



ISD2008 - 17th INTERNATIONAL CONFERENCE ON
INFORMATION SYSTEMS DEVELOPMENT

The Annabelle Hotel

Paphos, Cyprus

August 25-27, 2008

CONFERENCE PROGRAMME



WELCOME TO ISD2008

Welcome to the 17th International Conference on Information Systems Development (ISD2008), hosted by the Department of Computer Science of the University of Cyprus at the Annabelle Hotel, Paphos. We hope that your visit to Paphos will be an appealing and enjoyable one from both an academic and a cultural perspective.

Over the last few years, ISD has been organized as a track-based conference, covering many major aspects of Information Systems Development and featuring every year a different theme. This year's theme is "Towards a Service Provision Society" and ISD 2008 features no less than 15 tracks, each one specializing on a different aspect.

In response to the publication of the Call for Papers we received 165 submissions from 39 different countries and all 5 continents. This shows the truly international nature of this event. The submitted papers were fed into the review system and the approximately 210 reviewers generated a total of 543 reviews, an average of 3.29 reviews per submitted paper. Based on the review reports we were able to accept 99 papers, setting an acceptance rate of 60%. The accepted papers were organized for presentation into 28 sessions spread over the three days programme. Every one of the 15 tracks has at least one paper that was submitted to it and made it successfully through the review process.

The realization of an event of the size and complexity of ISD would not have been possible without the active involvement of many people. The members of the Program Committee did a wonderful job in providing thorough reviews which helped us to arrive at an accept or reject decision for each submitted paper. The Track Chairs deserve special acknowledgment for initially promoting the conference and their own track and later on for assisting us in the paper selection process and the formation of the final programme. I am personally deeply indebted to the organizers of last year's ISD in Ireland and the members of the Steering Committee for being there all the time in answering our many questions and queries. I would also like to thank our sponsors whose support has improved considerably the quality of the organizational logistics of the conference. Special thanks are due here to the members of the Organizing Committee for doing all the ground work and behind the scenes preparation. Finally, a big thank you to all of you, delegates, presenters and session chairs, as without your involvement all the hard work done by numerous people would have been simply meaningless.

George A. Papadopoulos
Programme and Organizing Chair

ABOUT THIS HANDBOOK

Because of copyright restrictions, we cannot make copies of papers available at the ISD2008 conference. However, this handbook provides you with the titles and abstracts of all papers so that you can make informed decisions as to which sessions you will attend.

The handbook also contains vital information on the conference timetable and venue. The main venue for the ISD2008 conference is the Annabelle Hotel, in the city of Paphos. Herein you can find maps of the city and of the immediate vicinity.

At the end of this handbook you will also find some general information, including what to do in the case of a mishap (e.g. personal accident, laptop repairs, damaged clothing). We hope that you find this handbook useful, and we wish you a pleasant stay and safe trip home.

CONFERENCE PROCEEDINGS

All papers presented at the ISD2008 conference will appear in a forthcoming Springer volume, on condition that (a) at least one author registers for and attends the conference; and (b) authors submit their final camera-ready papers by the notified deadline (July 15), complete with high-quality image files for all figures (if appropriate) and an explanation of how the issues arising in reviewers' reports were resolved.

Papadopoulos, G. A., Wojtkowski, W., Wojtkowski, W. G., Wrycza, S., & Zupancic, J. (eds) (2008), *Information Systems Development: Towards a Service Provision Society*, Springer-Verlag: New York.

If, in the course of production of proceedings, problems arise with poor formatting or poor quality images, the editors will contact the nominated corresponding author, whose responsibility it will be to rectify such problems without delay. Should the corresponding author fail to respond within a reasonable time, the editors retain the right to remove a paper from the volume so as to avoid publishing delays.

SEIT Lab @ Department of Computer Science, University of Cyprus

The Software Engineering and Internet Technologies (SEIT) Laboratory focuses its research activities on two important areas of Information Technology, namely Software Engineering and Internet Technologies. In the first area, SEIT concentrates on the development of Component-Based Systems, Software Architectures and Architecture Description Languages, Middleware Platforms and software for embedded systems. In the second area, the Laboratory concentrates on XML technologies, Multimedia Frameworks, Cooperative Information Systems, Mobile Computing, Open and Distance Learning, E-Commerce, e-Health, Web Services, and Service Oriented Computing.

SEIT has been actively involved in the Framework Programme (5th, 6th and 7th) through its participation in 12 EU funded projects in the Information Society Technologies (IST) initiative. Furthermore, it has also participated in 3 more belonging to the EUMEDIS (E.U. Mediterranean Information Society) initiative.

The Laboratory has also been involved in other EU funded initiatives, notably ESIS (European Survey in Information Society), but also the Leonardo Da Vinci framework on Vocational Training where it has participated in 8 such funded projects. It is also currently participating in the Interreg initiative.

The Laboratory currently occupies 12 personnel, including 3 post doctoral scientists and 4 postgraduate ones.

More information about SEIT can be found at the lab's web site, <http://www.cs.ucy.ac.cy/seit>.

This year, we are very pleased to be involved in the hosting of the 17th International Conference on Information Systems Development (ISD2008). Furthermore, we are proud to have been involved in the organization of the 8th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP 2008) and the prestigious 22nd European Conference on Object-Oriented Programming (ECOOP 2008). Furthermore, we are looking forward to be involved in the hosting of the 7th European Conference on e-Learning (ECEL 2008) and the 2nd European Conference on Software Architecture (ECSA), both to be held later on this year in Cyprus.



CONFERENCE TIMETABLE

SUNDAY, AUGUST 24, 2008

17:00 - 20:00 **ISD2008 Registration**

20:00 - 21:00 **Welcome Reception**
Annabelle Hotel

MONDAY, AUGUST 25, 2008

08:00 - 09:00 **ISD2008 Registration**
Annabelle Hotel

09:00 - 09:20 **Welcome Address**

09:20 - 10:20 **Keynote speech**

*“Towards an Understanding of ISD - Reflections on a
20 Year Long Journey”*

By Karlheinz Kautz

10:20 - 10:50 **Tea / Coffee Break**

10:50 - 12:30	Data Activity and Modeling Salle Armonia	Software Processes, Methods and Models I Aphrodite	Public Information Systems Development I Artemis	Special Topics in ISD Adonis
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12:30 - 15:00 **Lunch**

15:00 - 16:40	Web-based and Dynamic Systems Development Salle Armonia	Software Processes, Methods and Models II Aphrodite	Public Information Systems Development II Artemis	Enterprise Systems Development & Adoption I Adonis
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16:40 - 17:10 **Tea / Coffee Break**

17:10 - 18:25	Systems Implementation Salle Armonia	Information Systems & Applications Aphrodite	Public Information Systems Development III Artemis	Enterprise Systems Development & Adoption II Adonis
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19:30 - 23:00 **Social Event (Village night)**

Includes transportation provided by the Organizers

TUESDAY, AUGUST 26, 2008

08:00 - 09:00 **ISD2008 Registration**

09:00 - 10:40	Human Computer Interaction in ISD Salle Armonia	Human, Social & Organisational Issues in ISD Aphrodite	Teaching ISD in educational institutions Artemis
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10:40 - 11:10 **Tea / Coffee Break**

11:10 - 12:50	Service-oriented Analysis and Design of IS I Salle Armonia	Web and Mobile ISD Aphrodite	ISD education in society today Artemis
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12:50 - 15:00 **Lunch**

15:00 - 16:15	Service-oriented Analysis and Design of IS II Salle Armonia	Special Issues in and ISD Aphrodite	e-Learning Artemis
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16:15 - 16:45 **Tea / Coffee Break**

16:45 - 18:25	Service-oriented Analysis and Design of IS III Salle Armonia	Philosophical, Theoretical and Legal Issues in ISD Aphrodite	Case Studies and teaching programming Artemis
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20:00 - 22:00 **Social Event (Cyprus night)**

Annabelle hotel

WEDNESDAY, AUGUST 27, 2008

08:30 - 09:00 ISD2008 Registration

09:00 - 09:10 Awards Presentation

09:10 - 09:30 Presentation by the organizers of ISD 2009 (China)

**09:30 - 10:45 Model-driven Engineering in Rule-based Intelligent
ISD I Systems**

Salle Armonia

Aphrodite

10:45 - 11:15 Tea / Coffee Break

**11:15 - 12:55 Model-driven Engineering in Computational Intelligence
ISD II Techniques**

Salle Armonia

Aphrodite

12:55 - 15:00 Lunch / Conference Close

CONTENTS

ISD2008 - 17 th International CONFERENCE on INFORMATION SYSTEMS DEVELOPMENT	i
CONFERENCE PROGRAMME	i
WELCOME TO ISD2008.....	ii
ABOUT THIS HANDBOOK	iii
CONFERENCE PROCEEDINGS.....	iii
SEIT Lab @ Department of Computer Science, University of Cyprus.....	iv
CONFERENCE TIMETABLE	v
CONTENTS	viii
INDEX OF AUTHORS.....	xx
CONFERENCE COMMITTEES	1
KEYNOTE SPEECH	8
COMPUTER FACILITIES	9
SOCIAL EVENTS.....	9
ON-SITE REGISTRATION.....	9
ACCESS FOR DISABLED PERSONS.....	10
SPECIAL NEEDS.....	10
ISD2008 - 17 th International CONFERENCE on INFORMATION SYSTEMS DEVELOPMENT	12
ABSTRACTS.....	12
A1.1: Data Activity and Modeling	13
Monday, 25 August, 10:50 - 12:30.....	13
Scrutinizing UML Activity Diagrams	13
Sabah Al-Fedaghi.....	13
A1.1: Data Activity and Modeling	14
Monday, 25 August, 10:50 - 12:30.....	14
Designing Class Methods from Dataflow Diagrams	14
Peretz Shoval and Judith Kabeli-Shani	14
A1.1: Data Activity and Modeling	15
Monday, 25 August, 10:50 - 12:30.....	15
Towards Modeling-Language Independent Integration of Dynamic Schemata.....	15
Peter Bellström, Jürgen Vöhringer and Christian Kop.....	15
A1.1: Data Activity and Modeling	16
Monday, 25 August, 10:50 - 12:30.....	16

Integration of weakly heterogeneous semistructured data	16
George Feuerlicht & Jaroslav Pokorný, Karel Richta and Narongdech Ruttananontsatean	16
B1.1: Software Processes, Methods and Models I	17
Monday, 25 August, 10:50 - 12:30	17
Proposing a Formalised Model for <i>Mindful</i> Information Systems Offshoring	17
Gabriel J. Costello, Chris Coughlan, Brian Donnellan and Andreas Gadatsch	17
B1.1: Software Processes, Methods and Models I	18
Monday, 25 August, 10:50 - 12:30	18
Negotiating a Systems Development Method	18
Fredrik Karlsson and Karin Hedström	18
B1.1: Software Processes, Methods and Models I	19
Monday, 25 August, 10:50 - 12:30	19
Rules transformation using formal concept approach	19
Darius Jurkevicius and Olegas Vasilecas	19
B1.1: Software Processes, Methods and Models I	20
Monday, 25 August, 10:50 - 12:30	20
Agreements in virtual organizations	20
Malgorzata Pankowska	20
C1.1: Public Information Systems Development I	21
Monday, 25 August, 10:50 - 12:30	21
A Standardization Framework for Electronic Government Service Portals21 Demetrios Sarantis, Christos Tsiakaliaris, Fenareti Lampathaki and Yannis Charalabidis	21
C1.1: Public Information Systems Development I	22
Monday, 25 August, 10:50 - 12:30	22
A Taxonomy of E-Health Standards to Assist System Developers	22
Emma Chávez, Padmanabhan Krishnan and Gavin Finnie	22
C1.1: Public Information Systems Development I	23
Monday, 25 August, 10:50 - 12:30	23
Elaborating the WARE Method for eParticipation Requirements	23
Øystein Sæbø, Tero Päivärinta, Jan Helge Austbø and Svein Sundfør Scheie	23
C1.1: Public Information Systems Development I	24
Monday, 25 August, 10:50 - 12:30	24
Business Architecture Development at Public Administration - Insights from Government EA Method Engineering Project in Finland	24
Katariina Valtonen and Mauri Leppänen	24
D1.1: Special Topics in ISD	25
Monday, 25 August, 10:50 - 12:30	25

Using Agile Methods? -- expected effects	25
Stefan Cronholm	25
D1.1: Special Topics in ISD.....	26
Monday, 25 August, 10:50 - 12:30.....	26
MEDNET: Telemedicine via satellite combining improved access to health care services with enhanced social cohesion in rural Peru.....	26
Dimitrios Panopoulos ¹ , Ilias Sachpazidis ² , Despoina Rizou ³ , Wayne Menary ⁴ , Jose Cardenas ⁵ and John Psarras.....	26
D1.1: Special Topics in ISD.....	27
Monday, 25 August, 10:50 - 12:30.....	27
Why can't we bet on ISD Outcomes?: ISD "Form" as a Predictor of Success	27
Mike Newman, Shan L Pan, and Gary Pan	27
D1.1: Special Topics in ISD.....	28
Monday, 25 August, 10:50 - 12:30.....	28
Finding Categories and Keywords in Web Services.....	28
Christian Kop, Doris Galle, and Heinrich C. Mayr.....	28
A1.2: WEB-BASED AND DYNAMIC SYSTEMS DEVELOPMENT	29
Monday, 25 August, 15:00 - 16:40.....	29
Web-based Systems Development: Analysis and Comparison of Practices in Croatia and Ireland	29
Michael Lang and Dijana Plantak Vukovac	29
A1.2: Web-based and Dynamic Systems Development.....	30
Monday, 25 August, 15:00 - 16:40.....	30
Web Service Execution and Monitoring in Integrated Applications in Support of Business Communities	30
Rares M. Chiriacescu, Alexandru Szoke, Sorin Portase and Monica Florea	30
A1.2: Web-based and Dynamic Systems Development.....	31
Monday, 25 August, 15:00 - 16:40.....	31
Accounting, Charging and Billing for Dynamic Service Composition Chains.....	31
Frens Jan Rumph, Gert Kruithof and George Huitema.....	31
A1.2: Web-based and Dynamic Systems Development.....	32
Monday, 25 August, 15:00 - 16:40.....	32
Investigating the applicability of structural analysis techniques in distributed systems	32
Karen Hamber, Graham Low and Greg Stephens.....	32
Monday, 25 August, 15:00 - 16:40.....	33
Instantiating Software Processes, An Industry Approach.....	33
B1.2: Software Processes, Methods and Models II	34
Monday, 25 August, 15:00 - 16:40.....	34

Method Engineering: A Formal Description	34
Ali Sunyaev, Matthias Hansen and Helmut Krcmar	34
B1.2: Software Processes, Methods and Models II	35
Monday, 25 August, 15:00 - 16:40	35
Requirements Modeling with Agent Programming	35
Aniruddha Dasgupta, Aneesh Krishna and Aditya K. Ghose	35
C1.2: Public Information Systems Development II.....	36
Monday, 25 August, 15:00 - 16:40	36
Resolution of Complexity in ISD Projects	36
Jill Owen and Henry Linger.....	36
C1.2: Public Information Systems Development II.....	37
Monday, 25 August, 15:00 - 16:40	37
Reducing Health Cost: Health Informatics and Knowledge Management as a business and communication tool.....	37
Regina Gyampoh-Vidogah, Robert Moreton and David Sallah	37
C1.2: Public Information Systems Development II.....	38
Monday, 25 August, 15:00 - 16:40	38
Mobile Location Based Services for Trusted Information in Disaster Management	38
Lemonia Ragia, Michel Deriaz and Jean-Marc Seigneur	38
C1.2: Public Information Systems Development II.....	39
Monday, 25 August, 15:00 - 16:40	39
The development of mobile services - the impact of actor groups in the standardization process.....	39
Endre Grøtnes and Steinar Kristoffersen	39
D1.2: Enterprise Systems Development & Adoption I	40
Monday, 25 August, 15:00 - 16:40	40
The Total Picture - A framework for control of IT investments	40
Mats-Åke Hugoson, Björn Johansson and Ulf Seigerroth	40
D1.2: Enterprise Systems Development & Adoption I	41
Monday, 25 August, 15:00 - 16:40	41
Determinants of Open Source Software Adoption—an application of TOE framework.....	41
Tomasz Przechlewski and Krystyna Strzała	41
D1.2: Enterprise Systems Development & Adoption I	42
Monday, 25 August, 15:00 - 16:40	42
An Approach for Implementation of Project Management Information Systems.....	42
Solvita Bērziša and Jānis Grabis	42
D1.2: Enterprise Systems Development & Adoption I	43
Monday, 25 August, 15:00 - 16:40	43

