Interreg Co-funded by the European Union

Italy – Croatia

Digital Plan

Project DIGITAL PLAN

User Manual

Deliverable no. D.1.5.2

Done by LP GAL Molise



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Italy – Croatia

Digital Plan

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1. Introduction

The web app described in this document is part of the project Digital Plan, carried out under the Interreg Italia-Croazia cross-border cooperation programme, with the aim of digitalising the civil protection plans already in force across the territories of the participating partner organisations. Municipalities and other local authorities are required to maintain an up-to-date territorial plan describing the hazards present within their jurisdiction, the resources available to respond to an emergency, and the regulations governing land use and construction. This information has traditionally been maintained through paper documents, spreadsheets, CAD drawings and PDF attachments distributed across multiple offices, which makes it difficult to keep current, to cross reference against accurate geographic data, and to share with the parties who require it, including technical staff, emergency responders and the public.

DigitalPlan consolidates this information into a single, geographically integrated system. It enables a municipality or partner organisation to digitise its territorial and civil protection plan on an interactive map, attach supporting documentation, apply a shared classification system, monitor environmental risk through connected sensors by means of its Decision Support System, commonly abbreviated as DSS, and publish a public facing version of the plan for consultation by citizens, without requiring specialised geographic information system software or training. By combining plan digitisation with continuous, sensor-based risk monitoring, the platform supports both everyday planning work and the faster, better informed response that an emergency demands, contributing to the wider cross-border effort to strengthen disaster risk reduction and resilience across the cooperating territories.

This manual is intended for the individuals who operate the platform: staff at partner organisations responsible for digitising and maintaining plan content, administrators responsible for user accounts and partner organisations, technical staff responsible for geographic layers and risk monitoring configuration, and members of the public who consult the platform's public facing pages. Each chapter describes the purpose of a given section of the platform, its intended audience, and its functionality. Matters relating to the platform's internal architecture or implementation are outside the scope of this manual; refer to the separate technical manual for that information.

Readers using the platform for the first time should proceed to the following chapter, Platform Overview, which introduces the two applications that constitute the platform, followed by User Roles, which describes the roles relevant to each type of user, before proceeding to Getting Started and Login.

2. Platform Overview

DigitalPlan consists of two separate applications, each addressing a distinct audience and purpose.

The main application provides the platform's operational functionality. It is intended for staff at partner organisations, typically municipalities, technical configuration staff, and administrators. All functionality involving the creation or modification of data resides here: digitising plan content on a map, registering plan records, managing documents, maintaining the catalogue of geographic layers, defining the classification system used across the platform, configuring environmental risk monitoring, and managing user accounts and partner organisations. Because this functionality involves organisation specific and



administrative data, the main application requires authentication, and the features available to a given user depend on the role assigned to their account.

The public application provides public access to a defined subset of this information. It does not require authentication. A visitor may use it to view a public map of available plans, consult public plan documents, and view the current environmental risk and alarm status of a territory. A login option is also available within the public application, primarily for staff who prefer to access the platForm from that entry point; authentication is not required to use its public facing sections.

The separation between the two applications ensures that information intended for the public is presented in a simplified, read-only format, without exposing the organization's administrative tools or confidential data to unauthenticated visitors.

Once authentication is complete, the main application features four functional groups. The Operations group contains the modules used for the day-to-day management of plans: Digitisation Plan, Plan Management, Plan Documents, User Guides, and Request Flow. The Cartography group contains the modules used to manage the map's basic geographic layers. The Configuration group contains the modules used to define the reference data shared across the entire platform: Themes and Classes Management and DSS Management. The Administration group is reserved for administrators and allows them to manage users and partners. A fifth section of the menu, called Public, provides direct links to the three public-facing pages for authenticated staff, opening the public application in a new browser tab.



The following chapters describe each of these modules in turn, beginning with a description of the platform's roles, since the relevance of subsequent chapters depends on the reader's assigned role.

3. User Roles

Access to the platform’s features depends on the user role associated with your account; depending on the role assigned, certain features may or may not be available. The available user roles, along with their associated responsibilities and features, are described below.

At the foundation is the Viewer, which is not truly an account but the experience of anyone who consults the platform without signing in, through the public application: browsing plans on a public map, consulting public plan documents, and viewing the current environmental risk and alarm status of a territory, always in a simplified, read only form. The Public Map and Public Risks and Alarms chapters describe this experience in full, alongside the public facing view described in the Plan Documents chapter.

Signing in already grants considerably more than the public application does, and it does so before any further role is even taken into account: simply holding a valid, authenticated account is enough to digitise plan content in the Digitalisation Plan module, to consult and manage documents in the Plan Documents module, and to upload, describe, classify and remove geographic layers in the Layer Management module, all scoped to the user's own partner organisation. The same account can also consult the platform's built-in user guides and use the Request Flow module to request or offer resources during an emergency. This baseline comes with every account, whether or not either of the two further roles below has additionally been assigned to it.



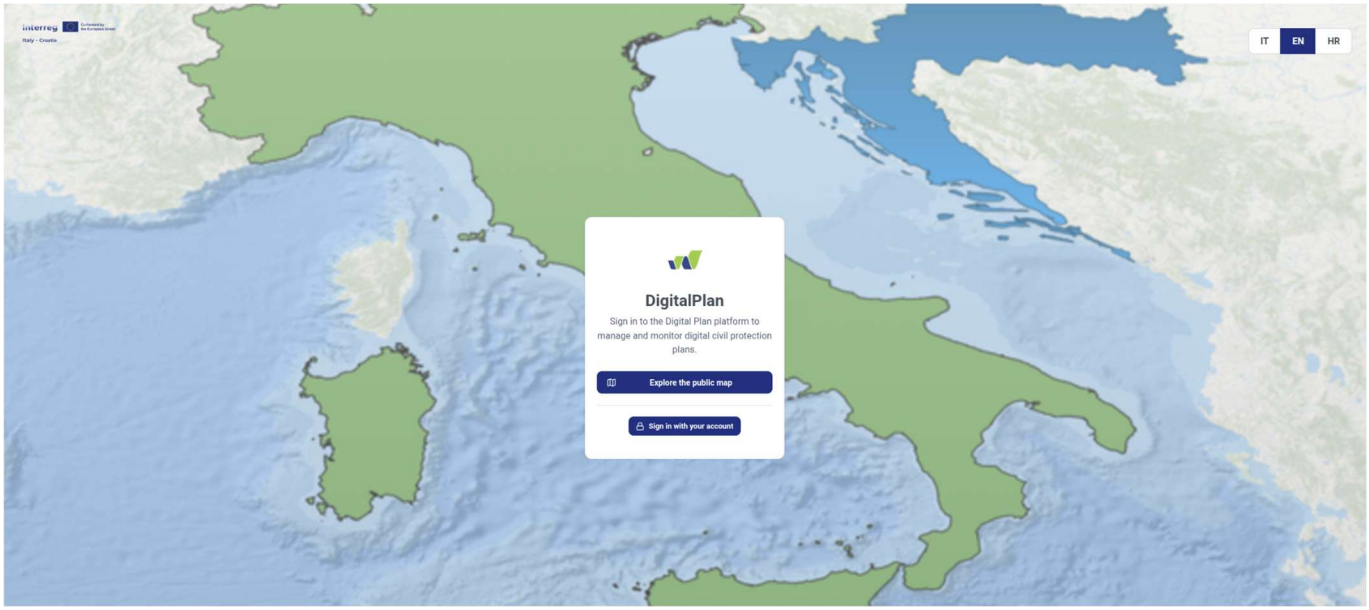
The Administrator role builds on this baseline within a single partner organisation, to which the account is permanently tied: an Administrator can also view and create users, register and manage plans, and configure risk monitoring thresholds and alarms for that organisation, on top of everything already available to any registered user. The Super Administrator sits above the Administrator, tied to no single organisation and able to do, across every partner registered on the platform, everything an Administrator or any registered user can do for one, managing users, plans, risk monitoring and geographic layers for any organisation. This role alone can additionally register, edit and remove partner organisations, alone defines the platform's thematic and class structure, and alone uploads the Request Flow document and manages the User Guides catalogue.

The following chapter, Getting Started and Login, describes the initial access procedure common to every role described above.

4. Getting Started and Login

This chapter applies to every role described in the preceding chapter and describes the initial access procedure for both applications.





To reach the restricted section of the platform, the main application is opened in a web browser; if no valid session exists, the user is redirected to a login page rather than a form specific to DigitalPlan, since credentials are entered and verified by a dedicated identity management application employing modern security standards, not by DigitalPlan itself. Once authentication is complete, the user is directed to the Digitisation Plan section, which serves as the default landing page for every authenticated account, and the side menu then shows only the sections corresponding to the role assigned to it, as described in the previous chapter; if an expected section does not appear, this generally means the corresponding role has not been assigned, and the account's administrator should be asked to grant it. Attempting to reach a section without the required role, including by entering its address directly, results in redirection to an unauthorised access page instead.

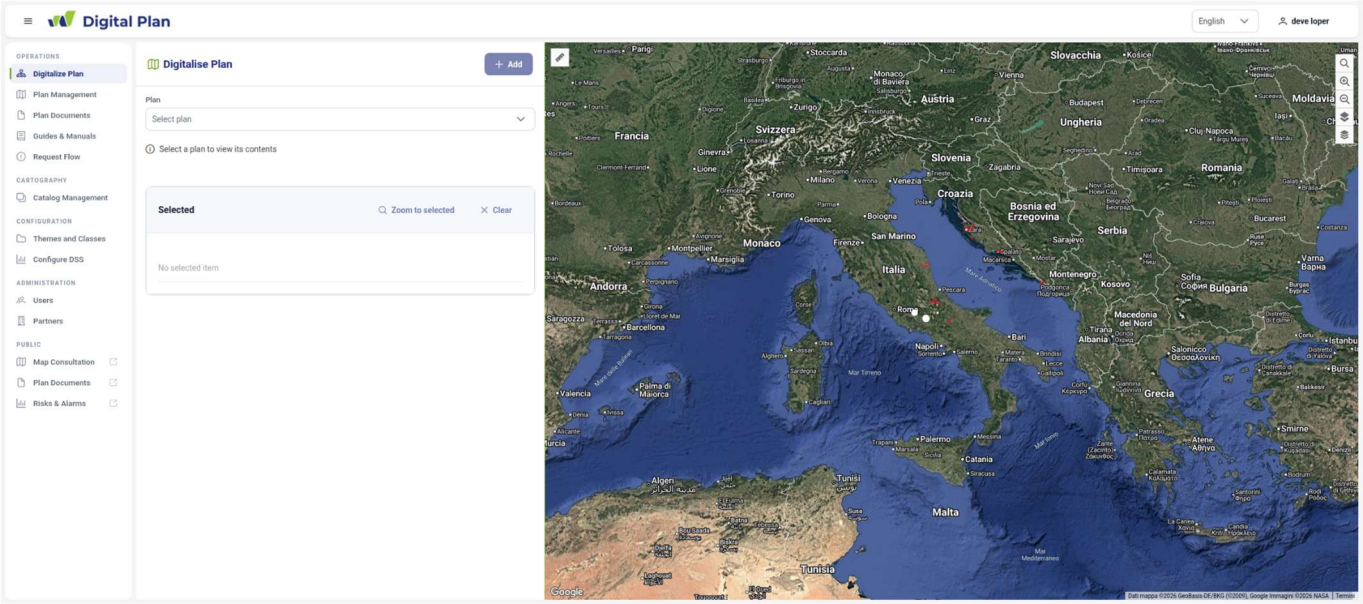
Sessions are not indefinite. Following a period of inactivity, or if the session is otherwise invalidated, the next attempted action redirects the user back to the login page, and re-authenticating restores access without any loss of previously saved data.

A language selector at the top of the screen allows switching between Italian and English at any time, both fully supported throughout the platform; Croatian may also appear as an option in parts of the main application, though its translation has not yet been completed, and selecting it currently results in untranslated interface text.

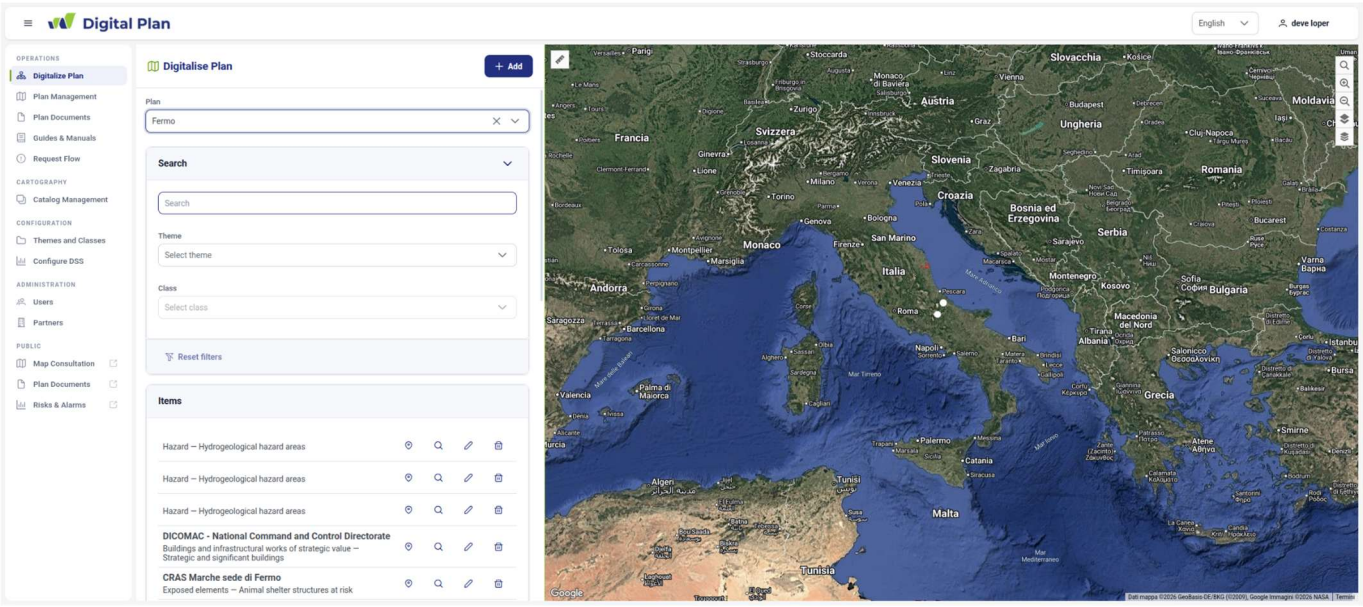
The public application, by contrast, requires no authentication at all, and can be reached directly to browse the public map, consult public plan documents, or view the public risks and alarms page, each described in a later chapter. A login option is still shown on its initial screen, for staff who prefer to authenticate from that entry point, but it is never required simply to consult what the public application makes available.

