

DigLogs

Functional specification and Design details

5.3.2 M2M dialogue

Responsible partner: Port of Rovinj Authority (PP9)			
Involved partners: All			
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Table of Contents

Introduction: App for data flows management	3
1. Functional specification	4
2. Design details.....	8

Introduction: App for data flows management

As part of DigLogs project, Port of Rovinj Authority has decided to upgrade the existing maritime traffic management system to improve information system functionalities related to vessel traffic monitoring, while also including all the related activities that enhance the port's performance. This upgrade refers to the enhancement of the traditional PCS system, which will serve its purpose as an intermediary between the given software and the National Maritime Single Window – CIMIS. The advantage of having this kind of solution would greatly exceed its nominal value and it would offer best experience to all of its stakeholders.

In the following paragraphs, motivation for such a project, functional/technical analysis and their aspects are going to be explained in more details, to create a path towards project analysis and requirements specification later in the document.

1. Functional specification

Main pilot function is to provide important inputs from the aforementioned system, which eliminates the possibility of making wrong business calls, all while providing the best user experience and creating the space for further development and advancements.

Scope of the pilot is requisitioning and purchase of the envisaged equipment, its installation and future desire of functional integration with the existing National Maritime Single Window - CIMIS system, already in use in the Port control center of the Port of Rovinj Authority, and the visualization of the port panoramic presentation for the end user group of passengers using already existing visualization using Web page presentation.

Exact technical requirements, connectivity and input-output possibilities are subject to further determination during pilot development and component identification up to its end, as some components might change even during pilot execution. While main components are already identified as a part of analysis and requirements specification, it is possible that some smaller components will be identified later in the pilot execution, so flexibility will be required during later stages.

A **required operational system** must possess adequate technical qualities to support envisaged role. Among initial and required **parameters** that were discussed and considered are:

1. Analysis of all port processes,
2. Modification of the application to the needs of the Port Authority,
3. Testing,
4. Training of employers and stakeholders,
5. Procurement of equipment, and
6. Supervision of the operation and efficiency of the system.

Project **assumptions** are:

1. Time frame dedicated for pilot execution will be adequate,
2. Financial means for pilot requisitioning will suffice,
3. There are suitable locations for uninterrupted installation and operative usage of the system's enabling equipment, and
4. The stakeholders will be interested in the project deliverables (checked during WP4).

Custom **project management methodology** will be used, based on PMI-PMP methodology. Best practices and concepts from classic project management methodology will be used. It will cover the entire lifecycle of the pilot project implementation. It is best suited to the fast track and relatively short project like this pilot.

Rovinj Port Authority **currently uses several different unrelated** software systems that make it difficult to operate and monitor all business processes. The implementation of a system that integrates all aspects of the Port Authority's operations will enable optimal control over the operations of the Port Authority in all port areas it manages and at the same time enable the control of the mooring capacity occupancy. The application enables better integration of the operational part of business and management. Additionally; it solves the problem of duplicate data entry and possible errors that occur during the input, facilitates access to the data since all the data is digitized and in one place, the software is also available through the mobile application, statistical reports on traffic in the port are generated, significantly reduces the paperwork, radically speeding up processes, digitizing business and enabling better financial control.

The application's output documents are a prerequisite for future automation of the communication process with NSW, which is not technically possible at this time.

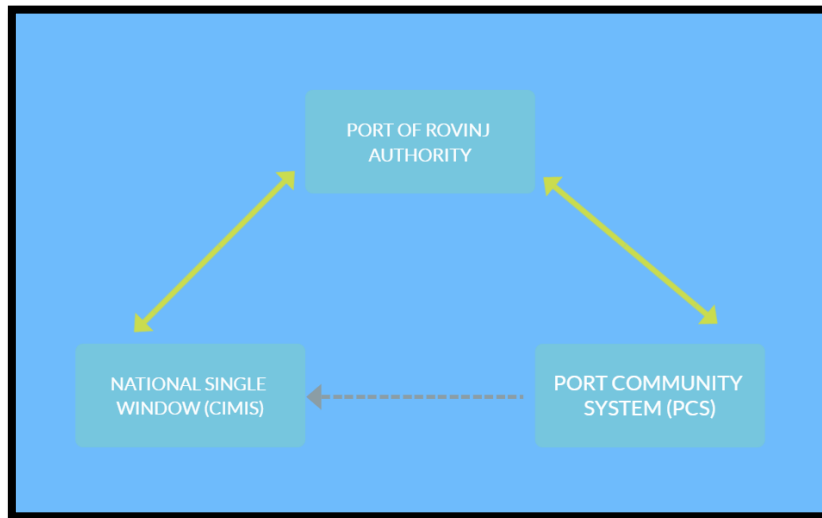


Figure 1. Three main parties and modalities which are envisaged and their correlation

CIMIS - Croatian Integrated Maritime Information System is a system that provides information interchange in order to enable the use of electronic business processes and procedures during ship's arrivals and departures in Republic of Croatia while the data used is connected with the SafeSeaNet system.

PCS - Port Community System

An information system responsible for collecting, controlling and exchanging data among all of the stakeholders in a port's cluster.

