

DOCKSTHEFUTURE

defining the concept of "Port of the Future"

Decision Support System Example

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Scope and Outline

The aim of these slides is to provide an example of the DSS interrogation.

Two examples are reported:

1. Given a set of Strategic Objectives, find the list of measures that address them at the best
2. Given a set of Measures, find the list of Strategic Objectives that can be addressed by them and the projects developing them

General overview of the DSS tool

DSS v1.0 structure

DSS structure

The DSS is developed in Visual Basic and consists of an Excel workbook articulated in three worksheets:


1. **Worksheet Guidelines:** this worksheet provides basic instructions
2. **Worksheet SO_to_MS:** this worksheet provides a list of MSs that addressed a list of SOs chosen by the user
3. **Worksheet MS_to_SO:** this worksheet provides a list of SOs that can be addressed by a list of MSs chosen by the user


NOTE: The DSS should be opened in only-read mode to avoid errors when saving

Worksheet SO_to_MS

DSS v1.0

Step 2: Press MS->SO and get the MS list





Select First Strategic Objective	Score
To improve the energy efficiency at ports	5

Select Second Strategic Objective	Score
To Increase the portion of renewable energy in port	3

Select Third Strategic Objective	Score
To promote green infrastructure at ports	2

SO->MS

EXPAND MEASURE

EXPAND PROJECT

RESET

BASIC HELP

- Select** up to three SO and the relevant importance (i.e., score)
- Press **MS->SO** to get list of the mesures, ranked and sorted from the most appropriate to the less appropriate
- Select a measure and press **EXPAND MEASURE** to get the list of projects and initiatives that developed the selected measure (measures in Italic are not developed in the considered initiatives/project)
- Select a project/initiative and press **EXPAND PROJECT** to get the details of the selected project
- Press **RESET** to clean the settings and restore the default condition
- An **ERROR** message is prompted if a proper selection is not made

Note: some SO might not be addressed by any MS in the DfF database

RANKING SCORE LIST OF MEASURES			CATEGORY
10	MS0550: Optimise renewable energy use including smart grids		Energy
8.3	MS0950: Wind energy systems		Energy
4.5	MS1041: Energy saving		Energy
4.1	MS1090: Carbon storage and recovery systems		Environment
2.9	MS1040: Energy management system		Energy
2.7	MS0210: Energy Efficiency Design Index (EEDI) and Ship Energy Efficiency Management Plan (SEEMP)		Energy
2.6	MS1230: Green procurement		Admin
2	MS1210: Port promotion port authority to business		Admin
1.9	MS0020: Alternative fuels		Environment
1.8	MS0930: Wave Energy systems		Energy
1.7	MS0520: On shore power supply		Energy
1.3	MS0510: Offshore renewable energy		Energy
1	MS0030: Ballast water management system		Environment
0.9	MS0440: LNG bunkering, supply and distribution chain		Environment
0.7	MS0420: Knowledge networks (creation of, investment in)		Admin
0.6	MS0670: Safe procedures for shore power supply		Energy
0.5	MS0461: Spatial harbour planning		Admin
0.4	MS0120: Create innovative energy storage systems		Energy
0.4	MS0260: Fuel types (new)		Environment
0.4	MS0490: Off shore wind farms		Energy
0.3	MS0160: Developing governance structure		Admin

NOTE: The different colours indicate the MS's category. MS are ranked by decreasing relevance.

Step 3: Select a MS and press EXPAND MEASURE

DOCKS THE FUTURE

Select First Strategic Objective

Select First Strategic Objective	Score
To improve the energy efficiency at ports	5

Select Second Strategic Objective

Select Second Strategic Objective	Score
To increase the portion of renewable energy in port	3

Select Third Strategic Objective

Select Third Strategic Objective	Score
To promote green infrastructure at ports	2

BASIC HELP

- Select up to three SO and the relevant importance (i.e., score)
- Press **MS->SO** to get list of the measures, ranked and sorted from the most appropriate to the less appropriate
- Select a measure and press **EXPAND MEASURE** to get the list of projects and initiatives that developed the selected measure (measures in *italics* are not developed in the considered initiatives/project)
- Select a project/initiative and press **EXPAND PROJECT** to get the details of the selected project
- Press **RESET** to clean the settings and restore the default condition
- An **ERROR** message is prompted if a proper selection is not made

