COPtool

User Manual

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Co-funded by the European Union Civil Protection

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DISCLAIMER

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Content

1. Background

In the event of a maritime accident involving HNS, maritime authorities must take numerous decisions to organize the best response strategy, i.e., one that minimizes risks to human health (including incident response teams, crew members and coastal communities), to the marine environment, for maritime safety and for socio-economic activities and facilities. While many key decisions and considerations are prescribed in national or regional contingency plans, operational response activities will generally need ongoing adjustment or review to reflect the most recent information available as the contamination event evolves. In such a rapidly changing situation, an efficient exchange of information between competent decision-making authorities and response teams on the ground can greatly facilitate both decision-making processes and organizational processes.

The purpose of work package 5 of the Manifests project (Manifests decision support system) is to develop an efficient information system that helps (1) decision makers understand the situation at stake and its likely evolution in the coming hours and days; (2) identify the population, ecosystems and socio-economic assets at risk and (3) share useful information with response teams deployed at sea, in the air or on the coast.

Building on the experience gained and development carried out during the previous HNS-MS and MARINER projects, the MANIFESTS decision support system (DSS) will integrate several services, including the DSS Common Operational Picture (COPtool).

This COPtool refers to a system designed so that during a contingency, the exchange of information that occurs between the maritime authorities and the different response teams (sea, coast, air) is carried out in the most efficient way possible, ensuring that all actors involved in the crisis committee and response teams can access the same data. These can be standard reports (such as the Standard Pollution Observation Report of the Bonn Agreement), images, videos and any other georeferenced data collected by response teams, as well as satellite observations, model simulation results, exclusion areas, location of response media, requests for new response actions shared by the crisis.

The COPtool documentation is composed by:

- Installation guides.
- User Manual (this document).

- DSS Implementation report.

2. Description of the COPtool

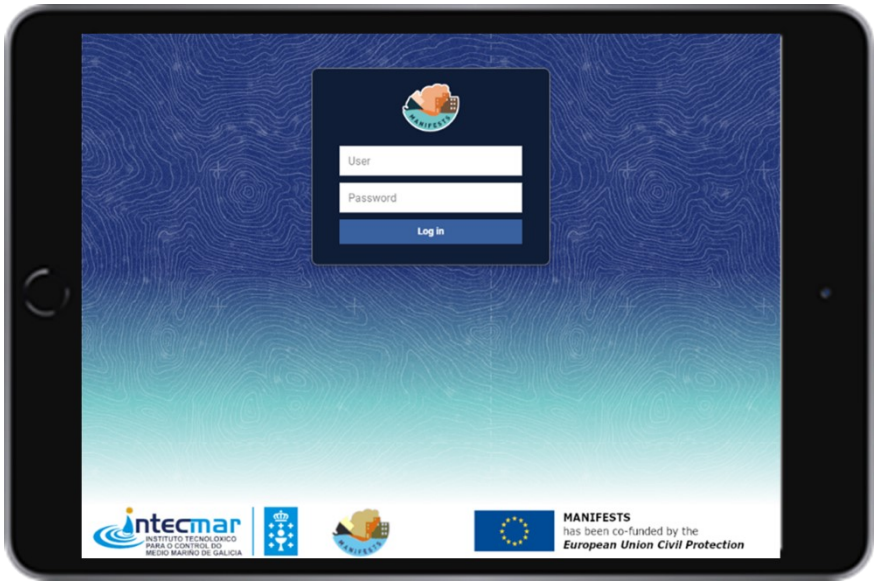
The COPtool consists of a web platform hosted on a server (Windows or Linux), which once published in a domain will be accessible to users through a web browser from a desktop computer or mobile device (responsive UI).

The platform allows you to perform the following tasks:

- Manage the system users, defining the responsibilities/functions of each one of them.
- Manage the information that must be available in the system permanently (basic or reference information). This information is characterized by being generated prior to a contingency. It must be routinely collected to ensure that the most up-to-date data is used. Examples of this information are: Base layers, topography, types of background, toponymy, administrative boundaries, marine charts, information on socioeconomic and environmental resources, ocean-meteorological data for both prediction and observation, etc.
- Insert information that is generated during the contingency, either information provided by the response teams (POLREP reports, SCAT, photos, videos, comments, etc.) such as collection of ocean-meteorological data obtained in situ, position of the buoys, simulations, dispersion of the toxic cloud, etc.
- Management/dissemination of information during a contingency, creating a strategic map that facilitates decision-making and giving different permissions to display the information depending on the user.

3. Access to the tool

The Web platform is available on http://coptool.plancamgal.gal/. If it's your first time accessing it, you must contact the administrator who will provide you with the credentials to gain access to the platform.



After identification, the user will be able to access those modules that have been assigned to him. The initial screen allows to:

- Access to the modules for which you have credentials (menu on the left)
- Display in the main panel the latest data (based on your credentials) that has been recorded in the system. This data is grouped in different windows depending on the module it belongs to.
- Look up a window with the information that has been marked as favorite by the user. At first this window will appear empty, getting filled as the user marks their favorites.
- Change the language or log out (icon in the upper right margin)

3.1. Navigation

In general terms, the application consists of different detail forms in which you will cover the required information. Navigation is done using the following common elements on all screens of the application:

- **+ button**: allows the creation of new elements (forms)
- **Search field:** With controls and forms to search for items by different criteria.
- **Menu:** allows you to access the detail form or delete the record
- **Next:** Allows you to advance to continue filling out the detailed form
- **Summary bar:** Located at the top, allows access to the different details that make up each form
- **Delete:** Deletes the record from the database

- **Edit:** Allows you to edit the forms.
- **Menu:** Access to the different modules integrated in the application.

3.2. Users

There are two types of users:

- **Administrator**: Super user, has access to all modules, as well as the management of users and layers of information of the system.
- **User**: Only with access to the modules (one or more) assigned by the administrator.

3.3. Modules

To facilitate its use, the application has been organized into different modules that allow the functions detailed below to be performed:

Module	Functions
User Management	Creation/editing of user accounts.
Layer management	Management of the layers of information available in the system.
COP Management	Management of the information to be distributed during the contingency.
POLREP	Insertion of POLREP reports in the system.
SCAT	Insertion of SCAT reports in the system.
Reports	Insertion of information derived from different inspections (photos, videos, comments, etc.)
COP Viewers	Access to the COP viewers to consult the COP of the contingency

Note: The user management and layer management modules are restricted to the administrator user, being the only one allowed to make changes.

The other users will be able to access one or several modules depending on the permissions granted by the administrator at the time of registration in the system.

The goal of this manual is to aid all users who use the system. To do this, it has been organized based on the modules that compose it. It is advisable to access only those sections that are of interest through the following tables.

POLREP | SCAT | REPORTS

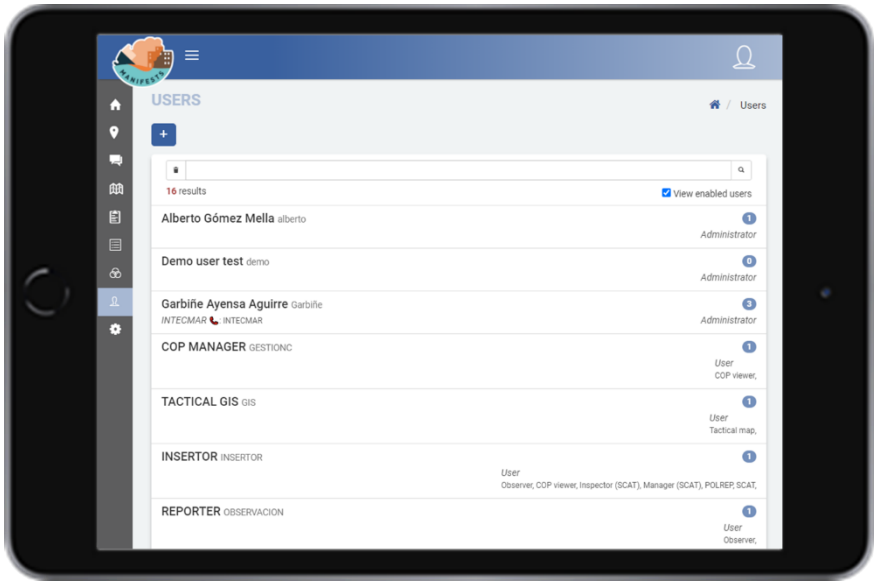
COP MANAGER | MANAGEMENT | COP VIEWER

4. Management module

This module is restricted to users with an Administrator profile. Through it it is possible to manage both the users of the system and the layers of information that will be available to POPs managers.

4.1. User Management

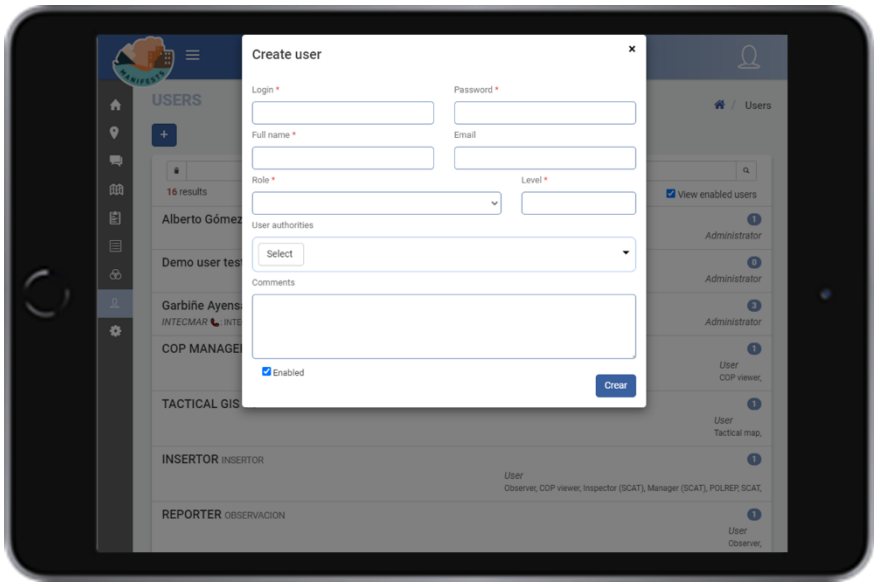
By clicking on the users menu, in the left sidebar you can access the users menu.



From this screen you can delete/edit existing users or, through the + button, access the form for the creation of a new user.

This form presents the following fields:

- Login and password: These will be the data that the user must know to access the system.
- Name, surname, and electronic contact code.
- Profile: where it is decided if the person who is being registered will be an administrator or user.
- Level: That will determine the level of confidentiality of the user (only applies to those users who have viewer permission)
- Comments: Free text field that allows you to add everything that is considered of interest.



4.1.1. User permissions

Once the user is registered on the platform, the administrator can assign different permissions. To do this, you must access the specific user form and open the edition.

Using the permissions field, you can assign or remove permissions to a user by changing their tool type (giving them access to more or fewer modules). The following table shows the available options.

Permission	Module	Functions
POPs Manager	POPs Management	Management of the information to be distributed during the contingency.

POLREP Reports	POLREP	Insertion of POLREP reports in the system.
Manager POLREP COSTA	POLREP COSTA	Opening of a POLREP Costa in the system
POLREP COSTA Team	POLREP COSTA	Insertion of information in the POLREP coast assigned by the manager of POLREP costa.
Observer	Reports	Insertion of information derived from different inspections (photos, videos, comments, etc.)
Strategy map	Tactical GIS	Development of strategic maps that allow obtaining a photograph of the contingency
COP Viewers	COP Viewers	View (based on your level) the information available in the viewers

4.2. Geographic Information Management

In the context **of Spatial Data Infrastructures (SDIs),** the Maps Web Service (WMS) is the most widely used service among organizations that provide geographic information over the Internet. This is due to its ease of implementation and the existence of several software solutions.

The **Web Map Service (WMS**) is defined by the Open Geospatial Consortium (OGC) in order to produce maps, from spatially referenced data, dynamically from geographic information. That is why the COP tool is based on this service to distribute geographic information in the system.

To make the query of the layers in the viewer more functional, they are organized hierarchically into groups and panels.

The groups are formed by layers that have a common theme, for example, being layers with information about the environmental resources of the area. The panels, the highest level of the hierarchy, are made up of different groups of layers that have a common entity, for example, the resource panel, formed by the environmental resources group and the fishery resources group.

In this way a layer should always belong to a group and a group should always belong to a panel.

4.2.1. New panel

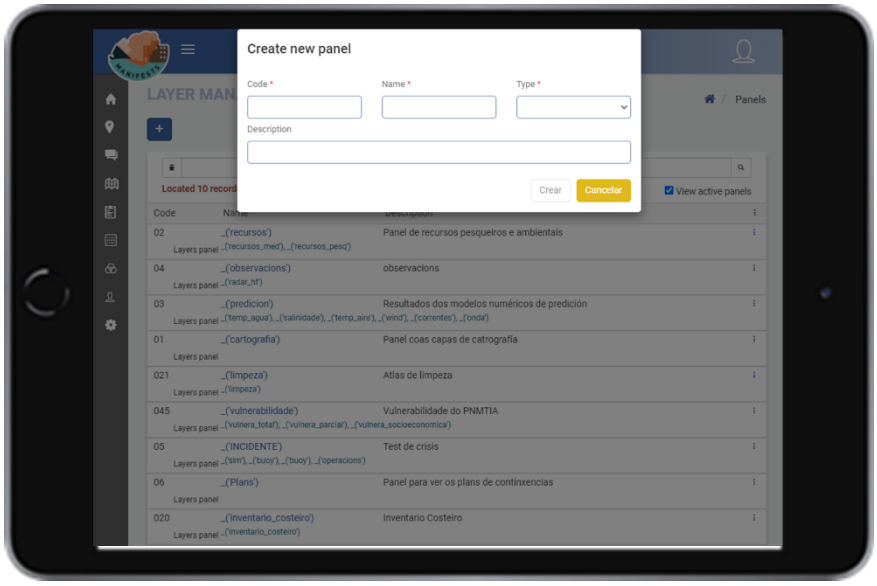
By clicking on the panel menu, in the left sidebar you can access the panel menu from where you can manage/edit the panels.

The + button gives access to the form to add a new panel to the system. This form contains the following fields:

Code: A numeric field used to sort the panels within the viewer's layer tree. The lower the panel code, the higher the panel will look in the tree.

Name: This will be the name that will be visible in the viewer.

Type: With two options, simple or model.



4.2.2. New group

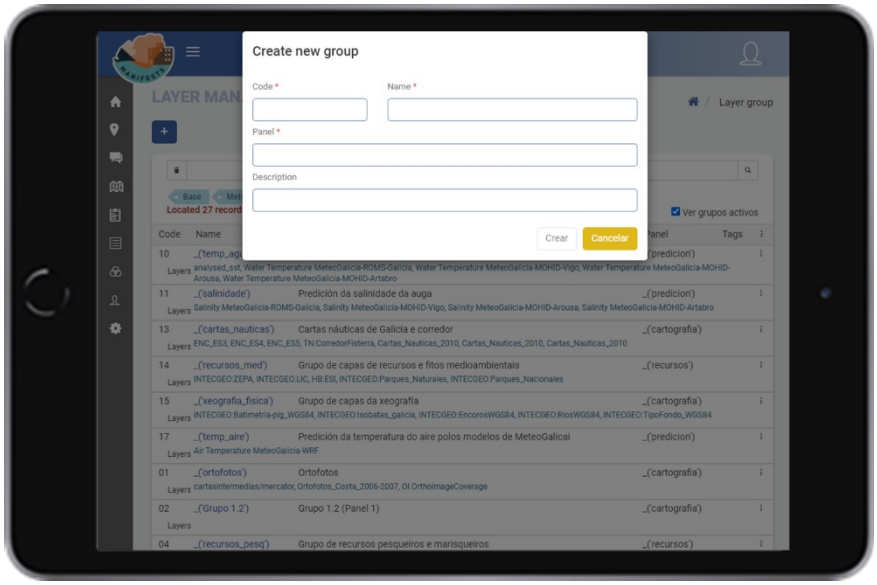
By clicking on the group menu, in the left sidebar you can access the panel menu from where you can manage/edit the panels.

The + button gives access to the form to add a new panel to the system. This form contains the following fields:

Code: Numeric field used to sort groups within panels. The lower the group code, the higher it will look.

Name: This will be the name that will be visible in the viewer.

Panel: Panel to which the group is assigned.



4.2.3. New layer

The + button gives access to the form to add a new layer in the system. This form contains the following fields:

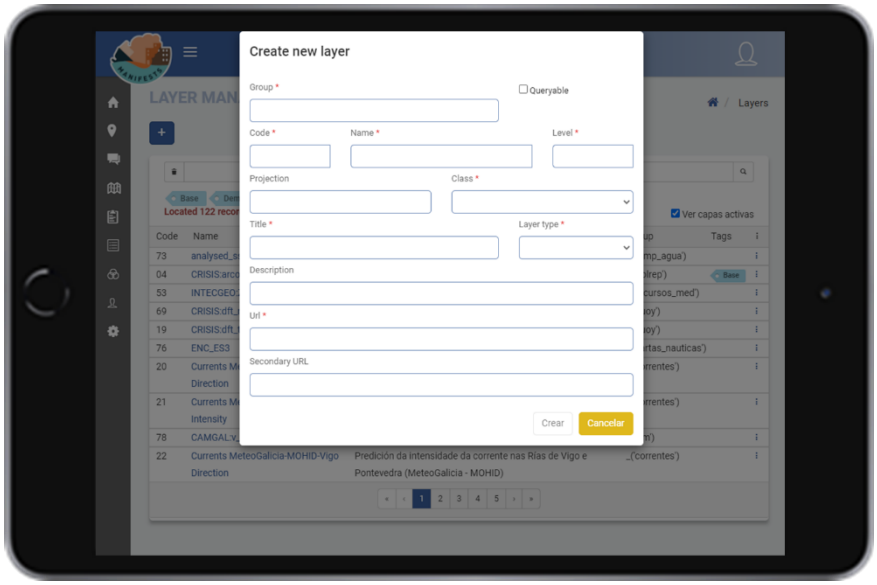
Name, Title, **Projection Description**, **URL, class** fields that serve to identify and explain the layer and are extracted from the WMS_Capabilities of the layer.

Level: A field that defines the sensitivity level of the layer.

Layer type: which varies depending on the type of the layer.

Group: Layers must be assigned to a group. In case you do not want to add the layer to any of the existing layers, you must create the group before the layer.

Once the layer is created, you must access its form to cover the boundary coordinate fields in edit mode. These values are queried in the layer WMS_Capabilities.



5. COP Management Module

This module is designed to manage in an agile way the information that will be distributed during a contingency. Both the geographic information, which will be displayed through the COP viewer is specific to each contingency, and that information that is provided by the different response teams that are facing the contingency (POLREP reports, POLREP coast, photos, videos, comments, etc.).

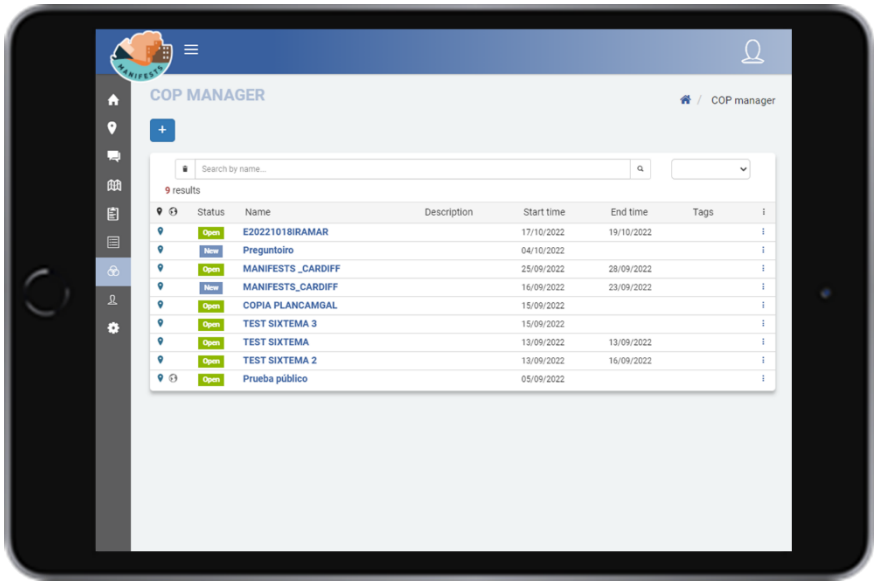
Since you must provide the information available in the application, the COP manager has access to the POLREP, SCAT, and reporting modules. This access enables you to consult the information available in them but does not allow you to edit it.

The menu on the left will give you access to each one of the modules. It is advisable, therefore, that the person in charge of the management of the COP also knows the rest of the modules of the application, for which it is recommended to consult this manual in all its sections.

5.1. COP management menu

Clicking on COP management opens the management window, which allows:

- To access the consultation / edition of all those COPs that the user has created in advance (a search engine facilitates the operation in case the number of COPs is high).
- To create a new one by clicking on the '**+**' button



5.2. New COP.

Once you click on the '**+**' button, you will navigate through different screens that allow you to cover the necessary sections to configure a COP.

Detail of the contingency.

The first thing to cover is the information regarding the name of the contingency, its start date, and a brief description of it. This field description is optional, it is recommended that in case of being left blank by the urgency of the crisis, it should be covered once the emergency has passed.

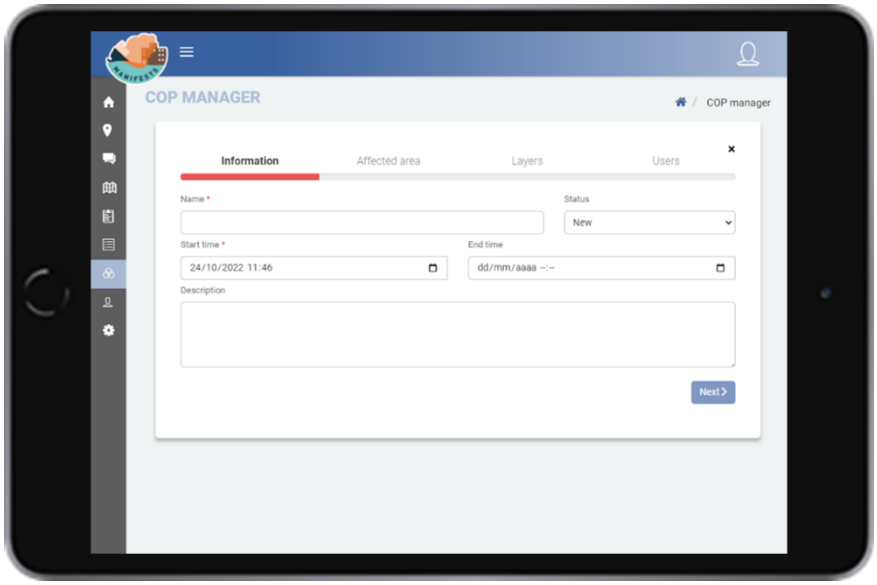
The COPs have the following statuses:

New COP created recently, is not visible to users. So that the manager can configure the COP privately once finished or published.

Open: In this state the COP will be visible to users with credentials. The information will be updated as soon as it becomes available.

Completed: The COP has been terminated. Users with credentials will be able to access the information but knowing that the situation is not active so that no updates will be made.

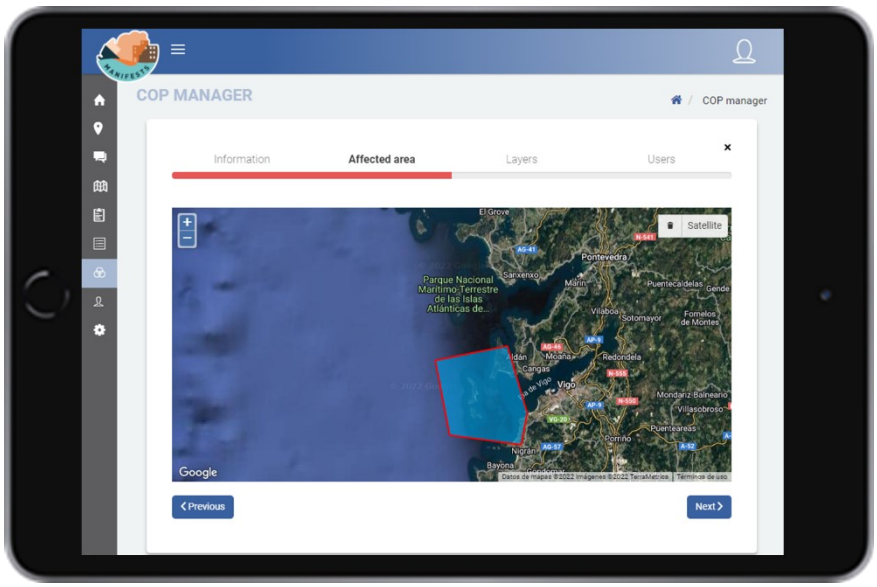
Archiving: The COP **can** be archived, ceasing to be visible to users, remaining available only to system administrators.



Note: This form does not require you to modify the status field, its function will be explained later. The end date will be covered once it is known, since the time to start the contingency has no end date.

Affected area.

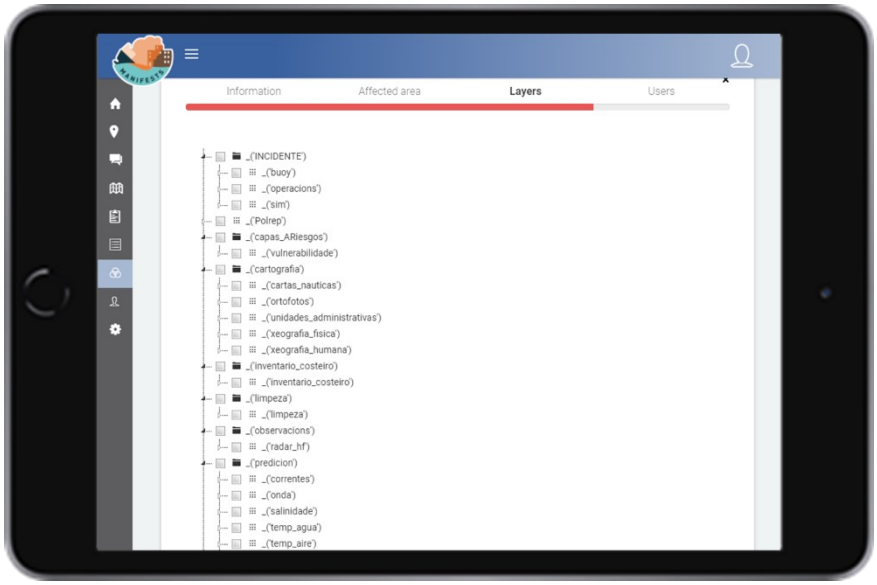
This section allows, with the aid of a map, to define the geographical area in which the COP will focus. With the mouse you can move the map, and clicking marks the four corners of the polygon that defines the area in which the map will be centered.



Layers

Through this screen, those layers that will be included in the COP are selected from a list previously configured by the administrator.

In Annex X you can consult the total layers available in the COP manager of the camgal plan, as well as a recommendation of the layers to be selected.

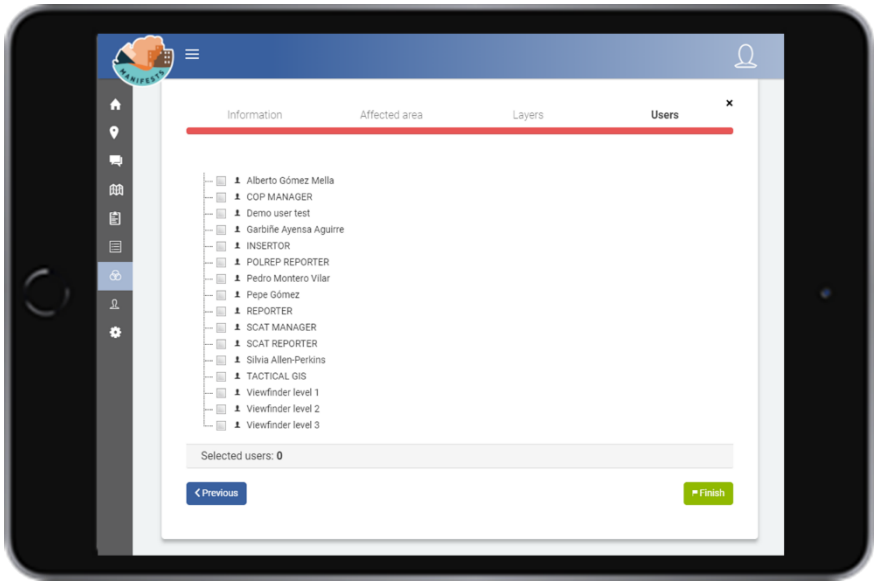


Once all the layers have been selected, the next button allows you to continue.

Users

This screen allows you to select, from a list configured by the administrator, those users who are given access to the specific COP viewer of the contingency.

Once all users have been selected, the next button allows you to continue.



Confidentiality rules

Since the information contained in the layers can be sensitive and you want to restrict only to certain users, each layer is associated with a level of confidentiality (established by the administrator). This can be low in those layers available open without any restriction, **intermediate** or high in those layers with restricted access depending on the user's credential.

Thus, users with display permission also have associated in their credential a level that determines which are the layers that will be displayed automatically.

User credential	Layers to display
Low (1)	All low level
Intermediate (2)	All low and intermediate level
High (3)	All layers that have been selected for contingency (high, medium, low)

The assignment of the layers to each user is done automatically following the table above.

5.3. Information Management

Once the COP is created you can access its management screen.

Said screen contains the following features:

Copy COP/close/publish buttons: These buttons, available at the top of the screen, allow you to do the following:

- **Close** the COP and save all the changes you have made.
- **Publish** the COP and save all the changes you have made, with its publication the COP status changes from new to open automatically.
- **Copy**, allowing you to use a COP as a basis to create a new one modifying only what is necessary.

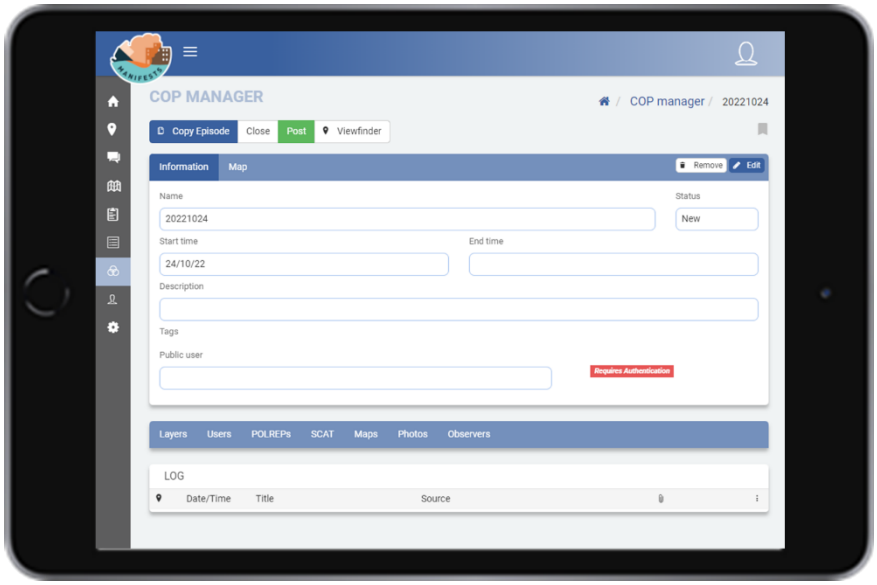
Top panel: Where you can consult/edit or delete what has been done so far.

Bottom panel: Where you can see the information available in the system to this COP in particular. This panel also allows you to make changes to both users and layers.

Clicking on the '**layers'** button opens the tree of the selected layers. The **'edit'** button allows you to add new layers or delete any that were chosen in the previous step.

The '**users'** button gives access to a table that summarizes the users who have been selected, what their level of confidentiality is and to what number of layers, of those selected for the contingency, they have access.

The COP manager is free to change the layers assigned to each user and can allow a low-level user to view a high-level layer. This change will only apply to the COP in progress, therefore it does not affect the credentials that the administrator has granted to the user when registering it in the system. To do this, clicking on the user's name opens the layer tree and allows the COP manager to make the modifications that are deemed appropriate.



The **'POLREP', 'SCAT'** buttons open the possibility of linking these reports to the COP. In this way these reports are linked to the contingency. The '**link'** button displays a table that makes it easy to find the reports that have been recorded in the application by the agents responsible for the inspection.

In the case of the '**map'** button, what is linked is not a report, but a strategic map that synthesizes the geographic information generated during the contingency.

The '**photos'** button allows you to link photographs to the COP by clicking on the '**+**' button.

In the square on the left, you can select a photograph from those available on the computer. The comment field allows a text to add everything that the user considers of interest. The associated location screen allows you to geolocate the photo by adding the latitude/longitude position of said photograph. To fill in this information, the application allows three possible ways:

1) M Typing manually the coordinates in the fields intended for this purpose.
2) Use the '**location'** button, which automatically inserts the position the user is in.
3) Use the '**paint'** button. This button opens a map where you can insert a point that determines the position in which you want to geolocate the photograph.

Reporters: Those observers who want to be linked to the contingency are managed through this section.

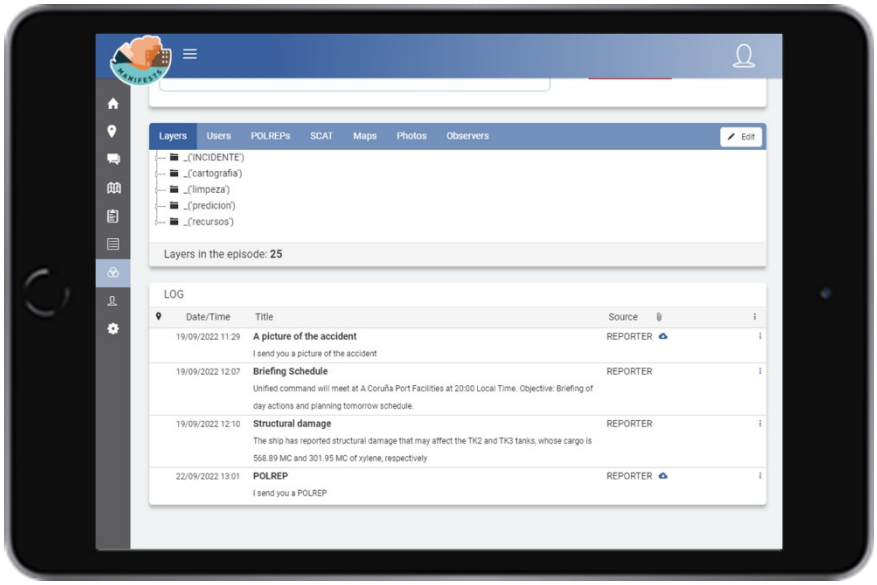
During a contingency, the agent involved may have to make numerous reports to deliver information about the evolution of the situation to the Operational Coordination Center (CECOP). To speed up this exchange of information the user can link all the reports of an agent to a specific contingency. If this is the case, all communications reported by this agent will be automatically visible to all members present at the POPRC.

Clicking on the '**link User'** button opens the linking window where the following fields must be covered:

- Name of the agent to be linked (field with the help of autocomplete).
- Linking start date
- Linking end date.

Log

The Log table, (available at the bottom of the screen), is completed automatically after the different agents are linked to the contingency. It displays the date and time, the sender of the message, the message itself and the attached files.



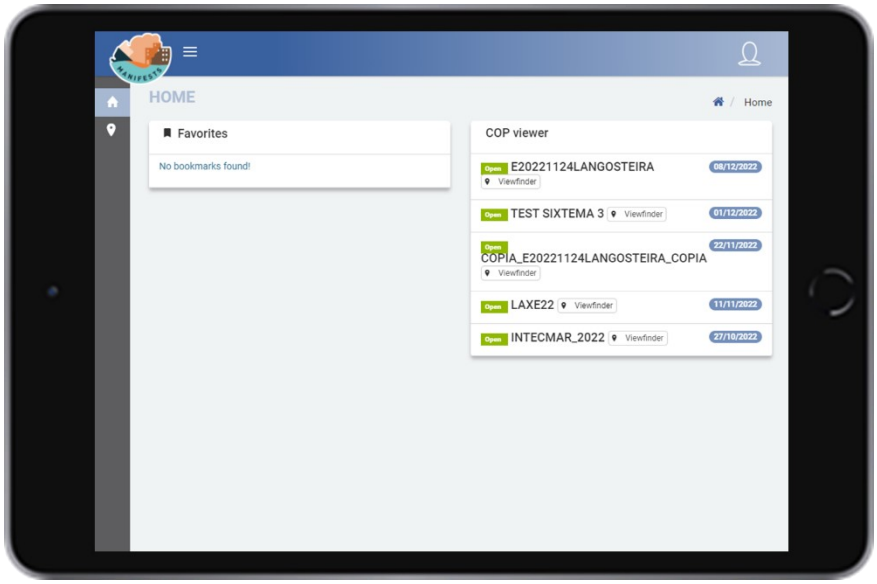
Once the linking is finished, you can use the '**publish**' or '**close**' buttons (previously explained) to exit, saving any changes made so far.

6. COP viewer

The COP viewer is a development that consumes geographic information from map servers. The COP viewer has a public component that allows its consultation by citizens. However, in most cases the maps that are displayed through the COP have restricted access giving different permissions to display the information depending on the user.

6.1. Viewer menu

By clicking on the VISOR module in the menu on the left you can access the Viewers screen, from here, the user can consult the viewers that have been assigned to him.



The viewer is structured in the following sections:

- Headboard.
- Title and user bar (visually active for private users).
- Viewfinder.
- Cartography management panel.
- Secondary layer management panel.
- Temporary animation panel.
- Prefooter.
- Footer.

Cop viewer: panel structure. 1. Header. 2.Title and user bar. 3. Geoviewer. 4. Cartography management panel. 5. Secondary layer management panel. 6. Temporary animation panel. 7. Prefooter. 8. Footer.

6.2. General viewer capabilities

The GIS viewer of the COPtool is a tool developed for use in a web environment, without the need to deploy or install software on the computer equipment of the functional users of the tool.

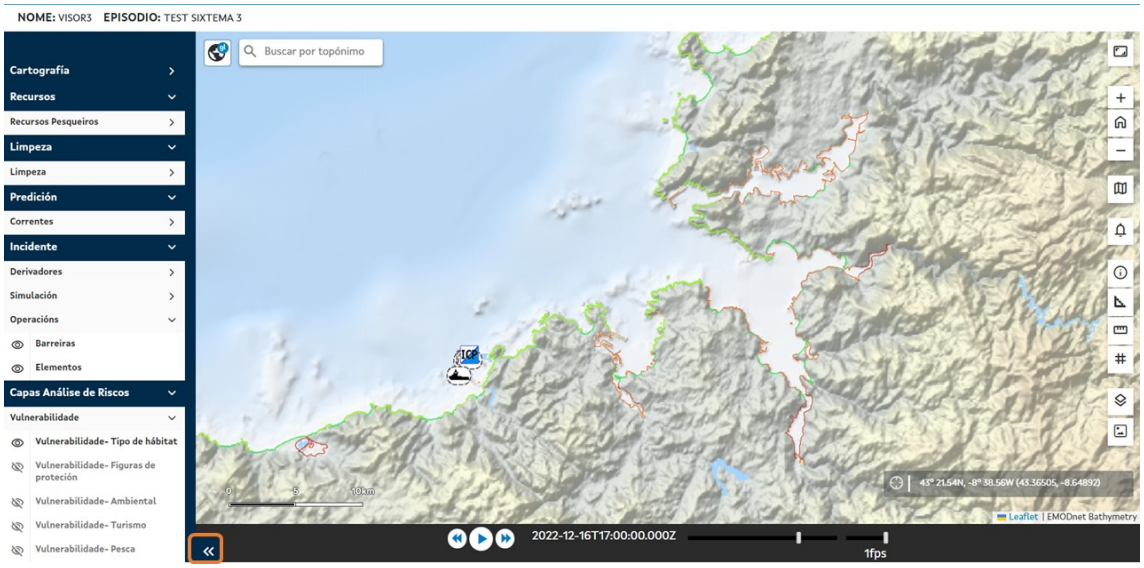
In addition, a tool with *responsive* design has been developed that allows consultation from different computer devices (computer, tablet, mobile), regardless of the screen size on which it is consulted.

Considering these premises, the main functionalities of the viewer are described below.

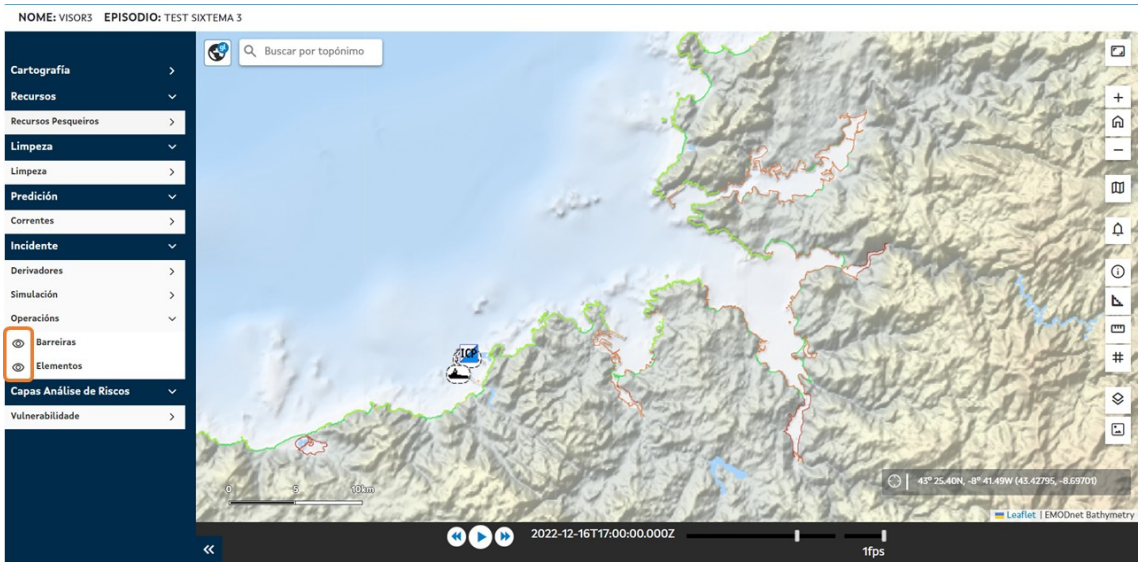
6.2.1. Cartography Management Panel

The viewer has a panel for managing cartography located on the left side of the screen. This panel has an associated button that allows its deployment and compression, according to the needs of the user.

This panel displays the various geographic information layers accessible from the viewer. These layers are grouped by thematic blocks that unfold and contract when you click on them.



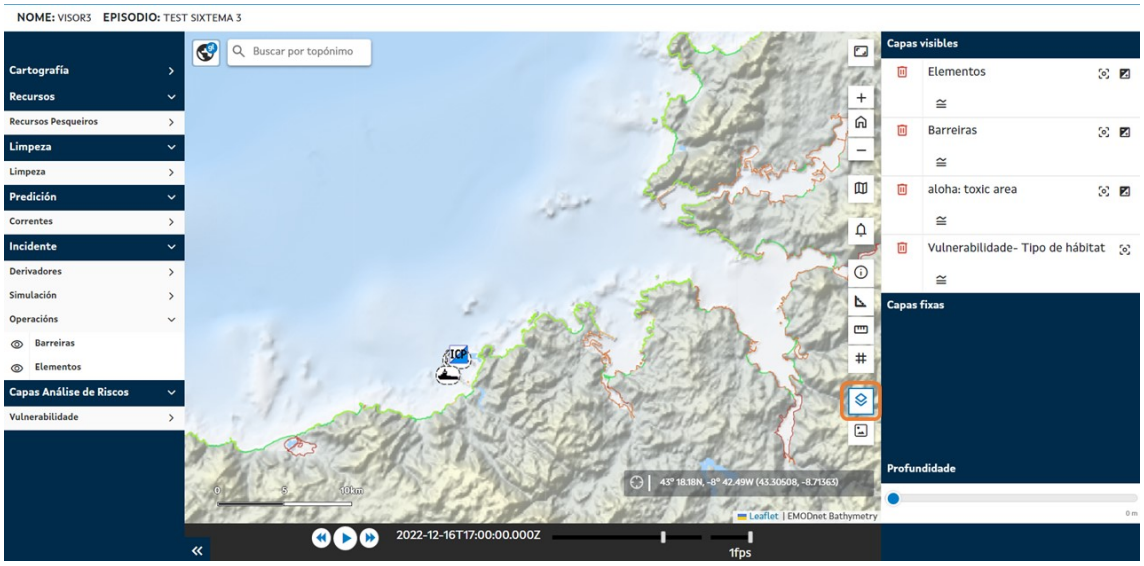
Users can turn **the display of layers on** or **off** by tapping the **eye-shaped icon** to the left of the layer name.



Cartography management panel. Visually turn information layers on or off.

6.2.1. Secondary Information layer management dashboard

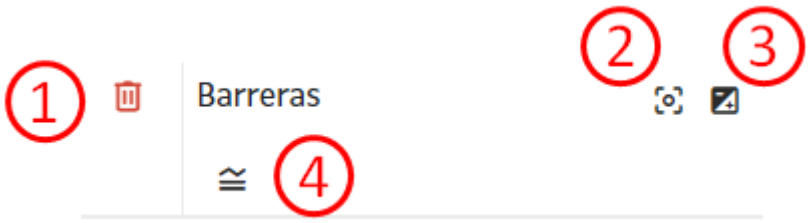
Visually active layers are automatically added to **the secondary information layer management dashboard**. In this secondary panel, in addition, the layers resulting from toponymic searches are recorded, as well as the results of the measurement of areas / surfaces and distances, as will be described in future sections.



Secondary mapping management panel and secondary panel access button

This panel has several functionalities for the management of the layers:

- **Visual deactivation of layers** by clicking on the red trash can icon located to the left of the layer name.
- **Visual ordering of layers.** Users can reorder the display of layers on the map by tapping the layer name and scrolling it up or down. This functionality is useful only when you have more than one layer in the secondary panel.
- **Display the maximum extent of the layer**.
- Definition of the **transparency or opacity** with which the layer is displayed.
- Query the **layer legend** (if available), opening a modal window above the viewfinder.



Capabilities associated with a layer in the secondary panel. 1. Visual deactivation. 2. Maximum layer extension. 3. Transparency/opacity selector 4. Display of the legend.

6.2.2. Navigation features

The COPtool viewer is equipped with the following functionalities:

Language selector

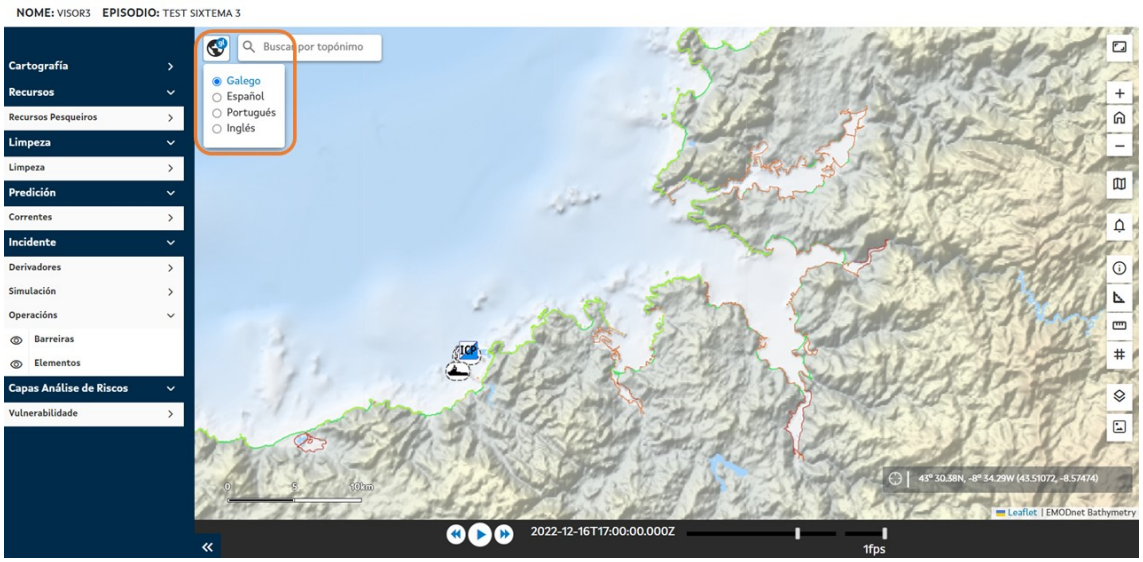
Users can **select the viewer's query language**. However, it will be the web browser itself that initially defines the default language based on its own configuration.

The available language selection options are:

- Galician (GL).
- Spanish (EN).
- Portuguese (PT).

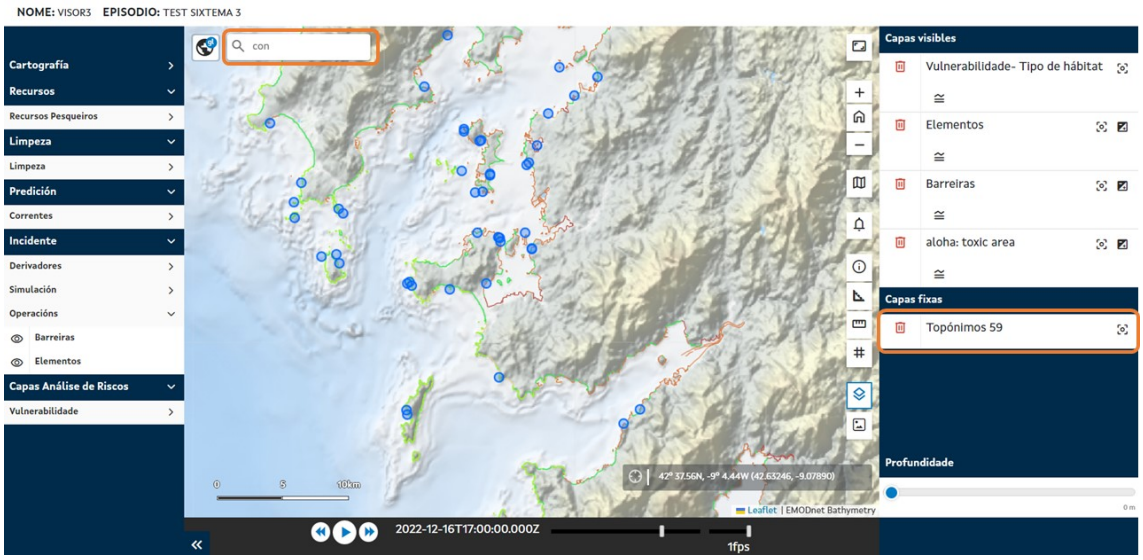
- English (EN).

Language selector: Galician (gl), Spanish (es), Portuguese (pt), English (en)



Consultation of toponymic information

The viewer offers the possibility to **search and geolocate place names**. To do this, the user must enter a text with the keyword in the toponymic search section and accept (press the "Enter / Enter" key).



Search by place name and display of the search results layer in the secondary panel.

The toponymic search results **will be recorded in the secondary results management panel**, described above: next to the name of the layer ("Place names") the **number of** results obtained in the search is displayed (59 results in the search shown in the previous image).

Full Screen Mode

Users can choose the display mode on the upper right rectangular icon:

- Navigation in **full-screen mode**.
- Navigation in **browser window**.

Navigation selection button in full-screen mode.

Zoom +/-

To zoom in or out in the viewfinder, users can press the **Zoom+** and **Zoom-** keys.

Zoom+ and Zoom- keys.

General zoom (full extension)

In the same block of buttons as those described in the previous functionality, users can **zoom to the predefined maximum extension** of the viewer by clicking on the "home" icon.

General zoom button.

Pan tool (displacement)

Users can **move** around the map if they do not have activated functionalities that are described below (information consultation, measurements ...). To do this, simply click on the map and move.

Basemap Management

The viewer offers users the possibility to consult different basemaps that give spatial context to the information displayed in the viewer:

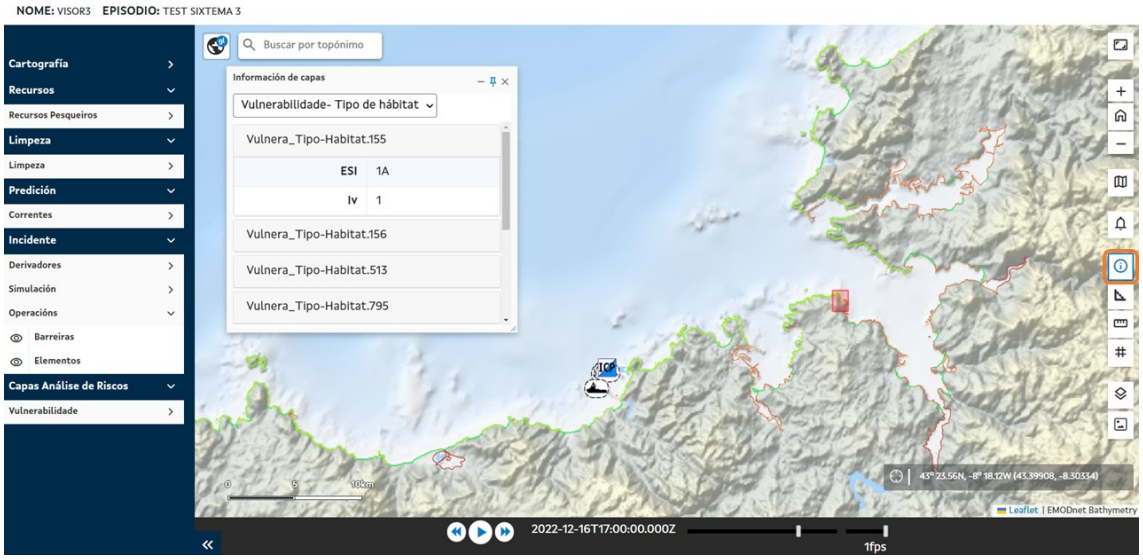
- Map of **bathymetry**.
- **IGN-BASE** (official cartography service developed by the National Geographic Institute).
- **OpenStreetMap** (collaborative project that aims to create a freely accessible global cartography based on the information provided by different administrations and, mainly, by collaborating users).
- **Spanish National Plan of Aerial Orthophotography (PNOA**) (cooperative project of the General Administration of the State and the Autonomous Communities that aims to obtain digital aerial orthophotographs of the Spanish territory).
- Satellite image of the world **Sentinel-2** (Earth observation mission developed by the European Space Agency within the Copernicus program to develop observations of planet Earth).

Basemaps selector

Item information query tools

The query tool allows you to obtain information about the elements displayed on the map. Users can **activate and deactivate the information query mode** in the "i" icon, being an indispensable condition that the layer to be consulted must be visually active.

Clicking on the geographic element opens a **window** with information about the entity. If you click on a point on the map where multiple layers overlap, the **information will be displayed for multiple layers**. In the window, the user simply selects the layer and element of the layer for which they want to query the information.

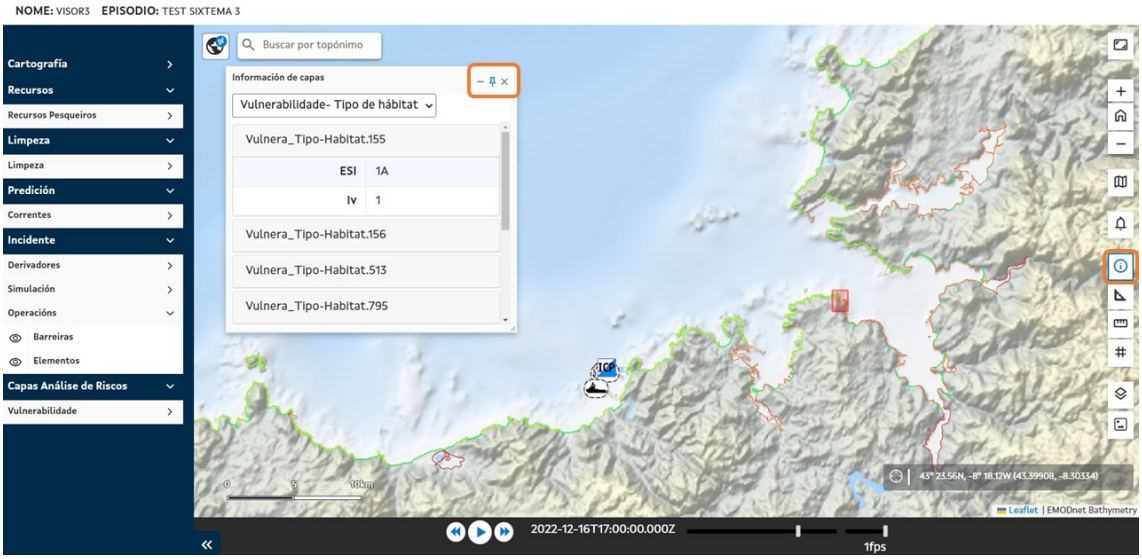


Enable or disable query mode, and window display with item information.

In addition to alphanumeric information, descriptive images of the element can also be displayed in the information window. These images can be displayed in larger size in a new browser tab.

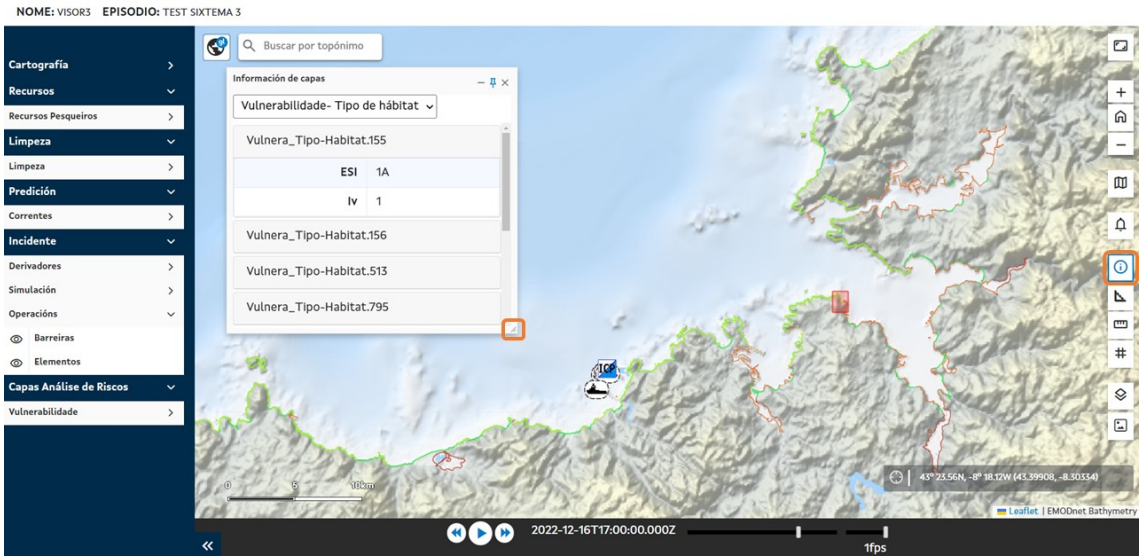
Users can **change the position of the Layer Information window** by clicking on the "pin" icon:

- If it is **blue**, it indicates that the window cannot scroll.
- If **it is grayed** out, it indicates that the user can click on the title bar of the window and move/scroll it.



Scroll button in the item information query window.

The **size of the viewer windows can be modified** (enlarged, made smaller) by clicking and dragging from the lower right corner of the window.



Modify the size button of the item information window.

Measurement tools

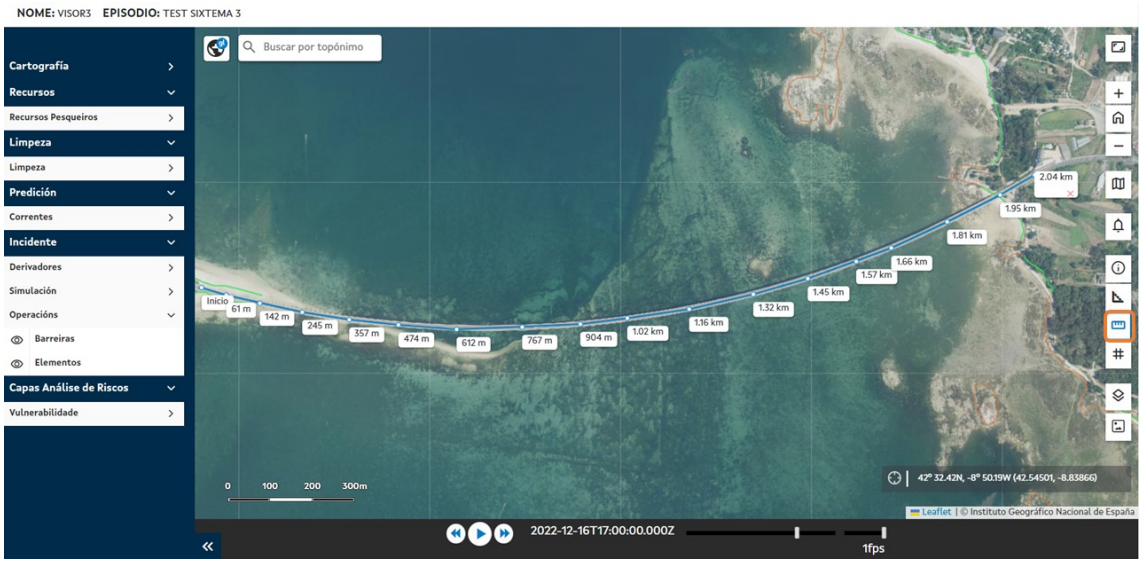
The viewfinder has tools for **measuring**:

- **Distances** (m/km).
- **Surfaces** or **areas** (m^2 / km^2).

The user only must press the desired tool and draw the figure that allows measuring distances

or surfaces. To finish the distance or surface to be measured, only the main mouse button must be pressed twice or the right mouse button once; In the case of using a tablet or a mobile phone, the measurement is completed by double-clicking on the screen.

Surface measurement tool.



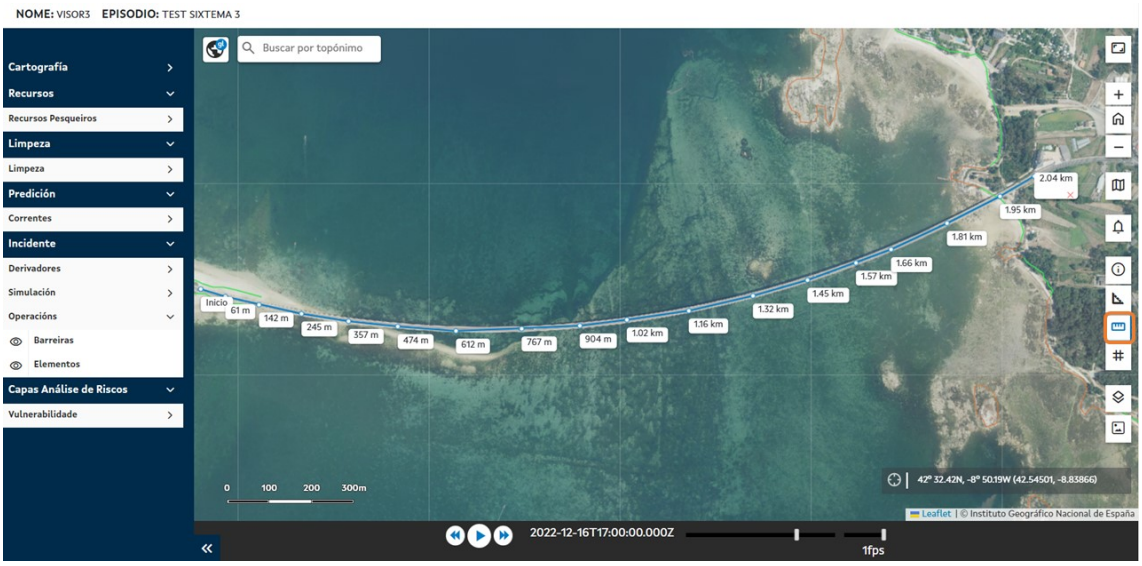
Distance measurement tool.

Each of the measurements made **is added to the secondary panel of management of layers of information**, being able to eliminate the geometry or zoom to the total extension of this from this panel.

Inclusion of measurements in the secondary information management panel.

In the case of distance measurement, the measurement shows:

- The starting point.
- The partial distances (at each vertex of the measurement line).
- The total distance of the measurement.



From left to right: starting point, distances at intermediate points, and total distance (with the corresponding distance measurement removal button).

In the case of surface/area measurement, the geometry shows the total surface value, as shown in the following image.

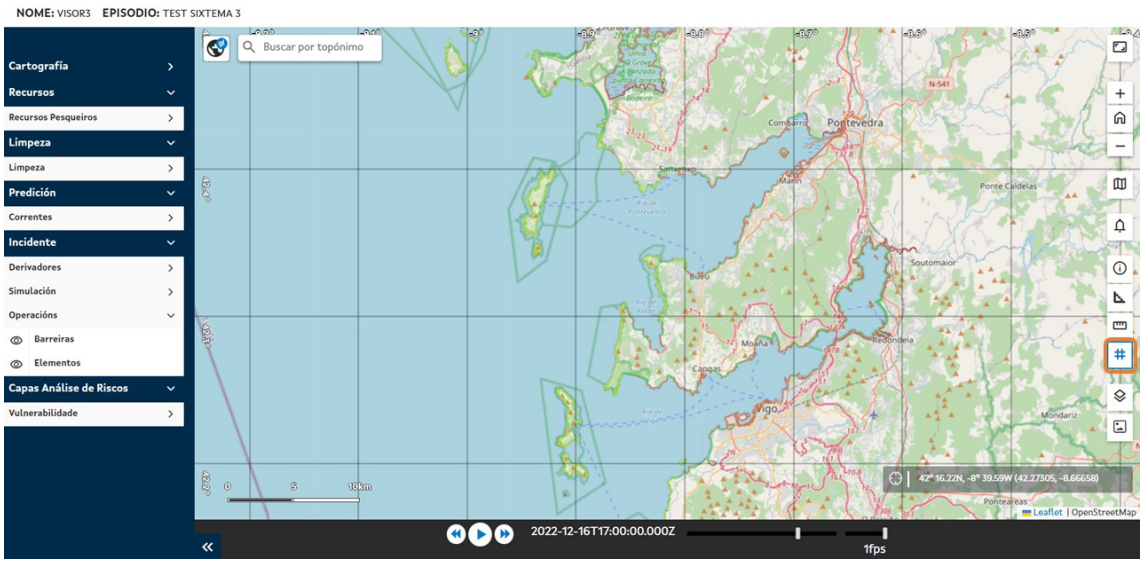
Total surface area value and delete button of the measured surface.

To **discard or delete a measurement**, there are two options:

- Click on the red cross shown next to the unit of measurement.
- Click the trash can icon associated with the geometry name in the secondary information management panel.

Grid

Users have the possibility to **activate a grid** (parallels and meridians) with variable scale depending on the zoom applied to the viewfinder. It is turned on and off on the "#" icon.



Geogrid on/off button

Graphical scale and coordinate display

At the bottom left of the COP viewer there is a **graphic scale** that is updated depending on the zoom level.

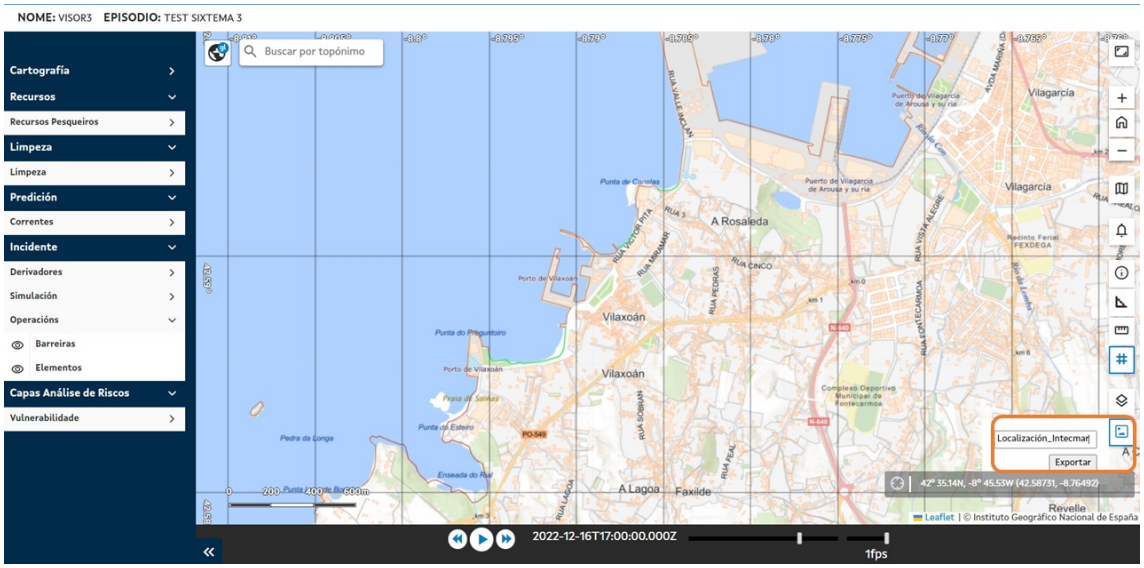
Graphic scale.

Similarly, there is a **coordinate viewer** (lower right of the screen) that shows the positioning of the mouse pointer when moving through the map in geographical coordinates (latitude-longitude). In mobile applications this functionality is not available.

Printing the map in image format

The viewer has the functionality of **printing the map in image format**. Users must select the tool indicated in the following image, enter the name of the image, and click on the "Export" button.

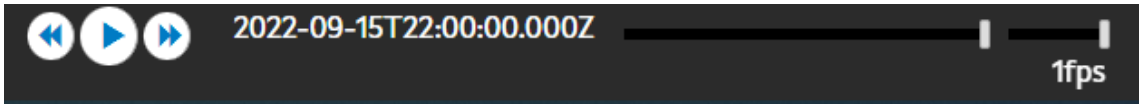
The result is the export of **a file containing an image of the viewer view at the time of export.**



Printing the map in image format

Temporal geographic data viewer

Users can query layers of geographic information in a **72-hour time interval** with a **data time range of 1 hour.**



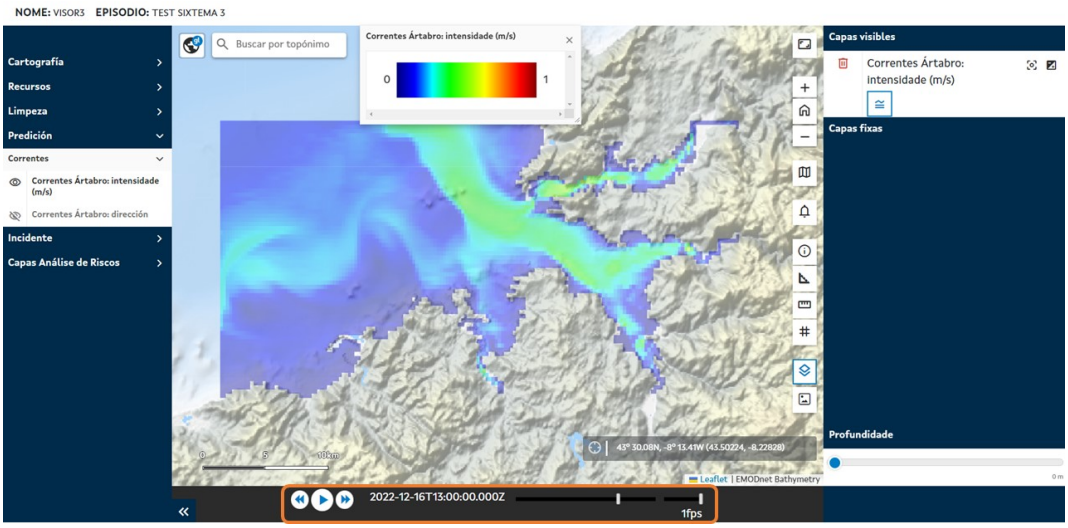
Functional module of temporary animation.

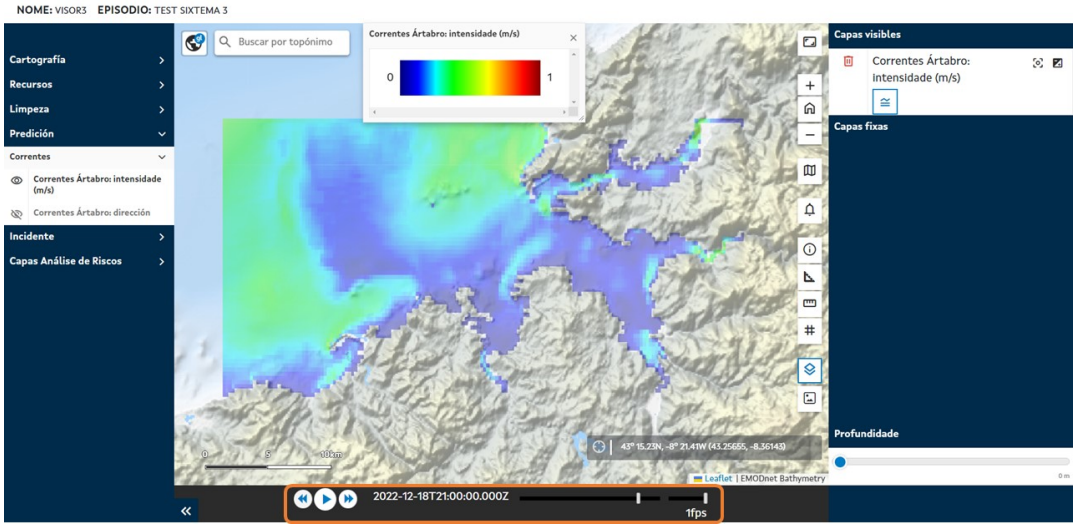
This functionality is available at the bottom of the viewer once layers that have temporary information are visually activated.

The time interval is controlled with **the play buttons**:

- Recoil.
- *Play*.
- Progress.
- Time bar.

To the right of these 3 buttons is the **date and time in which the data displayed on the screen is being displayed**. The scroll bar manages temporary progress; while the bar located further to the right allows you to manage the playback speed of the data (by default set to 1 *frame* per second).





Display two frames of an animation at two different points in time.

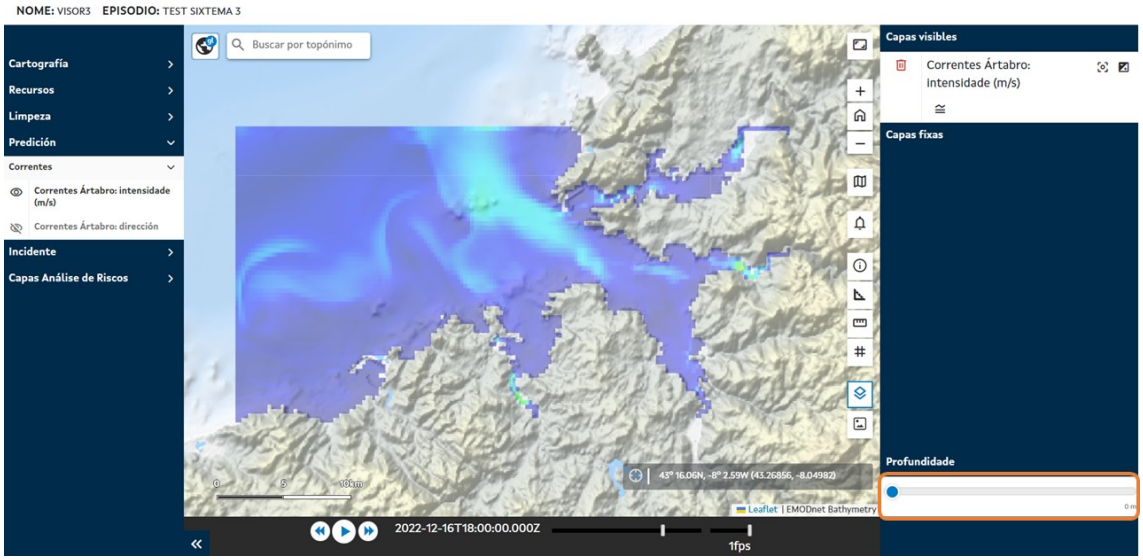
Query information according to depth

For those geographic information layers that enable this (for example, marine current information layers), the COP viewer offers the possibility to consult information from these layers not only at the surface level, but also in **depth**.

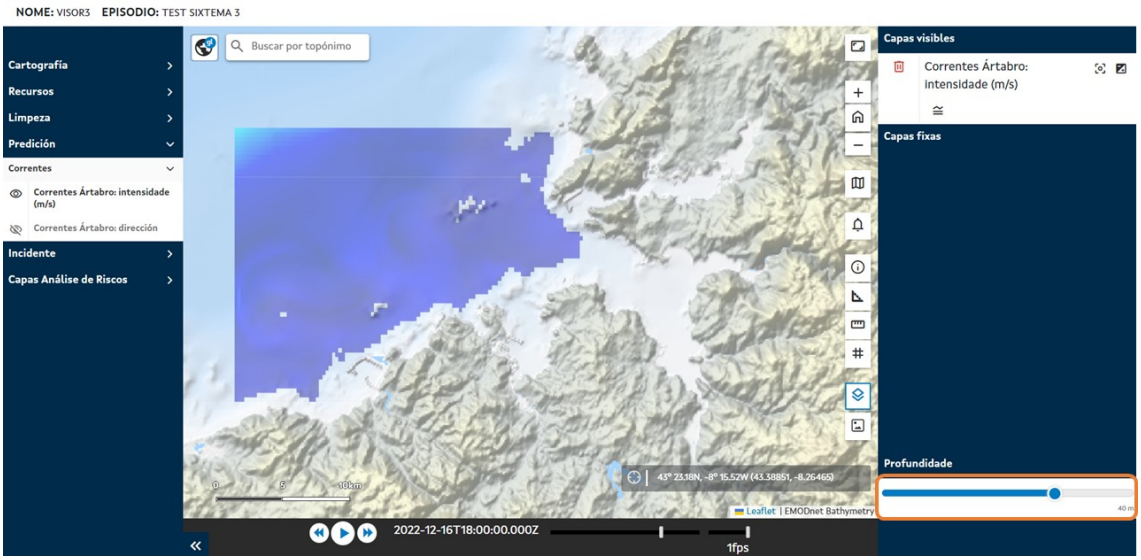
To do this, the user only must **regulate the depth level in the bar** located at the bottom of the secondary panel.

The following levels of depth are offered to be consulted:

- **0 meters**
- **0.5 meters**
- **1 meter**
- **2 meters**
- **5 meters**
- **10 meters**
- **20 meters**
- **40 meters**
- **75 meters**
- **125 meters**
- **250 meters**



In-depth information query: surface.



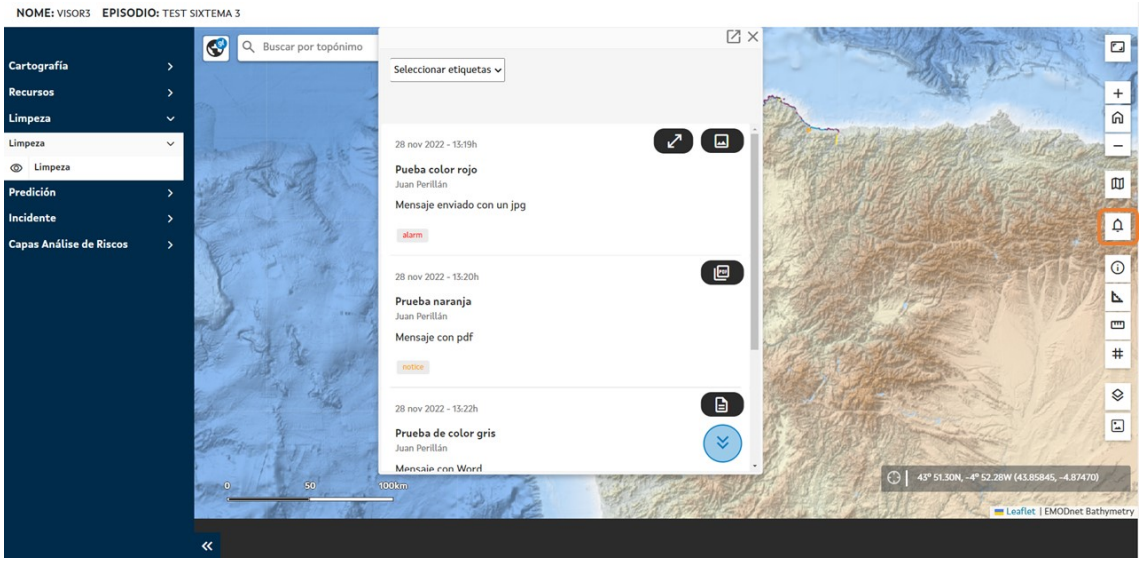
In-Depth information consultation: 40 meters.

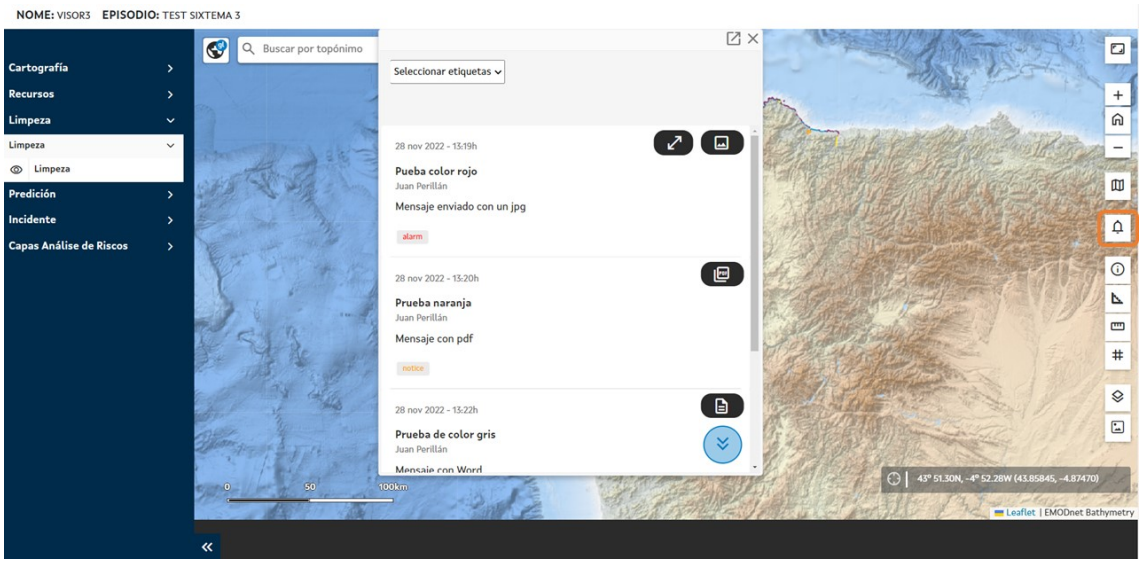
Log

The tool has a **communications module, or** logbook. By opening the window of this functionality, users can see in real time the communications generated because of contingencies.

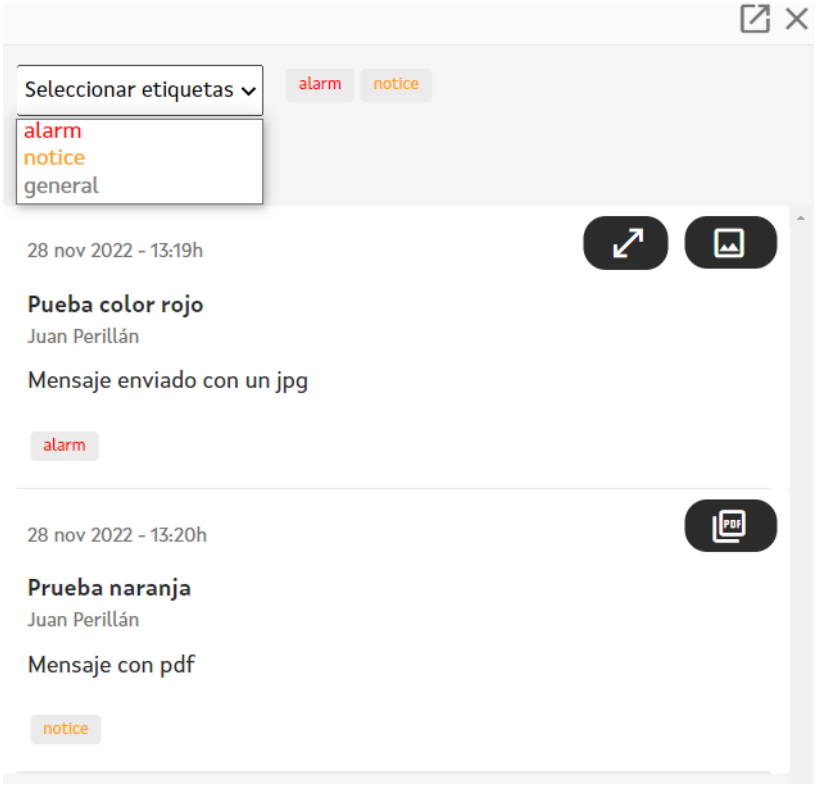
All communication is associated with a **label** that classifies the criticality and typology of the communication.

- **Alarm**
- **News**
- **General**

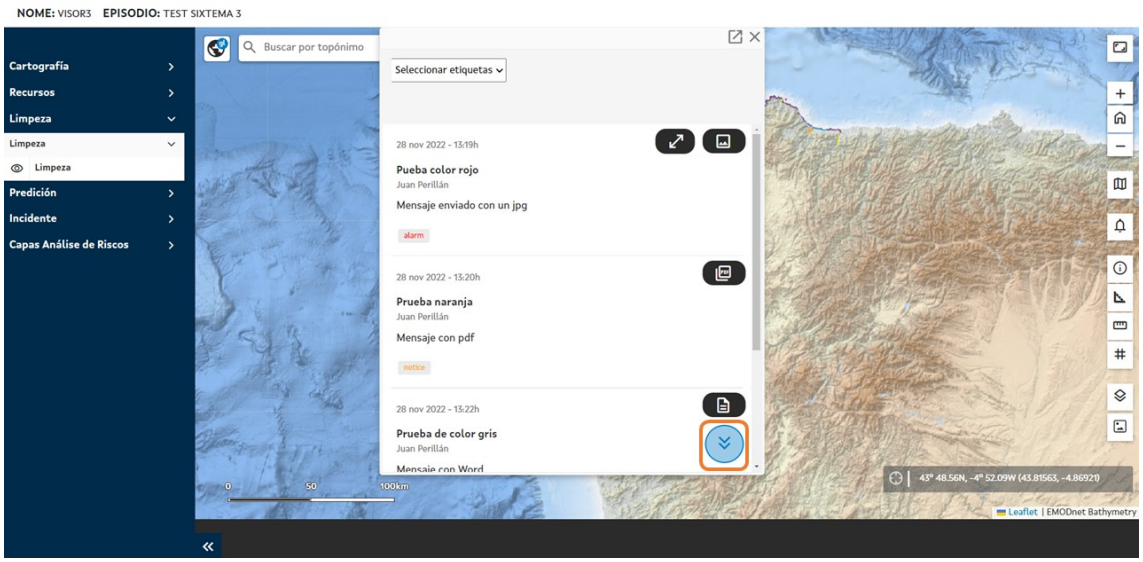




Communications in turn can be filtered based on the tags. Similarly, filters can be disabled by clicking on the label to the right of the drop-down.



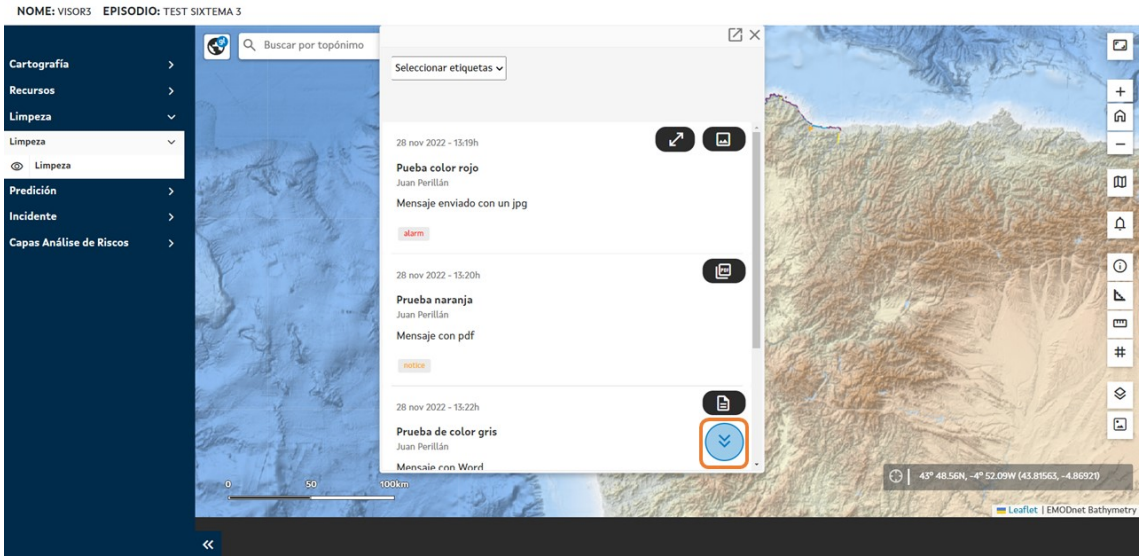
The log also has a button that allows the user to go to the most recent messages. Likewise, this button will show a red dot when there are new communications, and the user is in non-recent communications.



Functionality to go to the most recent messages.

Messages can bring **associated files or documents** that can be downloaded:

The log also has a button that allows the user to go to the most recent messages. Likewise, this button will show a red dot when there are new communications, and the user is in non-recent communications.



Functionality to go to the most recent messages.

Messages can bring **associated files or documents** that can be downloaded:

ELEMENT	SYMBOL
.PDF	
Text document	
Worksheet	
Imagery	

Images can be **previewed** in larger size within the log itself.

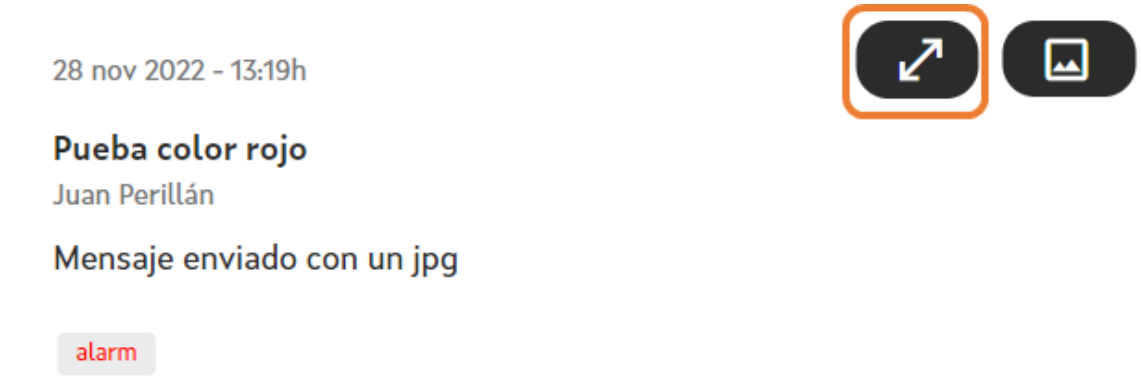
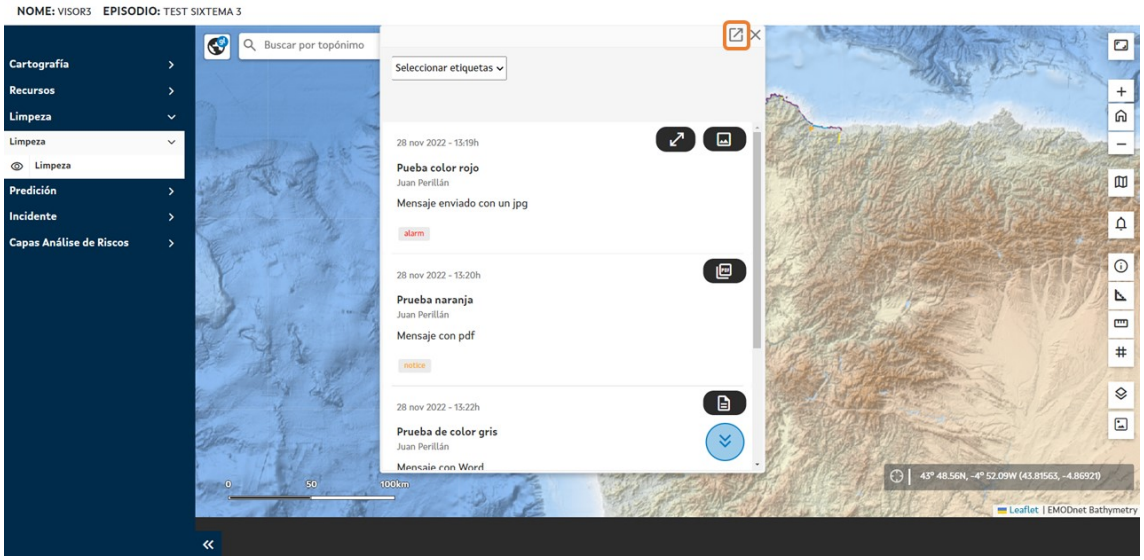


Image preview button in the log.

Finally, to facilitate the visualization of the log and geoviewer tool at the same time, the log can be **consulted in a new browser tab** by clicking on the button located in the title bar of the log.



Open button of the log in a new browser tab.

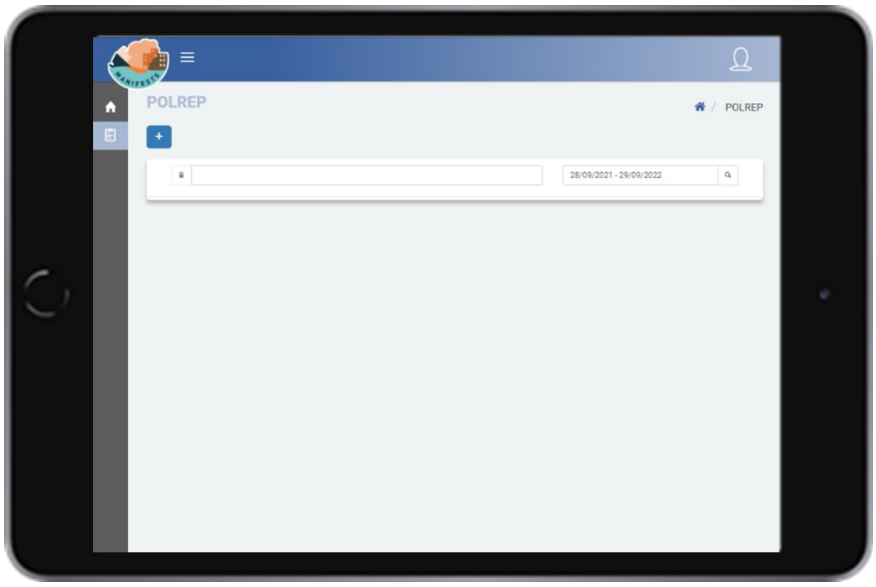
7. POLREP Module

The initial warning about an event of accidental marine pollution must collect as much information as possible to complete the data of the POLREP Galicia model that appears in Chapter IV ANNEX POLREP of the Camgal Plan. This document, if possible, must be completed by the observer of the event and must be sent urgently to the Operations room of the Galician Coastguard Service and other competent bodies that proceed.

This module makes it possible to access a standardized POLREP model through a mobile device, facilitating the observer to get the information to the Operations Room in an efficient and agile way.

7.1. POLREP menu

By clicking on the POLREP module, (in the menu on the left), you access the POLREP screen, from here, the user can make a new POLREP, as well as consult, edit or delete previously made POLREPs. In case of being the first time that the user accesses the platform there will be no associated POLREP so at this point you can only create a new POLREP, through the '**create new POLREP**' button.



7.2. New POLREP

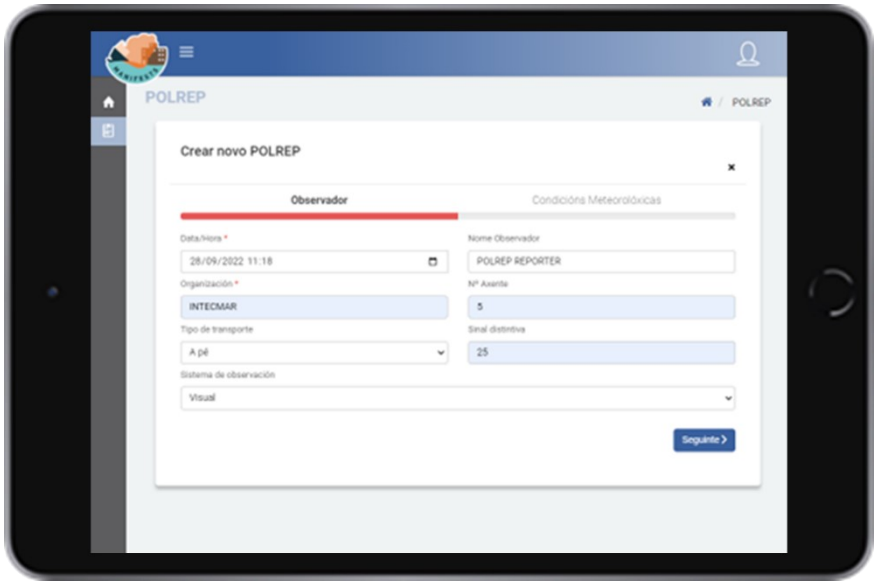
The user can start a new POLREP by clicking on the '**+**' button, filling in all the information related to said POLREP. This information will be saved automatically and can be edited if necessary. After completion, a POLREP report is generated, it will be registered on the platform and available for printing.

Observer data

This first form collects the data relating to the observer who is carrying out the inspection. The date/time field and the observer's name field are covered automatically considering both the date/time in which the form is being filled out and the user data used to access the platform. In both cases, the user may edit them if he deems it necessary.

The rest of the fields must be covered by the user. Although the ideal is that all fields of the form are covered, only the **Organization** field is mandatory, that is, without covering this information you

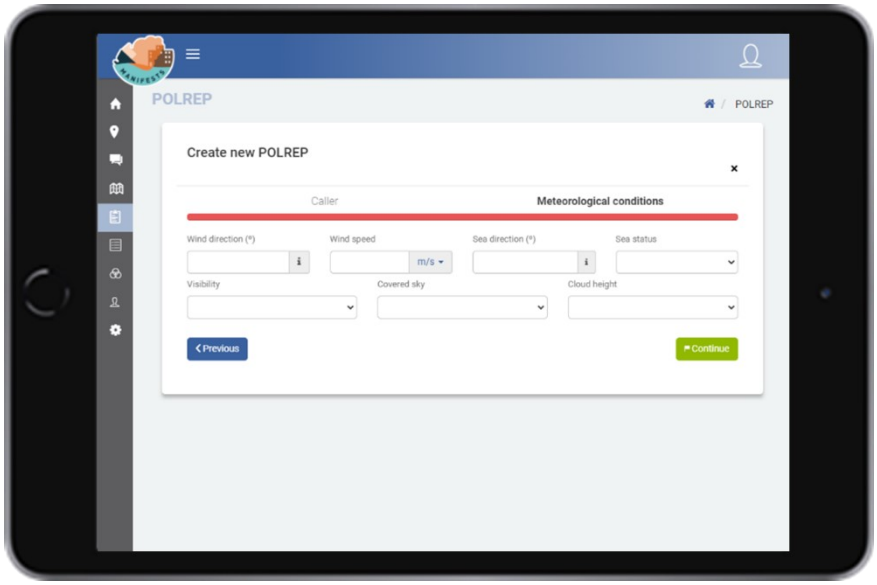
cannot continue. This field, like all those that are mandatory throughout the application, is marked with *.



Once covered, you must click on the '**next**' button to continue filling in the information, in this case, that related to weather conditions.

Meteorological conditions

This form is the one related to the meteorological conditions at the time of the observation, where data on the wind conditions, the state of the sea, the visibility in the area, etc. are stored. To facilitate its completion, most of the fields have drop-downs with the possible options for each parameter. It should be noted that, although it is advisable to cover the form in its entirety, any field is mandatory, so that, in case the observer does not have any of these data, he can continue to cover the rest of the information related to the POLREP.



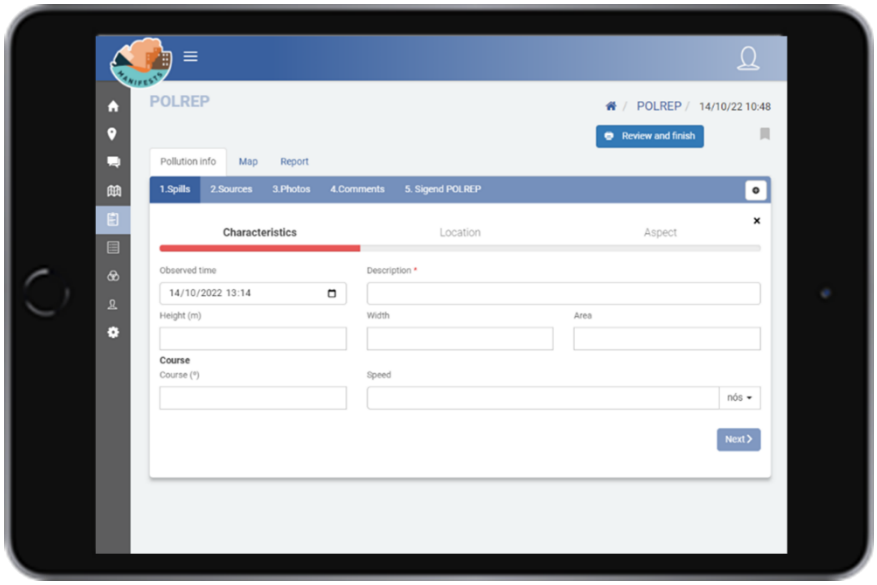
Pollution information

Once the first two forms have been completed, the user has access to the section on pollution information, which consists of four steps.

1. Information relating to spills.
2. Information on possible sources of pollution.
3. Photos of the pollution.
4. Comments that the user may consider of interest.

Information relating to spills.

The user will cover the information from each one of the spills that must be reported, related to its characteristics, location, and appearance. To do this, you can navigate through the different forms of this screen, either using the '**next**' button (lower left margin) or by clicking on the '**progress**' bar, at the top of the form.



The characteristics form collects information regarding the size and direction of the spill. The description field of the spill is mandatory, without making a brief description of it you can't continue.

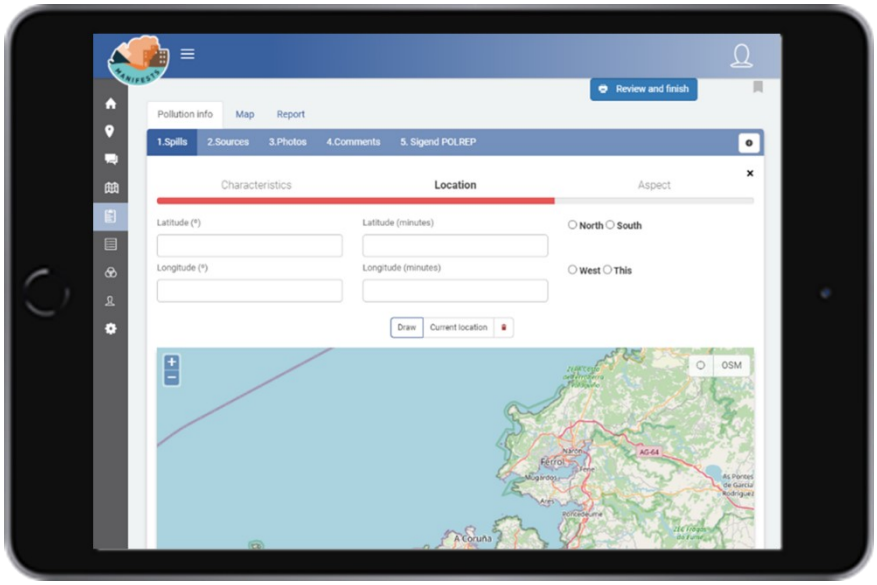
You cannot continue without making a brief description of it as it is mandatory to fill the description field.*

The location form collects the latitude/longitude position of the spill. To fill in this information, the application allows three possible ways:

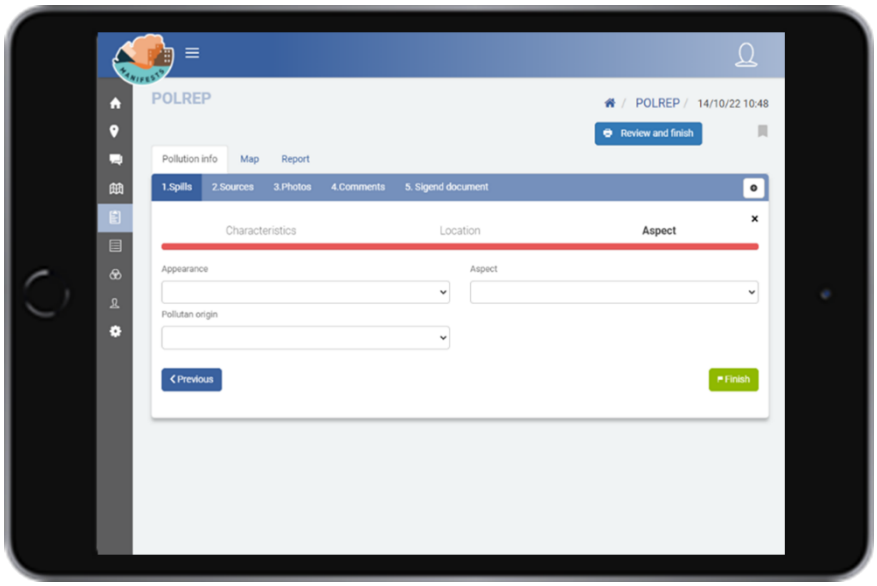
1) manually type the coordinates in the fields intended for this purpose.
2) Use the '**location**' button, which automatically inserts the position the user is in.
3) Use the '**draw**' button. This button opens a map where you can insert a point that determines the position of the spill.

It is recommended to use the '**current location**' button whenever the observer's location is very close to that of the spot. The first way can be used in case the observer has a GPS.

The map (way 3) is useful in those situations where the observer is very far from the spill (for example, in observations made from the coast) and does not have a GPS to help him geolocate. In this case the map will be useful to locate the spill, even if it is in an approximate way.

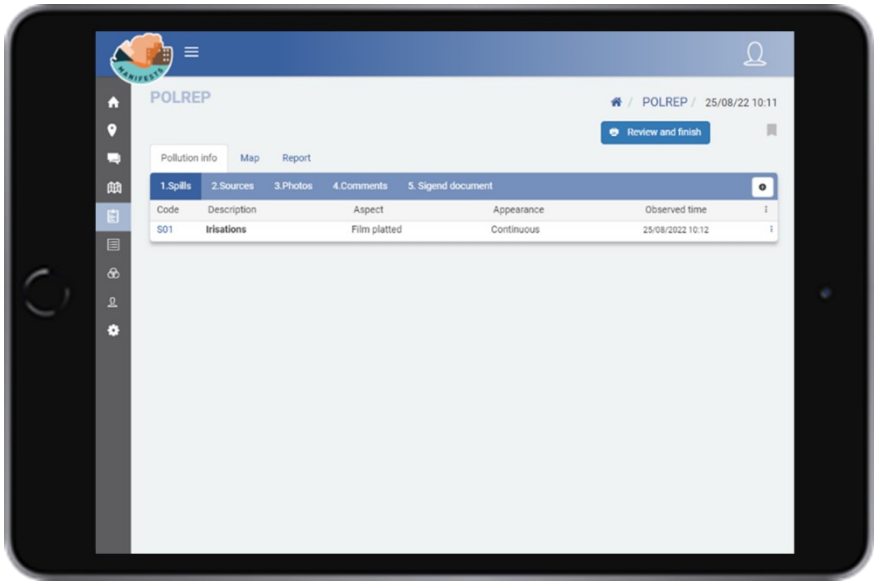


The aspect form collects information about the characteristics, appearance, and nature of the contamination. All fields have dropdowns with possible options.



After completing this last form, all the information related to the spill is considered covered. At this point you can continue adding new spill, using the '**+**' button located on the right side of the screen.

In this case, the information related to characteristics, location, and appearance of the second spill would be covered again, repeating the steps described so far.

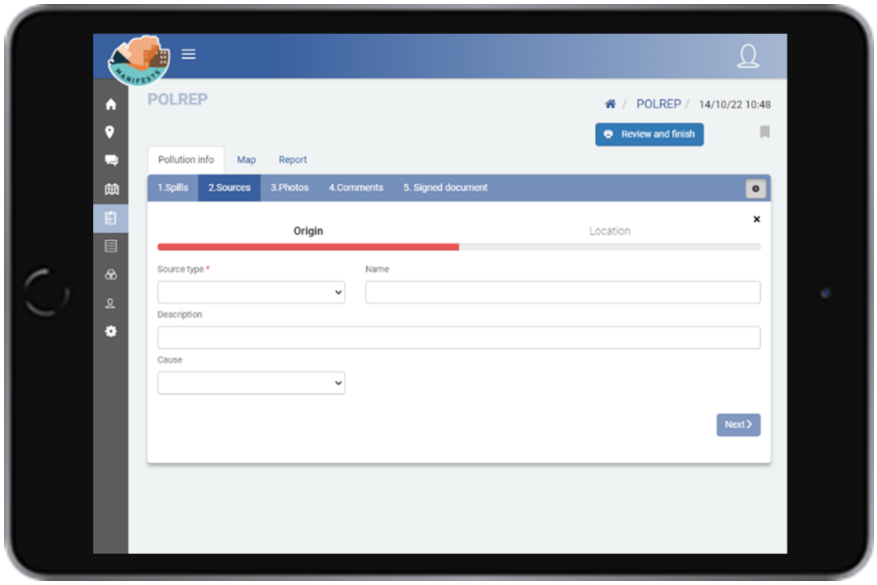


This screen also allows you to consult or edit the information that we have reported of the spills, for this it's necessary to double click on the registration of the spill. Once the information of all the spill is covered, you can continue to cover information related to the source's photos and comments.

The application allows free navigation between the different sections by clicking on them. In this way the user may not follow the suggested order, since sometimes information is not available regarding all the sections. For example, you may not want to insert information related to the source.

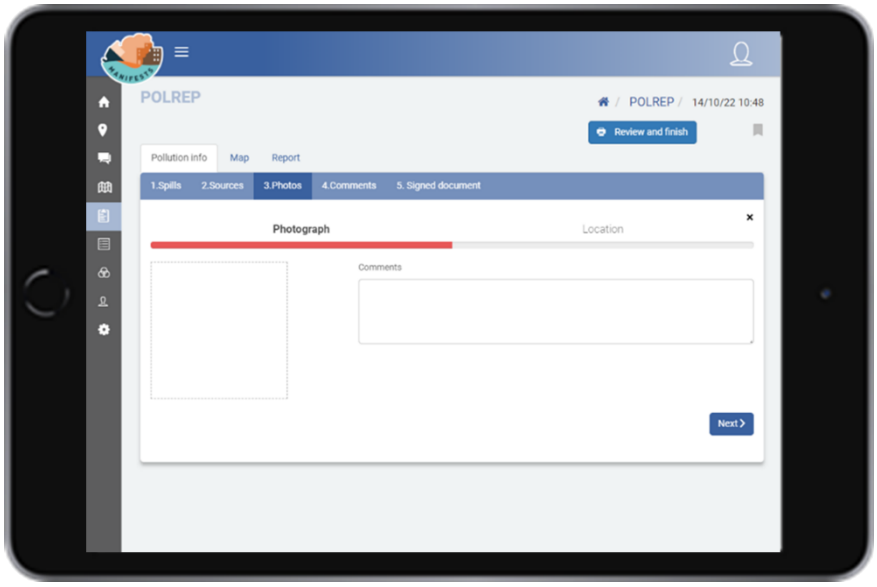
Source information

The form of the polluting source collects information regarding its origin, the type of source and the cause, and allows to write a description of it. It also allows to provide data on the geographical location of the source, for this you have a screen with the same options described in the spill location form.



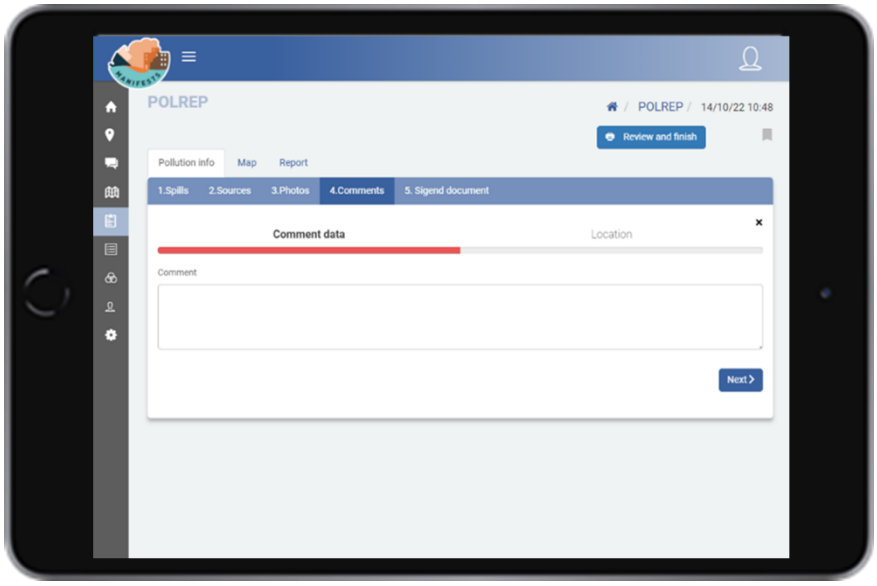
Photos

On this screen you can add one or more photos accompanied by a comment. These photos can be geolocated using the location screen (already described above).



Comments

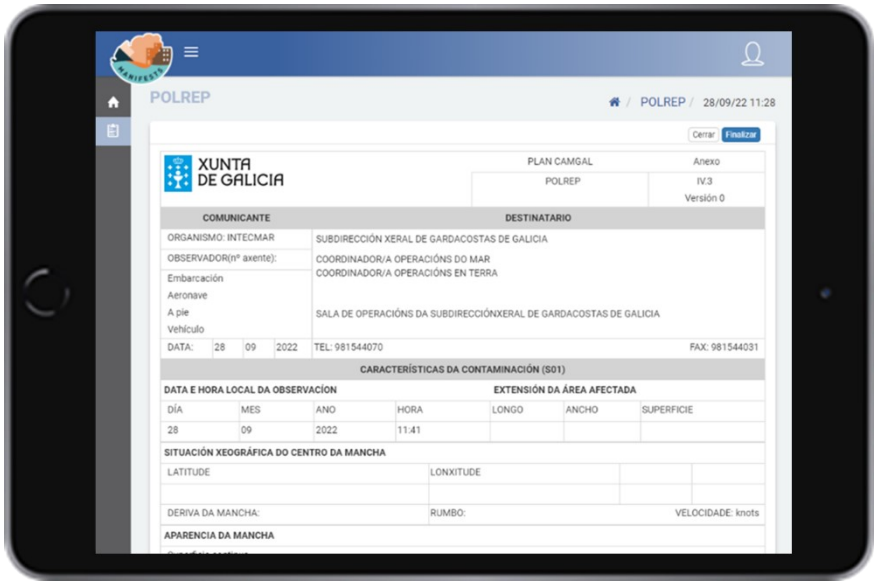
The user may add one or more comments of everything he considers of interest. Comments can also be geolocated using the location screen.



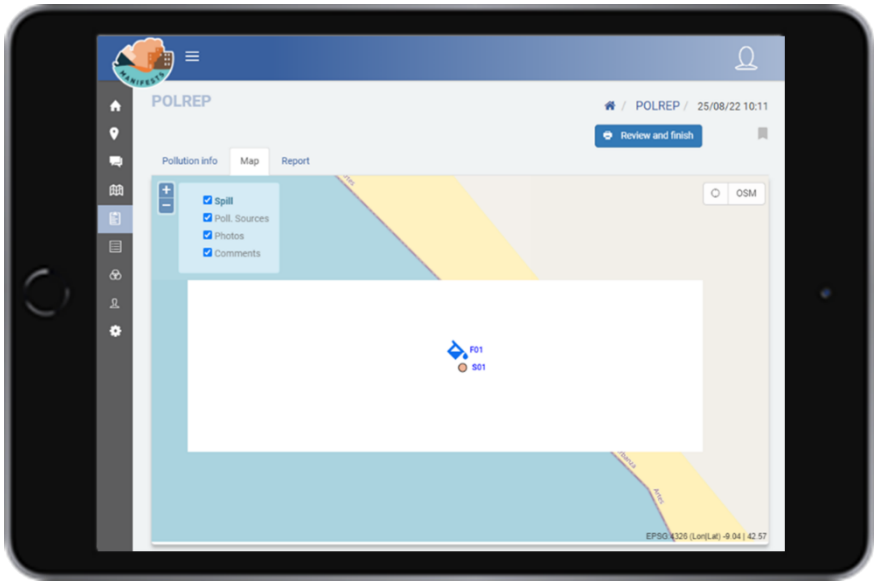
Review and finalize.

Once all the information related to the contamination is covered, the review and end buttons available at the top of the screen allow us to review our POLREP report and finalize it.

Although it is advisable to provide data related to the four sections of the pollution information, this is not always possible. Therefore, this button can be used at any time during the process, generating a POLREP report that will cover only the fields for which information is available.



Since most of the information in the POLREP can be geolocated, the application also allows to review the position of all the elements that have been geolocated (using the 'map' button).



Print a POLREP

Once a POLREP has been created using the application, it becomes registered in the database and can be consulted by those to whom the system administrator has given permission.

In case of needing a physical copy of the POLREP, it's possible to print one by opening the form with the 'review' option on your browser or download a PDF version of it.

8. SCAT Module

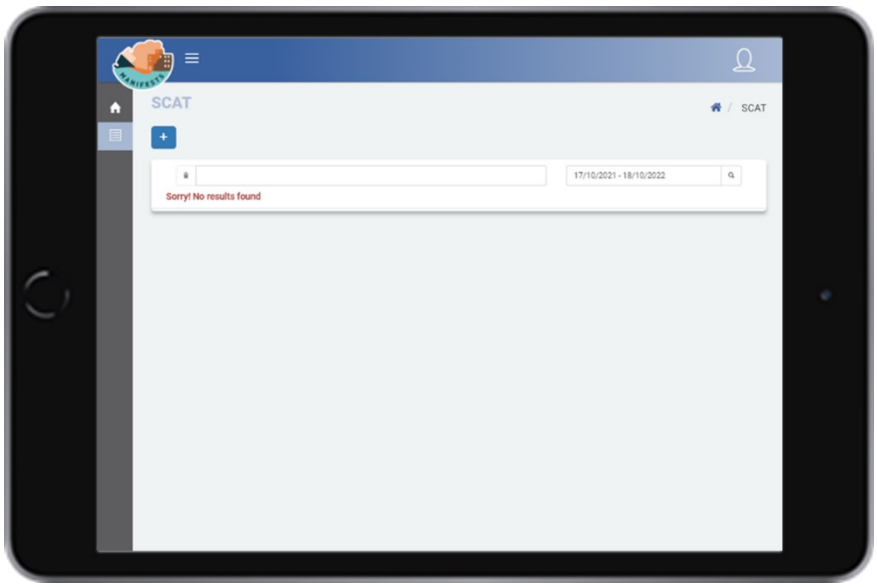
In Spain, the initial information on the pollution event on the coast conforms to the SCAT model, as provided for in article 6 of Order AAA/702/2014 approving the State Plan for the Protection of the Ribera del Mar against Pollution (Plan Ribera). This information is of crucial importance for decision-making and serves as the basis for different operational phases of the response ("Field Manual for Evaluation of the Coast Contaminated by Hydrocarbons", of the Ministry for the Ecological Transition. https://publicacionesoficiales.boe.es NIPO:638-19-003-8).

This module makes it possible to access a standard model of SCAT through a mobile device, thus facilitating the observer to send the information to the competent body.

A SCAT is composed of eight sections, the first three have the purpose of collecting basic information of the place and will be covered, in general, by the sampling coordinator. In this way, the members of the inspection team will only cover the remaining five sections, relating to the details of the contamination.

8.1. SCAT Menu

By clicking on the SCAT module (menu on the left) you access the SCAT screen, from here, the sampling coordinator can open a new SCAT, as well as consult, edit or delete the SCAT that you have previously made. In case of being the first time that the user accesses the platform there will be no associated SCAT so at this point only a new SCAT can be covered, through the '+' button.

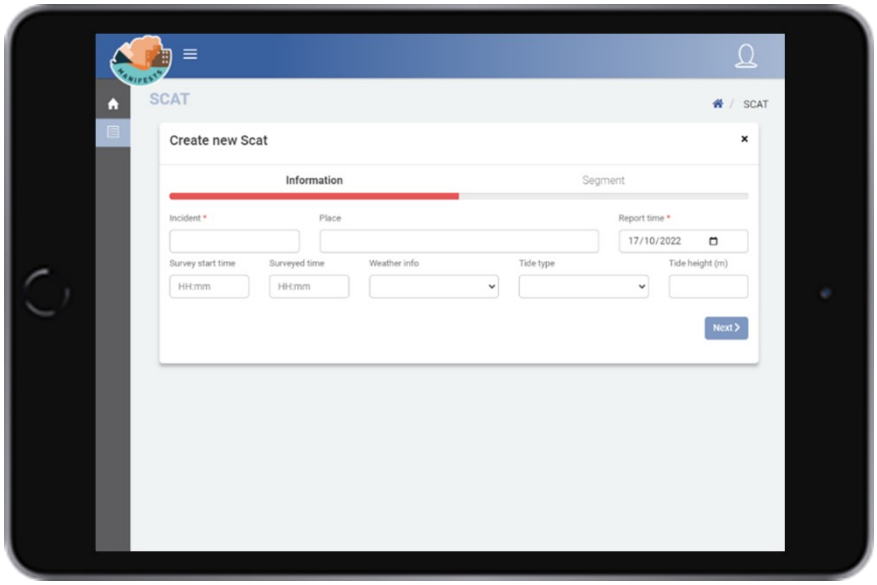


8.2. New SCAT

By clicking on the '+' button, the user can start a new SCAT, filling in all the related information. Said information will be saved automatically and can be edited if necessary. After completion, a SCAT report is generated and will be registered on the platform at the disposal of the corresponding inspection team, which will cover the sections related to the details of contamination.

Information

This first form collects general incident information, the incident fields (name you want to assign to it) and date of the report, are mandatory. Both marked with '*'. The application covers the date field automatically, and in case you want to modify this data it is possible to do so.

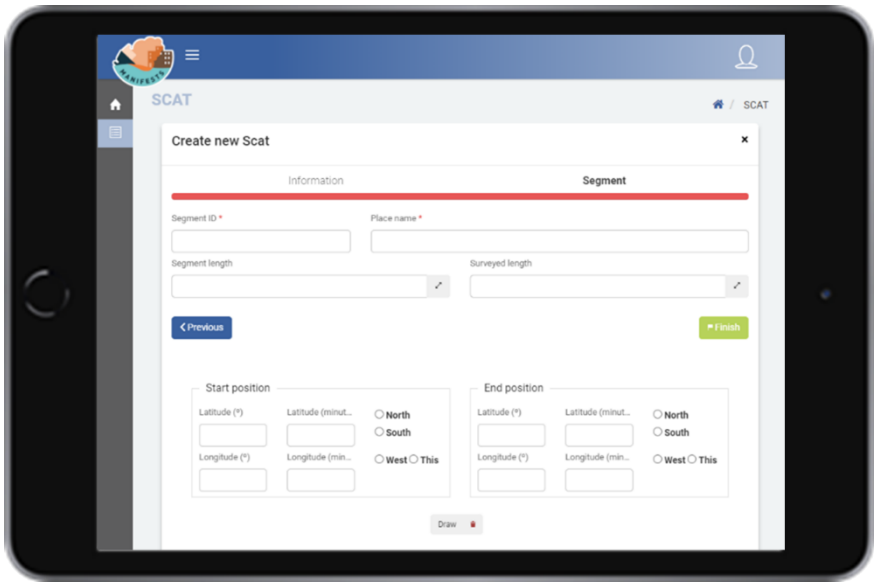


Once covered, the '**next**' button allows us to continue.

Segment

This form contains the information related to the segment to be inspected. In this case the segment ID and the name of the place are mandatory fields that must be established by the management team during the design of the inspection.

The start and end position of the segment can be set in two ways, covering the corresponding latitude and longitude data or by clicking on the '**Draw'** button that enables the map to draw the segment. This option covers the coordinate fields automatically.

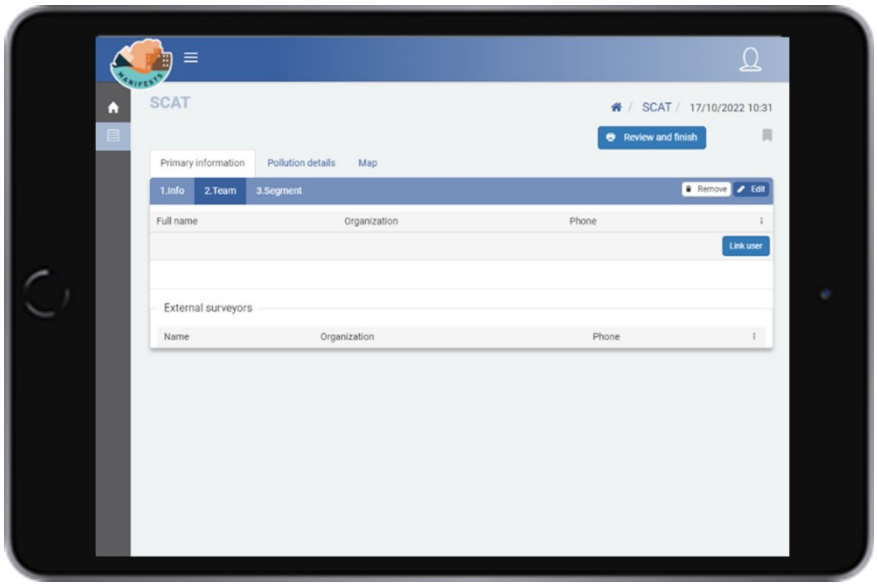


Once the form is completed, the '**finish**' button allows us to save the information and continue.

Inspection equipment

The inspection team can be composed of inspectors who are already registered in the system (inspection permit) or external personnel. In both cases this form records the name and contact details of each of them in case of needing further clarification.

To fill out the form you must click on '**2. Inspection equipment',** then over the **'Edit'** button that opens the form in edit mode.



The '**Link User'** button allows the linking of those inspectors who are registered in the system. Once the inspector data is completed, the '**save'** button records the log.

The '**External Personnel'** table allows to include in the inspection equipment those inspectors who are not registered in the system (for example, because they do not belong to the agency that is using the application) but will participate in the inspection.

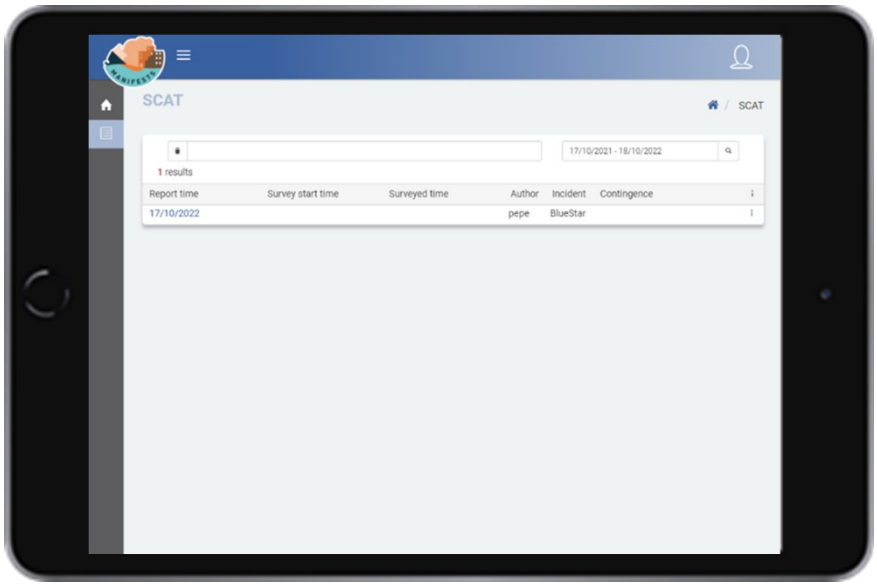
Once these three sections are covered, the SCAT is available to the members of the inspection team, who will cover the details of the contamination.

The '**Review and Finish'** button allows you to view the SCAT report in tab format for review. In case everything is correct the '**finish'** button closes the SCAT, going to the initial screen. Otherwise, the

'**close'** button takes you back to the detail form of the SCAT in progress to edit everything that is considered necessary.

8.3. SCAT Contamination Details

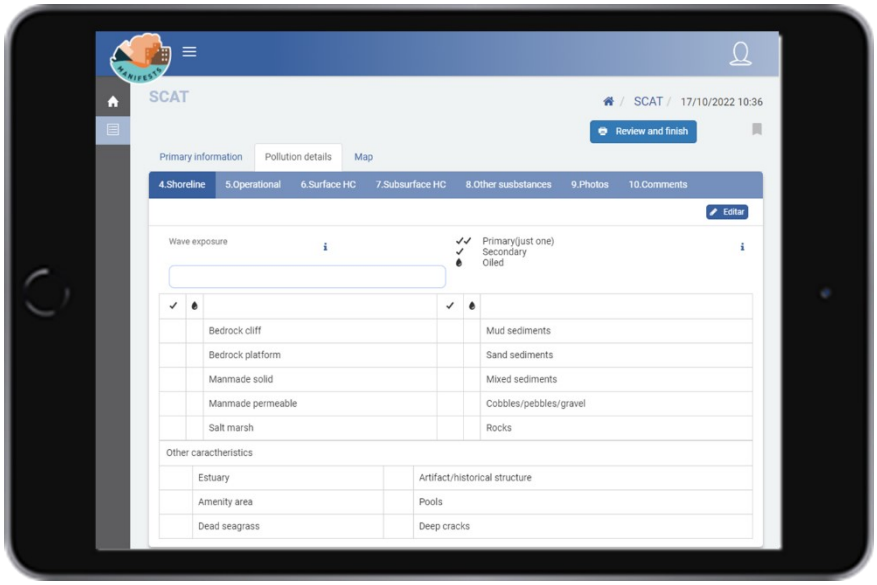
Once the POLREP costa has been opened by the sampling coordinator, the members of the inspection team will access the application through their credentials, finding in their profile those SCAT that have been assigned to them and proceeding to their completion.



To cover the information, click on '**Pollution Details'**. This detail is composed of the following five forms.

Types of coast.

The '**edit**' button opens the edit of the form where you must identify the nature of the types of coastline within the segment, paying special attention to contaminated areas.



This is a selection form, so that the first type of coast to be marked will be taken as primary by marking with the double sign ✓✓. This type of coast corresponds to the clearly predominant coast, located in the upper intertidal zone. In general, there can only be one type of main coast within a segment, but there can be several secondary ones. For this, the following types of coastline that are selected will be marked with a single sign✓.

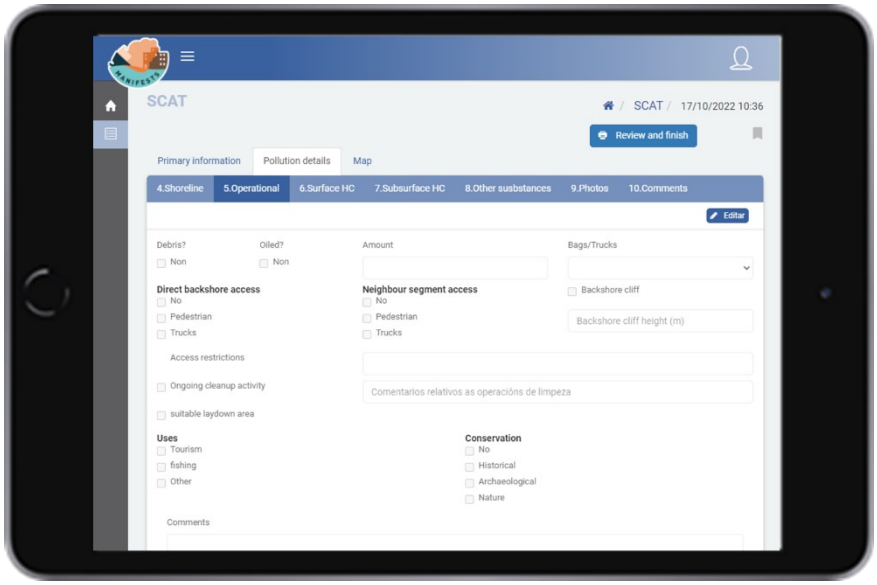
In case you want to indicate that there is pollution in that type of coast, select the icon 💧,being free of the 'x' and indicating the presence of contamination.

In the section other characteristics, you can select those aspects of the coast that may have an influence on the behavior of the hydrocarbon, on the anthropogenic use of the coast, wildlife or vegetation.

After the form is completed, the '**OK'** button saves the changes and closes the editing mode of the form.

Operational characteristics

The edit button opens the edition of the form, in this case of selection, where the user will cover by ✓ those options related to access, uses and conservation of the contaminated remains in the segment.

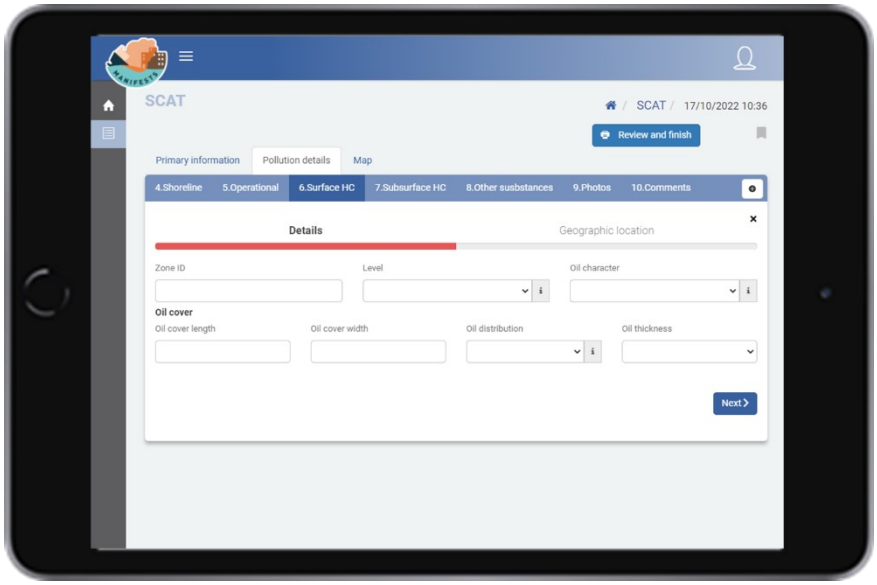


The notes field allows you to insert a text with the information that the inspector deems appropriate to facilitate emergency managers to make decisions when intervening in the area.

After the form is completed, the '**OK'** button saves the changes and closes editing mode of the form.

Surface hydrocarbon

If after the inspection, no surface contamination is observed it is not necessary to cover this section, in specific case the '+' button gives access to the form relating to the presence of surface hydrocarbon.



By using the drop-down buttons you can cover the information related to the area (ID), the position of the tide, the appearance of the hydrocarbon, distribution of the contamination and thickness of it.

Regarding the coverage of the hydrocarbon, data can be provided regarding the length and width of the contaminated area.

Once this information is covered, the '**next**' button gives way to a geographical location screen where the latitude/longitude position of the spot is collected. To fill in this information, the application allows three possible ways:

1) Typing manually the coordinates in the fields intended for this purpose.
2) Using the '**location**' button, which automatically inserts the position the user is in.
3) Using the '**paint**' button. This button opens a map where you can insert a point that determines the position of the hydrocarbon.

It is recommended to use the '**current location**' button whenever the location of the observer is very close to that of the hydrocarbon. Track 1 can be used in case the observer has a GPS with which he has positioned the hydrocarbon.

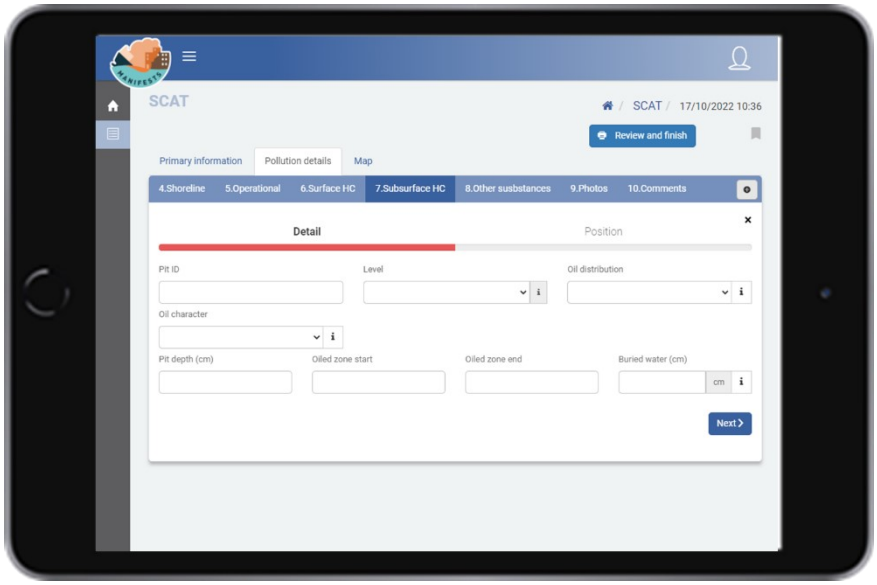
The map (track 3) is useful in those situations where the observer is very far from the hydrocarbon (for example, in observations made from the ground) and does not have a GPS to help him geolocate. In this case the map will be useful to locate the spill, even if it is in an approximate way.

The '**+**' button allows you to add all the necessary records in the form. Once the surface hydrocarbon sampling is completed, you can continue with the following form.

Hydrocarbon under surface

To determine the presence of hydrocarbon under the surface it is necessary to carry out small sampling, pitting, or digging of trenches on the coast. These actions should only be carried out if there is a suspicion that the hydrocarbon may have been buried.

If this pitting is not carried out, this section can be left uncovered, otherwise the + button gives access to the form.



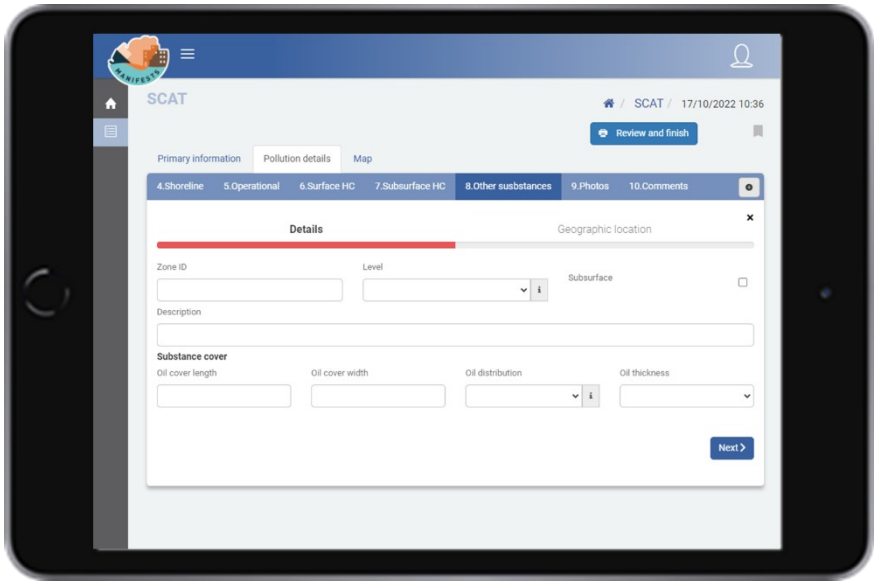
This form covers the information related to the ID of the pit, the tidal position, the distribution of pollution, the appearance of the hydrocarbon, the depth of the pit (with the beginning and end of the area that presents hydrocarbon) and the level of the sea water. The ⓘ icon opens aids related to each field.

As in the previous form there is the possibility of geolocating the position of the pollution through the geographical location screen.

The '**+**' button allows you to add all the necessary records in the form. Once the subsurface hydrocarbon sampling is completed, you can continue with the following form.

Other substances

If there are no other polluting substances it is not necessary to fill out this form, otherwise the '**+**' button allows access to the form.



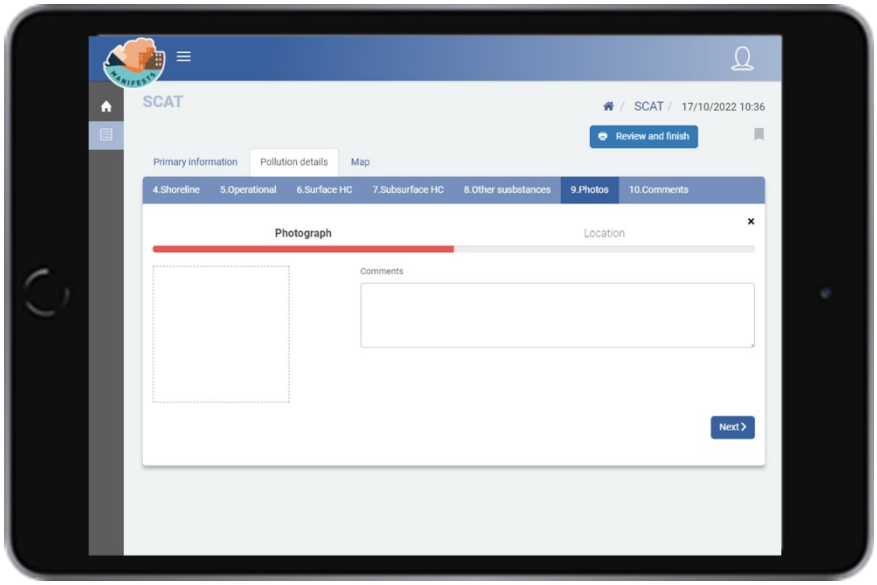
This form identifies the contaminated area with an ID and defines for each zone the position in relation to the tidal zone, coverage of the substance, its thickness, and a description of the substance.

As in the previous form, there is the possibility of geolocating the position of the pollution through the geographical location screen.

The '**+**' button allows you to add all the necessary records in the form. Once that form is finished, you can continue.

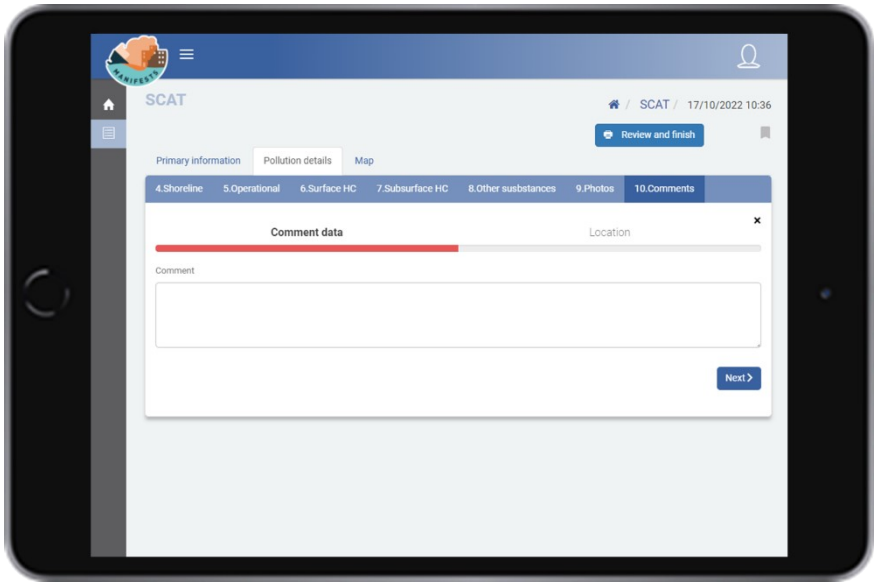
Photos

In case you want to complete the SCAT with photos, the '**+**' button allows you to add one or more photos accompanied by a comment. These photos can be geolocated using the location screen already described above.



Feedback

The user may add one or more comments of everything he considers of interest. Comments can also be geolocated using the location screen.



Review and finalize.

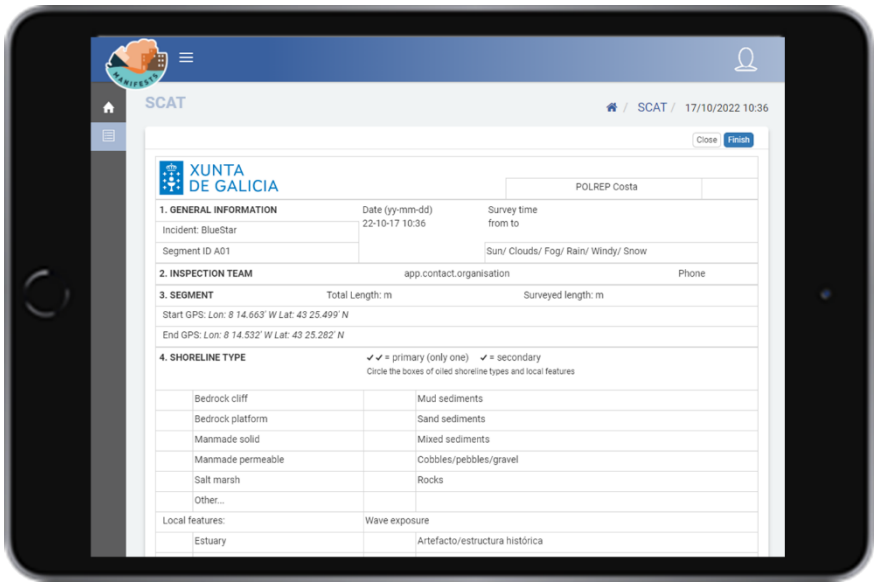
Once all the information related to the contamination has been covered, the '**review and finish**' button available at the top of the screen allows us to review our SCAT report and finalize it.

This button can be used at any time during the process, generating a SCAT report that will cover only the forms in which information has been filled.

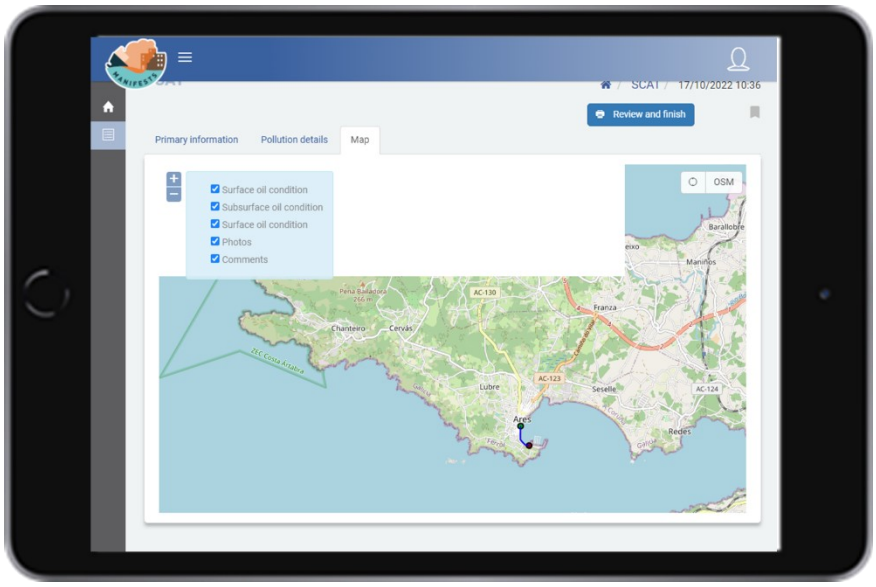
Print a SCAT

Once a SCAT has been created using the application, it becomes registered in the database and can be consulted by those to whom the system administrator has given permission.

Sometimes it may be necessary to send the SCAT via email or a printed copy of it's needed. To do this, you can open the form with the 'review' option and use the 'print' option of the browser in which the web application has been opened. In this way you can print the SCAT on paper on those devices connected to a printer or in PDF on those that do not have a printer.



Since most of the information in the SCAT can be geolocated, the application also allows, through the map button, to review the position of all the elements that have been geolocated.



9. Reports Module

During a contingency, response teams take many photos, videos and make a series of reports with decision-making managers. This module was designed with the idea of centralizing all these communications and giving a common entry point to all the files that can be generated during the crisis (photos, videos, pdf) ensuring that managers have them in a fast and efficient way.

9.1. Reports Menu

By clicking on the report's module, in the menu on the left, you can access the reports screen, from here, the agent who works in the response operation can open a new report, as well as consult, edit or delete the existing reports. In case of being the first time that the user accesses the platform there will be no previous reports so at this point you can only start a new one through the '+' button.

9.2. New report

Once the report is opened, the user accesses the form where the following fields are covered:

Title: it is an optional field, covered only in case the communicator finds it of interest.

Message: Text field where the communicator covers everything that he wishes to transfer to the contingency managers.

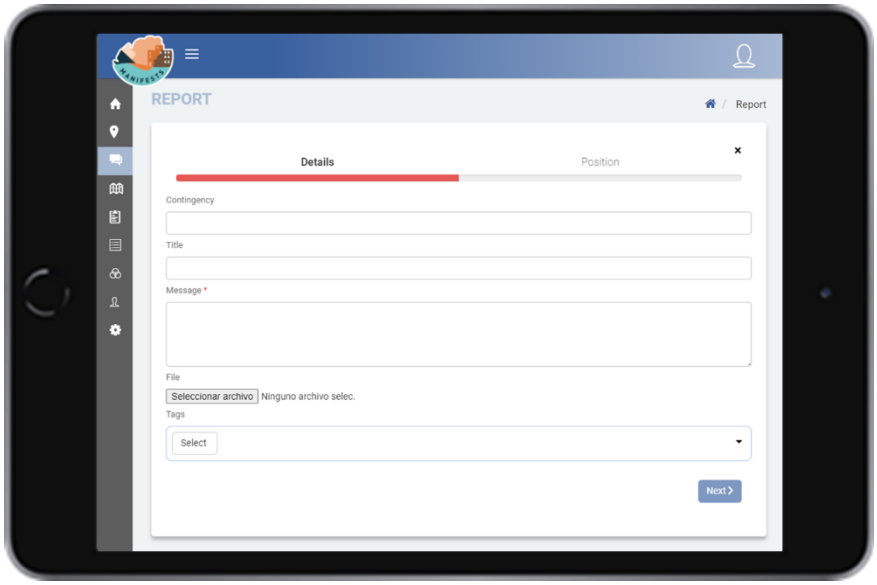
File selection: Button that allows you to attach all kinds of files (photos, videos, pdf, etc.) that the communicator wants to send to the managers.

Tags: Where the communicator can tag the communication between the three available options. This tag gives the contingency manager the ability to filter the information received based on the chosen tag.

Contingency: Non-editable field, marked in gray. To be covered by the contingency manager.

During a contingency, the agent involved may have to make numerous communications to report on the evolution of the situation to the Operational Coordination Center (CECOP). To speed up this exchange of information, the COP manager, whose mission is to manage the information to be distributed during the contingency, can link (a task that is carried out through the COP management module) all the communications of an agent to a specific contingency. If this is the case, all communications reported by this agent will be automatically visible to all members present at the CECOP.

In this situation, the contingency field will appear covered, to inform the agent that it has been linked to a contingency.



Optionally, the reports may be associated with a geographical location. To do this, each communication is associated with a location screen, which collects the latitude/longitude position of the communication. To fill in this information, the application allows three possible ways:

1) Typing manually the coordinates in the fields intended for this purpose.
2) Using the '**location**' button, which automatically inserts the position the user is in.
3) Using the '**paint**' button. This button opens a map where you can insert a point that determines the position.

It is advised that whenever the location of the agent is very close to the point you want to geolocate, use the '**current location**' button. 'Way 1' can be used in case the agent has a GPS with which he has located the position. 'Way 3' is useful in situations where the agent is far from the desired position (for example, in observations made from the ground) and does not have a GPS to help it geolocate. In this case the map will be useful to locate the position, even if it is in an approximate way.

It should be noted that the location is only indicated for those cases in which it's important that the information you want to move is geolocated. For example, reporting the appearance of a new spill.