

PRODUCT DESCRIPTION

GEOSPATIAL PORTAL 2018 PRODUCT FEATURES



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

Multiple data sources can be integrated into an easily navigated single map view. The Geospatial Portal ensures smooth browsing through intuitive navigation controls and technical advances, such as asynchronous communication, that ensures panning and zooming are not interrupted by having to wait for servers to respond. The client's utility is enhanced by additional tools such as measuring area and distance, controlling the appearance of individual map layers, and saving and recalling the current map context.

Geospatial Portal supports all the web services and open standards required for modern Spatial Data Infrastructure (SDI) client applications. This client solution provides International Standards Organization (ISO)/Open Geospatial Consortium (OGC) standards compliance and works with INSPIRE Directive discovery, view, download, and transformation services. Geospatial Portal also offers advanced functionality, including GeoRSS, coordinate transformation (CT) capability, connection to ERDAS[®] APOLLO, Transactional Web Feature Service (WFS-T) service-based features editing, and ad-hoc dynamic analyses over Web Feature Service (WFS) or GeoMedia[®] WebMap Publishing Service (WMPS).

Cutting-edge myVR technology brings rich 3D visualization via WebGL. Geospatial Portal displays the world as it is by adapting standard raster services to the elevation model and by handling dedicated 3D data sources. Moreover, the portal offers extrusion and display of vector data within the 3D world, including underground features positioned below the globe sphere, and a first-person perspective view.

In addition to the professional-level rich internet application, Geospatial Portal includes a simplified and user-friendly entry-level layout aimed at non-professional consumers of geospatial data. Optimized for performance and user experience, the Consumer layout takes advantage of the most up-to-date web technologies and standards.

The Consumer layout can be easily accessed on mobile devices using either a web browser or Geospatial Portal's mobile application. Geospatial Portal mobile runs on Android, iOS, and Windows mobile platforms, and is available for free download from Google Play, the AppStore, and the Microsoft store.

Click on a link below for quick navigation:

KEY FEATURES

GEOSPATIAL PORTAL CONSUMER LAYOUT

DEDICATED MOBILE APP FOR GEOSPATIAL PORTAL

GEOSPATIAL PORTAL FEATURES FOR ERDAS APOLLO

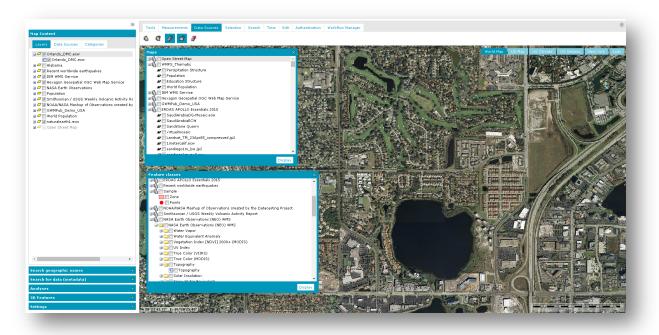




KEY FEATURES

Main functions

- Navigate maps easily via intuitive mouse control
- View 2D maps and content from:
 - Web Map Service (WMS) 1.1.1 and 1.3.0
 - Web Map Tile Service (WMTS) 1.0.0
 - GeoMedia WebMap Publisher Service (WMPS)
 - Google Maps and Bing Maps
 - Open Street Map
 - ERDAS APOLLO
 - GeoRSS feeds

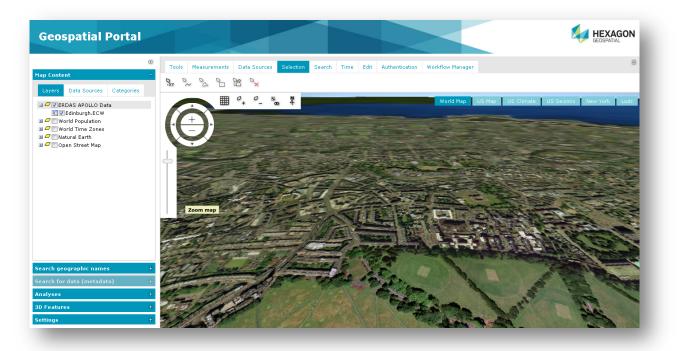


- 3D Display
 - Take advantage of advanced myVR technology
 - Display data and services:
 - Base map display
 - WMS and WMTS display
 - ERDAS APOLLO services





