IST4BALT

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News Journal

Information Society Technologies

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Information Society Technologies Promotion in Baltic States

The IST4Balt is a multi-partner action that intends to promote and coordinate IST innovation activities in EU entering Baltic States (Latvia, Lithuania and Estonia). The project develops IST Information Dissemination Centre in each Baltic country. The IST4Balt organises seven all-Baltic major conferences, seven technical/training workshops and provides distant and face-to-face training to promote FP6 and other EU programmes in Baltic States. Several IST tools for practical team work between EU and Baltic States will be selected and proposed for implementation. The project will result in creation of Trans-Baltic IST Association, which will coordinate efforts of Baltic States in European Information Society development during and after the end of the IST4Balt.

Project Coordinator
Jean BONNIN
EDNES
Maison des Associations
1A, place des Orphelins
F-67000 Strasbourg, France
Tel.: +33 3 90 24 00 32
Fax: +33 3 90 24 02 91
E-mail: bonnin@ednes.org

Project Manager
Alexander BERIOZKO
EDNES
3, Molodezhnaya St.
119991 GSP-1 Moscow, Russia
Tel.: +7 095 133 43 39
Fax: +7 095 930 55 59
E-mail: ber@ednes.org

Contact in the European Commission
Jacques BABOT
Head of sector
European Commission - DG INFSO
Rue de la Loi, 200
B-1049 Brussels, Belgium
Tel.: +32 2 296 35 94
Fax: +32 2 296 76 10
E-mail: jacques.babot@cec.eu.int

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Inside this issue

Dear Readers!

One of the objectives of the IST4Balt project is publishing of three issues of IST4Balt News Journal on a yearly basis. The News Journals will be devoted to IST events and tools relevant to IST activities in the Baltic States.

The present IST4Balt News Journal is the first volume, which covers the period from the beginning of the project 1 September 2004 to 31 August 2005.

The main thematic sections of the Journal are the following: Events, IST4Balt on the Web, Information society technologies in Baltic States, IST and other European ICT projects, Views and opinions.

Lugupeetud Lugejad!

Üheks IST4Balt projekti eesmärkidest on aastaajakirja IST4Balt News Journal kolmekordne väljaandmine. Ajakirja teemad ja sisu koosnevad kõigepealt IST uudistest, üritustest ja vahenditest, mis on seotud IST tegevusega Baltimaades.

Praegune väljaanne on esimene köide, mis hõlmab projekti esimest perioodi - 1. september 2004 kuni 31. august 2005.

Ajakirja põhiosad on: IST üritused, IST4Balt veebis, Informatsiooni Ühiskonna Tehnoloogiad Baltimaades, IST ja teised Euroopa ICT projektid, arvamused ja mõtted.

Cienījamais Lasītāj!

Viens no IST4Balt projekta uzdevumiem ir IST4Balt ziņu žurnāla publicēšana. Izdotie žurnāli tiek izplatīti dažādos pasākumos, kas saistīti ar IST aktivitāšu īstenošanu Baltijas valstīs un citur pasaulē.

Šis IST4Balt ziņu žurnāls ir pirmais izdevums, kurš aptver laika periodu no projekta sākums 2004.gada 1.septembrī līdz 2005.gada 31.augustam.

Galvenās žurnālā apskatītās tēmas ir sekojošas: pasākumi, informācija par IST4Balt internetā, informācijas sabiedrības tehnoloģiju attīstība Baltijas valstīs, citu IST projektu pieredze, ieskati un viedokļi.

Gerbiami skaitytojai!

Vykdant IST4Balt projektą bus išleisti trys metiniai IST4Balt žurnalai apie IST programos renginius, ITT produktus bei paslaugas, kurie atitinka IST programos sklaidos Baltijos šalyse tikslus.

Pirmasis IST4Balt žurnalo numeris apima projekto įgyvendinimo laikotarpį nuo 2004 m. rugsėjo 1 d. iki 2005 m. rugpjūčio 31 d.

Pagrindiniai žurnalo skyriai: renginiai, IST4Balt projekto sklaida Internete, informacinės visuomenės technologijos Baltijos šalyse, Informacinės visuomenės technologijų programa ir šios programos projektai, nuomonės ir komentarai.

Дорогие читатели!

Одной из задач проекта IST4Balt является публикация трех ежегодных выпусков журнала IST4Balt. Журналы будут посвящены событиям и технологиям программы IST, имеющим отношение к деятельности IST в Балтийских странах.

Данный журнал IST4Balt является первым выпуском, который охватывает период с начала проекта, 1 сентября 2004 г., по 31 августа 2005 г.

Основные тематические разделы журнала следующие: События, IST4Balt в сети, Технологии информационного общества в Балтийских странах, Проекты IST и другие европейские проекты в области информатики и коммуникаций, Взгляды и мнения.

About the project

Alexander Beriozko (Project manager, EDNES),
Jean Bonnin (Project coordinator, EDNES)

The project "Information Society Promotion in Baltic States (IST4Balt)" is a Coordination Action for the FP6 IST Priority. IST4Balt is a follow-up of the FP5 IST project "Teleworking as a Tool for Information Society Technologies Programme Promotion to Baltic States (TELEBALT)", 2001-2003.

The main goal of the project is to promote the FP6 IST Priority to Latvia, Lithuania and Estonia by implementing fast dissemination and awareness actions targeted on these EU New Member States (NMS).

The participants of the project are:

- Reseau pour les echanges en matiere d'education et de recherche dans le domain des Sciences de la Terre (Earth Data Network for Education and Scientific Exchange (EDNES), France;
- Riga Technical University (RTU), Latvia;
- Latvian Information Technology and Telecommunications Association (LITTA), Latvia
- Association of the Information Technology, Telecommunications and Office Equipment Companies of Lithuania (INFOBALT), Lithuania;
- Visoriai Information Technology Park (VITP), Lithuania;
- Inforing AS, Estonia;
- Bi-Info AS Information and Consulting Company, Estonia.

IST4Balt does technology studies and market review of the present situation with the IST in the three Baltic countries, provides (through IST4Balt Web-sites, News Journal, workshops, conferences and training course) relevant information and formulates appropriate recommendations to EU research and marketing telematics communities.

The project will select and demonstrate IST and other developed services and tools following IST Strategic Objectives:

- 2.3.2.6 Applications and services for the mobile user and worker;
- 2.3.2.3 Open development platforms for software and services;
- 2.3.2.7 Cross-media content for leisure and entertainment;
- 2.3.2.9 Improving Risk management;
- 2.3.2.10 e-Inclusion.

A system of three Information Dissemination Centers (IDCs) is developed by the project (one IDC in each participating country). A system of IST4Balt Web-sites is developed focused on particular application areas. Three issues of IST4Balt News Journal will be published yearly electronically and in hard copies.

The project co-organizes major international Baltic ICT events – three INFOBALT-IST4Balt conferences in Vilnius in October 2005-2007, three Baltic IT&T-IST4Balt conferences in Riga in April 2005-2007, and will organize special IST training day inside the conference "Transport and Logistics in International Trade. Information Technologies" in Tallinn, Estonia, on 9 December 2005.

The project organizes seven IST4Balt technical/training workshops (six goal oriented technical workshops at the time of the conferences in Vilnius and Riga, and a training workshop in Kohtla-Jarve, Estonia). The workshops are devoted to the promotion of the FP6, the FP7 and the IST. They will show new FP6 and FP7 opportunities for the Baltic countries and will contribute to launching IST project proposals.

IST4Balt provides training measures on the IST, the FP6 and the FP7, demonstrating new intellectual, technical, educational and business opportunities for Baltic States as the EU New Member States.

The project will initiate the creation of Trans-Baltic IST Association that will unite the IST4Balt participants with leading ICT organizations in Latvia, Lithuania and Estonia. The association will coordinate joint efforts of the Baltic States in IST development focusing on integration to the EU.

IST4Balt started in September 2004 and has the duration of 40 months.

Events

INFOBALT-IST4Balt 2004 seminar, October 2004

Edmundas Zvirblis (Project manager in Lithuania, INFOBALT),
Saulius Arelis (Project manager in Lithuania, VITP)

INFOBALT-IST4Balt 2004 seminar "IST FP6 projects promotion in Lithuania" was organized by INFOBALT and VITP in Vilnius, Lithuania, on 22 October 2004.

Due to the two months delay of the IST4Balt project launch the Lithuanian partners INFOBALT and VITP did not have enough time for the preparation of the full-scale INFOBALT-IST4Balt 2004 conference and workshop, which had been scheduled for the last week of October 2004. In this situation, at the IST4Balt kick-off meeting in October 2004 in Riga, Latvia, it was decided that only one day IST4Balt seminar would be organized by INFOBALT and VITP in the framework of the INFOBALT Trade Fair 2004 on 22 October 2004. It was also decided to extend the project by 4 months making the full duration of 40 months (01/09/2004 – 31/12/2007) in order to organize INFOBALT-IST4Balt 2007 conference and workshop in October 2007 in the framework of INFOBALT Trade Fair 2004.

INFOBALT-IST4Balt 2004 seminar in total was attended by 50 telematic users, developers, vendors and service providers in the Baltic countries with wide participation of potential EU team work partners. The seminar was devoted to the FP6 IST Priority. In time and audience the seminar was affiliated with the Trade Fair INFOBALT, which is organized by INFOBALT since 1994 in Vilnius yearly at the same time span. During more than ten years the Trade Fair INFOBALT is the major IT event in Lithuania and one of the most important gatherings in computer telecommunications as far as all Baltic countries are concerned. IST booth was organized at the conference (Fig. 1-4).

Figure 1. Press conference on INFOBALT 2004 and IST4Balt seminar, 22 October 2004 (left to right): D. Juknys (Director, INFOBALT), V. Vitkauskas (President, INFOBALT), A. Paulauskas (Chairman of Lithuanian Parlament), A. Brazauskas (Prime Minister of Lithuanian Government)

Figure 2. At IST4Balt stand at INFOBALT Trade Fair 2004: (left) H.E. V. Adamkus (President of Republic of Lithuania), (right) D. Juknys (Director, INFOBALT)

Figure 3. At the presentation of the IST4Balt project (first row, left to right): V. Vitkauskas (President, INFOBALT), H.E. V. Adamkus (President of Republic of Lithuania), D. Juknys (Director, INFOBALT)

Figure 4. IST4Balt stand at INFOBALT Trade Fair 2004: S. Arelis (Project manager, VITP)

CD-ROM with the materials on INFOBALT-IST4Balt 2004 seminar was developed and printed (in 500 copies) by INFOBALT. It contains general information on the IST4Balt project and the presentations delivered at the seminar. INFOBALT-IST4Balt 2004 seminar CD was widely disseminated at the IST Event 2004 in the Hague, the Netherlands, on 15-17 November 2004. The CD was submitted to the EC by EDNES.

IST4Balt at IST Event 2004, November 2004

Alexander Beriozko (Project manager, EDNES),
Mara Jakobsone (Project manager in Latvia, LITTA),
Inga Bakane (Project manager in Latvia, RTU)

The IST4Balt project was presented at the information stand and the networking session at the IST Event 2004 in the Hague, the Netherlands, on 15-17 November 2004. The project participants from EDNES, RTU, LITTA, INFOBALT, VITP, Inforing and Bi-Info performed the presentation.

Latvian President, H.E. VairaVike-Freiberga, opened the IST Event 2004 Conference on 15 November (Fig. 1). Her address was broadcasted via Eurovision satellite network from Riga, which had been organised in strong cooperation with EDNES. Jacques Babot (Head of the E-Work Sector, EC), Aiva Rozenberga (Press secretary of the President of Latvia), Arta Giga (Latvian Television) and Inga Bakane (IST4Balt project manager in Latvia, RTU) were the principle organizers of the broadcasting.

Figure 1. H.E. VairaVike-Freiberga, Latvian President, opens the IST Event 2004 Conference on November 15

More then 40 representatives from Latvia (universities, NGOs, private companies and research institutes) took part in the IST Event 2004 "Participate in your future" organised by the European Commission and the Government of the Netherlands in the Hague on 15-17 November 2004. IST4Balt contributed to this active participation of Latvia in the IST Event 2004. 11 people came from different faculties of RTU and were actively involved in activities of the IST Event 2004. The participants from RTU were: Inga Bakane, Janis Grabis, Vita Graudina, Janis Grundspenkis, Rudolfs Gulbis, Atis Kapenieks, Vjaceslavs Sitikovs, Ilmars Slaidins, Armands Strazds, Viktorija Vinogradova, Bruno Zuga.

At the IST4Balt Event 2004 Exhibition the information stand **I 3.2** entitled "The Baltic Experience in Shaping the Future of IST– IST4Balt" was set up and maintained by the project participants.

Alexander Beriozko, the IST4Balt project manager, and Jan Loonen (ROSAS, the Netherlands) took part in the IST Event 2004 as the representatives from EDNES. One representative from RTU, Inga Bakane, took part in the IST Event 2004 as the IST4Balt project manager in Latvia.

The following materials were distributed by EDNES at the IST4Balt information stand:

- IST4Balt project presentation brochure (in English);
- TELEBALT newsletters.

The list of materials distributed by RTU at the IST4Balt information stand was the following:

- Fact sheets:

Fact sheet: "Latvia in Brief" (2004)
Content: main facts on Latvia, statistics
Format: 2 pages (A4)
Language: English
ISSN: 1407-8708
Published: 1999-2004
PDF

Fact Sheet: "Latvian National Symbols"
Content: the flag, Coat of Arms and National Anthem of Latvia
Format: 2 pages (A4)
Language: English
ISSN: 1407-8708
Published: 2001
PDF

Fact Sheet: "Latvia's National Holidays And Remembrance Days"
Content: brief description of holidays and remembrance days of Latvia
Format: 2 pages (A4)
Language: English
ISSN: 1407-8708
Published: 2002
PDF

Fact Sheet: "The Latvian Language"
Content: description of the Latvian language, its structure and character
Format: 4 pages (A4)
Language: English
ISSN: 1407-8708
Published: 2001
PDF

Fact Sheet: "Education and Science in Latvia"
Content: brief history, review of recent development, description of the structure of education and science
Format: 4 pages (A4)
Language: English
ISSN: 1407-8708
Published: 2002
PDF

- Brochures "Business tourism in Latvia";
- Maps of the Republic of Latvia;
- RTU informative leaflets;
- IST4Balt poster;
- Flyers for dissemination of the information on the networking session N51 "IST promotion in Baltic countries as EU New Member States";
- List of organisations, institutions that are ready to cooperate with other countries within IST projects, as well as printed materials on profiles of the mentioned organisations.

LITTA also took active part in IST Event 2004. Participation included both the presence at the event and pro-active work before and after the event to make it a success. LITTA facilitated the high visibility of the IST4Balt project, Baltic States and especially Latvia at the IST Event 2004 by bringing considerable efforts for the keynote speech of H. E. Dr. Vaira Vike-Freiberga, President of Latvia, at the opening session, as well as for opening welcome and participation of H.E. Mrs Baiba Laizane, Ambassador of Latvia to the Netherlands, at the Networking Session N51 "IST promotion in Baltic countries as EU New Member States" of IST 2004. From LITTA the participants were: Mara Jakobsone (LITTA board), Andris Melnudris (LITTA office), as well as several participants from LITTA members: Inga Freiberga (Lattelekom), Mara Gulbe (University of Latvia), Oskars Ozols (Datorikas institūts DIVI), Maris Alberts (Institute of Mathematics and Computer Science).

LITTA prepared and delivered broad range of materials for distribution at the IST4Balt information stand:

- LITTA brochures;
- Baltic IS Cluster brochures;
- Statistical materials and brochures on Latvian economics, business, ICT market, culture, etc.;
- Baltic IT&T Review magazines;
- Information about the forthcoming IST4Balt event in Baltic States: Baltic IT&T 2005 Forum;
- Information about Latvian ICT companies;
- Other materials.

LITTA had also prepared and brought to the stand 2 posters on Baltic IT&T 2005 Forum and on Baltic IS Cluster (Fig. 2).

Figure 2. The information stand "The Baltic Experience in Shaping the Future of IST – IST4Balt" (left to right) S. Ipatov (Bi-Info), A. Beriozko (EDNES), A. Melnudris (LITTA)

Among the large Lithuanian delegation the IST4Balt representatives from INFOBALT Dziugas Juknys, Director, and Vytautas Vitkauskas, Vice-president, took part. Saulius Arelis, IST4Balt project manager in Lithuania, participated in the IST Event 2004 as the IST4Balt representative from VITP. The following materials were distributed by VITP and INFOBALT at the IST4Balt information stand:

- IST4Balt project presentation brochure (in English and Lithuanian);
- INFOBALT-IST4Balt 2004 seminar CD;
- IST4Balt poster.

The main goal of the participation of Bi-Info in the IST Event 2004 was to introduce Estonia at the IST4Balt information stand and the IST4Balt Networking Session. The participants from Bi-Info were Sergei Ipatov, project manager in Estonia, Market Research Dept., and Nikolai Jegorov, Director, IT Dept. The list of materials distributed by Bi-Info at the IST4Balt information stand was the following:

- Information CDs about Estonia "Estonia – Your Source for Innovative IT Solutions";
- Booklets and Power Point presentations from Estonian IT companies;
- Booklets from Technical University of Tallinn (TTU).

Anna Uibo, the IST4Balt Estonian project manager assistant, took part in the IST Event 2004 as the IST4Balt representative from Inforing. The following materials were distributed by Inforing at the IST4Balt information stand:

- IST4Balt project presentation brochure (in Estonian);
- Booklets from Inforing and other Estonian IT companies.

Hans Pruim took part in the IST Event 2004 as the representative from UNIDO. The publication "Capacity Building for Business Information Networking" was distributed by UNIDO at the IST4Balt information stand.

Figure 3. Opening Networking Session N51 "IST promotion in Baltic countries as EU New Member States" on 15 November (left to right): A. Kapenieks (RTU), B. Laizane (Latvian Ambassador to the Netherlands), A. Beriozko (EDNES)

The Networking Session N51 entitled "IST promotion in Baltic countries as EU New Member States" was submitted and organized by EDNES on 15 November in collaboration with the other IST4Balt participants. It was devoted to the Baltic States and the IST4Balt project. Latvian Ambassador to the Netherlands, H.E. Baiba Laizane, opened the session (Fig. 3). The IST4Balt project was introduced by Alexander Beriozko (EDNES).

The presentation "Opportunities for Cooperation in IST Area between Latvia and Other Countries" was prepared and delivered by Inga Bakane (RTU). The main aim of the presentation was to show how IST activities could facilitate collaboration between EU member states and Latvia. The audience was introduced with main Latvian companies, organisations and universities extrapolated on their fields of expertise. The opportunities of partnership with other countries were highlighted.

At the Networking Session "IST promotion in Baltic countries as EU New Member States" LITTA delivered two presentations:

- "Baltic IS cluster – example of regional ICT industry cooperation" (Mara Jakobsone);
- "Latvia@World project – Information society for all" (Andris Melnudris).

Vytautas Vitkauskas (INFOBALT) delivered the presentation "Lithuanian ICT market today and tomorrow", describing a program of investment into R&D initiated by Lithuanian ICT businesses and the Government in order to achieve by 2008 up to 2.5-3 percent of State budget funds allocated for R&D projects and enlargement of the related scope of work.

Hans Pruim (UNIDO) made the presentation "Information networking and SMEs" devoted to the possible assistance that UNIDO could provide to set up national SME information networks in the Baltic States.

Sergei Ipatov (Bi-Info) made a small presentation "Boost in Estonian IT market. Its tendencies – current and future" about IT market in Estonia and informed the delegates about the Conference "Logistics and IT in International Trade", which will be held in Tallinn in December 2005.

Anna Uibo (Inforing) delivered the presentation about the new project "TEAMTELEPARK -Information Technology and Teleworking centre in Kohtla-Jarve city, Estonia".

In total 11 presentations were delivered at the Networking Session N51 "IST promotion in Baltic countries as EU New Member States". It attracted more than 70 visitors (Fig. 4).

In overall more then 30 new contacts for future IST4Balt cooperation with representatives from Norway, Sweden, Cyprus, Germany, South Africa, India, China, Slovakia, Poland, Italy, Spain, France, UK, Belgium were established.

Information about participation of Latvian delegation in the IST 2004 Event in the Hague was highlighted in newsletters, press-releases and TV news (Fig. 5).

The detailed information about the participation of the IST4Balt project in the IST Event 2004 (photo gallery, presentations, etc.) is available at the IST4Balt central Web-site at EDNES (http://www.ednes.org/ist4balt/).

Figure 4. At the Networking Session N51 "IST promotion in Baltic countries as EU New Member States", 15 November 2004

Figure 5. Publications on the Latvian participation in the IST Event 2004 on the Web: http://www.am.gov.lv/en/news/press-releases/2004/november/15-1/ (top), http://www.netherlandsembassy.lv/ (bottom)

Baltic IT&T 2005: eBaltics Forum, April 2005

Mara Jakobsone
(editor in chief, magazine Baltic IT&T Review, Latvia)

On 6-9 April 2005 the Baltic IT&T 2005 Forum was organised in Riga by the Latvian Information Technology and Telecommunications Association (LITTA) in co-operation with the Ministry of Electronic Government Affairs of Latvia and Data Media Group. The Honorary chairman for the event was the Prime Minister of Latvia Aigars Kalvītis. The motto of the forum was "Building Effective Partnership Networks". The Forum was supported by the European Union (European Commission, IST Priority of the FP6, IST4Balt project).

Among major objectives of the forum there were discussion of important Information Society aspects, such as eInclusion, Internet governance, fostering sharing of experience and best practices on how ICT is used in eGovernment, eHealth and other sectors, initiation and development of valuable contacts and co-operation among leading industry companies and projects in the region and demonstration of the newest ICT technologies and products, solutions and applications.

Among Forum events there were:

- The 9th international conference "Information Technologies and Telecommunications in the Baltic Sea, Central and Eastern European Region" Baltic IT&T 2005 (eGovernment, eHealth, eInclusion, eServices for ALL sessions),
- Roundtable discussion "Internet governance and regulation",
- IST4Balt Workshop "IST 6th Framework Programme – Great Opportunity for Co-operation and Collaboration",
- Seminar "eGovernment – Open Source Software: Are You Prepared?",
- The Global Cities Dialogue workshop,
- Northern eDimension SOIS Meeting and eHealth Action Line meeting,
- eThematic Seminar: eFulfilment Best Practices,
- The 12th Annual International Information Technology, Telecommunications and Office Automation Exhibition "Baltic IT&T 2005".

