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### Usability Testing: Open GeoPortal 2.0

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# Usability Testing: Open GeoPortal

## Scope

The PLACE project team at the University of New Hampshire Library performed testing on May 9, 2014 with three participants with GIS experience. Tasks focused on use of Open GeoPortal 2.0 (beta).

## Tasks

1. You are a paralegal for a law firm specializing in maritime law. You have been instructed to find a NOAA navigational chart showing the Isles of Shoals. (MassGIS, raster)
2. You are a community member making the case for additional library funding. Find a layer from the last decade which shows the location of Massachusetts libraries. (MIT, point)
3. You are researching land use in the New Hampshire seacoast at the end of the industrial revolution. To help you, find and print a map of Rockingham County, NH from the 1850s. (Harvard, raster)
4. Your marine cartography professor has indicated that MassGIS has a map you might be interested in. Limiting your search to the MassGIS repository, view topographic imagery of the seafloor in the Stellwagen Bank National Marine Sanctuary. (MassGIS, raster)
5. You are studying the effects of seismic damage to railroad bridges and other structures. Find the locations of railroads in New Hampshire from 2000 according to the US Census. Then download this as a ShapeFile. (Harvard, line)
6. You are researching recent historical changes to land use in New Hampshire. Find a US Geological Survey topographic map of Exeter, NH from 1985. Download this map in GeoTIFF format. (Harvard, raster)
7. You are a geologist with an existing set of data in Google Earth. You would like to add to this a layer showing the bedrock lithology of Massachusetts. Find this and download it as a KMZ file. (MassGIS, polygon)
8. You are a hydrologist responsible for evaluating a flood model for Cambridge, MA. Find a Digital Terrain Model (DTM) of some portion of Cambridge. Make this data available to an external application using the Web Mapping Service (WMS) format. (Tufts, point)
9. You are an amateur historian living in Portsmouth and interested in your local history. Find a map of Portsmouth, NH from 1850. Create a link to share this map with a friend. (Harvard, raster)
10. You have received a link from a colleague via email to some geospatial data relevant to your work: <http://goo.gl/FXDNpz>. Using this link, view the data layers. (Harvard, polygon)

11. Using these same layers, set the opacity of each to 50%. Set the color of one to red and other to blue. Identify any significant differences between the two maps. (Harvard, polygon)
12. You are a civil engineering student studying the relationship between urban traffic and mass transit. Find a relatively current (2005-present) layer of Boston's MBTA Subway lines. Export this layer to GeoCommons. (MIT, line)

## Top Problems

1. Users were confused by the Where field being cleared. They often re-entered their search term even though the map extent remained the same.

Solutions:

- Maintain the current Where search term if the map extent does not change.
- If the map extent does change, clear the Where field and flash to indicate a change.

2. Users did not understand the relationship between the Where field and the map extent, i.e., the Where field sets the map extent and the map extent represents the current spatial search limit.

Solutions:

- Move the Where search field to the map.
- Alternately, provide visual feedback near the Where field which updates in real time as the map extent changes, e.g., latitude and longitude bounding coordinates or a small thumbnail of the current base map.
- Update the map immediately after the Where field has been filled without waiting for the user to submit the search query.

3. Layers are sometimes slow to load.

Solutions:

- Provide users an indication of how long they should expect to wait for each layer to load.
- Improve layer load times.

4. The advanced search clear button does not function.

Solutions:

- Fix the advanced search clear button.

