



# HEXAGON

Release guide

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## Release guide

WebGIS 2023

WebGIS 2023 Update 1

WebGIS 2023 Update 2

Version 16.8.0

Version 16.8.1

Version 16.8.2

Updated December 2024

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## About this release

This document describes enhancements for WebGIS 2023 products, including GeoMedia WebMap 2023, Geospatial Portal 2023 and Geospatial SDI 2023.

The 16.8.2 release includes both enhancements and fixes. For information on enhancements, see [New technology](#). For information on fixes, see [Issues resolved](#).

This document is an overview and does not provide all details about the products' capabilities. See [online help](#) and other documents provided with the WebGIS products for more information.

## GeoMedia WebMap

GeoMedia WebMap supports a broad range of customers who require visualization and examination of geographic data on the web. From easily creating standards-compliant web services to providing sophisticated visualization and analysis within interactive web mapping applications, GeoMedia WebMap builds powerful solutions for sharing your organization's rich geospatial data.

## Geospatial Portal

Geospatial Portal is a fully featured, configurable and customizable thin client application that can be used for finding, viewing, querying, analyzing and consuming geospatial data published by Hexagon products and/or other standards-based web services. The portal can be accessed by multiple users via web browsers, as it is installed and configured on a web application server.

## Geospatial SDI

Geospatial SDI is an interoperable and scalable component of spatial data infrastructure for cataloging and delivering enterprise geospatial data over the web. It is designed for data providers who need to manage and serve secure or licensed information using standards-based web services. It offers powerful tools for controlled access to standards-compliant services and data published by those services, as well as tools for monitoring and reporting service performance. The product adheres to Open Geospatial Consortium (OGC), INSPIRE and International Standards Organization (ISO) standards for web services and metadata compliance. Geospatial SDI can easily extend solutions based on GeoMedia WebMap or any other vendor's OGC-compliant product to assure the full set of services required for implementation of custom secure spatial data infrastructure (SDI).

# New technology (16.8.0)

## GeoMedia WebMap

### Extensive improvements to 64-bit route service and Location Utility Web Service

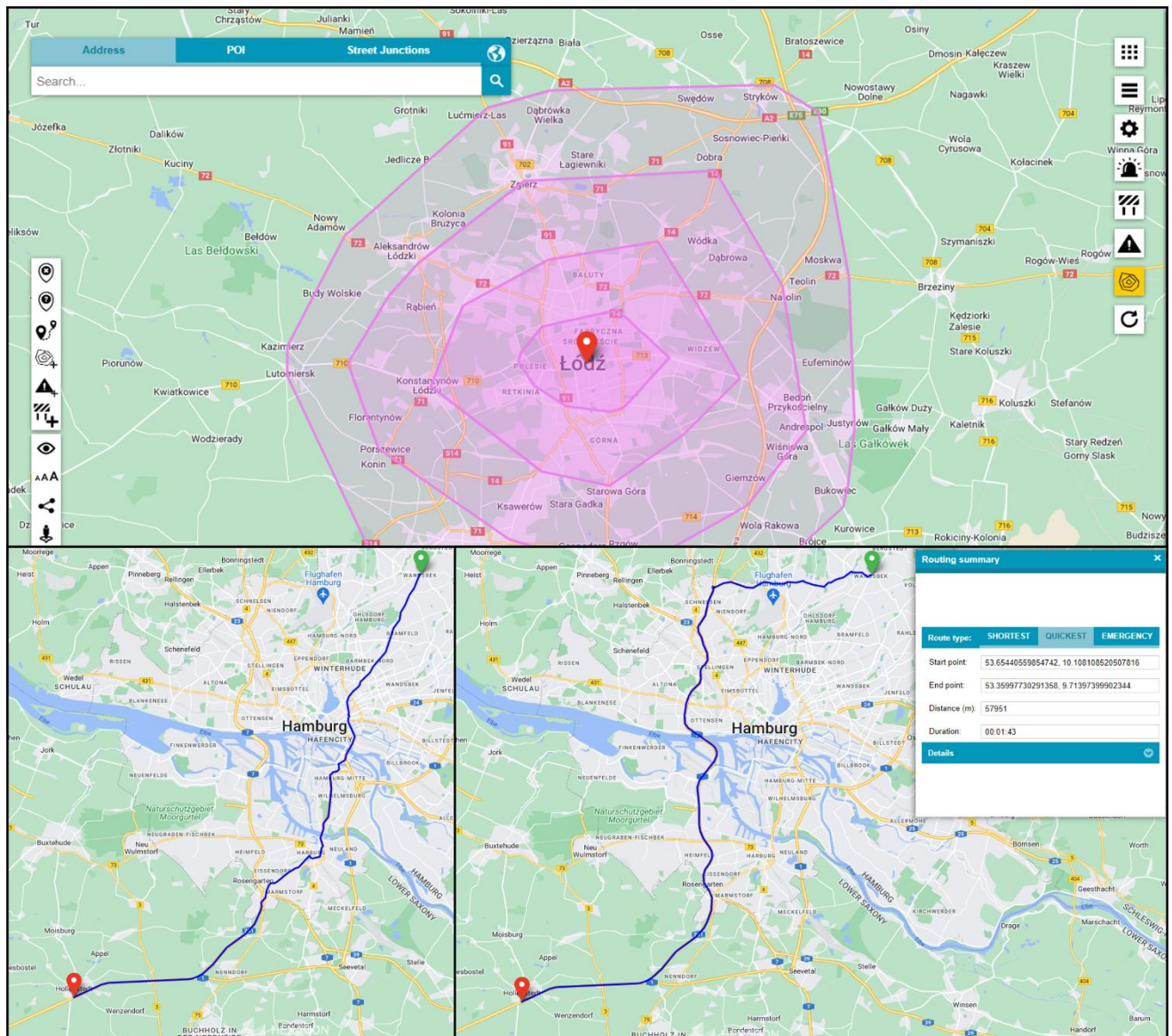
Release 2023 brings several changes and improvements to the implementation of the routing and geocoding services, respectively route service (64-bit) and Location Utility Web Service (LUWS).

#### 64-bit route service news

Route service is used to easily compute the best path between a given set of stops considering various criteria for the route. Presented routes can be optimized in terms of travel time, distance and now can be specially calculated for emergency vehicles. Route service from Hexagon can be combined with Geospatial Portal or Consumer Portal using SDK customizations to create a powerful tool for any kind of public safety and/or traffic management authorities.

Introduced improvements for route service encompass:

- Calculate multiple routes – shortest, quickest, emergency - for the same starting/ending point
- Support pre-calculated or ad-hoc roadblocks
- Easier and quicker publishing of routing files with the new 64-bit Route Data Publisher Utility
- Manage service instances via Administration Console
- Handle large datasets and calculate routes faster due to 64-bit implementation
- Migrate network data from third-party providers not only from Here or TomTom datasets, but also from plain GeoMedia Warehouses
- Generate driving instructions with high-quality performance; for example, city-sized routes of around 5 km drive are now returned two times faster than before
- Translate source data using single-pass data access, such as state-sized (1M road segments); TomTom dataset stored in Oracle now transforms in 15 minutes, compared to two hours, previously
- Regenerate only specific binary routing files instead of translating whole commercial formats, including Edge Cost files, Edge Geometry files, Edge Name files, Edge Property files (for routing restrictions) and Routing Graph files and companion files
- Improved TomTom format table name inference
- Support customer data from GeoMedia Warehouse and connect to additional data sources like MS SQL Server, PostGIS and GeoPackage (apart from Oracle or shapefiles)
- Log instances in the new 64-bit Route Service system and the 64-bit Route Data Publisher with the ability to run as a headless process, such as scheduled unattended binary route files refreshing



## LUWS news for geocoding

LUWS service, along with Geospatial Portal or Consumer, is a versatile tool for the spatial data infrastructure industry, where searching for any GIS information is crucial.

The most up-to-date version has the following features and improvements:

- Reverse geocoding to find an address (with option of detailed descriptive information) by providing only point coordinates and within a defined buffer zone
- **Support for many different address patterns extended to multisegment values**

It offers multiple, powerful search capabilities, allowing search for POI, addresses and any geographic location and through reverse geocoding - coordinates with address details, street junctions, parcel numbers and more. Data can be found not only in exact points, but also within a defined buffer zone.

LUWS and its configurable parsing methods can easily tailor the search service to the specifics of given languages, alphabets, cultures and geographic regions. Many different address patterns within one search service can be used. LUWS

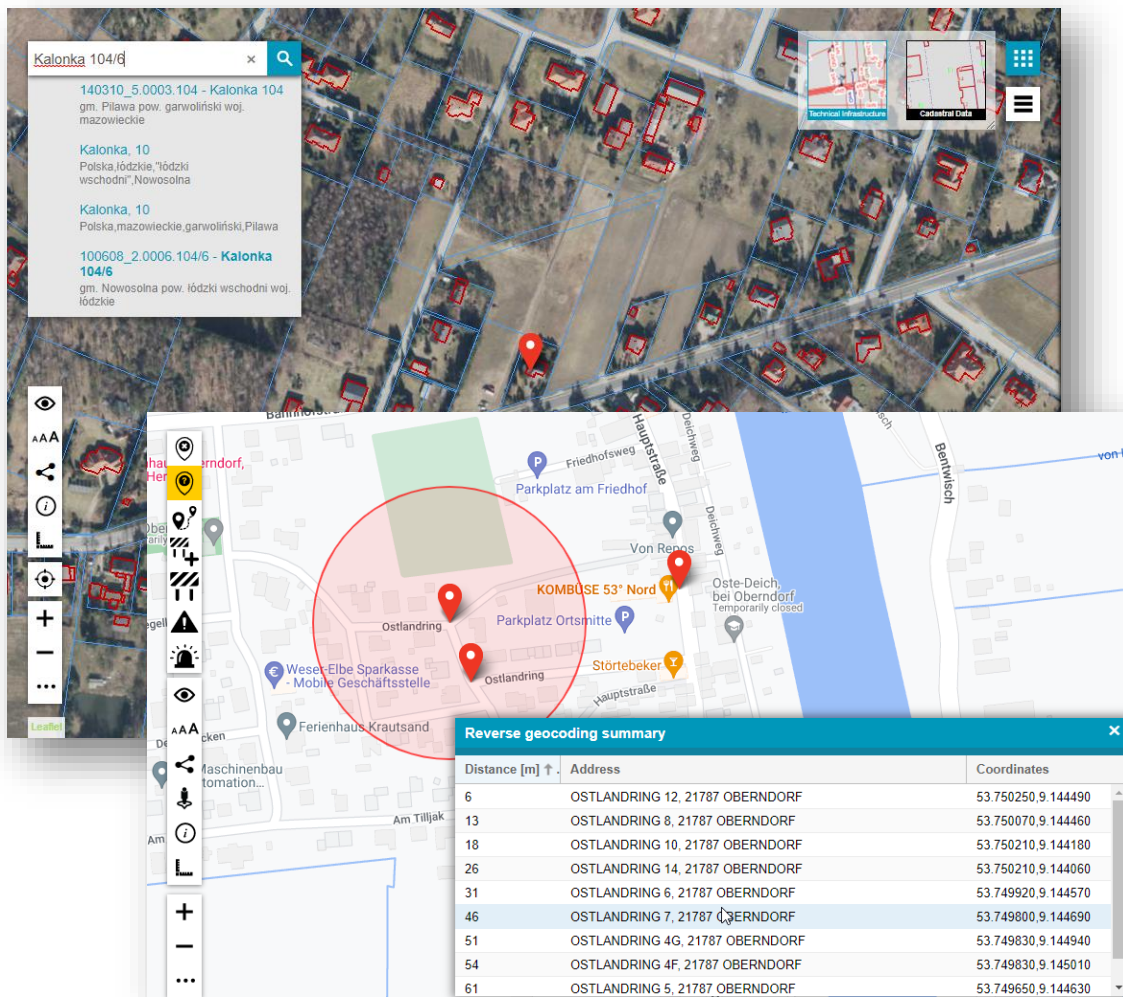


can be built on any supported GeoMedia Warehouse; for example, Oracle, SQL Server and other database engines including shapefiles, MS Access, GeoPackage and other file-based storages.

Transformation can be easily defined (outside of the LUWS configuration) that allows the usage of various data providers like TomTom, HERE, Geofabrik and OSM.

No programming skills are required to configure and adjust the service behavior to the customer needs and aspects specific to various regions. All preparation steps can be done with a few clicks in bundled tools.

For the end user, searching for data using a LUWS service in Geospatial Portal or Consumer is like using a well-known Google search. The location of found objects is presented on the map with a pin.



The screenshot displays a geospatial application interface. At the top, a search bar contains the text "Kalonka 104/6". Below the search bar, a list of results is shown, including "140310\_5.0003.104 - Kalonka 104", "Kalonka, 10", and "100608\_2.0006.104/6 - Kalonka 104/6". The main map area shows a satellite view of a residential area with red pins indicating the location of the search results. A red circle highlights a specific area on the map. In the bottom right corner, a "Reverse geocoding summary" table is displayed, showing a list of addresses and their corresponding coordinates.

Distance [m]	Address	Coordinates
6	OSTLANDRING 12, 21787 OBERNDORF	53.750250,9.144490
13	OSTLANDRING 8, 21787 OBERNDORF	53.750070,9.144460
18	OSTLANDRING 10, 21787 OBERNDORF	53.750210,9.144180
26	OSTLANDRING 14, 21787 OBERNDORF	53.750210,9.144060
31	OSTLANDRING 6, 21787 OBERNDORF	53.749920,9.144570
46	OSTLANDRING 7, 21787 OBERNDORF	53.749800,9.144690
51	OSTLANDRING 4G, 21787 OBERNDORF	53.749830,9.144940
54	OSTLANDRING 4F, 21787 OBERNDORF	53.749830,9.145010
61	OSTLANDRING 5, 21787 OBERNDORF	53.749650,9.144630



## GeoMedia WebMap service source metadata caching

GeoMedia WebMap services metadata is data that describes geospatial data and may include information about geometry storage, feature class definitions, supported geometry types, data type matchings, schemas, attribute properties, coordinate systems supported and more.

We are excited to announce that with GeoMedia WebMap 16.8 we've introduced a new metadata caching mechanism, a powerful feature to store and retrieve metadata related to WebMap Services.

By using WebMap services, source metadata caching significantly improves performance and reduces the need for repeated computations. Several tests performed during the development process showed that with a new caching mechanism the average response time is 25% faster due to fewer metadata requests and only checking for changes in the metadata.

Another advantage of a service source metadata mechanism can be smoother and more effective development workflows.

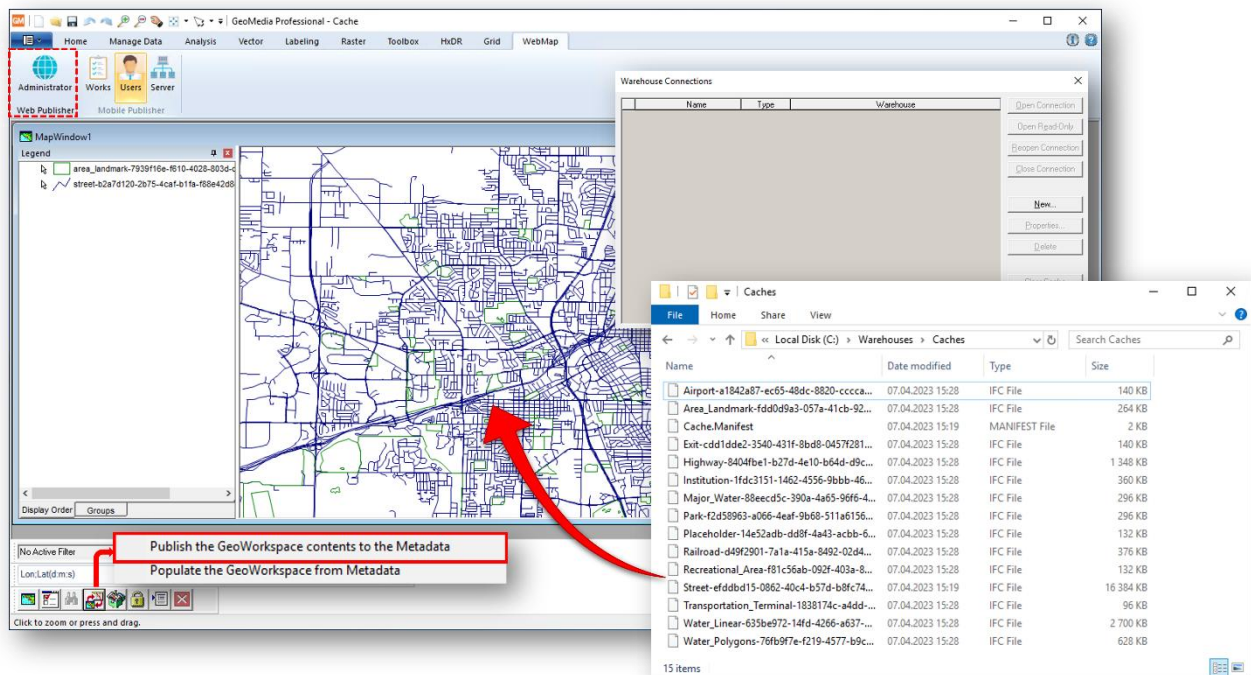
It is worth mentioning that the service metadata caching mechanism introduced works out of the box and no additional GeoMedia WebMap product configuration is needed.

## Publish GeoWorkspace with Index Feature Cache attached to WebMap service source metadata

Feature caching is a common way to improve overall performance for many common workflows and operations, especially with vector geospatial data. Thus, feature caching capabilities are available with the GeoMedia desktop. In GeoMedia, feature caching is handled using an Indexed Feature Cache (IFC) file.

With GeoMedia WebMap 16.8 (and later), it is possible to publish GeoWorkspace with Index Feature Cache files directly to service source metadata. Such a workflow does not require any additional steps. Having a GeoWorkspace with a legend entry originating straight to IFC, no warehouse connection is required to publish the data. GeoMedia WebMap users publish GeoWorkspace, as is done in the case of typical GeoWorkspace, with established warehouse connection(s).

It is important to mention that if publishing GeoWorkspace with IFC, transactional services, like WFS, cannot be met, so all services based on metadata published with IFC will be read-only.





## Managing instances with Administration Console Command Line Interface

GeoMedia WebMap 2023 comes with a preinstalled PowerShell module and provides several Cmdlets to configure and manage GeoMedia WebMap instances and services. Using PowerShell commands is very handy when administrative tasks are frequent, repetitive and/or need to be automated.

By using PowerShell and the newly introduced Cmdlets, every administrator of GeoMedia WebMap can:

- Review the configuration and get the list of available Cmdlets
- Display the configuration tree exposed by the server
- List all service instances
- Inspect services exposed by the Administration Console service
- Create or remove instances of GeoMedia WebMap services
- Manage instances and change GeoMedia WebMap settings

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Windows\system32> $n = new-node 'Demo_WMS'
PS C:\Windows\system32> $n.Description = 'Instance created using PowerShell'
PS C:\Windows\system32> $n.ServiceType = 'WMS'
PS C:\Windows\system32> $n.WebSiteName = 'Default Web Site'
PS C:\Windows\system32> $n.VirtualDirectory = 'Demo_WMS'
PS C:\Windows\system32> $n

[Demo_WMS]
Description: Instance created using PowerShell
ServiceType: WMS
WebSiteName: Default Web Site
VirtualDirectory: Demo_WMS

PS C:\Windows\system32> add-childnode /Services $n
```

```
PS C:\Windows\system32> get-command -module accli

CommandType Name Version Source
-----
Cmdlet Add-ChildNode 16.8.0 accli
Cmdlet Format-Node 16.8.0 accli
Cmdlet Get-Node 16.8.0 accli
Cmdlet Get-NodeProperty 16.8.0 accli
Cmdlet New-Node 16.8.0 accli
Cmdlet Open-adminconsole 16.8.0 accli
Cmdlet Remove-ChildNode 16.8.0 accli
Cmdlet Set-NodeProperty 16.8.0 accli
```

```
PS C:\Windows\system32> get-node /Services/ConsumerDemo

[ConsumerDemo]
ServiceType: Consumer Portal
VirtualDirectory: ConsumerDemo
PhysicalPath: C:\Program Files\Common Files\Hexagon\Services\Instances\ConsumerDemo
WebSiteId: 1
WebSiteName: Default Web Site
Version: 16.7.1
ServiceTypeDescription: Consumer Portal
Description: Consumer Portal instance created using PowerShell
Restart: False
Upgrade: False
[Configuration]
[Info]

PS C:\Windows\system32> get-node /Services/ConsumerDemo/Configuration

[Configuration]
[GeneralConfiguration]

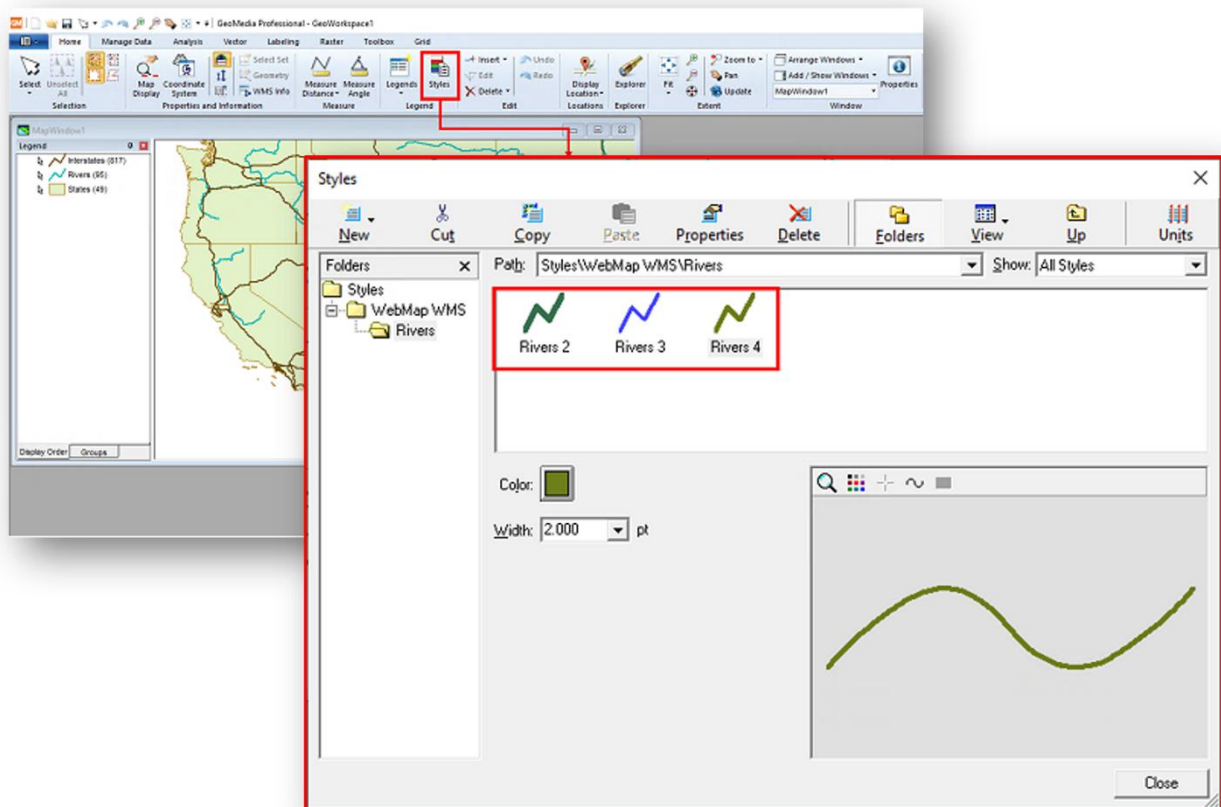
PS C:\Windows\system32> get-node /Services/ConsumerDemo/Configuration/GeneralConfiguration

[GeneralConfiguration]
EnableAdvancedMapCompositionSwitch: False
ShouldPreserveCameraPosition: False
ShouldDisplayMapCompositionsInfo: True
ShouldDisplayScaleBar: True
Layout: window
ShouldFoldGroups: True
[StartingConfiguration]
[SearcherDatasets]
```

## Publish and handle multiple WMS styles

When GeoWorkspace content is published to the WMS metadata, the current style set for a legend entry is published as a default for the WMS layer. This new release adds the ability to handle additional (non-default) styles for legend entries. A geospatial server administrator can publish several predefined styles per layer, so end users can choose and switch between these styles, such as in Geospatial Portal. This means it is now easier to match the WMS style to a particular map composition, for example, to prepare separate styles optimized for dark and bright backgrounds.

Additional styles are prepared using the standard GeoMedia functionality. It is enough to put additional styles in an appropriately named folder and one can start the standard procedure of data publishing.



## GeoJSON output format for GeoMedia WebMap WMS Feature Info response

GetFeatureInfo response from WMS service can be obtained in many formats, like XML, HTML or plain text. Now one can view and analyze the FeatureInfo output in geoJSON format. The application/geo+json output format is available out of the box and no additional configuration on the GeoMedia WebMap server side is required.

