

# LIZMAP WEB CLIENT

## Past, present & future

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# QGIS ecosystem

The QGIS ecosystem gathers:

-  Mobile applications > **QField & Mergin**
-  A processing engine to run algs > **QGIS Processing**
-  A GIS Server > **QGIS Server**

## QGIS Server

- **Extensible** with Python plugins
- **Additional requests**: GetPrint, GetLegendGraphics as JSON, etc

**Lizmap Web Client uses the power of QGIS Server to bring maps in your browser**



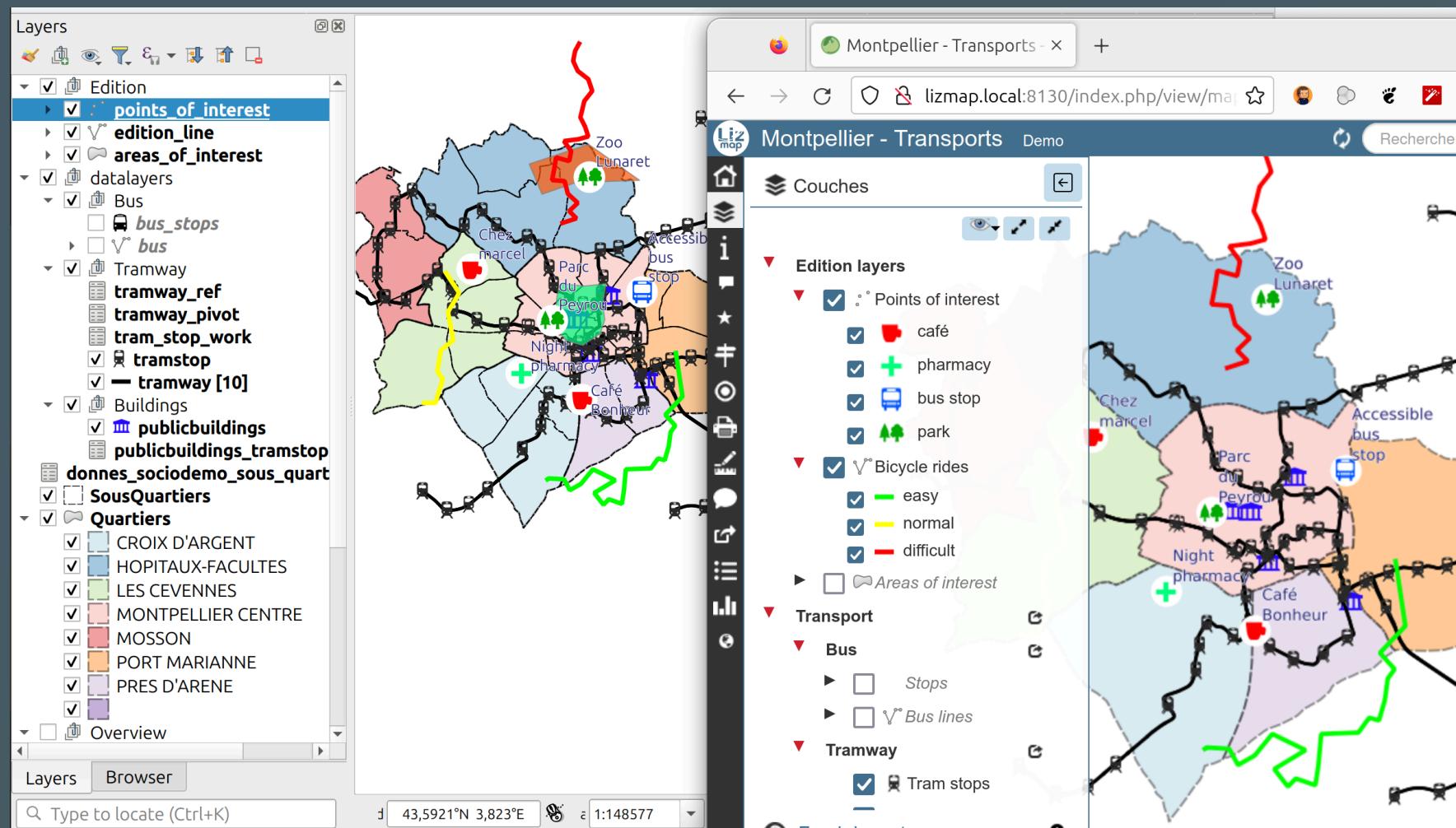


# Lizmap Web Client

**Prepare your projects on QGIS desktop / publish them with Lizmap**

- **FREE:** opensource > Mozilla Public Licence (MPL 2.0)
- **SIMPLE:** Generates **web maps** for any QGIS project - **No Code** web app publication
- **SECURE:**
  - acts as a **Proxy to QGIS Server**
  - has a **Web admin panel** to manage users, rights, configurations
- **POWERFUL:**
  - **many features and tools** are available: editing, printing, attribute table, search, spatial filter, etc.
  - **extensible** with **JavaScript** or **Modules**
- **MATURE** 13 years of active development in QGIS Server & Lizmap Web Client

# QGIS & Lizmap Web Client



# Lizmap Web Client - some key features

- **Manage rights** on repositories, projects, layers, features, tools
- **Rich editing forms** for PostgreSQL layers / expressions for constraints
- **Printing**: QGIS print layout / Feature-based atlas PDF export
- **Dataviz** - show charts based on your data (pie, bar charts)
- **= QGIS relations**: parent & child features / **cascading filter**

The screenshot shows the Lizmap Web Client interface with the following components:

- Top Bar:** Includes the Lizmap logo, project name "Landuse in Narbonne, South of France", a "Features" button, a "Download project" button, and user authentication buttons for "Administration" and "demo".
- Left Sidebar:** Contains a "Layers" section with checkboxes for "Limites administratives" (checked) and "Limites communales" (checked). Below this is the "Occupation du sol en 2021" section, which is expanded and shows five categories: 1 - Surfaces artificialisées, 2 - Zones agricoles, 3 - Forêts et zones semi-naturelles, 4 - Zones humides et lagunes, and 5 - Zones en eau. There are also collapsed sections for "Postes clés" and "Évolution entre 2018 et 2021".
