Sintagma

Sintagma, UAB (www.sintagma.eu) is a Lithuanian software development and system integration company, belonging to **Asseco Group** - the largest IT group in Central and Eastern Europe (the group employs over 8,500 people). The company has been operating since 1991. **Sintagma** specializes in implementation of large IT projects, development of information systems and software. **Sintagma** is a leading system integrator in Lithuania.

Sintagma's **mission** - we create information systems tailored to the specific business of each organization, helping our clients work efficiently and realize their true growth potential.

Sintagma's **core competencies** are software development and project management, a deep understanding of chosen application areas, different information technologies and methodologies, and an ability to fulfil the unique requirements of each customer.

Sintagma's Quality Management System is certified according to **ISO 9001:2008** requirements. In 2002 the company received the **National Quality Award**. In 2000 **Sintagma**'s media newsroom solution "NewsNote" received the "Lithuanian Product of the Year" award. In 2002 **Sintagma** received the "Lithuanian Product of the Year" award for Lithuanian Integrated Library Information System LIBIS. In 2005 **Sintagma**'s Siauliai Region Information System received the national award for the best e-content project in the category e-Government. In 2006 **Sintagma** was recognized as the best business partner of "IBM Lietuva". The company was recognized as the best "Microsoft Dynamics" partner of the year 2009.

Sintagma is organized into two **business units**:

- **Information Systems**. Implementation of the complete information system development cycle and sophisticated server infrastructure. Specialized software solutions for document and content management, library and archives processes' automation, finance management, news media processes' automation, auto dealership business management, public/EU administration (ministries, municipalities, other organizations); also the development, implementation and support of information systems and software.

- **Insurance Solutions**. We develop, implement and support specialized software solutions for insurance business management (ranging from life and pension insurance to non-life insurance).

The average revenue of **Sintagma** totalled 6.4 MEUR over the last 3 years. **Sintagma** has more than 130 employees.

Competencies

Sintagma's core competencies are software development and project management, a deep understanding of chosen vertical/horizontal application areas, different information technologies and methodologies, and an ability to fulfill the unique requirements of each customer.

We implement the complete information system development cycle, from preparation of IS specifications to system design, development, implementation and support, even hosting services, and take full responsibility for the system operation. Included in this area is the implementation of sophisticated server infrastructure and large IT projects.

Industry know-how

We have a long-term systems development experience and strong competencies in the following segments and areas: document and content management, libraries and archives, insurance and finance, the public sector and auto dealership. **Sintagma** develops solutions that are exactly tailored to the requirements of our customers considering possible changes in the future. Our experience grows with every implemented project.

The complete information system development cycle				
Software development			System integration	
Document and content management	Libraries and Archives	Insurance and Finance	Public / EU administration	Auto dealership

Software related technologies and methodologies

Sintagma's emphasis on software development projects has produced a strong project team. Below is a list of the main software platforms and technologies in which our team has in-depth knowledge:

- **IBM:** pSeries servers (AIX, PowerHA, PowerVM), xSeries servers (Windows/Linux, VMware, MS Virtual Server, Xen, Windows and Linux clusters), Tivoli (Storage Manager, HSM), Websphere (Application server, MQ), Lotus (Notes/Domino, Portal), Rational (Portfolio Management), Information Management (DB2, Informix), GPFS.
- **SQL:** Oracle, IBM DB2, IBM Informix, PostgreSQL, MySQL database management systems.
- **Open Source platforms:** Linux, Tomcat, PostgreSQL, MySQL, Apache, etc.
- **Microsoft Business Solutions platforms:** Microsoft Dynamics NAV finance and business management systems.
- **Programming languages and environments:** Java, JavaScript, C/C++, C#, Delphi, Lotus Script, PL/SQL, HTML, XML, Microsoft tools, Navision C/AL, Visual basic, GUPTA SQL Windows, SAL, etc.
- **Software development methodologies:** UML, RUP, SCRUM.
- **Software design tools**: MagicDraw, Oracle Designer.
- **Data analysis technologies:** DWH (Data Warehouse) technologies, Oracle Business Intelligence (BI), Business Objects.
- **Business process management:** ISO 9000, PMBOK, ITIL, CMMI.

Partnerships

We maintain a solid partnership with well-known partners. We also work in a network of other companies, like Atea, Alna, Affecto, Ernst & Young, Fima, Konferenta either in a prime-contractor or subcontractor position.

IBM Premier Partner. IBM has been our strategic partner in many IT projects since 1992.

Oracle Gold Partner. “Sintagma” holds “Oracle” partner status since 1997. Most of our implemented information systems are based on an “Oracle” database management platform.

Microsoft Gold Certified Partner. “Sintagma” has been a Microsoft Certified Business Solutions Partner since 1997. We use “Microsoft Business Solutions” applications as platforms for the proprietary insurance, budget and finance management solutions.

AutoMaster Distributor. “Sintagma” has been an official Distributor of “AutoMaster” software since 2003. We integrate and implement auto dealer business management software.

Projects

Sintagma has more than 18 years of successful project experience working with well-known and demanding customers. The company's contracts include some of the largest IT projects in Lithuania. We have an excellent practice working with projects financed by the international funds like EU (PHARE, ESF) and EBRD. Following are representative examples (references are available upon request).

First generation Schengen Information System (SIS1+). In 2007 **Sintagma** developed and implemented information system for joining Lithuania to the first generation Schengen information system SIS1+. The system covers departmental registries of the Ministry of Interior, supplying information about wanted persons, transport, weapons and documents, the Consular procedures system of the Ministry of Foreign Affairs, providing information about visas and consultations on the European visa system VISION, the State border control system and the system of the Lithuanian SIRENE bureau. All the systems were developed and/or modified to meet the requirements of joining Schengen system. **Sintagma** performed system design works, developed software, trained users and implemented the system. The solution to join SIS1+ was made in order new EU members could join Schengen area already in year 2007, not waiting launching SISII.
Technologies used:

- Oracle PLSQL,
- Java,
- Servlet API,
- WSDL,
- PHP.

