# SOLUTIONS ERA

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For those who follow the trends in intelligent engineering solutions

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# **2011:** Continuation of Innovative Projects and Firm Steps in Neighbouring Markets

Dear Colleagues, Partners and Customers,

This has been a busy and significant year, during which we have learnt much and have become stronger. I would like to express my gratitude and appreciation for this year to the staff and the clients of **Fima**: thank you for your professionalism, trust, cooperation and significant accomplishments in business, national and public projects.

I would like to mention a few very special projects in the public sector from the long list of our achievements: we kept contributing to the modernisation of streets in small towns in Lithuania, successfully tested the passenger counting system in public transport, equipped a laboratory for research of extremely dangerous diseases and launched the Baltic States' first Traffic Information System, which will be used by all drivers. Fifteen years of cooperation with Lithuanian Railways allowed us to continue modernisation of the railway junction in the strategically important Klaipėda State Seaport. This year, we kept developing our competence in the energy sector, expanded an ecological data centre which is unique in Central and Eastern Europe, and continued strengthening the protection of the state border.

Summing up our achievements, it is obvious that we have reached the stage at which we can share our knowledge and experience with the neighbouring markets even more actively. Expanding the exports of our services, which kept increasing this year, we have established the name of Fima not only in the Baltic region, but also in Belarus. This September we opened a subsidiary in Poland, and we are entering the New Year wishing our subsidiary a successful kick-off!

Looking to the future, I hope that the next year will bring us new challenges and new opportunities to prove Fima's professionalism and innovation. Next year, we will celebrate our 20th anniversary. It is a significant anniversary for us, since it proves that Fima is on the right path in searching for complex and unique solutions.

Let us take a minute and enjoy the achievements that we have accomplished together and see how far we have come.

I wish you and your families a Merry Christmas!



Sincerely yours, **Gintaras Juknevičius** General Director, Fima UAB

### News Stream

- This November, reconstruction of the Embassy of the Republic of Lithuania in the United Kingdom of Great Britain and Northern Ireland was completed in London. The new premises were outfitted by Fima with a CCTV and video conferencing system as well as security screening equipment. Furthermore, the company deployed an electronic queue management system, a security and fire alarm system and an access control system. This project required special attention because the works had to be planned with particular care due to the long distance, and special consideration had to be given to the UK laws regulating safety, evacuation, power supply and other issues.
- Within the framework of reinforcing the security of the external EU border in line with the terms of the Schengen Agreement, a new Stasylai (Šalčininkai) railway control post was opened at the Lithuanian-Belarusian border in November. Fima installed a microprocessor traffic control and level-crossing control system in this post, upgraded and expanded its communications systems and deployed security solutions at the Stasylai station.
- In Latvia, Fima has finished designing second track systems on a 56-kilometre Skrīveri-Krustpils railway line and has started installing the systems. The company will deploy signalling (traffic control), telecommunications and power supply systems on the new second track and will modernise the systems on the adjacent first track as well as at its stations.

### **News** Stream

- Another border protection modernisation project has been completed at the border between Lithuania and Russia. Fima has installed a complex protection system at a 25 km long border section serviced by the Plaškiai Frontier Post of the Pagėgiai Frontier District of the State Border Guard Service (SBGS) of the Republic of Lithuania. A surveillance centre equipped with tailor-made software has been installed at the frontier post.
- A data centre optimisation agreement has been signed with Belarusian mobile communication operator MTS. The reconstruction of the data centre's cooling systems will increase the centre's energy efficiency and reduce its power consumption.
- Installation of a horizontal current profiling and wave measurement equipment has been finished at the Klaipėda Seaport. From now on, the Klaipėda Seaport will have access to more accurate information, ship safety at the seaport will be improved, and ships will be serviced more quickly.
- Fima has become a founding member of the Intelligent Technology Association (ITA). One of the underlying goals of the Association is to contribute to the development and expansion of smart grids and electric car infrastructure in Lithuania.
- In October, Fina joined the ITS Lietuva (Intelligent Transport Systems) Association. The key goals of the Association are to accelerate and coordinate deployment of intelligent transport systems across all modes of transport, to be involved in designing and implementing the National ITS Strategy, and to promote international cooperation in the ITS area.

