SOLUTIONS | ERA

NEWSLETTER
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Fima

For those who follow the trends in intelligent engineering solutions

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Fima: 2012 – a year of ambitious projects

FIMA, the intelligent engineering solutions provider, finished last year on an **optimistic** note. It signed **contracts worth three times** the total of all of its 2011 results and completed some **nationally-important infrastructure projects.** Despite being a huge challenge in terms of scale and complexity, Fima took just three and a half years to complete the upgrade of the railway line between Kaunas and Kybartai. The firm's engineers installed an advanced microprocessor-based rail traffic control system and modernised the power supply, telecommunications and security systems on a 100km section of the line which is part of a branch of the IXD international transport corridor.

Fima specialists were also integral in the project to bring fibre optic broadband infrastructure to Lithuanian rural areas - RAIN2 - as well as upgrading the network of weather stations sited on national highways and installing fire detection and extinguishing systems in the combined-cycle unit of the Lithuanian Power Plant.

Strengthening our position across the Baltic region

FIMA continued to expand in foreign markets last year with revenue from its subsidiary companies in Latvia, Poland and Belarus growing by more than 40 per cent.

In Poland and Latvia, Fima continued to reinforce its position as expert in the installation of data centre infrastructure and strengthened relations with partners and potential customers. Fima was particularly successful in Belarus with many contracts signed and new projects started.

Investigating Scandinavian markets

FIMA's general director Gintaras Juknevičius forecasts that the good results will continue this year: "The sales figures from last year and the beginning of this year show that investments in the modernisation of technical infrastructure increased both in the public and in the private sectors. Furthermore, we are continuing to search for opportunities to export our expertise in data centre and railway systems upgrades to new markets in Scandinavia in addition to our successful development in Latvia, Poland and Belarus. This enables us to look forward to the rest of 2013 with confidence and we expect good results".

This year's challenges

This year FIMA's most ambitious projects include equipping the National Centre for Physical and Technological Sciences at Vilnius University and electrification of the rail line between Naujoji Vilnia and Kena in Lithuania.

FIMA will be responsible for designing and installing the engineering infrastructure for the entire complex at the National Centre for Physical and Technological Sciences, the country's largest technological building, as well as equipping the lab facilities. On the rail line between Naujoji Vilnia and Kena, it will lay a traction power network and build 110/27.5 kV substations. This will be the first project of its type in Lithuania since the country regained independence.

A NEW APPROACH

LEAN to assist in business optimisation

- Last year, FIMA started introducing the LEAN management system to its project management processes. LEAN is about finding solutions that increase the speed of recurring operations while keeping costs the same or reducing them.
- At first, FIMA will use LEAN in its biggest projects before expanding it to cover all of the company's processes.
- FIMA normally runs about 100 projects of varying complexities concurrently. The successful use of the LEAN system will allow us to better cope with the challenges of project management and will ensure that we keep our promises to clients.

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New director for **Telecommunications Solutions Department**

Vaidotas joined the FIMA team in 2007

FIMA underwent a management shift in March as **Vaidotas Černiauskas** took the post of director of Telecommunications Solutions Department.

With a master's degree in engineering and a 14-year track record in designing and building network infrastructure, Mr Černiauskas will now lead the FIMA department responsible for providing communications and network infrastructure solutions and running telecommunications projects across Lithuania and neighbouring countries.

Since joining the FIMA team in 2007, he has made a substantial contribution to the project to roll out broadband to rural areas in Lithuania (RAIN2) and has played a proactive role in introducing a leading new player, Extreme Networks, to the Lithuanian network infrastructure market.

In his new position, Mr Černiauskas replaces Mr Eugenijus Kurtinaitis, a long-standing FIMA executive, who has moved into the energy sector.

