

NoSQL Data Management(NDM)

User Interface

User Guide

Version 1.2

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v1.2

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Glossary of Acronyms

Acronym	Definition
DMS	Degrees Minutes Seconds
DTG	Day Time Group
MGRS	Military Grid Reference System
OBI	Object Based Intelligence
UI	User Interface
UTM	Universal Transverse Mercator

Introduction

Welcome to the user guide for NoSQL Data Management (NDM). The purpose of this guide is to provide instruction and suggestions on how to use the application. This guide contains a “Quick Start Guide” that provides step-by-step instructions on how to use the basic features of the application. Beyond the “Quick Start Guide,” users will find more in-depth discussion on all of the application’s features.

NoSQL Data Management enables object-based search, analysis and visualization with advanced features. These advanced features include the ability to create and edit objects (i.e., a person, place, or thing), the attributes of objects, and the ability to define relationships between objects. NoSQL Data Management also features enterprise search, enhanced geospatial visualization, tag cloud visualizations, the ability to highlight notes and add comments to documents, and enhanced UI performance. It also provides the ability to access the full breadth of classification and dissemination control markings for comments and annotations for easy adherence to all aspects of classification and marking guidelines, policies, and procedures.

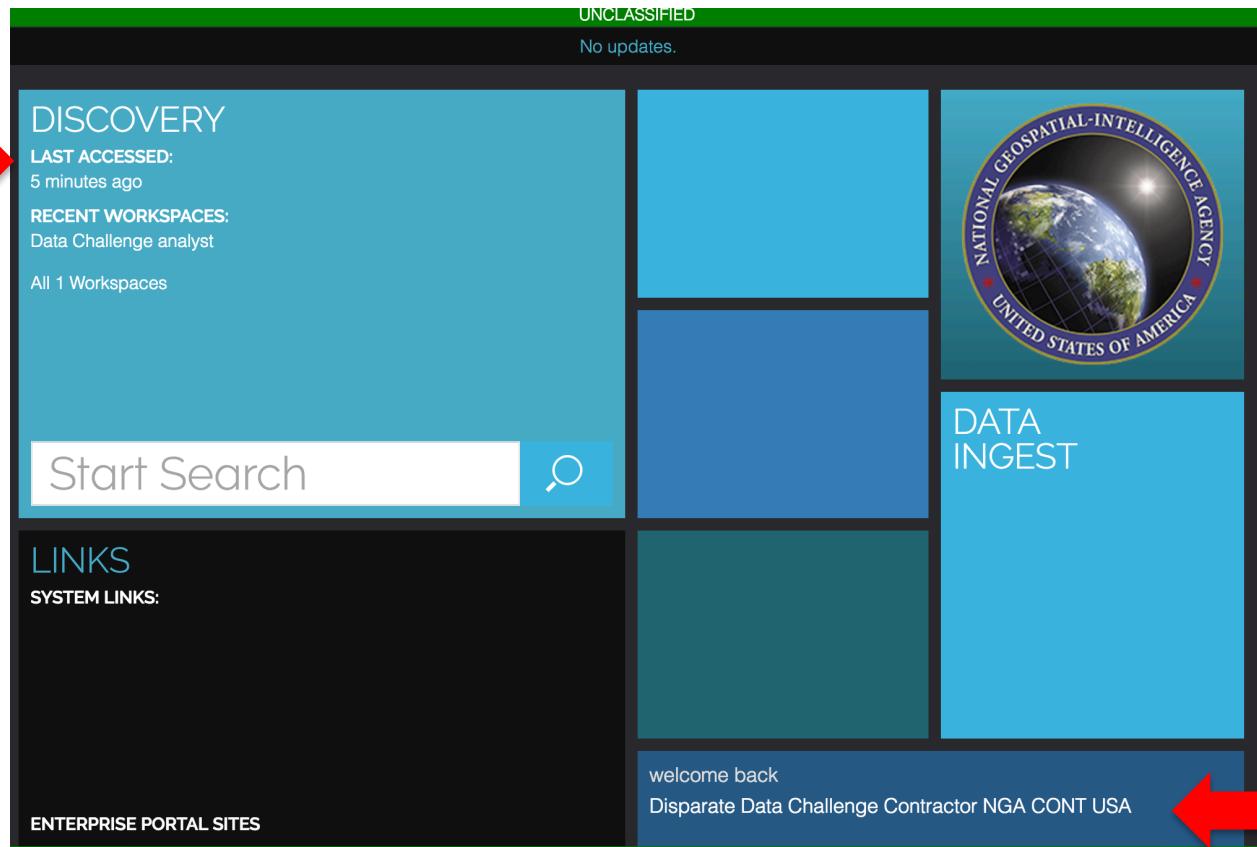
Intuitive design, analyst participation and feedback, intelligent partnerships, and cutting edge analytics all play a part in the continued development of software such as NoSQL Data Management that meets the needs of the NGA Community of Users.

