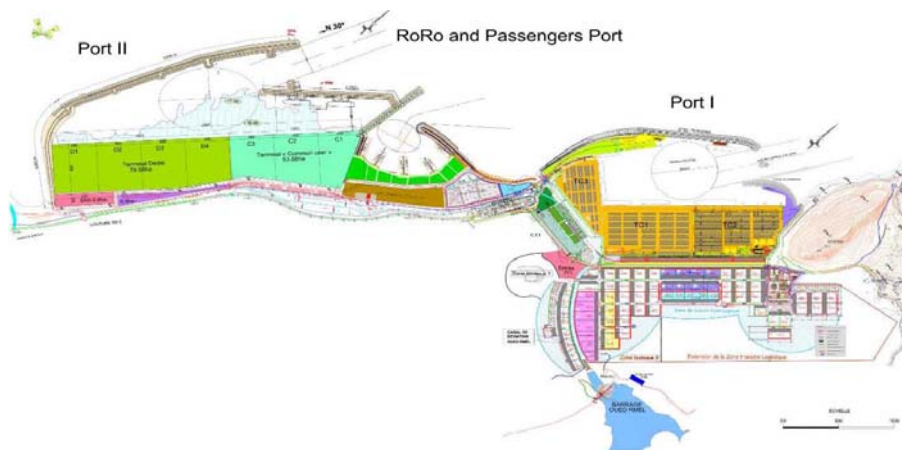


«“RORO AND PASSENGERS IS PROJECT” - TANGER MEDITERRANEAN SPECIAL AGENCY»

MANAGEMENT OF THE PASSENGERS ACTIVITY

IMPETUS is the contractor of the Port Authority of Tanger (TMSA) for the RORO AND PASSENGERS IS PROJECT. IMPETUS together with FORTHcrs (Union of Companies), offered a computerized solution for the management of the Passengers and vehicles flow, which covers the functional domains related to the Tanger Med port activity. The Union of FORTHcrs and IMPETUS currently implement a solution that assembles great experience of implementing and managing projects of this kind, as well as important know-how in the technical, functional and operational scopes.



This lot involves:

Lot 1 (Passengers Activity): Installation of a passenger registration centralized system interfaced with the reservation systems of the shipping companies.

The Passengers activity represents a strategic element in the commercial and operational objectives of the Tanger Med port. The commissioning of the terminal scheduled for the beginning of 2010 involves the installation of an information system in order to meet the goals set by TMSA at port authority level, namely:

- Ensure the port's technical efficiency, which is necessary for a competent authority
- Contribute to the improvement of the investment profitability at the level of passengers and Ro-Ro port
- Guarantee the reliability and transparency of information exchange with the various terminal partners (Customs, Police, Shipping Companies, Shipping Agents, Forwarding Agents, etc.)
- Guarantee the operational performance of the terminal (traffic flow planning and management, optimization of resources)
- Facilitate the services linked to the terminal activity (customs services, trailer pulling, Duty Free shops, etc.)

The IS solution is based on an open and adaptable architecture and it constitutes an action and decision instrument adapted to the operational management of the RoRo and Passengers port. The services that are offered by the UNION are the following:

- Elaboration of a detailed preliminary study to identify the TMSA needs

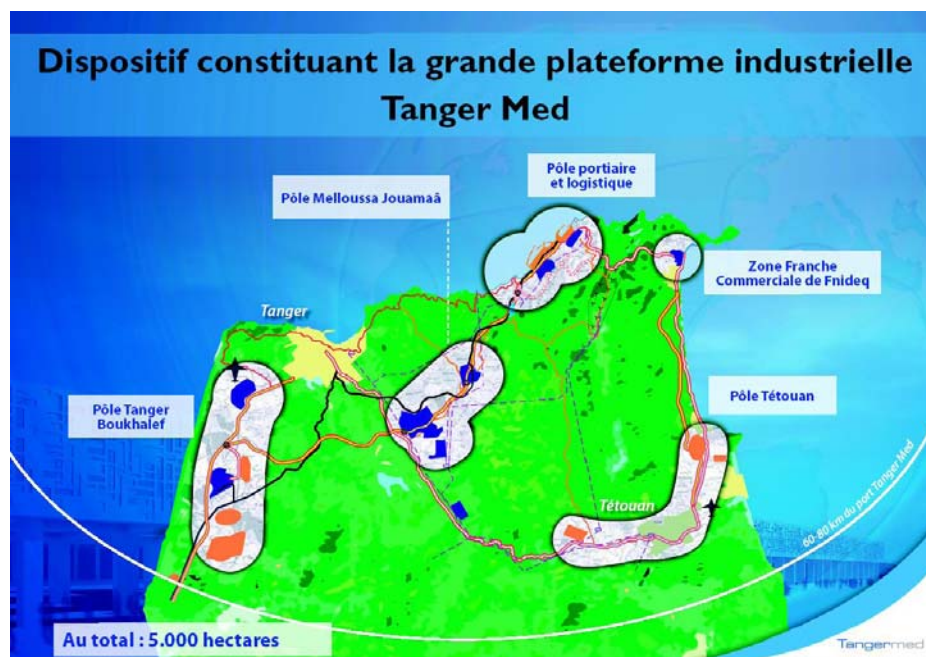
- Provision of software platforms that will constitute the core of the Ro-Ro and Passengers solution
- Elaboration of the data and interface model
- Execution and integration of the solution
- Implementation of the interfaces with the sections of the IS of TMSA and its partners
- Reporting
- Provision and deployment of technical and material infrastructure that is specific to the project
- Training of the project team
- Training of the users
- Support at the starting phase
- System maintenance

