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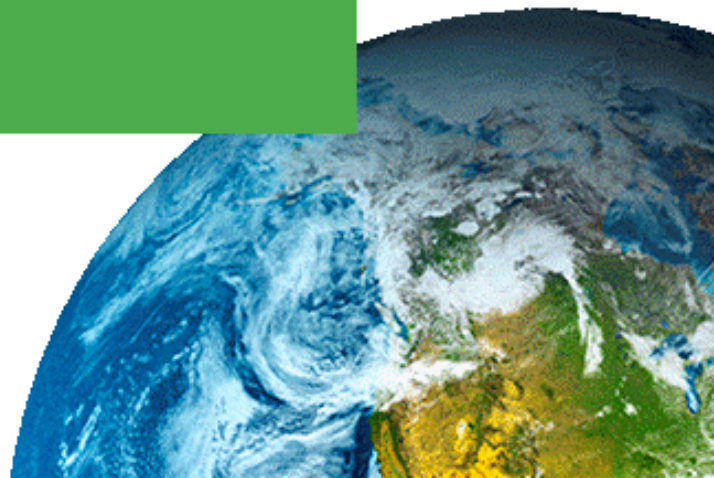
MapStore
at
geOcom 2022

Tobia Di Pisa
GeoSolutions

OGC® Member



About GeoSolutions

- Founded in late 2006
- Offices in Italy & US
- Supporting/Developing FOSS4G projects
  - MapStore, GeoServer, GeoNode , GeoNetwork, CKAN
- Offer
  - Enterprise Support Services
  - Deployment Warranty
  - Professional Training
  - End-To-End Projects (Integration)
- Clients
  - UN FAO (CIOK, FIGIS, NRL, FORESTRY, ESTG), UN WFP, World Bank, DLR, EUMETSAT, JRC, NATO CMRE, UNESCO, UNEP, etc..
  - BAYER, DigitalGlobe, MDA, TOPCON, SwissRE, Halliburton, etc..
- https://www.geosolutionsgroup.com

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Agenda

- What is MapStore ?
- Who uses MapStore ?
- MapStore at work
- MapStore roadmap

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What is MapStore?

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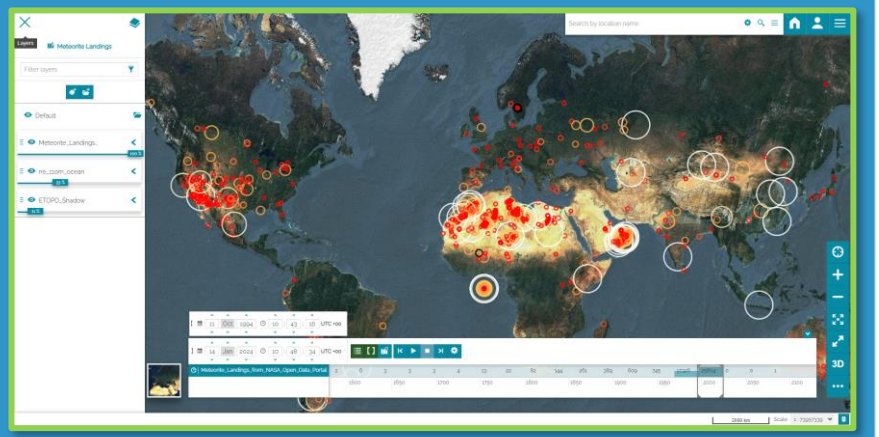
What is MapStore?

- **Create and share maps, charts, dashboards and stories online**
- **Mobile first | Responsive**
- **Mapping engine agnostic**
  - OpenLayers|Leaflet|Cesium
- **Leveraging React ecosystem**
- **Pluggable Look & Feel**
- **Consume data from many sources**
  - OSM, Bing, WFS, CSW, WMS, WMTS
- **License is Simplified BSD**
  - Commercial friendly!



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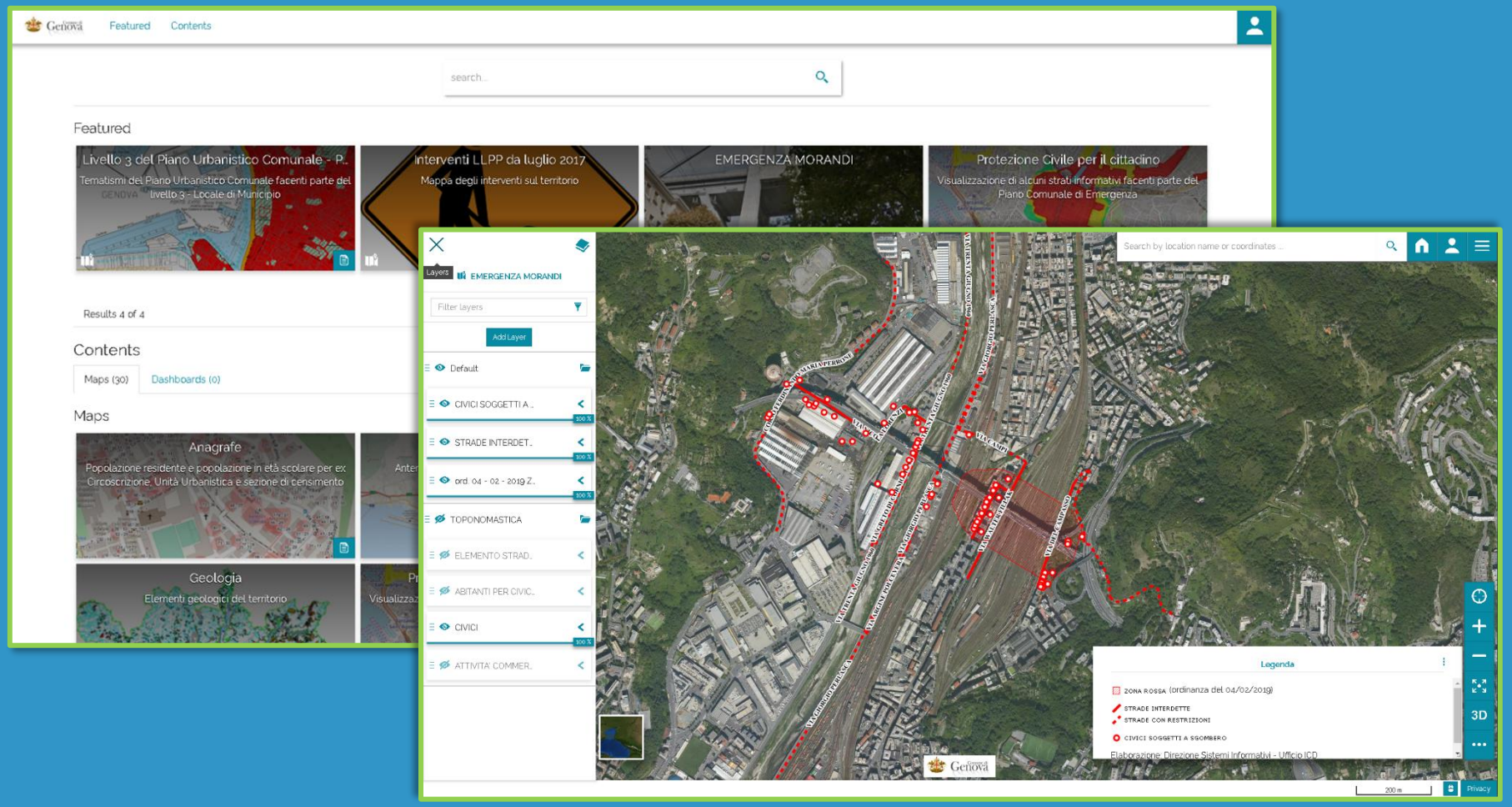
What is MapStore?

It is a Product



Use it as is and customize the look&feel

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What is MapStore?

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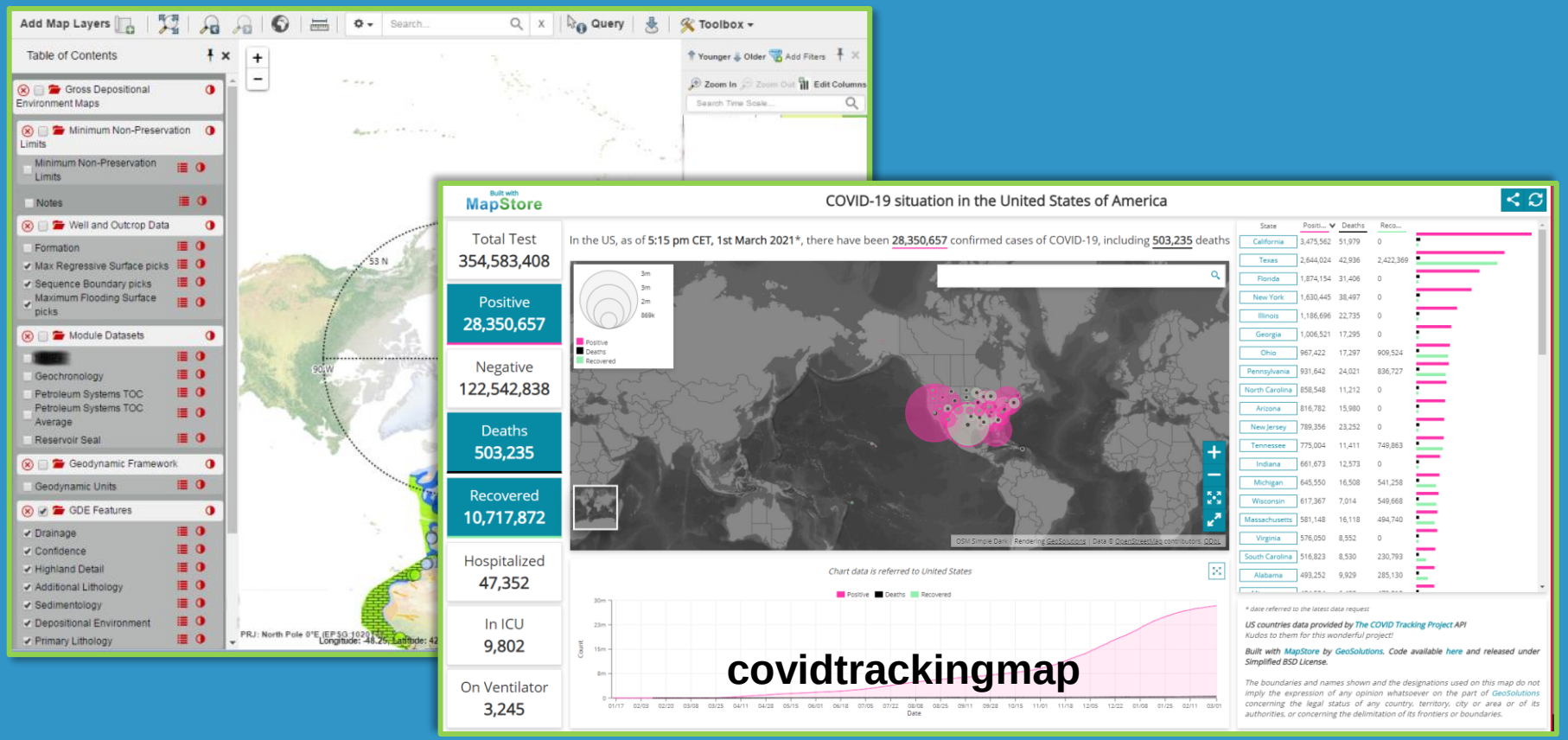
It is a Framework



You can build many different applications with its plugins (and by developing your own)

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Who uses MapStore?

Who uses MapStore?

- Halliburton
- Austrocontrol
- MapStand
- UN FAO
- EMSA
- World Bank (via GeoNode)
- Unesco (via GeoNode)
- EARTH-I
- Arno river basin authority
- Region of Tuscany (Hydrologic Service)
- Region of Tuscany (Urbanistic Department)
- LaMMa
- BRGM
- City of Munich
- City of Florence
- City of Genova
- City of Bozen
- City of Brussels
- IGB (via GeoNode)
- **Rennes Métropole (via geOrchestra)**

As well as many other clients and users around the world!

☺

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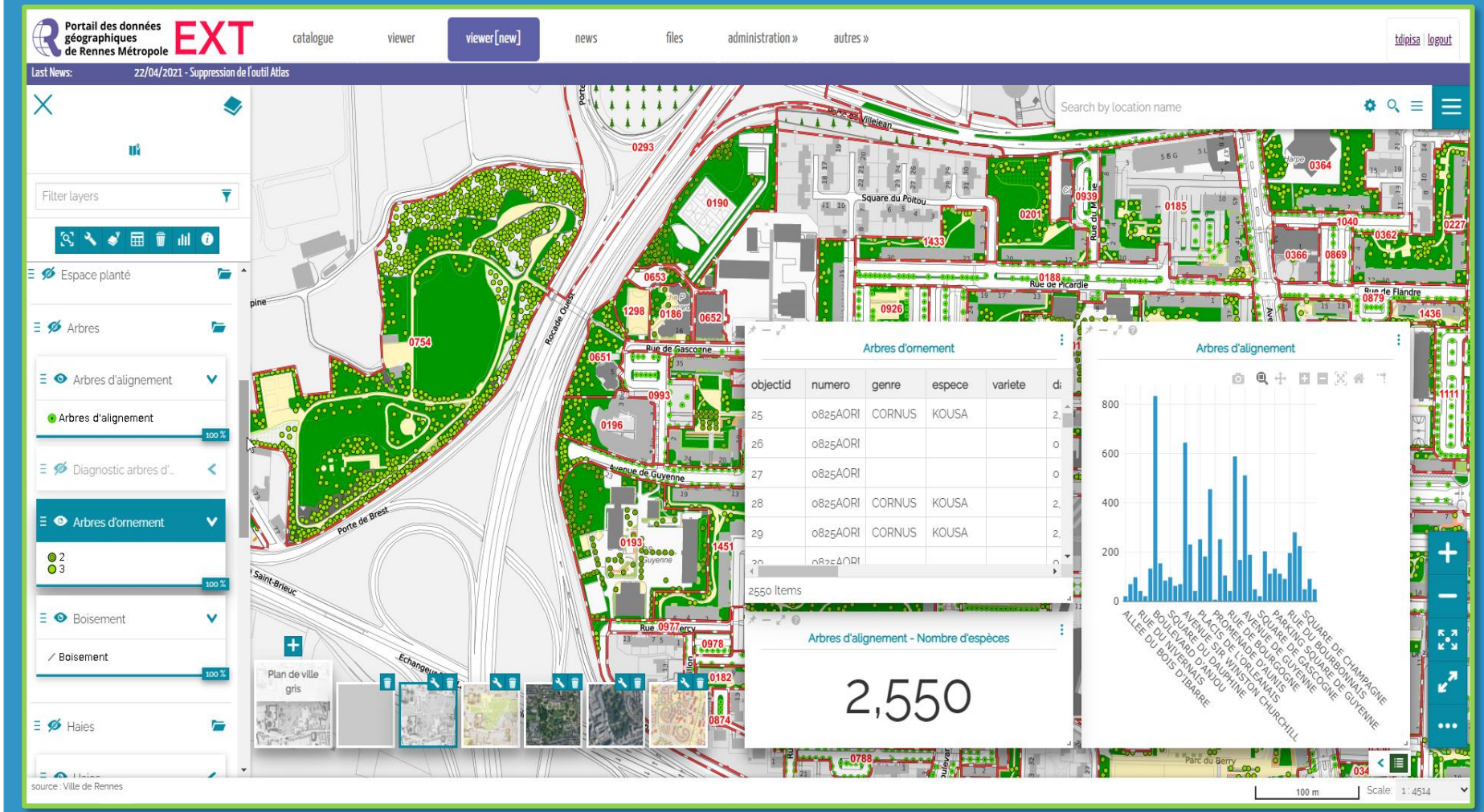
Who uses MapStore?

Rennes Métropole - geOrchestra



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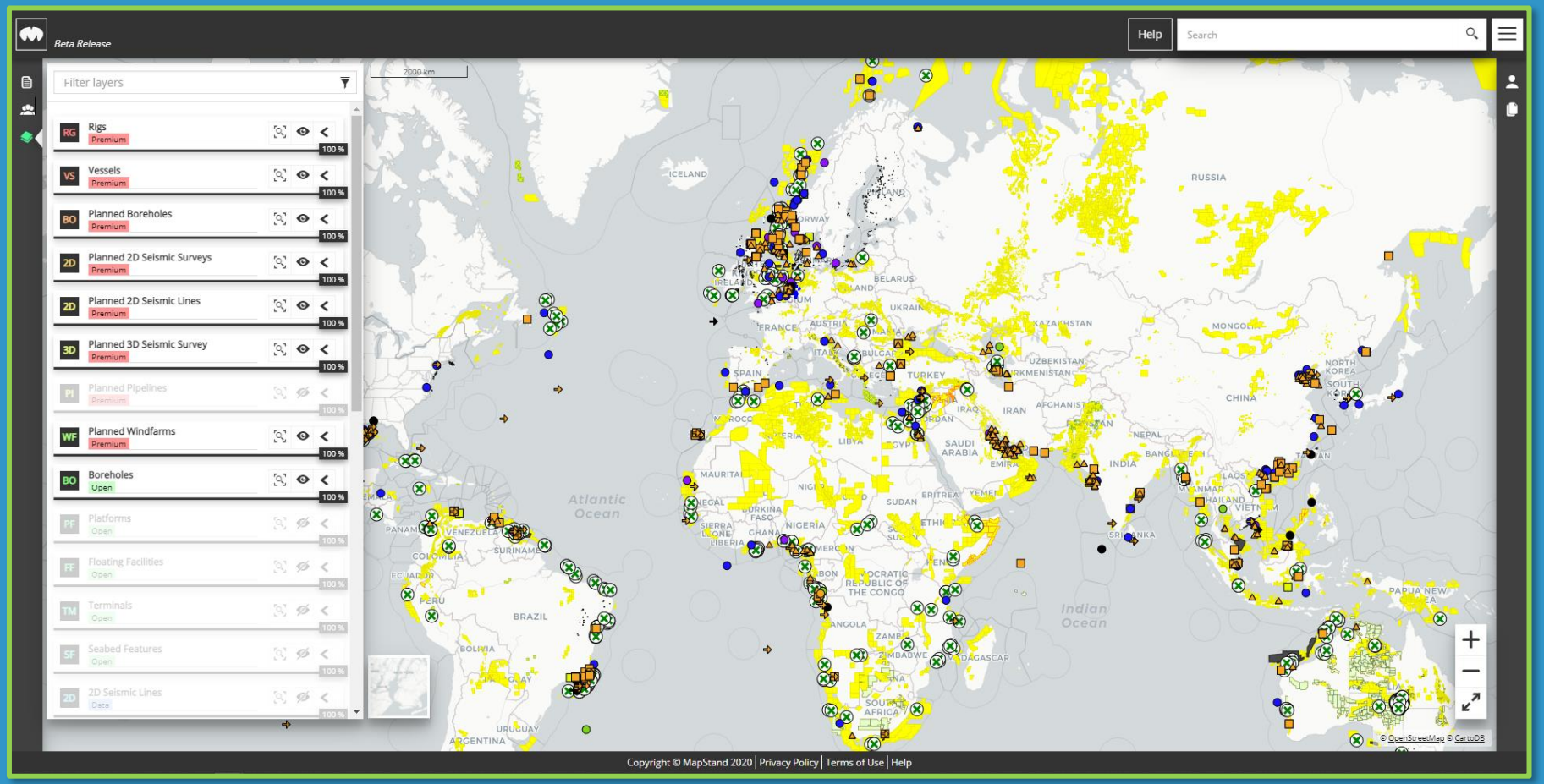
Who uses MapStore?