Insights on communications technologies in AVAYA'S latest study

FIMA's long-term partner AVAYA, a leading provider of new generation communications solutions, has released a special forecast guide for 2013. This comprehensive study offers insights on **trends in the development of communications technologies and how these innovations will affect your organisation.** To be one step ahead, read AVAYA's study - "2013 Guide. The Collaboration Trends".

http://www.avaya.com/usa/campaign/2013-guide/

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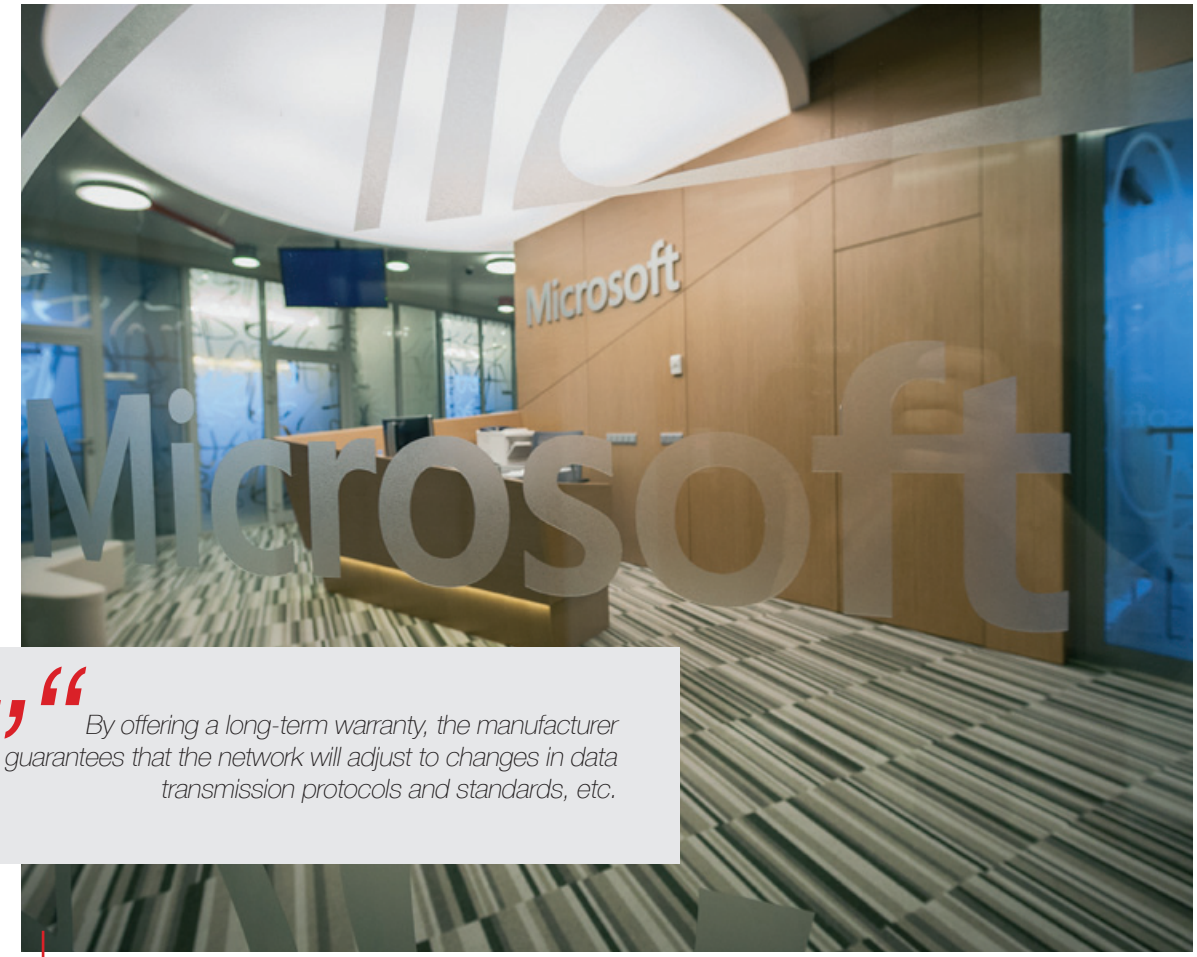
Businesses that value their reputation opt for certified systems

"Experience from our sales efforts has shown us that just under two per cent of companies in Lithuania **invest in certified cabling systems for computer networks.** Many still prefer to scrimp when it comes to cabling infrastructure reliability and go for the cheapest option," said FIMA's director of Automation and Data Transmission Solutions Department, Valdas Vrubliauskas.



