

«APPLICATIONS DEVELOPMENT AND PILOT PROJECT OF THE SECURITY SYSTEM OF THE PROJECT “GIPSY”»



IMPETUS was the contractor (Union of Companies) of the port of Igoumenitsa for the GIPSY project. The project focused on the pilot implementation of the security of passenger boarding/disembarking from the ships in the ports of the chosen areas (Patras, Igoumenitsa, Corfu) for combined transport issues. In addition, Dr. Nick A. Theofilopoulos, the Director of Research and Development of IMPETUS, was the Coordinator (Project Manager) of the project.

IMPETUS provided an integrated and comprehensive solution for the GIPSY project and an experience that was gained from the implementation of other major projects. These made Impetus' offer a credible and responsible solution that combined -state of the art- technologies and solutions.

This project was a computer based system that would assist the work of the administration bodies of the ports in the management and control of the passengers and vehicles that travel abroad by sea via the ports of Western Greece (Patras), Epirus (Igoumenitsa), Ionian Islands (Corfu) and Italy (Brindisi) for combined transport.

To summarize, in the context of the GIPSY project the following were offered:

- ◆ Installation and operation of license plate recognition system cameras in the ports of Patras, Igoumenitsa and Corfu.
- ◆ Supply and operation of RFID 865 MHz devices for the ports of Patras, Igoumenitsa and Corfu.
- ◆ Installation and operation of mobile vehicle passenger for the ports of Patras, Igoumenitsa and Corfu.
- ◆ Installation and operation in the Ports of Igoumenitsa, Patras and Corfu of the essential servers and of all the remaining equipment
- ◆ Supply and installation of printers.
- ◆ Supply and installation client PCs
- ◆ Development and installation of a Data Collection and Access Control System.
- ◆ Installation and operation of control centers in the ports of Patras, Igoumenitsa and Corfu.
- ◆ Online interface that provides information on passengers and vehicles in ships to all interested carriers.
- ◆ Development and installation of a smart card issuing application



for passenger.

- ◆ Supply of boarding cards.
- ◆ Linking the system that is under development with the system of related carriers (e.g. Booking System).
- ◆ Implementation of a Wi-Fi network via which there will be achieved the interconnection of the peripheral and central systems.
- ◆ Possibility of the interconnection of the system, with other information systems that function in the Greek and Italian Ports.
- ◆ Security, maintenance and system support services.
- ◆ Education services for port personnel.

The GIPSY proposed an important innovation for the check-in boarding of the passengers in the RO-PAX ships with wireless connection using tickets with passively tags for the passengers/tourists and with transponder UHF (with "token" or gate-pass that can be re-written) for the vehicles.

This Project aimed to help in the resolution of problems with regard to the safety in the phase of boarding and disembarkation of merchandises in the ships via:

- (i) the control of vehicles and passengers and
- (ii) the co-ordination and exchange of information with the Authorities of the port of destination.

The Project aimed to render a unique and automatically traceable access of the passengers and merchandises in the Port area, in the docks of embarkation and in the boats. The pilot system included:

- Multilingual Web Portal – A System of information management accessed via Web for the most optimal management of fleets and with the probability for the management of without drivers trucks



- Pilot gate for truck control
- System of interconnection and management of the information from and to the corresponding applications of the Ports of Bari and Brindisi in Italy

The project beyond the increase of the level of safety in the Port, also targets:

- (i) in the increase of the speed boarding,
- (ii) in the improvement of work conditions and use of structures and, accordingly
- (iii) in the exploitation of the Port and the offered services with indirect repercussions in all the system.

The exchange, in real-time, of data and information of the passengers and

loaded between the ports of departure and the Greek ports allows a cross-check of data and provides important information that is useful for the rapid check-out organization at the port of destination.

The main components of the system are:

- ✓ **Boarding Card Issuing.** The most important details of a passenger are recorded in the boarding card through a mixed technology of bar codes, RFID cards (proximity cards) and printing. Its goal is to automatically detect, both in the phase of Gate access and in the event of a check from post-security personnel by bar code and RFID readers. The **Boarding Cards** are issued to each customer per boarding. The agencies issue the boarding cards through a Web client equipped for access to GIPSY through a protected web connection. The printing of the tickets (both for passengers and vehicles) with RFID (or barcodes) is done from specific printers.
- ✓ **Boarding Cards for Trucks and unattended trucks (without a driver)** – While the passengers and the cars, have passive RFID tags, the Trucks and unattended trucks have energetic tags of a different form (heavy duty), where there exists a bigger scope of recognition and identification of the particular Trucks and unattended trucks
- ✓ **Intelligent Gate.** Via a system of access control in two points of entry on the ship – in the interior of the Port area there will be allowed the entry in the access areas to the ship only to those passengers and vehicles that have passed from the check - in processes and are provided with the boarding card.