1 Overview

This section provides users with an overview of the NoSQL Data Management UI, describing the main views and sections a user will interact with as they work in the application.

1.1 *Home*

The application opens on the **Home Screen**.



The top left tile contains information about when the system was last accessed, workspaces that were recently accessed by the user, and a search bar. The bottom right tile contains the name of the current user.

1.2 *Clicks, Mouse, and Touch Pad Actions*

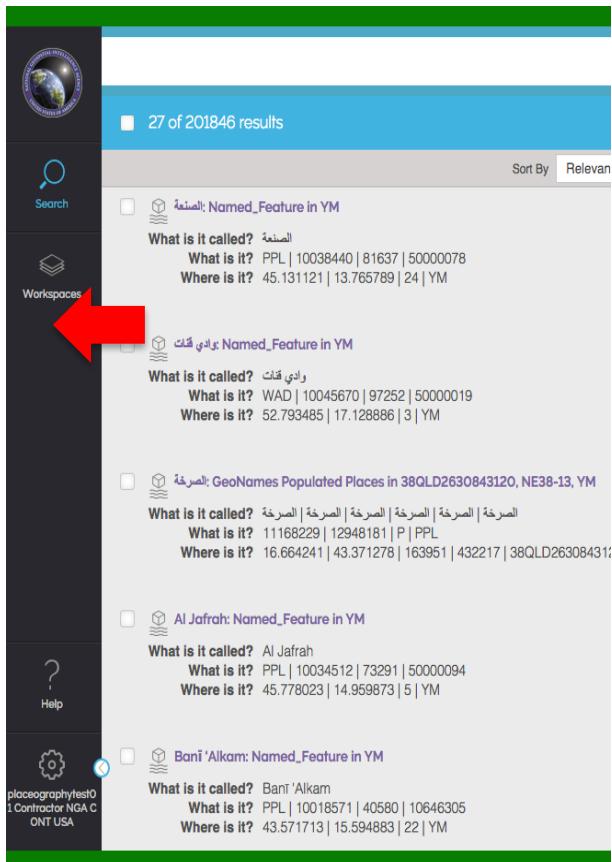
The application is designed so that menus, filters, and drop downs are expanded with a single click. A second click will collapse the menu, filter, or drop down. Additionally, when using a text filter, users can select text for inclusion in a facet with one click. A second click to the text will exclude the text from the facet.



The mouse wheel can be used for scrolling up or down on a page, zooming in and out of the **Geospatial** view, and zooming in and out on an **Object Timeline**. Alternatively, the user can use their touch pad to pinch-zoom, or hold down the Shift button, click, and drag a rectangle over the area they wish to zoom into.

1.3 Global Navigation Bar

The **Global Navigation Bar** appears at the left side of the screen and is persistent throughout the application, providing global navigation for the user at all times. It contains the options to execute a **Search**, access **Workspaces**, and open **User Settings**.





Search: Clicking the magnifying glass icon will begin a new **Search**



Workspace: Clicking the icon of stacked paper will open the list of **Workspaces** to which the user has access



User Settings: Clicking the cog icon will open the **User Settings** and preferences

To learn more about **Search** and **Workspace** features, please see “Search” and “Workspaces” respectively.

1.4 *User Settings*

Users have the option of applying customized settings to the system by clicking on the **User Settings** cog icon that appears above the user’s name on the bottom left of the screen in the **Global Navigation Bar**. Under **User Settings**, the user can edit their Contact Information, Query Preferences, and Document Viewer Preferences. Once edits have been made, click **Save**.

1.5 Classifications

Classification markings appear at the top and bottom of the screen and below document and object titles in the returned search results. Classifications also apply to **Comments**. Users are prompted to select a classification before saving any new data or metadata. The application employs role-based access rules, ensuring that only approved or cleared users can access sensitive or classified information.

The screenshot shows a list of documents from a search results page. Each document entry includes a checkbox, a title, a classification label in a red-bordered box, and a timestamp. A large red arrow points to the classification label in the first entry. Another red arrow points to the classification label in the second entry. The classification labels are consistently shown in a red-bordered box.