5. Digitalisation Plan

Digitising plan content requires no specific role beyond having a registered account: any user can create, edit and delete elements within their own partner organisation.

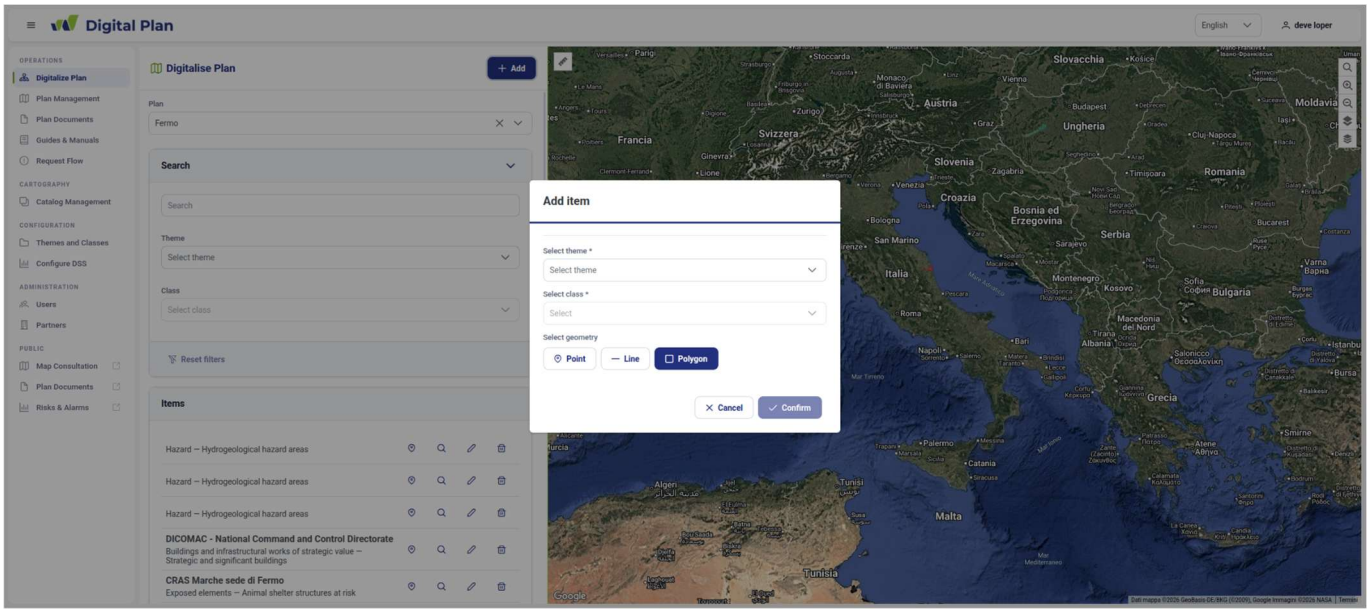


A civil protection or territorial plan requires precise geographic detail to be operationally useful, since the location, type and characteristics of elements such as strategic buildings must be recorded accurately rather than referenced in general terms. Where this information was once scattered across separate CAD files, spreadsheets and manual annotations that were difficult to keep synchronised, the Digitalisation Plan module consolidates it into a single, continuously maintained record, created directly on an interactive map; it also serves as the default landing page for all authenticated users.



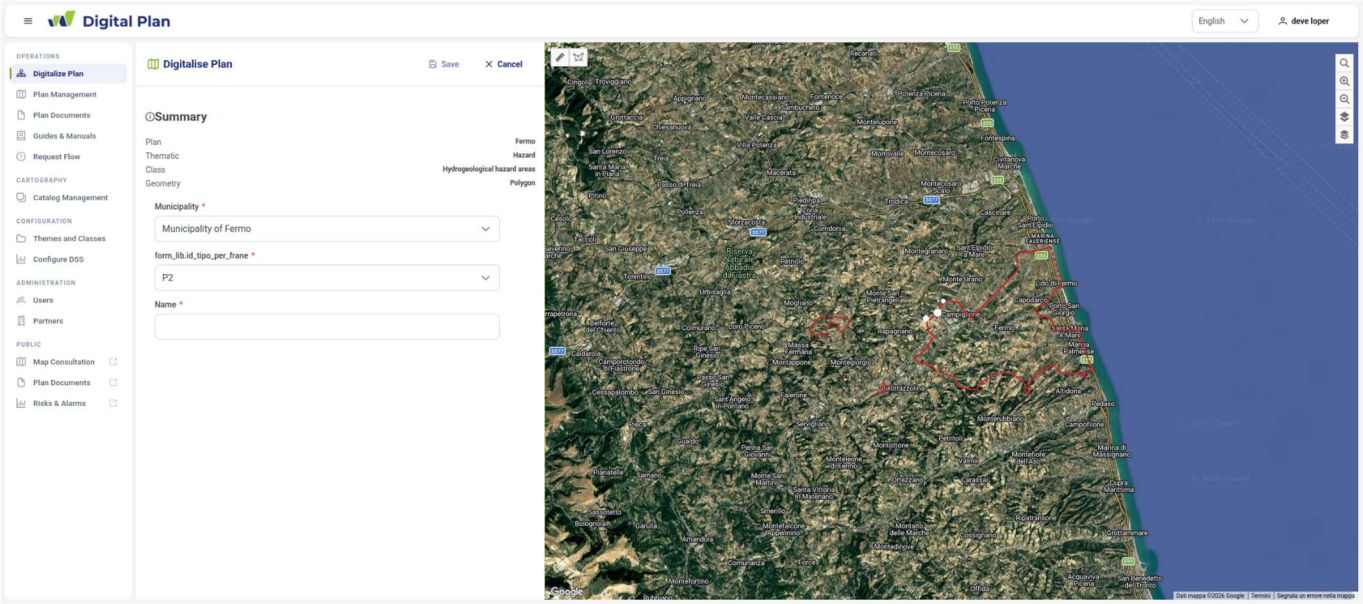
The screen is divided between a panel on the left and a full screen map on the right, and shows nothing until a plan has been selected from a dropdown list, since the platform hosts plans for multiple organisations at once: a Super Administrator selects from across every registered organisation, while other users choose among the plans belonging to their own. Selecting a plan also draws its geographic area of application on the map, shown as a red, dashed polygon in the Piani layer and taken from the shapefile attached to the plan in Plan

Management; every element added to the plan from this point on must be drawn within that boundary, which the map enforces while drawing. A search panel then allows the plan's geographic elements to be filtered by free text, theme and class, with active filters indicated and easily reset, and a paginated list below the filters shows each element's name, theme and class; from there, an element can be highlighted on the map, zoomed to, edited or deleted.



Adding a new element begins with the Add control, which opens a form for choosing the element's theme and class and the type of geometry to draw, point, line or polygon, before the geometry itself is drawn directly on the map; themes and classes are defined centrally in Themes and Classes Management, so that the same terminology applies across every organisation. Selecting an element for editing instead shows a summary of its plan, theme, class and geometry, followed by a form whose fields vary according to the selected class, a strategic building, for instance, requiring its name and number of floors, while other classes

call for different attributes of their own. A selection bar at the bottom of the screen lists currently selected elements, with options to zoom to the full selection or clear it, and every save, update or deletion produces a confirmation message, or, where the operation cannot be completed, an error message naming the condition that must be resolved first.

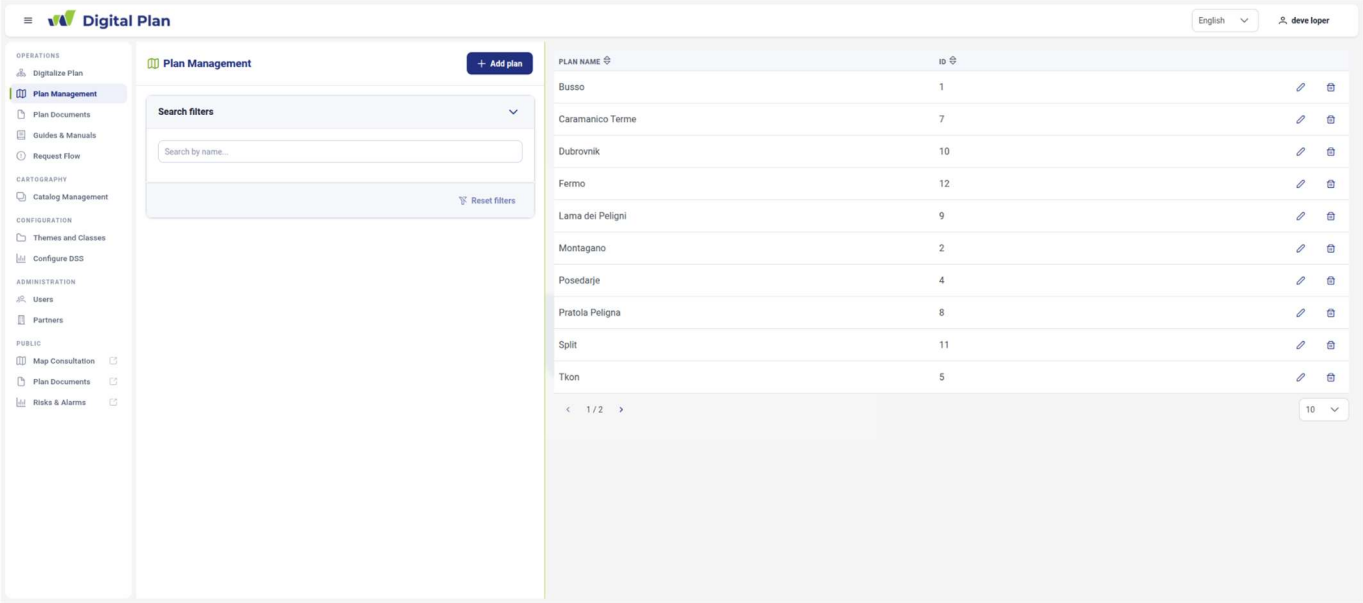


When a new hazard area is identified following an event, for example, a registered user at the partner organisation selects the relevant plan, adds a new element, assigns its theme and class, draws the affected area as a polygon on the map, and completes the class specific fields; the update is then reflected wherever the plan is subsequently consulted.

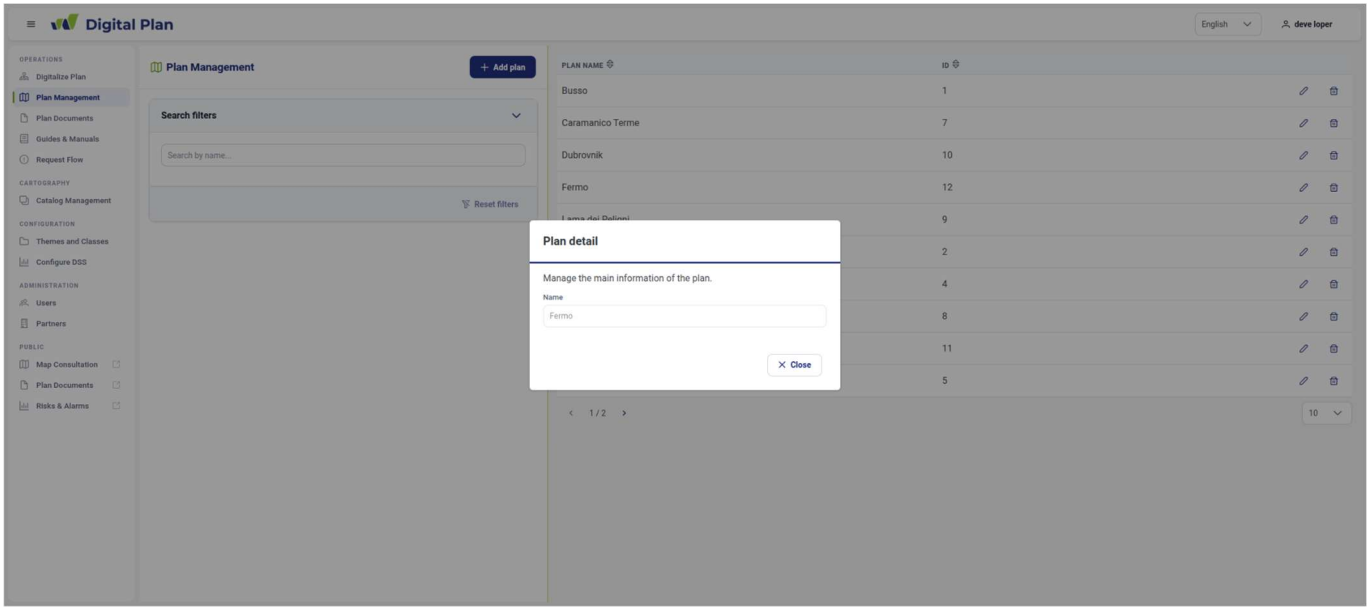
6. Plan Management

Registering a plan as a named record is an administrative function, handled by the Administrator role for their own partner organisation and by the Super Administrator for any

