

**EMODnet**  
European Marine  
Observation and  
Data Network  
*Your gateway to marine data in Europe*

**EMODnet Progress Indicators and  
Monitoring System**

September 14th, 2017

**PILOT**

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The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) No 509/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.



**Context**

- ④ Trust-IT supports Secretariat in the monitoring procedure revamp
- ④ Portal interviews were held in May 2017
- ④ Presentation of the new monitoring proposition at the Technical Working Group meeting in Genoa, on July the 6th
- ④ Feedback collection during the Summer and new proposition
- ④ Today: endorse new procedure to start pilot



## New Progress Indicators

**EMODnet**



Characteristics	Description
<b>Relevant</b>	<ul style="list-style-type: none"> <li>- Reflect the work of each portal</li> <li>- Show the portals' health, usage and popularity</li> <li>- <b>Understandable by any reader, self-contained reporting</b></li> </ul>
<b>Actionable</b>	<ul style="list-style-type: none"> <li>- Highlight the gaps and possible issues to prioritize future work</li> <li>- Find what is working well to generalize good practices</li> </ul>
<b>Precise</b>	<ul style="list-style-type: none"> <li>- The demanded indicators should be described in detail and leave no space to free interpretation</li> <li>- Templates should be provided</li> <li>- All reported numbers or facts should be dated</li> </ul>
<b>Easy to Report</b>	<ul style="list-style-type: none"> <li>- Favor automatable indicators</li> <li>- Compatible with every particular structure, architecture and organisation</li> </ul>
<b>Coherent among all the portals</b>	<ul style="list-style-type: none"> <li>- Ease global EMODnet reporting</li> <li>- One step towards EMODnet harmonization</li> </ul>



## Support Documents

**EMODnet**

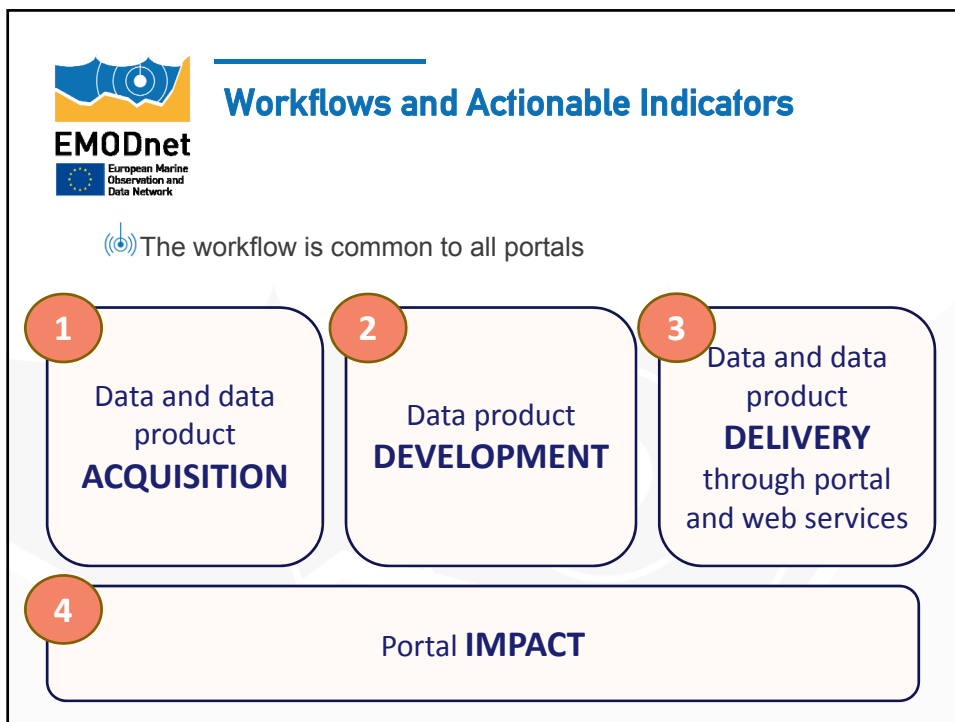



### (( )) Glossary

- (( )) Harmonised and precise reporting
- (( )) Helps external reader understand reports







### (( )) Monitoring Support Document


- (( )) Takes the form of a FAQ
- (( )) Is based on portals' feedbacks and questions
- (( )) Allows Indicators to adapt to special portal cases





## Group 1: Data and data product acquisition

-  Indicator 1 - Volume and coverage of available acquired data and data products TABLES, NEW MONITORING
  -  Indicator 1.1 – Volume and coverage of available acquired **data**
  -  Indicator 1.2 – Volume and coverage of available acquired **data products**
-  Indicator 2 - Organisations supplying data and data products FORMAT CHANGE ONLY
-  Indicator 3 - Organisations that have been approached to supply data with no result, including type of data sought and reason why it has not been supplied FORMAT CHANGE ONLY
-  Indicator 4 - Quality control and Quality Assurance indicators by theme TABLES, NEW MONITORING



## Indicator 4 – QC/QA

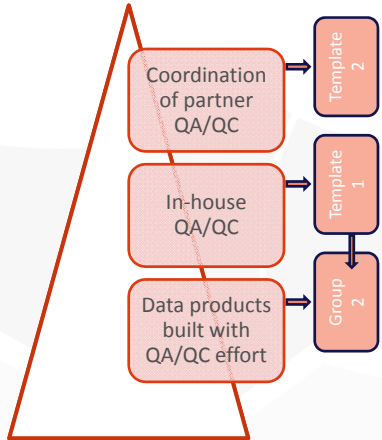
– A yearly list of QC/QA and harmonisation steps performed by the portal.