# Baltic States' First **Traffic Information System** Launched in Lithuania

As of October 2011, Lithuanians are the first in the Baltic States to be able to monitor traffic situation on the roads of national importance in real time. Such information is available on a special website, **www.eismoinfo.lt**, the launch of which finalised one of the main stages of the implementation of the National Road Traffic Information System project. From now on, travellers can prepare in advance for difficult weather conditions or possible traffic restrictions caused by roadworks or road accidents, and choose a safe driving speed, a good driving time and an appropriate route. The system will also help road maintenance services, which are tracking traffic information, to plan and control road maintenance works more efficiently.

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Within the framework of the project, which lasted more than two years, video cameras, traffic counters and 43 automated road weather stations with facilities to monitor weather conditions were deployed on every road of national importance across Lithuania. All these facilities and the 48 weather condition stations that had been deployed earlier were covered by the new Traffic Information System, which collects data about the roads and their condition. To control the system, the Traffic Information Centre was set up and equipped with a state-ofthe-art video wall: eight video cubes display the information on traffic and weather conditions on roads, with specialists monitoring them continuously.

SOCIAL INTEREST

Intelligent transport systems may improve the quality of passenger carriage, as real-time information about the situation on the roads helps plan transport routes, improve traffic safety and efficiency of traffic control and road maintenance, and lend prompt assistance in emergencies.

Gintaras Cilcius, Director of the Traffic Information and Management Division at the Lithuanian Road Administration (LRA) under the Ministry of Transport and Communications



To control the system, the Traffic Information Centre was set up and equipped with a state-of-the-art video wall: eight video cubes display the information on traffic and weather conditions on roads, with specialists monitoring them continuously.

# Laboratory for Research in Especially Dangerous Infectious Diseases Awarded **Gold Medal**

In autumn 2011, a **National Public Health Laboratory of Biosafety Level III** equipped by Fima and designed for the investigation of agents of dangerous diseases was officially opened in Vilnius. This is the first laboratory of its kind in Lithuania. It can examine rare micro-organisms related to dangerous human diseases such as anthrax, plague, tularaemia, brucellosis, yellow fever and other bacterial and virus infections, as well as cases of biological terrorism. For equipping this laboratory, Fima was awarded a **gold medal at the Lithuanian Product of the Year 2011** contest organised by the Confederation of Lithuanian Industrialists.

The laboratory is a unique integral complex consisting of facilities, support systems and laboratory equipment that are integrated and operate as a single system. As the general contractor, Fima offered a laboratory equipment solution that included a unique heating ventilation

and air conditioning system, a security system tailored to strict procedures, a special system for monitoring and automated control of all systems, and special equipment of facilities.

This is the second project of this kind that Fima have imple-

mented. In 2010 the company equipped a Biosafety Level II laboratory for the investigation of less dangerous diseases. The laboratory's capacities were expanded and now it can conduct research using molecular techniques and study the resistance of agents of diseases to antibiotics and such.

The prevention of any possible spreading of infections to the outside is ensured by hermetic doors and windows in premises; special HEPA filters for incoming air, which are probably the biggest in Lithuania; double HEPA filters for air extraction; and negative pressure cascades in different premises.



The laboratory is a unique integral complex consisting of facilities, support systems and laboratory equipment that are integrated and operate as a single system.

Investigation of agents of dangerous infectious diseases requires extremely strict conditions. The laboratory was designed and equipped to ensure a safe working environment for specialists and prevent any possible spreading of infections outside the laboratory.

Romualdas Brusokas, Director of the National Public Health Laboratory



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# Baltic Data Center: Vikings of the Baltic IT Market

Full of innovative ideas, the data centre and information system management company **Baltic Data Center** has conquered the IT services market in the Baltic States and is making firm steps in the direction of wider European sectors. In this interview, the General Director of Baltic Data Center **Saulius Markūnas** speaks about the company's plans, the dynamics of the IT market and the challenges faced by the company.



According to Saulius Markūnas, General Director of Baltic Data Center, the company has plans to expand into Nordic markets.

What have been the major changes in the IT systems management market in Lithuania? What caused such changes?

