



i-locate - Indoor/outdoor LOcation and Asset management Through open gEodata (GA 621040)

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DELIVERABLE

Project Acronym: i-locate

Grant Agreement number: 621040

Project Title: Indoor/outdoor LOcation and Asset management Through open gEodata

D1.4 – System Architecture

Appendix 2: Detailed Use Cases of the i-locate portal

Revision: v.1.0

Authors:

Anestis Trypitsidis (EPSGR), Lucian Brancovean (INDSOFT), Giuseppe Conti (TRILOGIS)

Project co-funded by the European Commission within the ICT Policy Support Programme		
Dissemination Level		
P	Public	X
C	Confidential, only for members of the consortium and the Commission Services	

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REVISION HISTORY AND STATEMENT OF ORIGINALITY

Revision History

Revision	Date	Author	Organisation	Description
V0.5	5/5/2014	Lucian Brancovean	INDSOFT	First version
V0.6	1/6/2014	Lucian Brancovean	INDSOFT	Updated version
V1.0	21/6/2014	Giuseppe Conti	TRILOGIS	Final review

Statement of originality:

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

1 Initial note

This document is an annex to the i-locate deliverable D1.4 – System Architecture (which is available online from: <http://www.i-locate.eu/public-deliverables/>) and it provides an in-depth view of the specific features of the portal through a detailed description of its low-level use cases. These use cases have not been included in the i-locate deliverable D1.1 – Use cases description and Privacy Threat Vulnerability and Risk (Available online from: <http://www.i-locate.eu/public-deliverables/>) because of they are not related to pilot-related use cases, but rather to functional aspects of the portal as part of the i-locate infrastructure. Their importance for the definition of the features required by the portal during the design stage, has justified their detailed definition and inclusion within the D.1.4 as appendix.

The portal and its related conversion tools will have to address the use cases detained in the following sections. For the portal, two types of users will exist. The “basic user” is typically a lay-person, e.g. a citizen, a patient of an hospital, the visitor of a museum, or a taxpayer. This lay user can only see the information available within the portal, that is indoor maps, which can be interactively accessed or downloaded as open data. A second type of user will be instead an ‘advanced user’, that is someone from an institution that wishes to enrol in the **i-locate** portal. Typically this user would be a IT manager or an IT specialist. This user profile will have the privileges and tools to create and edit maps, in order to make them available to the large community of end users.

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2 Use cases related to the i-locate web portal

2.1 Actors

The actors of the use cases are divided in two categories, in terms of which the cases are described.

The first and most general actor type, is named “Basic User”. This is a user with limited technical skills, who uses the system in general in a read-only manner. The basic user can see maps, request and follow routes, receive alerts. Examples of actors included in the basic user type are: hospital patients, museum visitors, citizens (visiting city hall).

The second actor type of user is an “Advanced User” who has better technical skills, who can use most or all of the capabilities of the i-locate system. The advanced user can see, create, edit maps, add or remove information from the system. Examples of actors included in the advanced user type are: a site system admin (someone who is in charge of i-locate at a certain pilot site), map editor for a site, IT department employee at a site. An advanced user will also be able do anything a basic user can do.