The technologies that were used during the implementation of the GIPSY project had the following characteristics:

- Object oriented programming languages
- Open standards architecture
- XML (Extensible Markup Language) for the interconnection and communication of the systems.
- Basic XHTML (Basic Extensible Hypertext Markup Language) and WML (Wireless Markup Language)
- Other international interconnection protocols.
- Wireless Internet
- Technologies of plates optical recognition based on statistical models and neuron networks. Also
- The equipment is of the latest technology.

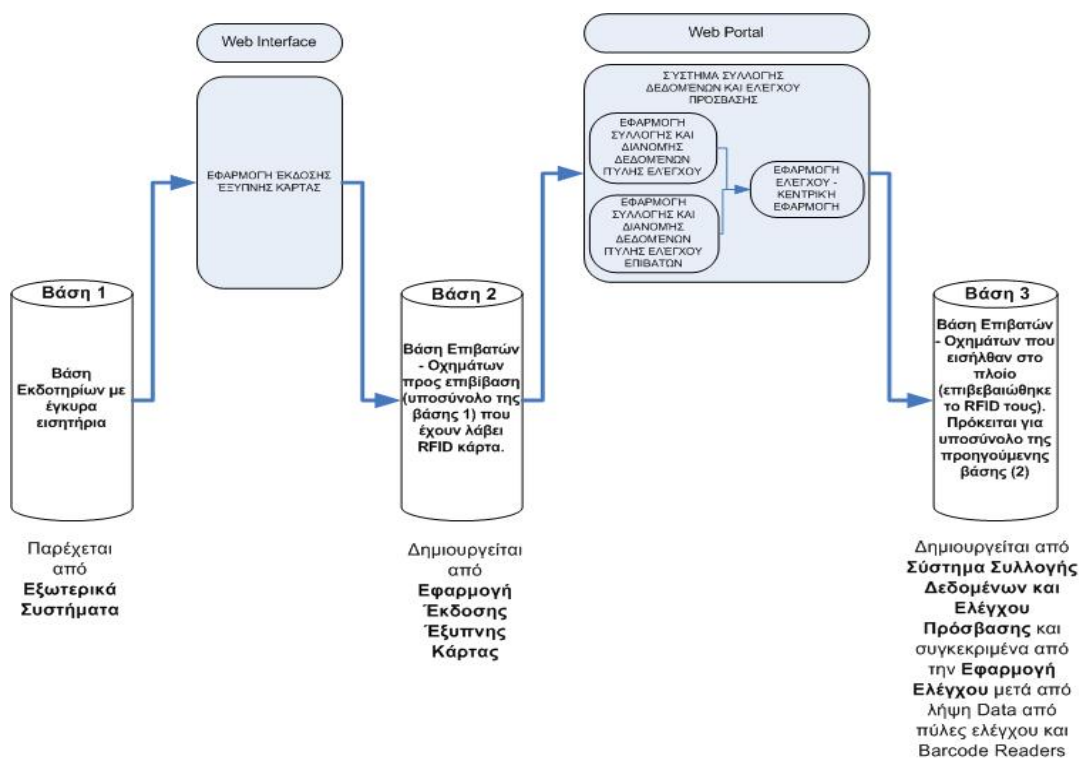
The development made use of the technology in web services, offering a standard way of communication through the web wherever that was possible. The software was designed based on the knowledge and standards of interconnectivity as well as the re-usability basic services that were materialized as Web Services. The architecture of Web Services offered a standard API (based on XML on top of HTTP) for the access of client applications to application servers, that web services offered. The Web services API is based on set of standards, that use XML, like UDDI for service discovery and registration in a distributed catalogue, WSDL for service description, SOAP or XML-RPC for XML communication and data transfer.



