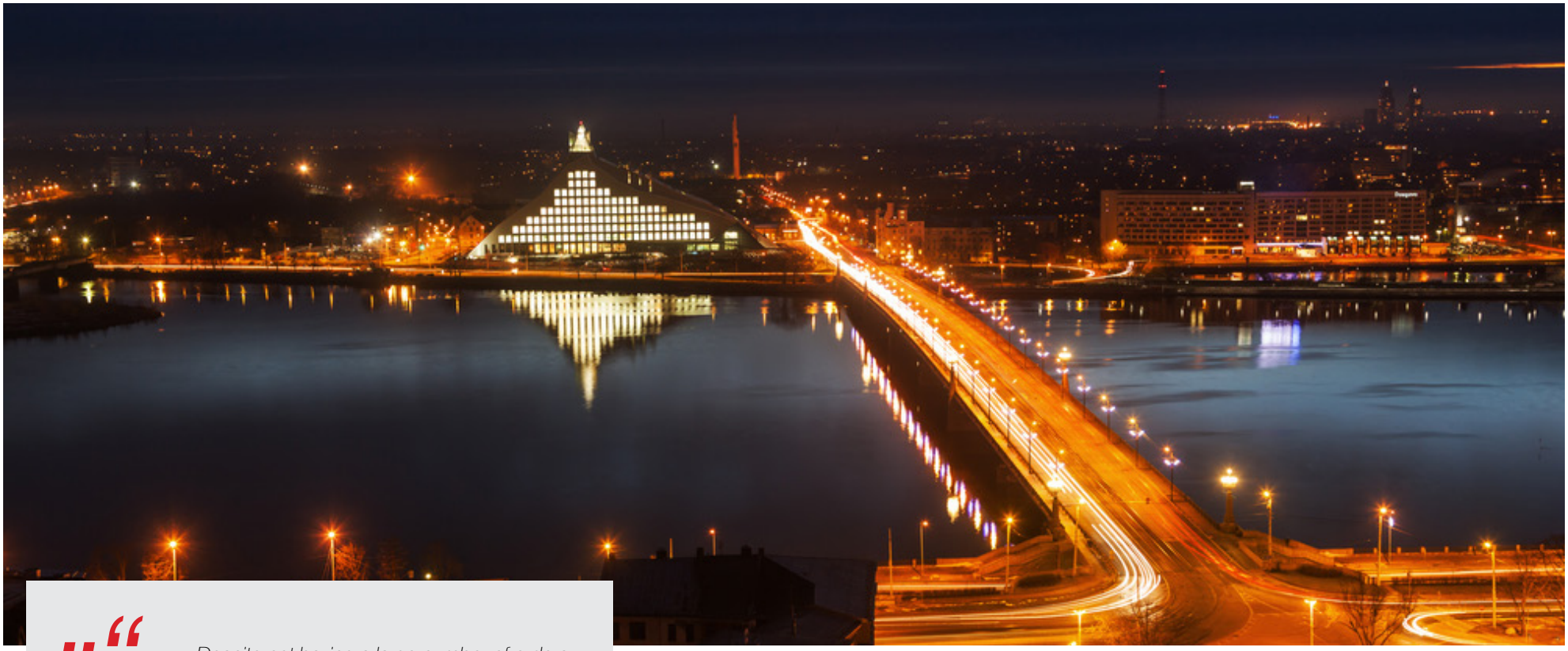
- 12 km-long perimeter security system
- A passenger flow control and information system at the new terminal
- A passenger flow visual simulation model for the new terminal
- A flight information system
- A runway beacon system
- A radioactive substances detection system
- A video surveillance system
- A security and fire alarm system

Tasks delivered during the project:

- A modern data centre installed
- The internal communication system expanded
- A video surveillance system
- Access control
- The building's automation system

FIMA's **successful year** in Latvia

FIMA's Latvian daughter company has rapidly increased its presence in the neighbouring market. This year has been extremely successful for SIA FIMA with an impressive number of contracts signed and much higher sales when compared with 2013. **As well as enjoying growth abroad, the company is growing thanks to its professional experience and expertise when it comes to integrated solutions and because it is able to employ a local workforce.**