The forum has brought together senior government representatives from the Baltic Sea region and other countries, high level officials and experts from European Commission and other international organisations, as well as vice-presidents and top level executives from the world's leading IT&T companies and other high-ranking delegates. Altogether more than 500 delegates participated in different Forum events (including Baltic IT&T 2005 Conference, IST4Balt Workshop, and Roundtable discussion "Internet Governance and Regulation"). The delegates represented 29 countries. The Forum was organised in 28 sessions with 170 speakers.

Photos and comments

The conference was opened by the honorary chairman of the forum, Latvian Prime Minister Aigars Kalvītis. In his address, the prime minister told participants and guests that the Information Society had developed quickly in Latvia: "The government has decided to do what it can in stimulating training, the upgrading and purchase of computers for schools, local governments and small and micro-companies. The national 'E-Latvia" programme is due to invest 17.44 million lats in education, and Ls 4 million will go to training adults in computer use. The long-awaited E-signature should become operational in the spring of this year. That will be a step which will allow us to take many more steps in reducing bureaucracy, saving money for the state, and strengthening a much more active form of democracy. We will optimise national governance as such, liquidating unnecessary bureaucracy, ensuring greater openness and public participation."

The plenary session at the conference was chaired by Latvian Transportation Minister Ainārs Šlesers. He expressed the hope that the IT&T sector will develop as quickly as airline transport had developed in Latvia over the past year – growth of 100% per year. The minister said that this could be achieved through the will of the government and through targeted initiatives.

For the first time at the Baltic IT&T, the audience was presented with the views of the OECD on priorities and initiatives in the development of the ICT sector. Pekka Lindroos, chairman of the OECD's Information, Computer and Communications Policy Division, delivered a presentation to the plenary session of the forum.

The director of the European Commission's DG INFSO, Frans de Bruine, presented the latest European Commission initiatives in the context of the Information Society. He said that the Baltic IT&T forum was taking place at an important time. It was during the forum that the European Commission approved a new initiative, i2010, which is a continuation of the eEurope 2005 programme.

Lattelekom executive director Nils Melngailis spoke about the emergence of the Baltic States as the centre of a developed economic region, putting to use the opportunities that are afforded by ICT technologies in this area. This goal requires support from governments, collaboration within the Baltic ICT industry, and greater recognizability of the ICT sector's achievements in the world.

Latvia's permanent representative to the United Nations, Jānis Kārkliņš, attended the forum to talk about a global summit on the Information Society that is being planned for Tunis in November 2005 (WSIS 2005). Kārkliņš chairs the organising commission for the event. He said that Internet regulations and Internet accesswere seen as being among the most important issues to face the Information Society in the world today.

Latvia's minister with special portfolio for E-governance, Jānis Reirs, was an active participant at all Baltic IT&T 2005 events. He spoke at the Internet Governance and Regulation Roundtable, which was a part of the forum, and at the forum's press conference. The minister also organised a reception for the honoured guests and speakers of the forum. The secretariat of the E-governance minister met with a delegation from the European Commission to talk about future co-operation between the two sides in terms of the development of the Information Society. One subject of discussion was the possibility of organising a pan-European conference, eInclusion, in Riga in 2006.

A narrowing of the digital gap will allows local residents to improve their computer skills, and that, in turn, will promote the more extensive use of E-services. This subject was the focus of attention at a two-day session, eInclusion, which was held on 7-8 April. Speakers analysed three factors in the digital gap – access to E-services (infrastructure, computers), the content and quality of E-services, and the digital skills of individuals. Edvīns Karnītis (first on the left), a member of the Public Services Regulatory Commission, chaired the session, with participants analysing the initiatives of various countries and organisations in support of attempts to narrow the digital gap.

The head of the European Commission's eInclusion Division, Per Blixt, attended the form to talk about his experience with Commission initiatives in this area. Per Blixt said that the European Commission would support eInclusion in a broader sense of the concept, hoping to cover all relevant risk groups – people with special needs, as well as those who are digitally excluded for reasons economy, social issues, gender, race or language.

Elena Bonfiglioli from Microsoft EMEA was on hand to talk about a new Microsoft programme, Unlimited Potential (UP). It is used all around the world to overcome the digital gap. Elena Bonfiglioli particularly spoke about those support activities in the context of UP which were pursued by Microsoft in the Baltic region and in other Central and Eastern European countries.

One of the key subjects in the Forum was eInclusion – various initiatives and programmes aimed at narrowing the digital gap. Throughout Europe, including Latvia, there was more active work in designing programmes and initiatives which permit the identification of causes for digital isolation and the digital gap and the design of responses to these problems. Signe Bāliņa, director of the Computer Skills Centre, spoke about an initiative of the Latvian ICT Association, Latvija@World, which seeks for delivering computer and Internet skills to 10% of Latvia's economically active residents.

Martin Baumgartner from the Austrian Research Promotion Agency spoke about the eMac project, which is financed as a part of the EU's eTen programme. This project is a support activity aimed at bringing the 10 new EU member states into the process.

Vera Skvortsova, an advisor to the Belarusian Embassy to Latvia, reported on initiatives in Belarus aimed at developing the Information Society and information technologies.

For the second year in a row, the Forum featured a session on eHealth. Official supporters for the session "eHealth: Information Systems in Health Care" included the Latvian Ministry of Health and the Northern eDimension programme. Health Minister Gundars Bērziņš opened the session, stressing the importance of synthesis between health care and information systems: "In pursuit of the basic principles of E-health, health care service providers will have access to health care data about patients – a full and electronic history of health and the patient's electronic health card. Several communications channels will be used for this. The patient's health care documents will be stored, processed and reviewed electronically. The internal information systems of hospitals will be open, and electronic data exchange amongst these systems will be guaranteed".

Speakers at the E-health presentation analysed the positive benefits for patients when health care information systems are modernised. Representatives of the Health Ministry, other ministries and agencies from Latvia and abroad exchanged views about the role of the E-health concept in overall health care development strategies, putting to use the experience of Latvia, the countries of the Baltic Sea region, EU member states and other countries. Participants at the session learned about the information systems of several health care service providers.

The E-health session was held on 7-8 April, and participants heard from experts from the Baltic Sea region countries, designers and suppliers of health care information systems, representatives of the European Commission's E-Health Division, representatives of health care service providers, people from the Health Ministry, other ministries and agencies from Latvia and abroad, and specialists in the area of patient and health care from various NGOs. Senior officials from the health ministries of the Baltic Sea region countries met on 6 April to agree on joint activities in the area of E-health.

A session that was called "E-services for Everyone" brought conference participants together on Friday morning. Those who spoke

about importantance to ensure that E-services are available to as a broad range of society as possible and about ways of achievement of it included experts from Latvia and other countries. From the left: George Hall, board member of the European Regional Information Society Association; Declan Fitzsimon from a consulting centre for organisations that is called Spring Valley; Ģirts Bērziņš, a board member from the Hansabanka bank in Latvia; David Broster, head of the European Commission's eTen programme; and Inita Paulovič a, director or the UNDP in Latvia.

Ģirts Bērziņš, a board member from Hansabanka, had calculated the losses which a country can suffer if E-services are not used. He spoke about the use of Internet banking services among Latvian companies and local residents, and presented some surprising results of his study. Bērziņš had found that if everyone were to use Internet banking services in place of ordinary ones, the state would save a sum of money that is equal to 1% of Latvian GDP.

David Broster, director of the eTen programme, spoke about his experience in supporting the spread of E-services in Europe. The aim of the programme is to support those E-services, which are mutually compatible and can be used in more than one European country. The programme had supported the introduction of such services for more than a decade, and it had posted good results in many areas such as E-governance, E-health, E-education, etc.

Declan Fitzsimon from Spring Valley, a consulting centre for organisations, shared in his experience with motivating various groups in society to make use of available E-services. There was much debate among participants over those services, which are most urgently needed for local residents and companies.

A banquet was held by the Riga City Council in honour of the forum's participants. Alter Veritas, a chamber ensemble, performed for guests at the House of the Blackheads.

George Hall, board member of the European Regional Information Society Association, spoke about ways in which the development of E-services can be promoted. He pointed at his own association as a good example – it brings together 45 European regions, as well as leading IT companies.

Ēriks Zēģelis, director of the Riga City Council's Information Technology Centre spoke proudly of the idea that Latvia was emerging as a powerful centre for information technologies and telecommunications not just in the Baltic States, but throughout Eastern Europe. He said that that was evidenced by the increasing number of visitors and participants from ever more distant countries.

IST4Balt workshop at Baltic IT&T 2005 conference

Inga Bakane, Tatiana Rikure
(IST4Balt project team in Latvia, Riga Technical University)

The first workshop "IST 6th Framework programme – great opportunity for cooperation and collaboration" was held in Riga, Latvia, on 6-7 April 2005. It was organized by Riga Technical University in the framework of the project IST4Balt funded by Information Society Priority of the European Commission and in cooperation with EDNES (France).

Welcome speech (left to right): Dr.Habil.sc.ing. Ivars Knets, Rector of Riga Technical University; Dr. Jacques Babot, Head of sector of European Commission - Directorate F, Unit F4: New working environment; Andrew Rasbash, Head of Representation of the European Commission in Latvia; Inga Bakane, IST4Balt Project Manager

The workshop was aimed at strengthening the scientific and technological cooperation and collaboration among the European Union countries in the field of IT applications to new working environment, e-learning, e-logistics and digital cultural and scientific resources. The workshop also showed how IST activities could facilitate collaboration between Latvia and other EU member states.

The first plenary session was devoted to potentialities of information society technologies in Latvia. Dina Berzina, coordinator from Latvian NCP, presented EC FP6 IST priority activities mentioning statistics on Latvia's participation and possible solutions to increase success. She mentioned that relatively low degree of participation by New Member States (NMS) in IST priority (~6% of the total) is partly due to lower involvement at the application stage, and partly to the lower average retention rate of projects in which they are involved. In terms of finances

awarded, NMS received 8% of total funding, compared with 85% received by EU-15. Latvian partner is in 4% of Call 1 proposals, 2.5% - Call 2 and 12% - Call 3 (designed for NMS). Most of the applicants interested to join a project or to search partners lack good contacts with European best and experienced teams and there are still no project co-ordinators from Latvia in FP6 IST priority. Concluding the speech, D.Berzina made some suggestions on creating an enterprise-friendly environment and building the conditions for knowledge-based economy at the same time. Institutional reforms and allocation of sufficient resources to knowledge creation combined with intelligent use of structural funds and other EU/national instruments could provide solutions for necessary changes.

Plenary session "Potentialities of IST in Latvia"

Professor J. Grundspenkis, Dean of Faculty of Computer Science and Information Technology (CSIT) of Riga Technical University, in his presentation analyzed the current situation of information society (IS) development in Latvia, using the basic characteristics of IS models such as technology and education. He pointed out that at the present moment it is hard to foresee the future of information society development in Latvia, namely, which economical and technological model of information society Latvia would follow. The main question is to which extent Latvia will be able to reach the needed level of technology, economy, welfare and social value dimensions of information society. Answers to the open question depend on many factors but mainly on the willingness of the government and the whole society to take advantages of strengths, to use opportunities, to overcome weaknesses, and to avoid threats.

Georges Grundberg, adviser of Euro-Case (European Council of Applied Sciences and Engineering), was speaking about the European IST Prize – an opportunity for innovative companies and organizations. During the presentation some guidelines were given for the potential candidates, and a brief description of the services offered to the Nominees and to the Winners was presented.

In the "e-Learning" parallel session presentations on different problems and possible solutions in e-Learning area were made presenting real researching results and active projects. It was started with Jean-Claude Marot from JC Consultants presentation about e-learning introduction strategies. Then it was continued with presentations of the researchers from RTU (Riga Technical University) – T.Rikure and B.Zuga, about possibilities of using Intelligent Tutoring Systems and Cognitive approaches to instructional multimedia design and ended with discussions about experience gained from implementation of real projects in e-learning area – "Post-graduate e-Training for teachers of informatics of rural secondary schools" and "Multimedia learning tools for electrical engineering", presented by Dr. V.Shitikov and ass. Prof. A.Ruplis, both from RTU.

The "e-Logistics" parallel session also covered theoretical and practical aspects of research in this area including discussions about active projects, such as eLOGMAR-M, Calypso and Simulation System of the Baltic Container Terminal. Professor L.Novitsky, Head of the Department of Applied Systems Software at Riga Technical University, presented eLOGMAR-M project, that was started in 2004, including 17 partners from 9 countries, aiming at supporting logistics and maritime operations by Web-based and Mobile Solutions. A.Groznik, ass. Professor at University of Ljubljana, was talking about Slovenia's experience in this area, including formation of Slovenian Transport Logistics Cluster. R.Gambetta, managing director of Temco GmbH, from Germany presented Calypso technology as a serving world-wide validated multiservice system based on wire and wireless technologies for payment, ticketing, identification, information, location and booking operations. It was interesting to compare real development experiences in different European countries.

In the "Collaborative working environment" parallel session the reports particularly included presentations about the COMIST and SIMS projects from A.Turowiec, director of Institute of Communication and Information Technologies Ltd. (ITTI), and P.French, entrepreneur and responsible for business development from Cybercom, Sweden. Dr. A.Kokorevics from Latvian Researchers Mobility Centre was presenting "Latvian researchers mobility Centre and portal" in the framework of the EU strategic initiative "Mobility Strategy for the European Research Area". The European Network of Mobility Centres (ERA-MORE), the Latvian Researchers Mobility Centre and its portal (http://www.eracareers.lv/) were established to provide free of charge information service (legal and administrative issues, daily life) and personal assistance to mobile researchers and their families, and also their employers.

The "Preservation and access to cultural and scientific resources using new IST" parallel session was widely attended by workshop participants. Different presentations were made during the session, including the introduction of new iZIME approach for effective protection of the intellectual property rights in the advanced ICT environment-enriched society from A.Strazds, researcher from RTU, and presentation of the BRICKS EU project from M.Bertoncini, Ingegneria Informatica, Italy.

The main goal of the workshop was to increase awareness about the actual 6th Framework Programme and oncoming 7th Framework Programme, by lesson learn from the participation of the Baltic States in previous Framework Programmes. E. Zicmane, a consultant from CARSA, Belgium, provided a detailed overview of preparing a proposal for FP6 including additional advices for success. For Latvia it is very important to continue learning about the experience of other countries in the field of IT, since many Latvian businessmen still are unaware of the

possibilities that the IST Programme opens up and do not believe that their ideas could be welcomed and projects funded by the EU, and others are looking for the partners.

Reports on parallel sessions

Two days workshop attracted around 70 participants from different countries, including Belgium, France, South Africa, Russia, Kazakhstan, Lithuania, Estonia, Latvia, Poland, Sweden, Denmark, UK, Italy, Spain, Azerbaijan, Moldova, Romania, Slovenia, Finland and the Netherlands.

Sectors of different IT activities were widely represented. Workshop clearly showed interest of different organizations and necessity of similar events organization in the future. The IST4Balt workshop ensured creative working atmosphere and brought together experts from industry and academia. Analytical reviews and work produced prove that IST4Balt helps experts to join forces, Latvia has a potential to continue the work commenced in the field of IST and its people may be more confident and daring in joint project solutions with other European countries.

INFOBALT-IST4Balt 2005 conference and workshop, October 2005

Dziugas Juknys (Director, Association INFOBALT)

The conference "Evolving Mobile Europe" and the parallel workshop "Participation in IST at the edge of 6th and 7th Framework Programmes" are being organized by INFOBALT (Association of Information Technologies, Telecommunications and Office Equipment of Lithuania) and VITP (Visoriai Information Technology Park) in co-operation with EDNES Association (Earth Data Network for Education and Scientific Exchange, http://www.ednes.org), France, in the framework of the project IST4Balt. The event will be held on 24-25 October 2005 in Vilnius, Lithuania.

The conference will aim at strengthening of the scientific and technological co-operation between the European Union and the Baltic countries in the field of mobile applications to new methods of work, business, research and development, e-government. The extended conference program will bring together not only participants, but also experts, as well as top-class speakers. At the conference latest IT trends and topics will be discussed.

The workshop aims to stimulate wider participation of organizations/companies from Baltic States in IST Priority. The workshop intends to discuss situation with Baltic States presence in FP6 programme focusing on IST. Possibilities and issues concerning participation in FP6 and FP7 will be presented at the workshop. The event is going to bring together groups and communities interested in joint activities within IST projects and provide floor for presentations of project ideas or organizations willing to take part in IST Priority, The workshop will also serve as networking and matchmaking tool stimulating participation in FP6 and future FP7 calls.

Last year H.E. Mr. Valdas Adamkus, president of the Republic of Lithuania, noted that Lithuania should ensure proper relations for business and the general public for using the possibilities offered by information technologies and telecommunications. "Lithuania is faced with an even more difficult task than EU's old members – our country has to catch up with these countries in terms of social and economic development and reach their living standards. It is clear that these tasks will be a reality only after we manage to ensure fast development of knowledge economy," said the president.

This year's IST4Balt conference will review the achievements of the Baltic countries mobile communications industry and the importance of the development of mobile applications in the European Union and global market, with discussions about what the countries need to gain stronger grounds in ambient working environment. The conference will also address such topics as importance of mobile applications and services in a knowledge society, state strategies and business investments into mobile communications, science and innovations, broadband Internet, mobile and wireless solutions today and in the future. The IST4Balt conference will show how mobile and wireless technologies can keep business professionals in touch with company resources and information no matter where they are.

All projects, research institutions and companies involved in EU FP6 IST Priority and other players of mobile communications and applications sectors are encouraged to participate in the conference and submit papers for presenting their activities.

The IST4Balt conference promotes ideas of the modern world focusing at Information Society technologies. They are open for all representatives of international organizations, professionals, business and science representatives and individuals. It's a unique opportunity to meet and contact mobile sector audience.

Preliminary Programme of Conference and Workshop

Day One, 24 October 2005. "Mobile Applications and Services: Business, R&D and e-Government":

- Joint IST4Balt and INFOBALT Keynote Session:
  - The Information Society Technologies (IST) in FP7 – the future development of knowledge–based society for all
  - Development of new work methods and collaborative work environments
  - Ambient Intelligence scenarios for 2010
  - Vision of "Optimally Connected Anywhere, Anytime"

- Session One: European Research and Innovation Area (ERA) at Mobile Work
- Session Two: Landscape of Innovative Mobile Applications and Services for e-Government
- Session Three: Mobile Communications Industry
- Session Four: Taking the Business Mobile
- Workshop "Participation in IST at the edge of 6th and 7th Framework Programmes" (following Joint Session):
  - IST Coordination Actions and IST 4Balt project
  - Baltic States in IST – current situation, trends and shortcomings
  - IST in FP6 and FP7– key subjects and changes
  - FP7 - possibilities and challenges for Baltic States
  - FP6 Call 6
- Official Reception

Day Two, 25 October 2005. "Mobile Applications and Services for Workers and Users, Challenges for SMEs, Knowledge Management":

- Session Five: Collaboration Anywhere at Anytime (New Works Methods)
- Session Six: Collaboration Anywhere at Anytime (Collaborative Work Environments)
- Session Seven: SME Participation in the Single Electronic Market
- Session Eight: Access to Knowledge Anywhere Anytime
- Reports and Conclusions
- Workshop "Participation in IST at the edge of 6th and 7th Framework Programmes" (all day):
  - Upcoming calls for proposals: practical issues and chances
  - Fostering instruments: networks, communities and tools
  - Matchmaking: presentation of project ideas, consortia and organizations/companies willing to join project
  - Parallel working groups: projects/networks
  - Discussions and conclusions
- Closing cocktails and networking event

List of topics

- The main priorities for FP6 and FP7
- Call 6 priorities
- Networks/IST projects
- Collaboration platforms for mobile work
- Mobile work organization
- Mobile workforce skills
- Service oriented architectures for collaboration support
- Awareness support for distributed mobile teams
- Collaboration within knowledge communities
- Community based Collaborative Workplaces
- New collaboration approaches
- Collaboration anywhere at anytime
- Engineering and Mobile technologies
- KM in Mobile Technologies
- Mobile workplace innovative applications in key industries and sectors
- Mobile workplace platforms and technologies
- Scenarios and innovation roadmap for mobile work
- Mobile workplace and ambient intelligence
- Societal and organizational aspects of introducing mobile workplaces
- Living labs experimentation environments for mobile workplace innovation
- m-Business Concepts and m-Business Models
- Mobile home
- Mobile lifestyle between vision and reality
- New applications for UMTS
- Secured mobile communication
- Mobile applications for government services
- The Mobile Network
- The challenges for Mobile applications
- Mobility evolution
- m-City
- m-Government
- m-Citizens
- Mobility to health and social services

Call for papers and submission guidelines

All abstracts should be prepared in English in electronic form. Submitted abstracts should be restricted to 1 page of A4 format and sent via e-mail as MS Word file to the Organizing Committee (e-mails: zvirblis@infobalt.lt and saulius@vitp.lt) by 1 August 2005. Simultaneously the title of the presentation should be sent to Dr. A. Beriozko, e-mail: ber@ednes.org. Notification of the presentation acceptance will be sent to authors not later than 21 July 2005.

IST4Balt conference and workshop speakers should submit the following items by 1 August 2005:

1. Title of presentation
2. Speaker's name, surname, position, scientific degree (Dr./Prof.), title (Mr./Mrs./Ms.) and represented country
3. Co-authors, if there are any, name, surname, position, scientific degree (Dr./Prof.), title (Mr./Mrs./Ms.) and represented country
4. Abstract of presentation (not exceeding 500 characters)
5. Short summary or CV (not exceeding 1000 characters) about speaker and photo (digital); if there are several authors - short CVs and photos of each of them

After notification the following items should be submitted to the Organizing Ocmmittee:

1. The final presentation in MS PowerPoint format sent by e-mail (to be stored in the computer for the presentation) *by 10 October 2005*
2. Text of presentation (to be published before the conference) *by 30 September 2005*

Abstracts and full papers should be submitted in MS Word format, pictures should be submitted separately (the desired formats are 300 dpi EPS, TIF or JPG at the highest possible quality level; only Excel graphs may be submitted in Excel files; only Word tables may be submitted in Word files; no images may be submitted in PowerPoint, Visio and other specific file formats). Full paper should not exceed 15,000 characters.