Hybridization of Architectural Styles for Integrated Enterprise Information Systems	43
Lina Bagusyte and Audrone Lupeikiene	43
A1.3: Systems Implementation.....	44
Monday, 25 August, 17:10 - 18:25.....	44
Improving Knowledge Management in the Health Service: Re-engineering approach towards successful implementation	44
Regina Gyampoh-Vidogah and Robert Moreton.....	44
A1.3: Systems Implementation.....	45
Monday, 25 August, 17:10 - 18:25.....	45
On The Human, Organizational and Technical Aspects of Software Development and Analysis.....	45
Robertas Damaševičius.....	45
A1.3: Systems Implementation.....	46
Monday, 25 August, 17:10 - 18:25.....	46
The Solution Space Organisation: Linking Information Systems Architecture and Reuse.....	46
Salem Ben Dhaou Dakhli	46
B1.3: Information Systems & Applications.....	47
Monday, 25 August, 17:10 - 18:25.....	47
Applying Utility Functions to Adaptation Planning for Home Automation Applications.....	47
Pyrros Bratskas, Nearchos Paspallis, Konstantinos Kakousis and George A. Papadopoulos	47
B1.3: Information Systems & Applications.....	48
Monday, 25 August, 17:10 - 18:25.....	48
Modeling the contribution of enterprise architecture practice to the achievement of business goals	48
Marlies van Steenbergem and Sjaak Brinkkemper.....	48
B1.3: Information Systems & Applications.....	49
Monday, 25 August, 17:10 - 18:25.....	49
A Methodological Framework for Enterprise Information System Requirements Derivation.....	49
Albertas Caplinskas and Lina Paškevičiūtė	49
C1.3: Public Information Systems Development III	50
Monday, 25 August, 17:10 - 18:25.....	50
Incorporating Spatial Data into Enterprise Applications	50
Pierre Akiki and Hoda Maalouf	50
C1.3: Public Information Systems Development III	51
Monday, 25 August, 17:10 - 18:25.....	51
Web Tools for Geo-spatial Data Management	51
Petr Horak, Karel Charvat and Martin Vlček.....	51

C1.3: Public Information Systems Development III.....	52
Monday, 25 August, 17:10 - 18:25.....	52
Computer literacy of population 50+ - a case from Slovenia.....	52
Barbara Vogrinec.....	52
D1.3: Enterprise Systems Development & Adoption II	53
D1.3: Enterprise Systems Development & Adoption II	53
Monday, 25 August, 17:10 - 18:25.....	53
Design Patterns Application in the ERP systems improvements	53
Bojan Jovičić and Siniša Vlajić	53
D1.3: Enterprise Systems Development & Adoption II	54
Monday, 25 August, 17:10 - 18:25.....	54
From Standard Application Packages to Enterprise Systems - A Matter of Opportunities.....	54
Anders Nilsson	54
A2.1: Human Computer Interaction in ISD	55
Tuesday, 26 August, 09:00 - 10:40.....	55
Designing Cognition-adaptive Human Computer Interface for Mission-Critical Systems.....	55
Yu Shi, Eric Choi, Ronnie Taib and Fang Chen.....	55
A2.1: Human Computer Interaction in ISD	56
Tuesday, 26 August, 09:00 - 10:40.....	56
Conceptual Web Users' Actions Prediction for Ontology-Based Browsing Recommendations	56
Tarmo Robal and Ahto Kalja.....	56
A2.1: Human Computer Interaction in ISD	57
Tuesday, 26 August, 09:00 - 10:40.....	57
A proposed extension of the CODAM model.....	57
Kleanthis Neokleous, Marios N. Avraamides, Andreas A. Ioannides, Costas K. Neocleous and Christos N. Schizas	57
A2.1: Human Computer Interaction in ISD	58
Tuesday, 26 August, 09:00 - 10:40.....	58
Web Portal Design: Employment of a Range of Assessment Methods	58
Andrina Granić, Ivica Mitrović and Nikola Marangunić.....	58
B2.1: Human, Social & Organisational Issues in ISD	59
Tuesday, 26 August, 09:00 - 10:40.....	59
Organizational learning literature visited - Fresh lenses to study practices in ISD organizations?	59
B2.1: Human, Social & Organisational Issues in ISD	60
Tuesday, 26 August, 09:00 - 10:40.....	60
A Language for Modelling Trust in Information Systems	60
Kamaljit Kaur Bimrah, Haralambos Mouratidis and David Preston	60

B2.1: Human, Social & Organisational Issues in ISD	61
Tuesday, 26 August, 09:00 - 10:40.....	61
Organizational Culture and ISD Practices: Comparative Literature Review	61
Päivi Ovaska and Pasi Juvonen	61
Tuesday, 26 August, 09:00 - 10:40.....	62
The Morning After: What Happens When Outsourcing Relationships End?.....	62
Hamish T. Barney, Graham C. Low and Aybüke Aurum	62
C2.1: Teaching ISD in educational institutions	63
Tuesday, 26 August, 09:00 - 10:40.....	63
Exploring the Role of Method Rationale in the Context of Teaching Information Systems Development Methods.....	63
Kai Wistrand, Fredrik Karlsson and Pär J. Ågerfalk.....	63
C2.1: Teaching ISD in educational institutions	64
Tuesday, 26 August, 09:00 - 10:40.....	64
Teaching medium sized ERP systems - a problem-based learning approach	64
Axel Winkelmann and Martin Matzner	64
Tuesday, 26 August, 09:00 - 10:40.....	65
Early Orientation towards Future Profession: a Case Study of Introduction into Information Systems Development for the First Year Students	65
Alla Anohina, Janis Grundspenkis and Evita Nikitenko	65
C2.1: Teaching ISD in educational institutions	66
Tuesday, 26 August, 09:00 - 10:40.....	66
Statistical analysis for supporting Inter-institutional knowledge flows in the context of educational system	66
Renate Strazdina, Julija Stecjuka, Ilze Andersone and Marite Kirikova	66
A2.2: Service-oriented Analysis and Design of IS I	67
Tuesday, 26 August, 11:10 - 12:50.....	67
Specification and Verification of an Agent-Based Auction Service.....	67
Amelia Badica and Costin Badica	67
A2.2: Service-oriented Analysis and Design of IS I	68
Tuesday, 26 August, 11:10 - 12:50.....	68
MISS: A Metamodel of Information System Service.....	68
Nicolas Arni-Bloch and Jolita Ralyté.....	68
A2.2: Service-oriented Analysis and Design of IS I	69
Tuesday, 26 August, 11:10 - 12:50.....	69
A New Method for Conceptual Modelling of Information Systems.....	69
Remigijus Gustas and Prima Gustiene.....	69

A2.2: Service-oriented Analysis and Design of IS I	70
Tuesday, 26 August, 11:10 - 12:50	70
Mapping SOA Artefacts onto an Enterprise Reference Architecture Framework	70
Ovidiu Noran	70
B2.2: Web and Mobile ISD	71
Tuesday, 26 August, 11:10 - 12:50	71
A Hybrid Peer-to-Peer Solution for Context Distribution in Mobile and Ubiquitous Environments.....	71
Xiaoming Hu, Yun Ding, Nearchos Paspallis, Pyrros Bratskas, George A. Papadopoulos, Yves Vanrompay, Manuele Kirsch Pinheiro and Yolande Berbers	71
B2.2: Web and Mobile ISD	72
Tuesday, 26 August, 11:10 - 12:50	72
Current Trends in Testing XMLMSs	72
Irena Mlynkova	72
B2.2: Web and Mobile ISD	73
Tuesday, 26 August, 11:10 - 12:50	73
Service-Oriented Software Development Value Chain and Process	73
Yuan Rao, Shumin Lu and ZhiXiong Yang	73
B2.2: Web and Mobile ISD	74
Tuesday, 26 August, 11:10 - 12:50	74
A Content Markup Language for Data Services	74
Noviello C., Acampa P. and Mango Furnari M.	74
C2.2: ISD education in society today	75
Tuesday, 26 August, 11:10 - 12:50	75
IS Degrees - Sociotechnical or Technosocial?	75
Jenny Coady and Rob Pooley	75
C2.2: ISD education in society today	76
Tuesday, 26 August, 11:10 - 12:50	76
Four Levels of Moral Conflict in ISD	76
Tero Vartiainen	76
C2.2: ISD education in society today	77
Tuesday, 26 August, 11:10 - 12:50	77
“Learning to research” in a Virtual Learning Environment: a case study on the effectiveness of a socio-constructivist learning design	77
López-Alonso, C; Fernández-Pampillón, A; de-Miguel, E.; and Pita, G.	77
A2.3: Service-oriented Analysis and Design of IS II	78
Tuesday, 26 August, 15:00 - 16:15	78

Using ESB and BPEL for Evolving Healthcare Systems towards Pervasive, Grid-Enabled SOA.....	78
V. Koufi, F. Malamateniou, D. Papakonstantinou and G. Vassilacopoulos	78
A2.3: Service-oriented Analysis and Design of IS II	79
Tuesday, 26 August, 15:00 - 16:15.....	79
Comparing Architectural Styles for Service-oriented Architectures - a REST vs. SOAP case study	79
Jörg Becker, Martin Matzner and Oliver Müller.....	79
A2.3: Service-oriented Analysis and Design of IS II	80
Tuesday, 26 August, 15:00 - 16:15.....	80
A Method for Transforming Existing Web Service Descriptions into an Enhanced Semantic Web Service Framework	80
Xiaofeng Du, William Song, and Malcolm Munro.....	80
B2.3: Special Issues in ISD	81
Tuesday, 26 August, 15:00 - 16:15.....	81
Contract Negotiations Supported Through Risk Analysis.....	81
Sérgio A. Rodrigues, Marco A. Vaz and Jano M. Souza	81
B2.3: Special Issues in ISD	82
Tuesday, 26 August, 15:00 - 16:15.....	82
Metadata to Support Data Warehouse Evolution	82
Darja Solodovnikova	82
B2.3: Special Issues in ISD	83
Tuesday, 26 August, 15:00 - 16:15.....	83
Measuring Communication Heterogeneity between Multiple Web-based Agents.....	83
Maricela Bravo and Martha Coronel	83
C2.3: e-Learning	84
Tuesday, 26 August, 15:00 - 16:15.....	84
Embedding Knowledge Management into Business Logic of e-Learning Platform for Obtaining Adaptivity.....	84
Dumitru Dan Burdescu, Marian Cristian Mihaescu and Bogdan Logofatu	84
C2.3: e-Learning	85
Tuesday, 26 August, 15:00 - 16:15.....	85
Specification of Learning Content Using Feature Diagrams.....	85
Robertas Damaševičius.....	85
C2.3: e-Learning	86
Tuesday, 26 August, 15:00 - 16:15.....	86
Refactoring of Learning Objects for Mobile Learning	86
Robertas Damaševičius.....	86

A2.4: Service-oriented Analysis and Design of IS III	87
Tuesday, 26 August, 16:45 - 18:25	87
Aligning Service Requirements with Business Strategy	87
Luthria, H., Aurum, A., Low, G.C., Rabhi and F.A.	87
A2.4: Service-oriented Analysis and Design of IS III	88
Tuesday, 26 August, 16:45 - 18:25	88
An Extensible ADL for Service Oriented Architectures	88
R. Bashroush and I. Spence	88
A2.4: Service-oriented Analysis and Design of IS III	89
Tuesday, 26 August, 16:45 - 18:25	89
An Examination on Service Science: A View from e-Service.....	89
William Song and Deren Chen.....	89
B2.4: Philosophical, Theoretical and Legal Issues in ISD.....	90
Tuesday, 26 August, 16:45 - 18:25	90
Information Technology Projects - leaving the 'magic' to the 'wizards' ..	90
Peter Bednar and Christine Welch.....	90
B2.4: Philosophical, Theoretical and Legal Issues in ISD.....	91
Tuesday, 26 August, 16:45 - 18:25	91
Ontology of Domain Analysis Concepts in Software System Design	
Domain	91
Robertas Damaševičius	91
B2.4: Philosophical, Theoretical and Legal Issues in ISD.....	92
Tuesday, 26 August, 16:45 - 18:25	92
The fight against piracy in peer-to-peer networks: the sword of Damocles	
hanging over ISP's head?	92
Evi Werkers and Fanny Coudert	92
B2.4: Philosophical, Theoretical and Legal Issues in ISD.....	93
Tuesday, 26 August, 16:45 - 18:25	93
AN ANONYMITY REVOCATION TECHNOLOGY FOR ANONYMOUS	
COMMUNICATION	93
Giannakis Antoniou, Lynn Batten and Udaya Parampalli.....	93
C2.4: Case Studies in teaching programming	94
Tuesday, 26 August, 16:45 - 18:25	94
Problem-Based Learning in a Programming Context - Planning and	
Executing a Pilot Survey on Database Access in a Programming	
Language	94
Peter Bellström and Nina Kilbrink	94
C2.4: CASE STUDIES IN TEACHING PROGRAMMING	95
Tuesday, 26 August, 16:45 - 18:25	95
BPMN, Toolsets and Methodology: A case study of business process	
management in higher education	95
Balbir S. Barn and Samia Oussena	95

Tuesday, 26 August, 16:45 - 18:25.....	96
Understanding Service Oriented Architectures in the Classroom: from Web Services to Grid Services.....	96
D. Petcu and V. Iordan	96
A3.1: Model-driven Engineering in ISD I	97
Wednesday, 27 August, 09:30 - 10:45	97
Expert Systems development through Software Product Lines techniques97	
María Eugenia Cabello and Isidro Ramos	97
A3.1: Model-driven Engineering in ISD I	98
Wednesday, 27 August, 09:30 - 10:45	98
Framework For Using Patterns In Model Driven Development	98
Picek Ruben and Strahonja Vjeran.....	98
A3.1: Model-driven Engineering in ISD I	99
Wednesday, 27 August, 09:30 - 10:45	99
An approach to generating program code in quickly evolving environments	99
Linas Ablonskis	99
B3.1: Rule-based Intelligent Systems	100
Wednesday, 27 August, 09:30 - 10:45	100
Analysis of Academic Results for Informatics Course Improvement Using Association Rule Mining.....	100
Robertas Damaševičius.....	100
B3.1: Rule-based Intelligent Systems	101
Wednesday, 27 August, 09:30 - 10:45	101
Risk Analysis Based Business Rule Enforcement for Intelligent Decision Support	101
Olegas Vasilecas, Aidan Smaizys and Ramunas Brazinskas.....	101
B3.1: Rule-based Intelligent Systems	102
Wednesday, 27 August, 09:30 - 10:45	102
Using Rules in an 'Intelligent' Information Retrieval Environment	102
Gian Piero Zarri	102
A3.2: Model-driven Engineering in ISD II	103
Wednesday, 27 August, 11:15 - 12:55	103
Model-Driven Development of Decision Support Systems: tackling the variability problem	103
María Eugenia Cabello and Isidro Ramos.....	103
A3.2: Model-driven Engineering in ISD II	104
Wednesday, 27 August, 11:15 - 12:55	104
Devising a New Model Driven Framework for Developing GUI for Enterprise Applications	104
Pierre Akiki	104

A3.2: Model-driven Engineering in ISD II.....	105
Wednesday, 27 August, 11:15 - 12:55.....	105
A Practical Environment to Apply Model Driven Web Engineering	105
Maria Jose Escalona, Francisco Morero, Carlos Luis Parra, Jaime Nieto, Francisco Perez, Francisco Martín, Antonio Llergo and Javier Jesus Gutierrez.....	105
A3.2: Model-driven Engineering in ISD II.....	106
Wednesday, 27 August, 11:15 - 12:55.....	106
Foundations on generation of relationships between classes based on initial business knowledge	106
Oksana Nikiforova and Natalya Pavlova.....	106
B3.2: Computational Intelligence Techniques	107
Wednesday, 27 August, 11:15 - 12:55.....	107
Sound processing features for speaker-dependent and phrase-independent emotion recognition in Berlin Database	107
Christos Nikolaos Anagnostopoulos and Eftichia Vovoli.....	107
B3.2: Computational Intelligence Techniques	108
Wednesday, 27 August, 11:15 - 12:55.....	108
Genetic programming modeling and complexity analysis of the magnetoencephalogram of epileptic patients	108
Éfstratios F. Georgopoulos, Adam V. Adamopoulos and Spiridon D. Likothanassis.....	108
B3.2: Computational Intelligence Techniques	109
Wednesday, 27 August, 11:15 - 12:55.....	109
A Three-Layer Approach to Testing of Multi-Agent Systems	109
Tomas Salamon.....	109
B3.2: Computational Intelligence Techniques	110
Wednesday, 27 August, 11:15 - 12:55.....	110
The Automatic Integration of Folksonomies with Taxonomies Using Non-Axiomatic Logic	110
Joe Geldart and Stephen Cummins.....	110
ISD2008 - 17 th International CONFERENCE on INFORMATION SYSTEMS DEVELOPMENT	111
USEFUL INFORMATION	111
USEFUL INFORMATION	112
ISD2008 - 17 th International CONFERENCE on INFORMATION SYSTEMS DEVELOPMENT	115
NOTES	115

INDEX OF AUTHORS

Acampa P.....	75
Adam V. Adamopoulos	109
Aditya K. Ghose	35
Ahto Kalja.....	57
Aidas Smaizys.....	102
Albertas Caplinskas	49
Alexandru Szóke	29
Ali Sunyaev	33
Alla Anohina.....	66
Amelia Badica	68
Anders Nilsson.....	55
Andreas A. Ioannides.....	58
Andreas Gadatsch	16
Andrina Granić	59
Aneesh Krishna.....	35
Aniruddha Dasgupta	35
Antonio Llergo	106
Audrone Lupeikiene	43
Aurum, A.	88
Axel Winkelmann	65
Aybüke Aurum.....	63
Balbir S. Barn	96
Barbara Vogrinec	52
Björn Johansson	40
Bogdan Logofatu.....	85
Bojan Jovičić	54
Brian Donnellan.....	16
Carlos Luis Parra	106
Chris Coughlan	16
Christian Kop.....	14, 27
Christine Welch.....	91
Christos N. Schizas.....	58
Christos Nikolaos Anagnostopoulos.....	108
Christos Tsiakaliaris	20
Costas K. Neocleous.....	58
Costin Badica	68
D. Papakonstantinou.....	79
D. Petcu	97
Darius Jurkevicius	18
Darja Solodovnikova	83
David Preston.....	61
David Sallah.....	37
Demetrios Sarantis.....	20
de-Miguel, E.....	78