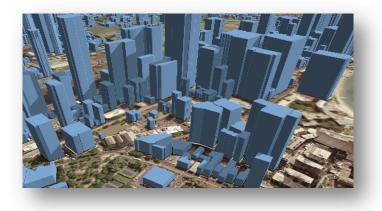
- GeoMedia WebMap Publisher Service (WMPS), including dynamic analyses over WMPS
- 3D Tiles (prepared based on GeoTIFF using mTransformer)
- 3D Objects (prepared based on OBJ, 3DS, KMZ using mTransformer)



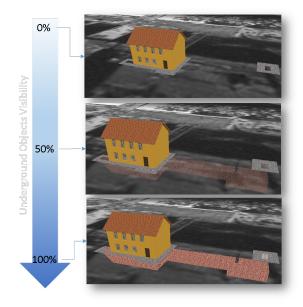
- Display vector data from GeoMedia WebMap WFS service
- Extrude 2-dimensional vector data to rapidly build 3D scenes







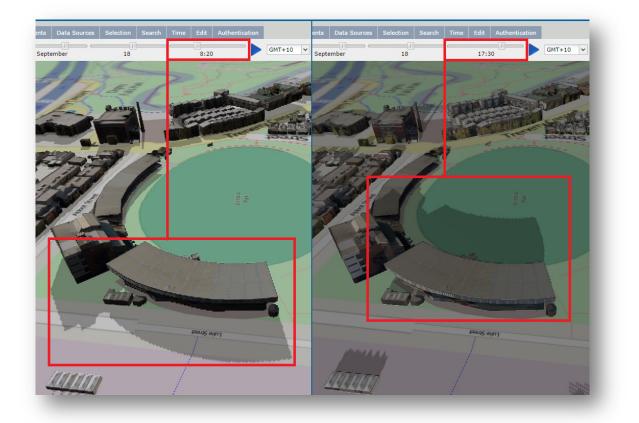
• Display underground features, both 3D Objects and WFS vector features







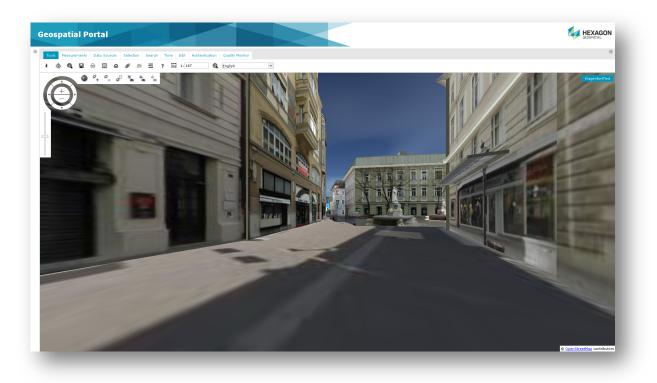
• Perform sunlight analysis



• Display First Person Perspective to explore 3D scenes







- Connect to services compliant to INSPIRE Technical Guidelines for discovery, view, download, and coordinate transformation
- Query data sources:
 - Catalog Service for the Web (CSW) services for datasets, datasets series, and services metadata (compliant with INSPIRE requirements)
 - Retrieve information from catalog services (CSW 2.0.2 ISO AP 1.0)
 - WFS services, both WFS 1.1 and WFS 2.0 (ISO 19142)
 - Use Filter encoding: (ISO 19143 supported)
 - GeoMedia WebMap Publisher Service (WMPS)
- Search for information:
 - Addresses based on OpenLS (Open Location Service)
 - Geographic names using the Gazetteer Service (WFSG)
- Create and edit vector data stored in a user-defined service (Personal Storage Service) and accessed via WFS-T
- Transform coordinates online using Web Coverage Tiling Service (WCTS) and INSPIRE WPS-CT support
- Run Geospatial Portal on mobile devices:
 - Using mobile web browser Geospatial Portal will automatically run in a dedicated Mobile layout





- Using mobile application for Android, iOS, and Windows OS mobile devices (Consumer layout)
- Create and manage user profiles:
 - Store user maps and workspaces
 - Manage user maps and workspaces
 - Save map context according to OGC Web Map Context (WMC) standard

Map tools and navigation

- Navigate the map using a mouse or the Navigation Control
- Read coordinates over mouse position
- Change map scale using the Scale bar
- Position map view using the Overview window



- Select features on the map by point, line, or area
- Get point coordinates
- Measure distance and area