With 800m2 of floorspace, the office boasts innovative technologies and design.

> *"By offering a long-term warranty, the manufacturer guarantees that the network will adjust to changes in data transmission protocols and standards, etc.*

Under normal circumstances, he added, a cabling system makes up only seven per cent of a corporate IT budget. "Companies that seek to cut costs further are taking a gamble because network failures may end up being more costly than the money saved in the first place. Organisations that combine equipment made by different manufacturers to set up network infrastructure are at an even greater risk and the effects of a network failure may be difficult to foresee," said Mr Vrubliauskas.

Solutions from trusted manufacturers reduce the risks

Mr Vrubliauskas advised businesses that care about protecting their reputations to invest in reliable cabling systems from well-known manufacturers to ensure uninterrupted network operation. "They may be invisible, but these systems control all business operations. Even minor faults in a computer network may paralyse an entire organisation with considerable losses involved. We aren't just talking about financial losses: Such failures may destroy the trust and goodwill of customers and ultimately prove fatal for a company."

He added that a single cabling infrastructure is vital when electronic in-building systems are installed in an office or an entire office block. "All in-building systems including automation and communications, security, heating and air conditioning as well as lighting connected into a single cabling infrastructure ensure more effective and efficient management of the whole building at a lower cost."

A system that delivers the ultimate in reliability

When it moved to new offices, Microsoft Lietuva chose Fima to install a computer network cabling system with the ultimate in reliability. The choice was for Systimax, a Category 6 structured cabling system, manufactured by CommScope that comes with a long-term 20-year warranty scheme.

"By offering a long-term warranty, the manufacturer guarantees that the network will adjust to changes in data transmission protocols and standards etc. Choosing a certified network means that high-quality components are used, that reliability is built in and that it can only be designed and installed by certified providers. CommScope takes staff certification very seriously. Its staff and partners are expected to keep up to date with innovations in the sector and to sit exams every two years to maintain their qualifications," said Mr Vrubliauskas.

The highest standards

The data transmission network for the Microsoft Lietuva office was installed to meet Microsoft's corporate standards which apply to all of its offices around the world. "We think that this integrated approach to office infrastructure is exactly

Continued on page 5

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Continued from page 4

Director of FIMA Automation and Data Transmission Solutions Department, Valdas Vrubliauskas, hands the director of Microsoft Lietuva, Kristijonas Kaikaris, a certificate which provides a 20-year warranty for the office's data communication network.

the right way to ensure that the same high standards are applied to all business communications. Microsoft's requirements for quality, reliability and the latest technology can only be achieved by using professional solutions," said Mr Vrubliauskas.

Microsoft Lietuva's director, Kristijonas Kaikaris, said: "We wanted the new Microsoft office to be comfortable for our staff as well as visitors, so we demanded the highest standards for all engineering solutions – both electronic and physical. The main requirement that we asked from the service provider was that all installed systems were certified because this is a guarantee that the infrastructure is of the highest quality. Not every contractor in Lithuania can offer such a sophisticated solution."

He added: "We designed our new office so that the working environment would act as a catalyst to improve the performance of our staff. Reliable systems in a building are vital for ensuring an efficient workflow."

The new Microsoft Lietuva is situated in the Baltic Hearts business centre. Fima was also responsible for the video surveillance, security and fire alarm, access control and car parking control systems for the entire building.

