

D3.4 Emergency Management Console

Release Notes

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List of abbreviations

<Abbreviation>	<Explanation>
AOI	Area of Interest
CDF	Citizen Direct Feedback
DM	Decision Maker
EMC	Emergency Management Console
ER	Emergency Responder
F	Facilitator
FE	Flood Emergency Expert
FSM	Finite State Machine
JSON	JavaScript Object Notation
POI	Point of Interest
SMC	Social Media Component
SW	Semantic Wiki
TMS	Territory Monitoring System
SPA	Single Page Application
ReactJS	Facebook React
UI	User Interface
UAT	User Acceptance Testing

Executive summary

D3.4 Emergency Management Console is the fourth deliverable from WP3. This is a software deliverable about development of the EMC tool.

The EMC development is based on the D3.1 and D3.2 documents, which deals with the functional specifications through the definition of the user stories for each component composing the FLOOD-serv platform and the description of the technical specification of each component: structure, data model, interfaces, services, data providers and implementation environment.

D3.4 is being developed at the same time as D3.3, D3.5, D3.6 and D3.7, which are reporting the development of the rest of components composing the FLOOD-serv platform, i.e.: the Social media component (SMC), the Semantic Wiki (SW), the Territory Management System (TMS) and the Citizen Direct Feedback (CDF), respectively.

1 Introduction

1.1 Purpose of the Document

The goal of this document is to describe the verification tests and the release notes for the Emergency Management Console. The document is based on D3.1 and D3.2.

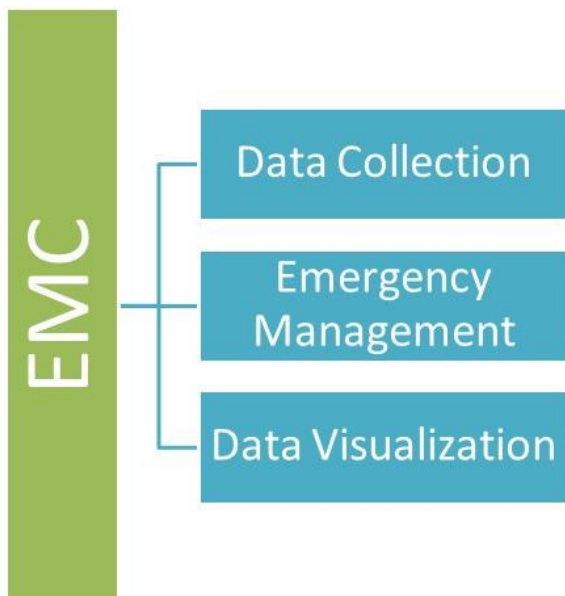
1.2 Structure of the Document

The document is organized as in the following:

- **Chapter 1** is this introduction and description of the document itself.
- **Chapter 2** overviews the user stories implemented for the EMC considering its contextualization inside the FLOOD-serv platform.
- **Chapter 3** explains what is the meaning of the verification tests carried out and presents the baseline for them, i.e. their preconditions.
- **Chapter 4** overviews all the test cases carried out considering the EMC functionalities implemented by each pilot
- **Chapter 5** describe each one of the test case carried out as well as their results.
- **Chapter 6** contains the release notes of the EMC.

2 Overview of user stories implemented

The main functionalities of the EMC are: data collection, emergency management and data visualization (represented in the next figure).

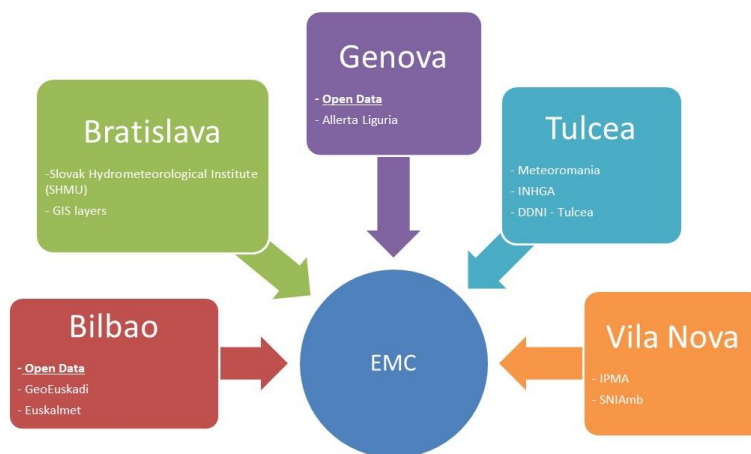


A tool (web and mobile) accessible for:

- Decision Makers (for example Mayors)
- Facilitator/Flood Expert (for example Civil Protection Directors)
- Emergency Responders (for example Firefighters)
- System Operator (for example Answare)

Most of the data collected in the EMC come from sensors and external data providers. The collected data are related mainly to the following data associated to the different pilot cities:

- Points of Interest (PoIs) and population data
- Daily measured weather (temperature, rain, wind and water level of target rivers)
- Daily weather forecast for tomorrow (temperature, rain, wind and water level of target rivers)
- Daily flood situation

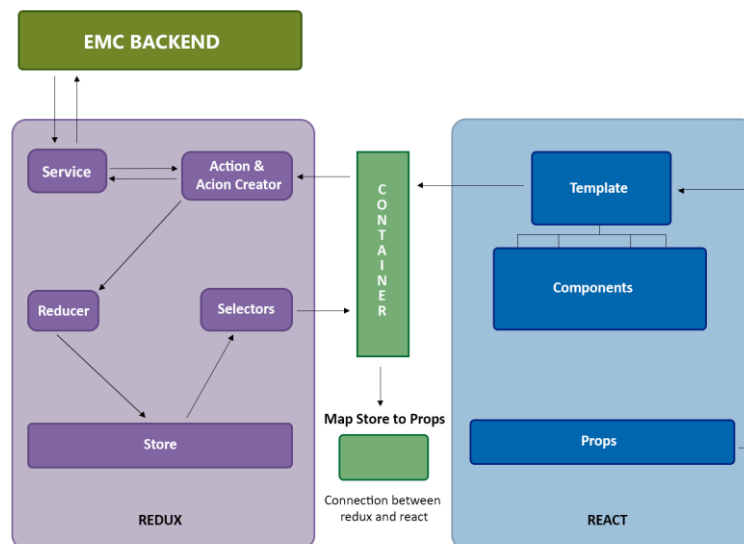


Data sources for each pilot city

The emergency management functionality is carried out through the following three subsystems integrated in the EMC:

- ✓ **Expert System.** It analyzes the situation to activate different emergency levels (*flood prevention*).
- ✓ **Decision Support System (DSS).** It makes suggestions about different actions to be done to fight against the incident (*flood response and recovery*).
- ✓ **Training.** It trains users by analysing a real crisis from the past (*flood mitigation*).

The data visualization (frontend) of the EMC is developed as Single Page Application (SPA) using Facebook React (ReactJS) + Redux. ReactJS is a JavaScript library that provides the tools to define and divide the User Interface into components that can be reusable. Furthermore, Redux is used to disengage the global state of the web application from the visual part, where this state is both the UI state and the data retrieved by services that fetch information from diverse sources like external API or the application Backend as OAuth 2.0 client over a secure channel (https). Then, using React the frontend exposes specific views for the data to be displayed, using a responsive approach.



Data flows between Redux web app and ReactJS components

The redux-flux pattern establishes a unidirectional data flow with a single store for the application state. This ensures that the views will always respect the changes of the app state, which are fired by actions. Actions can be related to UI interactions or other events. This allows to separate presentation from abstract representation of the app state, while boosting performances and simplifying component reusability and scope isolation.

The ReactJS-Redux design allows to separate view rendering from app state representation, writing better organized and more maintainable and reusable code. The main components of this architecture are the following:

- **Action Creators:** these functions define which action are dispatched in reaction to events such as user interaction, network, system or sensor events. Action Creators can be synchronous or asynchronous. To communicate with the EMC backend, Action Creators will take advantage of the Web API module.
- **Reducer:** depending on the triggered Action Creators, the reducer has the task of propagating events that mutate the app state. Since Redux contemplates a single store for the app state, all the actions, defined as plain objects, are dispatched by this central store.

- **Store:** it encapsulates the state of the application and it is read-only, in the sense that neither views nor network calls can directly manipulate it. The way the state can mutate is defined through so called “reducers”, which are pure functions that given the current state and an action, return the next state. It can be thought in terms of a Finite State Machine (FSM) whose states are a composition of each module states, and reducers are a composition of each module reducers, exploiting modularity and reusability. Each module thus defines a portion of the app state that is combined to the other portions and stored into the single store. This store is therefore a hierarchical object tree which serves as single source of truth.
- **Selector:** the selector allows to get data out of the store. Are functions that take Redux state as an argument and return some data to pass to the component.
- **React Views:** roughly corresponding to the V of the classic MVC pattern, React Views are made of reusable components that only render a portion of the current app state, which is propagated by mean of immutable properties in a hierarchical way. User Interface (UI) interactions are then propagated to the app state by calling the Action Creators, that will update the app state and finally propagate to the interested view components, when needed.

The frontend includes an additional Redux module, i.e., the **Web API**. It is tasked to act as a liaison with the backend, managing all interactions, both inbound and outbound.

While the proposed architecture is very similar for both frontend and mobile app, each one of these will implement specific modules and view components to cope with its own peculiarities. On the other hand, all efforts will be made for sharing common modules and view components where possible.

The user stories implemented to accomplish with the non-functional, functional and technical requirements of the EMC are collected in the following table. The first 22 user stories were described with more detail in D3.2. To consider the EMC as totally finished, the last 7 user stories collected in this table (from USEMC23 to USEMC29) have also to be implemented.

ID	Summary	Description
USEMC1	Visualization of social media posting	<p>As a Decision Maker (DM), Facilitator (F) or Flood Emergency Expert (FE), in a public emergency service I want to see postings from social media from selected campaigns on the EMC console.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The social media postings are shown on the EMC console map as a heat map; 2. The social media postings are shown on the EMC console with a sticker and it is possible to drill down and access the content of the posting.
USEMC2	Reporting from IN-FIELD Emergency Responder (ER) at any phase of the emergency	<p>As an ER I want to report my location, specific information regarding the emergency and send photos or videos to the control room</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The location is automatically provided by the GPS of the device, but it is possible to manually input the localization in the report. 2. An automatic timestamp will be associated to the report. 3. The ER can enter comments.

USEMC3	Data visualization from IN-FIELD ER and other components	As a DM, F or FE, I want to visualize the reports sent by ER and the data provided by other components. Acceptance criteria: <ol style="list-style-type: none">1. The reports sent for each emergency event by professional responders and the information provided by other components related to citizen are displayed differentiated on a map and a list.2. It is possible to customize the report visualization from the ER (e.g. chronological, per reporter role, per area, ...).3. The report visualization can be filtered.
USEMC4	Reports validation	As a F or FE, I want to validate the reports sent by ER including eventually a comment. Acceptance criteria: <ol style="list-style-type: none">1. Each report should have associated a button or icon to validate the report.2. Once it is validated the report can be differentiated from the others.3. Once it is validated, takes part of the DSS analysis.

<p>USEMC5</p>	<p>Visualize sensors data</p>	<p>As a DM, F or FE, I need to visualize data provided by the sensors of my pilot (geographical, hydrological and social) useful for the knowledge of the territory.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The geographical information will be shown on the map as map layers 2. The F or FE could select the information to be visualized on the map 3. Not geographical information will be shown as text and icons 4. The F or FE could filter the visualization of data.
<p>USEMC6</p>	<p>Obtain suggestions provided by the DSS engine of the EMC triggered by external data sources</p>	<p>As a DM, F or FE, I want to obtain suggestions from the EMC component when reports are provided by ER and other components of the system send notifications, in all the phases of the emergency.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. Suggestions can be triggered by external data from other components 2. Suggestions will have a status and this status could change. 3. The suggestion could have a user or team associated. 4. In the recovery phase, it is also possible to obtain suggestions.
<p>USEMC7</p>	<p>Push notifications (missions or updates)</p>	<p>As an F or FE, I want to send missions or flood updates to ER.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The F or FE can send missions or flood updates to in-field users (with the mobile app). 2. The F or FE could have seen the suggestion provided by the EMC, with the goal to notify some issues to a defined user (ER) or general users.

<p>USEMC8</p>	<p>Validate notifications from the EMC</p>	<p>As a DM, F or FE, I want to validate the notifications created by the EMC to be sent to the ER.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. Automatic alerts can be provided by the EMC when ER approaches to a critical area (flooded, fire). 2. The F or FR have the possibility to validate notifications provided by the EMC. Once it is validated they are pushed to the selected ER.
<p>USEMC9</p>	<p>Receive notifications</p>	<p>As an ER I want to receive notifications from the authorities.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The ER in his/her mobile device receives a push notification with a short description. 2. If the ER clicks on the description can see the notification in detail.
<p>USEMC10</p>	<p>Update progress of the mission</p>	<p>As a ER, I want to update the progress of the mission.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The ER selecting the mission should have a short description and the information of it. 2. The ER should have a tool to update the progress in an easy way.
<p>USEMC11</p>	<p>Receive missions</p>	<p>As a ER, I want to receive missions (actions to be taken) and visualize them.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The ER receives a notification with new mission assigned 2. The mission should have a short description, the ER assigned and the starting timestamp.

