SEVENTH FRAMEWORK PROGRAMME

GREEK INTEROPERABILITY CENTER

Deliverable D2.1 - G.I.C. Interoperability Course M12 (1st version)

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1. INTRODUCTION

Interoperability has been recognized as the key issue for achieving high productivity of Enterprises (especially SME's) and their information systems but also as the main driver for delivering effective pan-european electronic government services towards citizens and businesses. Promoted by the i2010 Strategy Framework, being a key area of the e-Government and e-Business European Commission research roadmaps, but also being a hot issue for all Governments of the 27 member states and the third countries, Interoperability is recognized as an inter-disciplinary research topic with high political and technological value.

Interoperability reaches all enterprises and governmental organizations at national and international level and constitutes a thriving research domain from all aspects – scientific, entrepreneurial, societal and political. Lack of interoperability appears as the most long lasting and challenging problem for enterprises and governmental organizations. It emerged from proprietary development or extensions, unavailability or oversupply of standards, and heterogeneous hardware and software platforms. Legacy enterprise applications, for example, often hinder cooperation endeavours, since they require complex system integration efforts, while international research estimates claim that around 40% of system implementation budgets are spent on system integration with other (legacy) systems within an enterprise. To meet their business objectives, enterprises and public organizations need to collaborate with other organizations: for many enterprises, doing business globally has become critical to their survival, while others (mainly governmental organizations and SMEs) discover new opportunities by focusing their business in a local setting. The situation has become more critical and important through new business paradigms like extended enterprises and networked organisations that require organizations to work together to achieve further benefits. Therefore, today an organization's competitiveness is to a large extent determined by its ability to seamlessly interoperate with others.

The main goals of GIC are as following:

- The creation of a national research pole of interoperability which will cooperate with enterprises, governmental organizations and research centres in Greece, in order to achieve high quality research results in the area of Interoperability.

- The active interaction with other relevant organisations and research centres, at Regional, European and International level, so as both to gain needed experience and know-how, but also to communicate results and assist neighbouring countries.

- The contribution of multi-disciplinary research on interoperability, tackling research challenges at organizational, semantic and technical level. Furthermore, as depicted in Figure 1, the scope of the G.I.C. in vertical thematic areas is not constrained to e-Business and e-Government, but has a long perspective of expanding to e-Learning, e-Health and Network of the Future - a multi-platform and multi-device approach to interoperability.

- The contribution to policy making and standardisation in Greece and the neighbouring region, thus assisting the implementation of European Policies and interoperability – related initiatives, such as the e-Government Interoperability Framework (eGIF).

- The creation of a new generation of young and more experienced researchers in the areas of Computer Science, Information Systems, Decision Support Systems and Electronic Business, able to tackle emerging interoperability issues in Businesses and Governments.

- The active dissemination of research results towards the scientific and business community in Greece, in the neighbouring countries and internationally.

2. The Deliverable

In accordance also with the workplan of task 2.2 of WP2 the G.I.C. project team has recently developed a dedicated lesson on Interoperability related subjects which is being taught as an elective course in a postgraduate program of NTUA.

The course is entitled "Electronic Transactions" and it is being provided in the framework of the master program "Technoeconomic Systems" (MBA) of NTUA.

The general scope of the course which is addressed to postgraduate students, is to attract and gather students of the highest academic background in interoperability-related fields (service oriented architectures, programming languages, modelling, XML standards etc), and provide them with an initial set of concepts and knowledge that will enable them to become researchers in the G.I.C.

In this deliverable we provide:

- information concerning the master program "Technoeconomic Systems" (MBA), within which the course is being offered
- information on the aim, structure and bibliography of the course "Electronic Transactions".
- Training material of the course

The course is being taught by the head team of the GIC, namely the Project Director and Quality Manager: Assist. Professor Dimitris Askounis, and the Project Manager of GIC: Dr. Yannis Charalabidis.

It is envisaged that in the next few semesters the undergraduate and the postgraduate programmes of NTUA where the GIC members participate as trainers/professors, will be enriched by lectures and case studies on interoperability issues.

Updated and additional relevant training material presented within postgraduate courses in NTUA will be included in the next version of the deliverable.

3. The MBA Programme "Technoeconomic Systems"

The MBA program "Technoeconomic Systems", which includes the course Electronic Transactions, began operating in February 1998 and is co-ordinated by the following Academic Institutions:

- National Technical University of Athens, School of Electrical and Computer Engineering

- University of Piraeus, Department of Industrial Management

The program has been organized according to the standards for MBA programs of prestigious Universities in Europe and the U.S.A., emphasizing on training in techniques and tools that are considered essential/fundamental for the environment of modern enterprises.

4. THE COURSE "ELECTRONIC TRANSACTIONS"

The course "Electronic Transactions" is being offered as an elective in the programme for students on the 3rd semester of their studies.

The main aim of the course Electronic Transactions is to provide the students with the necessary background and information for acquiring a strong understanding on the principles of the electronic business (e-business) such as enterprise models, standards, and methodologies.

In addition, the course aims to familiarize the students with the technologies and the Internet applications used by enterprises and the Greek Public Sector (application types, technological standards and tools).

Furthermore, the course contributes to the training of engineers and business researchers in technology management issues related to the new digital era in order to respond to the requirements/challenges of the ICT industry.

The course introduces also the main principles of Interoperability of Information Systems, providing the essential knowledge regarding: Definitions and Topologies, Standards for eBusiness & eCommerce, as well as International and Greek Interoperability Initiatives.

5. STRUCTURE OF THE COURSE

No	Lecture	Contents (Theory – Practice)
1.	**E-business principles**	Historical Review/ Internet & Web Basic Concepts of eBusiness (B2B, B2C, SCM) The main Trends in the Industry and Research Course Bibliography
2.	**Retail Sales via Internet (B2C)**	B2C Models and Applications Consumer Electronic Purchases eCommerce Technologies Case study
3.	**Enterprise Sales via Internet (B2B)**	B2B Models and Applications Enterprise Electronic Purchases B2B System Technologies Case Studies
4.	**Electronic Supply Chain Management (eSCM)**	Electronic Supply Chain Electronic Supply Systems Collaborative Electronic Systems (c-Commerce)
5.	**eGovernment I: Principles and Policies**	Basic Concepts of eGovernment (G2B, G2C, G2G) Trends and Policies in Research eGovernment applications eGovernment System Structure
6.	**eGovernment in Greece**	eGovernment actors in Greece The main projects and Initiatives of eGovernment Case Studies
7.	**Interoperability**	Interoperability Definitions and Topologies Interoperability Standards for eBusiness, eCommerce International and Greek Interoperability Initiatives
8.	**Mobile Commerce and Portable Devices**	mCommerce System Structure Access Devices Telecommunications Protocols and Provisions Applications and Case Studies
9.	**eCommerce System Development/Implementation I**	Internet Technologies – Systems and Platforms eCommerce EDI, HTML, XML Web Services, Semantic Web (I) Workflow Systems / Web Portals
10.	**eCommerce System Development/Implementation II**	The implementation/development steps of a Company Portal Structure and Contents of Company Portals Semantic Web (II) – Metadata Standards / WSDL / UDDI eBusiness & eGovernment data standards

6. Basic Bibliography

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ANNEX I – COURSES MATERIAL (IN GREEK)