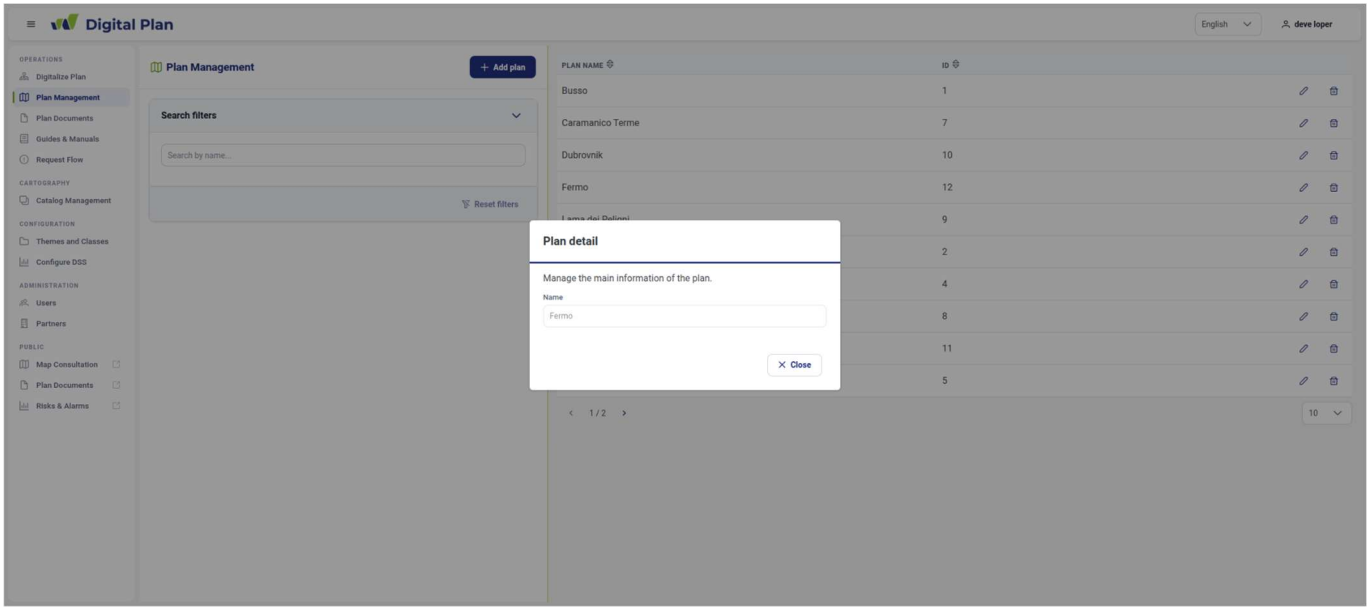
registered organisation; digitising the plan's actual content, described in the previous chapter, requires no specific role and takes place in a separate module.



Before a plan's geographic content can be digitised, the plan must first exist as a record on the platform, associated with the appropriate organisation and with a shapefile defining the geographic area the plan applies to. When the plan is created, the platform reads this shapefile and uses it to establish that area on the map; every element subsequently digitised for the plan, through the functionality described in the previous chapter, must fall geographically within it. Plan Management performs this registration and provides the reference that the Digitalisation Plan module's content is subsequently associated with.



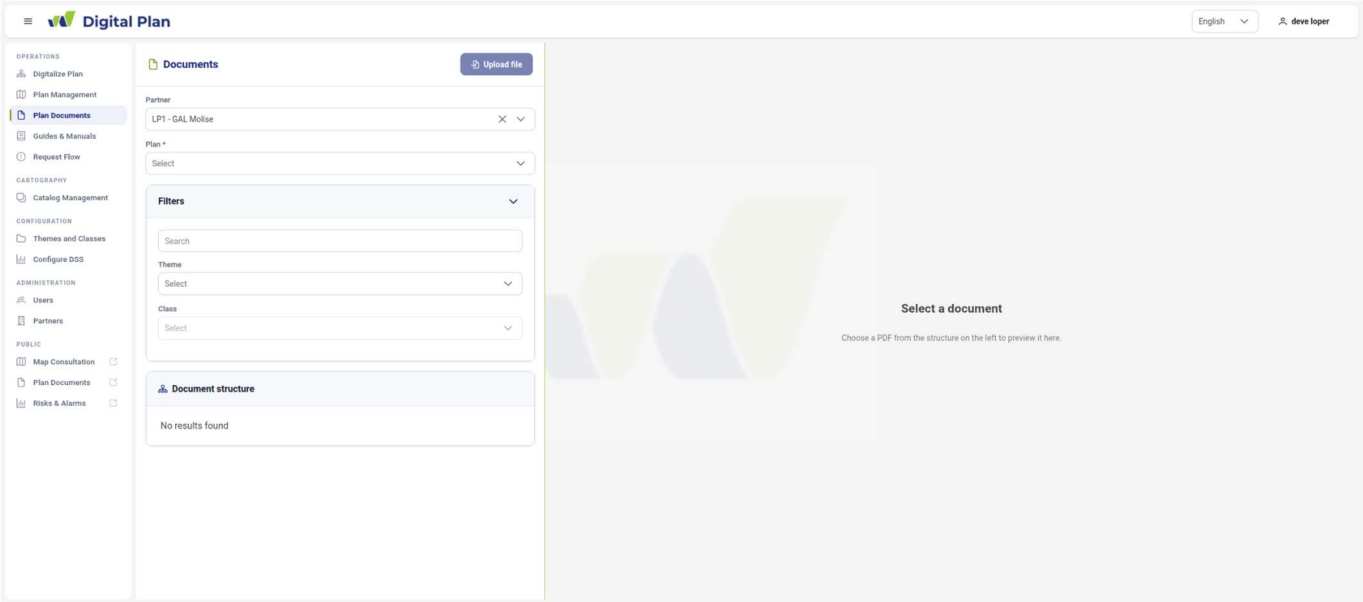
The main screen displays a searchable, sortable, paginated table of registered plans by name, showing only the plans of an Administrator's own organisation, or, for a Super Administrator, plans across every registered organisation. Adding a plan opens a dialog for entering its name and uploading the shapefile that defines its area of application, either by drag and drop or file selection, with a progress indicator during upload; editing a plan reopens the same dialog, pre populated with its current details, to update the name or replace the shapefile, while viewing a plan opens it in read only mode. Deleting a plan requires confirmation before the record is removed.



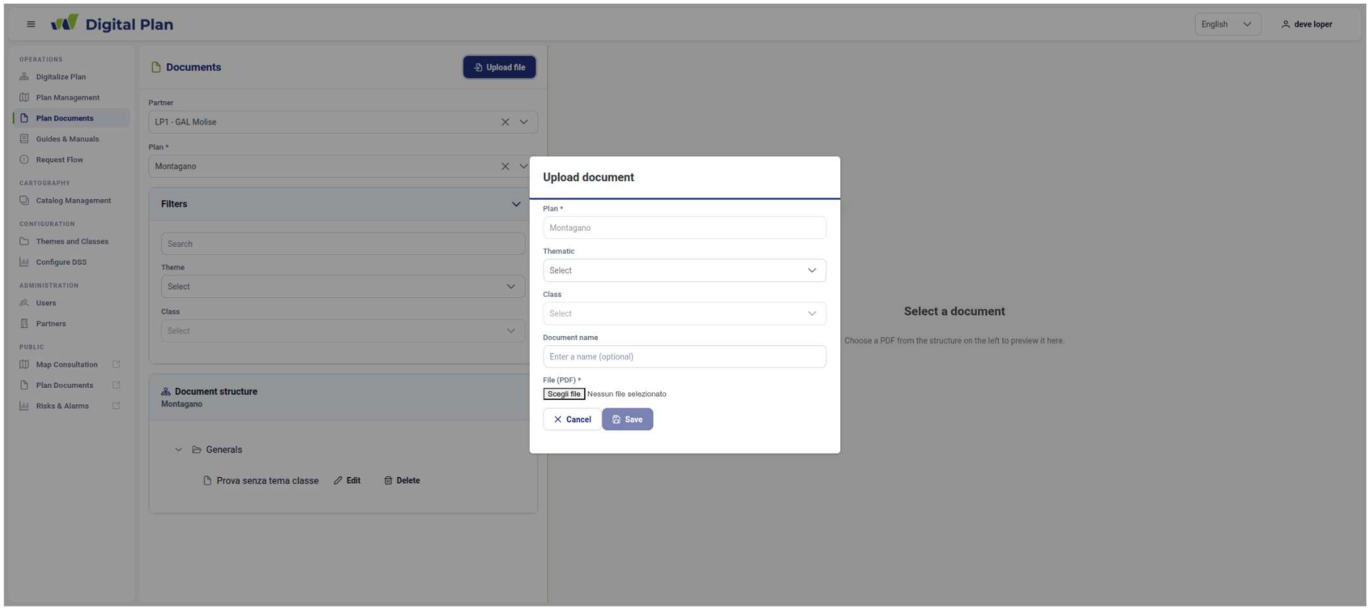
Plan Management and Digitalisation Plan address distinct functions that are easy to confuse because of their similar names: Plan Management maintains the registry of plans as named records with their area of application defined by a shapefile, while Digitalisation Plan maintains the geographic content associated with a given plan, its hazard zones, strategic buildings and related elements, all of which must lie within that area. In typical use, a plan is registered here before its geographic content is developed in Digitalisation Plan.

7. Plan Documents

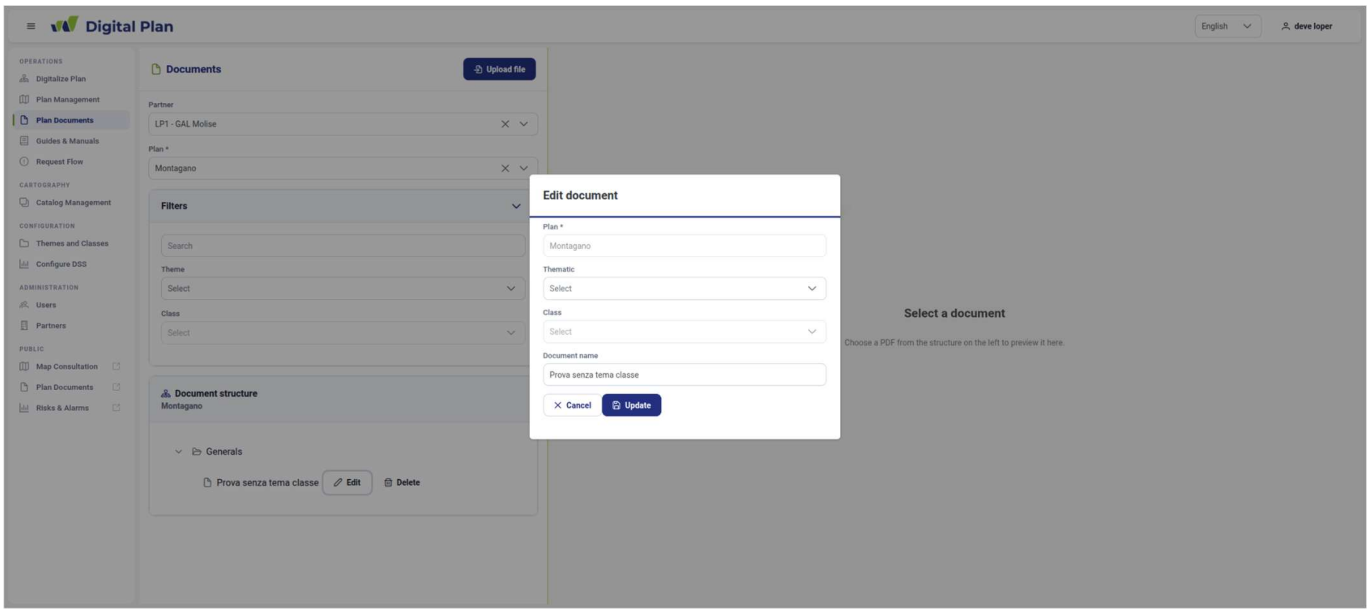
Plan Documents is shared between the main application and the public application, and addresses two different audiences accordingly. In the main application, any registered user may consult, upload, edit and delete the documents belonging to their own partner organisation without needing a specific role, while a Super Administrator may do the same for any registered organisation. In the public application the same module is accessible to any member of the public without authentication, always in a read only form.



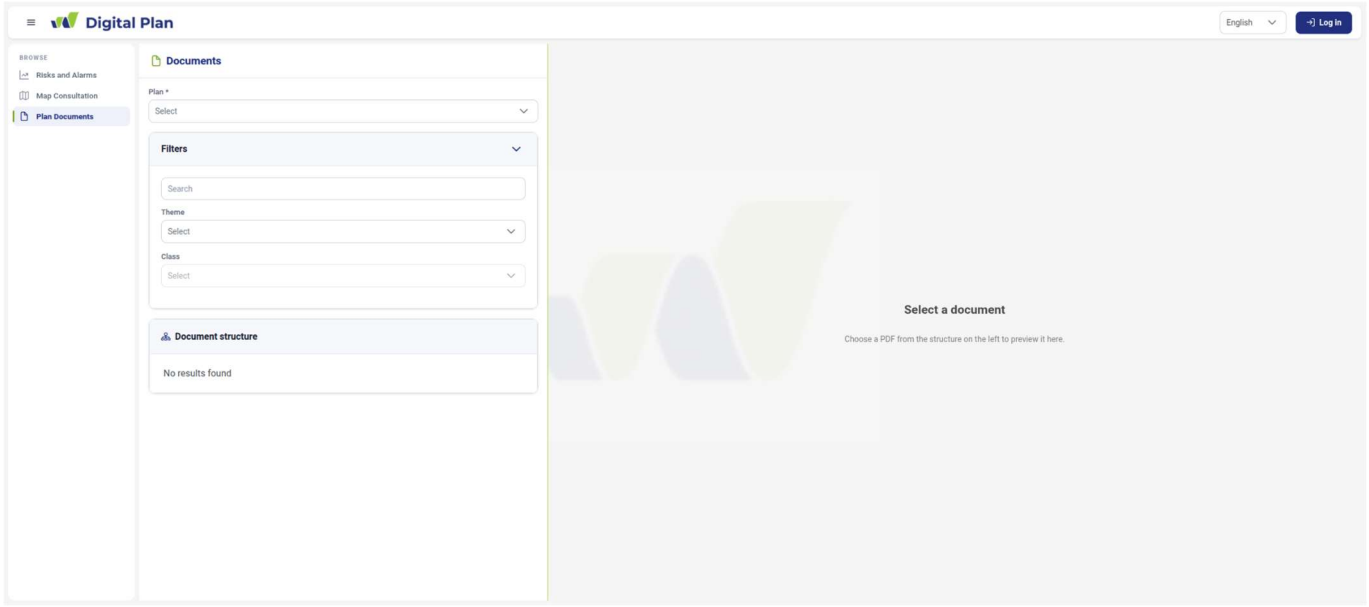
A territorial or civil protection plan is accompanied by supporting documentation, technical reports, regulatory attachments, official approvals, that substantiates the content shown on the map. Plan Documents provides a centralised, searchable repository for this documentation, organised using the platform's shared theme and class system, so that the same documents remain available to internal staff and, where appropriate, to the public alike.