```
<!-- Service Metadata -->
▼<Service>
  <Name>WMS</Name>
  <Title>Hexagon Geospatial OGC Web Map Service</Title>
  <Abstract>Service powered by Hexagon Geospatial Server products – GeoMedia WebMap and/or Apollo and/or Geospatial SDI.</Abstract>
  <KeywordList/>
  <OnlineResource xlink:href="http://www.hexagon.com/" />
  <AccessConstraints/>
</Service>
▼<Capability>
  ▼<Request>
    ►<GetCapabilities>
      ...
    </GetCapabilities>
    ►<GetMap>
      ...
    </GetMap>
    ▼<GetFeatureInfo>
      <Format>text/xml</Format>
      <Format>text/html</Format>
      <Format>application/gml+xml; version=3.1</Format>
      <Format>application/geo+json</Format>
      <Format>application/json</Format>
```

## Easier and faster use of custom legend icons and auto-generated thematic legend graphics while publishing WebMap services

The legend is a critical element of any map. It is a traditional feature, for paper or digital maps, served through web services such as WMS. Without a legend or legend graphics closer to WMS terminology, interpreting map data and features would be difficult. WMS legend graphics play a crucial role in explaining the symbols and colors used on a map.

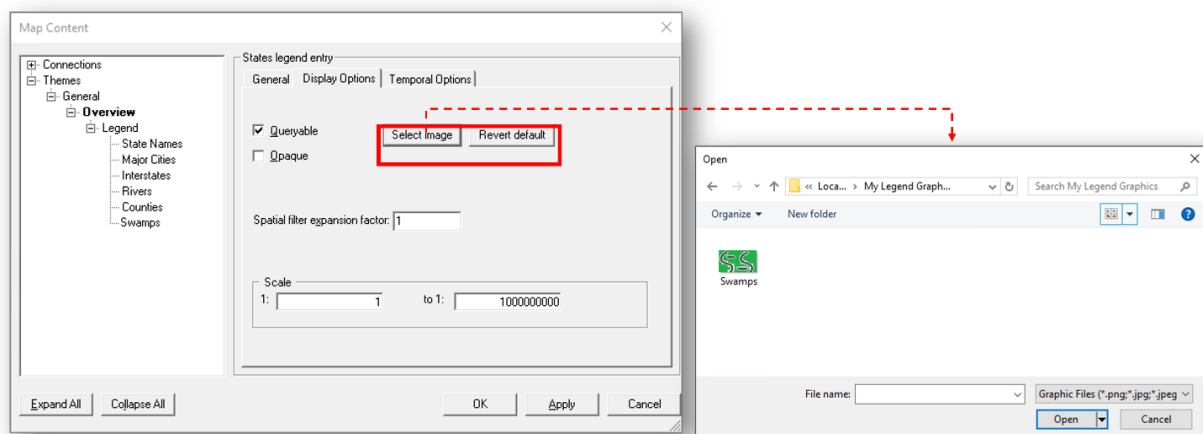
When data is published to the WMS service source, GeoMedia WebMap engines automatically generate the default legend graphic.

Whenever a map is requested from the GeoMedia WebMap server, the request usually includes retrieval of the corresponding legend graphics. The images returned by a server can be displayed in Geospatial Portals, other WMS clients or can be requested directly through a simple query request in the Web browser.

**Note:** The default legend graphics generated by GeoMedia WebMap on the base of feature stylistics can be replaced by a custom designed if desired.

As of version 16.8, overriding the default legend graphics for GeoMedia WebMap WMS is remarkably simple with the Publisher Administrator tool. Publisher Administrator provides display options that allow you to control how the legend entry is displayed in the map and legend. (The Display Options tab is unavailable when managing WFS (Feature) service sources.)

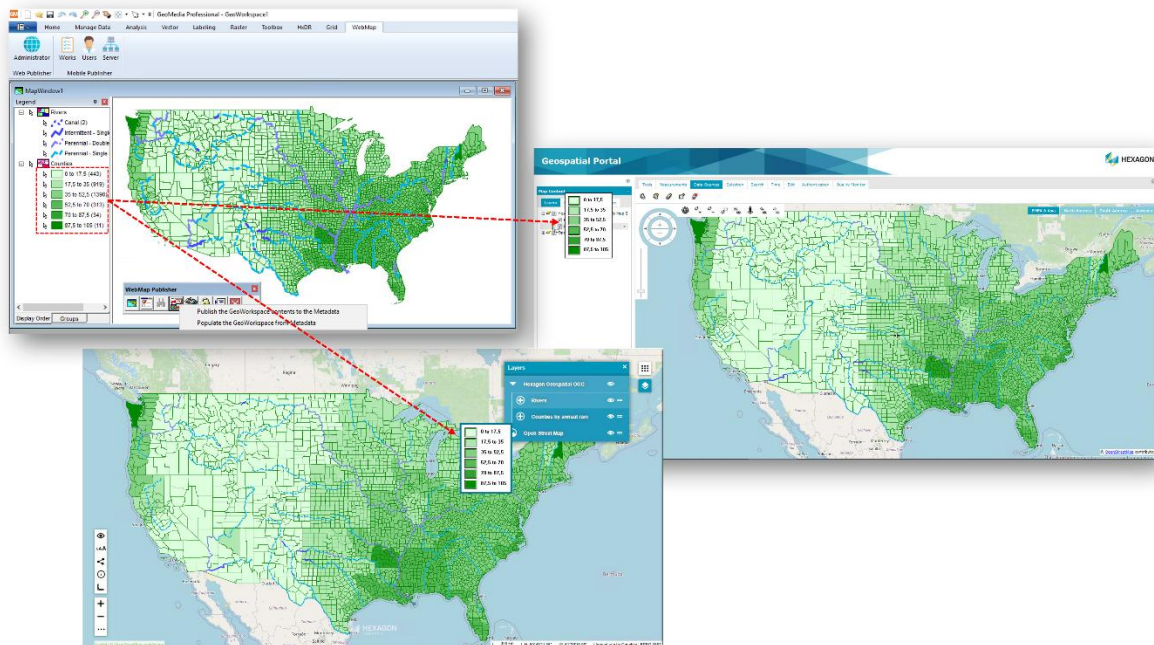
Two new buttons: **Select Image** and **Revert Default** have been added to the **Display Options** tab for WMS legend entry settings. The **Select Image** button allows you to select an image used to override default legend graphics. Pressing **Select Image** shows the dialog form to choose a new image from a disk. Supported image extensions include \*.png and \*.jpeg. This release implements image converter to assure the legend graphics are prepared in the appropriate format, .png, to conform to WMS specification. It means .jpeg files are automatically converted to .png. **Revert Default** restores the default legend graphic if it has been changed earlier. Legend graphics can be restored to default immediately after the user presses the button.



Other legend entry improvements concern the legend graphics for thematic layers.

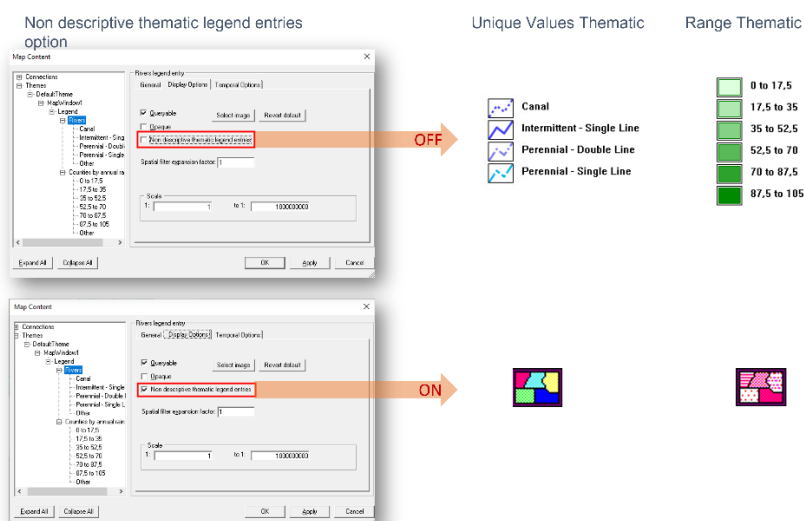
Publishing thematic maps to a WMS service creates a thematic legend instead of small pictograms that only give information with ranges or unique values. GeoMedia WebMap generates a real image of the thematic legend. Now the default WMS thematic legend graphic looks the same as the one defined in the GeoMedia

Desktop legend. With this solution, users looking at the thematic map in Geospatial Portal or Geospatial Portal Consumer can identify the affiliation of features on the map to the corresponding classification without any doubt.



It is still possible to provide the WMS service with a simplified pictogram for thematic maps that will not contain feature classification. The graphic above displays pictograms meant to inform users of the differences between a range thematic or unique value thematic map.

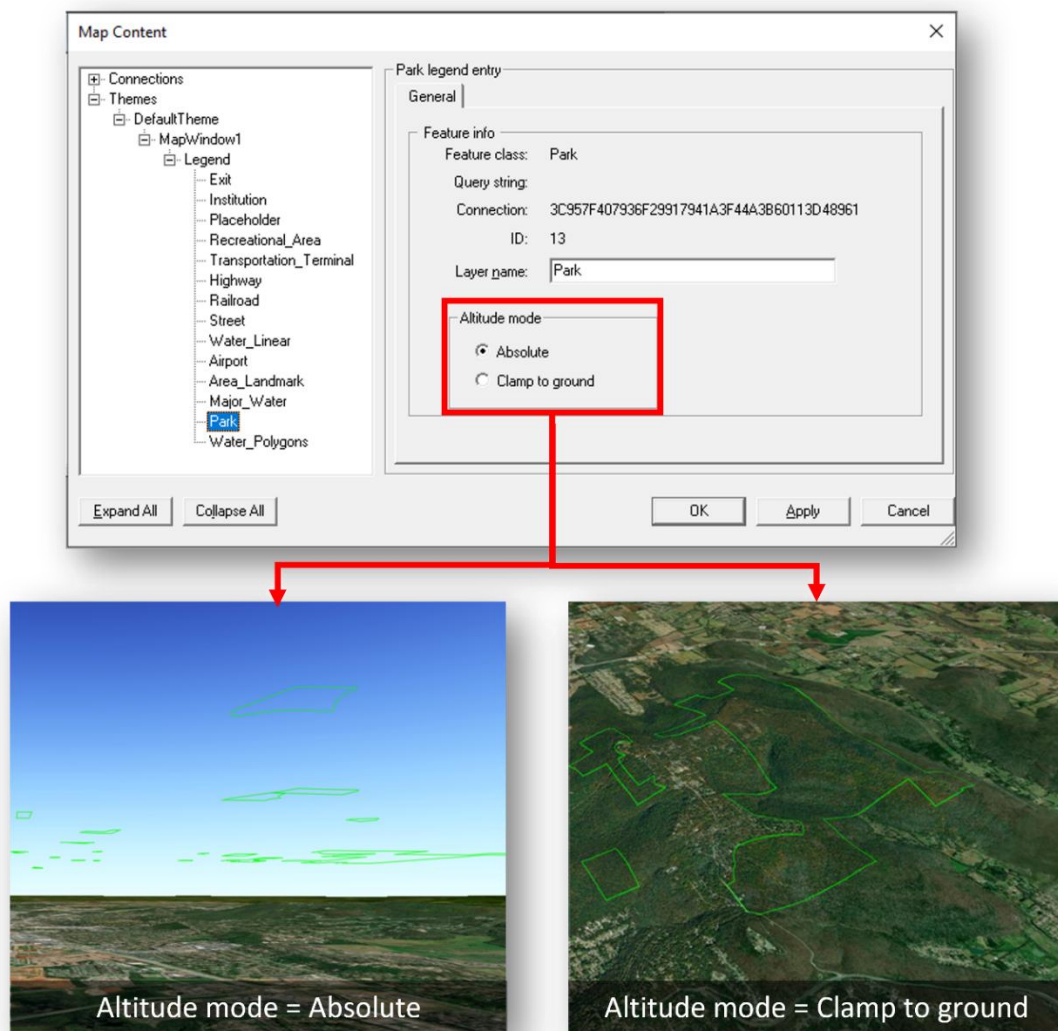
This is possible by manipulating the **Non-Descriptive Thematic Legend Entries** option for the selected legend in the **Display Options** tab in the **Map Content** window of the Web Publisher Administrator window.



## AltitudeMode KML for WebMap WFS

WFS services from Hexagon support KML markup language which is commonly used as a language for the visualization of geographic information, especially tailored for Google Earth. Features quite often contain an element or coordinate, which specifies a height (distance) above the ground or sea level. The **Altitude Mode** element in the KML tells how to read the altitude values. The **Clamp to Ground** parameter value means all heights are ignored and the feature is always on the ground or sea level. The other option is **Absolute**, which measures altitude relative to sea level, regardless of the actual elevation of the terrain beneath the feature. In this way, features can be placed underground and will not be visible or over the ground, depending on the specific values.

GeoMedia WebMap 2023 introduces a new GUI control to set this additional **Altitude Mode** parameter for GeoMedia WebMap WFS KML output format. Change of the KML **Altitude Mode** parameter value has never been so easy and fast. The GeoMedia WebMap administrators simply select the desired option for a specific WFS legend entry in the WFS data source settings, in the **Publisher Administrator** tool, **Map Content** window and **General** tab.



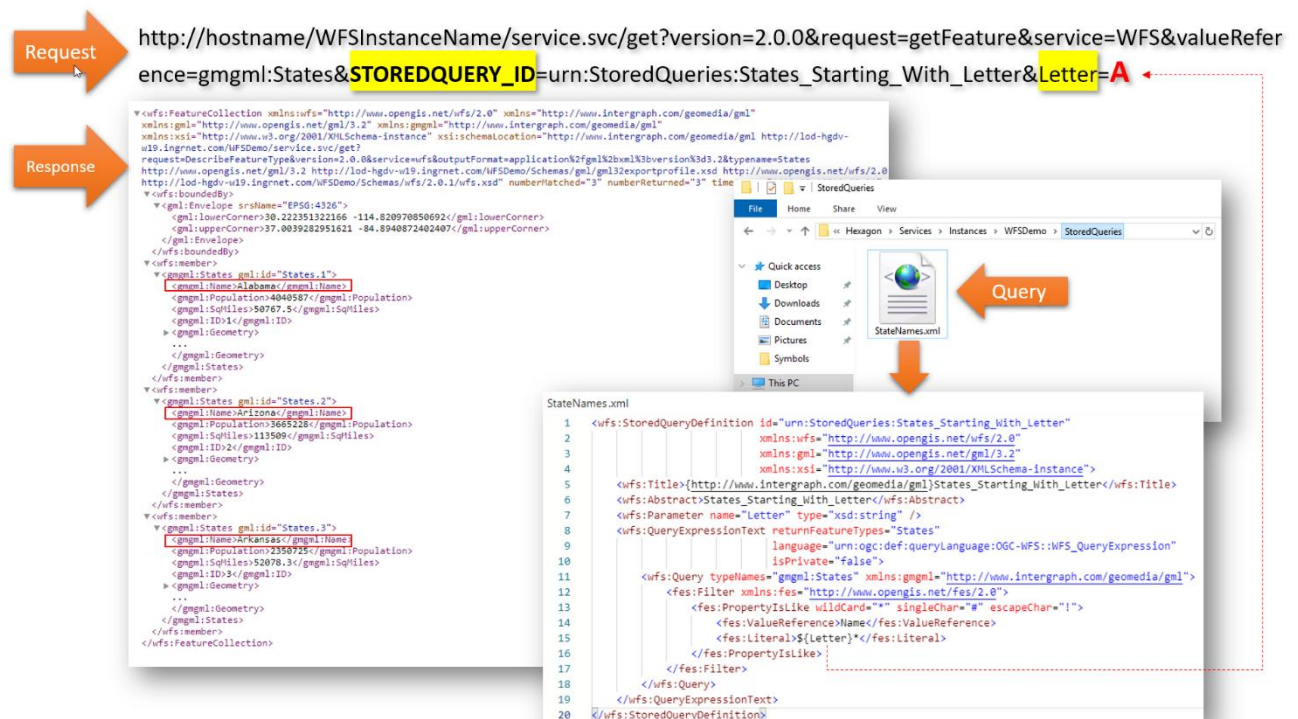


## Custom stored queries for WFS 2.0

In effect from version 16.8, GeoMedia WebMap fully supports stored queries for WFS 2.0, adhering to the OGC specification. Query definitions prepared by administrators are stored as XML files on the server side – for GeoMedia WebMap server specifically in the "StoredQueries" subfolder(s) of the respective WFS instance(s).

The XML-based query definitions contain vital details such as query ID, title, abstract, as well as parameterized attribute name(s), type(s) and operator(s). Executing a query is now as simple as providing the corresponding query ID value for the 'STOREDQUERY\_ID' parameter in the WFS request. There is no longer a need to include the entire filter in the request.

By leveraging WFS-stored queries, the process of querying WFS geospatial data becomes more streamlined and flexible. Users can invoke queries repeatedly with different parameter values, leading to improved efficiency.

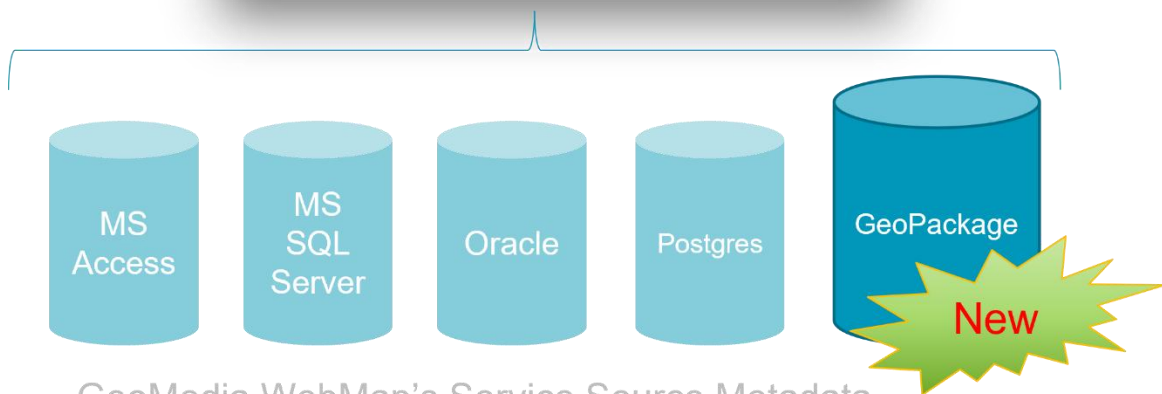
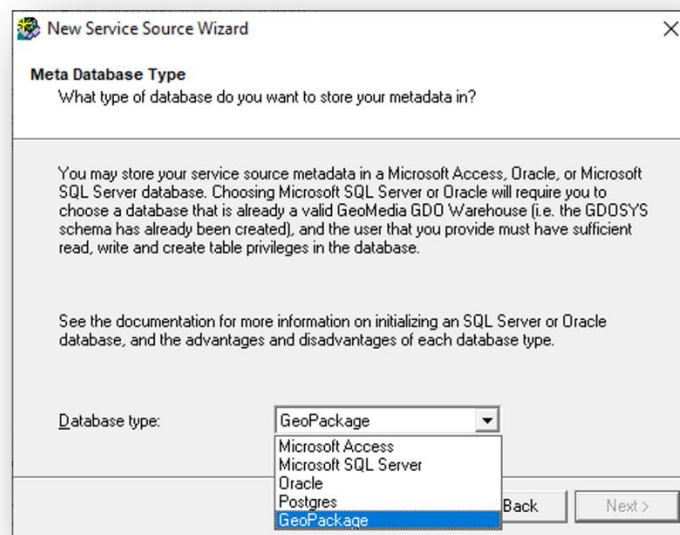


## New database type for GeoMedia WebMap service source metadata: GeoPackage

The crucial function of the GeoMedia WebMap Publisher Administrator is to publish geospatial data from GeoMedia GeoWorkspace to the service source. All additional information about spatial data, such as warehouse connections, queries, map windows, spatial reference systems and more, is stored in metadata databases. However, with the introduction of GeoMedia WebMap 2023, a new database type, GeoPackage, can now be used to store WebMap's service metadata.

GeoPackage adheres to OGC standards and specifications, ensuring interoperability with other geospatial systems and software that support OGC standards. GeoPackage offers many advantages and characteristics, such as extensibility, flexibility, seamless data interoperability, portability and performance.

With this enhancement, our users have more choices when it comes to selecting the database technology that best meets their expectations in GIS applications.



GeoMedia WebMap's Service Source Metadata



## Simpler workflows for product installation and configuration

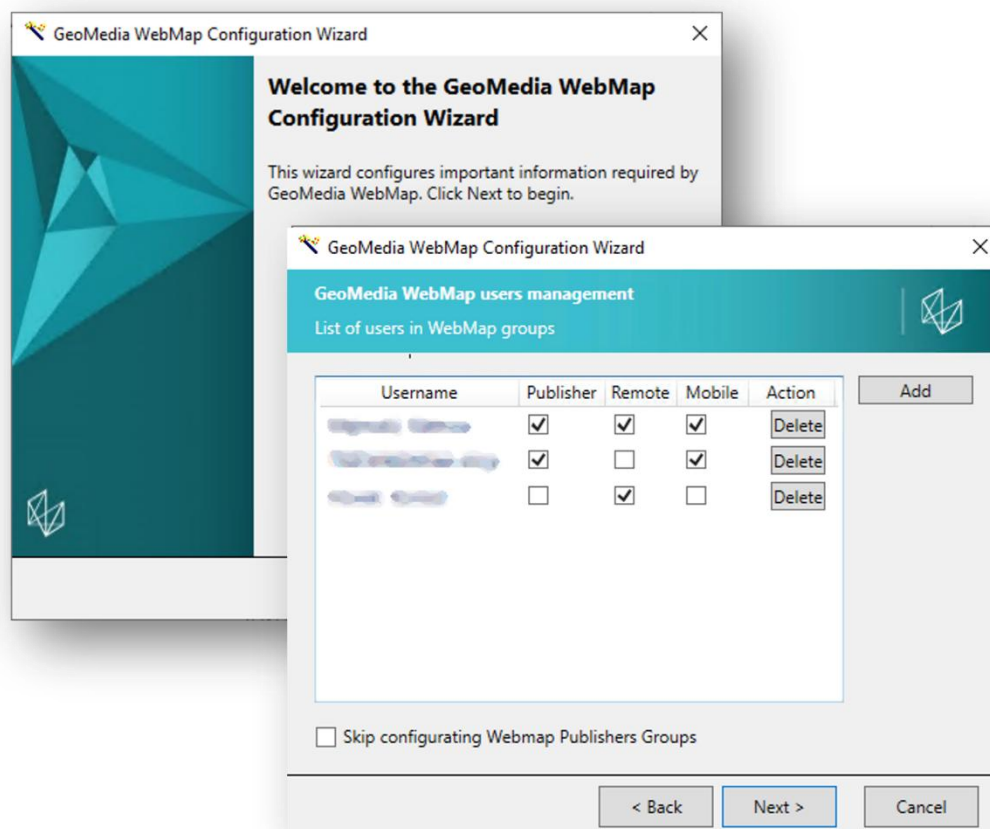
We firmly believe that our ease-of-use software directly contributes to the efficiency and effectiveness of our customers' work, and we strive to create an intuitive and user-friendly experience. By automating processes and minimizing the need for users to engage in additional configuration activities, we not only simplify and expedite the configuration process, but also mitigate the risk of incorrect settings.

With these principles in mind, we have implemented several notable enhancements to the GeoMedia WebMap 2023.

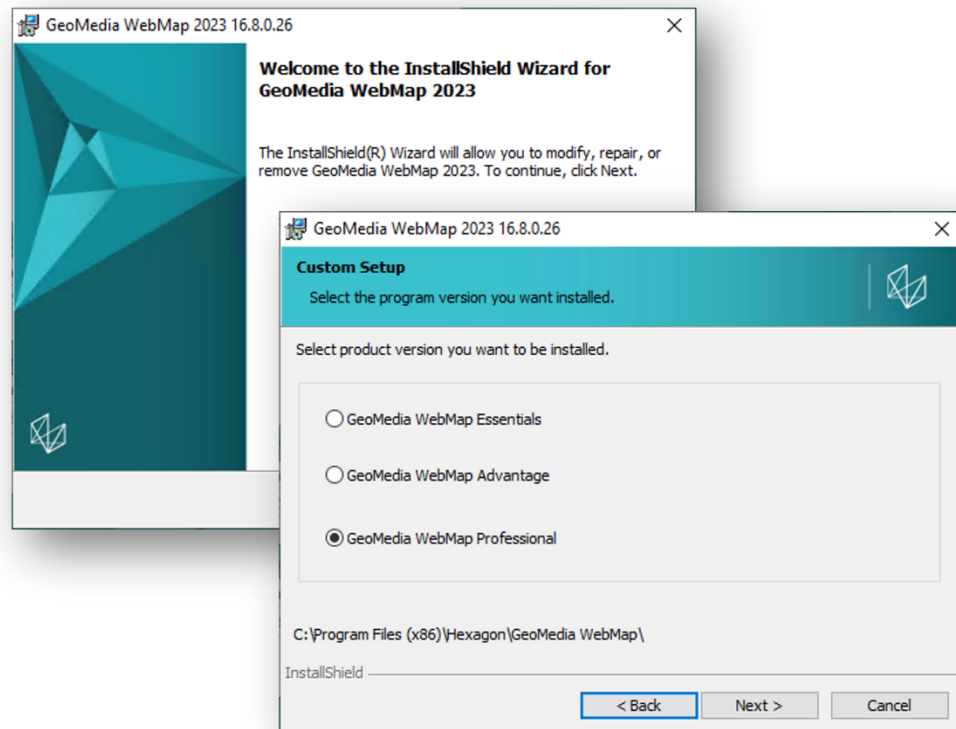
The process of ensuring seamless access to GeoMedia WebMap Mobile Publisher, Remote Publisher and Mobile Backend components, while empowering administrators to efficiently manage permissions for specific Windows groups, has been significantly streamlined.

The Configuration Wizard now creates all necessary Windows system groups during the product configuration. Through an additional step in the Configuration Wizard, administrators can effortlessly assign specific users to required groups (Publisher and Remote Mobile) with just a few clicks using checkboxes. Although optional, skipping this step may necessitate manual configuration of users within groups in the Windows IIS settings, as was required prior to version 16.8.

By incorporating user group assignments into the configuration process, the WebMap Publisher Administrator or Mobile Publisher utility now provides full functionality without the need to explicitly run GeoMedia desktop as an Administrator to enforce privileges.



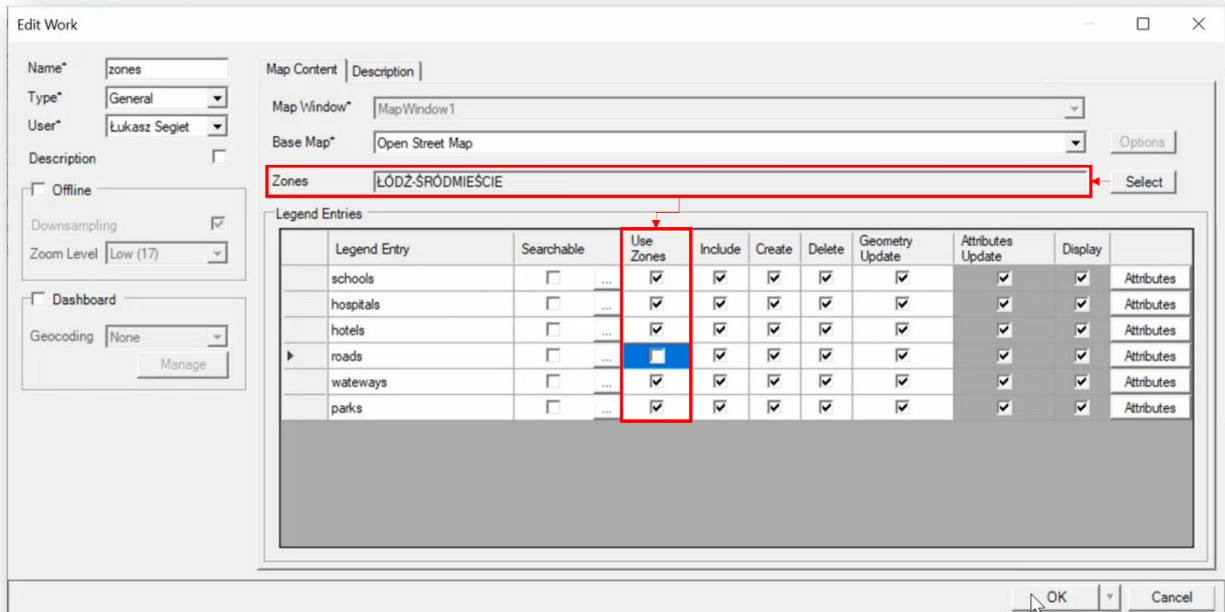
Furthermore, we have made slight redesigns to certain product setup dialogs, such as the Custom Setup screen, which allows users to select the desired program version. The implementation of radio buttons ensures a quicker, user-friendly selection process compared to previously used multiselect controls.



## GeoMedia WebMap Mobile and Mobile Publisher

### Enhanced zone assignment

Apart of filtering all active map layers by defining zones, now there is an option to opt out of limiting the legend entries to global work zone selection. With the introduced Use Zones option column in Mobile Publisher legend entries control, the administrator can select the feature classes filtered by a chosen zone(s).



**Edit Work**

Name\* zones  
 Type\* General  
 User\* Łukasz Segiet  
 Description  
☐ Offline  
 Downsampling ☒  
 Zoom Level Low (17)  
 Dashboard  
 Geocoding None  
 Manage

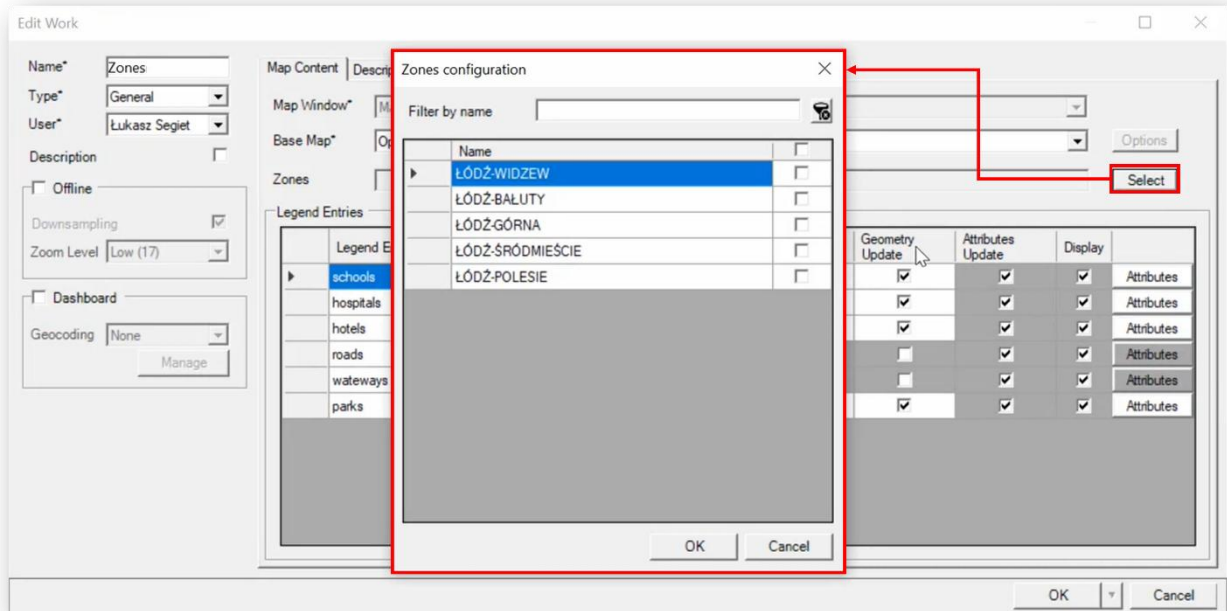
Map Content | Description |  
 Map Window\* MapWindow1  
 Base Map\* Open Street Map  
 Zones ŁÓDŹ-SRÓDMIEŚCIE  
 Select

Legend Entry	Searchable	Use Zones	Include	Create	Delete	Geometry Update	Attributes Update	Display	
schools	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
hospitals	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
hotels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
roads	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
waterways	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
parks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes

OK Cancel

Further enhancements in the Zones functionality include selecting and displaying the zones on the list.

All applicable zones that one can select to filter features are now displayed in a separate Zones configuration window, which one can open with the Select button. The dialog allows one to conveniently filter and select a zone(s). The selected zones are then listed in the Zones field, on the Map Content tab of Mobile Publisher.

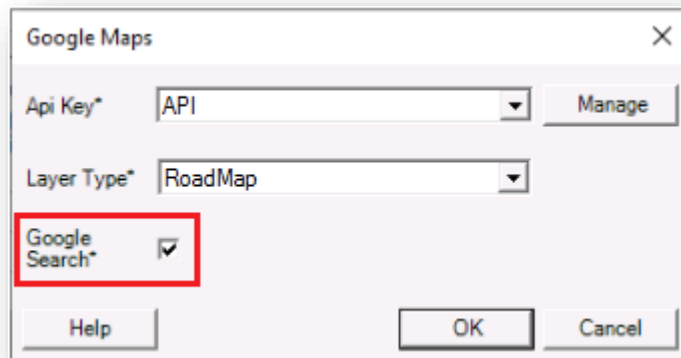


The last improvement in zone assignment workflow is that zones with wrong, empty or unsupported geometry are displayed in the zone's selection window as unsupported and selection for such zones is blocked.

### Turn on/off Google Search for Google Base Map in Mobile Publisher work

Before adding a Google service to the work definition, such as Google Base Maps layer, the Google API must be configured. The Google API may activate not only the Google Maps display, but also access to Google Search services.

Mobile Publisher users have a new option to turn on/off Google Search when configuring Google Base Map in Mobile Publisher work. The new option is in Google Maps' base map options dialog. Google Search is enabled by default for a Google Base Map defined in Mobile Publisher works.

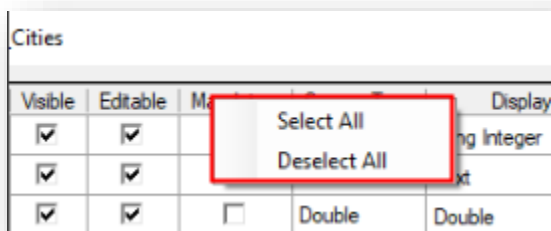


## Enhanced UI of WebMap Mobile Publisher for bulk configuration changes

To speed up the editing and preparing of the Work configuration, a header cell context menu for checkbox columns was implemented in version 2023. The new context menu for **Visible**, **Editable** and **Mandatory** columns in the **New/Edit Work** dialog has the following options:

- Select All
- Deselect All

With this little improvement, one configuring a Work can quickly check or uncheck all attributes at one time.



Visible	Editable	Mandatory	Display
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Integer
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Text
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Double

## Improved search configuration UI in Mobile Publisher

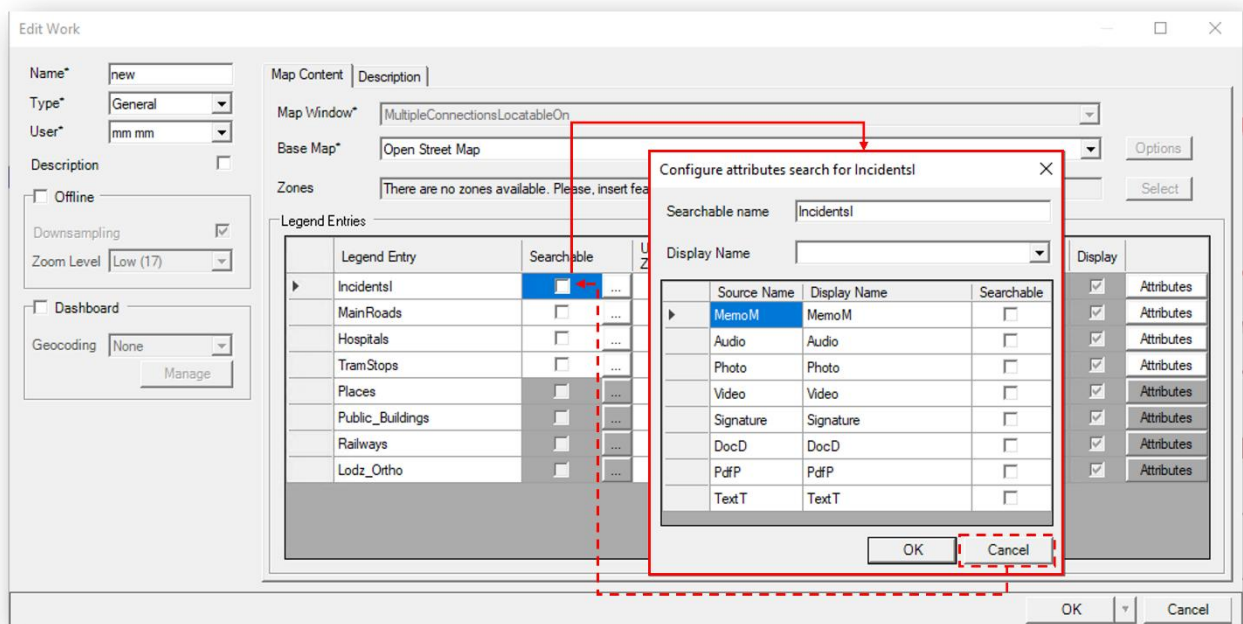
User interfaces for searchers' configuration in **Legend Entries** control, in **New/Edit Work** dialog, has also been improved.

First, searcher configuration is available only for WFS-T Legend Entries that have attributes:

Legend Entries

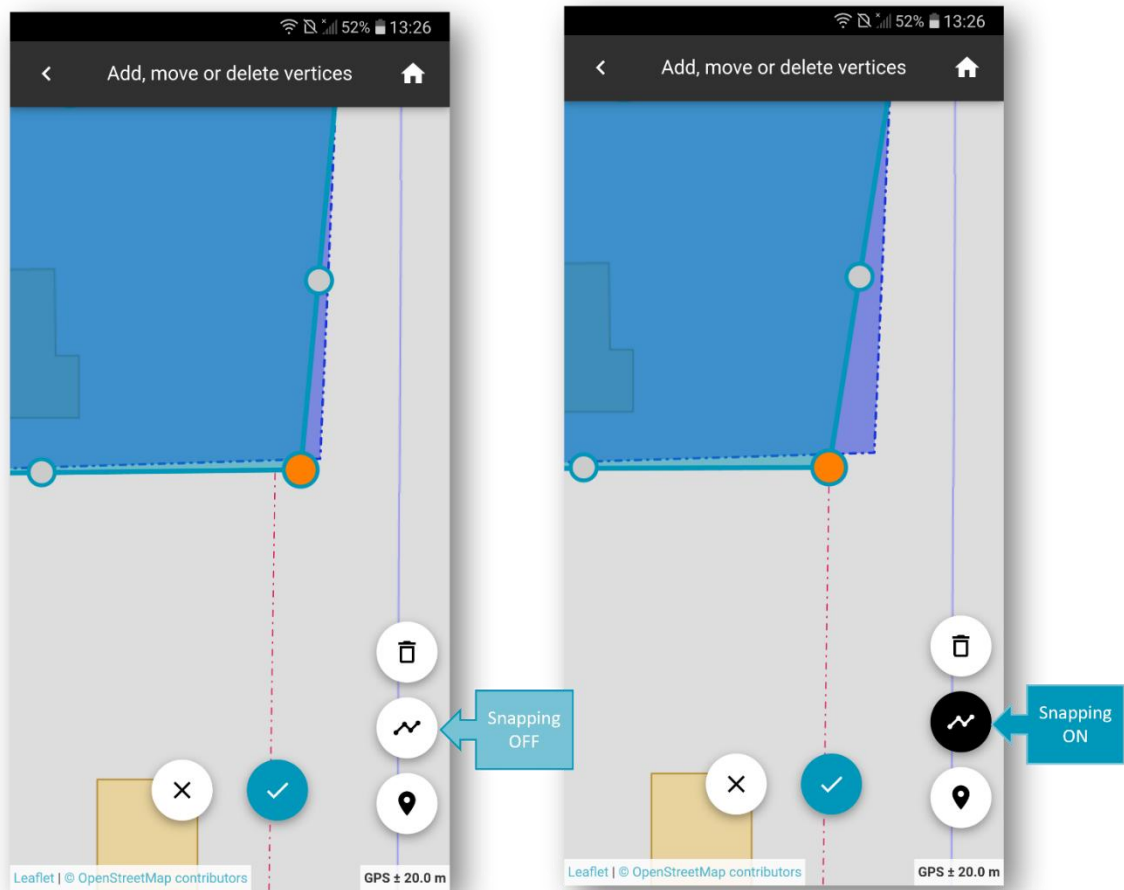
	Legend Entry	Searchable	Use Zones	Include	Create	Delete	Geometry Update	Attributes Update	Display	
▶	IncidentsI	<input checked="" type="checkbox"/>	...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
	MainRoads	<input type="checkbox"/>	...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
	Hospitals	<input type="checkbox"/>	...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
	TramStops	<input type="checkbox"/>	...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
	Places	<input type="checkbox"/>	...	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
	Public_Buildings	<input type="checkbox"/>	...	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
	Railways	<input type="checkbox"/>	...	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes
	Lodz_Ortho	<input type="checkbox"/>	...	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Attributes

Second, after clicking the checkbox a configuration window appears, which when canceled will deselect the checkbox:



## Snapping in geometry edition

Snapping works with all types of geometries supported by the mobile app and is active while editing existing features and adding new ones. The vertex of the edited geometry can be snapped to vertices of other geometry and to any point, line or boundary of area features. The special snapping button has been implemented. By using the new button users can quickly turn off/on snapping feature if needed.



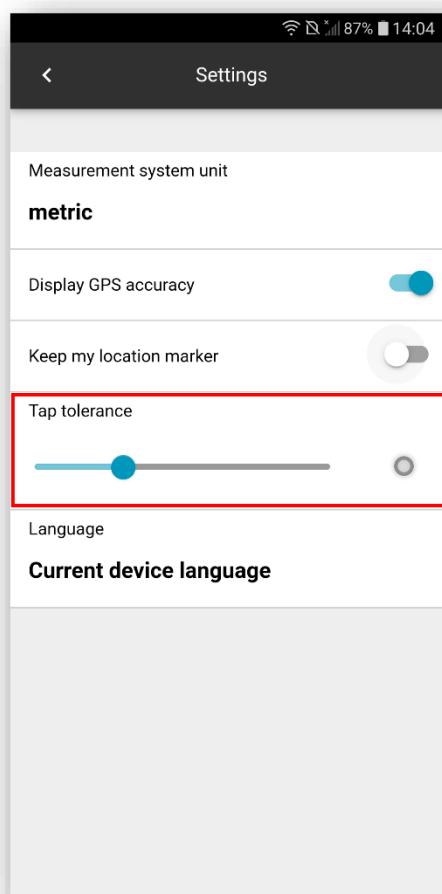


## Adjustable tap tolerance

This new feature should significantly improve the user experience while working with the GeoMedia WebMap Mobile application.

Depending on many factors, such as the physical size of the device screen, resolution of the screen, object style, arrangement of objects on the map and more, it was sometimes difficult to hit the right object on the map on the first try. Now mobile app users can adjust the tap tolerance to adjust to individual preferences and device properties. Every user can set individual tap tolerances by using the slider in the Settings panel.

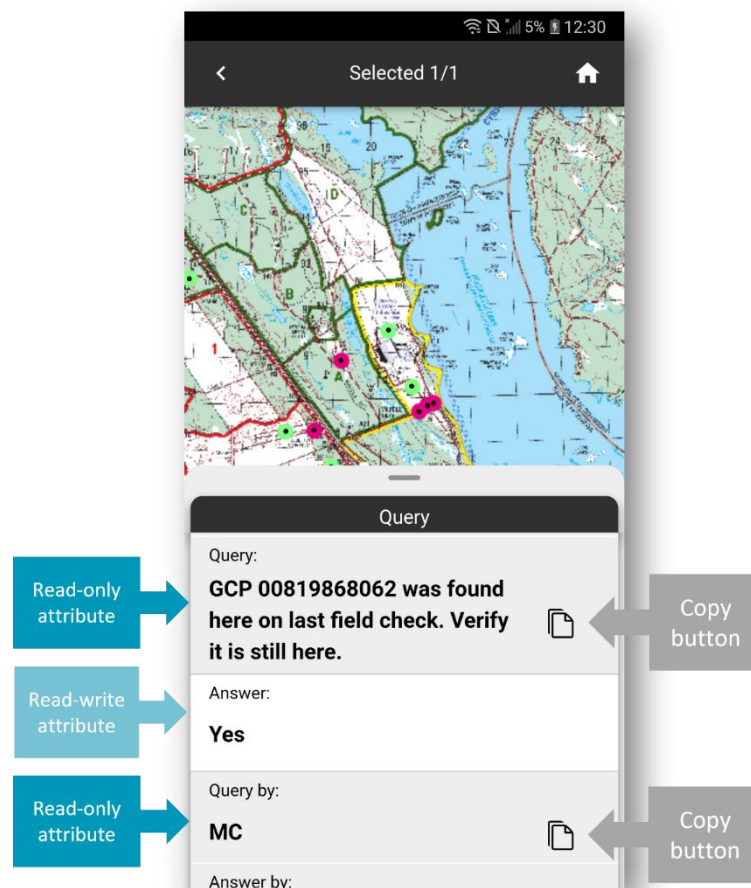
Also, the feature's style, such as dot size for points or line thickness, is taken into consideration. Now, one does not need worry about hitting the center of the feature (for a feature with a large enough style). It is enough to hit on the edge of the object to display its feature info.



## Copying of read-only attributes to clipboard

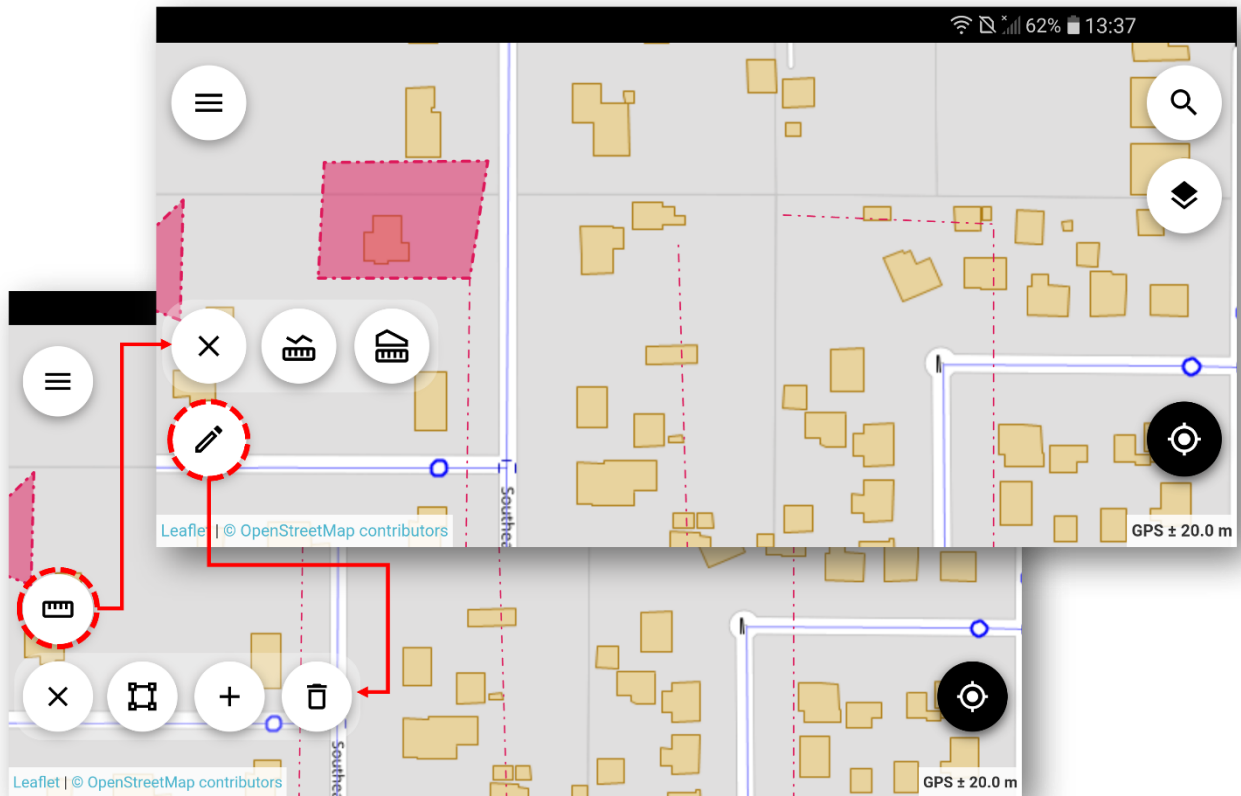
In the feature info card when viewing or editing object attributes, both read-only and read-write attributes are displayed. The read-only attribute fields are inactive so the user cannot change the fields or even select the attribute's value.

Now, it is possible to copy the read-only attribute's value. It can be done with the new Copy button displayed with every read-only attribute field. Tapping this button copies attribute values to the system clipboard. In the case of the read-write attributes, there is no special button, and the copying is done using standard system commands.



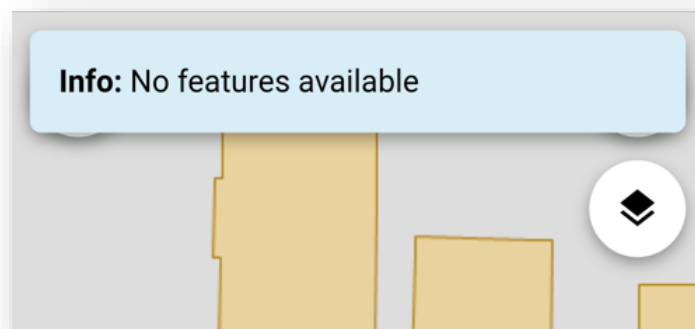
## Grouping of feature actions button

Automatic grouping of actions buttons was introduced to enhance the UI responsiveness in the GWM mobile application on different devices. If there is not enough space on the device screen, such as when the screen has low resolution and/or is switched to the horizontal view, the actions buttons are organized into groups. Clicking one button expands the other buttons in the group. The device's aspect ratio also determines whether buttons will be grouped or not.



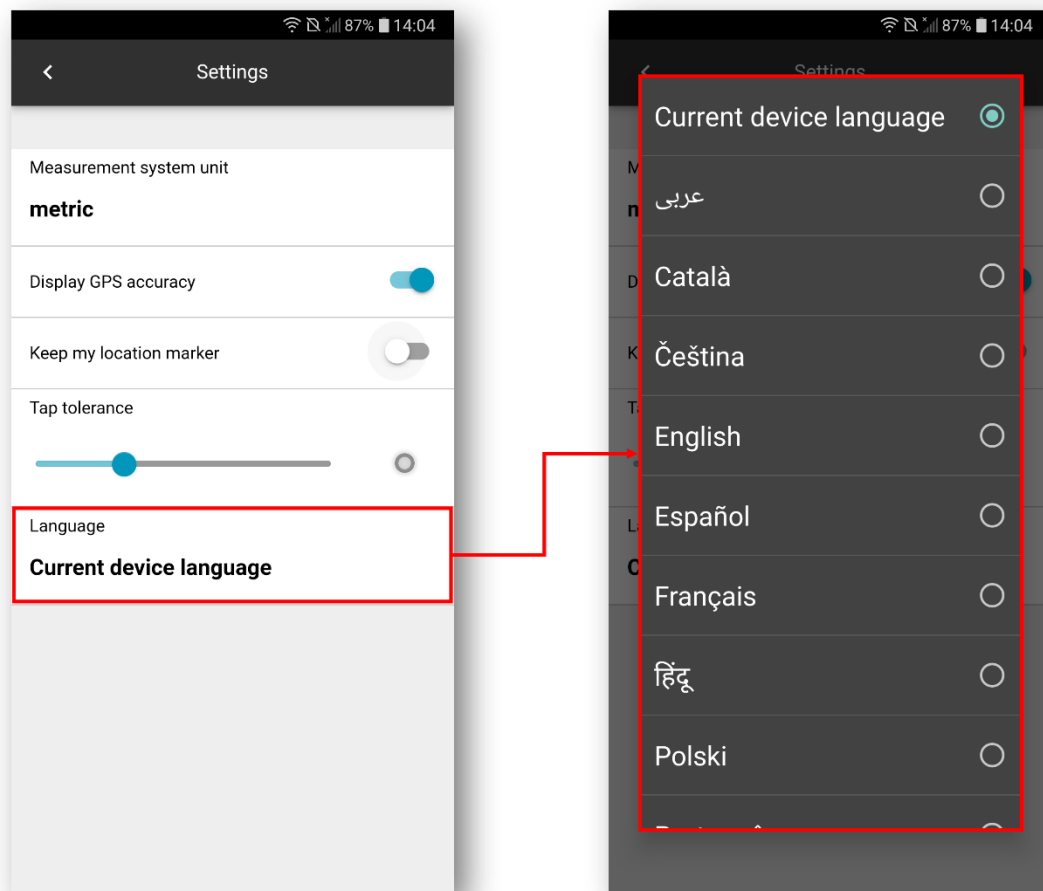