MapStand



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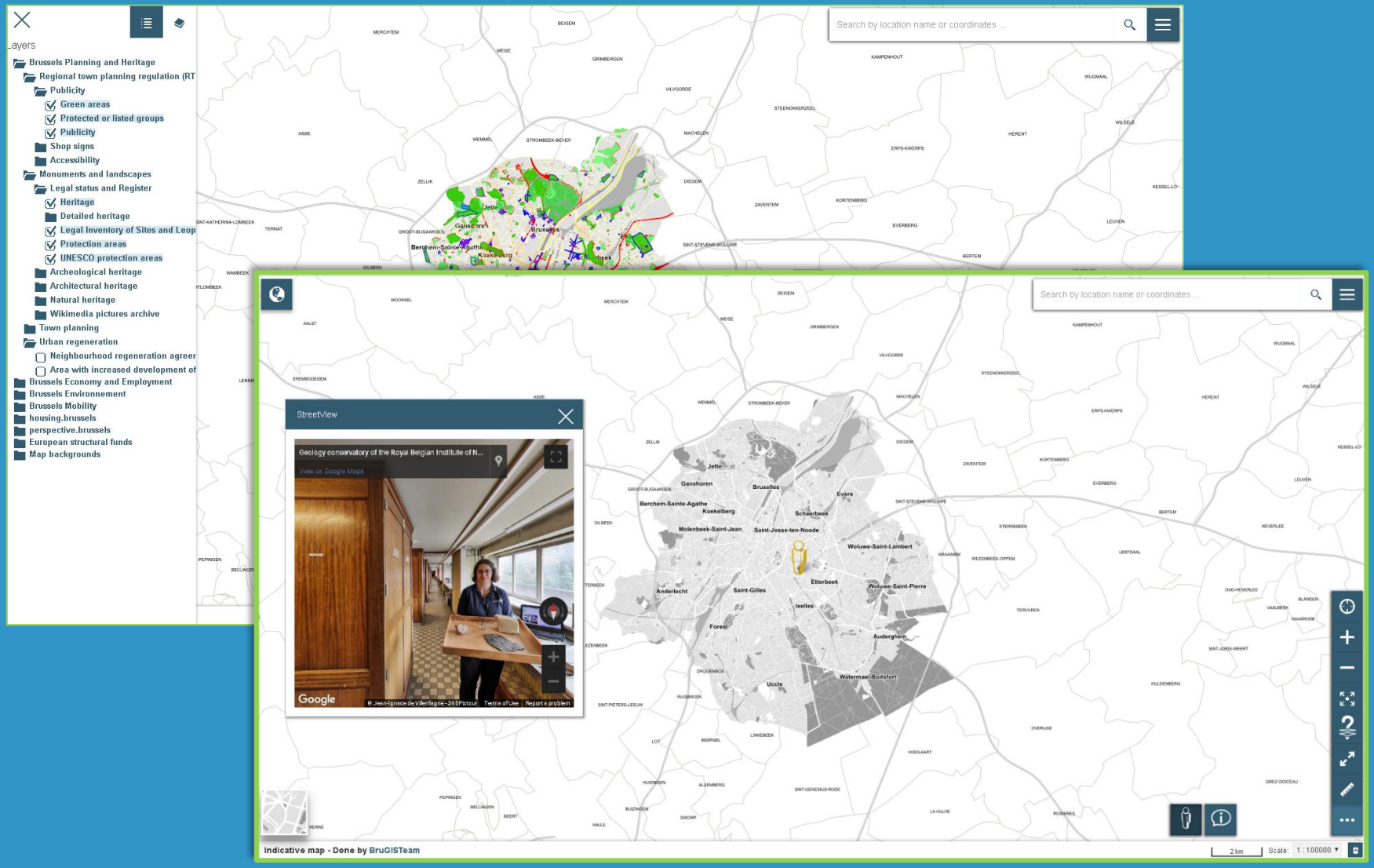
Who uses MapStore?

City of Brussels



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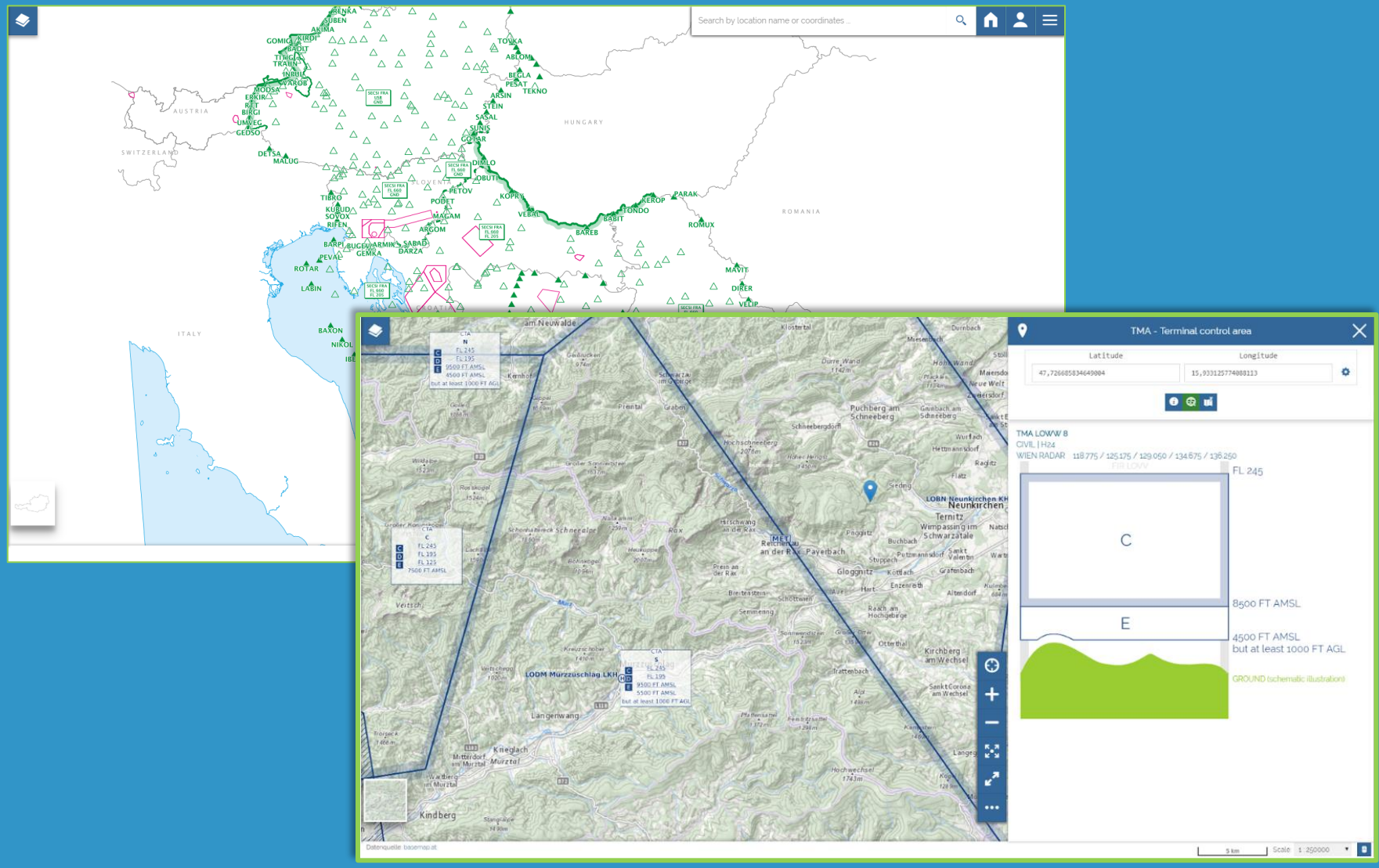
Who uses MapStore?

Austrocontrol



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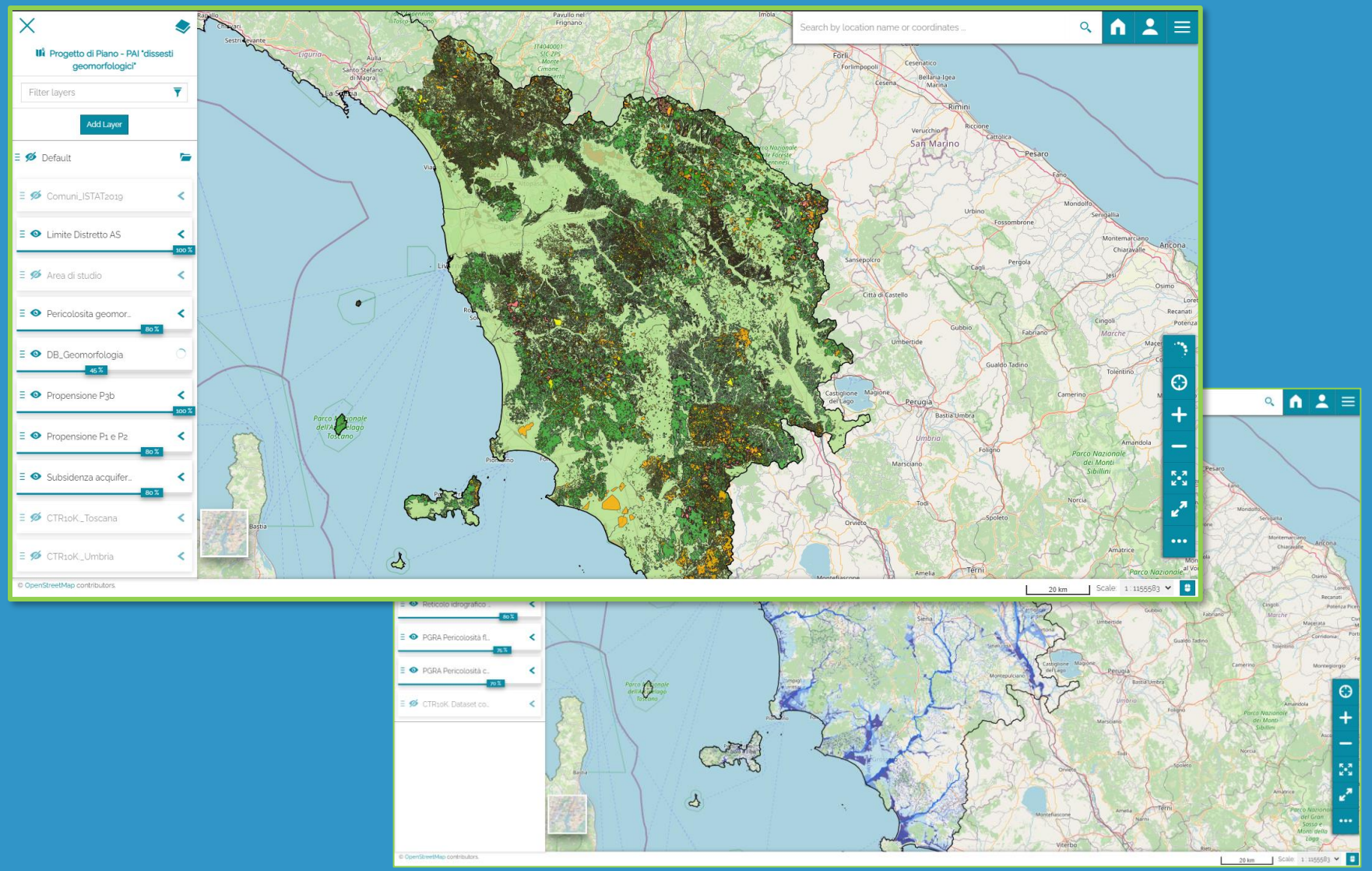
Who uses MapStore?

Arno river basin authority



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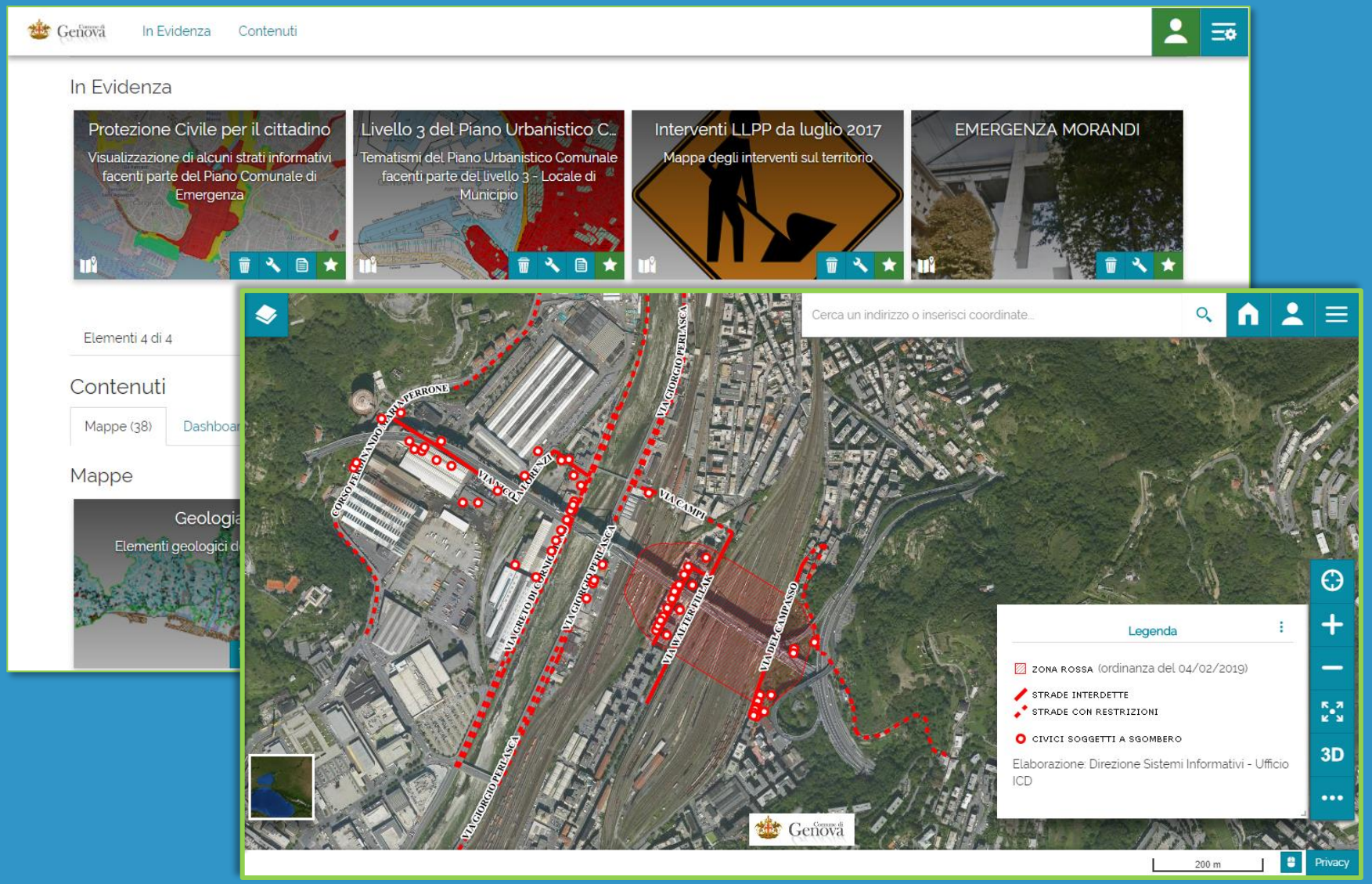
Who uses MapStore?

City of Genova



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More Info

- **Demo →** https://mapstore.geosolutionsgroup.com
- **User Docs →** https://mapstore.readthedocs.io/en/latest/user-guide/home-page/
- **Dev Docs →** https://mapstore.readthedocs.io/en/latest/developer-guide/requirements/
- **GitHub Repo →** https://github.com/geosolutions-it/MapStore2
- **Youtube Videos →** https://www.youtube.com/playlist?list=PLe2yzutVrnZ5tjYGYYcKmZzo_M9ku5I9X
- **Mailing Lists →** https://groups.google.com/g/mapstore-users
  https://groups.google.com/g/mapstore-developers

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MapStore at work

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MapStore at work

- Many features available out-of-the box
- Many scenarios are covered
- Works with of OGC standards
- Easy to set up and configure
- Easy to customize and extend
- Open Source project
- Compatible with the most common browsers: FF, Edge, Chrome and Safari

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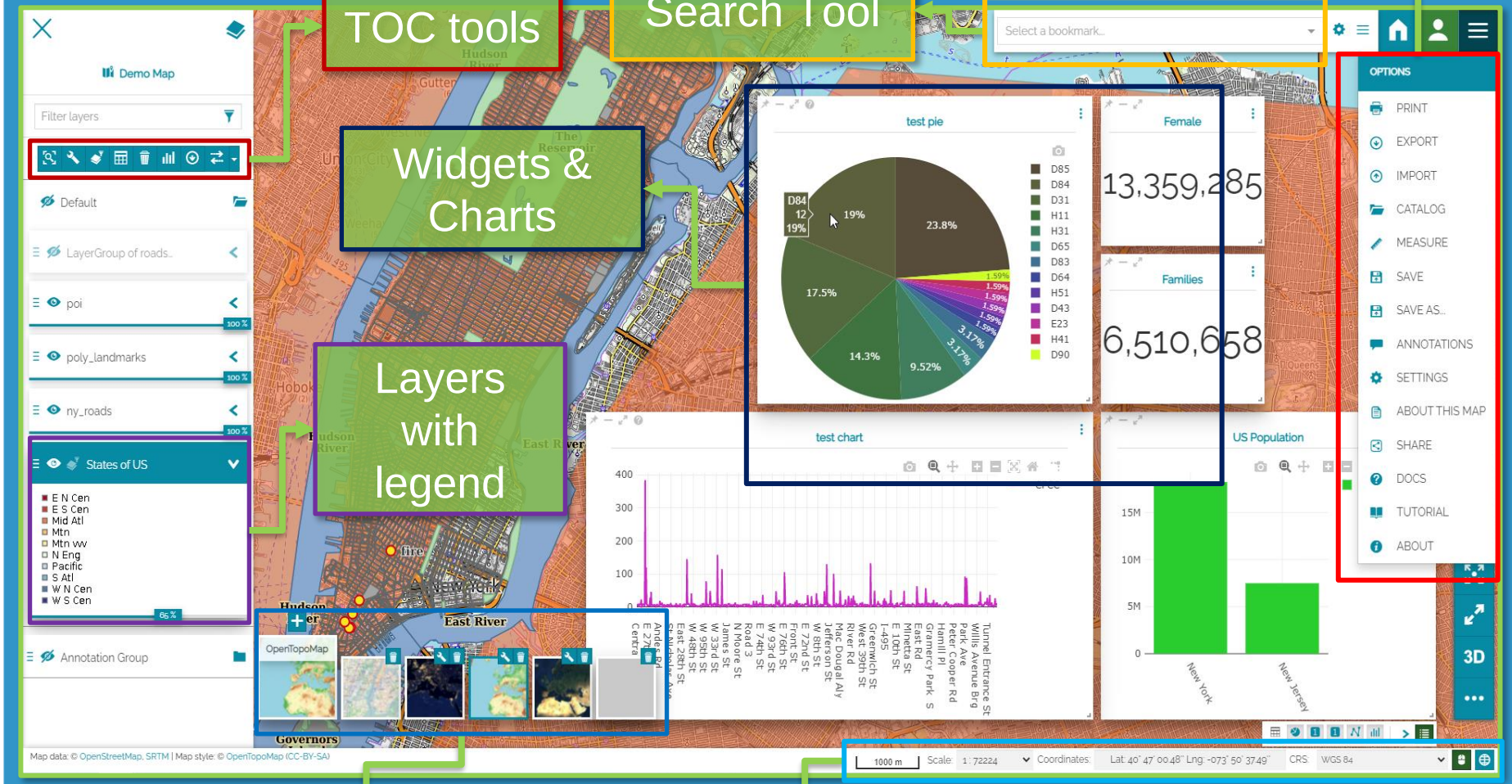
MapStore at work

MapStore Map Viewer: overview



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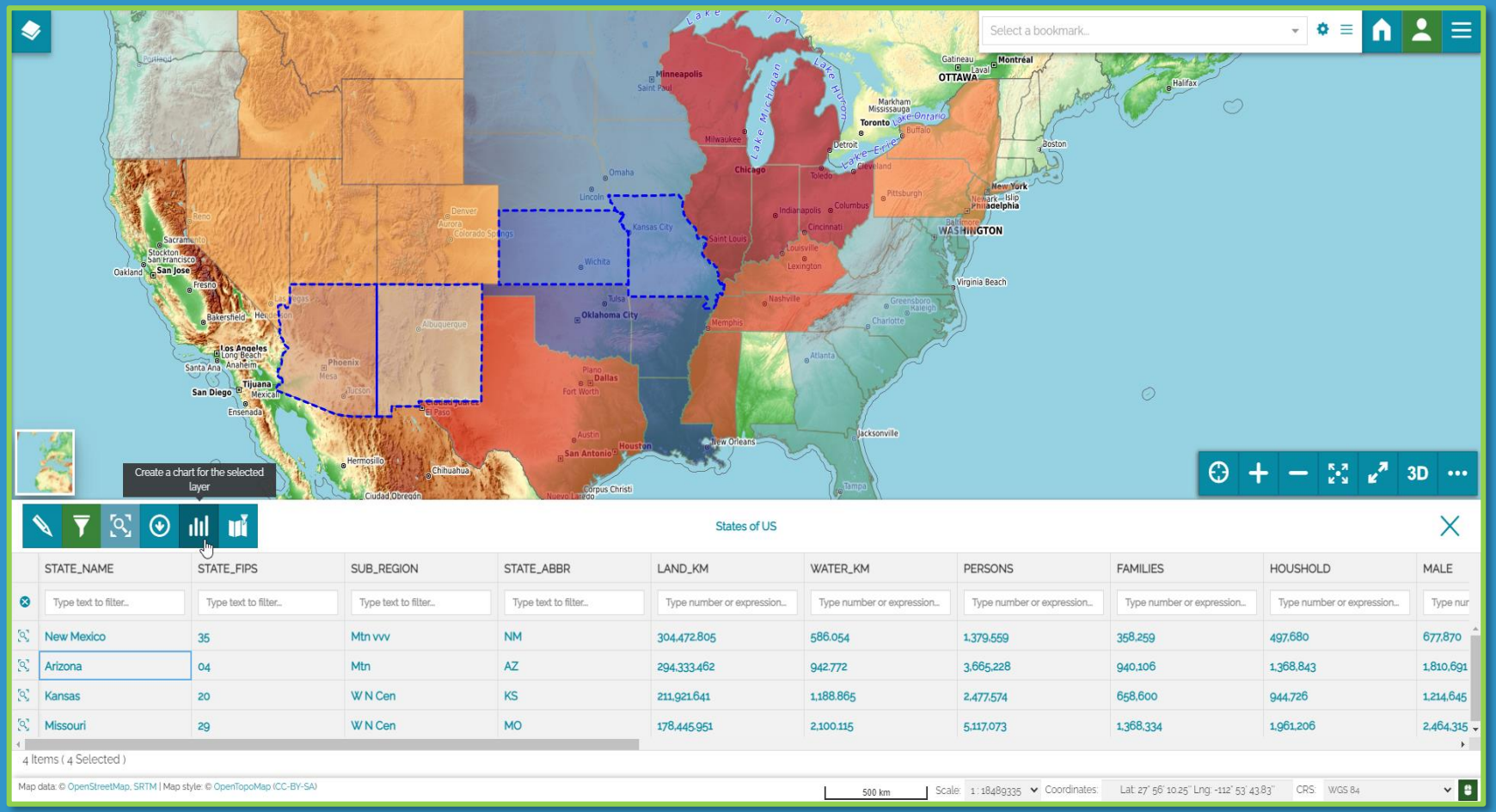
MapStore at work

Attribute Table: browse features of a vector layer through a tabular view and access advanced utilities (**Filters**, **Data Exports**, **Charts**, **Editing of features** and more).