NEED TO KNOW

SYSTIMAX certified structured cabling system

- All CommScope products are developed in industry-leading laboratory facilities where they are designed and tested using advanced techniques. They are also manufactured in dedicated factories and **installed by the network of highly skilled and approved Enterprise Business Partners.**
- CommScope includes a 20-year warranty with its structured cabling system, *Systimax,* **guaranteeing that the manufacturer will cover the cost of repairs to faults in the passive elements of the infrastructure or applications.**
- The unique **20-year Extended Product Warranty and Applications Assurance Program** is provided for all certified SYSTIMAX projects. It covers all applications currently contained in the SYSTIMAX Performance Specifications. In addition the Assurance Program will cover any application introduced in the future by recognized standards or user forums that use TIA/EIA 568-B or ISO/IEC IS 11801 for UTP channel specifications for cabling.

INTERESTING FACTS

Microsoft Lietuva unconventional offices:

- The office reflects the company's non-hierarchical structure: There is no separate office for the director and it is open plan.
- The working environment has been designed and fitted out to support a flexible style of working.
- Each employee can migrate between workstations at any time, depending on their daily agenda.
- Staff is able to bring children to the office because there a special playroom is provided.
- About 40 per cent of office space is devoted to customers and partners.

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Fima engineers bring added efficiency to first independent biofuel boiler-house in Kaunas

The first independent biofuel boiler-house in Kaunas began operation last year as planned and much of the credit for the completion of the project on time must go to Fima engineers.

Along with the other subcontractors, Empower and Elektros zona, Fima was responsible for the installation of the **majority of the medium- and low-voltage power supply** which included a 10kV transformer substation and low-voltage (0.4kV) power supply infrastructure. The firm's engineers also installed a complete set of low-current solutions including site security, fire alarm, access control, video surveillance and building security systems.

Ambitious deadlines

A project of this scope normally takes six months from start to finish but Fima completed it in half this time.

"Time was the greatest challenge for our staff. We are usually the last contractor on site and the last to leave so if other contractors fall behind, we inevitably end up having to complete our part in less time than planned. On this project, we started work two months after the contract was signed and we had to accelerate our efforts including introducing weekend working. However, we were able to cope and managed to keep to our promises," said Mantas Okuličius, who led Fima's role in the project.

> *"The vehicle control and weighing system at the boiler-house allows for fully automated operation.*

Setting to automatic mode

The GECO Kaunas energy company wanted the operation of the boiler-house to be automated as much as possible, said Mr Okuličius, with the automatic weighing of commercial vehicles entering the site being one of the requirements.

He added: "Many companies do this by hand, but the vehicle control and weighing system that we have introduced to the boiler-house allows running the process in automatic mode. That means that role played by boiler-house staff in this is restricted to simply confirming the data. Everything else is done by an integrated system. Video cameras scan the license plate of the vehicle and the system compares it with information on the database and opens the gate. Once the vehicle has been weighed and unloaded, the system weighs it once again and generates a report."

On-site security at the boiler-house is also automated with infra-red barriers running along the entire perimeter fence in addition to a sensitive microphone cable which can detect an impact or any attempt to climb the fence. The system automatically alerts the security post of fence violations and indicates the exact spot where an attempted breach has taken place. In addition, areas where vehicles enter and leave the site are covered by a video surveillance system.

Did you know?

- This is the first independent boiler-house in Kaunas which uses renewable energy to produce heat for residential customers.
- The boiler-house has a capacity of 20 MW and includes two 8 MW nominal capacity biofuel-fired water boilers.
- The boiler-house uses an innovative technology: A 4 MW condensation economiser that ensures the energy is also extracted from the exhaust gases of the boiler and that this smoke is cleaned before exiting the flue.

Fima and other subcontractors installed the majority of the medium- and low-voltage power supply infrastructure and security systems as well as automating the vehicle weighing process.