Deren Chen	90
Despoina Rizou	28
Dijana Plantak Vukovac.....	25
Dimitrios Panopoulos	25
Doris Gälle.....	27
Dumitru Dan Burdescu	85
Efstratios F. Georgopoulos,	109
Eftichia Vovoli.....	108
Emma Chávez	21
Endre Grøtnes	39
Eric Choi.....	56
Evi Werkers	93
Evita Nikitenko.....	66
F. Malamateniou.....	79
F.A.....	88
Fang Chen.....	56
Fanny Coudert.....	93
Fenareti Lampathaki.....	20
Fernández-Pampillón, A.....	78
Francisco Martín.....	106
Francisco Morero	106
Francisco Perez	106
Fredrik Karlsson	17, 64
Frens Jan Rumph	30
G. Vassilacopoulos.....	79
G.C.....	88
Gabriel J. Costello	16
Gary Pan	26
Gavin Finnie	21
Georg Peters	32
George A. Papadopoulos	47, 72
George Feuerlicht.....	15
George Huitema	30
Gert Kruithof	30
Gian Piero Zarri	103
Giannakis Antoniou	94
Graham C. Low	63,31
Greg Stephens	31
Hamish T. Barney.....	63
Haralambos Mouratidis	61
Heinrich C. Mayr.....	27
Helmut Krömer	33
Henry Linger.....	36
Hoda Maalouf	50
I. Spence	89
Ilias Sachpazidis.....	25
Ilze Andersone	67

Irena Mlynkova	73
Isidro Ramos	98, 104
Ivica Mitrović	59
Jaime Nieto	106
Jan Helge Austbø	22
Jānis Grabis	42
Janis Grundspenkis	66
Jano M. Souza	82
Jaroslav Pokorný	15
Javier Jesus Gutierrez	106
Jean-Marc Seigneur	38
Jenny Coady	76
Jill Owen	36
Joe Geldart	111
John Psarras	25
Jolita Ralyté	69
Jörg Becker	80
Jose Cardenas	25
Judith Kabeli-Shani	13
Julija Stecjuka	67
Jürgen Vöhringer	14
Kai Wistrand	64
Kamaljit Kaur Bimrah	61
Karel Charvat	51
Karel Richta	15
Karen Hamber	31
Karin Hedström	17
Katariina Valtonen	23
Kleanthis Neokleous	58
Konstantinos Kakousis	47
Krystyna Strzała	41
Lemonia Ragia	38
Lina Bagusyte	43
Lina Paškevičiūtė	49
Linas Ablonskis	100
López-Alonso, C.	78
Low	88
Luthria, H.	88
Lynn Batten	94
Malcolm Munro	81
Malgorzata Pankowska	19
Mango Furnari M.	75
Manuele Kirsch Pinheiro	72
Marco A. Vaz	82
María Eugenia Cabello	98, 104
Maria Jose Escalona	106
Marian Cristian Mihaescu	85

Maricela Bravo	84
Marios N. Avraamides	88
Marite Kirikova	67
Markus Stumptner	32
Marlies van Steenberghe	48
Martha Coronel	84
Martin Matzner	65, 80
Martin Vlk	51
Mats-Åke Hugoson	40
Matthias Hansen	33
Mauri Leppänen	23
Mehmet Aydin	34
Michael Lang	28
Michel Deriaz	38
Mike Newman	26
Monica Florea	29
Narongdech Ruttanontsatean	15
Natalya Pavlova	107
Nearchos Paspallis	47, 72
Nicolas Arni-Bloch	69
Nikola Marangunić	59
Nina Kilbrink	95
Noviello C.	75
Oksana Nikiforova	107
Olegas Vasilecas	18, 102
Oliver Müller	80
Ovidiu Noran	71
Øystein Sæbø	22
Padmanabhan Krishnan	21
Päivi Ovaska	60, 62
Pär J. Ågerfalk	64
Pasi Juvonen	60, 62
Peretz Shoval	13
Peter Bednar	91
Peter Bellström	14, 95
Peter Killisperger	32
Petr Horak	51
Picek Ruben	99
Pierre Akiki	50, 105
Pita, G.	78
Prima Gustiene	70
Przemyslaw Lech	53
Pyrros Bratskas	47, 72
R. Bashroush	89
Rabhi	88
Ramunas Brazinskas	102
Rares M. Chiriacescu	29

Regina Gyampoh-Vidogah	37, 44
Remigijus Gustas	70
Renate Strazdina	67
Rob Pooley	76
Robert Moreton	37, 44
Robertas Damaševičius	45, 86, 87, 92, 101
Ronnie Taib	56
Sabah Al-Fedaghi	12
Salem Ben Dhaou Dakhli	46
Samia Oussena	96
Sérgio A. Rodrigues	82
Shan L Pan	26
Shumin Lu	74
Siniša Vlajić	54
Sjaak Brinkkemper	48
Solvita Bērziša	42
Sorin Portase	29
Spiridon D. Likothanassis	109
Stefan Cronholm	24
Steinar Kristoffersen	39
Stephen Cummins	111
Strahonja Vjeran	99
Svein Sundfør Scheie	22
Tarmo Robal	57
Tero Päivärinta	22
Tero Vartiainen	77
Thomas Stückl	32
Tomas Salamon	110
Tomasz Przechlewski	41
Udaya Parampalli	94
Ulf Seigerroth	40
V. Iordan	97
V. Koufi	79
Wayne Menary	25
William Song	81, 90
Xiaofeng Du	81
Xiaoming Hu	72
Yannis Charalabidis	20
Yolande Berbers	72
Yu Shi	56
Yuan Rao	74
Yun Ding	72
Yves Vanrompay	72
ZhiXiong Yang	74

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KEYNOTE SPEECH

“Towards an Understanding of ISD - Reflections on a 20 Year Long Journey”, by Karlheinz Kautz (Monday, August 25th, 9:20-10:20)

Abstract

As a PhD student Karl participated in the first ISD conference (then known as Polish-Scandinavia Seminar on Current Trends in Information Systems Development Methodologies - Paraszyno, June 27-30, 1988). Since then he has become a professor in information systems development and software engineering. In his key note he is reviewing major trends in information systems development research and practice in the last 20 years which he (also) was a part of: from the prototyping approach as an answer to the structured engineering approaches in the 1970ties over more defined software processes in the software process improvement and software quality movement in the 1990ties as a response to too much flexibility to currently agile approaches as a balanced reaction to the too disciplined and rigid Software Engineering Institute approach. On this journey he also passes by perspectives on ISD as an innovative and knowledge-intensive human activity.

Author's biography

Karlheinz Kautz, Dr philos is professor in Systems Development & Software Engineering at Department of Informatics at the Copenhagen Business School, Denmark and the former Director of Studies of Europe's oldest course programme on Computer Science and Business Administration. Previously he has been employed as a senior researcher at the Norwegian Computing Center and as a lecturer at universities in Germany, Norway, England and Denmark. Since 2005 he is also a Visiting professor at the School of Information Systems, Technology & Management at the University of New South Wales, Sydney, Australia. He is a founding member and a former chairman of the IFIP TC8 WG 8.6 on Diffusion, Transfer, and Implementation of Information Technology. He is a member of AIS. His research interests are in systems development and system development methodologies in practice, the diffusion and adoption of information technology innovations, the organizational impact of IT, knowledge management and software quality and process improvement. He has published in these areas in journals like the European Journal of IS, the Information Systems Journal, Information, Technology & People, the Scandinavian Journal of Information Systems, Software Process: Improvement and Practice, IEEE Software, Journal of Knowledge Management, the Journal of Information Systems, the Journal of Informing Science, the Journal of Information Technology Cases and Applications, Information and Software Technology.

LOCATION OF CONFERENCE ROOMS

All Conference Rooms are located in the Annabelle hotel. Except for the main room (Salle Armonia), the other three rooms (Adonis, Artemis, Aphrodite) are located at the Mezzanine.

The keynote addresses will take place in the main room (Salle Armonia)

COMPUTER FACILITIES

Wireless access is also available for those with laptop computers. You should automatically be able to connect to the network without a username and password.

SOCIAL EVENTS

The conference fee covers the cost of attendance at social events.

On Monday evening (August 25th), a **Welcome Reception** will be held inside the hosting venue (the Annabelle hotel).

For the following day (August 26th), the evening will include a visit to a traditional Cyprus restaurant for dinner and a live show (dancing). This event will take place in a local Paphos restaurant, close to the venue hotel.

Delegates who wish to bring friends or partners to the conference social events may do so by paying an additional fee:

Welcome Reception	€28
Gala Dinner (August 25)	€65
Cyprus Night (August 26)	€60

OPTIONAL EXCURSION

A full day excursion will be organized to Nicosia after the conference. The price includes bus transportation, entrance fees, a guided tour and lunch. (28/8/2008) €65

ON-SITE REGISTRATION

A facility will be available for on-site registration, either by cash or credit card.

The on-site registration fee is €490. The registration fee includes: Coffee breaks, lunches, Cyprus night, 1 welcome cocktail, conference bag and the conference proceedings

ACCESS FOR DISABLED PERSONS

The four rooms where the conference talks will be given (Salle Armonia, Aphrodite, Adonis and Artemis) are all accessible by wheelchairs (by lift).

There are also special rooms in the Annabelle hotel capable to accommodate persons using a wheelchair. To book such a room, please contact directly the hotel or email info@cyprusconferences.org.

SPECIAL NEEDS

If you have any special needs (e.g. dietary requirements, physical disability) for which you require assistance, please speak to any of the conference officers or on-site stewards.

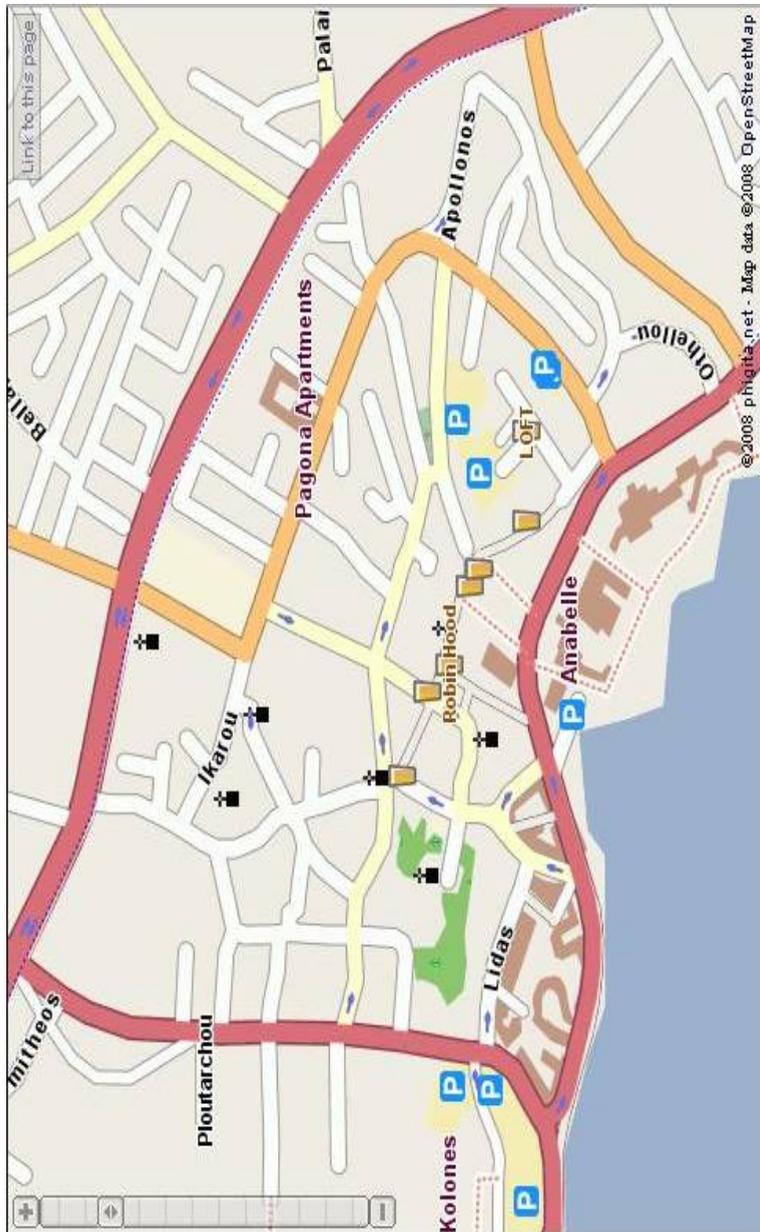


Figure 1: Map of hotel area



ISD2008 - 17th INTERNATIONAL CONFERENCE ON
INFORMATION SYSTEMS DEVELOPMENT

The Annabelle Hotel

Paphos, Cyprus

August 25-27, 2008

ABSTRACTS

A1.1: DATA ACTIVITY AND MODELING

Monday, 25 August, 10:50 - 12:30

Room Salle Armonia

SCRUTINIZING UML ACTIVITY DIAGRAMS

Sabah Al-Fedaghi

ABSTRACT

Building an information system involves two processes: conceptual modeling of the “real world domain” and designing the software system. Object-oriented methods and languages (e.g., UML) are typically used for describing the software system. For the system analysis process that produces the conceptual description, object-oriented techniques or semantics extensions are utilized. Specifically, UML activity diagrams are the “flow charts” of object-oriented conceptualization tools. This paper proposes an alternative to UML activity diagrams through the development of a conceptual modelling methodology based on the notion of flow.

A1.1: DATA ACTIVITY AND MODELING

Monday, 25 August, 10:50 - 12:30

Room Salle Armonia

DESIGNING CLASS METHODS FROM DATAFLOW DIAGRAMS

Peretz Shoval and Judith Kabeli-Shani

ABSTRACT

A method for designing the class methods of an information system is described. The method is part of FOOM -Functional and Object-Oriented Methodology. In the analysis phase of FOOM, two models defining the users' requirements are created: a conceptual data model - an initial class diagram; and a functional model - hierarchical OO-DFDs (object-oriented data-flow diagrams). Based on these models, a well-defined process of methods design is applied. First, the OO-DFDs are converted into transactions, i.e. system processes that supports user task. The components and the process logic of each transaction are described in detail, using pseudo-code. Then, each transaction is decomposed, according to well-defined rules, into class methods of various types: basic methods, application-specific methods and main Transaction (control) methods. Each method is attached to a proper class; messages between methods express the process logic of each transaction. The methods are defined using pseudo-code or message charts.

A1.1: DATA ACTIVITY AND MODELING

Monday, 25 August, 10:50 - 12:30

Room Salle Armonia

TOWARDS MODELING-LANGUAGE INDEPENDENT INTEGRATION OF DYNAMIC SCHEMATA

Peter Bellström, Jürgen Vöhringer and Christian Kop

ABSTRACT

In the early phases of the software development process we generally deal with systems requirements that are gathered from various sources. These requirements can be represented in the form of structural and behavioral schemata. But heterogeneous system requirements frequently contain conflicts and overlap. Requirements schema integration is therefore essential for successful further system development. The complex integration of dynamic schemata in particular cannot be fully automated and even partial automation is not a trivial task. In this paper we demonstrate a partially automated, guideline based, modeling language independent integration approach for dynamic schemata. We also show how our guidelines can be applied during the typical steps of an integration process.

A1.1: DATA ACTIVITY AND MODELING

Monday, 25 August, 10:50 - 12:30

Room Salle Armonia

INTEGRATION OF WEAKLY HETEROGENEOUS SEMISTRUCTURED DATA

George Feuerlicht & Jaroslav Pokorný, Karel Richta and Narongdech Ruttananontsatean

ABSTRACT

While most business applications typically operate on structured data that can be effectively managed using relational databases, some applications use more complex semistructured data that lacks a stable schema. XML techniques are available for the management of semistructured data, but such techniques tend to be ineffective when applied to large amounts of heterogeneous data, in particular in applications with complex query requirements. In this paper we describe an approach that relies on the mapping of multiple semistructured data sets to object-relational structures and uses an object-relational database to support complex query requirements. We illustrate this approach using weakly heterogeneous oceanographic data.