Note: some SO might not be addressed by any MS in the DfF database

Selected MS

RANKING SCORE	PROJECT OF INITIATIVE THAT DEVELOPED THE MEASURE	MEASURE
10	MS0550: Optimise renewable energy use including smart grids	Energy
9.5	MS0550: Wind energy systems	Energy
4.5	MS1041: Energy saving	Energy
4.1	MS1200: Carbon storage and recovery systems	Environment
2.9	MS1040: Energy management system	Energy
2.7	MS0210: Energy Efficiency Design Index (EEDI) and Ship Energy Efficiency Management Plan (SEEMP)	Energy
2.6	MS1230: Green procurement	Admin
2	MS1210: Port promotion port authority to business	Admin
1.9	MS0020: Alternative fuels	Environment
1.8	MS0930: Wave Energy systems	Energy
1.7	MS0520: On shore power supply	Energy
1.3	MS0510: Offshore renewable energy	Energy
1	MS0030: Ballast water management system	Environment
0.9	MS0440: LNG bunkering, supply and distribution chain	Environment
0.7	MS0420: Knowledge networks (creation of, investment in)	Admin
0.6	MS0670: Safe procedures for shore power supply	Energy
0.5	MS0461: Spatial harbour planning	Admin
0.4	MS0120: Create innovative energy storage systems	Energy
0.4	MS0260: Fuel types (new)	Environment
0.4	MS0490: Off shore wind farms	Energy
0.3	MS0160: Developing governance structure	Admin

RANKING SCORE PROJECT OF INITIATIVE THAT DEVELOPED THE MEASURE

RANKING SCORE	PROJECT OF INITIATIVE THAT DEVELOPED THE MEASURE	MEASURE
-	MS0550: Optimise renewable energy use including smart grids	Energy
10	The Northern ScanMed Ports	PROJECT
2.5	LEAWIND	PROJECT
1.6	ISO 14001	INITIATIVE

List of projects/initiatives that developed the selected MS. The list is ranked by relevance of the project

Step 4: Select a Project and press EXPAND PROJECT

The screenshot displays the 'DOCKS THE FUTURE' web application interface. On the left, a sidebar contains buttons for 'EXPAND MEASURE', 'EXPAND PROJECT', and 'RESET'. The main content area is divided into three sections for selecting strategic objectives, each with a table of options and a score. Below these is a 'BASIC HELP' section with instructions. On the right, a 'Selected MS' table lists measures ranked by score. A red box highlights the top measure (Ranking Score 10, MS 'energy'). A red arrow points from this measure to a 'Selected project' table, which shows details for 'The Northern ScanMed Ports' project, including its description and web reference.

DOCKS THE FUTURE

Select First Strategic Objective

	Score
To improve the energy efficiency at ports	5

Select Second Strategic Objective

	Score
To Increase the portion of renewable energy in port	3

Select Third Strategic Objective

	Score
To promote green infrastructure at ports	2

BASIC HELP

- Select up to three SO and the relevant importance (i.e., score)
- Press **MS->SO** to get list of the measures, ranked and sorted from the most appropriate to the less appropriate
- Select a measure and press **EXPAND MEASURE** to get the list of projects and initiatives that developed the selected measure (measures in Italic are not developed in the considered initiatives/project)
- Select a project/initiative and press **EXPAND PROJECT** to get the details of the selected project
- Press **RESET** to clean the settings and restore the default condition
- An **ERROR** message is prompted if a proper selection is not made

Note: some SO might not be addressed by any MS in the DTF database

Selected MS

RANKING SCORE	LIST	CATEGORY
10	MS	energy
8.3	MS	energy
4.5	MS	energy
4.1	MS	environment
2.9	MS	energy
2.7	MS	energy
2.6	MS	admin
2	MS	admin
1.9	MS	environment
1.8	MS	energy
1.7	MS	energy
1.3	MS	energy
1	MS	environment
0.9	MS	environment
0.7	MS	admin
0.6	MS	energy
0.5	MS	admin
0.4	MS	energy
0.4	MS	environment
0.4	MS	energy
0.3	MS	admin

Selected project

RANKING SCORE	PROJECT or INITIATIVE THAT DEVELOPED THE MEASURE	
10	The Northern ScanMed Ports	PROJECT
2.9	LEARNING	PROJECT
1.6	ISO 14001	INITIATIVE

The Northern ScanMed Ports PROJECT

Web Reference:
<https://trimis.ec.europa.eu/project/northern-scanned-ports-sustainable-maritime-links>

Description:
 The overall objective of the action is to improve energy-efficiency in port operations and shipping, provide onshore power and reception of ship waste and waste water. This will contribute to the development of sustainable, more environmental friendly Motorways of the Sea services between Sweden and Finland.