Even though we are speaking about a relatively short period of time, there is a clear tendency of growth in the field of small and medium-sized businesses. New technology and software has made IT systems accessible over the internet, so that they are no longer the exclusive domain of the big companies. Other contributing factors that drove the changes included cooperation in the business sector and exports.

What are the main challenges that Baltic Data Center is facing these days?

One of the biggest challenges for us is the limited local IT market. When it comes to outsourcing IT services, we already account for nearly a half of it, and we are therefore looking for possibilities to expand our business abroad.

The growing prices of energy resources in the global market are also a significant challenge that many companies face. Storing information in data centres and their maintenance consumes a lot of energy, and as a result even a tiny increase in its cost is a substantial challenge for our business, which makes us look for ways to achieve energy efficiency all the time.

You were among the first in the world to start using data centres outfitted with the advanced KyotoCooling system. Was that because of the need to cut energy costs as well?

Yes, that was one of the main reasons. However, deployment of green data centres is also one of our social responsibility considerations, because this helps us protect the environment Obviously, you are prone to taking risks, as there are only a few green centres of this kind across the world?

We knew we were taking the risk, but on the other hand, we had evaluated everything carefully before taking action. We were learning from other specialists, we were introduced to working examples, and we believed in what we were doing.

Today, we can see that this decision proved correct. By using the KyotoCooling system, we can meet top requirements

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#### NTERESTING

## Five facts about **Baltic Data Center:**

- It has been named the **best data centre operator** in Central and Eastern Europe.
- It was the first in Lithuania to deploy an underground data centre to match the highest security requirements.
- It was among the first in the world to start using green data management systems by deploying the most environmentally friendly data centre in the Baltic countries, equipped with KyotoCooling server cooling technology.
- It was the first Baltic company in the field to have its operations acknowledged with an international information security certificate under ISO 27001.
- In 2009, Baltic Data Center was recognised as the top partner of IBM Lietuva in the field of software.

for data security. This system creates a balance between reliability, an aspect that we find so important, and cost-efficiency, which puts us into a position to offer our clients reliable data protection at an affordable price.

> Can you say that the tendency for purchasing service hosting and leasing services now prevails, or are there still many companies that operate and maintain their own server hardware?

As a result of world-famous employers of IT specialists like Barclays entering the labour market of Lithuania, the competition in the IT labour market is currently increasing and the salaries are growing. Corporate management understands that recruiting experts is costly, and they therefore prefer to outsource IT system management services.

Some companies fear for the security of their information and are reluctant to trust external IT service providers. As a provider of such services, we can guarantee the security of our clients' information. We have special security systems and are proficient in managing them. We work with banks, which require top-level security for their data, and if they can trust us, so can any other company.

How do such tendencies differ in the business and governmental sectors?

## Valdas Vrubliauskas, Director of Fima's Automation and Data Networks Solutions Department:



We have been working with Baltic Data Center in the field of data centres for nearly seven years now, and we have deployed and upgraded several data centres as well as implemented many new things in Lithuania together, from installing the data centre with the KyotoCooling system to heating an office facility with heat from the servers. Baltic Data Center is an innovative client that makes it possible to apply advanced technology in Lithuania and for specialists to grow. On top of that, it is a company that knows how to attain focused efficiency in every project it is involved in

The business sector is increasingly inclined to trust services provided by external specialists; however, this shift is still rather sluggish within the governmental sector. Unfortunately, it has no stimulus to outsource the

the situation to change, the state should encourage the public sector to save and to look for practical IT solutions.

> What is the role of corporate management in operating the IT systems strategy?

With small companies, where IT management has a supporting function related to bookkeeping and logistics, strategic

issues are typically handled by the management, who prefer to entrust IT management to external service providers. When it comes to large companies, system management is critical, and such businesses therefore em-

Corporate management understands that recruiting IT experts is costly, and they therefore prefer to outsource IT system management services.

> ploy their in-house IT managers, who are in charge of both the IT strategy and the operations involving information.

> Export of services is a strategic pillar of the government. Do you think efforts to expand this area are sufficient?