<p>USEMC12</p>	<p>Obtain an emergency summary dossier with images</p>	<p>As a DM I want to obtain from the EMC an emergency summary dossier.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The dossier will have at least (if the information is provided - allow end users to insert that data): Number of affected people; Number of affected buildings; Affected critical infrastructures; Events produced in the crisis; Emergency personnel working on the crisis (state and location); Map with FR location, Crisis location, critical infrastructures; Images. 2. Web visualization and document template.
<p>USEMC13</p>	<p>Add new geographical data through the map</p>	<p>As a F, FE or ER I want to draw information on the map.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The user has the possibility to draw points, lines and polygons. 2. These features would be saved as a layer to be shown after to other emergency users.
<p>USEMC14</p>	<p>Add new geographical data sources</p>	<p>As a DM, F or FE I want to add and save new geographical data sources on the map.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The user has the possibility to add layers from different WM(T)S server: indicating the WM(T)S server the list of available layers would be displayed, letting the possibility to the user to select any layer to be visualized on the map. 2. The list of WM(T)S servers would be stored in order to be used in a quick way.

USEMC15	Select other geographical data sources	<p>As a DM, F or FE I want to select the visualization of layers from different data sources.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The user wants a layer from other data source, so can select the data source from a list (data sources saved already) 2. Once it is selected, the list of available layers should be displayed.
USEMC16	Be trained	<p>As a DM, F, FE or ER I want to be trained.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. Simulation teams of all the roles should be available in the pilots to use the platform system or at least the components that are going to use.
USEMC17	Include the "action plan" (main protocols) in the EMC	<p>As a DM I want to include the protocols of action in case of emergency in the EMC.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The addition of new protocols (in the DSS called rules) will be guided by the application. 2. The DM could select the predefined sentences and complete them in order to provide the necessary information. Once it is saved, will be stored on the EMC database. 3. The DM could check the list of rules, select one and modify it. Changes will be stored on the database.
USEMC18	Manage suggestions	<p>As a DM, F or FE, I want to modify, approve, reject and delete suggestions.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The F or FE can modify some fields of the suggestion: the name and description, the crew or user assigned, and include comments about that. 2. The F or FE can modify the status of the suggestion, approving or rejecting it. That will

		<p>make every suggestion marked in a different way. Approved ones will be converted into actions to be taken.</p> <p>3. The suggestions can be directly deleted because they can't be considered necessities or suitable for the emergency management.</p>
USEMC19	Assign missions	<p>As a DM, F or FE, I want to assign missions to the ER.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The mission is assigned to an ER when the F or FE approve a suggestion. 2. Automatically, the ER receives a notification about the new mission assigned.
USEMC20	Analyse progress of the mission	<p>As a DM, F or FE, I want to obtain the progress of the mission.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The F or FE can see the progress of the mission through an image or animated gif.
USEMC21	Visualize geographical information on a map	<p>As a DM, F, FE or ER I want to visualize the geographical information on a map.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. Layers to be shown if available: POIs (with critical infrastructures, shelters and safe spots, social services and resources), Population density traffic and road conditions, affected area, information from European assets, reports location, users location (any user that has GPS and is sending his location: citizen, FR, volunteers), Available FR, sensors geodata...

		<p>2. EMC users can filter POIs visualization on the map.</p> <p>3. EMC users can select the layers visualization</p> <p>4. EMC users can use map tools such as navigation, zooms.</p>
USEMC22	Report request	<p>As a DM, F or FE, I want to request a new report from the in-field ER.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> 1. The web interface offer the possibility to request new report. 2. The request should be related to an event 3. The F or FE could select the data needed. 4. The F or FE can select the reporter or select an area from the map that involve one or more than one reporter.
USEMC23	Localisation of EMC (Italian)	As an Italian speaking end user I want to see the EMC GUI in Italian
USEMC24	Localisation of EMC (Spanish)	As a Spanish speaking end user I want to see the EMC GUI in Spanish
USEMC25	Localisation EMC (Romanian)	As a Romanian speaking end user I want to see the EMC GUI in Romanian

USEMC26	Localisation of EMC (Slovak)	As a Slovak speaking end user I want to see the EMC GUI in Slovak
USEMC27	Localisation of EMC (Portuguese)	As a Portugese speaking end user I want to see the EMC GUI in Portuguese
USEMC28	REST Get Call	<p>As a user of other FLOOD-serv components I want to connect and retrieve information generated by the EMC in a harmonized format.</p> <p>Acceptance criteria:</p> <p>1) GET-Filter Parameters as follows are available:</p> <ol style="list-style-type: none"> 1. Points of interest 2. Population data 3. Daily measured temperature, rain, wind and water level 4. Daily forecasted temperature, rain, wind and water level 5. Daily flood situation <p>2) Content of the response are made available in JSON</p>
USEMC29	Mobile app	As a EMC user I want to use the mobile version of the EMC.

3 System Test Case Repository

This chapter provides an overview of the current system tests.

The tests described in this document demonstrates that the Emergency Management Console in all languages and the new features identified in D3.1 and D3.2 have been successfully implemented as part of the task T3.6.

3.1 System Tests

The core focus of the system tests is to test the Emergency Management Console - without integration with the other modules - as a black box as seen by the user. This test level is being performed by dedicated experts (testers, test manager).

WP5 is about user acceptance tests, which is the last phase of a software testing process. During UAT (User Acceptance Testing), actual software users test the software to make sure that it works in real-world scenarios, according to specifications.

3.2 Baseline for System Tests - Preconditions

In order to extract reproduceable and consistent results from executing the system tests they must be performed in a defined environment. Besides system level requirements (database is up and running), there are other internal settings that must be set accordingly. These settings are called preconditions and this chapter lists some of the most relevant ones which are present in most of the verification tests.

Id	Title	Setup
PRE 1	Activated Facilitator	<ul style="list-style-type: none"> client exists user with facilitator role has been added by the FLOOD-serv platform password for facilitator has been set
PRE 2	Activated Flood Expert	<ul style="list-style-type: none"> client exists user with flood expert role has been added by the FLOOD-serv platform password for flood expert has been set
PRE 3	Activated Decision Maker	<ul style="list-style-type: none"> client exists user with decision maker role has been added by the FLOOD-serv platform password for decision maker has been set
PRE 4	Activated Emergency Responder	<ul style="list-style-type: none"> client exists user with emergency responder role has been added by the system operator password for emergency responder has been set

4 Test cases – overview

We have grouped the tests carried out into clusters: such related to data collection, data visualization and emergency management.

	Italian Version	Portuguese Version	Romanian Version	Slovakian Version	Spanish Version
Data Collection					
Receive missions	X	X	X	X	X
Receive notifications	X	X	X	X	X
Data Visualization					
Visualization of social media posting	X	X	X	X	X
Data visualization from IN-FIELD ER and other components	X	X	X	X	X
Visualize geographical information on a map	X	X	X	X	X
Visualize sensors data	X	X	X	X	X
Emergency Management					
Add new geographical data sources	X	X	X	X	X
Reporting from IN-FIELD Emergency Responder (ER) at any phase of the emergency	X	X	X	X	X
Add new geographical data through the map	X	X	X	X	X
Analyse progress of the mission	X	X	X	X	X
Assign missions	X	X	X	X	X
Be trained	X	X	X	X	X

D3.4 Emergency Management Console

Include the "action plan" (main protocols) in the EMC	X	X	X	X	X
Manage suggestions	X	X	X	X	X
Obtain an emergency summary dossier with images	X	X	X	X	X
Obtain suggestions provided by the DSS engine of the EMC triggered by reports or notifications	X	X	X	X	X
Push notifications (warning or alerts)	X	X	X	X	X
Report request	X	X	X	X	X
Reports validation	X	X	X	X	X
Select other geographical data sources	X	X	X	X	X
Update progress of the mission	X	X	X		
Validate notifications from the EMC	X	X	X	X	X

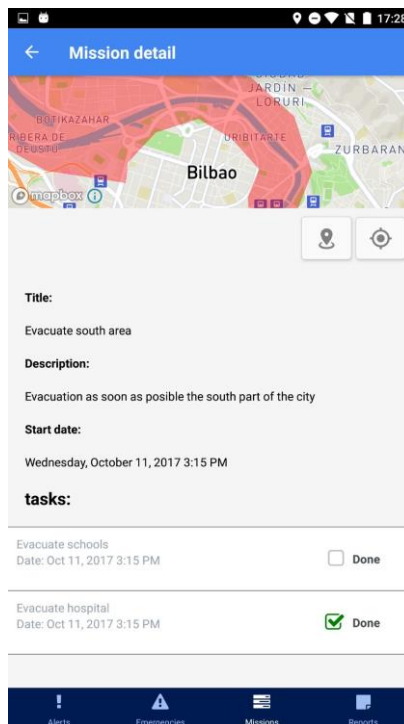
5 Test Cases and Results

5.1 Data Collection – Test Cases and Results

5.1.1 Test Case – Receive missions

Receive missions	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 4 – Activated Emergency Responder • A mission should have been generated by a DM, F and/or FE. • The ER must be logged in the system. • The mission should have: a short description, the ER assigned and the starting timestamp.
Steps to complete:	<ol style="list-style-type: none"> 1. The ER receives a notification with new mission assigned by authorities. 2. The ER open the mission sections and visualize the new one.
Expected Outcome:	1. Missions are received and visualized by ER.

5.1.2 Results – Receive missions



5.1.3 Test Case – Receive notifications

Receive notifications	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 4 – Activated Emergency Responder • A notifications/warning should have been generated by a DM, F and/or FE.
Steps to complete:	<ol style="list-style-type: none"> 1. The ER receives the notifications or missions provided by the authorities in his/her mobile device. 2. The ER clicks on the description and can see the notification in detail.
Expected Outcome:	1. Notifications and missions are received and visualized by ER.

5.1.4 Results – Receive notifications



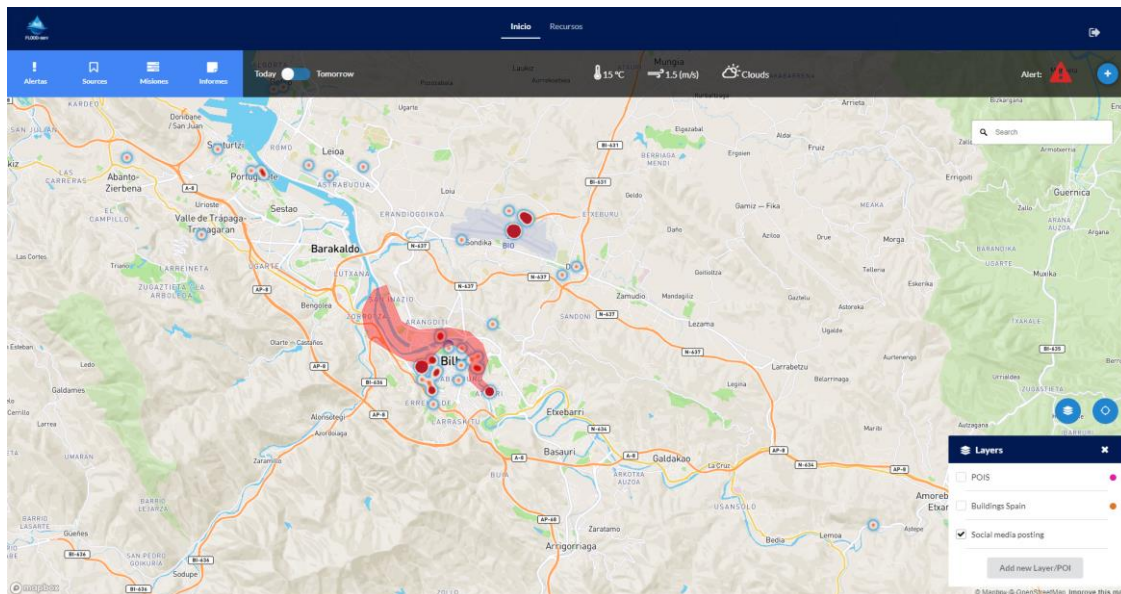
5.2 Data Visualization – Test Cases and Results

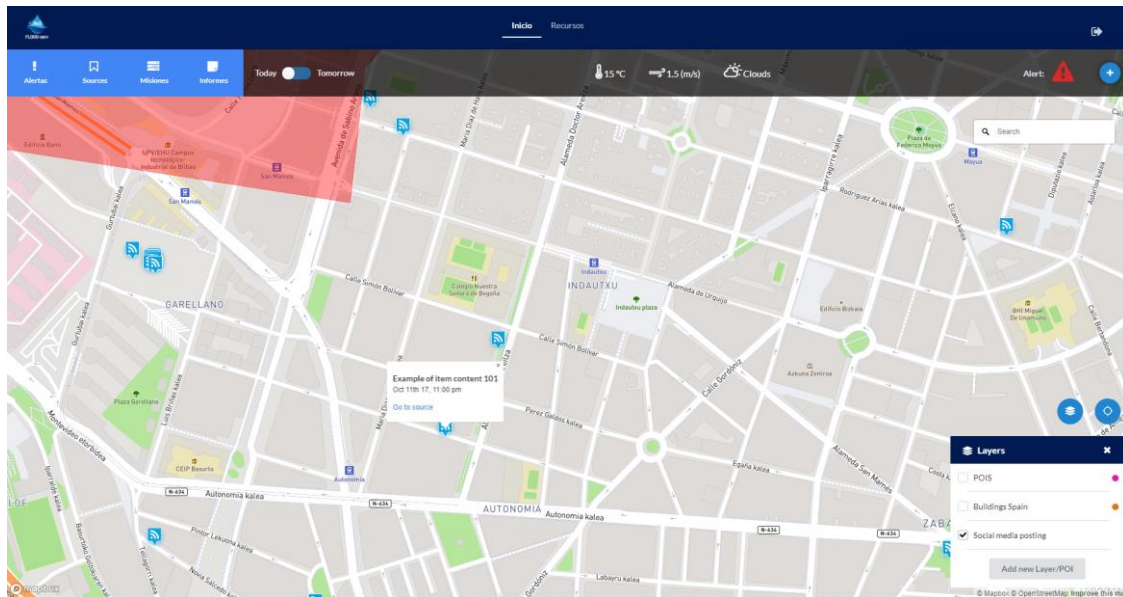
5.2.1 Test Case – Visualization of social media posting

Visualization of social media posting	
Test Type:	Manual
Status:	Final

<p>Preconditions:</p>	<ul style="list-style-type: none"> ● PRE 1 – Activated Facilitator ● PRE 2 – Activated Flood Expert ● PRE 3 – Activated Decision Maker ● Social media postings should be provided from the Social Media Component.
<p>Steps to complete:</p>	<ol style="list-style-type: none"> 1. The social media postings are shown on the EMC console map as a heat map. 2. The user selects the 'social media posting' layer from the Layers section.
<p>Expected Outcome:</p>	<ol style="list-style-type: none"> 1. A heat map is displayed on the map colored in red where there are more posts. 2. If the user zooms, each post will appear individually. 3. If the user clicks on a post his more detailed information will be shown.