– Template 1 - suggestion

Themes	Unit	Number passed QC/QA	Number corrected in-house	Number rejected/ returned	Number of merged datasets	Comments


– Template 2 - suggestion

Themes	Dataset name	Number of partners involved	Portal's achievement	Comments



```


graph TD
    A[Coordination of partner QA/QC] --> B[Template 2]
    C[In-house QA/QC] --> D[Template 1]
    E[Data products built with QA/QC effort] --> F[Group 2]
    B --> D
    D --> F
    
```



## Group 2 – Data product development


**Indicator 5 – Data product development** TABLES, NEW MONITORING

- Indicator 5.1 – Number and coverage of built data products
- Indicator 5.2 – List of data product releases by the port 1 TABLE REMOVED



## Group 3 – Data and data product delivery through portal and web services


- Indicator 6 – Portal visibility
  - Indicator 6.1 – Portal & Social Media visibility TABLES, ANALYTICS
  - Indicator 6.2 – Efforts to increase visibility (newsletters, press releases, events) SECRETARIAT
- Indicator 7 – Technical performance of the portal, both in back-end and front-end
  - Indicator 7.1 – Technical monitoring NEW MONITORING, SECRETARIAT
  - Indicator 7.2 – Portal user-friendliness TABLES, ANALYTICS
- Indicator 8 – Interfaces and their usage
  - Indicator 8.1 – Interfaces -> yearly reporting NEW FREQUENCY
  - Indicator 8.2 – See Group 4



## Group 4 – Portal Impact

- Indicator 8 – Interfaces and their usages
  - Indicator 8.1 – See Group 3
  - Indicator 8.2 – Usage of data and data products per interface and per theme
- Indicator 9 – Distribution of users that have used the portal’s data and data products per organisation type and country, and their main use cases
- Indicator 10 – Exploitation of EMODnet data
  - Indicator 10.1 - External products (websites, apps...) built on top of web services
  - Indicator 10.2 – Published use cases and number of readings

NEW INDICATOR, ANALYTICS

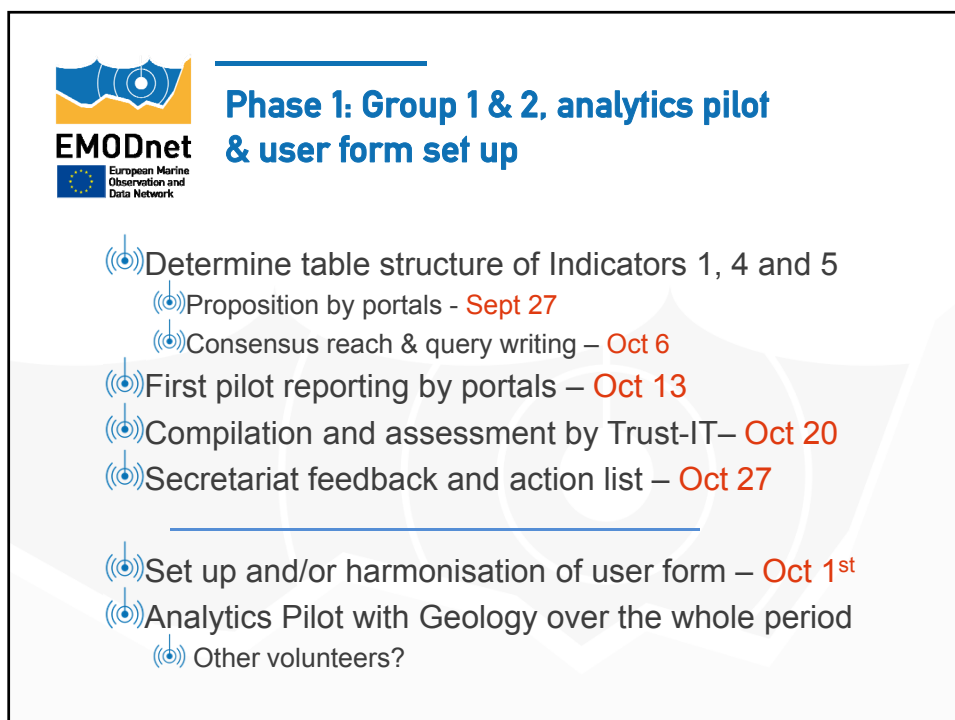
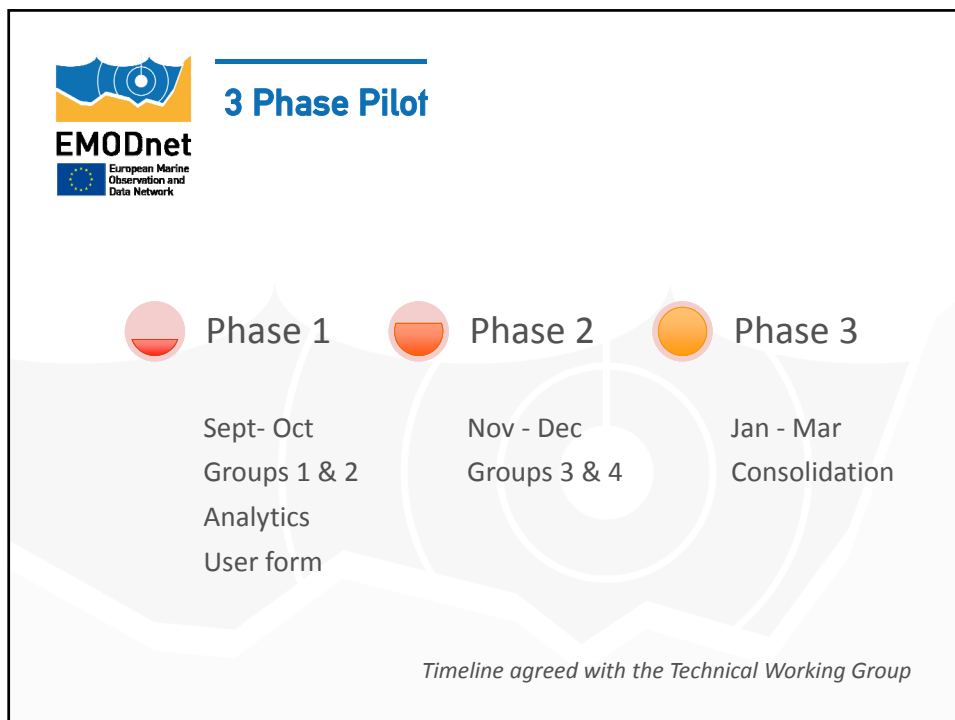