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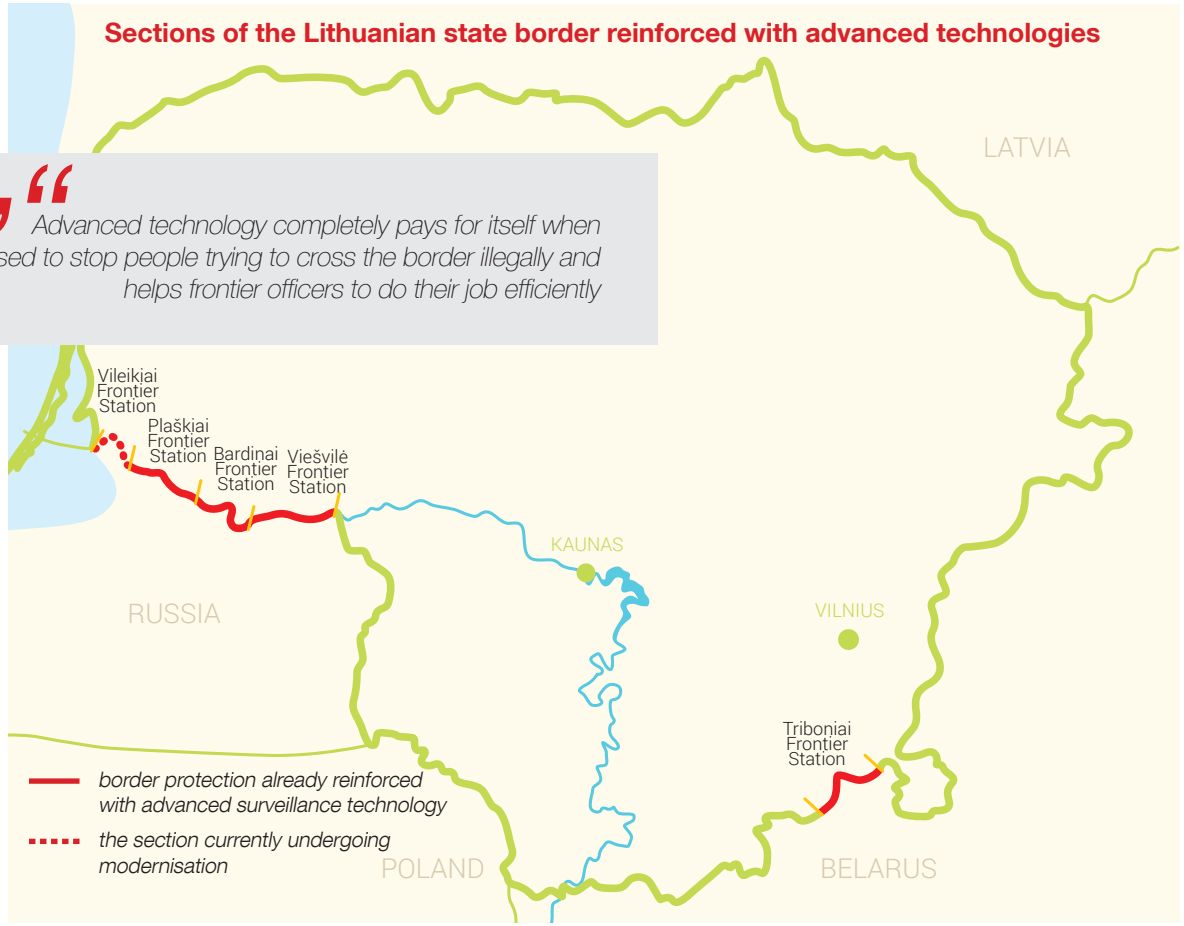
Modern technologies to secure the entire border along the Nemunas between Lithuania and Russia

The border with Russia was, for many years, one of the most porous sections of Lithuania's frontier and was criss-crossed with smuggling routes. However, when advanced technology was introduced a few years ago, the situation changed dramatically, with **attempts to cross the border illegally cut by more than 300 per cent.**

> *"Advanced technology completely pays for itself when used to stop people trying to cross the border illegally and helps frontier officers to do their job efficiently*