The module consists of a single screen: a filter panel on the left, covering partner organisation, plan, theme, class and free text, a document tree in the centre organised by theme and class, and an embedded PDF viewer on the right that displays whichever document is selected. In the main application, authenticating is enough to browse the tree and read its documents; uploading a new document, restricted to PDF format, renaming it, changing its theme and class, or deleting it, subject to confirmation, requires nothing more than a registered account either, so long as the document belongs to the user's own partner organisation.



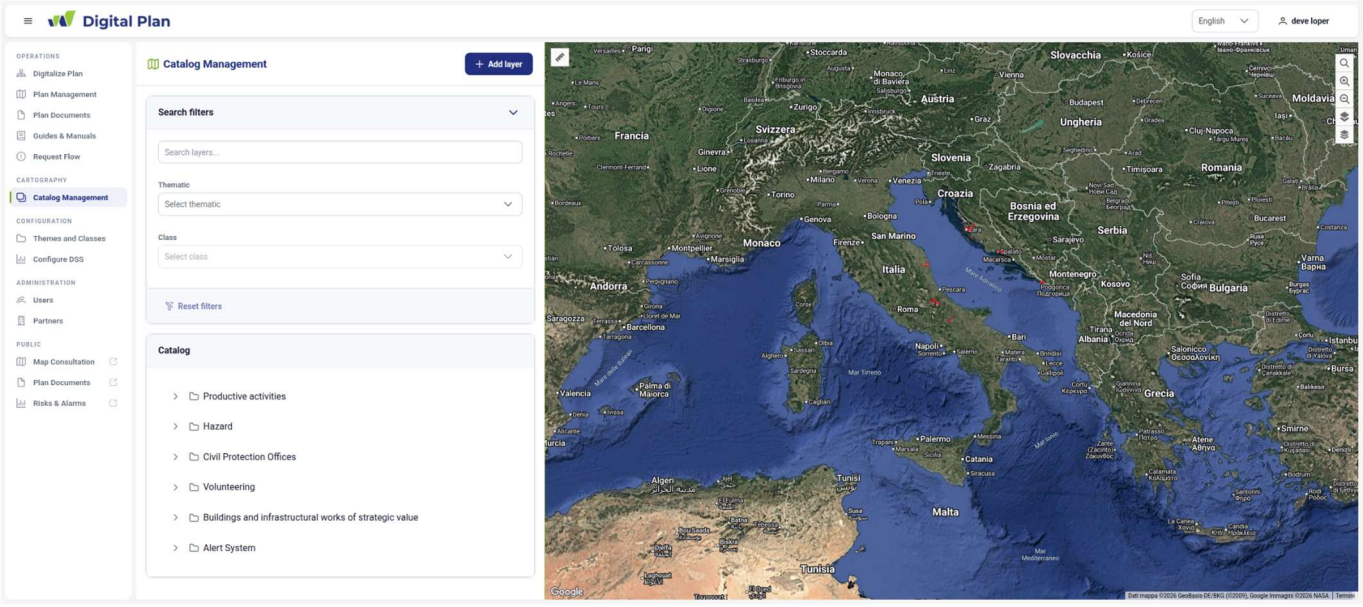
A partner selector, used to view or manage another organisation's documents, is displayed only to a Super Administrator; every other user sees only their own organisation's documents by default.



In the public application, the same screen loses its write controls entirely: uploading, editing and deleting are never available there, regardless of role. A partner selector is instead always displayed, since a public visitor is not associated with any organisation and must choose one before its documents appear.

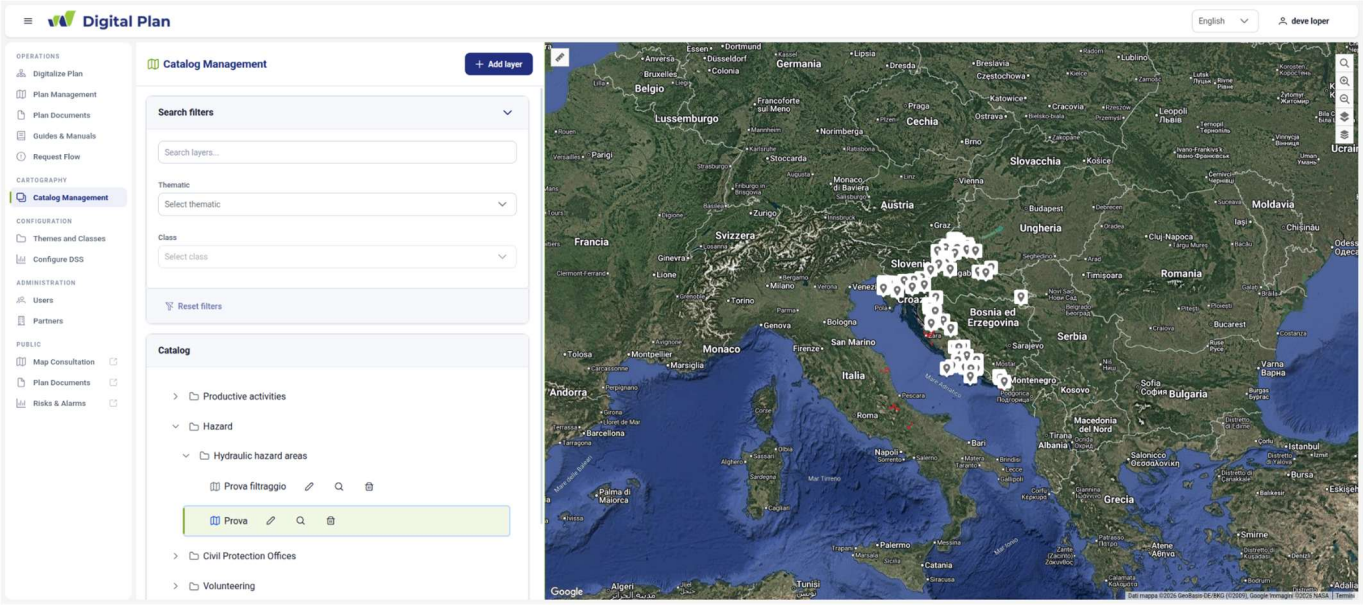
8. Layer Management

Layer Management requires no specific role beyond a registered account: any user can manage the layers of their own partner organisation here, while a Super Administrator can do the same for any registered organisation; the module sits in the Cartography section of the menu.



The maps displayed throughout the platform, in Digitalisation Plan as much as on the public map, are composed of geographic layers: supporting layers that provide context for the

territory, and ready-made layers already prepared as shapefiles. Before such data can appear anywhere, it has to be registered, described and classified within the platform, and Layer Management is the catalogue where that happens, feeding both the working map used to digitise plan content and the public application's map alike.

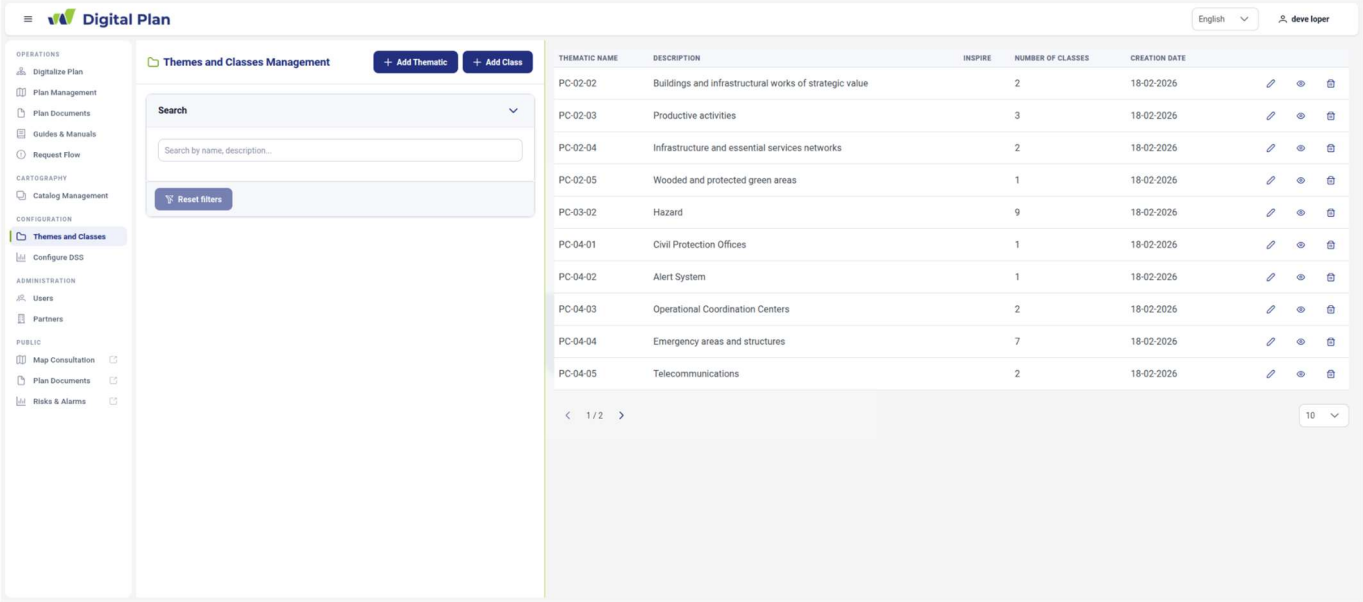


The screen splits between a panel on the left, containing a search field and a tree of layers organised by theme and class, and a map on the right displaying whatever is selected. Adding a layer opens a form for its name and description and a theme and class drawn from the classification maintained in Themes and Classes Management; a Super Administrator additionally chooses which partner organisation the layer belongs to. The geographic file itself is then uploaded as a shapefile, the only format the catalogue accepts. Viewing a layer's details shows its name, description, theme, class, processing status and identifier in read only form, and from there it may be switched to edit mode to update its name and description, or deleted, deletion being unavailable while a layer is still being processed.

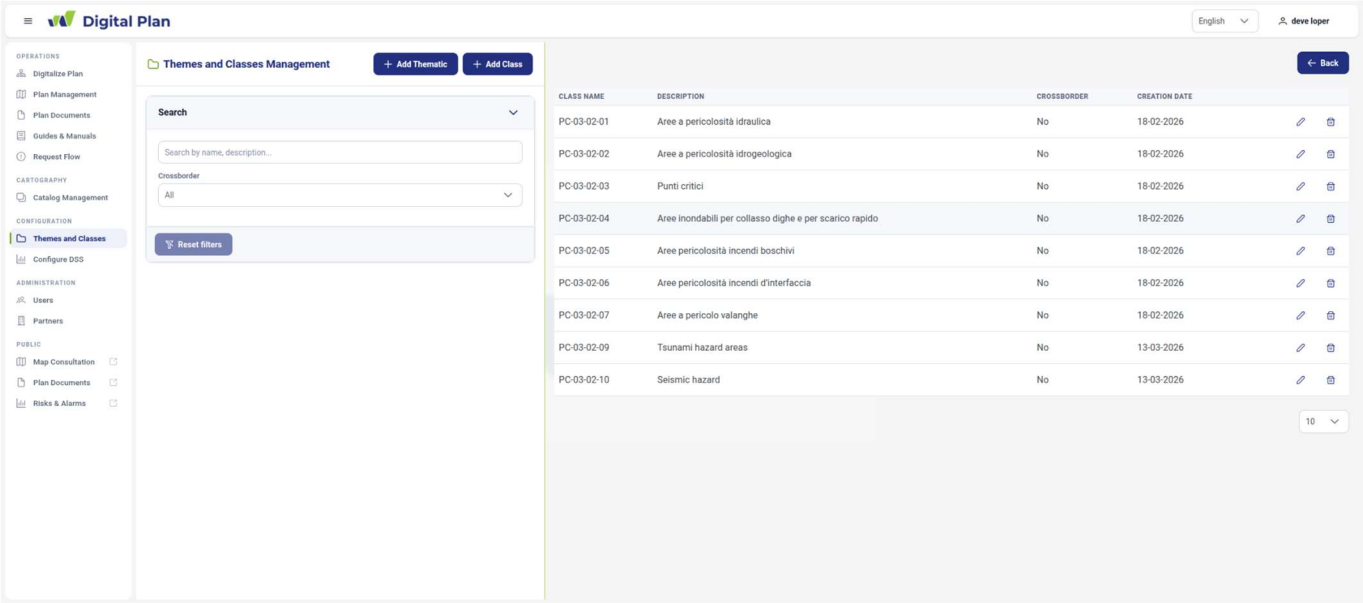
Every uploaded file needs processing before it becomes usable, moving through one of five statuses, created, loaded, in progress, published or error, each shown with a corresponding indicator while processing is underway. Even though the layers maintained here contribute to how a plan and its supporting layers are displayed, they are not standardised in their properties from one partner organisation to another, so they cannot support automated operations that would rely on that consistency, such as automatically displaying the supporting layers associated with an alarm.