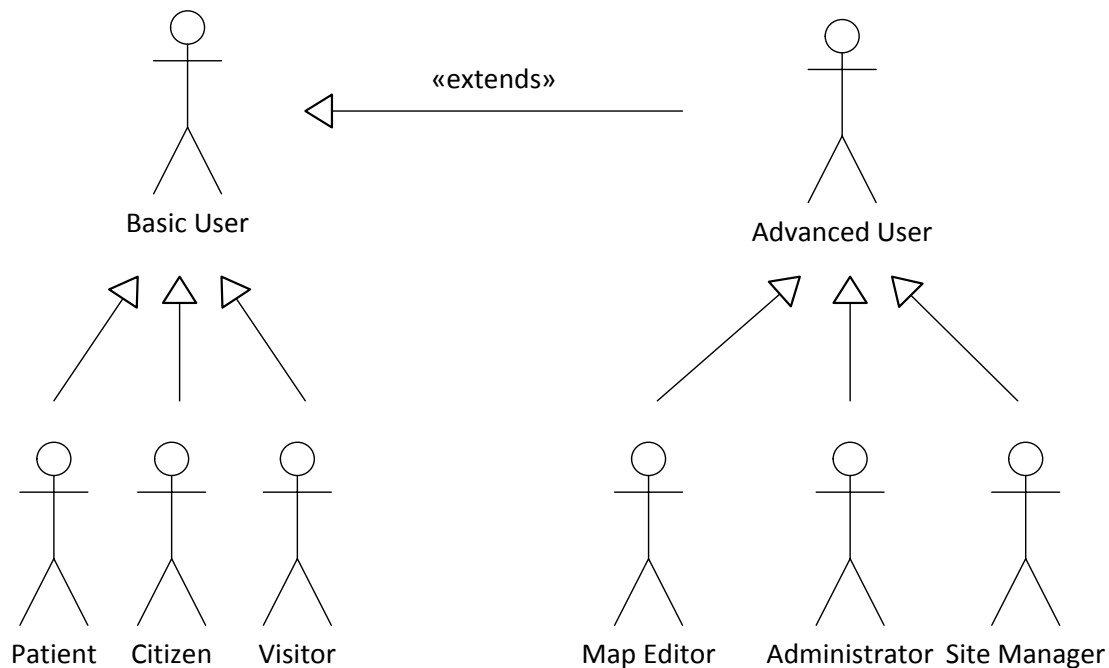


Figure 1: actors of the portal

2.2 'End-User' Portal Use Cases

Log in	
Who	Basic user.
Objectives	To log in to the i-locate portal.
Preconditions	<ul style="list-style-type: none"> An account for this user must exist.
Steps	<ul style="list-style-type: none"> Open the portal homepage in a browser; Click on "Log in"; A login form is displayed; Enter username and password; User is logged in, then redirected to the main page.
Technical details	<ul style="list-style-type: none"> If username or password are incorrect, an error message is displayed.

Log out	
Who	Basic user.
Objectives	Log out from the i-locate portal.
Preconditions	<ul style="list-style-type: none"> The user must be successfully logged in.
Steps	<ul style="list-style-type: none"> Click on "Log out"; User is logged out, then redirected to main page.
Technical details	<ul style="list-style-type: none"> If username or password are incorrect, an error message is displayed.

Register new user	
Who	Basic User.
Objectives	Create a new user account in the i-locate portal.
Steps	<ul style="list-style-type: none"> Open the portal homepage in a browser; Click on "Register"; A registration form is displayed; Enter username, password, email, and other details; Click register; A new user account is created.

Visualise a map	
Who	Basic User.
Objectives	Visualise the map of a certain site.
Steps	<ul style="list-style-type: none"> • Open the portal homepage page in a browser; • See the world map; • Interact with map to view to the desired site.

Interact with a map	
Who	Basic User.
Objectives	See certain features or places in a map.
Steps	<ul style="list-style-type: none"> • Open the portal homepage in browser; • Click on up/down/left/right arrows to pan on the map; • Drag map up/down/left/right to pan on the map; • Scroll up/down with the mouse wheel to zoom in / out; • Click on “Background” drop down menu to select the background of the map from a list (examples: Open Street Map, satellite view, Google Maps); • Click on one of the available floors to change the visible floor; • Visualise the map.

Get route	
Who	Basic User.
Objectives	Obtain a route between locations in a given site.
Steps	<ul style="list-style-type: none"> • Open the portal homepage in browser; • Navigate to list of sites with indoor maps; • Choose the site; • Enter locations (from, to), or choose the location from a list of locations available on the site, or point locations on the map; • See the route drawn on the map; • See the list of instructions (go straight by N meters, turn left, enter/exit building, go upstairs, etc.); • See map, Zoom, Pan, Scroll; • See available floors, change floor.



Technical details	<ul style="list-style-type: none">• Store list of sites in DB;• Display the list of sites in DB to select from;• Open the map viewer centred on a given site.
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2.3 'Admin/Manager' Portal Use Cases

Visualise a special map	
Who	Advanced User.
Objectives	Visualise a special map showing the location of managed assets on a map, or the location of tracked items / persons).
Steps	<ul style="list-style-type: none"> • Open the portal homepage in a browser; • Log in to portal; • Choose the map type; • Interact with the map (Zoom, Pan); • See available floors, change floor.
Technical details	<ul style="list-style-type: none"> • Special user accounts; • Need a source of metadata for tracked items (name, other details except location).