> *"Despite not having a large number of orders when we started, we made very efficient use of our first years in the Latvian market and later during the economic crisis. As time went on we continued to explore the local market – making useful business contacts, introducing our activities and sharing knowledge. All of these are now delivering results so it was worth that effort in the early days.*

SIA FIMA business results

Year	Revenue, EUR thous	Headcount
2012	4,868	52
2013	7,531	55
2014	9,425 (forecast)	60

FIMA entered the Latvian market just before the economic downturn in 2006 so it wasn't the easiest of starts. However, today SIA FIMA employs 60 professionals, delivering more and more significant large-scale projects, sometimes in partnership

> *"Smaller local businesses simply do not have sufficient capacity and experience to do this. We operate in several countries and FIMA boasts extensive, long-term experience when it comes to integrated projects. On top of all that, we have human resources and competences available in Lithuania that we can use if necessary.*

Vytautas Zinkevičius, FIMA's Development Director.

with their Lithuanian colleagues.

Specialisation starts showing

"Gaining a position in a new market is never easy. You may be known in your own country without your reputation or the quality you deliver being questioned while elsewhere you have to start everything from scratch. You must prove your ability to offer something better and something more than local competitors do. What is more, you need to become aware of quite a few business and cultural differences that exist in that market even though it is a neighbouring country with a similar history and culture. So when we started, we were delighted to be involved in our first projects. Each success has been shown in our growth and this has now led to much more significant projects," FIMA's Development Director, Vytautas Zinkevičius, said.

According to Mr Zinkevičius, SIA FIMA has been central to an increasing number of strategic national and international projects. "Today, modernisation of railway infrastructure and data centres seems to present the most promising prospects in foreign markets, including Latvia. So projects within these areas are our focus and we will continue prioritising them for several years to come," Mr Zinkevičius said.

Five-fold contract value in one year

The company's Development Director says that in 2014, SIA FIMA has signed many more contracts than the previous year with a value that is five times larger. This year's sales are expected to be worth LTL 32.43 million (EUR 9.42 million), which represents a LTL 6.5 million growth compared to 2013.

One of the most important contracts signed in Latvia include installation of engineering solutions at the new building of the Latvian National Library. Here, FIMA has installed access control, security alarm, audio communication and telecommunications systems as well as a video surveillance system which is integrated with other engineering systems and incorporates 150 video cameras.

A number of major projects are being delivered in partnership with Latvian railways. The SIA FIMA team is modernising the Latvian railways' core data communications network, installing new traffic control and power supply systems at Liepaja railway station and it is about to complete the reconstruction of a second track on a 52 km-long rail section between Skriveri and Krustpils. This year, FIMA's daughter company has increased its project portfolio with the second phase of expansion at a data centre for the Latvian National Radio and Television Centre (LNRTC), setting up data centres for Riga University of Technology (RTU) and the Mathematics and Computer Science Institute of Latvian University (LUMII) and other projects.

The benefits behind integrated solutions

"Despite not having a large number of orders when we started, we made very efficient use of our first years in the Latvian market and later during the economic crisis. As time went on we continued to explore the local market – making useful business contacts, introducing our activities and sharing knowledge. All of these are now delivering results so it was worth that effort in the early days," Mr Zinkevičius said.

He explained that the potential to deliver an integrated package as opposed to a single system is the key when it comes to competing in Latvia and the other markets where FIMA's daughter companies operate. "Smaller local businesses simply do not have sufficient capacity and experience to do this. We operate in several countries and FIMA boasts extensive, long-term experience when it comes to integrated projects. On top of all that, we have human resources and competences available in Lithuania that we can use if necessary. Both we and our customers benefit from this because sharing knowledge and competences across borders helps us to develop and improves the brand image of FIMA as an international company," the development director explained.

He pointed out that another success factor is the fact that all of SIA FIMA's workforce is local. This, according to Mr Zinkevičius, is very important as it helps to raise the company's reputation among local customers, facilitates communication with third parties and has other positive effects on the business.

SIA FIMA upgrades **Latvian railway infrastructure**

As part of its efforts to upgrade its rail network, Latvia is investing in new tracks, modern rail traffic control systems and an advanced data communications network and **FIMA's daughter company in the country has made a significant contribution to this renewal.**

SIA FIMA has been involved in the reconstruction of Liepaja railway station.