For more information:

Conference issues:

Mr. Edmundas Zvirblis
Association INFOBALT, Lithuania
Tel.: +370 2 622623
Fax: +370 2 622629
E-mail: zvirblis@infobalt.lt

Workshop issues:

Mr. Saulius Arelis
Visoriai Information Technology Park, Lithuania
E-mail: saulius@vitp.lt
Phone: +370 5 2109256
Fax: +370 5 2109257
Dr. Alexander Beriozko
EDNES
Tel.: + 7095 133 4339
Fax: + 7095 930 5559
E-mail: ber@ednes.org
http://www.ednes.org/ist4balt

IST training day at BI-INFO 2005 conference, December 2005

B&I Bi-Info

E.Konstantinova, S.Ipatov (Bi-Info, Estonia)

The V International Conference "Transport and Logistics in International Trade. Information Technologies" will be held on 8-9 December 2005 in Tallinn, Estonia. The Conference venue will be Hotel "Olympia".

The organizer of the Conference is Estonian IST4Balt IDC "Bi-Info" and this biennial event is a tradition in the community of transport and logistics specialists. Each of the previous conferences had its own focal point and was dedicated to the most urgent issue of that period. This time the organizers chose as a focal point the issues of the IT applications to develop transport, logistics and international trade.

The leaders of the state and private transport, logistics and IT companies will discuss the urgent issues of cooperation and collaboration.

The key issues of the conference are:

- The development of international trade as the way to the international integration
- The impact of EU enlargement on the development of transport and logistics
- The EU Customs Code: a stimulus or brake for foreign trade operations within a country and with third countries?
- EU policy to encourage the rational development of TEN
- Foreign trade and economic relations of the Euro-Asian countries and the prospects of their development
- China's role and its export in global transcontinental trade
- Commodity Demand Outlook – future trends and their impact on different sectors of trade
- Logistic methods in organizing commodities flows
- Latvia, Lithuania and Estonia are the major logistics center. Transit zone between Russia and EU
- Competition of alternative routes – water, sea and land
- ED 1 and modern terminal logistics
- Human resources in logistics (motivation, management, loyalty, recruitment, training)
- Information technologies at the service of transport and logistics
- Investments in IT as a factor of the fast regional development

Among the speakers there will be high rank executives of transport ministries, major international transport companies, unions and associations.

This year a special training day devoted to activities of the EU IST Priority and IST products to be implemented in the Baltic States will be held within the conference. The IST training day will be organized in the framework of the EU IST project IST4Balt. The topics of the training day will correspond to the following IST Strategic Objectives: "Applications and services for the mobile user and worker", "e-Inclusion" and "Improving Risk management".

Simultaneously the exhibition "The newest achievements in trade, transport, logistics and IT" will take place.

It is expected that about 250 delegates and guests – representatives of the state and private sectors from European and other countries – will attend this event. The issues of international trade, transport strategy of EU, Russia, China and other participants of the transport process, customs regulations as well as application of the advanced IT in logistics will be under debate at the Conference. This Conference is an ideal event to bring together academicians and practicians, specialists and experts.

Ways to register:

- in Internet at http://www.bi-info.ee/conference
- by phone +372 6272755

Financial terms and conditions for the conference:

- 600 Eur per one delegate

Special terms:

- 480 Eur per one delegate if the payment is made prior 1.08.2005
- 550 Eur per one delegate if the payment is made prior 1.11.2005
- 10 % discount for more than two delegates from the same company

The registration fee includes the payment for the participation in the Conference, the set of the Conference materials, lunch, and reception. Hotel accommodation is not included in the registration fee. The registration fee is to be paid before the Conference starts. Should the application be cancelled prior 1 November 2005, the registration fee will be returned in full minus 100 Eur for administrative charges. We regret no refund after 1 November 2005. A substitute delegate is welcome.

Contacts of the Organizing Committee:

Bi-Info AS

42 Narva mnt., 10150 Tallinn, Estonia

Tel.: +372 6272755, 6272760; Fax: +372 6272756

E-mail: marketing@bi-info.ee

Web-site: http://www.bi-info.ee/conference/

Questions concerning IST training day please address to IST4Balt project manager Dr. Alexander Beriozko, e-mail: ber@ednes.org, phone/fax: +7 095 133 43 39 / +7 095 930 55 59.

IST4Balt on the Web

System general description. IST4Balt central Web-site at EDNES

A.Soloviev, A.Beriozko
(IST4Balt management team, EDNES)

Introduction

The IST4Balt on the Web system consists of six national Web-sites hosted at servers of the project partners in the six Baltic States organisations and the central Web-site hosted at the server of EDNES. All the IST4Balt national Web-sites will be specific target oriented: open development platforms for software and services at RTU (Latvia), telematics for tourism and cross-media for leisure and entertainment at LITTA (Latvia), teleworking and new employment opportunities at Inforing (Estonia), improving risk management at Bi-Info (Estonia), applications and services for the mobile user and worker and networked business at INFOBALT and VITP (Lithuania). At the same time the content of the IST4Balt Web-sites encompasses: regularly updated information on the FP6 and IST, links to Web-sites of other partners and relevant IST projects, calls for applications and reports of IST4Balt gatherings, overview of IST products, etc. It is planned that the Web-sites will also promote new methods of work, such as "Virtual Laboratories", multilingual "discussion" media, "virtual awareness" tools, constantly updated on-line database of existing vacancies and demands, certificates, etc.

The central Web-site of the IST4Balt at EDNES is available at http://www.ednes.org/ist4balt/. A majority of the national IST4Balt Web-sites is available as well: http://www.balticit.com/ist4balt/ at RTU (Latvia), http://www.ist4balt.lt/ at INFOBALT (Lithuania), http://www.vitp.lt/ist4balt/ at VITP (Lithuania), http://www.bi-info.ee/Ist/ at Bi-Info (Estonia), and http://www.inforing.net/IST4Balt/ at Inforing (Estonia). The Web-sites at LITTA (Latvia) is under development and will be launched soon.

IST4Balt central Web-site

The central Web-site of the IST4Balt project was launched at EDNES, France, in December 2004. The Web-site is available at http://www.ednes.org/ist4balt/ (Fig. 1). The Web-site is implemented in English in pure HTML and optimised for 800x600 screen resolution to be viewed in Internet Explorer 5.0 or higher and Netscape Navigator 6.0 or higher. Simple and user-friendly interface allows users to navigate the Web-site with ease.

Figure 1. IST4Balt central Web-site at EDNES: index Web-page (news section)

The Web-site structure is illustrated by the scheme below (Fig. 2).

"The Project" section contains almost all the information on the IST4Balt project. It is divided into five subsections: "General Information", "Publications/Presentations", "Events", "Photo Gallery" and "Training Course". All the subsections are constantly updated. The screen-shots of each subsection are given below (Fig. 3).

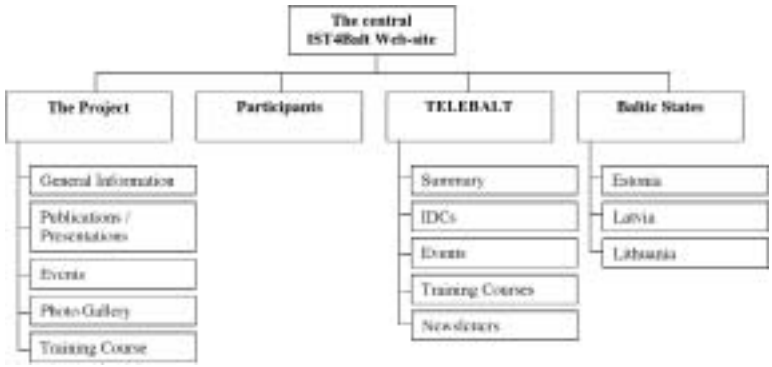

Figure 2. Structure of IST4Balt central Web-site at EDNES

"Participants" section contains list and contacts of the coordinator and contractors organisations of the IST4Balt project. Besides, the Web-links to national IST4Balt Web-sites in the three Baltic States are also given. The screen-shot of this section is given below (Fig. 4).

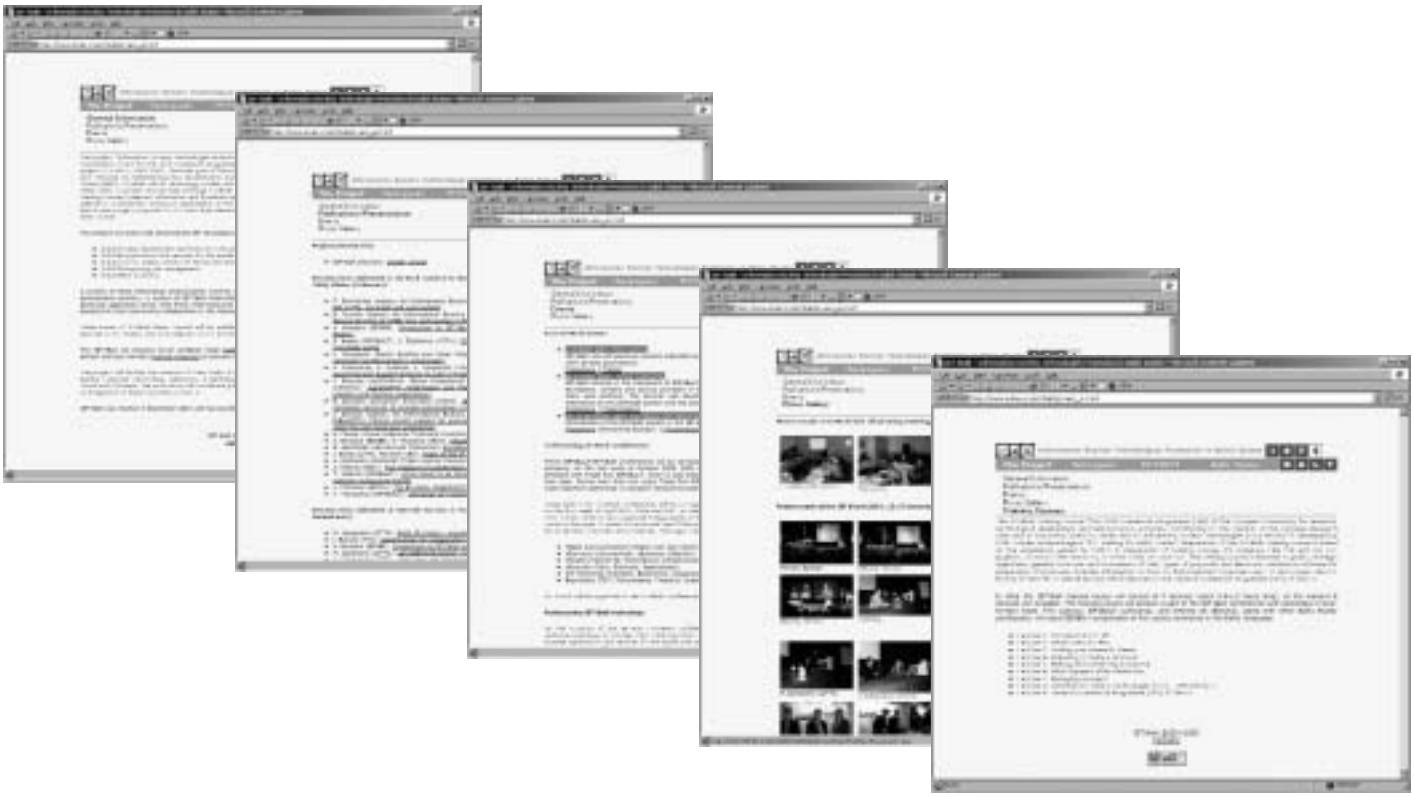

Figure 3. Screen-shots of subsections within "The Project" section of IST4Balt central Web-site at EDNES (left to right): "General Information", "Publications/Presentations", "Events", "Photo Gallery", "Training Course"

Figure 4. IST4Balt central Web-site at EDNES: "Participants" section

The section "TELEBALT" contains all the information on the project "Teleworking as a Tool for Information Society Technologies Programme Promotion to Baltic States" (TELEBALT). IST4Balt is the follow-up of the TELEBALT project. The latter was started on 1 October 2001 and successfully completed on 31 October 2003. TELEBALT was implemented in the framework of the FP5 IST Programme of the EU. The section consists of five subsections: "Summary", "IDCs", "Events", "Training Courses" and "Newsletters". The corresponding screen-shots are represented in Fig. 5.

"Baltic States" is an interactive section of the Web-site, which gives the overview of the three Baltic States involved in the IST4Balt project (Fig. 6). The overview is focused on the following items: General Information, Administrative Divisions, Economy, Money, History, Culture, Environment, Geology, Getting Around, Accommodation.

Figure 5. Screen-shots of subsections within "TELEBALT" section of IST4Balt central Web-site at EDNES (left to right): "Summary", "IDCs", "Events", "Training Courses", "Newsletters"

Figure 6. IST4Balt central Web-site at EDNES: "Baltic States" section

Thus the section "Baltic States" consists of the three similarly structured subsections: "Estonia", "Latvia" and "Lithuania". The screen-shots of the subsections are illustrated below (Fig. 7).

Figure 7. Screen-shots of subsections within "Baltic States" section of the IST4Balt central Web-site at EDNES (left to right): "Estonia", "Latvia", "Lithuania"

IST4Balt national Web-site at RTU, Latvia

Inga Bakane (Project manager, RTU)

The IST4Balt Latvian Web-site at RTU was launched on January 27, 2005, and it is available at http://www.balticit.com/ist4balt/ (Fig. 1). The Web-site is designed in English and Latvian.

Figure 1. IST4Balt Latvian Web-site at RTU: "General information" subsection

The following sections and subsections are available at the Web-site:

- "Information about project": General information, Partners, Workplan, Contact information, RTU participation and contribution, IDC calendar,
- "Conferences and workshops": Latvia, Estonia, Lithuania,
- "IDC": Latvia, Estonia, Lithuania,
- "Trainings": Latvia, Estonia, Lithuania,
- "Publications",
- "PR": Workshops/Conferences, Press news, PR presentations, Articles.

Moreover, the common sections are also available at the Web-site on the right side:

- "Information about Latvia": General info, Riga guide,
- "IST projects in Latvia",
- "IST events",
- "Higher education and science in Latvia",
- "Useful links",
- "Suggestions",
- "Discussions".

Some screen-shots of the IST4Balt Latvian Web-site at RTU are given below (Fig. 2).

Figure 2. Screen-shots of IST4Balt Latvian Web-site sections at RTU (left to right): "RTU participation and contribution", "Conferences and workshops" "Suggestions"

Lithuanian IST4Balt national Web-sites

E.Zvirblis (INFOBALT), S.Arelis (VITP), A.Soloviev (EDNES)

The IST4Balt Lithuanian Web-sites at INFOBALT and VITP were launched on 14 February and 4 April 2005, correspondingly. The Web-site at INFOBALT is accessible at http://www.ist4balt.lt/ (Fig. 1a) and the Web-site at VITP is accessible at http://www.vitp.lt/ist4balt/ (Fig. 1b). The Web-sites use the third generation open source based platform and they are available in English and Lithuanian.

Figure 1. IST4Balt Lithuanian Web-sites. (a, top) – index Web-page at INFOBALT Web-site. (b, bottom) – index Web-page at VITP Web-site

The IST4Balt Lithuanian Web-sites represent the Web-portal, which possesses several enhanced features. The main features are:

- The portal is being developed using Open Source tools;
- The portal enables easy dissemination of various information on:
  - INFOBALT/VITP conferences,
  - workshops devoted to the FP6 and the IST Priority promotion and technical matters of teleworking in business,
  - IST market review in Lithuania,
  - technology studies in Lithuania,
  - short information and links on the IST programme, FP6, FP7 and related EU projects with focus on IST Strategic Objective 2.3.2.6 Applications and services for the mobile user and worker,
  - IST4Balt News Journal;
- The portal provides:
  - demo information on selected telematics tools,
  - training information to promote IST Priority and the FP6 in general;
- The portal increases awareness by disseminating unstructured information enriched by metadata and stored in knowledge bases;
- The portal provides intelligent search for retrieving relevant information by using domain taxonomy and metadata of information blocks stored in knowledge base;
- The portal enables various ways to communicate both to Lithuanian project team and potential partners;
- The portal enables easy to access to information on Lithuanian potential partners to develop collaboratively new projects proposals;
- The portal assists in organizing different events (conferences and workshops) and Trans-Baltic Information Society Technologies Association (Trans-Balt IST Association);
- The portal presents new ways of working by developing a friendly environment for collaborative work of project team and potential partners;
- The portal will enable project management in teleworking mode.

The IST4Balt Web-site at INFOBALT is oriented at applications and services for the mobile user and worker and networked business. At the same time the contents of the Web-site encompasses:

- regularly updated information on the FP6, FP7 and IST;
- links to Web-sites of the other IST4Balt project partners and relevant IST projects;
- calls for applications and reports on IST4Balt gatherings;
- News Journal in electronic form;
- presentations of IST products.

Consulting service on new methods of work and on-line training courses are available at the INFOBALT Web-site.

The IST4Balt Web-site at VITP is designed to accumulate various information related to IST priority 2.3.2.6 “Application and services for mobile user and worker”. The Web-site provides structured space for the tools selected under WP5. It also provides information about IST projects implemented in the same thematic area (Fig. 2), information about FP6, IST, and upcoming calls.

Figure 2. IST4Balt Lithuanian Web-site at VITP: “Related projects” section

IST4Balt Web-site at VITP enables gathering IT communities within the virtual environment and providing community members with the facilities for publishing or updating information. The Web-site contains restricted area for the community members for information exchange, expression of interests, partners search, etc.

Several screen-shots of the IST4Balt Lithuanian Web-portal are given below (Fig. 3, Fig. 4).

Figure 3. Screen-shots of IST4Balt Lithuanian Web-portal at INFOBALT: (left) registration form for new Web-portal user, (right) Web-site map

Figure 4. Screen-shots of IST4Balt Lithuanian Web-portal at VITP: (left) VITP team members (short CVs), (right) Wireless Learning Guide ("Information Centre" section)

IST4Balt national Web-sites in Estonia

Sergei Ipatov (Bi-Info), Konstantin Baranov (Inforing AS)

IST4Balt national Web-site at Bi-Info

The IST4Balt Estonian Web-site at Bi-Info was launched on 10 December 2004, and it is accessible at http://www.bi-info.ee/Ist/ (Fig. 1). The Web-site is available in English, Estonian and Russian since it is still the language of communication between people from the Baltic States.

Figure 1. IST4Balt Estonian Web-site at Bi-Info: index Web-page

The Web-site contains the following sections: "Ist4Balt", "Library", "IDC", "Action Plan for IDC", "Events calendar", "Company Profile", "Partners & Members", "Forum".

Several screen-shots of the IST4Balt Estonian Web-site at Bi-Info are given below (Fig. 2).

Figure 2. Screen-shots of IST4Balt Estonian Web-site at Bi-Info (left to right): "Action Plan for IDC", "Partners & Members", "Forum"

IST4Balt national Web-site at Inforing

The IST4Balt Estonian Web-site at Inforing was launched on November 30, 2004, and it is accessible at http://www.inforing.net/IST4Balt/ (Fig. 3). The Web-site is available in Estonian, Russian and English.

Figure 3. IST4Balt Estonian Web-site at Inforing: "General information" section

The Estonian Web-site at Inforing consists of the following sections: "General information", "Goals", "Duration", "Objectives", "Coordinator", "Participants", "Consortium", "Workpackages" and "News". In addition, the Web-site contains exhaustive information on the publishing house Inforing as the IST4Balt partner. The subsections related to the overview of Inforing activity within the IST4Balt project are: "Editions", "Equipments", "People", "Experts", "Projects", "Workshops", "Workplan", "Job Exchange", "Partners", "Conferences", "Contacts".

The screen-shots of the IST4Balt Estonian Web-site at Inforing are given in Fig. 4.

Figure 4. Screen-shots of IST4Balt Estonian Web-site subsections at Inforing: (left) "Workplan", (right) "Job Exchange"

Information society technologies in Baltic States

IST4Balt project in Estonia and new employment opportunities

Konstantin Baranov (Project manager, Inforing AS)

General information about Inforing AS

Publishing house Inforing AS was invited to participate in the project IST4Balt in September 2004. Inforing Limited is a commercial company, registered under the Estonian law in Tallinn, Estonia, in 1994. Inforing Ltd. headquarters are located in Kohtla-Järve city. Currently it has branches in Tallinn, Estonia, and Riga, Latvia, and representatives in Lithuania and Finland. Inforing Ltd. has very professional staff, which consists of 25 persons in Kohtla-Järve and 15 persons in other cities. The turnover of the company is approximately 15 000 000 Estonian Crowns per year and is increasing every year. Inforing Ltd. is one of the biggest publishing houses and Internet information providers in Estonia.

The company issues one newspaper and four magazines in Estonian, Lithuanian, Latvian, Finnish and Russian languages and maintains information on Estonian news, business, sport, art, science, education and communication technologies in Internet.

The Internet newspaper "Infopress" contains main information on the company editions, registration systems for unemployed people, special registration system for public poll study and gives more attention to the information of the city government and local business.

Main goals of the IST4Balt project in Estonia

- Main methods of telematics and new employment opportunities: the main goal of the project in Estonia is to promote Information Society Technologies (IST), introduce new methods of teleworking, telematics and its use for new employment opportunities.
- Demonstrations of the IST objectives and opportunities: the project provides demonstrations of IST objectives, opportunities, developed telematics products and relevant results to Estonian telematics community.
- Study of situation with IST in Estonia: the project studies the present situation with IST development in Estonia and formulates appropriate recommendations to EDNES for research and marketing communities. It also establishes contacts with local research institutes and state departments.
- Searching for new projects: the project encourages submission of new project proposals to the EC.
- Publication of the information on the project in all Inforing AS editions and issue of IST4Balt News Journal vol.3; organization of workshop in Kohtla-Jarve, Estonia.

Information on the project in Internet

The IST4Balt Estonian Web-site (http://www.inforing.net/IST4Balt/) was prepared for installation in Internet – more then

20 Web-pages with information on the project goals were prepared by the project managers of Inforing AS during the period between January 2005 and April 2005. The Web-site has the following general directions: information on the main participants of the project, the project development goals and plans, information on job Web-sites and news. IST4Balt job exchange (e-Job Exchange for Baltic States) Web-pages were designed for installation at the Web-site in five languages: Estonian, English, Lithuanian, Latvian and Russian, since millions of people in Baltic States speak Russian only. The Web-site contains information parts related to different organizations and companies engaged in job services.

Development of the project within next three months implies design and installation of Web-pages about new teaching programs and methods, teamworking, teleconferences and implementation of special e-Consulting office with e-Consulting Points (ECP).