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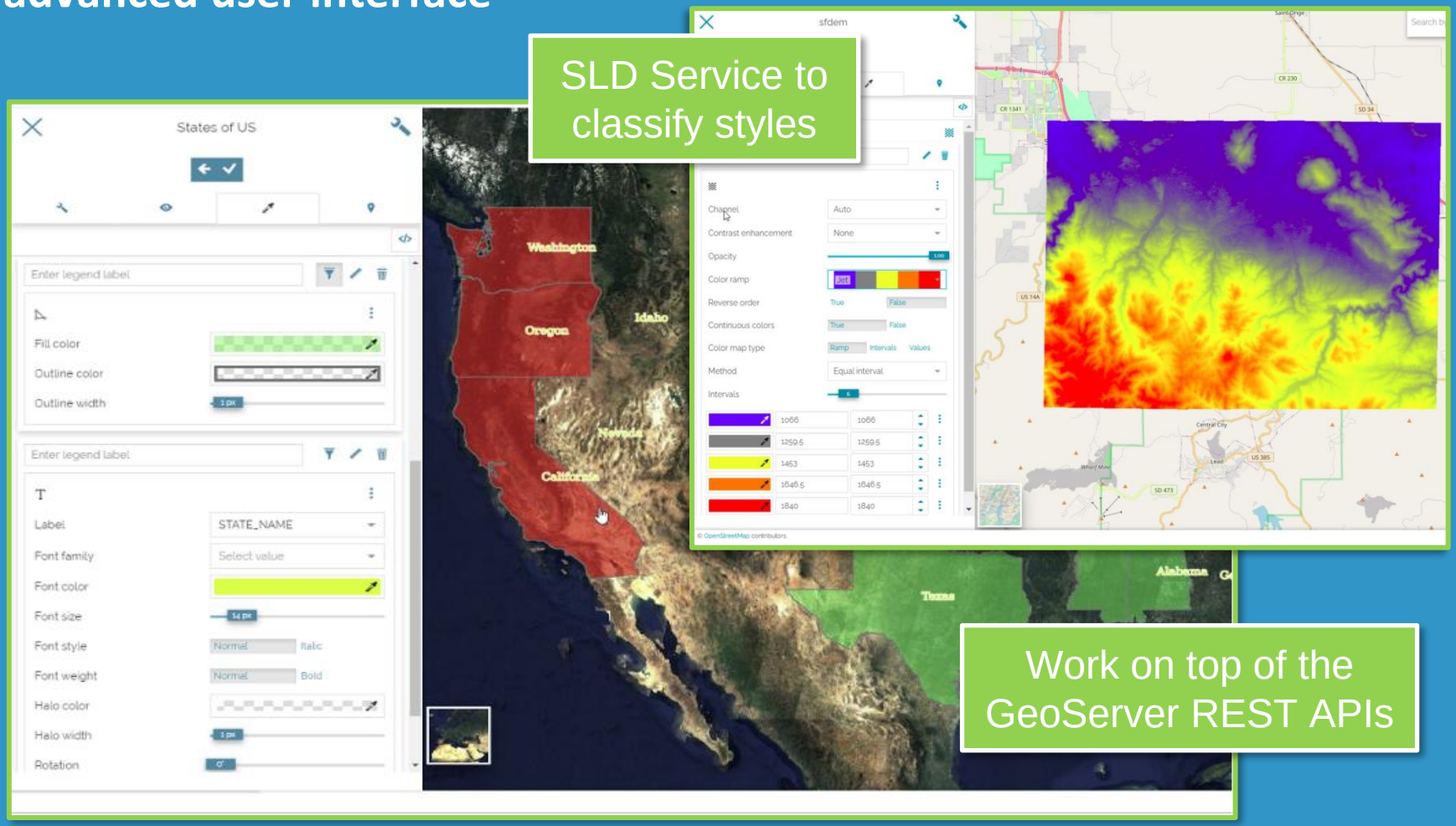
MapStore at work

Visual Style Editor: editing layers styles in MapStore with an advanced user interface



Both Vector and Raster styles!

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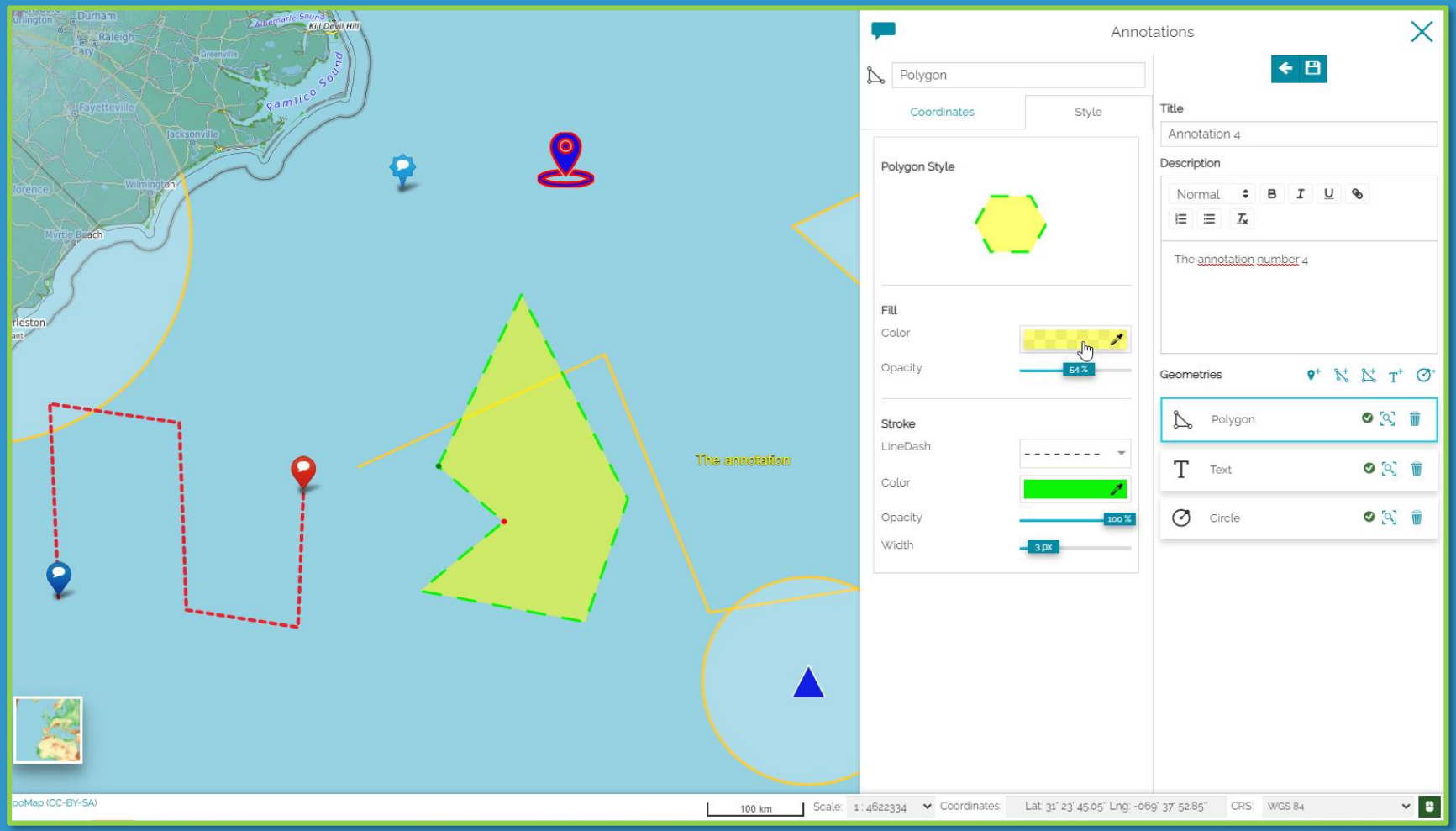
MapStore at work

Annotations tool: provide a great user experience in creating/drawing map annotations with a powerful user interface and styling capabilities.



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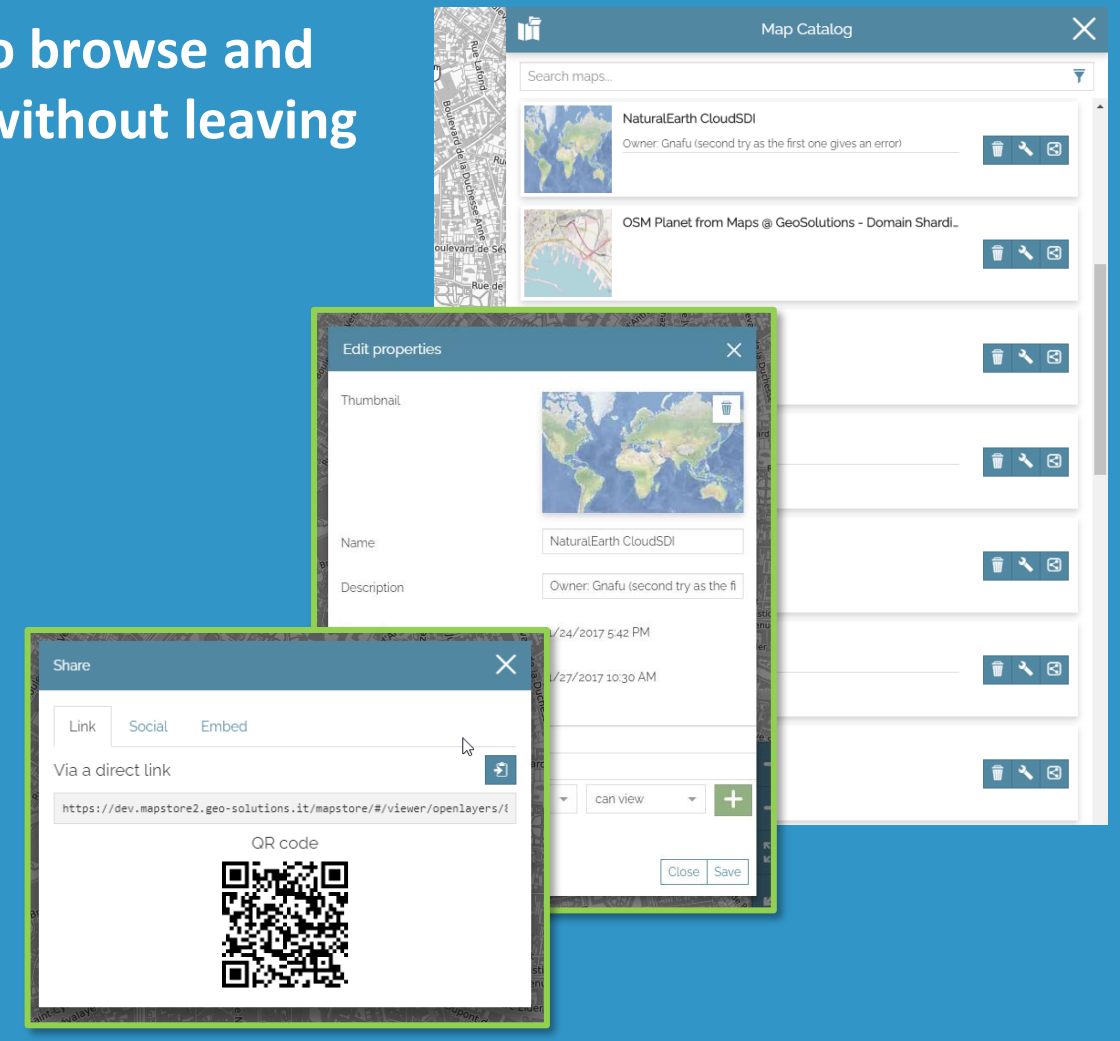
MapStore at work

The Map Catalog allows to browse and manage MapStore maps without leaving the viewer



- Search for maps you have access to
- Manage map properties and permissions
- Share a map

Thanks to Rennes Métropole and geOrchestra ! ☺

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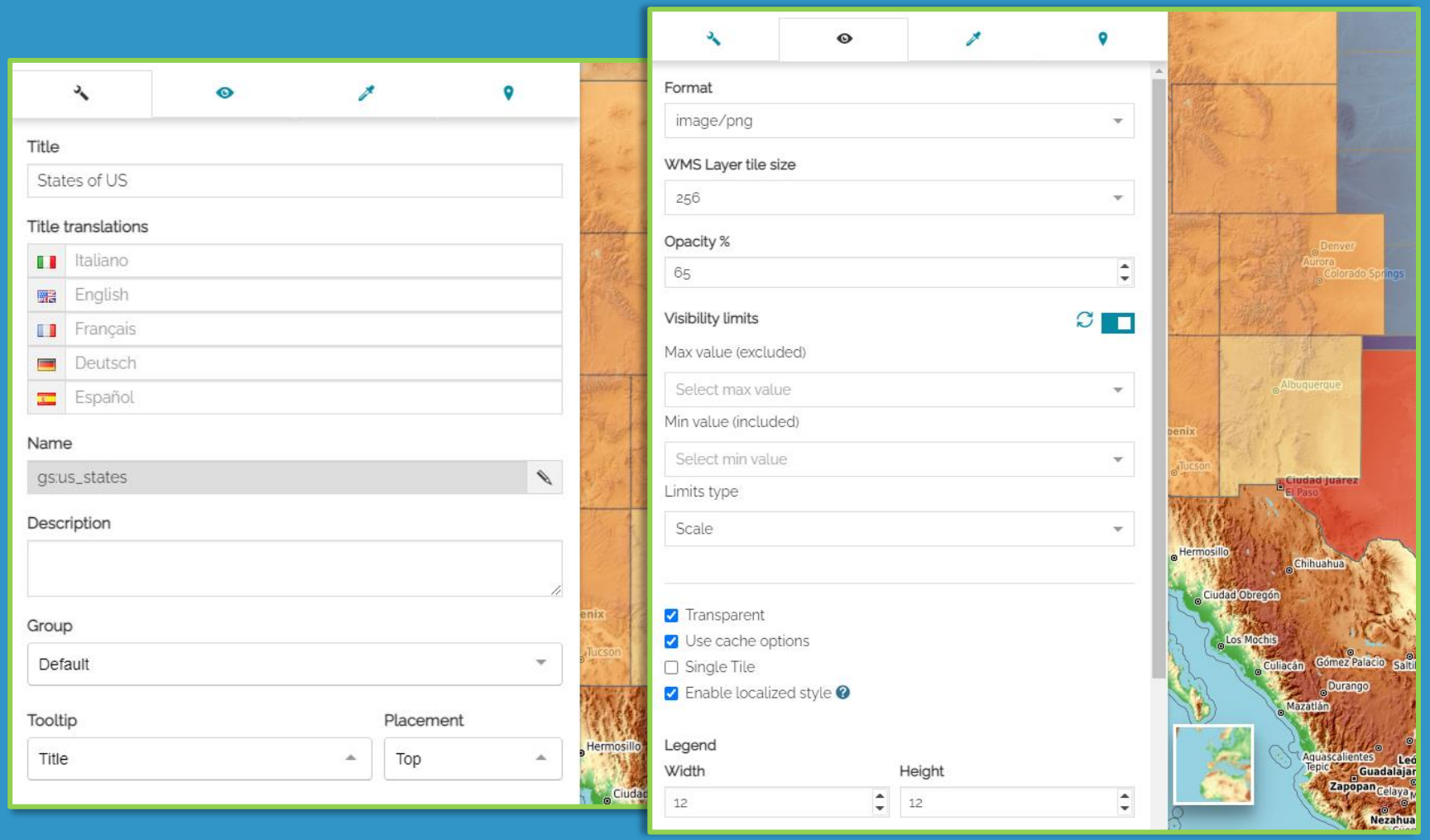
MapStore at work

Layer Settings: tune the layer settings in terms of *general information*, *display mode*, *style* and *feature Info*



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MapStore at work

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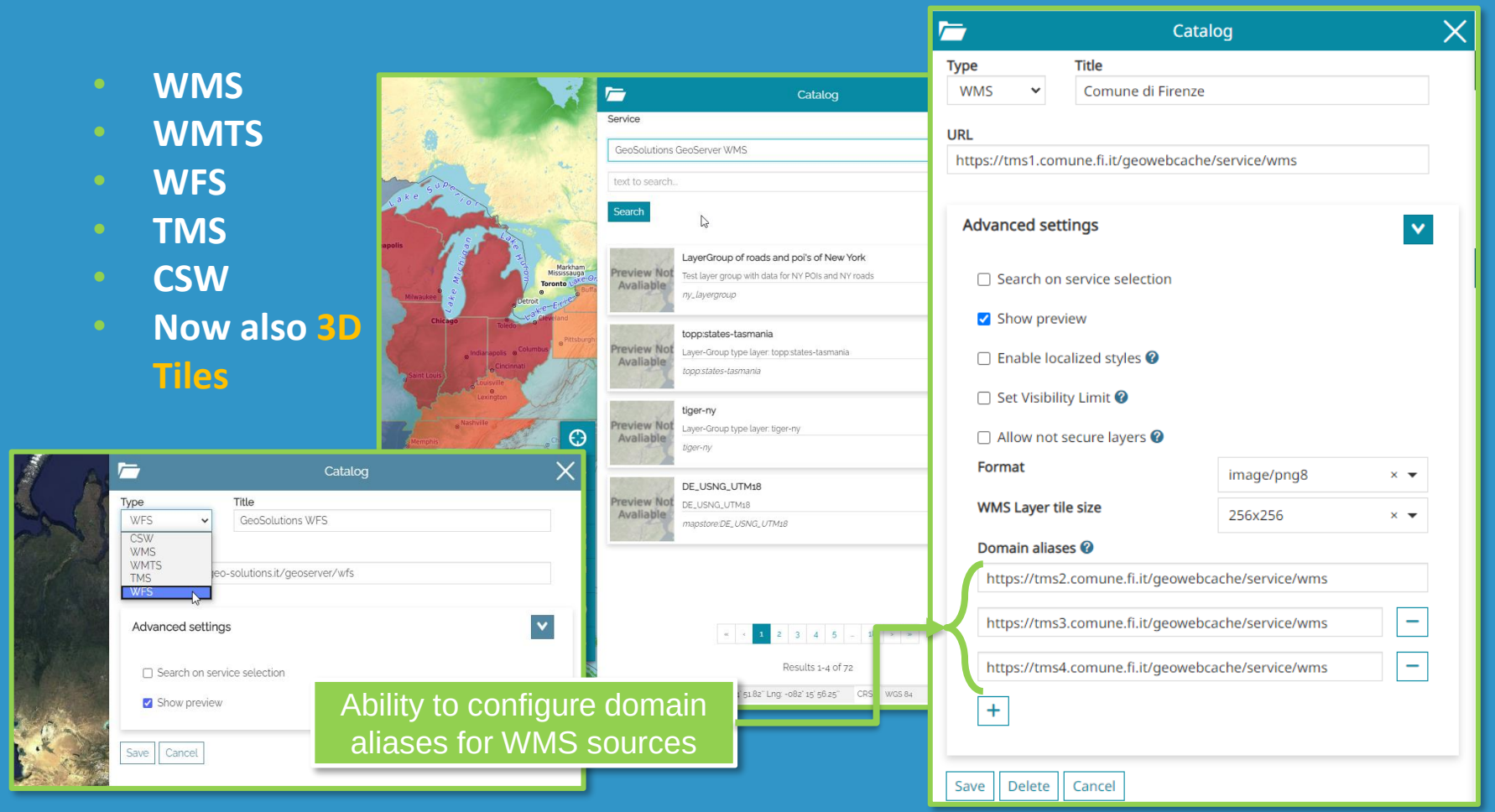
Catalog Tool: browse contents from external sources to add layers to the map. Supported catalog types are:

- WMS
- WMTS
- WFS
- TMS
- CSW
- Now also 3D Tiles



Thanks to Rennes Métropole and geOrchestra ! ☺

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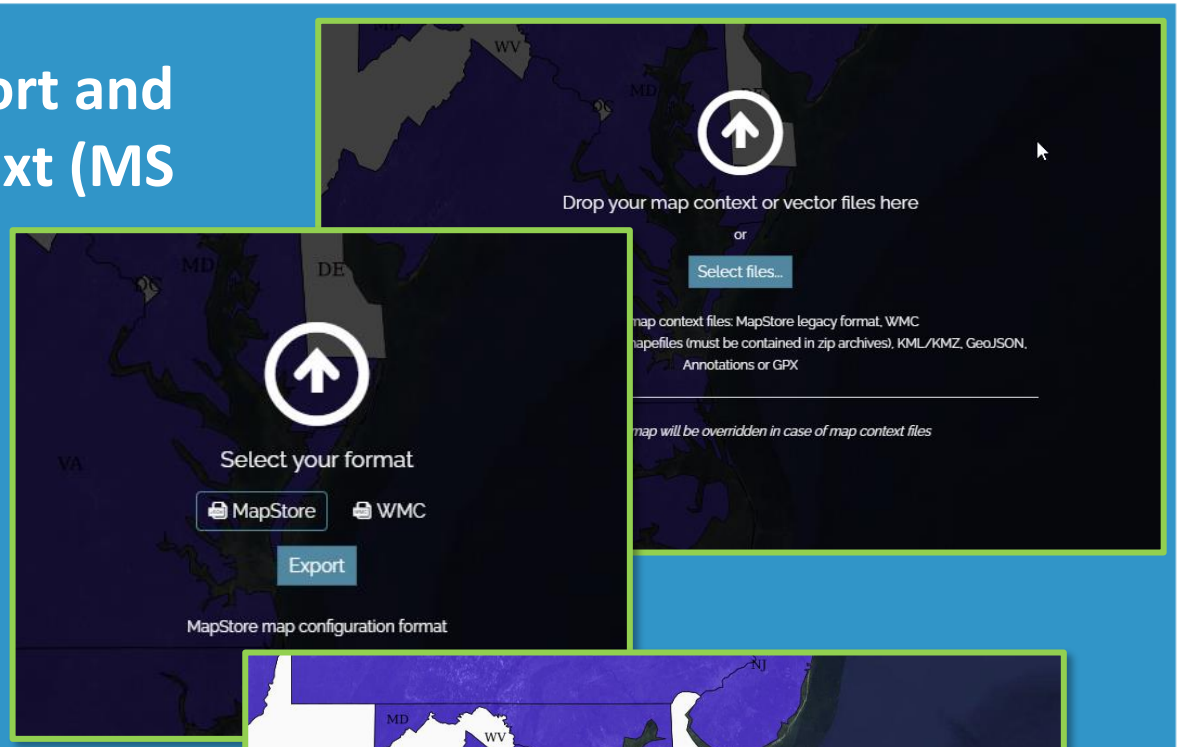
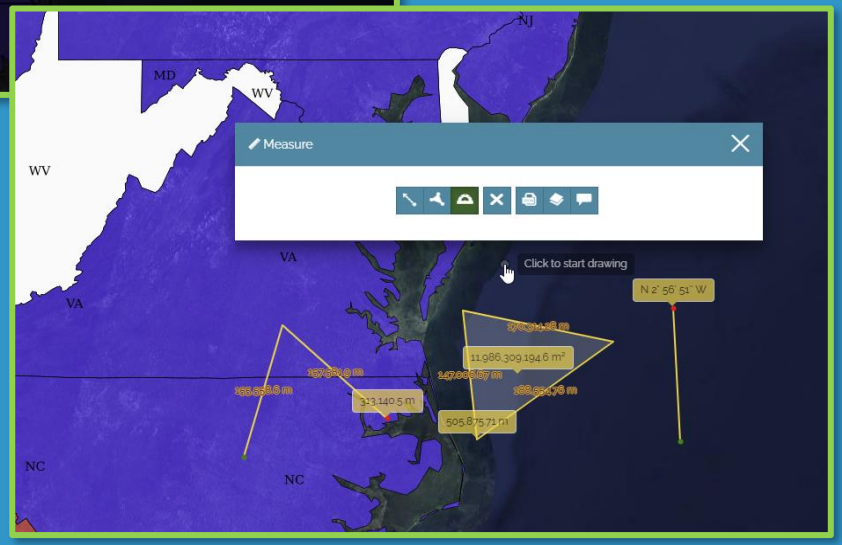
- **Import/Export**: import and export of map context (MS JSON and WMC are supported)



- **Measurements**: perform your measurement in map and export or convert them to be used with other tools



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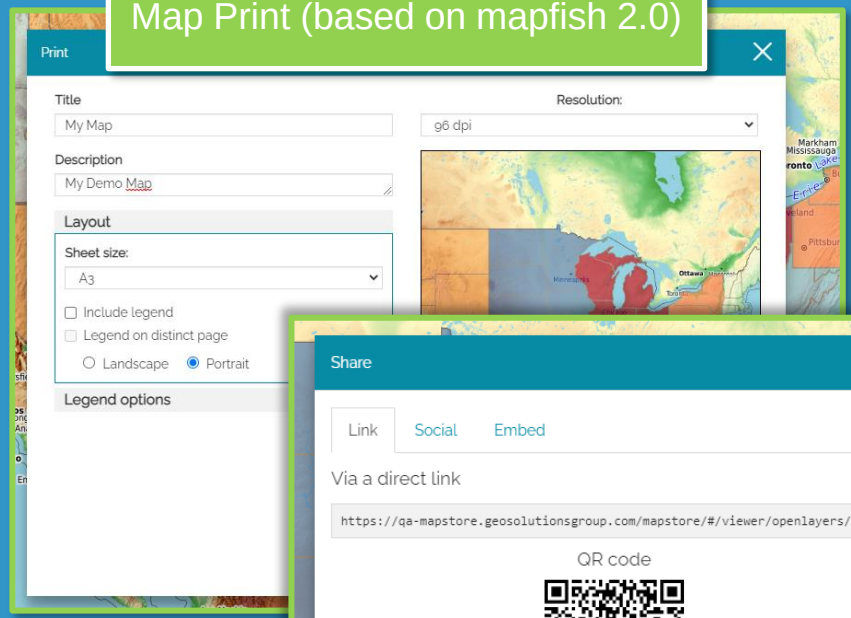
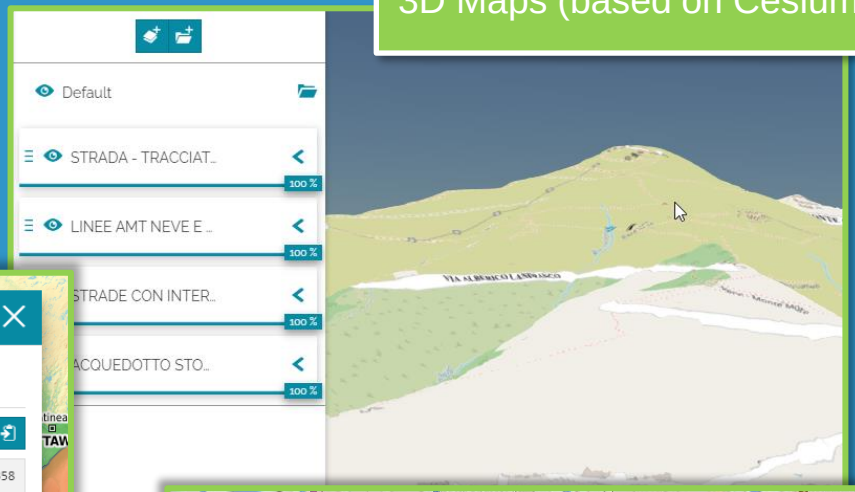
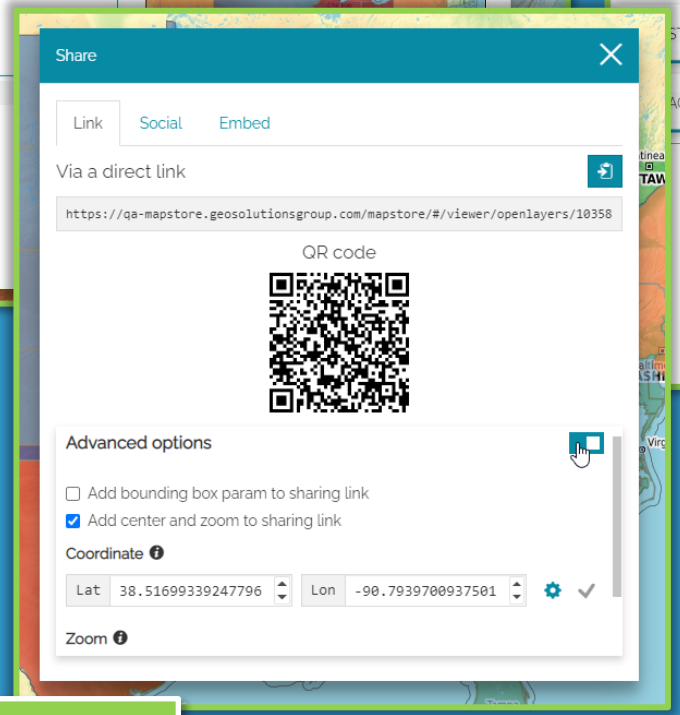
Map Print (based on mapfish 2.0)

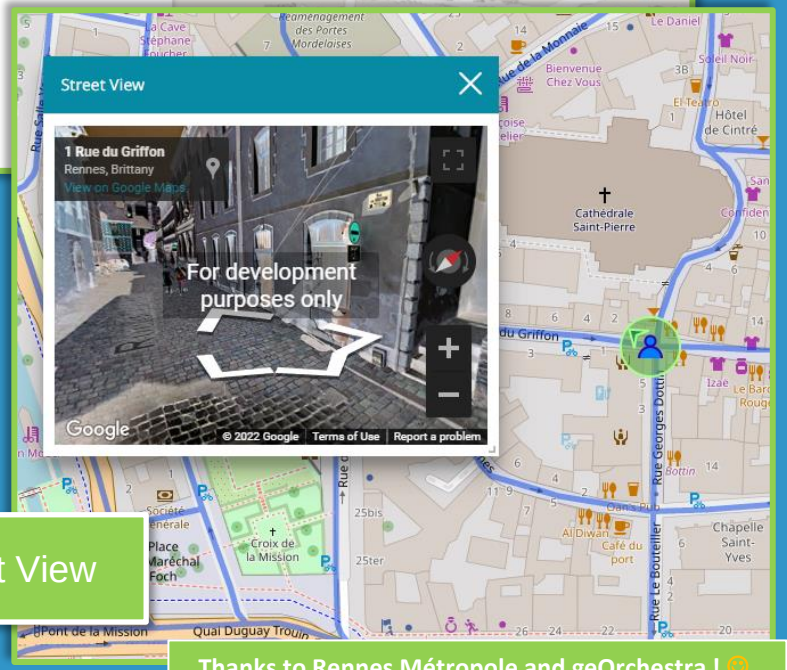


3D Maps (based on Cesium JS)





Map Share



Street View

Thanks to Rennes Métropole and geOrchestra ! ☺

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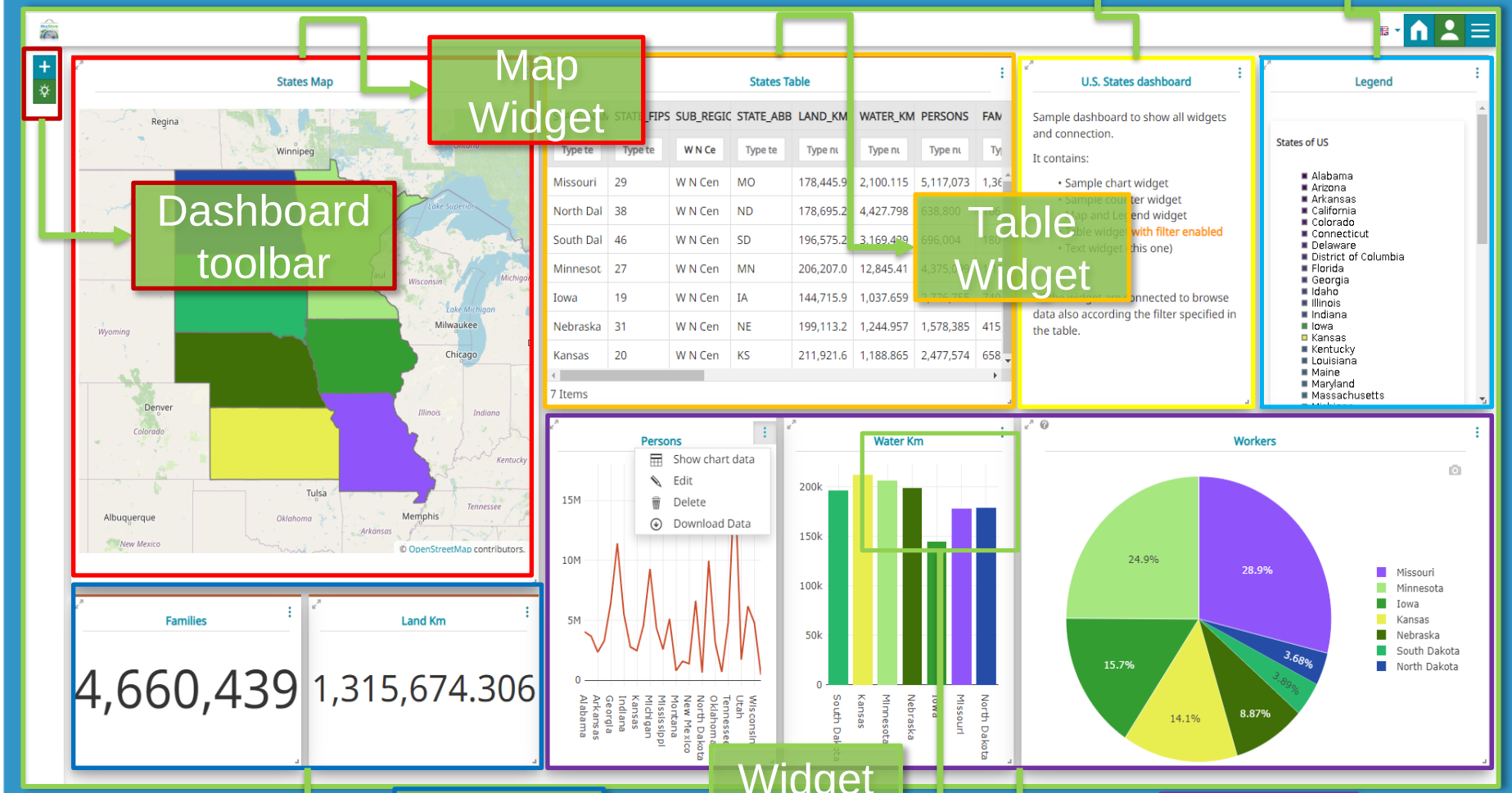
MapStore at work

MapStore Dashboard: general overview



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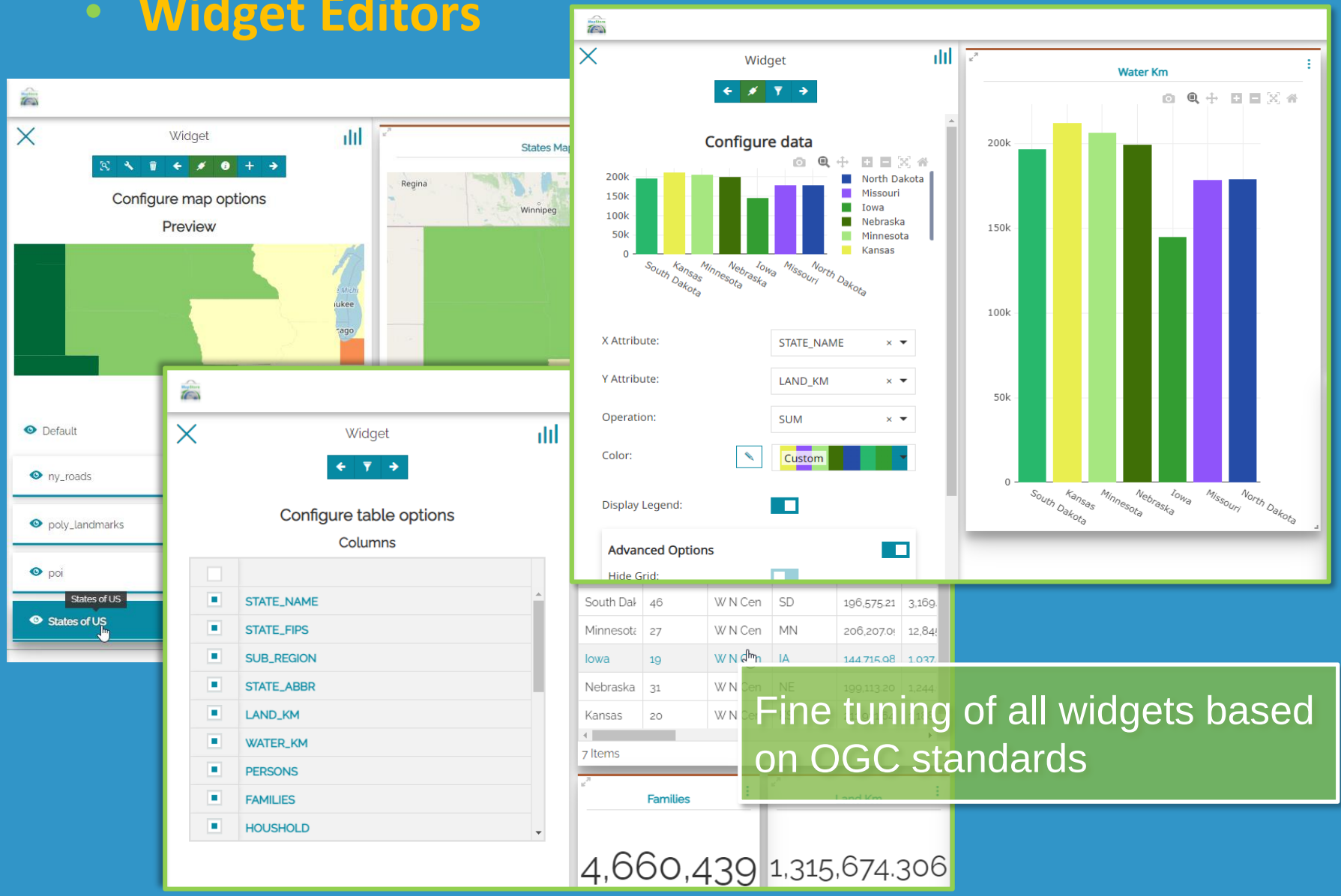
MapStore at work

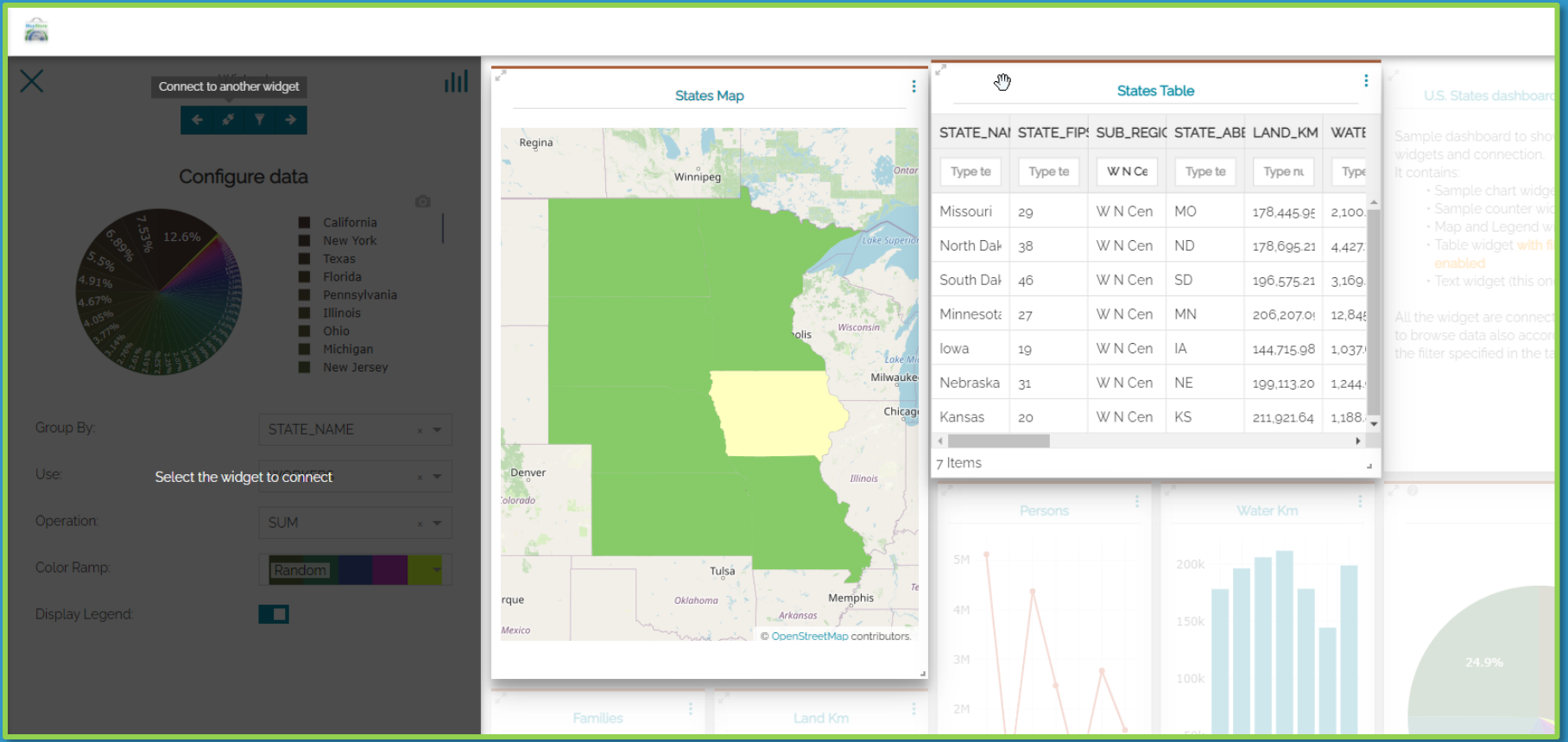
- **Widget Editors**



Fine tuning of all widgets based on OGC standards

MapStore at work

You can connect widgets to other widgets: Maps or Tables widgets



A connected widget updates its content according to the parent one!