- Map View:** The central area displays an orthophoto map of the Narbonne region. Overlaid on the map are administrative boundaries (yellow) and land use categories (pink, yellow, green, blue, grey).
- Locating Tool:** A floating window titled "Locating" shows the layer "Limites communales".
- Dataviz Panel:** This panel contains two main sections:
  - Superficie communale totale:** Displays the total municipal surface area (11,598.86) and population (17,134 habitants).
  - Les grandes composantes du territoire en 2021:** Describes the territory composition into five main land use types.A pie chart at the bottom of the panel illustrates the distribution of these land use components.

# QGIS Lizmap extension - An overview

The **Lizmap extension** allows:

- to easily configure the **QGIS project** to publish,
- to choose **which tools** must be activated in your published map:

The screenshot shows the QGIS Lizmap extension interface. On the left, a dark sidebar lists various configuration options: Information, Map options, Layers, Base-layers, Attribute table, Layer editing, Layouts, Form filter, Dataviz, Filter by user, Actions, Time manager, Atlas, Locate by layer, Tooltip layers, Checks, Auto-fix tools, Settings, and Upload. The 'Information' option is currently selected, indicated by a white background and a small arrow icon. The main window title is 'Publish a QGIS project on the Web with Lizmap'. It features a green circular logo with the text 'Lizmap'. Below the title, there's a 'Links' section with links to @LizmapForQgis (@3lizrelease), Documentation (<https://docs.lizmap.com>), IRC ([irc.libera.chat](#) Webchat, #lizmap), Mastodon ([@LizmapForQgis](#)), Discourse (<https://discourse.osgeo.org/c/qgis/lizmap/>), Mailing-list ([mail](#)), Demo (<https://demo.lizmap.com>), GIS Stackexchange, tag Lizmap, and YouTube ([@3Liz GIS \(Lizmap playlist\)](#)). There's also a 'Versions' section with 'Latest releases' for Lizmap Web Client (3.8.0 - 02/09/2024 and 3.7.10 - 01/08/2024) and a link to 'What's new in 3.7?'. The 'Servers' section shows the current server as demo.lizmap.com/lizmap, the current Lizmap Web Client branch selected as 3.7, and the current QGIS Desktop version as 3.34. At the bottom, a table lists one entry: Name (demo.lizmap.com/lizmap), Lizmap Version (3.7.10), QGIS Server Version (3.34.9), and Action (a green button with a gear icon).