Consular Procedures Management System (CPMS). Between 2003-2004. Development and implementation of a consular procedures management system in Embassies and Consulates of the Republic of Lithuania. The system is comprised of the Visa Information System and Document Management System (management of a document flow among embassies, consulates and Ministry of Foreign Affairs). The most important part of the system is Visa Information System allowing issuance of Lithuanian visas according to EU requirements. This system started in 46 Consulates and Embassies all over the world. The project was financed by European Commission external **Phare** aid. Technologies used:

- ORACLE v.9i;
- MaxDB by MySQL;
- Java;
- Various Open Source libraries.

Facilitated Rail Transit Document Information System (FRTD IS). Full scale transit visa system for Russian citizens, travelling by Railway between Russia and Kaliningrad via Lithuania. The system was designed, developed and implemented in 2003. The purpose of the FRTD IS is to manage the issuing process of the Facilitated Rail Transit Documents (FRTD) and Facilitated Transit Documents (FTD) at Vilnius, Moscow, St.Petersburg and Kaliningrad Consulates and check FRTD validation at the border point. The project is financed by European Commission external **Phare** aid. Technologies used:

- ORACLE v.9i on IBM pSeries server clusters with AIX HACMP;
- Websphere MQ (MQSeries);
- Apache Tomcat Web Server;
- Java, PL/SQL.

National Schengen Information System and Visa Information System (NS-SIS & NS-VIS). Between 2005-2007. Preparation of a feasibility study, terms of reference and consultancy services in the scope of project management, project quality assurance and preparation for Schengen evaluation when implementing the development and introduction of the technical and information infrastructure of the Lithuanian National Schengen Information System project in Lithuania for joining the second generation Schengen Information System SISII. The project was implemented by the consortium of the international company **Unisys** and **Sintagma**. The second generation of the Schengen Information System and Visa Information System are being implemented to help new EU member states to join Schengen area.

Development of National Schengen Information System (N.SISII). Since 2010. The goal of this project is to connect the second generation national Schengen information system (N.SISII) to the central Schengen information system and modernize the software of the national Schengen information system and related national systems and registers according to the changed requirements of the central Schengen information system. **Sintagma** as the main project contractor provides project management and coordination services, prepares technical and methodological documentation, performs software modernisation, testing, implementation, support and user training. Technologies used:

- Oracle 10g database;
- webMethods 8;
- Programming languages: Java, Delphi, Oracle PL/SQL;
- OpenSource technologies: Apache Tomcat, JSP;
- Servlet API,
- WSDL,
- PHP.

Development of National Visa Information System (N.VIS). Since 2009. The goal of this project is connect to the Central Visa Information System and modernize accordingly Consular Procedures Management System (CPMS), National Visa Information System and Information System of the State Border Guard Service in order to meet the requirements of the Central Visa Information System and ensure their smooth interaction. **Sintagma** as the main project contractor provides project management and coordination services, performs software modernisation, testing, implementation, support and user training. Technologies used:

- Oracle 10g database;
- Programming languages: Java, Delphi, Oracle PL/SQL;
- Tools of work wit biometric information (photos, fingerprints);
- OpenSource technologies: Apache Tomcat, JSP.

Preparedness for Schengen information system (Lithuanian National Register of Wanted Objects). Between 2001-2002. Development of a national register for the Ministry of Interior. The project was financed by European Commission external **Phare** aid and the Beneficiary. Type of services provided: application and system software, hardware, training and support. Technologies used:

- ORACLE v.9i on IBM pSeries server clusters with AIX HACMP;
- ORACLE Application server;
- ORACLE Real Application Cluster.

Information system of plenary sessions of the II Chamber of the Parliament. In 2007. Development, implementation and support of subsystems of information supply and management for the plenary sessions, information mapping, generating and printing reports. Implementation and configuration of the database management system and computer hardware. Technologies used:

- Database management system - Oracle;

- Server - IBM System x3650;
- Data storage - IBM TotalStorage DS4700 and IBM TotalStorage TS3100;
- IBM Tivoli Storage Manager;
- IBM Global Console KVM.

Information system for road vehicle technical inspection (TAIS). Since 2006. Preparation of the system specification and guidelines, development and implementation of software, testing services, supply, installation and configuration of the system software and third party equipment, training services, preparation of the technical and users manuals, preparation of the technical project of system functionality development, hosting of internet system services, system support services. The main users of the system are ten technical inspection companies and about ninety technical inspection centres and stations located throughout Lithuania. The main activity components are used to: perform state technical inspection, technical expertise, issue and manage documents, account the provided services to the clients, perform accounting and control of clients' payments, account special numbered forms and control their usage, register cash operations. TAIS system has been developed using internet technologies and can be accessed using internet browsers. Technologies used:

- Database management systems - Oracle 10g;
- Programming languages - SQL, PL/SQL, Oracle DBVS libraries, XML, Java, Java Script, AJAX, HTML;
- Programming tolls - Struts;
- Platforms - Tomcat, Apache, Windows;
- System modelling language - UML;
- System modelling tool - Magic Draw.

The third-party motor liability insurance information system. Since 2002. Development of the third-party motor liability insurance information system of the Republic of Lithuania. The system comprises of the central database of the Motor Bureau information system and components of information systems of insurance companies that ensure data exchange with the central database. The purpose of the system is to collect, store and distribute data about the submitted to the clients proposals of insurance policies and the issued insurance policies in one central database located at the Motor Bureau (national association of insurance companies). The system functionalities are regulated by the Law on Compulsory Motor Third Party Liability Insurance. Type of services provided: software design and implementation, hardware, WEB application development, WEB hosting and system support. Technologies used:

- ORACLE database management system and Web application server;
- Oracle Business Intelligence Discoverer;
- XML based secure data transfer between the insurance companies' databases over the standard HTTPS protocol and central database;
- Message transmission software MQ Series;
- XML;
- Magic Draw;
- Oracle Designer;
- PL/SQL, JAVA.