Sections of the Lithuanian state border reinforced with advanced technologies



Scale of smuggling

- The last few years have seen **a drop in the amount of contraband tobacco smuggled from Russia and intercepted by frontier officers.** Along this part of the border, 132,000 packs of cigarettes were intercepted last year, compared with 295,000 in 2011, 637,000 in 2010 and 920,000 in 2009.
- But the total amount of contraband cigarettes smuggled into Lithuania **rose by 10 per cent** last year. It was the second year in succession that the largest amount of intercepted illegal tobacco products that had been brought in to Lithuania came over the border from **Belarus.**

State Border Guard Service Information

The entire border with Russia along the Nemunas to be protected

As part of ongoing efforts to strengthen the state border, work to reinforce the entire section with Russia which runs along river Nemunas will be completed this year. FIMA will install an advanced border surveillance system at the Vileikiai frontier station (in Šilutė region), a post which covers 27km of the border with Kaliningrad Oblast.

Integrated system

The setup that FIMA is installing at Vileikiai will be a fully-integrated surveillance system. Nine 25 to 30 metre-high surveillance towers with day and night vision video cameras will be placed along the section of border. In addition, there are plans to install seismic sensors to detect the vibrations caused by people or vehicles as well as a sophisticated radar which will be able to locate people up to 2.5km away no matter what the weather conditions. The frontier station will be equipped by FIMA with specialist system management and control software developed by its engineers which has been purpose-built to suit the conditions of the Lithuanian border region. FIMA engineers will also install a surveillance centre.

Clear benefits

The new system will enable frontier officers to locate violators faster and more precisely and will ensure more efficient protection of the border, which is also an external EU border. The system will record and analyse events on the border in real time and, upon detecting any suspicious movement, will automatically transfer information to the officers.

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Border and customs screening for people travelling by train to Minsk to become more efficient

The border and customs checks for people travelling by rail to and from Minsk are set to change this year. Inspections by customs and border officers – which are currently carried out on the Lithuanian border – will be moved to the railway station in Vilnius. A new **border crossing and customs control checkpoint equipped with cutting-edge technology is now being installed at the station by Fima.**

Changes to screening will cut the journey time between the Lithuanian and Belarusian capitals by 30 minutes.

Did you know that...

- Minsk-Vilnius is one of the most popular rail destinations in Lithuania?
- More than 22,000 passengers travel by train between Vilnius and Minsk each month – a total of between 180 and 440 on every train?

Fima engineers are setting up new offices for State Border Guard Service and Customs officers in the station's underpass and will install a modern luggage x-ray system which will be capable of screening large amounts of luggage. In addition, a video surveillance system will be installed to record outbound passenger flows on the platform and throughout the station.

> *„The improved capacity of the new x-ray system at Vilnius railway station will allow up to 700 pieces of luggage to be screened every hour.“*

"The capacity of the new x-ray system at Vilnius railway station will allow to check up to 700 pieces of luggage an hour. This is going to make the security procedures much faster and smoother, meaning that passengers will not have to spend so much time passing through the checkpoint," said Giedrius Zaicevas, director of Security Solutions Department at Fima.

The changes will cut the journey time between the Lithuanian and Belarusian capitals by 30 minutes to just two and a half hours. Representatives of Lithuanian Railways say that procedures are being updated to reflect the growing demand for travel between Minsk and Vilnius. At the moment, Minsk is one of the most popular international rail destinations from Lithuania and the traffic is likely to grow further from the end of May when the number of trains running between the capitals will increase to three a day.

It is hoped that the new procedures, as well as cutting journey times, will reinforce efforts to stop smuggling and the movement of prohibited or restricted goods. Until recently, only random checks were carried out on trains and suspicious items had to be inspected by hand.

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Improved safety at level crossings in Vilnius

Fima has started work on **pilot projects** to install the most up-to-date **safety and security systems** at two **level crossings** in Vilnius.

Upsetting statistics

- Lithuanian Railways operate 538 level crossings, including 29 covered by a video surveillance system. Nine traffic accidents were recorded at level crossings in Lithuania last year with three people killed and two injured.