Create new site	
Who	Advanced User.
Objectives	Register a new site in <i>i-locate</i> .
Steps	<ul style="list-style-type: none"> • Open the portal homepage in a browser; • Login to portal; • Choose 'new site'; • Enter site name, parameters (geographic coordinates, number of levels).
Technical details	<ul style="list-style-type: none"> • The new site will be in staging mode by default.

Upload map section for site	
Who	Advanced User.
Objectives	Add a map section for a given site.
Preconditions	<ul style="list-style-type: none"> • A site for this map must be already created.
Steps	<ul style="list-style-type: none"> • Login to the portal; • Choose the site; • Upload a Shapefile with the selected map.
Technical details	<ul style="list-style-type: none"> • The user must provide a map in necessary format (e.g. shapefile);

	<ul style="list-style-type: none"> • The file is checked for consistency – if the check fails, the errors are displayed to the user; • A site may have several map sections.
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View site in staging mode	
Who	Advanced User.
Objectives	Preview the site map, check for errors, before publishing;
Steps	<ul style="list-style-type: none"> • Open the portal homepage in a browser; • Login to the portal; • Choose the site (the site must be already created); • Choose ‘view staging area’; • Interact with the map.
Technical details	<ul style="list-style-type: none"> • The server must keep track of data in staging or production mode.

Delete map section from site, while in staging	
Who	Advanced User.
Objectives	Remove a map section from site.
Steps	<ul style="list-style-type: none"> • Open the portal homepage in a browser; • Login to the portal; • Choose the site; • Choose the map from the list; • Choose ‘delete’.
Technical details	<ul style="list-style-type: none"> • The server must keep track of map sections.

Invoke topological checker on site	
Who	Advanced User.
Objectives	Check that a site data is consistent, useable.
Steps	<ul style="list-style-type: none"> • Open the portal homepage in a browser; • Login to the portal; • Choose the site (from sites in staging mode); • Choose ‘perform topological check’.

Technical details	<ul style="list-style-type: none"> • Topological check (e.g. for validation of IndoorGML data) invocation / results to be determined; • Only after passing this check a site may be promoted to production.
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Move site to production	
Who	Advanced User.
Objectives	Make a site visible for general public (after upload and testing).
Steps	<ul style="list-style-type: none"> • Open the portal homepage in a browser; • Login to the portal; • Choose the site (the site must be topologically checked); • Choose 'Move to production'.
Technical details	<ul style="list-style-type: none"> • Changes to sites must always be done in staging state; • A site may have different data in staging and production at the same time.

Remove site	
Who	Advanced User.
Objectives	Remove site from i-Locate.
Steps	<ul style="list-style-type: none"> • Open the portal homepage in a browser; • Login to the portal; • Choose the site; • Choose 'remove site'.

Add layer type	
Who	Advanced User.
Objectives	Create a new IndoorGML layer type.
Steps	<ul style="list-style-type: none"> • Select 'Add layer type' from menu; • Enter name, description for layer.

Map editing Use Cases

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Create new map	
Who	Advanced User.
Objectives	Create a new map starting from a shape file.
Steps	<ul style="list-style-type: none"> • Log in to the portal; • Choose site and section; • Start the map editor; • Choose 'new map' from menu; • Choose shape file to base on.
Technical details	<ul style="list-style-type: none"> • By using the space partitioner discussed in D.1.4, one or several IndoorGML objects (e.g. nodes of graphs) will be created automatically • The shape file will be displayed as background for the IndoorGML graph

Save map	
Who	Advanced User.
Objectives	Save a map after working on it (so that further work can be done at a later time).
Preconditions	<ul style="list-style-type: none"> • Have a map open in the map editor.
Steps	<ul style="list-style-type: none"> • Choose 'save map' from the menu; • The map editor is closed; • User is returned to the site / section where he/she can select new options.
Technical details	

Start editing	
Who	Advanced User.
Objectives	Start or resume the editing of a map.
Preconditions	<ul style="list-style-type: none"> • Have a map saved previously.
Steps	<ul style="list-style-type: none"> • Log in to the portal; • Select the site and the section of the map; • Choose "Edit Map".
Technical details	<ul style="list-style-type: none"> • The IndoorGML navigation graph will be displayed as an overlay on

	top of the floor plan described by the shapefile.
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Create layer	
Who	Advanced User.
Objectives	Create a new IndoorGML layer.
Preconditions	<ul style="list-style-type: none"> • Have a map open in the map editor.
Steps	<ul style="list-style-type: none"> • Select 'new layer' from the menu; • Select one of the available layers. (e.g. pedestrian, wheelchair).