Tools Measurements	Data Sources	Selection	Search	Time	Edit	Authentication	Workflow Manager
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- Print simple map
 - Select format, page size, template, scale, DPI, and orientation for print job
 - Supports portrait and landscape templates
 - Title and other textual fields on the printout are configurable
 - Relocate the effective printout area by mouse move
- Quick map printing using the standard browser print facilities
- Display Feature information at selected point
- Share link to a specific map view
- Dynamic object view for vector features

Map layers and content

- Manage layers, components, and content displayed on the map
- Map Window displays all the layers that make up the map
- Manage Map Content
 - Group data layers by source/data providers
 - Arrange available layers into categories
 - Drag and drop to change the order of layers on the map
 - Check box to toggle layer visibility
 - Click the context menu to access more options available for single layers and/or services





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	tural Earth en Street Map			Locatable	
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				Information about map	•
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				Rename	
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- Define layer styles (styling capabilities dependent upon individual third party services)
- Attribute-based symbology based on:
 - Unique value
 - Range thematic
 - User-defined
- Quick thematic legend creation with automatic classification and color assignment

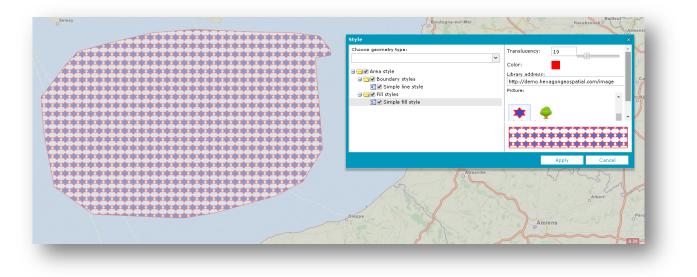
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- Define layer properties such as display mode, locatability, translucency, format, etc.
- Define a pattern fill for area geometry



• Set graphic for point geometry type





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- Display and edit labels, including label rotation, for WFS services
- Filter layers:
 - Filter display of vector data from data sources such as WMPS and WFS
 - Filter can be set separately for each feature class layer
 - Objects can be filtered in the map window using available attributes
- Set scale bands for each layer in the map
- Add predefined scales
- Save and reuse user maps and workspaces within a configuration
- Manage and configure map contexts (WMC), including export and import

CONNECTING TO AND MANAGING DATA SOURCES

Geospatial Portal offers numerous service connectors that let you consume data and functionality delivered by web services.

- Use administrator-defined connections to a service, modify them, or add your own
- Connect to web services asynchronously
- View all services currently connected to and available in the Geospatial Portal





	Name -	URL
	Name 👻	UKL
-	CSW (1)	
	Hexagon OGC Catalog Service for the Web	http://demo.hexagongeospatial.com/CSW/Service.svc/g
=	GeoRSS (1)	
	Recent worldwide earthquakes	http://www.bgs.ac.uk/feeds/SchoolSeismology.xml
=	Open Street Map (1)	
	Open Street Map	http://otile{1,2,3}.mqcdn.com/tiles/1.0.0/osm
=	Personal (3)	
	User dedicated PSS (Administrator)	
	Traffic	
	Sample	
-	Print Service (1)	
=	Print Service (1) http://demo.hexagongeospatial	http://demo.hexagongeospatial.com/printservice/portalp
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	http://demo.hexagongeospatial WFS (4) Trees New York Buildings Modernization Areas Lodz Buildings WFS-G (1)	http://demo.hexagongeospatial.com/WFST_Trees/servic. http://demo.hexagongeospatial.com/DemoBuildingsNY/S http://demo.hexagongeospatial.com/WFST_Area/service http://demo.hexagongeospatial.com/DemoBuildingsLodz
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	http://demo.hexagongeospatial WFS (4) Trees New York Buildings Modernization Areas Lodz Buildings WFS-G (1) GEONAMES WMS (2)	http://demo.hexagongeospatial.com/WFST_Trees/servic http://demo.hexagongeospatial.com/DemoBuildingsNY/S http://demo.hexagongeospatial.com/WFST_Area/service http://demo.hexagongeospatial.com/DemoBuildingsLodz http://demo.hexagongeospatial.com/WFSG_GEONAMES_ http://mesonet.agron.iastate.edu/cgi-
	http://demo.hexagongeospatial WFS (4) Trees New York Buildings Modernization Areas Lodz Buildings WFS-G (1) GEONAMES WMS (2) IEM WMS Service Hexagon Geospatial OGC Web	http://demo.hexagongeospatial.com/WFST_Trees/servic. http://demo.hexagongeospatial.com/DemoBuildingsNY/S http://demo.hexagongeospatial.com/WFST_Area/service http://demo.hexagongeospatial.com/DemoBuildingsLodz http://demo.hexagongeospatial.com/WFSG_GEONAMES_ http://demo.hexagongeospatial.com/WFSG_GEONAMES_

- Supported services include:
 - Authenticated web services
 - WMS Time parameter





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The lists of available service types and predefined services can be configured using the Administration Console.