Name	Lizmap Version	QGIS Server Version	Action
1 demo.lizmap.com/lizmap	3.7.10	3.34.9	

**Options in light blue background are only usable with higher version of Lizmap Web Client.**

# QGIS Lizmap extension - project validation

A growing set of **validity rules**

- **security**: PostgreSQL SSL connection, services
- **performance**: trusted project, estimated metadata, provider geometry, simplification, raster pyramids
- **good practices**: primary keys, needed indexes
- **issues prevention**: duplicated layers, proprietary format (ECW)

*Thanks to PyQGIS, which allow a fine control of the workflow, close to the data*

The screenshot shows the Lizmap validation plugin interface. The title bar reads "Lizmap branch master, commit 4b023d, next 4.1.2-alpha". On the left is a sidebar with icons for Information, Map options, Layers, Base-layers, Attribute table, Layer editing, Layouts, Form filter, and a "Filter by user" option. The main area has tabs for "Checks" (which is selected), "Help about checks", and "Raw logs". A message in the center says: "The plugin is doing some checks on your project. To know how to fix these checks, either use the tooltip (by hovering your mouse pointer on the table row) in the last column 'Error', or check the documentation in the next tab 'Help about checks' for all errors which can be reported." Below this is a button "Visit the 'Auto-fix tools' panel". At the bottom right is a button "Copy results in clipboard". A table below lists validation results:

Severity	Level	Source	Error
1 ● Blocking	Layer	Declar...	SSL connections to a PostgreSQL database
2 ● Blocking	Layer	Lumina...	SSL connections to a PostgreSQL database
3 ● Blocking	Layer	Gedat...	SSL connections to a PostgreSQL database

# Current roadmap

- **Branch 3.8**
  - 3.8.0, September 2024 for QGIS UC 2024 in Bratislava
  - 3.8.10 May 2025, **latest** release
- **Branch 3.9**
  - 3.9.0-RC3 **Feature freeze** in May 2025
  - 3.9.0 June 2025 for this QGIS UC ✨
- **Branch 3.10**
  - 3.10.0 started for **new** features

Similar to **QGIS.org** release schedule, **monthly** releases with bugfix :

- Compared to one year ago, **less overlap** between branches now
- <https://github.com/3liz/lizmap-web-client/tags>
- <https://www.qgis.org/resources/roadmap/#release-schedule>

**⚠ Please, do not stay on .0 version (or low number of bugfix), for any software ! ⚠**

# 2024 - Lizmap 3.8 key features

and some 3.9 features as well



# 2024 - Lizmap 3.8 features

- Render all the checked layers as a **single image**
- New management of the **N to M relations data editor**
- Ability to display specific **layer features** at startup when set in URL
- Improvement on the **landing page** content (logged and not logged user)
- **Tooltip feature** when hovering the map: allow to build rich content with QGIS expressions
- **Popup**: add toolbar for child features in the compact table view
- **Data editing** - Improve **snapping** functionalities
- New web component `lizmap-features-table` to display a **compact list of features** as a table
- *A big thank to **Faunalia** for your contributions to this version*

# The new compact list of features

- a **reusable component** which shows a **compact list of layer features**
- **3.8:** available only for user-defined HTML popup
- will be used by default in **identify results** (popup) in **3.9**



## quartiers

Champ	Valeur
quartier	2
quartmno	PA
libquart	MOSSON

child sub-districts

MOSSON - Les Hauts de Massane (193 ha)
MOSSON - LA PAILLADE (262 ha)
MOSSON - Celleneuve (83 ha)



# The new compact list of features

- QGIS **Display expression** is used by default for line heading

## New in 3.9:

- QGIS Expressions can be added to create multiple "virtual" columns.
- Due to the powerness of QGIS Expressions written on the "client side", an allowed list of expressions can be set, or the `not allowed` is returned (new in 3.9)

quartiers



Champ	Valeur
quartier	7
quartmno	MC
libquart	MONTPELLIER CENTRE

child sub-districts

	Virtual code	Virtual area	Forbidden
Antigone (91 ha)	MCN	904499.9	not allowed
Boutonnet (166 ha)	MCB	1661168.42	not allowed
Centre Historique (64 ha)	MCH	641998.3	not allowed
Comédie (34 ha)	MCC	340525.84	not allowed
Figuerolles (60 ha)	MCF	598274.39	not allowed
Gambetta (68 ha)	MCG	676749.46	not allowed
Gares (56 ha)	MCS	561186.29	not allowed
Les Arceaux (58 ha)	MCA	577675.24	not allowed
Les Aubes (85 ha)	MCU	845515.52	not allowed
Les Beaux - Arts (122 ha)	MCX	1221059.49	not allowed

# Lizmap 3.8 : relations management improvements

Very useful when you have a **relation between a parent layer** (ex: roads) and a **child layer** (ex: road works)

- You can now easily **create a new child feature** from the parent information panel
- The parent editing form respects the **QGIS Drag&drop form layout**

The image displays two side-by-side screenshots of the Lizmap application interface, version 3.8, demonstrating improvements in relation management.

