



beAWARE

Enhancing decision support and management services
in extreme weather climate events

700475

D6.8

Main Public Safety Answering Point (PSAP) Prototype

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Abstract.

This deliverable reflects the work performed in task T6.4 dedicated to the development of the main PSAP as part of the beAWARE platform. The main goal of this document is to describe the requirements, conventions, and specifications of each component of the beAWARE platform and the integration of the components to produce a holistic end-to-end solution. Additionally, several operational scenarios that have been implemented are also described, in order to demonstrate the compliance of the platform with the fundamental requirement to provide robust location management services.



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Executive Summary

This dual (confidential and public) deliverable presents the main Public Safety Answering Point (PSAP) Prototype. The LMS is a fundamental layer in the beAWARE architecture, allowing the generation, sharing, and management of position and location information across the beAWARE platform.

This dual deliverable has two variants: a public variant – D6.4, and a confidential variant – D6.8. The structure of both deliverables is identical, but the content of two confidential sections appears only in D6.7.

In the public part of this dual deliverable, we begin with an introduction and overview of the PSAP's modules and the PSAP's centrality to the beAWARE platform as an emergency management solution. We describe the main Public Safety Answering Point (PSAP) prototype demonstrator, which is part of the Prototype of the beAWARE platform (P1) due M32 (Aug 2019).

The Public Safety Answering Point (PSAP) is beAWARE's Command and Control module. It is developed and provided by Motorola Solutions Israel Ltd. (MSIL). The PSAP is intended to oversee the entire emergency management effort and to support the work of the Emergency Operations Center. The PSAP contains several modules:

- **City Dashboard** that tracks measurements in strategic areas, monitors and handles them.
- **Public Alert** allows the authorities to warn the public and first responders about hazards before or during an emergency, to distribute information and warn about specific incidents.
- **Incident Manager** that acquires incident reports from citizens through two alternative channels: mobile app-based reporting, and Twitter posting. Social media posts are collected by the SMA from Twitter, classified, and reported to the KBS via the MSB.
- **Operations Manager** to handle incidents, sending tasks to teams and view tasks and teams' status.
- **Map Module (GIS)** to enhance the overall visualization by displaying events by locations like: metrics, teams, tasks, etc. and gives the user wide options of layer management, advanced filtering by time, layer type, status, and other.

In the confidential part of this deliverable, we explain the functions and features required from each beAWARE module to ensure the flow of information including position and location data. We elaborate and analyze the functional flows across the platform in order to ensure the end-to-end realization of the requirements. We also specify the communication and data exchange protocols that enable these features.

Abbreviations and Acronyms

alt	Altitude
API	Application Programming Interface
ASR	Automatic Speech Recognition
CA	City Authority
CAP	Common Alert Protocol
CDR	Central Data Repository
CRCL	Crisis Classification
CSV	Comma-Separated Values
DB	Database
FR	First Responder
GIS	Geographic Information System
GPS	Global Positioning Satellite
HQ	Headquarters
HTM(L)	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
ID	Identifier
IoT	Internet of Things
IP	Internet Protocol
IM	Incident Manager
JSON	JavaScript Object Notation
KBS	Knowledge-Base Services
lat	Latitude
LMS	Location Management Solution/ Services
long	Longitude
MRG	Multilanguage Report Generation
MSB	Message Bus
MTA	Multilanguage Text Analysis
ODI	Open Data Interface
PCI	Peripheral Component Interconnect
PoR	Place of Relief
POS	Position

PSAP	Public Safety Answering Point
Pub/Sub	Publish—Subscribe
REST	Representational state transfer
SDK	Software Development Kit
SDS	Scenario Demonstration Site
SMA	Social Media Analytics
SoS	System of Systems
SQL	Structured Query Language
TCP	Transmission Control Protocol
TL	Team Leader
TR	Technical Requirement
UDP	User Datagram Protocol
UI	User Interface
UR	User Requirement
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
USB	Universal Serial Bus
WFS	Weather Forecast Services
WP	Work Package
XML	Extensible Markup Language
XSD	XML Schema Definition

Table of Contents

EXECUTIVE SUMMARY	2
1 INTRODUCTION [PUBLIC]	8
1.1 PSAP Modules	9
2 LOGIN WINDOW	11
3 CONTROL PANEL / MENU	12
3.1 PSAP Header (A)	12
3.1.1 External Apps	12
3.2 Side Menu (B)	13
4 CITY DASHBOARD	14
4.1 Emergency Phases (A)	14
4.2 Metrics (B)	14
4.3 Additional Actions (C)	15
4.3.1 Add new metric-box / chart(s)	15
4.3.2 Save layout	15
4.3.3 Reset to default	16
4.3.4 Delete metrics data	16
5 PUBLIC ALERT	18
5.1 List of message recipient(s) (A)	18
5.2 Location and radius (B)	18
5.3 Message text box (C)	19
5.4 Message history (D)	19
5.5 HOW-TO: Send Public Alert	19
6 INCIDENT MANAGER	20
6.1 All incidents history (A)	20
6.2 Specific incident information (B)	20
6.3 Specific incident history (C)	21
6.4 Specific incident media (D)	22
6.5 HOW-TO: Update Incident(s)	22
7 OPERATIONS MANAGER	23
7.1 Incident list (A)	23
7.2 Incident tasks (B)	23
7.3 Teams list (C)	24
7.4 Teams and tasks status (D)	24
7.5 Add a new task assignment (E)	24
7.5.1 Message type (1)	24
7.5.2 Teams list (2)	24
7.5.3 Attached media (3)	25
7.5.4 Task start and due time (4)	25
7.5.5 Task location (5)	25
7.6 HOW-TO: Assign New Task	26

8	MAP MODULE (GIS).....	27
8.1	Login Window	27
8.2	Map View (A)	28
8.3	Map Menu (B)	28
8.3.1	Map Type (1)	28
8.3.2	Map Layers (2)	29
8.4	Event Monitor (C)	30
8.5	HOW-TO: Define Map Filters.....	30
9	IMPORTANT NOTES.....	34
9.1	Preferred Web Browser	34
9.2	Multiple PSAP Instances	34
10	BE-AWARE COMPONENTS AND FLOW	36
10.1	Overview	Error! Bookmark not defined.
10.2	Scope and Boundary of the LMS Prototype	Error! Bookmark not defined.
11	END-TO-END FLOWS.....	37
11.1	Metric Flow	Error! Bookmark not defined.
11.2	Public Alert Flow	Error! Bookmark not defined.
11.3	Incident Flow	Error! Bookmark not defined.
11.4	Asset Flow.....	Error! Bookmark not defined.
11.5	Team Flow	Error! Bookmark not defined.
12	UI/UX IMPROVEMENTS [PUBLIC].....	38
12.1	Side Menu.....	38
12.2	Header	38
12.3	Language tab.....	39
12.4	Notification tab	39
12.5	Time tab.....	40
12.6	User tab	40
12.7	External apps tab.....	40
12.8	Dashboard	41
12.9	Public Alert	42
12.10	Incidents Manager.....	42
12.11	Operations manager.....	44
13	ICONS STANDARD [PUBLIC]	45
13.1	Incident Icons.....	45
13.2	Public alert Icon.....	48
13.3	Task Icons	49
13.4	Team icons.....	49
13.5	Metric Icons	50
13.6	Risk Map Icons	51
14	GENDER CONSIDERATION [PUBLIC]	52
15	CONCLUSION [PUBLIC]	53
16	REFERENCES.....	54

List of Figures

Figure 1: Login Window	11
Figure 2: PSAP Control Panel / Menu	12
Figure 3: PSAP Header	12
Figure 4: External Apps.....	13
Figure 5: City Dashboard	14
Figure 6: Additional Actions	15
Figure 7: Add New Chart(s)	15
Figure 8: Save Metrics Layout	16
Figure 9: Reset Metrics Layout	16
Figure 10: Delete Metrics Data.....	17
Figure 11: Public Alert	18
Figure 12: Incident Manager	20
Figure 13: Incident Information.....	21
Figure 14: Operations Manager	23
Figure 15: Task Assignment.....	25
Figure 16: Map Module (GIS) Login.....	27
Figure 17: Map Module (GIS) Module	28
Figure 18: Map Menu	28
Figure 19: Map Type.....	29
Figure 20: Map Layers	29
Figure 21: Map Event Monitor	30
Figure 22: Add a new tab.....	31
Figure 23: Event Monitor.....	31
Figure 24: Filter Editor	31
Figure 25: Clear All.....	32
Figure 26: Last Updated.....	32
Figure 27: Layers.....	33
Figure 28: Apply Filter	33
Figure 29: Access Denied.....	34
Figure 30: Enter Incognito Mode.....	34
Figure 31: Incognito Window	35
Figure 37- Side Menu 1.....	38
Figure 38- Side Menu 2.....	38
Figure 39: Header	38
Figure 40: Language tab	39
Figure 41: Notification tab.....	39
Figure 42: Time tab.....	40
Figure 43: User tab	40
Figure 44: External apps tab	40
Figure 45: Dashboard	41
Figure 46: Public Alert	42
Figure 47: Operations Manager	44

1 Introduction [PUBLIC]

The beAWARE Project is an EU-funded collaboration (#700475) of partners from several countries in Europe to deliver a prototype disaster management system for extreme weather conditions. The Project is focused on Flood, Forest Fire, and Heatwave scenarios, and is intended for deployment and testing of these scenarios in Vicenza (Italy), Valencia (Spain), and Thessaloniki (Greece), respectively. The end users are the Alto Adriatico Water Authority (AAWA), Valencia Local Police (PLV), and Hellenic Rescue Team (HRT), respectively. In addition, the Frederiksborg Fire Department (Frederiksborg Brand OG Redding, FBBR) contributed to the operational requirements for the Fire scenario.