"An increasing number of orders from local companies shows that we have built a reputation as a reliable partner in the Latvian market. We have signed some major contracts with Latvian railways and have been involved in consortiums to renovate rail infrastructure. We aim to continue taking an active part in projects to renovate, modernise and electrify Latvia's railways as well as to introduce modern technology," the director of SIA FIMA, Janis Vilmanis, said.

The Latvijas dzelzceļš government enterprise signed a contract with a consortium comprised of Thales, FIMA and Transceltnieks for the modernisation of rail traffic control systems and track reconstruction at Liepaja railway station. The SIA FIMA team is responsible for introducing traffic control and power supply systems at the station. The work includes setting up new transformer sub-stations, reconstructing platform and level crossing lighting systems and installing a new traffic control and level crossing signalling system as well as an electric heating system on points and automation systems. With the total value of EUR 24.4 million (LTL 84 million), the project is scheduled to be completed in the autumn of next year.

SIA FIMA and its local partners have also been upgrading Latvia's main railway data communications network: laying fibre optic cables, assembling telecommunications hardware and installing new data communications networks as well as introducing up-to-date public address systems at Liepaja and Ventspils stations. As part of this project, new data communications infrastructure – which is vital for the continued development of an integrated traffic system – will be installed.. FIMA's daughter company in Latvia will renovate 136 infrastructure objects in total, mainly in the Kurzeme region. All of this work will help to ensure that the rail system around these stations is more efficient and safer. Valued at EUR 14.2 million (LTL 49 million), the project is scheduled for completion by the end of next year.

The construction of a further 52 km of track in the section between Skriveri and Krustpils – another major project that SIA FIMA is working on for Latvian railways – is nearing completion and includes installation of rail traffic control, telecommunications and power supply systems on that section.

More platforms for integrating science and business

Co-operation between the scientific and business communities has been boosted throughout Lithuania along with the number of dedicated platforms with hubs that integrate business and science. Founded in 1998, the first hub of its kind – KTU Regional Science Park – is now home to 80 enterprises. **The Santaka Integrated Science, Education and Business Valley of Kaunas University of Technology (KTU) opened this November while the country's largest integrated science and business hub, Saulėtekis Valley, is currently taking shape in Vilnius.** As part of its efforts to find new business niches, FIMA and other companies have been providing engineering solutions at these facilities.

Jonas Jablonskis, Director of the Contracting solution department at FIMA. "We use an integrated approach on the project, so that as well as focusing on the present, we are able to look ahead to provide long-term support for different solutions as well as future upgrading opportunities and similar issues. With science and technology advancing so rapidly, an integrated approach is a must."

Modern science valleys, incubators and research centres commercialise research findings to promote the creation of high-tech companies and open up new opportunities for the country's scientists and technology businesses to compete on the international stage. Although still at an early stage, co-operation between science and business should increase in the future with more orders expected from overseas companies. The latest technology and laboratories necessary to carry out state-of-the-art research are being introduced at hubs that integrate business, education and research.

"By introducing specific solutions and innovations tailored to high-level scientific infrastructure, we are contributing to the country's scientific progress, opening up opportunities for entrepreneurs and providing a boost to the economy. We use an integrated approach on the project, so that as well as focusing on the present, we are able to look ahead to provide long-term support for different solutions as well as future upgrading opportunities and similar issues. With science and technology advancing so rapidly, an integrated approach is a must," FIMA's Director of the Contracting solution department, Jonas Jablonskis, said.

The first non-medical CT scanner

This year, Lithuania's first non-medical CT scanner was introduced in Santaka Valley in Kaunas. The scanner is able to identify the tiniest defects and details or parts of technical equipment down to 3 μm. Manufactured by German manufacturer RayScan, the installation can identify such technical defects as splits, wears and fractures. A specially-trained team of KTU researchers working at the Valley will use it for research while the laboratory will accept orders from private companies for tests tailored to the nature of their business.

As well as assembling the X-ray CT scan, FIMA specialists have equipped a dedicated laboratory room.

According to the requirements for this type of equipment, the lab's walls, ceiling and floor are made from lead. A new special concrete of has also been cast to support the eight-ton weight of this powerful installation. FIMA professionals also had to address logistical issues with the CT scanner. The maximum capacity of the building's lift is three tons, so the individual parts had to be brought to the laboratory before being assembled. A new fully-equipped laboratory has already been certified and is ready for operation.