9. Themes and Classes Management

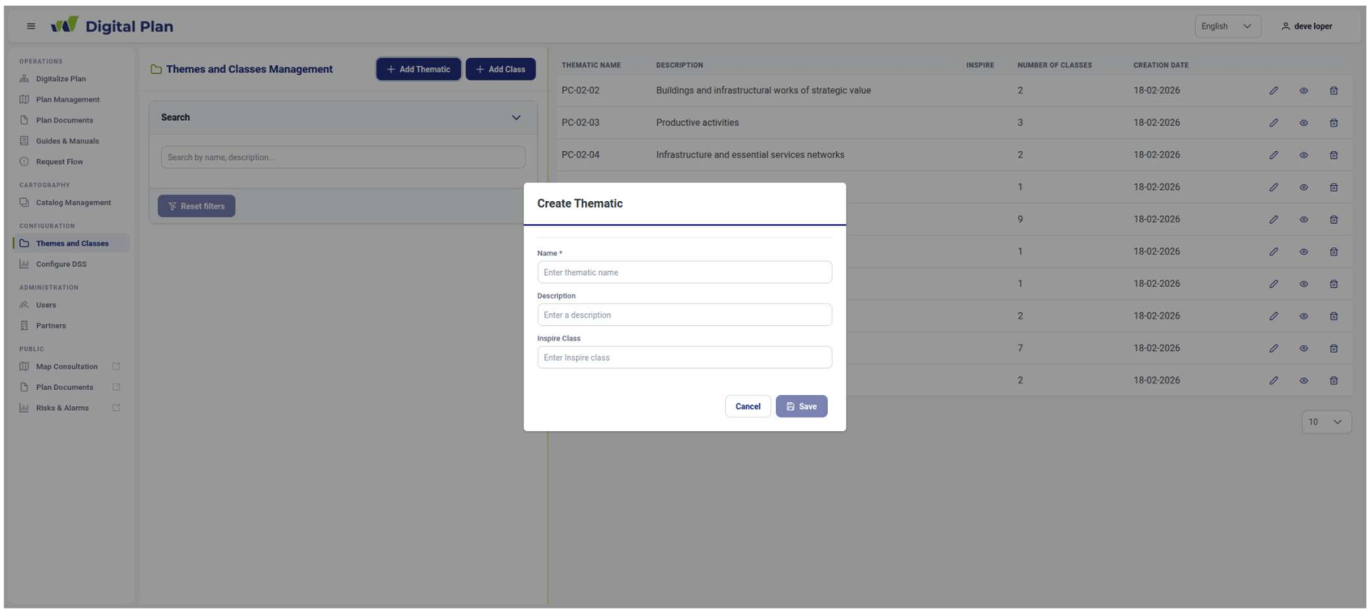
This module is reserved exclusively for the Super Administrator role; no other role has access to it, and it sits in the Configuration section of the menu.



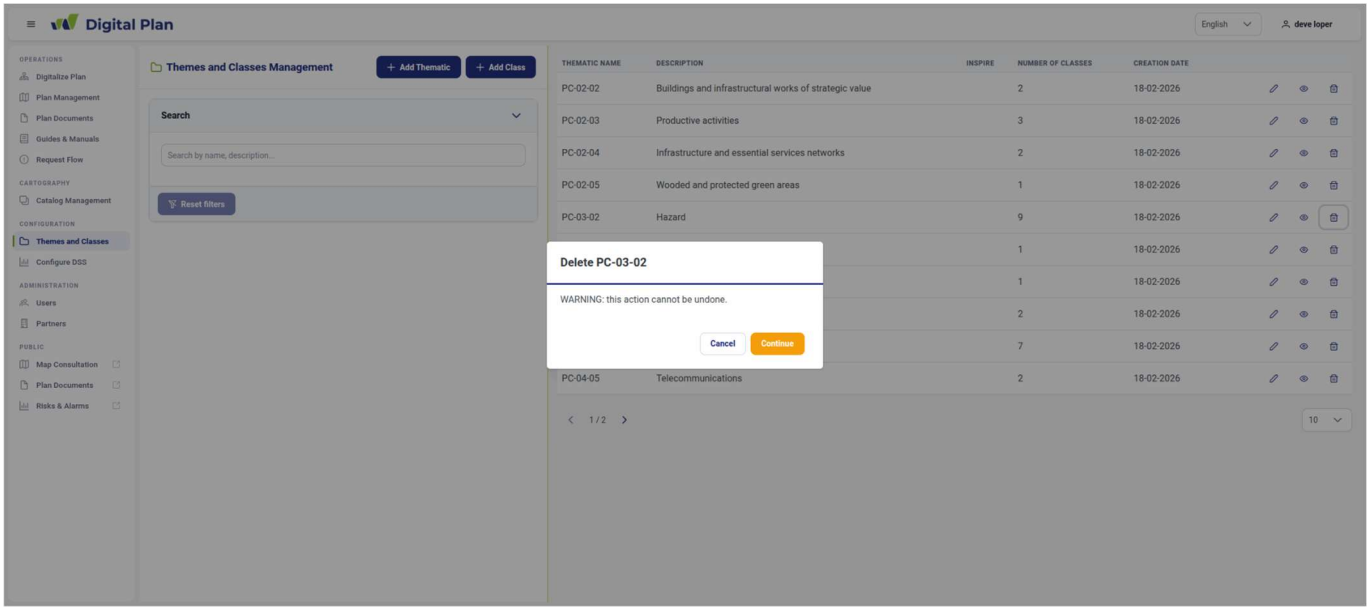
Every geographic element recorded in Digitalisation Plan and every layer registered in Layer Management must be classified for the platform to filter, search and display it consistently. Themes and Classes Management defines this classification centrally, rather than leaving each organisation to invent its own terminology.



Classification works on two levels: Thematics, broad categories such as a hydrogeological hazard theme, and Classes, the more specific subcategories within each one. The main screen lists Thematics with their name, description, number of associated classes and creation date; selecting one reveals its Classes, each shown with a name, description and creation date, alongside a side panel for text search and pagination. Adding a Thematic requires only a name, its description being optional free text, while adding a Class requires a name and an associated theme, with description optional.

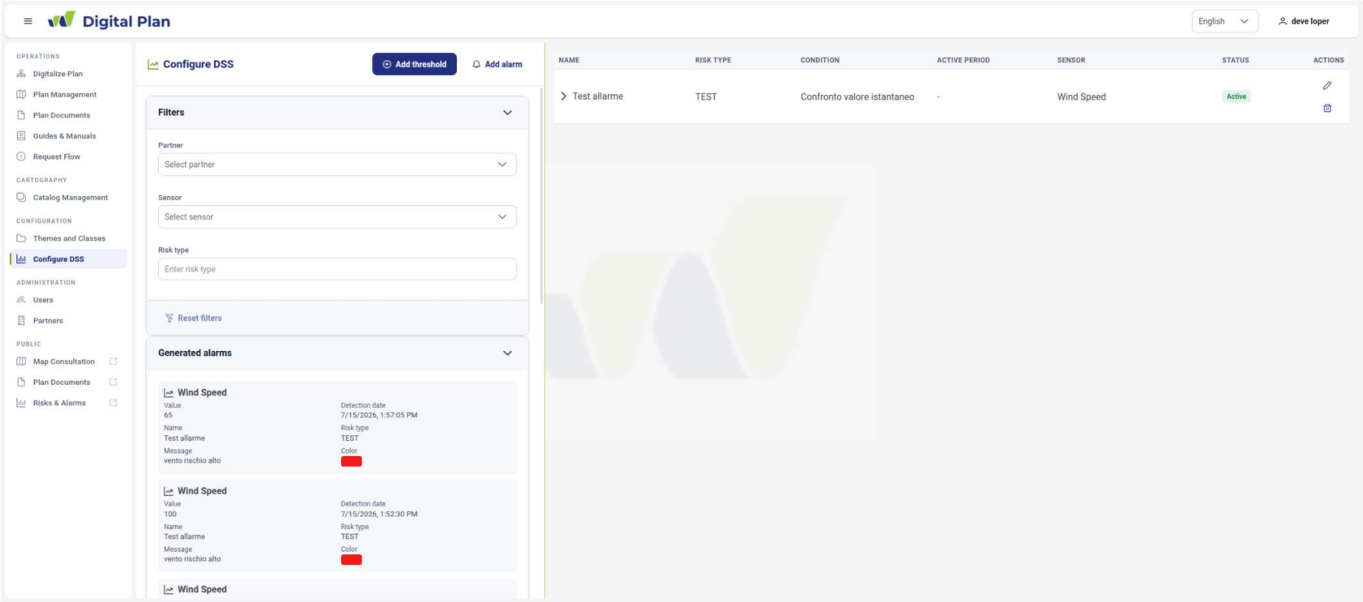


Both Thematics and Classes can be edited or deleted through the same interface, though deletion requires two confirmation steps, including retyping the exact name of the item being removed, since both are referenced throughout the rest of the platform: whenever plan content is assigned a theme and class in Digitalisation Plan, or a layer is classified in Layer Management, it is this classification that is being drawn on.



10. DSS Management

DSS Management is the domain of the Administrator role, exercised over risk monitoring for their own partner organisation, and of the Super Administrator, who can do the same for any registered organisation; the module sits in the Configuration section of the menu. DSS stands for Decision Support System, the platform's mechanism for turning sensor readings into actionable alerts.

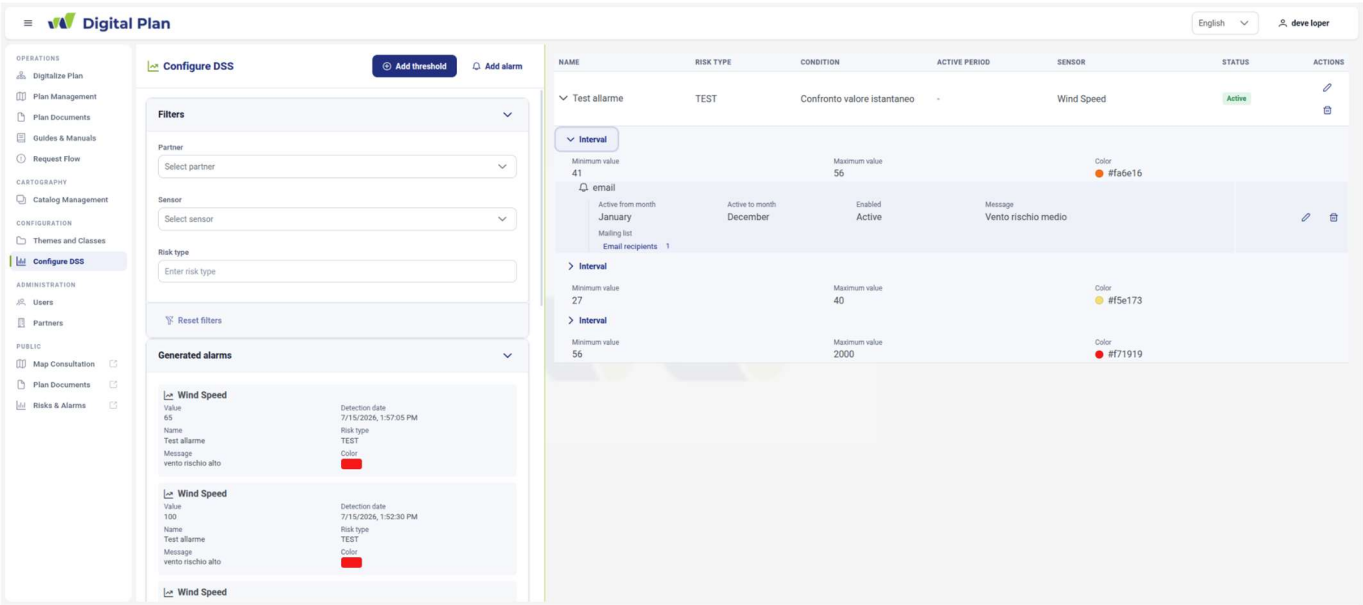


Knowing where a hazard could occur is not, on its own, enough to manage it: a civil protection plan also needs a way of recognising, continuously and automatically, when conditions on the ground indicate an emerging risk, a river level rising toward a dangerous point, an unusually dry spell increasing wildfire risk, heavy snow accumulating on a vulnerable structure.

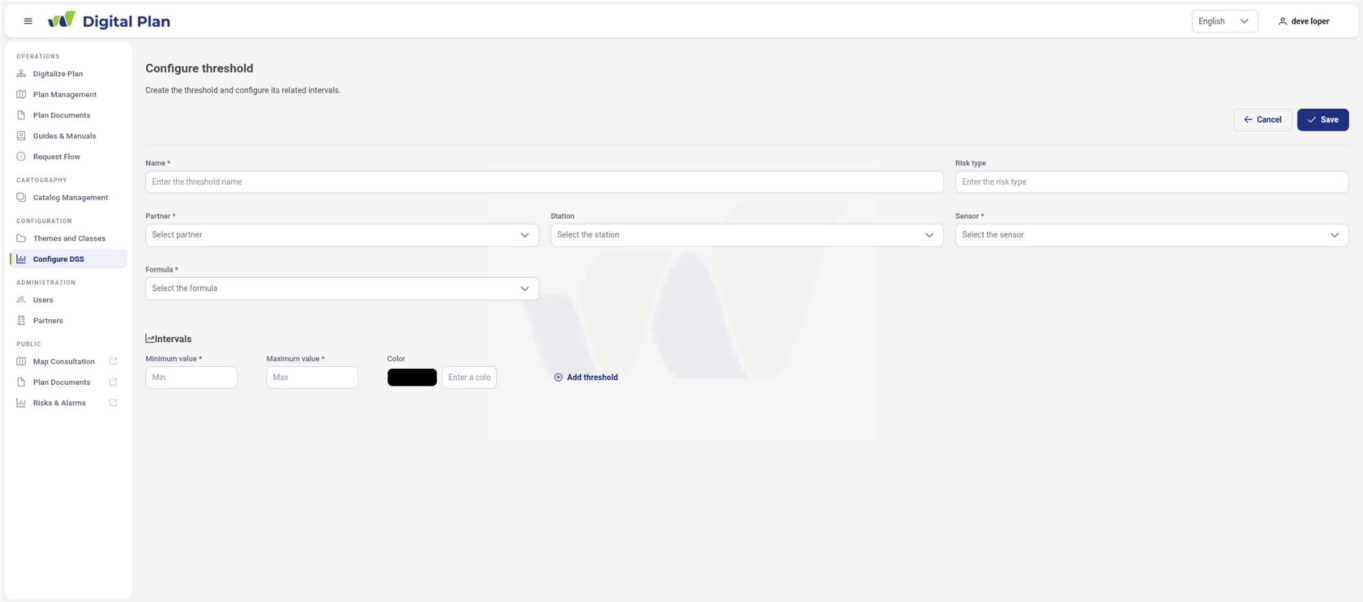
DSS Management is where this monitoring is configured, which sensors matter, what values should be treated as a cause for concern, and who, or what, should be notified when that happens, and the configuration defined here also determines what is later shown to the public on the Public Risks and Alarms page, which makes this module central to the platform's contribution to disaster risk reduction and to the speed and quality of an emergency response.

