

# « PILOT SECURITY APPLICATION OF PASSENGERS AND VEHICLES ON THE GREECE-ITALY SHIPS»

## “ SECURITY CHECK-IN SYSTEMS (SECINS)”



IMPETUS was the contractor (Union of Companies) of the port of Igoumenitsa for the SECINS 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 SECINS 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 SECINS project the following were offered:

- Installation and operation of license plate recognition system cameras in the ports of Patras, Igoumenitsa and Corfu.
- Installation and operation of barcode card readers in the ports of Patras, Igoumenitsa and Corfu.
- Supply and operation of RFID Proximity Detectors in the ports of Patras, Igoumenitsa and Corfu.
- Installation and operation of mobile RFID Readers for vehicles in the ports of Patras, Igoumenitsa and Corfu.
- Installation and operation of mobile RFID Readers for passengers in the ports of Patras, Igoumenitsa and Corfu.
- Installation and operation of central servers in the ports of Patras, Igoumenitsa and Corfu.
- Development and installation of a board control application.
- 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).
- Information screens and the appropriate tools to design them.
- The ability to interconnect the system with other information systems that operate, or will operate in the future, in Greek and Italian Ports.
- Security, maintenance and system support services.
- Education services for port personnel.

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 passengers 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 solution was characterized by its functionality, as it's based on at cutting edge technologies and products that have been implemented on similar-scale projects and are supported by their manufacturers on a regular basis.

The solution's architecture ensured sustainability and scalability, even if new electronic services need to be added, whilst the system can be readily extended to support more ports that need to use these services.

An important feature of the solution, especially the applications providing information on Gates and Schedules, was the use of open standards to allow future expansion of the system through an interconnection with a 'third' system. The system implemented interconnections with systems of other shipping companies by importing XML files, while its design anticipated the possibility of a future development of web services for the exchange of XML files as well as additional systems, such as the system implemented in the port of Brindisi in Italy.



SECINS was implemented with the full interoperability with the computer systems of other ports and especially the ports of Bari and Brindisi that took part in the SECINS program (especially the port of Brindisi), the GIPSY project (like the CARGO SYSTEM that was created by GIPSY especially in the port of Bari and Brindisi) and with the information systems that were created in the ADRION project in the ports of Patras, Igoumenitsa and Corfu.

SECINS exchanged information with all these systems adopting an exchange of messages with information in response to the XML-EDI standard thus providing a standard framework that is universal with software based web applications to describe various types of information such as payment orders, purchasing orders,

tickets for clearing and exiting of the Parking, alerts for debit and credit entries etc. This is done so that the information can be deciphered, reprocessed and viewed the right way from a common internet browser.



The exchange, in real-time, of data and information of the passengers and vehicles between the Greek ports of departure and the port abroad allows a cross-check of data and provides important information that is useful for the rapid organization at the port of destination (Brindisi) and vice versa.

The vehicles pass through a central port-entrance gate in which the appropriate equipment has been added. This equipment included cameras and license plate recognition cameras that perform an automatic count of incoming vehicles and stores the data in a record.

The visual inspection by cameras and a software application, for the recognition of the license plates, allows an enhanced control of data so as to reduce potential errors during the control and for attempts to breach access.

The mobile systems for passenger and vehicle control for the recording of passengers and vehicles entering a ship are installed at the entrance of the ship

Both the regional systems used by security personnel and the installed sensors in passages are connected between them as well as with the control center of the port and with SECIN'S database through a protected and encrypted wireless connection.

The web application was stored in the Central Computational management system which was equipped with a wireless connection for the access control pilot systems. The system can be interconnected with the computer systems of maritime companies that are involved in the port of Brindisi, or Bari, to exchange passenger and vehicle information

The main components of the system, that served all three ports (Patras, Igoumenitsas, Corfu), are:

- **Passenger/Vehicle Smart-Card Issuing Application.** The most important details of a passenger are recorded in the boarding card through a mixed technology of bar-codes and RFID (proximity cards). The boarding cards are issued for one passenger per boarding. The agencies that take part in the pilot program have the ability to issue boarding cards through a web client equipped for access to SECINS through a protected web connection.
- **Vehicle Control Smart Gate** Through an access-control system within the port zone (that utilizes RFID technology) access to ships is only allowed for vehicles that have a boarding card (includes a mobile gate equipped with boarding-card readers and a corresponding computer system).
- **Passenger Control Smart Gate** Through an access-control system within the port zone (that utilizes RFID technology) access to ships is only allowed for



passengers that have a boarding card (includes a mobile gate equipped with boarding-card readers that record the passengers' check-in and a corresponding computer system).

- **Vehicle Identification System** Through the installation of the visual identification system for vehicles at a central port gate, there is an initial registration of vehicles that enter the port. It includes a license



plate optical reader (license plate recognition) positioned at the top of the port's central gate so that all the vehicles passing through the port are recorded and data is sent to the central computer system.