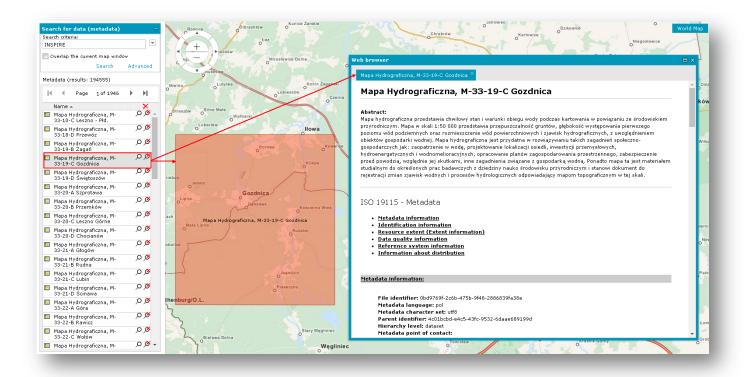
Search for dataset or service metadata

Geospatial Portal lets you connect to OGC Catalog Service for the Web (CSW) and search for metadata available in a catalog or federated catalogs. Icons designate what type of data is displayed, including for series, service, or dataset.

- Add service to map and center map on selected metadata (requires the web service metadata to provide this information)
- Obtain detailed information about discovered metadata
- Search metadata using multiple parameters
- Visualize the range for found metadata on the map







Search for geographic names

Connect to WFS-G (Gazetteer) service or services to search geographic objects such as cities, regions, and points of interest. See information and the location in the map window for each search result.





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∃New Mala	Geoname 🔎 🗸 🖙	Coordinates: -8.95238 160.06575
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Edit underlying WFS-T or PSS service resource

- Add features to feature classes
- Edit, move, continue, and remove geometry
- Insert text on the map at any angle
- Remove selected features from the database
- Snap functionality
- Markers and annotation layers, including add, edit, and delete
- Work with WFS-T or Personal Storage Service (PSS), depending on the need

Attribute data

 Display feature classes and attribute values for selected data sources (for example, WMPS, WFS, or PSS)





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∃ ⊖ VUSSample	n 👷 🔊	6	01065	HALE	01	Alabama	15498	6250	9190	87	29	29.4
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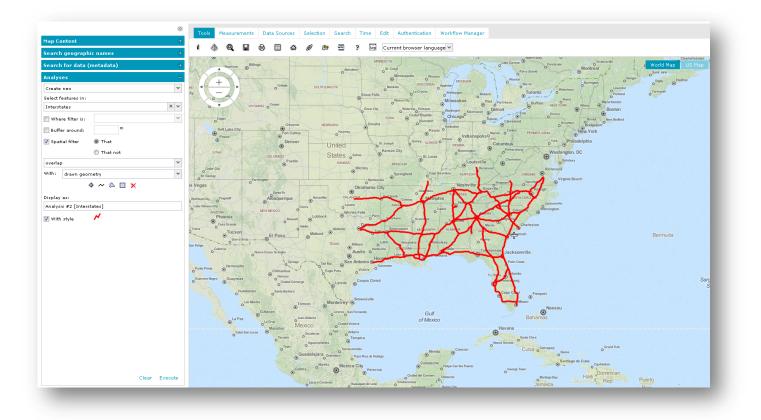
- Data is presented in tabular form
 - Data Window can contain many tabs with displayed data
 - Data for one feature class is presented on a single tab
 - Data view allows sorting, hiding columns, changing column size and order
- Selecting records in the Data Window automatically highlights the corresponding objects on the map
- Export all or selected features to CSV file

Analyses

Perform a series of attribute or spatial queries on data from selected sources. Set spatial filters or create a buffer. Geospatial Portal uses capabilities of underlying services to enable available query criteria and operations. Query definitions are saved in the Legend and can be reused or modified at any time. Updates to queries are instantaneously updated in the map and data windows.