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Baltic Data Center's General Director stresses that it is important to look for new efficient solutions that help reduce energy consumption at data centres

Even though the state focuses on attracting investments to Lithuania, we can feel its support for exports as well. We have been involved in an export promotion project financed by the European Union and have obtained funding for foreign-based marketing.

> How are the exports of services going for you? What markets are you working in and what are your plans for expansion?

We are focusing on the Nordic (Scandinavian) markets. Lithuanian and Scandinavian companies have good cooperation ties, and what's more, they are relatively close to Lithuania. When it comes to providing long-term IT services, distance is very important both from the practical point of view and out of organisational and cultural considerations as well.

Another reason why we have placed an emphasis on the Nordic market is because we see the greatest potential in it. This is affected by the level of the cost to export our services. That is our competitive strength, as we are offering high-quality services at lower prices.

The governmental sector has no stimulus to outsource the services, and for the situation to change, the state should encourage the public sector to save and to look for practical IT solutions. What do you think are the possibilities for our country to become a high-tech centre in the region? What advantages do we have? Neighbouring states also seek to attract investment; however, we have an edge because we can offer splendid specialists. The investors we work with are pleased with the level of our expertise and our working culture, but achieving truly great results requires many years of focused work as well as an ability to show that this market really is worthy of investing in. If banks can trust us, so can anyone.

# global innovation in Lithuania

**KyotoCooling** is a state-of-the-art data centre cooling system. Its unique feature is that it uses "free" air from outside to cool the servers. This technology helps reduce the costs to cool the data centre, which can be up to eight times cheaper than those for conventional data centres. The first data centre to use this system in Eastern and Central Europe was deployed by the Baltic Data Center in Vilnius in 2010, making Baltic Data Center the third company in the world to take advantage of this cost-saving solution. Through the use of an advanced way to cool air, the company is making a contribution to the European Union's objective of reducing power consumption levels at data centres by 20 per cent by the year 2020.

> For more information about this technology, visit http://www.kyotocooling.com/

# **APC Vice President:** "Baltic Region Holds Much Promise in the Data Centre Market"

Engineering solutions company Fima has expanded its cooperation with **APC by Schneider Electric**, a member of the world-famous Schneider Electric group. APC by Schneider Electric is a global leader in data centre infrastructure, IT power supply and cooling systems. **Soeren Brogaard Jensen**, vice president for data centre software at APC by Schneider Electric , has agreed to share with the readers of the Solutions Era his insights into the prevailing tendencies in the field of data centres, the influence that so-called cloud computing has on that sector and his views on how the Baltic countries look in this market. Enjoy!

> Mr. Jensen, what do you think are the challenges facing companies that operate and maintain data centres today?

Clients today are very concerned about the costs of running a data centre. Just like anywhere else, the clients want efficiency. Therefore, when it comes to outfitting and optimising data centres, high-quality infrastructure needs to be used. That is particularly relevant for major data centres, where optimisation might help cut the maintenance costs by up to 20 per cent. The bigger the data centre, the more savings can be achieved on operating costs. The right software needs to be selected and the system operation has to be carefully aligned. Thus, the current tendency in IT management is quite clear: attaining the best possible result at the lowest cost. By the way, I would like to add that this tendency is not being driven by clients alone. Many countries, e.g. Great Britain, Germany and the Scandinavian states, run rather austere tax schemes on companies that are not efficient in using electrical power. These countries are considering legal regulation of the requirements for power efficiency of data centres. Great Britain is already mulling over the requirement to keep the Power Usage Effectiveness ratio in new data centres below 1.2, and under 1.75 for existing data centres. Penalties or extra taxation would

be imposed on those failing to meet such requirements.

We can therefore say with some confidence that the issue of IT system efficiency is tied not only to the costs of running such systems, but also to the risk of paying added taxes. All of this is driving data centre specialists to look for ways to optimise data centres. With data centres growing bigger and more powerful, the inherent technology becoming more complex and the client demands increasing, the entire infrastructure of data centres needs to be managed more efficiently. In the future we will see special data centre infrastructure management (DCIM) applications automatically optimise the operation of the entire data centre, and cooling and other systems will automatically be adjusted to the load on the servers. Solutions like that have already been implemented. Based on a forecast from Gartner, in 2014, 60 per cent of data centres will be

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using such software, up from 1 per cent in 2010 (DCIM: Going Beyond IT, Gartner Research, March 2010).