B1.1: SOFTWARE PROCESSES, METHODS AND MODELS I

Monday, 25 August, 10:50 - 12:30

Room Aphrodite

PROPOSING A FORMALISED MODEL FOR *MINDFUL* INFORMATION SYSTEMS OFFSHORING

Gabriel J. Costello, Chris Coughlan , Brian Donnellan and
Andreas Gadatsch

ABSTRACT

The central thesis of this paper is that Mathematical Economics can provide a novel approach to the examination of offshoring business decisions and provide an impetus for future research in the area. A growing body of research indicates that projected cost savings from IT offshoring projects are not being met. Furthermore, evidence suggests that decision-making processes have been more emotional than rational, and that many offshoring arrangements have been rushed into without adequate analysis of the true costs involved. Building on the concept of *mindfulness* and *mindlessness* introduced to the IS literature by Swanson and Ramiller, a cost equation is developed using “deductive reasoning rather than inductive study” in the tradition of mathematical economics. The model endeavours to capture a wide range of both the quantitative and qualitative parameters. Although the economic model is illustrated against the background of a European scenario, the theoretical framework is generic and applicable to organisations in any global location.

B1.1: SOFTWARE PROCESSES, METHODS AND MODELS I

Monday, 25 August, 10:50 - 12:30

Room Aphrodite

NEGOTIATING A SYSTEMS DEVELOPMENT METHOD

Fredrik Karlsson and Karin Hedström

ABSTRACT

Systems development methods (or methods) are often applied in tailored version to fit the actual situation. Method tailoring is in most the existing literature viewed as either (a) a highly rational process with the method engineer as the driver where the project members are passive information providers, or (b) as an unstructured process where the systems developer makes individual choices, a selection process without any driver. The purpose of this paper is to illustrate that important design decisions during method tailoring are made by project members through negotiation. The study has been carried out using the perspective of Actor-Network Theory. Our narratives depict method tailoring as more complex than (a) and (b) show: the driver role rotates between the project members and design decisions are based on influences from several project members. However, these design decisions are not consensus decisions.

B1.1: SOFTWARE PROCESSES, METHODS AND MODELS I

Monday, 25 August, 10:50 - 12:30

Room Aphrodite

RULES TRANSFORMATION USING FORMAL CONCEPT APPROACH

Darius Jurkevicius and Olegas Vasilecas

ABSTRACT

One important part of modern information systems is rules. Rules that define or constrain some aspects of activities in an application domain are usually written using natural language in declarative form. However, for applying rules in information systems we need to use formal rules. In the paper we propose a method that allows the transformation of declarative rules represented in natural language into formal rules. For transformation we used formal context. In that formal context are described all concepts required for transformation of rules. The suggested method allows simplifying the input and transformation of rules.

B1.1: SOFTWARE PROCESSES, METHODS AND MODELS I

Monday, 25 August, 10:50 - 12:30

Room Aphrodite

AGREEMENTS IN VIRTUAL ORGANIZATIONS

Malgorzata Pankowska

ABSTRACT

The paper is an attempt to explain the important impact that contract theory delivers with respect to the concept of virtual organization. The author believes that not enough research has been conducted in order to transfer theoretical foundations for networking to the phenomena of virtual organizations and open autonomic computing environment to ensure the controllability and management of them. The main research problem of the paper is to explain the significance of agreements for virtual organizations governance. The first part of the paper comprises explanations of differences among virtual machines and virtual organizations for further descriptions of the significance of the first ones to the development of the second. Next, the virtual organization development tendencies are presented and problems of IT governance in highly distributed organizational environment are discussed. The last part of the paper covers analysis of contracts and agreements management for governance in open computing environments.

C1.1: PUBLIC INFORMATION SYSTEMS DEVELOPMENT I

Monday, 25 August, 10:50 - 12:30

Room Artemis

A STANDARDIZATION FRAMEWORK FOR ELECTRONIC GOVERNMENT SERVICE PORTALS

Demetrios Sarantis, Christos Tsiakaliaris, Fenareti Lampathaki and Yannis Charalabidis

ABSTRACT

Although most eGovernment Interoperability Frameworks (eGIFs) cover adequately the technical aspects of developing and supporting the provision of electronic services to citizens and businesses, they do not exclusively address several important areas regarding the organisation, presentation, accessibility and security of the content and the electronic services offered through government portals. This paper extends the scope of existing eGIFs presenting the overall architecture and the basic concepts of the Greek Standardization Framework for Electronic Government Service Portals which, for the first time in Europe, is part of a country's eGovernment Framework. The proposed Standardization Framework includes standards, guidelines and recommendations regarding the design, development and operation of government portals that support the provision of administrative information and services to citizens and businesses. By applying the guidelines of the Framework, the design, development and operation of portals, in Central, Regional and Municipal Government can be systematically addressed resulting to an applicable, sustainable and ever-expanding framework.

C1.1: PUBLIC INFORMATION SYSTEMS DEVELOPMENT I

Monday, 25 August, 10:50 - 12:30

Room Artemis

A TAXONOMY OF E-HEALTH STANDARDS TO ASSIST SYSTEM DEVELOPERS

Emma Chávez, Padmanabhan Krishnan and Gavin Finnie

ABSTRACT

Building e-health systems requires a good understanding of the range and characteristics of many relevant standards. These standards play an important role in the promotion of coordination amongst the key players in the technical and administrative areas of the e-health arena. Many entities including government, information technology professional bodies, and medical organizations have developed a large number of e-health standards initiatives. Because of this broad range of initiatives, we propose a classification of standards to simplify the process to find out relevant information. The main objective is to facilitate the retrieval of e-health standards information by limiting the searching of classes or categories based on the applicability that the standards have in particular domains. Thus, we offer a framework to classify documents “standards” by assigning them to a predetermined set of categories and domains.

C1.1: PUBLIC INFORMATION SYSTEMS DEVELOPMENT I

Monday, 25 August, 10:50 - 12:30

Room Artemis

ELABORATING THE WARE METHOD FOR EPARTICIPATION REQUIREMENTS

Øystein Sæbø, Tero Päivärinta, Jan Helge Austbø and
Svein Sundfør Scheie

ABSTRACT

eParticipation systems are often directly targeted at citizens. However, as a group of potential users, citizens form a heterogeneous and unpredictable group, which makes requirements elicitation a challenging issue. Based on recently developed ideas for Wide Audience Requirement Engineering (WARE), this paper discusses and elaborates a method for eliciting citizen requirements for eParticipation. The method elaboration was conducted in connection to a project in southern Norway, where young people's requirements for becoming active e-participants in society were mapped. Based on these experiences, we discuss the use and usefulness of the WARE method and suggest ideas on how to further develop the WARE method for eParticipation purposes.

C1.1: PUBLIC INFORMATION SYSTEMS DEVELOPMENT I

Monday, 25 August, 10:50 - 12:30

Room Artemis

BUSINESS ARCHITECTURE DEVELOPMENT AT PUBLIC ADMINISTRATION - INSIGHTS FROM GOVERNMENT EA METHOD ENGINEERING PROJECT IN FINLAND

Katariina Valtonen and Mauri Leppänen

ABSTRACT

Governments worldwide are concerned for efficient production of services to customers. To improve quality of services and to make service production more efficient, information and communication technology (ICT) is largely exploited in public administration (PA). Succeeding in this exploitation calls for large-scale planning which embraces issues from strategic to technological level. In this planning the notion of Enterprise Architecture (EA) is commonly applied. One of the sub-architectures of EA is Business Architecture (BA). BA planning is challenging in PA due to a large number of stakeholders, a wide set of customers, and solid and hierarchical structures of organizations. To support EA planning in Finland, a project to engineer a government EA (GEA) method was launched. In this paper, we analyze the discussions and outputs of the project workshops, and reflect emerged issues on current e-government literature. We bring forth insights into and suggestions for government BA and its development.

D1.1: SPECIAL TOPICS IN ISD
Monday, 25 August, 10:50 - 12:30

Room Adonis

USING AGILE METHODS? - - EXPECTED EFFECTS

Stefan Cronholm

ABSTRACT

This paper focuses on the movement from traditional to agile methods. What are the expected benefits of using agile methods instead of traditional ones? The paper compares identified benefits in traditional and agile methods and takes a critical attitude in order to reveal possibilities and risks with the expressed benefits in agile methods. The paper also tries to answer the questions of what benefits are lost and what benefits are preserved when moving to agile methods.

D1.1: SPECIAL TOPICS IN ISD

Monday, 25 August, 10:50 - 12:30

Room Adonis

MEDNET: TELEMEDICINE VIA SATELLITE COMBINING IMPROVED ACCESS TO HEALTH CARE SERVICES WITH ENHANCED SOCIAL COHESION IN RURAL PERU

Dimitrios Panopoulos¹, Ilias Sachpazidis², Despoina Rizou³,
Wayne Menary⁴, Jose Cardenas⁵ and John Psarras

ABSTRACT

Peru, officially classified as a middle-income country, has benefitted from sustained economic growth in recent years. However, the benefits have not been seen by the vast majority of the population, particularly Peru's rural population. Virtually all of the nation's rural health care centres are cut-off from the rest of the country, so access to care for most people is not only difficult but also costly. MEDNET attempts to redress this issue by developing a medical health network with the help of the collaboration medical application based on TeleConsult & @HOME medical database for vital signs. The expected benefits include improved support for medics in the field, reduction of patient referrals, reduction in number of emergency interventions and improved times for medical diagnosis. An important caveat is the emphasis on exploiting the proposed infrastructure for education and social enterprise initiatives. The project has the full support of regional political and health authorities and, importantly, full local community support.

D1.1: SPECIAL TOPICS IN ISD
Monday, 25 August, 10:50 - 12:30

Room Adonis

WHY CAN'T WE BET ON ISD OUTCOMES?: ISD "FORM"
AS A PREDICTOR OF SUCCESS

Mike Newman, Shan L Pan, and Gary Pan

ABSTRACT

The record of failure to deliver large-scale Information Systems (IS) in a timely fashion that offer value to major commercial and public organizations is legendary. Just looking to critical success factors such as top management support and user involvement in order to understand how to deliver better systems can at best be a partial solution. We seem to overlook an obvious area in our organizations: what can we learn from our information system development (ISD) historical patterns? In order to develop this idea we draw on parallels in sport where current performance and behaviour are believed to be closely linked to historical precedents, or "form". In that domain, historical patterns are a fallible but valuable predictor of success. Our thesis is that past negative patterns in ISD will tend to repeat themselves without radical intervention. Put another way, failure begets failure. After examining the game of football as an allegory for ISD, we look briefly at two organizations that have experienced a pattern of failure in the IS area in the past but have transformed the way they build IS, moving from negative patterns to successful ones. The article ends with suggestions for managers charged with developing new IS as to how they might use their understanding of ISD "form" to improve their chances of success.

D1.1: SPECIAL TOPICS IN ISD

Monday, 25 August, 10:50 - 12:30

Room Adonis

FINDING CATEGORIES AND KEYWORDS IN WEB SERVICES

Christian Kop, Doris Gälle, and Heinrich C. Mayr

ABSTRACT

Nowadays Web services are a common way to integrate functionality in an information system, but most of the time it is very difficult to find an appropriate service. If users of Web service engines do not exactly know what they want, they often browse through categories and search with keywords. This however depends on the knowledge of the Web service owner and his/her willingness to assign such keywords. This paper gives a proposal to provide the user with candidates for keywords and categories which are derived directly from the Web service specification itself.

A1.2: WEB-BASED AND DYNAMIC SYSTEMS DEVELOPMENT

Monday, 25 August, 15:00 - 16:40

Room Salle Armonia

WEB-BASED SYSTEMS DEVELOPMENT: ANALYSIS AND COMPARISON OF PRACTICES IN CROATIA AND IRELAND

Michael Lang and Dijana Plantak Vukovac

ABSTRACT

The “dot.com” hysteria which sparked fears of a “Web crisis” a decade ago has long subsided and firms established in the 1990’s now have mature development processes in place. However, there has been a notable fall-off in the number of empirical studies of Web-based systems development published in recent times. This paper presents a timely re-assessment of the state of Web development practices, comparing data gathered in Croatia and Ireland. Given the growth in popularity of “agile” methods in the past few years, a secondary objective of this research was to analyse the extent to which Web development practices are guided by or otherwise consistent with the underlying principles of agile development.

A1.2: WEB-BASED AND DYNAMIC SYSTEMS DEVELOPMENT

Monday, 25 August, 15:00 - 16:40

Room Salle Armonia

WEB SERVICE EXECUTION AND MONITORING IN INTEGRATED APPLICATIONS IN SUPPORT OF BUSINESS COMMUNITIES

Rares M. Chiriacescu, Alexandru Szőke, Sorin Portase and
Monica Florea

ABSTRACT

Emerging technology is one of the key factors that drive the business world to faster adaptation, reaction and shorter communication path. Building upon such technologies, business communities emerge, geared towards high flexibility in their offerings and collaboration: business-to-customer as well as business-to-business collaboration. Adapting to the market requirements, companies must address several technical challenges that arise from the main requirements of the system they have to introduce: a high degree of flexibility, heterogeneous system collaboration and security of the transferred data. Industry experience shows that many companies and public institutions have to address these kinds of challenges when introducing systems in support of business communities. In this paper we present a general solution to facilitate the introduction of a universal platform for the execution and monitoring of Web Services, as part of complex business processes.

A1.2: WEB-BASED AND DYNAMIC SYSTEMS DEVELOPMENT

Monday, 25 August, 15:00 - 16:40

Room Salle Armonia

ACCOUNTING, CHARGING AND BILLING FOR DYNAMIC SERVICE COMPOSITION CHAINS

Frens Jan Rumph, Gert Kruihof and George Huitema

ABSTRACT

Services delivered to an end-user can be composed of numerous subservices, and form chains of composed services. These service composition chains traditionally consist of a static set of business entities. However, in order to increase business agility, dynamic service composition chains can be used by leveraging techniques of service publishing and discovery, and consist of more short lived relations between the various business entities. This paper focuses on issues concerning accounting, charging and billing of such dynamic service composition chains. In this type of service delivery, several traditional settlement models are not applicable since existing architectures lack support of automated negotiation of settlement parameters. Examples of such parameters are what the service consumer will be charged for and how much, how and when the consumer will be billed. In this paper the requirements that have to be fulfilled with respect to accounting, charging and billing in dynamic service composition chains are explored. Based on these requirements, a framework architecture for accounting charging and billing is described.

A1.2: WEB-BASED AND DYNAMIC SYSTEMS DEVELOPMENT

Monday, 25 August, 15:00 - 16:40

Room Salle Armonia

INVESTIGATING THE APPLICABILITY OF STRUCTURAL ANALYSIS TECHNIQUES IN DISTRIBUTED SYSTEMS

Karen Hamber, Graham Low and Greg Stephens

ABSTRACT

An object-oriented system is comprised of a number of objects that work together to achieve a common goal. In a distributed system, these objects are distributed around a computer network to improve the overall performance or reliability of the system. However, care must be taken in the placement of the components because inappropriate assignment onto processors or subsystems can substantially degrade the performance of the system.

The distribution process can be broken up into two stages, partitioning and allocation. Partitioning is the process of dividing the system into tasks; these tasks are then assigned to the system's various processors in the allocation stage. This paper describes a new approach to the distribution process and investigates the use of structural analysis as developed for social network analysis for making distribution process decisions.

B1.2: Software Processes, Methods and Models II
Monday, 25 August, 15:00 - 16:40

Room aphrodite

INSTANTIATING SOFTWARE PROCESSES, AN INDUSTRY APPROACH

Peter Killisperger, Georg Peters, Markus Stumptner and Thomas Stückl

ABSTRACT

Software processes are used for organizing work in software development projects. In order to use them for a number of projects they are described in a generic way. Since software development is highly individual, they have to be particularized (i.e. instantiated) in turn for becoming applicable in projects. A number of instantiation approaches have been proposed in recent years, but none has become a de facto standard in industry. Therefore instantiation in many software developing organizations is still manual and lacks standardization, making the procedure time-consuming and expensive. This paper describes a standardized and semi-automated instantiation approach developed at Siemens. The approach supports instantiation by ensuring that the resulting process is syntactically correct and consistent.

B1.2: SOFTWARE PROCESSES, METHODS AND MODELS

II

Monday, 25 August, 15:00 - 16:40

Room aphrodite

METHOD ENGINEERING: A FORMAL DESCRIPTION

Ali Sunyaev, Matthias Hansen and Helmut Krcmar

ABSTRACT

The development of information systems (IS) requires methods that recommend how to act during the development process. In some cases existing methods cannot cope with the requirements of the project situation at hand. Therefore new methods must be developed. Method Engineering (ME) attends to this application field. In this article, we provide a detailed overview of IS method engineering approaches in order to describe the concept of method engineering. Based on a literature review we derive a formal description of methods that can be used to describe methods in a basic way and transfer them to other fields of application. With the formal description of methods this article facilitates the process of understanding method engineering both for method user and its engineer.

B1.2: SOFTWARE PROCESSES, METHODS AND MODELS

II

Monday, 25 August, 15:00 - 16:40

Room aphrodite

REQUIREMENTS MODELING WITH AGENT PROGRAMMING

Aniruddha Dasgupta, Aneesh Krishna and Aditya K. Ghose

ABSTRACT

Agent-Oriented conceptual modeling notations are highly effective in representing requirements from an intentional stance and answering questions such as what goals exist, how key actors depend on each other and what alternatives must be considered. In this paper, we review an approach to executing i^* models by translating these into set of interacting agents implemented in the CASO language and suggest how we can perform reasoning with requirements modelled (both functional and non-functional) using i^* models. In this paper we particularly incorporate deliberation into the agent design. This allows us to benefit from the complementary representational capabilities of the two frameworks.