Advantages of using a PCS in sea ports exceed the sole purpose of coordinating and communicating through features like:

- Development of Single window system - national level
- standardization of information exchange
- accurate and practical submission of data 24 hours a day, 7 days a week
- centralization of all operations conducted by members of the port community
- requests for internet services
- online payment for services

- flexibility in the delivery of information in multiple formats
- reporting
- savings throughout the port community
- statistical data analysis.

Lučka Uprava Rovinj - Port of Rovinj Authority

The port authority, as the administrative body, performs all administrative and inspection works of the safety of the sea in the Republic of Croatia, according to its legal rights and duties. The administrative works enclose particularly keeping the order and safety in harbour, keeping various records and registers, issuing required documents and inspecting the use and regulations about safety of navigation and the ability of ships

Potentially suitable candidate for the project core is identified during preliminary research, and also as a part of previous WP packages - **Marina Master** - highly modular cloud-based system that enables its user to take total control of port's operation with a simple, easy-to-use marina management system which in turn reduces costs, raises productivity, improves customer experience and increases profit. PP9 will aim to introduce this solution, or the one with a similar set of capabilities.



Figure 2. An excerpt from the Marina Master brochure

2. Design details

Highly customizable and modular software solution offers a wide range products and services which would greatly enhance port's business conduct through implementing modules which are considered most suitable after taking into account port's infrastructure and superstructure background.



Figure 3. Marina Master software

Some of the modules this PCS can provide are:

CUSTOMER RELATIONSHIP MANAGEMENT- CRM

Advanced CRM, designed specifically for marinas enables:

- › correspondence with customers and complete information about customer & vessel from any device,
- › automatic contract renewal according to various criteria,
- › printing contracts and invoices in customers' language,
- › automatic email and SMS messaging of relevant information (including offers, business letters),
- › planned sales activities (automated reminders & alarms),
- › electronic document storage

MOVEMENT CONTROL

- › graphical overview of marina occupancy today & history & future,
- › vessel movements: arrivals, departures, temporary absences,

› vessel data: berth location, planned lifting out / launching services, expected arrivals.

Different options of automatized **boat identification and movement control**:

- › wireless vessel identification using RFID system,
- › automatic marina control using Ultrasonic Sensors,
- › vessel identification using QR code,
- › berth identification using NFC labels,
- › dock walk integrated in Marina Master Mobile,
- › direct communication via MyMarina



Figure 4. Available options automatized boat identification and movement control

EVENT MANAGEMENT

Advanced event management enables easy planning & managing all events and resources in marina. Customers are automatically informed about event and are able to fill-in the application form to attend event and other activities.

RECEPTION DESK-GUESTS

- › quick serving of guests in marina resort with check-in / check-out,
- › simplified vessel-data input and registration,
- › guest registration for authorities if needed,
- › powerful statistical reports

INVOICING - POS

- › automatic invoicing and email sending,
- › invoices issuing in the selected language,
- › supervision of overdue accounts and their auditing,
- › all POS functionalities included.

myMARINA

Is a modern way of communication through any mobile device. myMarina enables marina customers:

- › ordering services: boat lifting/launching, bottle of champagne on arrival and more
- › communication with marina staff,
- › complete overview of boat data,
- › requesting berth/car assistance before arrival,
- › viewing their vessel current situation live through stream camera footage (expert CCTV solutions, DASH),
- › advanced services: boat/berth sharing.

myMarina **enables** marina staff:

- › communication with marina customers, sending proposals,
 - › automatically received SMS or sound alarm after customer request for berth/car assistance,
 - › viewing live streams of berths to confirm availability and occupancy,
 - › controlling, supervising services and situation in marina anytime from any device and more.



Figure 5. Visual representation of MyMarina mobile application

YACHT CLUB

The Membership module is designed specifically for marina-based Yacht Club and provides full member integration between marina, food & beverages facilities and processing of membership data, resulting in Yacht Club centralized management. It enables you quick data entering & access, system's alarms & controls, automatic invoicing and efficient contract management

ACCOUNTANCY

The Accountancy module covers the entire process of monitoring financial documents from their origin to posting to the General Ledger:

- › customer and supplier balance,
- › financial and material accountancy for service administration,
- › automatic interest adjustment and revaluation,
- › overdue claims preparation.

MANAGEMENT-EIS

- › complete monitoring of marina activities,
- › physical and financial indicators,
- › service, income and expenses analysis,
- › future cash flow,
- › data mining by various criteria: profit-centre, location, vessel length, services, flag,

- › comparison of financial data over years.

SERVICING AND WAREHOUSE ADMINISTRATION

- › complete overview of customer requests about vessel,
- › planning individual services and workforce administration,
- › managing of derricks and equipment,
- › supervision of service work on each vessel and overview of work efficiency.

APARTMENTS

- › bookings and reservations,
- › offers,
- › guest registration,
- › invoicing and accountancy,
- › check-in / check-out.

STORE

The Store module is easily used with barcode readers:

- › register of new products in a warehouse,
- › receipt issuance.

Every transaction directly affects accountancy and stock inventory.

FOOD & BEVERAGE

The Food & Beverage module with built-in touch screen support is a sophisticated and complete tool for catering services in bars and restaurants. Orders and payment receipts are created fast and easy.

CHARTER

- › shared bookings of charter vessels,
- › profit sharing with vessel owners