5.2.2 Results – Visualization of social media posting

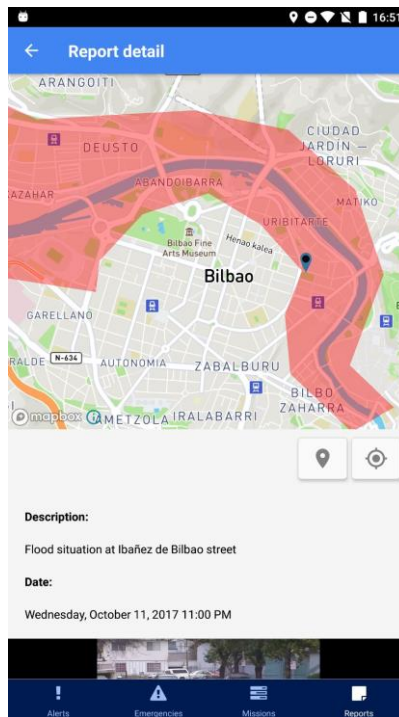
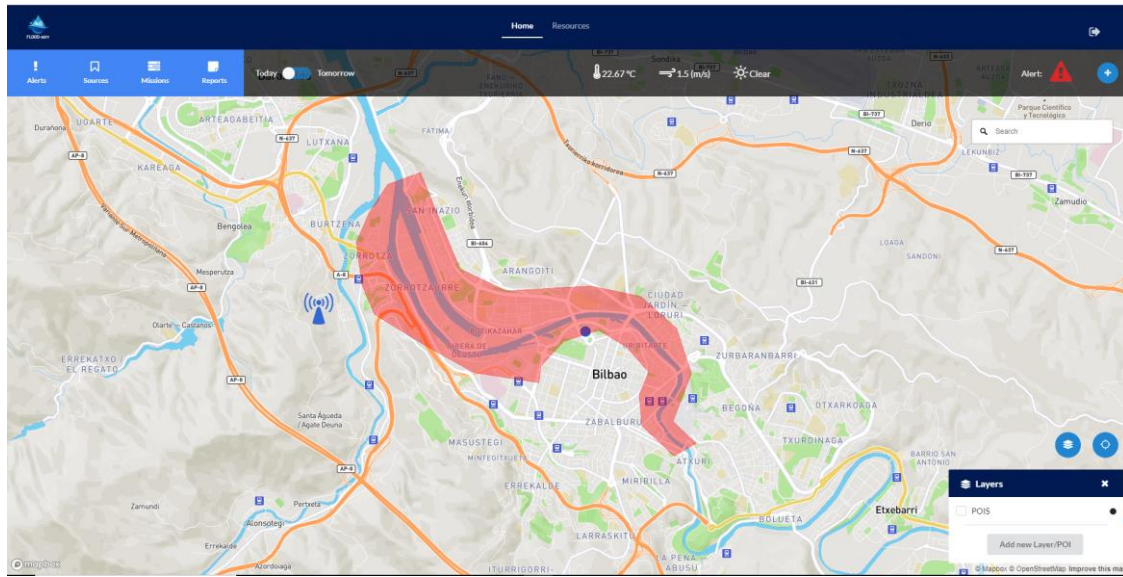




5.2.3 Test Case – Visualize geographical information on a map

Visualize geographical information on a map	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 -Activated Facilitator • PRE 2 -Activated Flood Expert • PRE 3 -Activated Decision Maker • PRE 4 -Activated Emergency Responder • The user must be logged in the system
Steps to complete:	<ol style="list-style-type: none"> 1. In the web app: in the main page the user can see the geographical data and visualize the different layers. 2. In the mobile app: if the user clicks on an alert, emergency, report or mission a detail page is opened and the area or POI associated is shown on the map.
Expected Outcome:	<ol style="list-style-type: none"> 1. The user will see the POIs and AOIs on the map depending the section is shown: <ul style="list-style-type: none"> • Web main page: the AOI of the emergency active, and optionally the sensors location and the layers. • Web Past emergencies: the AOI of the emergency, their missions and their reports location. • Mobile app alerts, emergencies, missions, reports: for each element, their AOI or POI will be shown.

5.2.4 Results – Visualize geographical information on a map

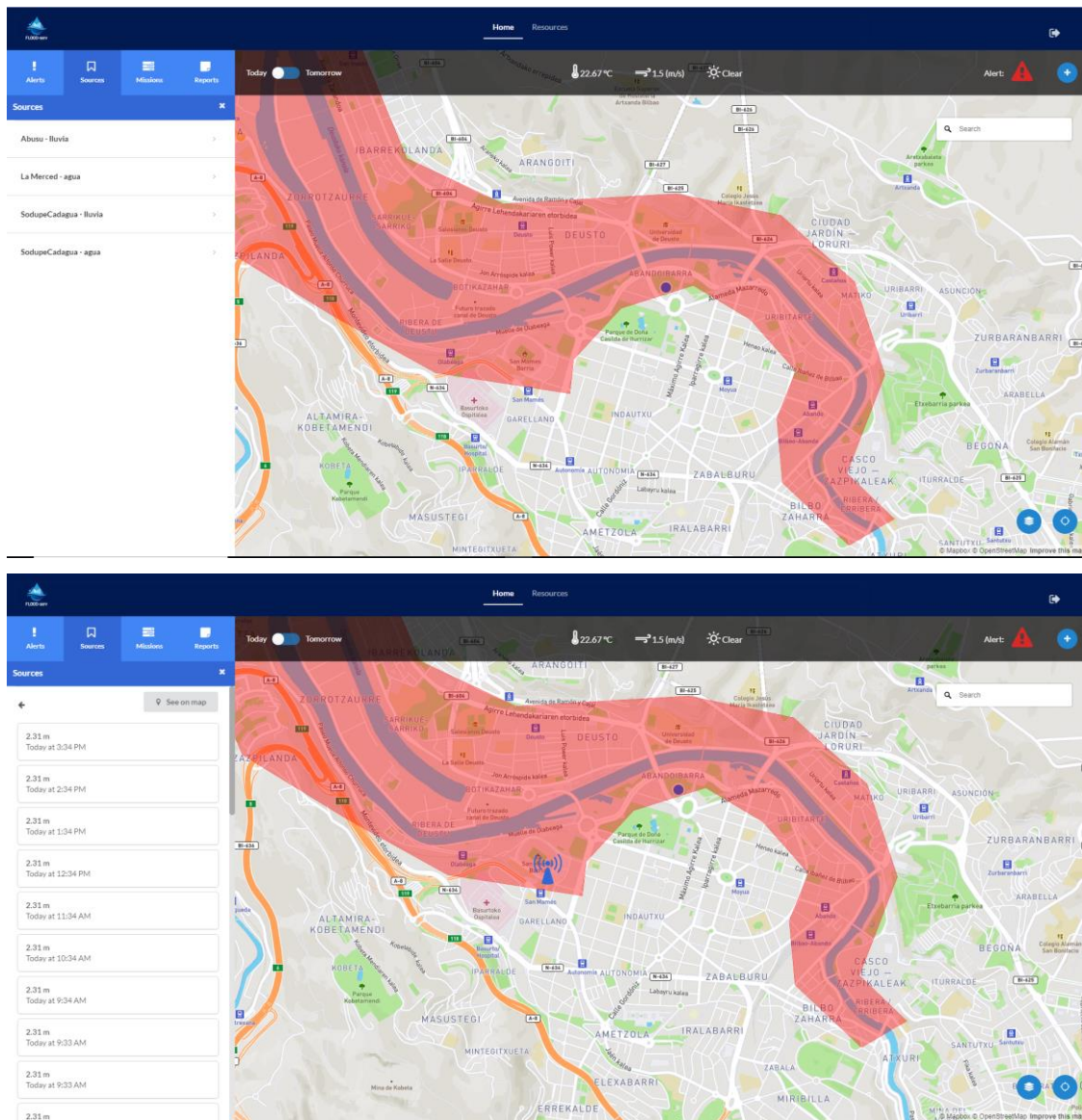


5.2.5 Test Case – Visualize sensor data

Visualize sensor data	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 -Activated Facilitator • PRE 2 -Activated Flood Expert • PRE 3 -Activated Decision Maker • The user must be logged in the system

Steps to complete:	<ol style="list-style-type: none"> 1. The user clicks on the sources section and visualize the available sensors. 2. If the user clicks on a sensor, the sensor measures are shown. 3. The user can visualize where the sensor is located.
Expected Outcome:	<ol style="list-style-type: none"> 1. When the user clicks on the see on map button, a point is drawn, and the map goes to its location.

5.2.6 Results – Visualize sensor data

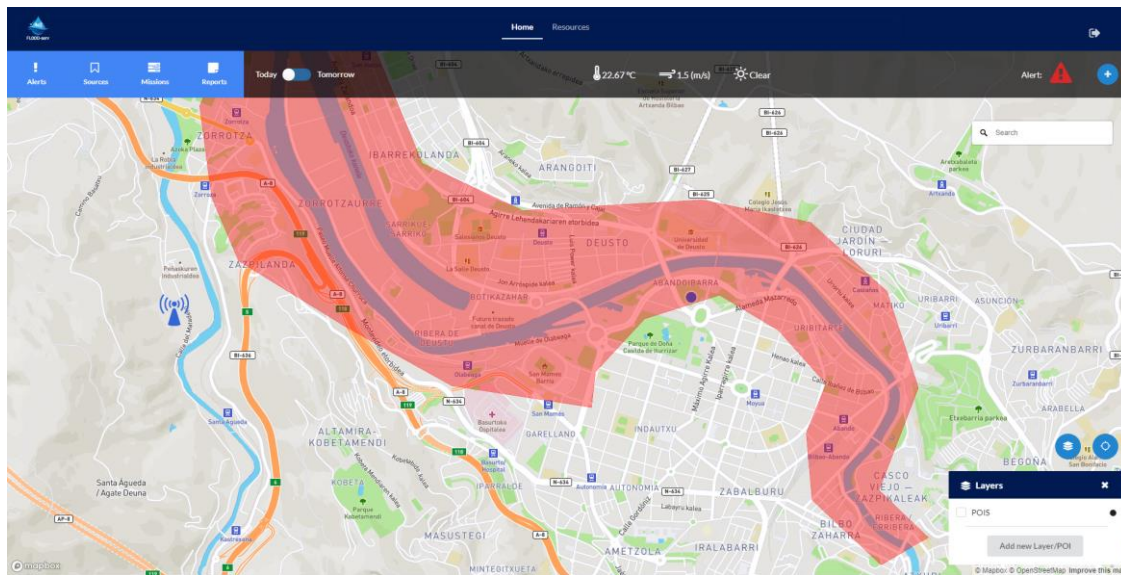


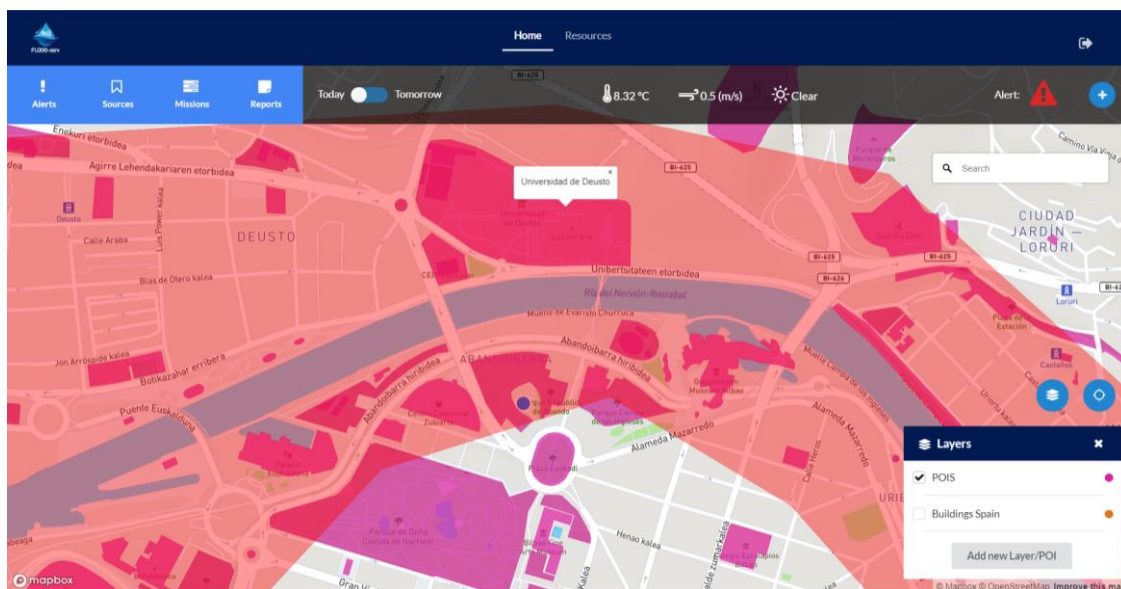
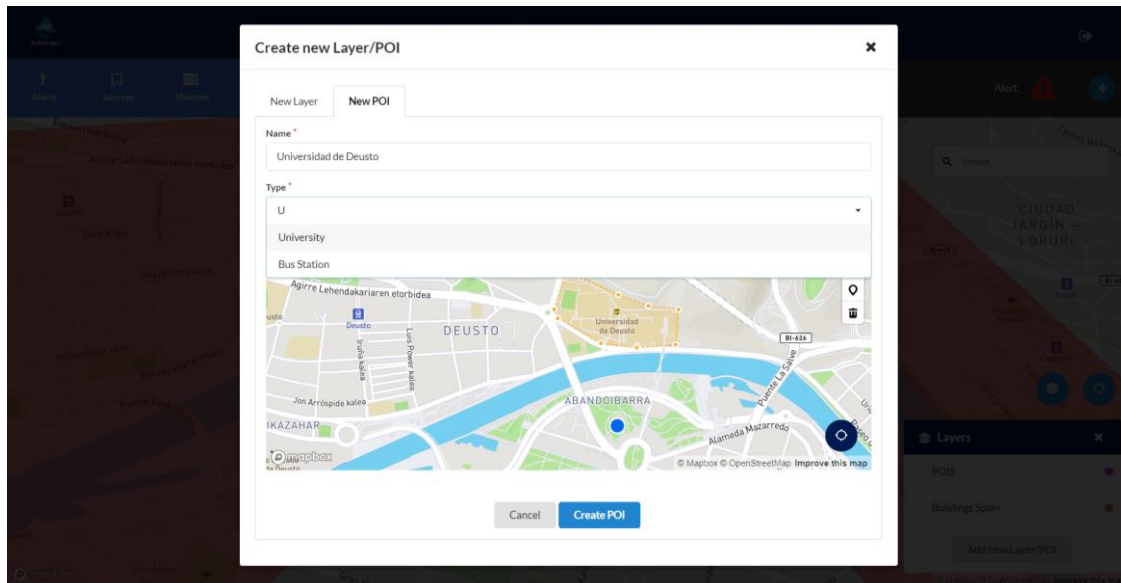
5.3 Emergency Management – Test Cases and Results