The technical partners involved in the project include: Centre for Research and Technology – Hellas (CERTH), who is also the coordinator of the project; Motorola Solutions Israel (MSIL), who is also the technical manager of the project; IBM Israel Haifa Research Labs (IBM); Finnish Meteorological Institute (FMI); Fraunhofer Institute for Optronics, System Technologies and Image Exploitation (IOSB); and Universitat Pompeu Fabra (UPF).

The beAWARE system is an end-to-end solution for collecting information from multiple data sources – such as end-users, social networks, sensors, and data providers – analyzing it, predicting and assessing emergencies, alerting the public, and managing first responders' activities.

This document is a description of the main Public Safety Answering Point (PSAP) prototype demonstrator, which is part of the Prototype of the beAWARE platform (P1), and due on M32 (August 2019).

The Public Safety Answering Point (PSAP) is beAWARE's Command and Control module. It is developed and provided by Motorola Solutions Israel Ltd. (MSIL). The PSAP is intended to oversee the entire emergency management effort and to support the work of the Emergency Operations Center.

1.1 PSAP Modules

The PSAP contains the following modules:

City Dashboard

Track measurements in strategic areas, able to indicate natural disasters through forecasts and real-time graphs. In addition, monitoring measurements that go beyond the pre-defined threshold values and handling them as alerts in real-time.

City Dashboard includes several graph types all of them are dynamic and user-friendly showing trends by dates, city areas, etc. The user can choose the best graph type for showing the information. Furthermore, this page is user-customized. The user can choose the graphs to display, layout and sizes for optimal usage.

Public Alert

Public Alert allows the authorities to warn the public and first responders about hazards before or during an emergency, to distribute information (e.g. locations of sandbag distribution stations or places of relief) and warn about specific incidents. The default location of any alert is the **district**, hence each alert's default position is the central position of the district, and the default radius of each alert is the district's **default radius**.

Incident Manager

This process includes the acquisition of incident reports from citizens through two alternative channels: mobile app-based reporting, and Twitter posting. Incident reports from the mobile app are relayed to the KBS by the MSB. Social media posts are collected by the SMA from Twitter, classified, and reported to the KBS via the MSB.

Incident reports are clustered by the KBS and associated with previous reports in order to create a holistic picture of each incident. Clustered Incident reports are sent from the KBS to the PSAP via the MSB. An incident map and an incident management interface are displayed to the user and allow several ways of interaction (filtering, detailing, media acquisition, modify, etc.) The user could change the status of the relevant new incident for continuing care.

Operations Manager

From this module, the user can assign/send tasks to teams in the field for a selected incident. The module also includes the ability to send a Public Alert targeting tasks' locations. In addition, this page presents the teams that have connected through the Mobile App, and the user can see relevant details (e.g. status) about them.

Map Module (GIS)

The main function of the map module is to display the following elements on the map according to its geographical location: metrics, events, teams, tasks, and other "locatable" items. Information is divided by map layers and advanced filtering abilities

to improve the visualization and giving the decision makers a location-based view in order to understand the big picture and better control the event/incident.

The rest of this document presents the developed PSAP Prototype and is structured as follows:

- Section 2 introduces the Login Window [\[Public\]](#).
- Section 3 introduces the Control Panel / Menu [\[Public\]](#).
- Section 4 introduces the City Dashboard [\[Public\]](#).
- Section 5 introduces the Public Alert [\[Public\]](#).
- Section 6 introduces the Incident Manager [\[Public\]](#).
- Section 7 introduces the Operations Manager [\[Public\]](#).
- Section 8 introduces the Map Module (GIS) [\[Public\]](#).
- Section 9 discusses Important Notes [\[Public\]](#).
- Section 10 introduces a suggested flow [\[Confidential\]](#).
- Section 11 introduces end to end flows [\[Confidential\]](#).
- Section 12 discusses UI/UX Improvements [\[Public\]](#).
- Section 13 discusses icons standard [\[Public\]](#).
- Section 14 discusses gender consideration [\[Public\]](#).

2 Login Window

To enter the beAWARE system, login to the system is required: (see Figure 1)

- 1) Fill User Name and Password
- 2) Choose the Authority
- 3) Click on the “Sign in” button

beAWARE

Username

User Name

User name is required!

Password

Password

VICENZA ▼

☐ Remember me

Sign In

Figure 1: Login Window

3 Control Panel / Menu

The Control Panel / Menu (see Figure 2) is divided in two parts:

- A. PSAP Header
- B. Side Menu

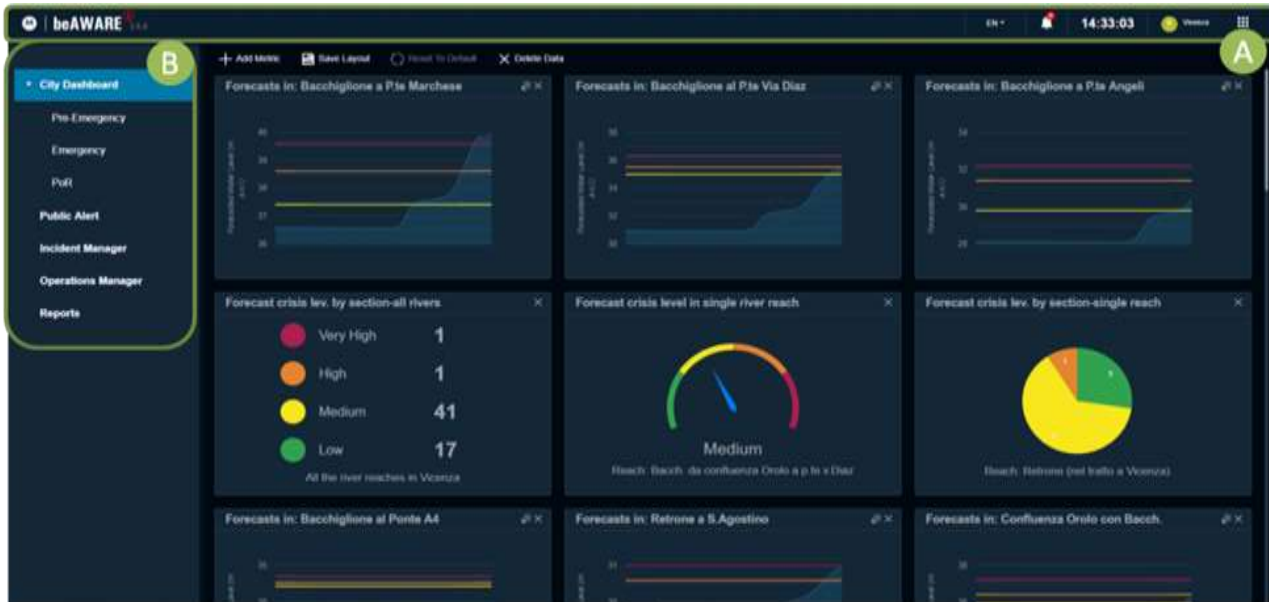


Figure 2: PSAP Control Panel / Menu

3.1 PSAP Header (A)

The functionality provided by the PSAP Header (see Figure 3) is as follows (from left to right):

- Change language
- See notifications (bell)
- Local time
- Username (and log-out option)
- External Apps



Figure 3: PSAP Header

3.1.1 External Apps

The External Apps menu (see Figure 4) provides links to important applications:

- **Map Module (GIS)** - To see events and teams on the map
- **Mobile App** - Used to send updates about an event
- **Logger** - Simulator for sending messages to the PSAP



Figure 4: External Apps

3.2 Side Menu (B)

The Side Menu (see B in Figure 2) provides access to all the PSAP pages:

- City Dashboard
 - Pre-Emergency Phase
 - Emergency Phase
 - Places of Relief (PoR)
- Public Alert
- Incident Manager
- Operations Manager

4 City Dashboard

The City Dashboard (see Figure 5) consists of three main parts:

- A. Emergency Phases
- B. Metrics
 - Additional Actions



Figure 5: City Dashboard

4.1 Emergency Phases (A)

The City Dashboard shows measurements for three emergency phases:

- Pre-Emergency
- Emergency
- Places Of Relief

When clicking on “City Dashboard” measurements for all three phases are shown.

4.2 Metrics (B)

System measurements are presented in metric-boxes. The City Dashboard may show several metric-box types at any given time:

- Line Graph
- Gauge
- Traffic Light
- Pie Chart
- Progress Bar
- Area Chart
- Error Bars

Any metric-box may be closed by clicking on the top-right 'X', and Line Graphs may also be maximized.

4.3 Additional Actions (C)

There is a sub menu for additional actions (see Figure 6).

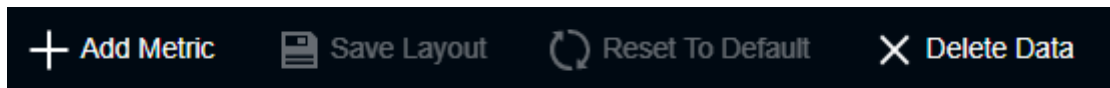


Figure 6: Additional Actions

There are four possible additional actions:

- Add new metric-box / chart(s)
- Save Layout
- Reset To Default
- Delete data

4.3.1 Add new metric-box / chart(s)

To add new charts (see Figure 7) choose a Metric Category (Flood, Heatwave or Fire), and then choose the metric sub-categories to be added to the City Dashboard as metric-boxes.