Worksheet MS_to_SO

DSS v1.0



Step 1: Select the MSs

The screenshot displays the 'DOCKS THE FUTURE' application interface. At the top, there are three blue chevron arrows pointing right. Below them is the title 'DOCKS THE FUTURE' in a stylized font. The interface is divided into three main sections, each corresponding to a 'Measure Selection' step:

- First MS:** A box labeled 'MSO010: AEO' with a blue button 'Select First Measure' above it.
- Second MS:** A box labeled 'MSO020: Alternative fuels' with a blue button 'Select Second Measure' above it.
- Third MS:** A box labeled 'MSO070: Cargo logistics system in urban areas' with a blue button 'Select Third Measure' above it. Below this label is a list of measures, with 'MSO070: Cargo logistics system in urban areas' highlighted in blue. Other measures listed include MSO080, MSO090, MSO100, MSO110, MSO120, MSO130, and MSO140.

Below the 'Third MS' section, there are three buttons: 'EXPAND SO' (green), 'EXPAND PROJECT' (green), and 'RESET' (dark grey). To the right of these buttons is a text area containing the following text:

selected measures and the list of projects that developed them

- To expand the Strategic Objective:
 - select the SO
 - press **EXPAND SO**
 - see the results in the SO_to_MS tool
- Press **RESET** to clean the setting and restore the default condition
- An **ERROR** message is prompted if a proper selection is not made

At the bottom right, a red note states: 'Note: some MS might not address any SO and/or be developed in a project in the DTF database'.

NOTE: It is possible to choose a single MS.
In this case it must be the first

Step 4: Select a Project and press EXPAND PROJECT

EXPAND
PROJECT

>>>>
DOCKSTHEFUTURE

Select First Measure

MS0020: Alternative fuels

Select Second Measure

MS0020: Alternative fuels

Select Third Measure

MS0070: Cargo logistics system in urban areas

MS->SO

EXPAND SO

EXPAND PROJECT

RESET

BASIC HELP

- > Select up to three Measures
- > Press **MS->SO** to get the list of SOs addressed by the selected measures and the list of projects that developed them
- > To expand the Strategic Objective:
 - o select the SO
 - o press **EXPAND SO**
 - o see the results in the SO_to_MS tool
- > Press **RESET** to clean the setting and restore the default condition
- > An **ERROR** message is prompted if a proper selection is not made

Note: some MS might not address any SO and/or be developed in a

RANKING SCORE	LIST OF STRATEGIC OBJECTIVES	Measure 1	Measure 2	Measure 3
10	To deploy alternative transport fuels	x	x	
3.9	To increase the portion of renewable energy in port	x	x	
2.9	To reduce / mitigate the externalities of port operations	x	x	
2.6	To transit towards digitization and automation in port activities	x	x	x
1.8	To provide systematic incentives for clean ships	x	x	
0.2	To strengthen city-port relations			x

Selected project

Measure	Measure 1	Measure 2	Measure 3
ITN			x
Intermodal, Technological, Urban, Coastal, Terrestrial			
GULNG	x	x	
POSEIDON MED		x	x
Civitas PORTIS		x	
LEAWIND		x	x
GAINNAMOS	x	x	
The small-scale LNG Reloading Terminal in Gdansk and bunkering services	x	x	
Go4Synergy	x	x	
Blue Baltics LNG infrastructure facility deployment in the Baltic Sea Region	x	x	
chameleon	x	x	
Technical Study and Cost-Benefit Analysis for the Development of LNG as a Marine Fuel in Malta	x	x	
Zero Emission Ferries	x	x	
CLEANPORT		x	x
Piote Gateway Project			x
GUICPORT			x
CRAFTPLAT			x
CiElo CityPort Eco Logistic			x
N2B Colle			
SWIFTLY Green			x
Directive 2014/94/EU	x	x	

Selected project details

ITN PROJECT

Web Reference:
<https://trimis.ec.europa.eu/project/intermodal-rail-height-twin-hub-network-northwest-europe>

Description:
The Aim of the project is to make intermodal rail transport in, from and to North West Europe (NWE) more competitive, in particular between the Dutch and the Belgian seaports and European inland terminals, in this way creating the conditions to shift flows from the road to the rail sector, providing in more sustainable and robust transport and a higher network connectivity and territorial cohesion within NWE. The central configuration to achieve this aim is the Twin hub network, a transnational rail service network. Its implementation to improve intermodal performances is the MAIN OBJECTIVE of the project. The objective refers to: promising networks, which could be implemented on the short to long term. A pilot (demonstration) network with three Twin hub trains to be implemented within the project period

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