5.3.1 Test Case – Add new geographical data sources

Add new geographical data sources	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 – Activated Facilitator • PRE 2 – Activated Flood Expert • PRE 3 - Activated Decision Maker • The user must be logged in the system
Steps to complete:	<ol style="list-style-type: none"> 1. The user clicks on the bottom right button. 2. The user sets the name type and geographical information (POI or AOI)
Expected Outcome:	<ol style="list-style-type: none"> 1. When the user adds a new POI, it can be visualized in a custom layer.

5.3.2 Results – Add new geographical data sources



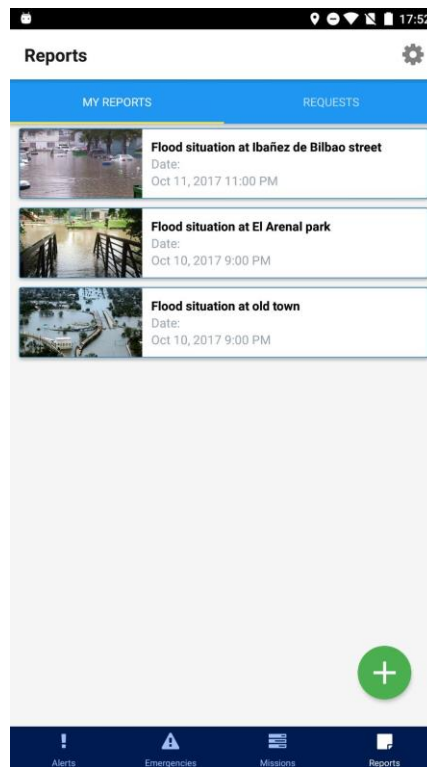


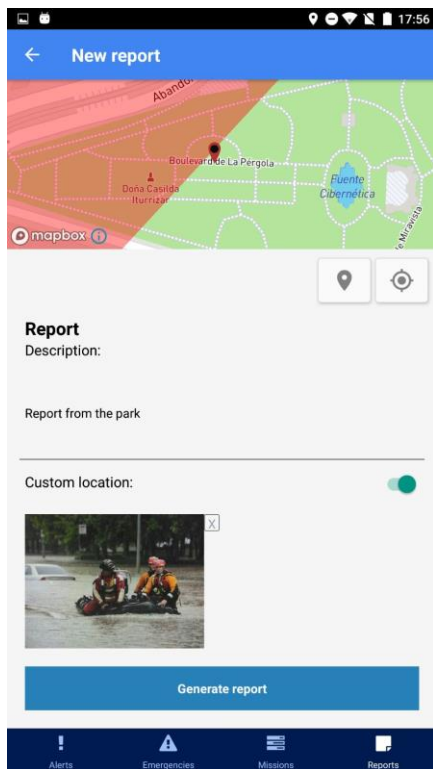
5.3.3 Test Case – Reporting from IN-FIELD Emergency Responder (ER) at any phase of the emergency

Reporting from IN-FIELD Emergency Responder at any phase of the emergency	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 4 - Activated Emergency Responder • The user must be logged in the system
Steps to complete:	<ol style="list-style-type: none"> 1. In the mobile app, the user goes to the reports section. 2. The user presses the new report button. 3. The new report must be a description, and optionally a photo. 4. If the user takes a photo, he can remove it and take a new one.

	5. The location can be geopositioned or custom if the user clicks on the form map.
Expected Outcome:	<ol style="list-style-type: none">1. If the user doesn't set the custom location option, the report position is the current position of the user.2. If the user sets the custom location option and doesn't click on the map, the report is not created.3. When the take a photo button is pressed, the camera starts. Then, if the user takes a photo, it is shown in the form.4. When a new report is created, it can be shown in the web and in the mobile application.

5.3.4 Results – Reporting from IN-FIELD Emergency Responder at any phase of the emergency



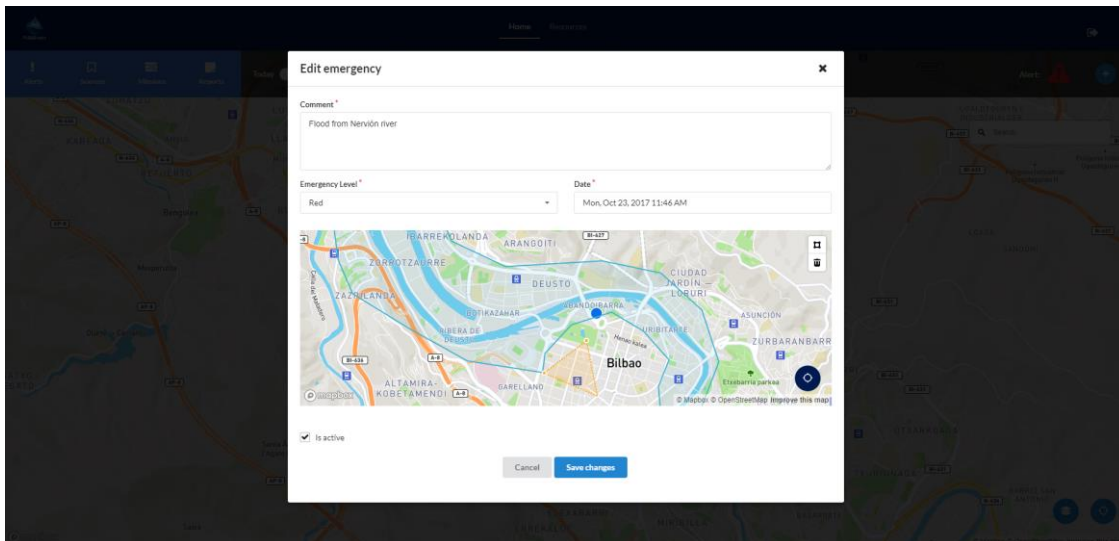


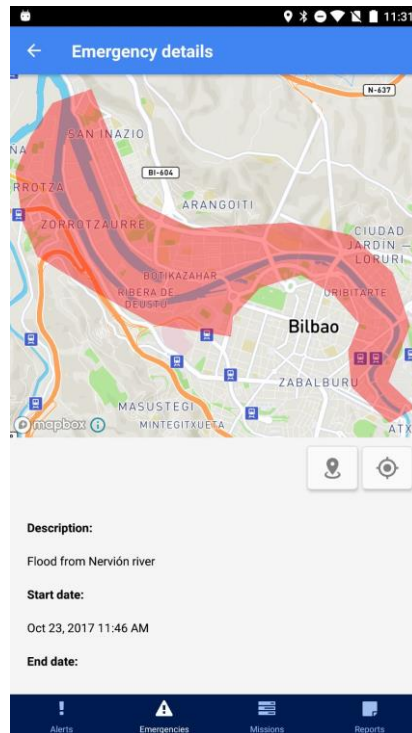
5.3.5 Test Case – Add new geographical data through the map

Add new geographical data through the map	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 -Activated Facilitator • PRE 2 -Activated Flood Expert • PRE 4 -Activated Emergency Responder • The user must be logged in the system.

Steps to complete:	<ol style="list-style-type: none">1. The user opens the create/edit emergency, create mission or create report request forms.2. The user can add one or more AOI to the map, that will be visualized if he creates or edit the element.
Expected Outcome:	<ol style="list-style-type: none">1. When the user creates or edit a new emergency, the AOI he sets on the form is shown on the map by all the users.2. When the user creates a mission, the AOI he sets on the form is shown on the map by the users assigned.3. When the user creates a new report request, the AOI or POI he sets on the form is shown on the map by the users assigned.

5.3.6 Results – Add new geographical data through the map

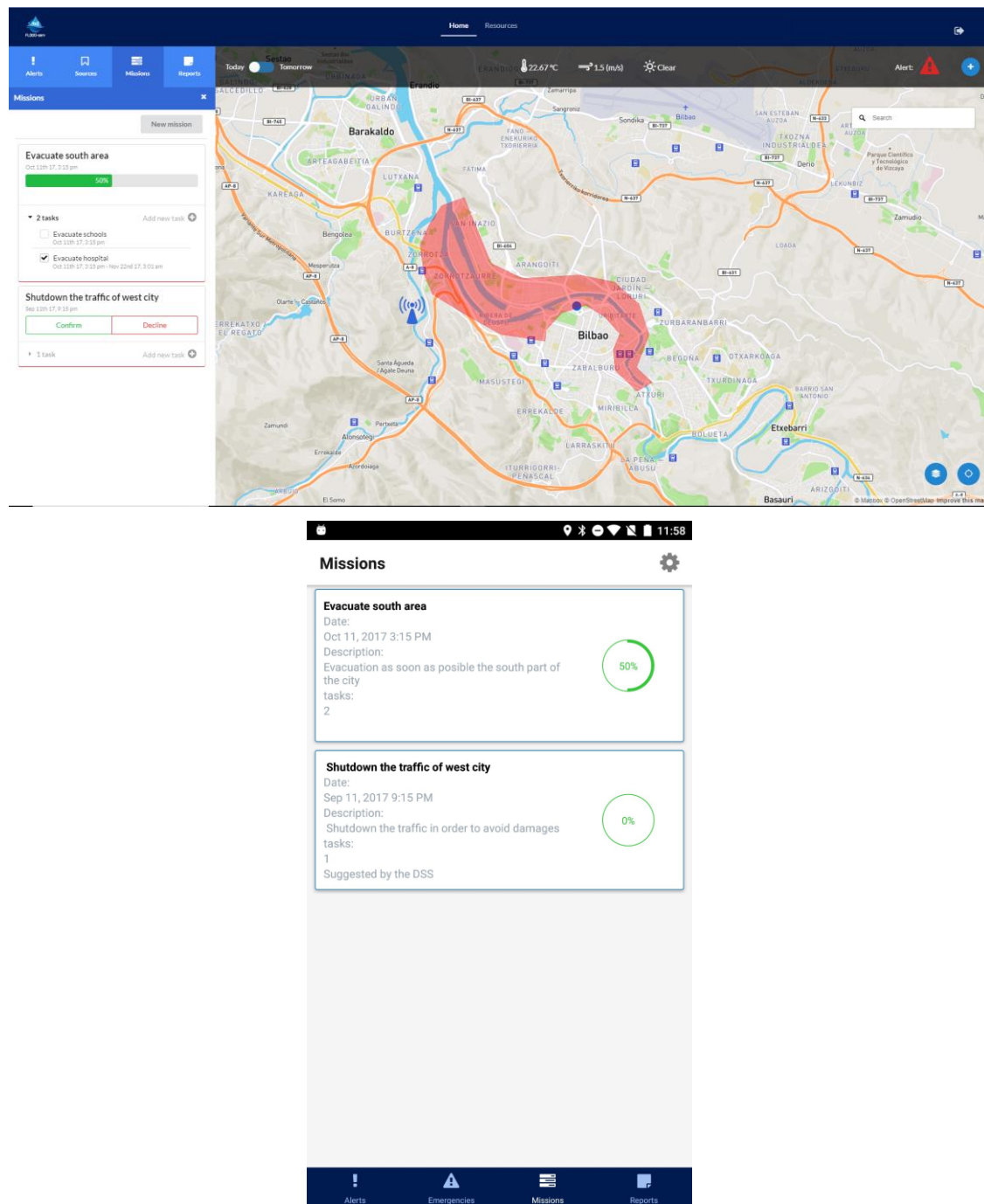




5.3.7 Test Case – Analyze progress of the mission

Analyze progress of the mission	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 -Activated Facilitator • PRE 2 -Activated Flood Expert • PRE 3 -Activated Decision Maker • The user must be logged in the system. • The mission must be previously confirmed or created by hand.
Steps to complete:	<ol style="list-style-type: none"> 1. The user clicks on the missions button. 2. The user can see the missions and their progress and tasks.
Expected Outcome:	<ol style="list-style-type: none"> 1. When the missions section is opened, there is a progress bar for each mission confirmed or introduced by hand. 2. In the mobile app, the ER will see only the missions associated to him.