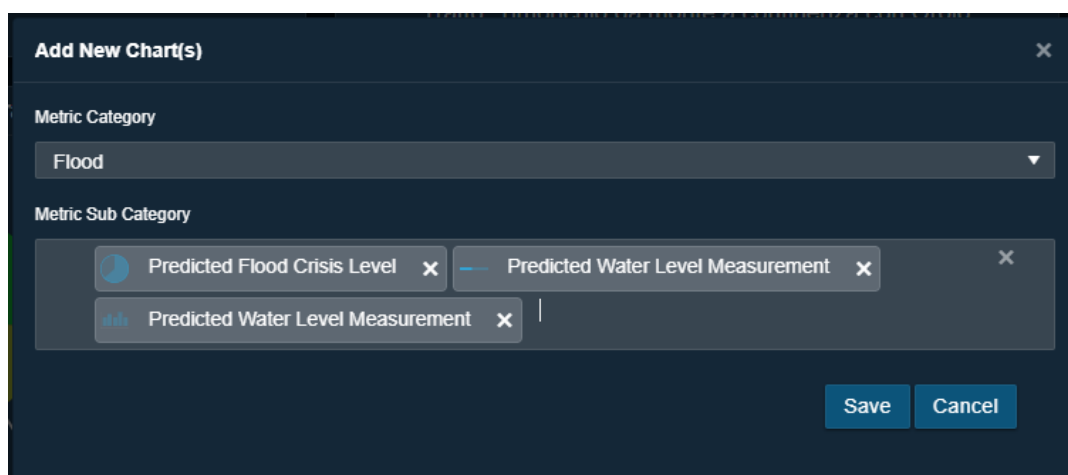


Figure 7: Add New Chart(s)

4.3.2 Save layout

To save the user layout change the metrics layout as you desire and click on the save button (see Figure 8).

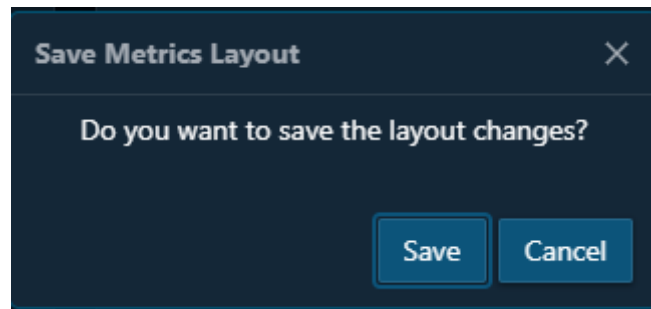


Figure 8: Save Metrics Layout

4.3.3 Reset to default

To reset the layout, click on the Reset button (see Figure 9).

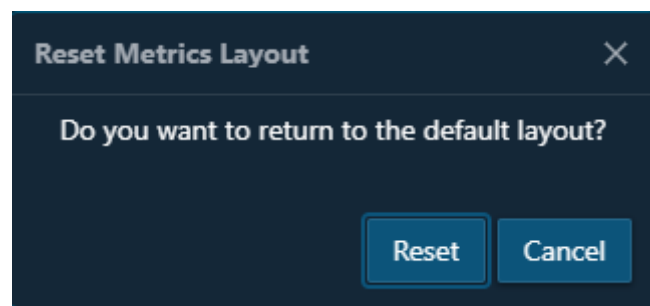


Figure 9: Reset Metrics Layout

4.3.4 Delete metrics data

There are three options for deleting the data shown in the City Dashboard (see Figure 10):

- **Clear local memory** - Clears only local data; refreshing the page will show the data again
- **Delete metrics data** - Clears the data from the database. The only place you'll see past events is the Map Module (GIS)
- **Full (metrics + map)** - Clears the data from both the PSAP database and the Map Module (GIS). This deletion is permanent

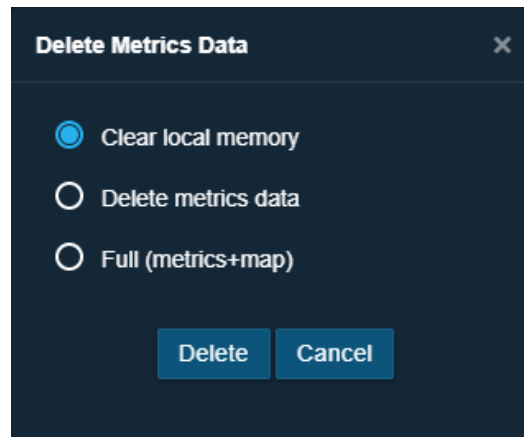


Figure 10: Delete Metrics Data

5 Public Alert

Public Alert is a module for sending public alerts to citizens, volunteers and other.

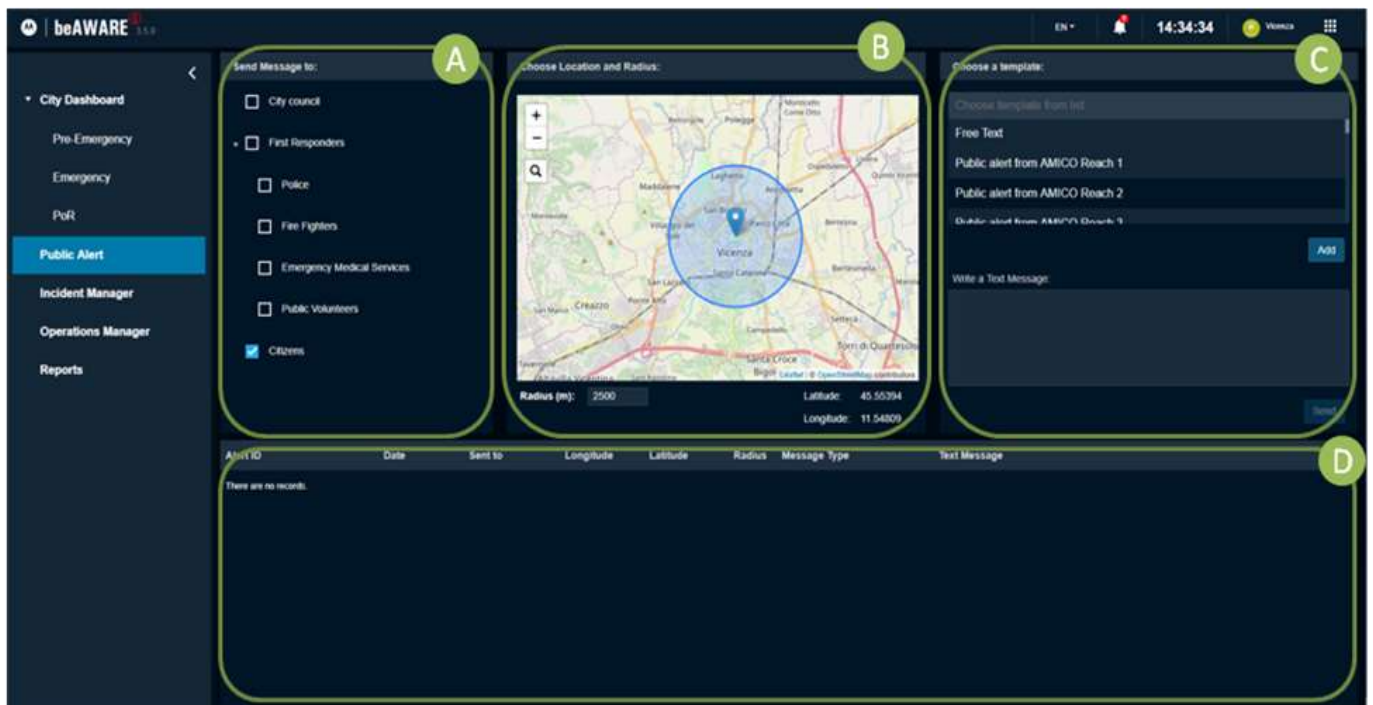


Figure 11: Public Alert

The Public Alert module has four parts (see Figure 11):

- A. List of message recipient(s)
- B. Location and radius
- C. Message text type and content
- D. Message history

5.1 List of message recipient(s) (A)

Here all message recipients are selected including the following options:

- City council
- Police
- Fire fighters
- Emergency medical services
- Public volunteers
- Citizens

5.2 Location and radius (B)

Here the information may be edited before sending including:

- Default information defined by the authority
- **Latitude** - a geographic coordinate that specifies the north-south position of a point on the Earth's surface
- **Longitude** - a geographic coordinate that specifies the east-west position of a point on the Earth's surface
- **Radius** - indicates the range of the recipients from the location in meters (m)

5.3 Message text box (C)

Here the type of message is selected including:

- a. **Free text** – writing your own message
- b. **Template message** – choose a pre-defined message and edit it if required

5.4 Message history (D)

This panel shows information about all the messages sent including:

- Date
- Recipients
- Message type
- Text message

5.5 HOW-TO: Send Public Alert

1. Choose message recipients in (A)
2. Choose between free text or template message in (B)
3. Edit the information of the message if needed in (C)
4. Send the message in (C)

6 Incident Manager

The Incident Manager is a module for managing incidents (see Figure 12). It has four main parts:

- A. All incidents history / sequence
- B. Specific incident information
- C. Specific incident history
- D. Specific incident media



Figure 12: Incident Manager

6.1 All incidents history (A)

Presents information about all received incidents including:

- Category icon
- Incident name
- Incident identifier
- Time stamp
- Source of incident
- Teams assigned to the incident
- Priority of the incident
- Status of the incident
- Description of the incident
- Attached media: text, picture, audio or video