Not only are information technologies "skyrocketing" into the clouds, but managing the infrastructure is also becoming increasingly complicated. This probably creates new tasks for data centre specialists as well?

Indeed, this is another element that heavily affects our work. Cloud computing is the most advanced approach to providing IT services, with companies or organisations no longer needing to store data in their own data centres or servers. This allows the available technological infrastructure to be dropped and professionals in the field to be trusted to main-

tain it. Data storage in a single location is replaced with a svstem which accommodates a large amount of storage space and is physically removed from the office of the company that actually uses the data. Therefore, data management systems must be automated to a greater extent, and data centre operators need to both take care of clients data and ensure that the service they provide is the most efficient, and that they are in a position to promptly issue information about the systems that they manage. Obviously, all of that requires new levels of knowledge and mastery from us as specialists.

> Are new data centre management technologies affecting the behaviour of companies that wish to contract data centre opti-

#### misation and maintenance services?

Without a shadow of a doubt. Previously, companies used to focus on seeking ways to resolve potential crises and data centre errors. In the light of data system virtualisation and technology becoming more and more sophisticated, automated technologies allow potential faults to be prevented immediately when systems become "self-healing", which opens up new opportunities for business development. This in turn means that there is now more focus on the client and the quality of the services. Of course, if I am allowed to say so, lower costs also reflects the way companies feel (smiles).

Could you share some of the examples of successful projects that your company has implemented?

As a leader in the field of data centre infrastructure, we have a lot of experience in deploying and improving sophisticated data management systems. I would like to mention the update of the Dutch Police data centre as one of our very successful projects. The virtualisation and restructuring of the data centre led to a 25 per cent increase in its power efficiency. In light of another project we've carried out, I would like to stress the importance of actually listening to the client's requirements and offering the best solution for them. Instead of buying new expensive hardware, we recommended that a leading US financial institution optimise its existing data centre. Following our work on the data centre, the company will now be able to use it successfully for at least another three years.

> What do you think the Baltic region looks like in the data centre market?

Most of Europe is quite conservative compared to the Baltics. In the Baltic States, I can feel this huge desire to catch up with Europe and even overtake it in the IT field, and you are therefore quite a bit more aggressive when it comes to applying new technology. In the business of data centres, the costs of keeping them running are an important element. It might sound weird, but the climate plays a significant part here as well (smiles). And there is a very rational explanation for that: the longer you can use air from the outside to cool data centres, the more power efficient and, of course, cheaper (to run) they become. In my opinion, the climate in Lithuania is very good for that purpose, as you do not have many hot days, and the air humidity is relatively low. Obviously, governmental policies and legislation as well as the conditions for founding and expanding businesses are equally important. In conclusion. I think that the Baltic reaion holds much promise in the data centre market, and therefore I wish you the best of luck.

Thank you for the interview.

IMPORTANT

### Power Usage Effectiveness (PUE) ratio

The data centre (DC) Power Usage Effectiveness (PUE) ratio shows the ratio of total power entering the facility compared to power used by the IT kit inside it. The closer the PUE is to 1, the higher the efficiency of the DC. Research has shown that most of the older data centres run at a PUE of 3,

which means that it takes more than 1,500 W of energy to have a 500 W server running! When the PUE stands at 2.4, most of the power is lost through inefficient cooling systems. The higher the effectiveness ratio, the more the environment is unsuitable to accommodate the server.

For more information about the DC efficiency ratings, visit http://www.thegreengrid.org/Global/Content/white-papers/The-Green-Grid-Data-Center-Power-Efficiency-Metrics-PUE-and-DCiE.

## APC Introduced an Upgraded Software Platform for Data Centre Infrastructure Management



APC by Schneider Electric, a partner of Fima, now offers the **StruxureWare** software, an upgraded data centre infrastructure management solution.

Data centre infrastructure management (DCIM) software monitors the status of data centre infrastructure, automatically operates the supporting systems, helps to plan and handle changes, tracks and helps to optimise energy consumption, and allows the physical and informational infrastructures of a data centre to be integrated into a single system.