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# PILOTING the new indicators

Actions

The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.




1.1. Volume of available data	Date	Portal	Unit	Redundancy	Total Volume	Trend	
	01-07-2017	Chemistry	datasets	Yes	#CDIs	+248 (+4%)	
	Greater North Sea- Celtic Sea- Norwegian Sea (2.3 M km2)	Baltic Sea (0.4 M km2)	Iberian Peninsula - Macaronesia - Bay of Biscay (>3 M km2)	Mediterranean Sea (2.5 M km2)	Black Sea – Sea of Azov (0.5 M km2)	Total Volume per theme	Trend
Acidity (4)	#CDIs	#CDIs	...		Total # CDIs	+35 (+2%)	
Antifoulants (3)	#		...				
Chlorophyll (2)	...						
Dissolved gasses (3)							
Fertilisers (14)							
Hydrocarbons (10)							
Heavy metals (7)							
Organic matter (8)							
Polychlorinated biphenyls (4)							
Pesticides and biocides (3)							

Assess feasibility

What is a table structure?

Example Indicator 1.1  
Data acquisition - Chemistry

Find structure suggestions in the monitoring document

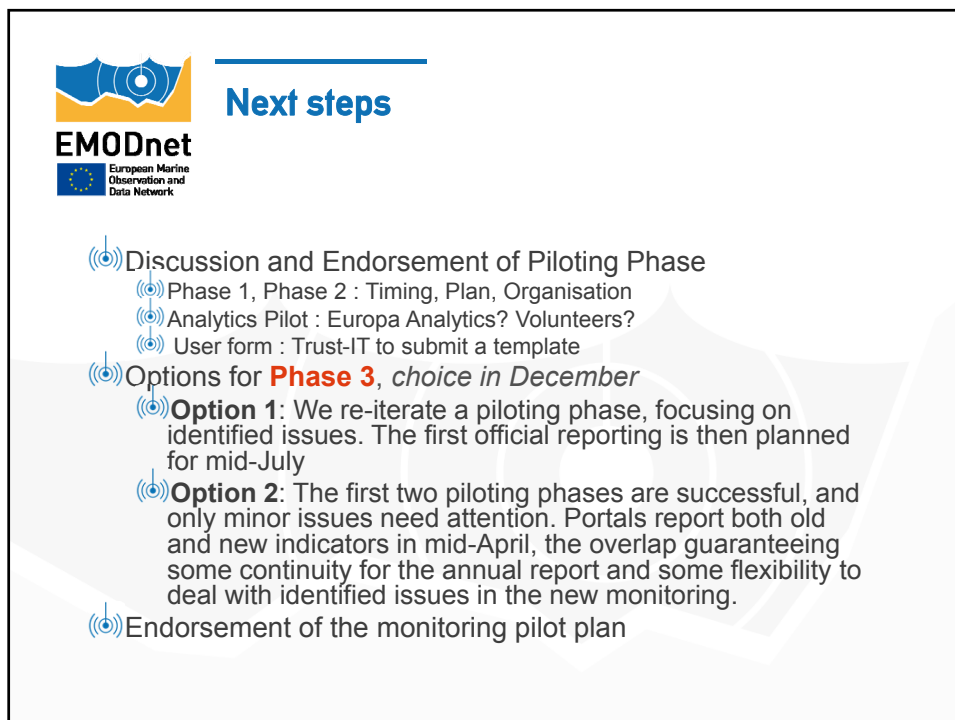
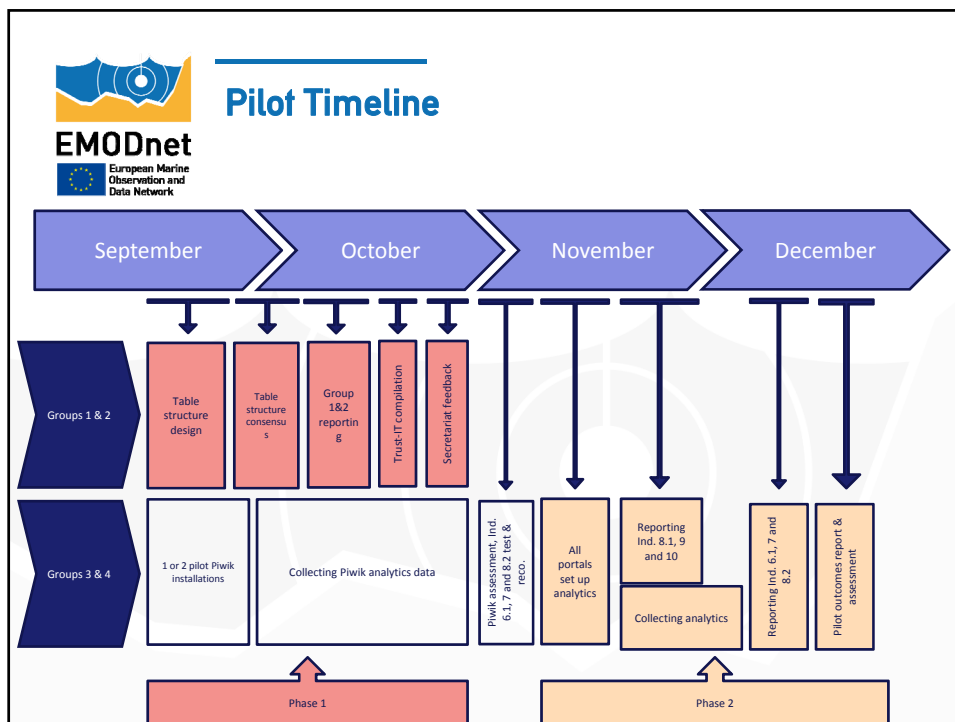