5.3.8 Results – Analyze progress of the mission

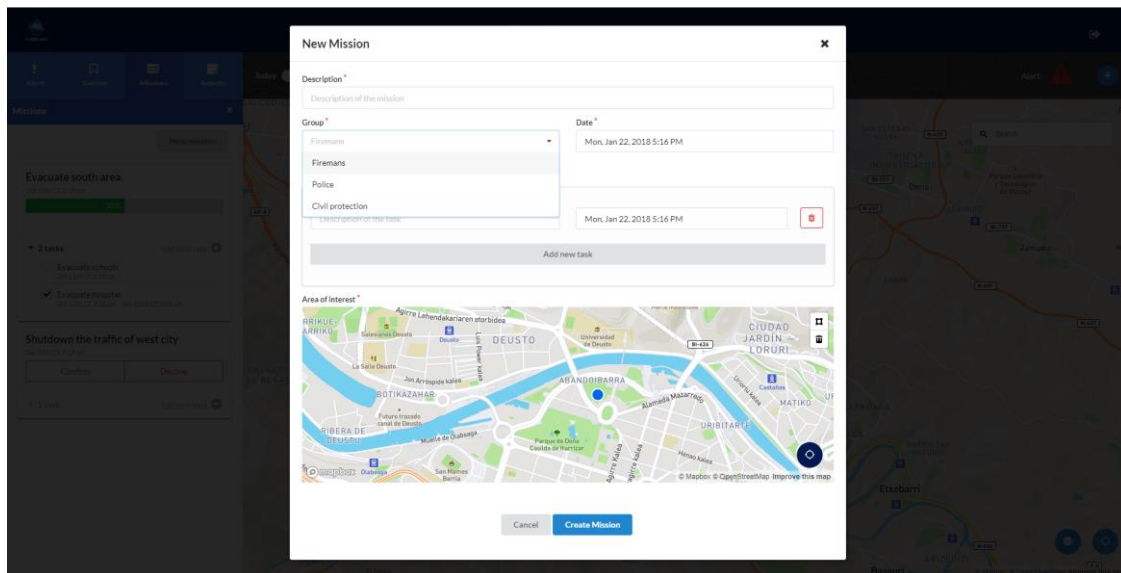


5.3.9 Test Case – Assign missions

Assigns missions	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> ● PRE 1 – Activated Facilitator ● PRE 2 – Activated Flood Expert ● PRE 3 – Activated Decision Maker

	<ul style="list-style-type: none"> The user must be logged in the system.
Steps to complete:	<ol style="list-style-type: none"> The user clicks on the Missions section. The user clicks on the new mission button. The user sets the group field. After sets all the fields and tasks, the user creates the mission.
Expected Outcome:	<ol style="list-style-type: none"> When the user clicks on the new mission button, a form is shown. When the user creates the mission, the new mission is shown in the mission section.

5.3.10 Results – Assign missions



5.3.11 Test Case – Be trained

Be trained	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> PRE 1 – Activated Facilitator PRE 2 – Activated Flood Expert PRE 3 – Activated Decision Maker PRE 4 - Activated Emergency Responder The user must be logged in the system.
Steps to complete:	<ol style="list-style-type: none"> The user clicks on the Resources section of the main menu. The user clicks on the magnifying glass icon to view the details of the emergency. The user can see the data associated to current and past emergencies: emergency area, alert that triggered the

D3.4 Emergency Management Console

emergency, missions necessary to resolve it and reports sent by ER.

Expected

Outcome:

1. If the user clicks on the See on map button, missions and reports location will be shown on the map as a POI or AOI.

5.3.12 Results – Be trained

The screenshot shows the Emergency Management Console interface. On the left, under 'Emergency events', there are three entries: 'Flood from Nervión river Q' (On going), 'Flood from both rivers Q' (Reviewed), and 'Flood from Cadagua river Q' (Reviewed). On the right, under 'Action plan documents', there is a table with three rows: 'Action plan Bilbao', 'Special plan to manage floods of Basque Country', and 'DSS action plan for Bilbao'. Each row has 'Add' and 'Remove' icons in the 'Actions' column.

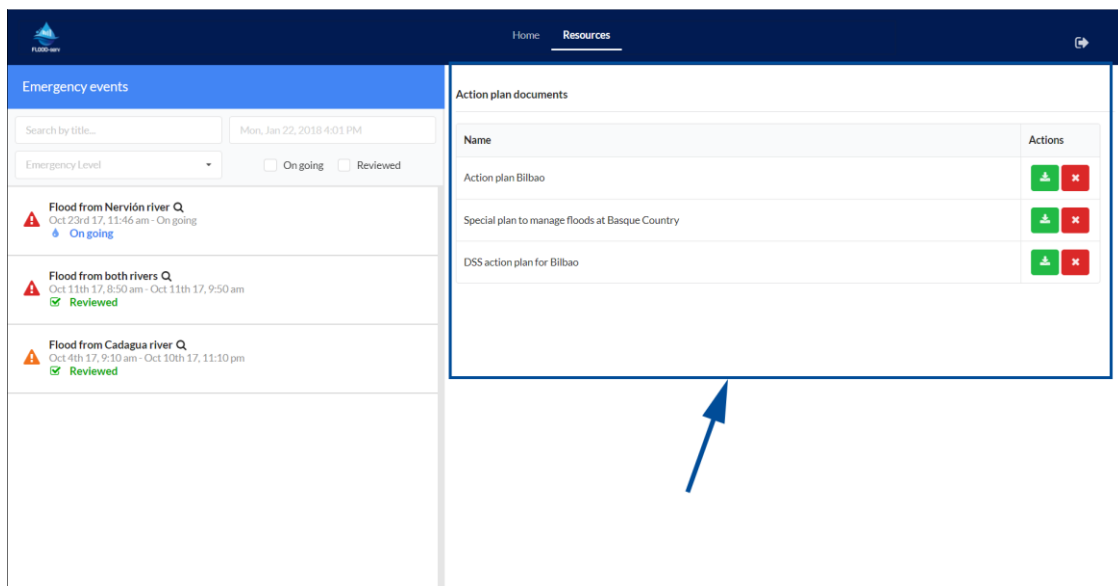
The screenshot shows the 'Emergency details: Flood from Nervión river' page. It includes a map of the affected area, a list of alerts (Heavy rain and Flood), a list of reports (Flood situation at Ibañez de Bilbao street and Flood situation at El Arenal park), and a list of missions (Evacuate south area and Shutdown the traffic of west city). The 'Evacuate south area' mission has a 'See on map' button.

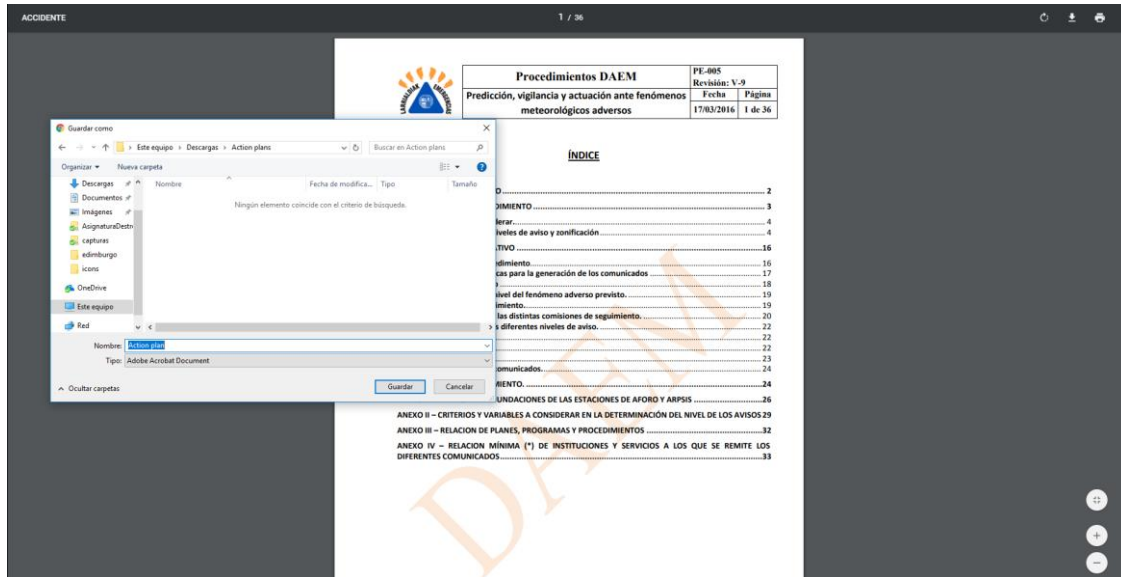
5.3.13 Test Case – Include the “action plan” (main protocol) in the EMC

Include the action plan in the EMC

Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 3 – Activated Decision Maker • The user must be logged
Steps to complete:	<ol style="list-style-type: none"> 1. The user clicks on Resources section 2. The user has a list with all the action plans on the right side of the screen. 3. To download one action of the list, he clicks on the green button on its right.
Expected Outcome:	<ol style="list-style-type: none"> 1. A new tab on the browser is opened with the action plan information detailed on a PDF. 2. A download button should appear in the upper right corner of the screen. This will allow to save the document in the computer.

5.3.14 Results – Include the “action plan” (main protocol) in the EMC

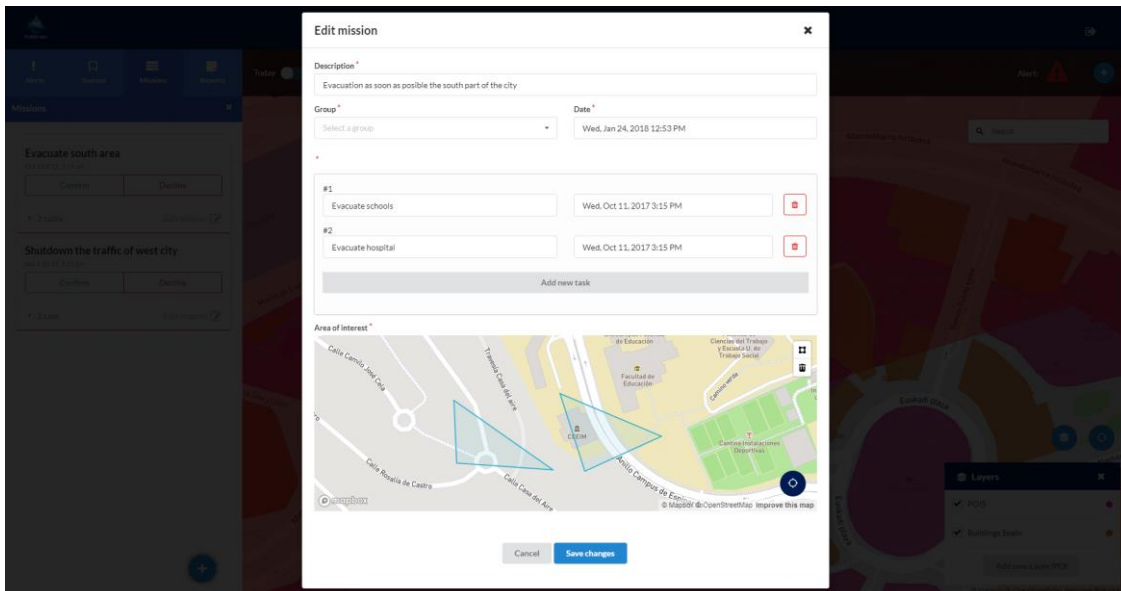
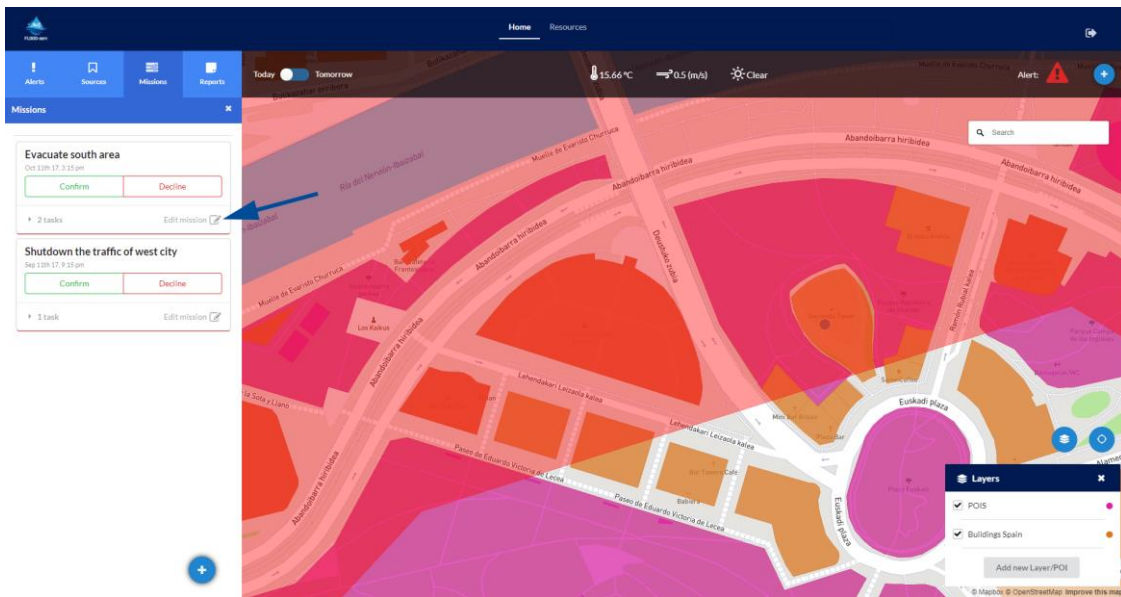




5.3.15 Test Case – Manage suggestions

Manage suggestions	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 – Activated Facilitator • PRE 2 – Activated Flood Expert • PRE 3 – Activated Decision Maker • The user must be logged in the system • There must be emergencies or missions suggested by the DSS
Steps to complete:	<ol style="list-style-type: none"> 1. The user selects the Mission section. 2. The user edits a mission or the emergency active. 3. A form is opened, and the user can change the element information.
Expected Outcome:	<ol style="list-style-type: none"> 1. When the user clicks on edit mission or emergency, a form is opened, and the fields must have the previous element information.