IST4Balt job information system

All work on development of the information system concerning problems on employment includes three basic stages. The first stage has been already completed and includes the following items implemented in Estonian, English and Russian:

a) Development of information system for three Baltic States:
- information on the basic electronic labour exchange between the Baltic and European States,
- brief information on the labour legislation of Estonia,
- brief information on stock exchange work and employment firms in Estonia,
- brief information on curriculum and improvements of professional skills in Estonia,
- other useful information.

b) Development of registration and search system:
- registration and search of vacancies,
- registration and search of summaries,
- automatic system of new offers dispatch.

c) Work on advertising the information system in the press.

Besides, two more stages are to be executed also:

a) Stage 2:
- extension of the information system to 5 languages including Lithuanian and Latvian,
- extension of the registration and search system to 5 languages including Lithuanian and Latvian.

b) Stage 3:
- increase of information volume at all positions of the information system,
- creation of e-Consulting office system with ECPs.

IT to facilitate commercial risk management. Application in Estonian market

Sergei Ipatov (Project manager, Bi-Info AS)

We never know exactly what will happen tomorrow. We learn by wisdom that chain of occurrences or results are related as causes and effects. The same cause produces the same effect.

We observe and analyze large number of similar instances and draw tendentious patterns or trends that will shape the coming events. This assimilation helps us to forecast results near accurately and chart our course of action.

When events do not shape as it was forecast by us earlier, we again re-analyze the sequence of variances to find what caused the unexpected.

Such variance is caused by unexpected new developments. They are identified as risk factors. By this we learn the type of risk factors we may confront in each and every venture we undertake. The extent of uncertainty in getting results in different spheres is determined as the extent of probability or "risk content". Risk analysis is broadly defined to include risk assessment, risk characterization, risk communication, risk management, and policy relating to risk. Risk Analysis provides a focal point for new developments in the perception of risk elements for scientists from a wide range of disciplines. The analysis of risks is being increasingly viewed as a field in itself, and the demand for a more orderly and formal treatment of risks is great. Risk Analysis is designed to meet these needs of organization, integration, and communication.

Concepts of risk analysis and risk management were developed for each stage of life cycle of a process and presented in the market by various large software producers. Estonian analysts implemented these methods into practice.

Several Estonian companies developed their own software, successfully competing in the risk management software market.

Software tools for risk management allow to automatize work of specialists in information security and risk management of enterprise.

Nowadays in Estonia more often various “paper” methods of analysis are used, benefits of this method are high flexibility and adaptivity.

This software could be used as an excellent tool to serve a risk manager. But there is no universal method to analyze and manage a risk, in each case the special software tool must be selected and adjusted in accordance with appropriate requirements.

Generally companies, which specialize in information security, develop this kind of methods. For well-known reasons these methods are not published as they belong to “know-how” of a company. In this case, it is quite difficult to evaluate quality and objectivity of these methods.

In 2000 the ISO 17799 was taken as an international standard, the basis of which is British standard BS 7799. As a result, the majority of the risk management instruments were modified to fit the requirements of this standard.

Specialized software tools, which implement methods of risk analysis and management, may belong to category of program software (for sale) or property of enterprise for inside use only.

If this software is developed as a programming product, it has to be universal to meet the basic needs of customers. Corporate software is adjusted to perform limited operations for risk analysis and management and allows to take into account the specification of information technologies of an enterprise.

In the market we usually have software oriented for upper-basic level of protection. In such a way, a toolkit is intended for general needs of an enterprise with the medium level of a maturity degree.

In organizations that reached a certain maturity level, implementation of risk analysis and risk management on every stage of life cycle of a process is a necessary procedure. Requirements for these stages are different for each kind of organization and differentiate in the wide variety of parameters such as technologies for risk analysis.

The development of risk analysis methods is connected with several methodological difficulties. Such as, building of information technology from system position, including random factors, related to organizational, procedural, technical aspects as well as their interrelation; the development of correct procedures of risk evaluation.

Risk management is essential for further beneficial development of all types of business and enterprises.

Implementation of IST4Balt activities in Latvia

Inga Bakane, Tatiana Rikure
(IST4Balt project team in Latvia, Riga Technical University)

The IST4Balt project is a follow-up of the FP5 IST project TELEBALT, 2001-2003. The main goal of the project is to promote the FP6 IST Priority to Estonia, Latvia and Lithuania by implementing fast dissemination and awareness actions targeted on these EU New Member States (NMS). IST4Balt project activities were started in September 2004 and have duration of 36 months.

Riga Technical University (RTU) and The Latvian Information Technology and Telecommunications Association (LITTA) are 2 partners from Latvia who will implement project activities in Latvia and ensure successful results for future cooperation among Baltic countries, Europe and World.

Riga Technical University (RTU) is the main technical university in Latvia. It offers advanced study programs in Engineering (Civil, Computer Science, Electronics and Telecommunication), Chemistry, Architecture, Business Management, with the total number of about 12,000 students and 1,500 staff members.

Faculty of Computer Science and Information Technology is well experienced in:

- systems theory;
- informatics and software engineering;
- computer networks and graphics;
- modelling and simulation.

Three Departments of Riga Technical University are involved in the IST4Balt project implementation in Latvia and each of them is responsible for different tasks of the project:

- Department of Applied Systems Software is a basic division for carrying out the tasks under IST4Balt project and location of Information Dissemination Centre (IDC) at the Riga Technical University;
- Department of System Theory and Design is responsible for development of open platforms for software and services;
- Department of Modelling and Simulation is responsible for development of Telematic for tourism and cross-media for leisure and entertainment.

Workshops

During project implementation period we are planning to organise 3 specific workshops to promote FP6, FP7 and other EU programmes in Baltic States.

The first workshop “IST 6th Framework programme – great opportunity for cooperation and collaboration” was held in Riga on 6-7 2005. It was organized by Riga Technical University in the framework of the IST4Balt project funded by Information Society Priority of the European Commission and in cooperation with EDNES (France).

IDC

In the framework of the IST4Balt project activities the Information Dissemination Center (IDC) in Latvia has been developed at the beginning of the project. The basis of this IDCs system was launched under "Open Latvia", Latvia, INFOBALT, Lithuania, and Inforing AS, Estonia, by TELEBALT project (IST-2001-33041).

Latvian IDC at RTU concentrates on the Strategic Objective 2.3.2.3 “Open development platforms for software and services” and also deals with telematics for tourism included in the Strategic Objective 2.3.2.7 “Cross-media content for leisure and entertainment”. This means that we provide information about the IST 6th and 7th Framework Programmes for our visitors but strategic objectives 2.3.2.3 and 2.3.2.7 are our focus points.

Main activities of the Latvian IDC are:

- Information:
  - articles in local newspapers and magazines;
  - press releases;
  - participation in different seminars, workshops, conferences;
  - organisation of information days in IDC;
  - information distribution through different channels - NCP, Foreign affairs department at RTU central house etc;
  - information distribution through electronic channels - e-mails, web sites, banners.
- Consultation (face to face and virtual):
  - how to write proposals - context and financial part;
  - how to find partners;
  - how to find right strategic objective;
  - how to find calls etc.
- Organizing of seminars, workshops:
  - organising of seminars in Riga for people who are already involved in EC IST activities in the framework of informing about novelties;
  - organising of seminars in Riga for people who are not involved in EC IST activities but who have interest in EK IST 6th FP;

- organising of seminars in regions for people who are already involved in EC IST activities in the framework of informing about novelties;
- organising of seminars in regions for people who are not involved in EC IST activities but who have interest in EK IST 6th FP;
- providing face-to-face and virtual consulting for all interested people in the region who seek for EU partners to prepare a joint proposal to IST.

• Web-site:
- Discussion section (http://www.balticit.com/ist4balt/phorum/list.php?4) has been created to find out what are the main questions which people would like to know and learn about EC IST 6th FP;
- Suggestion section (http://www.balticit.com/ist4balt/suggestions.php) has been created to find out what we have to change in our web site, trainings or works of IDC;
- Special section with different subdivisions for IDC in IST4Balt Web site has been created (http://www.balticit.com/ist4balt/idc.php).

Public awareness

Leaflet of the IST4Balt project was published in Latvian in the beginning of the project and is widely disseminated at different meetings, workshops and conferences.

Second issue of the IST4Balt News Journal will be published in the beginning of the next year by RTU IST4Balt project team. Main topics will be focused on IST development in Latvia, different R&D project activities, situation analysis in IT field, etc.

IST4Balt project team from RTU is taking part in different conferences and workshops in order to enlarge awareness about activities in R&D field with special focus on Baltic countries:

- Writing Successful Proposal, 9-10 June 2005, Riga, Latvia;
- GRID / Research Networks & eApplications, 30 -31 May 2005, Bangalore, India;
- eHealth and eInclusion, 20 May 2005, Riga, Latvia;
- 3 Day Financial Workshop in Latvia, 17-19 May 2005, Riga, Latvia;
- Chinese-European Networking Symposium, 17-18 March 2005, Beijing, China;
- IST 2004 Event "Participate in your future", 15-17 November 2004, "Netherlands Congress Centre", The Hague, The Netherlands.

Cooperation with other FP6 IST projects

ELOGMAR-M

Web-based and Mobile Solutions for Collaborative Work Environment with Logistics and Maritime Applications.

Action Line: Applications and services for the mobile user and worker, Funded under 6th FWP (Sixth Framework Programme) (511285).

The idea of integrating expertise and knowledge through co-ordination activities is widely recognised as an important tool for stimulating the European research community.

This project is the fourth project that is initiated by the major partner group under the co-ordination of the Fraunhofer Institute IFF/FhG (Germany). All previous projects: AMCAI (COPERNICUS 1994), DAMAC-HP (COPERNICUS 1998), BALTPORTS-IT (http://www.baltports-it.com/, IST FP5, 2001) – were aimed at creating an international network of scientists and experts dealing with the problems of improving transport logistics and harbour processes by using advanced IT-solutions.

The major aim of the eLOGMAR-M is to gather and co-ordinate activities in the field of IT- and Communication solutions (Web-services, GPRS and WAP/WML mobile services, simulation, technologies for information systems design, virtual reality) with maritime and logistics applications. The maritime freight route "Baltic Sea feeder ports - Western Europe hub ports (Hamburg) - Mediterranean ports - Chinese ports" is selected as the subject of investigation and demonstration.

The network of branch offices of the Baltic Regional Competence Centre in the field of advanced IT- and communication solutions and transport logistics will be established, covering the three Baltic countries (Estonia, Latvia and Lithuania).

Contact person in Latvia – Leonids Novickis

http://www.elogmar-m.org

IST-MENTOR+

Mentoring of IST-Multipliers in Associate Candidate Countries – Extension.

Action Line: Programme Level Accompanying Measures, Funded under 6th FWP (Sixth Framework Programme) (507704).

IST Mentor+ enables a wider participation in the IST Program of the Candidate Countries and New Member States, by developing a networked group of proficient IST multipliers, whose task will be to enhance building awareness of the IST Program and to assist potential proposers in submitting high quality proposals.

IST Mentor+ coaches and mentors these multipliers to teach them all that is known through the written published material and through the extensive experience in the EU, on how to go about their tasks and succeed in the proposals they will help to submit.

In addition, IST Mentor+ provides mentoring of the NCPs within these countries to enhance their proficiency in supporting these multipliers in their actions.

Contact person in Latvia - Dina Berzina

http://www.istmentorplus.net

Finance-NMS-IST

Finance-NMS-IST is a SSA project that assists New Member State Organisations with the financial and budgetary aspects of participation in the IST Programme.

Finance-NMS-IST runs an online helpdesk that can be found at www.finance-helpdesk.org.

In addition to the helpdesk, Finance-NMS-IST trains via workshops the financial personnel within SMEs and other organisations in the 10 New Member States, and assists them in interpreting and implementing the financial rules and regulations of

FP6 to their benefit. The organisations trained include local accounting companies, commercial organisations and academic institutions. This is so that they will be able to assist their own organisations or clients both in the computation of optimal correct budgets as well as to ensure correct understanding of the financial responsibilities in entering into an EU contract.

Working in coordination with each local NCP, Finance-NMS-IST will use accountants with experience in FP6 rules and regulations. They will share their experiences and tools to assist and train the organisations through seminars, one to one consulting sessions and help-desk facilities. Support includes proposing, negotiation, cost recording and cost reporting. This is to ensure that not only is the correct amount budgeted, but that it can also be eventually correctly realised.

Contact person in Latvia - Dina Berzina

http://www.efpconsulting.com

Telemetry solutions entering Lithuanian homes with Bitė GSM

Domas Sirgėdas (Bitė GSM)

Telemetry solutions, which have been gaining popularity recently in Lithuania, have entered the people's everyday life. Today the possibility of remote control of electronic devices via mobile connection is used not only in industries, such as accounting systems for heating or operation of elevators, but also in domestic life, for instance, to call an ambulance or fire brigade.

Telecommunications company Bitė GSM can be rightfully called the telemetry leader in Lithuania. In April this company launched a new service called BITĖ for Safe Home [BITĖ saugiems namams], which makes it possible to call the police, ambulance or fire brigade at a push of a button or control household electronic appliances by a mobile phone from a distance.

"We are continuously expanding the possibilities of mobile connection and offer Lithuanian people the most recent telemetry solutions which may bring a change into their lives", said Darius Montvila, Bitė GSM CCO Business. According to him, at the moment telemetry services allow to protect home, call an ambulance or police. Regardless of the distance, it is feasible to regulate urban traffic lights, control traffic flows and street lights, heating systems or electronic devices.

For home safety and comfort

Clients of BITĖ for Safe Home are serviced via a device with an integrated telephone connection that has been specially designed in Lithuania. The service package also includes built-in emergency buttons, security and operation systems. In addition to the standard package, a wireless emergency control panel may be acquired which allows for an even simpler system operation.

According to Montvila, BITĖ for Safe Home stands out in terms of user-friendliness and reliability. Once the new security system has been installed, all one needs to remember is that the green button is for calling the police, while the red one – for calling the ambulance. Assistance and security is ensured all around the clock and is protected from connection failures or similar disturbances. A security agency, upon receipt of a signal, reacts immediately and dispatches the necessary assistance.

The service is highly relevant to owners of summer cottages or those living far from town who often face the security problem of their houses. A traditional alarm system is usually inefficient in such cases. The new home security system, linked to the information centre of the security agency Apsaugos centras all around the clock, allows for an instant reaction to emergency signals and transmission of information to security services and the police.

A changing concept of a modern housing

Another possibility developed by Bitė and its partners, namely that of operating electronic devices via mobile phone is changing the concept of modern housing. For instance, on the way home it is possible to switch on the washing machine or oven to finish the steak in time. Moreover, the system allows for checking the operation of the security system or regulating motion sensors by an SMS in every location within mobile network coverage.

"In a certain way contemporary telemetry solutions now bring us back to the reality of science fiction movies shown a decade ago. Finally, it has become the reality – these solutions are becoming increasingly popular all around the world", said Montvila.

Take the largest Japanese telecommunications company NTT DoCoMo, for example. This company claims that in five years telemetry devices will make up two thirds of the company's customer base, while other customers will make up the remainder one third. It has been estimated that already over this year more than 700 mln. telemetry devices will be installed throughout the world.

According to Montvila, Bitė will maintain its leading position in Lithuanian telemetry market. "During this year alone the number of telemetry solutions in Lithuania should grow three times", stated Montvila. It has been forecasted that in 2008 Bitė will have installed around 12 thousand of telemetry devices.

Monitoring of heating meters

The business has already appreciated the benefit of telemetry solutions. Without leaving office, managers may monitor even the operation of sales machines – how many and what kind of snacks or soft drinks are needed or are sufficient to ensure an uninterrupted availability of change. In order to change the price tags visiting each outlet is no longer necessary. In addition, owing to the contemporary technology machines are burglary-proof, while clients can pay for the goods by sending SMS.

The largest by far telemetry project is run with Dalkia in the heating sector. Energy specialists make use of telemetry solutions for performing checks of meter readings.

Connection with an elevator – within a matter of seconds

In April yet another novelty was launched, i.e. operation of elevators via mobile connection. These solutions were installed jointly by Bitė and Schindler liftas. Within an elevator a mobile connection ensures a rapid connection between the dispatcher and the passengers within a matter of few seconds.

"The idea of using telemetry solutions for elevator operation was born during the brainstorming session seeking alternatives for

wire and radio connection. In the Soviet times many elevators were equipped with local panels connected with the dispatcher board via wire connection, but over time this solution proved to be unreliable", said manager of Schindler liftas Marius Pilkauskas.

For a year and a half Bitė has been developing and testing the telemetry solution for the elevator maintenance service. The key difference of the new system is that instead of a wire or radio connection a mobile connection is used. Dispatchers working on PCs can trace what is happening in their "realms" and can connect to passengers inside an elevator in case of need. At any point in time they can send a stand-by emergency brigade.

Schindler liftas is planning to install the new solution in its 2 thousand elevators operated in Lithuania. Over two hundred elevators have been modernised so far. Mobile connection for elevator operation is installed in residential houses, as well as office and commercial buildings of the capital city. It is provided to the highly sophisticated shopping and entertainment centres, such as *Europa*, *Akropolis* and *Ermitažas*, *Flagman*, Siemens arena, Novotel Hotel and many other buildings. Gradually, these systems should penetrate markets beyond the limits of Vilnius.

"The European Union standards require considerable attention to be given to elevator maintenance, which is why we are keeping hand in hand with state-of-the-art technologies", said Pilkauskas. Operation of elevators via mobile connection is a relative advancement even in European terms. Similar devices are being installed in Norway, Sweden and Finland.

Illustrations

Figure 1. Special device designed for the BITĖ for Safe Home service – the green button calls the police, the red one calls the ambulance

Figure 2. "Telemetry solutions allow for remote operation of electronic devices via a mobile phone", said Darius Montvila, Bitė GSM COO Business

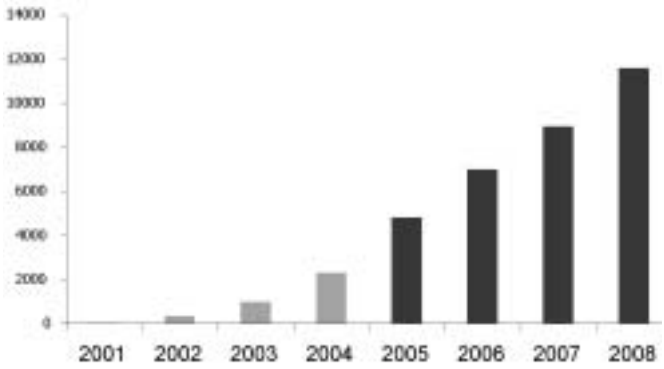

Figure 3. Number of telemetry devices in BITE network (2005-2008, BITE prognosis)

IST and other European ICT projects

The EU Leonardo da Vinci Programme project ORGANIC

Alexander Beriozko (EDNES), Richard Messnarz (ISCN, Austria)

Inroduction

Business organizations today need an innovation manager – a person who can identify the trends and achievements in technology, can mentally apply them to particular business, can foresee practical technology and market advantages and can develop a plan for implementation of such technology achievements.

What have to be theoretical knowledge and practical skills and experiences of such a person? The project ORGANIC ("Continuous Organisational Learning in Innovation and Companies"), which association EDNES started recently, will try to answer such questions. For EDNES this is a new type of the project in another European programme. Project ORGANIC is implemented in a framework of theEuropean programme "Leonardo da Vinci". Leonardo programme deals with vocational training of many kinds. ORGANIC perfectly fits into programme goals and objectives: its purpose is to develop a "skill card" of innovation manager – a set of skills, pieces of knowledge, best cases, experiences which the person pretending to be an innovation manager should have.

The participants of the project ORGANIC are:

- ISCN (Austria);
- Danube Innovation Relay Centre (Austria);
- FGUVA (Spain);
- CIT (Slovenia);
- TecNet (Ireland);
- MTA Sztaki (Hungary);
- EDNES (France).

Each partner has his share of intellectual work and his share of workshops.

Imagine that in the future Europeans will have a skill card like a card with a chip, which stores your skill profile to fulfil specific professions, job roles, and tasks. It's working like an ID card. This future scenario requires -

- A standard way to describe a skill set for a profession, job, or specific task;
- A standard procedure to assess the skill and to calculate and display skill profiles.

Such a common set of skill sets in Europe is needed due to the free mobility of workers, and e.g. software engineering companies in Germany employ software engineers from Ireland, etc. European countries such as UK, The Netherlands, and France have already well established open universities which support APL (Accreditation of Prior Learning). In APL the skills of students are assessed, already gained skills are recognised, and only for the skill gaps a learning plan is established. The skill assessment bases on defined skill units and a skill profile displaying how much of the skill units are covered.

For developing the skill set of the Innovation Manager we base on the skills definition proposed by the DTI (Department of Trade and Industry) in the UK for the NVQ (National Vocational Qualification) standards [1, 2]. These models have been re-used and slightly modified by other countries when they started employing skill cards, and so we also base our work on these models.

Skills definition model

A skills definition contains the following items (see Figure 1):

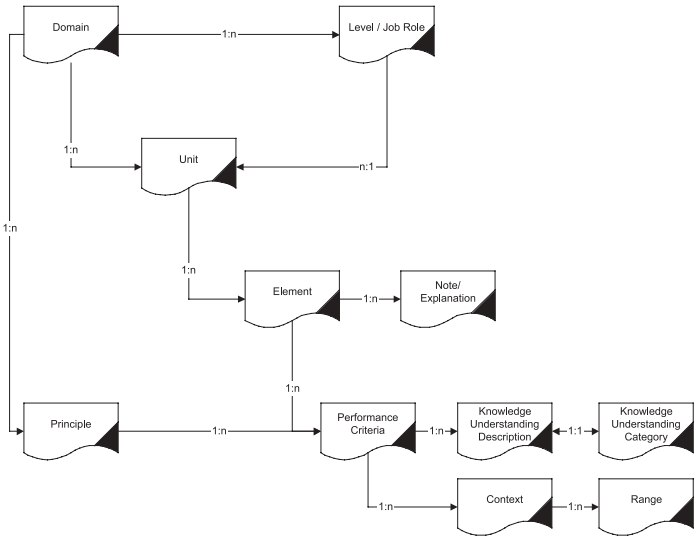

Figure 1. The Skill Definition Model (1:n = one to many relationship)

Context (UK standards): A category of ranges; it represents some terminology used in a performance criterion that consists of different context, conditions or circumstances. A participant must be able to prove competence in all the different circumstances covered by the context.

Domain: An occupational category, e.g. childcare, first level management or software engineering.

Element (UK standards): Description of one distinct aspect of the work performed by a worker, either a specific task that the worker has to do or a specific way of working. Each element consists of a number of performance criteria.

Evidence: Proof of competence.

Knowledge and understanding category (UK standards): A category of knowledge and understanding descriptions.