## Phase 2 – Groups 3 & 4

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- ⌚ Pilot reporting of Indicators 8.1, 9 & 10 – **Nov 6<sup>th</sup>**
  - ⌚ Indicator 9 requires a user form! – Anticipation required
- ⌚ Install a common Analytics tool – **Nov 13<sup>th</sup>**
  - ⌚ A analytics pilot will take place in Phase 1 with Geology
  - ⌚ Other portals can join Phase 1 analytics pilot
  - ⌚ Tool: Europa Analytics, Piwik based – Central installation
- ⌚ Pilot reporting of Indicators 6.1, 7 and 8.2 – **Dec 11<sup>th</sup>**
  - ⌚ These indicators require analytics
  - ⌚ Based on data collected from November 15th at the latest.
- ⌚ Pilot outcomes report & assessment – **Dec 18<sup>th</sup> & 21<sup>st</sup>**





ANNEX

## SLIDES FROM TECHNICAL WORKING GROUP – JULY 6<sup>TH</sup>

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Group 1

## DATA AND DATA PRODUCT ACQUISITION

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### Indicator 1: Volume and coverage of acquired data and data products available

- Purpose: Measure the portal data acquisition progress and the volume of available data
- Break-down categories: portal themes and sea basins
- Actions triggered by the indicator:
  - Focus data acquisition efforts where data is missing
  - Start a data product where good coverage is reached



### Volume and coverage of available acquired data

1.1. Volume of available data	Date	Portal	Unit	Redundancy		Total Volume	Trend
	Sea basin 1 (area in km2)	Sea basin 2 (area in km2)	Sea basin 3 (area in km2)	Sea basin 4 (area in km2)	..	Total Volume per theme	Trend
Theme 1							
Theme 2							
Theme 3							
...							

### Number of acquired external data products

1.3.1. Number of external data products	Date <sup>11</sup>	Portal <sup>12</sup>	Redundancy <sup>13</sup>		Total Number <sup>14</sup>
	Sea basin 1 (area in km2)	Sea basin 2 (area in km2)	Sea basin 3 (area in km2)	...	All sea basins
Theme <sup>15</sup> 1					
Theme 2					
Theme 3					
...					

### Coverage of acquired external data products

1.3.2. Parameter coverage of external data products	Date	Portal	Redundancy	
Number of parameters with...	no data product	1 data product	2 to 4 data products	More than 5 data products
Theme 1				
Theme 2				
Theme 3				
...				

## Indicator 2 : Organisations supplying data and data products.

- Purpose: Track the organisations supplying data and data products.
- Actions triggered by the indicator:
  - Potential use cases to be explored for communication scopes
  - Clear understanding of the organisations that could potentially become data providers.

## Indicator 2 : Organisations supplying data and data products.

2.1. Organisations supplying each type of data	Date	Portal		
	Type	Country	Data or Data product or Both	% of restricted data
Organisation 1				
Organisation 2				
Organisation 3				
...				

Indicator 3: Organisations that have been approached to supply data with no result, including type of data sought and reason why it has not been supplied

- Purpose: Track the reasons of why some organisations do not want to supply data although having been approached.
  - Actions triggered by the indicator:
    - Tune the engagement strategy
    - Analyse the causes of the refuses and bring them to the attention of other portals that may incur in the same issue
  - Template: Free text.
- 

Indicator 4 - List the main quality and harmonisation steps performed by EMODnet to make acquired data available

- Purpose: Qualify the added value of EMODnet in data acquisition
  - Actions triggered by the indicator: Share good practices & steer communication
  - Template: In the first 2 reports: bullet-point lists. Then we will synthesize the lists into a harmonized table to be checked.
-

Indicator 4 - List the main quality and harmonisation steps performed by EMODnet to make acquired data available

Step	Category

Categories : Harmonisation, Quality control. More?