Thresholds and their ranges

The module is organised around an expandable summary table listing every configured threshold, with its name, risk type, monitored sensor and active status; expanding a threshold reveals the value ranges configured for it, each shown with the colour used to represent it on the map, and expanding a range in turn reveals its alarm notifications and any alarm already raised against it.



A filter panel narrows this list by sensor and by risk type, and a Super Administrator sees, in addition, a filter for selecting which partner organisation's thresholds to display, since this role is not limited to a single organisation; an Administrator sees only their own.



Configuring a threshold requires only a name and the sensor it monitors. A risk type may optionally be entered as free text, allowing each partner organisation to describe the hazard in terms meaningful to its own plan, a hydrogeological risk from intense rainfall, a wildfire risk, a snow load risk, without the platform restricting this to a fixed list of categories; a calculation formula is then chosen from a list of options the platform provides, determining how the sensor's raw readings become the value actually compared against the threshold. One or more value ranges complete the configuration, each with a minimum, a maximum and a colour used to represent it wherever the threshold's status is displayed, and the platform checks that a range's minimum stays below its maximum and that no two ranges for the same threshold overlap, so that a given reading can never fall within two ranges at once. A Super Administrator configuring a threshold additionally chooses which partner organisation it belongs to; for an Administrator this is assigned automatically to their own.

Alarm notifications

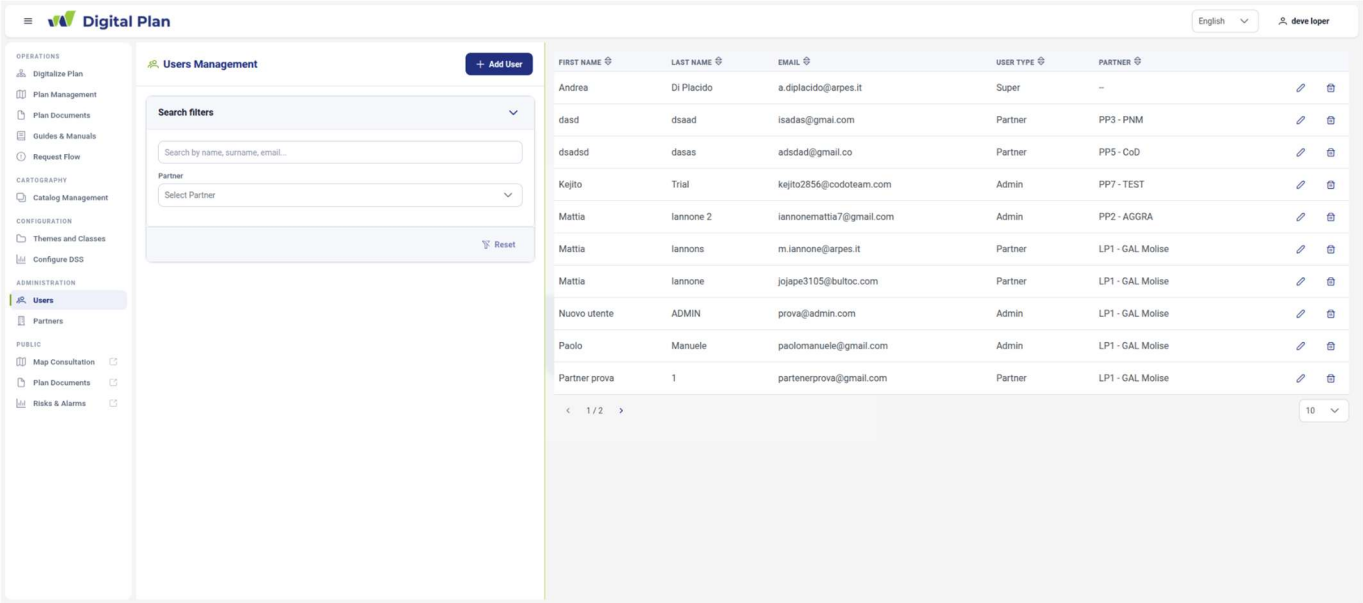
Each value range of a threshold may carry one or more alarm notifications, describing how the platform should react when a reading falls within it. Configuring one means selecting the threshold and range it applies to and a single notification channel, either an email or a connected actuator, the two cannot currently be combined in the same notification, together with a period of activity defined by a starting month and an ending month, so that, for instance, a snow risk notification can be excluded from the summer months. The notification can be switched on or off at any time without being deleted, carries a free text message for inclusion in the notification itself, and, when the channel is email, one or more recipient addresses entered as free text; as with thresholds, a Super Administrator additionally chooses which partner organisation the notification belongs to.

Adding, editing and deleting thresholds and alarm notifications, viewing the recipients configured for a notification, and resetting the active filters are all available throughout the module. The value of the risk information eventually shown to the public, described in the Public Risks and Alarms chapter, depends entirely on these thresholds and notifications being kept accurate and current as conditions on the ground, and the monitoring equipment itself, change over time.

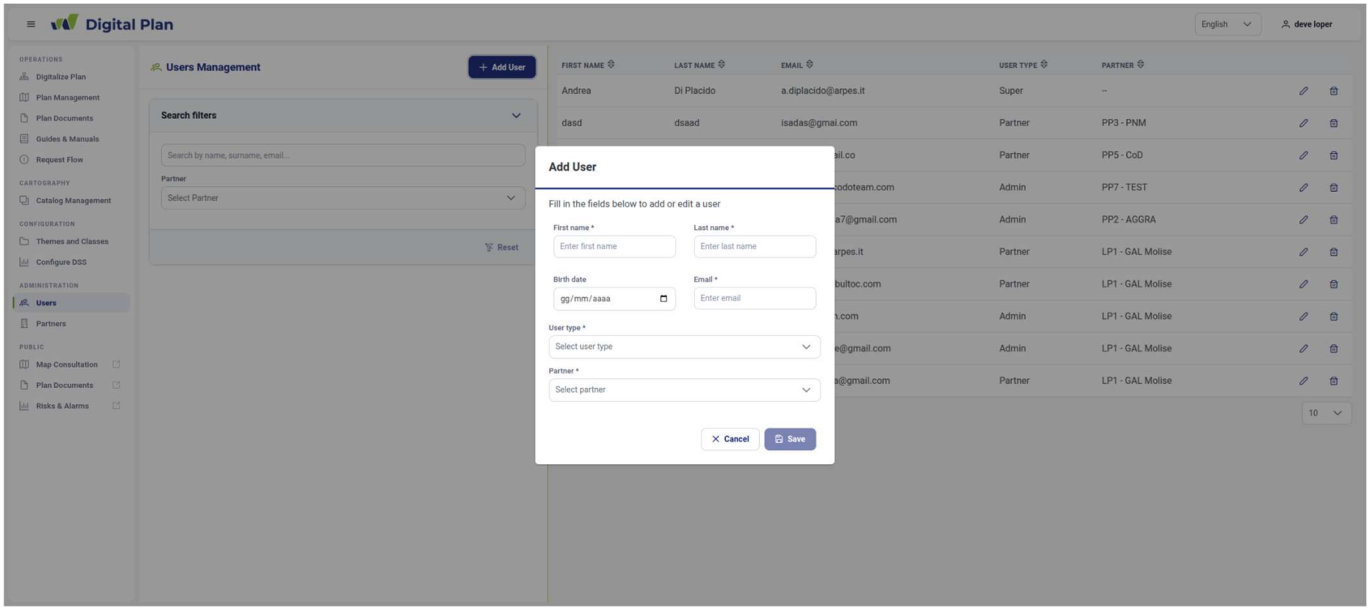


11. User Management

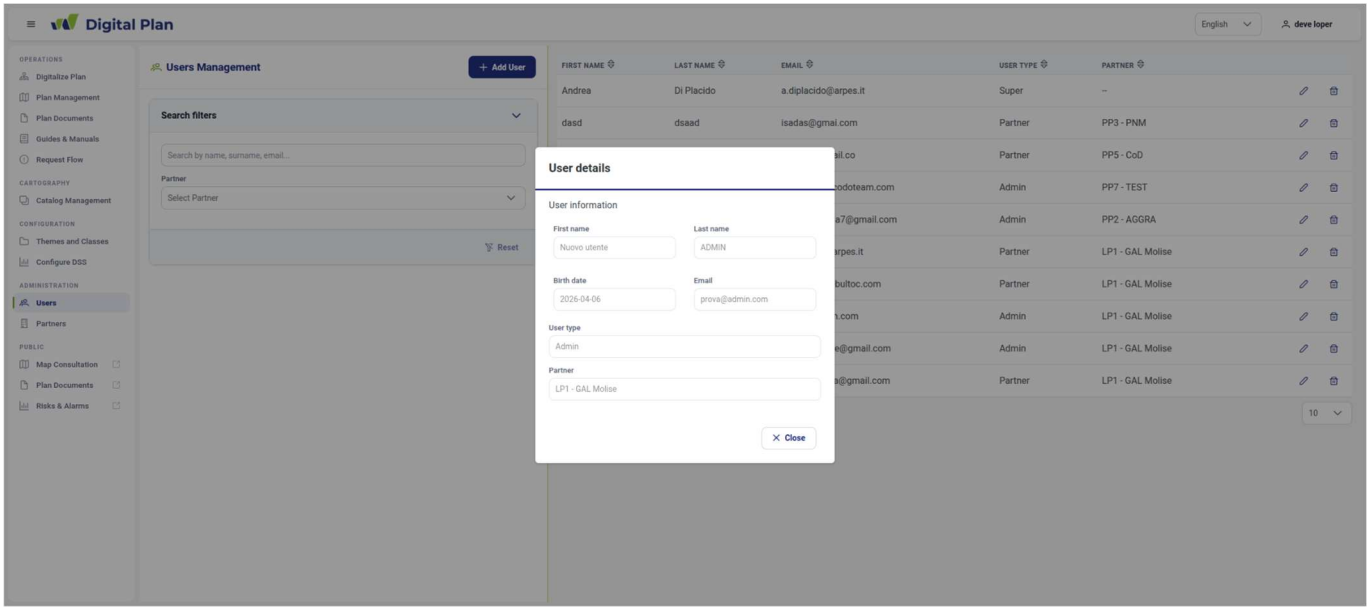
User Management belongs to the Administrator role for their own partner organisation, and to the Super Administrator for any registered organisation; the module sits in the Administration section of the menu.



Its screen combines a filter panel, searching by name, surname or email and filtering by partner, with a sortable, paginated table listing each user's first name, last name, email, user type and partner organisation; a Super Administrator additionally sees users across every registered organisation and can filter the list by organisation, while an Administrator sees only their own.



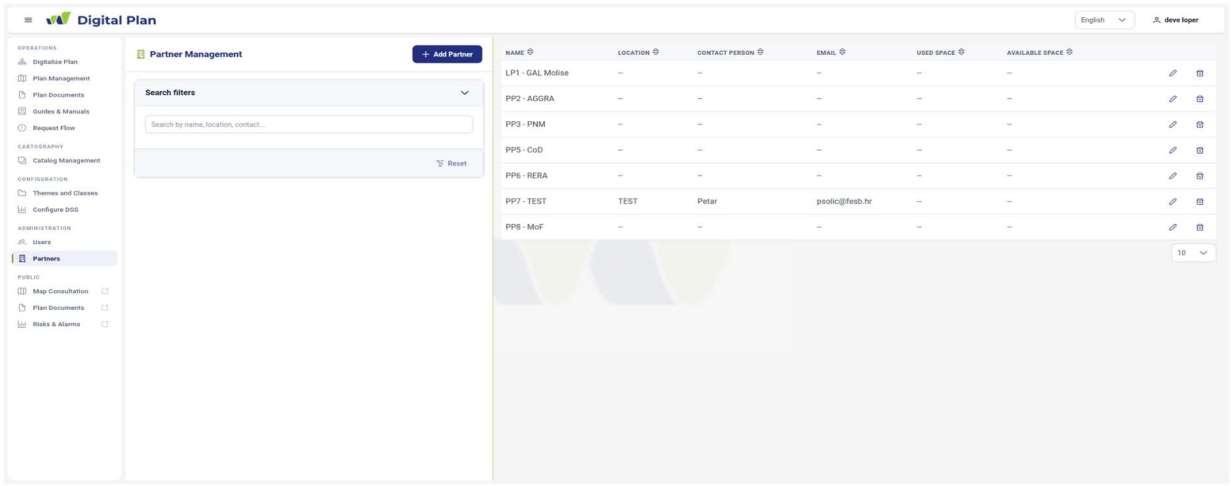
Adding a user opens a form for first name, surname, date of birth, email and user type, plus, for a Super Administrator, the partner the user belongs to; editing reopens the same form pre populated with the existing details, to update them or reassign the user's type or partner, while viewing shows the same information read only.