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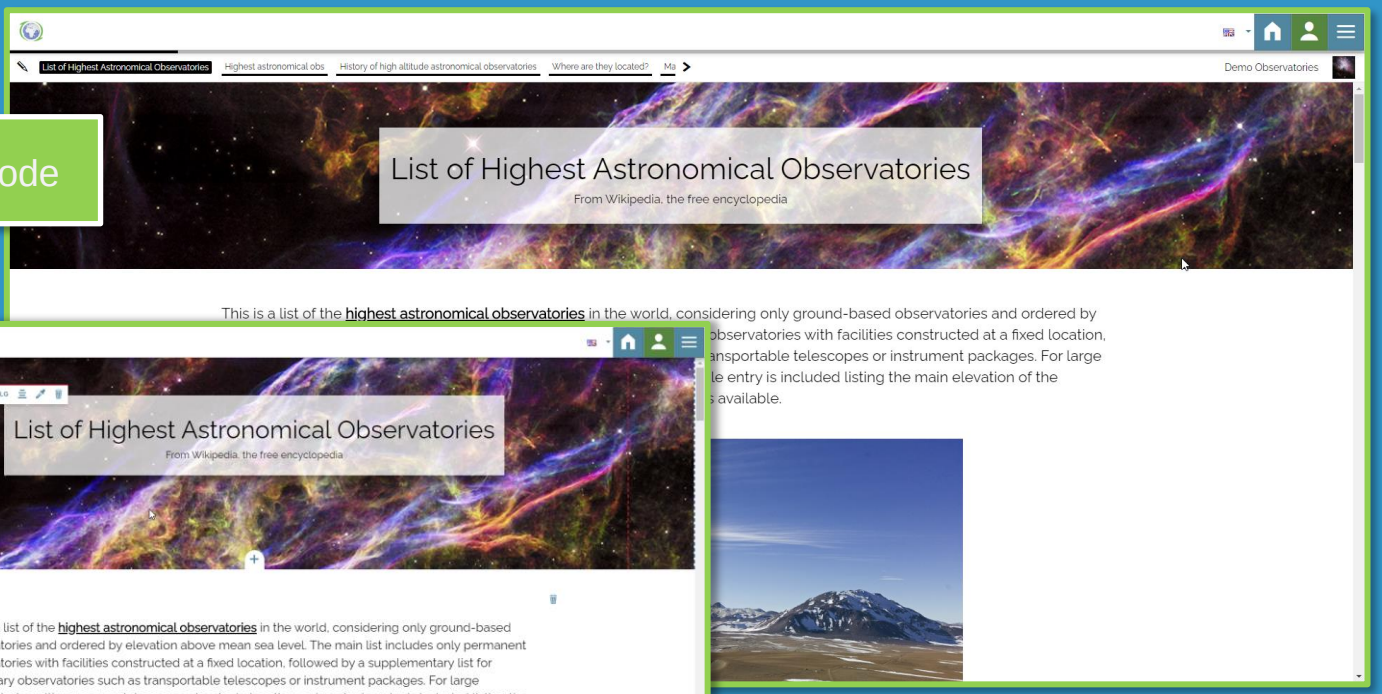
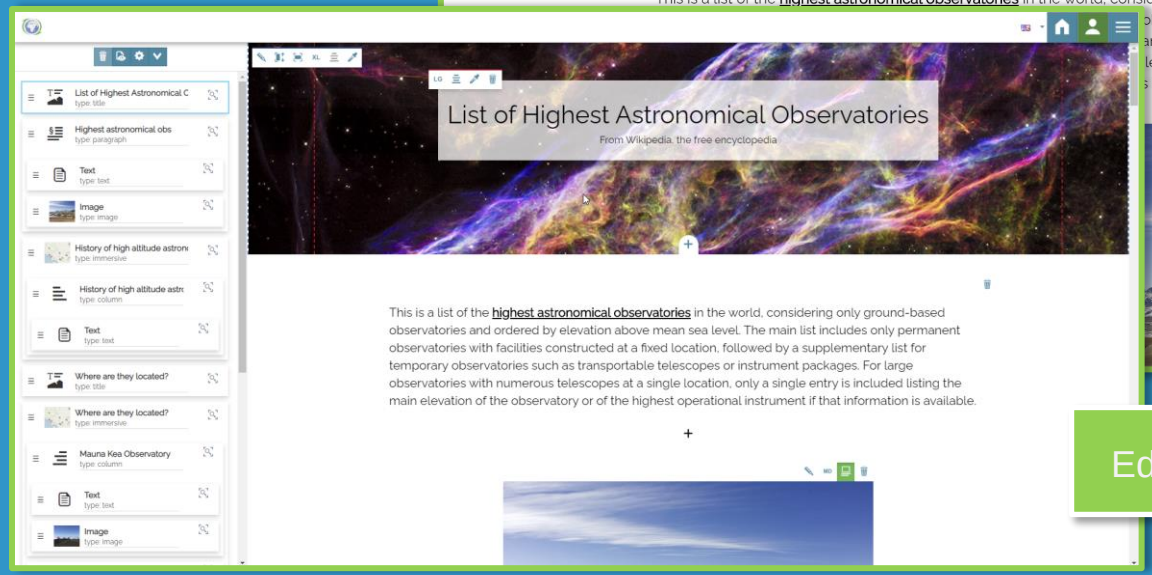
MapStore at work

MapStore GeoStory:

create inspiring and immersive stories by combining text, interactive maps and multimedia content (e.g. images, video or other third party content).

View mode





Edit mode

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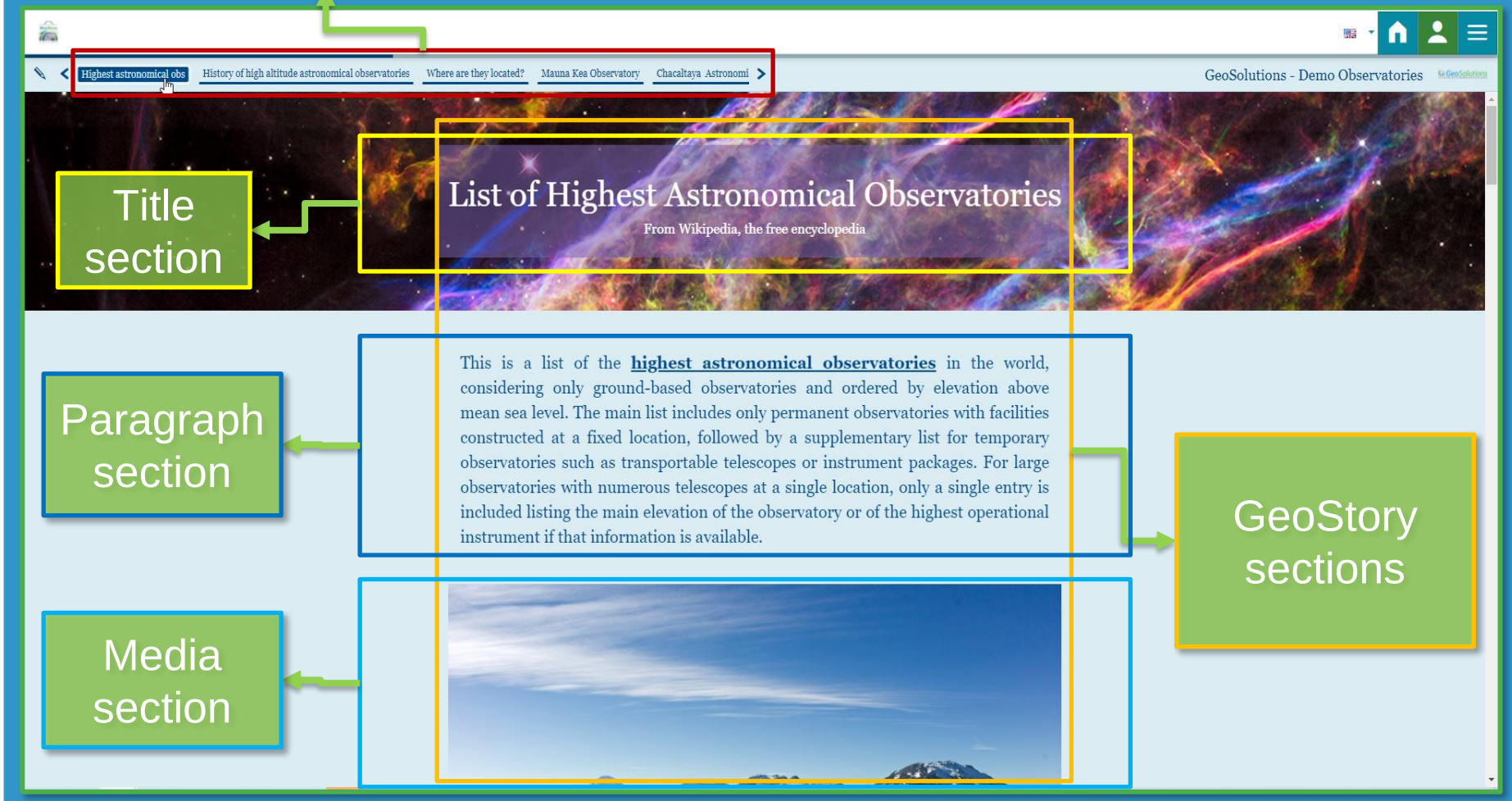
MapStore at work

Navigation toolbar

Tell your story with a modern look !



Title section

Paragraph section

Media section

GeoStory sections

Other kind of sections are available, like Maps and Immersive! ☺

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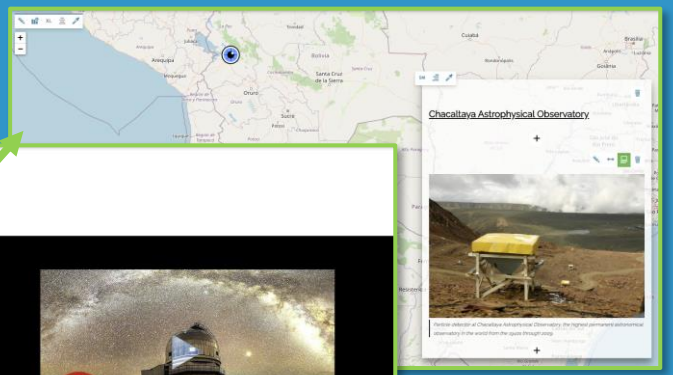
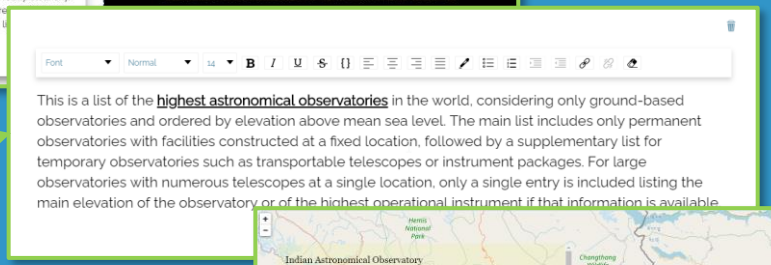
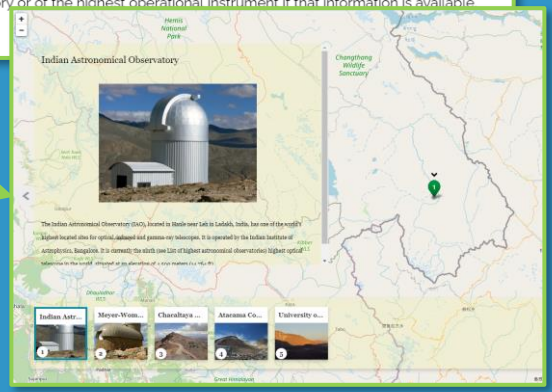
MapStore at work

Build your story by adding different kind of sections, one after the other with an **advanced web editor**:

- Title/Cover
- Paragraph
- Immersive
- GeoCarousel
- Media (Map, Image, Video)
- Web Page







Sections are organized in a continuous scrolling layout!

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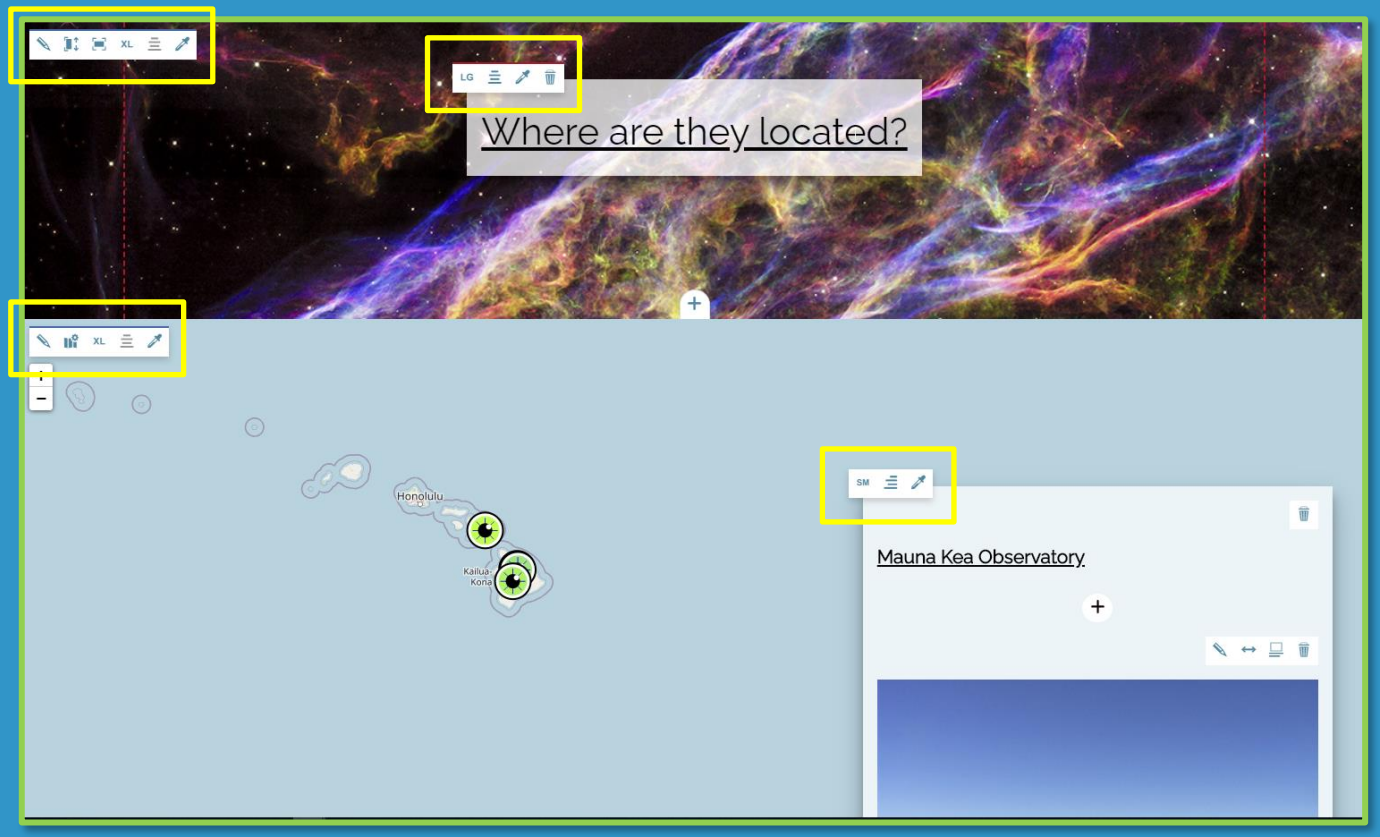
MapStore at work

GeoStory gives control over the sections through an action toolbar, one per section or sub-section



Perform quick actions on your section contents to place, align and configure them as you prefer!

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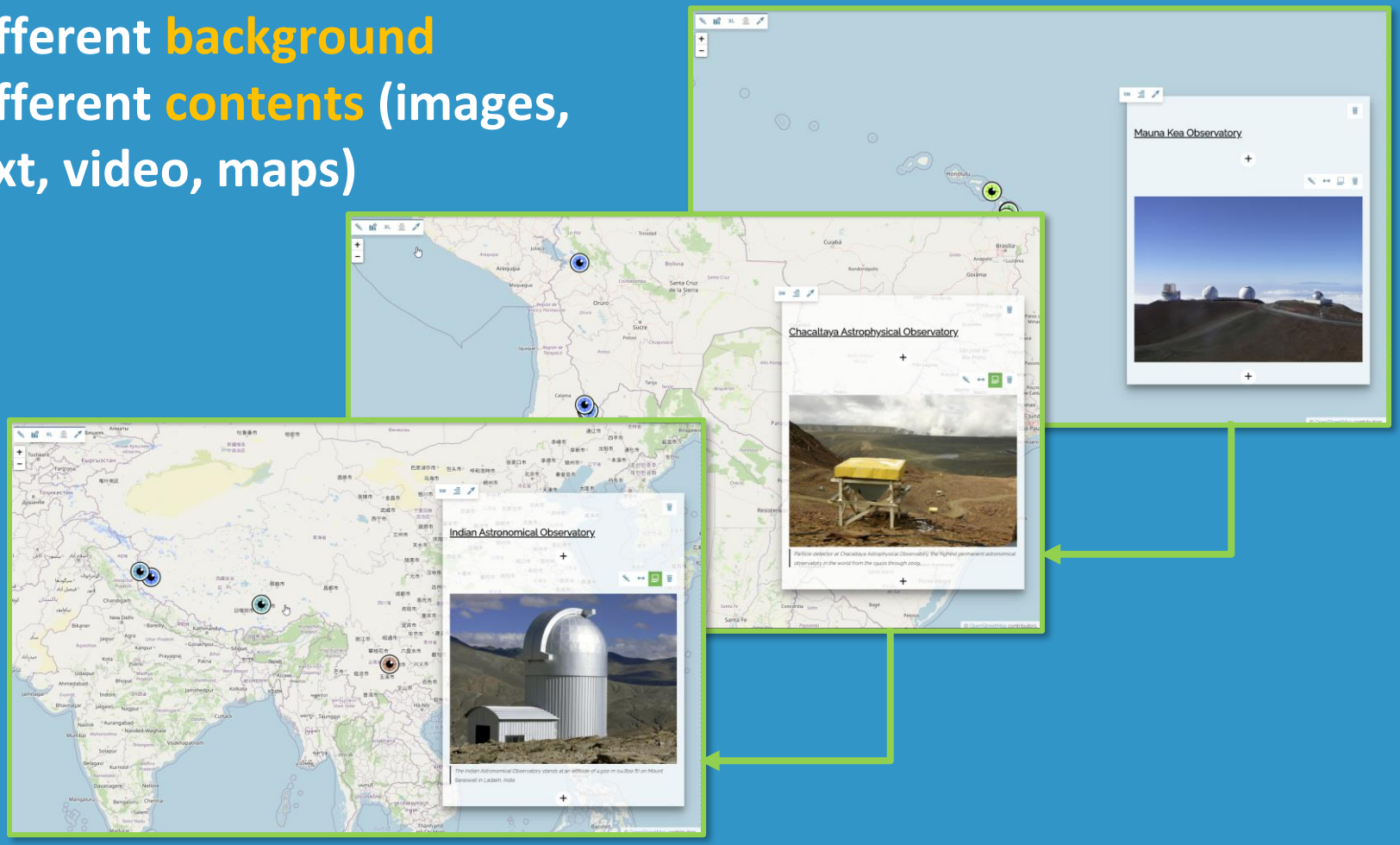
Browse connected topics vertically in your story with the Immersive section

- Different background
- Different contents (images, text, video, maps)