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Group 2

## DATA PRODUCT DEVELOPMENT

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Indicator 4 (2<sup>nd</sup> part) - List of the main processing steps performed by EMODnet to build and maintain data products

- Purpose: Qualify the added value of EMODnet in building and maintaining data products.
- Actions triggered by the indicator:
  - Share good practices
  - Steer communication
- After the first report, we will synthesize the lists and provide harmonized step names and categories.



Indicator 4 (2<sup>nd</sup> part) - List of the main processing steps performed by EMODnet to build and maintain data products

Step	Category

Categories : Data preparation, Data processing, Accuracy estimation, Output formatting. (?)



### Indicator 5 - Number and coverage of built data products, and list of releases

- Purpose: Measure the portal efforts in creating and improving data products
- Break-down categories: portal themes and sea basins
- Actions triggered by the indicator:
  - Focus effort on themes and sea basins with little data products
  - Update data products that have not been in a long time
  - Communicate about recent releases

### Indicator 5 - Number and coverage of built data products, and list of releases

#### Number of built data products

2.2.1. Number of EMODnet data products	Date <sup>16</sup>	Portal <sup>17</sup>	Redundancy <sup>18</sup>		Total Volume <sup>19</sup>
	Sea basin 1 (area in km <sup>2</sup> )	Sea basin 2 (area in km <sup>2</sup> )	Sea basin 3 (area in km <sup>2</sup> )	...	All sea basins
Theme <sup>20</sup> 1					
Theme 2					
...					

Coverage of built data products

2.2.2. Parameter coverage of EMODnet data products <sup>21</sup>	Date	Portal	Redundancy	
Number of parameters with...	no data product	1 data product	2 to 4 data products	More than 5 data products
Theme 1				
Theme 2				
Theme 3				
...				

List of data product releases by the portal

EMODnet data product name	Last release date (< 3 months only)	Creation or Update	Short comment

Last release period	Number of EMODnet data products
< 3 months	
3 - 12 months	
12 - 24 months	
> 24 months	

Group 3


## DATA AND DATA PRODUCT DELIVERY THROUGH PORTALS AND WEB SERVICES

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### Indicator 6 - Portal visibility and efforts to increase visibility (newsletters, SEO, press releases, events)

#### Portal & Social Media visibility (visits & SEO Scoring)

- Purpose: To monitor the popularity of the websites/social media
  - Actions triggered by the indicator:
    - Set up appropriate communication actions when a portal is underperforming
  - This indicator includes the following metrics: Number of Visits (of main pages), unique visitors, country histograms and trend compared to previous reporting period, SEO scoring, number of followers on different social media
-



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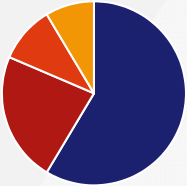
**Indicator 6 - Portal visibility and efforts to increase visibility**

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**Portal & Social Media VISIBILITY**

Page	Number of Visits	Trend	Number of Unique Visitors	Trend
Page 1				
Page 2				
...				

Visits



■ Country 1  
 ■ Country 2  
 ■ Country 3  
 ■ Others

SEO score :	
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Social Media	Number of Followers	Trend
Twitter		
LinkedIn		
...		



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**Indicator 6 - Portal visibility and efforts to increase visibility**

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**Efforts to increase VISIBILITY (newsletters, press releases, events)**

- Purpose: Make sure that actions are put in place to increase the visibility of the portals
- Actions triggered by the indicator:
  - Revise the communication strategy when not-appropriate
- This indicator includes the following metrics: Number of events; Number of new contacts established at events; Number of newsletters; Number of press releases,...
- Intranet: A tool to report events will be set up