## Notification about feature unavailability

By default, tapping a point on the map opens the Feature Info dialog for the underlying queryable layers. Now in case there is no queryable layer in tapped map point, the appropriate notification is displayed to the user.



## Language selection

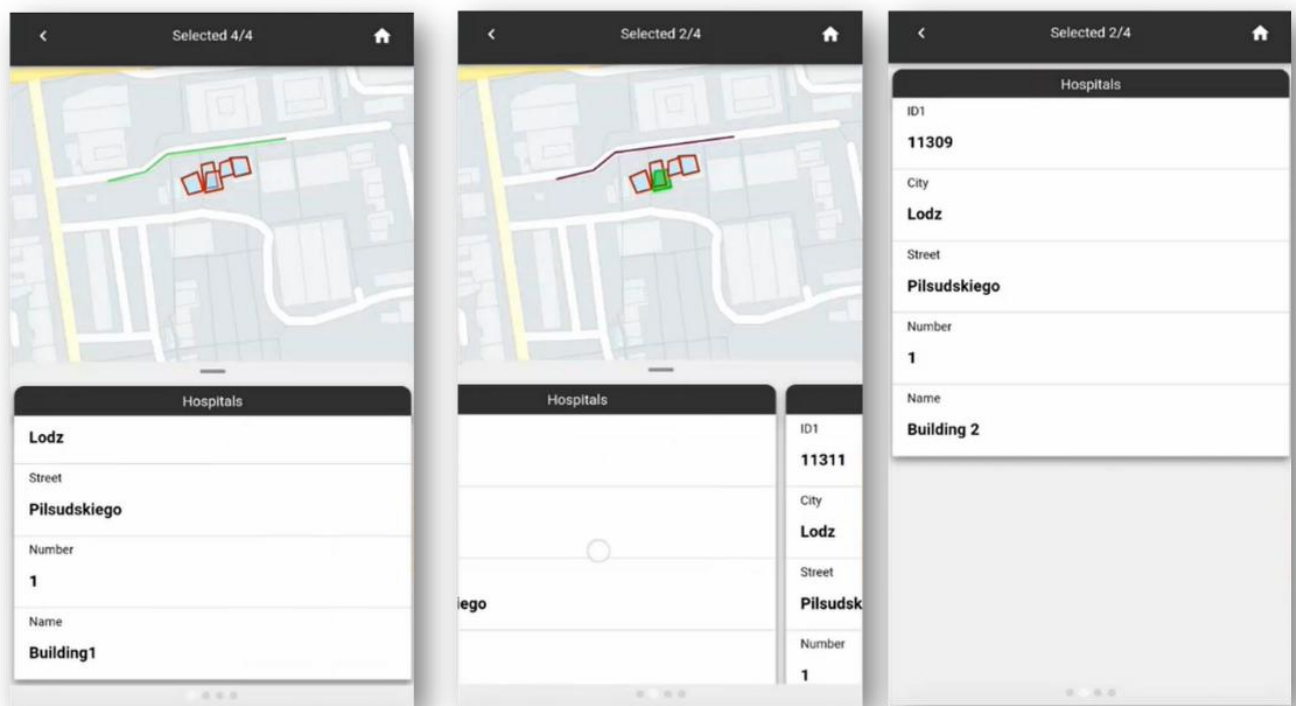
The WebGIS family of products, including the GeoMedia WebMap Mobile app, are multilingual with options for a variety of languages out of the box. The GeoMedia WebMap Mobile app was translated to be available in many languages like Arabic, Catalan, Chinese, Czech, French, Hindi, Polish, Portuguese, Romanian, Spanish, Kannada and Marathi. The GeoMedia WebMap Mobile app detects the default language on the user's mobile device and starts automatically in this language if available. The update brings the possibility to change the language of the app without changing the default device language settings. Users can set the preferred application language by selecting it directly in the GeoMedia WebMap Mobile app settings. With this feature, using the app in different languages becomes handier.



Prior to version 16.7.0, the mobile application was displayed only in the current mobile device language.

## Visual enhancements of user interface

The UX and design of the attribute panel in the mobile app were slightly redesigned to make it more user-friendly. Now moving from one to another feature is smoother and it looks more modern with a better attribute view. The new visual improvements include a new card panel where the feature class name is close above the attribute section instead of showing it on the top. The feature class name is visible when users scroll the attribute view. With the new layout, it is easier to determine what feature is currently edited. On the top users will see information about which feature is displayed and the total number of selected features. The next improvement here is the nice looking carousel animation when feature cards are swapped. The cards can be dragged from left to right or right to left in an infinity loop, and the feature corresponding to the currently displayed attribute card is highlighted on the map. Despite these changes, the feature card can still be resized to full-screen mode, but when the feature info panel is moved up or down the nice-looking animation is present with the move.



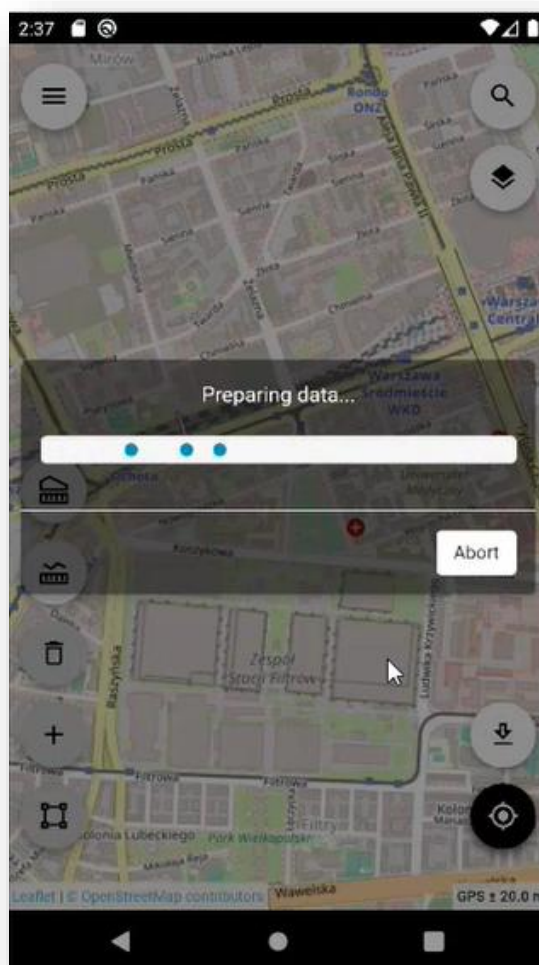
When adding a new feature, the same card view style and behavior are applied.

## Synchronization users experience Improvements

A few improvements to the mobile app concern the offline data synchronization process. With these synchronization enhancements described below, WebMap Mobile users have many more control possibilities over working with and synchronizing offline data.

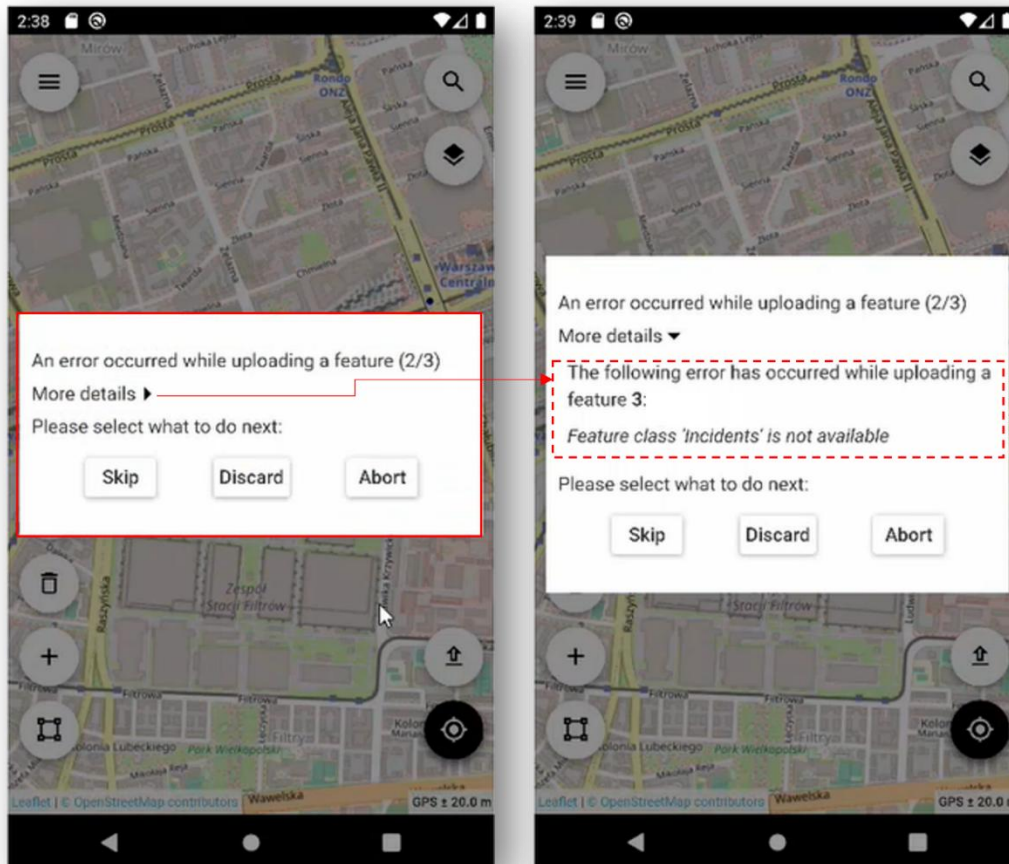
### New download progress bar

The progress has been refreshed and now the new animation is shown when the data is being prepared for download.

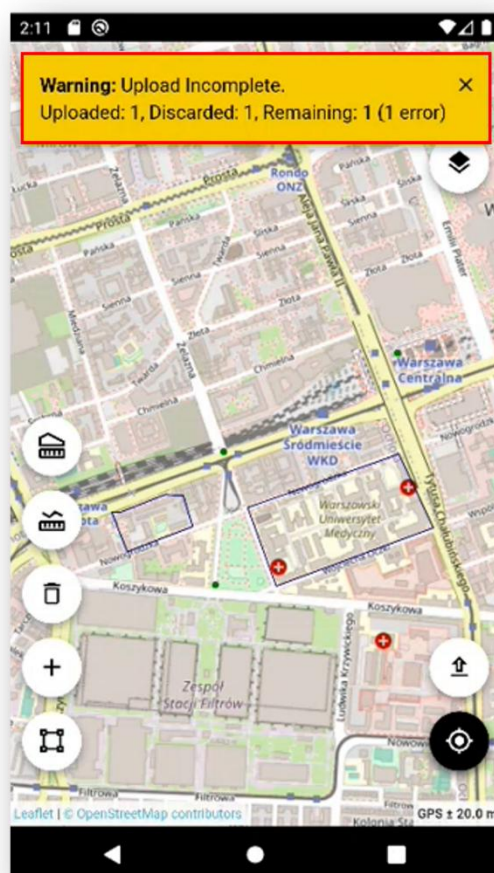


### Better error handling during a data synchronization process

Previously when there was an error during the data synchronization, the process was automatically aborted. Now, a new prompt dialog appears if an error occurs. The user receives information on how many objects have been synchronized and how many errors occurred and for which objects. Then one can see more detailed information about the error. Moreover, users can skip or discard the change or abort the entire process. In the end, a short summary notification is displayed, so the user knows how many features were skipped and/or discarded during the synchronization process, whether the synchronization was aborted and if that was a user choice.







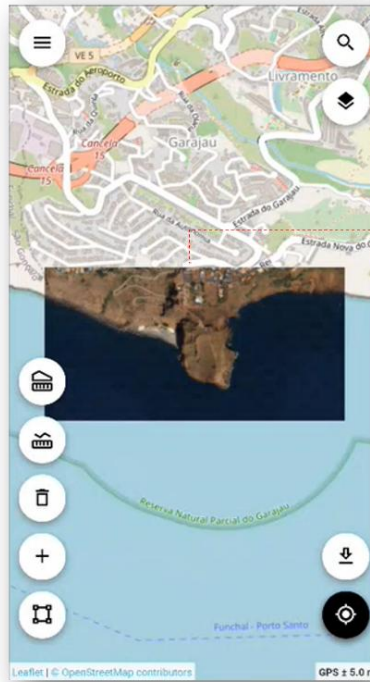
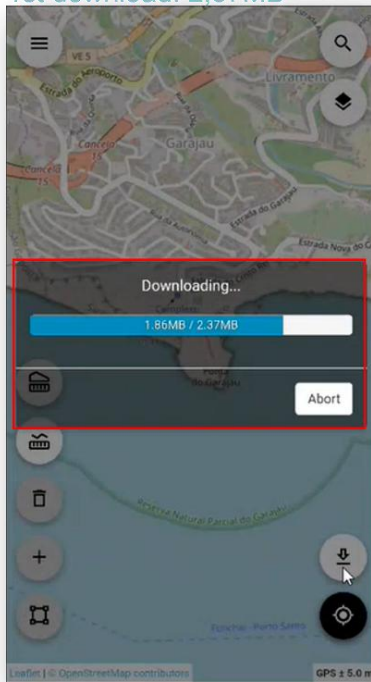


## Checking raster GeoPackage

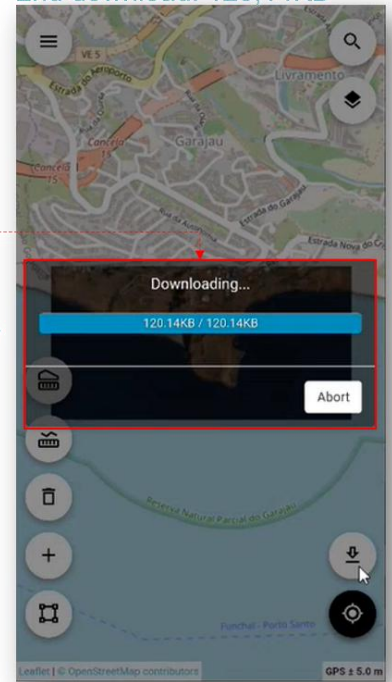
In version 16.7, when the user pressed the download button to download data to work offline, the entire data packet was always downloaded which, for example, could extend the process or increase the costs associated with it (especially when working in the field and using the cellular data packages).

Now, the repeated download process synchronizes only vector data. In case the raster data was downloaded with the previous tap of synchronizing button, and the raster is still available in the app cache and the data did not change on the server-side, it won't be downloaded again until the user clears the cache.

1st download: 2,37MB

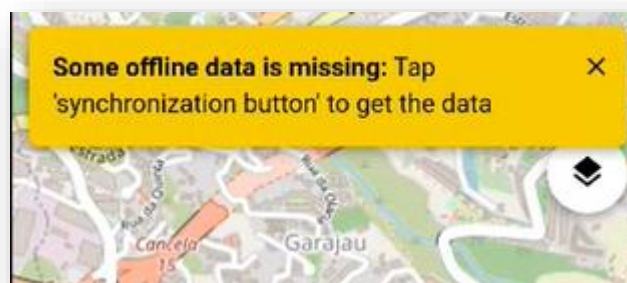
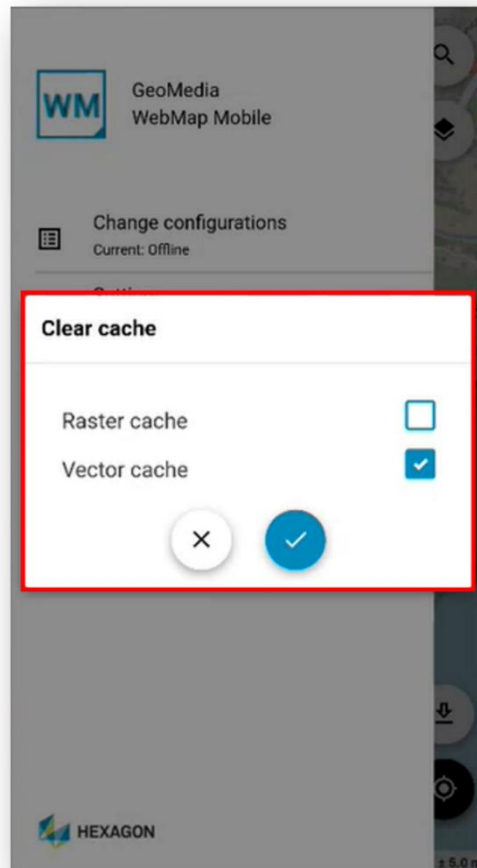


2nd download: 120,14KB



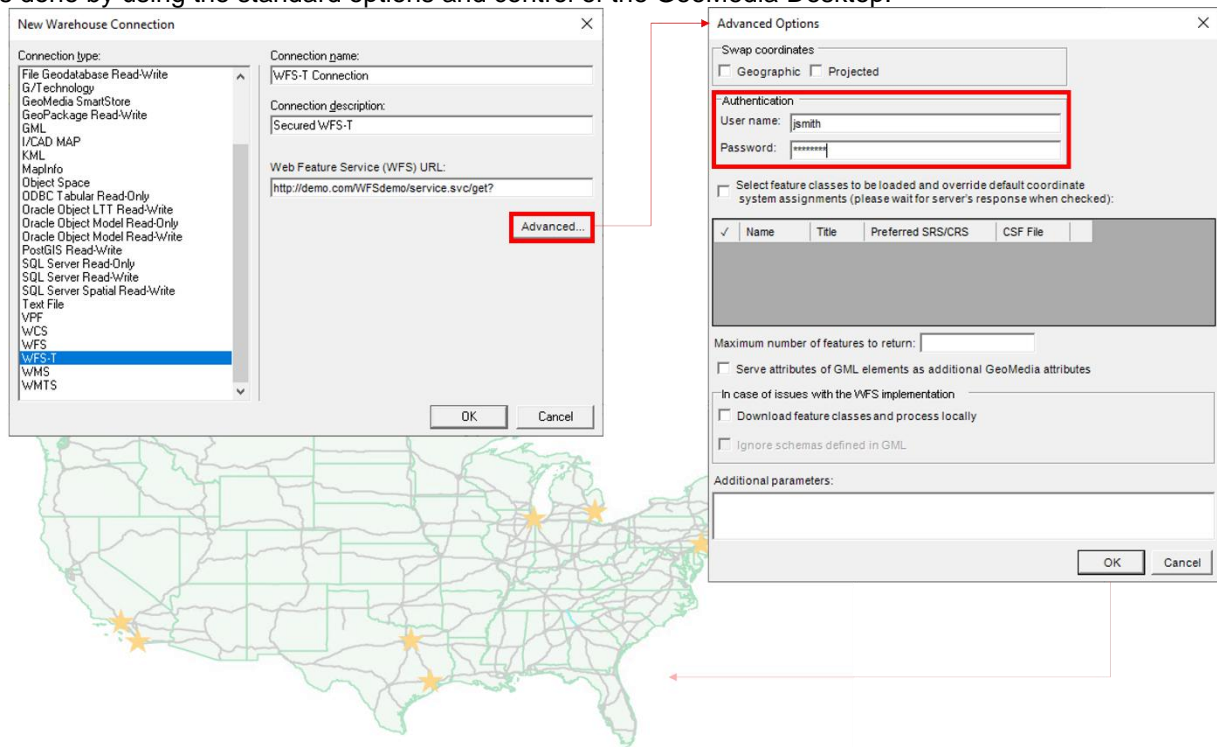
### Select cache type (raster/vector) on clearance in GeoMedia WebMap Mobile app

GeoMedia WebMap Mobile app users can choose the type of cache (raster/vector) to be cleared. After choosing to clear the cache (available in the same place as in the previous versions of the application), a new simple dialog window will appear with two options that allow the user to select the type of cache to be cleared. It is possible now to clear only the raster cache, vector cache or both. After clearing the cache (raster or vector) a new notification appears informing users that some data may be missing.

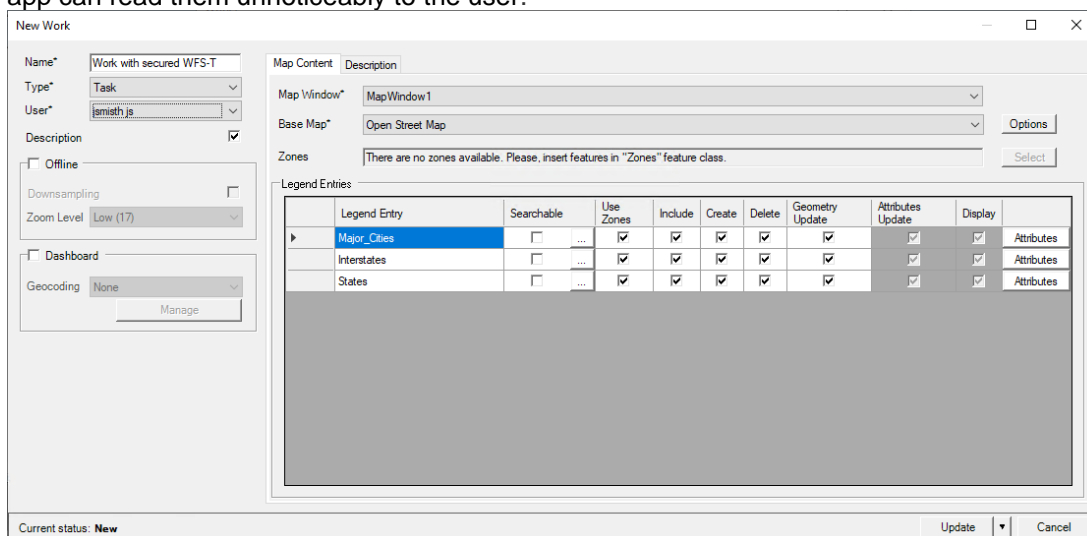


## Handle secured WFS-T services in GeoMedia WebMap Mobile

As of version 16.8, authenticated WFS-Transactional (WFS-T) services are supported. Working with authenticated services in Mobile Publisher does not differ from working with non-secured WFS-T. The only additional step is the need for service authentication when registering it in GeoMedia Desktop. Authentication is done by using the standard options and control of the GeoMedia Desktop.



Then, the administrator can prepare a map view and work definition as usual. Users of the mobile application will also not notice any differences in the use of the application when working with authenticated service(s). The username and password are encrypted in the JSON file in such a way that GeoMedia WebMap Mobile app can read them unnoticeably to the user.



## Managing Raster GeoPackage in GeoMedia WebMap Mobile Publisher

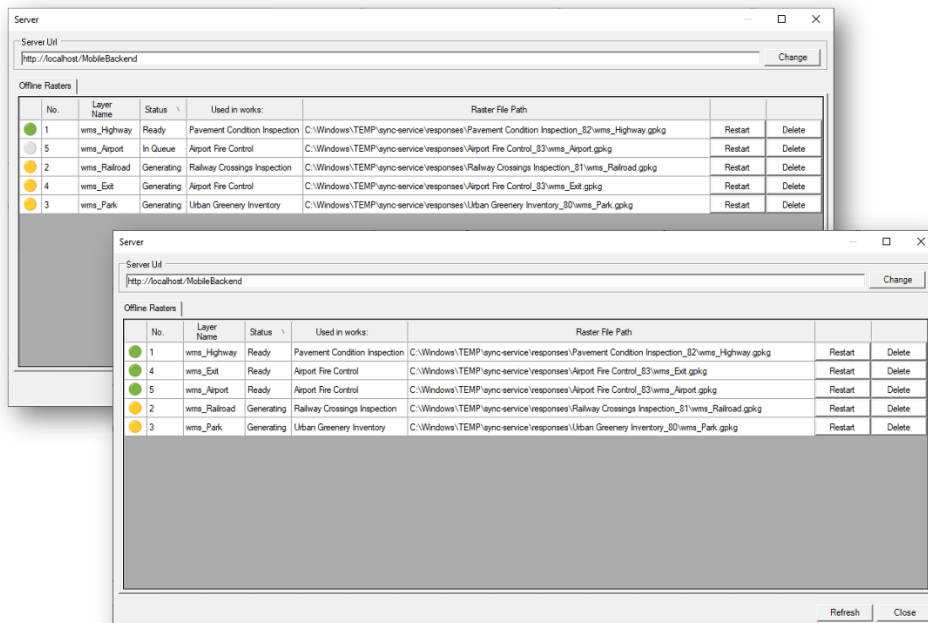
To provide offline users access to raster data, WMS layers, GeoPackage files containing the raster tiles are first generated on the server. Then the data is synchronized with the GeoMedia WebMap application installed on the mobile device as soon as the user starts the synchronization process. The raster GeoPackage generation process starts immediately if the Mobile Publisher administrator pushes a new work to the GeoMedia server.

The 16.8 release provides redesigned and enhanced **Server** dialog, giving the administrators a better opportunity to monitor and manage the process of generating gpkg files. Raster tiles Administrators have insight into the processes run on the server side and can get a piece of information including:

- Layer name
- Status (In Queue, Generating, Ready and Failure)
- List of all Mobile Publisher Work definitions that are using the specific raster
- Raster file path

Management capabilities here also include restarting the process, deleting files and configuring raster queue parameters. The latter is to avoid overloading the server while generating the gpkg files with rasters for offline configuration. The number of rasters generated at the same time can be set by the Administrator in a new Mobile Backend Web.config parameter - RastegGPKGThreads. The default value for offline rasters generated at once is three while the other rasters wait in a queue, but this can be easily changed by the Mobile Publisher Administrator.

This makes the workflow of preparing data for field works much more transparent.



## Thematic Vector Layer in Mobile Publisher

Thematic maps, also known as choropleths, are one of the common ways to present diverse phenomena in an area. It is obvious that server products like GeoMedia and GeoMedia WebMap have extensive possibilities for creating thematic maps. With the latest (16.8) edition of GeoMedia WebMap, thematic layers can be used in mobile app Work definition and then dynamically displayed in the mobile application.

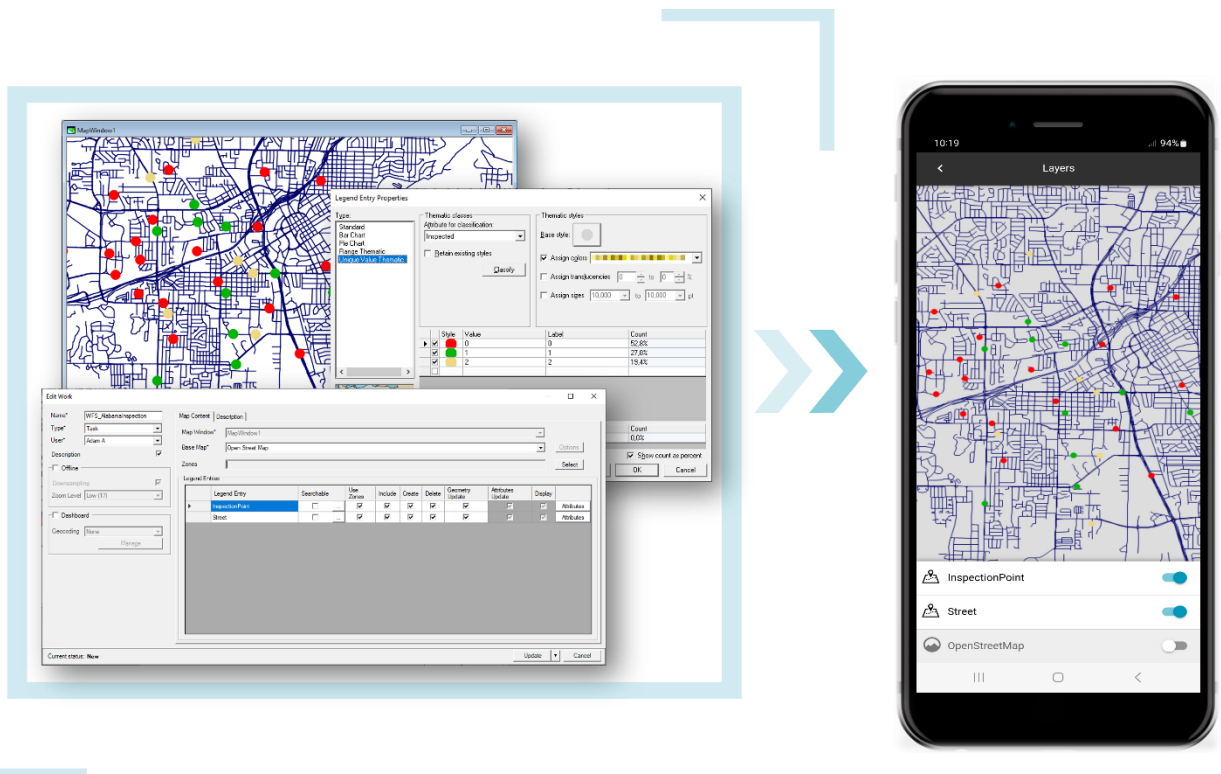
Thematic stylistics can be used in the mobile application to present data of background context layers and/or for main objects to be inspected by field workers. It is important to note that the thematic layer can be built on a base of vector feature(s) from WFS-T service(s).

Using the thematic vector layer can help users distinguish map features by attribute value.

An example of the thematic vector layer use could be to provide, in the form of a dynamic, changing style, information on whether an object has already been inspected, or to indicate in graphic form (e.g., changing color or size) another characteristic of an explored feature. In this way, users obtain the current condition or phenomena occurrence at one glance without having to invoke the Feature Info dialog each time.

Mobile Publisher supports the most common thematic legend types like range thematic and unique value thematic. The map stylistics are now updated on the fly when users update vector data.

On the Mobile Publisher Administrator side there is no additional work needed to prepare the thematic layer for mobile users except preparing the thematic legend entry in GeoMedia.





## Gather logs in WebMap Mobile app

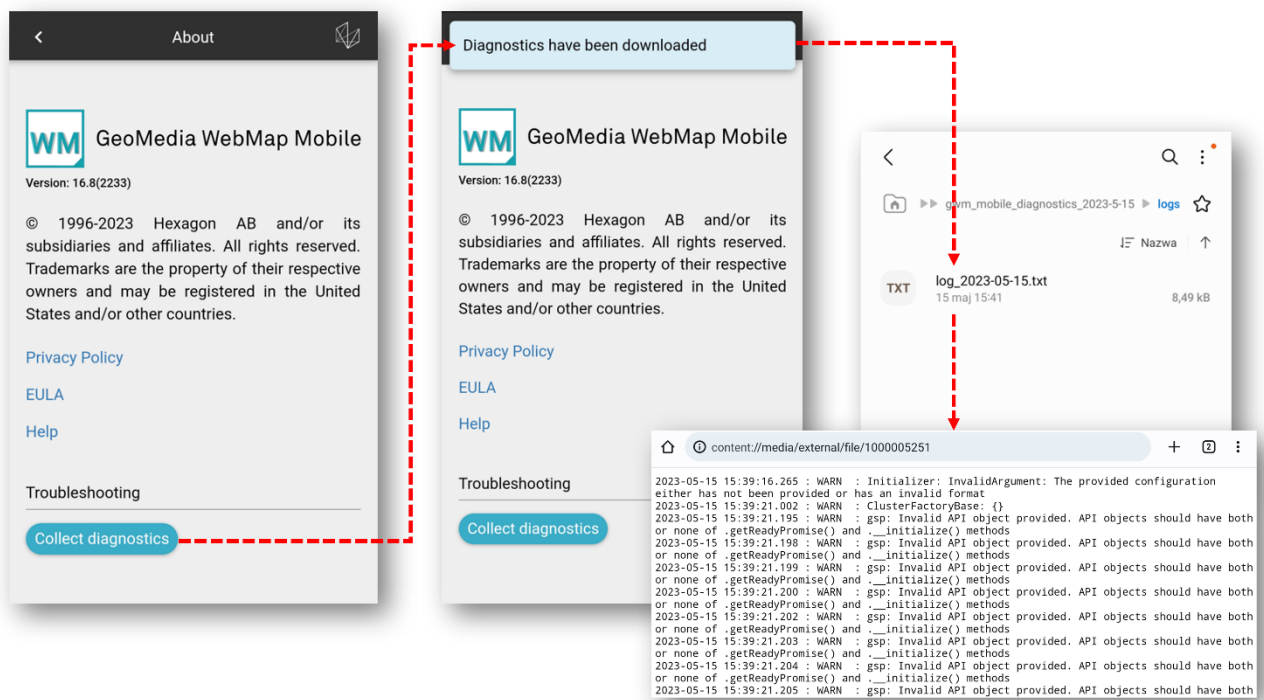
Logs gathering is a very helpful aspect of software maintenance including software designed and working on mobile devices like tablets, smartphones or other specialized devices supporting fieldwork. With version 16.8, the GeoMedia WebMap Mobile app can collect diagnostic data.

If a user encounters an error while working with the app, there is a simple yet effective method to gather logs.

Here's how it works:

Having the application open, navigate to the About page by clicking on the information icon located within the app's interface. In the Troubleshooting section, you will notice a Collect Diagnostics button. Simply click on this button to initiate the diagnostic data download process. The app will automatically download a zip file containing all relevant logs and diagnostic data associated with the encountered error. Next, locate the downloaded zip file by navigating to your device's designated download directory. The zip file contains the diagnostic data you can now easily share with the support team or your organization's administrators. Doing so enables them to analyse the issue swiftly and provide solutions.

The new ability to collect and share logs makes troubleshooting GeoMedia WebMap Mobile app issues more efficient, saving valuable time and effort for both users and technical staff.

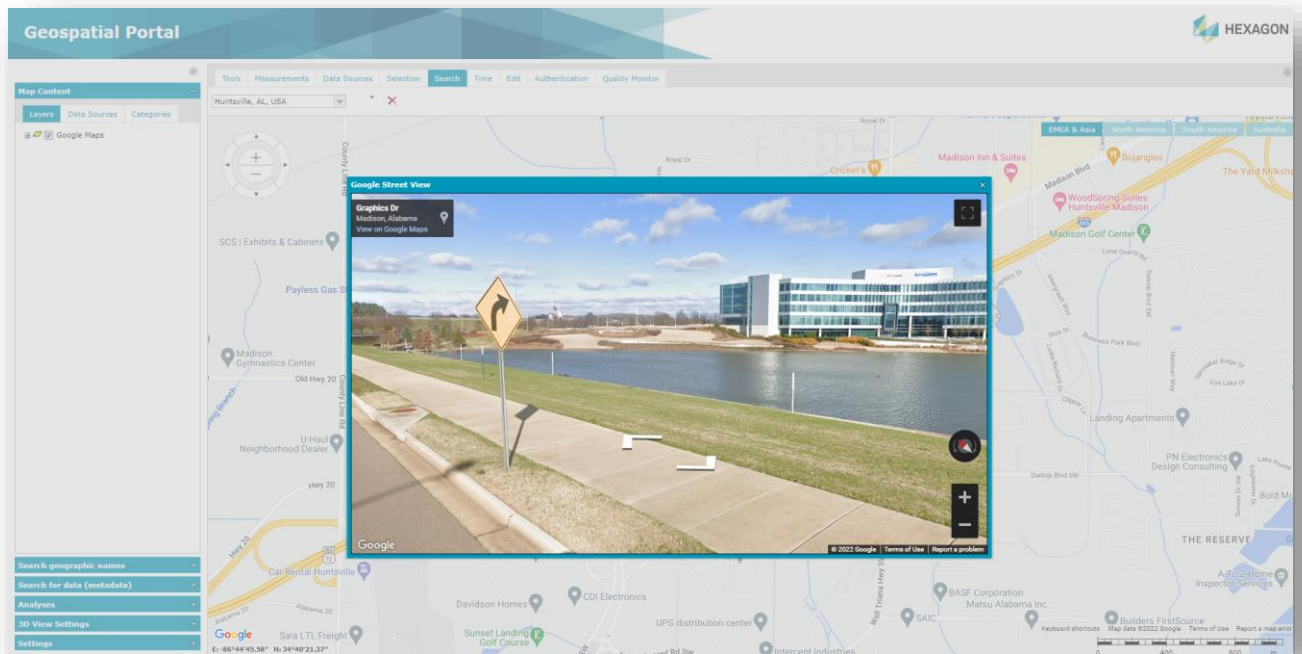


## Geospatial Portal and Consumer Portal

### Google Street View in Geospatial Portal

The Geospatial Portal handles Google Maps layers and Google Maps Places search service, but with the 2023 release, users in Geospatial Portal can also explore Google Street View. Exploring the Google Street View in the Geospatial Portal is intuitive and uses well-known Google Street View native functionality available in a

floating and resizable pop-up window. All you need to do is to enable Street View mode and place a marker on the map. The Street View mode icon was added to the Geospatial Portal navigator toolbar. The marker on the map shows your location, view direction and follows the position when you move in the Street View.

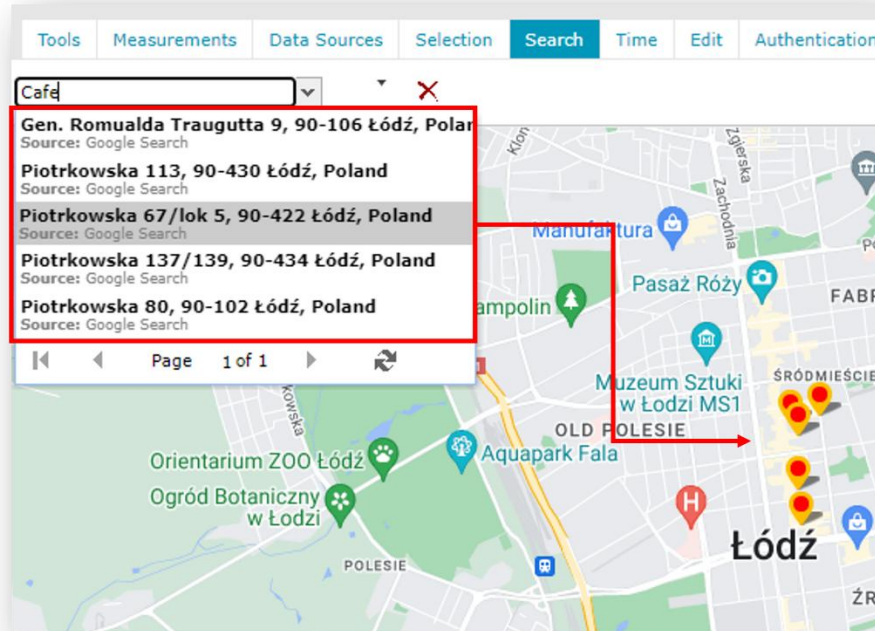




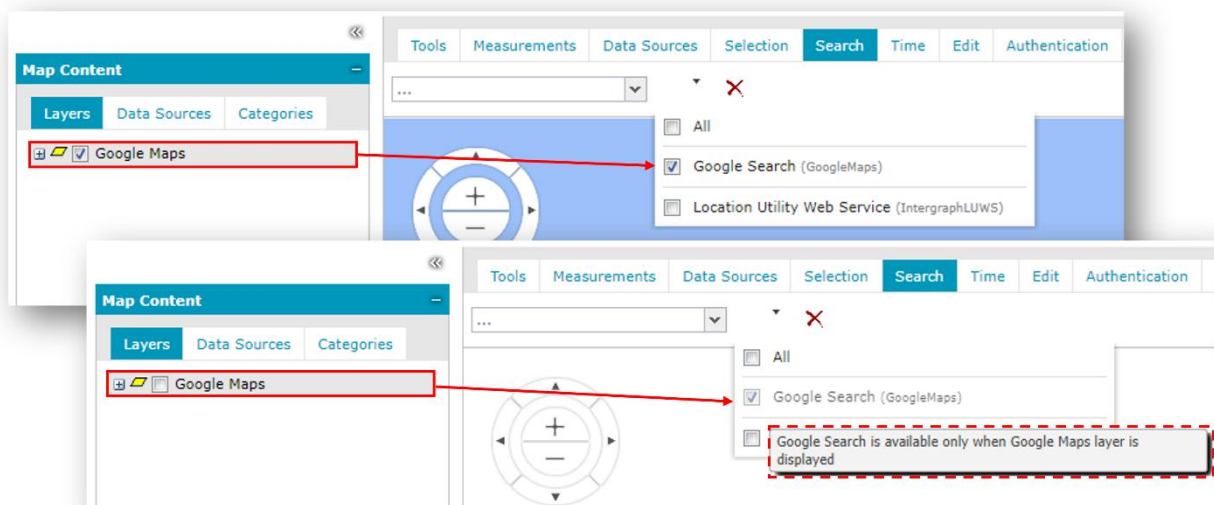
## Google Search Places in Geospatial Portal

Geospatial Portal handles Google Maps layers. Users can view Google Maps, explore Google Street View and search for interesting objects by using the Google Maps Places search service.

While the Google Map layer is active, users can search for a POI or address by using the standard Portal search control integrated with Google Maps Places. Pins with the locations of searched objects appear on the map.

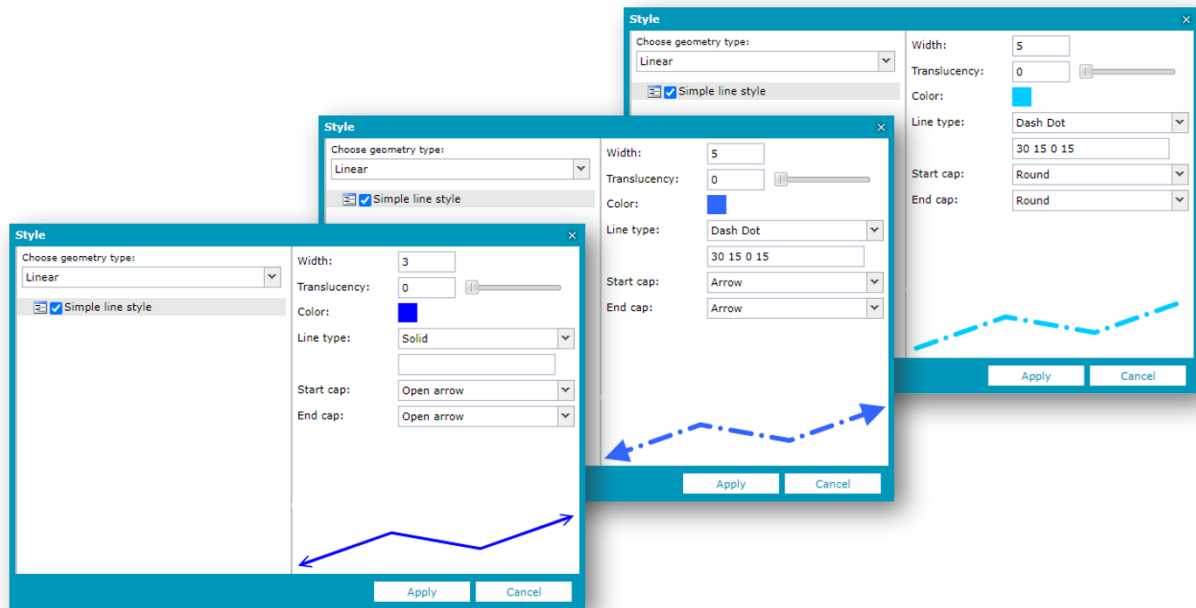


In case the Google Maps layer is not visible, or the current CRS is not supported by Google Maps, a message about Google Search unavailability will be displayed to the user.

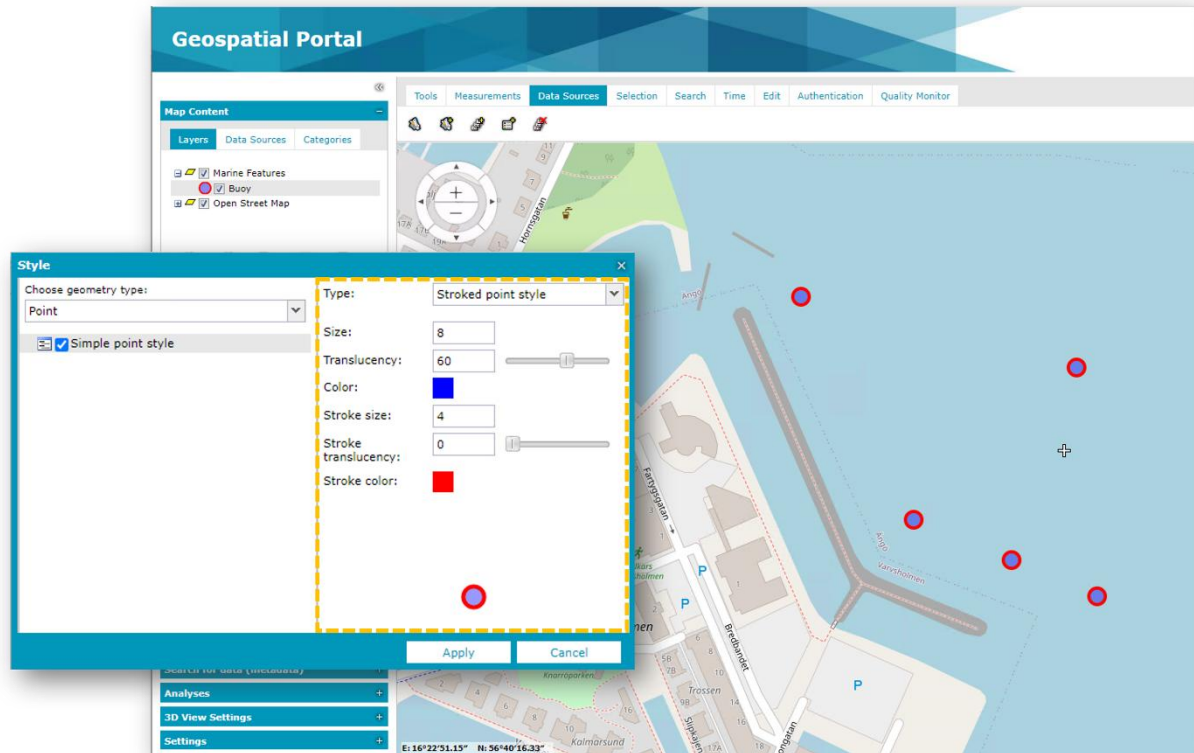


## More custom feature style capabilities in Geospatial Portal

Geospatial Portal users can define custom display styles for features on the map. The rich possibilities of overriding the default display style have been slightly extended. When defining display style for linear objects, one can in addition set the type of the start and end line cap. The choices are the round arrow and the open arrow. Style sets are made (as it was in prior versions) in the Style dialog box, invoked by double-clicking on the feature class pictogram in the legend. For linear objects, there are new controls available to set the start/end cap. The settings of the start and end caps are self-standing.



For point (vector) features the new stroked point style for point geometry objects has been introduced. The possible style types are single point style, graphic style and the new one: stroked point style. Configurable parameters for the new stroked point style definition include point size, translucency, color and stroke size, stroke translucency and color.

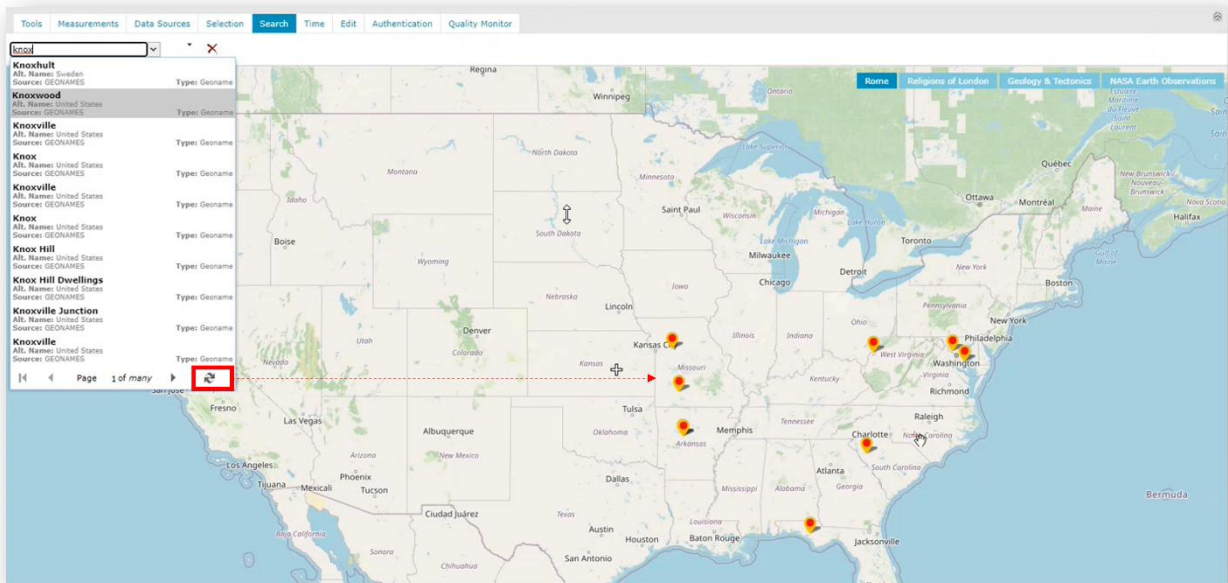


With the introduced enhancements of the style definitions, users get more possibilities to adjust the map view to their own needs, distinguishing objects displayed on the map and making the map data look better and more attractive.

## Hot swapping capabilities to LUWS

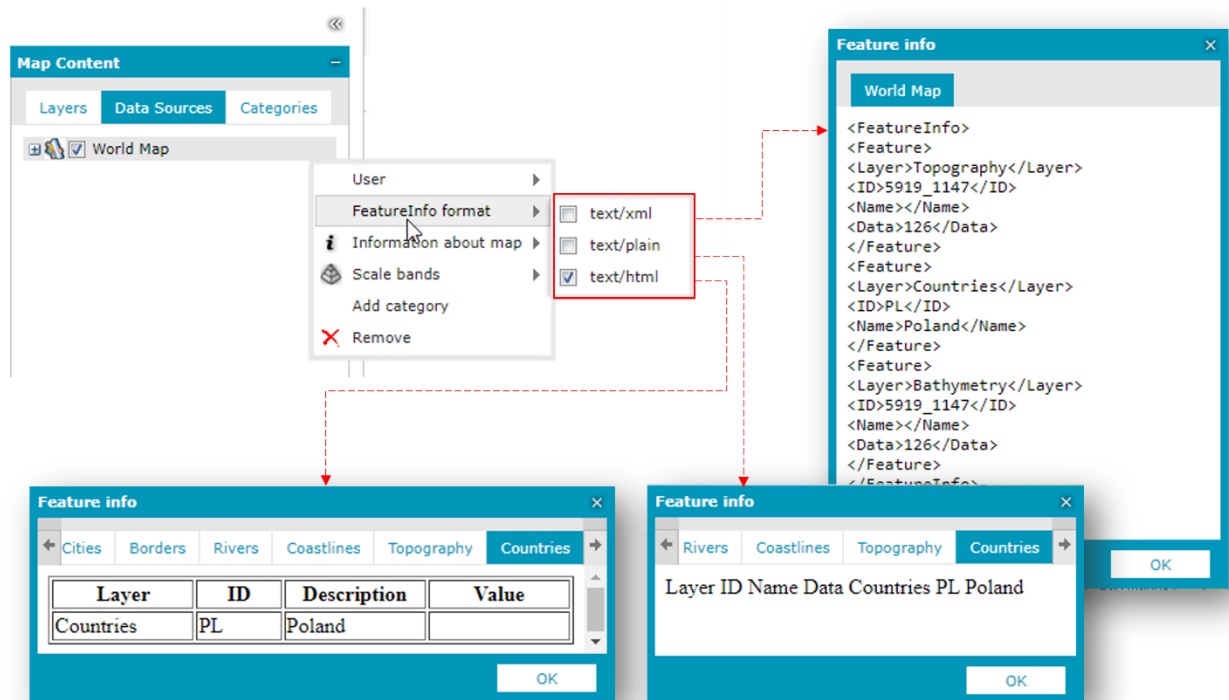
Hot swapping capabilities to LUWS in Geospatial Portal is another new feature worth mentioning. It significantly improves the user experience while working with LUWS services that change quite often.

If changes occur in the LUWS service configuration or LUWS dataset and those service updates impact the search results, there is no need to reregister the LUWS in data sources. All users need to do is press the Refresh button in the search list control and the results will be updated including search results in the list and on the map.

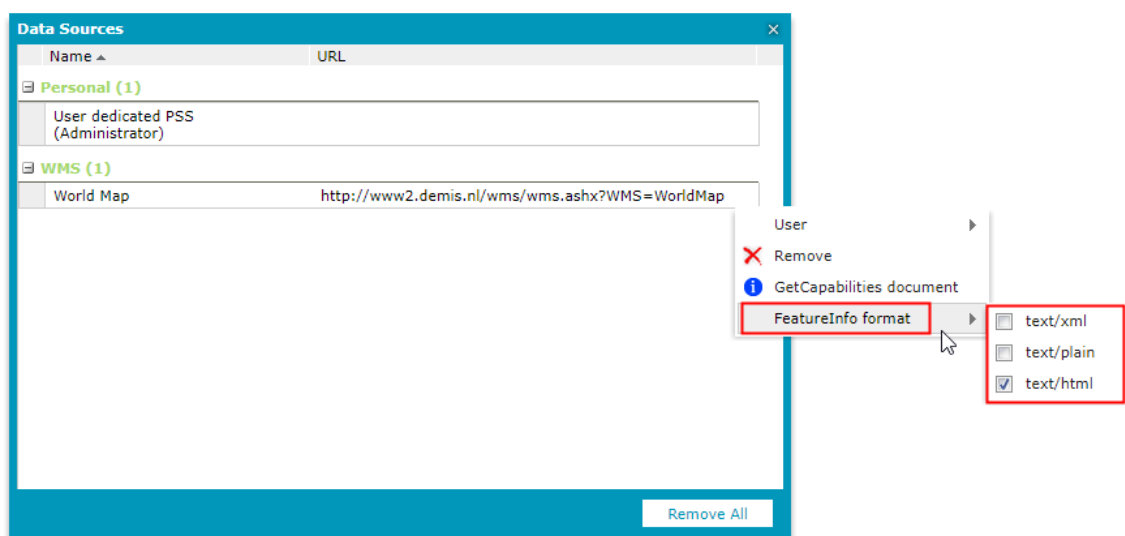


## Manage WMS Feature Info Format in Geospatial Portal

Registering a new WMS service in Geospatial Portal and/or Administration Portal one must provide not only URL service, but also set a few parameters including Feature Info Format. User and administrators of Portals in version 2023 can change with ease the Feature Info Format for already registered services. There is no longer need to unregister the service and register it again. The Feature Info Format can be changed at any time by using the new context menu option in the Map Content > Data Sources tab.

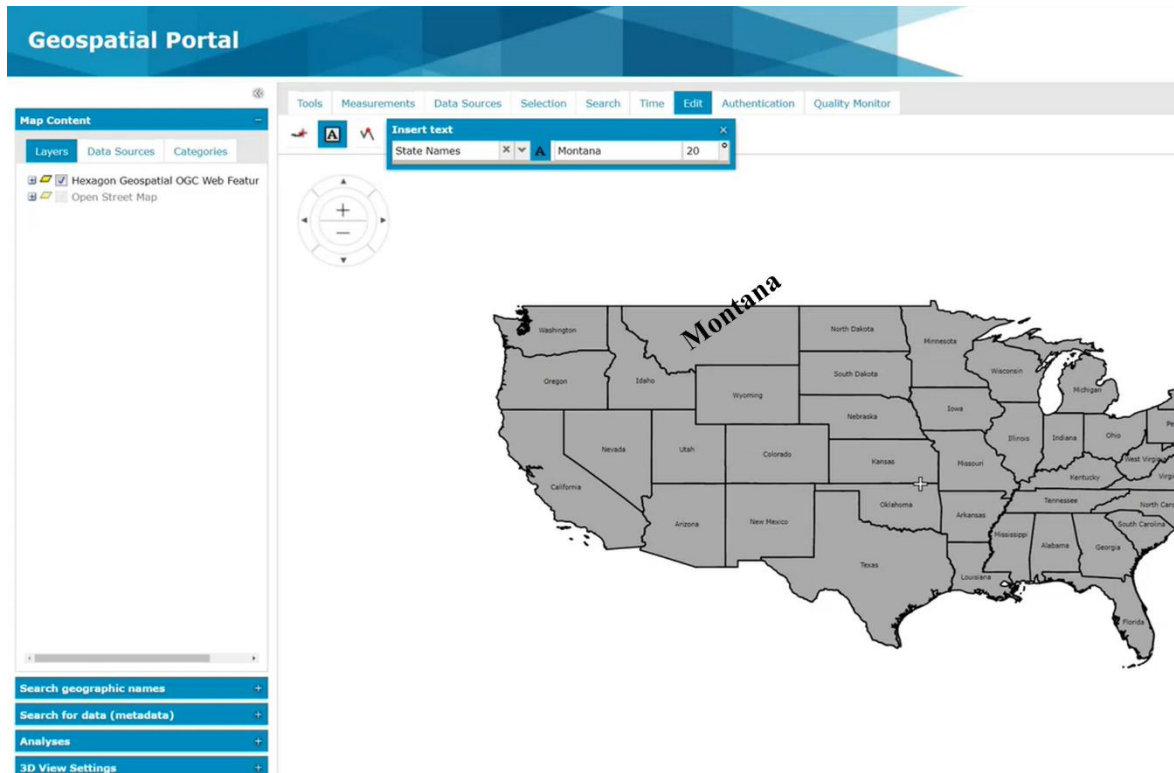


The Feature Info Format also can be chosen in the Data Sources dialog, menu for registered WMS.



## Insert and update WFS text features in Geospatial Portal

GeoMedia WebMap WFS-T (WFS-Transactional) capabilities have been extended to support the editing of text feature classes. The new implementation allows easy manipulation of text features served by the GeoMedia WebMap WFS-T service, registered in Geospatial Portal. One can move a label to another place, remove it or insert a new one. The result of such an operation is immediately visible on the map in Geospatial Portal. To manipulate the text features served by GeoMedia WebMap WFS-T, standard editing tools and controls of Geospatial Portal are used. Note that both the Geospatial Portal and the GeoMedia WebMap service must be on the same product version, 16.8 or later.







## CSV | separator | in Portal | exports

Geospatial Portal users by using a data window can view tabular data of features provided by services like WebMap Publisher, WFS or PSS. Data shown in Geospatial Portal's data window can be exported to the CSV file, for further analysis in third-party software or just to share with other users.

To facilitate the exchange of exported data for further processing and to avoid any complications that may arise when data is to be used in systems with different regional settings (and thus different characters for delimiters, which may also involve different characters for decimal separators or commas), we have decided to explicitly use only one separator in CSV files with exported data, regardless of current regional settings of the system on which Geospatial Portal is hosted or run. Now it is a vertical line: |, also known as the pipe, vertical slash, think colon or divider line. Introduced a new "hardcoded" separator is interpreted seamlessly by most external editors or spreadsheets like Microsoft Excel.

