

PCS for small ports

Deliverable D5.4 – Version Final – 2022-11-30



Advanced, Efficient and Green Intermodal Systems

<http://aegis.autonomous-ship.org/>



This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant Agreement N° 859992.



Document information

Title	D5.4 PCS for small ports
Classification	Confidential

Editors and main contributors	Company
Marianne Hagaseth (MH)	SO
Anne Cecilie Rueness (ACR)	GC
Terje Krogstad (TK)	GC
Johan Nordh (JN)	GC
Dan Steinnes (DS)	GC

Rev.	Who	Date	Comment
0.1	TK	2022-10-24	Draft skeleton
0.2	TK	2022-11-08	Draft main sections
0.3	TK	2022-11-10	Main section ready for internal review
0.4	TK	2022-11-14	Draft of complete report finalised
0.5	TK	2022-11-16	Adjust formatting, clean up references
0.6	TK	2022-11-25	Review by Peter Olesen, Port of Aalborg
0.7	TK	2022-11-29	Adjustments based on review
Final	TK	2022-11-30	Final revision to be submitted to EC

© 2020 AEGIS CONSORTIUM

This publication has been provided by members of the AEGIS consortium and is intended as input to the discussions on and development of new automated and autonomous waterborne transport systems. The content of the publication has been reviewed by the AEGIS participants but does not necessarily represent the views held or expressed by any individual member of the AEGIS consortium.

While the information contained in the document is believed to be accurate, AEGIS participants make no warranty of any kind with regard to this material including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. None of AEGIS participants, their officers, employees, or agents shall be responsible, liable in negligence, or otherwise howsoever in respect of any inaccuracy or omission herein. Without derogating from the generality of the foregoing neither of AEGIS participants, their officers, employees or agents shall be liable for any direct, indirect, or consequential loss or damage caused by or arising from any information advice or inaccuracy or omission herein.

The material in this publication can be reproduced provided that a proper reference is made to the title of this publication and to the AEGIS project (<http://aegis.autonomous-ship.org/>).



Table of Contents

- Executive Summary 5
- Definitions and abbreviations 6
- 1 Introduction..... 7
 - 1.1 Scope 7
 - 1.2 Preliminary state of PMS / PCS..... 7
- 2 Capabilities of community end user applications 8
 - 2.1 Port Management Systems 8
 - 2.1.1 Digital port Assets module 8
 - 2.1.2 AIS and live prediction..... 10
 - 2.1.3 External portal and collaboration (Quay bookings, services and price calculation) 13
 - 2.1.4 Mooring plan 16
 - 2.1.5 Dashboard and statistics 18
 - 2.2 ISPS and Port Security 20
 - 2.2.1 Authentication and authorisation 20
 - 2.2.2 Permit applications..... 21
 - 2.2.3 Short time permit ISPS areas and secured areas 25
 - 2.2.4 Digital ISPS assets, ISPS areas 26
 - 2.3 Terminal Operating System 31
 - 2.3.1 Digital yard..... 31
 - 2.3.2 Terminal planning operations and stakeholders..... 35
 - 2.3.3 Real time discharge and load operation support 36
 - 2.3.4 Cargo clearance 37
- 3 Community data services 39
 - 3.1 Integrations with authorities and stakeholders 39
 - 3.1.1 PCS and MSW 39
 - 3.1.2 PCS and Ship Operator 39
 - 3.1.3 PCS and VTS 40
 - 3.1.4 PCS and Terminal..... 40
 - 3.1.5 PCS and perimeter control (ISPS) 41
- 4 PCS and AEGIS, conclusions and further work 42
 - 4.1 AEGIS logistics models and operational scenarios 42



- 4.1.1 Automated port call updates and visualisation through AIS geofence and MSW integration 42
- 4.1.2 Self-service quay booking and port service orders 42
- 4.1.3 Insufficient RoRo operation capabilities 42
- References..... 43



Executive Summary

This deliverable describes and discusses the development of a Port Community System (PCS) for small ports based on the port management system (PMS) Port by Grieg Connect (Formerly named PortWin) as described in AEGIS T5.6.

A PCS should facilitate efficient information exchange between the port and other stakeholders, e.g., transport operators, terminal operators, port users, shipping companies, agents and authorities. It should support the communication between participating parties in both in the port call process, the cargo handling and the supply chain.

Through the D5.4 delivery (this report) Grieg Connect has enhanced the PMS with some of the necessary features and enhancements to support these processes, e.g., standardised digital and geometric assets, self-service features, automated ISPS and port facility security, digital yard planning etc.

The development of the PCS has also been analysed based on to the AEGIS use case A and use case B, findings related to operational scenarios of T5.1 and findings related to the logistics models developed in WP2.