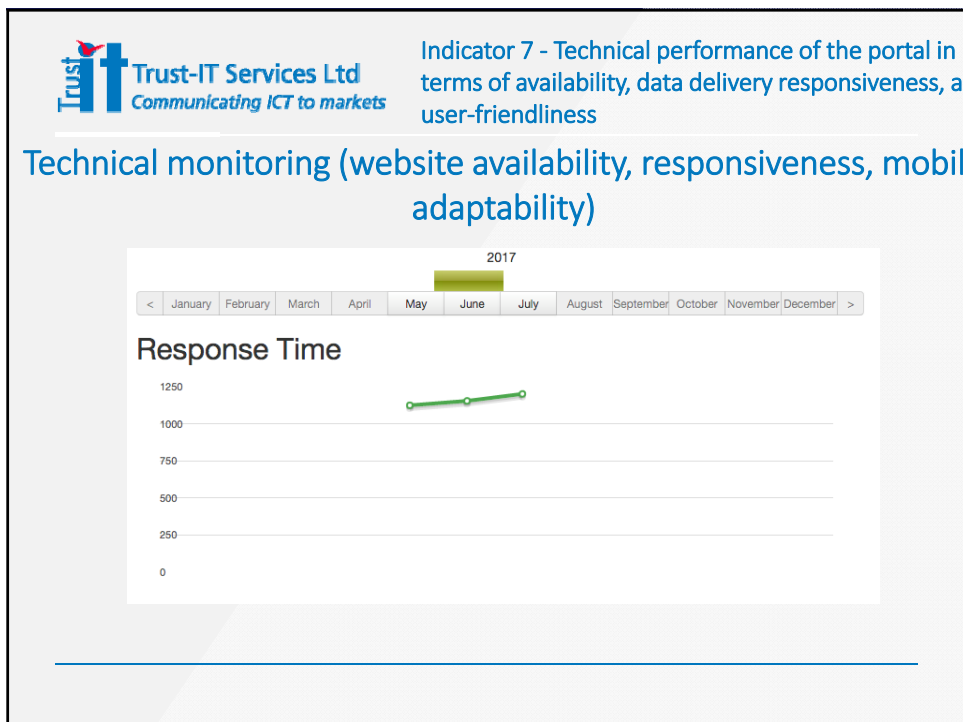
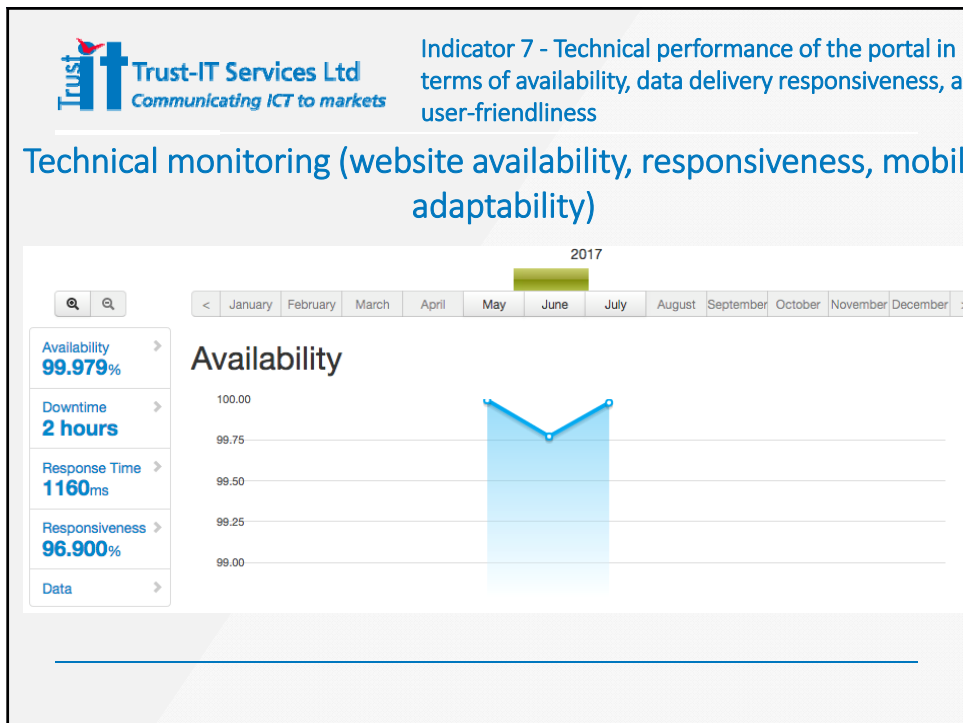
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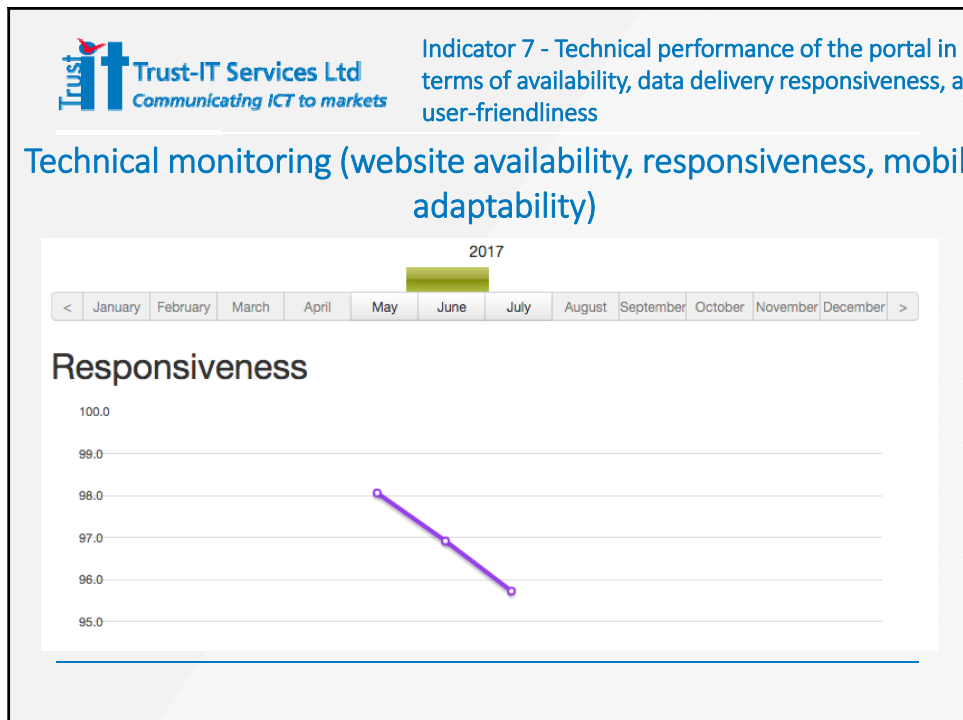
**Efforts to increase VISIBILITY**

	Quantity	Comments
Number of events		
Number of contacts		
Number of press releases		
Number of tweets		
Number of newsletters		
...		