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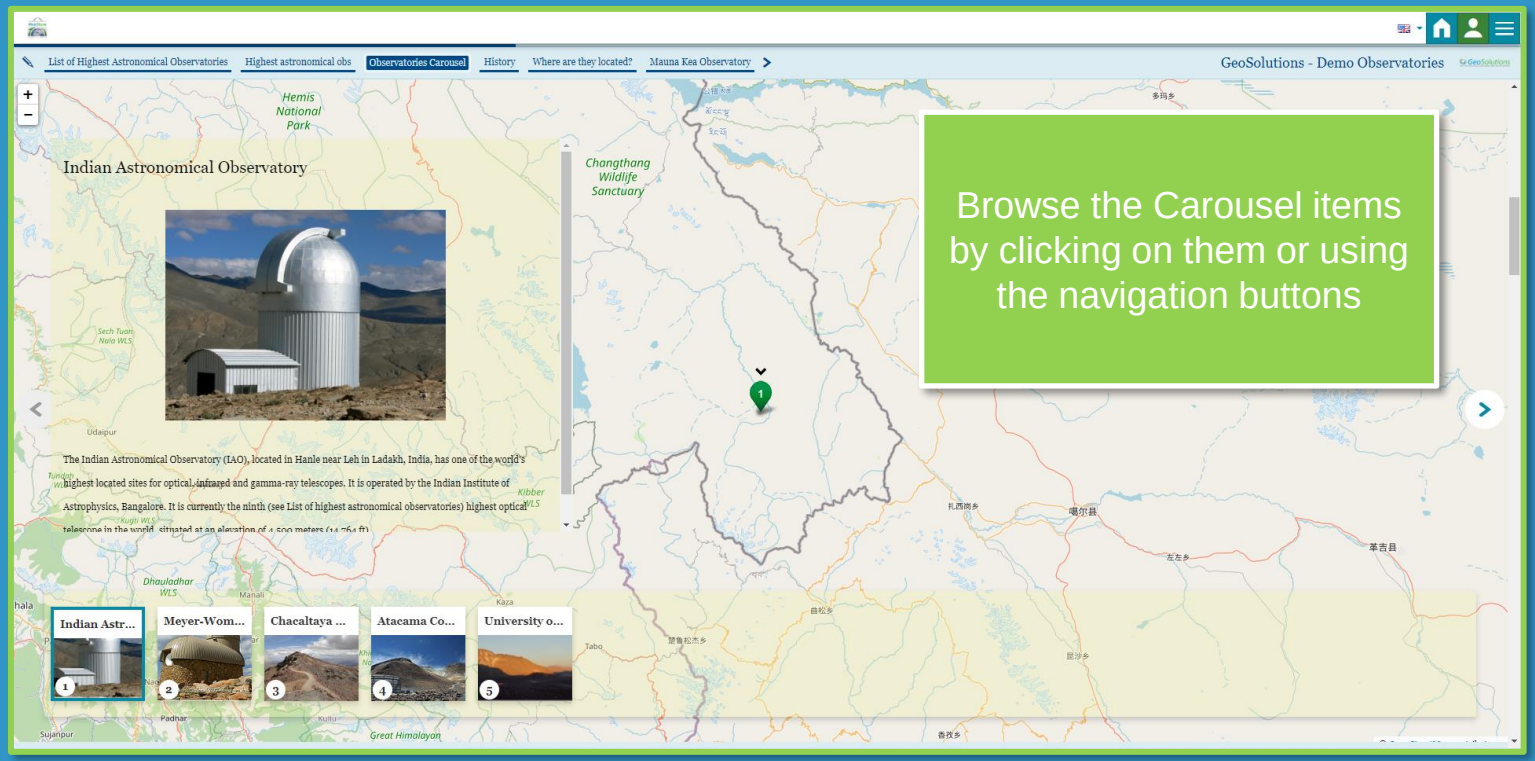
MapStore at work

Browse connected topics horizontally in your story with the Carousel section

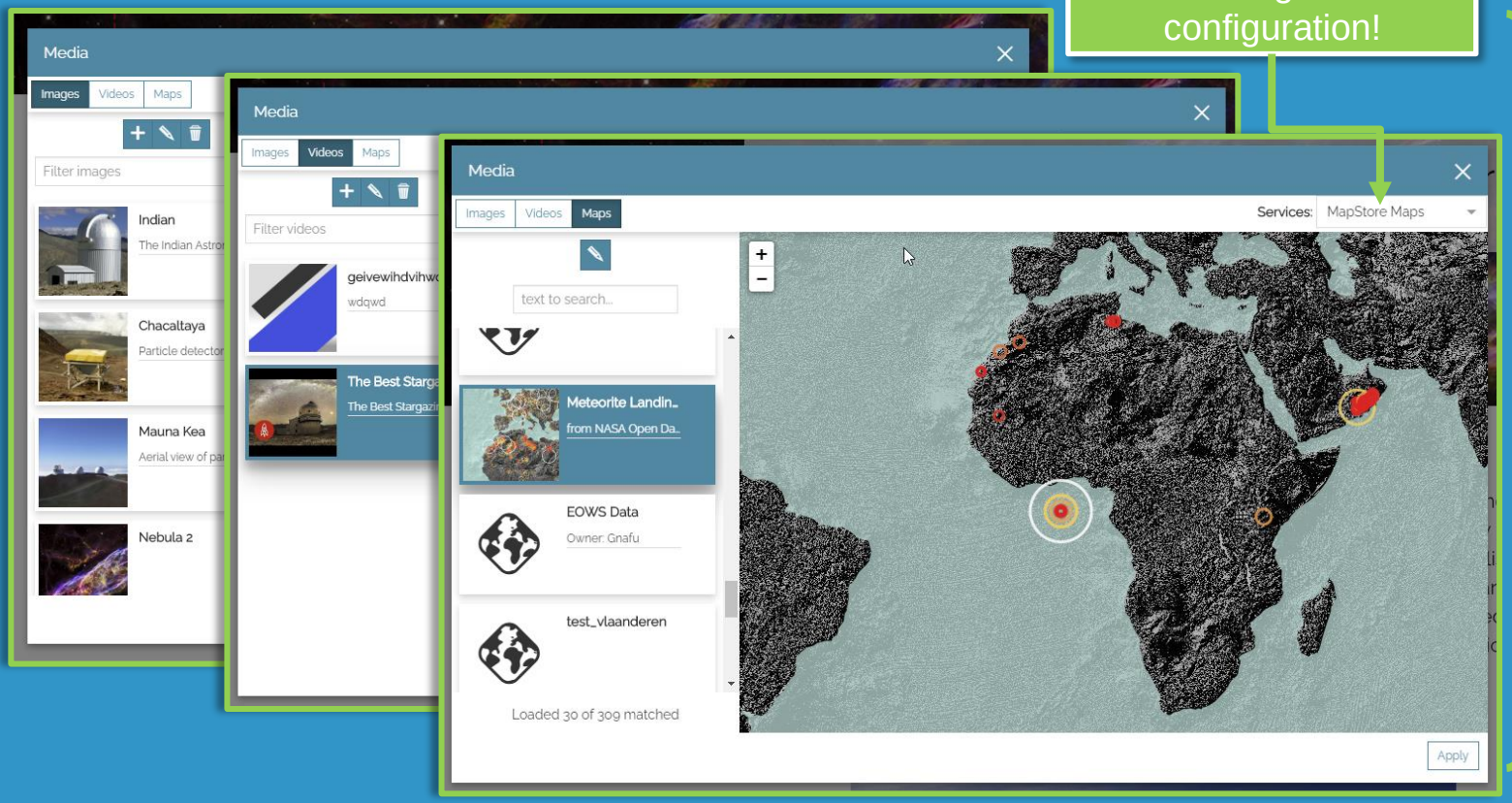
- Define different locations that help to tell your story
- Customize each location with its own descriptive content in overlay (images, text, video, maps)



MapStore at work

What should you do if you want to change multimedia content in your story?

You can connect multiple MapStore catalogs via configuration!



The Media Editor gives you control over different multimedia contents!
Images, Videos and Maps

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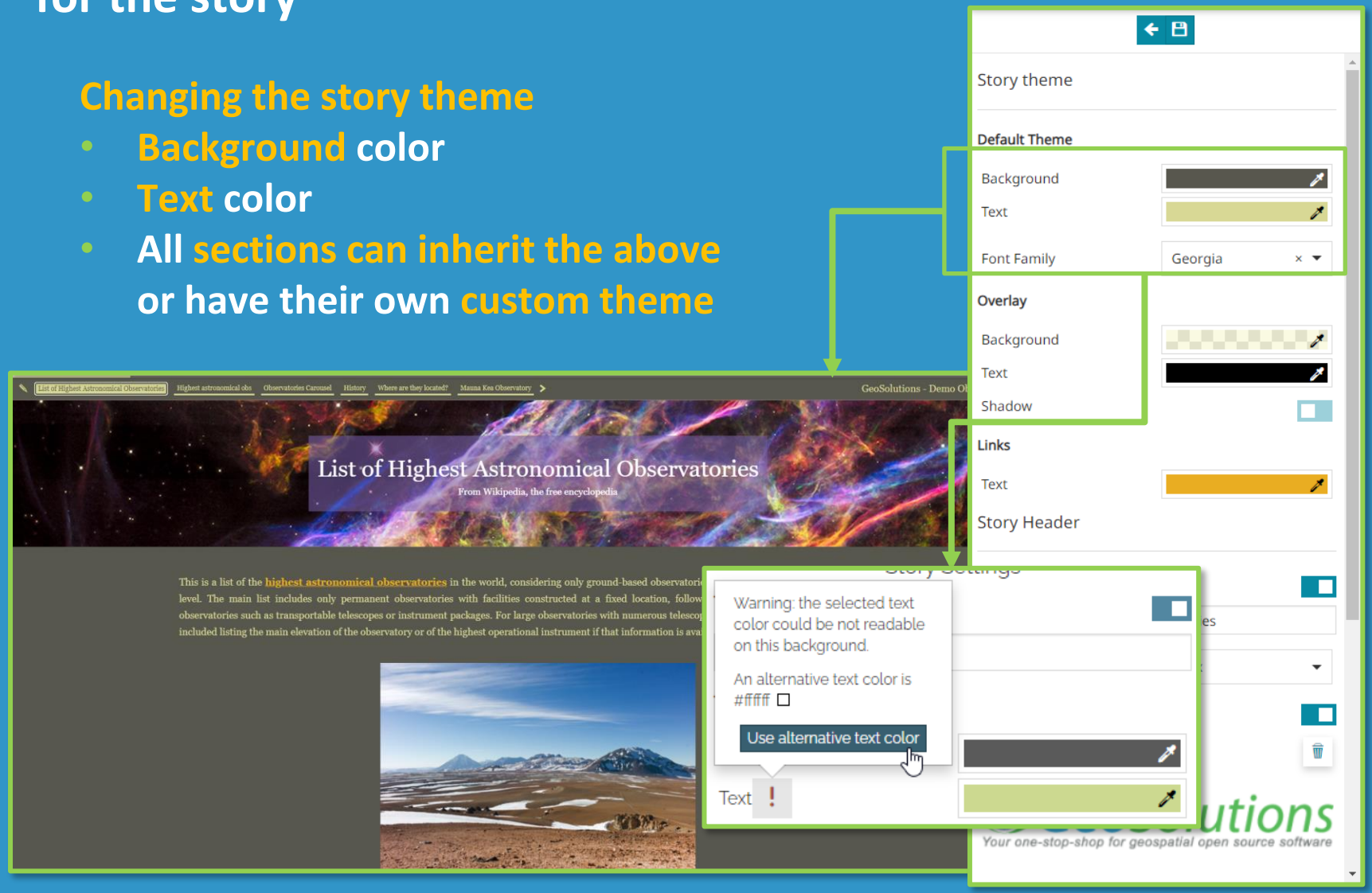
MapStore at work

A Toolbar on top of the side panel provides additional settings for the story

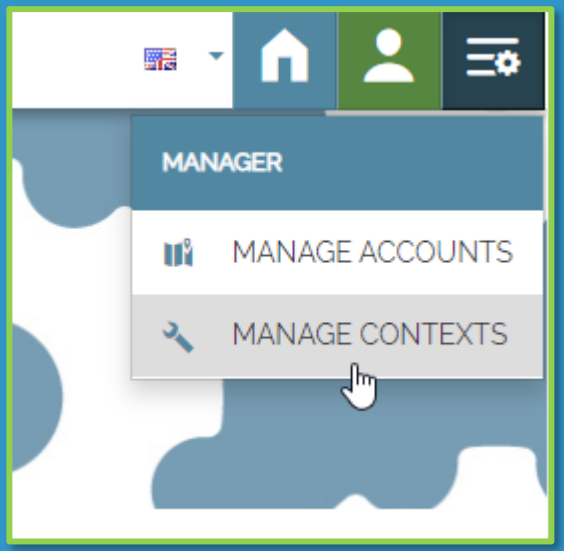
Changing the story theme

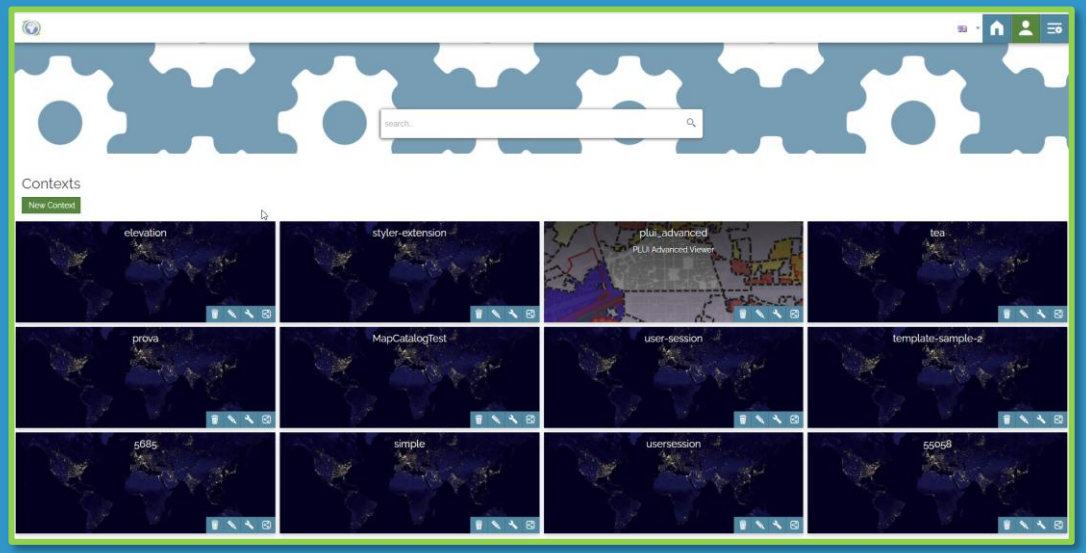
- Background color
- Text color
- All sections can inherit the above or have their own custom theme



MapStore at work

The **Application Context Manager** is an administrative tool designed to build and configure different MapStore viewer configurations for the same MapStore installation





A **multisteps wizard** allows the administrator to configure a custom MapStore viewer

Thanks to Rennes Métropole and geOrchestra ! ☺

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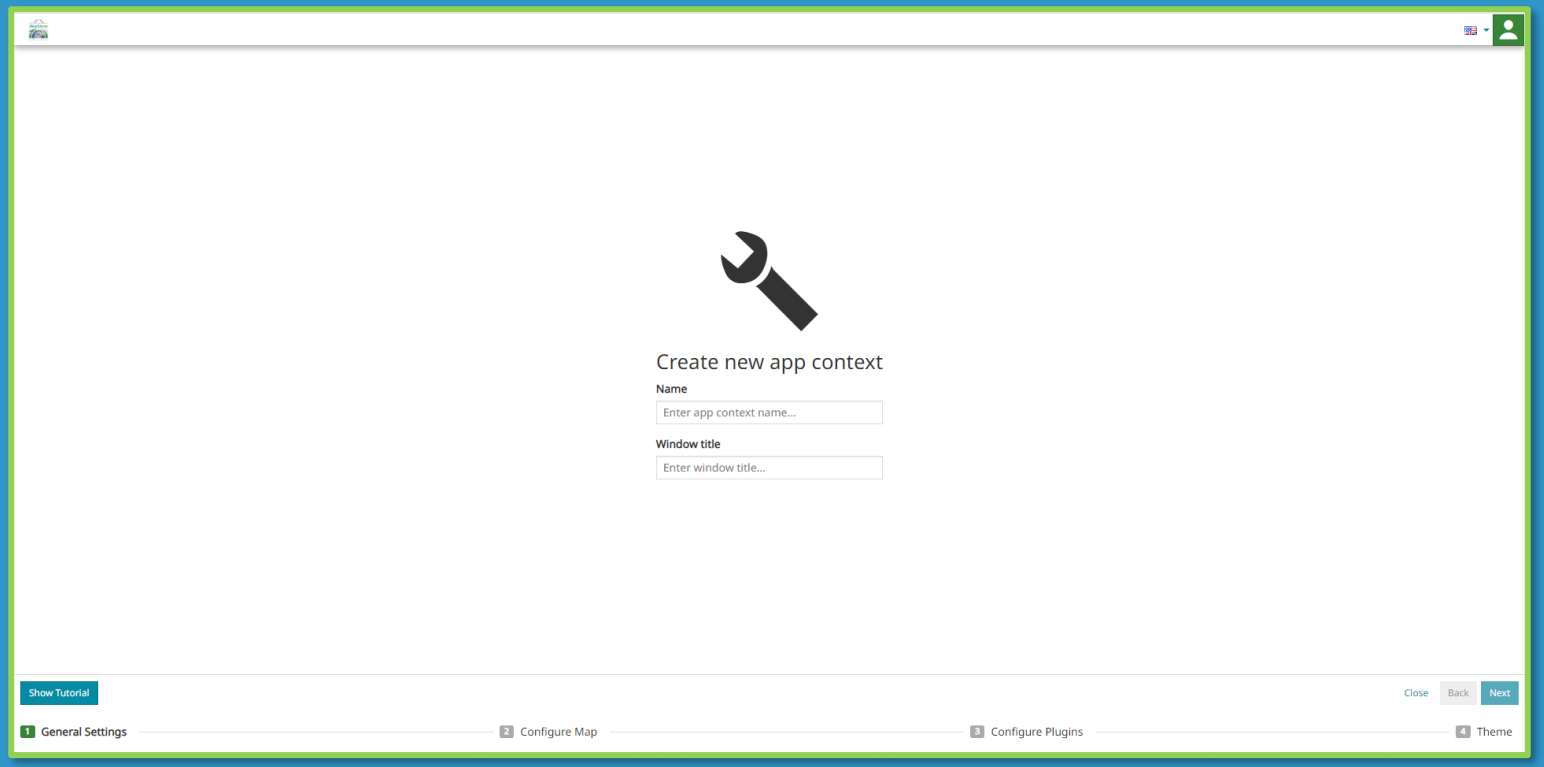
MapStore at work