5.3.16 Results – Manage suggestions



5.3.17 Test Case – Obtain an emergency summary dossier with images

Obtain an emergency summary dossier with images	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 3 – Activated Decision Maker • The user must be logged • There must be at least one emergency. Active or finished.
Steps to complete:	<ol style="list-style-type: none"> 1. The user clicks on the Resources section of the main menu. 2. The user clicks on the lupe to view the details of the emergency.

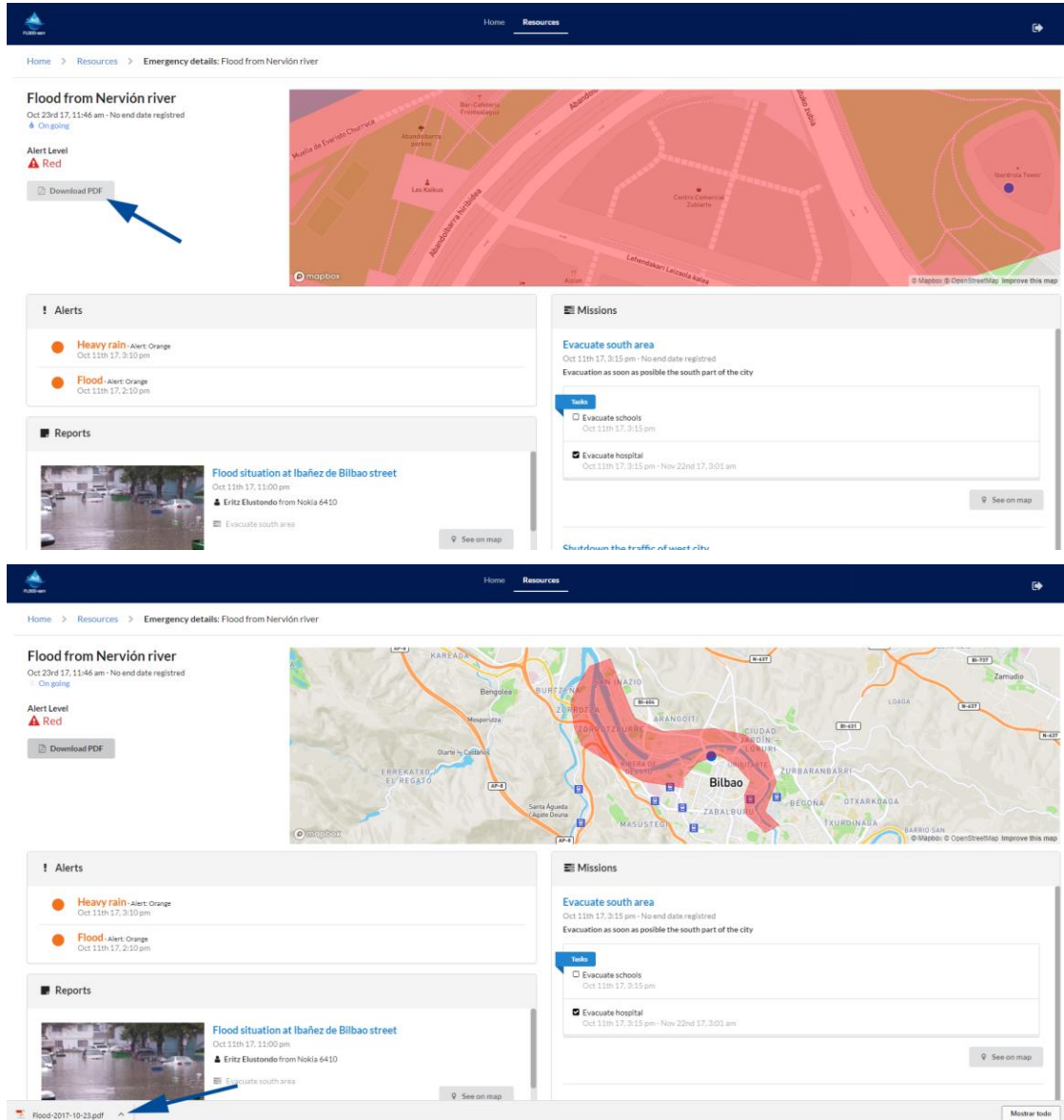
3. The user clicks on the 'Download PDF' button.

Expected

1. A PDF must be download on the computer.

Outcome:

5.3.18 Results – Obtain an emergency summary dossier with images



5.3.19 Test Case – Obtain suggestions provided by the DSS engine of the EMC triggered by reports or notification

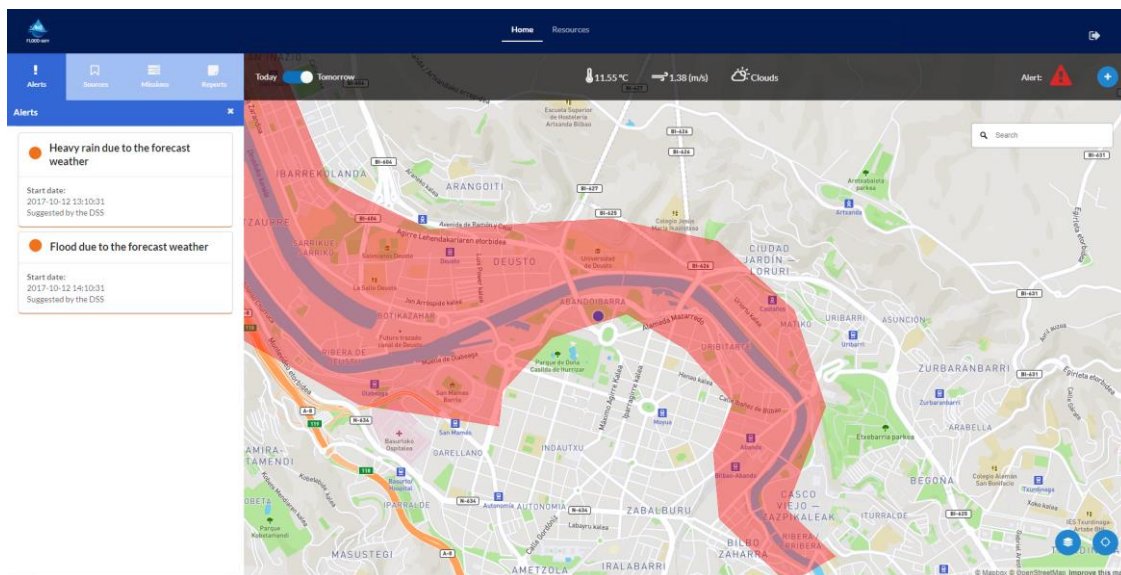
Obtain suggestions provided by the DSS engine of the EMC triggered by reports or notifications

Test Type: Manual

Status: Final

Preconditions:	<ul style="list-style-type: none"> • PRE 1 – Activated Facilitator • PRE 2 – Activated Flood Expert • PRE 3 – Activated Decision Maker • PRE 4 - Activated Emergency Responder • The user must be logged in the system.
Steps to complete:	1. The users will receive alerts and missions as suggestions, that can be confirmed by them. They also receive warning for forecast weather.
Expected Outcome:	1. If the DSS generates a new suggestion, it can be visualized in the corresponding section: alerts, warnings or missions.

5.3.20 Results – Obtain suggestions provided by the DSS engine of the EMC triggered by reports or notification



5.3.21 Test Case – Push notifications (missions or updates)

Push notifications (warnings or alerts)	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 – Activated Facilitator • PRE 2 – Activated Flood Expert • The user must be logged in the system.
Steps to complete:	<ol style="list-style-type: none"> 1. The user receives an alert/mission from DSS or creates a new mission by hand. 2. The user confirms the suggestion.

	3. A push notification is sent to the ER.
Expected Outcome:	1. When an alert or mission with people or groups associated are confirmed, the system will send a push notification that will be shown if the ER are logged in the system.

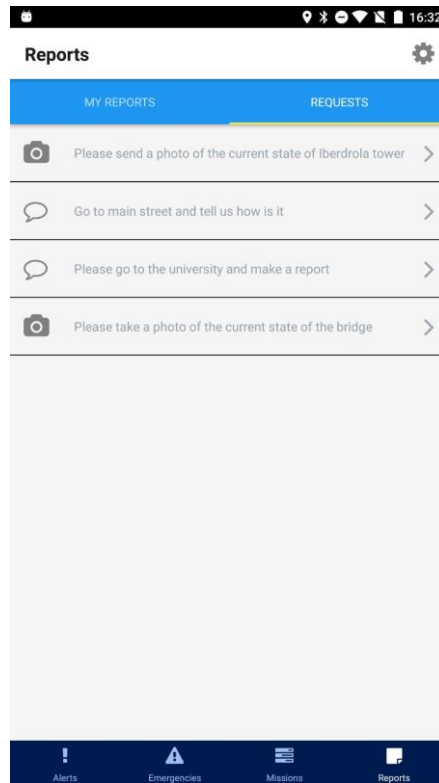
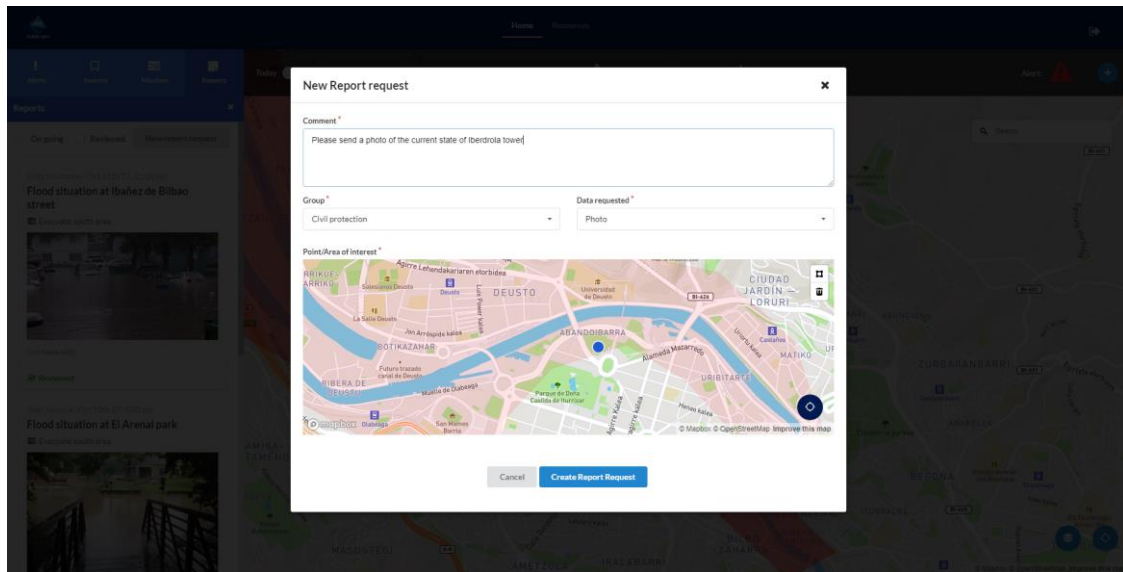
5.3.22 Results – Push notifications (warnings or alerts)



5.3.23 Test Case – Report request

Report request	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 – Activated Facilitator • PRE 2 – Activated Flood Expert • PRE 3 – Activated Decision Maker • The user must be logged
Steps to complete:	<ol style="list-style-type: none"> 1. The user clicks on the 'New report Request' button to open the form 2. The user completes the needed fields and click to 'Create Report Request'.
Expected Outcome:	1. The ERs should receive a new report request on their devices.