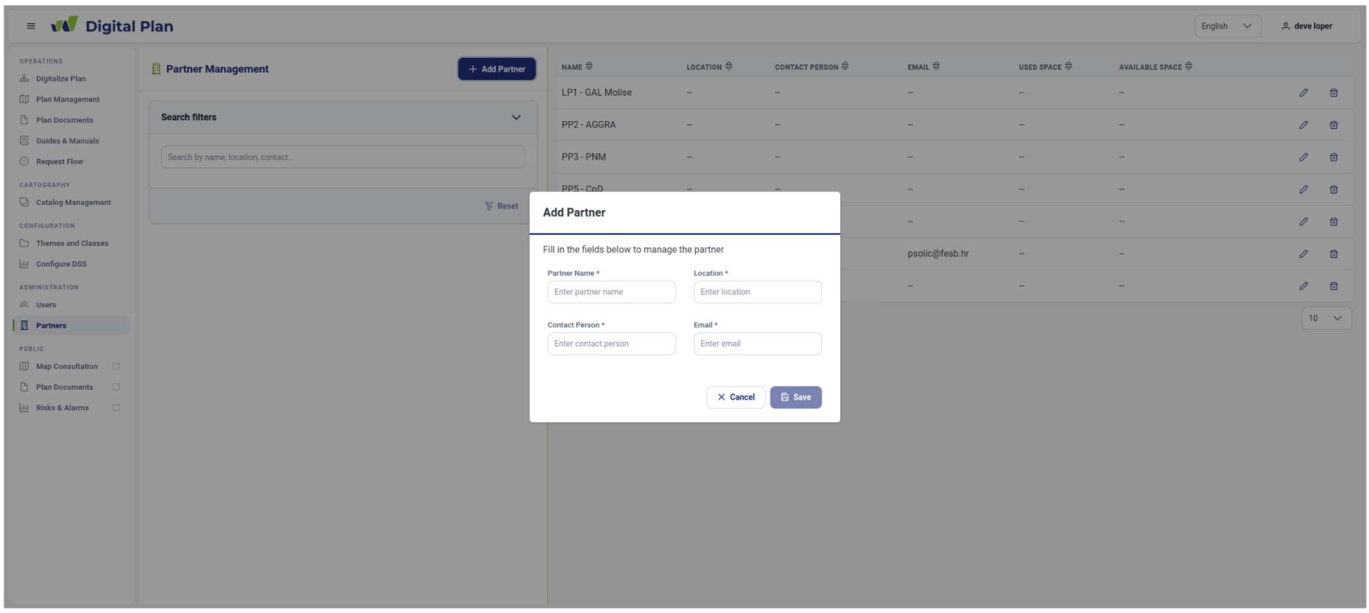
Deleting a user requires confirmation and cannot be undone. This module manages account identity, user type and organisational membership.

12. Partner Management

Partner Management is reserved for the Super Administrator, the platform's highest level of access, and sits in the Administration section of the menu.



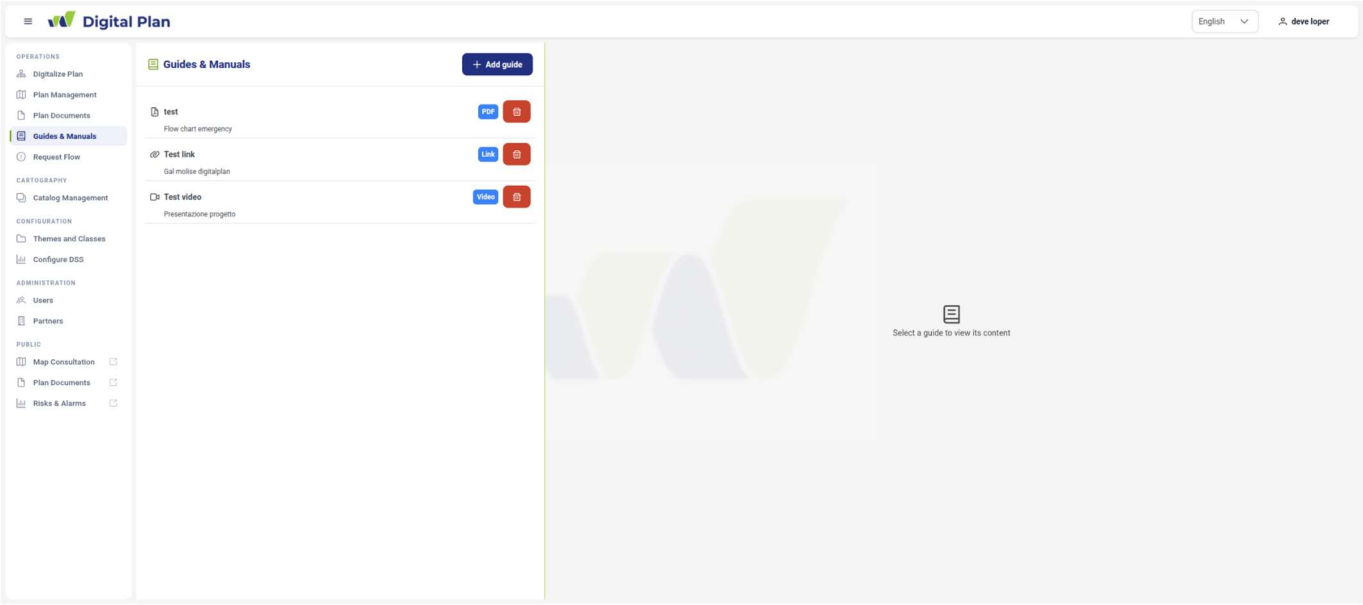
DigitalPlan supports multiple partner organisations at once, each maintaining its own plans, users, layers and documents, and before any other module in this manual can be used by a given organisation, that organisation must first be registered as a partner here.



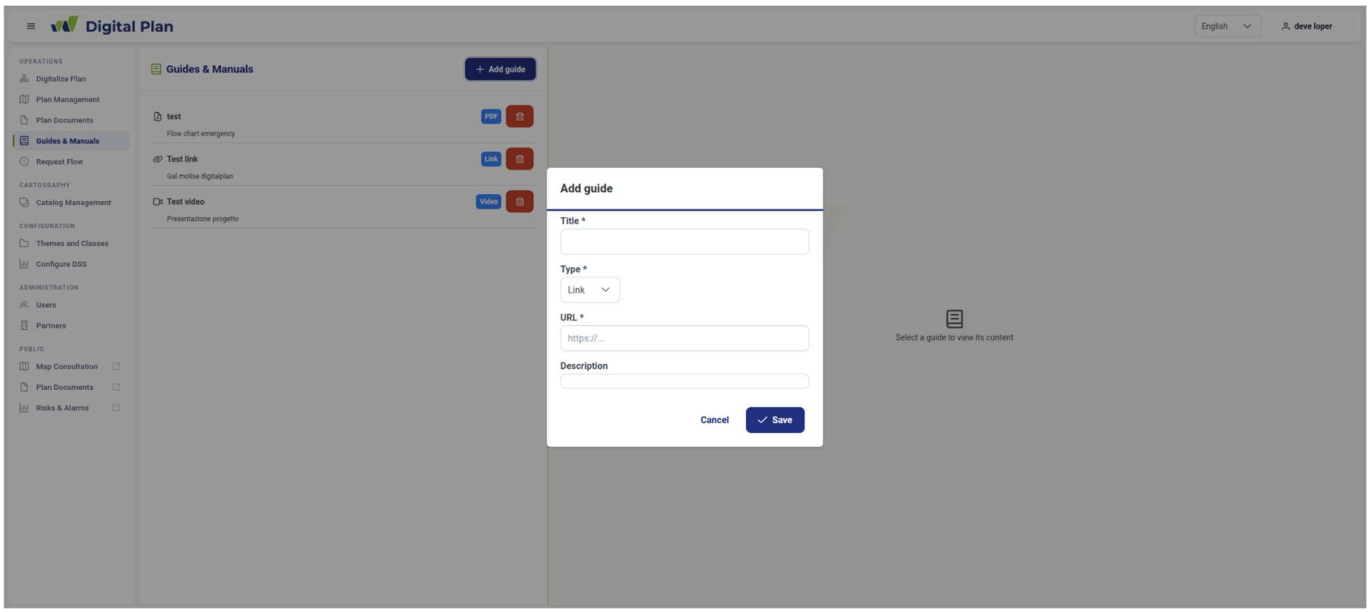
Its screen shows a searchable, sortable, paginated table listing each partner's name, location, contact person, email, and used and available storage space. Adding a partner requires a name, a location, a contact person and an email; editing reopens the same form pre populated with the existing details, while viewing shows the same information read only, and deleting a partner requires confirmation.

13. User Guides

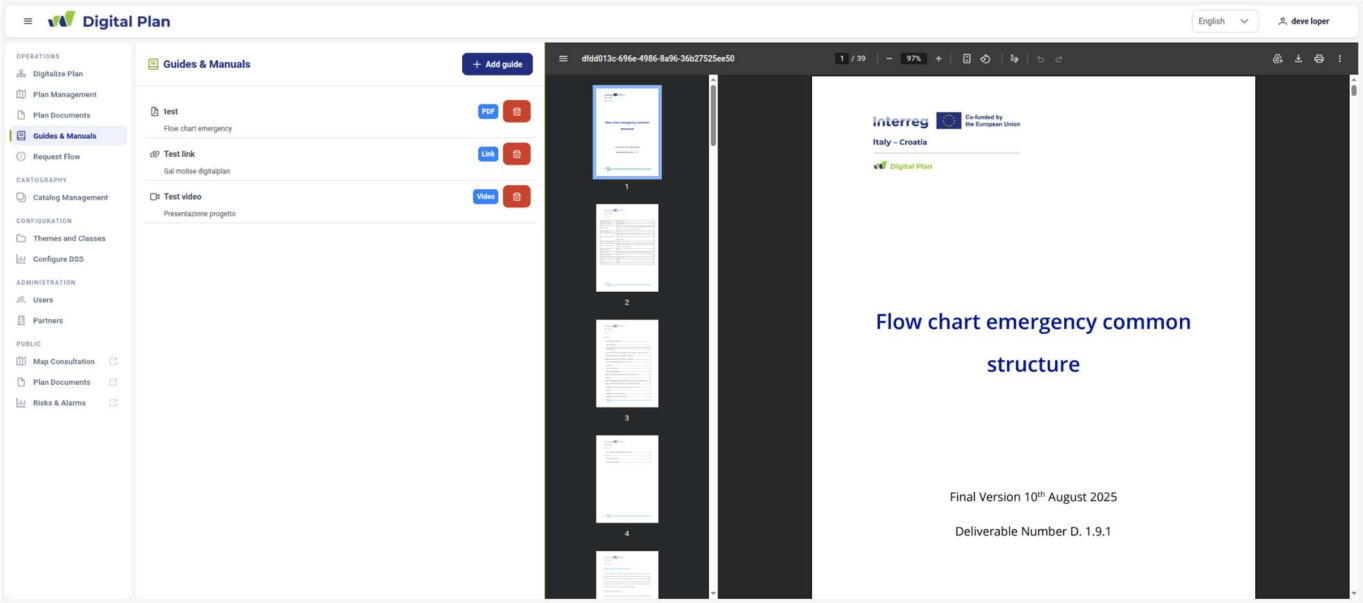
Any authenticated user may browse User Guides without needing any additional role; adding or removing a guide is reserved for the Super Administrator.



The module provides platform specific instructional material, documents, videos and external references, directly within the platform and close to the functionality each guide describes.



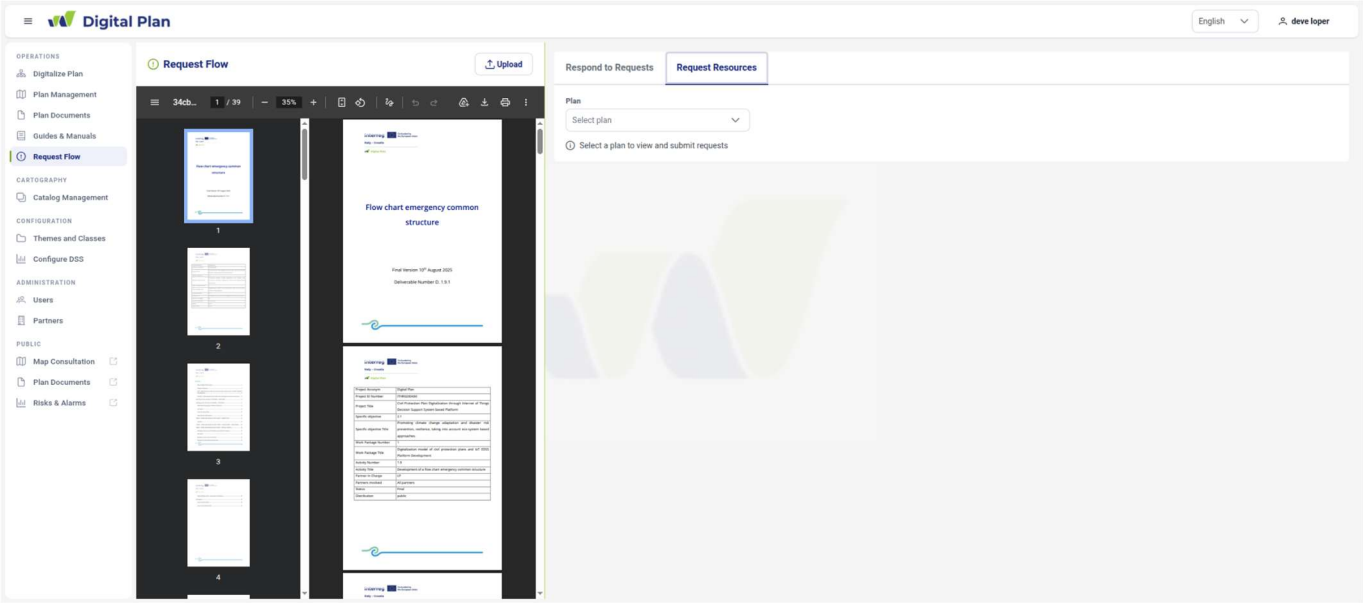
Its screen is divided between a paginated list of guides on the left, each shown with a title, a type indicator, PDF, video or link, and a short description, and a viewer on the right displaying whichever guide is selected, an embedded PDF, an embedded YouTube or Vimeo video, or, for external links, a control that opens the link; if nothing is selected, a message invites the user to choose one, and an empty list is announced with a message of its own. No text search is currently available within the guides list.