Delete layer	
Who	Advanced User.
Objectives	Delete an IndoorGML layer.
Preconditions	<ul style="list-style-type: none"> • Have a map opened in the map editor, at least one layer.
Steps	<ul style="list-style-type: none"> • Select 'choose current layer' from menu; • Choose a layer from a list; • Select 'delete current layer' from a menu; • Confirm the deletion; • The layer is deleted.

Copy layer	
Who	Advanced User.
Objectives	Copy the IndoorGML layer. (To minimize work on a new layer).
Preconditions	<ul style="list-style-type: none"> • Have a map opened in the map editor, at least one layer.
Steps	<ul style="list-style-type: none"> • Select 'copy layer' from menu; • Choose the layer to copy from existing layers; • Choose the layer to copy to from available layer types; • Confirm copy; • The new layer is created with content copied from selected existing layer.

Create new graph node (including anchor node) in current layer

Who	Advanced User.
Objectives	Create a new node in the IndoorGML navigation graph.
Preconditions	<ul style="list-style-type: none"> • Have a map opened in the map editor; • Have a layer selected as current layer.
Steps	<ul style="list-style-type: none"> • Click on 'new node' button on the toolbar • Click on map to create the new node
Technical details	<ul style="list-style-type: none"> • A method for associating the node with a cell (room, hallway, etc) is needed. • In case of anchor node additional properties (e.g. link to an outdoor network) are possible to set.

Delete a graph node (including anchor node) in the current layer

Who	Advanced User.
Objectives	Delete a node in the IndoorGML navigation graph.
Preconditions	<ul style="list-style-type: none"> • Have a map opened in the map editor; • Have a layer selected as current layer.
Steps	<ul style="list-style-type: none"> • Click on the node to be deleted; • Click on 'delete node' on the toolbar.
Technical details	<ul style="list-style-type: none"> • If the node has transitions to other nodes, ask for confirmation. If confirmed, delete node and all associated transitions.

Change properties of a graph node (including anchor node) in the current layer

Who	Advanced User.
Objectives	Change node properties in the IndoorGML navigation graph.
Preconditions	<ul style="list-style-type: none"> • Have a map opened in the map editor; • Have a layer selected as current layer.
Steps	<ul style="list-style-type: none"> • Click on the node to be edited; • Click on 'node properties' on the toolbar; • Add / remove / edit node properties from a list.

Technical details	<ul style="list-style-type: none"> A list of available properties should be obtained from somewhere.
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Create new graph edge in the current layer	
Who	Advanced User.
Objectives	Create a new edge in the IndoorGML navigation graph.
Preconditions	<ul style="list-style-type: none"> Have a map opened in the map editor; Have a layer selected as current layer; Have some nodes available for connecting.
Steps	<ul style="list-style-type: none"> Click on 'new transition' on the toolbar; Click on the first node; Click on the second node.
Technical details	<ul style="list-style-type: none"> A snapping mechanism must be implemented to facilitate interactions with nodes.

Delete a graph edge in the current layer	
Who	Advanced User.
Objectives	Delete an edge from the IndoorGML navigation graph.
Preconditions	<ul style="list-style-type: none"> Have a map opened in the map editor; Have a layer selected as current layer.
Steps	<ul style="list-style-type: none"> Click on 'delete transition' on the toolbar; Click on the transition to delete (the nodes will be left untouched).
Technical details	<ul style="list-style-type: none"> N/A

Change properties for a graph edge	
Who	Advanced User.
Objectives	Change properties for an edge in the IndoorGML navigation graph.
Preconditions	<ul style="list-style-type: none"> Have a map open in the map editor; Have a layer selected as current layer.
Steps	<ul style="list-style-type: none"> Click on the transition to edit;



	<ul style="list-style-type: none">• Click on 'edit transition properties' on the toolbar;• Add / remove / edit edge properties from a list.
Technical details	<ul style="list-style-type: none">• A list of available properties should be obtained from somewhere.