**Technical monitoring (website availability, responsiveness, mobile adaptability): centralised and automatic monitoring**

- Purpose: Weekly monitor the technical performances of the portals
- Actions triggered by the indicator:
  - Improve **back-end** to ensure a proper user experience
- This indicator is split into three categories:
  - Website availability: Usually calculated in percentage polling the website homepage every minute, if there is no reply or an error message it's calculated as a downtime. Usually anything over 99.5% in a month should be acceptable.
  - Response time: The time to download the whole homepage. This measurement is affected by network connection speed.
  - Responsiveness: Polling the website, if the homepage is slower than 1500ms (this value can be changed) the website is flagged as slow. Usually displayed as the percentage of the "not slow" requests



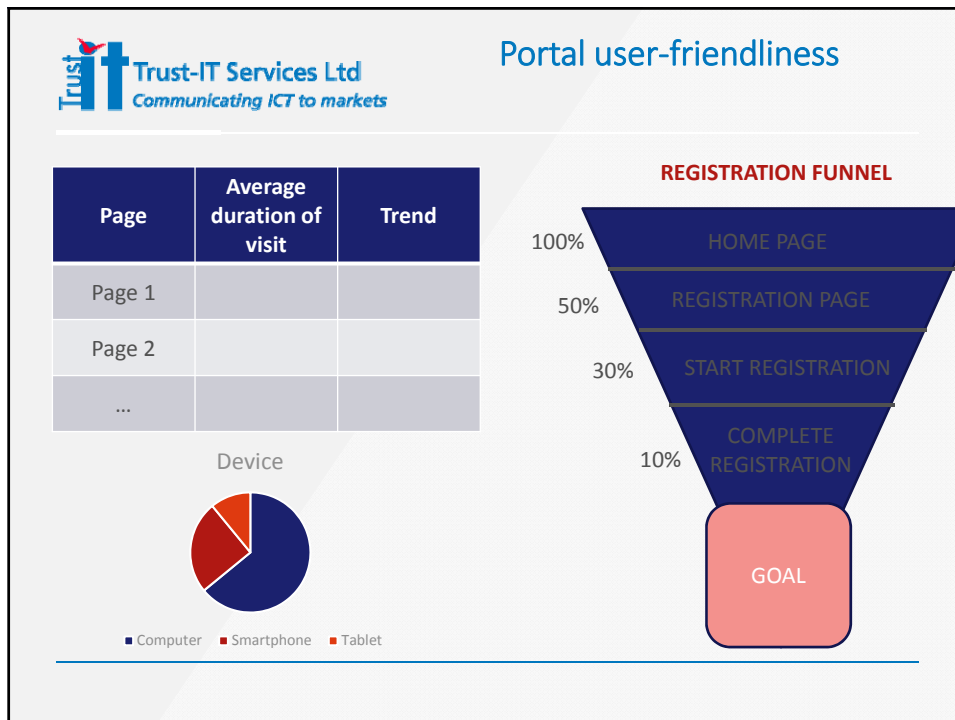


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Indicator 7 - Technical performance of the portal in terms of availability, data delivery responsiveness, and user-friendliness

### Portal user-friendliness (visit durations, analytics goal and funnel analysis, visual harmonisation score)

- Purpose: To monitor the usability of the websites and identify bottlenecks
- Actions triggered by the indicator:
  - Set up appropriate **front-end** actions to improve user-friendliness when portal is underperforming
- This indicator includes the following metrics to assess the user experience:
  - Average visit duration of the main pages (home page, data download page, map viewer);
  - Goal and funnel analysis of main portal features (it depends on the portal): do visitors easily find their way in the portal? Which steps prevent visitors from reaching goals (data download, map views)?;
  - Device histograms: assess if portals should work on mobile rendering;
  - Visual harmonization score (to be defined)



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### Indicator 8 - Interfaces to access or view data (one table for data, one table for data products)

- Purpose: To map the existing interfaces to access or view data
- Actions triggered by the indicator:
  - Future harmonization of the portals
  - Interface gap analysis: plan future interfaces.
- Feature list to check: Possibility to superpose data, external data products and EMODnet data products in the map viewer; Possibility to download data from map viewer, possibility to read metadata of data from map viewer; ...



Indicator 8 - Interfaces to access or view data (one table for data  
one table for data products)

List of interfaces	DATA	Date	Portal		
	Manual download	Map viewer	WCS	WFS	...
Theme 1	% of data available through services	or	✓ available ...; not available ...; available in the next 6 months	or	any other suggestions?
Theme 2					
Theme 3					
...					

Indicator 8 - Interfaces to access or view data (one table for data  
one table for data products)

List of interfaces	External DATA PRODUCTS	Date	Portal		
	Manual download	Map viewer	WCS	WFS	...
Theme 1	% of data <u>products</u> available through services	or	✓ available ...; not available ...; available in the next 6 months	or	any other suggestions?
Theme 2					
Theme 3					
...					

Indicator 8 - Interfaces to access or view data (one table for data  
one table for data products)

List of interfaces	EMODnet DATA PRODUCTS	Date	Portal		
	Manual download	Map viewer	WCS	WFS	...
Theme 1	% of data available through services	or	✓ available ; not available ; available in the next 6 months	or	any other suggestions?
Theme 2					
Theme 3					
...					