- **Central Computer System** This system collects data and is responsible for the presentation and distribution of this data to

everyone that is engaged with the port's boarding procedure. The system has an Internet interface and includes an Internet check-in control application through which all the information about the customers that pass through the gates or/and the information is checked manually at check points without further delays. The information is stored in a database and it can be accessed through a simple Internet interface. The application has the ability to interconnect with ticket issuing authorities so that it can draw further information about passengers and vehicles. It can also interconnect with other computer systems from companies that are involved in the port of Brindisi or Bari so as to exchange passenger and vehicle information. This system is installed in corresponding servers that are meant for this purpose.

- **Barcode readers** The manual control of boarding cards is achieved by using a bar-code reader. The data from the cards is sent to the central Computer System.
- The system also includes a control center that includes:
  - Control consoles
  - Management consoles,
  - as well as everything else that is necessary to protect it from unauthorized access attempts to access the computer system

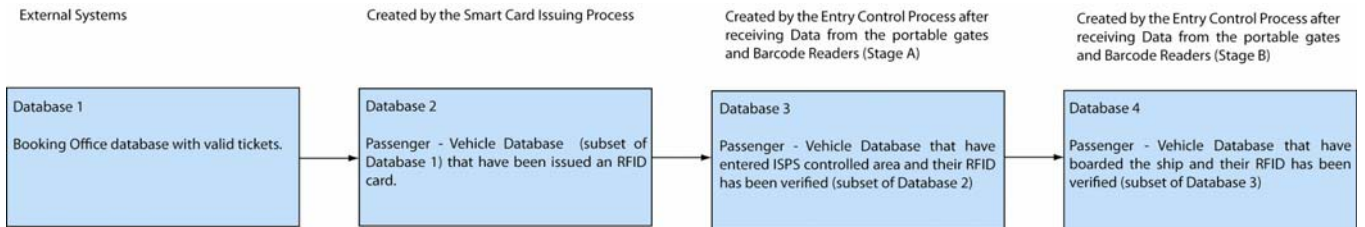
The data provided by the port authorities allows the system to confirm that the number of boarding passengers on each ship doesn't exceed the maximum legal number for the specific ship thus avoiding putting the whole maritime in danger.

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.

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

Download all tickets for who route

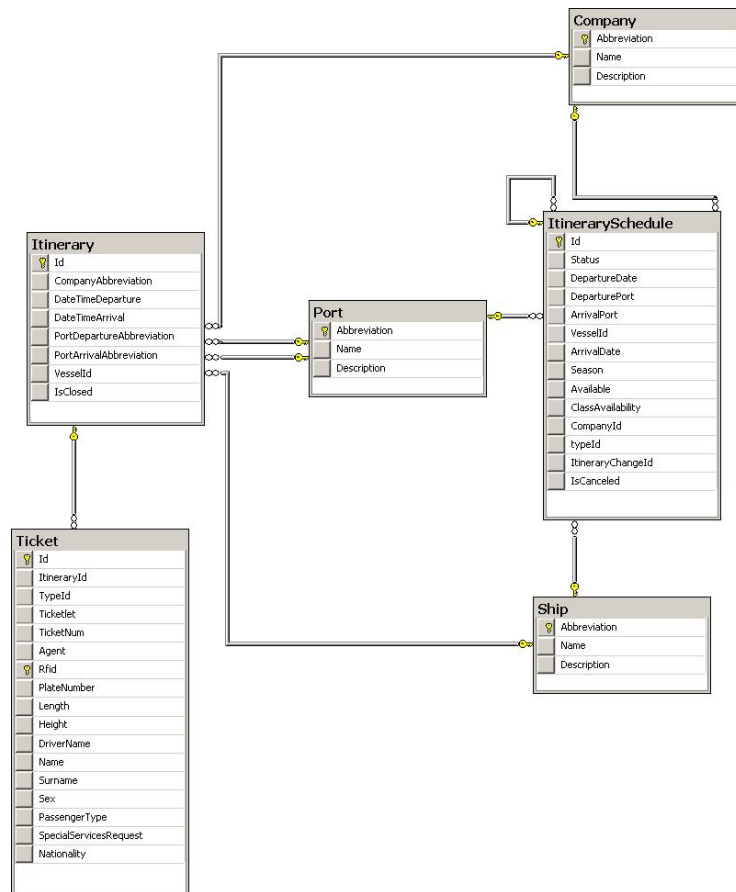
Download all tickets for selected itinerary

Get data every (min)

Print boarding pass

ticket data to display.....

*Shipping Company Database*



*Port Database*

Key areas of the project were:

- 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 Passengers & Vehicles.
- 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)