The screenshot displays the Geospatial Portal interface. At the top, there's a navigation bar with 'Tools', 'Measurements', 'Data Sources', 'Selection', 'Search', 'Time', 'Edit', 'Authentication', and 'Quality Monitor'. Below this is a map of Alabama. A 'Data Window' is open, showing a table with columns: 'Clipboard', 'Major Cities', 'County', 'State', 'FIPS', 'NAME', 'POP', 'WPOP', 'BLPOP', 'HISPOP', 'ASIANPOP', 'HISASIANPOP', 'POP\_BLI', 'BLT\_HIS', 'RCHI', 'RCHI2000', 'RCHI2010'. The table lists various counties in Alabama, including Etowah, Fayette, Franklin, Geneva, Greene, Hale, Henry, Houston, Jackson, Jefferson, Baldwin, Butler, Chilton, and others. A red arrow points from the 'Data Window' tab to the 'Export' button in the top right corner of the table.

Clipboard	Major Cities	County	State	FIPS	NAME	POP	WPOP	BLPOP	HISPOP	ASIANPOP	HISASIANPOP	POP_BLI	BLT_HIS	RCHI	RCHI2000	RCHI2010		
1	ETOWAH	Alabama	09040	09040	ETOWAH	17962	15055	2206	127	21	33.9	37.3	11872	1080	1525	1043		
2	FAVETTE	Alabama	09040	09040	FAVETTE	27814	25405	1271	95	52	34	37.8	18292	8212	5640	2436	1506	
3	FRANKLIN	Alabama	09040	09040	FRANKLIN	23647	23617	2817	155	36	34.3	38.4	18475	8866	4534	1951	1158	
4	GENEVA	Alabama	09040	09040	GENEVA	15012	15012	1567	8178	24	0	28.3	33.3	5917	2734	1737	665	576
5	HALE	Alabama	09040	09040	HALE	15486	6250	9130	87	29	29.4	33.7	9244	4218	2862	966	880	
6	HENRY	Alabama	09040	09040	HENRY	15274	9916	2292	29	9	23.4	37.4	9922	4121	2871	1536	1119	
7	HOUSTON	Alabama	09040	09040	HOUSTON	61331	61796	18894	389	392	31.5	34.3	51134	16228	11610	9116	8052	
8	JACKSON	Alabama	09040	09040	JACKSON	47706	44483	1960	238	180	33.4	35.8	33847	15032	9876	4230	2765	
9	JEFFERSON	Alabama	09040	09040	JEFFERSON	54222	27221	8842	328	89	30.2	33.1	20861	6282	6671	3973	3063	
10	BALDWIN	Alabama	09040	09040	BALDWIN	98200	94957	12274	935	189	24.2	26.9	84422	17209	25944	12828	12141	
11	BUTLER	Alabama	09040	09040	BUTLER	22817	14092	11212	21	29	33.9	39.2	12762	8962	4239	1917	1890	
12	CHILTON	Alabama	09040	09040	CHILTON	15576	13080	3492	47	2	30.6	33.4	10865	4850	3407	1010	575	
13	CLAY	Alabama	09040	09040	CLAY	15048	15048	15048	48	48	33.3	35.4	10865	4850	3407	1010	575	
14	BULLOCK	Alabama	09040	09040	BULLOCK	11242	11242	11242	33	29	30.8	33.8	6727	3428	1465	704	612	
15	BUTLER	Alabama	09040	09040	BUTLER	21882	22641	8902	121	18	31.4	35.4	12400	6274	2927	1247	1228	
16	CHANDLER	Alabama	09040	09040	CHANDLER	116034	92902	21500	1206	853	30.9	34.5	72405	12623	11397	6022	4822	
17	CHAMBERS	Alabama	09040	09040	CHAMBERS	15676	23544	13248	109	5	32.7	37.2	13681	10831	5749	2844	2536	
18	CHEROKEE	Alabama	09040	09040	CHEROKEE	15945	15264	1277	89	12	34.8	38	12054	6035	4092	1524	928	
19	CHICKASAW	Alabama	09040	09040	CHICKASAW	23458	23458	23458	78	9	32.7	35.2	20761	9222	4770	2726	1876	

Below the map, there's a 'Data Window' tab with a table of data. A red arrow points from the 'Data Window' tab to the 'Export' button in the top right corner of the table.

Clipboard	Major Cities	County	State	FIPS	NAME	POP	WPOP	BLPOP	HISPOP	ASIANPOP	HISASIANPOP	POP_BLI	BLT_HIS	RCHI	RCHI2000	RCHI2010		
1	ETOWAH	Alabama	09040	09040	ETOWAH	17962	15055	2206	127	21	33.9	37.3	11872	1080	1525	1043		
2	FAVETTE	Alabama	09040	09040	FAVETTE	27814	25405	1271	95	52	34	37.8	18292	8212	5640	2436	1506	
3	FRANKLIN	Alabama	09040	09040	FRANKLIN	23647	23617	2817	155	36	34.3	38.4	18475	8866	4534	1951	1158	
4	GENEVA	Alabama	09040	09040	GENEVA	15012	15012	1567	8178	24	0	28.3	33.3	5917	2734	1737	665	576
5	HALE	Alabama	09040	09040	HALE	15486	6250	9130	87	29	29.4	33.7	9244	4218	2862	966	880	
6	HENRY	Alabama	09040	09040	HENRY	15274	9916	2292	29	9	23.4	37.4	9922	4121	2871	1536	1119	
7	HOUSTON	Alabama	09040	09040	HOUSTON	61331	61796	18894	389	392	31.5	34.3	51134	16228	11610	9116	8052	
8	JACKSON	Alabama	09040	09040	JACKSON	47706	44483	1960	238	180	33.4	35.8	33847	15032	9876	4230	2765	
9	JEFFERSON	Alabama	09040	09040	JEFFERSON	54222	27221	8842	328	89	30.2	33.1	20861	6282	6671	3973	3063	
10	BALDWIN	Alabama	09040	09040	BALDWIN	98200	94957	12274	935	189	24.2	26.9	84422	17209	25944	12828	12141	
11	BUTLER	Alabama	09040	09040	BUTLER	22817	14092	11212	21	29	33.9	39.2	12762	8962	4239	1917	1890	
12	CHILTON	Alabama	09040	09040	CHILTON	15576	13080	3492	47	2	30.6	33.4	10865	4850	3407	1010	575	
13	CLAY	Alabama	09040	09040	CLAY	15048	15048	15048	48	48	33.3	35.4	10865	4850	3407	1010	575	
14	BULLOCK	Alabama	09040	09040	BULLOCK	11242	11242	11242	33	29	30.8	33.8	6727	3428	1465	704	612	
15	BUTLER	Alabama	09040	09040	BUTLER	21882	22641	8902	121	18	31.4	35.4	12400	6274	2927	1247	1228	
16	CHANDLER	Alabama	09040	09040	CHANDLER	116034	92902	21500	1206	853	30.9	34.5	72405	12623	11397	6022	4822	
17	CHAMBERS	Alabama	09040	09040	CHAMBERS	15676	23544	13248	109	5	32.7	37.2	13681	10831	5749	2844	2536	
18	CHEROKEE	Alabama	09040	09040	CHEROKEE	15945	15264	1277	89	12	34.8	38	12054	6035	4092	1524	928	
19	CHICKASAW	Alabama	09040	09040	CHICKASAW	23458	23458	23458	78	9	32.7	35.2	20761	9222	4770	2726	1876	

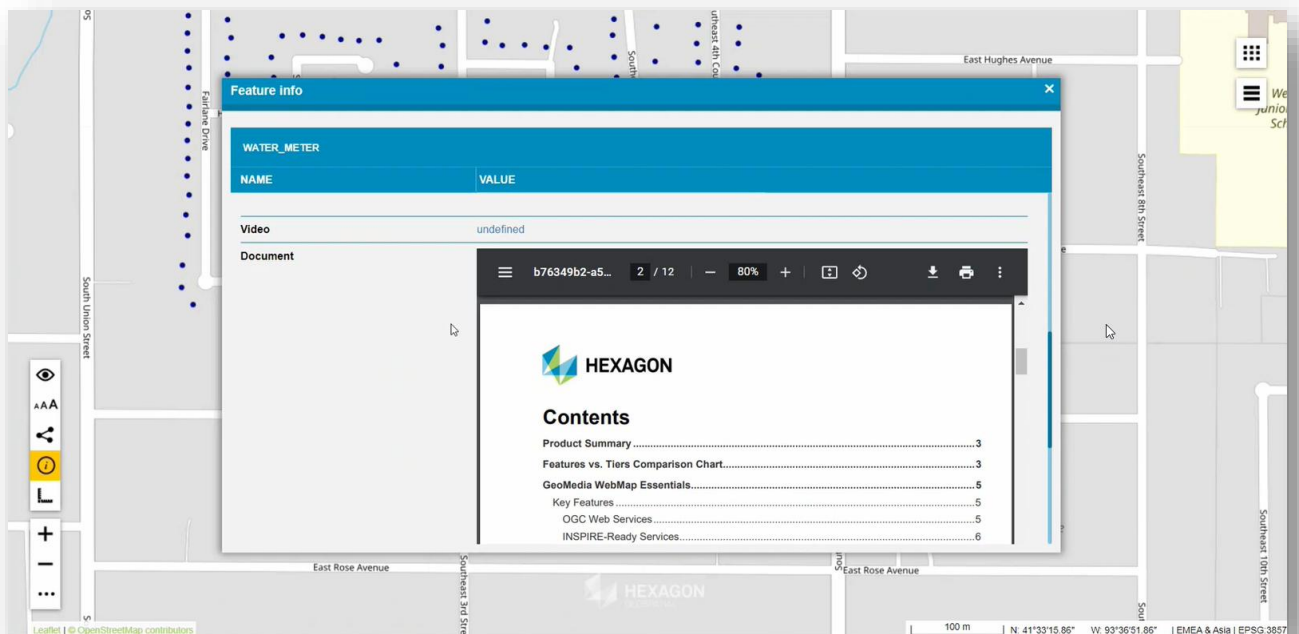
## Consumer Portal Feature Info enhancements

This release brings a set of improvements to the Feature Info functionality in Consumer Portal.

### Embedded PDF and multimedia files

For attributes in data that represent photo, video or audio URLs, the end user can see an image or html5 player for audio/video within the Feature Info dialog instead of URLs as text.

The image or media player (for video/audio) is shown within the appropriate Feature Info data cell. The image and video player may occupy either the full width of the cell or have a fixed width and height passed as part of the configuration. Current web browser compatibility determines whether a multimedia file can be displayed instead of links and what formats are supported. In case the link to the multimedia file is invalid or the web browser does not support the given media format, instead of showing video/audio it will fall back to the display of the URL. This is the same solution for PDF documents, which can also be displayed within the Feature Info dialog, instead of URLs.



## Store active feature info tab in Consumer Portal

The next enhancement related to the Feature Info dialog is the possibility of displaying the previously opened tab for the last reviewed feature class. The behaviour is configurable with a new option in Administration Console. It is the administrator's choice, whether the reloaded Feature Info window shows the tab that was open previously, if the same queryable layer(s) is present in a map point where the Feature Info is issued again or the first tab in Feature Info dialog is displayed, even if the user switched to a different one before issuing new Feature Info.

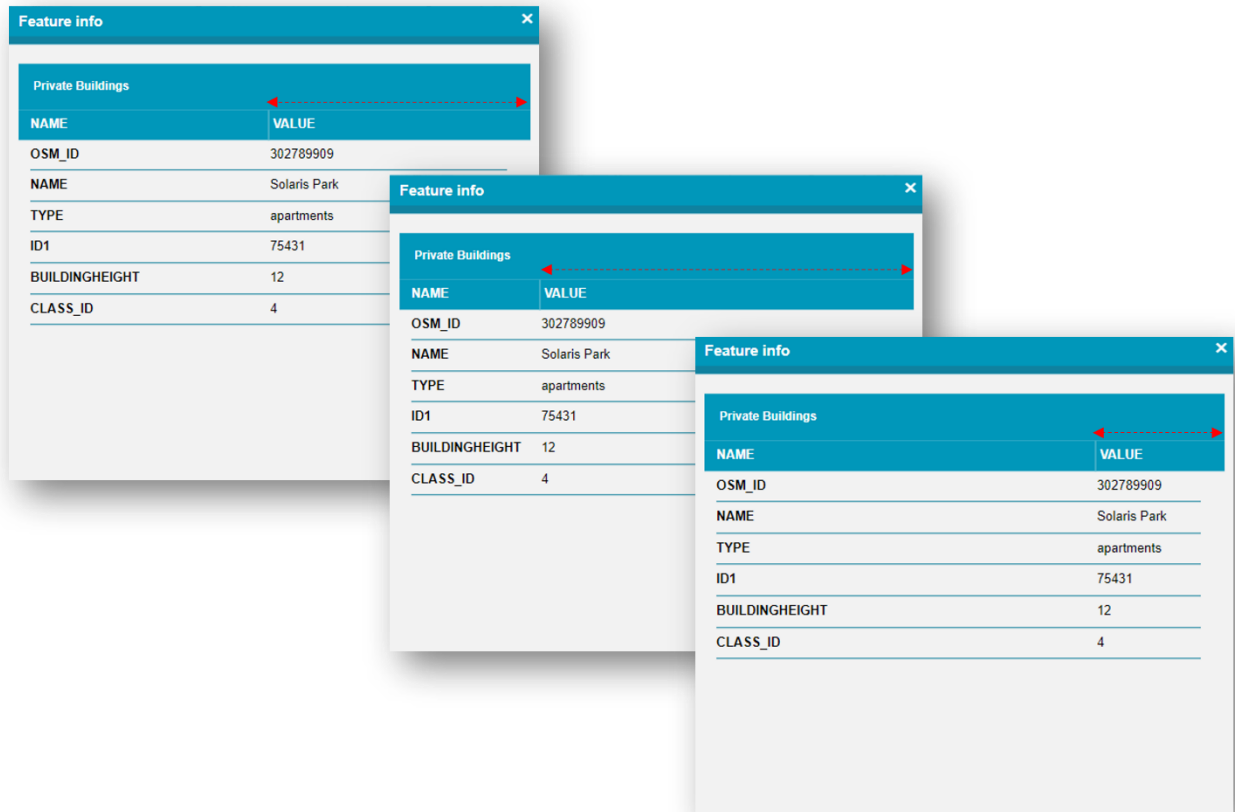


Feature Info window reflects the current state of the map.

The Consumer Portal Feature Info window reflects the current state of the map. When the map layers change their visibility or locatability while the Feature Info window is still open, the Feature Info window in such cases, is closed automatically since displayed data in the dialog may not be valid anymore.

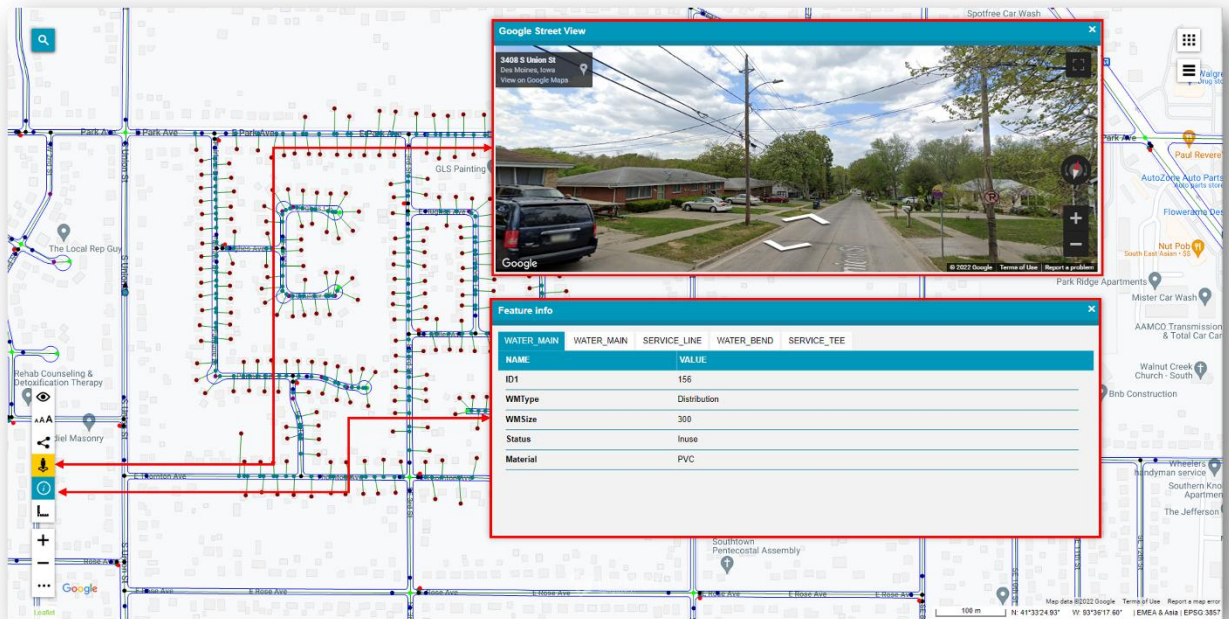
Adjustable columns in Feature Info dialog

Another enhancement is that users can adjust column size in Consumer Portal Feature Info dialog to customize the view to their needs while browsing the data.



## Ability to run Feature Info and Street View simultaneously in Consumer Portal

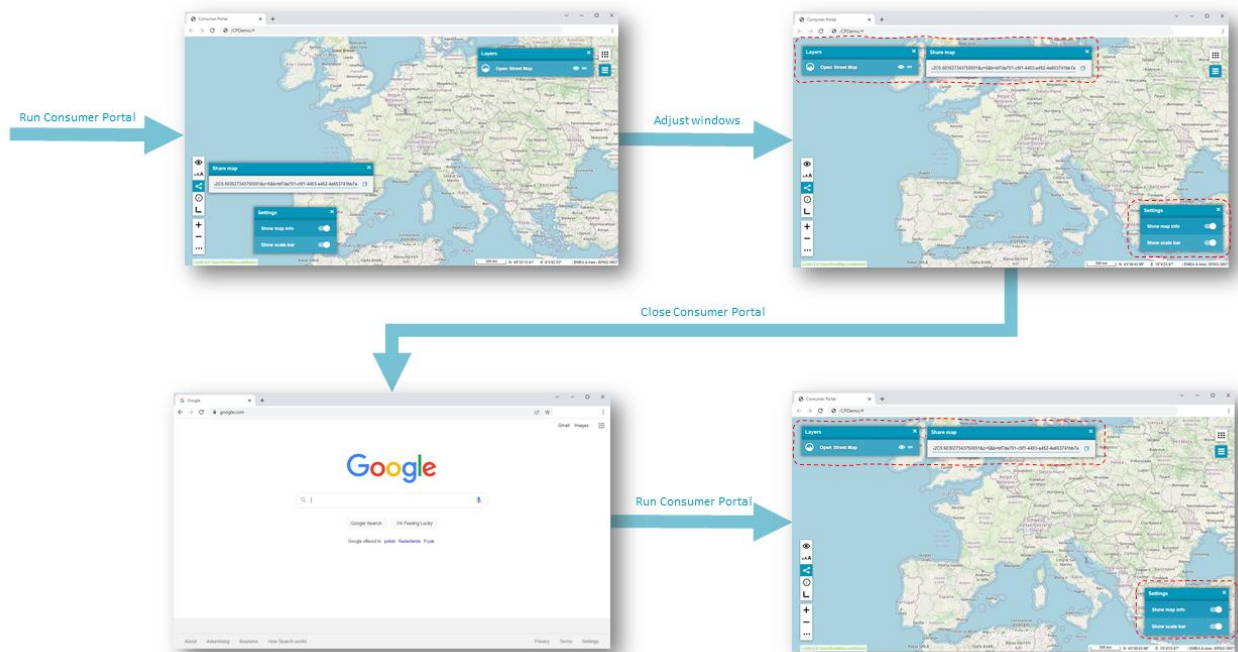
Consumer Portal users can use both the Feature Info command and the Street View window at the same time. The constraint to have the Feature Info and Street View modes exclusive has been removed. This results in changing both for subsequent clicks on the map. After a relevant window is shown, the clicking of the other modal button doesn't disable the current mode entirely, but switches map input, while keeping the current window open and non-reactive to subsequent map clicks.





## Remember sizes and positions of Consumer Portal windows

Users of Consumer Portal can adjust window sizes and positions to their preferences. Consumer Portal can remember the position and size of windows. When the Consumer Portal is run, the size of the windows and their arrangement will be the same as during the last session even if the web page was refreshed or Web browser tab or the entire web browser was closed. The behavior is configurable with the option in the Administration Console. The administrator of Consumer Portal can disable the windows sizes and positions memory so windows will be in a default state with every Portal run or refresh of the page.



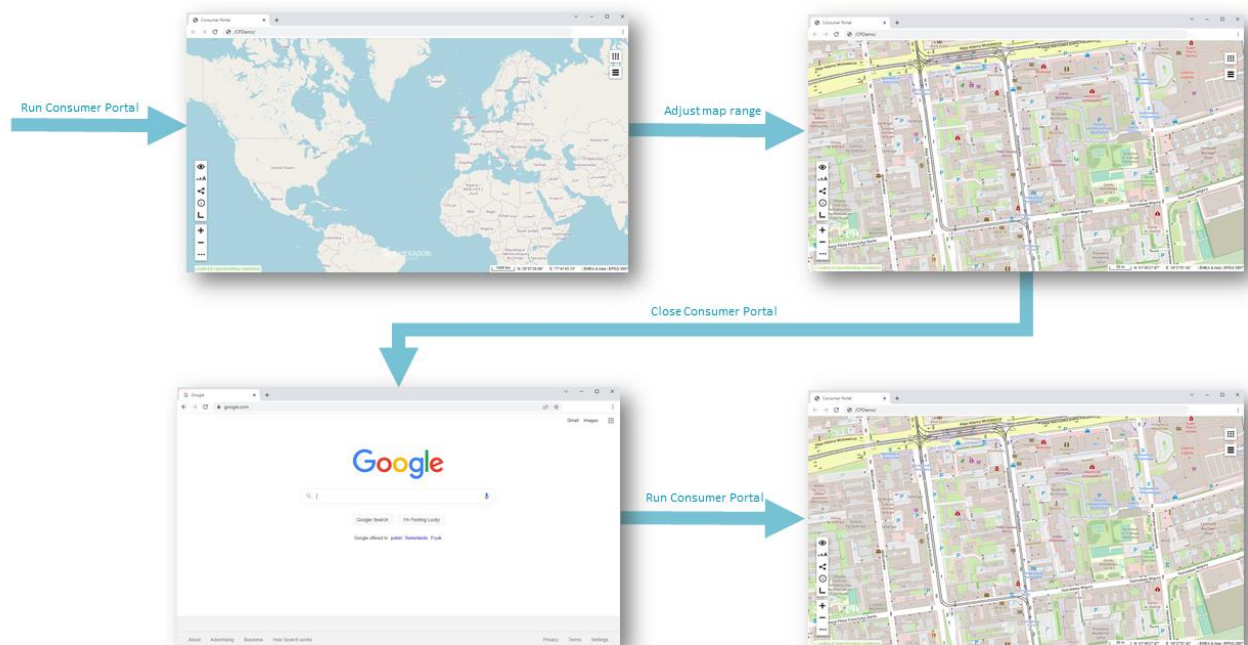


## Customize starting map range in Consumer Portal

Consumer Portal by default starts with the map range as defined in its starting workspace definition.

In version 2023 there are two additional startup options:

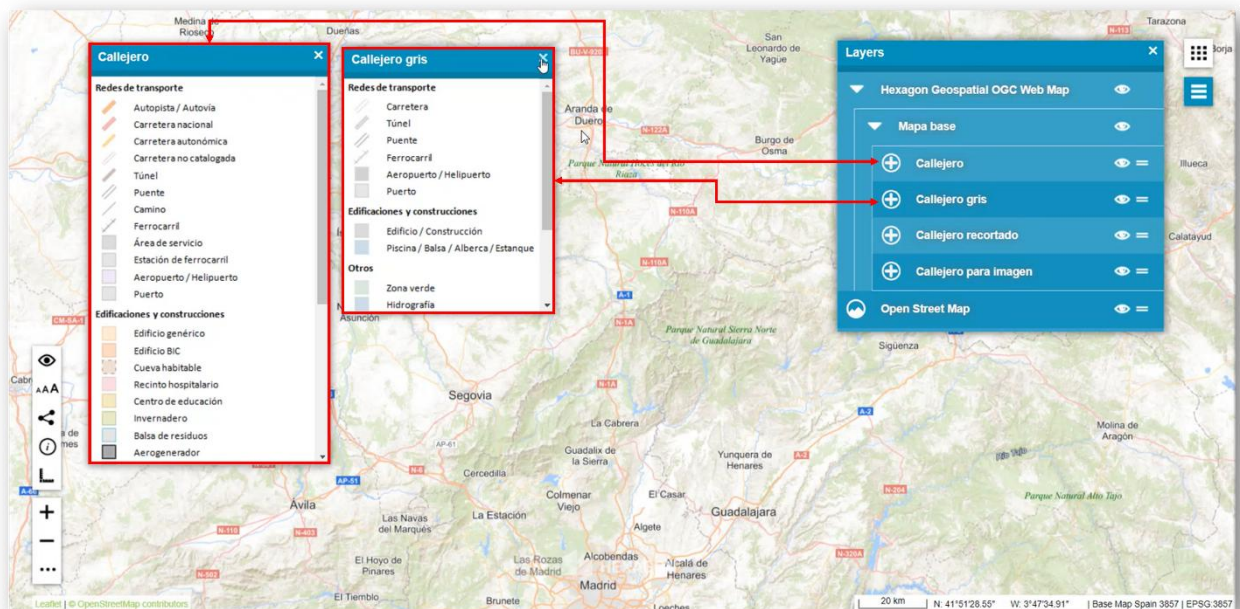
- Remember the last session map range: With the first run of Consumer Portal, the map range will be as defined in the starting workspace, but with every subsequent session of the Consumer portal, the map will open with the same range in which it was previously closed
- Use client location: Consumer Portal will attempt to acquire the user's location and adjust the map range to the location obtained; this option requires enabled localization services to work



## Dedicated window for legend hover

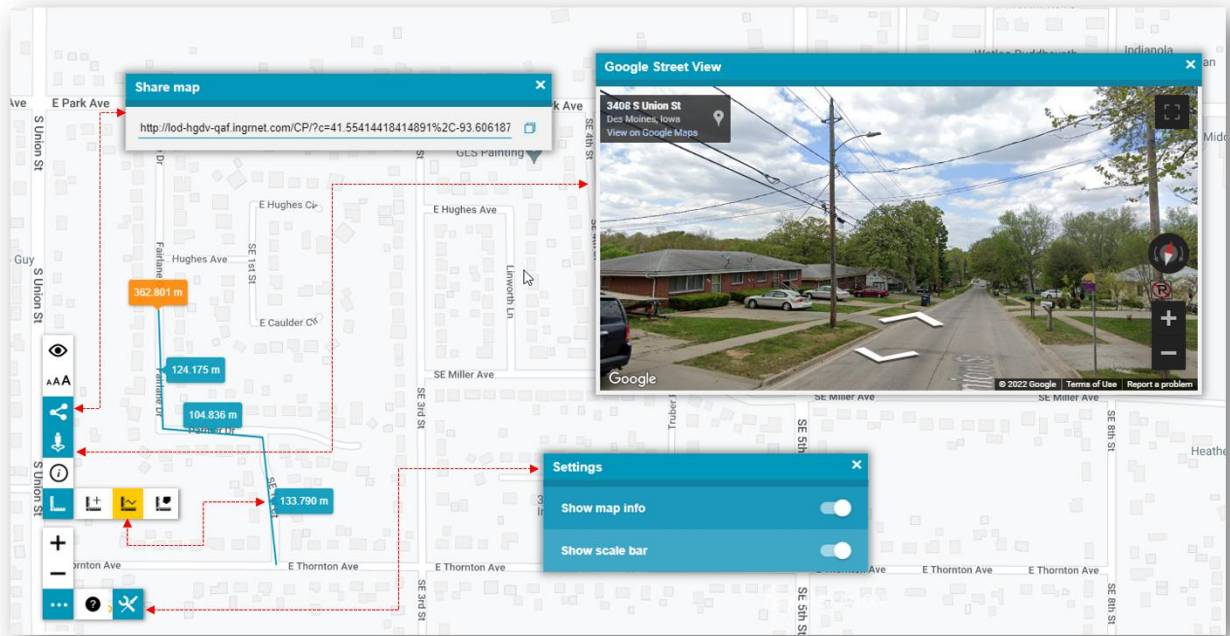
The legend is an indispensable element of every map and allows you to understand what the map is about. WMS services serving map data often provide a comprehensive legend in the form of a picture. In the Consumer Portal, the map legend was available after hovering the cursor over a pictogram of a given legend entry (and disappeared after moving out the cursor). The legend from the WMS service can be displayed all the time in a separate window. Moreover, the window with a legend picture can be resized and placed anywhere on the screen. The benefit is that the legend is visible all the time while working with the map, even after closing the legend entries window. It is possible to display legends for multiple layers/services.

To emphasize that a new window is being open from the Layers form to the location of the window (by default displayed in place of hover) the animation is displayed. The same animation runs backward while closing the window.



## Slight visual enhancements in Consumer Portal

Minor visual changes have been made to make the entire Consumer Portal look more consistent and intuitive. By default, the buttons are white. The buttons for all active and open windows in Consumer Portal are highlighted in blue. Once enabled in the active mode they become yellow.



## New warning notification in Consumer Portal

If service initialization has failed and data sources for the Consumer Portal workspace are invalid, the appropriate notification will be displayed. With this new notification, Consumer Portal users and administrators will know that certain services have not been initialized and the workspace may not be valid.



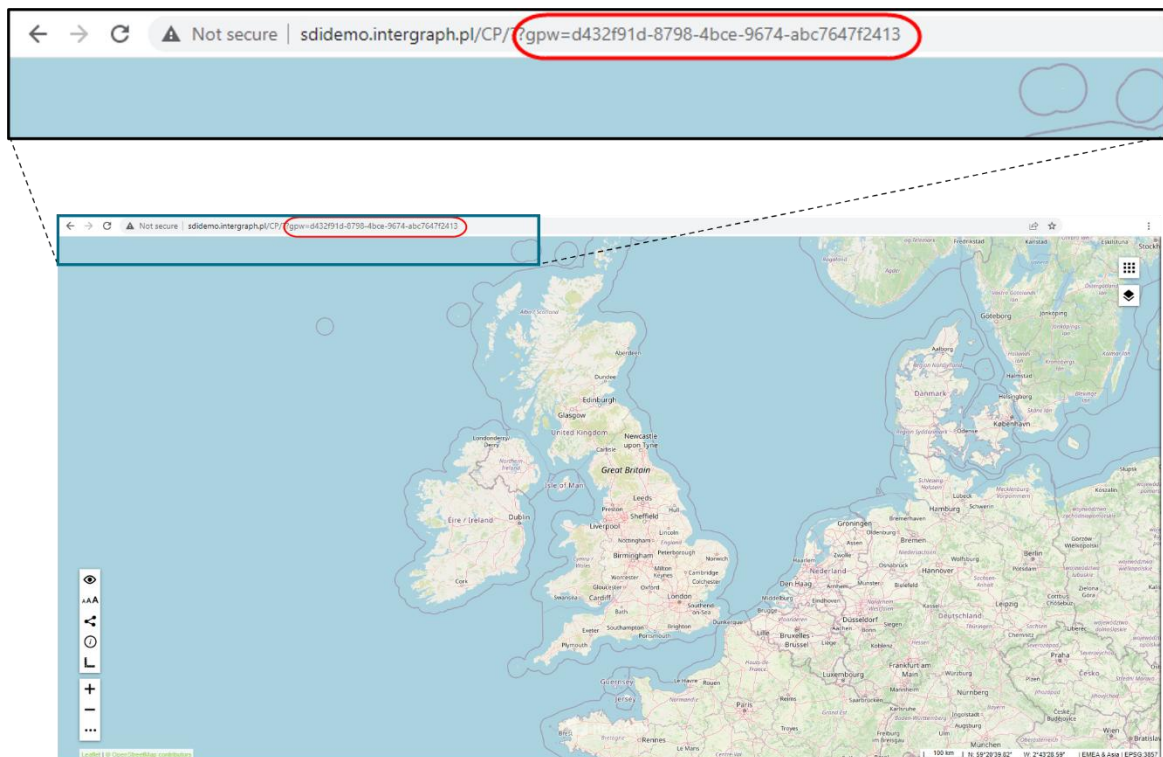
## Display non-starting workspace at Consumer Portal launch

The Consumer Portal instance can be run with a specific workspace by including the Workspace ID as a parameter in the URL, for example <http://sdidemo.intergraph.pl/ConsumerInstance/?gpw=b13c1d4c-645a-4a48-a847-1e81c030ab08>.

With this improvement, it's no longer necessary to create distinct instances of the Consumer Portal for each workspace. Instead, multiple workspaces can be accessed using a single instance.

The map range will be set accordingly to the option chosen for Starting map range option in the Administrator Console. It can be set as a specific GeoWorkspace map range or retain the last used map range if the **Remember last session's map range** option is enabled. The third option is to use the current client location to determine the starting map view.

It is important to note that if the Consumer Portal instance has been launched with the GPW (Geospatial Portal Workspace) parameter in the URL, then the link displayed in the Share Map dialog will also contain the GPW parameter along with the ID of the GeoWorkspace specified during the launch of the Consumer instance.

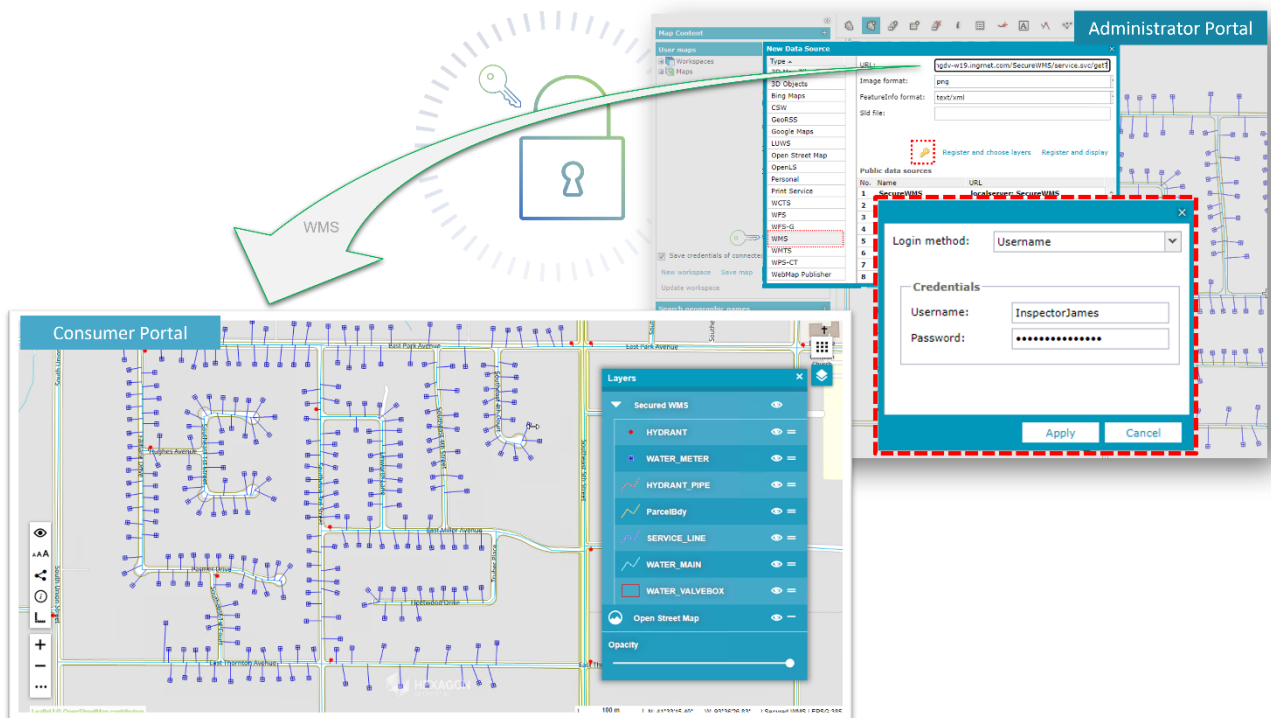




## Geospatial Portal Consumer handles secured WMS with Authorization

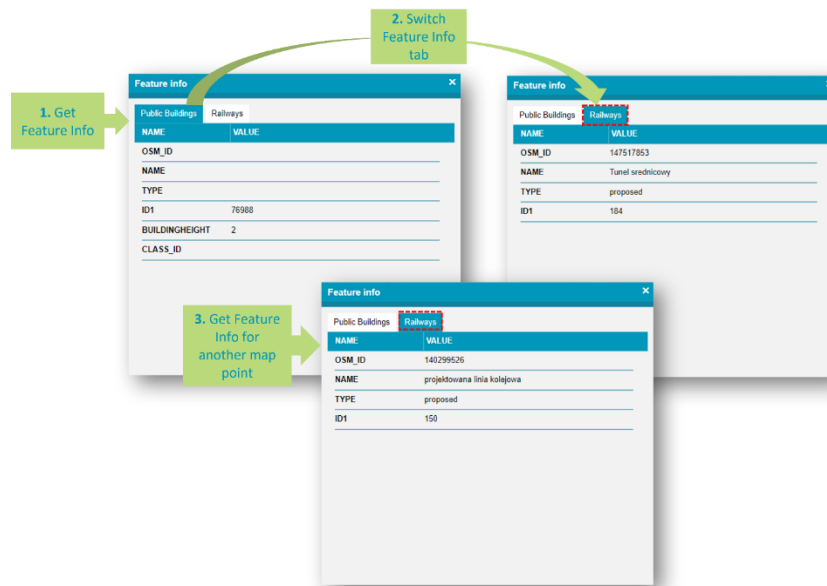
With our latest release, we've also focused on enhancing the security aspects of the web services we provide, so the Consumer Portal handles secured WMS services out of the box. Along with the security and access control capabilities of the SDI Authorization Bridge service and SDI security console, the display of secured WMS services in the Consumer Portal is assured. The introduced solution ensures that Consumer Portal users can get access only to the selected geospatial data in accordance with their roles.

From the administrator's point of view, the preparation of Consumer Map Compositions with secure authorized WMS is almost the same as in the case of standard WMS without authorization and is done with the use of the Administrator Portal tools and functions. Administrators have full control over which data, and on which credentials, can be consumed by Consumer users. Preparing the map composition that uses authorized WMS provides the WMS username and password while registering such a secured service in the Administrator Portal. With **Save credentials of connected data sources** option enabled, everyone with access to the Consumer URL can view the prepared map composition (in accordance with the credentials provided and saved in the map definition.) Doing so, Consumer Portal will display WMS data according to security settings defined for specific WMS users and roles. It is worth mentioning that Consumer Portal works not only with secured services created with GeoMedia WebMap and Geospatial SDI tools, but also with third-party services.



## Extended variants for Remember Feature Info Tab feature of Consumer Portal

Along with version 2023 the option Remember Feature Info tab has been introduced to allow Consumer Portal administrators to customize the behaviour of tabs in the Feature Info window when switching between successive objects. If the option is enabled then the reloaded Feature Info window shows the tab that was last open, on the condition that the same queryable layer(s) is present in a map point where the Feature Info is issued again. If disabled the Feature Info window reloads and selects the first feature tab, even if the user switched to a different one before issuing new feature info.



Beginning with release 2023 (16.8) administrators, in addition, can decide whether the settings are to apply only over one Consumer Portal session or whether they are to be remembered between sessions. The selection of the appropriate option is now made using a drop-down list.

→ ADMINISTRATION CONSOLE → INSTANCE LIST → CONSUMER PORTAL CONFIGURATION

CP 16.8.0

Searching Configuration Appearance **Logging** Starting Configuration Map Compositions Behavior Details

**APPEARANCE**

Layout: Window

Starting map range: Remember last session's map range

Remember window sizes and positions: ☐

Show Map Info: ☒

Show Scale Bar: ☒

Collapse Legend Groups: ☒

Remember feature info tab: Over one session

Never

Over one session

Between sessions

REFRESH APPLY



## Improved performance of Consumer Portal loading time

Inventory and optimization of the use of extraordinary libraries resulted in an approximately 20% faster load time for the Consumer Portal, which makes its initialization quick and smooth. Concurrently, an aesthetically rejuvenated loading progress bar was unveiled.

Sencha is widely used framework for developing cross-platform web applications. It provides a comprehensive set of external libraries and components, which used to be available in Consumer Portal.

Knowing that all standard workflows within the Consumer Portal do not require these extensive capabilities and focusing on improving overall Consumer Portal performance, we have made the decision to remove Sencha libraries previously used within the Consumer Portal.

Although Sencha libraries have been removed from the Consumer Portal, they remain available within the Consumer Portal SDK. This means that developers still have access to Sencha components and if needed can use the features when building custom applications based on Consumer Portal.



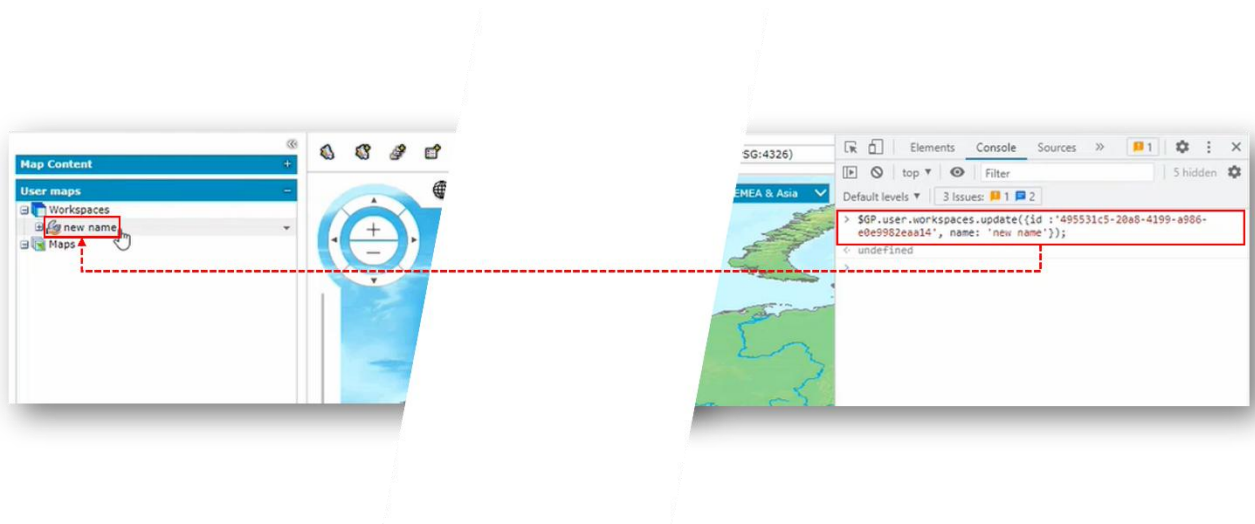
## Portal SDK: Workspace update from API

Release 2023 brings a new method provided to the API in the Portal SDK to change Workspace parameters like:

- Workspace name
- Public/Private workspace type
- Map range

One customizing Geospatial Portal has the `$GP.user.workspaces` method giving an additional `update()` contract:

- `$GP.user.workspaces.update()`



Various combinations of updating workspace or map parameters are possible:

```
> $GP.user.workspaces.update({id: '495531c5-20a8-4199-a986-e0e9982eaa14', name: 'new name'});
< undefined

> $GP.user.workspaces.update({id: '495531c5-20a8-4199-a986-e0e9982eaa14', isPublic: false});
< undefined

> $GP.user.workspaces.update({id: '495531c5-20a8-4199-a986-e0e9982eaa14', isPublic: true, name: 'another new name'});
< undefined

> $GP.user.workspaces.update({isPublic: false, name: 'another new name'});
< undefined

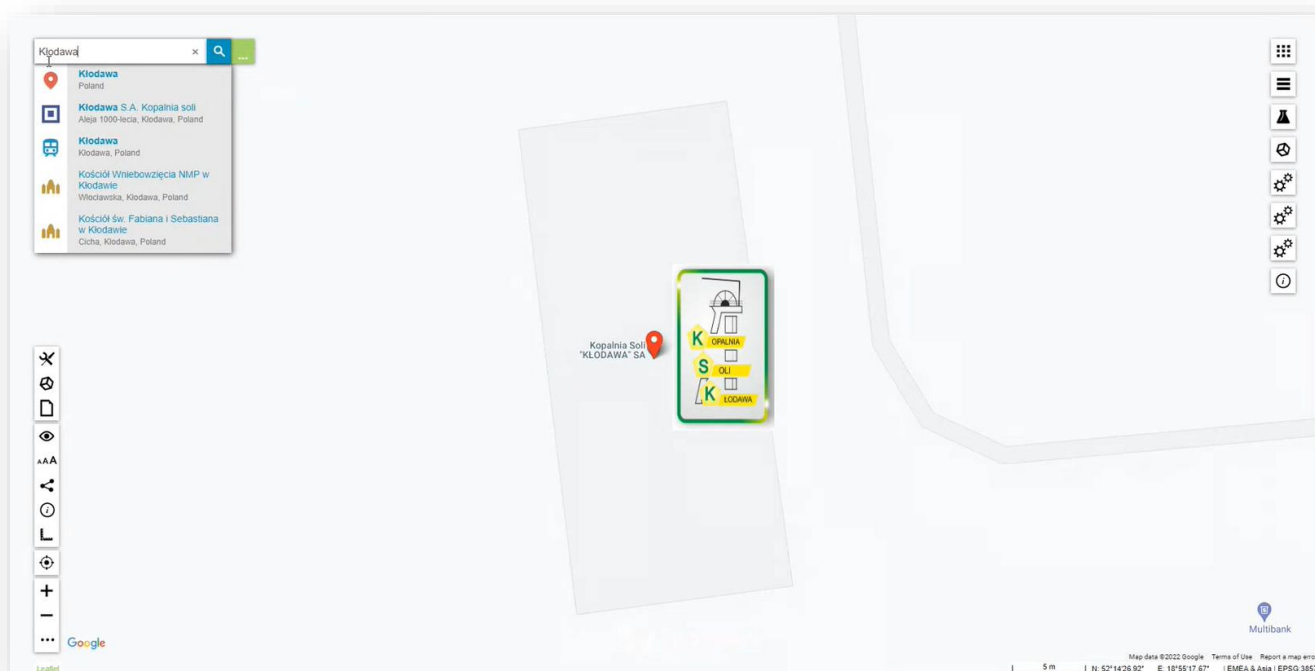
>
```

## Consumer Portal SDK: New code examples and features to customize Consumer Portal layout and its behaviour

A set of new Consumer Portal customization examples is added with the latest product version.

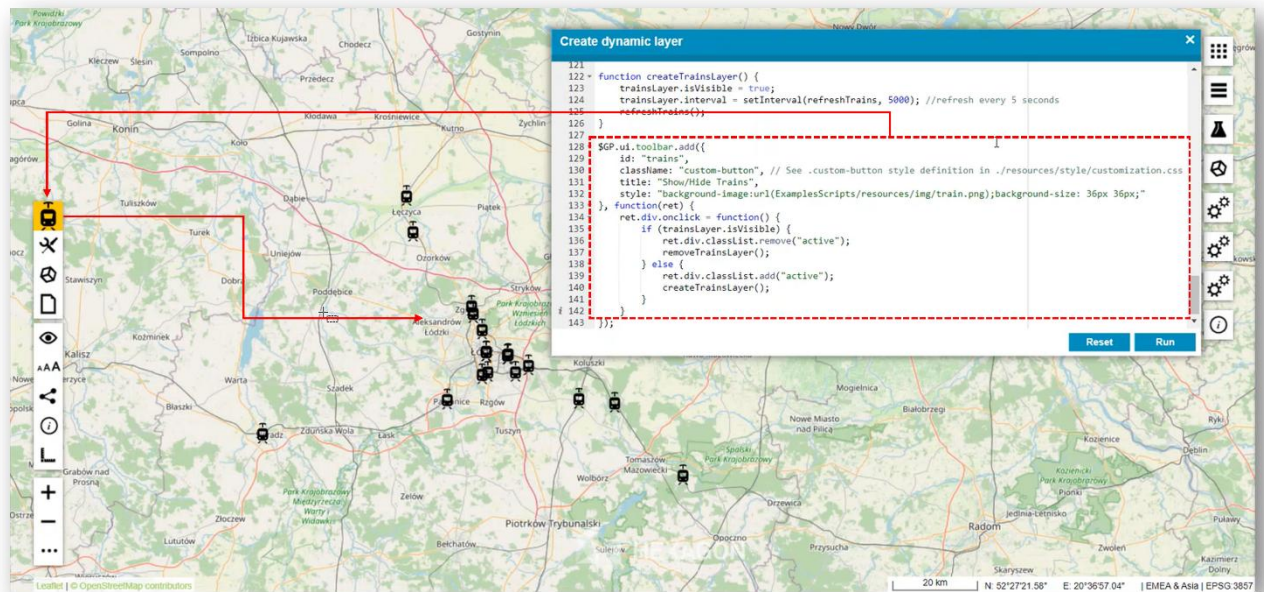
Expose methods in Consumer Portal API to display layer for search results

New code examples were introduced to customize Consumer Portal behaviour for actions related to search result control. Sample events allow users to add search results to the map and display additional data on the map (e.g., raster/vector layer, etc.). Exposed events can react to search result pop up, search result click or search result clear. Custom layers added along with search result user action can be both raster and vector types and can be added temporally or permanently to the map view.



Activate icons for enabled dynamic legends.

One of the code examples in Consumer Portal SDK creates a dynamic layer from third party data providers. For example, it can be icons of trams or buses moving on the map in real time, using external API sources. The new extension introduces adjustments for that code example so it can show whether the layer is being displayed or not. It is achieved by adding a new button to the Consumer Portal toolbar that not only allows the user to turn the dynamic layer on or off, but also the button state (its highlight color) gives immediate information to users about whether a given layer is active. The button style is customizable with the CSS.



Code examples to showcase the possibility of customizing Consumer Portal starting behaviour

Further code examples to demonstrate the possibilities of adjusting and controlling the map range at the launch of the Consumer Portal are provided for the SDK in the latest version.

The enhanced options for customizing starting map range include:

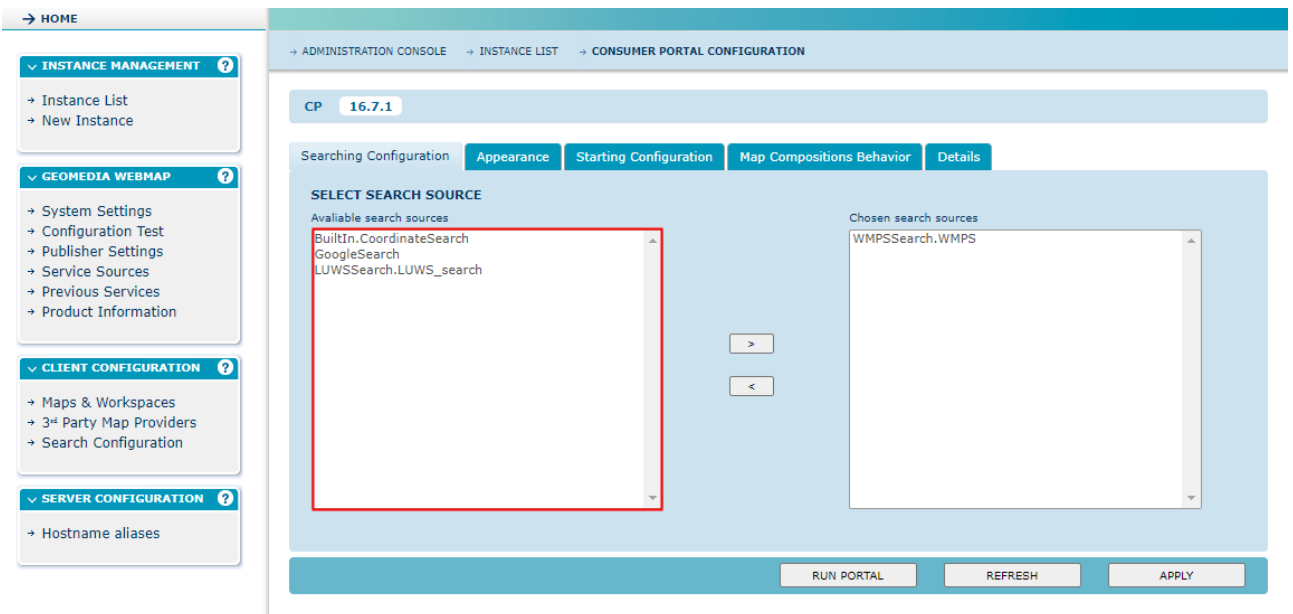
- Use the current client location and adjust the map range to the location obtained
- Reopen the last viewed map range with every subsequent session of the Consumer Portal

## Administration Console

### Prevent sending unsupported searches to Consumer Portal instances

Geospatial Portal Administrators can define Coordinate/Google/LUWS searches in WebGIS and then send them to any Consumer Portal instance.

To prevent breaking Consumer Portal instances, unsupported searches cannot be applied to the Consumer Portal instances. Breaking the instance might happen if the unsupported search is sent to a non-upgraded instance. Now Administration Console checks whether the Consumer Portal instance version is high enough to send a given search to it. If not, the search is hidden on the search list and cannot be selected and sent. Coordinate search is available from version 16.6.1, Google search is available from 16.6.2 and LUWS search is available from 16.7.0.



→ HOME

→ ADMINISTRATION CONSOLE → INSTANCE LIST → CONSUMER PORTAL CONFIGURATION

CP 16.7.1

Searching Configuration Appearance Starting Configuration Map Compositions Behavior Details

**SELECT SEARCH SOURCE**

Available search sources

- BuiltIn.CoordinateSearch
- GoogleSearch
- LUWSSearch.LUWS\_search

Chosen search sources

- WMPSSearch.WMPS

>

<

RUN PORTAL REFRESH APPLY

**INSTANCE MANAGEMENT**

- Instance List
- New Instance

**GEOMEDIA WEBMAP**

- System Settings
- Configuration Test
- Publisher Settings
- Service Sources
- Previous Services
- Product Information

**CLIENT CONFIGURATION**

- Maps & Workspaces
- 3<sup>rd</sup> Party Map Providers
- Search Configuration

**SERVER CONFIGURATION**

- Hostname aliases

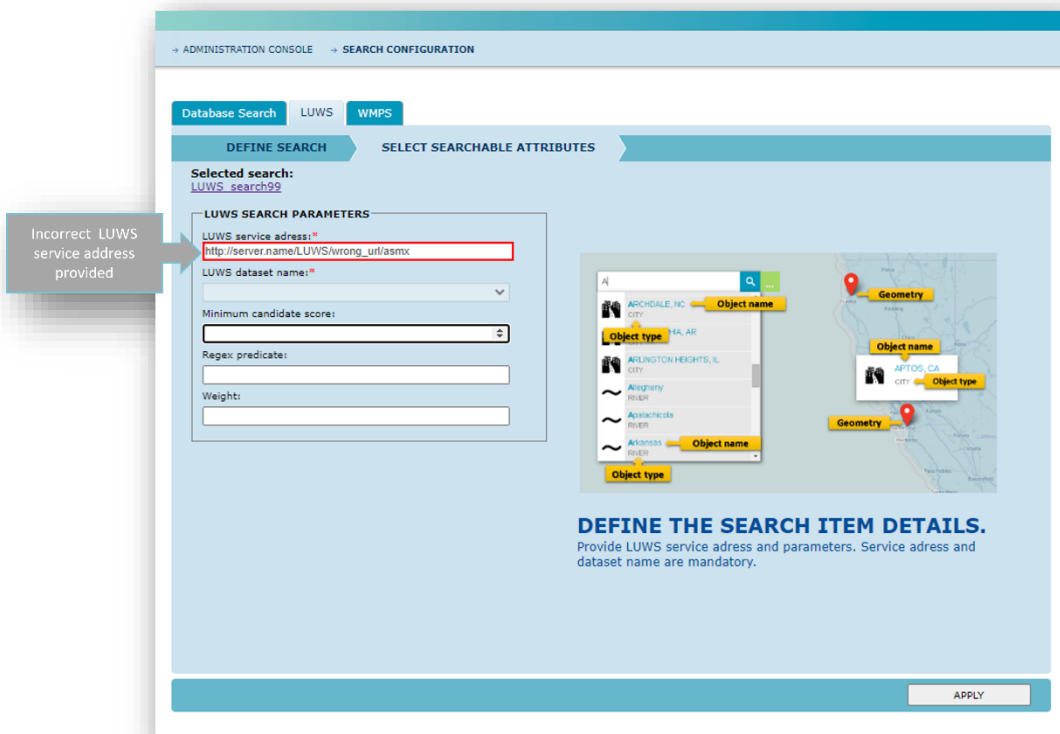
## Improvements to LUWS Search Configuration and usage

### LUWS Search Configuration for Consumer Portal in Administration Console GUI

The LUWS is an exceptionally flexible method for finding geospatial information. It uses geocoding to determine the position and address of an object (POI). LUWS is a search service that can be compared to Google's search services. With LUWS, users can search addresses, points of interest, cadastral data or any defined geospatial objects.

Starting from version 16.7, users of Consumer Portal can search for objects by using the LUWS service. With the LUWS tab in the Search Configuration section of the Administration Console, it is possible to add a working LUWS service to the Consumer searches. Administrators can configure LUWS to be used with Consumer instances with a few mouse clicks; no programming skills are required. To make the process of the configuration of LUWS in Portals more friendly and intuitive a few LUWS-related improvements were introduced.

The first LUWS-related improvement is the automatic validation of provided LUWS URL. When the administrator configures the LUWS search for Consumer Portal and types or pastes the LUWS URL into the LUWS address field, it is validated for syntax and LUWS response and availability. If the validation fails, a field is marked with a red border and the tooltip notification is displayed.



The screenshot displays the 'ADMINISTRATION CONSOLE' > 'SEARCH CONFIGURATION' interface. The 'LUWS' tab is active, showing the 'DEFINE SEARCH' section. The 'Selected search:' is 'LUWS\_search92'. The 'LUWS SEARCH PARAMETERS' section includes:

- LUWS service address:** A text field containing 'http://server.name/LUWS/wrong\_url/asmx', which is highlighted with a red border.
- LUWS dataset name:** A dropdown menu.
- Minimum candidate score:** A text field.
- Regex predicate:** A text field.
- Weight:** A text field.

A tooltip notification points to the red-bordered field, stating: 'Incorrect LUWS service address provided'. To the right, a map shows search results for 'ARCHEDALE, NC' and 'ARLINGTON HEIGHTS, IL', with labels for 'Object name' and 'Object type'. Below the map, the text reads: 'DEFINE THE SEARCH ITEM DETAILS. Provide LUWS service address and parameters. Service address and dataset name are mandatory.' An 'APPLY' button is at the bottom right.



The next improvement is the automatically populated LUWS dataset name field. If the LUWS service URL is valid, there is no need to type the dataset name. The field is populated with values automatically and in case the given LUWS service provides more than one dataset, the administrator who is configuring the LUWS search can easily choose the one from the pull-down list. If there is a change on the LUWS service side and the state of datasets changes, then after setting the focus on the LUWS address field, the LUWS dataset list is refreshed and updated.

ADMINISTRATION CONSOLE
SEARCH CONFIGURATION

Database Search
LUWS
WMPS

DEFINE SEARCH
SELECT SEARCHABLE ATTRIBUTES

Selected search:  
LUWS\_Demo2

LUWS SEARCH PARAMETERS

LUWS service address:  
http://od-hgdv-qaf/Default\_LUWS/Locate.aspx

LUWS dataset name:  

NC
NC
TN

Regex predicate:

Weight:

ARCHDALE, NC  
CITY  
Object name

Object type

AHLINGTON HEIGHTS, IL  
CITY  
Object name

Object type

Allegheny  
RIVER  
Object name

Object type

Apalachicola  
RIVER  
Object name

Object type

Arkansas  
RIVER  
Object name

Object type

AFTON, CA  
CITY  
Object name

Object type

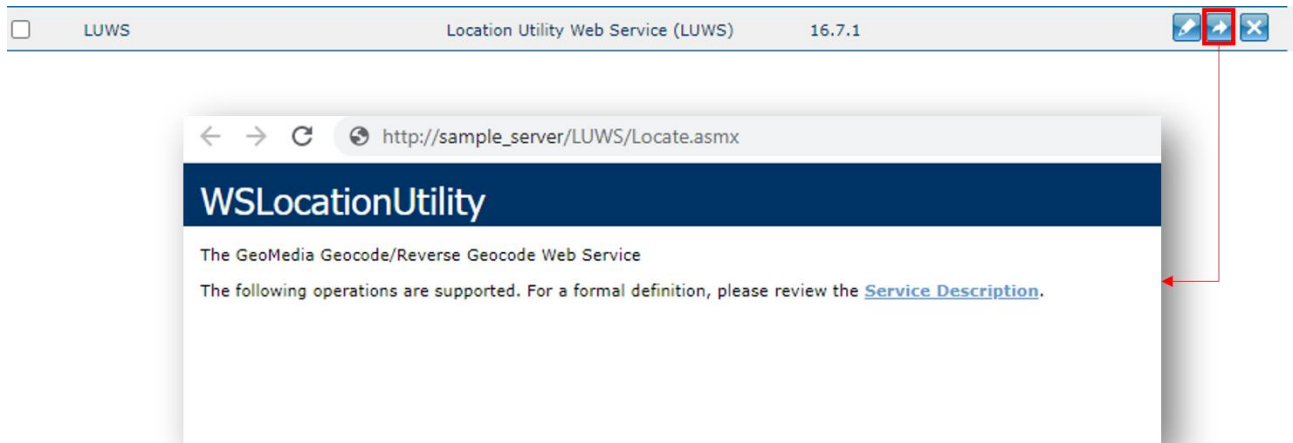
Geometry

**DEFINE THE SEARCH ITEM DETAILS.**  
Provide LUWS service address and parameters. Service address and dataset name are mandatory.

APPLY

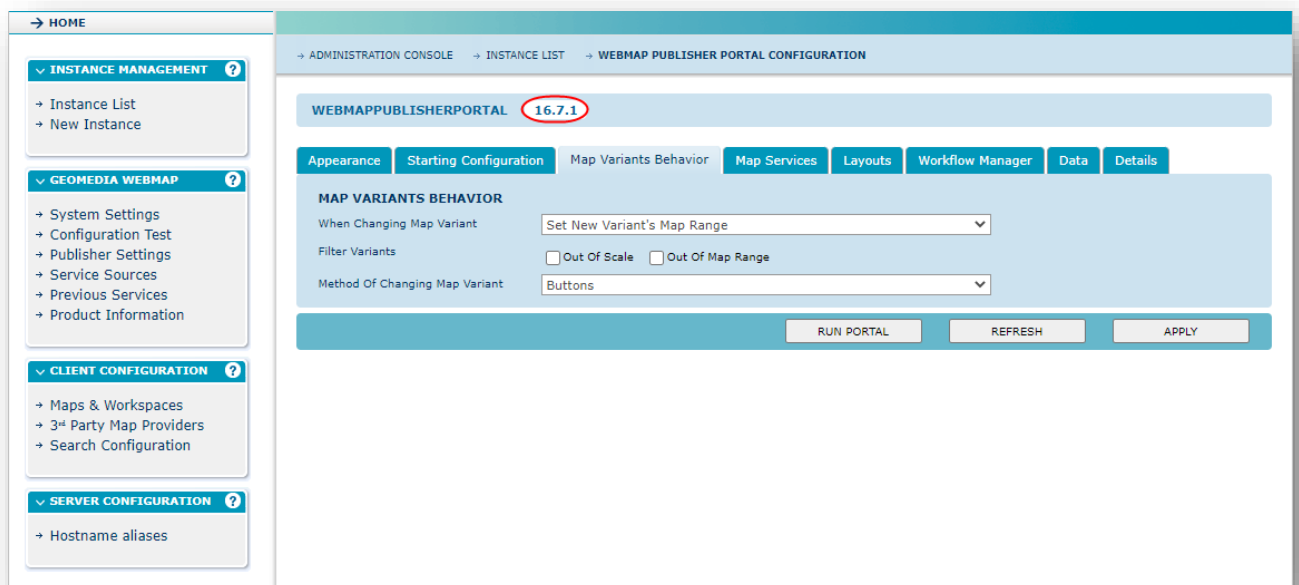
## Run LUWS button in Administration Console

With the latest GeoMedia WebMap release, administrators can press the new Run button assigned to a given LUWS instance entry. Pressing this new (for LUWS) Run button opens the LUWS locate.asmx service info page. Administrators can copy the URL to paste it into the Consumer search configuration or simply view more details about LUWS service by clicking the Service Description link provided.



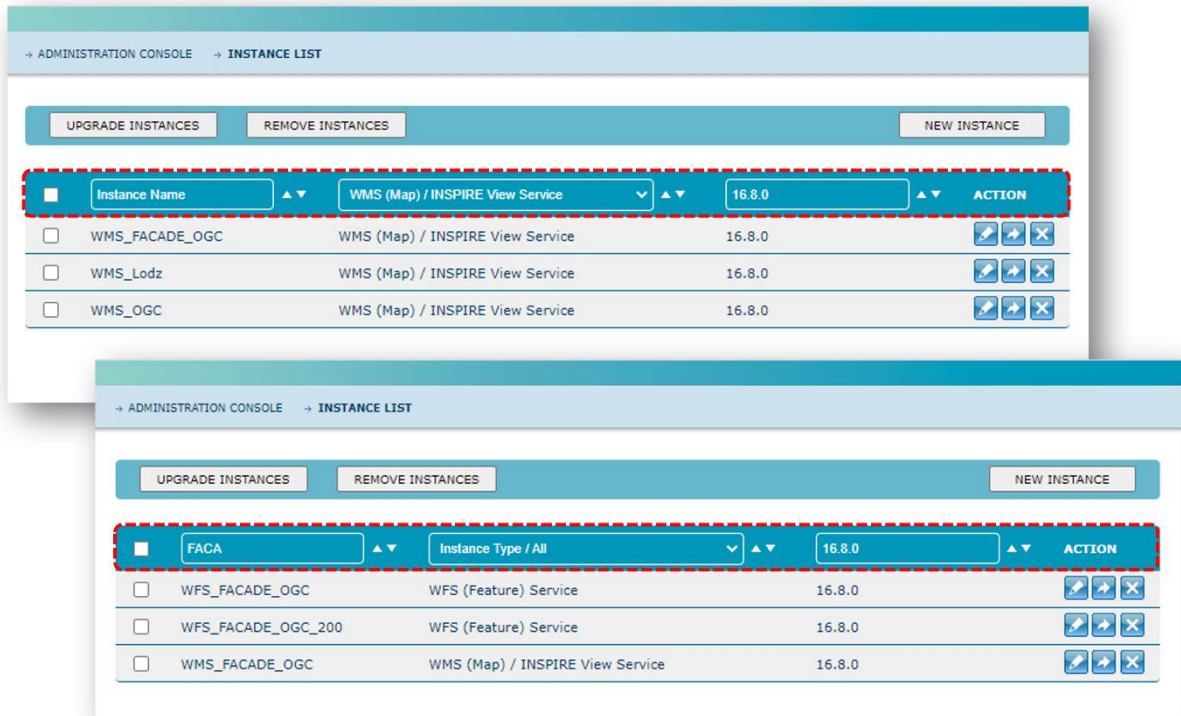
## Information about instance version

The current instance version is displayed on the instance configuration screen of the Administration Console. With this label displayed, it is now easy to determine which version of a service is being configured.



## Filtering instances list in Administration Console

Managing many service instances may be difficult, especially if you need to quickly find one item in the list in Administration Console. That's why we've introduced the filtering options in the Administration Console instance list. By using the filter options, available in the Instance list header, one can quickly find the required entry. Instances can be filtered by name or partial name, type and version simultaneously. With a few clicks, you can adjust the list view to the required list entries and/or sort them as well.



The image shows two screenshots of the Administration Console Instance List interface. The top screenshot shows the default view with filters for Instance Name, Instance Type, and Version. The bottom screenshot shows the same interface with filters applied to find 'FACA' instances of type 'WFS (Feature) Service'.

**Top Screenshot: Default View**

Navigation: → ADMINISTRATION CONSOLE → INSTANCE LIST

Buttons: UPGRADE INSTANCES, REMOVE INSTANCES, NEW INSTANCE

Filters:

- Instance Name: [Empty]
- Instance Type: WMS (Map) / INSPIRE View Service
- Version: 16.8.0
- ACTION

Instance Name	Instance Type	Version	ACTION
<input type="checkbox"/> WMS_FACADE_OGC	WMS (Map) / INSPIRE View Service	16.8.0	[Edit] [Copy] [Delete]
<input type="checkbox"/> WMS_Lodz	WMS (Map) / INSPIRE View Service	16.8.0	[Edit] [Copy] [Delete]
<input type="checkbox"/> WMS_OGC	WMS (Map) / INSPIRE View Service	16.8.0	[Edit] [Copy] [Delete]

**Bottom Screenshot: Filtered View**

Navigation: → ADMINISTRATION CONSOLE → INSTANCE LIST

Buttons: UPGRADE INSTANCES, REMOVE INSTANCES, NEW INSTANCE

Filters:

- Instance Name: FACA
- Instance Type: Instance Type / All
- Version: 16.8.0
- ACTION

Instance Name	Instance Type	Version	ACTION
<input type="checkbox"/> WFS_FACADE_OGC	WFS (Feature) Service	16.8.0	[Edit] [Copy] [Delete]
<input type="checkbox"/> WFS_FACADE_OGC_200	WFS (Feature) Service	16.8.0	[Edit] [Copy] [Delete]
<input type="checkbox"/> WMS_FACADE_OGC	WMS (Map) / INSPIRE View Service	16.8.0	[Edit] [Copy] [Delete]

## Administration Console Diagnostics

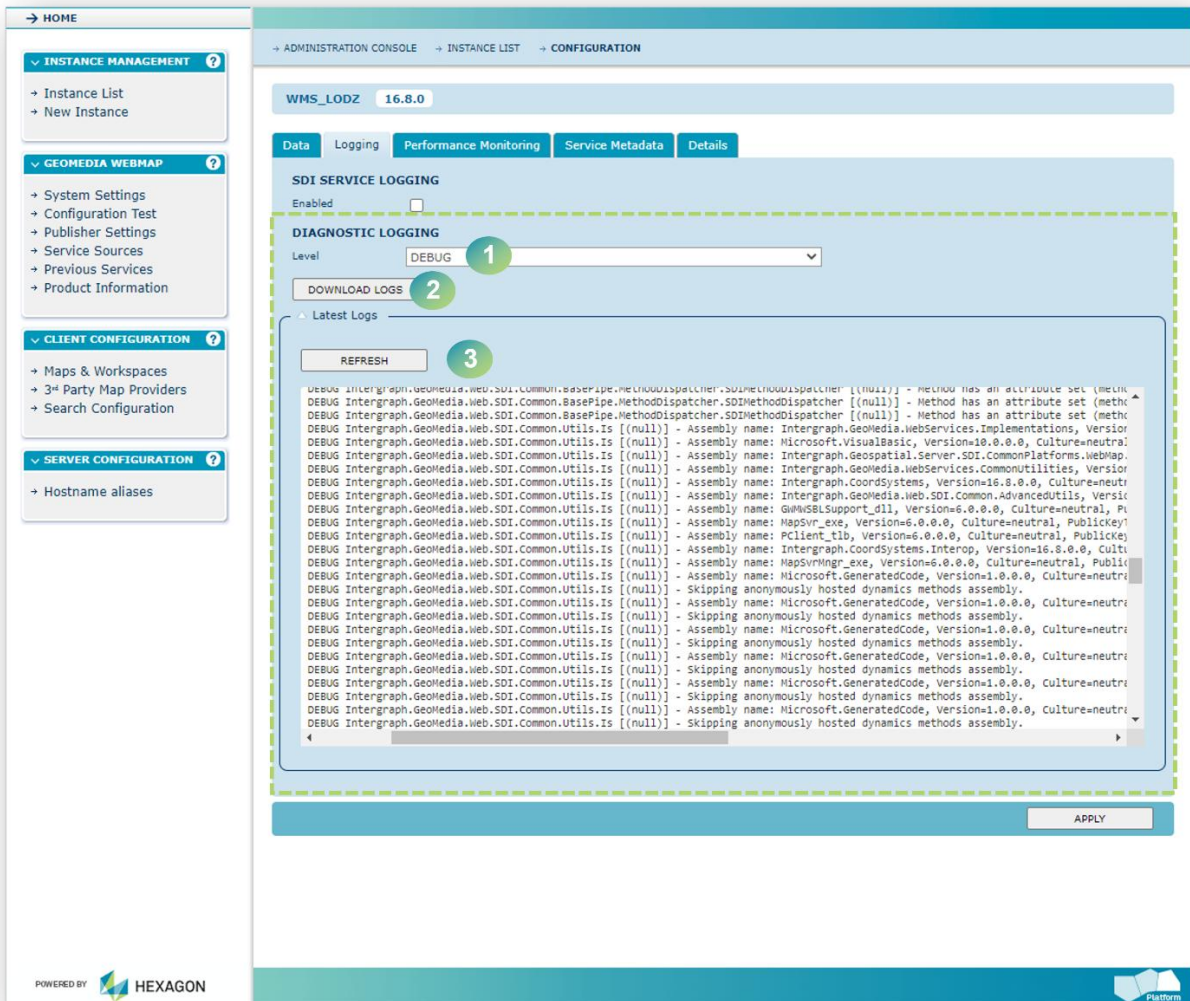
Logging is a well-known essential and handy function used for WebGIS products and services maintenance tasks. WebGIS administrators use the logging feature to track unexpected behavior of products, track down errors and quickly identify potential problems that may affect end users and their applications. Recorded events can provide valuable information for administrators and developers about configuration or connectivity issues.

Enabling logging for GeoMedia WebMap or Geospatial SDI services has so far required the administrator to edit the WebConfig file for the specific service, find specific parameters and change them directly in the file. Next, reading specific log files required a manual search in the folder structure for the product and finally editing the service log file in a text file editor of choice. In version 16.8, configuration and access to the service logs is much faster and simpler (although the old procedure is still possible.) Administrators of the 16.8 version can enable and get logs with a just few clicks in the Administration Console.

The Login tab in the Administration Console is where administrators can configure and view the logs for relevant instance services. The following new controls have been introduced:

- 1) Level: A drop-down list to select the required login level
- 2) Download button: Allows download from the server all log files related to the service instance
- 3) Latest Logs: Shows the latest log entries captured by the log service for the current instance. By default, 300 last entries are shown but it can be configured in the registry. To update the log view, it is required to press the Refresh button.

There is also good news for administrators preferring the use of the command line instead of GUI. All the log settings available on the Logging tab can also be made by using the PowerShell command line interface due to the built-in ACCLI module.



The screenshot shows the Hexagon WMS configuration interface. The left sidebar contains navigation links for HOME, INSTANCE MANAGEMENT, GEOMEDIA WEBMAP, CLIENT CONFIGURATION, and SERVER CONFIGURATION. The main content area is titled 'WMS\_LODZ 16.8.0' and includes tabs for Data, Logging, Performance Monitoring, Service Metadata, and Details. The 'Logging' tab is active, showing the 'SDI SERVICE LOGGING' section with an 'Enabled' checkbox. Below this is the 'DIAGNOSTIC LOGGING' section, where the 'Level' is set to 'DEBUG' (indicated by a green circle with the number 1). A 'DOWNLOAD LOGS' button is highlighted with a green circle with the number 2. Below the button is a 'Latest Logs' section with a 'REFRESH' button (indicated by a green circle with the number 3) and a list of log entries. The log entries show various assembly names and their versions, such as 'Microsoft.VisualBasic, Version=10.0.0.0, Culture=neutral'. At the bottom right of the main content area is an 'APPLY' button.

```
PS C:\Users\admin> set-nodeproperty

cmdlet Set-NodeProperty at command pipeline position 1
Supply values for the following parameters:
Name: DevLogLevel
Value: ERROR
Path: /Services/CleanWms/Configuration
PS C:\Users\admin> get-node /Services/CleanWms/Configuration

[Configuration]
  DisableAnonymousAccess: False
  DevLogLevel: ERROR
-[Data]
-[Logging]
-[Metadata]
-[PerformanceMonitoring]
```



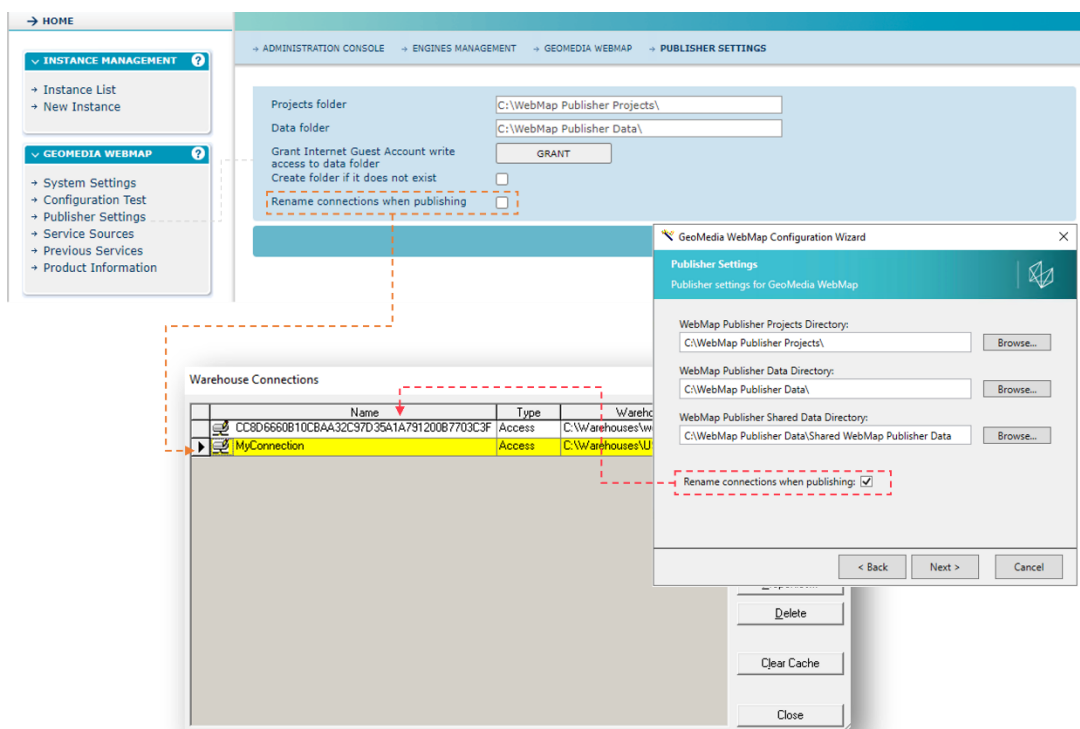


## Manage WebMap Publisher connection renaming

When publishing GeoWorkspace contents to metadata, a dialog box prompts users about potential modifications to connection names. This prevents collision issues when publishing multiple workspaces to various service sources, ensuring unique identification by data source type and address. This is an existing feature.

Responding to power users' requests for greater control over connection names, a new registry setting has been introduced to disable the standard behavior of GeoMedia WebMap that renames the connections. Furthermore, this setting has been conveniently placed as a checkbox in the Publisher Settings within the Administration Console. By unchecking the option “Rename connections when publishing” users can retain their original connection names without being prompted for modifications during publishing.

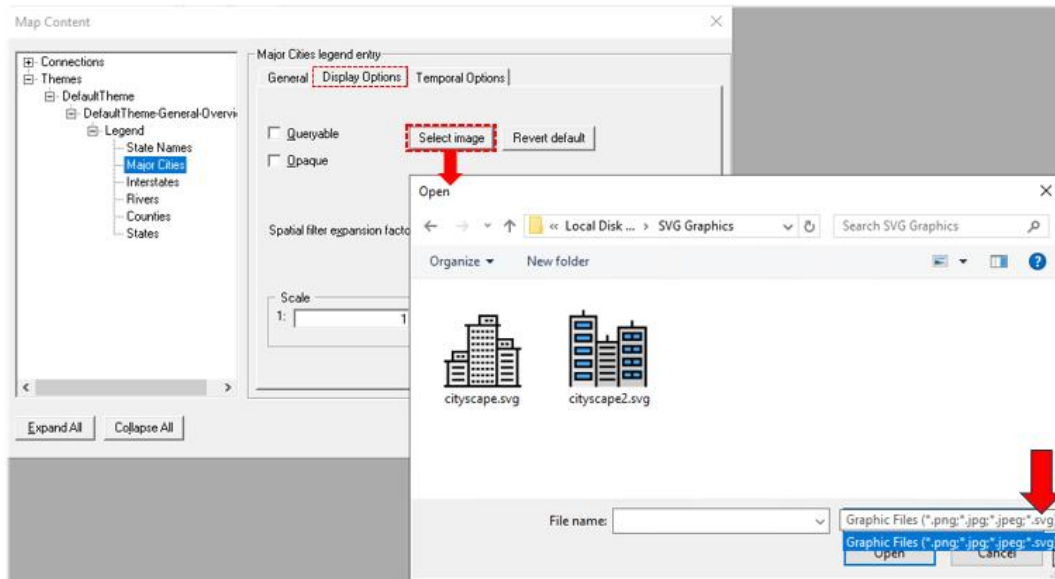
In addition to the new Administration Console option, the configuration wizard pages have been enhanced to provide more flexibility. Users configuring a fresh installation of WebMap can now easily decide whether to apply automatic connection naming rules or maintain control over their connection names, tailoring the setup process to individual preferences. The “Rename connection when publishing” option also appears on the Publisher wizard screen for Publisher Settings.



## WMS legend graphics in vector format (SVG)

GeoMedia WebMap Administrators now can change the default legend graphic with SVG files. The functionality to change legend graphics with JPEG and PNG files was an existing feature, but support for SVG files is now also available. This enhancement expands the Web Publisher options in the Map Content > Display Options dialog window, enabling administrators to select SVG files alongside JPEG and PNG formats.

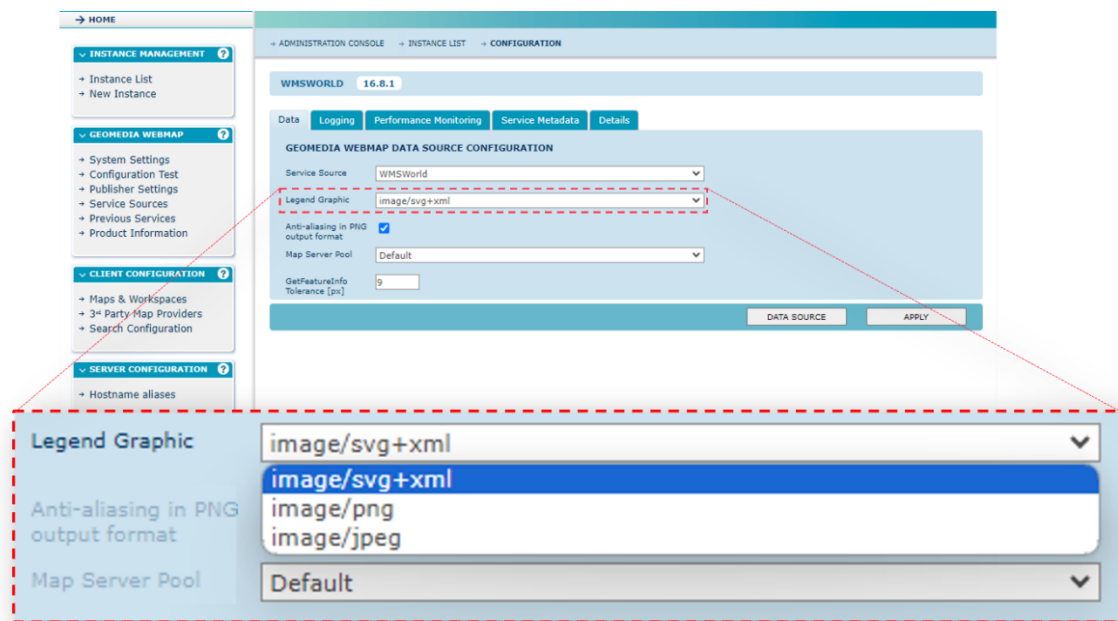
Users also gain the opportunity to work with the scalable high-resolution legend pictograms from the WMS service for presentation in the Consumer Portal and Geospatial Portal.



## WMS legend graphics configuration in Administration Console

As a GeoMedia WebMap administrator, you can now set the default format for the WMS legend graphic. A new attribute, `defaultLegendGraphicFormat`, is supported for `WMSOriginatingPipe`, allowing you to specify the default image format for the legend graphic. Available formats include `image/svg+xml`, `image/png` and `image/jpeg`. By default, the format is set to `image/svg+xml`.

This enhancement allows administrators to tailor the format of the legend graphic according to their preferences. You can adjust this setting per instance via the WMS web.config or by using the newly introduced Legend Graphic pull-down list in the Administration Console.

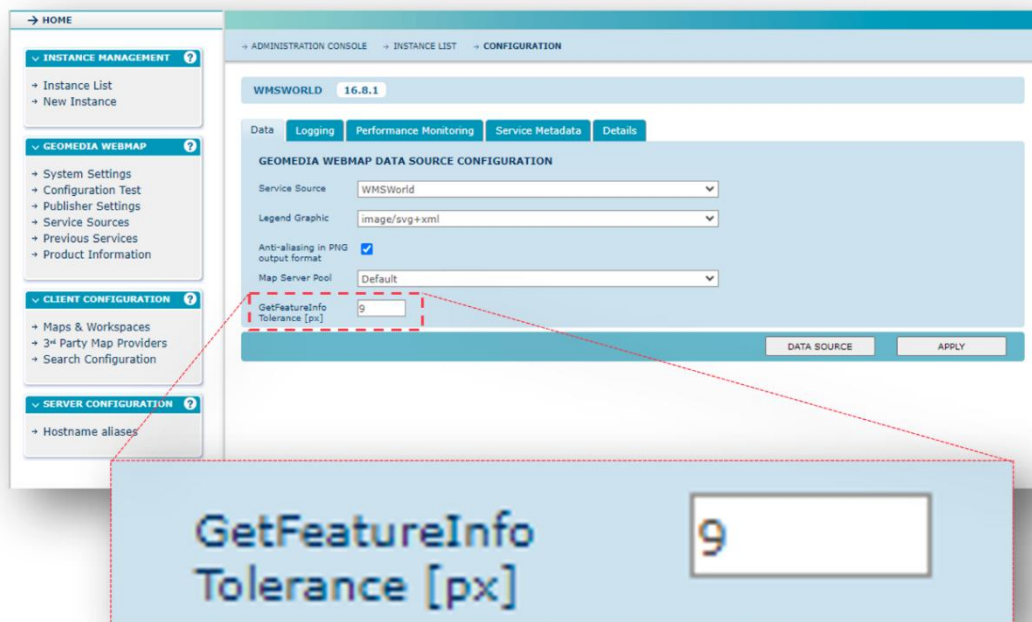


## WMS GetFeatureInfo Tolerance setting

We've optimized the default tolerance setting for the GetFeatureInfo operation in WMS to elevate user experience and streamline administrative tasks. The default tolerance has been increased from 2 pixels to 9 pixels, aligning with common customer preferences.

This adjustment aims to simplify feature identification on maps across various scenarios. It also minimizes the need for manual adjustments by administrators. By default, this modification will apply to both newly created instances and upgraded instances, unless overridden in the web.config file.

Furthermore, we've introduced a graphical user interface (GUI) in the Admin Console's Data tab within the WMS configuration section. Administrators now have a dedicated field to effortlessly modify the tolerance setting for each WMS instance. This enhancement provides administrators with a more intuitive and efficient way to manage GetFeatureInfo tolerance, ensuring optimal performance across all instances.

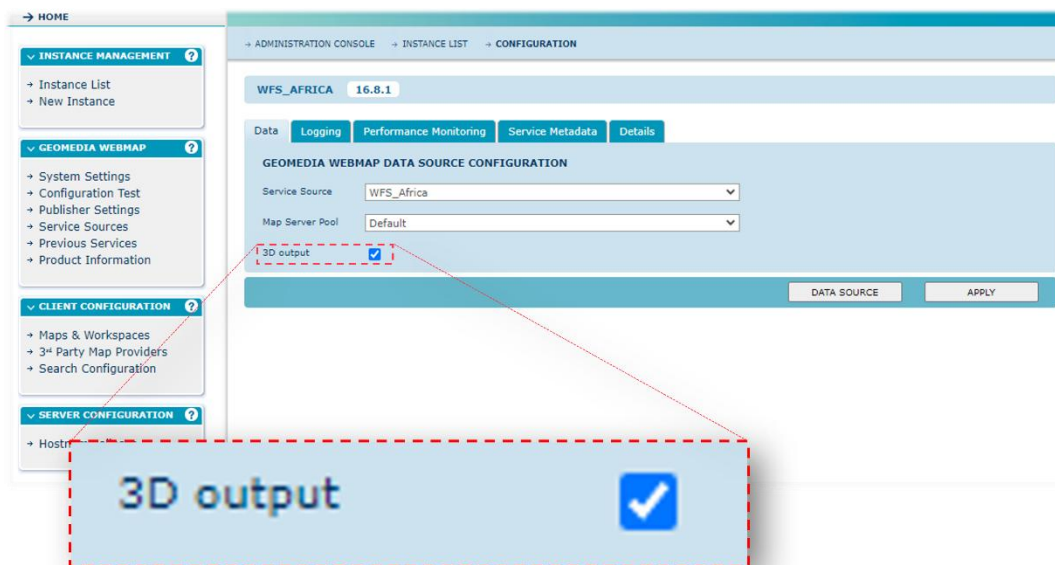


## Extended WebMap WFS to support 3D output

Administrators can now enable the new 3D output setting in the Administration Console under the WFS Configuration section.

Enabling this setting adds an additional third coordinate (Z) to feature requests, enhancing the capabilities of WFS services. This enhancement applies to various output formats, including XML and GeoJSON.

Configuration is available at the instance level, allowing precise control over 3D output for individual WFS services.



## Geospatial SDI

### GeoJSON output format support in Geospatial SDI's WFS Façade

You can now get and consume the Geospatial SDI's output in GeoJSON format. The application/geo+json output format is available out of the box, requiring no additional server-side configuration. Other formats like XML, HTML or plain text are still available.