Knowledge and understanding description (UK standards): A description of certain knowledge and understanding. To be judged competent in a unit a participant must prove to have and to be able to apply all the knowledge and understanding attached to it.

NVQ (UK based): The National Vocational Qualification standard of England, Wales and N. Ireland.

Performance criterion (UK standards): Description of the minimum level of performance a participant must demonstrate in order to be assessed as competent. A performance criterion may have relevant contexts.

Principle (UK standards): A statement of good intentions; it underpins all competent domain practice.

Range (UK standards): Description of a specific circumstance and condition of a performance criterion statement.

Qualification: The requirements for an individual to enter, or progress within a certain occupation.

Qualification / training levels: Five levels of qualification / training are defined by European legislation and this structure can be used for comparability of vocational qualifications from the different European countries.

- Level 1: semi-skilled assistant performing simple work
- Level 2: basic employee performing complex routines and standard procedures
- Level 3: skilled professional with responsibility for others and performing independent implementation of procedures
- Level 4: middle management & specialist performing tactical an strategic thinking
- Level 5: professional / university level

Job Role: A certain profession that covers part of the domain knowledge. E.g. domain = Innovation, job role = Innovation Manager.

Unit (UK standards): A list of certain activities that have to be carried out in the workplace. It is the top-level skill in the UK qualification standard hierarchy and each unit consists of a number of elements.

Skills assessment model

Step 1 – Browse a Skills Set: You select a set of skills or competencies, which are required by your profession or job using national standards or your company standards [4]. You browse different skills cards and select a job role you would like to achieve (Figure 2).

Step 2 – Register for Self Assessment with a Service Unit: This can be a service unit inside your own company (e.g. a personnel development department) or a skills card and assessment provider outside your company which offers skills assessment services. In case of the Innovation Manager Project the registration will automatically assign a predefined service unit.

Step 3 – Receive an Account for Self –Assessment and Evidence Collection: With the registration you automatically received an account to login to the working space in which you can go through the steps of online self assessment and the collection of evidences to prove that you are capable of certain performance criteria.

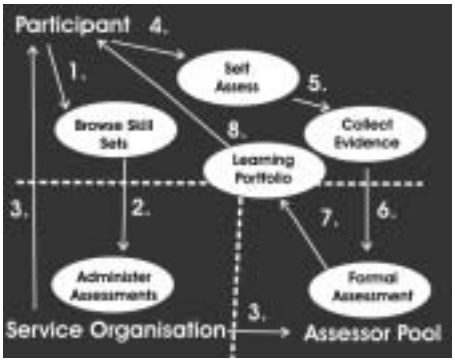

Figure 2. Basic steps of the skills assessment model

Step 4 – Perform Self Assessment: You log into the system, browse through the skills required and self assess performance criteria, whole elements or whole units with a standard evaluation scale of non-applicable, not adequate, partially adequate, largely adequate, and fully adequate. A skills gaps profile can be generated and printed illustrating in which areas your self assessment shows improvement potentials.

Testing of Skills (Addition to Step 4) – The system provides a multiple-choice test for each performance criteria so that you can check your capabilities as realistically as possible.

Step 5 – Collect Evidences: Before you want to enter any formal assessment you need to prove your skills by evidences. Evidences can be any electronic files (sample documents, sample graphics, results of some analysis, etc.) or any references with details (e.g. a certificate received from a certain institution). Evidences you can then link to specific performance criteria or whole elements of skills units.

Testing of Skills (Addition to Step 5) – In traditional learning schemes people have always needed to go to a learning institution (university, accreditation body, professional body, etc.) to take exams and they received a certificate if they pass. This traditional approach however is insufficient when it comes to measuring experience and (soft) skills learned on the job and fails to give recognition to skills gathered on the job. The APL (Accreditation of Prior Learning) approach, by contrast, collects so called evidences. Evidences can be certificates obtained in the traditional way, but also references from previous employers, materials from previous projects in which the person took ownership of results (e.g. a test plan) to prove their capability, as well as any kind of proof of competence gathered on the job. The assessors will then evaluate the evidences provided and not only rely on certificates and exams.

Step 6 – Receive Formal Assessment: Formal assessors are assigned by the service unit to the skills assessment. Once formal assessors log into the system they automatically see all assigned assessments. They select the corresponding one and can see the uploaded evidences. They then formally assess the evidences and assess the formal fulfilment of performance criteria, whole elements or whole units with a standard evaluation scale of non-applicable, not adequate, partially adequate, largely adequate, and fully adequate. In case of missing competencies they enter improvement recommendations, a well as learning options.

Step 7 – Receive Advise on Learning / Improvement Options: After the formal assessment the participants log into the system and can see the formal assessment results from the assessors, can print skills gaps profiles based on the assessor results, and can receive and print the improvement recommendations and learning options. If required, the generation of learning options can also be automated through the system (independent from assessor advises).

Skills hierarchy

Using the terminology outlined in the skills definition model and including the skills identified during the demand analysis at the beginning of the project, the following skills hierarchy for the job role innovation manager has been designed (Figure 3).

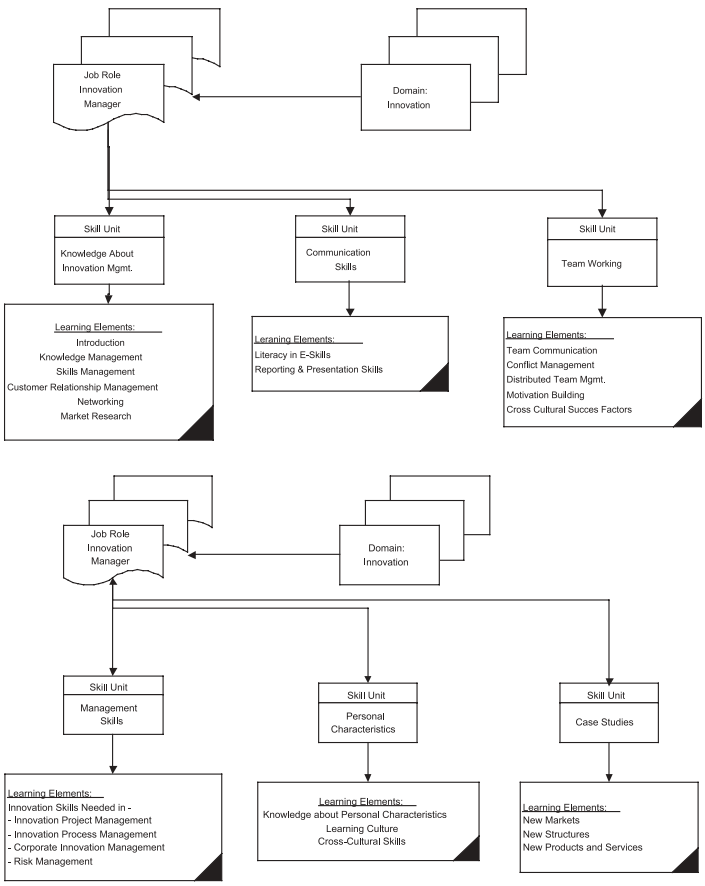

Figure 3. The Skills Card for an Innovation Manager

Training

The project ORGANIC envisages a series of training workshops (for EDNES – in Baltic countries), where the skill card will be tested and refined.

The first field test training was held in Vilnius, Lithuania, on March 22, 2005, at the premises of the Visoriai Information Technology Park (VITP). It included the elements from Units 1-3, 5 and 6. The trainees represented IT&T companies and universities (Figure 4).

Figure 4. ORGANIC training in Vilnius, Lithuania

The second field test training was organized in Tallinn, Estonia, on May 20, 2005, at the premises of VirestProf Company (Figure 5). The elements from Units 1, 4 and 6 were presented. The trainees included representatives from SMEs, ICT and publishing companies. After this training the trainees passed an online self-assessment test at ORGANIC Innovation Manager Skills Assessment and Test/Exam Portal (http://www.iscn.com/projects/organic_skill_portal), which had become operational just before the training. The test was based on multiple choice questions.

Figure 5. ORGANIC trainers from EDNES, Dr. A. Beriozko (left) and Dr. A. Soloviev (right), at the training in Tallinn

Conclusions

The final version of the skill card design was adopted at the ORGANIC Editing Meeting in 2004.

There will be a lot of online activities during nearest 2 years of the project duration, including online forums and discussions [4]. The partners will meet for face-to-face discussions of the most important issues.

As a result of field test trainings the training course will be refined and updated, and its final version will be elaborated.

A three days long training workshop will be organized in April 2006 in the frame of the Baltic IT&T Forum 2006.

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5. www.innovationmanager.org

Contacts

Beriozko Alexander, Project Manager, EDNES, 1A place des Orphelins, F-67000, Strasbourg, France, Phone: +33 (0)3 90240032, Fax: +33 (0)3 90240291, e-mail: ber@ednes.org.

MOSAIC project overview

Hans Schaffers (MOSAIC project coordinator, Telematica Instituut, the Netherlands), Anatoly Soloviev (IST4Balt telematics engineer, EDNES)

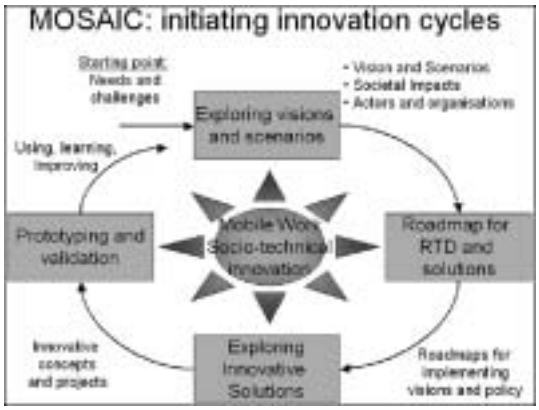
The key objective of the MOSAIC project (http://www.mosaic-network.org) is to accelerate innovation in Mobile Worker Support Environments by shaping future research and innovation activities in Europe. Since an important challenge for the future economy is to establish human-centric and highly flexible work environments where technology is in the background and people are in the foreground, MOSAIC explores business and societal innovation. Thus it prepares Europe for deploying innovative mobile technology in a range of application domains to support mobile workers in dispersed and location-sensitive settings.

MOSAIC focuses on mobile working in three key domains:

- Healthcare and Wellbeing;
- Life-Cycle Management sectors (such as building, construction, and manufacturing);
- Rural and Regional Work Environments.

MOSAIC works in close co-operation with the New Working Environments Unit within the EC to shape future Framework Programmes and establish communities in the area of Ambient Intelligence (AMI) @ Work, covering the three key innovation domains as well as strategic "horizontal" knowledge areas such as

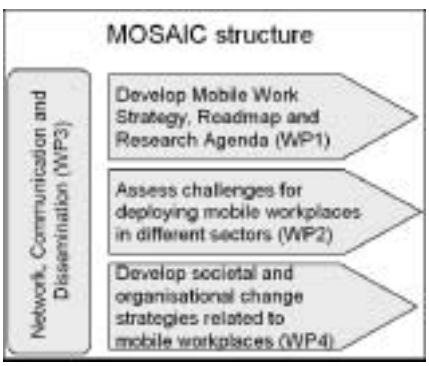
collaboration, mobility and knowledge. In addition to the well-established players, MOSAIC encourages participation of SMEs and small research teams across Europe including new member states.



In order to achieve its aims and objectives, MOSAIC carries out a series of parallel activities such as:

- expert network building;
- identification of mobile work good practices and critical success factors in current mobile work pilot and national programmes;
- identification of future R&D needs, development of domain-specific roadmaps to support successful deployment of mobile working within the chosen three application sectors;
- development of a generic roadmap and research agenda for mobile working;
- promotion of Europe wide collaboration for deploying mobile work environments;
- running of working groups and dissemination activities.

Through these multi-disciplinary work activities, MOSAIC aims to influence EU policies and strategies for research and innovation in the area of mobile worker and mobile work environments. The driving force for MOSAIC is the challenge for supporting efficient, intuitive, user-oriented and 'human-centric' work environments where technology is aligned to organisations and human behaviour, enabling people to work together irrespective of constraints of locations and time. Undoubtedly, ICTs supporting mobility, context- and location-awareness, networking and ambient interfaces will play an important role in implementing this challenge.



However the impact of these ICTs on the worker environment is not well understood, hindering innovation. Therefore technical, organisational and geographical aspects of workplace innovation, and coping with social issues in mobility, sustainability and quality of work should go hand in hand with ICT innovation. MOSAIC therefore pursues a holistic and multi-disciplinary view on innovation, bringing together different disciplines and communities, in particular those in the areas of mobile and wireless technologies and applications, workplace innovation, and spatial infrastructures for living and working. MOSAIC aims at creating a "breeding ground" for such multi-disciplinary collaboration and innovation in the area of mobile work environments.

The MOSAIC Network offers membership to individuals and organisations – users, researchers, providers, consultants, policy makers and decision makers interested in contributing to shaping a vision of the future mobile workplace and jointly develop scenarios and roadmaps for application domains in mobile working. MOSAIC workshops are organised in co-operation with AMI@Work family of communities' events run by the New Working Environments unit of the EC.

The MOSAIC has brought together a core team of partners with a strong track record in community building, mobile working RTD and coordination of roadmap projects and network activities under FP5, such as COCONET, Future Workspaces, INTELCITIES, NESKEY, ROADCON, CE-NET and others.

Consortium

The MOSAIC Consortium represents 15 major companies, research organisations and SME in 8 countries (UK, France, Italy, Finland, Germany, The Netherlands, Poland, Switzerland). The consortium covers all segments of the Mobile Work value chain, including end-user domains.

1. Telematica Instituut (coordinator), NL
2. NOKIA, FIN
3. Fraunhofer Gesellschaft, D
4. Telecom Italia Learning Services, IT
5. APIF Moviquity SA, ES
6. University of Salford, Centre for Virtual Environments, UK
7. EsoCE-NET, IT
8. BAE Systems, UK
9. Kingston University, Centre for Working Life Research, UK
10. University of Sankt Gallen, MCM Institute, CH
11. VTT – Technical Research Centre of Finland, FIN
12. University of Oulu, FIN
13. Institute of Communication and Information Technologies, PL
14. CAS Software, D
15. Euconnect, UK

SatNEx – A Network of Excellence in Satellite Communications

Erich Lutz[4], Ray E. Sheriff[1], Y. Fun Hu[1], Pauline M.L. Chan[1], Michel Bousquet[2], Giovanni E. Corazza[3], Anton Donner[4], Alessandro Vanelli-Coralli[3], Markus Werner[4]

Introduction

Satellite communications represent a specialised area of telecommunications. While the development of satellite technology is relatively slow in comparison to wireless networks evolution, due to the need for high reliability, the services that satellites are able to offer are evolving at much the same pace as their terrestrial counterparts. It is within this context that the Satellite Communications Network of Excellence (SatNEx) has evolved its initiative, the aim being to serve the engineering community with the latest technological trends, while also providing a solid grounding in the fundamentals for those new to the subject area.

SatNEx: A Long-Term Research Vision

The SatNEx consortium forms a pan-European network of research organisations and higher education institutions, see Table 1. European research in satellite communications requires a long-term vision from which to develop a technology and service roadmap that will drive the longer-term research programme. SatNEx aims to produce this vision, in collaboration with industry. In developing the satellite vision, it is intended to work closely with the Advanced Satellite Mobile Systems Task Force (ASMS-TF) for fixed broadband, mobile, broadcast and navigation/positioning areas.

A major aim of SatNEx is to rectify the fragmentation in satellite communications research by bringing together leading European academic research organisations in a durable way. The creation of the Network aims to establish critical mass and allow access to a range of expertise currently distributed across Europe. In this respect, mobility is an important aspect of SatNEx's work, with academic staff and research students being encouraged to move between institutions to allow access to specialised research equipment and to facilitate research integration. Another key goal of SatNEx is the establishment of a common communications platform that will also exploit satellite communications technology to link all partners' sites. This platform will provide SatNEx partners with a range of opportunities for day-to-day communications, research and training. The ability to deliver interactive satellite communications lectures over a satellite link is a feature of SatNEx that is likely to be developed over the coming years.

Particularly, the higher education institutions have as their mandate the production of new knowledge and the transfer of this knowledge to industry and to society at large. Within the SatNEx work programme, this is termed 'Spreading of Excellence', and encompasses activities dedicated to training, dissemination and standardisation.

Work Organisation: Joint Programme of Activities (JPA)

Figure 1 shows the workpackage (WP) breakdown structure of the Joint Programme of Activities.

- The Integrating Activities (WP 1000), led by DLR, support the jointly executed research (JER) (WP 2000) by:
  - co-ordinating the participants' research (WP 1100) and integrating research tools and testbeds (WP 1200);
  - providing a communication and collaboration platform based on satellite communications technology (WP 1300);
  - organising the exchange of students and personnel between SatNEx partners (WP 1400);
  - performing integrated management of knowledge and intellectual property (WP 1500).
- The Jointly Executed Research (JER) activities (WP 2000), led by University of Bologna, produce new knowledge and support WPs 1000 and 3000 by:
  - providing new knowledge and expertise;
  - producing scientific papers, along with papers of a tutorial nature;
  - developing common research tools and testbeds;
  - proposing suitable cases for personnel exchange.
- Finally, WP 3000, led by University of Bradford, primarily aims at the spreading of excellence to Europe and beyond. This activity:
  - provides training opportunities for students and researchers from organisations that are not members of the Network and for practicing engineers (WP 3100);
  - disseminates information and transfers knowledge through the generation of publications and supporting literature and media, including the webpage (WP 3200);
  - influences standardisation and regulation, and enhances public awareness of the benefits of satellite communications (WP 3300).

The Management of the Network (WP 4000) is the responsibility of the Network Coordinator, DLR, with input from the leaders of WPs 2000 and 3000.

Whereas the WP structure (see Figure 1) is the organisational framework of SatNEx, setting out the scope of and also the responsibilities within the project, the Joint Activities (JAs) are the fundamental unit in the implementation of the SatNEx Joint Programme of Activities (JPA). A SatNEx JA is defined by a set of coherent activities, cost elements and procedures that are required to achieve a specified objective within an associated time frame. A team of SatNEx partners, termed a Joint Activity Team, jointly performs a JA. Each JA is focused on a relevant part of the JPA. The JAs are the new methods of putting the SatNEx objec-

(1)Mobile and Satellite Communications Research Centre, University of Bradford, Richmond Road, Bradford, UK BD7 1DP Email: {r.e.sheriff, p.m.l.chan, y.f.hu}@bradford.ac.uk
(2) SUPAERO, Aerospace Electronics & Communications Programmes, 10 Avenue Edouard Belin, BP 54032, 31055 Toulouse Cedex 4, France Email: michel.bousquet@supaero.fr
(3) University of Bologna, DEIS/ARCES Viale Risorgimento 2, 40136 Bologna, Italy E-mail: {gecorazza, avanelli}deis.unibo.it
(4) German Aerospace Center (DLR) Insitute of Communications and Navigation PO Box 1116, 82230 Weßling/Oberpfaffenhofen, Germany Email: {erich.lutz, anton.donner, markus.werner}@dlr.de

tives into practice – they are the elements that specify how the work is performed. Table 2 provides an excerpt of current JAs performed by SatNEx.

Communication Platform

A key goal of SatNEx is the establishment of a common Pan-European Platform providing equitable access to real-time communication services by all Partners. This platform will provide a range of different opportunities for day-to-day communications, research and training. The ability to deliver virtual meetings and lectures/seminars within Europe is expected to become increasingly important in coming years. The geographic dispersion of the 22 SatNEx Partners and disparities between national ground network infrastructure and/or local security policies place high demands on current network infrastructure for such interactive communication services and lead to a vision for a "federal" satellite-based system, dedicated to SatNEx communication and able to complement the existing ground connectivity. Although SatNEx began its activities at the start of 2004, with a two-year contract from the EC, many SatNEx Partners already have many years of experience of collaborative research and training in satellite communications. It is therefore appropriate that the SatNEx Platform will exploit satellite communications technology.

Events and Training

SatNEx events address both post-graduate (doctoral) students and experienced researchers. In 2005 two major events are under preparation: The SatNEx Summer School in August (Pisa, Italy) and the International Workshop on Satellite and Space Communications in September (Siena, Italy). The objectives and detailed programmes of these events are available from the SatNEx website http://www.satnex.org.

In essence, the first four days of the SatNEx Summer School provide a comprehensive programme of lectures covering all key areas in satellite communications, which is then complemented by selected industry presentations featuring "IP over satellite" on the fifth day, forming at the same time the final COST 272 event.

The SatNEx Summer School establishes a key element of the NoE's Training and Dissemination activities, and is as such open to all interested people from the target community.

The objective of the SatNEx-sponsored International Workshop on Satellite Communications Systems 2005 is to provide a forum for researchers and technologists to present new ideas and contributions in the form of technical papers, panel discussions and tutorials of ideas in the field of satellite communications. This workshop will be held jointly with ISWCS'05. It is intended to bring together various satellite communication systems developers to discuss the current status, technical challenges, standards, fundamental issues, and future services and applications in the form of panels and tutorials.

Conclusion

The SatNEx project has brought together twenty-two partner organisations from across the European Union with the aim of establishing strategic leadership in the area of satellite communications. This will be achieved through the performance of a joint programme of activities, which include integrating activities, jointly executed research and spreading of excellence. Details of the SatNEx activities can be found at the SatNEx website: http://www.satnex.org.

Acknowledgement

The EC funds SatNEx under the FP6 IST Programme.