6.2 Specific incident information (B)

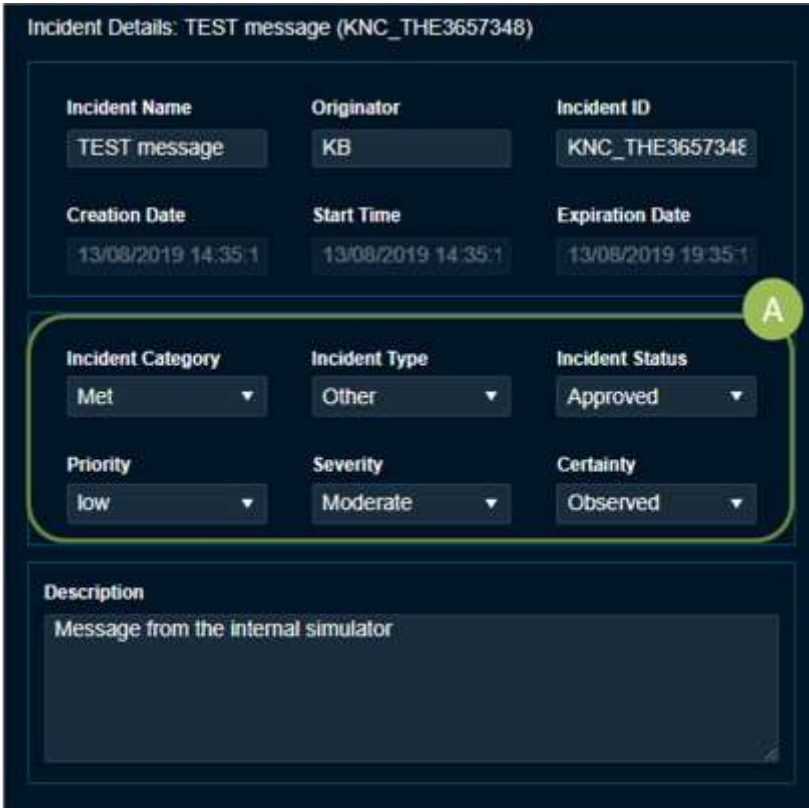
Presents information about the select incident including:

- Incident name

- Originator
- Incident identifier
- Creation date
- Start time
- Expiration time

Also, part of the incident data may be updated (see A in Figure 13 below):

- Incident category
- Incident type
- Incident status
- Incident priority
- Incident severity
- Incident certainty



Incident Details: TEST message (KNC_THE3657348)

Incident Name	Originator	Incident ID
TEST message	KB	KNC_THE3657348
Creation Date	Start Time	Expiration Date
13/08/2019 14:35:1	13/08/2019 14:35:1	13/08/2019 19:35:1
Incident Category	Incident Type	Incident Status
Met	Other	Approved
Priority	Severity	Certainty
low	Moderate	Observed

Description

Message from the internal simulator

Figure 13: Incident Information

6.3 Specific incident history (C)

Presents previous activities related to the selected incident including:

- Time
- Priority
- Status
- Description

6.4 Specific incident media (D)

Presents the media-files attached to the incident and a preview option.

6.5 HOW-TO: Update Incident(s)

1. Choose incident from the list (in A)
2. Update the desired fields (in B)
3. Click on “Save changes” (in the bottom)

7 Operations Manager

The Operations Manager is a module for managing teams and tasks. It has five main parts (see Figure 14):

- A. Incident list
- B. Incident tasks
- C. Teams list
- D. Teams and tasks status
- E. Add a new task assignment
- F. Sending Public Alert to this location



Figure 14: Operations Manager

7.1 Incident list (A)

Shows all the Approved incidents in the Incident Manager (see Figure 14).

7.2 Incident tasks (B)

After selecting (clicking) a specific incident, this table presents information about the tasks assigned to the incident including:

- Title
- Description
- Team
- Status
- Start date
- Due date

- Attached media

7.3 Teams list (C)

Presents information about the registered teams including:

- Name
- Description
- Status
- Type
- Priority
- Last update
- Expiration time

7.4 Teams and tasks status (D)

Presents a current summary of teams and assigned tasks including:

- **Teams status** - presented on the left as a pie chart
- **Tasks status** - presented on the right as a traffic light

7.5 Add a new task assignment (E)

After selecting an incident, a new task may be added to it using the New Task module (see Figure 15). The New Task module consists of five main parts:

7.5.1 Message type (1)

Here the message type is selected from two possible options:

- a. **Free text** – writing your own message
- b. **Template message** – choose pre-defined message and edit if required

7.5.2 Teams list (2)

Here one or more Ready teams to be assigned the task are selected.

7.5.3 Attached media (3)

Here incident available media may be attached to the task and previewed.

7.5.4 Task start and due time (4)

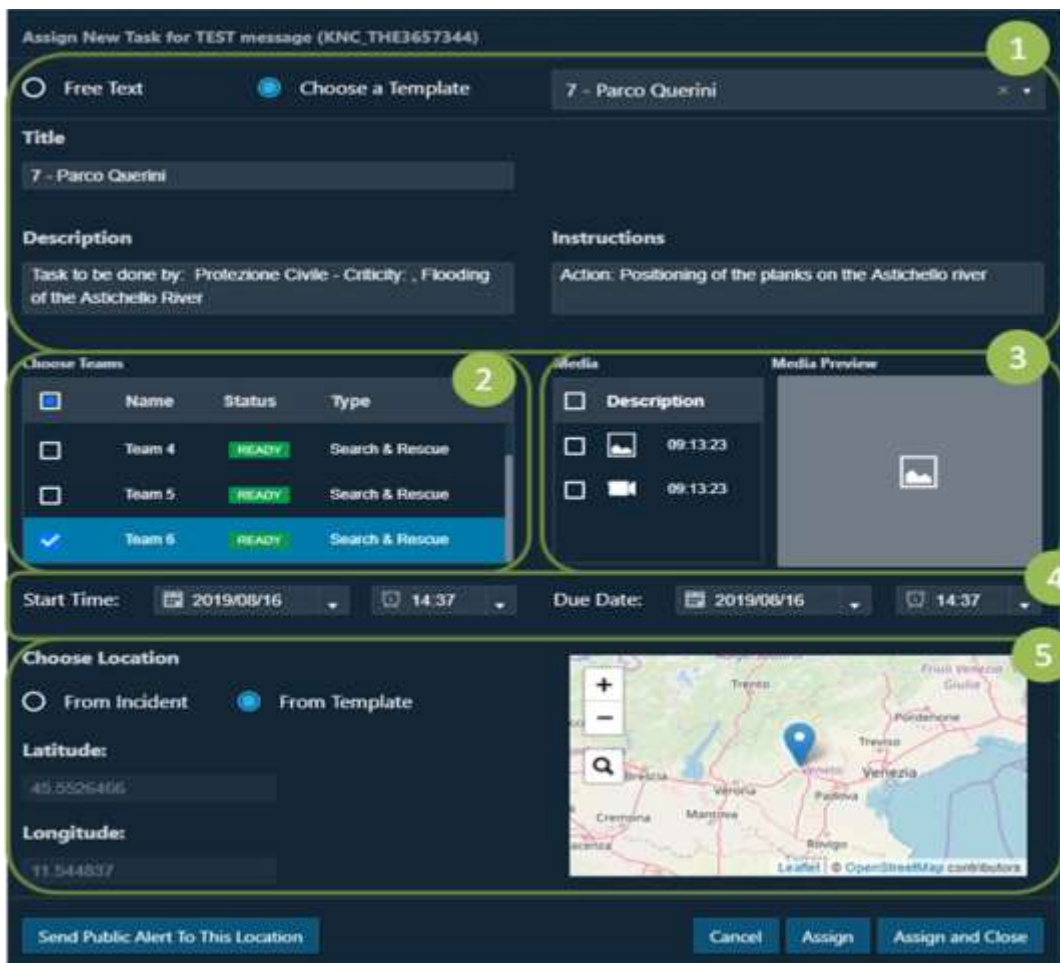
Here the required start and due times for the task are specified.

7.5.5 Task location (5)

Here a location for the task is specified choosing one of the following options:

- a. **From incident** – passing the incident's location
- b. **From template message** – passing the pre-defined location and editing it if required

From this section Public Alert messages may also be sent to the specified location.



The screenshot shows the 'Assign New Task' interface for a message with ID KNC_THE3657344. The interface is divided into several sections, each highlighted with a green circle and a number:

- 1**: Title and Description fields. The title is '7 - Parco Querini'. The description is 'Task to be done by: Protezione Civile - Criticity: , Flooding of the Astichello River'.
- 2**: Choose Teams section. It contains a table with columns: Name, Status, and Type. The table lists three teams: Team 4 (READY, Search & Rescue), Team 5 (READY, Search & Rescue), and Team 6 (READY, Search & Rescue). Team 6 is selected with a blue checkmark.
- 3**: Media section. It contains a table with columns: Description, and two columns for media (image and video). The table lists two media items: '09-13-23' (image) and '09-13-23' (video). A 'Media Preview' section is also visible.
- 4**: Start Time and Due Date section. The start time is '2019/08/16 14:37' and the due date is '2019/08/16 14:37'.
- 5**: Choose Location section. It contains a map showing the location of the task. The map is centered on the Astichello river area. The location is marked with a blue pin. The map also shows the names of nearby towns: Trento, Pordenone, Treviso, Verona, Padova, Mantova, Cremona, and Brescia.

At the bottom of the interface, there are three buttons: 'Send Public Alert To This Location', 'Cancel', and 'Assign'. There is also an 'Assign and Close' button.

Figure 15: Task Assignment

7.6 HOW-TO: Assign New Task

1. Choose an incident from the list (in A - Figure 14)
2. Click on the "Add Task" button and enter the assigning task window (in E - Figure 14)
3. Change the information of the message as required (in 1)
4. Choose a team (in 2)
5. Choose media (in 3)
6. Change the date and location of the task as required (in 4)
7. Click on "Assign" (bottom)

8 Map Module (GIS)

Map Module (GIS) is a Geographical Information System (GIS) module used to present emergency-related information on the map.

8.1 Login Window

To access Map Module (GIS) first login entering a [provided] username and password (see Figure 16).