C1.2: PUBLIC INFORMATION SYSTEMS DEVELOPMENT II

Monday, 25 August, 15:00 - 16:40

Room Artemis

RESOLUTION OF COMPLEXITY IN ISD PROJECTS

Jill Owen and Henry Linger

ABSTRACT

ISD projects are characterised by complexity because they are situated in an unstructured environment where requirements are dynamic and the technical solution is potentially unknown. In this context existing tools, routines and methodologies may not be sufficient to resolve the complexity that emerges during the project life span. The resolution of complex issues requires access to a broad range of experience and knowledge and the ability to apply that knowledge to the specific requirements of the project. Knowledge processes, such as experimentation, sense-making and learning, amongst others, represent an innovative and flexible means to address the intrinsic complexity of ISD projects. In this paper we argue that knowledge processes must be explicitly incorporated into project management in order to resolve emergent issues and to integrate knowledge created by those practices into project management tools, techniques and methodologies. The paper presents a study of the rollout of an Enterprise Project Management Software project in an Australian Government Department to illustrate the role of knowledge processes to resolve complex issues and how these processes became incorporated into the emergent methodology used to manage the project.

C1.2: PUBLIC INFORMATION SYSTEMS DEVELOPMENT II

Monday, 25 August, 15:00 - 16:40

Room Artemis

REDUCING HEALTH COST: HEALTH INFORMATICS AND KNOWLEDGE MANAGEMENT AS A BUSINESS AND COMMUNICATION TOOL

Regina Gyampoh-Vidogah, Robert Moreton and David Sallah

ABSTRACT

Health informatics has the potential to improve the quality and provision of care while reducing the cost of health care delivery. However, health informatics is often falsely regarded as synonymous with information management (IM). This paper (i) provides a clear definition and characteristic benefits of health informatics and information management in the context of health care delivery, (ii) identifies and explains the difference between health informatics (HI) and managing knowledge (KM) in relation to informatics business strategy and (iii) elaborates the role of information communication technology (ICT) KM environment. This paper further examines how KM can be used to improve health service informatics costs identifies the factors that could affect its implementation and explains some of the reasons driving the development of electronic health record systems. This will assist in avoiding higher costs and errors, while promoting the continued industrialisation of KM delivery across health care communities.

C1.2: PUBLIC INFORMATION SYSTEMS DEVELOPMENT II

Monday, 25 August, 15:00 - 16:40

Room Artemis

MOBILE LOCATION BASED SERVICES FOR TRUSTED INFORMATION IN DISASTER MANAGEMENT

Lemonia Ragia, Michel Deriaz and Jean-Marc Seigneur

ABSTRACT

The goal of the present paper is to provide location based services for disaster management. The application involves services related to the safety of the people due to an unexpected event. The current prototype is implemented for a specific issue of disaster management which is road traffic control. The users can ask requests on cell phones or via Internet to the system and get an answer in a display or in textual form. The data are in a central database and every user can input data via virtual tags. The system is based on spatial messages which can be sent from any user to any other in a certain distance. In this way all the users and not a separate source provide the necessary information for a dangerous situation. To avoid any contamination problems we use trust security to check the input to the system and a trust engine model to provide information with a considerable reliability.

C1.2: PUBLIC INFORMATION SYSTEMS DEVELOPMENT II

Monday, 25 August, 15:00 - 16:40

Room Artemis

THE DEVELOPMENT OF MOBILE SERVICES - THE IMPACT OF ACTOR GROUPS IN THE STANDARDIZATION PROCESS

Endre Grøtnes and Steinar Kristoffersen

ABSTRACT

This paper presents the impact of actor groups in the development of new mobile services. We have taken a micro view and collected actual data from a standardization process to contrast the general macro perspective in use. We develop four metrics; strength, openness, depth and efficiency to measure the impact of groups. Our findings indicate that contrary to popular belief the manufacturers and operators still dominate the development process. They score highest on all aspects while the application vendors score low on almost all aspects. We also find that governments and content providers are almost absent from the standards development process for new mobile services.

D1.2: ENTERPRISE SYSTEMS DEVELOPMENT & ADOPTION I

Monday, 25 August, 15:00 - 16:40

Room Adonis

THE TOTAL PICTURE - A FRAMEWORK FOR CONTROL OF IT INVESTMENTS

Mats-Åke Hugoson, Björn Johansson and Ulf Seiggeroth

ABSTRACT

Evaluation of IT investments is a difficult and complicated issue. The paper pre-sents a framework for control of IT investments with the aim of providing deci-sion makers with a clear picture of individual IT investments as well as an aggre-gated level where all IT investments are combined into a total picture. The framework has been developed using an action-research approach. In a number of workshops intermediate results have been presented, and reactions from practitio-ners have influenced the development. Participants in the project come from dif-ferent EU countries all directly concerned with IT investments. The framework, that is being tested by authorities in different EU countries, is considered by par-ticipants to have the potential to improve the decision-making processes. The framework can also potentially be used in academic teaching in IT economics. The framework is based on a lifetime perspective in which established investment models can be applied. A main dimension is to consider interrelations between different IT investments through aggregation into a total picture, in order to control total spending on IT in organisations.

D1.2: ENTERPRISE SYSTEMS DEVELOPMENT & ADOPTION I

Monday, 25 August, 15:00 - 16:40

Room Adonis

DETERMINANTS OF OPEN SOURCE SOFTWARE ADOPTION—AN APPLICATION OF TOE FRAMEWORK

Tomasz Przechlewski and Krystyna Strzała

ABSTRACT

Open source software (OSS) is currently one of the most debated phenomena in both academia and the software industry. Several OSS systems have achieved significant market success but they are rather server-side applications, such as the Apache web server, MySQL database server, or other components of IT infrastructure. On the other hand penetration of OSS systems on the market of desktop applications is rather limited and it is virtually dominated by products of one software vendor, i.e. Microsoft. In this paper the benefits and barriers of OSS implementation in Poland are investigated. Based on the well known technology-organization-environment model of IT technology adoption a simple model was developed and evaluated empirically, based on the data from the survey of 178 enterprises and public institutions. Statistical analysis using Partial Least Squares (PLS) was performed. Of the four factors considered to determine adoption decisions (benefits, costs, environment and organization) it was found that only perceived benefits and environment are significant.

D1.2: ENTERPRISE SYSTEMS DEVELOPMENT & ADOPTION I

Monday, 25 August, 15:00 - 16:40

Room Adonis

AN APPROACH FOR IMPLEMENTATION OF PROJECT MANAGEMENT INFORMATION SYSTEMS

Solvita Bērziša and Jānis Grabis

ABSTRACT

Project management is governed by project management methodologies, standards and other regulatory requirements. This paper proposes an approach for implementing and configuring project management information systems according to requirements defined by these methodologies. The approach uses a project management specification framework to describe project management methodologies in a standardized manner. This specification is used to automatically configure the project management information system by applying appropriate transformation mechanisms. Development of the standardized framework is based on analysis of typical project management concepts and process and existing XML-based representations of project management. A demonstration example of project management information system's configuration is provided.

D1.2: ENTERPRISE SYSTEMS DEVELOPMENT & ADOPTION I

Monday, 25 August, 15:00 - 16:40

Room Adonis

HYBRIDIZATION OF ARCHITECTURAL STYLES FOR INTEGRATED ENTERPRISE INFORMATION SYSTEMS

Lina Bagusyte and Audrone Lupeikiene

ABSTRACT

Current enterprise systems engineering theory does not provide adequate support for the development of information systems on demand. To say more precisely, it is forming. This paper proposes the main architectural decisions that underlie the design of integrated enterprise information systems. The paper argues for the extending service-oriented architecture - for merging it with component-based paradigm at the design stage and using connectors of different architectural styles. The suitability of general-purpose language SysML for the modeling of integrated enterprise information systems architectures is described and arguments pros are presented.

A1.3: SYSTEMS IMPLEMENTATION

Monday, 25 August, 17:10 - 18:25

Room Salle Armonia

IMPROVING KNOWLEDGE MANAGEMENT IN THE HEALTH SERVICE: RE-ENGINEERING APPROACH TOWARDS SUCCESSFUL IMPLEMENTATION

Regina Gyampoh-Vidogah and Robert Moreton

ABSTRACT

Changes to business practices involve risks. There has always been an attempt to develop various concepts for successful restructuring of business processes to enable technology adoption. This is due to the fact that the success of any business depends as much on how it is structured, as well as its ability to adopt new technology. As a consequence, the great success stories of the global economy emanate from those organisations most capable of adopting new technology, which invariably includes Information Technology (IT). This paper examines how business process re-engineering (BPR) can be used to improve knowledge management (KM) in health services by (i) assessing the effectiveness and usefulness of BPR; (ii) present a critical review of approaches to BPR and; (iii) describe a framework for using BPR for KM, based on empirical research. The aim is to provide a sound strategic and tactical management approach for successful implementation of knowledge management systems (KMS) to improve health care service project administration.

A1.3: SYSTEMS IMPLEMENTATION

Monday, 25 August, 17:10 - 18:25

Room Salle Armonia

ON THE HUMAN, ORGANIZATIONAL AND TECHNICAL ASPECTS OF SOFTWARE DEVELOPMENT AND ANALYSIS

Robertas Damaševičius

ABSTRACT

Information systems are designed, constructed and used by people. Therefore, a software design process is not purely a technical task, but a complex psycho-socio-technical process embedded within organizational, cultural and social structures. These structures influence the behavior and products of the programmer work such as source code and documentation. This paper (1) discusses the non-technical (organizational, social, cultural and psychological) aspects of software development reflected in program source code, (2) presents a taxonomy of the social disciplines of computer science, and (3) discusses the socio-technical software analysis methods for discovering the human, organizational and technical aspects embedded within software development artifacts.

A1.3: SYSTEMS IMPLEMENTATION

Monday, 25 August, 17:10 - 18:25

Room Salle Armonia

THE SOLUTION SPACE ORGANISATION: LINKING INFORMATION SYSTEMS ARCHITECTURE AND REUSE

Salem Ben Dhaou Dakhli

ABSTRACT

Nowadays, improvement of software development productivity is among the main strategies proposed by academics and practitioners to deal with the chronic software crisis. As stressed by many authors during the last two decades, reuse of software artifacts provides efficient instruments to implement this strategy. Nevertheless, despite organizations high investments in defining software reuse plans, implementation of such plans has often failed. We think that the identification and description of the relationships between the areas of information systems architecture and software reuse are required to define a successful reuse approach which takes into account all the dimensions of information systems. In this paper, we propose a structural and architecture oriented description of the solution space associated with information systems development. We use such a description to build a reuse approach compliant with all the dimensions of information systems including the organizational, economic and human dimensions.

B1.3: INFORMATION SYSTEMS & APPLICATIONS

Monday, 25 August, 17:10 - 18:25

Room Aphrodite

APPLYING UTILITY FUNCTIONS TO ADAPTATION PLANNING FOR HOME AUTOMATION APPLICATIONS

Pyrros Bratskas, Nearchos Paspallis, Konstantinos
Kakousis and George A. Papadopoulos

ABSTRACT

A pervasive computing environment typically comprises multiple embedded devices that may interact together and with mobile users. These users are part of the environment, and they experience it through a variety of devices embedded in the environment. This perception involves technologies which may be heterogeneous, pervasive and dynamic. Due to the highly dynamic properties of such environments, the software systems running on them have to face problems such as user mobility, service failures, or resource and goal changes which may happen in an unpredictable manner. To cope with these problems, such systems must be autonomous and self-managed. In this paper we deal with a special kind of a ubiquitous environment, a smart home environment, and introduce a user-preference based model for adaptation planning. The model, which dynamically forms a set of configuration plans for resources, reasons automatically and autonomously, based on utility functions, on which plan is likely to best achieve the user's goals with respect to resource availability and user needs.

B1.3: INFORMATION SYSTEMS & APPLICATIONS

Monday, 25 August, 17:10 - 18:25

Room Aphrodite

MODELING THE CONTRIBUTION OF ENTERPRISE ARCHITECTURE PRACTICE TO THE ACHIEVEMENT OF BUSINESS GOALS

Marlies van Steenbergem and Sjaak Brinkkemper

ABSTRACT

Enterprise architecture is a young, but well-accepted discipline in information management. Establishing the effectiveness of an enterprise architecture practice, however, appears difficult. In this paper we introduce an Architecture Effectiveness Model (AEM) to express how enterprise architecture practices are meant to contribute to the business goals of an organization. We developed an AEM for three different organizations. These three instances show that the concept of the AEM is applicable in a variety of organizations. It also shows that the objectives of enterprise architecture are not to be restricted to financial goals. The AEM can be used by organizations to set coherent priorities for their architectural practices and to define KPIs for measuring the effectiveness of these practices.

B1.3: INFORMATION SYSTEMS & APPLICATIONS

Monday, 25 August, 17:10 - 18:25

Room Aphrodite

A METHODOLOGICAL FRAMEWORK FOR ENTERPRISE INFORMATION SYSTEM REQUIREMENTS DERIVATION

Albertas Caplinskas and Lina Paškevičiūtė

ABSTRACT

Current information systems (IS) are enterprise-wide systems supporting strategic goals of the enterprise and meeting its operational business needs. They are supported by information and communication technologies (ICT) and other software that should be fully integrated. To develop software responding real business needs, we need requirements engineering (RE) methodology that ensures the alignment of requirements for all levels of enterprise system. The main contribution of this paper is a requirement-oriented methodological framework allowing to transform business requirements level by level into software ones. The structure of the proposed framework reflects the structure of Zachman's framework. However it has other intention and is purposed to support not the design but the RE issues.

C1.3: PUBLIC INFORMATION SYSTEMS DEVELOPMENT

III

Monday, 25 August, 17:10 - 18:25

Room Artemis

INCORPORATING SPATIAL DATA INTO ENTERPRISE APPLICATIONS

Pierre Akiki and Hoda Maalouf

ABSTRACT

The main goal of this paper is to discuss the usage of spatial data within enterprise as well as smaller line-of-business applications. In particular, this paper proposes new methodologies for storing and manipulating vague spatial data and provides methods for visualizing both crisp and vague spatial data. It also provides a comparison between different types of spatial data, mainly 2D crisp and vague spatial data, and their respective fields of application. Additionally, it compares existing commercial relational database management systems, which are the most widely used with enterprise applications, and discusses their deficiencies in terms of spatial data support. A new spatial extension package called Spatial Extensions (SPEX) is provided in this paper and is tested on a software prototype.

C1.3: PUBLIC INFORMATION SYSTEMS DEVELOPMENT III

Monday, 25 August, 17:10 - 18:25

Room Artemis

WEB TOOLS FOR GEO-SPATIAL DATA MANAGEMENT

Petr Horak, Karel Charvat and Martin Vlk

ABSTRACT

The systems that are able to work with data from remote sources are becoming more and more important. Management and the usage of data stored on remote sources (external servers) without the necessity of data replication give us the chance to try to solve some of the problems that requirements for fast and easy data usage present. This solution is based on the principles of remote data retrieval through data management systems. The main objective of the paper is a present unique web solution for spatial data management in a form of integration using different kinds of spatial web services together with internal data sources (files, databases). A very important point is also the collaboration of this tool with other web tools in the same portal solution. Map Project Manager and the Uniform Resource Management system are the programmes able to provide geo-data integration and SW tools collaboration within a web environment

C1.3: PUBLIC INFORMATION SYSTEMS DEVELOPMENT III

Monday, 25 August, 17:10 - 18:25

Room Artemis

COMPUTER LITERACY OF POPULATION 50+ - A CASE FROM SLOVENIA

Barbara Vogrinec

ABSTRACT

The contribution refers to two projects of computer/ICT literacy of older adults in Slovenia that are also linked one to another. The first is the slovenian national project »Computer literacy of population« - that was actually the first project of this kind in Slovenia, and that brought a new, innovative, i.e. the so-called brain learning based curriculum. The second project is the european international project »Specific experiences in collaborative work using ICT - Photographic internet gallery project« - that brought a curriculum developed on the basis of the one of the first project.

D1.3: ENTERPRISE SYSTEMS DEVELOPMENT & ADOPTION II

Monday, 25 August, 17:10 - 18:25

Room Adonis

DESIGN PATTERNS APPLICATION IN THE ERP SYSTEMS IMPROVEMENTS

Bojan Jovičić and Siniša Vlajić

ABSTRACT

Design patterns and have long been present in software engineering. The same is true for ERP systems in business software. Is it possible that ERP systems don't have a good maintenance score? We have found out that there is room for maintenance improvement and that it is possible to improve ERP systems using design patterns.

We have conducted comparative analysis of ease of maintenance of the ERP systems. The results show that the average score for our questions is 64%, with most answers for ERP systems like SAP, Oracle EBS, Dynamics AX. We found that 59% of ERP system developer users are not familiar with design patterns.

Based on this research, we have chosen Dynamics AX as the ERP system for examination of design patterns improvement possibilities. We used software metrics to measure improvement possibility. We found that we could increase the Conditional Complexity score 17-fold by introducing design patterns.