Group 4

## PORTAL IMPACT

Indicator 8 (2<sup>nd</sup> part) - Usage of data and data products per INTERFACE (downloads, views, web-services) and per theme (together with volume of downloadable units per theme to assess relative data popularity)

- Purpose: Measure data and data product popularity
  - Actions triggered by the indicator:
    - Unpopular data: understand the situation (poor coverage, fragmented data, poor user interface, lack of communication) and prioritize actions to make it more popular.
    - Popular data:
      - Consider building a data product
      - Look for related use cases
- 

Indicator 8 (2<sup>nd</sup> part) - Usage of data and data products per interface and per theme

- Break-down categories:
    - Portal themes and interfaces (Manual downloading, web services, etc.)
    - Tiles and interfaces for bathymetry (holds only 1 theme)
    - If for some interface, the breakdown is not possible, merge column cells.
  - Tables: depending on the portal, one or more tables are reported for this indicator:
    - One table for Data
    - One table for External data products
    - One table for EMODnet data products
    - And/or combinations of the above when the distinct downloads cannot be measured separately; e.g. if data products and data are both present in the map viewer, mixed map views are counted.
    - If usage data is not available for 1 category (data, external & EMODnet data products) or for 1 interface, report a table or a column with question marks (?) highlight the existence of untracked usage.
-

4.1.1 DATA	Date <sup>22</sup>		Portal <sup>23</sup>		Redundancy <sup>24</sup>		Use of WMS for map viewer? <sup>25</sup>			
	Downloadable Volume <sup>26</sup>	trend <sup>27</sup>	Number of manual downloads	trend	Number of WMS requests	trend	Number of map visualisations	trend	...	trend
Theme <sup>28</sup> 1										
Theme 2										
...										


4.1.2 EMODnet DATA PRODUCT	Date		Portal		Redundancy		Use of WMS for map viewer?			
	Number of EMODnet Data Products	trend	Number of manual downloads	trend	Number of WMS requests	trend	Number of map visualisations	trend	...	trend
Theme 1										
Theme 2										
...										
All										

Indicator 9 – Distribution of users that have used the portal's data and data products per organisations type and country, and their main use cases.

- Purpose: Know who the portal users are (on the last year)
  - Actions triggered by the indicator:
    - Reach communities not using the portal enough
    - Reach engaged user communities to get feedback, improve the service for them, and write new use cases.
    - Adapt the portal vocabulary and technicity to the users.
    - Build data products relevant to specific user communities.
  - Template:
    - If the portals gets several sources of user information, it is possible to report several times the template table, once per information source. Similarly, some groups of interfaces can be reported in separate tables.
- 

Indicator 9 – Distribution of users that have used the portal's data and data products per organisations type and country, and their main use cases.

- User form before download
    - Organisation type (required field)
    - Country (optional or compulsory field)
    - Email (optional field). This will be used to engage with users who are interested in the portal's updates.
    - Use Case (optional & free text field).
  - Considering the use of EUlogin
    - Give information less often
    - Service personalisation possibilities
-




Indicator 9 – Distribution of users that have used the portal’s data and data products per organisations type and country, and their main use cases.

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Date	Portal	Interfaces <sup>30</sup>	Means of information collection	Number of users giving information <sup>31</sup>	Total number of users <sup>32</sup>
Organisation type <sup>33</sup>	% of users	Main use cases and application areas <sup>34</sup>			

Date	Portal	Interfaces	Means of information collection	Number of users giving information	Total number of users
Country	% of users				



Indicator 10 - Applications: list of external products (websites, apps,...) built on top of web-services, list of published use cases and number of readings.

External products (websites, apps,...) built on top of web-services

- Purpose: lists the external products and services that have been built using the portal’s web services.
  - Exhaustive lists are not required. Prioritize the most important and also the new ones.
- Actions triggered by the indicator:
  - Improve the engagement strategy & increase awareness about use cases

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External products (websites, apps,...) built on top of web-services

Organisations who built on top of EMODnet web-services	Date	Portal		
	Type	Country	Web-service type	Link to product or short description of usage
Organisation 1				
Organisation 2				
Organisation 3				
...				

Published use cases and number of readings

- Purpose: List use cases that are published in the portal and assess the interest they raise.
- Actions triggered by the indicator:
  - Trigger dissemination of the use cases
  - Improve the presentation of use cases
- Central Portal will also report this indicator, and results will be merged.

### Published use cases and number of readings

Date	Portal		
Use case title	Release date	Number of views in reporting period	Appears in Central Portal
			✓

### Bonus Indicator - List of known publications using EMODnet data or products.

- Purpose: List publications (scientific papers, general press, etc.) based on the portal's data or data products, that have been published in the reporting period.
- This indicator will be measured by **Secretariat**, but portals are welcome to support Secretariat by indicating publications they happen to know about.
- Actions triggered by the indicator:
  - Trigger dissemination of the scientific publications



## Bonus Indicator - List of known publications using EMODnet data or products.

<i>Date</i>	<i>Portal</i>			
Date of publication	Journal, conference...	Title	Authors	Organisation

## Next steps

- Collect feedback from portals 6 July 2017
- Write the new monitoring procedure document end of July (final version of D2.2)
- Try a pilot reporting
- New monitoring procedure official endorsement by the Steering Committee (September 2017)
- New monitoring procedure in place (from September on)
- New monitoring refinement (from September to Dec 2017)
- Final deliverable D2.3 December 2017