Mobile devices

Geospatial Portal automatically displays a simplified interface, in either landscape or portrait orientation, when viewed on a mobile device.



On mobile devices, you can:

• Display, zoom, and switch predefined maps

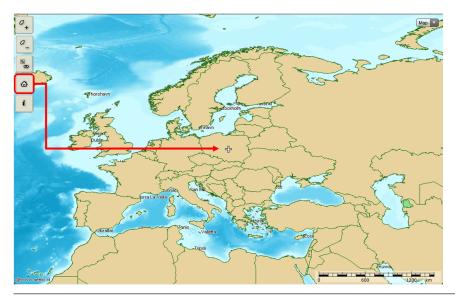




- Show feature attributes (GetFeatureInfo)
- Maintain a list of pre-defined maps
- Access the Scale bar
- Center the map based on device localization capabilities (GPS, A-GPS)
- Use your finger to scroll the map



- Change map scale with zoom buttons or with device-specific gestures, such as pinching the screen
- Find your location on the map



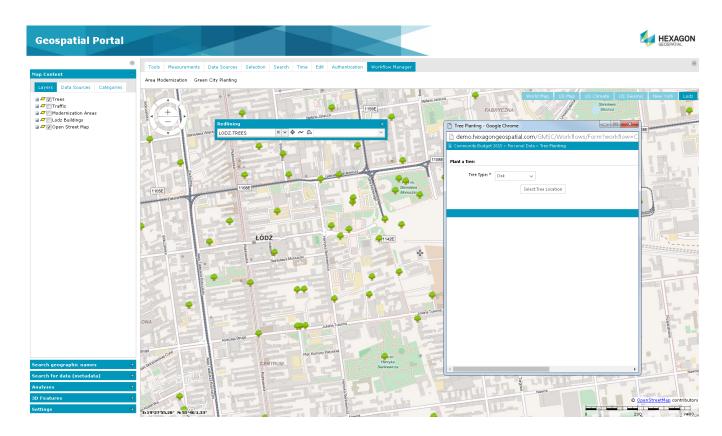




Support for business workflows

When deployed with Hexagon Geospatial's Workflow Manager, Geospatial Portal can be used to automate and organize the typical workflows of government agencies, utilities companies, and enterprise users.

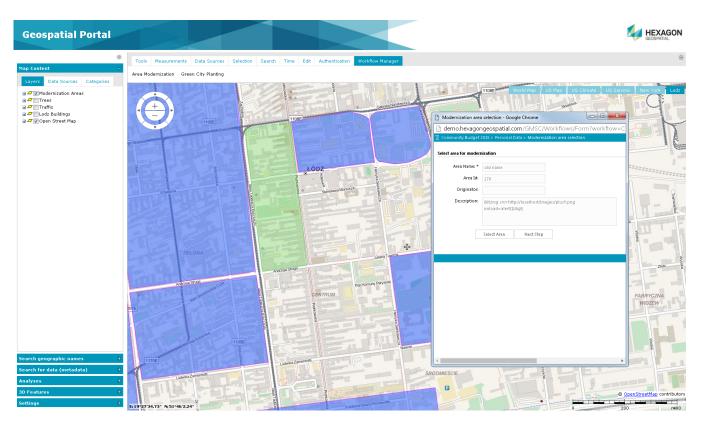
- Run pre-configured workflows with the Workflow Manager
- Combine map-based operations with the steps of business workflows, including map navigation



• Display, edit, and select features and attributes







Workflows can be easily configured and launched from the Geospatial Portal GUI. Administration Console lets you add new icons that represent the workflows.

Create a Personal Storage Service (PSS)

Personal Storage Service lets you create a local service in the session into which you collect vector data. You can create feature classes, define attributes, add features, add and edit attribute values, and display vector data served by a service in the map and data windows.

Administer instances with THE Administration Console

A web-based Administration Console provides the means for creating and configuring all aspects of server-side engines, web services, and web applications in a single place. Portal instances (portal applications available under a given web address) can be created, configured, and removed. For each portal instance, the following features can be configured:

- Banner image
- Application Title (multilingual)
- Existence and order of GUI icons available to end users
- Service types available to end users
- Predefined services





- An initial default workspace, including all pre-configured services
- Color theme
- Appearance and behavior of map variants

Support user registration and login

Geospatial Portal provides functionality for user registration and login. Registered users have their own profiles (folders on the server) that store user maps.