D1.3: ENTERPRISE SYSTEMS DEVELOPMENT & ADOPTION II

Monday, 25 August, 17:10 - 18:25

Room Adonis

FROM STANDARD APPLICATION PACKAGES TO ENTERPRISE SYSTEMS - A MATTER OF OPPORTUNITIES

Anders Nilsson

ABSTRACT

The purpose of this paper is to make clearer the meaning behind the concepts of “standard application package” and “enterprise system”. There is today a confusion in our IS field about the connection between the two concepts and how they have appeared historically? The main idea is to contrast them against each other and in this sense to study which opportunities organizations and companies can achieve with these two different IT environments. This transparency will give business and IT people a better understanding for managing investments in information systems more professionally. The research approach is characterized as “consumable research” [13] based on theoretical knowledge integrated with business practice from the IS field. Our background is through working with practical methods for customer involvement (purchasing, implementation, maintenance) as well as performing vendor studies of the software application industry.

A2.1: HUMAN COMPUTER INTERACTION IN ISD

Tuesday, 26 August, 09:00 - 10:40

Room Salle Armonia

DESIGNING COGNITION-ADAPTIVE HUMAN COMPUTER INTERFACE FOR MISSION-CRITICAL SYSTEMS

Yu Shi, Eric Choi, Ronnie Taib and Fang Chen

ABSTRACT

With applications of new information and communication technologies, computer-based information systems are becoming more and more sophisticated and complex. This is particularly true in large incident and emergency management systems. The increasing complexity creates significant challenges to the design of user interfaces (UIs). One of the fundamental goals of UI design is to provide users with intuitive and effective interaction channels to/from the computer system so that tasks are completed more efficiently and user's cognitive work load or stress is minimized. To achieve this goal, UI and information system designers should understand human cognitive process and its implications, and incorporate this knowledge into task design and interface design. In this paper we present the design of CAMI, a Cognition-Adaptive Multimodal Interface, for a large metropolitan traffic incident and emergency management system. The novelty of our design resides in combining complementary concepts and tools from Cognitive System Engineering and from Cognitive Load Theory. Also presented in the paper is our work on several key components of CAMI such as real-time cognitive load analysis, and multimodal interfaces.

A2.1: HUMAN COMPUTER INTERACTION IN ISD

Tuesday, 26 August, 09:00 - 10:40

Room Salle Armonia

CONCEPTUAL WEB USERS' ACTIONS PREDICTION FOR ONTOLOGY-BASED BROWSING RECOMMENDATIONS

Tarmo Robal and Ahto Kalja

ABSTRACT

The Internet consists of thousands of web sites with different kinds of structures. However, users are browsing the web according to their informational expectations towards the website searched, having an implicit conceptual model of the domain in their mind. Nevertheless, people tend to repeat themselves and have partially shared conceptual views while surfing the web, finding some areas of websites more interesting than others. Herein, we take advantage of the latter and provide a model and a study on predicting users' actions based on the web ontology concepts and their relations.

A2.1: HUMAN COMPUTER INTERACTION IN ISD

Tuesday, 26 August, 09:00 - 10:40

Room Salle Armonia

A PROPOSED EXTENSION OF THE CODAM MODEL

Kleanthis Neokleous, Marios N. Avraamides, Andreas A. Ioannides, Costas K. Neocleous and Christos N. Schizas

ABSTRACT

A new computational model of visual attention is proposed on a theoretical basis, based on the CODAM model (Taylor, 2002, 2003, 2006). Also a more general mechanism is proposed for an attention model of two or more senses working concurrently. The additional mechanism is mainly based on the interaction of the attention mechanism in the brain with working memory.

A2.1: HUMAN COMPUTER INTERACTION IN ISD

Tuesday, 26 August, 09:00 - 10:40

Room Salle Armonia

WEB PORTAL DESIGN: EMPLOYMENT OF A RANGE OF ASSESSMENT METHODS

Andrina Granić, Ivica Mitrović and Nikola Marangunić

ABSTRACT

The paper reports on the experience regarding usability evaluation of web portals. The study is placed in Croatian web sphere where the most visited portals are the broad-reach web ones. Consequently, such a research may be of interest to the communities with comparable user population and market characteristics. The evaluation methodology advocates a number of usability test methods along with specialists' inspection. The results of the first study indicated that the chosen research instruments, measures and methods for usability testing were consistent. Conversely, the results of the second study, which employs the guideline-based inspection, did not agree with those obtained through the end-user testing. Although showing significant potential, the methodology needs to be improved.

B2.1: HUMAN, SOCIAL & ORGANISATIONAL ISSUES IN ISD

Tuesday, 26 August, 09:00 - 10:40

Room Aphrodite

ORGANIZATIONAL LEARNING LITERATURE VISITED - FRESH LENSES TO STUDY PRACTICES IN ISD ORGANIZATIONS?

Pasi Juvonen and Päivi Ovaska

ABSTRACT

This paper presents results of a study, in which the literature related to organizational learning (OL) and learning organization (LO) also in disciplines outside information systems (IS) was studied. The results of the literature review were classified based on the proposed framework. Based on the framework, organizations tend to learn from direct experience, from the experience of others or by developing conceptual frameworks or paradigms for interpreting that experience. The paper also represents some expressions from empirical data related to the subjects. The results suggest that studies made in other disciplines might provide the IS community some fresh lenses and insights to study OL and LO. The results also suggest that there exists a difference between canonical practices and non-canonical practices in the ISD organizations studied. Implications of these differences and the need for more empirical research related to the OL and LO are also discussed in the paper.

B2.1: HUMAN, SOCIAL & ORGANISATIONAL ISSUES IN ISD

Tuesday, 26 August, 09:00 - 10:40

Room Aphrodite

A LANGUAGE FOR MODELLING TRUST IN INFORMATION SYSTEMS

Kamaljit Kaur Bimrah, Haralambos Mouratidis and David
Preston

ABSTRACT

It has been argued in recent research that trust is an important issue for modern information systems and that it should be considered from the early stages of the development process. Nevertheless, little effort has been put into understanding how trust can be modelled and reasoned when developing information systems. Equally little effort has been put into developing modelling languages to support trust modelling. Our motivation comes from this situation and we aim to develop a trust-aware modelling framework that will enable information system developers to consider trust and its related concepts collectively during the development of information systems. In this paper we re-enforce the argument about the need to consider trust during information systems development and we describe a modelling language that support trust modelling. We employ a case study from a trust critical domain to demonstrate the application of our language.

B2.1: HUMAN, SOCIAL & ORGANISATIONAL ISSUES IN ISD

Tuesday, 26 August, 09:00 - 10:40

Room Aphrodite

ORGANIZATIONAL CULTURE AND ISD PRACTICES: COMPARATIVE LITERATURE REVIEW

Päivi Ovaska and Pasi Juvonen

ABSTRACT

This paper reports results from a study that aims to analyze and compare the literature related to custom IS, packaged and open source software organizational cultures and their systems development practices. The comparative analysis is performed using a framework for organizational culture as lenses to the literature. Our study suggests that the beliefs and values of these three communities of practice differ remarkably and make their organizational culture and systems development practices different. The most important differences were found in business milieu, ISD team efforts, ISD approaches and products and quality. Based on the study we can question the widely held wisdom of methods, techniques and tools in systems development and managing its efforts. Our study has several implications for research and practice, which are discussed in this paper.

B2.1: Human, Social & Organisational Issues in ISD
Tuesday, 26 August, 09:00 - 10:40

Room Aphrodite

THE MORNING AFTER: WHAT HAPPENS WHEN OUTSOURCING RELATIONSHIPS END?

Hamish T. Barney, Graham C. Low and Aybüke Aurum

ABSTRACT

Many firms are reevaluating their initial outsourcing decisions for various reasons, including: whether the goals set for the outsourcing effort were achieved, changes in the business environment, internal changes and/or mergers. An increasing number of outsourcing deals are being terminated and backsourced or re-outsourced. According to a recent international industry survey 49% of companies engaged in outsourcing have terminated outsourcing contracts prematurely. Research has not reflected this trend with few studies concentrating on what firms do after they terminate or fail to extend an outsourcing contract. It is argued that there is a need to study this important and increasingly frequent decision. The main contribution of this paper is to present an outsourcing decision model and demonstrate its applicability with respect to a recent sourcing decision.

C2.1: TEACHING ISD IN EDUCATIONAL INSTITUTIONS
Tuesday, 26 August, 09:00 - 10:40

Room Artemis

EXPLORING THE ROLE OF METHOD RATIONALE IN THE
CONTEXT OF TEACHING INFORMATION SYSTEMS
DEVELOPMENT METHODS

Kai Wistrand, Fredrik Karlsson and Pär J. Ågerfalk

ABSTRACT

Research has shown that traditional education in systems development has its limitations. This paper draws on recent research on a component based view of systems development methods. The aim is to explore the impact of explicating method rationale in method teaching on students' ability to reason about the suitability of a particular method to various development settings. A qualitative research approach was adopted, which used two different approaches to teaching a particular method to two groups of students. The students' ability to reason about the method in modelling seminars and follow-up interviews were analysed. The results indicate that explicating method rationale in teaching methods may have a positive impact on students' ability to reason about methods and method tailoring.

C2.1: TEACHING ISD IN EDUCATIONAL INSTITUTIONS

Tuesday, 26 August, 09:00 - 10:40

Room Artemis

TEACHING MEDIUM SIZED ERP SYSTEMS - A PROBLEM-BASED LEARNING APPROACH

Axel Winkelmann and Martin Matzner

ABSTRACT

In order to increase the diversity in IS education, we discuss an approach for teaching medium sized ERP systems in master courses. Many of today's IS curricula are biased towards large ERP packages. Nevertheless, these ERP systems are only a part of the ERP market. Hence, this paper describes a course outline for a course on medium sized ERP systems. Students had to study, analyze and compare five different ERP systems during a semester. The paper introduces a procedure model and scenario for setting up similar courses at other universities. Furthermore, it describes some of the students' outcomes and evaluates the contribution of the course with regard to a practical but also academic IS education.

C2.1: Teaching ISD in educational institutions

Tuesday, 26 August, 09:00 - 10:40

Room Artemis

EARLY ORIENTATION TOWARDS FUTURE PROFESSION:
A CASE STUDY OF INTRODUCTION INTO INFORMATION
SYSTEMS DEVELOPMENT FOR THE FIRST YEAR
STUDENTS

Alla Anohina, Janis Grundspenkis and Evita Nikitenko

ABSTRACT

The paper describes an experience of the Institute of Applied Computer Systems of Riga Technical University in the implementation of a business game related to the information system development project within the course "Introduction to study area" for the first year bachelor level students. The conception of the business game and its implementation scenario, as well as results of processing of students' questionnaires evaluating organization of the game and changes in students' knowledge about the information system development are discussed.

C2.1: TEACHING ISD IN EDUCATIONAL INSTITUTIONS

Tuesday, 26 August, 09:00 - 10:40

Room Artemis

STATISTICAL ANALYSIS FOR SUPPORTING INTER- INSTITUTIONAL KNOWLEDGE FLOWS IN THE CONTEXT OF EDUCATIONAL SYSTEM

Renate Strazdina, Julija Stecjuka, Ilze Andersone and
Marite Kirikova

ABSTRACT

Inter-institutional networks become more and more important for today's organizations. Despite mostly business-oriented organizations are recognizing the possibilities that come with these networks, academic and educational systems are a typical example of inter-institutional network and viewing these institutions as elements of a single network would yield positive results for all the parties. However there is almost no research on the educational system as an inter-institutional network, especially in information system development education. The purpose of this study is to consider the education system as an inter-institutional network and to define the feedbacks existing within it in order to improve the network's overall performance. Besides this the purpose is to find the data sets required to feedbacks analysis and appropriate methods for data analysis.

A2.2: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS

I

Tuesday, 26 August, 11:10 - 12:50

Room Salle Armonia

SPECIFICATION AND VERIFICATION OF AN AGENT-BASED AUCTION SERVICE

Amelia Badica and Costin Badica

ABSTRACT

In this paper we propose a rigorous modelling and analysis of complex interactions occurring between providers and users of an agent-based English auction service. In our model several auctions initiated by different seller agents are carried out in parallel. Buyer agents can dynamically decide to register for participation in auctions that match their goals. Our approach is based on conceptualising these interactions by formal specification using FSP process algebra and formal verification using FLTL temporal logic.

A2.2: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS

I

Tuesday, 26 August, 11:10 - 12:50

Room Salle Armonia

MISS: A METAMODEL OF INFORMATION SYSTEM SERVICE

Nicolas Arni-Bloch and Jolita Ralyté

ABSTRACT

Integration of different components that compose enterprise information systems (IS) represents a big challenge in the IS development. However, this integration is indispensable in order to avoid IS fragmentation and redundancy between different IS applications. In this work we apply service-oriented development principles to information systems. We define the concept of Information System Service (ISS) and propose a Metamodel of ISS (MISS). We claim that it is not sufficient to consider an ISS as a black box and it is essential to include in the ISS specification the information about service structure, processes and rules shared with other services and thus to make the service transparent. Therefore we define the MISS using three informational spaces (static, dynamic and rule).

A2.2: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS

I

Tuesday, 26 August, 11:10 - 12:50

Room Salle Armonia

A NEW METHOD FOR CONCEPTUAL MODELLING OF INFORMATION SYSTEMS

Remigijus Gustas and Prima Gustiene

ABSTRACT

Service architecture is not necessarily bound to the technical aspects of information system development. It can be defined by using conceptual models that are independent of any implementation technology. Unfortunately, the conventional information system analysis and design methods cover just a part of required modelling notations for engineering of service architectures. They do not provide effective support to maintain semantic integrity between business processes and data. Service-orientation is a paradigm that can be applied for conceptual modelling of information systems. The concept of service is rather well understood in different domains. It can be applied equally well for conceptualisation of organizational and technical information system components. This paper concentrates on analysis of the differences between service-oriented modelling and object-oriented modelling. Service-oriented method is used for semantic integration of information system static and dynamic aspects.

A2.2: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS I

Tuesday, 26 August, 11:10 - 12:50

Room Salle Armonia

MAPPING SOA ARTEFACTS ONTO AN ENTERPRISE REFERENCE ARCHITECTURE FRAMEWORK

Ovidiu Noran

ABSTRACT

Currently, there is still no common agreement on the Service Oriented Architecture (SOA) definition, or the types and meaning of the artefacts involved in the creation and maintenance of an SOA. Furthermore, the SOA image shift from an infrastructure solution to a business-wide change project may have promoted a perception that SOA is a parallel initiative, a competitor and perhaps a successor of Enterprise Architecture (EA). This paper attempts to map several typical SOA artefacts onto an enterprise reference framework commonly used in EA. This is done in order to show that the EA framework can express and structure most of the SOA artefacts and therefore, a framework for SOA could in fact be derived from an EA framework with the ensuing SOA-EA integration benefits.

B2.2: WEB AND MOBILE ISD

Tuesday, 26 August, 11:10 - 12:50

Room Aphrodite

A HYBRID PEER-TO-PEER SOLUTION FOR CONTEXT DISTRIBUTION IN MOBILE AND UBIQUITOUS ENVIRONMENTS

Xiaoming Hu, Yun Ding, Nearchos Paspallis, Pyrros Bratskas, George A. Papadopoulos, Yves Vanrompay, Manuele Kirsch Pinheiro and Yolande Berbers

ABSTRACT

With the proliferation of mobile devices such as PDAs and smart-phones, users get accustomed to using them in their daily life. This raises the expectations for user-customized and environment-aware services. However, mobile context-aware systems inherently feature characteristics of distribution and heterogeneity which pose great challenges to their developers. In this paper, we focus on context distribution in mobile and ubiquitous computing environments. After describing the requirements in such environments, we propose a hybrid peer-to-peer based context distribution approach, which is built on top of the JXTA framework, a standard for peer-to-peer systems. We categorize context-aware system entities into three types of peers according to their device capabilities and their roles in context distribution. The peers are able to dynamically discover each other along with their offered services, form groups, and communicate with each other. The proposed approach is evaluated against the derived requirements and illustrated through a motivating scenario

B2.2: WEB AND MOBILE ISD

Tuesday, 26 August, 11:10 - 12:50

Room Aphrodite

CURRENT TRENDS IN TESTING XMLMS

Irena Mlynkova

ABSTRACT

Since XML technologies have become a standard for data representation, a huge amount of XMLMSs have emerged as well. Consequently, it is necessary to be able to experimentally test and compare their versatility, behaviour and efficiency. In this paper we provide an overview of existing approaches to testing XMLMSs and we discuss respective consequences and recommendations.

B2.2: WEB AND MOBILE ISD
Tuesday, 26 August, 11:10 - 12:50

Room Aphrodite

SERVICE-ORIENTED SOFTWARE DEVELOPMENT VALUE CHAIN AND PROCESS

Yuan Rao, Shumin Lu and ZhiXiong Yang

ABSTRACT

SOA provided a new method to optimized software development process with value chain. A formalized definition and a meta-model about value chain were introduced for analysis the difference between traditional software development process and service-oriented reusable software process. Furthermore, some metrics in software development value chain was proposed and compared in value matrix. The results show that the service-oriented reusable development process has more value improvement than traditional software process, which collaborate all the resources and roles in software process together under an open environment.

B2.2: WEB AND MOBILE ISD

Tuesday, 26 August, 11:10 - 12:50

Room Aphrodite

A CONTENT MARKUP LANGUAGE FOR DATA SERVICES

Noviello C., Acampa P. **and** Mango Furnari M.