- Al Qaeda in the Arabian Peninsula docx
(UNCLASSIFIED//FOUO) 22 Dec, 2014 15:27
Al Qaeda in the Arabian Peninsula Al Qaeda in the Arabian Peninsula (AQAP) formed in January 2009 as a merger between the Yemeni and Saudi al Qaeda branches. Operatives work in cells throughout the country and rely on tribal support for shelter. The group seeks to establish an Islamic state and has executed attacks on Western interests. <LINK> Capabilities: AQAP has historically targeted western interests in Yemen; however, the 2009 Christmas Day attack, October 2010 parcel plot, and...
- Al Qaeda in Yemen_Countering the Threat from the Arabian Peninsula.docx
(UNCLASSIFIED//FOUO) 22 Dec, 2014 15:27
Al Qaeda in Yemen : Countering the Threat from the Arabian Peninsula By <LINK> Katherine Zimmerman October 19, 2012 Funeral procession for bodyguards of Yemeni Defense Minister Maj. Gen. Mohammed Nasser Ahmed killed in September 13, 2012 attempt to assassinate the minister. (Reuters) Executive Summary. <LINK> Al Qa'ida affiliates seized on the opportunities presented during the Arab Spring across northern Africa and the Middle East to gain and consolidate safe havens. These groups...
- AQAP's Looming Threat in Yemen.docx
(UNCLASSIFIED//FOUO) 22 Dec, 2014 16:41
Warning: AQAP's Looming Threat in Yemen By <LINK> Alexis Knutson , <LINK> Katherine Zimmerman August 14, 2014 Click <LINK> here to enlarge map. The horrific images and story of 14 murdered soldiers that came out of Yemen on August 8 pale in comparison to those coming from Iraq and Syria. Yet they may presage the emergence of a renewed threat from al Qaeda in the Arabian Peninsula (AQAP) that the U.S and Yemen are ill-prepared to handle. The murders deviate from what has become an...
- BEGIN REPORT-----
(UNCLASSIFIED//FOUO) 12 Feb, 2015 02:16
BEGIN REPORT-----1 DOI= 05/20/2014 (date of information) MSG DTG= 05/22/2014 6:31pm REF= YEMEN , AQAP Preparing VBIED for Unknown T in Yemen DT_ID= 05-05105 dated 22 May 2014 SUBJ= HUMINT: Source Informant provides information re: Fazul ((Harrar)) TEXT= Unclassified (Classification) Grade Criteria: A-1 (U) According to reporting, AQAP senior operative and regional emir Faizul Abdullah Mohammed ((Harrar)) prepared a white Toyota Land Cruiser with 2,000...
- BEGIN REPORT-----
(UNCLASSIFIED//FOUO) 12 Feb, 2015 02:16
BEGIN REPORT-----10 DOI= 05/20/2014 MSG DTG= 05/22/2014 6:31pm REF= YEMEN , AQAP DT_ID= 05-05105 dated 22 May 2014 SUBJ= HUMINT San'a vehicle registration information TEXT= Unclassified Grade Criteria: A-1 (U) A check on Sanaa Province license plate KWST 121 ... by the unidentified man at F ((Yusufi))'s residence , revealed that it is registered to the Brother 's Trucking Company. A check on license plate ' KWST-AASI ' revealed it belongs to a 1995...

UNCLASSIFIED//FOUO

1.6 Navigation

To enter the application, begin by typing a search term in the search bar and hit enter or click the **Magnifying Glass** icon. This will return documents and objects containing that term. Alternatively, users can put the cursor in the search bar and hit enter or click the **Magnifying Glass** icon to return the entire corpus of data.



Upon executing a search, the **Detailed Search** screen will load. This is the default screen when searching in the application (to change this, see “User Settings”). This screen includes a list of returned documents and objects on the left and collapsible filters on the right.

The screenshot shows the 'Detailed Search' interface for the term 'Yemen'. The top navigation bar is green with the text 'UNCLASSIFIED'. Below it, the search query 'Yemen' is entered. A magnifying glass icon is highlighted with a white box and a blue border. To its right are a search button and a file icon. On the far right of the top bar are two arrows pointing left and right.