Lithuanian Geographical Information Infrastructure System (LGII). Between 2006-2008. The project was implemented by a consortium of **Sintagma** and other Lithuanian IT companies. **Sintagma** was responsible for development of administration system and also participated in managing the project, developing tools for further system development, internet portal (www.lgii.lt or www.geoportal.lt), performing training of users and guarantee support. The goal of the project was to develop a framework of national geographic information infrastructure, joining providers (institutions) of most important state geographic databases and registries in order to make it easier

to collect, manage and apply digital geographical information. Based on this system one internet portal of national geographic information has been created. It enables exchanging most important state data, accessing it at one place, submitting and getting data in a preferred format. The project was partially financed by EU (PHARE) aid. Technologies used:

- IBM Websphere Portal server;
- ESRI ArcGIS products;
- MS Project Server, MS Dynamics NAV.

Integrated Computerised Information System for Environmental Management (ICISEM). Between 2004-2006. Development and implementation of an integrated computerised information system for the Ministry of Environment. The project was implemented by the consortium of **Fichtner** and **Sintagma. Sintagma** performed system analysis, design and software development. The project was financed by European Commission external **Phare** aid. Technologies used:

- Oracle 10g;
- Oracle Application Server Containers for J2EE;
- Oracle Application Server Reports Services;
- Oracle Jdeveloper;
- Oracle Warehouse Builder.

Information system for construction permits and state supervision of construction (IS INFOSTATYBA). Between 2006-2008. Since 2009, when legislation regulating the developed software has changed, the system has been further developed according to the new requirements. Preparation of IS project documentation, development, implementation and support of subsystems' software, training users, delivery and implementation of computer hardware. The system was integrated with other information systems and registries, enabled a quick disposal of all information about a status of national constructions and significantly improved servicing legal and natural entities in getting construction permits. Electronic service of issuing construction permits was created. It allows submitting applications and getting documents related to issuing permits in portal www.planuojustatyti.lt based on "one window" principle. The system has been officially launched in the country since June of 2008. The project was financed by EU regional development fund and state budget. Technologies used:

- Relational database management system Oracle;
- Information presentation – HTML;
- Application server Web Apache and J2EE;
- SQL query language.

Information System for personalization and accounting of identity cards used in digital tachographs (SKAITIS). Between 2004-2008. Specification, development and implementation of the card issuance component application, system documentation and training services, supply of hardware. The main purpose of SKAITIS system is to computerize functions performed by the card issuance center: registration of applications to issue, change or renew cards, checking the correspondence of data with the State registries and the participants of TACHOnet system, making a decision to issue the card, transferring the data to the cards' personalization/certification center and data acceptance from personalization/certification center, managing data about the issued cards, managing "white" and "black" lists; providing the data about the drivers' working and rest time to the supervisory authorities. Technologies used:

- Central database management system "Oracle";
- Data processing – internet technologies "Tomcat";
- Application server "Apache";
- UML;
- Magic Draw;
- Oracle Designer.

Road Transport Activity Information System (KELTRA). Between 2003-2009. Specification and design of the system, development and implementation of the system components' application, system documentation and training services, system further development services, supply of hardware and system software. The goal of KELTRA system is to computerize functions performed by the State Road Transport Inspectorate (VKTI) in a field of road transport. Application of licensing, economic and financial accountancy, accountancy of road transport activity, training in the field of road transport, technical maintenance, supervision of the road transport activity, document management and preparation of legal documents was developed. Hardware and application was supplied and the VKTI territorial computer network connecting VKTI central administration and its affiliate institutions, was developed in order to implement and operate KELTRA system. Technologies used:

- Central database management system "Oracle";
- Data processing – internet technologies "Tomcat";
- Application server "Apache";
- UML;
- Magic Draw;
- Oracle Designer.

Development of interactive electronic services for ordering and receiving publications in the public libraries. Since 2009. System analysis, specification and testing, project management and coordination, software development, implementation and support, user training. Supply, installation, preparation for operation and guarantee support of technical and system equipment to provide e-services. The goal of the project is to develop electronic services provided at the public libraries related to searching, ordering and returning the documents with a self-service possibility. These e-services will be used by the users of the public libraries and all citizens of Lithuania and abroad. Technologies used:

- Database management system - Oracle RDBMS;
- Application server - Apache Tomcat;
- Programming languages: Java, Delphi, Oracle PL/SQL;
- Standards: Unicode.

Integrated Virtual Library Information System. Between 2006-2008. System analysis, specification and design, development and implementation of software, training services, supply of hardware and system software, installation and set-up, guarantee support services. It is the first project of its kind in Lithuania and aims to digitize objects of cultural heritage currently stored in libraries, archives and museums. The goal of the project was to create a data bank of electronic documents of major libraries, archives and museums, which could be used by all citizens free of charge and interactively (via the Internet), also to create one more way for conservation of digitized objects. Technologies used:

- Database management system - Oracle RDBMS;
- Application server - Oracle Application Server;
- Programming languages: Java, Delphi, Oracle PL/SQL, C;
- Operational system - IBM AIX 5L;
- Central server cluster – IBM System p5;
- Data storage – IBM TotalStorage DS8100;
- Archiving software: IBM Tivoli Storage Manager, IBM Tivoli HSM;
- Standards: Unicode.

Development of Virtual Electronic Heritage System (VEPS). Since 2010. This project is a follow-up of the Integrated Virtual Library Information System development project implemented in 2006-2008. Project management and a full development cycle of information system that will connect 10

memory institutions. Supply, installation, setup and guarantee support of hardware and system software to perform e-services. The goal of the project is to develop e-services making more convenient and faster access to the digitized heritage contents. Also to assure a long-term storage of this contents and possibilities of searching, reviewing and ordering the digitized objects in internet. The scope of the project is to supply hardware and develop software for preparing, accumulating, storing for a long time, circulating and integrating into a common European cultural heritage space of the digitized contents of the Lithuanian memory institutions' cultural heritage objects. Technologies used:

- Database management system - Oracle RDBMS;
- Programming languages: Java, Delphi, Oracle PL/SQL;
- Central server cluster – IBM Power p550;
- Data storage - IBM TotalStorage DS8100;
- Archiving software: IBM Tivoli Storage Manager, IBM Tivoli HSM;
- Standards: OAI-PMH, RDF.