User-defined settings

Options in the settings tab let you:

- Change the coordinate system
 - Administrator pre-defines the list of available coordinate systems
 - Map ranges are recalculated when coordinate system is changed

Settings	
Coordinate System:	
Sphere Visualization (EPSG:3857)	~
Sphere Visualization (EPSG:3857)	
WGS 84 (EPSG:4326)	
Select SRS	
19	
📝 Respect axes order	
🕼 Show coordinates	
📝 Show scale	
🕼 Show navigator	
📝 Show crosshair	
📝 Display measurements	
—	
Change screen size	

- Toggle on/off:
 - Axes order
 - Coordinates visibility





- Scale bar visibility
- Navigator visibility
- Cross-hair indicating map center
- Customize the view in the browser window, such as hiding elements of Geospatial Portal to give you more map window area
- Select language from a dropdown list (if available, Geospatial Portal automatically starts in the default user's web browser language)

Follow OGC and INSPIRE specifications

Geospatial Portal works in accordance with OGC and INSPIRE discovery, view, download, and transformation services. It supports the following OGC/ISO specifications:

- WMS 1.1.1, 1.3.0 [time dimension]
- WMTS 1.0.0
- WFS 1.1, 2.0.0
- WFS(T) 1.0.0, 2.0.0
- WFS(G) 1.0
- CSW 2.0.2, ISO AP 1.0
- WCTS 0.3.0
- OpenLS [OLS] 1.1
- WMC 1.1
- GeoRSS
- FE 1.1.0, 2.0.0
- GML 3.2.1

Geospatial Portal also supports implementation of INSPIRE Technical Guidance for network services:

- INSPIRE View Service
- INSPIRE Discovery Service
- INSPIRE Direct Access Download Service
- INSPIRE Coordinate Transformation Service (WPS-CT)



Cloud deployment All Geospatial server products can be deployed in the cloud (via Amazon EC2)

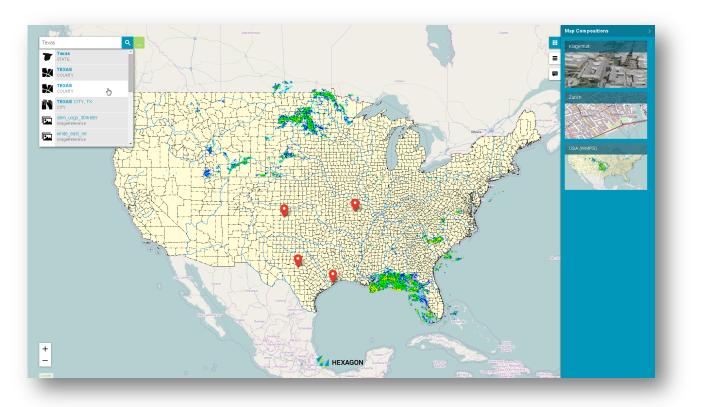
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GEOSPATIAL PORTAL CONSUMER LAYOUT

Consumer layout is a simplified user-friendly entry-level layout for non-professional consumers of geospatial data. It allows you to use maps for discovery and visualization with minimal effort. It is optimized for performance and user experience, and takes advantage of the most up-to-date web technologies and standards.









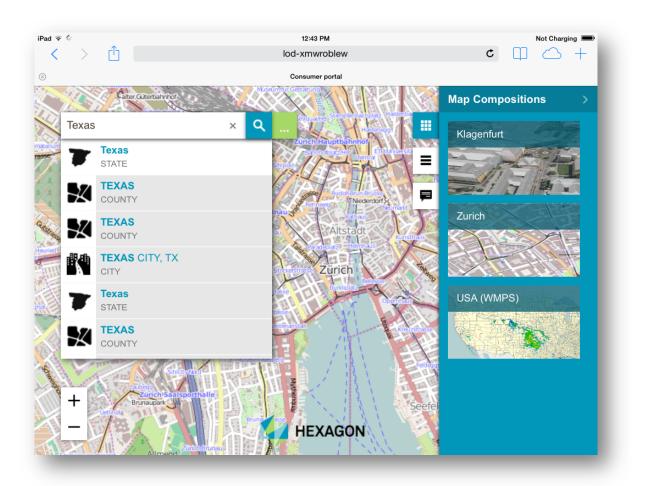
The Consumer layout provides smooth and intuitive navigation on ubiquitous touch screens. The technology framework behind the Consumer Portal, including CSS3 and HTML5, remains consistent across the broader Hexagon Geospatial mobile story, which is crucial to homogeneity of configuration and deployment.