ABSTRACT

Network content delivery and documents sharing is possible using a variety of technologies, such as distributed databases, service oriented applications, and so forth. The development of such systems is a complex job, because document life cycle involves a strong cooperation between domain experts and software developers. Furthermore, the emerging software methodologies, such as the Service Oriented Architecture and knowledge organization (e.g. semantic web) did not really solve the problems faced in a real distributed and cooperating settlement. In this paper the authors efforts to design and deploy a distribute and cooperating Content Management System are described. The main features of the system are a user configurable document type definition and a management middleware layer. It allows CMS developers to archestrate the composition of specialized software components around the structure of a document. In this paper are also reported some of the experiences gained on deploying the developed framework in a cultural heritage dissemination settlement.

C2.2: ISD EDUCATION IN SOCIETY TODAY

Tuesday, 26 August, 11:10 - 12:50

Room Artemis

IS DEGREES - SOCIOTECHNICAL OR TECHNOSOCIAL?

Jenny Coady and Rob Pooley

ABSTRACT

It is widely agreed that Information Systems is a field requiring knowledge and competence, spanning business processes, information infrastructure and technical processes, uniting these to deliver information needs of organisations. In designing curricula which will educate new IS professionals appropriately, we are faced with a daunting range and volume of material. Despite attempts to structure and scope this, the problems remain and become worse with time. We revisit such a degree course, noting that many existing courses are based in Management and Business Schools. We, however, are based in a Computer Science department. We have experience of convincing technologically focused students that understanding organisational and social issues is crucial to successful software engineering and students with an interest in organisations and people that they need technical understanding of information systems. We review some key proposals for IS model curricula and conclude with a proposal suited to the students we recruit.

C2.2: ISD EDUCATION IN SOCIETY TODAY

Tuesday, 26 August, 11:10 - 12:50

Room Artemis

FOUR LEVELS OF MORAL CONFLICT IN ISD

Tero Vartiainen

ABSTRACT

This study introduces a literature-based classification of moral conflicts in information systems development (ISD). The classification describes what moral conflicts an IS professional confronts in ISD as a whole, and includes intentional, functional, managerial, and societal levels. The internal structure of moral conflicts is exemplified by means of a philosophical and a business-ethics theory. The limitations of the study are considered and practical implications for the teaching of computer ethics are discussed.

C2.2: ISD EDUCATION IN SOCIETY TODAY

Tuesday, 26 August, 11:10 - 12:50

Room Artemis

“LEARNING TO RESEARCH” IN A VIRTUAL LEARNING ENVIRONMENT: A CASE STUDY ON THE EFFECTIVENESS OF A SOCIO-CONSTRUCTIVIST LEARNING DESIGN

López-Alonso, C; Fernández-Pampillón, A; de-Miguel, E.; and Pita, G.

ABSTRACT

Learning is the basis for research and lifelong training. The implementation of virtual environments for developing this competency requires the use of effective learning models. In this study we present an experiment in positive learning from the virtual campus of the Complutense University of Madrid (UCM). In order to carry it out we have used E-Ling, an e-learning environment that has been developed with an innovative didactic design based on a socio-constructivist learning approach. E-Ling has been used since 2006 to train future teachers and researchers in “learning to research”. Some of the result of this experiment have been statistically analysed in order to compare them with other learning models. From the results obtained results we have concluded that E-Ling is a more productive proposal for developing competences in learning to research.

A2.3: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS II

Tuesday, 26 August, 15:00 - 16:15

Room Salle Armonia

USING ESB AND BPEL FOR EVOLVING HEALTHCARE SYSTEMS TOWARDS PERVASIVE, GRID-ENABLED SOA

V. Koufi, F. Malamateniou, D. Papakonstantinou and G. Vassilacopoulos

ABSTRACT

Healthcare organizations often face the challenge of integrating diverse and geographically disparate information technology systems to respond to changing requirements and to exploit the capabilities of modern technologies. Hence, systems evolution, through modification and extension of the existing information technology infrastructure, becomes a necessity. Moreover, the availability of these systems at the point of care when needed is a vital issue for the quality of healthcare provided to patients. This paper takes a process perspective of healthcare delivery within and across organizational boundaries and presents a disciplined approach for evolving healthcare systems towards a pervasive, grid-enabled service-oriented architecture using the enterprise system bus middleware technology for resolving integration issues, the business process execution language for supporting collaboration requirements and Grid middleware technology for both addressing common SOA scalability requirements and complementing existing system functionality. In such an environment appropriate security mechanisms must ensure authorized access to integrated healthcare services and data. To this end, a security framework addressing security aspects such as authorization and access control is also presented.

A2.3: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS II

Tuesday, 26 August, 15:00 - 16:15

Room Salle Armonia

COMPARING ARCHITECTURAL STYLES FOR SERVICE-ORIENTED ARCHITECTURES - A REST VS. SOAP CASE STUDY

Jörg Becker, Martin Matzner and Oliver Müller

ABSTRACT

Two architectural styles are currently heavily discussed regarding the design of Service-oriented Architectures (SOA). Within this paper we have compared those two alternative styles - the SOAP-style with procedural designs similar to remote procedure calls and the REST-style with loosely coupled services similar to resources of the World Wide Web. We introduce the case of a business network consisting of manufacturers and service providers of the electronics industry for deriving a set of requirements towards a specific SOA implementation. For each architectural style we present a concrete SOA design and evaluate it against the defined set of requirements.

A2.3: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS II

Tuesday, 26 August, 15:00 - 16:15

Room Salle Armonia

A METHOD FOR TRANSFORMING EXISTING WEB SERVICE DESCRIPTIONS INTO AN ENHANCED SEMANTIC WEB SERVICE FRAMEWORK

Xiaofeng Du, William Song, and Malcolm Munro

ABSTRACT

Web Services as a new distributed system technology has been widely adopted by industries in the areas, such as enterprise application integration (EAI), business process management (BPM), and virtual organization (VO). However, lack of semantics in the current Web Service standards has been a major barrier in service discovery and composition. In this paper, we propose an enhanced Context based Semantic Service Description Framework (CbSSDF+) that tackles the problem and improves the flexibility of service discovery and the correctness of generated composite services. We also provide an agile transformation method to demonstrate how the various formats of Web Service descriptions on the Web can be managed and renovated step by step into CbSSDF+ based service description without large amount of engineering work. At the end of the paper, we evaluate the applicability of the transformation method and the effectiveness of CbSSDF+ through a series of experiments.

B2.3: SPECIAL ISSUES IN ISD

Tuesday, 26 August, 15:00 - 16:15

Room Aphrodite

CONTRACT NEGOTIATIONS SUPPORTED THROUGH RISK ANALYSIS

Sérgio A. Rodrigues, Marco A. Vaz and Jano M. Souza

ABSTRACT

Many clients often view software as a commodity; then, it is critical that IT sellers know how to create value into their offering to differentiate their service from all the others. Clients sometimes refuse to contract software development due to lack of technical understanding or simply because they are afraid of IT contractual commitments. The IT negotiators who recognize the importance of this issue and the reason why it is a problem will be able to work to reach the commercial terms they want. Therefore, this article aims to stimulate IT professionals to improve their negotiation skills and presents a computational tool to support managers to get the best out of software negotiations through the identification of contract risks.

B2.3: SPECIAL ISSUES IN ISD

Tuesday, 26 August, 15:00 - 16:15

Room Aphrodite

METADATA TO SUPPORT DATA WAREHOUSE EVOLUTION

Darja Solodovnikova

ABSTRACT

The focus of this paper is metadata necessary to support data warehouse evolution. We present the data warehouse framework that is able to track evolution process and adapt data warehouse schemata and data extraction, transformation and loading (ETL) processes. We discuss the significant part of the framework, the metadata repository that stores information about the data warehouse logical and physical schemata and their versions. We propose the physical implementation of multiversion data warehouse in a relational DBMS. For each modification of a data warehouse schema, we outline the changes that need to be made to the repository metadata and in the database.

B2.3: SPECIAL ISSUES IN ISD

Tuesday, 26 August, 15:00 - 16:15

Room Aphrodite

MEASURING COMMUNICATION HETEROGENEITY BETWEEN MULTIPLE WEB-BASED AGENTS

Maricela Bravo and Martha Coronel

ABSTRACT

Communication between multiple agents is essential to achieve cooperation, negotiation and take decisions for mutual benefit. Nowadays there is a growing interest in automating communication processes between different agents in dynamic Web-based environments. However, when agents are deployed and integrated in open and dynamic environments, detailed syntax and semantics of their particular language implementations differ, causing the problem of communication heterogeneity. Therefore, it is necessary to measure heterogeneity among all participating agents and the number of required translations when heterogeneous agents are involved in communications. In this paper we present a set of measures with the objective to evaluate the minimal computational requirements before implementing a translation approach. Our measures are based on set theory, which has proved to be a good representation formalism in other areas. We showed how to use the set of measures for two highly heterogeneous set of agents.

C2.3: E-LEARNING

Tuesday, 26 August, 15:00 - 16:15

Room Artemis

EMBEDDING KNOWLEDGE MANAGEMENT INTO BUSINESS LOGIC OF E-LEARNING PLATFORM FOR OBTAINING ADAPTIVITY

Dumitru Dan Burdescu, Marian Cristian Mihaescu and
Bogdan Logofatu

ABSTRACT

Obtaining adaptivity is one of the main concerns in current e-Learning development. This paper proposes a methodology for obtaining adaptivity by embedding Knowledge Management into the business logic of the e-Learning platform. Naive Bayes Classifier is used as machine learning algorithm for obtaining the resources that need to be further accessed by learners. The analysis is accomplished on a discipline that is well structured according to a Concept Map.

C2.3: E-LEARNING

Tuesday, 26 August, 15:00 - 16:15

Room Artemis

SPECIFICATION OF LEARNING CONTENT USING FEATURE DIAGRAMS

Robertas Damaševičius

ABSTRACT

The main idea of a Learning Object (LO) is to break educational content down into small chunks that can be reused in various learning environments. When reused, such small chunks of educational content are combined in various ways leading to a great variability of the learning content. We propose using Feature Diagrams (FDs) for the specification of learning content at different layers of abstraction starting from the organization of teaching material in a lecture down to the specification and demonstration of particular software/hardware components. FDs can be used by: 1) designers, teachers and learners for graphical representation of domain knowledge in LOs; 2) programmers to specify and express variability-commonality relationships of LOs at a higher abstraction level to allow the development and implementation of generative LOs; 3) researchers as a vehicle for analysis and better understanding of the e-Learning domain itself.

C2.3: E-LEARNING

Tuesday, 26 August, 15:00 - 16:15

Room Artemis

REFACTORING OF LEARNING OBJECTS FOR MOBILE LEARNING

Robertas Damaševičius

ABSTRACT

We analyze the problem of refactoring of Learning Objects (LO) for m-Learning. We apply methods adopted from software engineering domain for redesigning the structure and user interface of a LO and aim both at increasing usability and accessibility of the learning material. We evaluate usability of a LO from the user interface point of view, following the user interface development principles that are common both for Human-Computer Interaction (HCI) and e-Learning domains. We propose the LO refactoring framework based on user interface usability principles. In a case study, we demonstrate the refactoring of an array sorting LO for a mobile device.

A2.4: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS III

Tuesday, 26 August, 16:45 - 18:25

Room Salle Armonia

ALIGNING SERVICE REQUIREMENTS WITH BUSINESS STRATEGY

Luthria, H., Aurum, A., Low, G.C., Rabhi and F.A

ABSTRACT

Value based requirements engineering plays a critical role in software development because it seeks to align requirements with the organizational strategy that drives business value. This paper discusses the value proposition of service-oriented architectures and proposes a value-based decision mechanism for requirements engineering for service oriented systems. In doing so, it lays the groundwork for future research into the important but relatively unexplored area of service oriented requirements engineering.

A2.4: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS III

Tuesday, 26 August, 16:45 - 18:25

Room Salle Armonia

AN EXTENSIBLE ADL FOR SERVICE ORIENTED ARCHITECTURES

R. Bashroush and I. Spence

ABSTRACT

While Architecture Description Languages (ADLs) have gained wide acceptance in the research community as a means of describing system designs, the uptake within the Service Oriented Architecture (SOA) domain has been slower than might have been expected. A contributory cause may be the perceived lack of flexibility and, as yet, the limited tool support. This paper describes ALI, a new ADL that aims to address these deficiencies by providing a rich, extensible and flexible syntax for describing component and service interface types and the use of patterns and meta-information. These enhanced capabilities are intended to encourage more widespread ADL usage.

A2.4: SERVICE-ORIENTED ANALYSIS AND DESIGN OF IS III

Tuesday, 26 August, 16:45 - 18:25

Room Salle Armonia

AN EXAMINATION ON SERVICE SCIENCE: A VIEW FROM E-SERVICE

William Song and Deren Chen

ABSTRACT

Since it was proposed in 2003, service science has become a keen topic in the communities of web services, semantic web, and e-businesses. According to a recent proposal by IBM, it covers service science, service management, and service engineering (SSME). Although there have been many discussions and reports on this topic, it is still quite unclear these debates would contribute to the establishment of service science as a research subject. This paper intends to address this issue by comparing related studies on service science or SSME, discussing interrelationships among the components of Service Science (SSME), outlining its evolutionary process in terms of the enterprise modeling approach, and illustrating a number of possible research sub-topics.

B2.4: PHILOSOPHICAL, THEORITICAL AND LEGAL ISSUES IN ISD

Tuesday, 26 August, 16:45 - 18:25

Room Aphrodite

INFORMATION TECHNOLOGY PROJECTS - LEAVING THE 'MAGIC' TO THE 'WIZARDS'

Peter Bednar and Christine Welch

ABSTRACT

In this paper, we explore the significant challenges relating to investment in IT in business. Information technology does not in itself deliver business value. We highlight the complexities that are often ignored in management of IT projects. If the management system in an organization is ineffective, then installing information technologies does not constitute a 'magic wand' that will generate prosperity. It can only generate value if attention is paid to the design of the system for use at the same time that technological systems are developed. The authors explore how IT benefits require attention from management generally, and show that investment in IT projects cannot be left to 'IT experts' alone. We point out that undue reliance on rational planning is unsatisfactory, as it ignores contextual dependencies in organizational life. Criteria by which the success/failure of projects is to be judged must go beyond a focus on time-scales, budgets and 'requirement specifications'. We suggest that the criteria need to be expanded to embrace usefulness of resultant systems, as perceived by organizational staff as they attempt to use them in carrying out their work.

B2.4: PHILOSOPHICAL, THEORITICAL AND LEGAL ISSUES IN ISD

Tuesday, 26 August, 16:45 - 18:25

Room Aphrodite

ONTOLOGY OF DOMAIN ANALYSIS CONCEPTS IN SOFTWARE SYSTEM DESIGN DOMAIN

Robertas Damaševičius

ABSTRACT

The aim of domain analysis is to extract, identify, capture, organize and make reusable information used in developing new information systems. Many different concepts are used in the area of domain analysis, such as concerns, features, aspects, subjects, intentions, roles, etc. Metamodeling of domain concepts by constructing domain ontologies (ontology engineering), taxonomies and meta-models of domain concepts supports flexible, concise and efficient domain knowledge extraction and analysis, provides means for analyzing, representing and reusing the results of domain analysis, and is an important step towards the development of knowledge-oriented information systems. The aim of this paper is to analyze the concepts used in domain analysis of software systems and to construct ontology of concepts in software system design domain that describes relationships between analyzed domain concepts and highlights their properties and characteristics.

B2.4: PHILOSOPHICAL, THEORITICAL AND LEGAL
ISSUES IN ISD

Tuesday, 26 August, 16:45 - 18:25

Room Aphrodite

THE FIGHT AGAINST PIRACY IN PEER-TO-PEER
NETWORKS: THE SWORD OF DAMOCLES HANGING
OVER ISP'S HEAD?

Evi Werkers and Fanny Coudert

ABSTRACT

During the past few years copyright holders and holders of related rights have started to legally challenge peer-to-peer networks. Their latest strategy consists of trying to actively involve Internet Service Providers (ISPs) in this combat, e.g. through the implementation of filters. This development raises legal problems and questions both in terms of the liability of ISPs and the protection of privacy of their clients. This paper discusses the difficult task of balancing copyright interests and fundamental rights which as the European Court of Justice clearly stated in the *Promusicae* case remains a matter of Member States.

B2.4: PHILOSOPHICAL, THEORITICAL AND LEGAL ISSUES IN ISD

Tuesday, 26 August, 16:45 - 18:25

Room Aphrodite

AN ANONYMITY REVOCATION TECHNOLOGY FOR ANONYMOUS COMMUNICATION

Giannakis Antoniou, Lynn Batten and Udaya Parampalli

ABSTRACT

A number of Privacy Enhancing Technologies (PETs) have been proposed in the last three decades offering unconditional communication anonymity to their users. Unconditional anonymity can, however, be a security threat because it allows users to employ a PET in order to act maliciously while hiding their identity. In the last few years, several technologies which revoke the identity of users who use PETs have been proposed. These are known as anonymity revocation technologies (ARTs). However, the construction of ARTs has been developed in an ad-hoc manner without a theoretical basis outlining the goals and underlying principles. In this paper we present a set of fundamental principles and requirements for construction of an ART, identifying the necessary features. We then propose an abstract scheme for construction of an ART based on these features.