Automated Library Information System for the Belarus National Library (ABIS). Since 2005. This project is a follow-up of the Integrated Virtual Library Information System development project implemented in 2006-2008. Consultancy services and design of an automated library information system (ABIS) for the Belarus National Library (BNB), using experience gained from implementing the Lithuanian LIBIS project for the National M. Mazvydas library. The project is being implemented together with the partner in Belarus AGAT-SYSTEM. **Sintagma**'s consultations cover creating the library's electronic catalogue and its architecture, defining the modules and functions of the system, including quality control parameters. The ABIS system is being developed on the same principles as LIBIS system, but taking into account established BNB practice working with bibliographic information, managing documents and servicing library customers. For example, bibliographic data will be stored using the BELMARC format, while Lithuania uses the UNIMARC format. The electronic catalogue will store not less than 14 million documents (books, magazines, brochures, maps, notes, audio and other documents). Based on this system the system has been **implemented for the Belarus Presidential Library** and adjusted according its working practices.

Lithuanian Integrated Library Information System (LIBIS). Since 1997. Design, implementation and support of the system at all Lithuanian public and scientific libraries, training services. The goal is to achieve standard solutions for main library processes: from acquisition and cataloguing to circulation (library customer services), including Internet based services. The main challenge was multilingual requirements for data management, retrieval and visualization. A search for a publication in electronic catalogues is facilitated across all of the country's libraries. No duplication in cataloguing. Creation of the Unified Catalogue (www.libis.lt) for Lithuanian and international users. Technologies used:

- Oracle 8 and 10g RDBMS server with Oracle Text option, integration with Saperion;
- PostgreSQL RDBMS for small library software (Open Source platform, no third-party licenced components);
- Z39.50 server for Union Catalog;
- Windows 98 and above for client, Apache Web Server;
- Standards: Unimarc/B and Unimarc/A, ISBD, ISO2709, Z39.50, Unicode, Unimarc/H..

Information System "Lithuanian archival funds collection". Since 2001. Design, implementation and support of the IS "Lithuanian archival funds collection" for the Lithuanian Archives Department. The scope of the system is to store and manage large amount of multilingual information in the State Archives and perform a universal search, exchange and publication of the archival records to the Internet. The system is based on many years of experience in cooperation with the Lithuanian State Archives, Libraries and the advanced and reliable Oracle information storage technologies. Technologies used:

- Oracle 9.2 RDBMS with Oracle Text option;

- Standards: ISAD(G), EAD v2002, Unicode.

Electronic Archive Information System (EAIS). Since 2010. EAIS system will make it possible to submit to the state archives the official electronic documents signed by e-signature, organize their storage, assure their confidentiality and possibility to use and store them unlimited time, search for e-documents and submit them using IT and communication means, also to submit applications to the state archives and issue documents confirming the legal facts, to submit electronically certificates or certified document copies. The system will also cover supply of software tools of free accessibility for preparation of official e-documents, signing them by e-signature, preview, verification, accumulation, analysis and processing of statistical data about the stored documents. The project is being implemented by the consortium of **Sintagma** and other Lithuanian IT companies. **Sintagma** as the main project contractor together with subcontractor develops internal portal functionality of EAIS, also software tools related to creating and checking electronic documents and e-signatures, and is also responsible for project management and coordination of decisions related to EAIS design, development, testing, implementation and training services. Technologies used:

- XML technologies;
- Network services (SOAP, WSDL language);
- Java, J2EE;
- Electronic signature (XAdES-BES, -EPES, -T, -C, -X-L, -A);
- Electronic document (ADOC-V1.0);
- IBM WebSphere Application Server V7;
- IBM WebSphere MQ File Transfer Edition v7;
- IBM WebSphere Enterprise Service Bus v7;
- IBM Tivoli Storage Manager 6.1;
- Oracle Database 11g Standard Edition;
- Adlib Software Express Server 4.8;
- Microsoft Office 2007;
- Open Office v2.4;
- UML.

Information system of filing electronic documents in the State archives (prototype). In year 2008. Design, development and implementation of information system prototype. Preparation of electronic document specification (ADOC). The main deliverables of the project: developed tools for testing and verifying the main procedures of electronic documents‘ acceptance, long-term and permanent filing, made recommendations for a feasibility study and technical specification of creating infrastructure of electronic documents‘ filing in the State archives, prepared the project of specification of electronic documents signed by electronic signature, selected formats for transforming the contents of electronic documents (for a long-term and permanent filing of electronic documents), also formats for transforming image of electronic document content. Technologies used: Java.

Decommissioning Management System and Database for Ignalina Nuclear Power Plant (DMSD). Between 2007-2008. The DMSD covers management of overall decommissioning process including processes like inventory of the plant, dismantling and decontamination planning, waste management, human resources planning, calculation of decommissioning costs, administration of contracts and documentation, reports and public relations. **Sintagma** brought its deep know-how of documents and web content management, systems integration and implementation of complex IT solutions based on IBM hardware and Oracle software and experience of work with INPP gathered in previous project “Document Archive Management System” implemented in year 2004-2005. Technologies used:

- Oracle DMS;

- Java;
- Oracle 10g Application Server;
- Oracle Forms and Reports Server;
- AIX, HACMP.

Document Archive Management System for Ignalina Nuclear Power Plant (DAMS). Between 2004-2005. DAMS is the first electronic document library in Lithuania and is a part of the whole INPP decommissioning process. The purpose of INPP Document Archive Management System is to ensure a long-term preservation of documents, also audio and video information with a reliable and controlled access for 100 years. To achieve high availability, easy management and long lifetime goals, DAMS consists of relatively independent modules based on the standard industry proven IBM hardware and software. The main contractor was IBM. **Sintagma** was subcontracted for software development. The project was financed by International Ignalina Decommissioning Support Fund managed by EBRD. Technologies used:

- IBM AIX HACMP cluster;
- IBM Content Manager;
- IBM DB2 Universal Database;
- IBM WebSphere Application Server;
- Tivoli Storage Manager;
- Java;
- Kofax Ascent Capture.