**Screenshot 1 (Left):** Shows the "Landuse in Narbonne, South of France" map. A feature in the "Apartments" layer is selected, and its information panel is open. The panel shows a table with fields: ID (6), Address (180 Freedom avenue), Municipality code (34000), Type (House), Need renovation (No), and PRM access (No). The address field contains the value "180 Freedom avenue". Below the table is a "Tenant inventory" section.

Field	Value
ID	6
Address	180 Freedom avenue
Municipality code	34000
Type	House
Need renovation	No
PRM access	No

**Screenshot 2 (Right):** Shows the same map and feature selection. The information panel has been updated to show a new table for the "Apartments" layer, reflecting the changes made in the previous screenshot. The address field now contains "190 Broadway avenue".

Field	Value
ID	6
Address	190 Broadway avenue
Municipality code	34000
Type	House
Need renovation	No
PRM access	No

**Bottom Left:** A QGIS logo with the text "NORRKÖPING UC25" and "QGIS UC 2025 / Norrköping".

**Bottom Right:** The number "13" indicating the slide number.

# Lizmap 3.8 : Improve PostgreSQL actions

**Lizmap actions:** run specific PostgreSQL queries and display results :

- new **project** and **layer** contexts / Run an action **programmatically** with JavaScript

**In 3.9, an input geometry drawn by the user can be added**

The image shows a screenshot of the LIZmap software interface. At the top, there's a dark blue header with the 'LIZmap' logo on the left, followed by 'Action and SQL' and 'Features' buttons, and a 'Download project' button with a cloud icon. On the far right of the header is an 'Administrator' link with a user icon. The main area is a detailed map of a town, likely Le Ronel, showing streets, buildings, and green spaces. A prominent red ribbon highlights a specific area labeled 'La Mésigienne'. The map is filled with labels like 'Chemin des Géodésiens', 'Rue Joseph Deltell', 'Avenue Louis Varet', and 'Route de Brignac'. There are also several red markers scattered across the town. On the left side of the screen, there's a vertical toolbar with various icons for map navigation and management. The bottom left corner has some text: 'QGIS UC 2025 / Norrköping' and 'GIS LUC25'. The bottom right corner has the number '14'.

# Quick overview Lizmap 3.9

- Drawing : Circular geometry measurement on draw, contribution from Faunalia
- Import and export drawing with FlatGeobuf
- Under the hood
  - performance about reading the QGIS project
  - Eslint, Styleline, Rector : code analysis and linting tools
  - Ongoing work to improve JavaScript documentation with OpenLayers etc
  - API documentation <https://docs.3liz.org/lizmap-web-client/>

# REST API

- Latest releases from May, June 2025
  - Perform some HTTP GET, PUT or DELETE requests
  - Manage Lizmap repositories and their rights
  - Metadata information from QGIS requests
  - More tight integration from the QGIS Desktop plugin to come, step by step ! 

## *Contributions from Néon Garaix*

# Lizmap Admin API

3.10.0-pre OAS 3.0

[/openapi.yaml](#)

Servers

http://localhost:8130/api.php ▾

[Authorize](#)

## repositories Requests onto repositories located in Lizmap

[/admin/repositories](#) Get all repositories

[/admin/repositories/{repository\\_key}](#) Get a specific repository

[/admin/repositories/{repository\\_key}](#) Create a specific repository

[/admin/repositories/{repository\\_key}/rights](#) Get list rights of a specific repository

[/admin/repositories/{repository\\_key}/rights](#) Add a right to a group on a repository

[/admin/repositories/{repository\\_key}/rights](#) Remove a right to a group on a repository

## projects Requests onto projects located in a specific repository in Lizmap

[/admin/repositories/{repository\\_key}/projects](#) Get all projects from a specific repository

[/admin/repositories/{repository\\_key}/projects/{project\\_id}](#) Get a specific project from a specific repository

## A focus on Lizmap modules



Lizmap features can be extended with modules for dedicated use cases

The wish is to integrate these modules into core, to ease the maintenance and make them more discoverable.