The Tanger Med Port has a very strong position in the import/export market of Morocco, offering sufficient capacity. The new Tanger Med port, with draught marks of 16 m, will be able to host the largest vessels that already exist or are under construction. The choice of the site corresponds to a strategic location on the Straits of Gibraltar at the crossroads of important East-West and North-South maritime commercial routes. It is this same location that allowed the development of the port of Algeciras, which in a few years became one of the two main transshipment ports in the region of the Mediterranean. The Tanger Med port can therefore aspire to become one of the major platforms in the region of the West Mediterranean. It has been operational since 2007. Ensuring transshipment and splitting in the international container trade, it will also be an important "import-export" port for the Moroccan territory, assisting the port of Casablanca by taking a significant part of the container international exchange. This port will also have a hydrocarbon and a bulk terminal.

Ro-Ro Terminal

The Ro-Ro and passengers terminal is a key element of the Tanger Med port device. Intended to receive millions of Moroccan and foreign visitors, a modern harbor station will be constructed at the Tanger Med port, taking into account the modernization of travelling conditions and the passenger's comfort and security. With a nominal capacity of 7 million passengers, 700,000 trucks and 1,000,000 cars, the passengers and Ro-Ro port includes not only the harbor station, but also a Ro-Ro and ITR parking area of 25 ha as well as a railway passenger station connected to the harbor terminal.

This port will allow to reduce by more than half the distance of the sea journey regarding the Tanger-Algeciras trip. It is therefore a remarkable strengthening of the regional logistics system, if we take into account the importance of the road links in the just-in-time (JIT) production that is being developed between Morocco and Europe.



The Project has a lot of goals to fulfill. Specifically, the strategic goals of the Project are:

- The platform to become an instrument accessible to all TMSA partners allowing, within the framework of the process, to support and supervise the main flows.
- The platform to have the flexibility that subsequently will allow it to expand to more business rules and processes and to offer data exchange to all services.

The goals of integrating the future Ro-Ro and Passengers system are to meet the needs that can be summarized as follows:

- Distribution of crucial information to the port staff and automation of the collection of most data and information
- Optimization of the tasks related to the Passengers and ITR flow management
- Guarantee of the reliability and completeness of the data that will be used as the basis for billing
- Optimization of the port resources



The implementation of the solution is part of the global vision of the TMSA IS project and will be aligned with the future business imperatives. Its main goal is to improve the logistics and operational efficiency of the Tanger Med Project and foster its competitiveness and attractiveness. The main project expectations are the following:

- Flow of information exchange
- Better logistics
- Information consistency
- Global vision of TMSA IS

The project should resolve security problems, related to boarding phase, via:

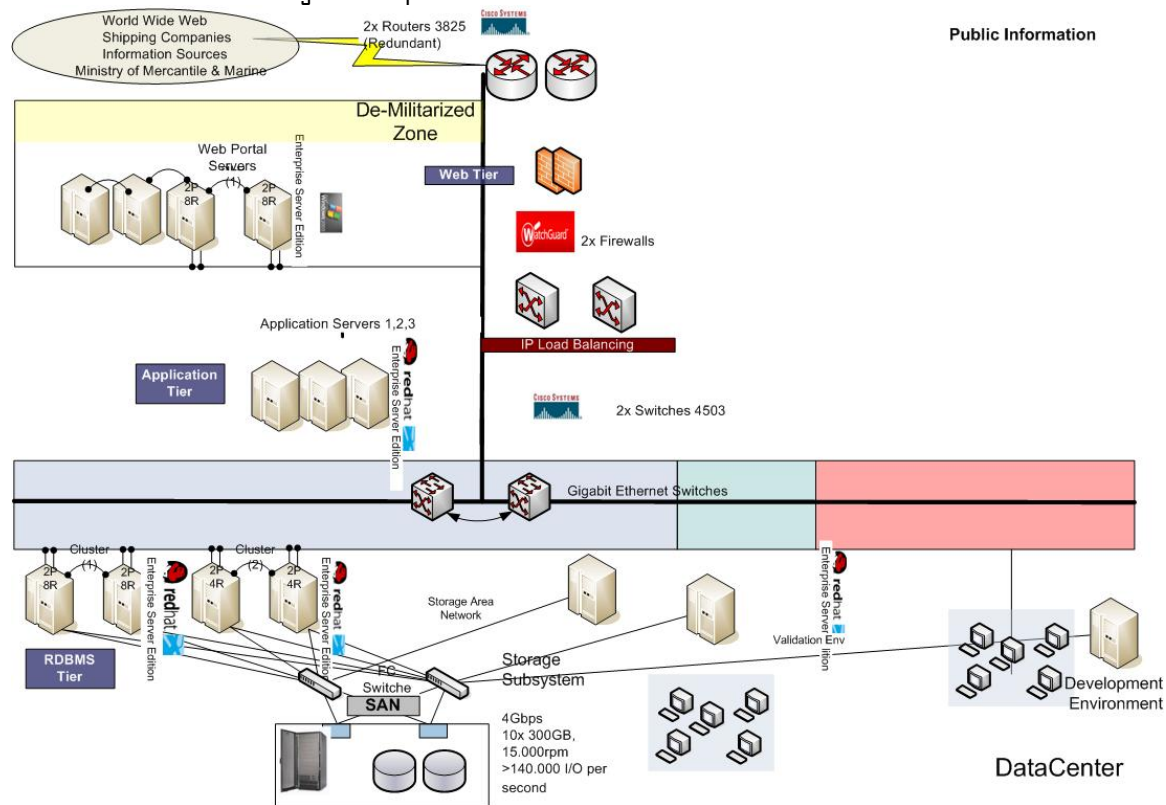
- Passenger and vehicle control
- Coordination and information exchange among ports and ferry companies

Basic criteria of the solution include the following:

- Business Operation Cohesion - The solution should be aligned to the set procedures for check-in and passenger/flows management.
- Availability - It should be available
- Performance - Perform fast and not create long queues, even during high-load conditions
- Integrated Efficiency - System should communicate efficiently with several external systems including the port systems and ferry companies' systems.
- Flexibility - The solution should be adopted to new procedures for check-in and passenger/flows management when these have to be changed.
- Ability to operate during system/network failure - System modes should ensure smooth operation and passenger service even when system and network failures occur.

- Efficient support, management and maintenance – Administration should be easy and flexible. Training of administering staff should secure this.
- Low Operation Cost – Costs for operation should be rational.
- Easiness to use – The system should not need high-skilled users. Quick learning should be feasible.

The design of the solution focuses on covering all of the requirements of the TSMA as well as ensuring the continuity and availability of the applications in case of hardware failure or software faults. The solution is based on a multi-tier design which guarantees both scalability and availability as each part of it can scale up on its own level without affecting the rest parts.



During the ferries' departure from Tangier port, the **SeaOnLine™ Passenger and Vehicle Registration Check-in application** sub-system will be utilized in order to validate the ticket data authenticity and produce the necessary boarding cards for passengers and vehicles that will enter the port area before getting on board the vessels. This operation will be performed by the personnel of the shipping company for their own departure or by the people from the TMSA for any departure. The data for the departures will be collected from the PMIS using one web service that is stored into EAI as well as the load factor of the boat.

Printing Boarding Passes

When the passenger presents his ticket to the user responsible for issuing the boarding pass, his unique ticket number or booking reference number, is checked at first on the local port database to check its existence and validity. If it is not found, a request is sent on-line to the ferry company's system using the web service, retrieving thus all the necessary data for the specific ticket. Then the data are validated and written in the port's local database, and the boarding pass is printed with all the necessary information for visual verification including also the unique Barcode for the electronic identification from the application at the final check-in step. In case a data matrix is printed on the ticket, the data is retrieved from it. An online request is also sent to the local database and – if necessary - to the ferry company's system, in order to validate the data.

In case the passenger has a manual ticket, or there is an operational problem in the port's system or infrastructure, the user responsible to issue the boarding pass, will have to direct the passenger into the

specific port service dealing with such problems. There, the administrating staff will have the capability to insert to the local port's database the appropriate data manually by using an offline application and issue the boarding card according to the information written on the passenger's ticket.