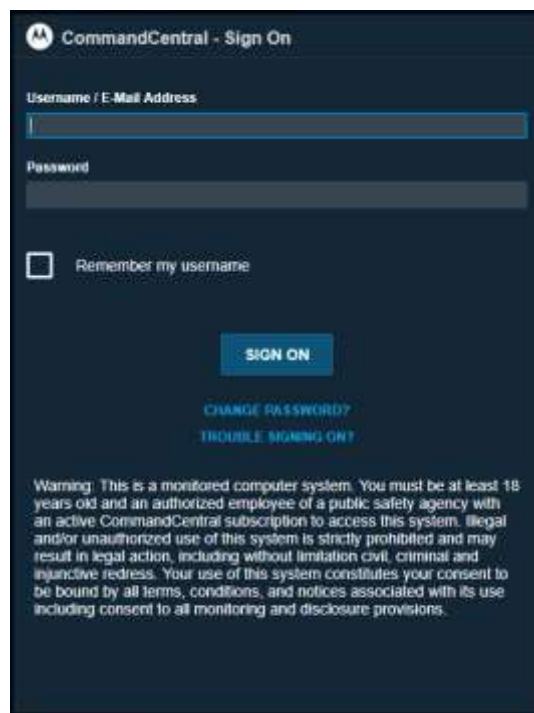
The image shows a login window titled "CommandCentral - Sign On". It has a dark blue background. At the top left is a small icon of a person. Below the title, there are two input fields: "Username / E-Mail Address" and "Password". Below the password field is a checkbox labeled "Remember my username". In the center is a blue button labeled "SIGN ON". Below the button are two links: "CHANGE PASSWORD?" and "TROUBLE SIGNING ON?". At the bottom is a warning message: "Warning: This is a monitored computer system. You must be at least 18 years old and an authorized employee of a public safety agency with an active CommandCentral subscription to access this system. Illegal and/or unauthorized use of this system is strictly prohibited and may result in legal action, including without limitation civil, criminal and injunctive redress. Your use of this system constitutes your consent to be bound by all terms, conditions, and notices associated with its use including consent to all monitoring and disclosure provisions."

Figure 16: Map Module (GIS) Login

The Map Module (GIS) module presents three main parts (see Figure 17):

- A. Map View
- B. Map Menu
- C. Event Monitor



Figure 17: Map Module (GIS) Module

8.2 Map View (A)

The Map View presents the Authority's map. Relevant events will be presented on this map.

8.3 Map Menu (B)

The Map Menu (see Figure 18) enables customizing the current map including:

1. Map Type
2. Map Layers



Figure 18: Map Menu

8.3.1 Map Type (1)

The available map types (see Figure 19) include:

- Open Street Map
- World Imagery
- Topographic

- Other

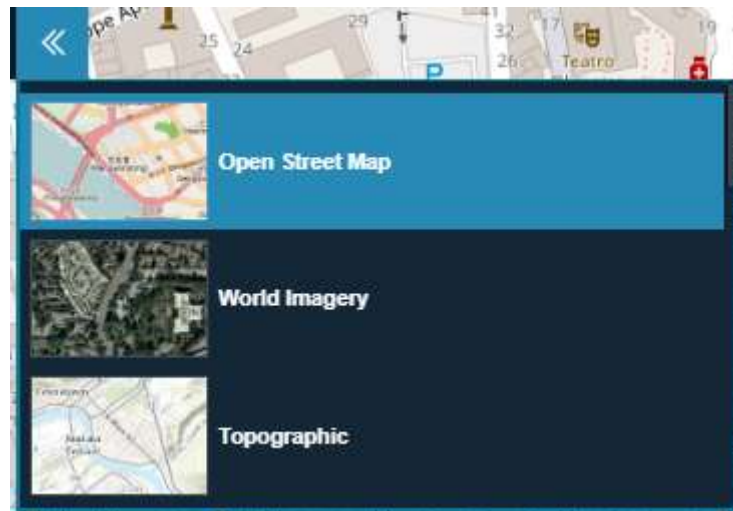


Figure 19: Map Type

8.3.2 Map Layers (2)

Information on the map is divided into four categories which are presented as separate layers:

- Incidents
- Observations
- Tasks
- Teams

Layers may be turned on/off (show/hide) using this option (see Figure 20).

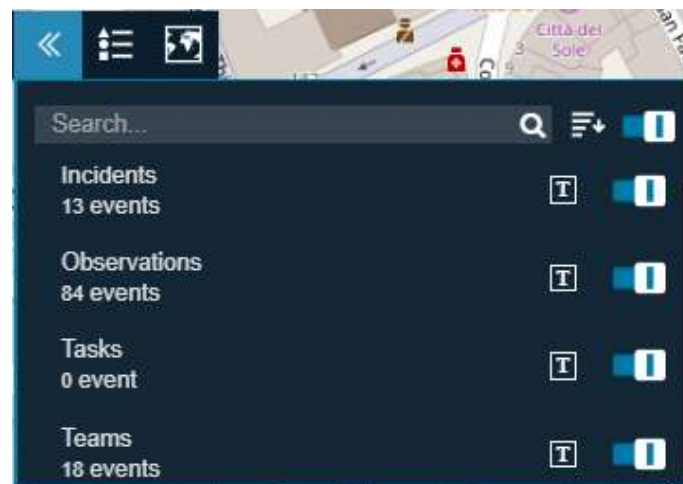
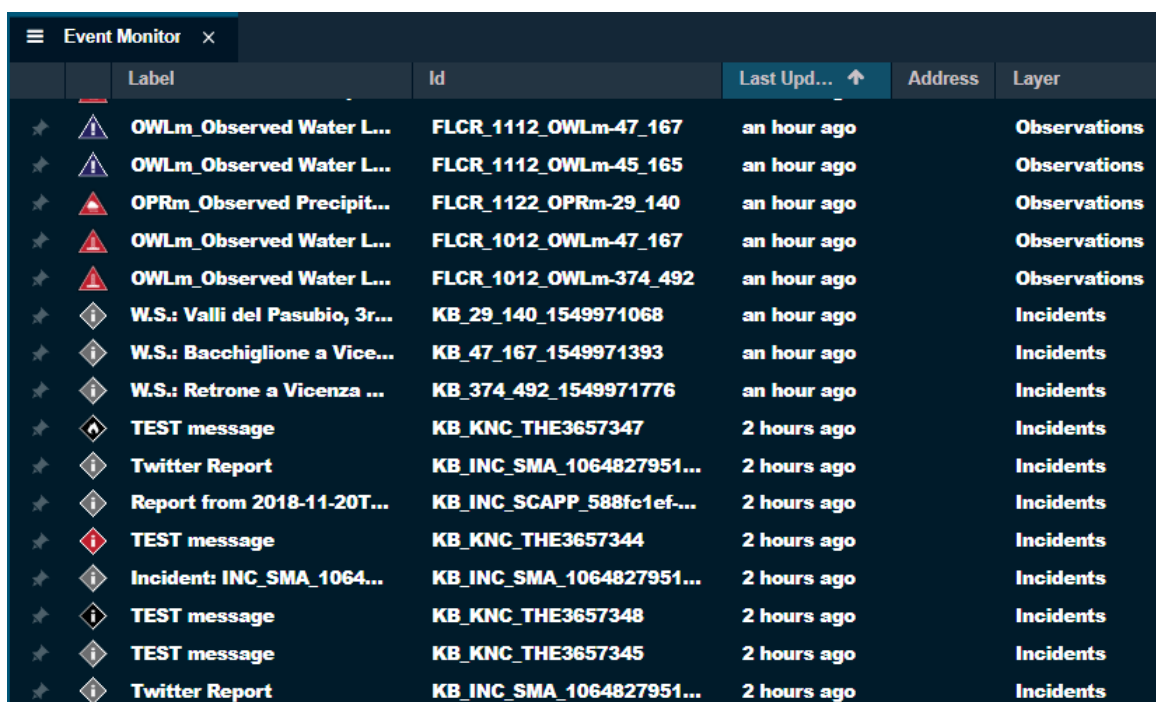


Figure 20: Map Layers

8.4 Event Monitor (C)

The Event Monitor presents data about events (icons) on the map (see Figure 21). For each event the following data is presented:

- Icon
- Label
- Identifier
- Time stamp
- Address
- Layer



	Label	Id	Last Upd...	Address	Layer
★	OWLm_Observed Water L...	FLCR_1112_OWLm-47_167	an hour ago		Observations
★	OWLm_Observed Water L...	FLCR_1112_OWLm-45_165	an hour ago		Observations
★	OPRm_Observed Precipit...	FLCR_1122_OPRm-29_140	an hour ago		Observations
★	OWLm_Observed Water L...	FLCR_1012_OWLm-47_167	an hour ago		Observations
★	OWLm_Observed Water L...	FLCR_1012_OWLm-374_492	an hour ago		Observations
★	W.S.: Valli del Pasubio, 3r...	KB_29_140_1549971068	an hour ago		Incidents
★	W.S.: Bacchiglione a Vice...	KB_47_167_1549971393	an hour ago		Incidents
★	W.S.: Retrone a Vicenza ...	KB_374_492_1549971776	an hour ago		Incidents
★	TEST message	KB_KNC_THE3657347	2 hours ago		Incidents
★	Twitter Report	KB_INC_SMA_1064827951...	2 hours ago		Incidents
★	Report from 2018-11-20T...	KB_INC_SCAPP_588fc1ef...	2 hours ago		Incidents
★	TEST message	KB_KNC_THE3657344	2 hours ago		Incidents
★	Incident: INC_SMA_1064...	KB_INC_SMA_1064827951...	2 hours ago		Incidents
★	TEST message	KB_KNC_THE3657348	2 hours ago		Incidents
★	TEST message	KB_KNC_THE3657345	2 hours ago		Incidents
★	Twitter Report	KB_INC_SMA_1064827951...	2 hours ago		Incidents

Figure 21: Map Event Monitor

8.5 HOW-TO: Define Map Filters

Here a map filter to show the last thirty minutes of activity for all layers on the map is defined.