5.3.24 Results – Report request



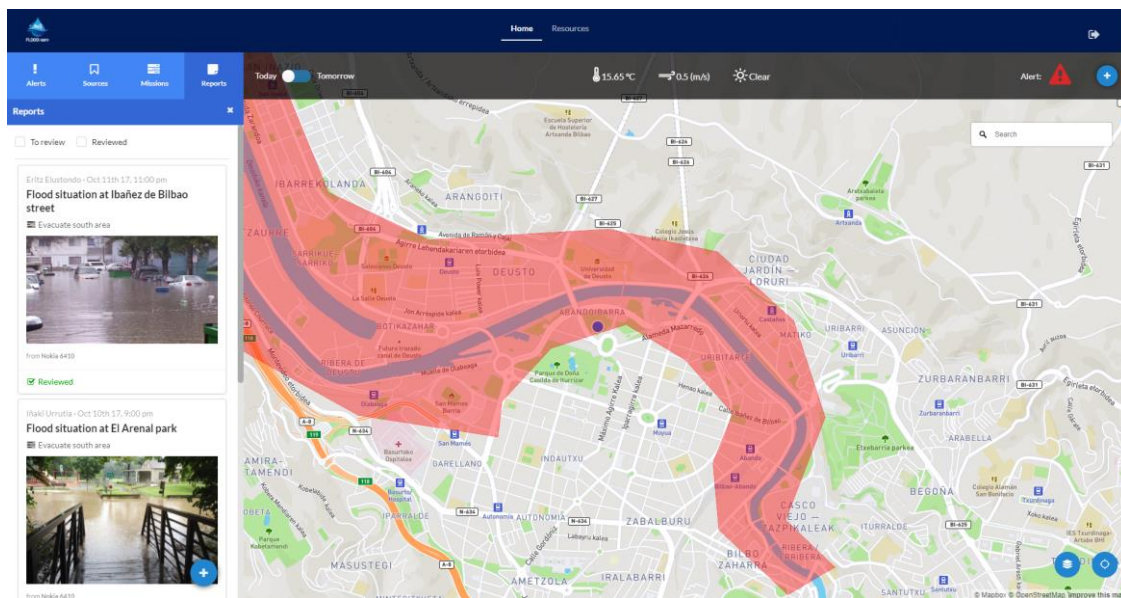
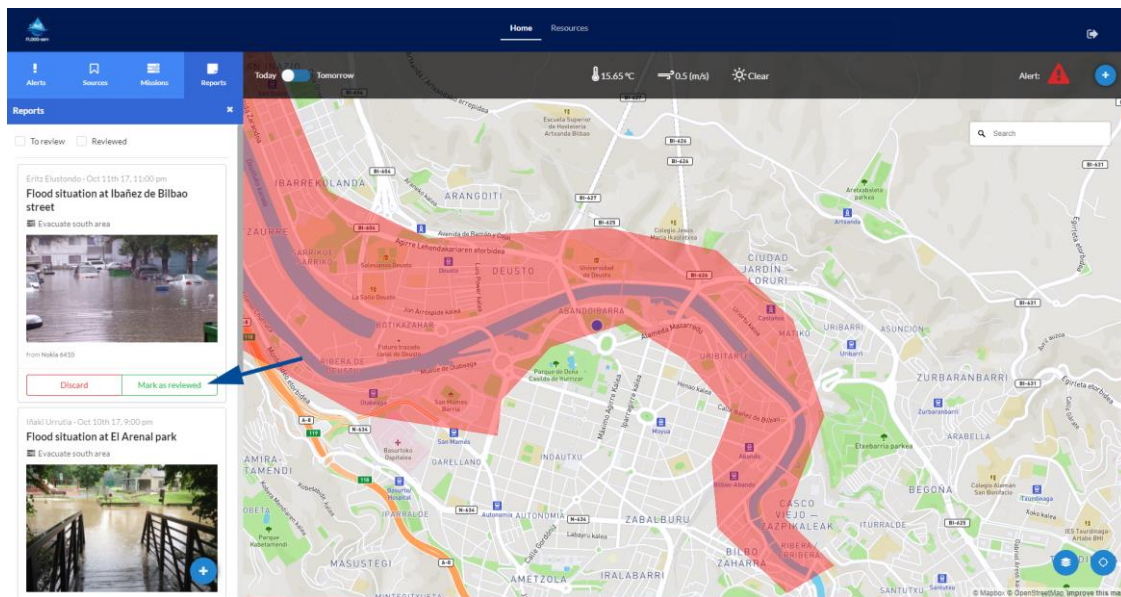
5.3.25 Test Case – Report validation

Report validation	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> ● PRE 1 – Activated Facilitator ● PRE 2 – Activated Flood Expert ● PRE 3 – Activated Decision Maker ● The user must be logged.

D3.4 Emergency Management Console

	<ul style="list-style-type: none"> There should be available reports.
Steps to complete:	<ol style="list-style-type: none"> The user clicks on the Reports section. The user should click on the 'Mark as reviewed' button.
Expected Outcome:	<ol style="list-style-type: none"> The status of the report must change.

5.3.26 Results – Report validation

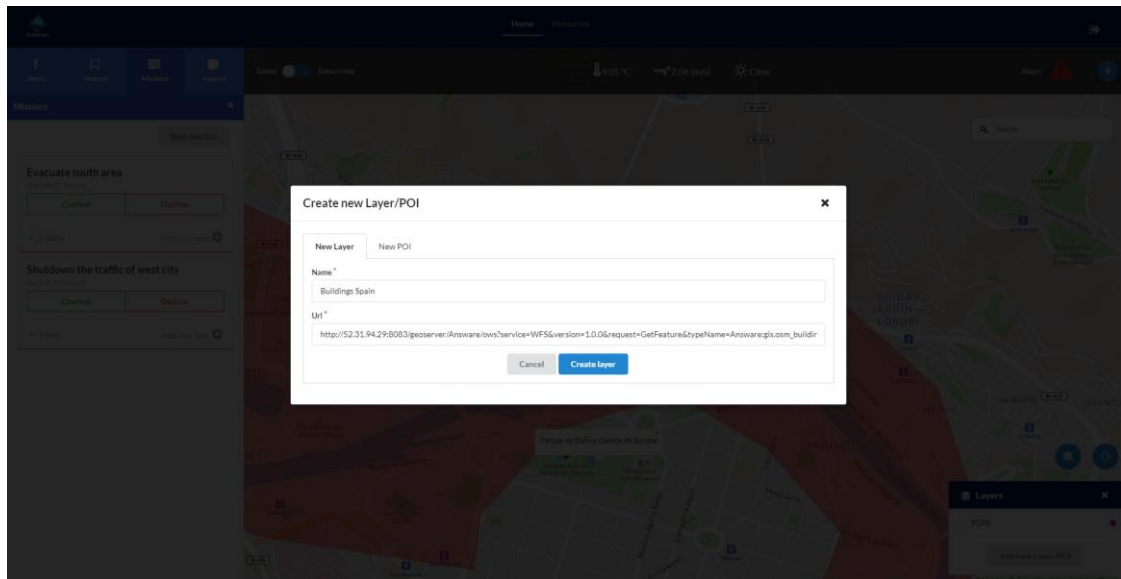


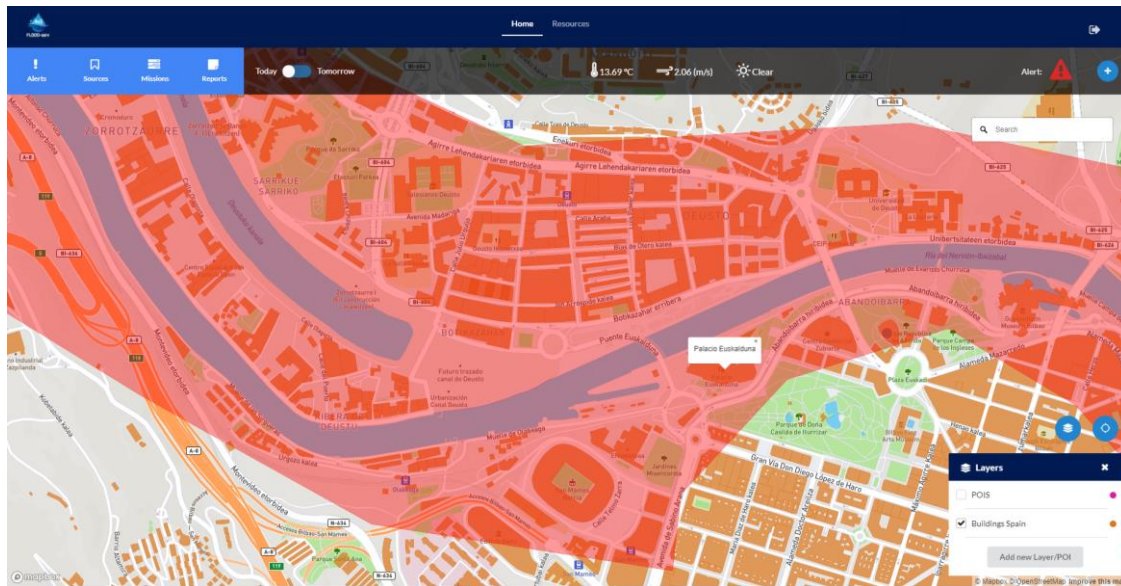
5.3.27 Test Case – Select other geographical data sources

Select other geographical data sources	
Test Type:	Manual

Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 – Activated Facilitator • PRE 2 – Activated Flood Expert • PRE 3 – Activated Decision Maker • The user must be logged in the system. • The URL introduced must be a valid geoJSON object.
Steps to complete:	<ol style="list-style-type: none"> 1. The user clicks on the layers button (lower right corner) to open the layer widget. 2. The user clicks on the 'Add new Layer/POI' button. 3. A form is shown, and the user can enter the name and URL of the outer layer. 4. The user clicks on Create Layer button 5. In the Home page, the user clicks on the Add new Layer/POI 6. The user introduces the URL of the layer and creates the new layer.
Expected Outcome:	<ol style="list-style-type: none"> 1. A new layer is added to the list of the widget. 2. When the user clicks on the new layer the data the Add new Layer/POI button, a form is shown on the map. 3. When the user creates the layer, it appears in the layers section, and can be shown if the user clicks on it.

5.3.28 Results – Select other geographical data sources

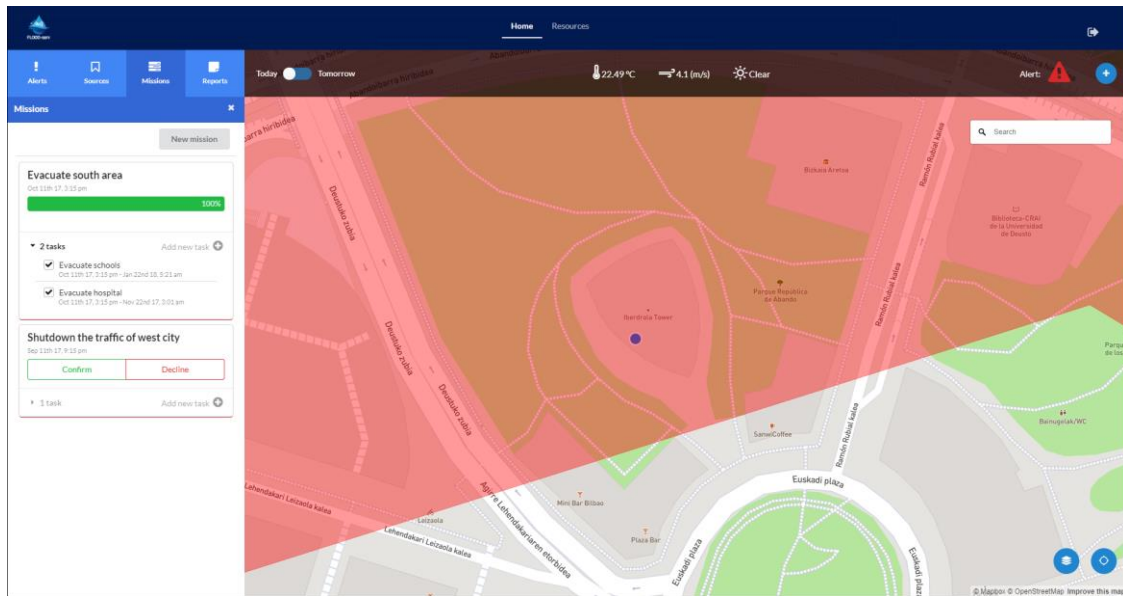




5.3.29 Test Case – Update progress of mission

Update progress of mission	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 4 - Activated Emergency Responder • The user must be logged in the system.
Steps to complete:	<ol style="list-style-type: none"> 1. The user clicks on the Missions section 2. The user clicks on the drop-down of the tasks 3. The user check or uncheck a task
Expected Outcome:	<ol style="list-style-type: none"> 1. The progress of the mission must update

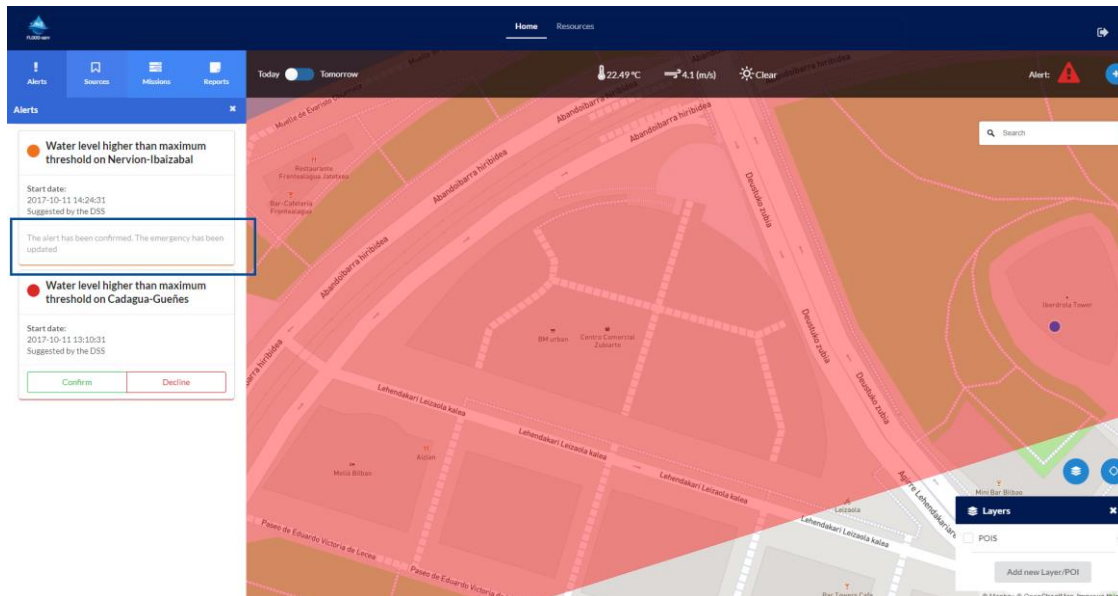
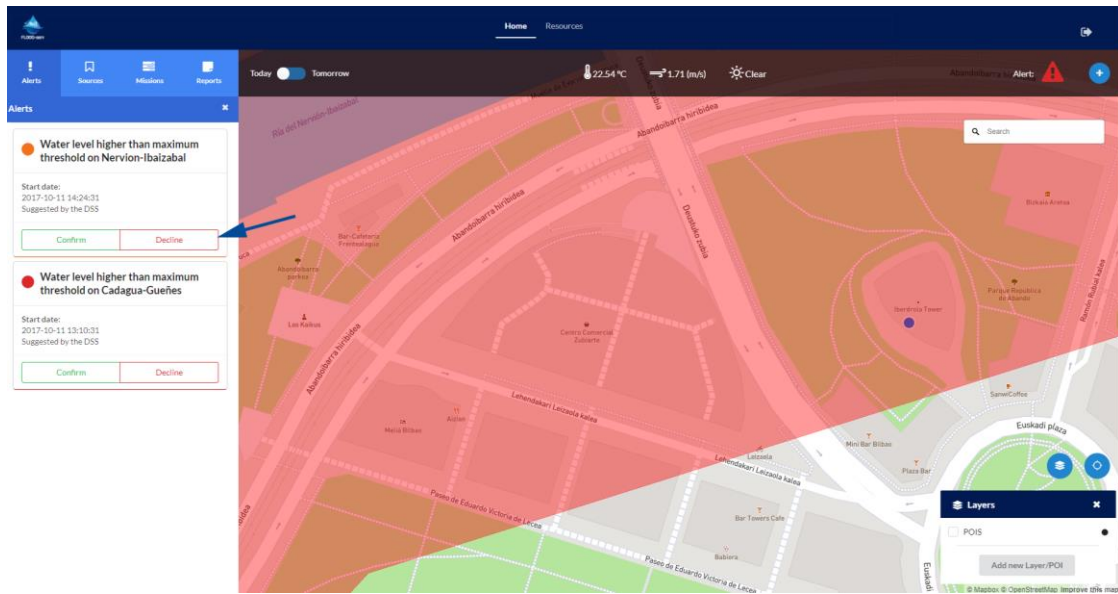
5.3.30 Results – Update progress of mission



5.3.31 Test Case – Validate notifications from the EMC

Validate notifications from the EMC	
Test Type:	Manual
Status:	Final
Preconditions:	<ul style="list-style-type: none"> • PRE 1 – Activated Facilitator • PRE 2 – Activated Flood Expert • PRE 3 – Activated Decision Maker • The user must be logged • There must be alerts suggested by the DSS
Steps to complete:	<ol style="list-style-type: none"> 1. The user selects the Alerts section. 2. The user can Confirm or Decline the alerts suggested by the DSS clicking on the right button (green to confirm and red to decline).
Expected Outcome:	<ol style="list-style-type: none"> 1. When the user confirms an alert, the system must display a message informing that the alert has been confirmed, 2. If there is not an emergency active when the user confirms an alert, a new emergency is created with the alert information. 3. If there is an emergency active when the user confirms an alert, the emergency is updated with the alert information.

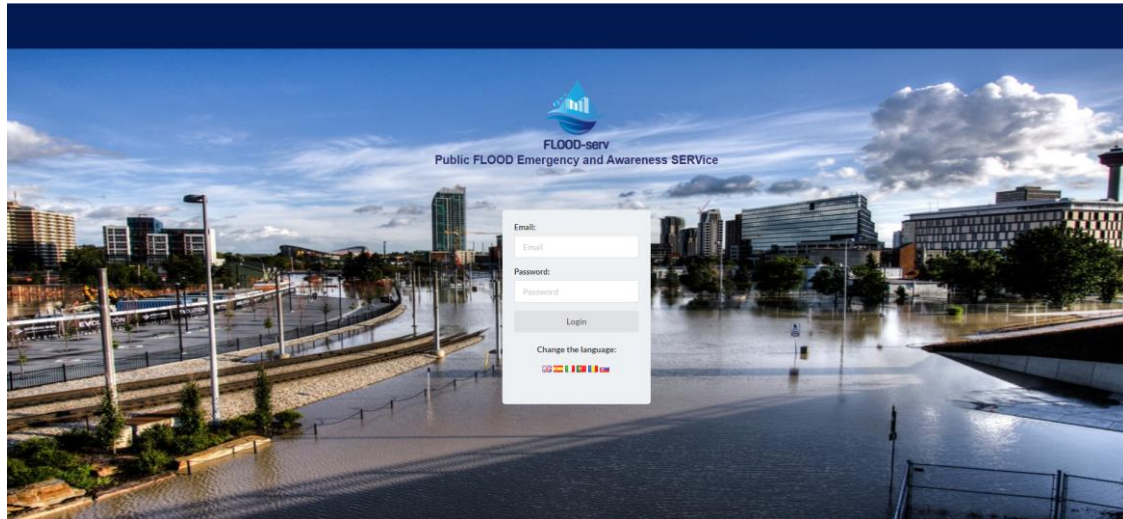
5.3.32 Results – Validate notifications from the EMC



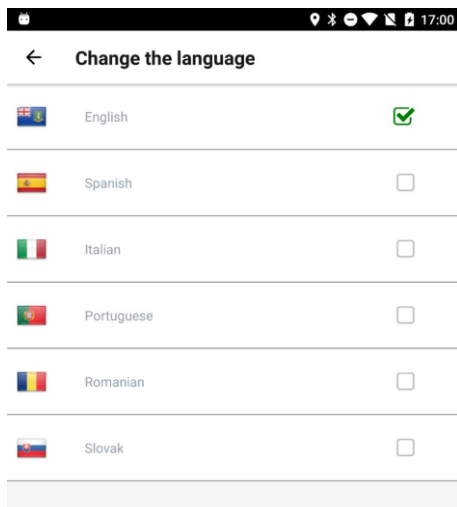
D3.4 Emergency Management Console

Though the results obtained for each one of the verification tests presented until now are shown in English in this document, each one of the tests has been verified for each one of the five languages in which the EMC is implemented, i.e. Italian, Spanish, Romanian, Slovak and Portuguese. To verify the user stories USEMC23-27, all the tests presented above can be repeated selecting the appropriate language in each case.

In the web, you can change the language in the login page.



In the mobile app, you must navigate to settings (gear icon) and then press the change language option.



Note that a different instance of the EMC has been generated for each pilot city, with a different rules engine according to the flood mitigation plan for each pilot city and different data sources.

The USEMC28 can be verified making different rest get calls to the EMC in the following way:

Emergency Active: <http://52.31.94.29:5002/api/v1.0/emergencies/current/>

Sensor 1 Data: <http://52.31.94.29:5002/api/v1.0/sensors/1/data/today/>

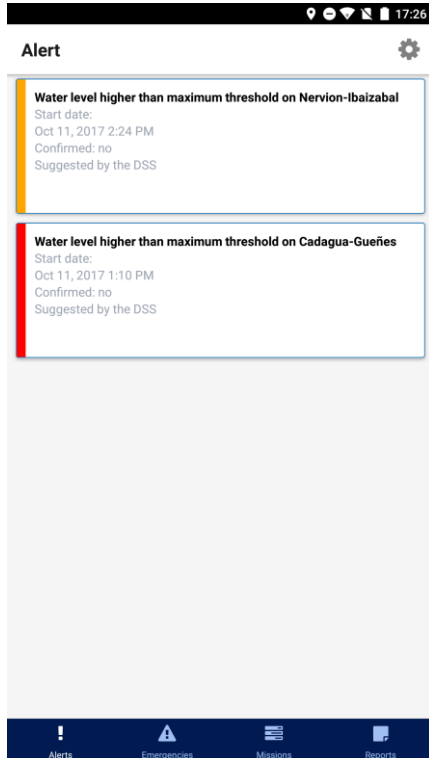
Current weather: <http://52.31.94.29:5002/api/v1.0/weather/>

Forecast weather: <http://52.31.94.29:5002/api/v1.0/weather/forecast/>

D3.4 Emergency Management Console

USEMC29 has been already verified through the tests “data collection - Receive missions” and “data collection - receive notifications”, where the ER uses his/her mobile app of the EMC to carry out such tasks.

The mobile app on Android is already available, and in the incoming weeks the IOS version will be available too.



6 EMC Release Notes

This section contains the EMC release notes.

6.1 System access requirements

EMC can be accessible through any web browser in any device, doing it a multiplatform tool available everywhere. The browser compatibility list is the next:

- Chrome 63+
- Firefox 57.0.4+

The mobile application is compatible with:

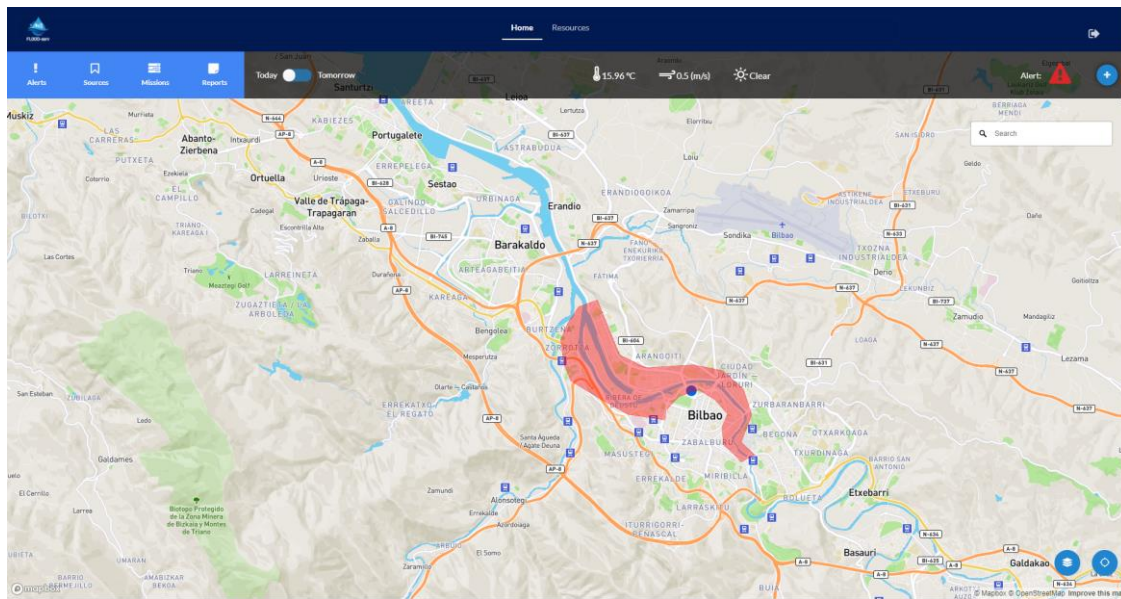
- Android 4.1+
- IOS 8.0+

6.2 Features

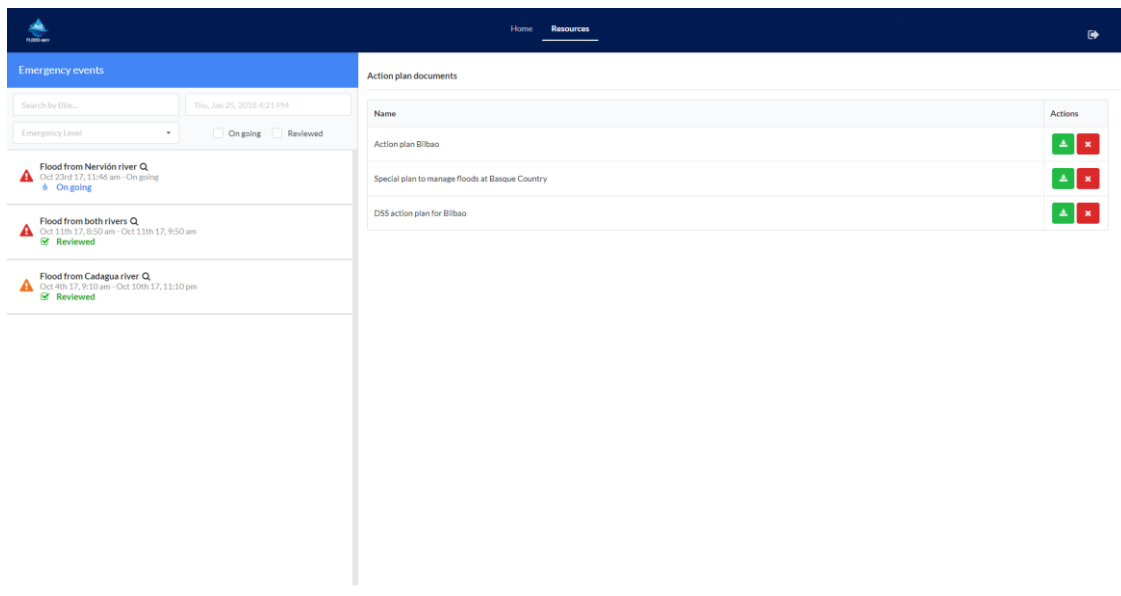
The EMC application has three main views:

- Home. This is the main view that shows a map. On this map information of five different sections is displayed: Alerts, Sources, Missions and Reports. These sections behave like frames that can be opened and appear overlapping the map or be closed and hide its contents.
On the top of the screen, on the left, the app features a header that contains the logo of the FLOOD-serv project and log out buttons on the right. Besides, below the header, we can see a bar called "status bar" where it is possible to select between the options of "today" or "tomorrow" to visualize and work with all the information associated to both situations. In this bar it is also possible to create/edit information related to the active emergency.
- Resources. In this view you will find all the information needed to be train. The data of past emergencies, its reports, missions and alerts. You can also download the action plan and other documents here.

6.2.1. Home



6.2.2. Resources



6.3 Installation guide

The platform is currently published in beta version at the following links:

Bilbao instance: <http://54.155.66.254:5002>

Bratislava instance: <http://54.155.66.254:5003>

Vila Nova instance: <http://54.155.66.254:5004>

Tulcea instance: <http://54.155.66.254:5005>

The credentials to access to the web app are:

- user: admin@defaulttenant.com
- pass: 123qwe

For Genova it is not available the EMC because for now this city has decided not to pilot the this tool.

The mobile app on Android is available for downloading at:

<https://1drv.ms/f/s!AhYWpmwwwvgoCgSpckEgIOcrFD2AW>

The credentials to access to the mobile app are:

- user: fr@defaulttenant.com
- pass: qwerty

Any verification tests described in this document can be repeated using such links, with the possibility to change the language to verify that the application is running for the five languages of the pilot cities and in English as well.