Clean premises – a landmark project

FIMA is involved in two projects in Saulėtekis Valley, Vilnius. A Joint Centre for Life Sciences is taking shape on an area of 1,215 m2 as part of the second phase of the Science and Technology Park project at the Valley. The company's specialists will install a fire and security alarm system, an electronic communications system and a process management mechanism and will develop the park's infrastructure. A local water supply and refinement system will also be introduced to supply extra-pure deionised water of purity level II to the valley's laboratory facilities. Special piping will be laid and water filters will be installed to ensure that all the labs have access to clean water.

The second development phase of the National Centre for Physical and Technology Sciences (NFTMC) is another project that FIMA has been involved in at Saulėtekis. During the first phase,

Santaka Valley saw the introduction of Lithuania's first non-medical CT scanner which is able to identify the tiniest defects and details or parts of technological equipment, going down to 3 µm.

it designed engineering systems for a 25,000 m2 complex and is now in the process of installing them. One of the most important tasks is to equip a number of laboratories to extremely high cleanroom standards. Lithuania currently has few cleanrooms, which allow researchers to carry out highly-sophisticated work and to compete successfully on the international market.

Future work to open new opportunities

In 2015, FIMA will also equip NFTMC with a CVD reactor, which is a chemical vapour deposition system designed for synthesising silicon- and carbon-based films and nano formations. The installation produces a high vacuum atmosphere and enables synthesising substances such as silicon, graphene and diamond layers in a mixed gas environment.

Diamond is in particularly high demand in the gemstone, semiconductor, cutting and grinding industries because of its hardness and thermal conductivity. Graphene, a type of carbon also known as "the substance of the future", has multiple applications. In the future, graphene transistors will replace silicon in the semiconductor industry, batteries with graphene will charge in minutes and the substance will also be used for touchscreens and in many other industries. Graphene's crystal grid dominates the facade structure of the NFTMC building.

Successful projects at national business contests

FIMA is taking part in the Merits to Business competition hosted by the Lithuanian Ministry of Economy. As it successfully develops its presence in the Belarus market, the company is in the running for nomination in the category named “A firm look at export markets.” FIMA is also taking part in the Lithuanian Product of the Year 2014 national awards hosted by the Lithuanian Industrialists’ Confederation with an integrated staff and vehicle access control and a time and attendance registration system project at Lifosa in Kėdainiai. This unique project integrates the HR management, accounting, logistics, surveillance and access control systems developed by different providers.

FIMA and its long-standing partner, AVAYA, introduce video conferencing opportunities for businesses.

Working with its long-term partner, AVAYA, FIMA updated Lithuanian and Latvian entrepreneurs on the opportunities that will be on offer from communications solutions. In September, its representatives attended a conference called “Cooperation Technologies’ 2014” in Vilnius. Hosted by IT Summit, the event attracted more than 150 IT professionals and entrepreneurs who want to ensure more efficient communications for their businesses. FIMA’s professionals gave a live demonstration of what an Avaya Scopia video conferencing system can do as they established a direct connection between the conference centre and the FIMA office for a virtual brain battle. The entertaining event attracted the largest number of participants of all those at the conference. AVAYA’s representative from Norway, Maksim Lukaščiuk, gave a more detailed account of video conferencing systems and other business-transforming co-operation technologies.

LESTO’s pilot project

If there are any electricity power blackouts in the Klaipėda region in the future, the supply will be restored by a ‘self-healing’ network in seconds. This remarkable improvement is possible thanks to smart electrical grid sectioning facilities (automatically controlled switching units referred to as ‘reclosers’) which have been introduced into Lithuania’s electricity network for the first time. Designed and installed by FIMA specialists, these remotely-controlled automatic self-restoring facilities have been integrated with LESTO’s dispatcher control system, SCADA. This ensures that dispatchers are updated about faults on those sections monitored by the system in real time. Most customers will not even notice that a fault has occurred because the electricity supply will be restored automatically and almost instantaneously for most consumers or, at worst, much more rapidly than ever before. Further expansion of this system is due to be considered in the near future.

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.

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About FIMA companies

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.**