C2.4: CASE STUDIES IN TEACHING PROGRAMMING

Tuesday, 26 August, 16:45 - 18:25

Room Artemis

PROBLEM-BASED LEARNING IN A PROGRAMMING CONTEXT - PLANNING AND EXECUTING A PILOT SURVEY ON DATABASE ACCESS IN A PROGRAMMING LANGUAGE

Peter Bellström and Nina Kilbrink

ABSTRACT

In this paper we describe a pilot survey on applying Problem-Based Learning (PBL) in an undergraduate programming course. During the course the students have applied PBL as a complement to traditional teaching and learning techniques. The PBL problem in this survey combines both knowledge about programming and knowledge about databases. We argue that to handle programming the students have to learn programming according to the deep approach to learning in order to be able to apply their knowledge in new programming situations and contexts. The result from this pilot survey indicates from both a tutor and a student perspective that PBL could be one method to reach a deeper understanding on how to access databases in a programming language.

C2.4: CASE STUDIES IN TEACHING PROGRAMMING

Tuesday, 26 August, 16:45 - 18:25

Room Artemis

BPMN, TOOLSETS AND METHODOLOGY: A CASE STUDY OF BUSINESS PROCESS MANAGEMENT IN HIGHER EDUCATION

Balbir S. Barn and Samia Oussena

ABSTRACT

This paper describes ongoing action research which is exploring the use of BPMN and a specific toolset - Intalio Designer to capture the “as is” essential process model of part of an overarching large business process within higher education. The paper contends that understanding the efficacy of the BPMN notation and the notational elements to use is not enough. Instead, the effectiveness of a notation is determined by both the notation, the toolset that is being used and methodological consideration. The paper presents some of the challenges that are faced in attempting to develop computation independent models in BPMN using toolsets such as Intalio Designer™.

C2.4: Case Studies in teaching programming
Tuesday, 26 August, 16:45 - 18:25

Room Artemis

UNDERSTANDING SERVICE ORIENTED ARCHITECTURES IN THE CLASSROOM: FROM WEB SERVICES TO GRID SERVICES

D. Petcu and V. Iordan

ABSTRACT

The main challenges in today's teaching of service oriented architectures at graduate and undergraduate levels are discussed and several approaches are analyzed. Teaching Web and Grid services are treated as special cases. Based on a positive experience in teaching service-oriented architecture using Grid services, we advocate the usage of Grid services in classroom for graduate students.

A3.1: MODEL-DRIVEN ENGINEERING IN ISD I

Wednesday, 27 August, 09:30 - 10:45

Room Salle Armonia

EXPERT SYSTEMS DEVELOPMENT THROUGH SOFTWARE PRODUCT LINES TECHNIQUES

María Eugenia Cabello and Isidro Ramos

ABSTRACT

This paper deals with Expert Systems (ES) development as the final product of a Software Product Line (SPL). We take into account software variability management in the ES domain. Two kinds of variability emerge: variability in the behavior as well as in the structure of such systems. Experts' knowledge is captured using domain conceptual models in order to manage the variability and functionality of the ES. The ES are constructed using our Baseline Oriented Modeling (BOM) approach. BOM is a framework that automatically generates software applications as PRISMA architectural models by using SPL techniques. We follow the Model-Driven Architecture (MDA) initiative for building domain models, which are automatically transformed into executable applications.

A3.1: MODEL-DRIVEN ENGINEERING IN ISD I

Wednesday, 27 August, 09:30 - 10:45

Room Salle Armonia

FRAMEWORK FOR USING PATTERNS IN MODEL DRIVEN DEVELOPMENT

Picek Ruben and Strahonja Vjeran

ABSTRACT

This paper presents a framework for using patterns in promising and emerging paradigm of software industry called model-driven development (MDD). Despite a lot of skepticism and problems, MDD paradigm is being used and improved to accomplish many inherent potential benefits. During the last two decades, patterns are used in SW industry and becoming more and more numerous. So it is natural to ask the question: *How software patterns fits into MDD paradigm?* In this paper authors examine the possibilities of using patterns in context of MDD paradigm. Because in the methodological approach of software development is necessary to use some kind of development process as the result of this research authors in article presents the framework for using patterns in model driven development.

A3.1: MODEL-DRIVEN ENGINEERING IN ISD I

Wednesday, 27 August, 09:30 - 10:45

Room Salle Armonia

AN APPROACH TO GENERATING PROGRAM CODE IN QUICKLY EVOLVING ENVIRONMENTS

Linus Ablonskis

ABSTRACT

In Model Driven Engineering (MDE) program code generators are used to generate program code from abstract program models, thus bringing the final code closer to program specification and saving time that would be spent in coding. Current approach to program code generation from abstract program models does not work well in quickly evolving environments due to the large amount of work that is required to fully prepare and maintain program code generator. This paper presents analysis of current approach to program code generation and presents an alternative approach tailored for generating program code in quickly evolving environments by using self configuring program code generator.

B3.1: RULE-BASED INTELLIGENT SYSTEMS

Wednesday, 27 August, 09:30 - 10:45

Room Aphrodite

ANALYSIS OF ACADEMIC RESULTS FOR INFORMATICS COURSE IMPROVEMENT USING ASSOCIATION RULE MINING

Robertas Damaševičius

ABSTRACT

In this paper we analyze the application of association rule mining for assessing student academic results and extracting recommendations for the improvement of course content. We propose a framework for mining educational data using association rules, and a novel metric for assessing the strength of an association rule, called 'cumulative interestingness'. In a case study, we analyze the Informatics course examination results using association rules, rank course topics following their importance for final course marks based on the strength of the association rules, and propose which specific course topic should be improved to achieve higher student learning effectiveness and progress.

B3.1: RULE-BASED INTELLIGENT SYSTEMS

Wednesday, 27 August, 09:30 - 10:45

Room Aphrodite

RISK ANALYSIS BASED BUSINESS RULE ENFORCEMENT FOR INTELLIGENT DECISION SUPPORT

Olegas Vasilecas, Aidan Smaizys and Ramunas Brazinskas

ABSTRACT

Intelligent information systems are acting by structured rules and do not deal with possible impact on the business environment or future consequences. That is the main reason why automated decisions based on such rules can not take responsibility and requires involvement or approval of dedicated business people. This limits decision automation possibilities in information systems. However business rules describe business policy and represent business logics. This can be used in intelligent information systems together with risk assessment model to simulate real business environment and evaluate possible impact of automated decisions to support intelligent decision automation. The paper proposes Risk and Business rule model integration to provide full intelligent decision automation model used for business rule enforcement and implementation into intelligent software systems of information systems.

B3.1: RULE-BASED INTELLIGENT SYSTEMS

Wednesday, 27 August, 09:30 - 10:45

Room Aphrodite

USING RULES IN AN 'INTELLIGENT' INFORMATION RETRIEVAL ENVIRONMENT

Gian Piero Zarri

ABSTRACT

The availability of a powerful 'rule system' is an essential requirement for any implemented methodology intended to make use of querying/inferencing techniques according to a knowledge-based approach. In this paper, we will supply some information about the rule system of NKRL; NKRL (Narrative Knowledge Representation Language) is a powerful Information Retrieval environment designed to deal with non-fictional 'narratives' of an economic interest. Rules in this context correspond to high-level reasoning paradigms like the search for causal relationships or the use of analogical techniques. Given i) the conceptual complexity of these paradigms, and ii) the sophistication of the underlying representation language, these rules cannot be implemented in a (weak) 'inference by inheritance' style but must follow a powerful 'inference by resolution' approach.

A3.2: MODEL-DRIVEN ENGINEERING IN ISD II

Wednesday, 27 August, 11:15 - 12:55

Room Salle Armonia

MODEL-DRIVEN DEVELOPMENT OF DECISION SUPPORT SYSTEMS: TACKLING THE VARIABILITY PROBLEM

María Eugenia Cabello and Isidro Ramos

ABSTRACT

In this paper we present software variability management using conceptual models for Diagnostic Decision Support Information Systems (DSS) development. We use a Software Product Line (SPL) approach. In the construction of the SPL, two orthogonal variabilities are used to capture domain (i.e. diagnosis) and application domain (i.e. medical diagnosis) particularities. In this context we describe how variability is managed by using our BOM (Baseline Oriented Modeling) approach. BOM is a framework that automatically generates applications as PRISMA software architectural models using model transformations and SPL techniques. We use Model-Driven Architecture (MDA) to build domain models (i.e. Computational Independent Models: CIMs), which are automatically transformed into Platform Independent Models: PIMs, and then compiled to a executable application (i.e. Platform Specific Model: PSM). In order to illustrate BOM, we focus on a type of Information System, the Decision Support System, specifically in the diagnostic domain.

A3.2: MODEL-DRIVEN ENGINEERING IN ISD II

Wednesday, 27 August, 11:15 - 12:55

Room Salle Armonia

DEVISING A NEW MODEL DRIVEN FRAMEWORK FOR DEVELOPING GUI FOR ENTERPRISE APPLICATIONS

Pierre Akiki

ABSTRACT

The main goal of this paper is to demonstrate the design and development of a GUI framework that is model driven and is not directly linked to one presentation technology or any specific presentation subsystem of a certain programming language. This framework will allow us to create graphical user interfaces that are not only dynamically customizable but also multilingual. In order to demonstrate this new concept we design in this paper a new framework called Customizable Enterprise Data Administrator (CEDAR). Additionally, we build a prototype of this framework, and a technology dependent engine which would transform the output of our framework into a known presentation technology.

A3.2: MODEL-DRIVEN ENGINEERING IN ISD II

Wednesday, 27 August, 11:15 - 12:55

Room Salle Armonia

A PRACTICAL ENVIRONMENT TO APPLY MODEL DRIVEN WEB ENGINEERING

Maria Jose Escalona, Francisco Morero, Carlos Luis Parra,
Jaime Nieto, Francisco Perez, Francisco Martín, Antonio
Llargo and Javier Jesus Gutierrez

ABSTRACT

The application of a Model-Driven Paradigm in the development of Web Systems has yielded very good research results. Several research groups are defining metamodels, transformations and tools which offer a suitable environment, known as Model-Driven Web Engineering (MDWE). However, there are very few practical experiences in real Web system developments using real development teams. This paper presents a practical environment of MDWE based on the use of NDT (Navigational Development Techniques) and Java Web Systems, and it provides a practical evaluation of its application within a real project: Specialized Diraya

A3.2: MODEL-DRIVEN ENGINEERING IN ISD II

Wednesday, 27 August, 11:15 - 12:55

Room Salle Armonia

FOUNDATIONS ON GENERATION OF RELATIONSHIPS BETWEEN CLASSES BASED ON INITIAL BUSINESS KNOWLEDGE

Oksana Nikiforova and Natalya Pavlova

ABSTRACT

This paper focuses on the development of the main component of Platform Independent Model (PIM) of Model Driven Architecture e.g. class diagram defined in Unified Modeling Language (UML), which has necessary details for transformation into Platform Specific Model (PSM). It is important to formulate core principles of development of well-structured class diagram at a conceptual level, using knowledge of the problem domain, which consists of two interrelated models of system aspects - business processes and concept presentation. Definition of relationships of classes is important for PSM generation, therefore the research how it could be defined is performed. The hypothesis that it is possible to derive a class structure from initial business information is adduced. Information about the problem domain is presented in the form of two-hemisphere model that describes two interrelated parts of the most important aspects of a system, namely business process and concept models. These models serve as a source model for class diagram receiving. Capacity for the class diagram generation, based on the two-hemisphere model, is represented by a collection of graph transformations and illustrated with examples, where definition of different kinds of relationships (namely, aggregation, dependency, generalization) is displayed.

B3.2: COMPUTATIONAL INTELLIGENCE TECHNIQUES

Wednesday, 27 August, 11:15 - 12:55

Room Aphrodite

SOUND PROCESSING FEATURES FOR SPEAKER-DEPENDENT AND PHRASE-INDEPENDENT EMOTION RECOGNITION IN BERLIN DATABASE

Christos Nikolaos Anagnostopoulos and Eftichia Vovoli

ABSTRACT

An emotion recognition framework based on sound processing could improve services in human computer interaction. Various quantitative speech features obtained from sound processing of acting speech were tested, as to whether they are sufficient or not to discriminate between seven emotions. Multilayered Perceptrons were trained to classify gender and emotions on the basis of a 24-input vector, which provide information about the prosody of the speaker over the entire sentence using statistics of sound features. Several experiments were performed and the results are presented analytically. Emotion recognition was successful when speakers and utterances were "known" to the classifier. However, severe misclassifications occurred during the utterance-independent framework. At least, the proposed feature vector achieved promising results for utterance-independent recognition of high and low arousal emotions.

B3.2: COMPUTATIONAL INTELLIGENCE TECHNIQUES

Wednesday, 27 August, 11:15 - 12:55

Room Aphrodite

GENETIC PROGRAMMING MODELING AND COMPLEXITY ANALYSIS OF THE MAGNETOENCEPHALOGRAM OF EPILEPTIC PATIENTS

Efstratios F. Georgopoulos, Adam V. Adamopoulos and
Spiridon D. Likothanassis

ABSTRACT

In this work MagnetoEncephaloGram (MEG) recordings of epileptic patients are modeled using a Genetic Programming approach. This is the first time that Genetic Programming is used to model MEG signal. Numerous experiments were conducted giving highly successful results. It is demonstrated that Genetic Programming can produce very simple nonlinear models that fit with great accuracy the observed data of MEG.

B3.2: COMPUTATIONAL INTELLIGENCE TECHNIQUES

Wednesday, 27 August, 11:15 - 12:55

Room Aphrodite

A THREE-LAYER APPROACH TO TESTING OF MULTI-AGENT SYSTEMS

Tomas Salamon

ABSTRACT

In this paper, a complex approach to testing of multi-agent systems is presented. Multi-agent testing should be divided into three layers. On the first layer, the individual agents should be tested. A stochastic approach to unit testing and the use of “stages” can be adopted. A stage is a perceptible segment of a virtual world where an agent is placed that is projected for agent unit testing. On the second layer, deadlocks and similar flaws of agent interaction should be fought. Our method of deadlock detection is based on monitoring recurring agent interactions. On the third layer, the behavior of the entire system is evaluated. Bottlenecks and “hot spots” of the system could cause serious performance problems. Stability of multi-agent systems in case of mass collapse of many agents should be tested using stress tests.

B3.2: COMPUTATIONAL INTELLIGENCE TECHNIQUES

Wednesday, 27 August, 11:15 - 12:55

Room Aphrodite

THE AUTOMATIC INTEGRATION OF FOLKSONOMIES WITH TAXONOMIES USING NON-AXIOMATIC LOGIC

Joe Geldart and Stephen Cummins

ABSTRACT

Cooperative tagging systems such as folksonomies are powerful tools when used to annotate information resources. The inherent power of folksonomies is in their ability to allow casual users to easily contribute ad-hoc, yet meaningful, resource metadata without any specialist training. Older folksonomies have begun to degrade due to the lack of internal structure and from the use of many low quality tags. This paper describes a remedy for some of the problems associated with folksonomies. We introduce a method of automatic integration and inference of the relationships between tags and resources in a folksonomy using Non-Axiomatic Logic. We test this method on the CiteULike corpus of tags by comparing precision and recall between it and standard keyword search. Our results show that Non-Axiomatic reasoning is a promising technique for integrating tagging systems with more structured knowledge representations.



ISD2008 - 17th INTERNATIONAL CONFERENCE ON
INFORMATION SYSTEMS DEVELOPMENT

The Annabelle Hotel

Paphos, Cyprus

August 25-27, 2008

USEFUL INFORMATION

USEFUL INFORMATION

TELEPHONE INFORMATION

If you are dialing a Cypriot number from your mobile phone, you need to firstly dial the international code for Cyprus (**00357**), and then the number. For example, if dialing Paphos 26 123456, you need to enter 00357-26-123456.

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Coral Bay, locally on ALEPA bus No 10 (summer daily 8am-7 pm every 20 min, 7.30-11 pm every 25 min; winter daily 8am- 6 pm every 20min; 40 min)

More information about buses can be found at:

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We have provisionally reserved a number of rooms for delegates in local hotels and guesthouses at specially negotiated rates. You must contact these establishments directly to make your own accommodation arrangements.

When calling the hotel / guesthouse, please tell them that you are attending the ISD2008 conference at NUI Galway so that you may qualify for the special rate.

The Annabelle Hotel

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Fetta's Tavern (Traditional Meze tavern)

Arch. Makariou III avenue Paphos, 26937822

Il Classico (French cuisine with a touch of the Mediterranean),

13 Nikou Georgiou, 8035 Paphos 26939777

The Rib Shack (Mexican cuisine)

65 Poseidonos avenue (next to Amathus Hotel) 26964083

Chloe's Chinese Restaurant

13 Poseidonos avenue, Paphos 26934676

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ISD2008 - 17th INTERNATIONAL CONFERENCE ON
INFORMATION SYSTEMS DEVELOPMENT

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NOTES

Notes

Session:

Paper Title:

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Session:

Paper Title: