

# MOBILE EMERGENCY PRO

USER'S MANUAL



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# Introduction

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Although the user interface is very simple and intuitive, an user with low experiences with the typical components of the iOS graphical interface, may have difficulty during the first use of the application.

This manual describes the main steps that lead the user to exploit the various functionalities provided by the Mobile Emergency Pro application.

## Home Screen

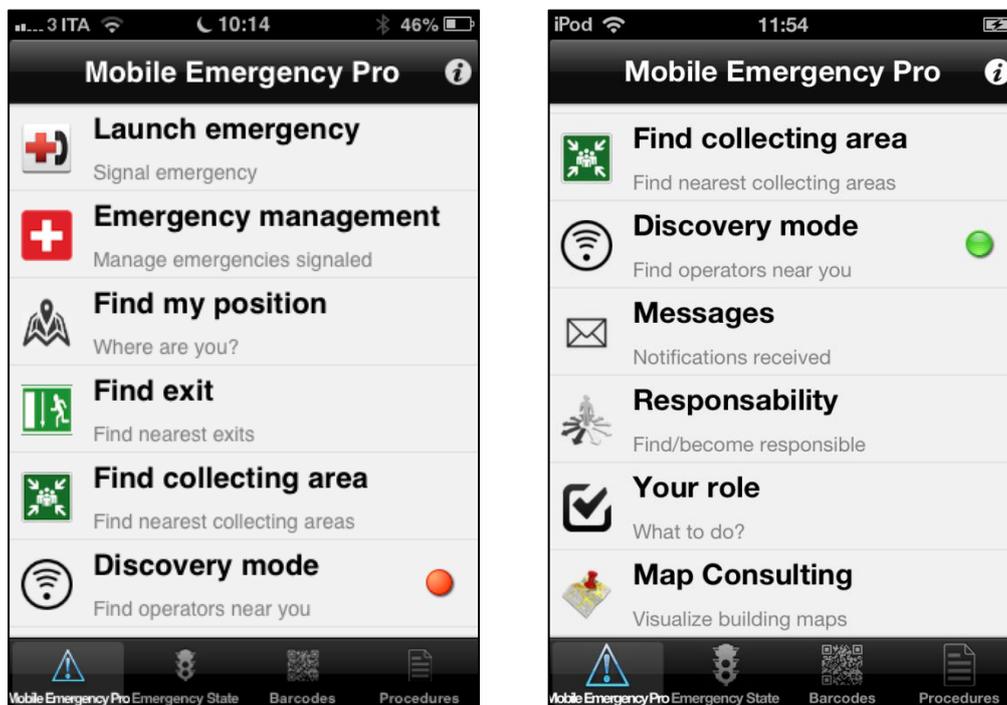


Figure 1 – Home screen

Through the home screen the user has access to the main features offered by the application:

- **LAUNCH EMERGENCY**: this section allows authorized users to report an emergency to the Operative Center.
- **EMERGENCY MANAGEMENT**: the user who reported the emergency state to the Operative Center, can subsequently send pictures and videos to enrich the emergency synoptic.
- **FIND MY POSITION**: the system displays a map showing the indoor or outdoor position of the user.
- **FIND EXIT**: based on the last position acquired via QR code, the application shows the nearest emergency exits.
- **FIND COLLECTING AREA**: based on the last position acquired via QR code, the application shows a list of indoor and outdoor collecting areas defined by the Operative Center.
- **DISCOVERY MODE**: exploiting the connection to a local wireless network, the user is able to discover other operators inside the building and communicate with them.
- **MESSAGES**: this section allows the user to download and read new messages sent from the Operative Center.
- **RESPONSIBILITY**: users can retrieve information about the emergency's supervisor, or request to become it.

- **YOUR ROLE**: consulting roles and related tasks in an emergency situation;
- **MAP CONSULTING**: by this section the user has full access to the building maps.

In the bottom part of the screen there is a tab bar by which the user can:

- **Visualize a list of emergencies in progress** and, for each one see its detailed status and show a multimedia gallery if present.
- **Update his position** by the acquisition of a new QR code.
- **Access the multimedia resources** available on the social network Mobile Medicine.

## Launch Emergency

When the user identifies an emergency situation and intends to report it to the operative station, he chooses the menu item “Launch Emergency”.

This functionality is only allowed to authorized personnel, so the system shows a login form if the user is not yet logged (Figure 2).

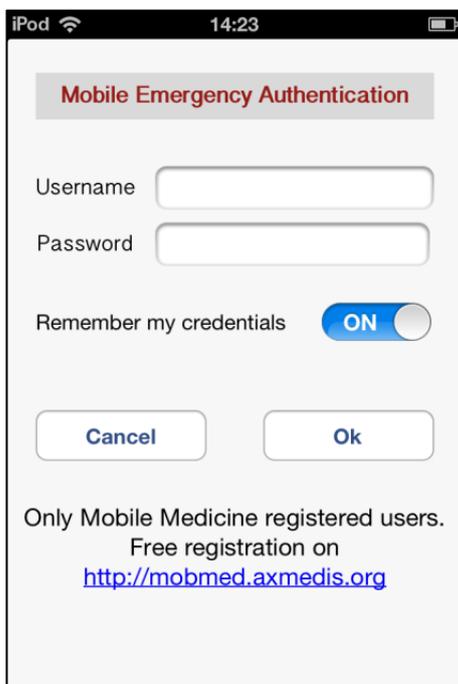


Figure 2 – Authentication View



Figure 3 – Emergency type selection

Clicking on one of the fields in the login form, the system displays a QWERTY keyboard that allows the user to enter their username and password; the user, via a control switch type has the ability to let the system store its credentials for future authentication requests (by setting the switch to ON).

Once authenticated the user can select the emergency type (fire, collapse, earthquake, blackout). After this the system shows a form where the user can indicate the main information about the emergency state in order to report it to the Operative Station. Figure 4 -5.



Figure 4 – Emergency signaling 1/2



Figure 5 – Emergency signaling 2/2

By turning on the switch “Position”, the user indicates to the system that he wants to provide his last known position acquired as the emergency location. If his position is not correct, he can update it by selecting the item “ReDo Position”.

The user can also specify to the operative station other information, like the emergency size, how many people are involved and the patients conditions.

By pressing the Red Button, the user sends the report to the Operative Center and the system shows a message that indicates the signaling confirmation (figure 6). If the report is sent with success, the application asks the user if he wants to also send some images or videos (figure 7), in which case, the system redirects automatically the user to the Emergency Management section.



Figure 6 – Signaling outcome



Figure 7 – Application hint

# Emergency management

By selecting the menu item Emergency Management, the user can manage the emergency signaled previously. In figure 8 we can see the list of the emergencies signaled by the user. By choosing one, the user can see the emergency detailed state (figure 9).

The application allows user to:

- Quit the emergency.
- Visualize a gallery composed by images and videos sent by himself previously.
- Send images or videos from the device gallery or captured directly from the smartphone camera (figure 10).



Figure 8 – List of emergencies signaled

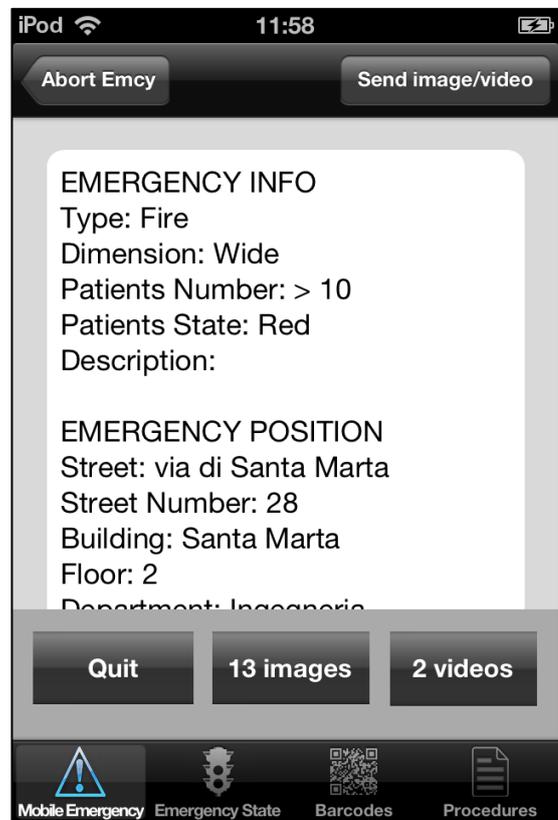


Figure 9 – Emergency management

## EMERGENCY QUIT

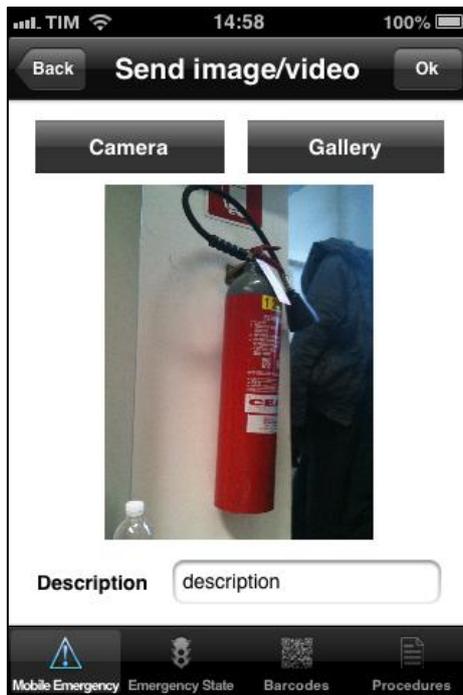
The authenticated user has the possibility to quit the emergencies in progress. Once clicked the Quit button the system asks the user a confirmation before proceeding.

Afterwards, the emergency selected appears in the above section called “Past Emergencies”.

## MULTIMEDIA GALLERY

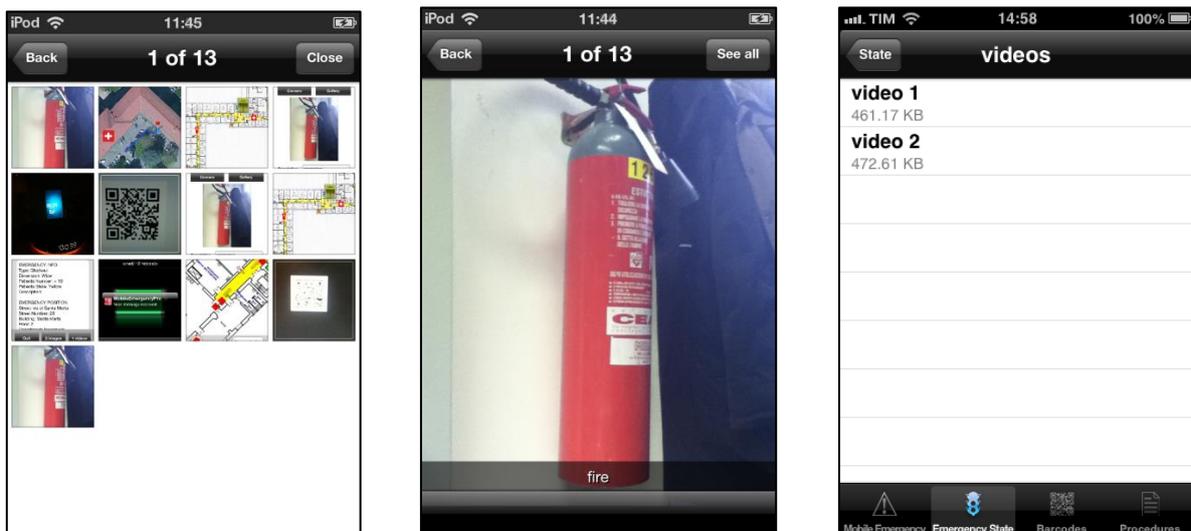
To enrich the information framework about the emergency signaled, the user can send to the Operative Station images and /or videos captured by the device camera or taken from the smartphone gallery.

By clicking on the “Send image/video” button on the upper right corner of the screen (figure 9), the system shows a new view where the user can choose how to acquire the multimedia content. (figure 10). Once selected the image/video, the user must enter a short description about the file chosen.



**Figure 10 – Image/Video sending**

At any time the user can see the gallery composed by the multimedia content sent (figure 11).



**Figure 11 – Multimedia gallery**

# Find my position

By selecting the menu item “Find my position” the application shows a view that allow the user to know his indoor and outdoor position. (Figure 12)

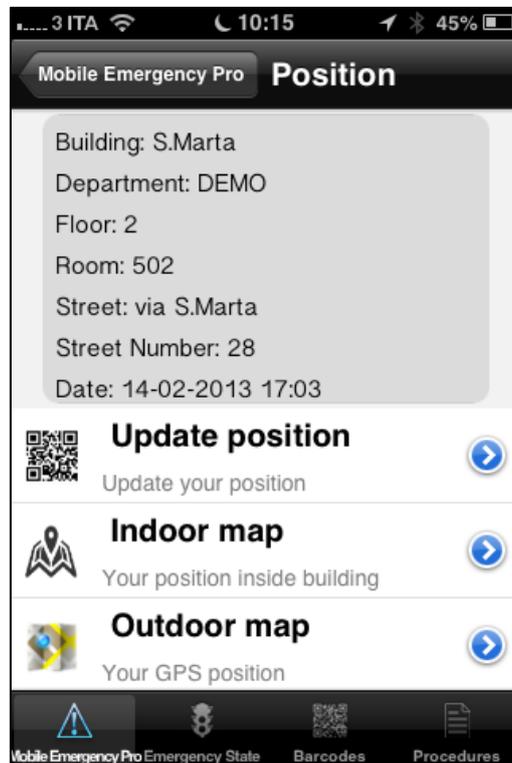


Figure 12 – User position controller

The system shows detailed information about the last position acquired (building, department, floor, room, street and the signaling date) and allows the user to:

- **update his position** by acquiring a new QR code;
- see his **indoor position** by visualizing the floor’s map where he is;
- see his **outdoor position** by visualizing a iOS Map that shows the user GPS position.

## UPDATE POSITION

Every time the user wants to know his indoor position, he needs to find a QR code near him. Once found, he must select the option “Update position” and then press the “Scan” button (fig. 13a) that enables the QR-code scanner (fig. 13b).

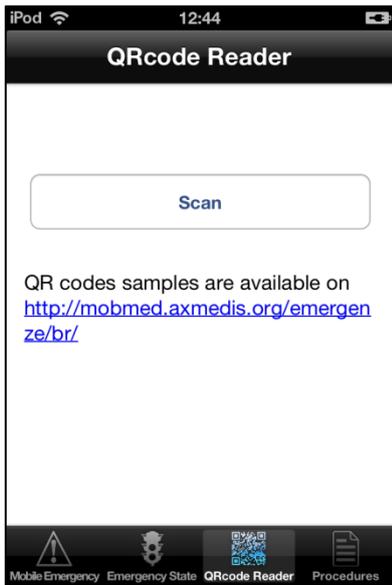


Figure 13a – QRcode Reader



Figure 13b – Scanning QR code

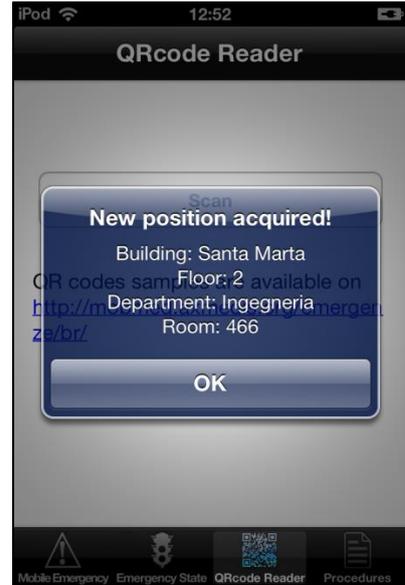


Figure 13c – Position updated

Whether the code is in the required format, the information inside it is extracted and sent to the central station that responds to the device by sending all the details about his actual position (fig. 13c). This information is stored in the device memory to allow user to use it also in offline mode.

## INDOOR POSITION

Once acquired a QR code, the user can see his actual position inside the building by selecting the menu item “Indoor map”. The application downloads the floor map from the Operative Station, saves it in the device memory and shows the user position on it, exploiting the information previously obtained from the QR code acquisition (figure 14).

The user, through the typical iOS gestures (pinch, tap...) can consult the entire map and, to recover his position, he has to click on the “Your position” button that centers and zoom the map on the user location.

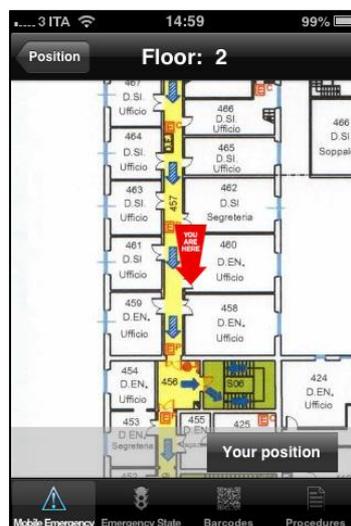
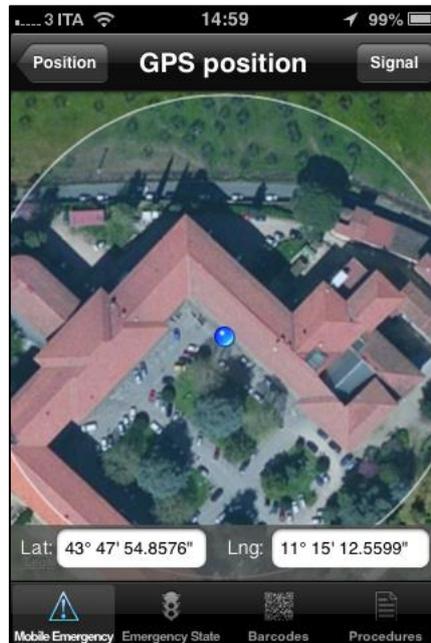


Figure 14 – User indoor position

## OUTDOOR POSITION

If the user is outside, he may need to know his GPS location. Once selected the menu item “Outdoor position”, the application shows a iOS Map (figure 15) displaying the user GPS position real-time updated. In the bottom side of the view, the user can see also the latitude and longitude coordinates.



**Figure 15 – User outdoor position**

At the top right of the view there is also a button called “Signal” by which the user, if authenticated, can communicate his GPS position to the Operative Center.

# Find exit

In an emergency situation the user may need to find the nearest security exit. To do this, he has to select the menu item “Find exit” by which he enters in the view below.

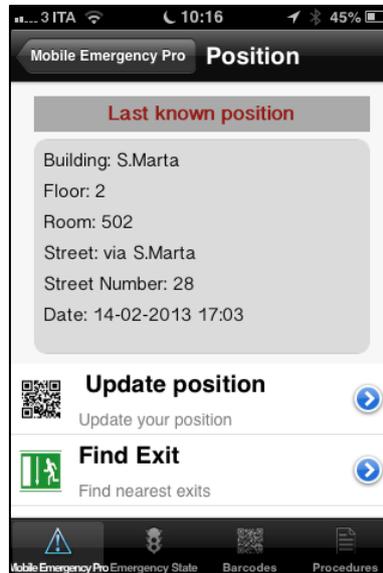


Figure 16 – Find exit panel

The system shows the details about the last position acquired and allows user to

- **update his position**, by acquiring a new QR code;
- **find the nearest exits on the floor**. Once selected the item “Find Exit”, the system downloads, if not present in the local memory, the floor map and displays on it the user position and the nearest exit from him. The map is centered and zoomed in order to frame the two targets figure 17).



**Figure 17 – Emergency Exit Map**

As you can see in figure 17, at the bottom there is a bar containing some useful shortcuts that allows to zoom and center the map respectively on the user position  or on the exit position , acquire a new QR code  and start indoor navigation towards the target.

During an emergency situation, it is possible that an exit area is not reachable, so the user needs an alternative escape. At the right upper corner there is a button “Next exit” by which the user can obtain alternative exits near him.

As previously said, the user can use the indoor navigation system to reach the emergency exit. By pressing the button “Navigation”, the system enters in navigation mode (fig. 18). The map is centered on the user position and it is constantly updated respect to the user movement and orientation. During the navigation, the system shows an upper bar that displays the direction towards the target  and the distance remaining from it.

During the navigation the user may need to update his position. For this purpose the user can directly press the button  and acquire a new QR code as seen previously. As soon as the QR is decoded and the user position details are downloaded from the Operative Center, the application reload the map (or download a new one if the user has changed floor) and displays on it the new user position and the nearest exits.

## Find Collecting Area

During an emergency situation the Operative Center generally defines some collecting points where patients and operators can gather and receive the first aids. Depending on the emergency type and the building size, collecting areas can be defined both inside and outside.

To find them, the user selects first the menu item “Find collecting area”; the system shows a view displaying the main information about the last position acquired, and allowing user to update it or to find the collecting areas. By selecting the option “Find collecting area”, the system shows a table where the indoor and the outdoor collection points are listed.

For each area it is displayed a distance information. If the indoor collecting area is on the same floor, the user can see the distance (in meters) from it, otherwise the user can see its floor location. For outdoor areas instead, the system shows the distance (in meters) based on the GPS coordinates of user and area. In figure 20 we can see an example.

The user can choose:

- an indoor collecting area at the same floor;
- an indoor collecting area at different floor;
- an outdoor collecting area;

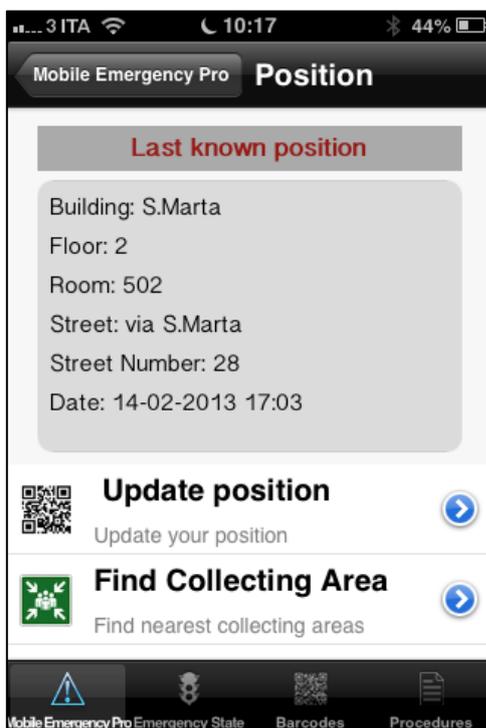


Figure 19 – Find Collecting Area section

Figure 20 – Indoor/outdoor collecting areas

## INDOOR COLLECTING AREA AT THE SAME FLOOR

If the user selects an indoor collecting area that is on the same user floor, the application downloads the map and displays on it the user and the collecting area positions (fig. 21). The user, using the bottom bar, can:

- explore the map by using the typical smartphone gestures (pinch, tap...);
- zoom and center the map on the user position ;
- zoom and center the map on the collecting point ;
- update position by acquiring a new QR code ;
- Start the indoor navigation system to reach the target.



Figure 21 – Indoor collecting area map

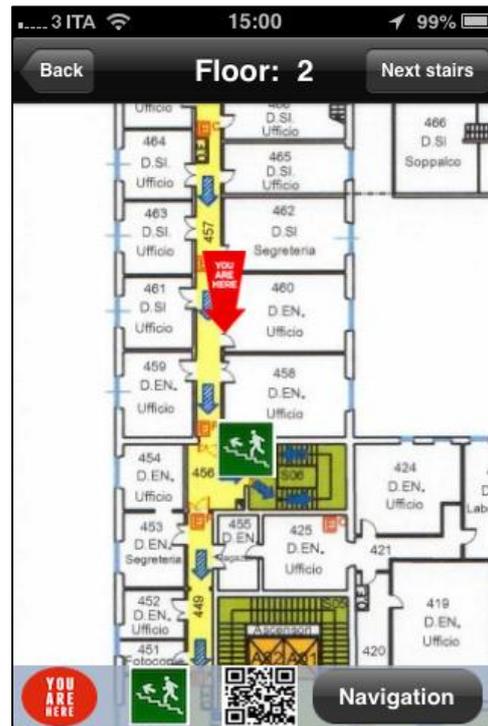
The system allows users to visualize alternative areas by pressing the button on the right corner “Next area”.

## INDOOR COLLECTING AREA AT DIFFERENT FLOOR

If the collecting point selected is on a different floor, the user may need to reach first the nearest stairs. The system notify to the user that the area is on a different floor (fig. 22) and shows to him all the stairs present ordered by the distance from the user position (fig. 23).



**Figure 22 – System suggestion**



**Figure 23 – Stairs map**

Also in this case the user has the possibility to exploit the indoor navigation system to join the target more easily. Every time the user wants to update his position, he can do it by pressing the button . Once updated position the system automatically reloads the map and its content; if the user is not yet on the correct floor, he is notified about it and he is guided towards the nearest stairs again, otherwise he visualizes a map displaying his position and that one of the previously selected collecting point (fig.21).

## OUTDOOR COLLECTING AREA

If the user decides to reach a collecting point defined outside, the system shows to him an iOS Map displaying the GPS user position, the collecting area and the walking path between them (fig. 24). During the navigation the user can see his position constantly updated on the map.

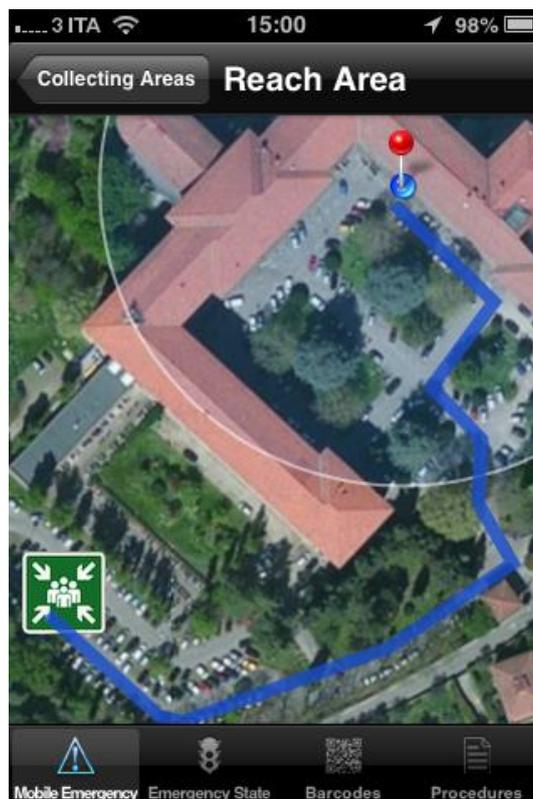
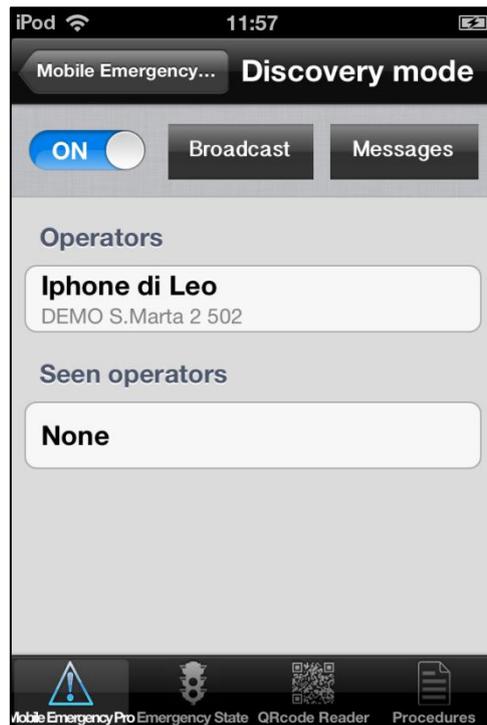


Figure 24 – Indoor collecting area map

## Discovery Mode

During an emergency situation, communications may be difficult due to the network congestion. Operators inside a building may need to communicate with each other in order to cooperate and coordinate the rescue actions. For this purpose, we introduced in Mobile Emergency Pro a functionality called Discovery Mode that allows to find all the operators inside the building, exploiting the device connection to the local wireless network.

To take advantage of this functionality the user needs to be connected to the local wireless network and he must turn to on the Discovery mode switch at the left corner (fig.25).



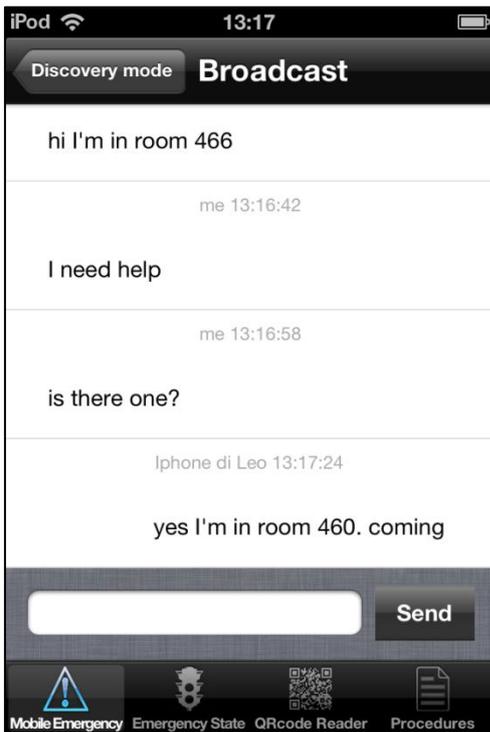
**Figure 25 – Discovery mode**

As you can see in figure 25, the system shows a list of operators connected and present, and a list of operators recently seen but no more connected. Each user belonging to this “private” network exchanges his position details with the other operators.

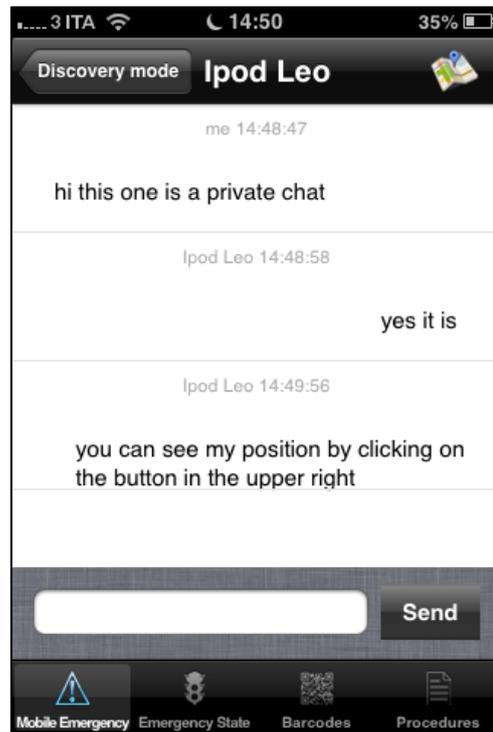
The user can use 2 different communication mode: broadcast or unicast.

To communicate with all operators he must press the button “Broadcast” and the system shows a chat (figure 26) where he can exchange messages with all.

If the user needs to communicate with a single operator, he can select him from the list (fig.25) to open a private chat with him (figure27). The user can also visualize the operator position by pressing the button  and reach him through the indoor navigation system (figure 28). All the messages exchanged are saved in the device memory so that the user can read them at every time. In figure 29 are showed the chat sessions stored and accessible by the button “Messages”.



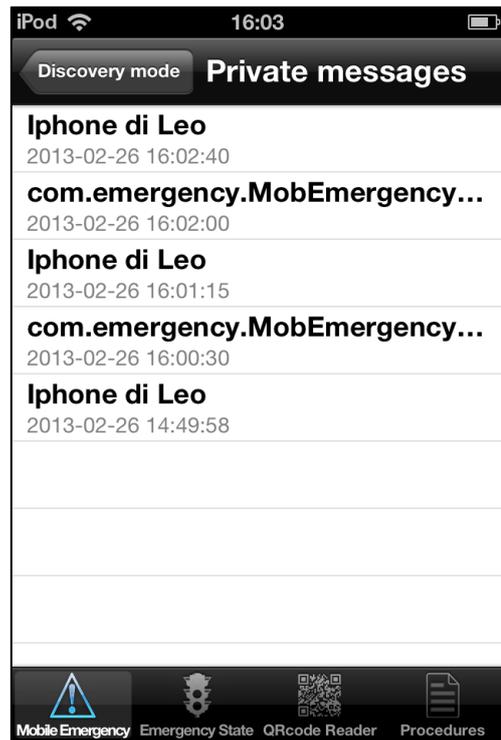
**Figure 26 – Broadcast chat**



**Figure 27 – Private chat**



**Figure 28 – Map showing user and operator position**



**Figure 29 – Old chat messages**

## Messages

During an emergency situation, often the Operative Center needs to contact support teams to provide them all the emergency details and the associated tasks. For this scope the Operative Center can send text messages to operators.

In order to download new messages, the user must be authenticated with the system. After authentication, the user can visualize the messages list like in figure 30. All the read messages are stored in the device memory, so that the user can consult them also in offline mode.

The Operative Center can send, together with the message, also the emergency status details. In this case the user can download and consult the emergency sheet by pressing the button “Additional Info” (figure 31).

In figure 32 we can see an emergency sheet example. This last view is described later in more depth.

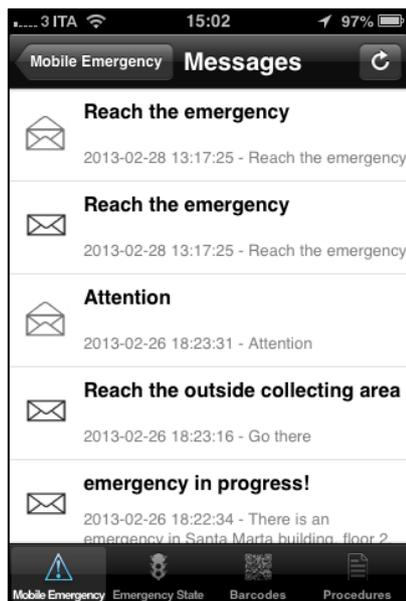


Figure 30 – Messages list

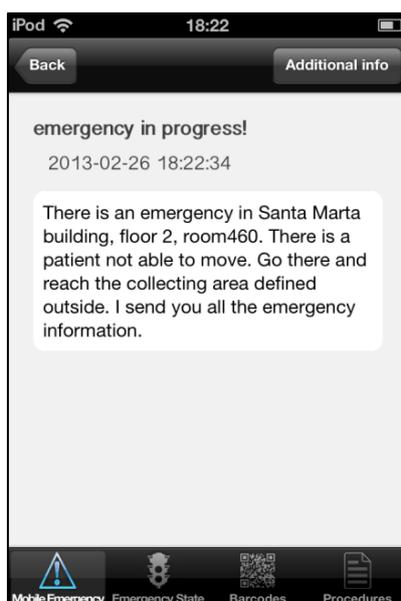


Figure 31 – Message received



Figure 32 – Emergency sheet

## Push notifications

During an emergency situation the Operative Center may need to communicate with operators to provide them all the necessary information for the emergency management.

For this purpose the operative station can send two types of push notifications:

- **Emergency notification:** the user receives an alert about a new emergency in progress (Figure 33). By this push notification the user is able to download the emergency sheet.
- **Message notification:** the user receives an alert about a new text message (figure 34). By opening the notification the user downloads the message from the server and saves it in the local memory. As seen previously, the Operative Center can send to users also additional information about an emergency in progress (figures 31 -32).



Figure 33 – New emergency



Figure 34 – New message received

## Responsibility

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To manage or consult information about the emergency supervisor the user must select the menu item “Responsibility”. The system displays a view (fig. 35) with two buttons, one used to get information about an emergency manager, the other to become it.

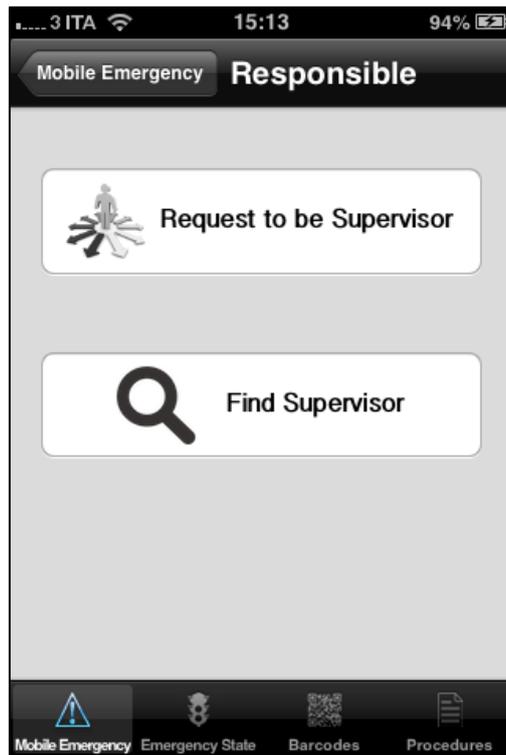
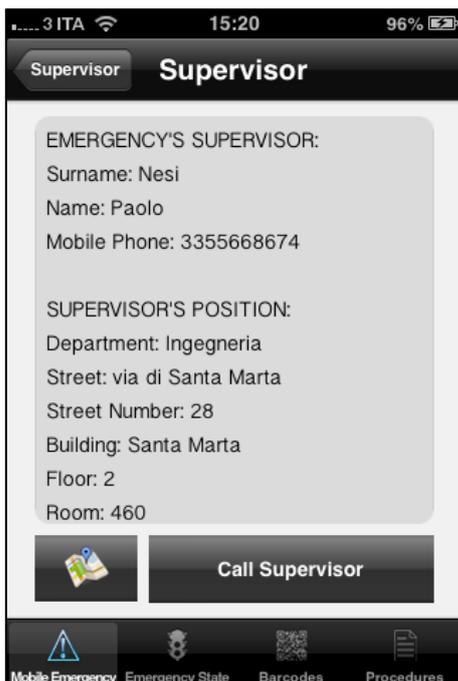


Figure 35 – Responsibility section

In both cases the system downloads from the Operative Center the updated list of emergencies in progress, in order to allow user to select the desired one.

At this point the system behavior changes depending on the user choice.

If the user is searching a responsible (fig.36), the system downloads from the server the main information about him, if present. To help the users to contact or reach the manager, there are two buttons: the first allows user to visualize the floor map (fig.37) displaying the manager position, the second one allows user to call immediately the manager phone number.



**Figure 36 – Responsible information****Figure 37 – Responsible position**

If instead the user has chosen to request to become the emergency supervisor, the system can react in two ways: if the emergency has already a manager defined, the system shows the screen in figure 36 containing the main information about him. If the supervisor is not yet set, the user becomes the emergency manager and receives a confirmation by the system like in figure 38.

**Figure 38 – User request to become emergency manager**

## Your role

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During an emergency situation, it is useful for an operator to know roles and tasks defined by the emergency plan. Through the menu item “Your role” the user get the complete list of roles defined by the hospital. By selecting one of them, the user get the corresponding tasks. Figures 39, 40, 41 report some examples.

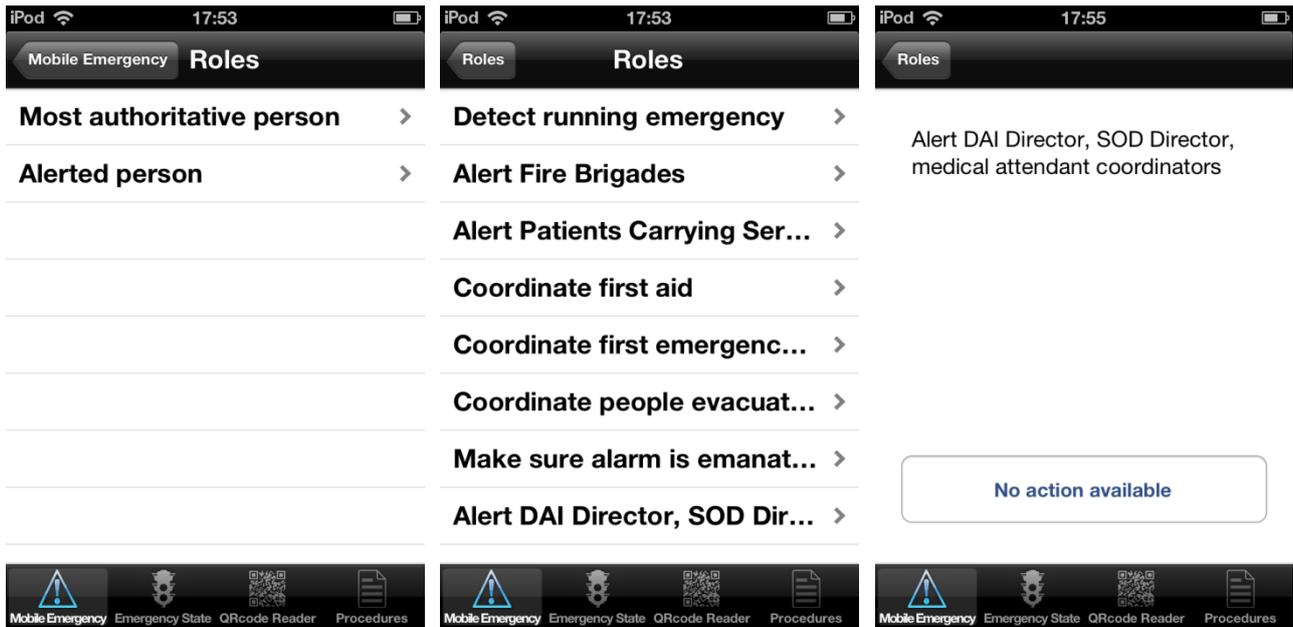


Figure 39, 40, 41 – Roles and tasks consulting

## Map consulting

The last menu item “Map Consulting” allows users to download and visualize all the floor maps for each building registered in the Operative Center server.

In figure 42 the user can see all the buildings managed by Mobile Application Pro. By selecting one of them the system shows the view in figure 43, where the user can:

- **Visualize the building geographical position.** By pressing the “Map” button the system displays a map centered and zoomed on the building selected. Figure 44.
- **Visualize a floor map.** By selecting one floor the system downloads from the server the right map and displays it to the user like in figure 45.



Figure 42 – Building List

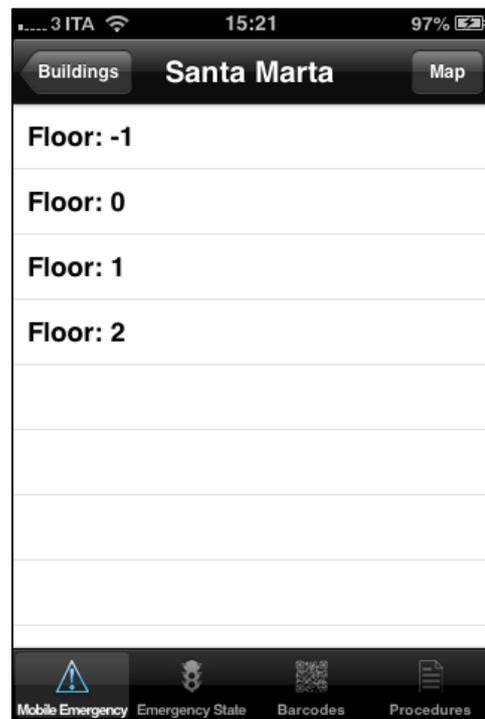


Figure 43 – Building Floors



**Figure 44 – Map showing the geographical position of a buiding**



**Figure 45 – Responsible position**

For each map the user can get the position of all the POI (Points Of Interest) present. By clicking on the “POI” button, a side menu appears showing a POI list like in figure 46. As soon as the user selects one of them, the side menu disappears, the system gets all the POI positions on that floor and displays them on the map (fig. 47).

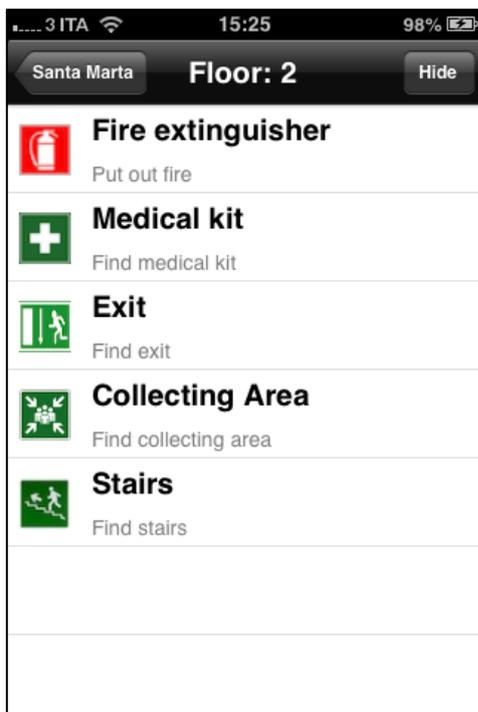


Figure 46 – POI list

Figure 47 – POI positions on map

## Emergency state

The application allows users to consult at any time the status of the emergencies in progress. To use this feature, the user must select the item “Emergency State” in the bottom tab bar. At this point the system downloads and displays a list of emergencies in progress like in figure 48. For each one are indicated building, department and signaling date.

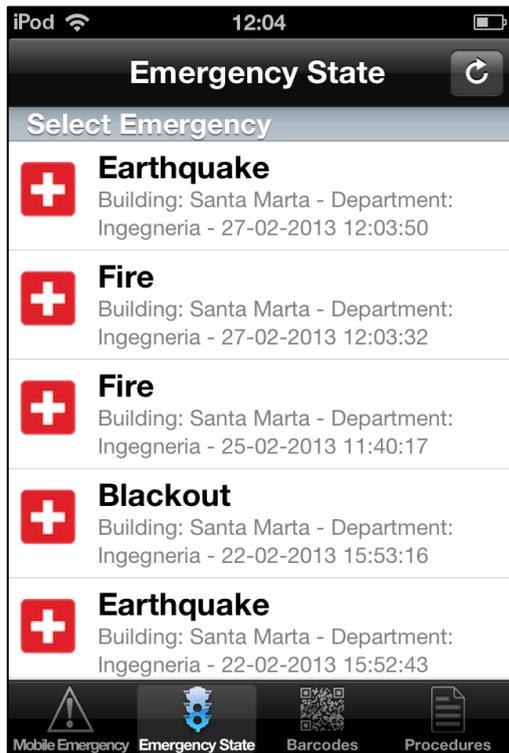


Figure 48 – Emergencies in progress



Figure 49 – Emergency sheet

By selecting one of them the user can see its detailed status like in figure 49.

By this emergency sheet the user can:

- Visualize the exact position of the emergency by consulting an indoor map.
- Visualize a gallery composed by images and videos sent by the signaling user.
- Reach the emergency location through the application instructions.

### MULTIMEDIA GALLERY

Analyzing the emergency sheet of figure 49, the user can see how many images and videos are sent from the operator signaling.

By selecting the button “Images” the user visualizes the image gallery like in figures 50 – 51.

By selecting the “Video” button the user visualizes the video gallery like in figure 52.



Figure 50 – Images gallery



Figure 51 – Image from gallery

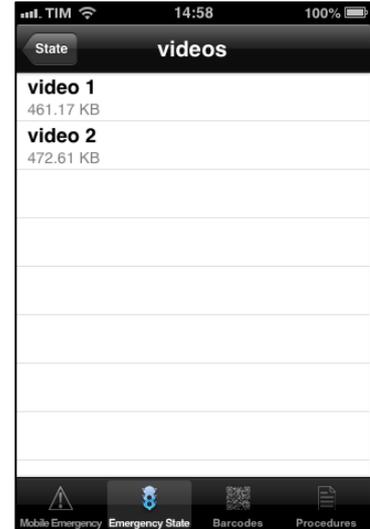


Figure 52 – Video gallery

## EMERGENCY MAP

The user may need to know the exact position of the emergency selected. When the user selects the button “Map” in the view of figure 51, the system downloads, if not present in the local memory, the floor map where emergency is located and displays it like in figure 53.

If the user is inside the same building, the system allows to use the indoor navigation system to reach emergency: if they are on a different floor the application shows the nearest stairs (fig. 54), otherwise the system displays user and emergency positions on the map (fig. 55).

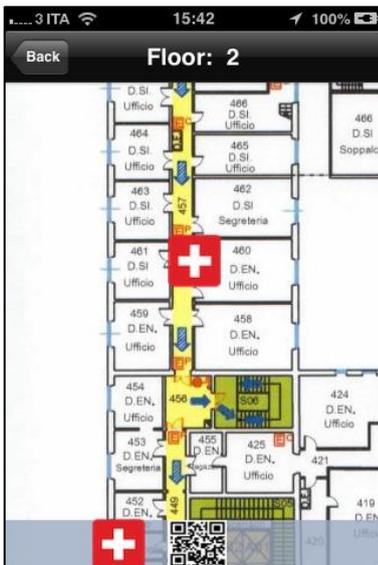


Figure 53 – Emergency Map, user is in different building.

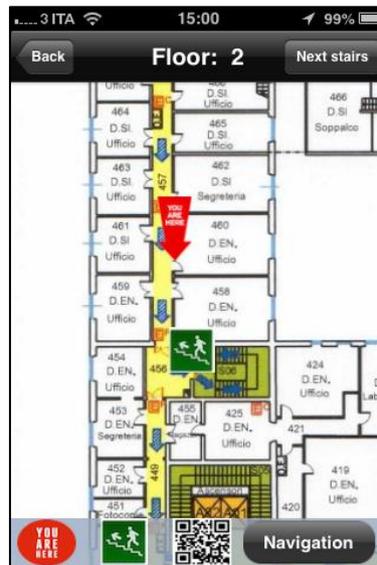


Figure 54 – Stairs map, same building, different floor



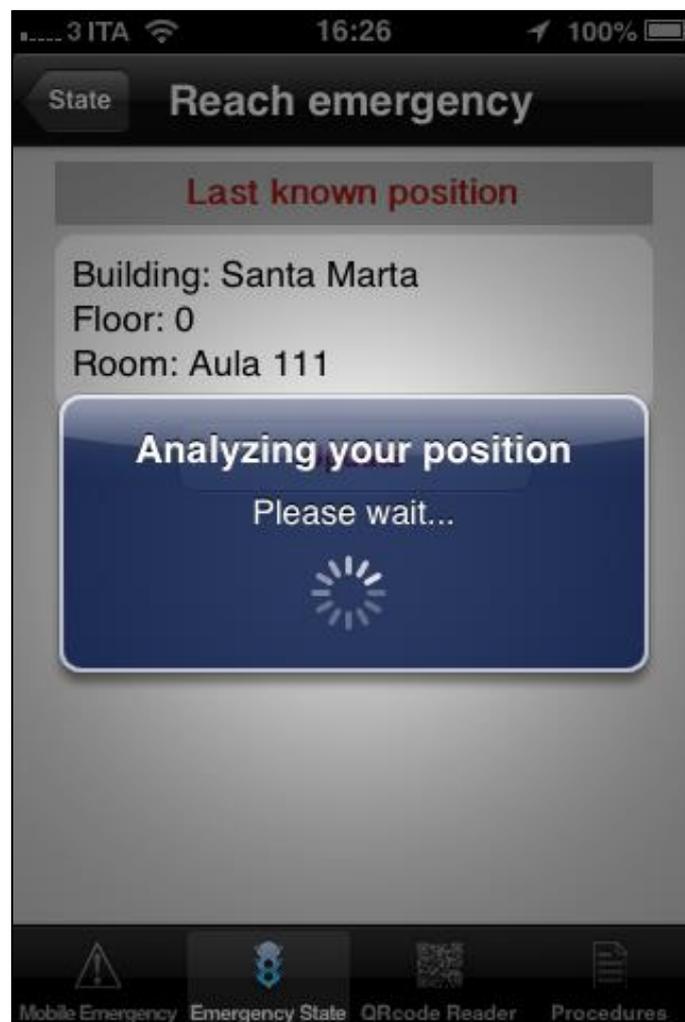
Figure 55 – Emergency map, same building, same floor

Every time he wants the user can acquire a new QR code simply by pressing the button  in the bottom bar: once position is updated, the system reload the map.

# Reach Emergency

One of the main purposes of this application is to provide a valid help to rescue teams to obtain all the relevant information about an emergency state and to know how to reach it.

In the emergency sheet of figure 49 you can see a button in the navigation bar titled “Reach”. By selecting it, the user obtains from the system all the instructions necessary to reach the emergency place. Naturally the path depends on the user position, deduced by the system analyzing the GPS accuracy and comparing the user GPS coordinates with the last known position acquired (Figure 56).



**Figure 56 – The system analyzes the user position**

## USER IS INSIDE A BUILDING, BUT HIS ACTUAL POSITION DOESN'T MATCH WITH HIS LAST QR ACQUIRED.

In this case the GPS accuracy is low, so the user is inside a building. The system check that the last position acquired (if present) is coherent with the actual user position. If not, the system suggest the user to acquire a new valid QR code in order to establish which instructions provide to him (figure 57). In figure 58 we can see that the user can only update his position.

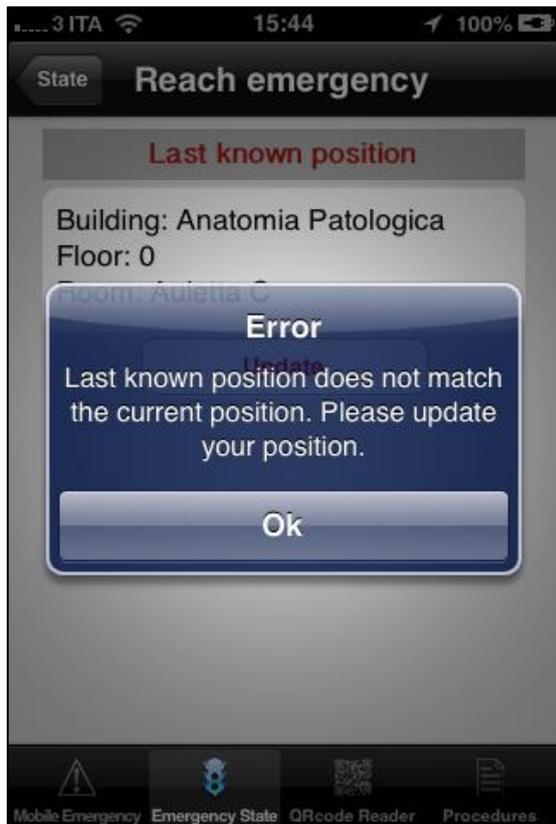


Figure 57 – Error, incoherent position

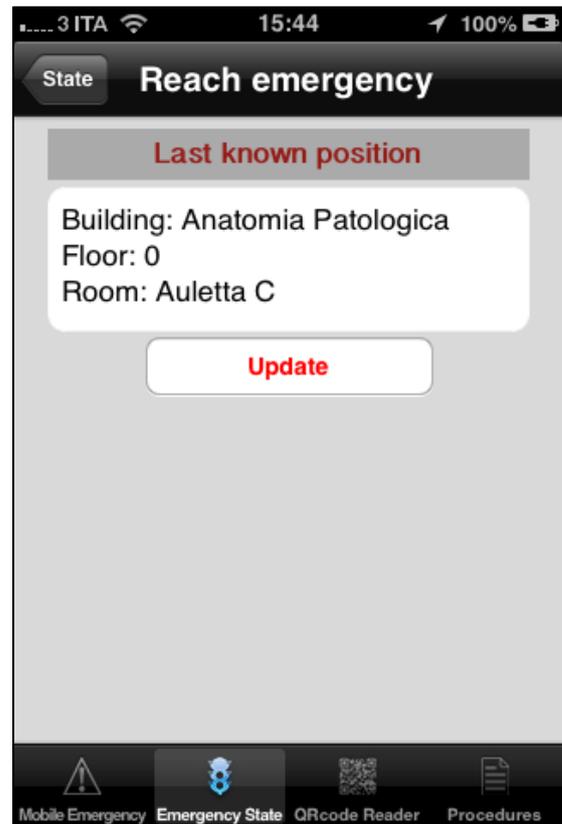


Figure 58 – User must update position

### USER IS INSIDE A DIFFERENT BUILDING

In this case the user GPS coordinates and his last acquired position are coherent but the user is not inside the emergency building. The system notifies this situation and suggests him to reach the nearest exit (figure 59).

This time the Emergency Reach View shows to user a new button titled “Exit from building” (fig. 60). By pressing this button, the user is guided towards the nearest exit like described in a previous paragraph (fig.61).

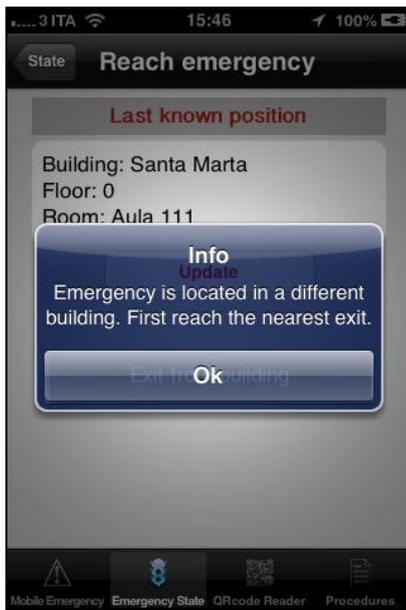


Figure 59 – System message

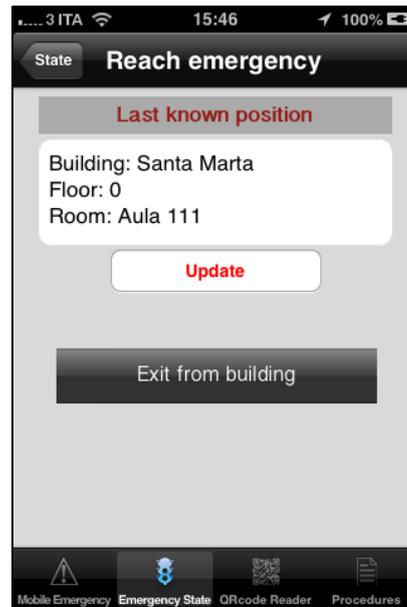


Figure 60 – Reach emergency interface

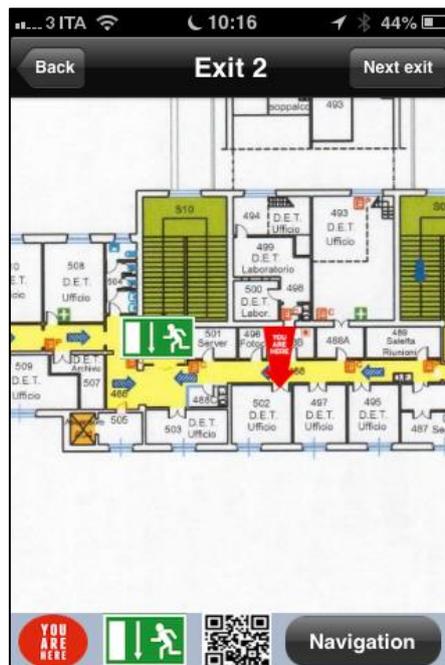


Figure 61 – Exit path

## USER IS OUTSIDE

In this case GPS accuracy is high so the system deduces the user is outside. The Emergency Reach interface now shows to user another option: “Reach building” (figure 62).

When the user selects this button, the system displays to him the walking path from his current location to the emergency building (figure 63).

The map is realized by using the iOS Map on which is drawn the path obtained by the Google API. At every movement the user position is constantly updated on the map, so he can understand if he is following the right route or not.

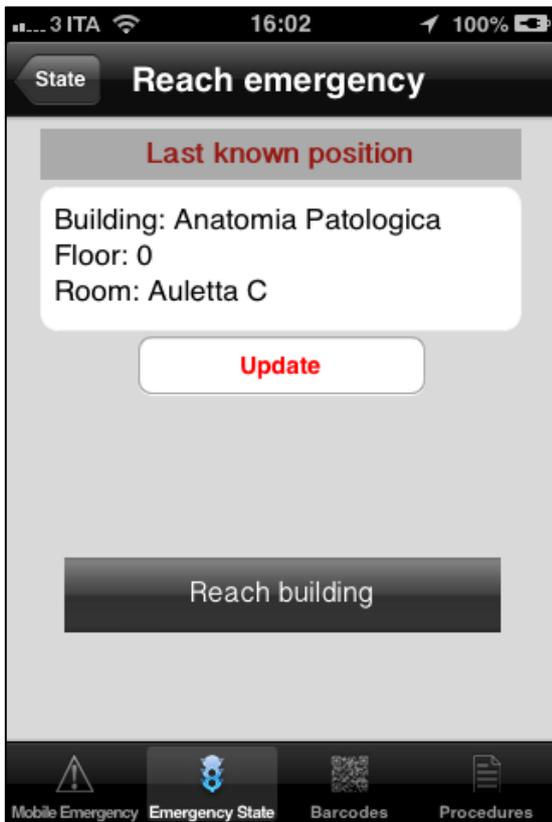


Figure 62 – Emergency Reach View



Figure 63 – Map showing the walking path

## USER IS INSIDE THE EMERGENCY BUILDING

In this case the user GPS coordinates and his last acquired position are coherent and the user is inside the emergency building. If the user is on a different floor the system suggest him to join the nearest stairs in order to reach the right emergency floor (figure 65). The user can visualize a map showing his position and that of the nearest stair; he can exploit the indoor navigation system to join the destination easily (fig. 66). As seen in the previous sections, the user can update his position by acquiring a new QR simply pressing the relative button in the bottom bar.

Once the user is on the same emergency floor, the system shows to him a map like that in figure 67 where are displayed the user and the emergency positions. Also in this case the user can exploit the indoor navigation system to reach the emergency place.

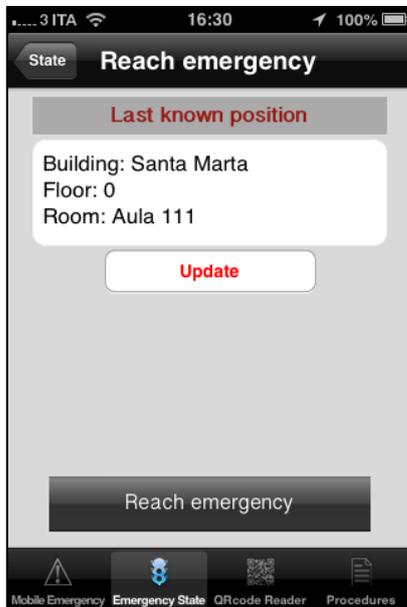


Figure 64 – Emergency Reach View



Figure 65 – System suggest



Figure 66 – Stairs position



Figure 67 – Map emergency position

## Procedure mode

As described previously, the application has a tab bar at the bottom of the screen. By selecting the last right option, the user switches to the Procedure Mode, by which he can access the multimedia resources available on the social network Mobile Medicine.

In this mode the application is able to collect and search files inside the Mobile Medicine Object Collection stored in the device. The application allows to get them, to search them and to organize them into icons and/or lists. Object can be both those collected from the Mobile Medicine portal <http://mobmed.axnmedis.org> directly accessible from the Application itself. The registration on the portal is free of charge. Object can be: medical calculators, documents, images, videos, procedure, medical dosages, checklists, audio, etc. They are useful as decision support system and for education purpose. On the help page of the portal you can find indication on how it is possible to contribute and work on groups, forum, with colleague and students. Search and download the Content Organizer application, please install. It is the improved version of this Mobile Medicine, presenting QR code and firing, GPS location, access to multiple social and best practice networks, more robust on communication, multilingual, e-Pub, etc.

To switch again to Emergency Mode, the user must select again the last right tab bar option.

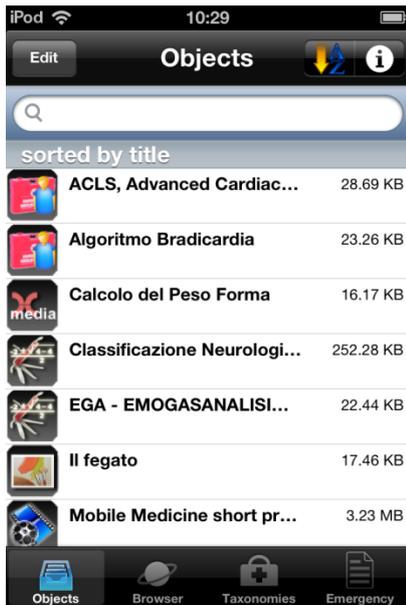


Fig 68 –Mobile Medicine Objects Collection



Fig 69 – Mobile Medicine Browser



Fig 70 – Taxonomies

## Mobile Emergency Pro: guided procedure

A typical usage of the mobile application is depicted in Figures A, B, C, D and E through a series of scenarios. The **Scenarios A** starts with a fire causing serious damages to the building. A medical operator uses the Mobile Emergency application and selects the “Launch emergency” (A.1); then the type of emergency is selected (A.2), and it gives other useful pieces of information on the position, number and the state of the people involved (A.3) and (A.4). Finally, the emergency is sent (A.4) and a confirmation is required (A.5).

The system asks the user if he want to send images or videos to the Operative Station (A.6). In positive case, the system redirects automatically the user to the Emergency Management section (A.7) where he can select multimedia content from the device gallery or directly from the camera. Once selected an image (or a video) the operator indicates a description and sends it (A.8) waiting a confirmation from the server (A.9). If the upload is successful the system redirects the user to the emergency sheet where he can see its detailed status.

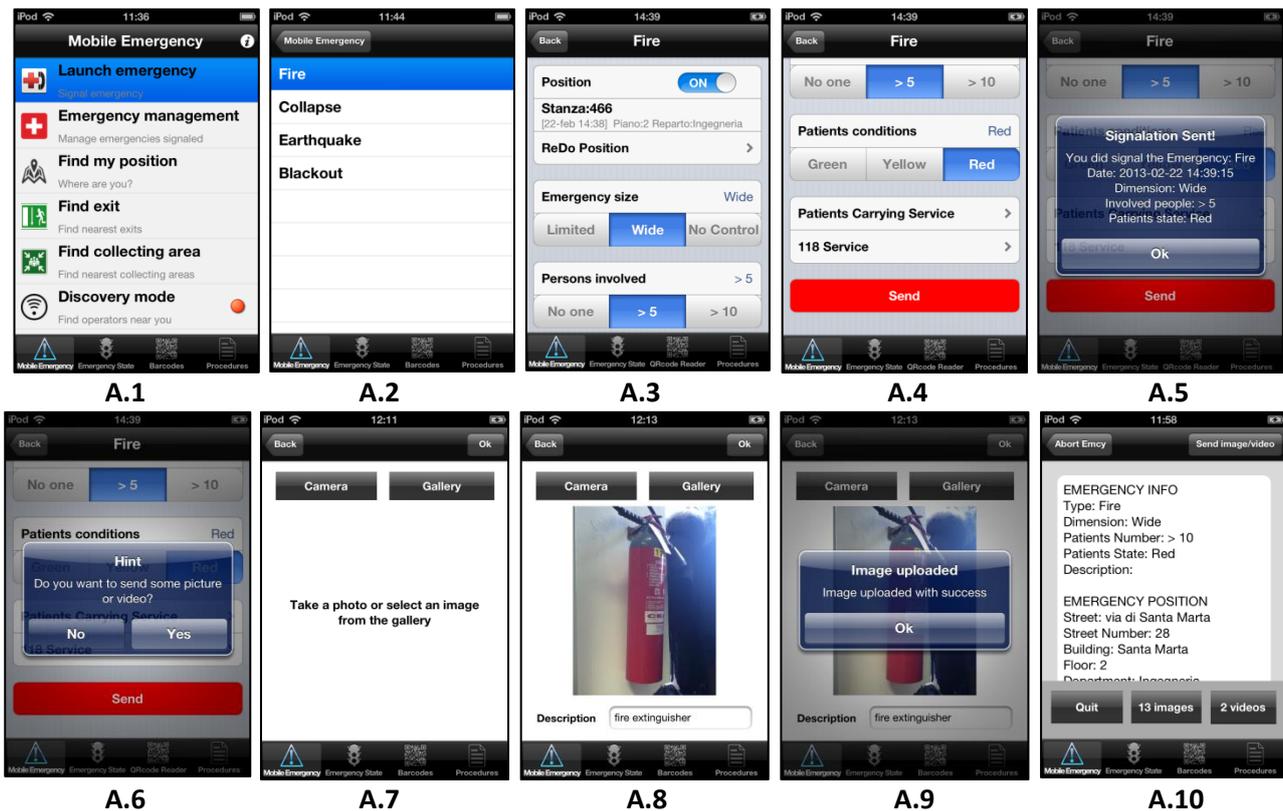


Figure A - Scenario A: the Emergency Call delivering.

**Scenario B.** The personnel at the Central Station receives a push notification by which it is alerted about the new emergency in progress. The operator decides to send a rescue team. To this end a push message is sent to rescue personnel to cope with the emergency (B.2) asking to each of them to accept the message from Mobile Emergency Pro application to get the instructions to follow and all the relevant information about the ongoing emergency. Once the notification is accepted, the application downloads the message and displays it to the user (B.3). From that page the user can consult the emergency status (B.4). At this point the operator asks the system to get the map to reach the emergency place. The system analyzes the user current GPS position (B.5) and, basing on it, it shows the right instructions. Supposing that the user is outside, the system indicates to reach the building first (B.6) showing the relative path (B.7). Once the right building is spotted, the personnel can take their own position with respect to the position of the Emergency by using a QR placed in proximity of doors and other relevant points (as the maps hung on the walls), see QR in (B.8) and (B.9). Once the position within the building has been taken, the system guides the user to reach the emergency position (B.10). The rescue team can spot its own position with respect to the emergency location (marked with a red arrow). The Scenario can go on by reaching the point and addressing the emergency, performing the triage and going to the exit (see Scenarios C) or moving the patients to the collecting area (see Scenarios D).