- **Step #1: configure the name of the context and the window title**

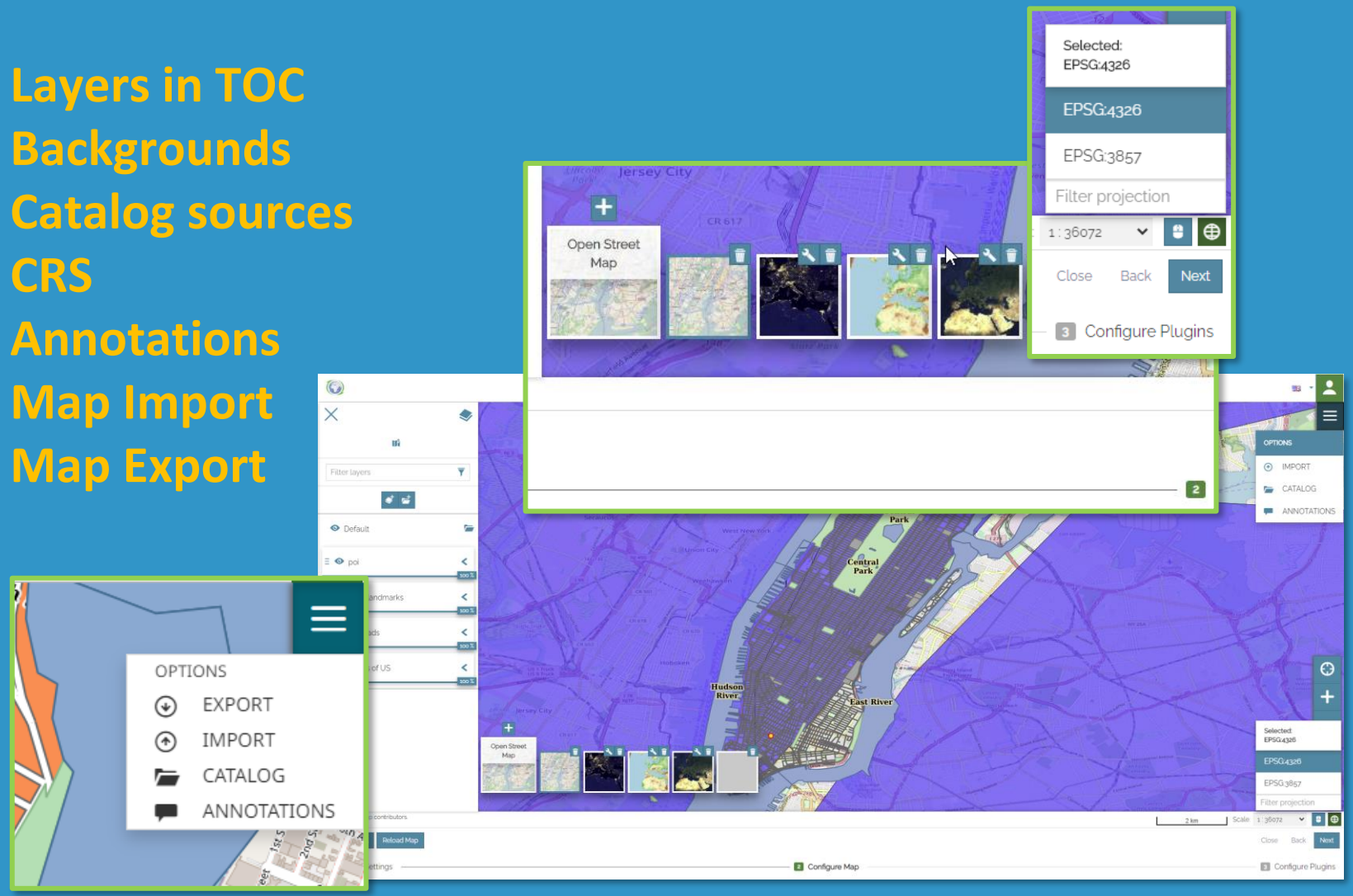


The Context URL:

https://mapstore.geosolutionsgroup.com/mapstore/#/context/newyorkcity

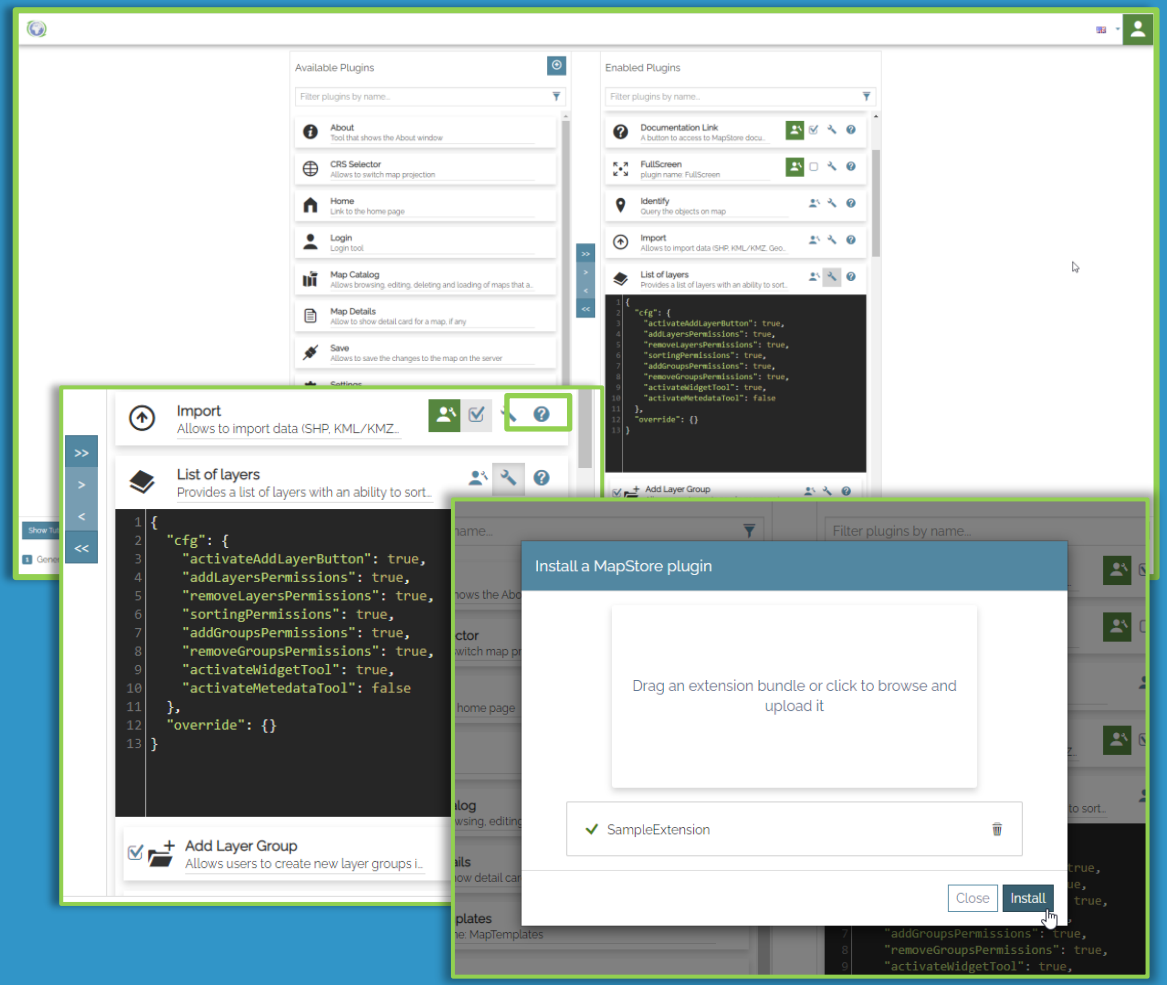
MapStore at work

- **Step #2**: configure the default map state and map contents
  - Layers in TOC
  - Backgrounds
  - Catalog sources
  - CRS
  - Annotations
  - Map Import
  - Map Export



MapStore at work

- **Step #3**: configure the set of plugins to include in the context viewer
  - **Select plugins** to include
  - **Configure** each plugin
  - **Make plugins** ready to be activated by users on the fly
  - **Install** a custom plugin
  - **Direct link** to the plugin online doc



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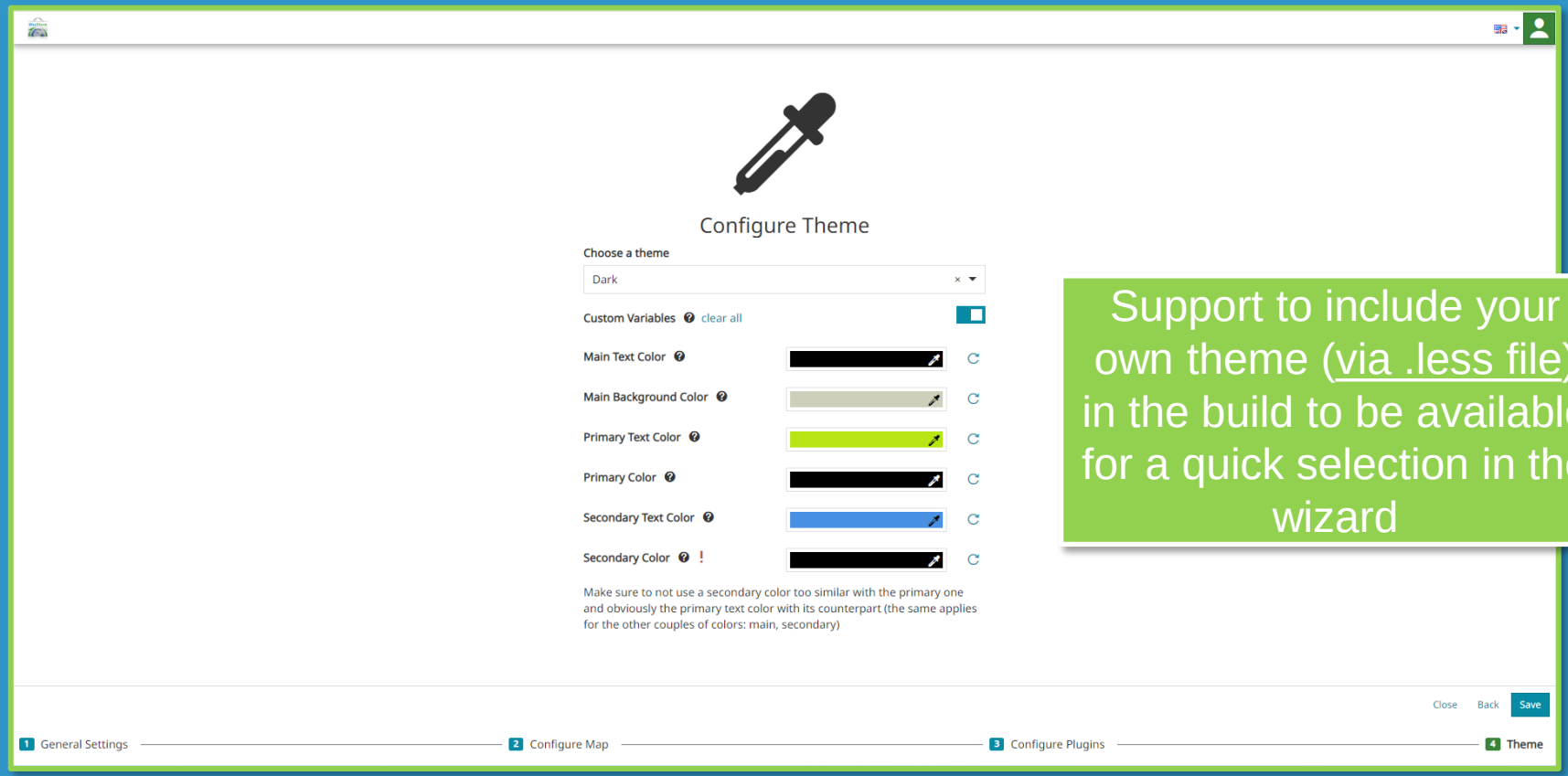
- **Step #4: customize the Theme of your context**

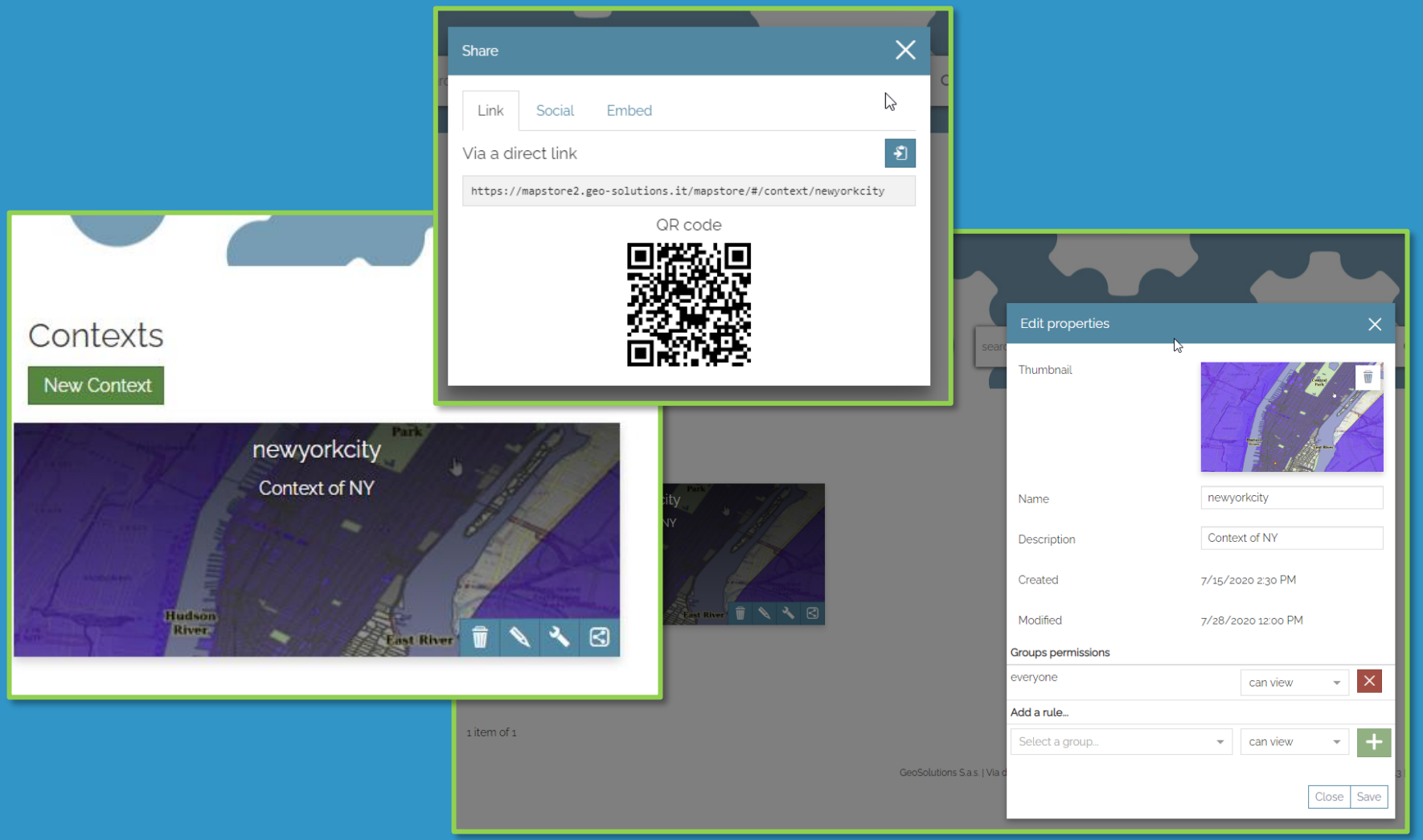


Support to include your own theme (via .less file) in the build to be available for a quick selection in the wizard

Yes, you can do it from the User Interface! ☺

MapStore at work

- **Step #5**: share the context and manage permissions ☺



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MapStore at work

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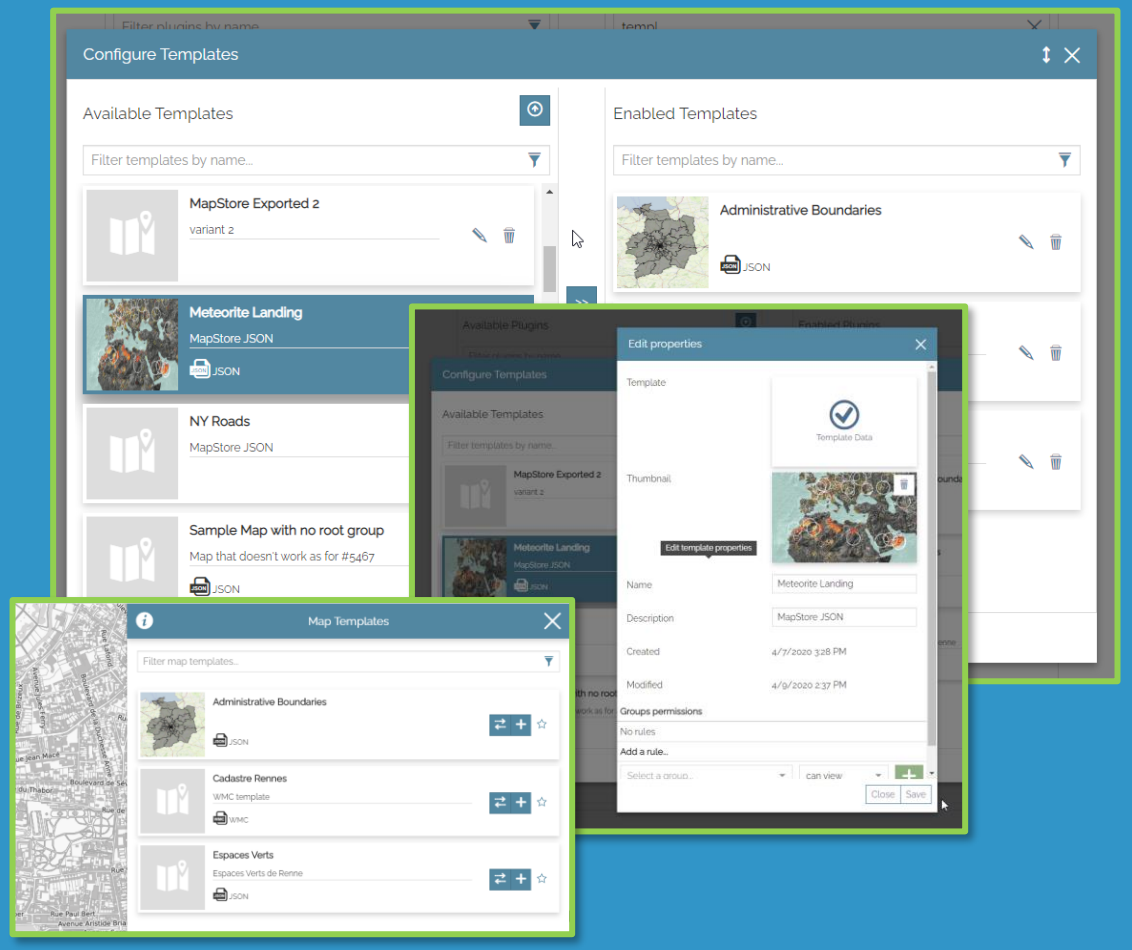
The Map Templates tool is also available for Application Contexts

- **Ready-made map** contents that can be added to a Map
- **Two formats** supported (both MapStore JSON and WMC)



Thanks to Rennes Métropole and geOrchestra ! ☺

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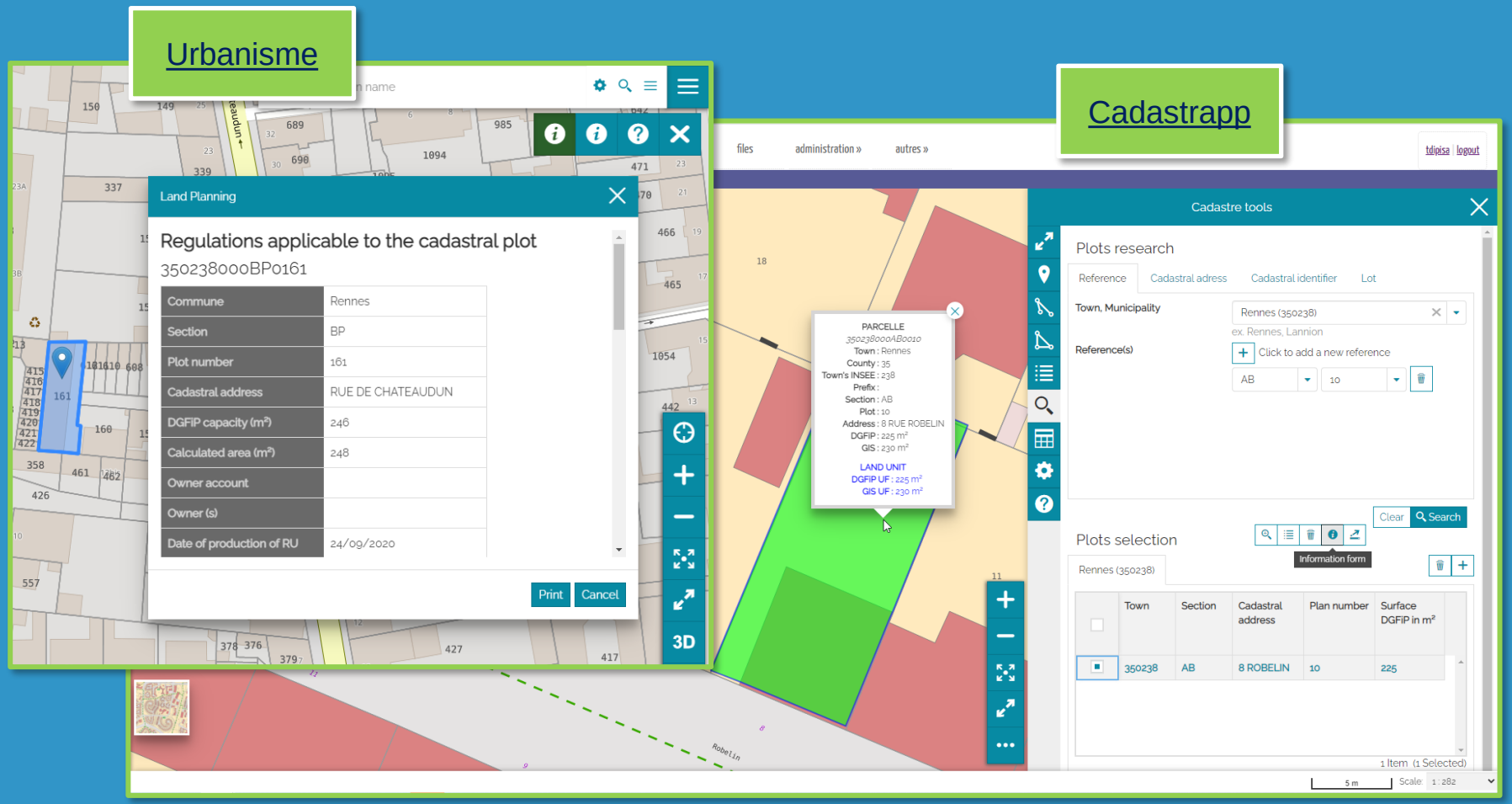
MapStore at work

- **Easy to customize and extend:** customize the theme and develop your own plugins to be uploaded and installed in one or more application contexts!