Photo: Judita Grigelytė

> *"One of the safety measures being installed on the crossings will be a first in Lithuania: special equipment will allow train drivers to see the level crossings from up to 2.5km away.*

An integrated security system will be installed on the level crossings between Subačiaus and Juodojo kelio and Pavilnio and Žemoji streets. The system will provide train drivers with an early warning if there is an obstruction on either of the level crossings and also minimise the risk of road vehicles jumping a red light and driving across the railway.

"The evidence that Lithuanian drivers still lack awareness is clear because a failure to obey the laws of the road is often the main cause of serious accidents at level crossings. To stop this happening, we are improving safety at level crossings. In addition to physical safety measures, we will install some advanced technology which will give train drivers enough warning of a danger ahead for them to stop the train safely," said Andrius Janušauksas, Chief Security Inspector of Lithuanian Railways. Improving safety at level crossings is absolutely essential, he added.

Fima will replace the obsolete relay-based system with a modern microprocessor-based one. It will upgrade the power supply and data communications systems and install additional safety measures including day and night vision video cameras and induction loops to identify vehicles using the crossings. Fima will also install a wireless alert system to transmit data directly to the cabs of trains using that section of line.

The video cameras and induction loops installed under the road surface will alert the train control centre in Vilnius of obstructions allowing staff to change track signals and halt approaching trains.

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“99,999... Vision or reality?”

In March, FIMA ran a seminar for its customers to discuss the **latest solutions that guarantee the reliable operation of IT services.** The seminar was called “99,999... Vision or reality?”

“Ensuring the continuous provision of IT services is a relevant issue for all of our customers. More and more companies are relocating their operations and services to the cloud and the need for bandwidth is growing exponentially, which makes a reliable network infrastructure vital,” the director of Telecommunications Solutions Department at FIMA, Vaidotas Černiauskas, said.

Representatives of FIMA along with its partners **Avaya, Eaton** and **Microsoft** and an expert on broadband internet projects for Lithuanian rural areas gave presentations to IT managers and professionals from a number of Lithuanian companies and organisations. The participants were also introduced to solutions provided by the network equipment manufacturer, **Extreme Networks.**

FIMA holds themed seminars for its clients and partners every year. The event at Mototoja car centre was attended by about 100 participants.