Document management system Avilys for Akropolis Group. In year 2009. Implementation of the document management system Avilys as developed by **Sintagma** has led to the attainment of Akropolis Group's targets of facilitation and acceleration of managing, inputting, searching for, reviewing, updating and storing the organisation documents. Managing client contracts became more efficient due to automation of data transfer from the financial management system (*Microsoft Dynamics NAV*) directly into contract templates. This eliminated the need to enter the same financial data of a contract at several sites. The modules of Avilys that have been implemented in the organisation provided a possibility to have a comprehensive history of activities and events and draw miscellaneous reports that are a part of the system Avilys. Technologies used:

- Database management system: MS SQL Server;
- Application server: Apache Tomcat 5.5;
- WWW server: Apache 2.2;
- Operating system: MS Windows server 2003.

Document management system for SEB Bank. Between 2008-2009. The goal of the document management system is to store and manage the documents of SEB Bank and its branches. The system covers: document management system (DMS), software for importing the accumulated documents to the DMS, software for automatic importing of the scanned documents to the DMS and automatic filling of document registration data (integration with KOFAX Capio). The project also included integration with the customer's system of user rights' management and other information systems of the bank. Technologies used:

- ORACLE database;
- Java (Hibernate, Spring),
- Servlet API,
- IBM WebSphere AS.

Document management system for the central Bank of Lithuania. Since 2001. Design, implementation and support of the document management system - enterprise-wide solution for document management, with more than 500 users, paperless technology for document preparation,

storage with sophisticated functions of access control, delegations, coordination and standard workflow, training services. Technologies used:

- IBM Lotus Domino/Notes;
- IBM Lotus Domino.Doc;
- IBM Lotus Workflow.

Document Management System for the Ministry of Transport. Since 2001. Implementation of Document Management system in Ministry of Transport and in 32 affiliate institutions. Enterprise-wide solution for document management, paperless technology for document preparation, storage with sophisticated functions of access control, delegations, coordination and standard workflow. Main functions: registration of documents (incoming, outgoing, internal documents), tasks assignments, preparation and coordination of document drafts, reports, full-text search, archiving system. Technologies used:

- IBM Lotus Notes/Domino as document management platform and Web Server.

Document and Services Management System for Vilnius Municipality. Since 2001. Design and implementation of the document management system for Vilnius Municipality - the second largest public institution in Lithuania, with 22 branches and over 600 employees. The scope of the system is to cover all routine document management and control tasks. The system allows tracking of ten and hundred thousands incoming, internal and outgoing documents and task assignments per month. Using the document management system Vilnius Municipality has already processed over one million documents. The base for this system is a proprietary document management solution *Avilys* (*the Hive)*. The system has been modernized in order to apply “one window” principle of citizens’ services. The system runs on an Open Source platform. Technologies used:

- SQL, ORACLE;
- XML, XSLT;
- Java;
- Various *Open Source* technologies, e.g. Tomcat, Velocity, iBATIS;
- LDAP.

Feasibility Study for preparation of land exploitation planning documents electronically. In year 2008. Preparation of feasibility study, covering the requirements for developing software tools (prototype). The goals of preparation of feasibility study: evaluate an expediency of developing information system of preparation, consideration with a society, coordination and publicity of land exploiting planning documents, present proposals for improving the procedures of preparation of land exploiting documents regulated by the legal acts.

Development, implementation and support of Electronic public services portal (EPP) of Kaunas City Municipality. Between 2006-2008. Development and implementation of tools enabling the Municipality to provide electronic public services, organize and manage a data exchange between the subjects of information systems operating in different technological environments and participating in providing electronic public services using XML data format. Integration environment supporting open standards was created. The developed internet portal of electronic public services uses a safe authorized access to information. EPP was integrated with e-banking, www.evaldzia.lt (e-government), www.epaslaugos.lt (e-services) portals’ user identification systems. Software and hardware installed in EPP enables performing the various functions of providing e-services. Technologies used:

- XML Web Services;
- Oracle DBVS;
- Java, Tomcat,
- PHP.

State Energy Inspectorate Information System (VEI IS). Between 2006-2008. VEI IS is a specialized document management system aimed to verify, create and approve documents related to running equipment using energy, also to issue certificates and permits to run such equipment. Each document is managed according to a certain workflow. The system has about 30 of such workflows. The user connects to the system through internet with a key containing his certificate and fingerprint. This enables the direct users to connect to the system safely from any location. When the user connects to the system a window with not yet finished tasks is displayed, so it allows the user to track the status of documents and manage them more effectively. Technologies used:

- ORACLE Database Server and PL/SQL (programming language);
- Tomcat Web Server;
- Java programming language based IBATIS and STRUTS framework;
- Eclipse development environment.

Information system of Vilnius City interactive school (IMIS). Between 2008-2009. Design, development and testing of information system, user training and guarantee support services, preparation of documentation. IMIS is an information system for pupils, teachers, parents (patrons), education institutions that require reporting data. The system consists of: a system of informing parents (patrons) - analogous like e-diary, document management system for registering incoming/outgoing documents of the school, for issuing tasks and so on, reports' component for creating reports on issuing trimesters/semesters, attendance and other internal school and statistical reports, component of printing certificates and duplicates – analogous to Sintagma's Certificate DB but made to operate not locally (Delphi), but in a remote connection to the main server (using Oracle / Java technologies). The base implementation of IMIS covered 5 pilot education institutions. The system is planned to operate in 130 education institutions. Technologies used:

- Oracle;
- Java;
- PHP.