The main area displays a list of search results:

- Yemen: DBpedia - Country in**
 - What is it called?** Yemen | Yemen7 | yemen9 | Yemen8 | Yemen100 | Yemen1920192 | yemen10 | yemen11 | Yemen91238-192833
 - What is it?** ABC | Value1 | Foooooooo | TestDataaaaaaa
 - Where is it?**
- Yemen: CIA World Factbook - Country in Middle East**
 - What is it called?** Yemen | Yemen
 - What is it?** ym | ym | adsfdas | adsfasdfasd | test | test | tesadsafkjdk | kajdsfhadskjfh
 - Where is it?** Middle East
- YEMEN: GeoNames Administrative Regions in 38PQC6820715194, ND38-04, YM**
 - What is it called?** Yemen | Republic of Yemen | YEMEN | Yemen | Yemen | YEMEN | Yemen | Yemen
 - What is it?** -3193053 | 14066320 | A | PCLI
 - Where is it?** 15.5 | 47.5 | 153000 | 473000 | 38PQC6820715194 | ND38-04 | YM | 00
- YEMEN: GeoNames Populated Places in 38PKB4044889263, ND38-01, YM**
 - What is it called?** YEMEN | Republic of Yemen | YEMEN | Yemen | Yemen | YEMEN | Yemen | Yemen
 - What is it?** -3193452 | -4514473 | P | PPL
 - Where is it?** 15.266667 | 42.583333 | 151600 | 423500 | 38PKB4044889263 | ND38-01 | YM | 08
- Yemen: GeoNames Administrative Regions in 38PQC6820715194, ND38-04, YM**
 - What is it called?** Yemen | Republic | REPUBLICOFYEMEN | Republic of Yemen | Republic of Yemen | YEMEN REPUBLICOF | Yemen, Republic of | Yemen, Republic of
 - What is it?** -3193053 | -4514479 | A | PCLI

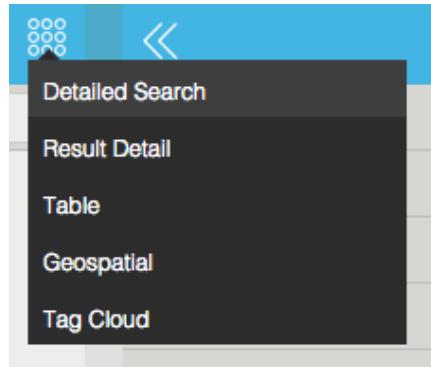
On the left side, there is a vertical sidebar with icons for 'Search', 'Workspaces', 'Help', and 'placeographytest0 Contractor NGA C ONT USA'. At the bottom of the sidebar is the text 'placeographytest0 Contractor NGA C ONT USA'.

On the right side, there is a panel titled 'UNCLASSIFIED' with a list of filter categories: Name, Location, Geospatial, ObjectType, Created Date, and Object Cloud. A 'Add Filter' button is located at the bottom of this panel.

The application allows users to explore data using a range of views. Users can choose a view by clicking the **9 Dot** icon at the top right of the search return list.

2 Views

The **9 Dot** icon allows the user to choose between five views including **Detailed Search, Result Detail, Table, Geospatial, and Tag Cloud**.



2.1 Detailed Search View (Default Screen)

Unless a user changes their preferences (see “User Settings”), the default screen displayed when entering the system is the **Detailed Search** view. Users have the option of multiple views that can be selected using the **9 Dot** icon in the blue **Menu Bar**. A **Detailed Search** view will display results in a list format and an excerpt of the first few lines associated with the document or object. Users can explore within the search return results by using the filters, displayed to the right of the search results.

In the blue **Menu Bar** to the right of the **Search Bar**, there are two icons—a **Magnifying Glass** icon to execute a search, and a **Disk** icon that allows the user to save the search.

Name	Location	Geospatial	ObjectType	Created Date	Object Cloud
<input type="checkbox"/> Yemen: DBpedia - Country in					
What is it called?	Yemen Yemen? yemen9 Yemen8 Yemen100 Yemen1920192 yemen10 yemen11 Yemen91238-192833				
What is it?	ABC Value1 Foooooooc TestDataaaaaaa				
Where is it?					
<input type="checkbox"/> Yemen: CIA World Factbook - Country in Middle East					
What is it called?	Yemen Yemen				
What is it?	ym ym Yem adsfidas adsfasdfasd test test tesadsafk dak kajdsfhadskjh				
Where is it?	Middle East				
<input type="checkbox"/> YEMEN: GeoNames Administrative Regions in 38PKC6820715194, ND38-04, YM					
What is it called?	Yemen Republic of Yemen YEMEN Yemen Yemen YEMEN Yemen Yemen				
What is it?	-3193053 14066320 A PCL				
Where is it?	15.5 47.5 153000 473000 38PKC6820715194 ND38-04 YM 00				
<input type="checkbox"/> YEMEN: GeoNames Populated Places in 38PKB4044889263, ND38-01, YM					
What is it called?	YEMEN Republic of Yemen YEMEN Yemen YEMEN Yemen YEMEN Yemen Yemen				
What is it?	-3193452 -451473 P PPL				
Where is it?	15.266667 42.583333 151600 423500 38PKB4044889263 ND38-01 YM 08				
<input type="checkbox"/> Yemen: GeoNames Administrative Regions in 38PKC6820715194, ND38-04, YM					
What is it called?	Yemen Republic REPUBLICOFYEMEN Republic of Yemen Republic of Yemen YEMEN REPUBLICOF Yemen, Republic of Yemen, Republic of				