Consumer layout offers a high level of usability across desktops, laptops, tablets, and mobile phones – anywhere modern web browsers are supported.

Configuration of the Consumer layout is done via the web-based Administration Console. Both pre-configured maps and search sources can be easily configured without any need for programming. Oracle direct access and support for GeoMedia data warehouses make the search easy to configure and very powerful.







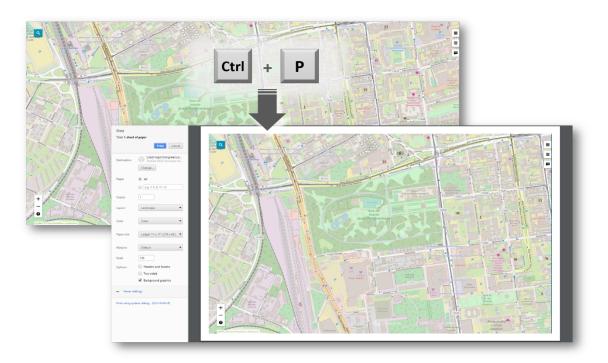
The Consumer layout displays both raster datasets published through WMS, WMPS or WMTS services, and vector feature classes published through WFS. (WFS service is offered in GeoMedia WebMap).

The Feature Info tool in Geospatial Portal's Consumer layout displays information about features portrayed on the map.

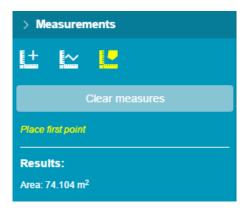
Maps can be printed using the standard browser print facilities. Use the Ctrl+P keyboard combination to quickly print the map currently displayed in the Consumer layout.







Consumer layout provides support for basic measures to gather point coordinates or calculate the distance between two locations. Measurement tools - Measure Point, Measure Line, and Measure Area - are accessible in the Consumer layout from the Measurement tab in the side panel.



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DEDICATED MOBILE APP FOR GEOSPATIAL PORTAL

Based on Hexagon Geospatial's Mobile SDK, a touch-friendly Geospatial Portal mobile application is available out of the box. The app displays 2D Consumer layout maps that can be accessed through either a URL or QR Code. The app is available for iOS, Android, and Windows mobile platforms.

Features include:

- Display pre-defined maps
- Turn on/off layers, change opacity for a specific layer
- Locate yourself on the map
- Search features on the map
- Retrieve selected feature information
- Use QR Code reader to scan QR Codes associated with Consumer layout to access the map
- Support for operating systems (both tablets and smartphones):
 - iOS, version 11 or later
 - Android, version 4.4 or later
 - Windows, version 10

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GEOSPATIAL PORTAL FEATURES FOR ERDAS APOLLO

The Geospatial Portal can be used as a thin client to connect to ERDAS APOLLO for core operations. Dedicated Geospatial Portal layouts enable the GUI to access key ERDAS APOLLO functions.

Connect to ERDAS APOLLO

Consume ERDAS APOLLO services through Geospatial Portal GUI:

- Connect ERDAS APOLLO Advantage catalog
- Browse and search the catalog for metadata and datasets
- Visualize datasets on the map
- Download datasets





 Execute server-side geoprocessing (functionality available in ERDAS APOLLO Professional)

Search ERDAS APOLLO Catalog

The Geospatial Portal provides a GUI for discovery of assets collected in the ERDAS APOLLO catalog:

- Browse ERDAS APOLLO catalog hierarchy and third-party services repository
- Search by object type, web availability, keywords, spatial footprint (box, point, line, polygon), and registration dates (registration, acquisition, temporal extent)
- Define a working geometry by drawing on the map or selecting a feature on the map, then apply a buffer to the selected geometry
- Discover raster, vector, terrain, LAS, video, web services, and business data
 - Display extents and points of interest on the map
 - Customize display style according to user needs
 - Interactive search that displays items dynamically as you navigate the map
- View metadata
 - ERDAS APOLLO Index Metadata the whole set of coverage metadata for selected search results
 - ISO 19115 metadata using ISO 19139 XML encoding
 - Quickly select data of interest using result thumbnails and metadata