Partner	*Country*
German Aerospace Center (DLR)	Germany
Aristotle University of Thessaloniki	Greece
University of Bradford	UK
Budapest University of Technology and Economics	Hungary
Centre National d'Etudes Spatiales	France
Consorzio Nazionale Interuniversitario per le Telecomunicazioni	Italy
Fraunhofer Gesellschaft zur Förderung der Angewandten Forschung e.V.	Germany
Groupe des Ecoles des Télécommunications	France
Institute of Communication and Computer Systems of NTUA	Greece
National Observatory of Athens	Greece
Istituto di Scienze e Tecnologia dell'Informazione "Alessandro Faedo"	Italy
Jožef Stefan Institute	Slovenia
Rheinisch-Westfälische Technische Hochschule Aachen	Germany
Office National d'Etudes et de Recherches Aérospatiales / TeSA / SUPAERO	France
Institut für Kommunikationsnetze und Satellitenkommunikation, TU Graz	Austria
Universidad Carlos III de Madrid	Spain
The University of Surrey	UK
The University Court of the University of Aberdeen	UK
University of Bologna	Italy
Università Degli Studi Di Roma "Tor Vergata"	Italy
Universidad De Vigo	Spain
Universitat Autònoma de Barcelona	Spain

Table 1. The SatNEx consortium

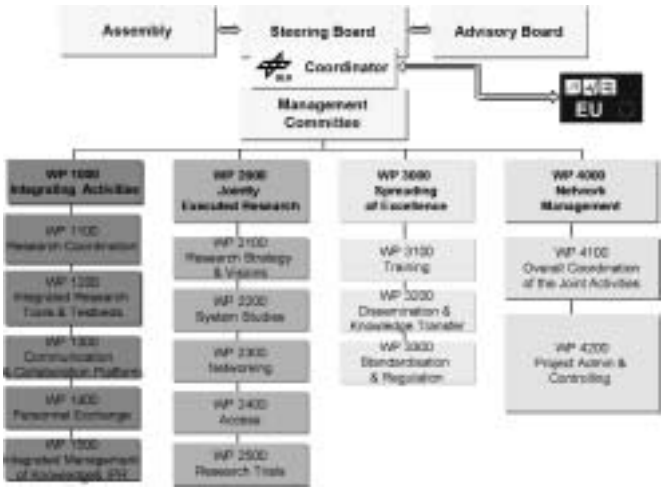


Figure 1. The SatNEx workpackage (WP) structure

Table 2. The SatNEx joint activities

MobiLife: Applications and Services for the Mobile Users

Mika Klemettinen
(Project coordinator, Nokia)

IST Integrated Project MobiLife (www.ist-mobilife.org) for mobile applications and services research was launched in September 2004. MobiLife consists of a consortium of 22 organisations from 9 countries. The consortium comprises manufacturers, operators, solution providers, SMEs and academia. The project is scheduled to run over a period of 28 months until the end of 2006, with total EU funding support of up to 9.7 M€ (total budget 17.3 M€). MobiLife is part of a larger project cluster Wireless World Initiative (WWI). WWI (www.wireless-world-initiative.org) contains a series of large Integrated Projects in FP6-IST covering a broad range of research topics for the development of wireless communication technologies for systems beyond 3G.

The strategic goal of MobiLife Integrated Project in IST-FP6 is to bring advances in mobile applications and services within the reach of users in their everyday life by innovating and deploying new applications and services based on the evolving capabilities of the 3G systems and beyond.

Rationale

People today take part in varying social contexts and play different roles in their everyday life. MobiLife addresses the need to manage today's complex lifestyles by offering facilities and tools to support communication, and share information and time with others. Future communication environments may give new possibilities to do this, but also new challenges due to increasing heterogeneity of technological environments, user needs and expectations.

In order to be able to overcome these technological and non-technological barriers, certain issues have to be addressed. What will the end-users use their devices and services for? Which new devices and services will be acceptable to end-users, many of whom already feel overwhelmed by the hectic lifestyle? How can desirable service characteristics be facilitated on the basis of new and emerging enabling technologies such as positioning, context sensitivity, and adaptive multi-modal interaction? What kinds of technical infrastructures and platforms are needed? How can the services be provisioned and adapted to match the variable needs and profiles of potentially hundreds of millions of end-users? How will different players on the market – network operators, service operators, content and application providers, public authorities, user groups and individual users – interact and co-operate to create and provide the services effectively, timely, and securely while balancing the various interests and values of the different players? These interacting issues form the baseline of the research in MobiLife.

Research Challenge

The research challenge of MobiLife is to address the multi-dimensional diversity in end-user devices, available networks, interaction modes, applications, and services. To deal with this complexity and reach its strategic goal, MobiLife researches with a user-centric approach context-awareness, privacy and trust, adaptation, semantic interoperability, and their embodiment in novel services and applications matching key use scenarios of everyday life.

User Centricity

MobiLife's iterative user-centric approach consists of several cycles of user research, technical design and development, and user evaluation. The first step of this process is the creation of scenarios, followed by the creation of mock-ups and probes. At each step of the process, user evaluations are conducted to help identifying the most promising concepts from the users' point of view and to gather detailed user requirements for these concepts.

At the beginning of the first cycle a user study with multiple families was conducted in Finland and Italy to get feedback for the MobiLife scenarios to drive the technology and application work. Similar studies are performed on the application mock-ups and the probes as well as on the final applications and services.

Business Modelling

Successful innovations often demand innovative business models at least as much as innovative technology. MobiLife studies new business models in conjunction with the user requirements research. In general, marketplace dynamics in the converging world has a great impact on the future business models. Marketplace dynamics research in MobiLife is based on deep insights into the trends in user, society, applications and services, industry, regulation, and technology areas.

Architecture

The MobiLife Reference Model identifies the essential functional blocks for the realisation of new mobile service and applications. The goal is to provide a reference model that provides service developers an environment to realise mobile communication services that follow the trend of the pervasive computing paradigm.

The essential functional blocks identified include: User Interface Adaptation Function, Context Awareness Function, Privacy and Trust Function, Personalisation Function, Operational Management Function, Service Usage Function, and Service Provisioning Function. The functional block specifications allow an independent development.

Technologies

MobiLife researches mechanisms to make **multi-modal user interfaces** in mobile environments aware of their environment with the aim to dynamically re-shape (adapt) the multi-modal user interface depending on the availability of interface devices and to improve the user experience of the mobile applications. MobiLife also develops technologies to manage the local context of the user in order to allow applications to be **personalised** to the user profile and situation.

Trust, in relation to **privacy**, can be defined as the capability to "respect" the privacy level/requirement defined by the user of the system. For this, MobiLife is, e.g., creating a trust engine, which will enable the user to verify the policies, which apply to the data, and to make sure these have not been changed (unless allowed) since she inspected them.

The MobiLife **Context Management Framework (CMF)** represents the MobiLife approach to discovery of, exchange of, and reasoning with context information, in such a way that context information can easily flow from one provider to multiple consumer, and from multiple providers to one consumer. The MobiLife CMF is an enabling technology for a wide range of context-aware MobiLife applications that are aware of the user's (or group's) context and proactively adapt to it.

Applications

In parallel to the technology work described above, MobiLife is developing a set of applications – e.g., Wellness-Aware Multi-Modal Gaming – matching to the user-centric scenarios. These applications show what will be enabled by the technologies developed, but are also driving the research. The applications are developed in several stages and at each stage they are tested with actual users. The results of these tests will be taken into account not only in the application development but also in the technology work.

MobiLife as part of the Wireless World Initiative (WWI)

WWI was established in 2002 to lay foundations for the long-term future of global wireless communications. WWI contains a series of large Integrated Projects in FP6-IST covering a broad range of research topics for the development of wireless communication technologies for systems beyond 3G, including services and applications (MobiLife), platforms (SPICE), networking (Ambient Networks), new radio interfaces (WINNER) and end-to-end reconfigurability (E2R). The Initiative is made up of more than 100 partners with the majority of the global players in wireless communications from the manufacturers, operators, academic and national regulatory agencies domain as well as SMEs. See more from www.wireless-world-initiative.org.

Project Coordinator

Dr. Mika Klemettinen, Nokia

Email: mika.klemettinen@nokia.com

Website: www.ist-mobilife.org

Project Partners

Nokia Corporation (FI), Alcatel-CIT (FR), Ericsson AB (SE), Oy LM Ericsson Ab (FI), Hewlett-Packard Italiana srl (IT), Motorola Ltd (GB), Motorola SAS (FR), NEC Europe Ltd. (GB/DE), Siemens Mobile Communications SpA (IT), DoCoMo Communications Laboratories Europe GmbH (DE), Elisa Corporation (FI), Fraunhofer Gesellschaft zur Foerderung der angewandten Forschung e.V. (DE), University of Helsinki (FI), UniversitKt Kassel (DE), The University of Surrey (GB), NEOS Engineering SRL (IT), Stichting Telematica Instituut (NL), UNIS spol. s. r. o. (CZ), Suunto Oy (FI), BellStream SP.z o.o (PL), Helsinki University of Technology (FI) and Telecom Italia (IT).

wearIT@work – The largest project world-wide in wearable computing

Michael Lawo (Prof. Dr., Technical manager of wearIT@work)

wearIT@work was set up by the European Commission as an Integrated Project to investigate "Wearable Computing" as a technology dealing with **computer systems integrated in clothing**. The project has 36 partners, among them EADS, HP, Microsoft, SAP, Sony, Siemens, and Zeiss. The partners come from 14 different countries.

With a project volume of about 23.7 million € and a funding of about 14.6 million € under contract no. 004216, ***wearIT@work*** is the largest project world-wide in wearable computing. The project started in June 2004 with duration of 4.5 years. The **TZI** is one of the University of Bremen research centres and co-ordinates this key project of the "Bremen Mobile Research Centre" - ***wearIT@work*** contributes to the shaping of today's most challenging computer applications.

Project Description

wearIT@work is to prove the applicability of computer systems integrated to clothes, the so-called wearables, in various industrial environments.

These novel computer systems support their users or groups of users in an unobtrusive way, e.g. wearing them as a computer-belt. This allows them to perform their primary task without distracting their attention enabling computer applications in novel fields.

Interaction with wearables by the user must be minimal to realize optimal system behaviour. For this reason a wearable computer recognizes by integrated sensors the current work progress of a user.

Based on the work context detected the system pushes useful information to its user, e.g. how to proceed with the work. Apart from speech output, media could be optical systems presenting the information, e.g. via semitransparent glasses within the workers visual field. Output devices for tactile feedback will be applicable, too.

One of the major goals of wearIT@work is to investigate the **user acceptance** of wearables. Furthermore methods for user

interaction and processes suited to wearables in industry will be identified. Four industrial pilot applications namely variant production, the clinical pathway, maintenance, and emergency are addressed. In **variant production** the challenge will be the *information integration and the intelligent information presentation*. For **the clinical pathway** the focus will be on *intelligent information logistics and context aware collaboration*. The **maintenance** scenario will have its focal point on *context detection and intelligent manuals*. The focus of the **emergency** activity field will be the *collaborative planning and interaction using wearable devices*.

Findings so far

Beside the application oriented interaction with the end users of the project a lot of effort is put into a common understanding of wearable computing taking first steps towards a common wearable computing platform and framework.

A hardware platform consisting of a core wearable computing unit, input and output devices, general peripherals, and sensor and communication subsystems was defined. One of the challenges is the necessity to provide the end-user with a seamless access to heterogeneous networks. This reflects the general wearIT@work architecture as well as the communication service module architecture.

The idea of creating a common software framework based on a common hardware platform is from the perspective of the project as well as beyond of great importance. Only in case we are successful with this process a remarkable impact is achieved for the exploitation of wearable computing solutions. In this case not only the four within the project addressed application domains but also other application domains and in case the addressed standardization push is successful also the developers of devices, components and solutions can benefit from the result.

The general structure of the software framework covers beside a service registry and high level services core services like context awareness, communication, I/O, and security.

Beside these core services domain specific services of the same structure exist. The idea is to integrate services of common use within the application domains of the project into the core services. The advantage of this approach is that with increasing and/or changing requirements the general structure remains valid.

Context detection is as mentioned above one of the essential success factors of wearable computing. Only in case using sensors a context can be detected with high reliability and the cognitive load of the end-user can be managed in a successful manner. This is seen as one of the most scientifically challenging topics of the project. Other challenges like the always outside the lab in the real world required robustness are more relevant for producers and developers of devices.

To master the context detection problem a general approach was agreed and is suitable for extension and adaptation. It is foreseen to perform with the end-users series of tests with existing sensor subsystems that are still basically in a prototype stage. These end-user tests are necessary to decide on which sensor subsystems further research and development work is necessary to achieve a performance accepted by the end-users.

Conclusion

The first year of the project brought already some remarkable results. There are still nearly four years of research to be done and it is still some way to the end but the fundamental steps towards a user centred design approach, a hardware framework and software platform were done. With the creation of the Open Wearable Computing Group and organising annually the International Forum on Applied wearable Computing a community building process in industry and science has been initiated. It is the intention of the project and the accompanying activities to understand the project not as a tree bringing us the fruits but a seed for wearable computing. Miniaturisation and low power computing devices are still a challenge as well as ubiquitous wireless communication. A wide spectrum of innovative solutions is necessary to achieve wearable computing anytime at any place, and in any situation.

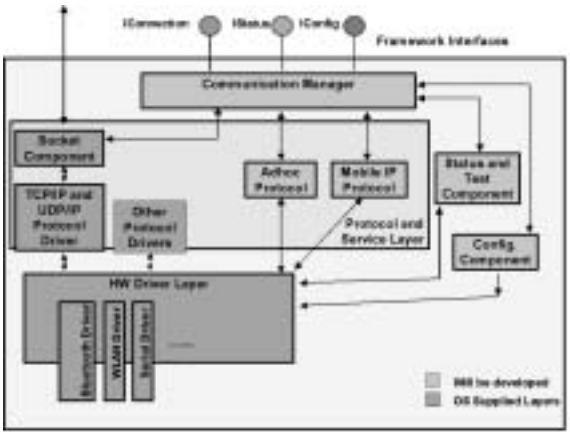


Figure 1. Communication service module architecture

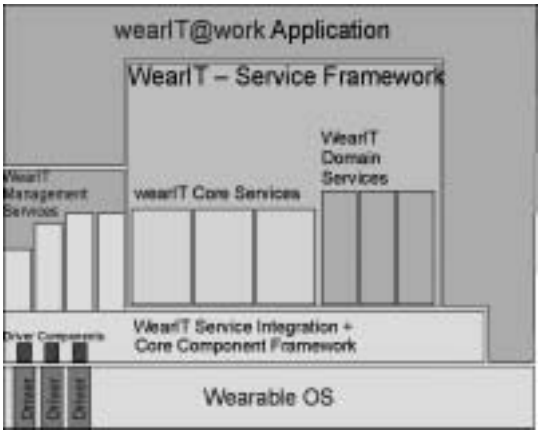


Figure 2. General structure of the software framework

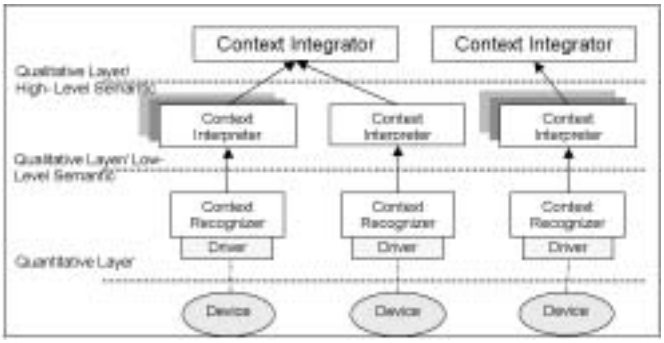


Figure 3. Context detection using sensors

Figure 4. Using HMD as output and Sensor Systems as input devices

Putting all of Europe's people on line – work of ENABLED FP6 project

Simon van Dam (Project manager), Ray Wai Yu (Project coordinator)

Europe is going on-line. The growth of multimedia broadband networks is spreading access to an e-Society of Europe where the activities of daily life take place on-line. People unable to gain access to the services offered by these networks will be denied access to participation in the life of the very community in which they live.

For a significant number of people visually rich multimedia communications services are not easy to use. People with visual disabilities are in many cases excluded from access to on-line services by a lack of adequate technology to allow them to present the information in a format that they can read. The ENABLED project - Enhanced Network Accessibility for the Blind and Visually Impaired Integrated Project FP6-2003-IST-2-004778 - is determined to address this problem. The project is improving access for visually impaired persons to the Internet through two approaches:

- Developing technologies that create universal accessible contents on the Web
- Developing tools that enable easy access to information and services through interfaces that are adaptable and interoperable

To achieve the objectives of the ENABLED project, research and development work is being focused into four areas:

- Accessible Web content (making Web content accessible)
- Adaptable interfaces (how people interact with computers)
- Mobile computing (handheld computers, mobile phones)
- Wireless networking (seamless connection between mobile devices & network infrastructure)

In this project, a range of technologies is being employed that will reduce the gap between what information technology has to offer and the benefit that it brings to blind and visually impaired people. Accessibility of Web content is being addressed by developing techniques that make the information source itself universally accessible, so that visually impaired people will have access to the same information as sighted people.

The projects research efforts will ensure that user interfaces will be intuitive and transparent and exploit the convenience provided by mobile and wireless technologies. In order to achieve the objectives of ENABLED the technical research efforts are organised into the following four work packages:

- WP1 - Accessible Web contents
- WP2 - Adaptive interfaces
- WP3 - Mobile computing
- WP4 - Wireless networking

Interaction with blind and visually impaired people is imperative for the success of this type of research. For this purpose, user organisations are being involved at every stage of the project. Collaborating with user organisations provides valuable feedback from the consumer perspective to guide the work taking place and set the research agenda; during the validation phase there will also be an opportunity for the participating organisations to disseminate results from the project.

The ENABLED Special Interest Group (SIG) brings together many representatives of different communities who have an interest in accessibility for people with a visual disability. Members are regularly kept informed of the work of the project. To join simply go to the SIG page of the ENBLED web site at: http://www.enabledweb.org/sig/special_interest_group.htm

For more information please contact:

Dr. Wai (Ray) Yu	*Simon van Dam*
Project Coordinator	Project Manager
w.yu@qub.ac.uk	svandam@alvainnovision.com
Tel. + 44 (0)2890 974778	Tel. +972 (0)2 6786120

or visit the ENABLED website at: www.enabledweb.org.

ULTRA Light Augmented Reality Mobile System

Alexandra Makri[1], Jens Weidenhausen[2], Peter Eschler[2], Didier Stricker[2], Oliver Machui[3], Carlos Fernandes[4], Sergio Maria[4], Gerrit Voss[5], Nikolaos Ioannidis[1]

1. Introduction

The objective of the IST project ULTRA is a light and compact system that applies augmented reality techniques to handheld PCs. ULTRA offers a comfortable and unobtrusive solution that integrates augmented reality functionalities with near-the-eye display, wireless connection and remote support over integrated mobile phone. The outcome of the ULTRA project additionally includes a set of software tools that enable the efficient production of electronic augmented reality manuals and on-site support of mobile workers. The application areas of the ULTRA

Intracom S.A.[1], Fraunhofer IGD[2], Trivisio Prototyping GmbH[3], Meticube Lda[4], Centre for Advanced Media Technology[5]
almak@intracom.gr, jens.weidenhausen@igd.fhg.de, eschler@igd.fhg.de, Didier.Stricker@igd.fhg.de, machui@trivisio.com, Carlos.Fernandes@meticube.com, Sergio.Maria@meticube.com, vossg@camtech.ntu.edu.sg, nioa@intracom.gr

system span multiple domains such as the maintenance and support of complex machines, construction and production, and edutainment and cultural heritage.

Figure 1. The ULTRA user

ULTRA system is based on the new principle of "on-demand" augmented reality, which consists of superimposing real-time virtual animations correctly overlaid on images of the real scene, rather than aiming at continuous real-time see-through augmentation.

2. State of the art

Most of the projects that have so far addressed the issue of applying augmented reality techniques on PDA platforms, perform the computation of the video images on a server ([3] [5]). This architecture represents a strong constraint for the implementation of the technology on industrial environments. Work that has been done in the Technical University of Vienna [2] consists of an augmented reality software that is based on AR-toolkit [4]. The system though is not compliant with OpenGL ES and is used as a handheld device and not as a wearable computer with an HMD.

3. Design approach

In this section we will explain the ULTRA system concept of use. The mobile user, namely the on-the-field technician, takes an image of the machine he is working with. This image is calibrated either per user interaction on the touch screen display of the PC-unit (PDA), or automatically through computer vision based registration algorithms. Afterward the image is augmented with a real-time graphic animation demonstrating the maintenance instructions. The augmentation process occurs locally on the PC-unit. The user may also use the tele-consultation module to communicate with the remote expert who can alter the content using the authoring tools, in order to further clarify some steps. The PC-unit is equipped with a monocular near-the-eye display, that does not obstruct the natural view of the user and offers a maximum comfort due to its lightweight.

The content is created offline (prior to the use of the system) using the ULTRA process and the 3D authoring tools.

3.1. Overall ULTRA architecture

The overall architecture of the ULTRA system is depicted in the following figure:

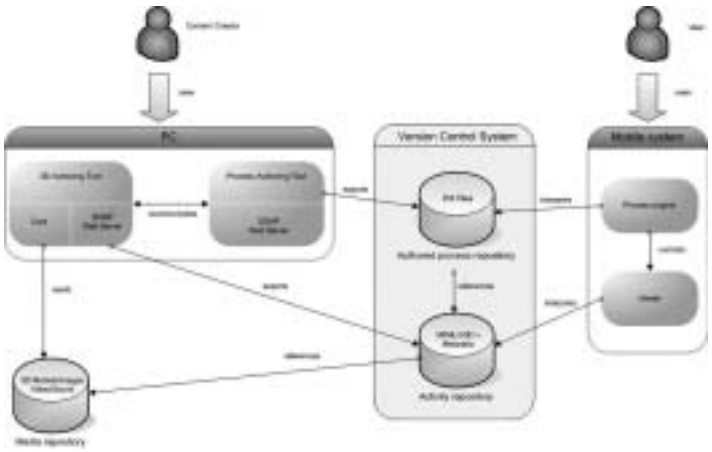


Figure 2. Overall ULTRA architecture diagram

The complete ULTRA system consists of the following subsystems:

- A run-time AR-system with a scene graph based rendering engine;
- A workflow editor/engine and template-based authoring tool that allows efficient creation of AR manuals;
- A tracking/registration module;
- A tele-consultation module with augmented reality capabilities;
- A robust and lightweight near-the-eye display with integrated camera, microphone and earphone.

3.2. ULTRA runtime system

The architecture of the run-time system is presented in more detail in the following figure:

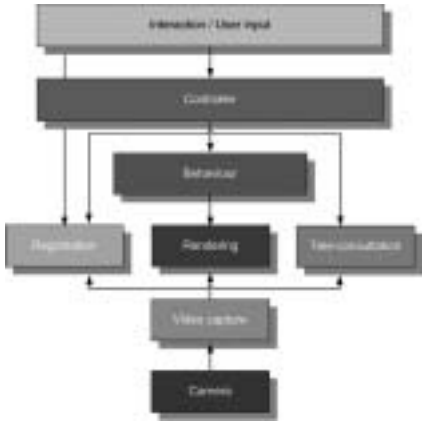


Figure 3. The components of the ULTRA runtime system

The ULTRA runtime system has the following six major components:

- Interaction and User Input: This module manages the user interactions with the system. The three interaction vehicles are: interaction pen, speech recognition, and handheld-PC buttons.
- Registration: The image has first to be registered (or calibrated) in relation with the 3D virtual objects in order to ensure proper overlay on the image. This is done either manually or with help of markers placed in the scene or

onto the object to be repaired. A markerless method will be envisaged, and will base on an approach that uses pre-calibrated reference images [6].