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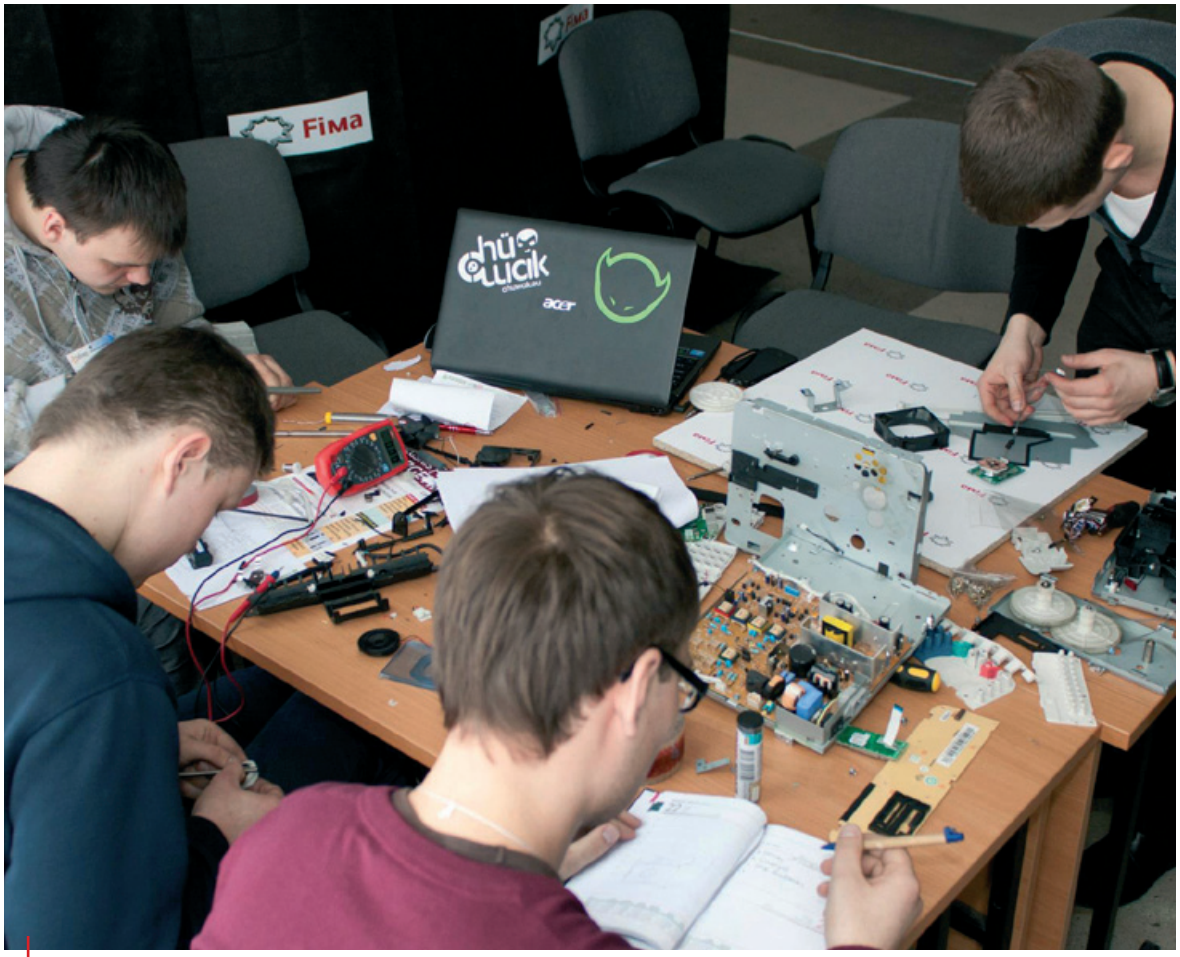
Turning an old printer into a wind power generator? Why not!

As is becoming traditional, the European BEST Engineering Competition (EBEC) for technology students took Kaunas University of Technology by storm again in February. **This year's participants were set a mind-boggling challenge by FIMA:** transform an old printer into a wind power generator… a working one. Could such a thing even be possible?



All competing teams succeeded in constructing functioning wind power generators

Across the EU

- EBEC (European BEST Engineering Competition) is an annual international contest which brings together engineering students from across Europe. It was first held in 2003. Lithuania has taken part in EBEC since 2006. This year's play-offs take place in 83 European cities. The contest in Kaunas involved more than 100 students.

As things turned out, it was. Despite looking difficult at first, the challenge turned out to be a piece of cake for the students. The teams demonstrated amazing imagination as they designed wind power structures and solved the puzzle of how to allow the generators to rotate to generate the maximum amount of electricity.

> *"The Fima engineering team prepared as seriously for the contest as the students. They devised the task, found a way to imitate the force of the wind and to measure the voltage generated. They also set up a test bed.*

"Even though they were given just four hours to complete the project, this did not put the students off. All teams created functioning wind power generators and some even came up with solutions that had not occurred to the Fima engineers when they created the assignment," said Director of Solutions Department at Fima, Rokas Šlekys, who was one of the evaluation team.

The Fima engineers took great care to come up with something sufficiently challenging for the students. "Our preparations for the contest were as serious as theirs. We devised the task, found a way to imitate the wind and to measure the voltage generated. We also set up a test bed," said Mr Šlekys.

The projects were judged according to their technical application and amount of volts generated as well as design, durability and practical applicability.

Two teams – InfoSA and LMKJ^m – won the main prize: a trip to Saint Petersburg to take part in the regional EBEC competition.

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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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