Open Information, Counselling and Guidance System (AIKOS). Since 2003. Development, implementation and support of the sub-systems for administration of registries and databases of education for the Ministry of Education and its affiliate institutions. Software for managing classificators, registration and administration of the system users was developed. Software for information exchange with the Lithuanian Labour Exchange, Department of Statistics and Lithuanian labour market training authority was developed. Software for creating and regular updating of AIKOS website (www.aikos.smm.lt) was developed and implemented. The main task of the internet system is to join information from different databases of education system, systematize it and provide up-to-date information about the current professional qualifications, programs of studies, educational institutions, the registered and accepted education certificates and issued teaching licences, number of students/pupils and free jobs/positions in Lithuania. The system is fully integrated with the State registries and is being updated every day. Technologies used:

- INFORMIX Internet Fundation: Dynamic Server (SQL), Web and Excalibur Text Search DataBlades on Windows 2003 for server, Windows 95 and above for client;
- Delphi, Java, Tomcat.

Lithuanian Education Information System (IS SCHOOL). Since 1998. Since 2003 this project has been extended to AIKOS project. Design, implementation and support of the selected subsystems for the Ministry of Education and related institutions to administer the public schools. The scope of the Web-enabled system (www.mokykla.smm.lt) is to interconnect information from databases of the system of education, systematize and provide daily updated information about qualifications available in Lithuania, studies and teaching programs, educational institutions and

forms of education certificates registered and acknowledged in Lithuania. The system is fully integrated with the state registers. Technologies used:

- INFORMIX Internet Fundation: Dynamic Server (SQL), Web and Excalibur Text Search DataBlades on WindowsNT for server, Windows 95 and above for client;
- Delphi, Java, Tomcat;
- IBM Lotus Notes/Domino as document management platform for some applications and as a Web Server.

National Register of organ donors and recipients. Between 2000-2002. The purpose of the register is to collect, process, systematize, store and provide data about donors and recipients of tissue and organs, and the persons, who declare their agreement or disagreement to use their tissue and (or) organs for transplantation after their death. Central database of the register and specialized databases like “Kidney“ and “Eye tissue“ were designed. Application of database management was developed. An informational exchange of data checking with the Register of inhabitants was completed. A module of selection donor and recipient pairs was designed and developed. The register was implemented for the National Bureau of Organ Transplantation and specialized institutions managing databases. Technologies used:

- Central database and specialized databases management system Interbase;
- Architecture of client server is used for the register.

National Register of establishments of the state significance and dangerous objects. Between 2002-2005. Design, development, implementation and support of the system, training services. The software of the Register of establishments of the state significance and dangerous objects helps to store in one central database information about the state significance and dangerous objects, update this information and provide it for solving civil protection tasks. The goal of the system is to operatively and conveniently provide information to the register users for the efficient solving of the planned tasks. The system helps to perform civil protection tasks: anticipate dangers, prevent and manage emergencies, coordinate fire and civil protection training, perform fire & rescue and other tasks. Technologies used:

- DBVS Oracle 9i, Delphi,
- DBVS PosgreSQL,
- Tomcat, Java.

National Register of dangerous chemical substances and preparations. Between 2003-2004. Design, development, implementation and support of the system, training services. The software of Dangerous chemical substances and preparations register helps managing information of the register’s central database: gathering, processing, systematizing, storing and use of data about dangerous chemical substances and their suppliers. This register enables to control the emerging of new dangerous chemical substances in market as well as to investigate them and report to the European Commission. This enables the Lithuanian producers to supply chemical substances to the EU with equal rights, to guarantee free trade among countries and safely use them. Technologies used:

- DBVS Oracle 9i, Delphi,
- DBVS PosgreSQL,
- Tomcat, Java.

Design, programming and integration with other information systems of securities, document forms, banderoles, official marking register (LiDOKS IS) components. Between 2004-2005. The purpose of LiDOKS IS is to computerize an operation of register of securities, forms of documents, banderoles, official marks of the Republic of Lithuania. LiDOKS IS helps to collect, archive, process, systematize, store, use and provide data of the Register. Textual and graphical information about technological means of protection, production of forms, detected

falsifications is stored in the Register. The Register is integrated with other information systems. Technologies used:

- ORACLE database server;
- LINUX server operating-system;
- Tomcat Servlet Container;
- Programming languages: Java, PL/SQL, SQL;
- Framework: Struts;
- Work with the programs using internet browsers;
- Protocol of client communication with LiDOKS IS - HTTPS.

Development and implementation of the finance management system for the Ministry of Finance and its subordinate institutions (FVAIS). Since 2009. The goal of the project is to develop a finance management and accounting information system while expanding the State budget accounting and payment system (VBAMS) that would ensure an accurate and correct accounting management according to the requirements of the being performed public sector accounting reform – that is to manage accounting according to the requirements of the public sector accounting and financial reporting standards (VSAFAS) and applying accumulation principle. The system will help to increase and assure accessibility and common use of accounting data at the Ministry of Finance and its subordinate institutions, to provide quickly and efficiently data in various views, to avoid duplication of data registration in different systems, to reduce a possibility of accounting errors, to control accounting and work efficiency of the ministry employees and quickly process data. Technologies: Microsoft Dynamics NAV.

Development and implementation of the Treasury finance management and accounting information system (FVIS). Since 2009. The goal of the project is to develop a tool giving a possibility to implement the requirements of the public sector accounting and financial reporting standards (VSAFAS) in the treasury accounting, to apply accumulation principle, assure accuracy of information needed for the Treasury accounting, financial accountability and finance management. The FVIS system will allow an accurate, correct and efficient management of the Treasury accounting (fund of the state resources) according to the requirements of the being implemented accounting reform. Technologies: Microsoft Dynamics NAV.

Budget and finance management system for the Presidential Office. Since 2006. In 2006 a module of fixed and current assets was implemented, provided training of users and consulting services. In 2007 the system was further developed and a module of budget accounting was implemented. Presently a replicated FVAIS finance management solution of the Ministry of Finance is being implemented at the Presidential Office. Technologies: Microsoft Dynamics NAV.