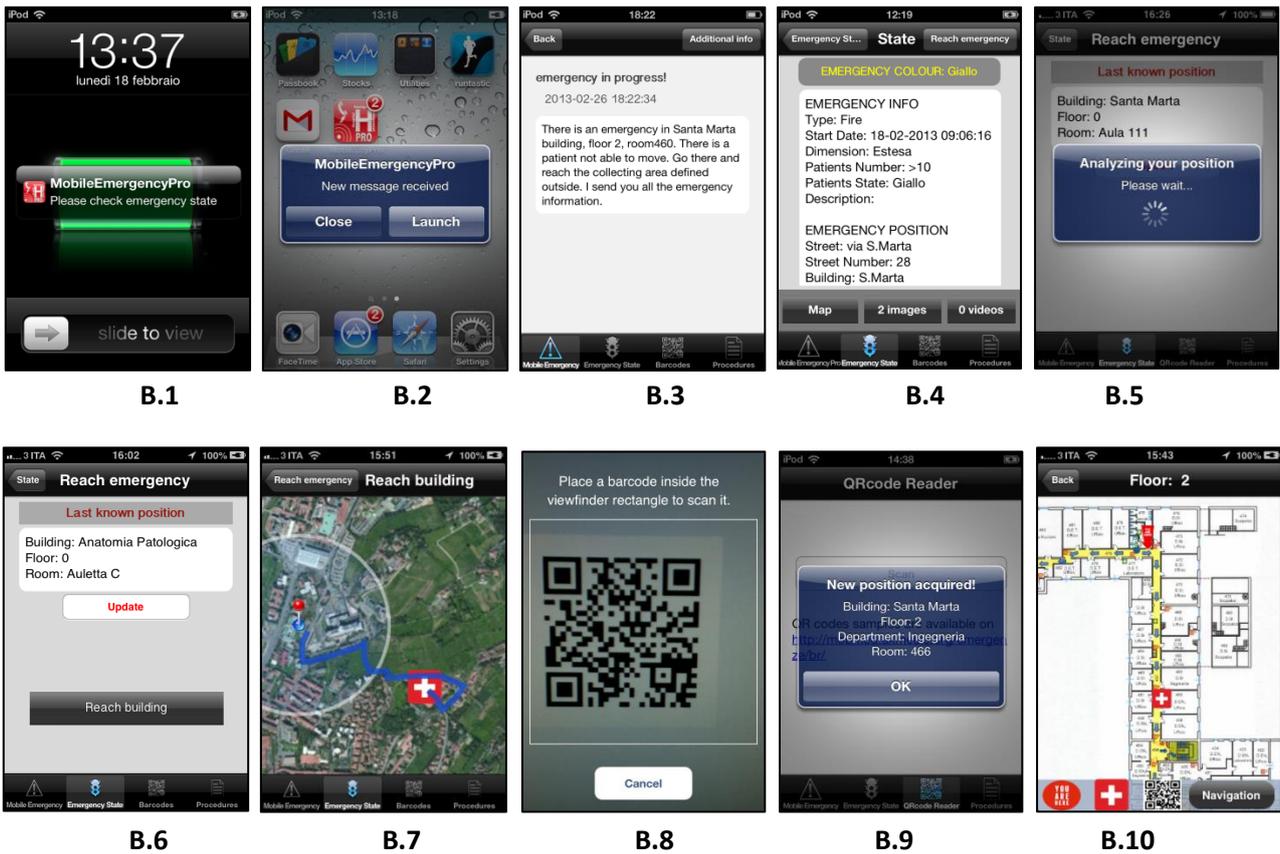


Figure B - Scenarios B: from B.1 to B.2, the emergency team reaches the emergency location.

**Scenarios C** describes the simple point of view of personnel able to leave the emergency location without waiting for the rescue team. This scenario is depicted by considering the sequence (C.1) and (C.2) to take their own position and continue with (C.3) and (C.4) to reach the Exit 2 assisted by the application's internal navigator.

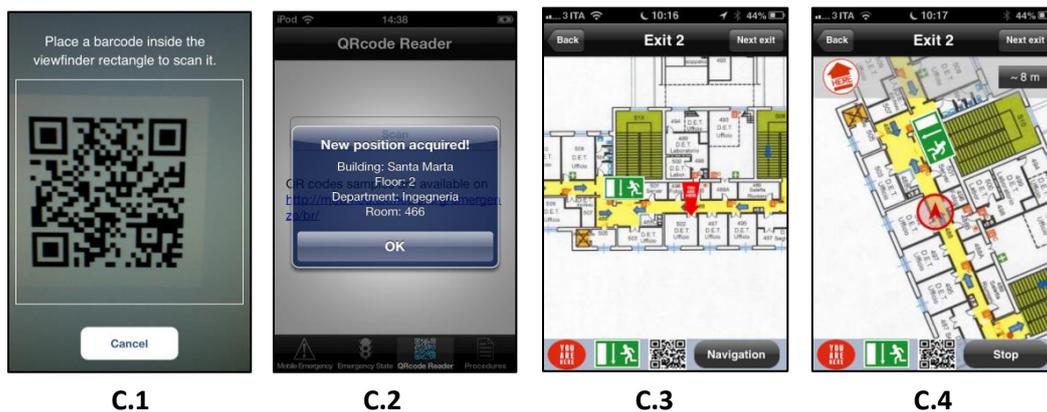


Figure C - Scenarios C: direct exit from (C.1)-(C.2) to move out (C.3) to (C.4).

**Scenarios D** consists in moving from the emergency location to a collecting area. The user can see all the indoor/outdoor collecting areas defined by the Operative Center. For each one is indicated the distance from the user position (D.1). If the user selects an indoor collecting area that is on a different floor the system alerts him (D.2) and shows to him the nearest stairs on a map (D.3). If instead the user selects a collecting point on the same floor, the system shows the path to reach it

(D.4). If the user is outside he may need to reach the outdoor area defined. The system shows the outdoor map with the necessary path from the user current position and that of the collecting area selected (D.5).



Figure D - Scenarios D: from emergency location (D.1) to collecting areas indoor (D.2)-(D.4) and outdoor (D.5).

**Scenarios E** depicts the advantage of the local wireless exploitation in connecting the operators who can locate one another by using the discovery mode (E.1). With this functionality operators can communicate both with a chat in broadcasting mode (E.2) and directly with a private chat with a single user (E.3) whose position can be displayed by a floor map (E.4).

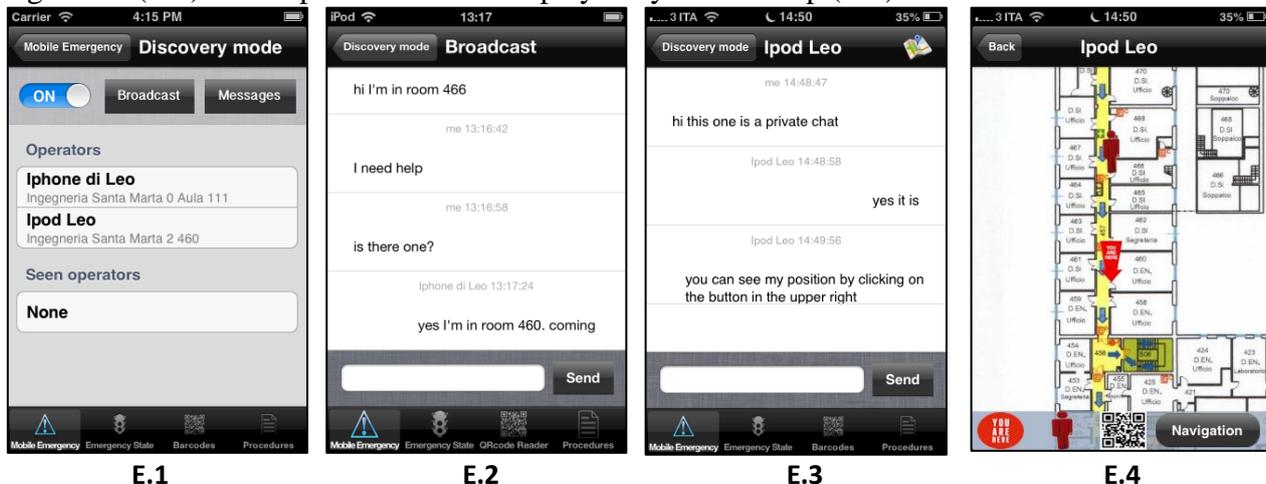


Figure E - Scenarios E shows some snapshots of direct discovering and chat among personnel in the emergency area (E.1)-(E.4).

## Mobile Medicine, medical procedures and content

In the Mobile Medicine scenario, the useful content types may range from *single files*: audio, video, images, documents, slides and animations; to *cross media* containing supportive tools such as a sort of mini-application (internally consisting of a set of files and descriptors). As depicted in Figure 6, examples of Mobile Medicine cross media content can be: **interactive guidelines/procedures** to

help users to follow procedures and taking decisions on the specific cases and pathologies. Examples are: Treatment algorithm ARDS ECMO, triage, ECG, Assessment of Consciousness, SAPS, ACLS, SOFA Score, BLS, SNG (Nasogastric tube), Apache Score, etc.; **calculators and tools** where the user may insert data/info collected out of the patient/context (such as: age, weight, pressure, temperature, habits, symptoms, conditions, reactions, etc.) to obtain from the device/content some estimations/suggestions to be used to take decisions. For example, the estimation about the probability of pulmonary emboli, the estimation of a dosage on the basis of patient weight, the assessment of neurological conditions on the basis of standard quantitative models, etc.



Figure – Some examples of Mobile Medicine section into Mobile Emergency application.