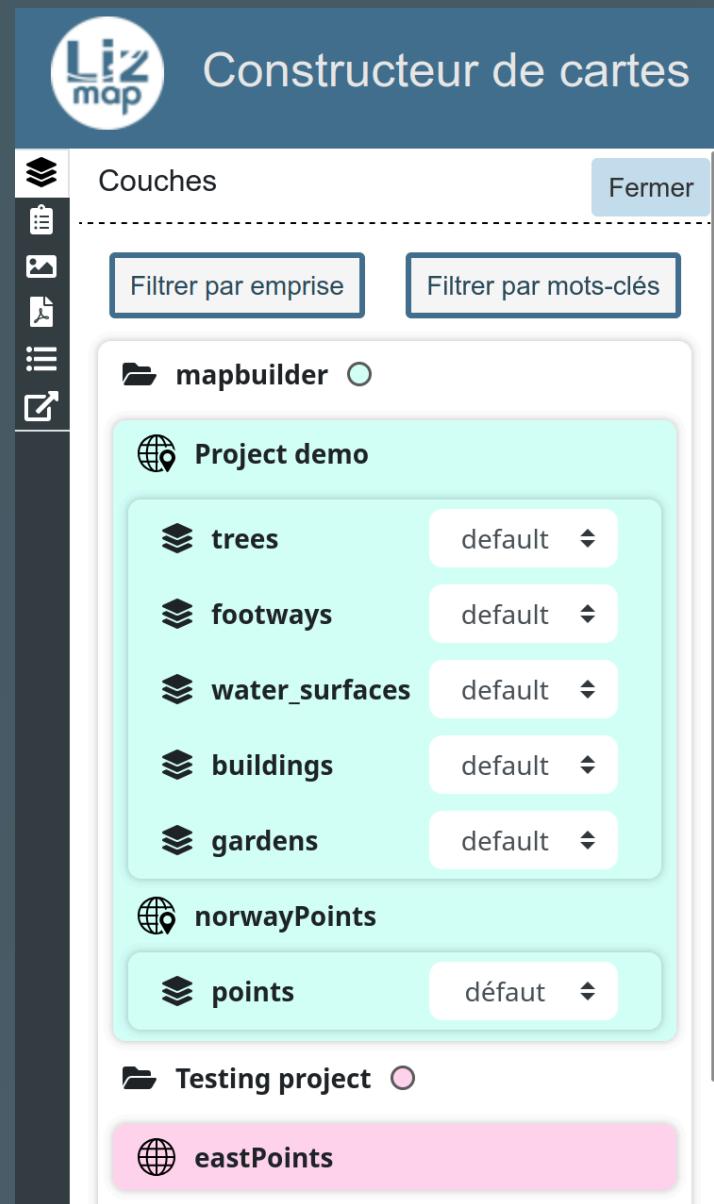
# Presentation module - Tell a story with Lizmap

- Create **one or more presentation** inside your maps
- Create slides with **rich text and medias** (images or video)
- Each slide can **zoom to a specific area** with a set of **active layers**

The screenshot shows the Lizmap Presentation module interface. At the top, there's a header with the Lizmap logo, the title "Presentation module", and a "Modules" dropdown. Below the header, the left sidebar has a "Presentations" section with a list containing one item: "Presentation test". It includes "Detail", "Delete", and "Launch" buttons. The main area is a satellite map of a city with several green and pink circular overlays representing active layers. A legend on the right side shows icons for zooming, panning, and other map controls. In the bottom right corner of the map area, there's a scale bar labeled "1 : 5 000" and "0 100 m 200 m".