The key advantage of StruxureWare is that it offers the possibility for top management, data centre operators and specialists to see, control and automate the day-to-day operations of a data centre in a single system.

For more information about data centre infrastructure management solutions, visit:

http://www.apc.com/products/category.cfm?id=7

# Fima starts cooperation with Morpho

Fima has become a representative of the US company Morpho in Lithuania and Latvia. Morpho, a member of the Safran Group, is a global leader in identification and security control solutions. The company sells its products and services to governments, national agencies, law enforcement and border control administrations and private businesses that seek to implement physical and consistent access control arrangements.

Morpho offers luggage screening intrascopes, explosives detection systems, portable drug and explosives detection devices, the up-to-date analysers to detect biological and chemical substances, etc.

Morpho has cooperated with more than 450 governmental agencies from over 100 countries.

For more information, visit: http://www.morpho.com



After 12 minutes of uninterrupted video surveillance an operator usually **misses up** to 45 per cent of events in his field of view. After 22 minutes this figure rises to 95 per cent. The data of the study carried out by Ainsworth speaks for itself. Why does this happen?

A revolution in the field of video surveillance has already taken place: analogue video surveillance systems have been successfully replaced by IP video systems that offer more flexibility and a significantly higher image resolution. A single megapixel camera is equivalent to 10 analogue cameras, and their number is increasing continuously. Human eyes, however, have not undergone an evolution: we still have only two of

data, a human being is physically unable to process it effectively.

"As technologies were becoming less expensive and the number of cameras was increasing. the need for efficient management of incoming information emerged, and that is precisely when the development of intelligent detection technologies started," says Šarūnas Pavilionis. Video Svstems Engineer at Fima. According to him, over time the technologies have been perfected to such a degree that today one can confidently claim they have reached an appropriate level of quality: recording and spotting even the smallest important details on the one hand and preventing false alarms on the other. Intelligent detection enables a single operator to attend to a large number of came-

ras. The technoloav serves the operator as an extra pair of "intelligent" eves, and the human only has to take prompt action in

response to incoming automatic alerts and make appropriate decisions.

Intelligent detection becomes a necessity in contemporary surveillance systems: it vigilantly spots everything that slips past the human eye. The system's capabilities go beyond the ability to recognise a moving object and alert the operator's attention: it can spot and call attention to an abandoned object, an individual who has been loitering for a



offers

long time or even the presence of a stranger who is not in uniform in the territory, and send an alert signal if the camera has been tur-

ned away. The The number of video svstem surveillance cameras some excellent is on the rise – the human features for citv eye is incapable of surveillance sysprocessing such a huge tems, e.g. it can flow of information. automatically record and send

> alerts about unauthorised parking of vehicles or about vehicles moving against the traffic flow. It also helps in detecting extraordinary and precarious situations, e.g. recording the emergence of an incident, a commotion or panic during an event. Efficient detection can also be used to accumulate statistical data and record human or vehicle traffic flows.

> Intelligent video surveillance systems are already applied in the Baltic States, e.g. the technology

is successfully employed by the State Border Guard Service of the Republic of Lithuania.

The examples listed above represent only a small part of the results that can be achieved by installing the appropriate software in a video surveillance system that must serve not only as an instrument for reviewing past events but also as a tool for prompt reaction.

"Intelligent detection can also be adapted to the existing systems, i.e. all one has to do in order to start using the possibilities offered by intelligent detection is supplement the available network of cameras with new hardware and software. We have noticed that functionality, operation and benefits offered by the system rather than the number of cameras alone increasingly becomes a priority when designing video surveillance systems," Mr. Pavilionis says.

them. Due to the huge amount of

## Capabilities of modern intelligent video surveillance systems:

- > **Classifying** objects by colour, size and shape;
- **Classifying** objects by speed and direction of movement; >
- Counting objects; >
- Simultaneous tracking of multiple objects without "losing" in-> dividual objects even when their movement trajectories intersect;
- > **Distinguishing** an object from its shadow;
- > Ignoring interference from weather conditions.



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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 nearly 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.**