New map filters are defined in the Event Monitor (see C in Figure 17) as follows:

1. Click on the '+' sign in the Event Monitor to create a new tab (see Figure 22):



Figure 22: Add a new tab

2. Select **Event Monitor** as the new tab type (see Figure 23):



Figure 23: Event Monitor

3. Open the **Filter Editor** by clicking on the filter-stack (see Figure 24):

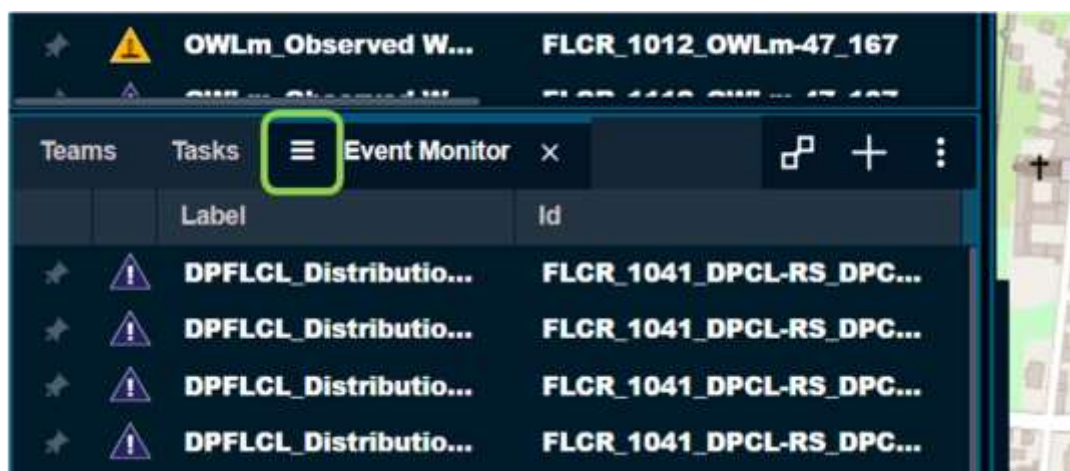


Figure 24: Filter Editor

4. Click on **Clear All** to clear any default filters (see Figure 25):

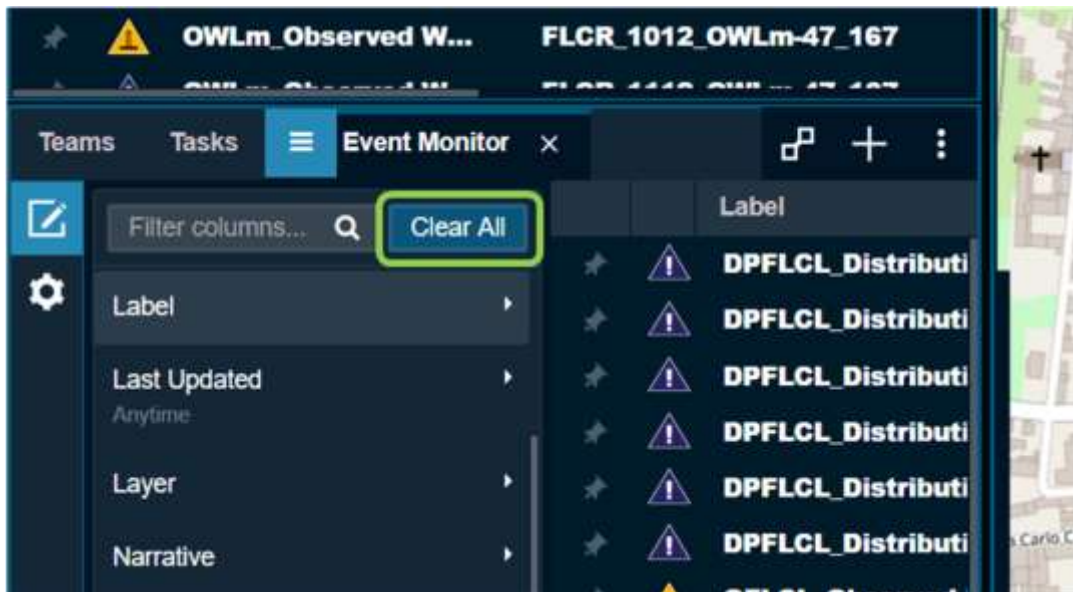


Figure 25: Clear All

5. Click on **Last Updated** to select the desired time interval (see Figure 26).

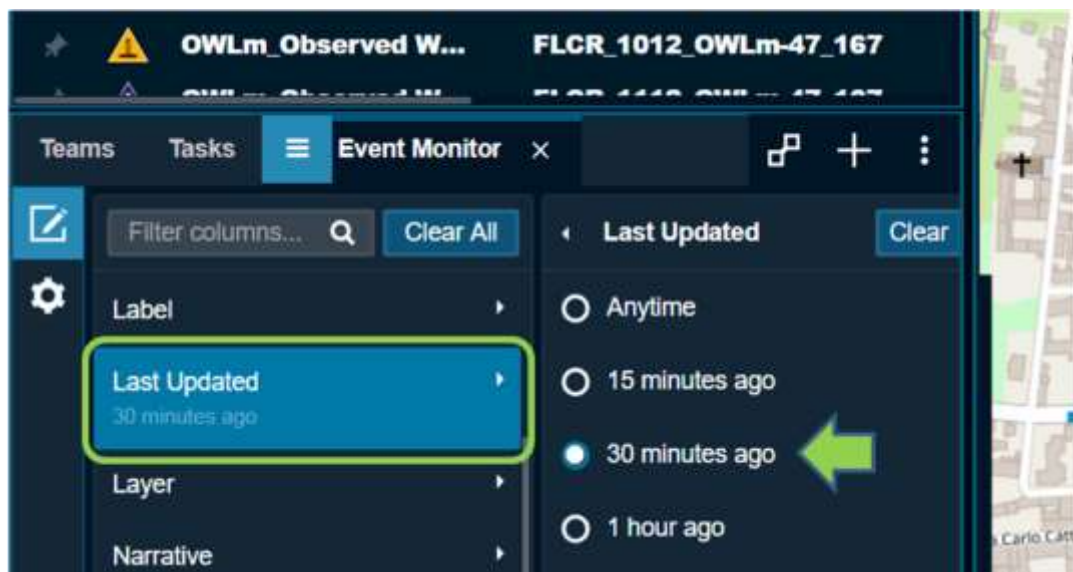


Figure 26: Last Updated

6. Click on **Layers** to select the relevant layers on the map (see Figure 27).

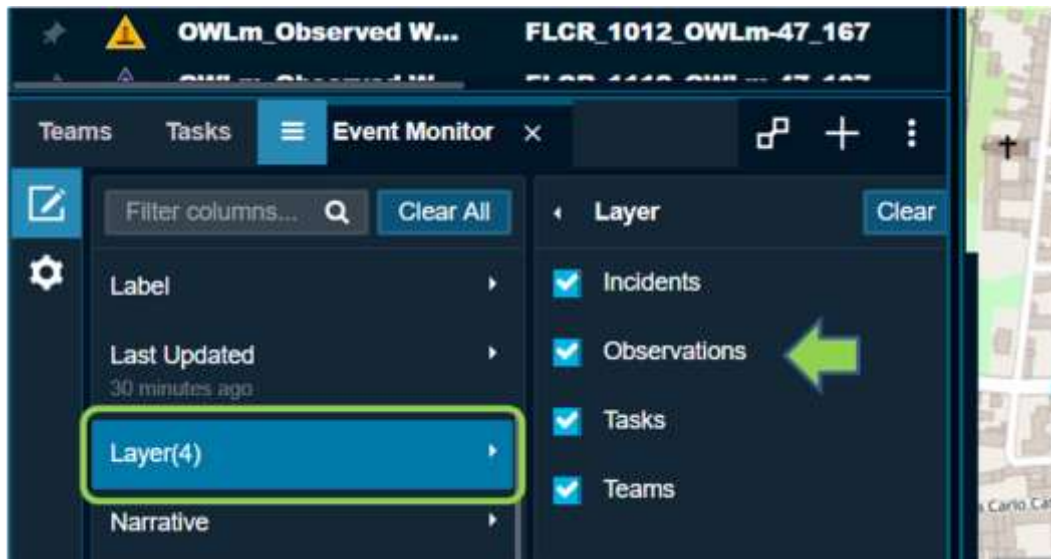


Figure 27: Layers

7. Double-click on the tab title (Event Monitor) to edit the **new tab name** (Last 30 min). Click on the **Apply Filter** toggle to set the filter on/off (see Figure 28).



Figure 28: Apply Filter

9 Important Notes

9.1 Preferred Web Browser

The PSAP was developed and tested using **Google Chrome**. Support for other browsers may be considered in the future.

9.2 Multiple PSAP Instances

Opening multiple instances of the PSAP in the same computer (PC) requires additional instances to be opened using **incognito mode** to avoid Access Denied (see Figure 29).

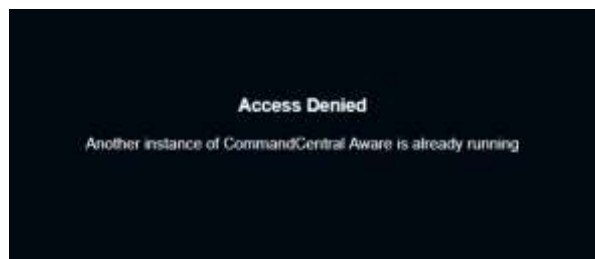


Figure 29: Access Denied

To enter incognito mode select “**New incognito window**” in Chrome (see Figure 30).

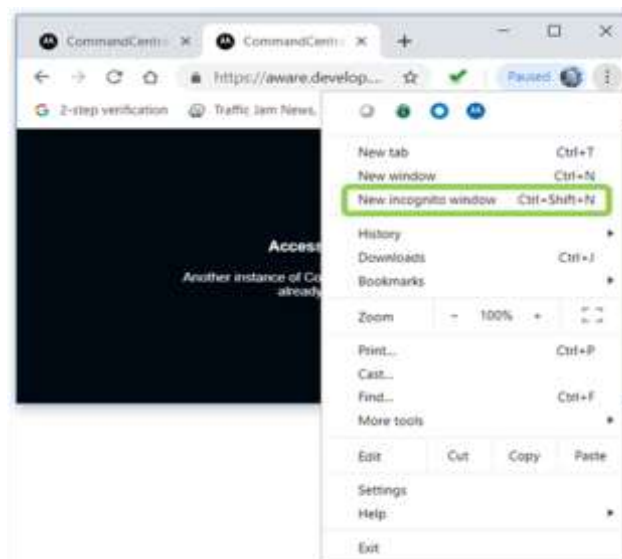


Figure 30: Enter Incognito Mode

In the new incognito window (see Figure 31) enter the PSAP URL and then login as usual.