```
▼ <wfs:OutputFormats>
  <wfs:Format>text/xml; subtype=gml/2.1.2</wfs:Format>
  <wfs:Format>text/xml; subtype=gml/3.0.0</wfs:Format>
  <wfs:Format>text/xml; subtype=gml/3.1.1</wfs:Format>
  <wfs:Format>text/xml; subtype=gml/3.2</wfs:Format>
  <wfs:Format>application/gml+xml; version=2.1.2</wfs:Format>
  <wfs:Format>application/gml+xml; version=3.0.0</wfs:Format>
  <wfs:Format>application/gml+xml; version=3.1.1</wfs:Format>
  <wfs:Format>application/gml+xml; version=3.2</wfs:Format>
  <wfs:Format>RSS</wfs:Format>
  <wfs:Format>application/vnd.google-earth.kml+xml</wfs:Format>
  <wfs:Format>myVR</wfs:Format>
  <wfs:Format>application/vnd.geo+json</wfs:Format>
  <wfs:Format>application/geo+json</wfs:Format>
  <wfs:Format>text/csv</wfs:Format>
  <wfs:Format>application/x-protobuf</wfs:Format>
</wfs:OutputFormats>
```



## Enhanced Catalog Editor UI, INSPIRE 2.0 ready

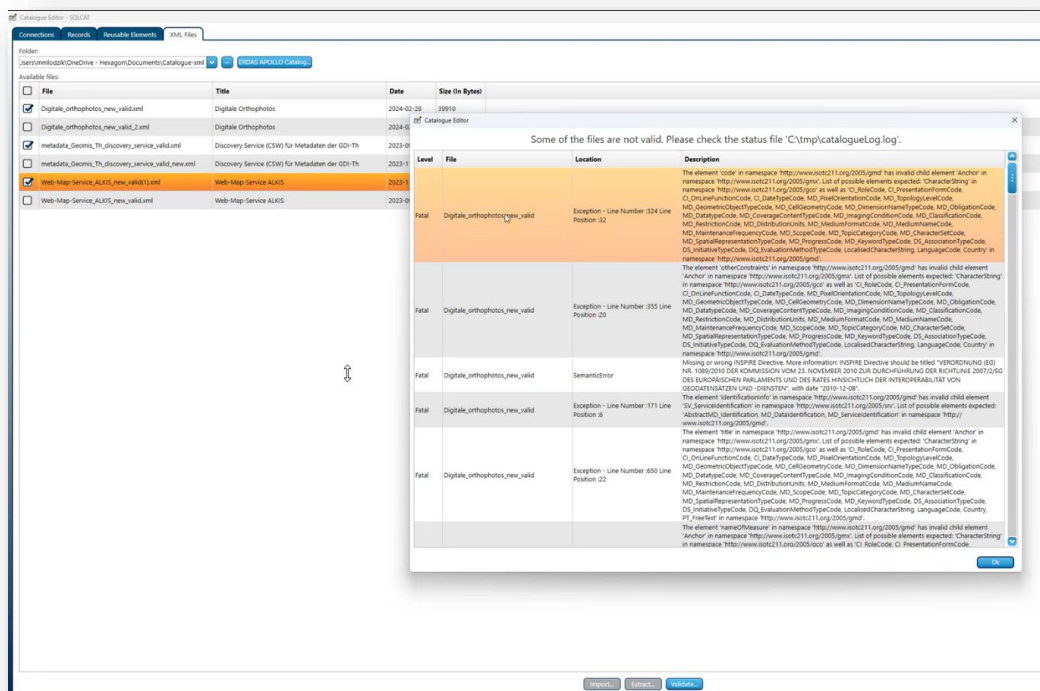
The Catalog Editor is a vital tool for managing database records associated with specific services. It enables users to organize, validate and export XML files containing metadata relevant to their datasets.

In line with evolving standards, we've enhanced the Catalog Editor to align with INSPIRE 2.0 specifications. These updates reflect our commitment to ensuring compliance with the latest regulatory frameworks governing geospatial data management.

One notable enhancement is the streamlined validation process. Users can now validate multiple files simultaneously, with any errors promptly displayed in a new window and logged for reference. This intuitive approach eliminates the need to search for specific log files, enabling users to quickly identify and rectify any issues.

Additionally, the Catalog Editor now supports multiple languages specified in official INSPIRE data, ensuring that validation processes are accessible and effective for users across many languages.

This comprehensive support improves usability and ensures that users can easily navigate the validation process in their preferred language, making their metadata management workflows more efficient and effective.



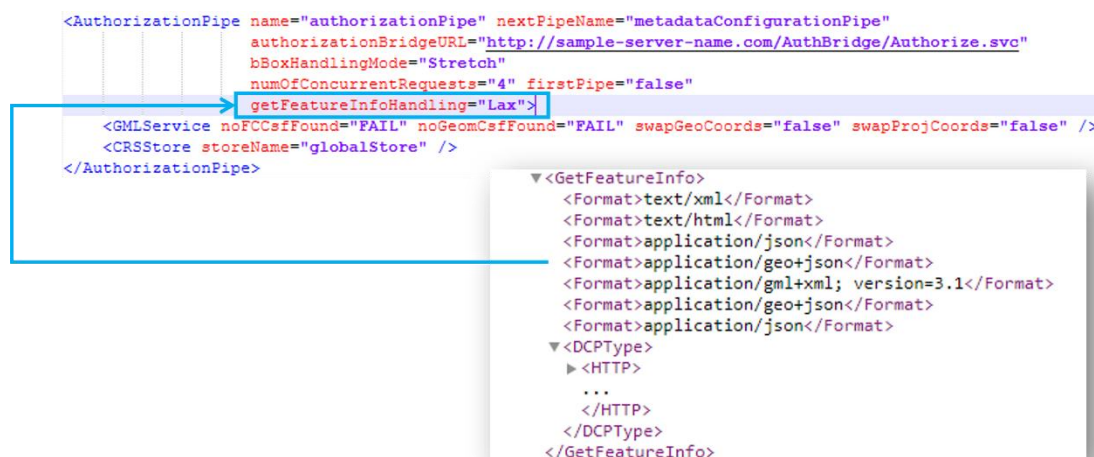
## Handle multiple Feature Info formats in WMS with authorization

Geospatial SDI enables the configuration of an authenticated WMS with support for multiple Get Feature Info formats.

Previously, attribute authorization within the WMS was limited to the text/xml format. However, with version 16.8.1, this functionality has been expanded to include the application/gml+xml; version=3.1 format.

Additionally, we've introduced support for text/html formats, with attribute authorization exclusive to recognized formats originating from GeoMedia WebMap.

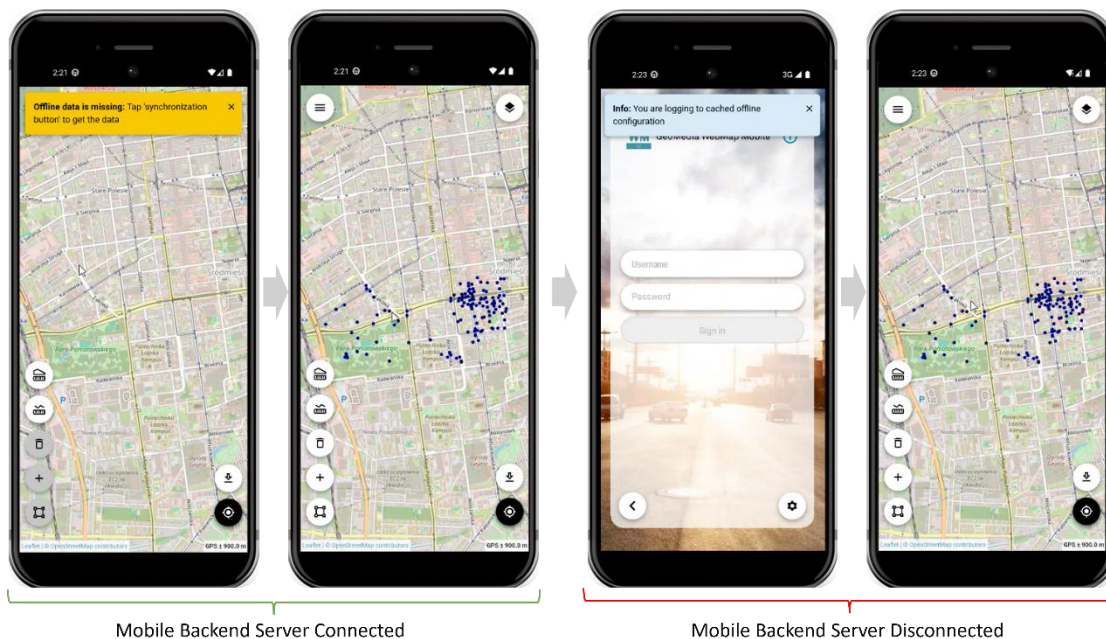
To provide users with more control, a new setting has been added to the <AuthorizationPipe> section of the WMS Web.config configuration file: "getFeatureInfoHandling." This parameter allows users to choose between "Strict" or "Lax" modes. In "Strict" mode (the default option), the Feature Info format is restricted to text/xml for authorized services. Conversely, "Lax" mode permits all Feature Info formats for authorized services, although attribute filtering is only supported for GeoMedia-formed formats.



## GeoMedia WebMap Mobile and Mobile Publisher

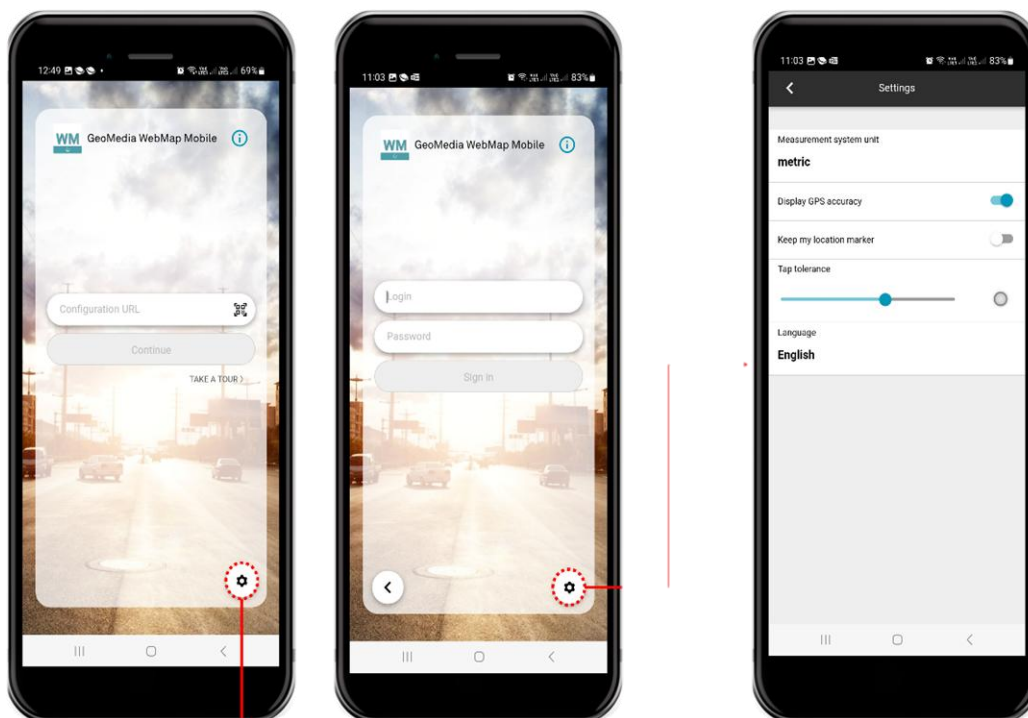
### WebMap Mobile offline usability enhancement

This update brings enhanced offline capabilities, allowing you to access stored configurations even when online but disconnected from the server. Receive real-time notifications upon logging into cached offline configurations. Modify data offline and save changes locally for future synchronization. Uploading changes to the server is seamless once the connection is restored, ensuring data integrity. Additionally, signing out will disable access to the saved offline configuration for enhanced security.



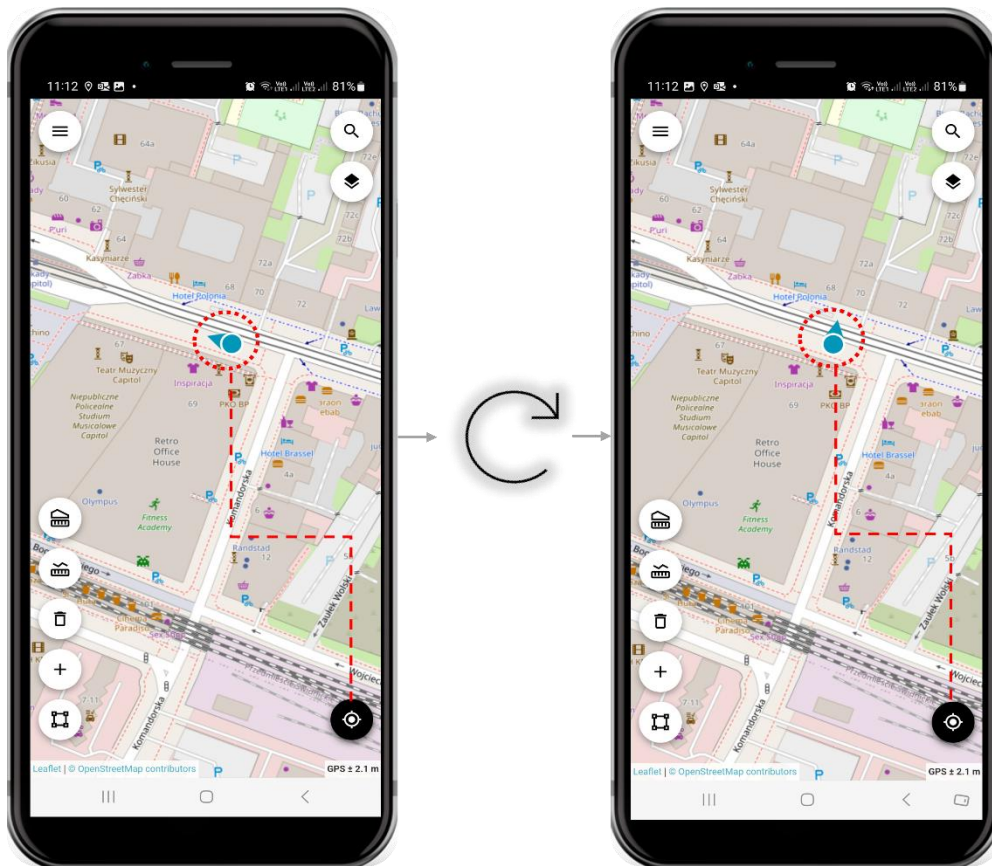
## WebMap Mobile settings on start screen

The Settings button is now conveniently accessible from the bottom right corner of both the Configuration URL and Login entry screens. This makes adjusting settings easier and more intuitive, offering quicker access to customization options.



## Display direction arrow for WebMap Mobile GPS marker

The arrow now indicates the direction the user is facing, adjusting dynamically as the phone or tablet rotates. This feature provides orientation information for users exploring outdoors or adding new features, enhancing usability, especially for marking the current location and navigating in the field.



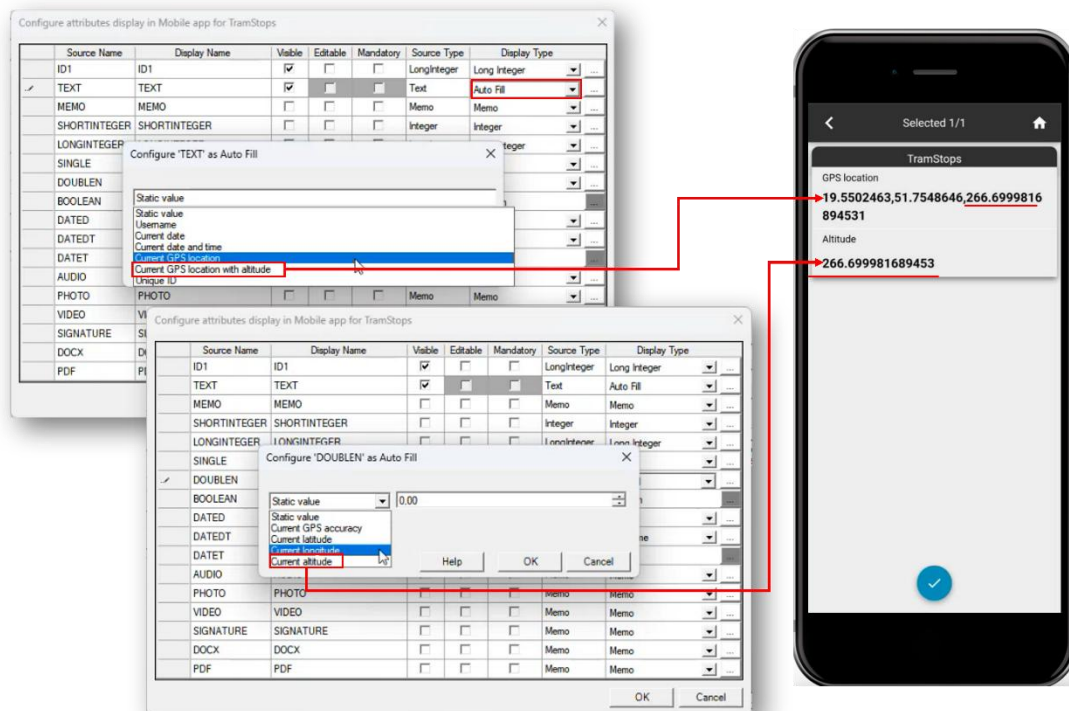


## Altitude Auto Fill in WebMap Mobile

GeoMedia WebMap Mobile Publisher administrators can now empower field inspectors with even more precise location data by capturing the current GPS location, including longitude, latitude and altitude. This feature provides valuable context for fieldwork and ensures accurate data collection. Please ensure that the device's location access is enabled for this function to work correctly. If altitude data is unavailable, only longitude and latitude will be captured.

It's worth noting that administrators preparing the mobile configuration have access to other auto-fill types, such as static value, current date and time, GPS location with latitude and longitude only, username and unique identifier. These options remain consistent with previous versions.

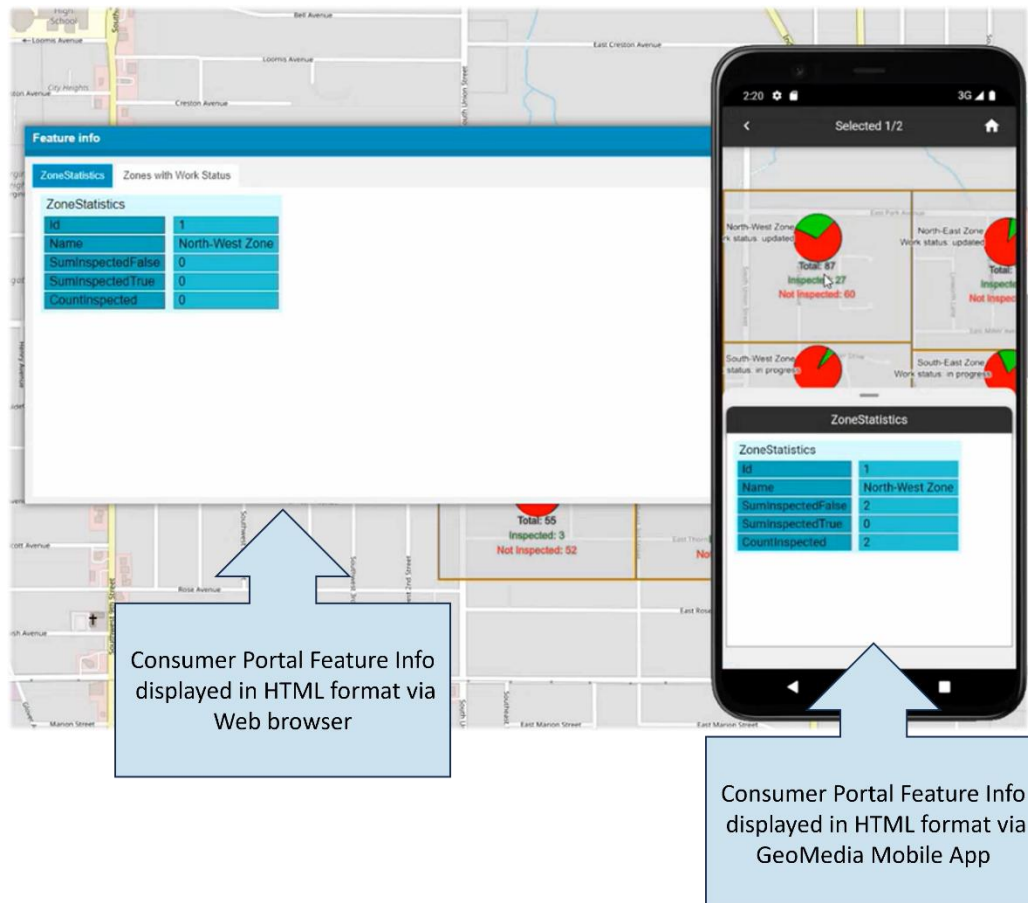
Upgrade to the latest GeoMedia WebMap Mobile app to leverage this new feature and enhance your field data collection workflows.





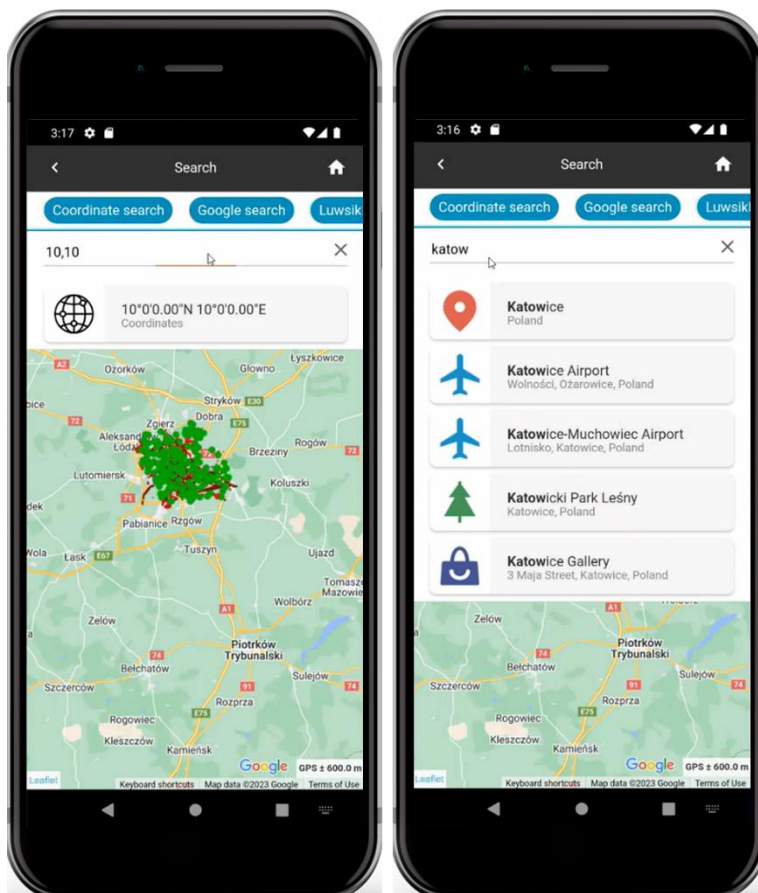
## Support for Consumer HTML Feature Info format in the WebMap Mobile app

Due to the new improvement – support for the HTML Feature Info format in the WebMap Mobile app – users can view WMS Feature Info in HTML format in the consumer portal configuration being displayed in the WebMap mobile app. Whether consumed in a web browser or a mobile app, the HTML Feature Info format is now available for Consumer configuration, providing a seamless experience across platforms.



## Support for Consumer Portal search templates in WebMap Mobile app

Previously, search results in the mobile app appeared in a simple text format. Now, the results display has been visually enhanced for better usability. They appear larger and are separated, making it easier for users to accurately select their desired result. New icons represent different types of search results, such as airports or shopping galleries, improving visual clarity. Additional details, such as country, city or street name, are displayed at the bottom of the main title, providing context. These updates are also aligned with LUWS and include dedicated icons for improved readability and separation. Furthermore, new icons for coordinate searches were introduced. This enhancement aims to provide users with a better Consumer Portal native experience in the mobile environment, enhancing usability and productivity.

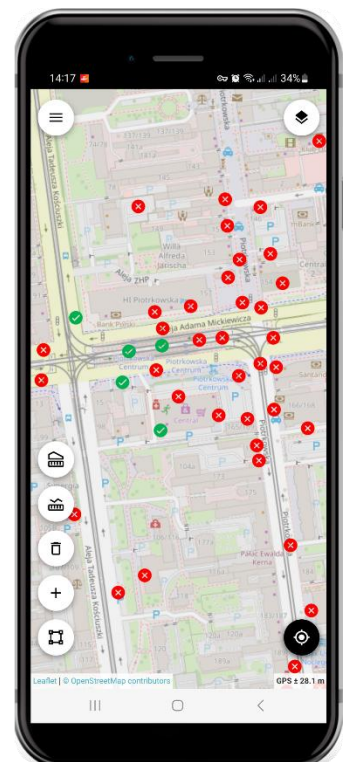
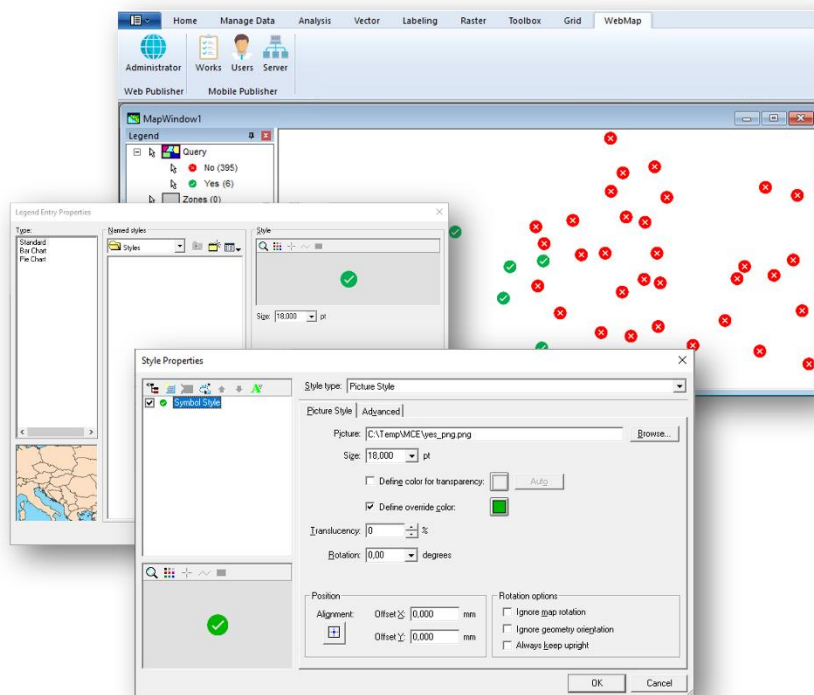


## Support for colored image-styled features in WebMap Mobile app

This extension broadens the capabilities for defining thematic legends in the WebMap Mobile app. While previous versions supported thematic legends with a default simple style, this update brings significant improvements.

With this update you can define a specific picture for each thematic layer's legend entry, and these customized legends can be successfully displayed in the WebMap Mobile app, providing a richer and more visually appealing thematic experience.

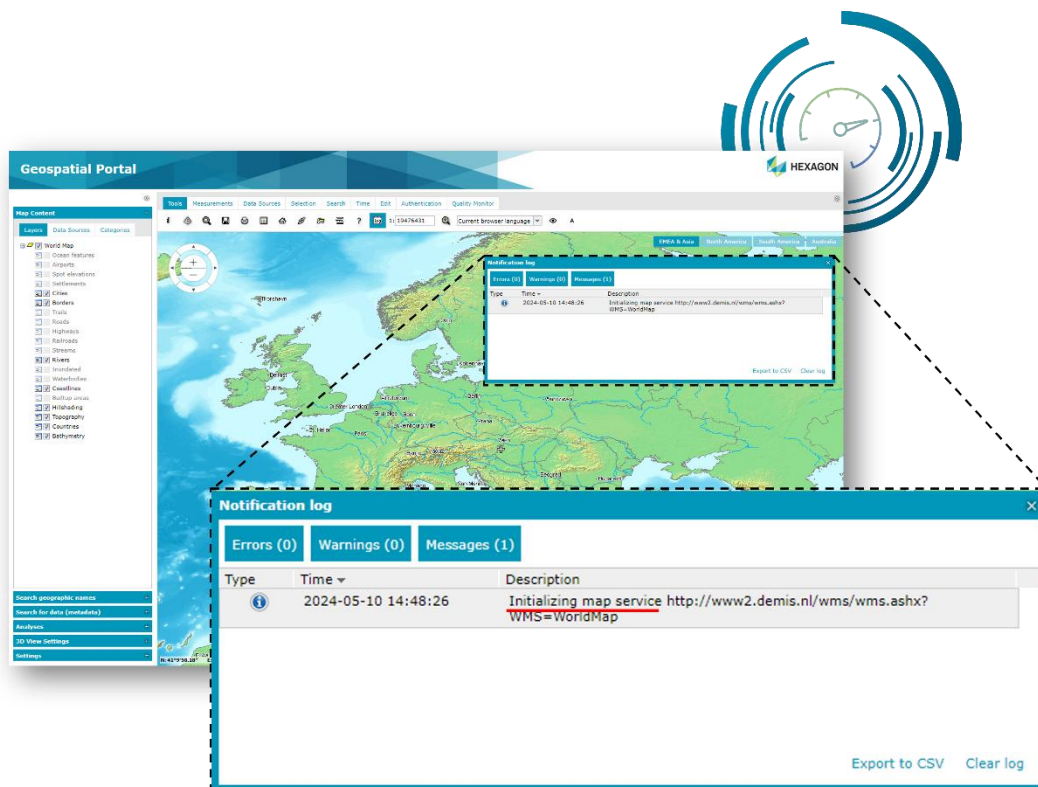
Moreover, as a WebMap Mobile Publisher user, you can prepare thematic images with specific colors and publish them for the WebMap Mobile app. This allows for consistent and visually coherent thematic representations across the WebMap Mobile app.



## Geospatial Portal and Consumer Portal

### Speed up the first display of WMS in the Geospatial Portal

The Consumer Portal has been enhanced to optimize the initialization process for WMS services with complex capabilities documents. Previously, users had to wait until the WMS service was fully initialized to view map data and access certain functionalities like feature info. With this improvement, users can now view map data and zoom in even while the service is still initializing, making the quick start of the portal more efficient. This enhancement is particularly beneficial for WMS services with lengthy capabilities documents, reducing wait times and improving the overall user experience.

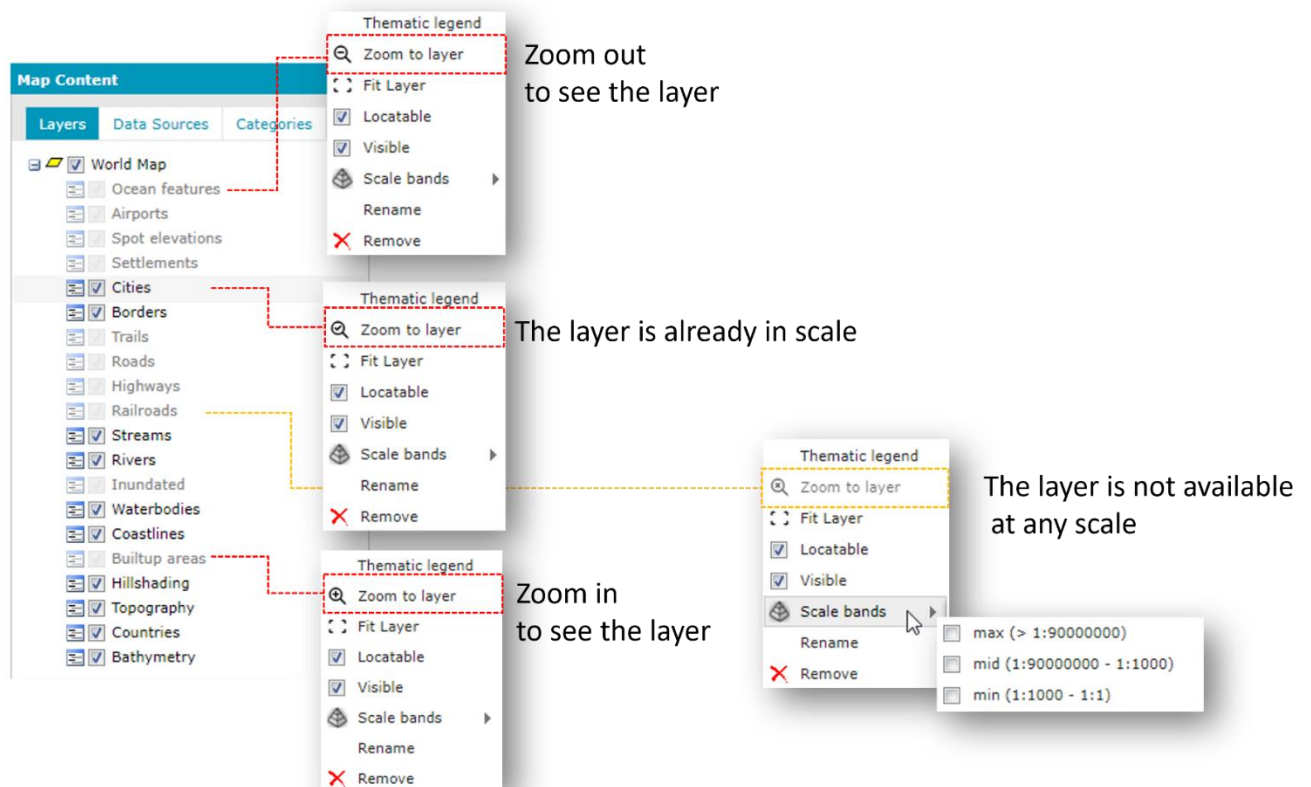


## Geospatial Portal Zoom to layer and Fit layer

The recent improvements to the Geospatial Portal aim to enhance user experience by addressing visibility issues related to layer availability and scale. Previously, users had to manually adjust the zoom level to make layers visible, leading to inefficiencies in map navigation. However, the introduction of **Zoom to layer** button, lets users quickly navigate to layers that are currently out of scale.

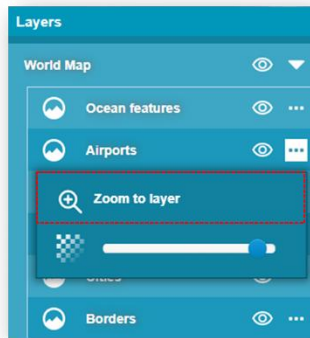
The **Zoom to layer** button features a magnifier icon, with a minus sign indicating zooming out and a plus sign indicating zooming in. A check mark appears when the layer is within scale. When users try to Zoom to layer for a layer that is currently in scale, an appropriate pop-up notification will be shown. This functionality considers both service scale limitations and defined scale bands, ensuring that only relevant data is displayed on the map.

Furthermore, the Fit layer option, denoted by a new icon, allows users to quickly adjust the map view to fit the selected layer. This functionality works as before, but now indicates when a layer is already fitted on the map. A check mark has also been added to the icon. These enhancements aim to streamline map navigation and improve the overall user experience for our customers.

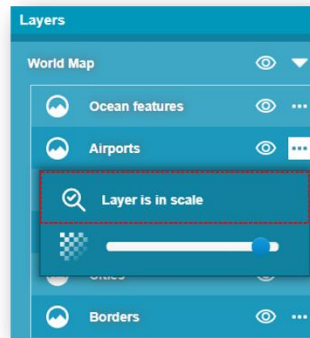


## Introduction of Zoom to Layer for Consumer Portal

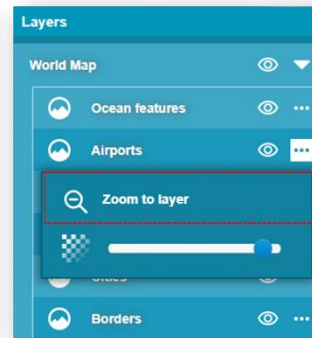
Enhancements to the Consumer Portal also include introducing a **Zoom to layer** button, facilitating quick navigation to layers outside the current scale. The button features a magnifier icon, with plus and minus symbols indicating zoom direction. Additionally, a check mark icon denotes when a layer is within scale. This feature is available for both window and panel layouts and aligns with the concept introduced in the Geospatial Portal, ensuring consistency across portal designs.



Zoom in to see the layer



The layer is in scale



Zoom out to see the layer

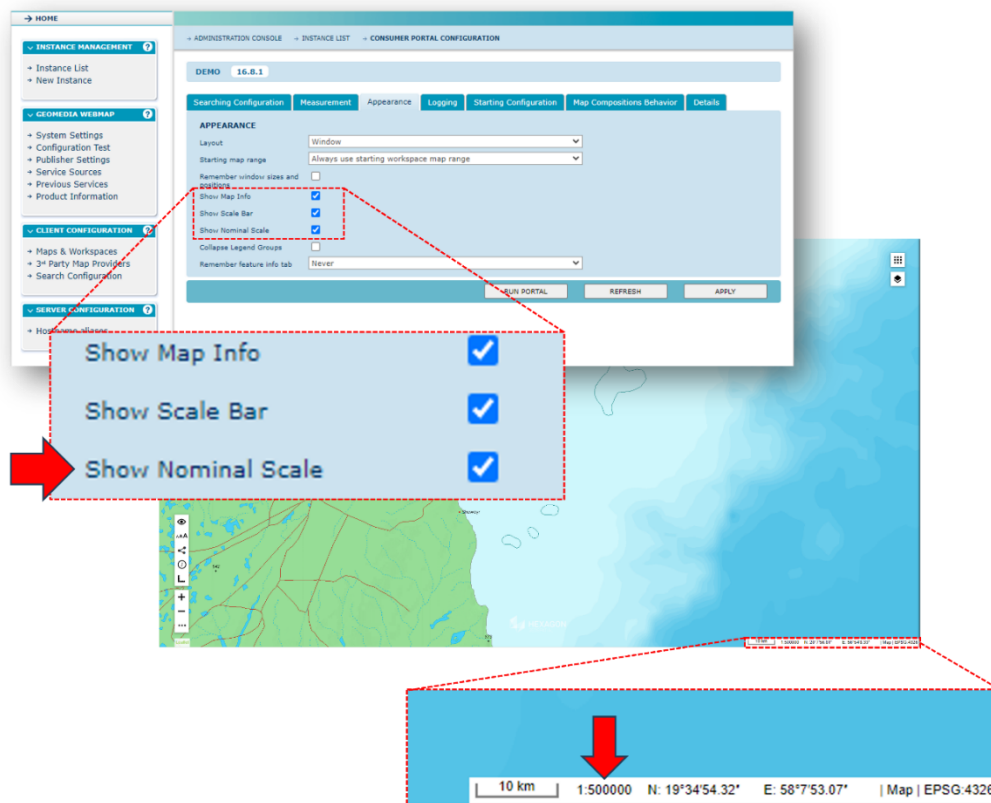


## Display Nominal Scale in Consumer Portal

The scale display feature in the Consumer Portal has been revamped to provide users with a more comprehensive and unified experience with a scale display. Previously, users only had access to a scale ruler in the bottom right corner. Now, this section includes the nominal scale alongside the scale ruler. Both scales' presentations are consolidated into a single component known as the scale.

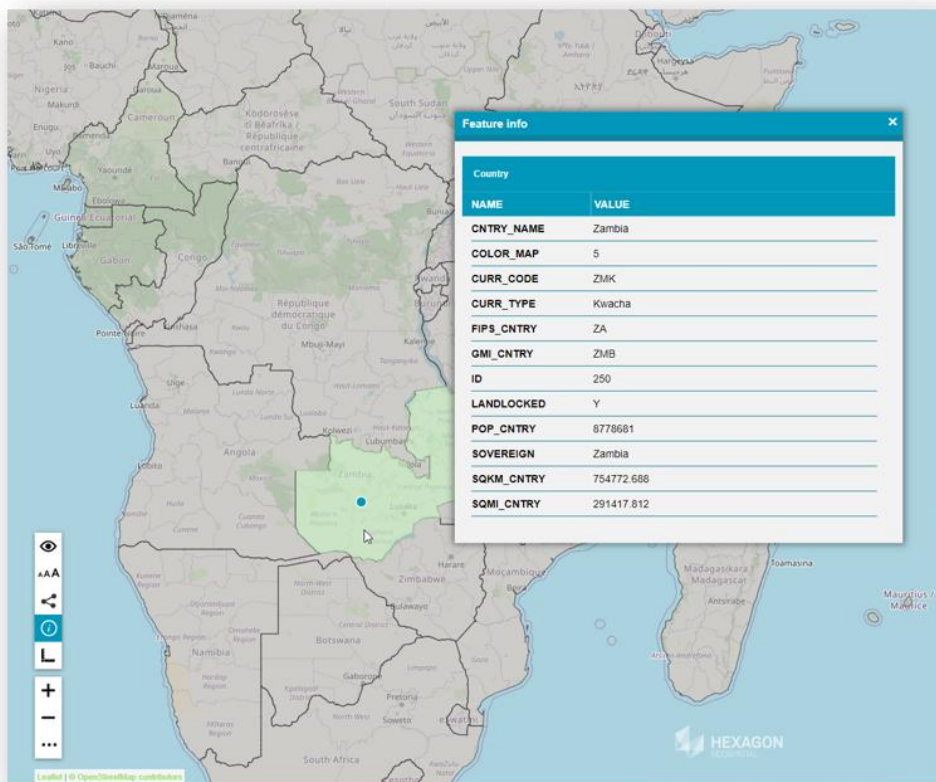
To give Consumer Portal users greater control over their view, there is a setting in the Consumer Portal settings menu titled "Show Scale." It allows users to toggle the scale component on or off.

These settings can be further customized in the Admin Console by administrators managing Consumer Portal instances. Within the appearance tab of the Consumer Portal instance settings, administrators will find check boxes for both "Show Scale Bar" and "Show Nominal Scale." By default, both check boxes are enabled, ensuring no disruption for existing users. However, administrators now have the flexibility to choose which scale-type presentations are visible to users. They can select all, none or a combination of scale presentations based on their preferences and requirements.



## Single-click Feature Info for vector layers in Consumer Portal

In the latest release, we've introduced a convenient enhancement to the Consumer Portal: Single-click Feature Info for vector layers. This feature streamlines the process of accessing Feature Info for vector objects served by the WFS service. Now, users can simply click on a feature to display its information without the need to activate the Feature Info mode separately. This improvement enhances the user experience by reducing unnecessary clicks and simplifying the workflow. Importantly, this feature is available out of the box, meaning administrators do not need to configure it separately.



## Support for custom WMS tile size in Consumer Portal

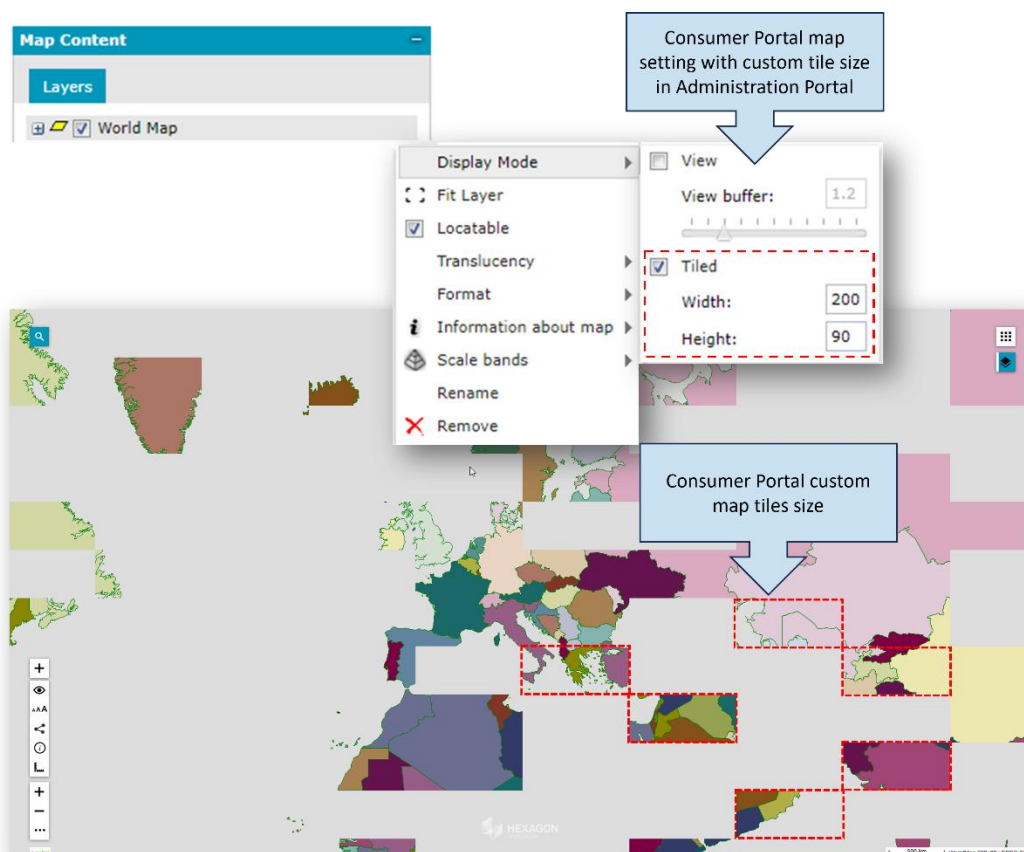
We're thrilled to introduce the capability to customize tile sizes for WMS displayed in the Consumer Portal. This enhancement enables users to consume WMS maps using tiles of dimensions different from the default settings.

Configuring custom WMS tile sizes is quick and easy, leveraging the familiar functionalities of the Administration Portal. Here's how to set custom WMS tile sizes for the Consumer Portal:

- Register and display the WMS in the Administration Portal
- Navigate to the Map Content menu in the Administration Portal and change the Display Mode to Tiled
- Specify your desired custom width and height (in pixels) for the WMS tiles
- Save the map configuration within the Consumer Portal starting workspace

Once configured, users can seamlessly consume the tiled WMS layers with the specified tile size directly in the Consumer Portal.

This feature provides greater flexibility and customization options for map display, empowering users to tailor their viewing experience according to their preferences.

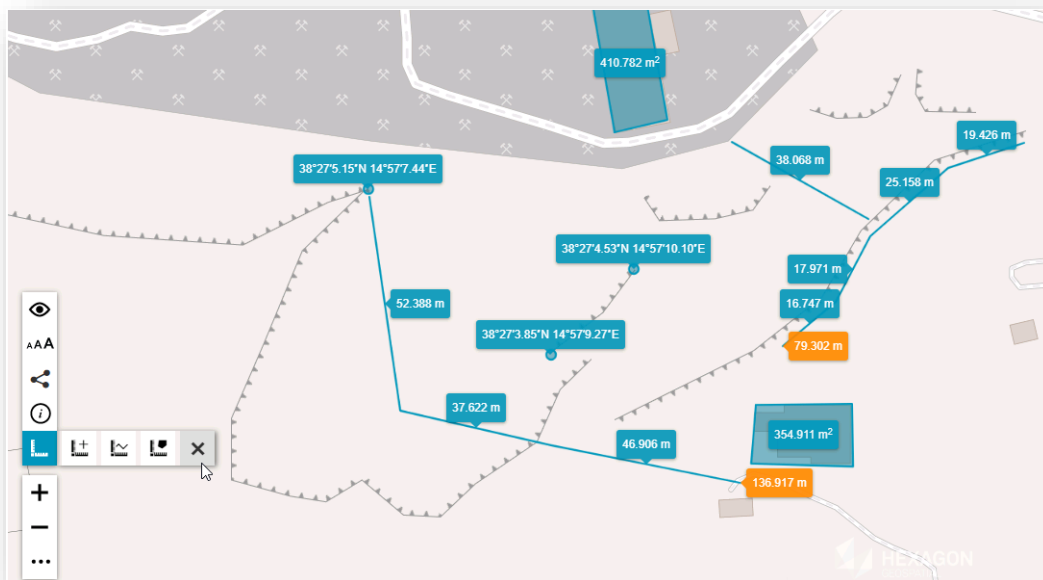


## Improved UI for Consumer Portal Measurements

The Consumer Portal now supports the concurrent display of multiple measurements, offering enhanced versatility in data analysis. Users can take measurements of various types, including point coordinates, lines and areas, with the flexibility to initiate new measurements at any time. Each measurement remains visible on the map, allowing for easy reference and comparison.

Furthermore, the Consumer Portal seamlessly integrates measurement functionality with other features, such as displaying Feature Info or accessing the Google Street View window. This enables users to leverage multiple tools simultaneously, enhancing the overall user experience and productivity.

Measurements remain visible on the map until they are removed by the user with the new Clear Measurements button.

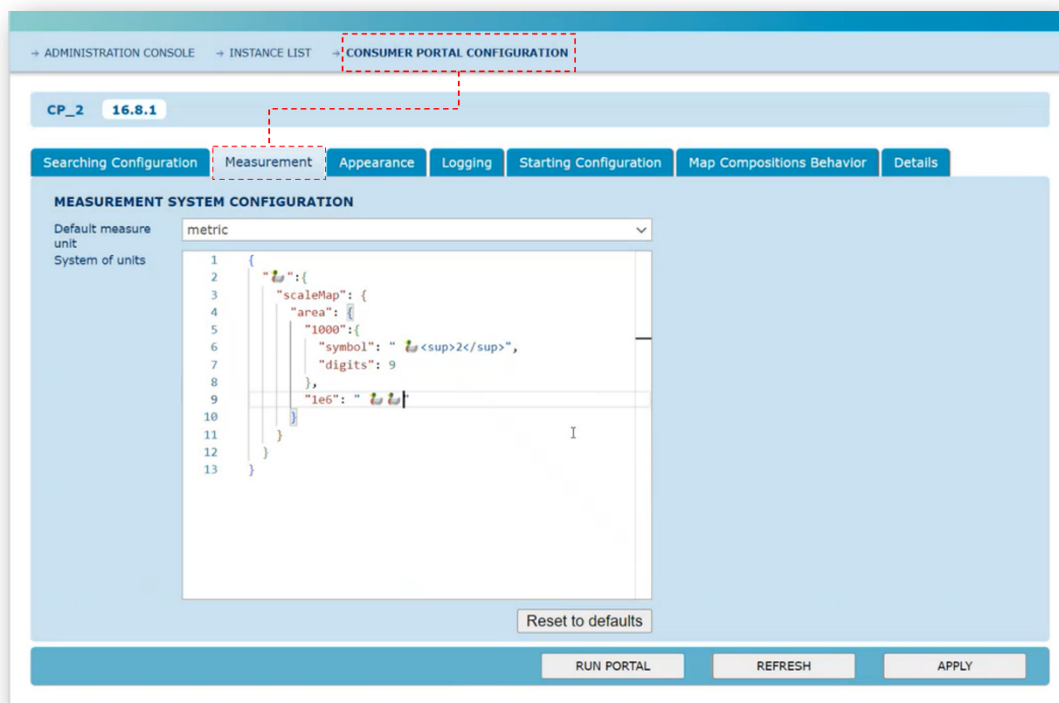


## Define Custom Units for Consumer Portal Measurements

Enhanced customization options for measurement units are now available in the Consumer Portal, beginning with version 16.8.1. While the default units remain metric or imperial, administrators now have the flexibility to incorporate any desired measurement unit.

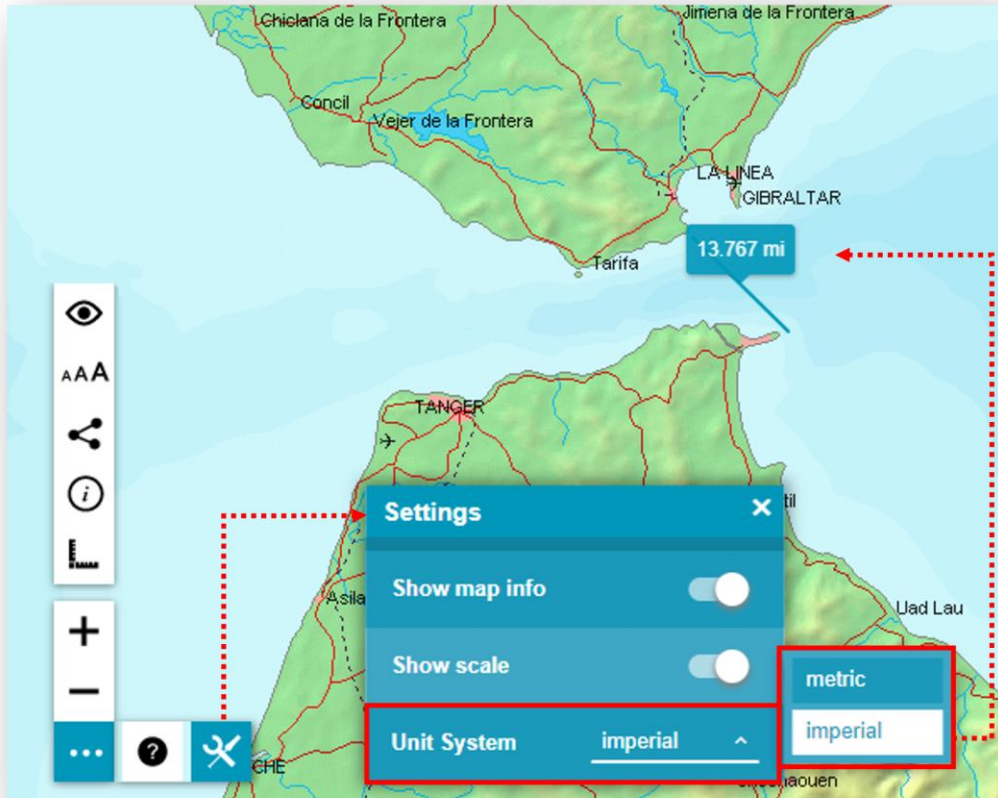
A tab called “Measurement” has been added to the Consumer Portal configuration section. This tab houses a robust editor where administrators can craft their own measurement system units using JSON-like format and syntax. Designed for ease of use, the editor offers helpful hints to guide users through the process of defining fully customized measurement system units.

Administrators can define custom units for a variety of measurements, encompassing areas, lines and points. Furthermore, they can customize symbols and meter factors to align with specific requirements. This feature enables users to tailor measurement units to meet their individualized needs and preferences.



## Easy change of measurements unit system in Consumer Portal

Consumer Portal UI now supports switching between metric, imperial and custom unit systems defined by administrators. Users have the flexibility to switch units for upcoming and existing measurements. Changing the unit in settings triggers a refresh of existing measurements to ensure accuracy and consistency.



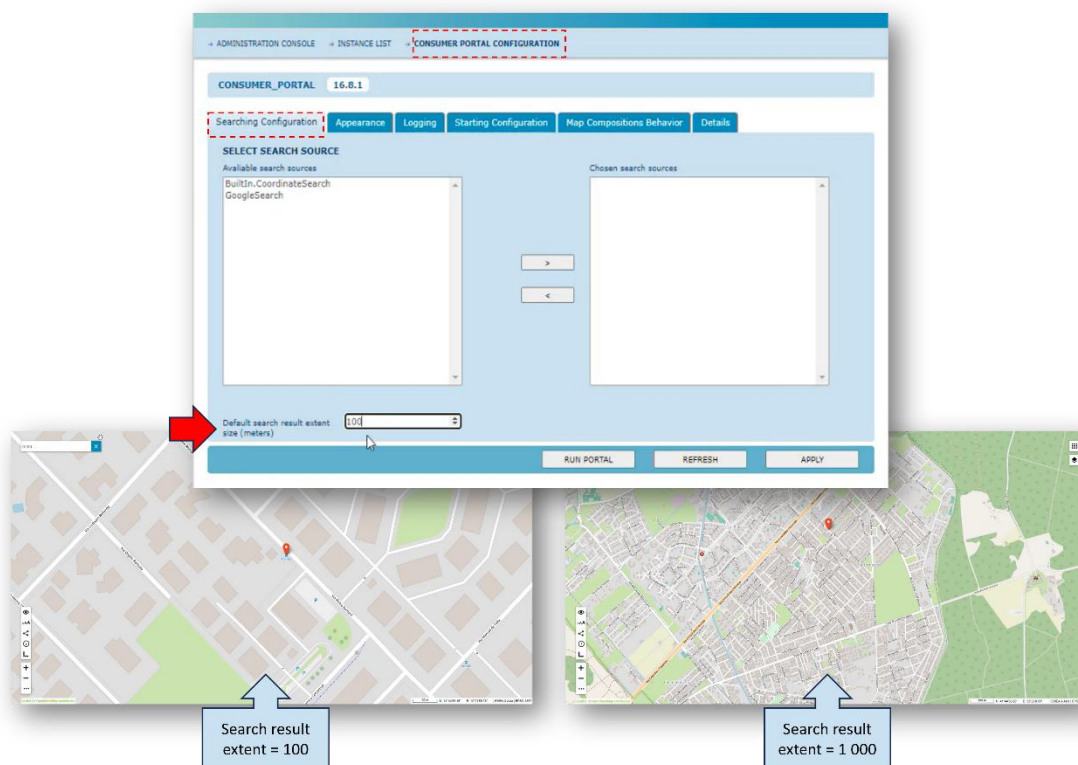


## Define the Default Search Extent Size for the Consumer Portal

Beginning with version 16.8.1, it is possible to specify the map extent at which pins showing search results will be displayed upon clicking on one of the results.

In the Searching Configuration section for Consumer Portal instances, a new input field has been introduced: "Default Search Results Extent Size (Meters)."

With the new input field, the administrator can now specify the length of the bounding box edge in meters. This setting applies to all searches defined for the instance, providing users with greater control over the extent size of search results. Previously, this value was fixed at zero. A zero value means that when performing a search and clicking on the search result, the bounding box for the search result was automatically set to the maximum scale available.

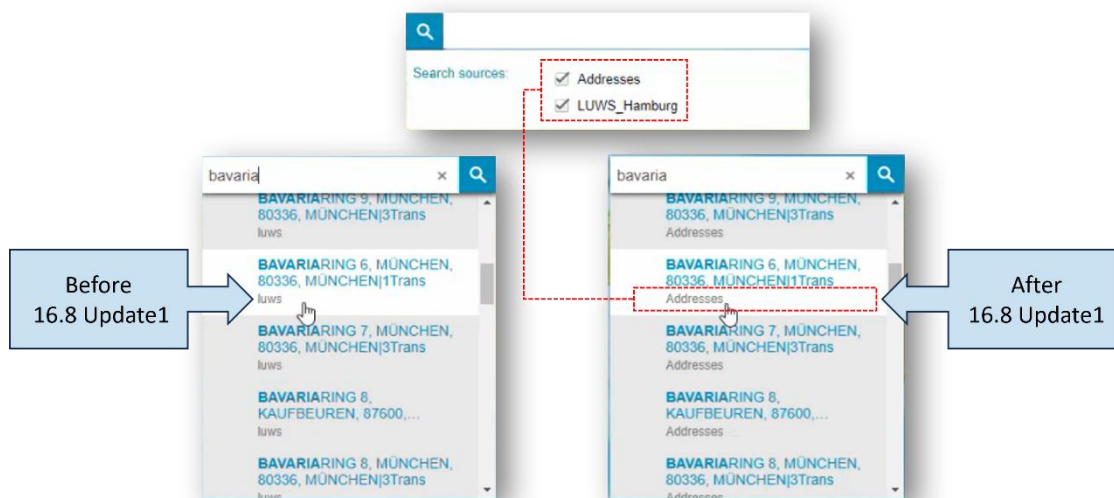


## Introduced ability to distinguish multiple LUWS searches in Consumer Portal

Introducing an enhancement to LUWS searches in Consumer Portal. This improvement provides users with enhanced visibility and customization options for search results. Previously, users encountered challenges in distinguishing search results from different LUWS searches. With the new approach, users can now easily identify which service search the results belong to, which streamlines the search experience, particularly for users with multiple location service searches configured.

Additionally, users now can rename search service names directly from the Admin Console Search Configuration section. This customization option empowers users to personalize their search experience according to their specific requirements. By choosing dataset names and applying changes, users can easily distinguish between different search services and datasets.

These enhancements aim to improve the user experience by providing clearer identification of search results and enabling users to customize search service names to suit their preferences, streamlining the search process and enhancing productivity for our users.

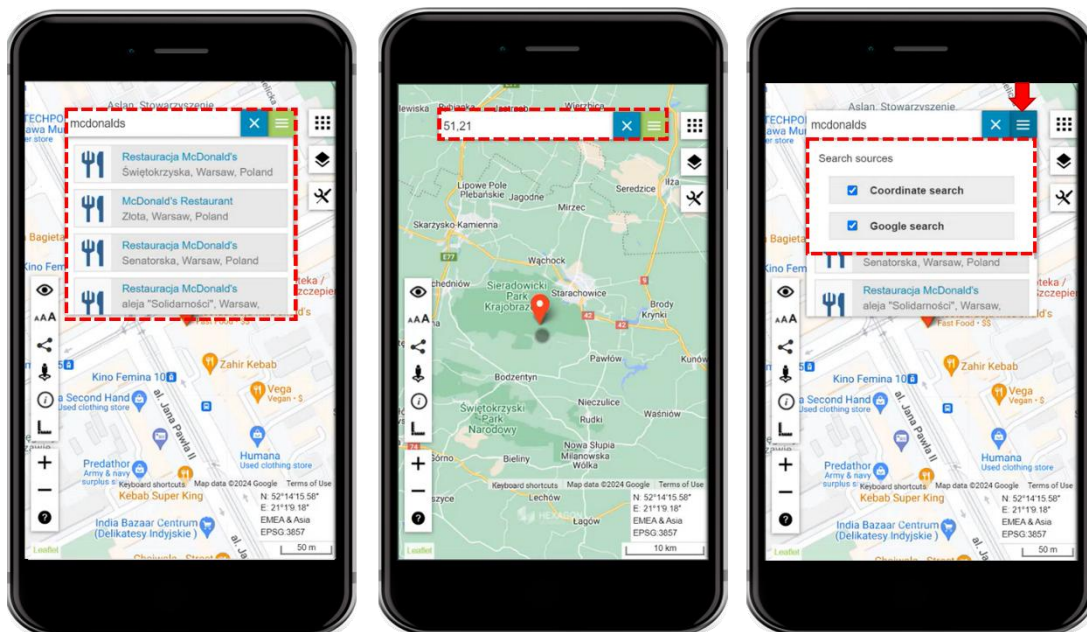


## Enhanced search in Consumer Portal for mobile devices

The Clear search button now automatically appears as you type, replacing the previous magnifier icon. Clicking the Clear button resets the search, switching back to the magnifier for subsequent searches.

On mobile, the search bar now opens centred, enhancing thumb accessibility. When selecting a search result, the results list is temporarily hidden, minimizing distractions. Tapping the search bar brings back the list, simplifying the search process.

These improvements are compatible with all search types handled by the consumer. Enjoy a smoother, more intuitive search experience with these updates. Your feedback is always welcome as we strive to enhance your experience further.



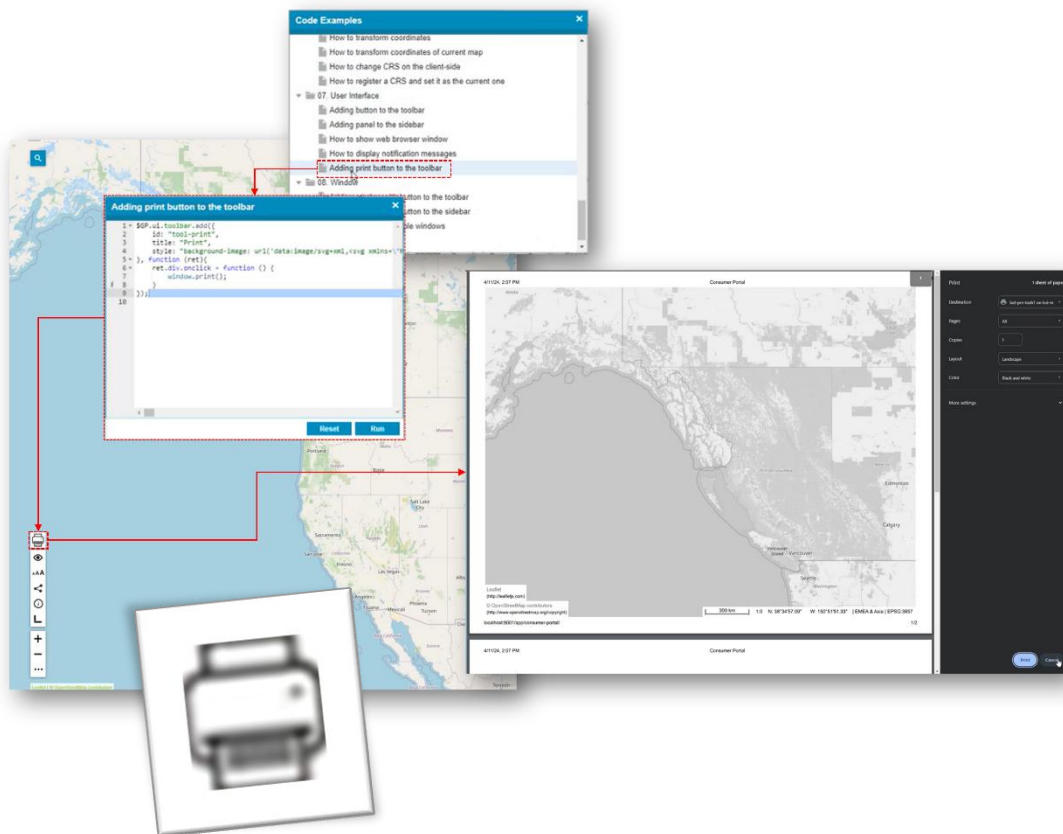
## Portal SDK: Print button in Consumer Portal

This new functionality enhances the user experience by providing easy access to print previews directly from the portal interface.

Developers utilizing the Consumer Portal SDK will find a new code example in the User Interface section, titled "Adding Print Button to the Toolbar." This script adds a printer icon button to the toolbar, located on the left side of the Consumer Portal interface.

Administrators can easily customize Consumer Portal by copying the provided script and adding it to the custom.js file for the desired Consumer Portal instance. Once added, users will see the new button with the printer icon in their portal toolbar.

With this new button, users can conveniently access the print preview feature maintained by their web browser, making printing from Consumer Portal a seamless experience. This update provides an intuitive solution for users to print content from Consumer Portal, enhancing its functionality and usability.



## Portal SDK: Consumer extension points and new examples

We've introduced some updates to improve the customization capabilities and user experience of Consumer Portal, providing developers with the tools and examples needed to create a more tailored and interactive environment.

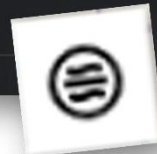
### Consumer extension point to open details window from code

Extension points in the \$GP/Consumer Portal SDK enable customizers to programmatically open the Search Details window when a search result is clicked, with the selected result displayed. Additionally, closing the Search Details window will trigger an event, allowing customizers to intercept it through \$GP.events. This enhancement facilitates more dynamic and interactive search experiences, allowing for greater customization and user engagement.

### New examples showcasing sidebar and toolbar customization in Consumer Portal

New code examples are now available, demonstrating how to style sidebar and toolbar buttons in Consumer Portal using custom images, like SVGs. These examples provide valuable guidance for customizers, helping them enhance the visual appeal and functionality of the sidebar and toolbar and enabling the use of custom icons and images for a more personalized user interface.