On the left, under the **Search Bar**, is a checkbox that appears in front of the number of results displayed. Checking this box will select all of the documents in the search return results.

A checkbox also appears next to each individual document, allowing the user to select one or multiple documents from the search return results.

The screenshot shows a search results page for the term "Yemen". The top navigation bar is blue with the text "UNCLASSIFIED" and the search term "Yemen". Below the bar, it says "27 of 4186 results (2 selected)". There are several icons for file operations: download, folder, email, and comment. The search results are listed in a table with columns for Name, Location, Geospatial, ObjectType, Created Date, and Object Cloud. On the left side, there's a sidebar with icons for "Workspaces" (highlighted with a red arrow), "Help", and "placeographytest01 Contractor NGA C ONT USA". The main content area shows two selected documents:

- Yemen: DBpedia - Country in** (selected)
 - What is it called?** Yemen | Yemen7 | yemen9 | Yemen8 | Yemen100 | Yemen1920192 | yemen10 | yemen11 | Yemen91238-192833
 - What is it?** ABC | Value1 | Fooooooo | TestDataaaaaaa1
 - Where is it?**
- YEMEN: CIA World Factbook - Country in Middle East**
 - What is it called?** Yemen | Yemen
 - What is it?** ym | ym | adsfdas | adsfasdfasd | test | test | tesadsafkjdk | kajdsfhadskjf
 - Where is it?** Middle East

Below the results, there's a "Add Filter" button.

Once a document(s) is selected, additional icons will appear next to the number of results.



From left to right these are:

Download: Allows the user to download the selected documents

Folder: Allows the user to add the selected documents to a folder

Email (Envelope icon): Allows the user to email links of the selected documents to other system users

Comment (Conversation Bubble): Allows the user to add a comment to the selected documents

If a user has selected multiple documents, they may perform an action for all of those documents at the same time by using these icons. For example, a user can check five documents and click the **Folder** icon to move all of the documents to a folder at one time.

These icons also appear below the individual document or object in the search result list when the user hovers over the document or object. Doing so shows an additional icon that allows the user to open the document or object in a new window.



To the right of the **Download**, **Folder**, **Email**, and **Comment** icons is an additional icon allowing users to change the returned results display.



9 Dot: Allows the user to choose between five views including **Detailed Search**, **Result Detail**, **Table**, **Geospatial**, and **Tag Cloud**.

Users can differentiate between **file types** by icons located to the left of the file name in the **Detailed Search** view.

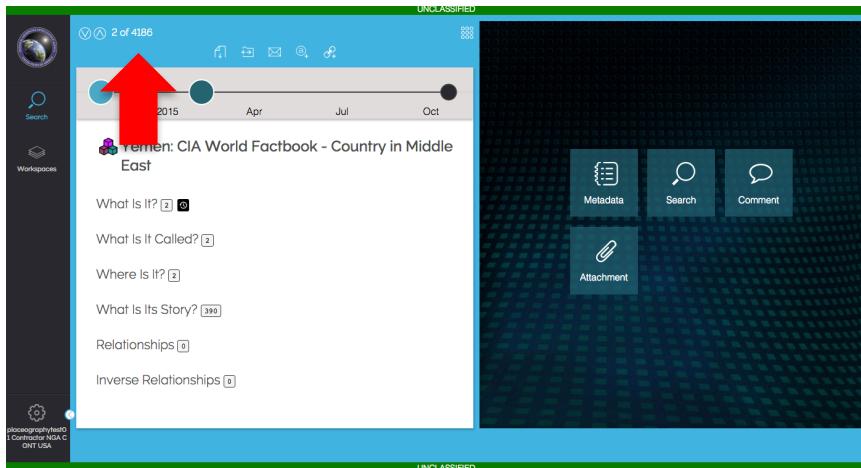
Feature	
Social media tweet	
Text	
Object	

2.2 Result Detail View

Users may opt to view search results in the **Result Detail** view. To view search results, execute a search by either clicking the **Search** icon in the **Global Navigation Bar** or by using the search bar in the blue **Menu Bar**. Enter search terms and hit enter or click the **Magnifying Glass** icon.