- Behavior and Rendering: The rendering system bases on OpenGL ES and consists of a scene graph based representation of the virtual world. We use in the first step VRML (Virtual Reality Modeling Language). Extension to X3D will be considered for the second prototype.
- Video Capture and Camera: The image grabbing of the live videos as well as the capture into the main memory of the handheld-PC are fundamental functionalities, which are provided by this module.
- Tele-consultation: The tele-consultation module is responsible for the communication over W-LAN, GSM, GPRS and UMTS. It builds the interface to the "external world" and supports the transmission of images, videos, and the virtual information. It ensures a correct synchronization with the server on which the remote expert will work.
- Controller: The major functionalities of the controller are display and management of workflow, integration of runtime system components and media content synchronization.

3.3. ULTRA authoring tools

The ULTRA system features a set of content generation/authoring tools. The 3D authoring tool that creates 3D animations is based on the concept of templates.

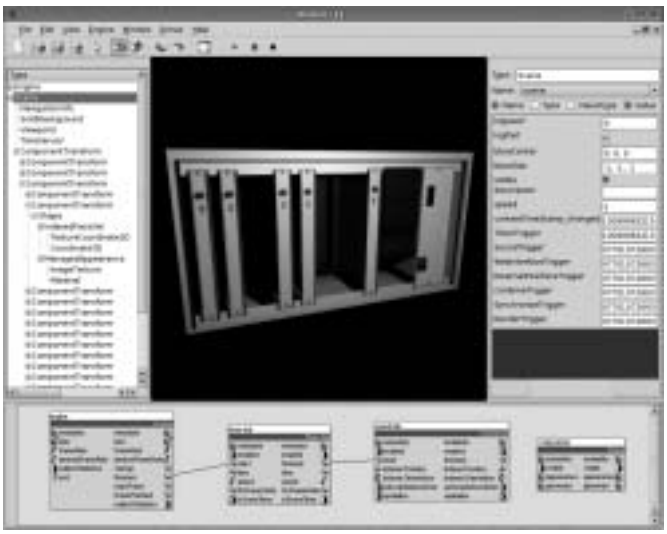


Figure 4. 3D authoring tool

Each virtual instruction step is described as a parametric template, which is compiled at editing time. For example the action "screw the bolts with the screw-driver number 5" will be implemented with the help of the template "screw" with the input object "bolts" and "screw-driver". The parameter of the template will be in this case the screw-driver number "5" and for example the duration of the animation. The 3D animation is generated automatically based on this information. The 3D animation of a single task is called an Activity.

The process authoring tool allows the creation of an authored process in a timeline paradigm, by dragging Activities and Decision points in the correct sequence in the timeline. Decision points require user interaction and lead accordingly to the corresponding Activity.

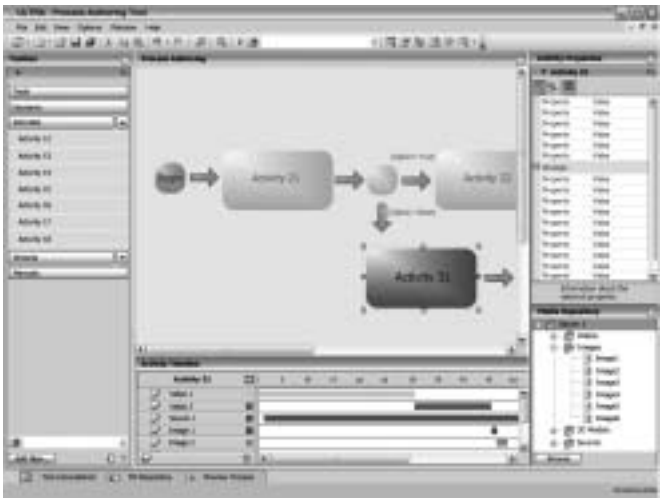


Figure 5. Process authoring tool

3.4. Hardware set-up

The platforms selected to host the runtime system of the first ULTRA prototype are the Fujitsu Siemens Pocket LOOX 720 and the Hewlett Packard rx3715 working under Windows Pocket PC 2003 OS. For the second prototype the aim is to provide cross platform source code in order to support several operating systems, mainly Windows Mobile, Linux, Symbian and possibly Palm OS. The universality of the ULTRA system will principally depend on the availability of OpenGL ES under these OS.

In the course of the project ULTRA a new head immersive mounted display has been designed by the project partner Trivisio in order to cover the needs of the ULTRA mobile client. Concerning the mechanical design of the HMD we proposed a head-band concept to mount the HMD on the user's head. The optic-electronic unit consists of the optical display case with camera and microphone integrated and the electronic case. The optic-electronic unit has the side attachment to head-band by means of a sphere joint which gives all angular degrees of freedom to the unit. The unit has a linear movement relative to head-band to adjust eye-relief distance. The optical and display cases have two angular degrees of freedom relative to each other to place eye at the right position for viewing.

Figure 6. ULTRA HMD design

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System of remote access to database of up-to-date motions of the Earth crust

A.Polyakov, M.Zhizhin, D.Mishin, D.Kokovin, Yu.Tyupkin (Geophysical Centre of Russian Academy of Sciences, Moscow)

Up-to-date methods of measuring tectonic deformations

At present time various technologies of space geodesy are used for obtaining data on the velocity of the up-to-date Earth crust motions, including the Global Positioning System (GPS) [1], Satellite Laser Ranging (SLR) [2], Very Long Baseline of Interferometry (VLBI) [2], Doppler Orbitography and Radiopositioning Integrated by Satellite (DORIS) [2].

The sphere of use of the obtained data is rather wide. For example, the reconstruction of deformations of the Earth crust, the estimate of seismic danger and forecast of earthquakes, or geodynamic aspects of assessing stability of engineering constructions and particularly dangerous objects.

Visualization and access to Internet databases

The system of remote access to the database of the up-to-date motions of the Earth crust [3] is a problem-oriented information system, responsible for collection, visualization and providing data to remote users and client applications.

At the present time the system includes:

- the database obtained by the global observations network and regional space geodesic observation systems, in particular, data of European regional networks REGAL, RGP;
- the database of international models of tectonic plates motions velocity reconstruction;
- the means for interactive selection, data processing and cartographic data representation in remote access regime;
- web-services [4] for remote access to the client applications data.

To solve the task of visualization and providing access to the data of space geodesic stations, in the Geophysical Center of the Russian Academy of Sciences (GC RAS) interactive web-application system was created. The system is based on web-technologies, making it accessible for any Internet user.

The structure of the distribution system is shown on Figure 1. The server part of the system consists of web-server (Apache), linked by a local network to applications server (Tomcat), connected in its turn to database server (MySQL) and geoinformation server (Map Server).

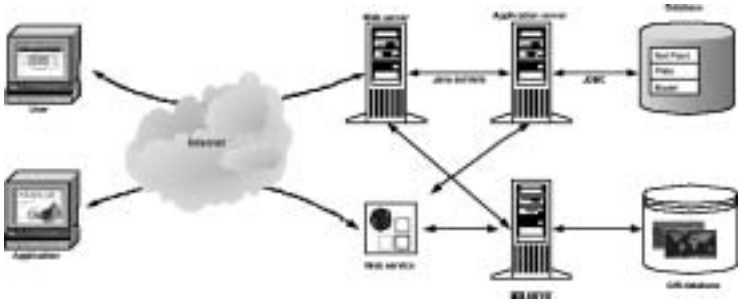

Figure 1. Structural scheme of the system of remote access to the database of the up-to-date motions of the Earth crust

As far as solution of the problem of scientific data visualization is dealing with showing information on a map, the system uses web-GIS-server. It can create maps for graphic display of parameters, chosen by a user.

The GIS-server is comprised of the following parts:

- space databases, containing information about objects, shown on a map (roads, rivers, cities, etc.);
- software set on a server for dynamic creation of electronic maps as graphic files.

Web-server, applications server, GIS-server and database servers can operate either on one computer, or on different nods of computer cluster.

Entering the system

The work with the system of remote access to the database of the up-to-date motions of the Earth crust starts from a welcome page. On that page a user can:

- enter the system using his registration record;
- enter the system using a guest registration record;
- get registered in the system;
- use the reference catalogue regarding his theme of interest.

User registration records and their interfaces

The system uses different interfaces and workflows for various registration records: user and administrator. The user interface is used by all registration records, and the administrator interface is available only to the system administrator.

All users can enter the system, make database query and make calculations. The difference is that a user registered as a guest, cannot export data, available only to registered users and administrator. In his turn a registered user doesn't have access to administrator interface.

Administrator interface consists of several web-pages, dealing with adding and changing the system data. There is also visual difference of interfaces, such as color gamut, information menu

and list of workflow junctions. For data scanning users on all levels go to user interface.

General transition graph in interfaces workflow of a user and the administrator is shown on Figure 2.

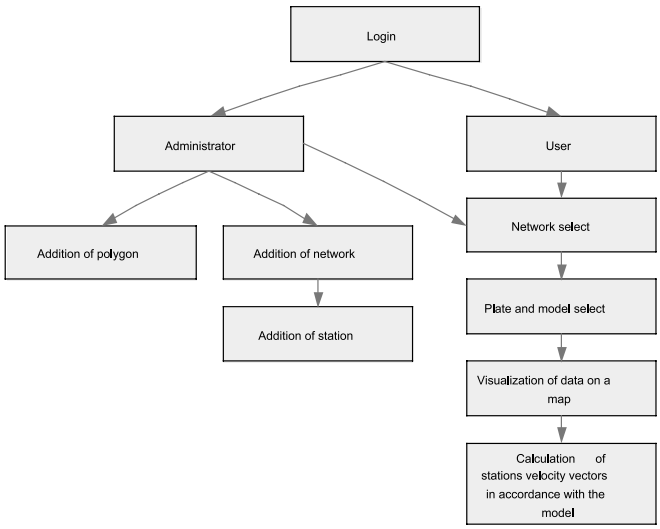

Figure 2. Transition graph in the workflow of a user and the administrator

User interface

This interface is designed for data scanning, data visualizations and making calculations. To look at the systems capabilities let's view the following situation: for example, we need to calculate horizontal velocities for the Alaska Stations network relatively to the African plate according to the model NNR-Nuvel-1a.

After entering the system we get to the geodesic network selection page. We select the Alaska Stations network out of the list and press the "GO" button (Figure 3).

Figure 3. Selection of space geodesic stations network

It is worth mentioning here that the system "helps" an inexperienced user. Each time after pressing the "GO" button we get to a next stage of a workflow. If a user, at the time of transition, didn't select the stations network, plate or model, the system is sending him a corresponding message.

In our case next step after network selection would be transferring to page of tectonic plate and model selection.

At present the system realizes the following, accepted by specialists, kinematics models of plates motions, in suggestion of their absolute rigidity:

- Model NNR-Nuvel-1a [5];
- Actual Plate Kinematics Model 1998 [6].

Selection of plates included into the information system is shown on Figure 4.

Figure 4. Plate and model selection

After selection of the African plate and model NNR-Nuvel-1a our next step is to go to the visualization page.

Having selected the network, plate and model, we are ready to calculate stations velocity vectors in accordance with the model. By pressing the "GO" button we are activating calculation methods and calculation vectors are shown by applet on the map (Figure 5).

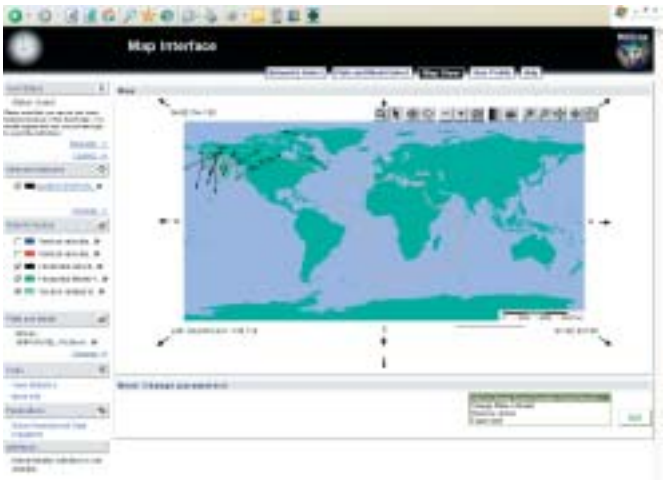

Figure 5. Stations velocity vectors according to the model selected

Administrator Interface

The main purpose of administrator interface is to update and edit data. We can fulfill the following tasks:

- download stations networks data from a file;
- add networks and stations using the form;
- edit and delete networks and stations;
- add tectonic plates (polygons).

Remote data access

The information system of remote access to the database of the up-to-date motions of the Earth crust provides two ways of obtaining data directly by a user. The first way is to export data as a text file. As it was mentioned above, this way is available for registered users and is designed for those who work directly with the system's web-interface.

The second way is logging on users application through web-services. It was created for rendering data to applications developed in programming languages Java, C++, C#, MatLab and operating with web-services.

Such web-applications with remote access to data through web-services were for the first time based on a completely new approach to distributing functions between heterogeneous systems. The first local application version was developed in MatLab. It included the models of operating with data files, visualization, analysis and served as a prototype for creating a network system of remote access, whose task was to expand the circle of users, having access to data. This system is based on technology, which was used in SPIDR [7]. In the process of work the system's nucleus and main functions for data processing were transferred from local version into network version. It allowed to get rid in the local version of data loading modules. After that two systems started to develop in two different directions: the main way of the local version development became analysis and data processing, and web-supplement services provide access to the centralized database.

The system of remote access to the database of the up-to-date motions of the Earth crust was created with the help of the Russian Fund of Fundamental Research (RFFR), project 05-07-90035. The system URL is http://clust1.wdcb.ru/gps/.

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Satellite Altimetry Data System for Geodynamics and Oceanography Studies: telematics aspects and applications

***P.Medvedev**, Yu.Tyupkin (Geophysical Center RAS, Moscow), D.Medvedev (Moscow State Bauman Technology University, Moscow, Russia)*

Introduction

Satellite altimetry started to develop in late 70s in connection with studies of mean sea surface, which (with some assumptions) can be identified with geoid surface. In this connection, USA launched three satellites: Skylab IV, Geos-3 and Seasat. Processing of the Geos-3 and Seasat radio-altimetry data allowed to solve many important practical problems. In particular, the Earth gravity potential model and the geoid surface model (between +72 and -72 degrees of latitude) have been significantly improved; a correlation between ocean topography and meteorological events has been found. The Seasat radio-altimeter allowed to receive stable return signals from the glacial surfaces of Greenland and Antarctica, and for the first time precise relief maps of these regions were obtained. Satellite altimetry has been also proved efficient in studies of ocean floor and dynamic ocean surface topography.

Taking into consideration the perspectives of satellite altimetry applications, since 1980 intensive work on the production and deployment of a new class of high-precision radio-altimeters has started. The main goal of satellite altimetry is to keep constant tracking of the sea surface level.

An integrated satellite altimetry, gravity and geodesy database (ISAGG DB)

The information system for using of satellite altimetry data in geodynamics and oceanography research has been created in GC RAS. Currently, the database contains radio-altimeter measurement results of the satellite missions, listed in Table 1.

Mission	Time of activity (month, year)	Altitude (km)	Inclination (degrees)	Repeatable period (days)
GEOS-3	4/75-12/78	840	115	-*
SEASAT repeatable 17-days	7/78-9/78	790	108	17
SEASAT repeatable 17-days	9/78-10/78			3
GEOIK 1-9	7/1985-7/1995	1500	74, 82	-*
GEOSAT GM	3/85-11/86	780	108	-*
GEOSAT ERM	11/86-12/89			17
ERS-1 A	7/91-11/91	785	98.5	3
B	11/91-3/92			3
C	4/92-12/93			35
D	12/93-4/94			3
E	4/94-9/94			168
F	9/94-3/95			168
G	4/95-6/96			35
TOPEX/ POSEIDON	8/92-present time	1300	66	10
ERS-2	4/95-	785	98.5	35
GFO	5/98- present time	800	108	17
ENVISAT	03.02- present time	800	98	35
JASON	12.01 - present time	1300	66	10
Notes: * – not exactly repeatable				

Table 1. Satellite missions with radio-altimeters

As an example, Figure 1 shows the spatial coverage of the Earth's surface by the tracks of the Russian GEOIK satellite.

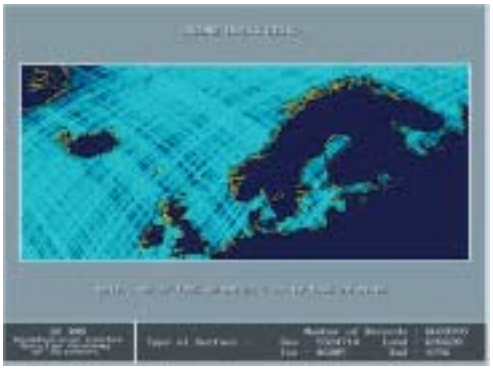


Figure 1. The spacial coverage for 50°-72° N and 30°-45° E region Earth's surface by the tracks of the Russian satellite GEOIK

ISAGG DB has three levels of information: input altimeter data, the supplementary geophysical and geodetic information, and the results of the problem-oriented preliminary processing. Figure 2 shows the input data for ISAGG DB.

The database management system (DBMS) has the problem-oriented modes of a complex analysis of data and provides the space-time graphic presentation of results of processing in addition to the routine DBMS functions. It also allows recalculating the corresponding corrections, when new or updated geophysical models are linked to the ISAGG DB. The total amount of data is about 200 GB.

Two modes of access of remote user are available. Off-line request for data from the 1st and 2nd level databases can be made at http://www.wdcb.ru/ALTIM/English/Chap_1.htm

A user must fill in the request table, which is used to form a query to the global database. Query results are delivered to the user via e-mail or FTP protocol. On-line user access to the 3rd level database is available (http://zeus.wdcb.ru/wdcb/gps/geodat/main.htm).

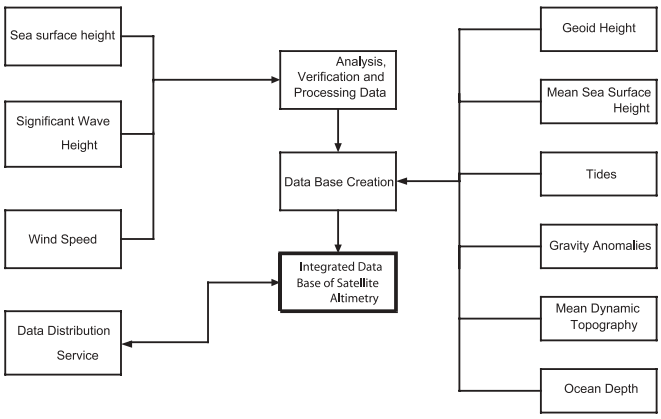


Figure 2. Input data of ISAGG DB

Scientific applications

Few examples of application of the ISAGG DB to the study of the seasonal and annual variations of the Caspian Sea level, to the analysis of gravity anomalies and to the study of tsunami wave motion in open ocean are presented in this section.

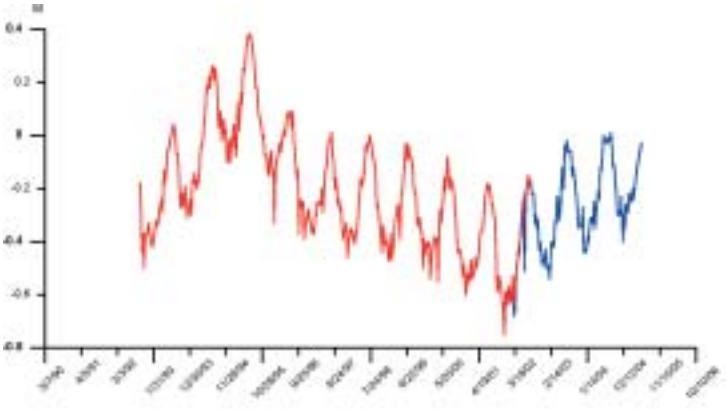


Figure 3. Sample of the study of the Caspian Sea level variations based on TOPEX (red) and JASON (blue) satellites altimetry data

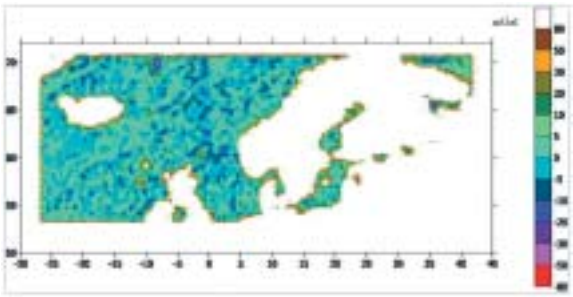


Figure 4. Comparison of GEOIK gravity anomalies with Sandwell altimetry data

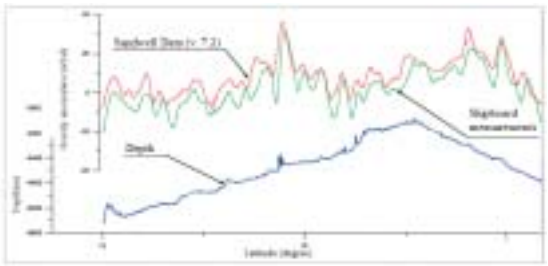
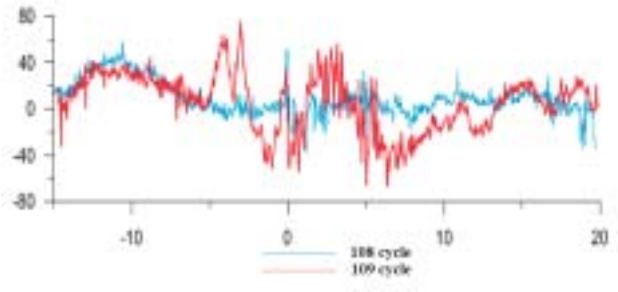


Figure 5. Comparison of Russian shipboard gravity anomalies along ground



track GEOIK with Sandwell altimetry data

Figure 6. The profile of the Indian ocean level depending on latitude obtained using JASON satellite altimetry data. Red plot corresponds to 109 cycle, 129 pass (two hours after the earthquake). Blue plot corresponds to 108 cycle, 129 pass (ten days before the earthquake)

Acknowledgement

The present study became possible due to the fact that NASA and European Space Agency provide free remote access to altimetry data obtained by them.