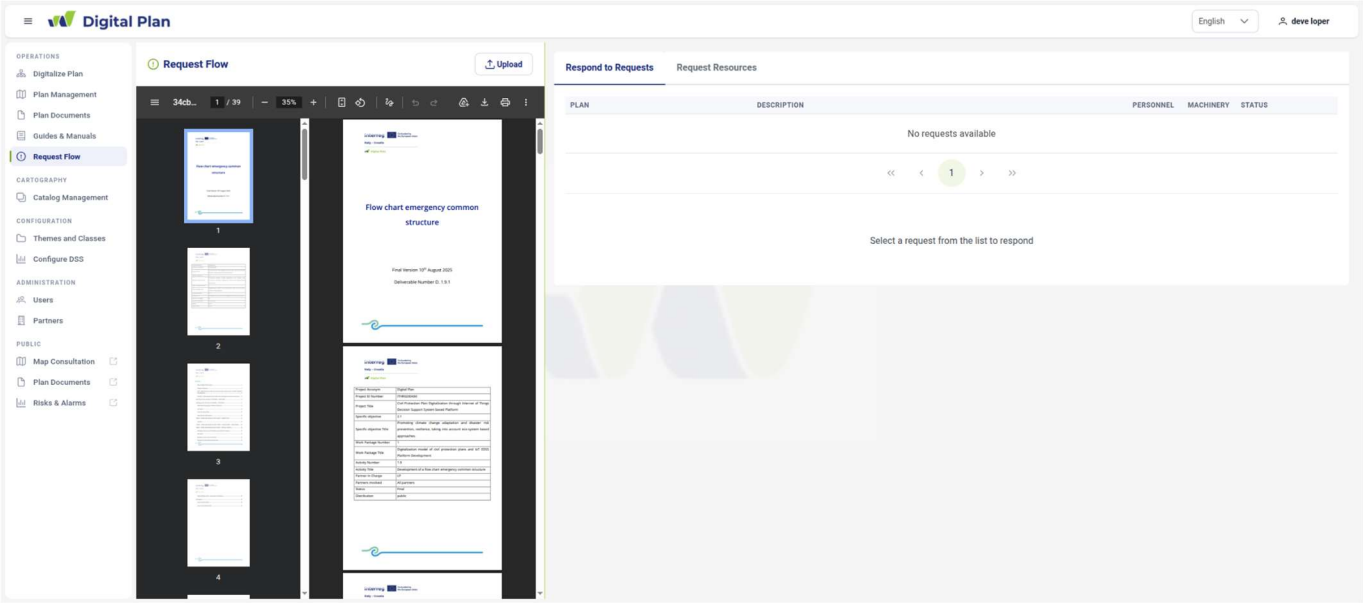
A Super Administrator additionally has access to an Add guide control, opening a form for a title, type and description and, depending on the type chosen, either a PDF file or a link, only YouTube and Vimeo being supported for video guides, together with a delete control for each existing guide.

14. Request Flow

Any authenticated user can use the resource request and response functionality of Request Flow; uploading the document shown in its preview panel is reserved for the Super Administrator.



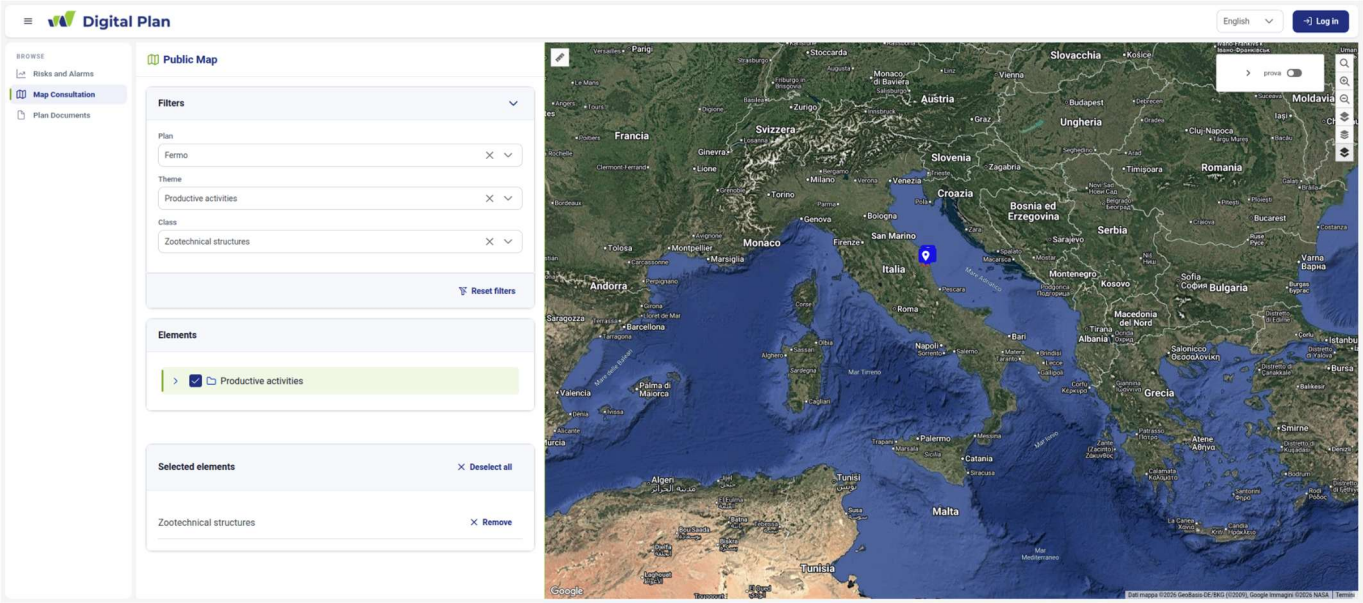
During an emergency, coordinating resources, personnel and vehicles, between organisations is time critical, and Request Flow provides a shared mechanism for partner organisations to request and respond to each other's requests. A panel on the left displays a PDF or image associated with it wherever one has been uploaded, or a corresponding message where none is available yet, with only a Super Administrator able to upload it.



The Request Resources section offers a form for submitting a request, a mandatory description, the number of personnel required with an optional note, and the number of vehicles required with an optional note, followed by a list of requests already submitted. The Respond to Requests section lists requests received from other organisations; selecting one opens a form for indicating the personnel available in response, with an optional note, and the vehicles available, with an optional note of its own.

15. Public Map

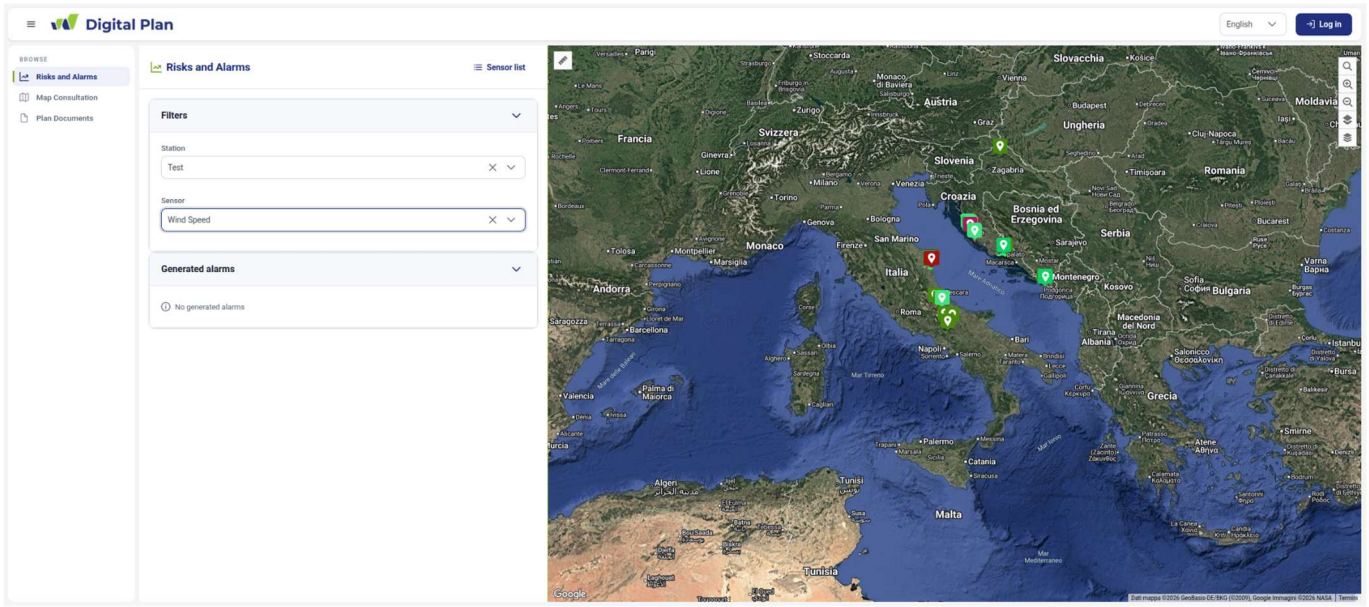
Public Map is what a Viewer, someone consulting the platform without an account, experiences of DigitalPlan's cartography; the module is labelled Plans Showcase in the interface.



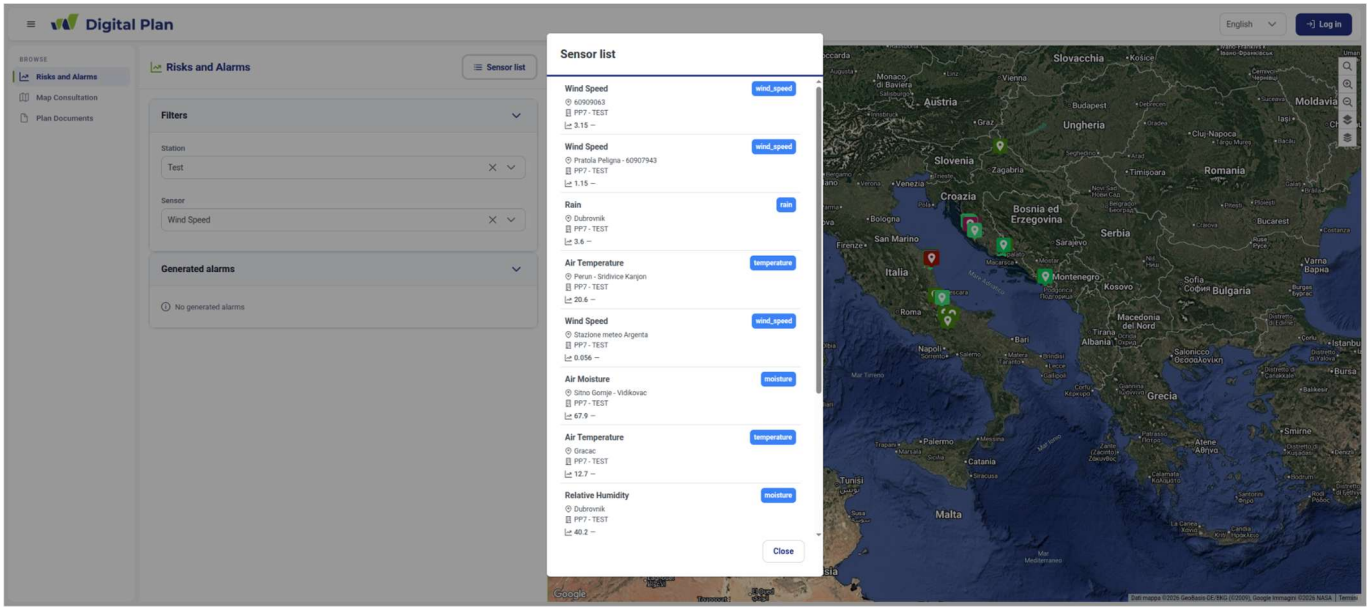
It provides public access to the territorial digital plans maintained by partner organisations, presented on an interactive map without requiring an account or any familiarity with the platform's administrative side. A sidebar on the left combines a Filters panel, narrowing displayed content by plan, theme and class with a reset control, an Elements panel showing a checkbox tree of themes and classes to toggle map content, and a Selected elements panel listing whatever has been chosen, with options to remove individual items or clear the selection; the map itself occupies the rest of the screen, displaying the geographic layers that match the active filters and selection.

16. Public Risks and Alarms

Public Risks and Alarms is likewise part of the Viewer's experience, and is also consulted by staff who want the same view of conditions that the public sees.



It makes the environmental risk monitoring configured in DSS Management directly available to citizens and other interested parties without requiring authentication, supporting ongoing situational awareness of a territory's environmental conditions as much as its use during an active emergency, when up to date sensor readings and active alarms can materially affect the response.



A panel in a modal presents the monitoring sensors relevant to the displayed area as a table, browsed one page at a time rather than as a single continuous list; for each sensor it shows the name, type, monitoring station, the partner organisation responsible for it, and the value most recently recorded together with when it was recorded, with a sensor lacking recent data indicated accordingly and a message shown if none are available at all. Because the list loads one page at a time, moving to a further page asks the platform for fresh information at that moment; the page being viewed does not refresh itself in the meantime.

The map on the right tells a different story: it displays the monitoring stations relevant to the area, together with the boundary of the corresponding civil protection plan, and, unlike the sensor list, keeps their positions and status continuously up to date as new information arrives, without the page needing to be reloaded or the visitor doing anything at all. Selecting a station, or any other element on the map, opens its details.

Every threshold and alarm notification described in the DSS Management chapter ultimately determines what appears here: a sensor reading that falls within a configured range, and

any alarm that results from it, is what gives this page its practical value as an early warning tool for the public, as well as for staff during an active emergency. Keeping thresholds current in DSS Management is therefore essential to how reliable the information on this page actually is.