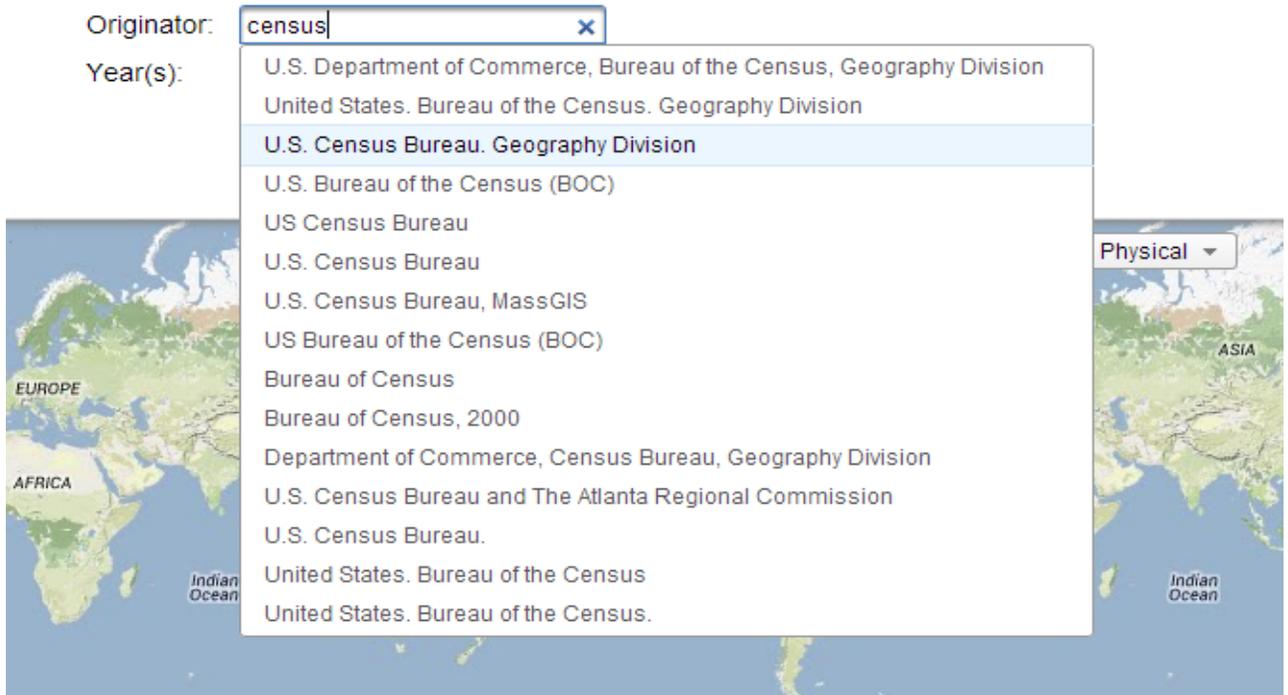
5. Users cannot tell the current status of the Data Type and Repository fields in the advanced search without activating the drop-down menu. When missed, searches are more limited than the user intended.

Solutions:

- Display all choices for the Data Type and Repository fields rather than use a drop-down menu.

- Alternately, display the currently selected options for the Data Type and Repository fields in the drop-down active value.

6. Search suggestions for the Originator field in advanced search yield a large number of variations for the same entity. If a user chooses one, they inadvertently exclude items which use other variations.



Solutions:

- Remove search suggestions for the Originator field. Users will not be tempted to choose but can still enter a search term.
- Alternately, develop an authority file for originators.

## Additional Observations & Recommendations

- A result selected for viewing is also duplicated at the top of the search results. This confused users, as it was not clear if this was the same item or another search result. The item should be moved, not copied, to the top of the results. Alternately, a list of the currently viewed layers could be displayed elsewhere, such as on the map.
- Some users were unclear when a search had been executed, particularly when there were no results or the list of results was the same. The “Processing...” message either did not display or displayed too quickly. The contrast of the message should be increased. Also, it should display when a new search is executed for a minimum time long enough to be noticed. Finally, an indication when no results are found should be provided, rather than a blank result set.

- Date information was often required by users but does not display by default. Users checked the metadata record for date information rather than use the Columns dropdown menu to show the date field. Date should be a default field in search results.
- Users did not always anticipate which functions were available for items in the cart. One user was unclear what the [+] button would do. An animation of the item moving to the cart upon selection may help with this.
- The map extent should be centered relative to the currently viewable area rather than the browser.
- One user did not notice the Advanced Search link. Increasing the contrast of the link, e.g., by changing the color or increasing the font size, may help with this.
- One user expected a zoom out tool. They did not use the zoom slider and had difficulty with the mouse scroll wheel.
- Hover effects are unlikely to be seen by those using touch interfaces. Ideally, tooltips should be viewable on click or tap.

## Acknowledgements

Special thanks to Patrick Florance and Chris Barnett at Tufts University for setting up the demo instance of Open GeoPortal for testing.