TOPEX/POSEIDON MGDR and ERS-1, ERS-2 and GEOSAT georeferenced data were obtained from the NASA Physical Oceanography Distributed Archive Center at Jet Propulsion Laboratory / California Institute of Technology.

Sea Level anomaly data were obtained from The Radar Altimeter Database System (RADS) is DEOS.

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Views and opinions

Information and Knowledge Portal – a tool for collaborative working environment

Zigmas Bigelis
(IST4Balt project consultant, zigmasb@techas.lt)

Professional virtual communities and nomadic personnel need new work methods and new working environment. European Union IST Programme promotes developing solutions.

One of FP6 Strategic Objectives is **Collaborative Working Environment**. The objective of this topic is to develop the next generation of collaborative working environments, thereby increasing creativity and boosting innovation and productivity.

These environments should provide collaboration services to make possible the development of worker-centric, flexible, scalable and adaptable tools and applications.

This will enable seamless and natural collaboration amongst a diversity of agents (humans, machines, etc) within distributed, knowledge-rich and virtualized working environments.

Access to knowledge by professional virtual communities and nomadic personnel should be supported.

EC **"New Working Environments"** unit proposes such a **vision**:

Next Generation Collaborative Mobile Virtualised Working Environments focuses on workers interacting with their environments and collaborating with each other, having access to all the (also virtualised) resources (including also assisting robotics) required to carry out their tasks and enhance their capabilities. Among these resources, the key is the knowledge of the co-workers to complement in dynamic groups the needed competences and skills to carry out the task in an efficient way leading to increase in productivity, and generating innovative and creative solutions.

To implement a part vision features a number of products developed by different companies already exists, e.g. Microsoft, IBM, Lotus Notes, Groove, Plumtree, Sybase, Team Ware, Hummingbird and other. Typically they are very powerful, rather expensive and it is difficult to enhance them.

Therefore the better way is to find a simple solution that can be easily enhanced and needs low price for adaptation and/or development of missing applications or features.

Open Source Information and knowledge portal is one solution to provide *part* of the vision tasks.

We should pay attention to the fact that the solution is not only technological but it must include both human and organizational dimensions.

At the first stage the portals (e.g. Enterprise Information Portals (EIP)) operated as a **single point access** to enterprise information, applications and communication services.

Currently the portals, especially Knowledge Portals, should not only provide single point access but they should provide more powerful services both in information and knowledge dissemination (push and pull), search, and especially provide knowledge **discovery** and **creation** services in mobile environment.

At the first stage the most important feature was a convenient and easy **publishing** on the Web.

But problem of information **overload** has emerged. A lot of surveys evaluate that 10-15% of work time is used for relevant information search.

Other problem is **processing** (e.g. **analyzing** and **evaluating**) of a large volume of retrieved information. If a search is performed by software application then analysis is performed manually.

The next problem is that 80% of information is unstructured and therefore its processing is sophisticated.

To solve the problem an idea of Semantic Web has been proposed and its implementation has started. The main idea is using software for information **processing**. But to enable such processing we need to enrich unstructured information. A number of various solutions, e.g. XML, RDF Schema, OWL has been developed and started to be used.

The project needs include **team work, presence awareness service** and **teleworking**. All these tasks can be solved using information and knowledge portal **integrated** with some services.

The integration is rather simple as it means selecting of the communication services, development of guides (instructions) and work scenarious.

A part of these services (e.g. email, discussion forum, news, calendars) can be provided by **Open source** tools and the rest is free (e.g. VoIP - Skype).

The portal integrated with communication services may be used as a **collaborative working environment** both for the project team and/or registered users.

Open Source tools Plone and Zope could be used to develop an Information and Knowledge. Such solution will enable to adapt different applications already developed.

We should pay attention that some services or tools provide only part of their features, e.g. team work service lacks workflow management.

But we must analyze more carefully our needs and make a decision whether we need a full system of team work for project performance or only a part of features.

Workflow management issue can be solved using communication in synchronous or asynchronous mode as we do not collaboratively develop a lot of documents

One of the work mode should use simultaneously web page browsing and synchronous communication tools. Free tools could be used, e.g. instant messaging or VoIP (e.g. Skype).

During such a communication you may update document and your partner after reloading web page will be able to see a new version.

On fig.1 main collaboration processes, services and modes are presented in aggregated form.

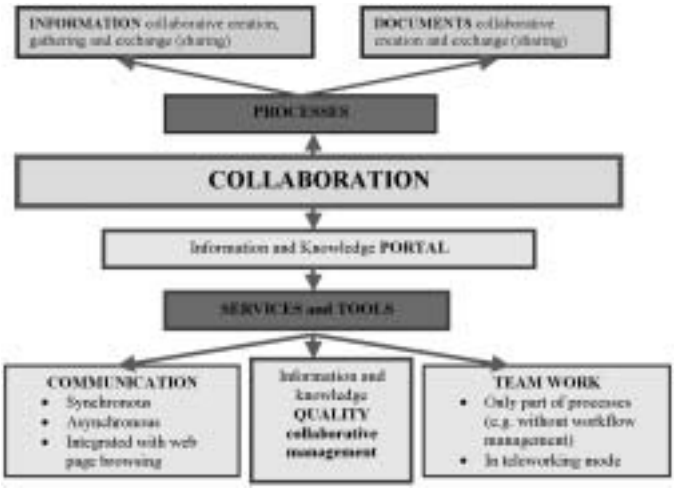

Figure 1. Collaboration processes, services and tools

The portal should consist of such main components as:

- **Information** (creation, publishing on the Web);
- **Knowledge** (information transforming to knowledge by enriching with *metadata* and developing and maintenance of domain *taxonomy* (on the later stages ontology) in collaborative and eworking mode);
- **Communication services;**
- **Collaboration** is provided bys using communication services and information or knowledge content editing or updating processes;
- **Support** (HELP or FAQ system both for end user and system administrator);
- **Search** (simple and intelligent);
- **Calendar** (individual and team);
- **Other services**, e.g. online **consulting.**

The portal structure is given in fig. 2.

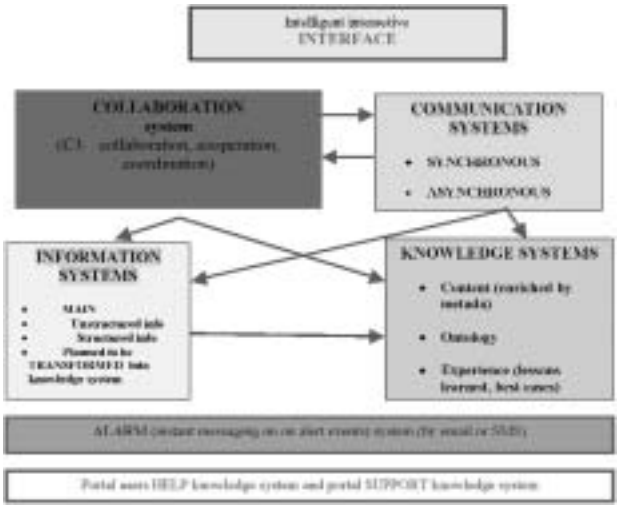

Figure 2. Information and Knowledge Portal Structure

Information (documents, extracts from web pages etc.) can be entered by any project team member without any assistance of web site administrator or software engineer. The procedure is easy implemented and learned by anybody. At the beginning of the project we have developed the portal content structure and information is entered to relevant folders both as new documents or copies of different format files (doc, pdf, ppt, etc.). Editing or updating (including deleting) is an easy procedure as well.

The most important information blocks (extracts or content objects) should be entered to **knowledge base**. The information blocks can be selected both from the information on the portal or other information sources (portal information, other web pages, documents on PC etc.). Then they will be enriched by metadata by an entering person or in collaborative mode by users.

Knowledge base should contain domain taxonomy that will assist intelligent search and metadata adding to content objects. Collaborative mode of creating, updating and using of taxonomy enables it to be transformed to volksonomy and on the next phase to multilingual ontology.

Typically anybody working in collaborative environment performs a set of procedures to complete a business process.

An example of scenario is given in fig. 3.

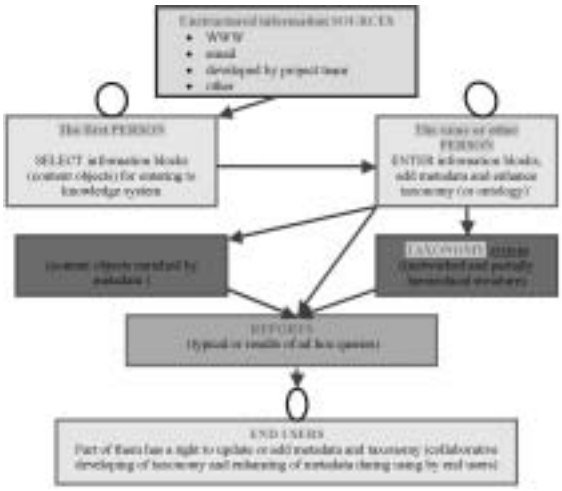

Figure 3. SCENARIO – unstructured information gathering and transforming to knowledge and utilization

New information or knowledge is developed and entered or updated in the portal in e-working (teleworking) mode. Any team member or registered user who has rights to do it can collaborate in this process.

Communication tools are synchronous and asynchronous:

- **ASYNCHRONOUS**:
  - Email;
  - Discussion forums;
- **SYNCHRONOUS**:
  - Instant messaging;
  - VoIP (e.g. Skype).

The Skype provides automatically **Presence Awareness Service**. By using Skype and Web browsing services in real time we are enabled to see the same web page of the portal, to discuss it, to update and after reloading the Webpage we can see the updated version.

Communication services and rights to enter or update information or knowledge TOGETHER with the portal content management services enable to create **collaborative working environment**.

Collaborative working environment synergetic analysis and evaluation can be done analyzing different aspects:

- **Technological** (e.g. easy to learn, convenient to use, support and maintain);
- **Organizational** (to approve agreement who, when, what and how works);
- **Psychological** (different capabilities for processing oral, visual (graphical) or written information and knowledge).

IST4Balt project

We started IST4Balt project dealing with information and knowledge dissemination, online training, IST tools demonstration, new project proposals development. The IST4Balt project requires the next generation interactive information and knowledge portal providing these activities.

We should use the above recommendations for developing portal and its content and information and knowledge).

When using these recommendations in the IST4Balt knowledge portal development we should pay attention to the following issues:

- at the first stage we should develop **different scenarios** for different collaboration cases;
- we should develop and approve a guide for documents or information **versions** processing and storing;
- we should approve the system of requirements for writing of **News items providing an easy access** to new information or documents or updated information;
- we should enhance **navigation** system of the portal by developing a simple folder structure and automatically generating sitemap;
- we must develop a system of keywords(later it will be transformed to domain **taxonomy**) in collaborative mode and enhance it on demands;
- it would be very useful to develop project **structural writing** requirements. It will help us to navigate more easily in large volume documents and better understand the content.

Challenges

Open source information and knowledge portal integrated with various communication services could be used for developing a set of collaborative applications of the full chain of main business processes:

- **Information** gathering, analysis, evaluation and online dissemination;
- Selected information transferring into **knowledge base** including both content objects enriched by metadata and domain taxonomy. Information and knowledge online dissemination;
- IST **product** and **services** demonstration;
- **Training courses** developing, transferring into knowledge base and online learning;
- **Information Dissemination Centre** library knowledge base;
- **Current state** (e.g. market, technology) analysis, problem and changes identification, trends and conclusion developing;
- **Documents**, e.g. new projects proposals analysis and evaluation by using EC criteria system;
- **Innovation support** (**Problem** analysis, **ideas** generating, **alternative solutions** analysis and evaluation, making **decisions** on final solutions);
- **Partnership matching** (enhanced contact base with additional services);
- **Project management** (monitoring, scheduling, analysis and comparing with project goals and objectives, draft reporting).

These applications could be created not by developing new software but only developing new convenient and understandable for end users interfaces and changing lists of meanings of various fields or by default meanings.

Architecture for location-based services

Viktoras Paliulionis, Saulius Maskeliūnas
(Institute of Mathematics and Informatics, Akademijos str. 4, Vilnius, LT-08663, Lithuania)

Location-based services (LBS) have become one of the fastest-growing areas based on modern technologies. LBS provide information and services depending on the location of the user or mobile object. LBS integrate GIS, Internet, wireless communication and positioning techniques. The aim of this paper is to analyze the architecture of LBS and implementation peculiarities of such systems, including wireless messaging, location determination technologies and core LBS services that use GIS technologies.

1. Introduction

Location-Based Services (LBS) are the new form of mobile services. LBS are services that take the current position of the user into account when performing their task [1]. These services can be accessed from mobile phones, PDA and other mobile devices. LBS integrate geographic information systems (GIS), Internet, wireless communication and location determination technologies. LBS are used in mobile commerce, mobile news, vehicle tracking, city guides, tourism information, entertainment activities and other areas [2]. The main *categories* of LBS are location-based information services, navigation services, tracking services, and emergency services.

Location-based information services provide the user with the information about the objects close to the place of his (her) presence. The location of the user is detected automatically and he is provided with necessary information. For example, the user can get a map of the location with the place of his presence marked, to find and order the closest hotel, to receive the list of all the cultural objects in the street he walks, to find out driving conditions on his way, etc.

Navigation services are related to route planning. They help a mobile user to get to the desired place. For example: How to get from point A to point B? What is the quickest road to avoid the traffic jam? When to leave to catch the next train?

Tracking services allow monitoring movements of people, animals, vehicles, shipments and other mobile objects. For example, this kind of services can answer such questions: Where is my child? Where is my friend? Where is my shipment? Where is my car? Where is an emergency car closest to the accident place? The category of tracking services includes telemetric services (i.e. observation of parameters of objects: speed, direction of movement, etc.).

Emergency services allow automatic identification of subscribers' locations in the event of an emergency. Such data help to coordinate the dispatch of emergency personnel.

The aim of this paper is to analyze the architecture of LBS and implementation peculiarities of such systems, including wireless messaging, location determination technologies, and core LBS services that use GIS technologies.

2. The architecture of the location-based services

Many LBS have the same features, requirements, and functionality. The general architecture of the LBS is shown in the Figure 1. This architecture can be adopted for various LBS applications. We will discuss the components of LBS more comprehensively.

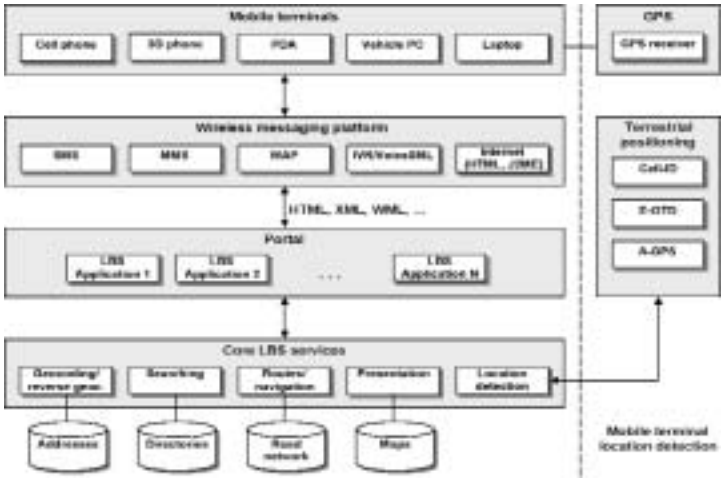

Figure 1. General architecture of LBS

2.1. Mobile terminals and wireless messaging platform

There are various mobile devices with different capabilities. Small devices usually have limited memory, power, processing resources, and small display. According to their capabilities, mobile devices can be classified into three main groups:

- devices with very limited capabilities (e.g. mobile phones);
- devices with medium capabilities (e.g. PDA);
- devices with good capabilities (e.g. laptop with GSM modem; on the other hand, laptops often are not considered to belong to mobile devices because of their size).

Mobile devices are developing fast and the differences among these groups are decreasing. The features of the portable computers are corresponding to the stationery ones.

Various types of *messaging services* can be used when implementing LBS. These include SMS, MMS, WAP, HTTP, J2ME™, IVR.

Short Message Service (SMS) provides a possibility to receive and send text messages (up to 160 characters) to a mobile phone. Because of its simplicity, SMS usage is getting more and more popular in mobile commerce, as well as in the location-based services. One message is often enough to make an enquiry or to send coordinates of an object, and to receive information about the point of interest or instructions on how to get to the desired place. However, functional capabilities of the user interface that is implemented using SMS are very limited.

Multimedia Messaging Service (MMS) provides a possibility to combine text, voice and visual content in one message and can be used in modern phones with high resolution colour displays. It gives an opportunity to send small map fragments by MMS messages. For example, Lithuanian telecommunications company "Bitė GSM" and "Mobile Solutions Center" offer the Locator service[1] that allows quick finding the location of mobile phones.

The location is presented by MMS message as map and textual description. SMS and MMS can be a popular form of delivering public services for a while.

Wireless Application Protocol (WAP) is a technology allowing access to necessary information on the Internet from a mobile phone.The mobile phone can access a website located anywhere in the world and download information written in WML language. WAP protocol transforms the information located in the Internet into the format applicable to mobile phones. WML language allows rendering not only text but also graphic images. WAP is widely used in the LBS providing information services, reservation services, etc. However, WAP perspectives for such systems are limited, as this technology does not allow creating interactive interfaces for work with maps.

HTML browsers that use *HTTP protocol* give biggest set of possibilities for the user. GPRS data transmission technology implemented in GSM networks allows to be connected to Internet constantly and to transmit data faster. However, only few small mobile devices have HTML browsers. Some PDA have Windows CE operating system and browser that supports HTML language but with few limitations (i.e. does not support JavaScript and CSS style tables). Some mobile devices support modifications of HTML language (i.e. cHTML, HDML and other).

Java 2 Micro Edition (J2ME™) is the edition of the Java platform that is targeted at small, standalone or connectable consumer and embedded devices (i.e. it is a Java technological version created especially for small electronic devices). J2ME allows creating programs for mobile devices with graphic user interface and Internet possibilities and is optimized for small displays, ways of input and other specific features of mobile devices. J2ME allows implementing interactive maps with zooming and panning possibilities. It is a very perspective technology, which most of GIS companies are offering to use.

At the moment interactive voice portals that use *Interactive Voice Response* (IVR) technologies are getting more and more popular. In these portals commands are made and the answers are received by voice. Voice recognition and voice synthesis technologies are used here; the text usually is coded in VoiceXML language. A limited number of commands are enough to implement the user interface; therefore the voice is recognized quite successfully. In some cases voice interface can be very useful, for example, when the LBS are used driving a car.

2.2. Determination of the location of a mobile terminal

Determination of the location of a mobile terminal is one of the most important tasks, which have to be analyzed when implementing LBS. There are many location determination methods, however no single method will operate effectively in all intended environments (e.g., indoors, urban and open areas) with sufficient accuracy. The positioning technologies can be satellite based (GPS, GLONASS, Galileo) or terrestrial based (CELL-ID, AOA, TOA, E-OTD) or combination of the two (A-GPS) [3].

One of the most widely used systems of satellite positioning is GPS (Global Positioning System), which was developed by the US Department of Defence. GPS consists of 24 satellites turning in orbits around the Earth. GPS satellites are constantly sending synchronized digital radio signals. The signals are received by special equipment – GPS receiver – that by triangulation method calculates its geographic coordinates according to the time difference of signal receipt. The accuracy of localization in an open area is up to 10 m. However equipment of usual GPS receiver in the cell phone telephone has few shortcomings. It increases size and price of the mobile phone and decreases battery service time. Moreover, GPS does not work when there is no direct visibility of at least three satellites (for example, among or inside buildings).

Besides GPS there is GLONASS location determining system, created in Russia [4]. In the beginning it was also used only for military services. The system Galileo is being constructed in Europe [5]. It is being designed as a civil system from the very beginning. Differently from GPS, Galileo will offer the users higher accuracy.

Even now better location determining results can be achieved using A-GPS technology. A-GPS (Assisted GPS) is a hybrid technology, which uses data of GPS satellites and additional information from wireless communication network. It allows increasing the accuracy of localization even when the visibility of satellites is poor. As the main calculations are made in the network, GPS part in the telephone decreases, and the size of the telephone decreases, too. If this technology is to be used, both telephone and equipment of base stations have to be modified.

Cell-ID method is the simplest terrestrial based method. Cell-ID uses the network base station cell area to identify the location of the mobile phone. This method does not require major modifications to the phone or the network, thus making it a cheap method to implement. The accuracy of the method varies from a few hundred meters to some dozens of kilometres depending on the density of basic stations.

In addition to Cell-ID, there are other terrestrial network-based technologies, including Angle of Arrival (AOA), Time of Arrival (TOA), Enhanced Observed Time Difference (E-OTD) and others. These vary by the triangulation method employed to establish the correct location. All these methods provide better accuracy than Cell-ID, but are still quite expensive.

At the moment not all of the providers of wireless communication provide location determination services. The presented LBS architecture supposes various methods for location determination (handset-based and network based).

2.3. Core LBS services and applications

LBS applications can be created using some set of basic services. OpenLS specification [6] identify such core services:

- *Location detection* service that integrates LBS application with position determination equipment;
- *Geocoding service* (geocoding is translating an address or place into a latitude, longitude location);

[1] *http://www.locator.lt*

- *Reverse geocoding service* (reverse geocoding is translating a location back to an address, place, city, or identifying other attributes about the location);
- *Directory service* for searching yellow pages, travel guides, nearest points of interests and so on;
- *Route determination service* for navigation;
- *Presentation service* (displaying maps, routes, points of interests).

Most of these services can be implemented using GIS technology. Therefore GIS is an essential part of LBS. GIS provides means for storing, manipulating, analyzing, and displaying geographically referenced information.

LBS applications created by using core services can be available through Internet portals. For example, the application can find the closest hotel, show it on the map and determine the shortest route to it.

3. Conclusions

In this paper we have given an overview about some of the most important components and services necessary to build location-based services. The proposed architecture can be adapted for many typical LBS, which provide services taking into consideration location of the user. When implementing LBS applications, available location determining technologies and capabilities of mobile terminals have to be taken into account and a wireless messaging method has to be chosen. Mobile network operators, GIS technology providers, digital maps providers, and information content providers have to cooperate in the development of LBS. At the moment, the spread of LBS, especially public ones, is restricted because of the lack of accurate and commonly accepted location determining technology, low data transmission rate and limited capabilities of mobile devices.

In Lithuania, mobile network operators only begin to provide location services. New UMTS networks will support location service features, to allow new and innovative LBS to be developed. The work in GIS and LBS areas is carried out at the Institute of Mathematics and Informatics in Vilnius, Lithuania.

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