Program development and budget planning system for Ministry of National Defence. Since 2001. Development, implementation and support of the program development and budget planning system for the Ministry of National Defence. The system helps to perform a detailed budget expense planning according to the activity programs of the Ministry of National Defence. The system will be integrated with accounting, finance management, logistics and other functions. During the 2005-2007 project of developing Budget performance subsystem analysis, design, development, implementation, support, modernization and user training services were provided. Project results: finance management and accounting information system was developed that is used by 100 users at one time. The system was implemented at the ministry and remoted departments The solution has been developed on a basis of Microsoft Dynamics NAV application.

Finance and accounting management system for the Ministry of Economy. Since 2001, when when the initial system implementation was performed. In 2006 the Ministry of Economy migrated the system to version “Navision 3.7”. During the project of system development a module of contracts management was developed and implemented. A feasibility study was performed in 2006

in order to develop and implement a budget planning module in 2007. During the 2004-2009 project system analysis, design, development, software and data migration to a higher Navision platform version (Microsoft Dynamics NAV 5.1), implementation and support, system adaptation according VSAFAS (the public sector accounting and financial reporting standards) requirements, user training services were provided. The implemented system is used also by the ministry's subordinate institutions. During the project the accounting method was moved from a money principle to accumulation principle.

Sampo Life Insurance Business Management System (SLIB-MS). Since 2007. The goal of the project is to move current system of 2.5 version to "Microsoft Dynamics NAV" version 4.0, also adapt and implement life insurance system to "SE Sampo Life Insurance Baltic" in its Estonian and Latvian branches. SLIB-MS covers all main life insurance operations, including management of information on policyholder, insured and beneficiary, administration of unit-linked and classical insurance contracts during the whole life-cycle, claims management, premium payment management and debts control, reinsurance, reserve calculation, etc. Implemented internet self-service sub-system, which provides possibility for policyholder to review insurance contract data as well as to manage investments of Unit-Linked contract via Internet. The solution has been developed as an extension of the Microsoft Dynamics NAV package. Clients information and self-service subsystem is developed on Java and WEB technologies base. Technologies used:

- Microsoft Dynamics NAV;
- Microsoft SQL;
- Microsoft Active Director;
- Java, Tomcat, PostgreSQL.

Life & Pension Insurance Business Management System. Since 1999. Development, implementation and support of a business management system for life insurance companies. The system contains complete functionalities necessary for core life and pension insurance business processes, including unit-linked insurance products and other life and pension insurance products, plus accounting and finance management. The solution has been developed as an extension of the Microsoft Dynamics NAV package and uses its widely adapted standards. Clients information and self-service subsystem is developed on Java and WEB technologies base. The customers are SEB Life Insurance, Sampo Life Insurance Baltic, Aviva Lithuanian Branch, Danske Capital Investment management, Bonum Publicum. Technologies used:

- Microsoft Dynamics NAV;
- Java, Tomcat, Struts Java Framework, PostgreSQL.

Auto dealership business management system. Since 2003. Development, implementation and support of integrated business management system for autodealer companies. The system contains complete functionalities necessary for core autodealer business processes and is Web-enabled. The main advantages of the system are: unified client and car databases, integration with accounting and finance management, autodealer partners' support and barcode systems. The solution is based on AutoMaster Dealer Management System. The main customers are "Tokvila", "Veho", "Solorina", "Fakto", "Autotoja", "Autojuta", "Ivuana", "Mototoja" and "Žaibo ratas Vilnius". Technologies used:

- Microsoft SQL Server;
- CristalReports;
- Microsoft Dynamics NAV;
- AutoMaster.

Implementation of IBM Rational Portfolio Manager (RPM) project management system at publishing companies "Šviesa" and "Alma littera". In year 2006. **Sintagma** performed RPM presentation, analysis of customer's business processes and fitting of RPM to their needs, set-up of

servers and implementation of all software. Implementation of RPM covered product configuration, mapping customer's project information into RPM, preparation of work with RPM methodology, training users, support and consulting. RPM system was integrated with the existing ERP solution based on Microsoft Dynamics NAV, allowing the two applications to share data on project costs and estimate projected expenses. Centralized system provides a single source of information on the whole portfolio of projects; better status reporting enables more effective utilization of manpower and resources; analysis of project history enables constant improvements in internal processes. **Sintagma** is carrying out an in-house project on implementation of RPM system. Technologies used:

- IBM Rational Portfolio Manager;
- IBM DB2 database management system;
- Microsoft Dynamics NAV.

Development and support of "Omnitel" performance management (PM) system. Since 2008. Project aims to integrate customer's technological systems, the generated by them productivity and other data statistics into PM data storage and assure a unified creation and presentation of reports for all the systems. **Sintagma** performs system integration works, preparation of reports' environment, creation of reports, other works related to the PM system, its support and update services. Technologies used:

- IBM Tivoli Netcool Performance Management for Wireless;
- Business Objects (BO);
- Motorola OMC-R;
- Nokia Netact.

Media Newsroom System for "Verslo Zinios", the largest Business Daily Newspaper in Lithuania. Since 1999. Development, implementation and support of a complete multimedia newsroom and daily newspaper production system with workflow and real time online publishing. "Verslo Zinios" (www.vz.lt) is a member of Bonnier Group, the largest media corporation in Scandinavia. "Verslo Zinios" employs over 60 journalists. The system is an e-business solution for a newsroom and daily publication. The system is based on the proprietary solution *NewsNote*, which facilitates specific daily production, workflow, various databases, archives, work off-line while travelling, direct newspaper publishing to the Web and on-line news in the real time Internet. Technologies used:

- IBM Lotus Domino/Notes;
- IBM Lotus Domino.Doc;
- IBM Lotus Workflow.

National Tourism Information and Reservation System. Between 2003-2004. The main objective was to develop, implement and support a comprehensive up-to-date Tourism Information System's database (www.travel.lt) with every imaginable data of interest to tourists and prospective tourists, along with the tools to research and book all types of accommodation anywhere in Lithuania. The task of IS is to provide marketing and visitor services. The project was financed by European Commission external **Phare** aid. Technologies used:

- ORACLE/ ArcSDE database;
- Apache HTTP server, Tomcat 4.x application server, Microsoft Internet Information Server;
- ASP technology, Java, PL/SQL;
- ArcGIS application developed using MS Visual Basic and ArcObjects;
- Windows NT, ArcSDE, ArcView, ArcInfo, ArcIMS.