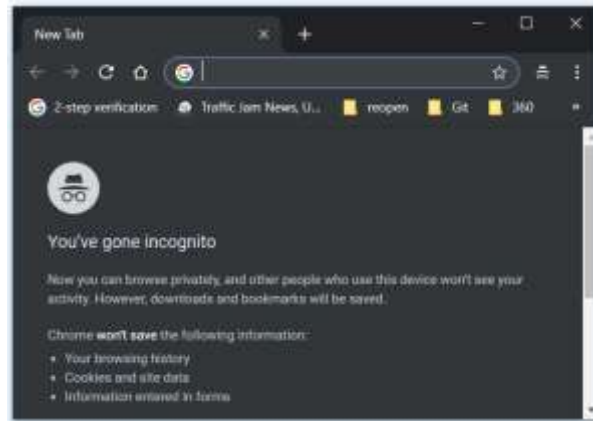


Figure 31: Incognito Window

10 Be-Aware components and flow

[CONFIDENTIAL]

11 End-to-End Flows

[CONFIDENTIAL]

12 UI/UX Improvements [PUBLIC]

12.1 Side Menu

- The menu gives quick access to all the pages and is ordered by a logical flow.
- There is an option to minimize the side menu in order to get more space to show the page's content.

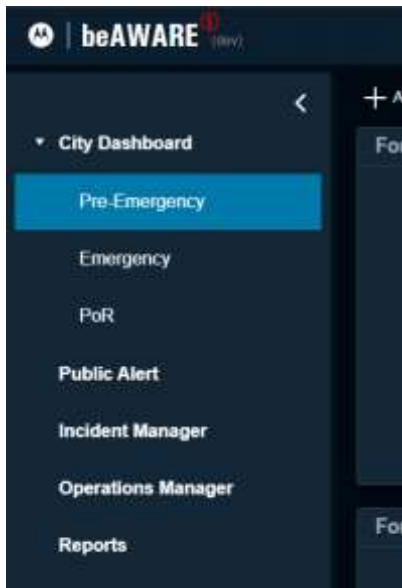


Figure 33- Side Menu 2



Figure 32- Side Menu 1

12.2 Header



Figure 34: Header

12.3 Language tab

- The user has the ability to choose the language he is most comfortable with.

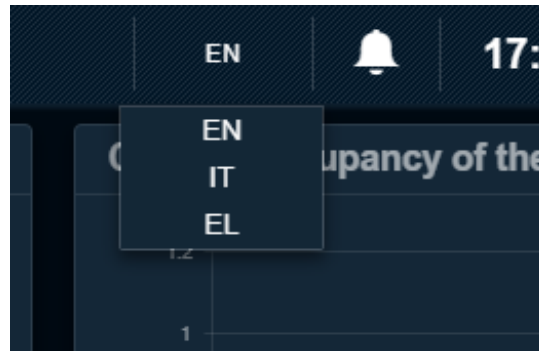


Figure 35: Language tab

12.4 Notification tab

- The user has a quick access to updates in the system through the notifications bell.
- There is access to additional actions via the notifications bell (creation of public alerts and task assignments).

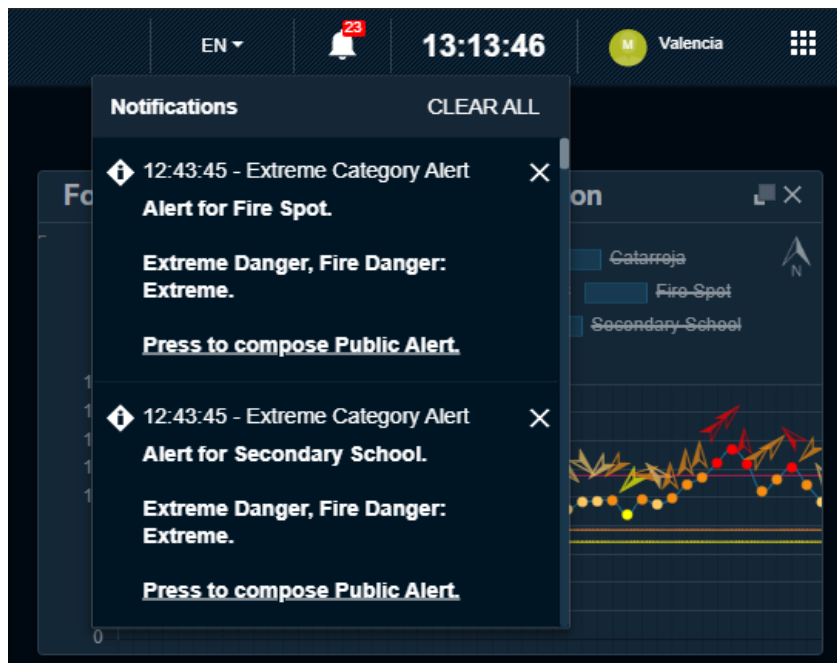


Figure 36: Notification tab

12.5 Time tab

- The time throughout the system is displayed by the authority's timezone, with no regards to the user's real location, or the computer's operating system's timezone.



Figure 37: Time tab

12.6 User tab

- Access to deleting all the data of the system throughout every page in the PSAP (because the button is in the header).

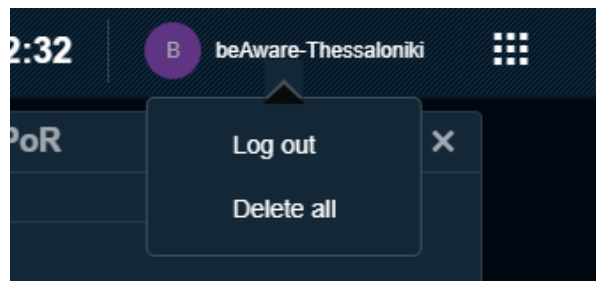


Figure 38: User tab

12.7 External apps tab

- We supply quick access to external applications that are corresponding to the PSAP.



Figure 39: External apps tab

12.8 Dashboard



Figure 40: Dashboard

- The ability for each user to change the layout of the dashboard (the metrics' order) and save it.
- An option to show the metrics in three different sizes, and save that as user layout as well.
- We added new charts that can display multiple lines per several locations and ability to show which is the current value according to the current time.
- Ability to display symbols in addition to displaying simple dots as the chart's measurements (direction wind, for example).
- Automatic creation of notifications when there are measurements that match a predefined rule (when the measurement pass the low threshold, for example).

12.9 Public Alert

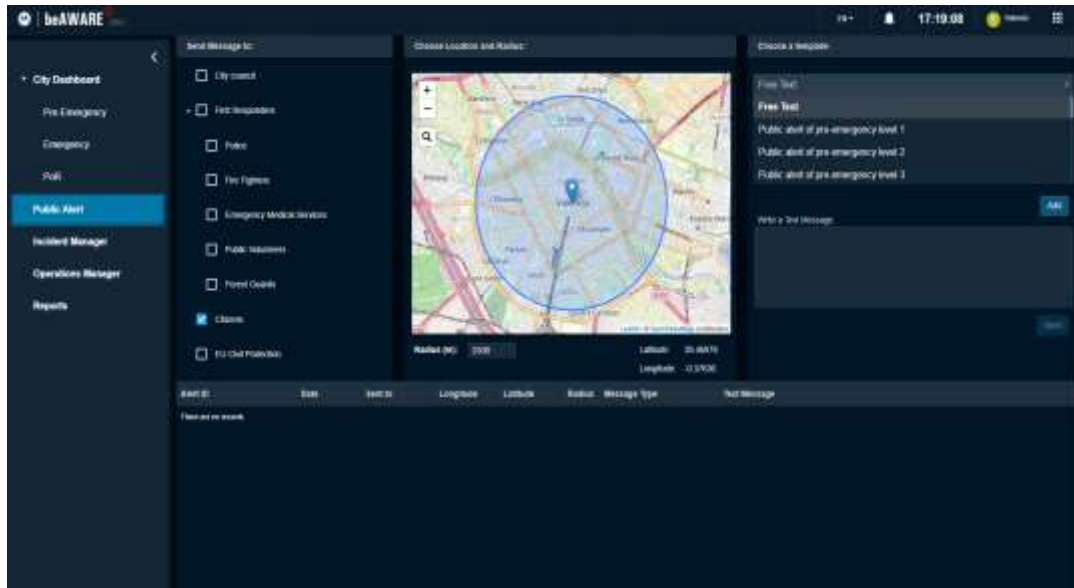


Figure 41: Public Alert

- Added a new map component that gives the user the ability to pick a location



or search for one. ()

- Ability to search for messages from the templates list by auto-complete.
- Ability to copy the content of past public alerts and resending it, with or



without modification. ().