```
> const button = $GP.ui.toolbar.add({
  title: "added_button",
  id: "added_button"
}).div
< undefined
> button.style.backgroundImage = 'url(https://www.svgrepo.com/show/532030/circle-heat.svg)'
< 'url(https://www.svgrepo.com/show/532030/circle-heat.svg)'
> button.style.backgroundSize = "24px"
< '24px'
> button.style.backgroundPosition = "center"
< 'center'
> |
```



## Portal SDK: Updated Consumer search templates

In Consumer Portal 16.8.1, customization of search result presentations is even more flexible. Default templates for elements like result lists, tooltip frames and detailed views have been enhanced.

Specifically, the default.resultlist.tmpl file has been replaced with default.resultList.template.jsx. However, the other template files remain unchanged. Now, users have the option to create new templates for individual elements, all three or any combination of them, offering greater customization possibilities.





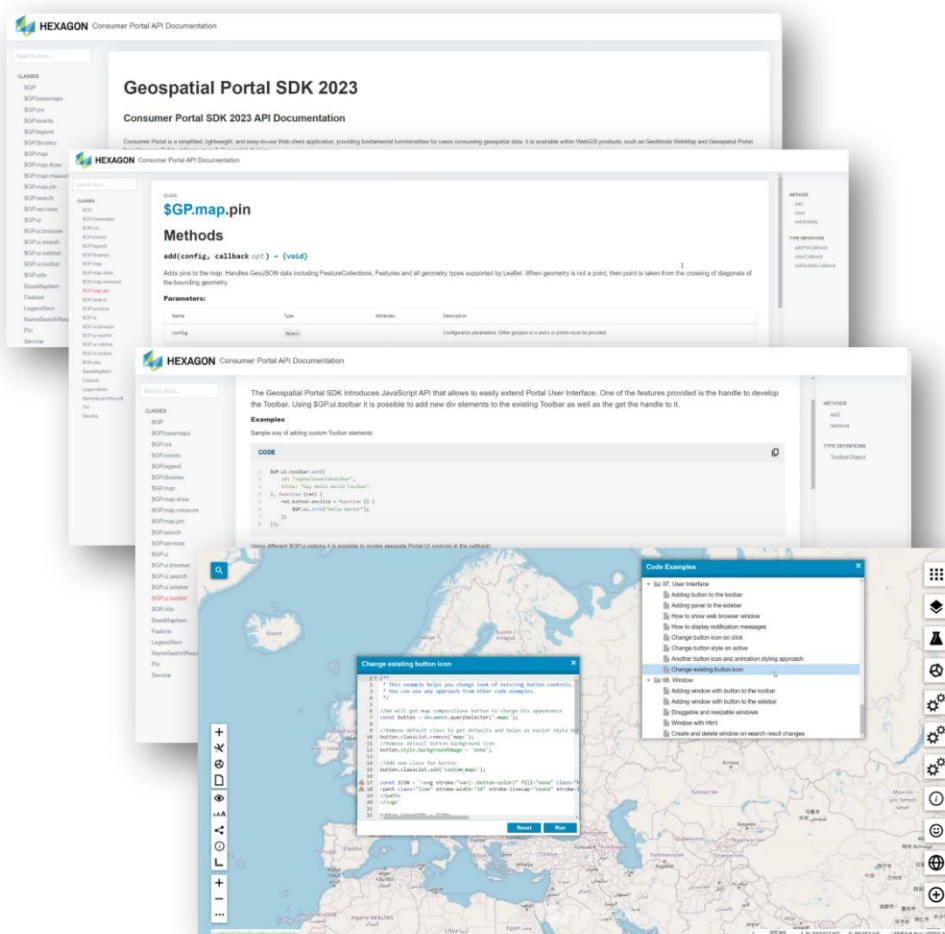


## Portal SDK: Consumer Portal API documentation and samples

Consumer Portal SDK documentation was redesigned to enhance readability and navigation based on current JavaScript documentation standards.

With a sleek new layout featuring company branding and intuitive navigation elements, including clickable class paths and a dynamic method section, users can easily explore the SDK's functionalities.

Notable features include a method section with detailed descriptions, optional parameter markers and a few new code examples for customizing sidebar and toolbar icons. These new examples demonstrate various approaches to icon customization, empowering users to personalize their Consumer Portal experience effortlessly.





## Portal SDK: Enhanced Geospatial Portal API and modernized Format Converter

Update 1 enhances the functionality and usability of the Geospatial Portal SDK, providing developers with improved tools for customizing and managing geospatial data.

### Expose Legend Item ID for Custom Code

The Geospatial Portal API has been extended to expose the LegendItem ID. Previously, the `/api/LegendItem` only allowed getting and setting the name and priority, which could lead to situations where LegendItems were not uniquely identifiable. With the `get_id()` method, programmers can now reliably identify LegendItems within the Portal SDK, ensuring more precise and efficient custom code implementation.

### Enhanced workspace update from API

The Geospatial Portal API extension was provided for `$GP.user.workspace` methods `add()` and `update()` to translate workspaces into Consumer format. By introducing the `isConsumerCompatible` parameter, programmers can decide whether the added or updated workspace shall be automatically available in Consumer Portal. One customizing Geospatial Portal has the `$GP.user.maps` method giving an additional `update()` contract.

### Modernized Format Converter

The Format Converter in the Portal SDK has been modernized to address several issues. The Format Converter API examples have been updated to use distinct data and symbology. This change ensures the results of the two Format Converter usage API examples are easily distinguishable, preventing confusion and duplication of features on the map when run sequentially. With this update it is now recommended to use client-side reprojection instead of server-side.

## New technology (16.8.2)

### GeoMedia WebMap

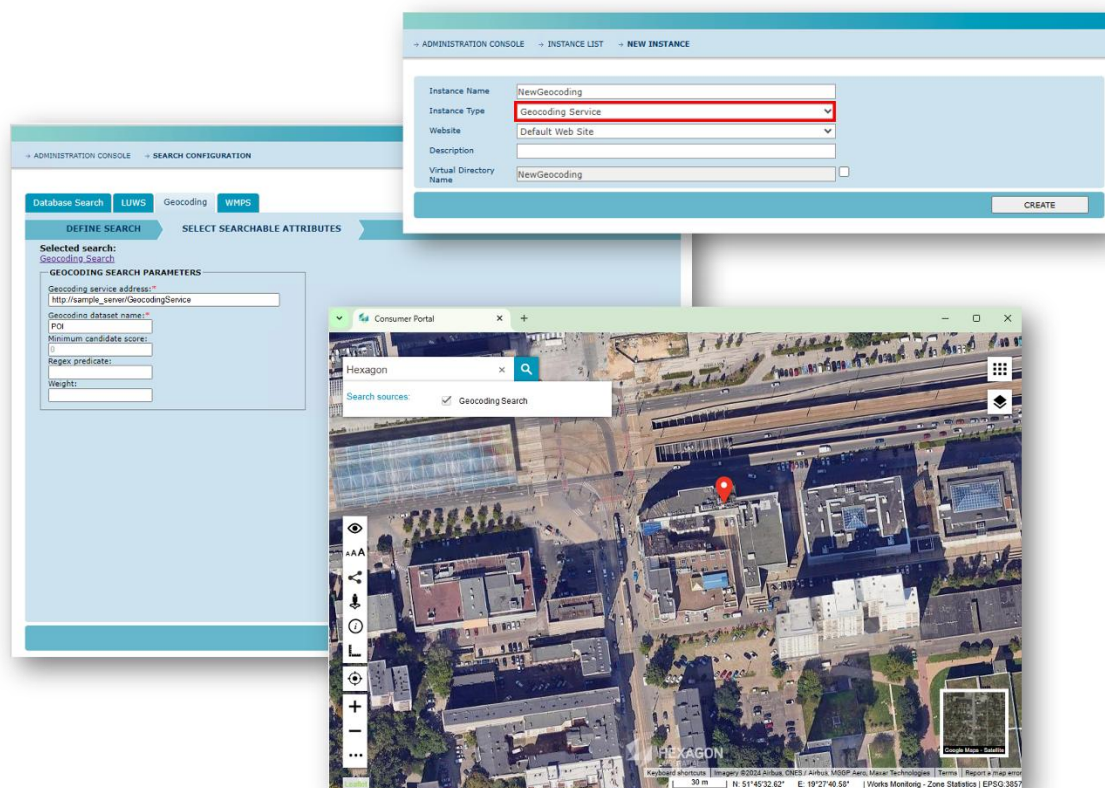
#### New 64-bit Geocoding Service

The Geocoding Service provides robust search capabilities, enabling users to search for Points of Interest (POI), addresses and geographic locations. Through reverse geocoding, it can return coordinates along with detailed address information, street junctions, parcel numbers and more. Searches can be performed not only for exact locations, but also within a specified buffer zone.

The service offers flexible, configurable parsing methods, allowing it to be tailored to specific languages, alphabets, cultural norms and geographic regions. It supports a wide variety of address formats in a single search service.

The Geocoding Service can be built on any supported data warehouse, including Oracle, SQL Server, Shapefiles, GeoPackage and other file-based storage formats. It also supports easy data transformations and integration with multiple external data providers, such as TomTom, HERE, Geofabrik and OpenStreetMap (OSM).

Additionally, the service is designed to handle human input errors — such as typographical mistakes — by using a relevancy evaluation mechanism that ranks and presents the most accurate results based on the user's query. The Geocoding Service instance can be created via the Admin Console GUI.



## Enhancements to ACCLI for improved node examination and creation

Updates to the Admin Console CLI empower WebGIS Server Administrators to manage nodes and services more efficiently through PowerShell cmdlets.

With the enhancement to ACCLI, work with this feature is simpler, for example, by passing a hashtable when creating a new node:

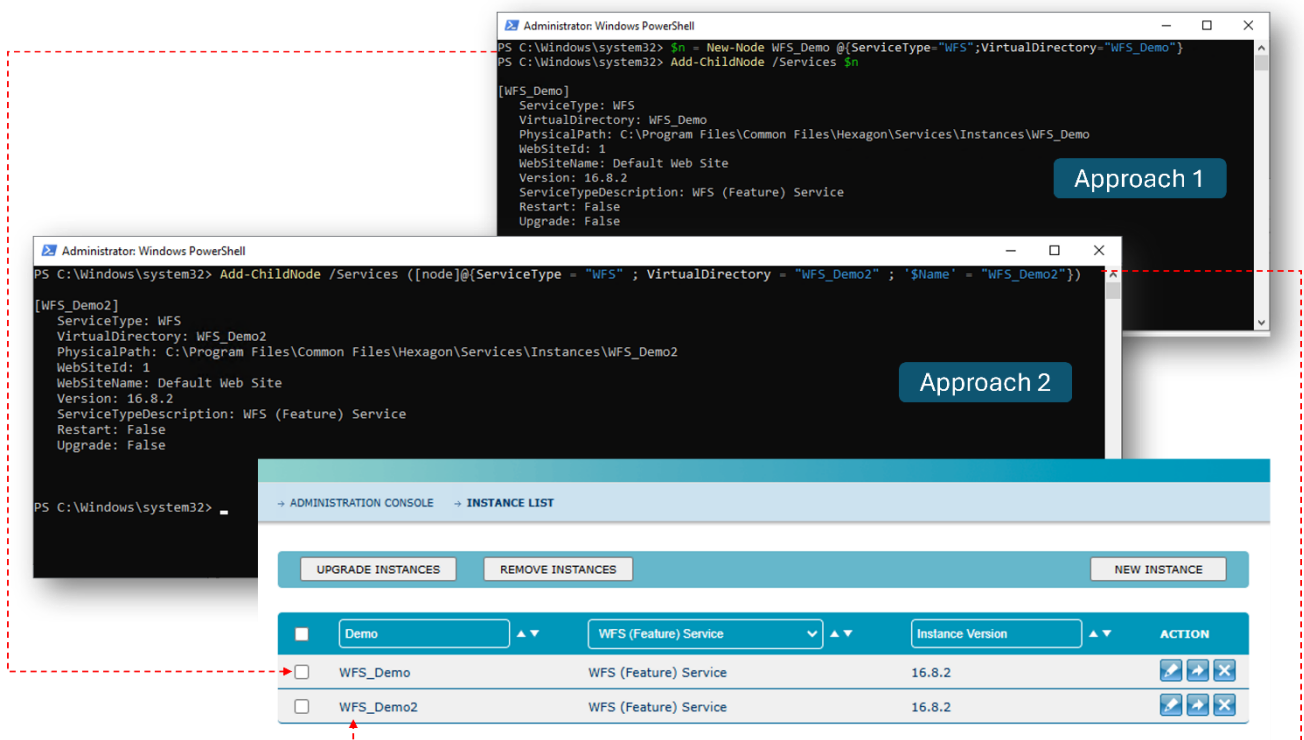
```
New-Node WFS_Demo @{ServiceType="WFS"; VirtualDirectory="WFS_Demo"}
```

Administrators can easily iterate over retrieved node children and properties, streamlining the management process.

Alternatively, it is possible to cast a hashtable into a node type if a type accelerator is registered, allowing even more flexibility in managing node configurations:

```
Add-ChildNode /Services ([node]@{ServiceType="WFS"; VirtualDirectory="WFS_Demo2";  
'$Name' = "WFS_Demo2"})
```

This enhancement significantly reduces the complexity of creating and managing nodes and services.



The image illustrates two PowerShell approaches for creating nodes and the resulting state in the Admin Console.

**Approach 1:** A PowerShell window showing the execution of `New-Node WFS_Demo` and `Add-ChildNode /Services`. The output for `[WFS_Demo]` is:

```
ServiceType: WFS
VirtualDirectory: WFS_Demo
PhysicalPath: C:\Program Files\Common Files\Hexagon\Services\Instances\WFS_Demo
WebSiteId: 1
WebSiteName: Default Web Site
Version: 16.8.2
ServiceTypeDescription: WFS (Feature) Service
Restart: False
Upgrade: False
```

**Approach 2:** A PowerShell window showing the execution of `Add-ChildNode /Services` with a hashtable. The output for `[WFS_Demo2]` is:

```
ServiceType: WFS
VirtualDirectory: WFS_Demo2
PhysicalPath: C:\Program Files\Common Files\Hexagon\Services\Instances\WFS_Demo2
WebSiteId: 1
WebSiteName: Default Web Site
Version: 16.8.2
ServiceTypeDescription: WFS (Feature) Service
Restart: False
Upgrade: False
```

**Admin Console Instance List:** The screenshot shows the 'ADMINISTRATION CONSOLE' with the 'INSTANCE LIST' tab selected. It displays a table of instances:

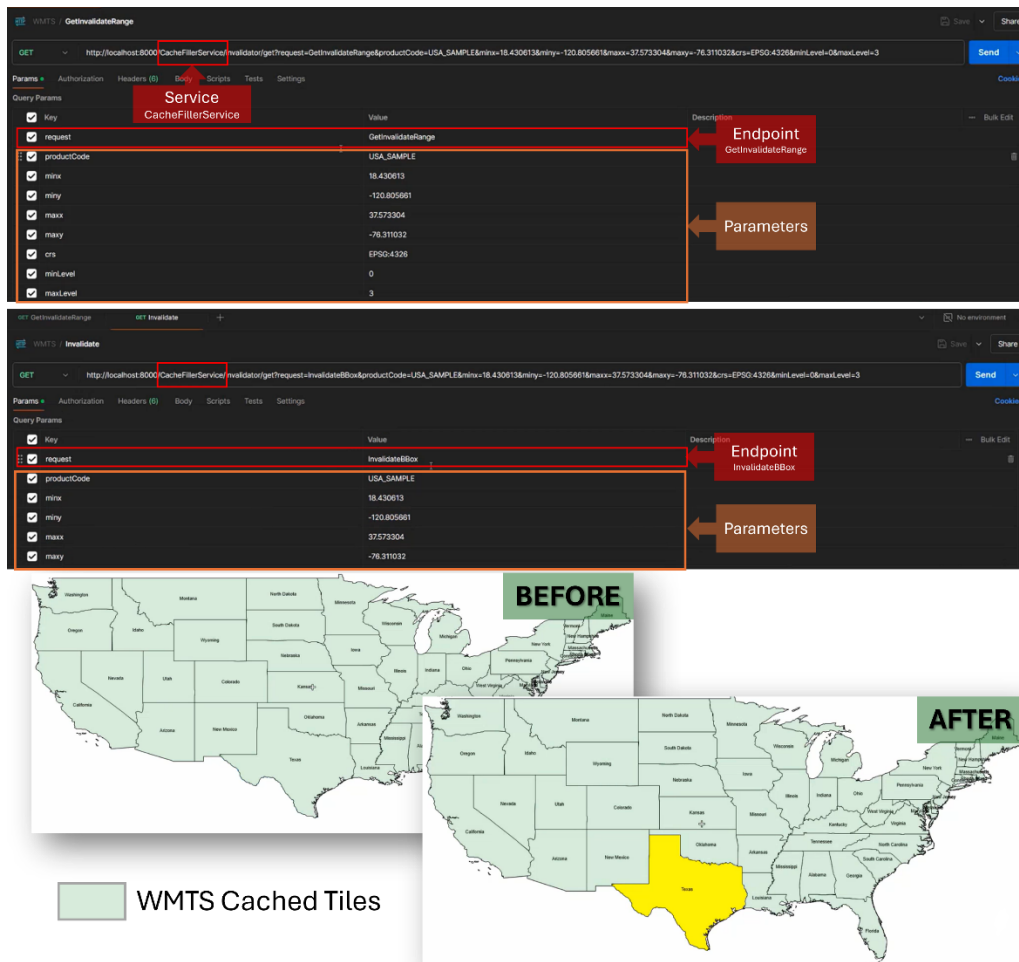
	Demo	WFS (Feature) Service	Instance Version	ACTION
<input type="checkbox"/>	WFS_Demo	WFS (Feature) Service	16.8.2	
<input type="checkbox"/>	WFS_Demo2	WFS (Feature) Service	16.8.2	

## Enhancements to SDI Cache Filler for invalidating cached tile images

The Geospatial Server Cache Filler service provides an efficient way to manage the invalidation of cached WMTS tile images in the GeoMedia WebMap environment. This ensures the maps are always up to date with the latest data. The service includes two new HTTP endpoints:

- **GetInvalidateRange:** Retrieve cached tiles within a specified range, allowing administrator to identify which zoom levels have cached data
- **Invalidate:** Delete cached tiles within a defined bounding box and zoom levels, helping administrator clear outdated or incorrect tiles as needed

These endpoints give administrators control over cached tile management, ensuring that only the necessary data is invalidated, improving both map performance and data accuracy. This feature is particularly beneficial when one needs to refresh specific map areas without clearing the entire cache, and it works seamlessly with the existing WMTS configuration.



The image displays two screenshots of a REST client interface for the WMTS service, followed by two maps illustrating the state of cached tiles.

**WMTS / GetInvalidateRange**

Endpoint: `http://localhost:8000/CacheFillerService/invalidator/getRequest=GetInvalidateRange&productCode=USA_SAMPLE&minx=18.430613&miny=-120.805661&maxx=37.573304&maxy=-76.311032&crs=EPSG:4326&minLevel=0&maxLevel=3`

Parameters:

Key	Value
request	GetInvalidateRange
productCode	USA_SAMPLE
minx	18.430613
miny	-120.805661
maxx	37.573304
maxy	-76.311032
crs	EPSG:4326
minLevel	0
maxLevel	3

**WMTS / Invalidate**


Endpoint: `http://localhost:8000/CacheFillerService/invalidator/getRequest=Invalidate&productCode=USA_SAMPLE&minx=18.430613&miny=-120.805661&maxx=37.573304&maxy=-76.311032&crs=EPSG:4326&minLevel=0&maxLevel=3`

Parameters:

Key	Value
request	InvalidateBBox
productCode	USA_SAMPLE
minx	18.430613
miny	-120.805661
maxx	37.573304
maxy	-76.311032

**BEFORE**

**AFTER**

Legend:  WMTS Cached Tiles

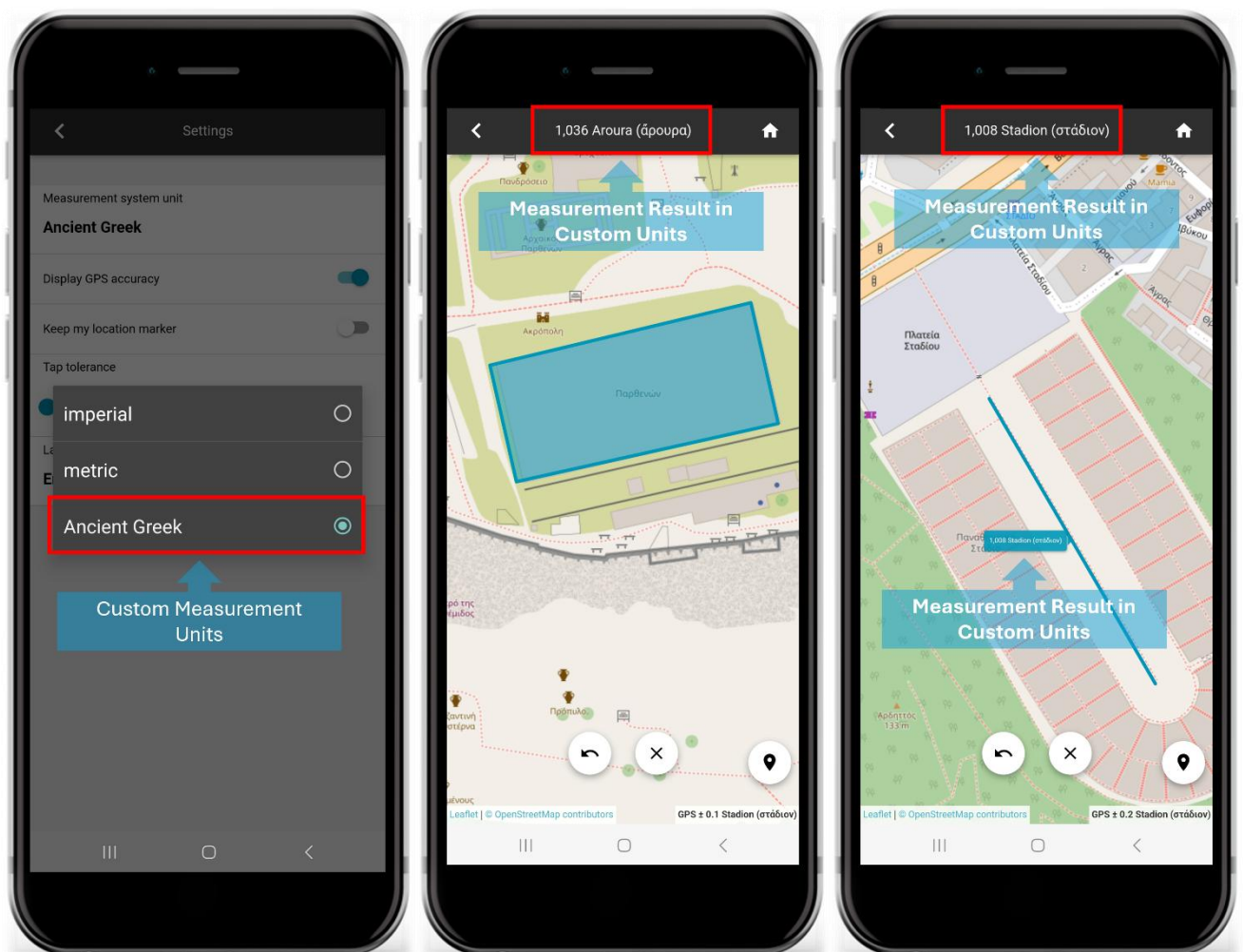


## GeoMedia WebMap Mobile and Mobile Publisher

### Custom unit system for Consumer Portal in GeoMedia WebMap Mobile

The default measurement system units in Consumer include both metric and imperial units, available out of the box. However, administrators can define custom measurement units to meet specific needs. These custom units may include symbols and meter factors tailored to users' requirements and can be applied across various measurements, including areas, lines and points.

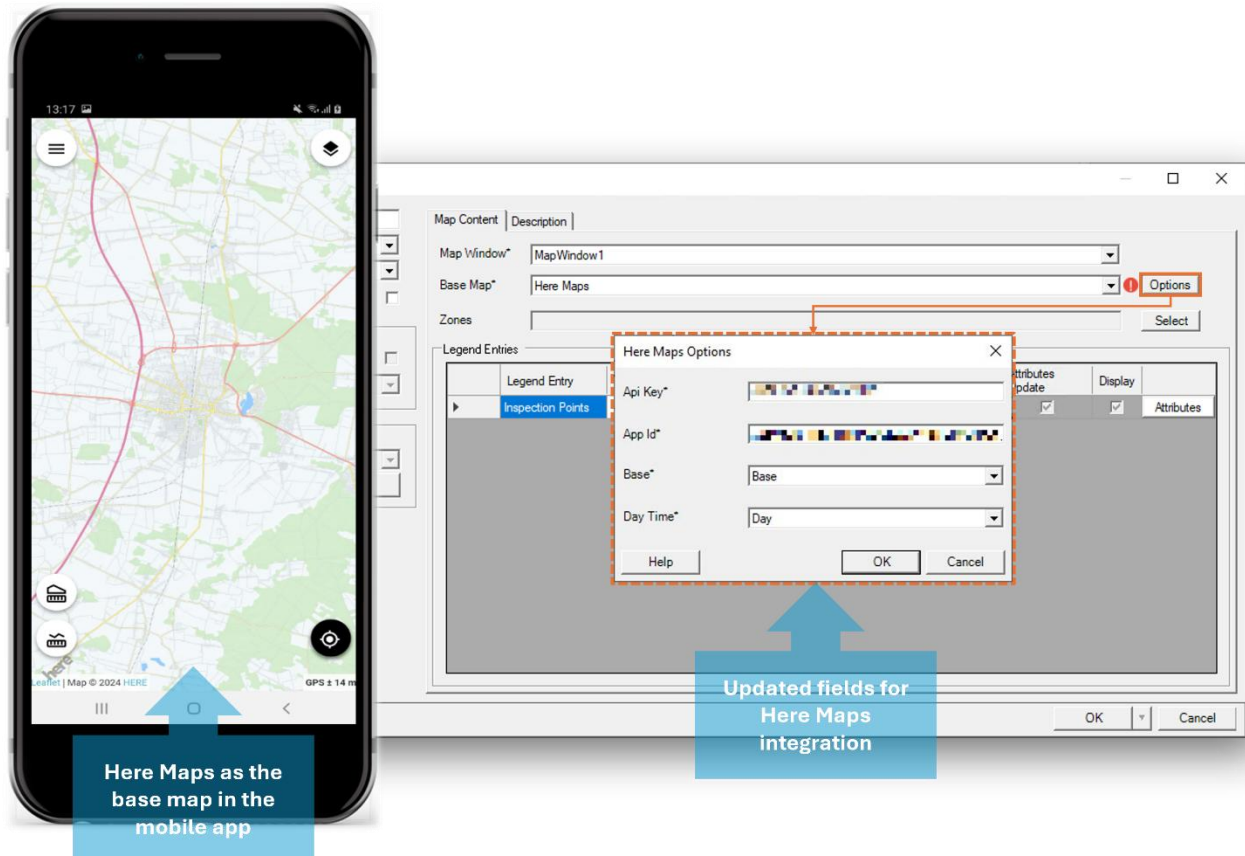
The Consumer Portal can be accessed both through a web browser and via the GeoMedia WebMap Mobile app. Until now, custom measurement units were only available for users accessing Consumer through a web browser. Starting from version 16.8.2, custom measurement units are now also supported when using the Consumer Portal via the GeoMedia WebMap Mobile app. This update ensures consistency in measurement features across all platforms, regardless of how the Consumer Portal instance is accessed.





## Use Here Maps integrated in Mobile Publisher

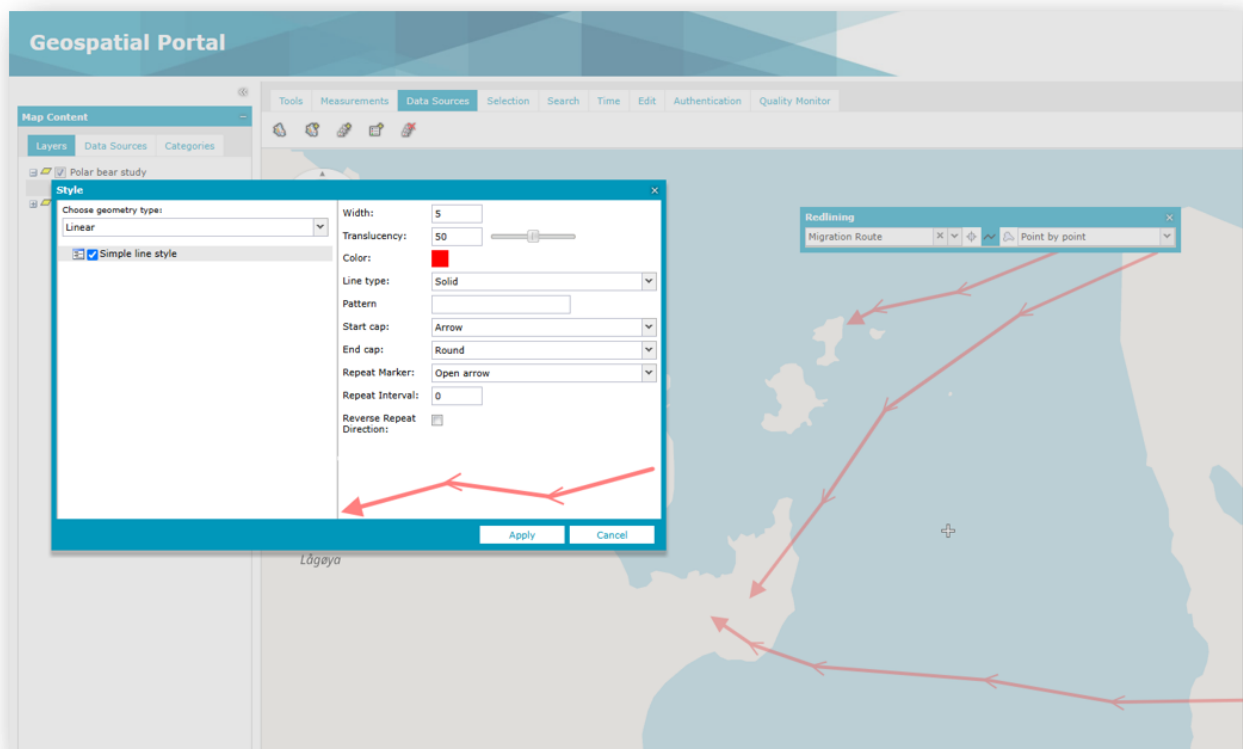
We've updated Mobile Publisher to support changes introduced by Here Maps regarding API credentials management. Here Maps has deprecated the App Code credential, and as a result, the App ID and App Key are now required for Here Maps integration. To accommodate this change, the credential fields in Mobile Publisher have been updated to support the new App ID and App Key combination.



## Geospatial Portal and Consumer Portal

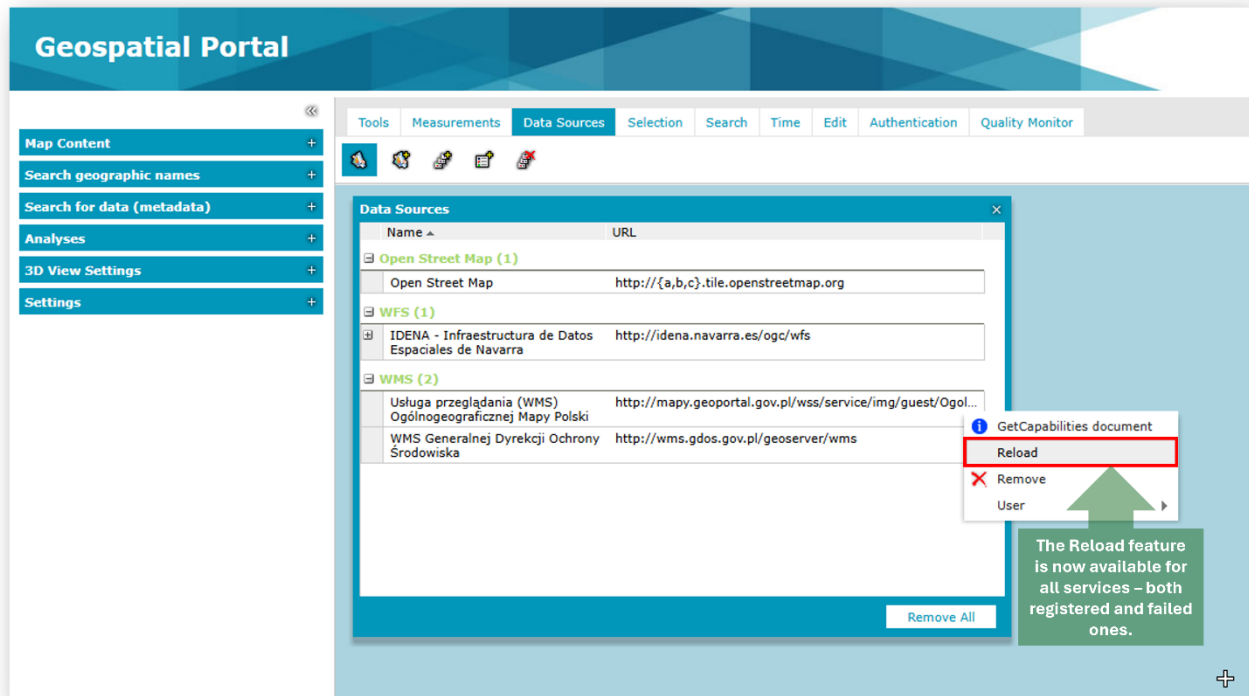
### Enhanced arrowheads for line style in Geospatial Portal

Update 2 to Geospatial Portal 2023 introduces an extension of the existing **Simple Line Style**, providing users with the ability to place symbols, such as closed and open arrows, along the line geometry. These new style properties allow separate control over the start cap and end cap, enabling different arrowhead styles at each end, and includes the ability to specify the spacing between the symbols, independent of other line properties. Additionally, users can set the direction of repeated markers, giving them greater flexibility in how symbols are oriented along the line.



## Reloading individual map services in Geospatial Portal

The **Data Sources** dialog now includes a new **Reload** option, available for all services. Previously limited to services that failed during initialization, this option can now be used for both initialized and noninitialized services. It allows users to refresh and reinitialize services, even when they are operating normally. This improvement gives users greater control over service management by enabling reinitialization directly from the context menu. A warning message informs users about the potential impact of reloading a service, helping prevent accidental removal of active items from the list.



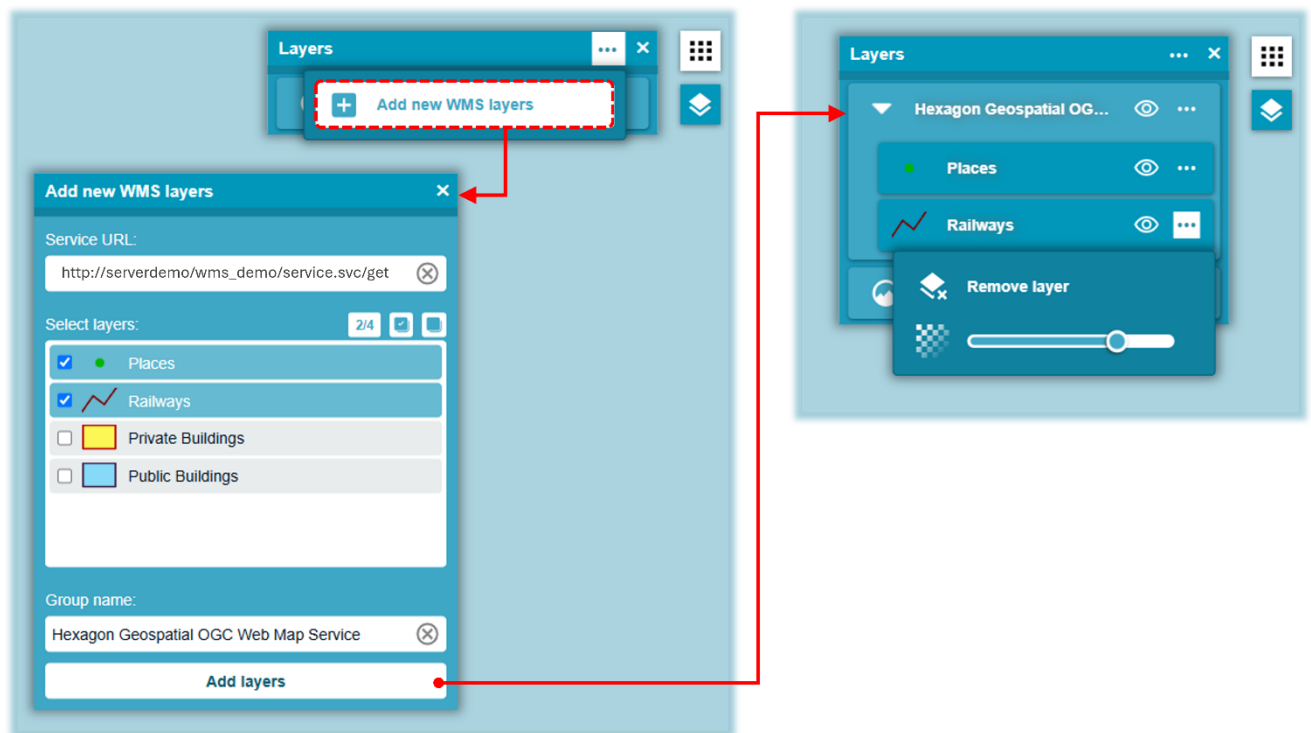
## Add/Remove WMS layer(s) at runtime in Consumer Portal

We are thrilled to announce a new feature in the Consumer Portal that enables users to add and remove WMS layers during their sessions.

In the **Layers** panel, a new option is available in the three-dots menu. By selecting **Add new WMS layer**, a window opens where the service URL for the desired WMS can be input. The portal conveniently remembers previously used URLs, allowing for easy selection from the history list without the need to re-enter them. After entering the service URL, layers can be chosen for addition. Layers can be added individually or in groups, and these groups will be reflected in the Consumer Portal's legend. Once selections are made, clicking the **Add layers** button incorporates them into the Consumer Portal for the current session. It is important to note that these layers will be removed if the session is refreshed (for instance, when the browser is reloaded). There is also an option to remove any added layers; however, default layers in the initial workspace legend cannot be removed by users.

For administrators, this feature can be enabled or disabled through the Administration Console. A new option, **Add/Remove layers**, allows control over this feature by adjusting the `addRemoveLayers` property in the `client_config.json` file.

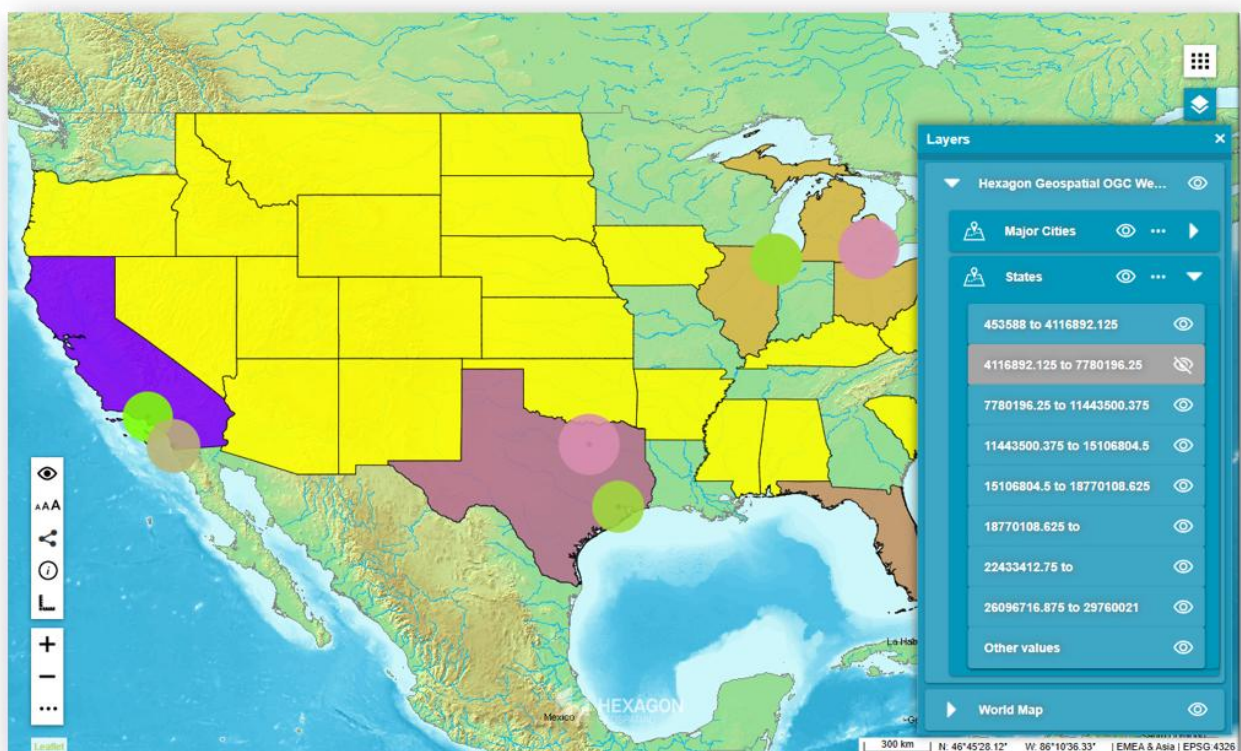
This feature currently supports standard WMS services, providing greater flexibility while allowing administrators to manage its availability effectively.



## Thematic legend handling in Consumer Portal

The Consumer Portal, since version 16.8.2, supports the display of thematic legends for WFS layers, enabling users to interact with thematic layers and manage sub-items with a simple click. Specifically, users can view thematic layers with sub-items, where each sub-layer can be individually enabled or disabled. Parameters such as opacity are handled at the parent thematic layer level.

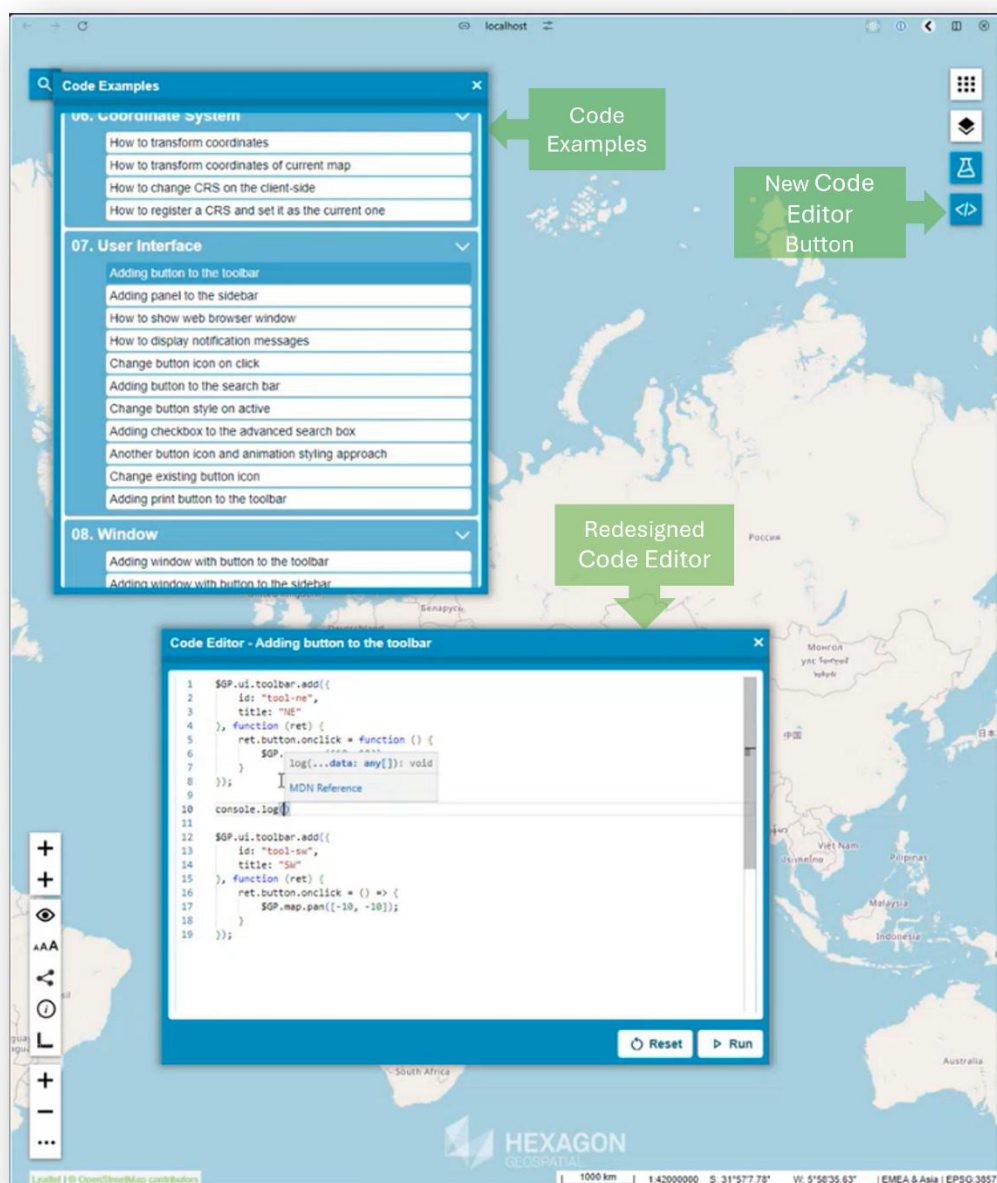
From an administrative perspective, preparing thematic map compositions is as simple as working with nonthematic maps. Thematic layers in WFS are prepared and defined within the Administration Portal. Once configured, the administrator sends the map workspace containing the thematic maps to the Consumer Portal instance, as with any other map. Users can then access and use the thematic maps within the Consumer Portal instance seamlessly.



## Portal SDK: Enhanced Code Editor for Consumer Portal

This update includes a redesigned Code Editor in Consumer Portal SDK to enhance the editing experience and make working with code examples easier. The editor now supports loading multiple code examples simultaneously, allowing customization, running and, testing them with ease. Also, a new button has been introduced that opens the Code Editor, ensuring changes are preserved even if a developer accidentally closes the editor by pressing ESC, for example. With the Code Editor dedicated button, one can simply reopen it and continue editing without losing work.

Along with the editor redesign, we've improved functionality by adding warnings for functions and syntax issues, as well as providing helpful suggestions, such as possible method calls. This includes direct links to relevant documentation, helping quickly resolve any potential issues. The Code Editor includes the option to restore code examples to their original forms, providing an easy way to revert.





## System requirements (16.8.0)

GeoMedia WebMap	
Operating systems	<ul style="list-style-type: none"> <li>Windows Server 2016 (64-bit)</li> <li>Windows Server 2019 (64-bit)</li> <li>Windows Server 2022 (64-bit)</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>All later service packs are considered viable unless otherwise noted. See the support site for specific notices.</li> <li>On the client side (Geospatial Portal and/or GeoMedia WebMap Publisher Portal), any operating system equipped with one of the supported browsers will work</li> </ul>
Operating systems for GeoMedia WebMap Mobile app	<ul style="list-style-type: none"> <li>iOS version 15.x or later</li> <li>Android version 7.0 or later</li> <li>Windows 10</li> </ul>
Server-side database engines	<ul style="list-style-type: none"> <li>Oracle Server 12c R2 (12.2.0.1)</li> <li>Oracle Server 18c (12.2.0.2)</li> <li>Oracle Server 19c (12.2.0.3)</li> <li>Oracle Client 12.2.0 (32-bit)</li> <li>Oracle Client 18.5.0 (32-bit)</li> <li>Oracle Client 19.12.0 (32-bit)</li> <li>Oracle Client 19.18.0 (32-bit)</li> <li>Oracle Client 19.19.0 (32-bit)</li> <li>SQL Server 2014</li> <li>SQL Server Express 2014</li> <li>SQL Server 2016</li> <li>SQL Server Express 2016</li> <li>SQL Server 2017</li> <li>SQL Server Express 2017</li> <li>SQL Server 2019</li> <li>SQL Server Express 2019</li> <li>SQL Server 2022</li> <li>SQL Server Express 2022</li> <li>SQL Server Native Client 10.0 or higher</li> <li>Azure SQL Database compatible with SQL Server 2014, 2016, 2017, 2019 or 2022</li> <li>PostgreSQL 11 with compatible version of PostGIS</li> <li>PostgreSQL 12 with compatible version of PostGIS</li> <li>PostgreSQL 13 with compatible version of PostGIS</li> <li>PostgreSQL 14 with compatible version of PostGIS</li> <li>PostgreSQL 15 with compatible version of PostGIS</li> </ul>

	<p>Notes:</p> <ul style="list-style-type: none"> <li>All later service packs are considered viable unless otherwise noted. See the support site for specific notices.</li> <li>Access (MDB) is considered viable</li> <li>GeoPackage is considered viable</li> <li>No database engine is required on the client side nor to run the Administration Console</li> <li>SQL Server Native Client 10.0 or higher is needed for the Database Utilities to automatically create the correct GeoMedia metadata for date, time and datetime data types when using a SQL Server or SQL Server Spatial warehouse. You may get SQL Server Native Client 10.0 or higher from the corresponding Microsoft websites. If the SQL Server Native Client is not installed on the system, you need to manually choose Date as the data type from the drop-down combo box for these data types in the Feature Class Properties dialog and set the format properly.</li> </ul>
<p>Client-side internet browsers</p> <p>(Client is Geospatial Portal and GeoMedia WebMap Publisher Portal)</p>	<ul style="list-style-type: none"> <li>Firefox 116 or higher</li> <li>Google Chrome 116 or higher</li> <li>Microsoft Edge 115 or higher</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>Versions stated above are the versions certifications were conducted on. The software should work on newer versions of these browsers, but they were not officially certified.</li> <li>The 3D features of Geospatial Portal Classic require native WebGL support. WebGL is available in Firefox, Chrome and Edge.</li> <li>Web browser issues found on the GeoMedia WebMap product that are no longer supported by the browser vendor can be addressed within a limited scope by Hexagon. Refer to vendor sites for information on their web browser support policies.</li> <li>The mobile versions listed as supported web browsers are compatible with GeoMedia WebMap. However, differences in system architecture and mobile device limitations may result in some of the functionality being unavailable when running on a mobile browser. Hexagon will attempt to address any mobile browser issues; however, a solution may ultimately depend on support from the browser provider.</li> <li>The Internet Explorer (IE) 11 desktop application ended support for Windows 10 semiannual channel on June 15, 2022. For more information visit <a href="https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11">https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11</a>.</li> </ul>
<p>Server-side internet browsers</p>	<ul style="list-style-type: none"> <li>Google Chrome</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>Google Chrome is required on the server side only to provide printing functionality unless Internet Explorer 11 or PhantomJS engine is used</li> <li>Internet Explorer 11 has retired and is officially out of support</li> <li>To run the Administration Console directly on the server host machine, any browser listed in client-side internet browsers can be used. Administration Console can be run remotely from the client side.</li> </ul>
<p>Client-side system dependencies and additional software</p>	<ul style="list-style-type: none"> <li>GeoMedia or GeoMedia Professional 16.8</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>GeoMedia or GeoMedia Professional is required for GeoMedia WebMap Publisher Administrator</li> </ul>

Server-side system dependencies and additional software	<ul style="list-style-type: none"><li>• .NET Framework 4.7.2</li><li>• Microsoft Identity Foundation</li><li>• Windows Installer 3.1 or higher</li><li>• Internet Information Services (IIS) 10.0</li></ul>
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Geospatial Portal	
Server-side operating systems	<ul style="list-style-type: none"> <li>Windows Server 2016 (64-bit)</li> <li>Windows Server 2019 (64-bit)</li> <li>Windows Server 2022 (64-bit)</li> </ul>
Database engines	<ul style="list-style-type: none"> <li>Oracle Server 12c R2 (12.2.0.1)</li> <li>Oracle Server 18c (12.2.0.2)</li> <li>Oracle Server 19c (12.2.0.3)</li> <li>Oracle Client 12.2.0 (32-bit)</li> <li>Oracle Client 18.5.0 (32-bit)</li> <li>Oracle Client 19.12.0 (32-bit)</li> <li>Oracle Client 19.18.0 (32-bit)</li> <li>Oracle Client 19.19.0 (32-bit)</li> </ul>
Client-side internet browsers	<ul style="list-style-type: none"> <li>Firefox 116 or higher</li> <li>Google Chrome 116 or higher</li> <li>Microsoft Edge 115 or higher</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>For browsers: Firefox, Google Chrome and Microsoft Edge versions stated are the versions that certification was conducted on. The software is expected to work on newer versions of these browsers, but they were not officially certified.</li> <li>The 3D features of Geospatial Portal require native WebGL support. WebGL is available in Edge, Firefox and Chrome.</li> <li>Web browser issues found on the Geospatial Portal Classic product that are no longer supported by the browser vendor can be addressed with a limited scope by Hexagon. Refer to vendor sites for information on their Web browsers support policies.</li> <li>The mobile versions listed as supported web browsers are compatible with GeoMedia WebMap. However, differences in system architecture and mobile device limitations may result in some of functionality being unavailable when running on a mobile browser. Hexagon will attempt to address any mobile browser issues; however, a solution may ultimately depend on support from the browser provider.</li> <li>The Internet Explorer (IE) 11 desktop application ended support for Windows 10 semiannual channel on June 15, 2022. For more information visit <a href="https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11">https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11</a>.</li> </ul>

Server-side internet browsers	<ul style="list-style-type: none"> <li>• Google Chrome</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• Google Chrome is required on the server side only to provide printing functionality unless Internet Explorer 11 or PhantomJS engine is used</li> <li>• Internet Explorer 11 has retired and is officially out of support</li> <li>• To run the Administration Console directly on the server host machine, any browser listed in client-side internet browsers can be used. Administration Console can be run remotely from the client side.</li> </ul>
Server-side system dependencies and additional software	<ul style="list-style-type: none"> <li>• .NET Framework 4.7.2 or higher</li> <li>• Windows Identity Foundation</li> <li>• Windows Installer 3.1 or higher</li> <li>• Internet Information Services (IIS) 10.0</li> </ul>

Geospatial SDI	
Operating systems	<ul style="list-style-type: none"> <li>• Windows Server 2016 (64-bit)</li> <li>• Windows Server 2019 (64-bit)</li> <li>• Windows Server 2022 (64-bit)</li> </ul>
Database engines	<ul style="list-style-type: none"> <li>• Oracle Server 12c R2 (12.2.0.1)</li> <li>• Oracle Server 18c (12.2.0.2)</li> <li>• Oracle Server 19c (12.2.0.3)</li> <li>• Oracle Client 12.2.0 (32-bit)</li> <li>• Oracle Client 18.5.0 (32-bit)</li> <li>• Oracle Client 19.12.0 (32-bit)</li> <li>• Oracle Client 19.18.0 (32-bit)</li> <li>• Oracle Client 19.19.0 (32-bit)</li> <li>• SQL Server 2014</li> <li>• SQL Server Express 2014</li> <li>• SQL Server 2016</li> <li>• SQL Server Express 2016</li> <li>• SQL Server 2017</li> <li>• SQL Server Express 2017</li> <li>• SQL Server 2019</li> <li>• SQL Server Express 2019</li> <li>• SQL Server 2022</li> <li>• SQL Server Express 2022</li> <li>• SQL Server Native Client 10.0 or higher</li> <li>• Azure SQL Database compatible with SQL Server 2014, 2016, 2017, 2019 or 2022</li> <li>• PostgreSQL 11 with compatible version of PostGIS</li> <li>• PostgreSQL 12 with compatible version of PostGIS</li> <li>• PostgreSQL 13 with compatible version of PostGIS</li> <li>• Access 2010 (MDAC2010 v14)</li> <li>• GeoPackage</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• For all later service packs, see the support site for specific notices</li> <li>• NHibernate, Log4Net and ADO.NET are used for accessing databases in SDI Pro Security and Logging mechanisms. The full list of supported database engines depends on these third-party frameworks. However, SDI services were used successfully with listed engines.</li> <li>• 64-bit Oracle Data Access Components (ODAC) is required for Catalogue (CSW) services running with Oracle Server 12 (64-bit)</li> <li>• SQL Server Native Client 10.0 or higher is needed for the Database Utilities to automatically create the correct GeoMedia metadata for date, time and datetime data types when using a SQL Server or SQL Server Spatial warehouse. You may get SQL Server Native Client 10.0 or higher from the corresponding Microsoft websites. If the SQL Server Native Client is not installed on the system, you need to manually choose Date as the data type from the drop-down combo box for these data types in the Feature Class Properties dialog and set the format properly.</li> </ul>



<p>Internet browsers</p> <p>(Required to run Administration Console)</p>	<ul style="list-style-type: none"> <li>• Firefox 116 or higher</li> <li>• Google Chrome 116 or higher</li> <li>• Microsoft Edge 115 or higher</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• For browsers: Firefox and Chrome versions stated are the versions that certification was conducted on. The software is expected to work on newer versions of these browsers, but they were not officially certified.</li> <li>• Web browser issues found on the Geospatial SDI product that are no longer supported by the browser vendor can be addressed with a limited scope by Hexagon. Refer to vendor sites for information on their browser support policies.</li> </ul>
<p>Server-side internet browsers</p>	<ul style="list-style-type: none"> <li>• Google Chrome</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>• Google Chrome is required on the server side only to provide printing functionality unless Internet Explorer 11 or PhantomJS engine is used</li> <li>• Internet Explorer 11 has retired and is officially out of support</li> <li>• To run the Administration Console directly on the server host machine, any browser listed in client-side internet browsers can be used. Administration Console can be run remotely from the client side</li> </ul>
<p>Server-side system dependencies and additional software</p>	<ul style="list-style-type: none"> <li>• .NET Framework 4.7.2</li> <li>• Windows Identity Foundation</li> <li>• Windows Installer 3.1 or higher</li> <li>• Internet Information Services (IIS) 10.0</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>• All later service packs for the system dependencies are considered supported unless otherwise noted. See the support site for specific notices.</li> </ul>

## System requirements (16.8.1)

GeoMedia WebMap	
Operating systems	<ul style="list-style-type: none"> <li>Windows Server 2016 (64-bit)</li> <li>Windows Server 2019 (64-bit)</li> <li>Windows Server 2022 (64-bit)</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>All later service packs are considered viable unless otherwise noted. See the support site for specific notices.</li> <li>On the client side (Geospatial Portal and/or GeoMedia WebMap Publisher Portal), any operating system equipped with one of the supported browsers will work</li> </ul>
Operating systems for GeoMedia WebMap Mobile app	<ul style="list-style-type: none"> <li>iOS version 15.x or later</li> <li>Android version 7.0 or later</li> <li>Windows 10</li> </ul>
Server-side database engines	<ul style="list-style-type: none"> <li>Oracle Server 12c R2 (12.2.0.1)</li> <li>Oracle Server 18c (12.2.0.2)</li> <li>Oracle Server 19c (12.2.0.3)</li> <li>Oracle Client 12.2.0 (32-bit)</li> <li>Oracle Client 18.5.0 (32-bit)</li> <li>Oracle Client 19.12.0 (32-bit)</li> <li>Oracle Client 19.18.0 (32-bit)</li> <li>Oracle Client 19.19.0 (32-bit)</li> <li>SQL Server 2014</li> <li>SQL Server Express 2014</li> <li>SQL Server 2016</li> <li>SQL Server Express 2016</li> <li>SQL Server 2017</li> <li>SQL Server Express 2017</li> <li>SQL Server 2019</li> <li>SQL Server Express 2019</li> <li>SQL Server 2022</li> <li>SQL Server Express 2022</li> <li>SQL Server Native Client 10.0 or higher</li> <li>Azure SQL Database compatible with SQL Server 2014, 2016, 2017, 2019 or 2022</li> <li>PostgreSQL 11 with compatible version of PostGIS</li> <li>PostgreSQL 12 with compatible version of PostGIS</li> <li>PostgreSQL 13 with compatible version of PostGIS</li> <li>PostgreSQL 14 with compatible version of PostGIS</li> <li>PostgreSQL 15 with compatible version of PostGIS</li> </ul>

	<p>Notes:</p> <ul style="list-style-type: none"> <li>All later service packs are considered viable unless otherwise noted. See the support site for specific notices.</li> <li>Access (MDB) is considered viable</li> <li>GeoPackage is considered viable</li> <li>No database engine is required on the client side or to run the Administration Console</li> <li>SQL Server Native Client 10.0 or higher is needed for the Database Utilities to automatically create the correct GeoMedia metadata for date, time and datetime data types when using a SQL Server or SQL Server Spatial warehouse. You may get SQL Server Native Client 10.0 or higher from the corresponding Microsoft websites. If the SQL Server Native Client is not installed on the system, you need to manually choose Date as the data type from the drop-down combo box for these data types in the Feature Class Properties dialog and set the format properly.</li> </ul>
<p>Client-side internet browsers</p> <p>(Client is Geospatial Portal and GeoMedia WebMap Publisher Portal)</p>	<ul style="list-style-type: none"> <li>Firefox 116 or higher</li> <li>Google Chrome 116 or higher</li> <li>Microsoft Edge 115 or higher</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>Versions stated above are the versions certifications were conducted on. The software should work on newer versions of these browsers, but they were not officially certified.</li> <li>The 3D features of Geospatial Portal Classic require native WebGL support. WebGL is available in Firefox, Chrome and Edge.</li> <li>Web browser issues found on the GeoMedia WebMap product that are no longer supported by the browser vendor can be addressed within a limited scope by Hexagon. Refer to vendor sites for information on their web browser support policies.</li> <li>The mobile versions listed as supported web browsers are compatible with GeoMedia WebMap. However, differences in system architecture and mobile device limitations may result in some of the functionality being unavailable when running on a mobile browser. Hexagon will attempt to address any mobile browser issues; however, a solution may ultimately depend on support from the browser provider.</li> <li>The Internet Explorer (IE) 11 desktop application ended support for Windows 10 semiannual channel on June 15, 2022. For more information visit <a href="https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11">https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11</a>.</li> </ul>
<p>Server-side internet browsers</p>	<ul style="list-style-type: none"> <li>Google Chrome</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>Google Chrome is required on the server side only to provide printing functionality unless Internet Explorer 11 or PhantomJS engine is used</li> <li>Internet Explorer 11 has retired and is officially out of support</li> <li>To run the Administration Console directly on the server host machine, any browser listed in client-side internet browsers can be used. Administration Console can be run remotely from the client side.</li> </ul>
<p>Client-side system dependencies and additional software</p>	<ul style="list-style-type: none"> <li>GeoMedia or GeoMedia Professional 16.8</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>GeoMedia or GeoMedia Professional is required for GeoMedia WebMap Publisher Administrator</li> </ul>

Server-side system dependencies and additional software	<ul style="list-style-type: none"><li>• .NET Framework 4.7.2</li><li>• Microsoft Identity Foundation</li><li>• Windows Installer 3.1 or higher</li><li>• Internet Information Services (IIS) 10.0</li></ul>
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Geospatial Portal	
Server-side operating systems	<ul style="list-style-type: none"> <li>Windows Server 2016 (64-bit)</li> <li>Windows Server 2019 (64-bit)</li> <li>Windows Server 2022 (64-bit)</li> </ul>
Database engines	<ul style="list-style-type: none"> <li>Oracle Server 12c R2 (12.2.0.1)</li> <li>Oracle Server 18c (12.2.0.2)</li> <li>Oracle Server 19c (12.2.0.3)</li> <li>Oracle Client 12.2.0 (32-bit)</li> <li>Oracle Client 18.5.0 (32-bit)</li> <li>Oracle Client 19.12.0 (32-bit)</li> <li>Oracle Client 19.18.0 (32-bit)</li> <li>Oracle Client 19.19.0 (32-bit)</li> </ul>
Client-side internet browsers	<ul style="list-style-type: none"> <li>Firefox 116 or higher</li> <li>Google Chrome 116 or higher</li> <li>Microsoft Edge 115 or higher</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>For browsers: Firefox, Google Chrome and Microsoft Edge versions stated are the versions that certification was conducted on. The software is expected to work on newer versions of these browsers, but they were not officially certified.</li> <li>The 3D features of Geospatial Portal require native WebGL support. WebGL is available in Edge, Firefox and Chrome.</li> <li>Web browser issues found on the Geospatial Portal Classic product that are no longer supported by the browser vendor can be addressed with a limited scope by Hexagon. Refer to vendor sites for information on their web browsers support policies.</li> <li>The mobile versions listed as supported web browsers are compatible with GeoMedia WebMap. However, differences in system architecture and mobile device limitations may result in some of functionality being unavailable when running on a mobile browser. Hexagon will attempt to address any mobile browser issues; however, a solution may ultimately depend on support from the browser provider.</li> <li>The Internet Explorer (IE) 11 desktop application ended support for Windows 10 semiannual channel on June 15, 2022. For more information visit <a href="https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11">https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11</a>.</li> </ul>

Server-side internet browsers	<ul style="list-style-type: none"> <li>• Google Chrome</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• Google Chrome is required on the server side only to provide printing functionality unless Internet Explorer 11 or PhantomJS engine is used</li> <li>• Internet Explorer 11 has retired and is officially out of support</li> <li>• To run the Administration Console directly on the server host machine, any browser listed in client-side internet browsers can be used. Administration Console can be run remotely from the client side.</li> </ul>
Server-side system dependencies and additional software	<ul style="list-style-type: none"> <li>• .NET Framework 4.7.2 or higher</li> <li>• Windows Identity Foundation</li> <li>• Windows Installer 3.1 or higher</li> <li>• Internet Information Services (IIS) 10.0</li> </ul>



Geospatial SDI	
Operating systems	<ul style="list-style-type: none"> <li>• Windows Server 2016 (64-bit)</li> <li>• Windows Server 2019 (64-bit)</li> <li>• Windows Server 2022 (64-bit)</li> </ul>
Database engines	<ul style="list-style-type: none"> <li>• Oracle Server 12c R2 (12.2.0.1)</li> <li>• Oracle Server 18c (12.2.0.2)</li> <li>• Oracle Server 19c (12.2.0.3)</li> <li>• Oracle Client 12.2.0 (32-bit)</li> <li>• Oracle Client 18.5.0 (32-bit)</li> <li>• Oracle Client 19.12.0 (32-bit)</li> <li>• Oracle Client 19.18.0 (32-bit)</li> <li>• Oracle Client 19.19.0 (32-bit)</li> <li>• SQL Server 2014</li> <li>• SQL Server Express 2014</li> <li>• SQL Server 2016</li> <li>• SQL Server Express 2016</li> <li>• SQL Server 2017</li> <li>• SQL Server Express 2017</li> <li>• SQL Server 2019</li> <li>• SQL Server Express 2019</li> <li>• SQL Server 2022</li> <li>• SQL Server Express 2022</li> <li>• SQL Server Native Client 10.0 or higher</li> <li>• Azure SQL Database compatible with SQL Server 2014, 2016, 2017, 2019 or 2022</li> <li>• PostgreSQL 11 with compatible version of PostGIS</li> <li>• PostgreSQL 12 with compatible version of PostGIS</li> <li>• PostgreSQL 13 with compatible version of PostGIS</li> <li>• Access 2010 (MDAC2010 v14)</li> <li>• GeoPackage</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• For all later service packs, see the support site for specific notices</li> <li>• NHibernate, Log4Net and ADO.NET are used for accessing databases in SDI Pro Security and Logging mechanisms. The full list of supported database engines depends on these third-party frameworks. However, SDI services were used successfully with listed engines.</li> <li>• 64-bit Oracle Data Access Components (ODAC) is required for Catalogue (CSW) services running with Oracle Server 12 (64-bit)</li> <li>• SQL Server Native Client 10.0 or higher is needed for the Database Utilities to automatically create the correct GeoMedia metadata for date, time and datetime data types when using a SQL Server or SQL Server Spatial warehouse. You may get SQL Server Native Client 10.0 or higher from the corresponding Microsoft websites. If the SQL Server Native Client is not installed on the system, you need to manually choose Date as the data type from the drop-down combo box for these data types in the Feature Class Properties dialog and set the format properly.</li> </ul>

<p>Internet browsers</p> <p>(Required to run Administration Console)</p>	<ul style="list-style-type: none"> <li>• Firefox 116 or higher</li> <li>• Google Chrome 116 or higher</li> <li>• Microsoft Edge 115 or higher</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• For browsers: Firefox and Chrome versions stated are the versions that certification was conducted on. The software is expected to work on newer versions of these browsers, but they were not officially certified.</li> <li>• Web browser issues found on the Geospatial SDI product that are no longer supported by the browser vendor can be addressed with a limited scope by Hexagon. Refer to vendor sites for information on their browser support policies.</li> </ul>
<p>Server-side internet browsers</p>	<ul style="list-style-type: none"> <li>• Google Chrome</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>• Google Chrome is required on the server side only to provide printing functionality unless Internet Explorer 11 or PhantomJS engine is used</li> <li>• Internet Explorer 11 has retired and is officially out of support</li> <li>• To run the Administration Console directly on the server host machine, any browser listed in client-side internet browsers can be used. Administration Console can be run remotely from the client side.</li> </ul>
<p>Server-side system dependencies and additional software</p>	<ul style="list-style-type: none"> <li>• .NET Framework 4.7.2</li> <li>• Windows Identity Foundation</li> <li>• Windows Installer 3.1 or higher</li> <li>• Internet Information Services (IIS) 10.0</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>• All later service packs for the system dependencies are considered supported unless otherwise noted. See the support site for specific notices.</li> </ul>

## System requirements (16.8.2)

GeoMedia WebMap	
Operating systems	<ul style="list-style-type: none"> <li>Windows Server 2016 (64-bit)</li> <li>Windows Server 2019 (64-bit)</li> <li>Windows Server 2022 (64-bit)</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>All later service packs are considered viable unless otherwise noted. See the support site for specific notices.</li> <li>On the client side (Geospatial Portal and/or GeoMedia WebMap Publisher Portal), any operating system equipped with one of the supported browsers will work</li> </ul>
Operating systems for GeoMedia WebMap Mobile app	<ul style="list-style-type: none"> <li>iOS version 15.x or later</li> <li>Android version 7.0 or later</li> <li>Windows 10</li> </ul>
Server-side database engines	<ul style="list-style-type: none"> <li>Oracle Server 12c R2 (12.2.0.1)</li> <li>Oracle Server 18c (12.2.0.2)</li> <li>Oracle Server 19c (12.2.0.3)</li> <li>Oracle Client 12.2.0 (32-bit)</li> <li>Oracle Client 18.5.0 (32-bit)</li> <li>Oracle Client 19.12.0 (32-bit)</li> <li>Oracle Client 19.18.0 (32-bit)</li> <li>Oracle Client 19.19.0 (32-bit)</li> <li>SQL Server 2014</li> <li>SQL Server Express 2014</li> <li>SQL Server 2016</li> <li>SQL Server Express 2016</li> <li>SQL Server 2017</li> <li>SQL Server Express 2017</li> <li>SQL Server 2019</li> <li>SQL Server Express 2019</li> <li>SQL Server 2022</li> <li>SQL Server Express 2022</li> <li>SQL Server Native Client 10.0 or higher</li> <li>Azure SQL Database compatible with SQL Server 2014, 2016, 2017, 2019 or 2022</li> <li>PostgreSQL 11 with compatible version of PostGIS</li> <li>PostgreSQL 12 with compatible version of PostGIS</li> <li>PostgreSQL 13 with compatible version of PostGIS</li> <li>PostgreSQL 14 with compatible version of PostGIS</li> <li>PostgreSQL 15 with compatible version of PostGIS</li> </ul>

	<p>Notes:</p> <ul style="list-style-type: none"> <li>• All later service packs are considered viable unless otherwise noted. See the support site for specific notices.</li> <li>• Access (MDB) is considered viable</li> <li>• GeoPackage is considered viable</li> <li>• No database engine is required on the client side or to run the Administration Console</li> <li>• SQL Server Native Client 10.0 or higher is needed for the Database Utilities to automatically create the correct GeoMedia metadata for date, time and datetime data types when using a SQL Server or SQL Server Spatial warehouse. You may get SQL Server Native Client 10.0 or higher from the corresponding Microsoft websites. If the SQL Server Native Client is not installed on the system, you need to manually choose Date as the data type from the drop-down combo box for these data types in the Feature Class Properties dialog and set the format properly.</li> </ul>
<p>Client-side internet browsers</p> <p>(Client is Geospatial Portal and GeoMedia WebMap Publisher Portal)</p>	<ul style="list-style-type: none"> <li>• Firefox 133 or higher</li> <li>• Google Chrome 131 or higher</li> <li>• Microsoft Edge 131 or higher</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• Versions stated above are the versions certifications were conducted on. The software should work on newer versions of these browsers, but they were not officially certified.</li> <li>• The 3D features of Geospatial Portal Classic require native WebGL support. WebGL is available in Firefox, Chrome and Edge.</li> <li>• Web browser issues found on the GeoMedia WebMap product that are no longer supported by the browser vendor can be addressed within a limited scope by Hexagon. Refer to vendor sites for information on their web browser support policies.</li> <li>• The mobile versions listed as supported web browsers are compatible with GeoMedia WebMap. However, differences in system architecture and mobile device limitations may result in some of the functionality being unavailable when running on a mobile browser. Hexagon will attempt to address any mobile browser issues; however, a solution may ultimately depend on support from the browser provider.</li> <li>• The Internet Explorer (IE) 11 desktop application ended support for Windows 10 semiannual channel on June 15, 2022. For more information visit <a href="https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11">https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11</a>.</li> </ul>
<p>Server-side internet browsers</p>	<ul style="list-style-type: none"> <li>• Google Chrome</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• Google Chrome is required on the server side only to provide printing functionality unless Internet Explorer 11 or PhantomJS engine is used</li> <li>• Internet Explorer 11 has retired and is officially out of support</li> <li>• To run the Administration Console directly on the server host machine, any browser listed in client-side internet browsers can be used. Administration Console can be run remotely from the client side.</li> </ul>
<p>Client-side system dependencies and additional software</p>	<ul style="list-style-type: none"> <li>• GeoMedia or GeoMedia Professional 16.8</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• GeoMedia or GeoMedia Professional is required for GeoMedia WebMap Publisher Administrator</li> </ul>

Server-side system dependencies and additional software	<ul style="list-style-type: none"><li>• .NET Framework 4.7.2</li><li>• Microsoft Identity Foundation</li><li>• Windows Installer 3.1 or higher</li><li>• Internet Information Services (IIS) 10.0</li><li>• .NET 8 Desktop Runtime</li><li>• .NET 8 Hosting Bundle</li></ul> <p>Note:</p> <ul style="list-style-type: none"><li>• The .NET 8 Desktop Runtime and .NET 8 Hosting Bundle are specifically required for the Geocoding Service</li></ul>
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Geospatial Portal	
Server-side operating systems	<ul style="list-style-type: none"> <li>Windows Server 2016 (64-bit)</li> <li>Windows Server 2019 (64-bit)</li> <li>Windows Server 2022 (64-bit)</li> </ul>
Database engines	<ul style="list-style-type: none"> <li>Oracle Server 12c R2 (12.2.0.1)</li> <li>Oracle Server 18c (12.2.0.2)</li> <li>Oracle Server 19c (12.2.0.3)</li> <li>Oracle Client 12.2.0 (32-bit)</li> <li>Oracle Client 18.5.0 (32-bit)</li> <li>Oracle Client 19.12.0 (32-bit)</li> <li>Oracle Client 19.18.0 (32-bit)</li> <li>Oracle Client 19.19.0 (32-bit)</li> </ul>
Client-side internet browsers	<ul style="list-style-type: none"> <li>Firefox 133 or higher</li> <li>Google Chrome 131 or higher</li> <li>Microsoft Edge 131 or higher</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>For browsers: Firefox, Google Chrome and Microsoft Edge versions stated are the versions that certification was conducted on. The software is expected to work on newer versions of these browsers, but they were not officially certified.</li> <li>The 3D features of Geospatial Portal require native WebGL support. WebGL is available in Edge, Firefox and Chrome.</li> <li>Web browser issues found on the Geospatial Portal Classic product that are no longer supported by the browser vendor can be addressed with a limited scope by Hexagon. Refer to vendor sites for information on their web browsers support policies.</li> <li>The mobile versions listed as supported web browsers are compatible with GeoMedia WebMap. However, differences in system architecture and mobile device limitations may result in some of functionality being unavailable when running on a mobile browser. Hexagon will attempt to address any mobile browser issues; however, a solution may ultimately depend on support from the browser provider.</li> <li>The Internet Explorer (IE) 11 desktop application ended support for Windows 10 semiannual channel on June 15, 2022. For more information visit <a href="https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11">https://docs.microsoft.com/en-us/lifecycle/products/internet-explorer-11</a>.</li> </ul>



<p>Server-side internet browsers</p>	<ul style="list-style-type: none"> <li>• Google Chrome</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• Google Chrome is required on the server side only to provide printing functionality unless Internet Explorer 11 or PhantomJS engine is used</li> <li>• Internet Explorer 11 has retired and is officially out of support</li> <li>• To run the Administration Console directly on the server host machine, any browser listed in client-side internet browsers can be used. Administration Console can be run remotely from the client side.</li> </ul>
<p>Server-side system dependencies and additional software</p>	<ul style="list-style-type: none"> <li>• .NET Framework 4.7.2 or higher</li> <li>• Windows Identity Foundation</li> <li>• Windows Installer 3.1 or higher</li> <li>• Internet Information Services (IIS) 10.0</li> </ul>

Geospatial SDI	
Operating systems	<ul style="list-style-type: none"> <li>• Windows Server 2016 (64-bit)</li> <li>• Windows Server 2019 (64-bit)</li> <li>• Windows Server 2022 (64-bit)</li> </ul>
Database engines	<ul style="list-style-type: none"> <li>• Oracle Server 12c R2 (12.2.0.1)</li> <li>• Oracle Server 18c (12.2.0.2)</li> <li>• Oracle Server 19c (12.2.0.3)</li> <li>• Oracle Client 12.2.0 (32-bit)</li> <li>• Oracle Client 18.5.0 (32-bit)</li> <li>• Oracle Client 19.12.0 (32-bit)</li> <li>• Oracle Client 19.18.0 (32-bit)</li> <li>• Oracle Client 19.19.0 (32-bit)</li> <li>• SQL Server 2014</li> <li>• SQL Server Express 2014</li> <li>• SQL Server 2016</li> <li>• SQL Server Express 2016</li> <li>• SQL Server 2017</li> <li>• SQL Server Express 2017</li> <li>• SQL Server 2019</li> <li>• SQL Server Express 2019</li> <li>• SQL Server 2022</li> <li>• SQL Server Express 2022</li> <li>• SQL Server Native Client 10.0 or higher</li> <li>• Azure SQL Database compatible with SQL Server 2014, 2016, 2017, 2019 or 2022</li> <li>• PostgreSQL 11 with compatible version of PostGIS</li> <li>• PostgreSQL 12 with compatible version of PostGIS</li> <li>• PostgreSQL 13 with compatible version of PostGIS</li> <li>• Access 2010 (MDAC2010 v14)</li> <li>• GeoPackage</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• For all later service packs, see the support site for specific notices</li> <li>• NHibernate, Log4Net and ADO.NET are used for accessing databases in SDI Pro Security and Logging mechanisms. The full list of supported database engines depends on these third-party frameworks. However, SDI services were used successfully with listed engines.</li> <li>• 64-bit Oracle Data Access Components (ODAC) is required for Catalogue (CSW) services running with Oracle Server 12 (64-bit)</li> <li>• SQL Server Native Client 10.0 or higher is needed for the Database Utilities to automatically create the correct GeoMedia metadata for date, time and datetime data types when using a SQL Server or SQL Server Spatial warehouse. You may get SQL Server Native Client 10.0 or higher from the corresponding Microsoft websites. If the SQL Server Native Client is not installed on the system, you need to manually choose Date as the data type from the drop-down combo box for these data types in the Feature Class Properties dialog and set the format properly.</li> </ul>

<p>Internet browsers</p> <p>(Required to run Administration Console)</p>	<ul style="list-style-type: none"> <li>• Firefox 133 or higher</li> <li>• Google Chrome 131 or higher</li> <li>• Microsoft Edge 131 or higher</li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>• For browsers: Firefox and Chrome versions stated are the versions that certification was conducted on. The software is expected to work on newer versions of these browsers, but they were not officially certified.</li> <li>• Web browser issues found on the Geospatial SDI product that are no longer supported by the browser vendor can be addressed with a limited scope by Hexagon. Refer to vendor sites for information on their browser support policies.</li> </ul>
<p>Server-side internet browsers</p>	<ul style="list-style-type: none"> <li>• Google Chrome</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>• Google Chrome is required on the server side only to provide printing functionality unless Internet Explorer 11 or PhantomJS engine is used</li> <li>• Internet Explorer 11 has retired and is officially out of support</li> <li>• To run the Administration Console directly on the server host machine, any browser listed in client-side internet browsers can be used. Administration Console can be run remotely from the client side.</li> </ul>
<p>Server-side system dependencies and additional software</p>	<ul style="list-style-type: none"> <li>• .NET Framework 4.7.2</li> <li>• Windows Identity Foundation</li> <li>• Windows Installer 3.1 or higher</li> <li>• Internet Information Services (IIS) 10.0</li> </ul> <p>Note:</p> <ul style="list-style-type: none"> <li>• All later service packs for the system dependencies are considered supported unless otherwise noted. See the support site for specific notices.</li> </ul>

## Issues resolved (16.8.0)

Geospatial Server 2023

GeoMedia WebMap 16.8.0, Geospatial SDI 16.8.0, Geospatial Portal 16.8.0

Support ticket	Summary
00028639	CreateMapByRange with SVG output format fails to produce proper XML output.
00023520 00029513	Some point features not being rendered when specific symbol style used.
00040538	LabelWeb crashes with specific (renaming) rule.
00116157	WFS 2.0.0 - combination of GetPropertyValue and StoredQuery returns zero results.
00113171	Problem with characters encoding in WFS Transaction request for Portal.
00086254	X-Powered-By header present in all /api/ calls.
00084569	One of the base maps in Consumer Portal does not initialize when the Consumer Portal is started.
00084570	The Consumer Portal generates GetMap requests to each element of the composition legend.
00095756	WFS-T cannot update date field in PostGIS.
00065234	WebMap Publisher WMS metadata corrupted after SVG symbol is assigned to point feature.
00052217	WMTS SDI Facade - RESTful constraint not declared in Capabilities.
00053053	Issue with \$GP.events.featureInfoRequested.register.
00023205 00027269 00027286 00116171	Unable to connect to SQL Server 2016 database - SSL Security Error.
00116471	MSXML vulnerability.
00114807	SDK - Dynamic styles not being honored for analyses when printing.
00151400	Missing Polish translation for Selected features spatial filter in Portal Analyses control.
00142540	Portal Category - WFS layer keeps spinning after panning to a map area containing no wfs layer record.
00149392	Functional attributes are not shown in WMPs Feature Info.

00114077	Exception when using MSS file.
00151618	Unable to connect to WMS - Sequence contains no matching element.
00143156	Portal will always fall back to Mobile.aspx despite mobileTemplateName attribute settings.
00140725	Print Service hangs out when multiple users access to Geospatial Portal.
00147878	ECW raster goes blank on map when only WebMap is installed on server.
00149980	WMS layer legend icon goes blank for point styled with FSM.
00172747	Geospatial Portal - error initializing Luciad CSW map service.

## Issues resolved (16.8.1)

Geospatial Server 2023 Update 1

GeoMedia WebMap 16.8.1, Geospatial SDI 16.8.1, Geospatial Portal 16.8.1

Support ticket	Summary
00255673	Consumer Portal - there appears to be no request for GetFeatureInfo request when WMS from geoserver is connected
00235510	WMS time service generation error when Oracle metadata in GeoMedia WebMap Publisher
00210039	After data sources are removed, saved gpm cannot be Displayed again because previously deleted data sources are not loaded by the Display command
00205182	WMPS layers with Display Range defined are not displaying under Consumer Portal
00203211	WFS query fails when using combination of attribute and spatial filter
00200596	SDK Portal initializes WMPS for too long
00200906	'Get values' window doesn't return expected value when using Unicode/accent characters
00199048	WMS GetFeatureInfo incorrect result when geometry type filtering query used
00197880	Consumer Portal's feature info split words by single character
00197746	Consumer Portal doesn't retain legend layer visibility
00197876	UI display issues after hiding and revealing the top banner
00196673	Binding between AdminConsole GUI and AdminConsole service breaks after certain time of inactivity
00196646	WMS service doesn't accept special characters '*' in the layer name
00196099	Button Apply in the style properties (WMS layer) is not active in certain use case
00193714	AdminConsole doesn't list instances in certain languages
00193662	Every second analysis sends invalid (swapped) filter coordinates
00191932	Unable to print Google Maps using Chrome engine
00189068	Error retrieving OriginatingPipe extension from a LegendEntry loaded from GM library
00187315	Deselection (shift + click) on analysis does not de-highlight features on map
00183604	Portal 16.7.1 failed to load multiple WMPS with the same URL



00179979	Geocode Coordinate Query in Legend causing error when calling the published WMS
00174727 00184589	GPW gets corrupted in a specific use case
00177176	GWMMMapDef.exe giving error 'Error creating ConnectionWizard object' under Windows Server 2019
00154036	Catalogue Editor is not populating expected DB records when using custom (INSPIRE-based) profile
00143784	Records created in Catalogue Editor are not valid according to INSPIRE reference
00142486	Valid INSPIRE metadata record cannot be validated/published using Catalogue Editor
00027240	WMS legend entries in reverse order when adding through CSW metadata search results
00027290	WFS GetFeature with filter query uses UPPER function on all columns
00023178	"Invalid number of coordinates. The amount should be divisible by srsDimension (default 2)" error in portal
00022918	Legend images are not created for Entries containing a German Umlaut (ä, ö, ü) in the name
00027306	Using scale band for legend entries causes issues in zooming in or panning around the map in Consumer Portal

## Issues resolved (16.8.2)

Geospatial Server 2023 Update 2

GeoMedia WebMap 16.8.2, Geospatial SDI 16.8.2, Geospatial Portal 16.8.2

Support ticket	Summary
0027313	Thematic WFS layer doesn't display properly in Consumer, breaks highlighting
00309150	An attempt to export Data Window data to CSV causes Portal to reload
00314741	Problem with add/load workspaces with time dimensions in Geospatial Portal
00338821	SDI: adding IP Limitation to role fails in Security Console on Oracle schema
00339690	WMS Spatial filter expansion factor causes reverse filter effect.
00348591	Workspace is corrupted or incompatible with the current version of the product
00353428	WebMap fails to create WMPS Map after upgrading from version 16.7
00365410	LUWS cannot be configured to work properly with sample and customer's data sets LUWS does not understand multiple user address transforms defined in the GCM
00378852	Errors on double click FeatureInfo action on the WMPS vector layer
00385569	Consumer Portal WMS Feature Info uses wrong value for a hyperlink URL
00389448	WMS - Child layer re-defines same Style definition as parent layer
00389914	WMPS svg map misplaces text features
00390491	Errors on Data Window's Properties command on the WMPS vector layer
00391232	Functional attributes are not shown in WFS Feature Info
00394867	Cannot add new records on Catalogue Editor



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Hexagon is the global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector and mobility applications.

Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's Safety, Infrastructure & Geospatial division improves the resilience and sustainability of the world's critical services and infrastructure. Our solutions turn complex data about people, places and assets into meaningful information and capabilities for better, faster decision-making in public safety, utilities, defense, transportation and government.

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