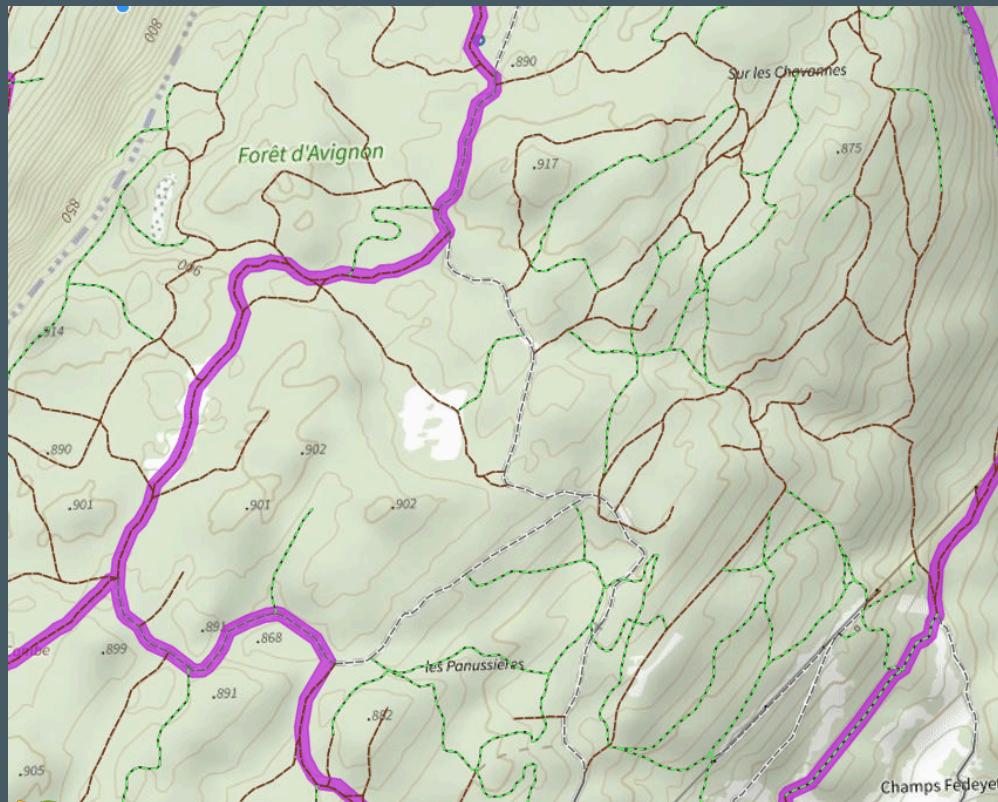
# MapBuilder

- Be able to combine layers from different QGIS projects, on the web browser **only**, without being a GIS technicians with QGIS and the need to publish a "new" QGIS project
- A lot of work done recently
  - filter by extent
  - filter by keywords
  - icon for the geometry type...
  - CSS overhaul...



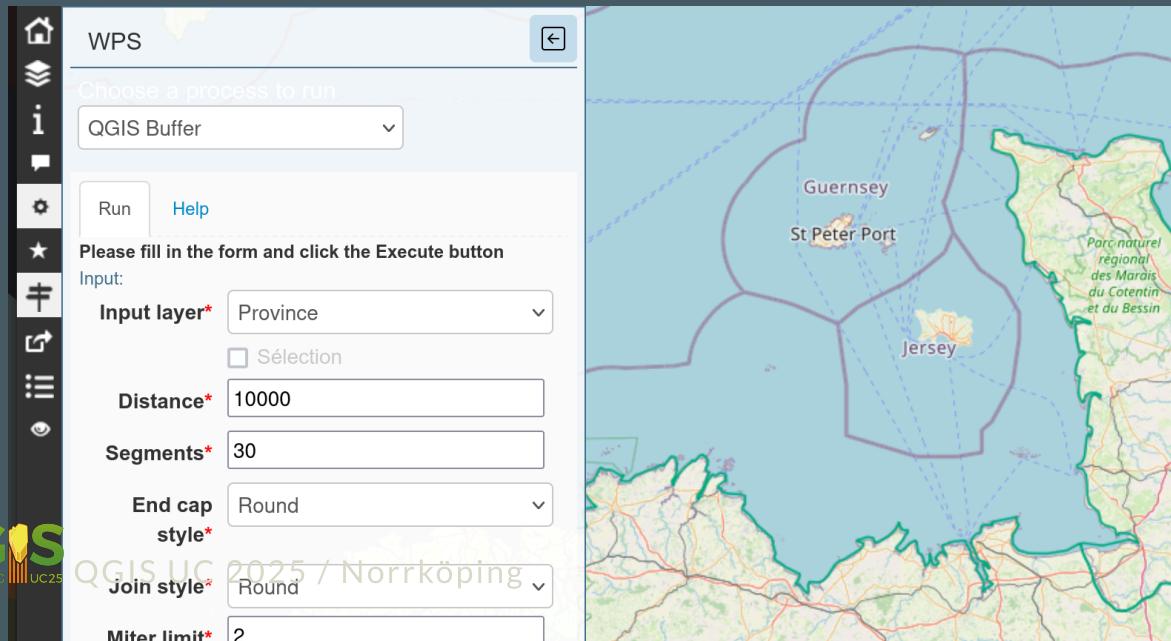
# PgRouting - Find your way

- Based on the amazing **PgRouting extension** for PostgreSQL
- The module adds **routing tools** which help the user to find its way
- The routing graph is **based on your data**, not on a online API