Siauliai Region Information System (www.siauliai.aps.lt). Between 2004-2010. Development, implementation and support of the Siauliai Region Information System that allows providing to the citizens centralized e-services of Siauliai County Administration (AVA) and region municipalities in

a regional website, also helps the County Administration to manage information in the regional website more convenient and operative, enables providing multilingual information, creating more interactivity and a possibility of searching among all website information. The system is based on the proprietary content management solution “Station SI”. The system runs on an OpenSource platform. Technologies used:

- Apache WWW server and Tomcat application server;
- Programming languages: JAVA, XML, PHP;
- Website can use those DB management systems: PostgreSQL, INFORMIX 9.x, MySQL, MaxDB;
- Website runs on those operating-systems: Linux, UNIX, Windows .

Insurance software development for Profit Software Oy, Finland. Project of web-enabling of Profit's software product for life and non-life insurance in year 2000. Technologies used:

- LotusScript and JavaScript based Internet programming.

Software for Business Directories on CD for “Eniro” (CD-Surf). Between 2001-2004. Development and implementation of a software package for publishing business directories on CD. Small production runs of CD directories are expensive when royalties must be paid for each copy of licenced software. In 2001 Eniro Lietuva (www.eniro.lt) - a subsidiary of the international Eniro group and the largest Lithuanian provider of directories - announced a tender for the development of original software, thus removing the need for external licences. Sintagma won over competitors from Finland, Sweden, Lithuania and the CIS. The result was *CD-Surf*, which Eniro Lietuva uses to publish 200,000 copies of two CD directories in Lithuania: the enterprise directory “Visa Lietuva”, and the “Lithuanian Export-Import Directory”. The company uses *CD-Surf* to expand its activities in other countries. Key features include: simplicity, functionality, low cost and multilingual search. Technologies used:

- Delphi and C++;
- Embedded Open Source Database engine.

Electronic Information System at EXPO 2000, Hanover. In year 2000. Development and implementation of information system for visitors to the pavilion of Lithuania. The system is comprised of the following key components: database server, touchscreen information terminals, local area network, software applications, and system administration tools. Visitors were served at 10 terminals in the pavilion. Each terminal was dedicated to an individual theme. A visitor selected information on one of three levels by touching objects on the screen. Technologies used:

- IBM Lotus Notes/Domino as a platform and Web Server;
- XML and Java based client applications.

News System for Lithuanian Embassies. Between 1999-2000. Design and implementation of news system for the Ministry of Foreign Affairs as a central database for standard incoming and internal news messages, and as a short-term archive. Based on the proprietary solution *NewsNote Wires* with some extensions, including a subscription service. This intranet application is used worldwide by Lithuanian embassies and consulates via the Web and e-mail. Technologies used:

- IBM Lotus Notes/Domino as document management platform and Web Server.

The Lithuanian Social Card System. Between 1999-2003. The project was cancelled by the Government in 2003. Consulting, design and implementation of main technical solutions and a pilot project. The final goal is to create a nationwide “smart card” system (with over 2 million cards) to leverage activities of the Social Insurance Fund (Sodra) and the State Health Care Fund. A personal smart card (social card) is to be used for identification and administration in both institutions. The social card infrastructure with terminal, issuance and processing centers is designed as part of a front-office of host information systems. Technologies used for a prototype:

- BULL TB and CC multifunctional smart card frameworks, cryptography and secure authentication protocols;
- BULL EFT POS Alto/Amadeo transaction terminals;
- Windows PCs with card readers as terminals;
- Oracle 8.0 for social card database and back office functions in the issuance center;
- Windows PC based self-service terminals with a specialized Web browser and smart card readers for secure access to personal data.

Printing Center for Lithuanian Post Office. Between 1996-1997. Consulting, design, implementation and post-installation maintenance of a mass printing and mailing center. The project included complete consulting services, preparation of a business plan, design of the entire printing facility, project management, equipment installation, software development and implementation. The Center is capable of printing and mailing up to 15 million items per year with expansion capacity up to 50 million items per year. The software segment is a universal solution, with printing task and individual document tracking capabilities, uniform process accounting, and a printing-independent application. The software solution is based on an open document stream standard. Therefore it can be used in almost every environment, e.g. other high volume printing centers, with capacity starting from 3 million items per year. Technologies used:

- IBM 3900 high speed printer;
- Bowe 201 mailing equipment;
- IBM RS/6000 with AIX for data preparation, job tracking and printer control, PCs as clients;
- IBM Printing Services Facility/6000 as printer driver;
- IBM DB2 for customer database and archive;
- Proprietary solution for high volume print job, document tracking and accounting;
- Over 15 high volume printing applications for banking, telecommunications and other sectors.

SAVIVALDYBE: A Standardized Information System for Municipalities. Between 1994-2000. Design, implementation and support of the system. The system contains state registers of inhabitants, enterprises and etc., databases of law acts, personnel, enterprises, inhabitants and various applications. The task of the system is to provide for the local authorities document management, civil state registration, management of main classifiers, legal support and other services. The system has a linkage to the state databases and systems. The system is implemented in 20 municipalities. Technologies used:

- Informix Dynamic Server, Informix Standard Engine on AIX and WindowsNT for server, Windows 95 and above for client;
- INFORMIX 4GL, INFORMIX NewEra, Delphi, Visual C++.

APSKRITIS: Information System for County Administrations. Between 1996-2002. Design, implementation and support of the system. The system is part of the state information infrastructure. It is devoted to the activities of county administrators: document management, management of main classifiers, legal support, accounting and budget management, etc. The system has a linkage to the state databases and systems. Technologies used:

- INFORMIX on AIX and WindowsNT for server, Windows 95 and above for client;
- Delphi, Visual C++;
- Microsoft Dynamics NAV.