Boarding Pass Cancellation is the procedure the operator will follow in order to deactivate a specific boarding pass. If the passenger or the vehicles finally must embark a new boarding pass has to be produced (printed) as the previous one will be permanently cancelled.

Final check-in

This is the final step in the check-in procedure. It takes place just before the ferry entrance. A mobile device (PDA) is utilized to read boarding pass data and confirm that the specific passenger or vehicle gets on board the ferry. The functions at this step include also the ability to perform an extra-ordinary (unplanned or enforced) and immediate check-out procedure that might occur after the final check-in. If the passenger or vehicle that exited the ferry must re-enter to the ferry, the final check-in operation will take place again, with the same boarding pass. If the internal communication network is deactivated during the final check-in process, the PDA will store the data in order to update the main system after the communication is established.

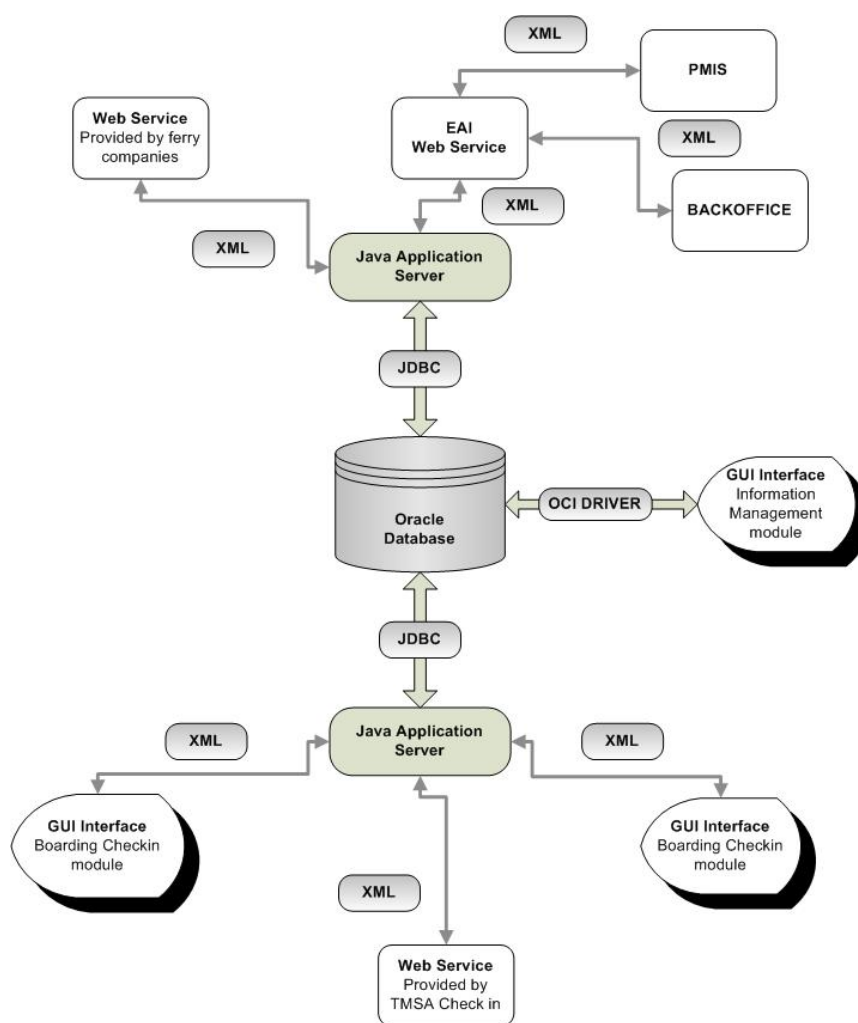
Discontinuing the Check-in process

There are two reasons for discontinuing the check-in procedure

- ❑ Upon demand from the authorized users.
- ❑ Automatically from the system when the load capacity of the ferry is reached. This step can be parametrically over-passed by the administrator of the check in and in such case the passenger or vehicle is embarked.

The overall software solution that will be implemented for the needs of the TMSA passenger registration system project is divided in several modules, as follows:

- ❑ The module of Seonline Checkin information management it will be a GUI interface That it will communicate direct with the database server using JDBC driver.



- ❑ The module of the Seonline Registration checkin is a GUI interface that it will communicate with an application server using XML protocol messages.
- ❑ The application server that accepts XML messages and interacts with the database server and it is the hart of the system.
- ❑ Seonline Boarding checkin is a GUI interface on the PDA computer that they communicate with an application server using XML messages.
- ❑ Web services on the EAI for data exchange between the passenger registration system and the PMIS.
- ❑ Web services hosted on the ferries companies servers that they will provide the passenger registrator system project with all the necessary information.

The schema below illustrates the process flow :