Consume ERDAS APOLLO data

- Visualize data service layers on the maps
- Publish GeoRSS feed so it can be consumed by Geospatial Portal or any other RSS reader
- Download data, including:
 - Raster, vector, terrain, LAS, and business data (documents, movies, any electronic content)
 - Original files, ERDAS IMAGINE and Google formats
 - Open search results directly in Google Earth and ERDAS IMAGINE
 - Download data from given aggregates that intersect a given polygon
- Utilize raster and terrain data in geoprocessing workflows
- Clip, Zip, and Ship data
 - Select polygonal clip areas, search the catalog, and download multiple aggregates or individual datasets of gridded or LAS data





- Output options include output format, resolution, SRS, bands, and more
- Clip, Zip, and Ship subsets of LAS data
 - Select Classifications
 - Filter by Return value
 - Clip by Bounding Box or Polygon
 - Automatic mosaic of results when clipping across multiple LIDAR datasets to return one single LIDAR file
 - Output formats: GeoTIFF, IMG, NTF, ECW, JP2, LAS

ERDAS APOLLO Advantage maintains a large download job query, executes the job asynchronously, and provides e-mail notification when the download jobs begin. Another email, containing

a hyperlink to the download location, is sent when a job completes.

Execute Processes over the Web

Create value-added data products via OGC Web Processing Service (WPS). Execute complex spatial models in a map area of interest, with no required knowledge of the process or data. Select, configure, and execute the processes remotely.

- Fully described processes
 - Process View displays all processes the user has the right to read and execute
 - Process Description provides detailed description of the model selected to execute
 - Process Input displays all process arguments and allows you to configure them. It also:
 - Provides support for multiple data inputs
 - Provides configurable alpha-numeric and color input fields
 - Provides default values for arguments
 - Highlights required arguments
 - Input Data Search Results:
 - Provide separate panels to display each imagery data input required to execute a process
 - Display imagery search results for the area the user is looking at in the map
 - Prompts the user to select valid input data to "load" as the process input
- Process Monitoring
 - My Process View lists all processes the user has run and displays job metadata: when the process was run, which process was run, and its progress
 - Process Arguments View displays all arguments used in the process run





- Process Output View lists each process output with metadata, thumbnail, extent, and the tools to visualize and download the processing results
- Visualize and Download Process Outputs
 - Add process outputs to the map as map layers
 - Use any map and layer tools to manipulate the outputs
 - Configure layer opacity, visibility, and styling
 - Zoom in, zoom out, and pan
 - Measure distances and identify pixel values
 - Generate a Web Map Context (WMC) for distribution of a user-created map
 - Use the Clip, Zip, and Ship feature to download the process results

Vector web service workflow

Find, filter, and edit data.

- Create, edit, and update vector data geometry and attributes, with the use of WFS-T
- Find and select features (individual instances of vector data) and visualize their properties and attributes with a simple mouse click
- Find and filter vector data by defining a filter on spatial extent and alphanumeric properties

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ABOUT US

Hexagon Geospatial helps you make sense of the dynamically changing world. We enable you to envision, experience and communicate geographic information. Our technology provides you the form to design, develop and deliver solutions that solve complex, real-world challenges. Ultimately, this is realized through our creative software products and platforms.

CUSTOMERS. Globally, a wide variety of organizations rely on our products daily including local, state and national mapping agencies, transportation departments, defense organizations, engineering and utility companies, and businesses serving agriculture and natural resource needs. Our portfolio enables these organizations to holistically understand change and make clear, reliable decisions.

TECHNOLOGY. Our priority is to deliver products, platforms and solutions that make our customers successful. Hexagon Geospatial is focused on developing technology that displays and interprets information in a personalized, meaningful way. We enable you to transform location-based content into dynamic and useable business information that creatively conveys the answers you need.

PARTNERS. As an organization, we are partner-focused, working alongside our channel to ensure we succeed together. We provide the right platforms, products, and support to our business partners so that they may successfully deliver sophisticated solutions for their customers. We recognize that we greatly extend our reach and influence by cultivating channel partner relationships both inside and outside of Hexagon.

TEAM. As an employer, we recognize that the success of our business is the result of our highly motivated and collaborative staff. At Hexagon Geospatial, we celebrate a diverse set of people and talents, and we respect people for who they are and the wealth of knowledge they bring to the table. We retain talent by fostering individual development and ensuring frequent opportunities to learn and grow.

HEXAGON. Hexagon's solutions integrate sensors, software, domain knowledge and customer workflows into intelligent information ecosystems that deliver actionable information. They are used in a broad range of vital industries.

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