12.10 Incidents Manager

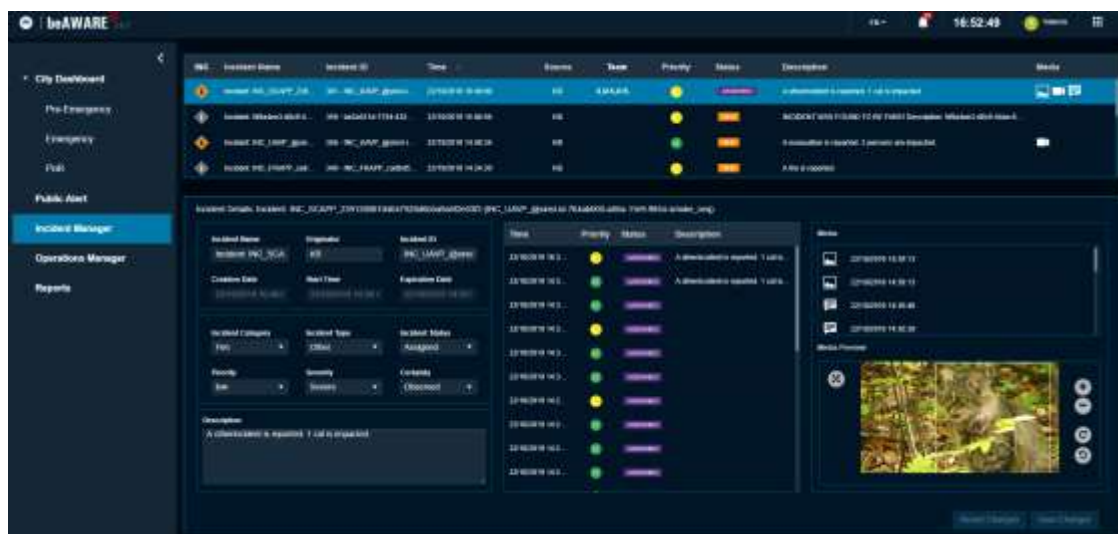


Figure 47 – Incidents Manager

- Using the colored incident status' labels and same icon from the PSAP map.
- Ability to show the attachment files and resize them.
- The ability to see the incident tracking.

12.11 Operations manager

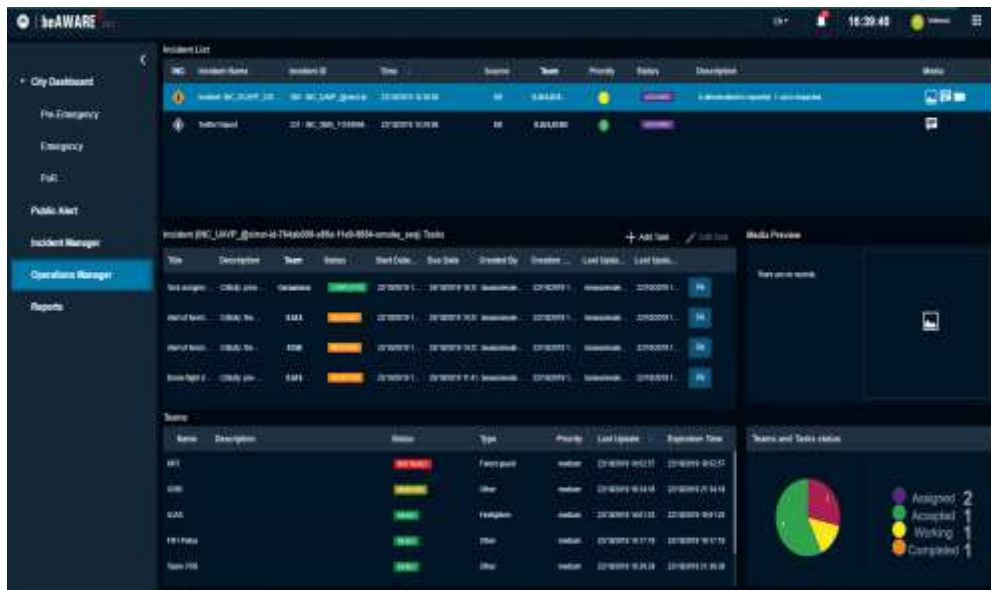

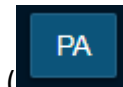


Figure 42: Operations Manager

- Added the ability to modify existing tasks and resend it to the map and the teams.
- Quick access to send public alerts to existing task's location. ()



13 Icons Standard [PUBLIC]

During the project's implementation, we changed the icons and now we are using Standard Humanitarian Icons.









In this process, we discussed with partners and Motorola's UI/UX team.












In addition, we added new rules with new conditions to the "rules machine" in our database, such as incident type, team type, "DataStream ID", etc.











The icons' logic on the PSAP is defined as follows:


13.1 Incident Icons

Table 2 – Incident Icons

Icon	Topic Name	Property Name	Property Value
	Incident	Incident Category Severity	Fire Minor
	Incident	Incident Category Severity	Fire Moderate
	Incident	Incident Category Severity	Fire Severe
	Incident	Incident Category Severity	Fire Extreme
	Incident	Incident Category Severity	Fire Unknown
	Incident	Incident Category Is Spam	Fire True
	Incident	Incident Category Severity	Met Minor
	Incident	Incident Category Severity	Met Moderate


	Incident	Incident Category Severity	Met Severe
	Incident	Incident Category Severity	Met Extreme
	Incident	Incident Category Severity	Transport Unknown
	Incident	Incident Category Is Spam	Transport True
	Incident	Incident Category Severity	Transport Minor
	Incident	Incident Category Severity	Transport Moderate
	Incident	Incident Category Severity	Transport Severe
	Incident	Incident Category Severity	Transport Extreme
	Incident	Incident Category Severity	Transport Unknown
	Incident	Incident Category Is Spam	Transport True
	Incident	Incident Category Severity	Heatwave Minor

	Incident	Incident Category Severity	Heatwave Moderate
	Incident	Incident Category Severity	Heatwave Severe
	Incident	Incident Category Severity	Heatwave Extreme
	Incident	Incident Category Severity	Heatwave Unknown
	Incident	Incident Category Is Spam	Heatwave True
	Incident	Incident Category Severity	Other Minor
	Incident	Incident Category Severity	Other Moderate
	Incident	Incident Category Severity	Other Severe
	Incident	Incident Category Severity	Other Extreme
	Incident	Incident Category Severity	Other Unknown

	Incident	Incident Category Is Spam	Other True
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13.2 Public alert Icon

Table 3 – Public Alert Icon

Icon	Topic Name
	PA (Public Alert)





13.3 Task Icons


Table 4 – Task Icons

Icon	Topic Name	Property Name	Property Value
	Tasks	Status	Received, Accepted, OTW
	Tasks	Status	Completed
	Tasks	Status	Rejected
	Tasks	Status	Working

13.4 Team icons

Table 5 – Team Icons

Icon	Topic Name	Property Name	Property Value
	Teams	Status	Ready
	Teams	Status	Assigned
	Teams	Status	Working
	Teams	Status	Not Ready, Resting
	Teams	Status	Disabled
	Teams	Status	Off Duty

	Teams	Team Type	EU Civil Protection
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13.5 Metric Icons

Table 6 – Metric Icons

Icon	Topic Name	Property Name	Property Value
	Metrics	Severity DataStreamID	Low FLCR_1002_PWLm
	Metrics	Severity DataStreamID	Medium FLCR_1002_PWLm
	Metrics	Severity DataStreamID	High FLCR_1002_PWLm
	Metrics	Severity DataStreamID	Very High FLCR_1002_PWLm
	Metrics	Severity DataStreamID	Low FLCR_1012_OWLm
	Metrics	Severity DataStreamID	Medium FLCR_1012_OWLm
	Metrics	Severity DataStreamID	High FLCR_1012_OWLm
	Metrics	Severity DataStreamID	Very High FLCR_1012_OWLm
	Metrics	Severity DataStreamID	Low FLCR_1123_OPRm
	Metrics	Severity DataStreamID	Medium FLCR_1123_OPRm
	Metrics	Severity DataStreamID	High FLCR_1123_OPRm
	Metrics	Severity DataStreamID	Very High FLCR_1123_OPRm

13.6 Risk Map Icons

Table 7 – Risk Map Icons

Icon	Topic Name	Property Name	Property Value
	Risk	Sender	ZoneGen

14 Gender Consideration [PUBLIC]

Gender Human-Computer Interaction (here forth referred to as Gender HCI) is a fairly new subset of traditional HCI that aims to explore how the different genders perceive and use computer interfaces differently. An important distinction to make is that we use the term “gender” to refer to someone’s sexual identity, traditionally referred to as “masculine” and “feminine” and not their sex, though western society typically uses these terms interchangeably.

Although gender issues have come to the forefront in mainstream and political talks, gender biases still exist in our culture, and are deeply ingrained in many of our technologies and practices.

The literature shows that HCI researchers have been aware of the differences in how males and females perceive interfaces.

Previous experiments show that there are distinct elements in website interface design that will be preferred by either males or females, and websites can be made to specifically target the genders using these principles.

Our goal was to ensure that our project will remain gender neutral throughout all components and modules.

We used these guidelines when creating the design:

- Followed Motorola Solutions’ interface layout which created by professional designers.
- Addressing users according to general phrases that do not include gender specifications.
- Minimal language use, and in a casual but non-conversational tone when in use.
- Vibrant, multiple colors. Using colors to represent status and updates throughout the system.

15 Conclusion [PUBLIC]

This document described the main Public Safety Answering Point (PSAP) prototype demonstrator, which is part of the Prototype of the beAWARE platform (P1), due M32 (Aug, 2019).

The Public Safety Answering Point (PSAP) is beAWARE's Command and Control module. It is developed and provided by Motorola Solutions Israel Ltd. (MSIL). The PSAP is intended to oversee the entire emergency management effort and to support the work of the Emergency Operations Center.

In this document we described The PSAP's modules:

- **City Dashboard**
- **Public Alert**
- **Incident Manager**
- **Operations Manager**
- **Map Module (GIS)**

After presenting the system's modules, we discussed important aspects about using the system.

In the confidential part of this deliverable, we explained the functions and features required from each beAWARE module to ensure the flow of information including position and location data to implement the Location Management Service (LMS). We elaborated and analyzed the functional flows across the platform in order to ensure the end-to-end realization of the requirements. We also specified the communication and data exchange protocols that enable these features.

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