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News For Developers

MapStore Extensions: leveraging on the Application Context system MapStore gives you the ability to build custom extensions in a structured and standard way

- **Dedicated repository:** so that you can manage versioning and keep your extension inline across different versions of MapStore
- **Ready to be installed:** following the guidelines your extension can be uploaded and installed in a running MapStore instance
- **Well documented:** we are trying to keep the online documentation always in line at each MapStore release
- **Extension Template:** we provided a template project as a quick start to encourage developers to use this system and improve it

https://github.com/geosolutions-it/MapStoreExtension

Thanks to Rennes Métropole and geOrchestra ! ☺

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News For Developers

Check out the updated User and Developer guides of the release v2022.01.01

https://mapstore.readthedocs.io/en/v2022.01.01/user-guide/home-page/

https://mapstore.readthedocs.io/en/v2022.01.01/developer-guide/requirements/

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Ongoing work

We are actively working on interesting new features and improvements for existing tools to be available in next releases!

The MapStore community is also growing a lot, Thank you all! ☺

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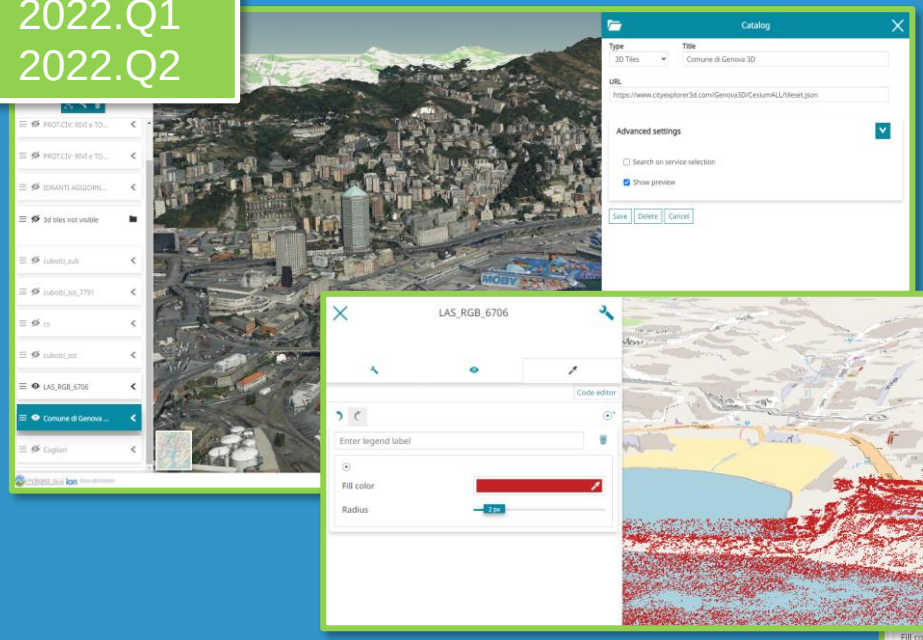
Ongoing work

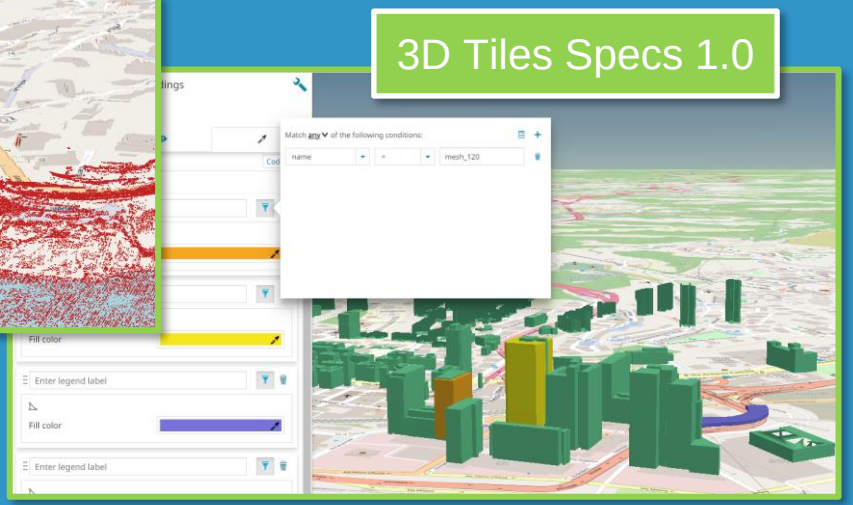
- **3D Tiles:** we are working to improve the MapStore 3D viewer through the inclusion of new interesting updates:
  - **Update of the Cesium JS** library to the latest version. This helps to solve also some performance issues present in the older version

2022.Q1
2022.Q2



- **Support for a new catalog source and layer type for 3D Tiles**
- **Support for 3D Tiles styling**

3D Tiles Specs 1.0



- **More work in progress to support more styling capabilities**

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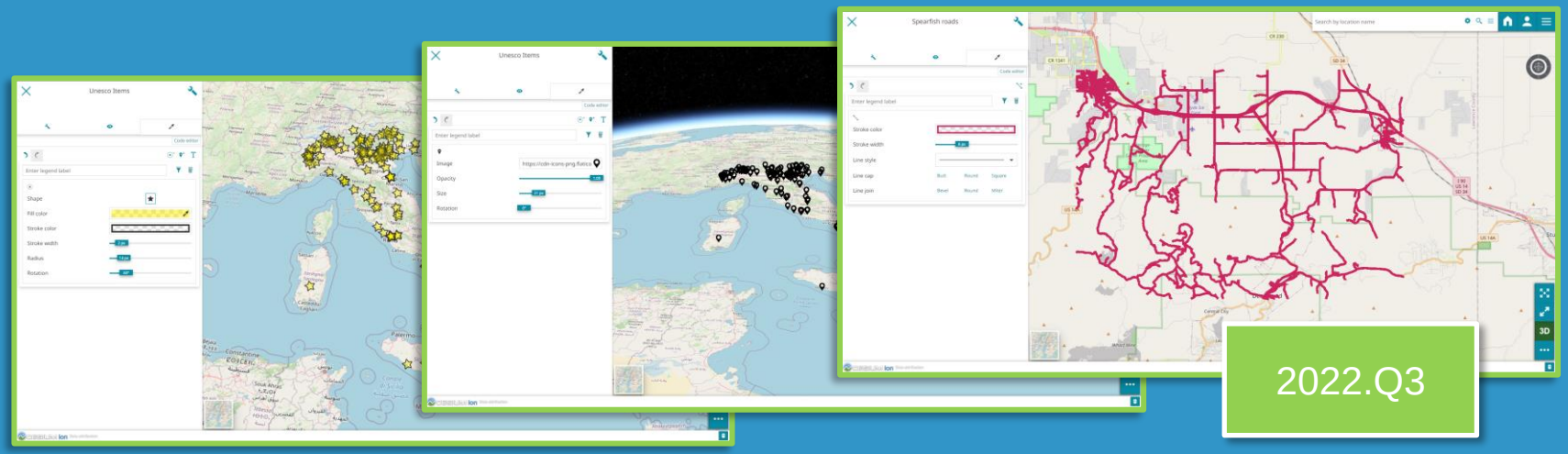
Ongoing work

- **More on 3D:** we are working to move further steps on the 3D functionalities
  - **Some experiments** aimed to support 3D geometries in the Cesium map (in GeoJSON format)
  - **Support of WFS layers** also in Cesium map
  - **Enhancements** aimed to evolve the styling of client side **vector features** with an improved Visual Style Editor (both 2D and 3D maps)



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Ongoing work

- **More on 3D:** we are working to move further steps on the 3D functionalities

  - **More experiments** aimed to enrich the **styling capabilities of 3D Tiles** (based on the OGC Styling specifications 1.0) such as: labels, alignment of Graphics (Marks/Icons) and labels, clamp to ground and extrusion properties and more
  - **Some investigations** to possibly support experimental styling properties
  - **Some experiments** aimed to include the selection of **multiple Terrain layers** for in the 3D map

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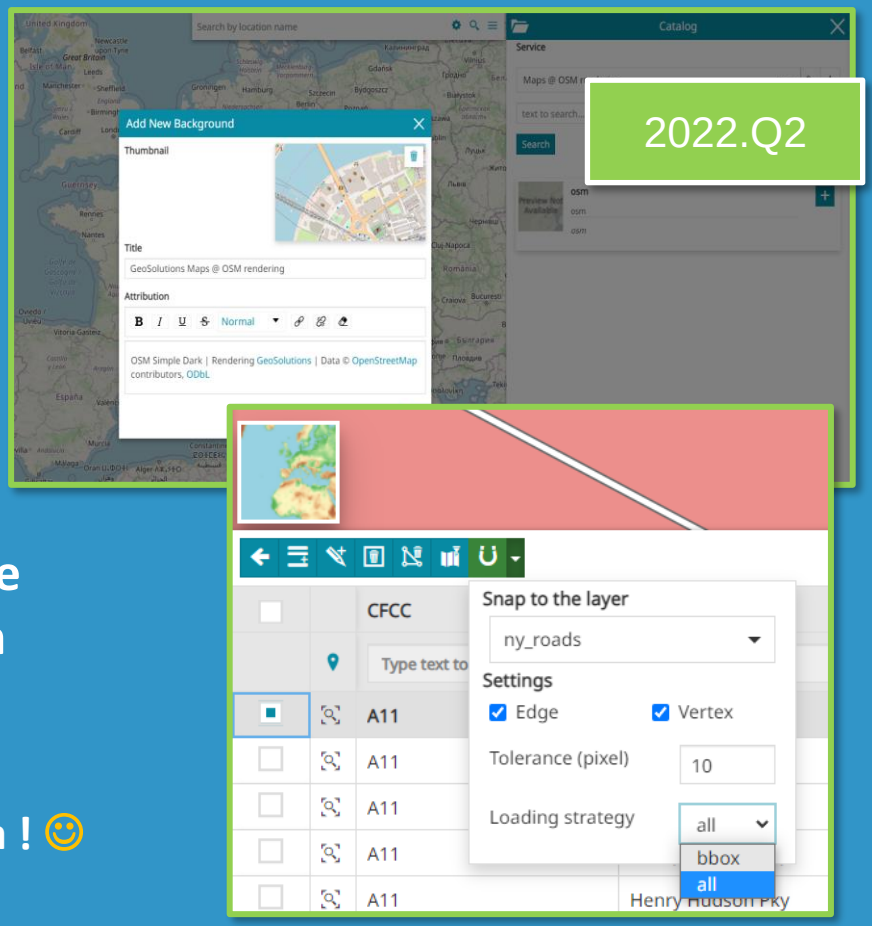
Ongoing work

- **Additional capabilities added to existing tools:** in v2022.01 some interesting enhancements and new features have been included

  - **Improved the WMTS support:** more support of WMTS layers in GeoStory and added Attributions for WMTS background layers

  - **Snapping function for Attribute Table:** in edit mode it is now possible to snap features to other ones when editing geometries



Thanks to Rennes Métropole and geOrchestra ! ☺

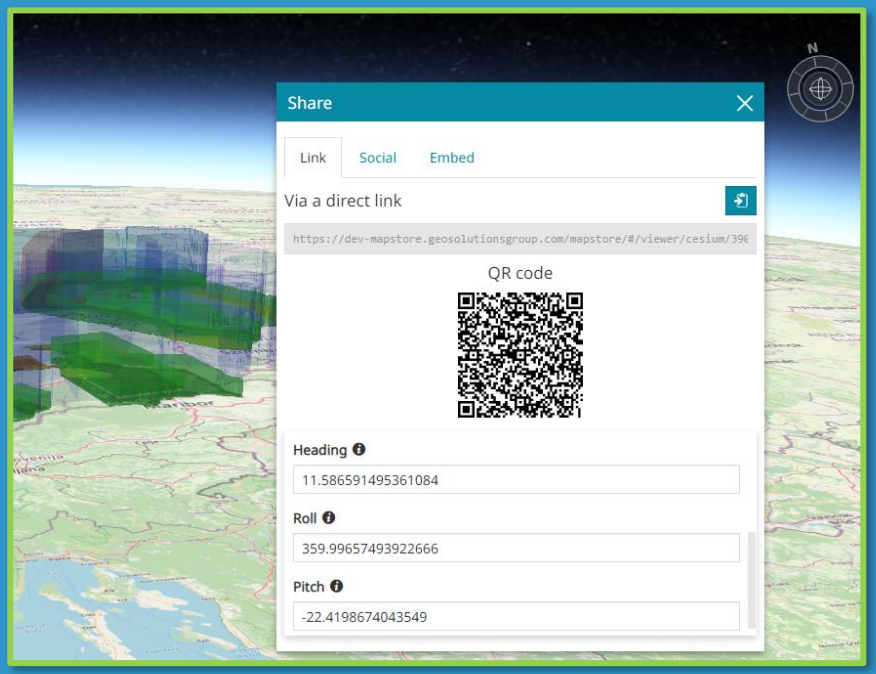
Loading strategy included! Support to implement additional strategies in addition to the default ones

Ongoing work

- **Additional capabilities added to existing tools:** in v2022.01 some interesting enhancements and new features have been included

  - **3D query parameters:** enhanced sharing capabilities for the 3D map providing the support for additional options for the camera orientation

  - **Map Viewer query parameters:** enhanced the support to viewer query parameters (also via POST)

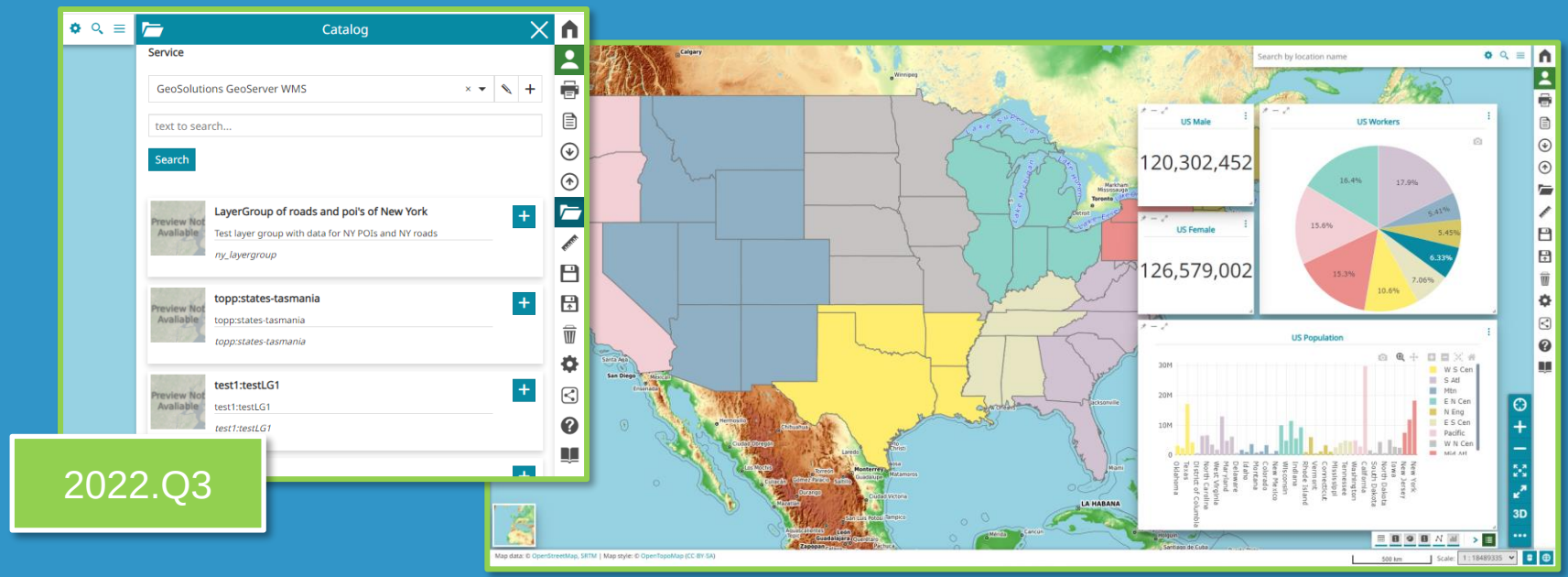


Thanks to Rennes Métropole and geOrchestra ! ☺

2022.Q2

Ongoing work

- **Layout enhancements:** in v2022.02 some interesting improvements will also be provided for the new MapStore layout where:
  - The Options menu will be replaced by a **Sidebar**
  - Other layout changes such as: **smaller buttons** and **reduces size of side panels on the right**

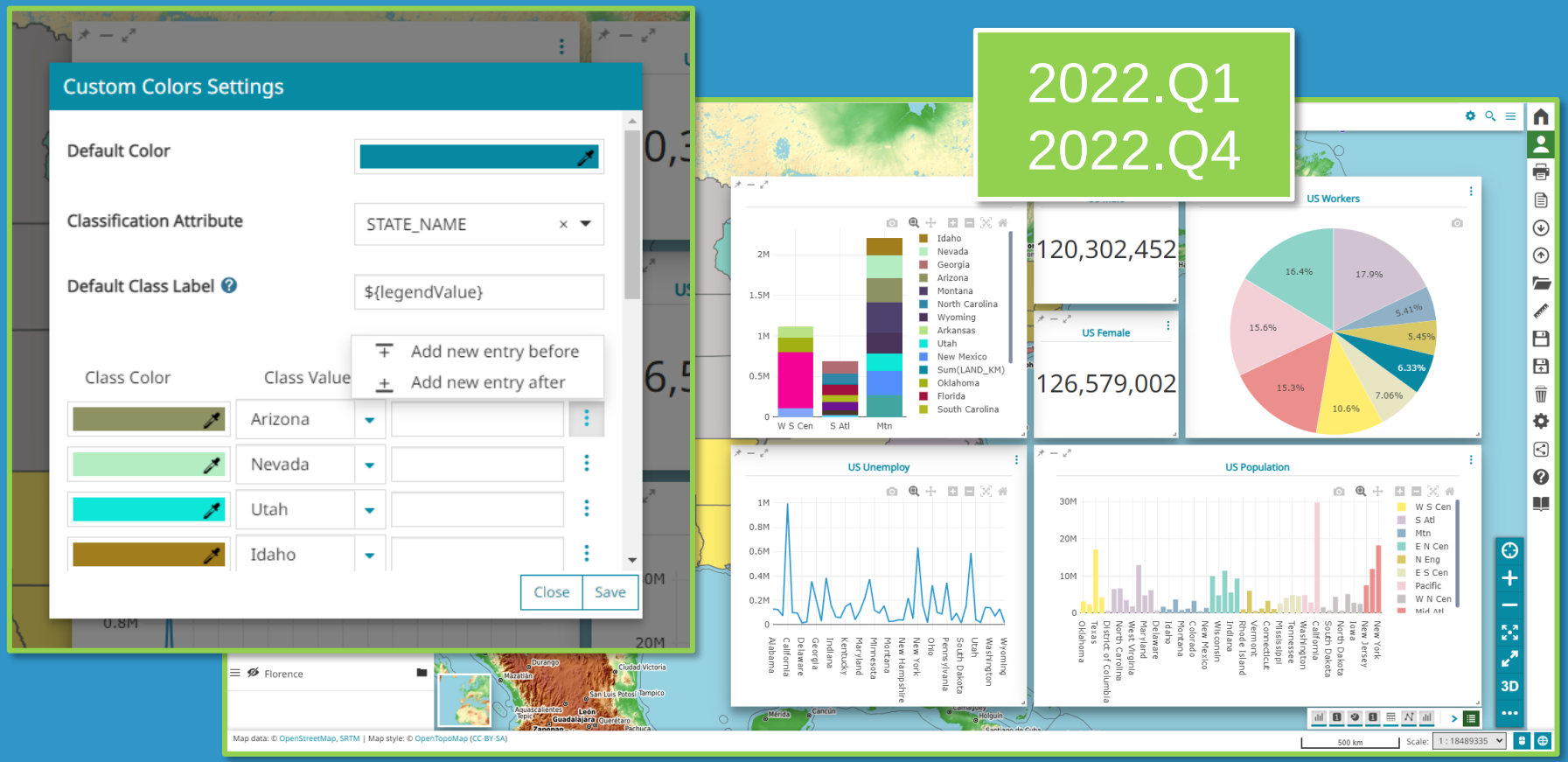


2022.Q3

Thanks to Rennes Métropole and geOrchestra ! ☺

Ongoing work

- **MapStore Charts:** we are working to improve charts
  - In v2022.01 MapStore widgets have been enhanced with classification capabilities for **Bars (staked and grouped)** and **Pie** charts



Both **MapViewer** and **Dashboard** are supported!

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Ongoing work

- **Downstream projects:** we are working on a new project system that helps to maintain and update existing projects and new ones. We are going to separate gradually the core from the product to have the core library in **npm package(s)**

2022.Q4

- **Performances:** MapStore is growing very quickly. For this reason, we are working to keep it as optimized as possible to:
  - **Reduce the loading time at startup** by reviewing and reducing the bundle size
  - Optimize **build time** and **resource consumption**

2022.Q3
2022.Q4

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That's all folks!

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Questions?

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