# WPS module - Run processing algorithms

- The power of **QGIS processing toolbox** inside Lizmap
- Each map has its set of **allowed algorithms or models**
- **Run the algorithm**: choose input values (buffer size, area code, etc.)
- **Results** are displayed whenever the algs ends (asynchronous run)
- **Download** produced outputs (layers, reports, etc.)
- A lot of work is going to be done with the coming weeks, stay tuned ! 
- UI Overhaul, CSS, move to OGC Processes...



The screenshot shows the Lizmap WPS module interface. On the left, there's a sidebar with icons for home, layers, info, print, settings, and more. The main window title is "WPS" and it says "Choose a process to run: QGIS Buffer". Below that, there are tabs for "Run" (which is selected) and "Help". A message says "Please fill in the form and click the Execute button". The "Input" section contains the following fields:

- Input layer\*: Province
- Sélection
- Distance\*: 10000
- Segments\*: 30
- End cap style\*: Round
- Join style\*: Round
- Miter limit\*: 2

On the right, a map of Jersey and Guernsey is shown. Jersey is highlighted in yellow, and Guernsey is highlighted in orange. A large purple buffer zone is drawn around Jersey, extending into the sea. Labels on the map include "Guernsey", "St Peter Port", "Jersey", and "Parc naturel régional des Marais du Cotentin et du Bessin". The bottom of the window displays the text "QGIS UC 2025 / Norrköping".

# Some side projects, under the hood of Lizmap

- Proj4Js will be replaced by Proj4Rs
  - Written in Rust Web Assembly
  - <https://github.com/3liz/proj4rs>
- Py-QGIS-Server
  - Better management of QGIS server processes (without Apache/Nginx)
  - <https://docs.3liz.org/py-qgis-server/>
  - It will be replaced by a total new project
  - QJazz, QGIS as a service
    - <https://docs.3liz.org/qjazz/qjazz-server/>



# The Future of Lizmap



# 3.9 is in feature freeze, 3.10 started

- Attribute table managed on the server side
  - Better performance, the customer request is to manage millions of lines with pagination
- Point vector layer from QGIS translated to a vector point layer into OpenLayers 10, with the QGIS symbology.
- Layouts portofolio, work funded by Mirandela city in Portugal (throughw



# The future of Lizmap

- Generalize the use of the **compact list of features**
- Catch up with QGIS **editing form capabilities**
- **Copy-paste geometries** between tools (drawing, selection, identified feature)
- Always some work under the hood :
  - Bootstrap 5 migration
  - OpenLayers :
    - Remove the last part of OpenLayers 2
    - Since version 3.8, the OpenLayers 10 map is now on top
    - OpenLayers 2 : **only**



# The future of Lizmap

- Integrate some **external modules** into **core** ?
  - Presentations
  - PGrouting
  - Altiprofil, with **COG** support
- QGIS Authentication database, or other backend



# The future of Lizmap

Routing specific requests to  
specific QGIS Server  
backend :

- PDF print requests →  
dedicated QGIS Server  
processes
- Slowness of queries
- Manage cache per  
processus
- Readonly
- Not loading QGIS layouts if  
not needed
- Move attribute table export  
of layer to a QGIS processes



# Connect with our community !

- Organize **online events** to meet users and developers
- Gather user needs and maintain **a roadmap** with priorities
- **Communicate more:** transition from twitter to **Mastodon** & LinkedIn, etc.



# Translations

- Quick updates about the state of translation, as of begining of May 2025
- Top 10 (with English, of course)

French

100.0

Portuguese

100.0

Romanian

100.0

Czech

99.22

Italian

95.72

Polish (Poland)

87.7

Dutch

79.37

Japanese

73.79

German

67.74

Ukrainian (Ukraine)

65.69

# Thank you for your attention !

- Demos: <https://demo.3liz.com>
- Email: [info@3liz.com](mailto:info@3liz.com) / Mastodon: @LizmapForQgis - Coming soon
- Source code: <https://github.com/3liz/>
- Hosting: <https://www.lizmap.com/en/plans.html>