The offered solution contributed to the development of an appropriate infrastructure (hardware and software) for distribution of electronic information and the availability of automated information services and Internet security in the area of maritime transport. This was necessary in order to improve the services and quality offered to those visiting our country. The modernization of the ports in conjunction with passengers turning to marine transport requires the support and automation of the maritime security infrastructure, information and optimum service of the passenger.

The application, developed for the Check-In Process has a lot of possibilities:

- possibility of printing the embarkation card or cancellation in order the card of embarkation and the passenger to be certified as checking
- possibility of data reading from bar code card through the scanner
- possibility of embarkation control without the existence of a systems operator by automatic reading proximity cards
- It's interlinked in real time with systems of tickets' issuance
- It ensures communication with single protocol of messages
- Existence of alternative scripts of operation in cases of connection weakness and communication with the companies.



ENDEAVOR from PATRA on 03/12/2008

03/12/2008	17:30	PATRA	IGOUMENITSA ENDEAVOR LINES MARITIME COMPANY ELLI T
03/12/2008	17:30	PATRA	BRINDISI ENDEAVOR LINES MARITIME COMPANY ELLI T

Ticket number

or

Name/Plates

Get ticket data

Print boarding pass

Download all tickets for who route

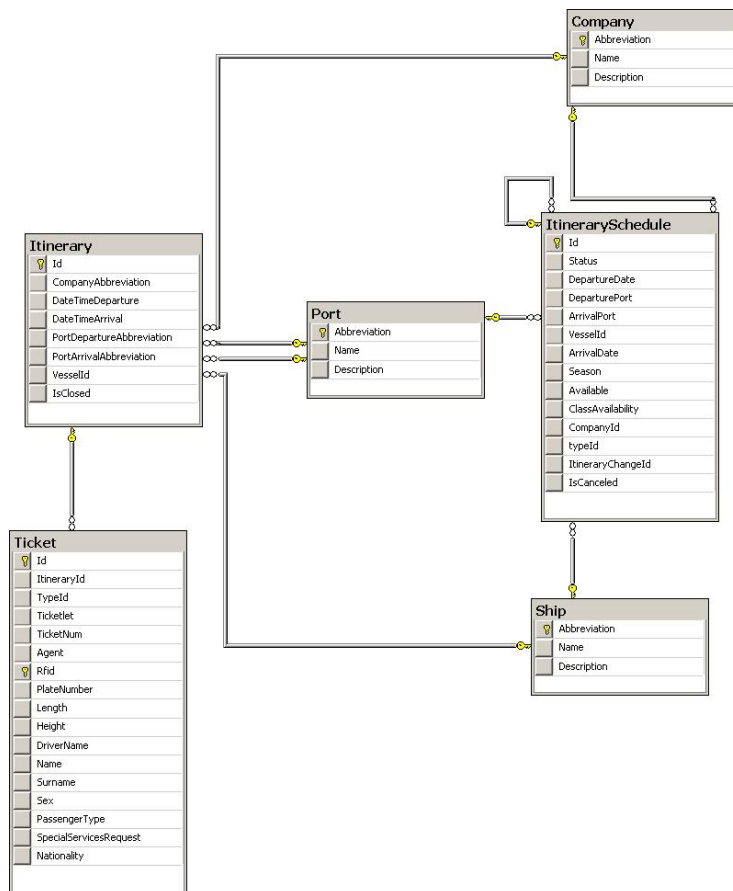
Download all tickets for selected itinerary

Get data every (min)

ticket data to display.....

Close

Shipping Company Database



Port Database

The use of specialized and evaluated methodologies in the management and development of the project was anticipated. This allows a complete coordination of the work of the project, the immediate identification of problems and suggestions for solving them.

Key areas of the project are:

- Security Check-in System (ISPS Code)
- Fully responsive to ISPS Code requirements
- Risk Management & Operational Efficiency
- Port Efficiency and Traffic Planning
- Port Boarding Data Base for every ship leaving the Port
- Access Control for Vehicles, Trucks, Unattended, etc
- Organization and Management of Port Resources in Check-In process
- Effective control of Port Resources
- Flexibility and adaptability in operational / organizational and technological Port Structures
- Administrative & Financial Management of Port's related income (based on accurate and real time check-in procedures)
- Established & Operated Procedure for Port Control in embarkation process (Portable Gates – first time established on European Ports)
- External Communications with Destination Ports (cases of Bari & Brindisi) established through XML communications (after the ship leaves the Port of origin)