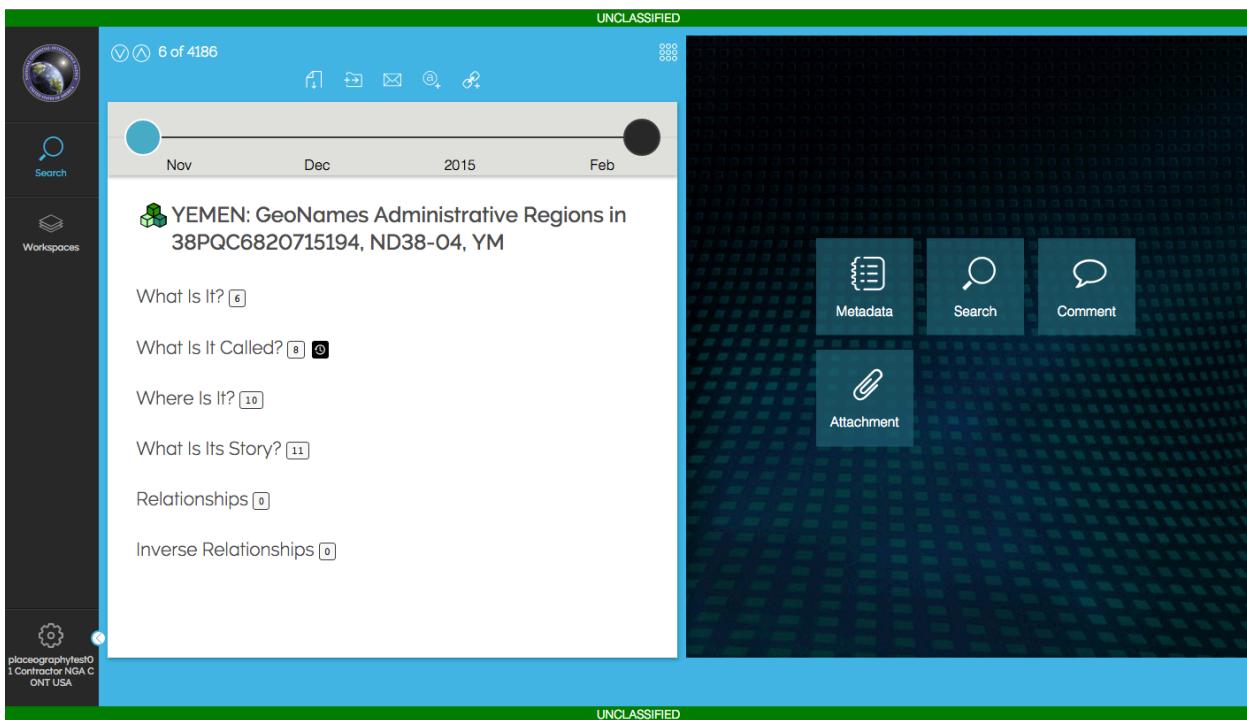
Once the search is executed, click on the **9 Dot** icon and click on **Result Detail**. All search results are loaded into this view and the user can page through the results using the **Down Arrow** and **Up Arrow** icons at the top left of the blue **Menu Bar**.

The application also switches from the **Detailed Search** view to the **Result Detail** view when the user clicks on a document or object title in the search return list. The **Result Detail** view for the selected object or document appears in place of the search return list.

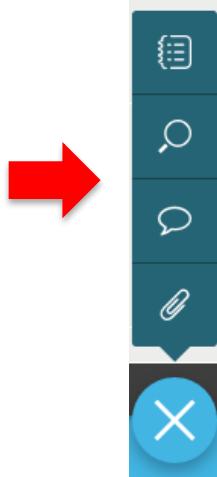


Once a user has selected the **Result Detail** view, they can take advantage of the highly customizable view layout. Each detailed view is called a card, and the user may choose to view multiple cards at one time. Once the **Result Detail** view is open, a card view of the selected document or object opens on the left. The same **Download**, **Folder**, **Email**, **Add Attribute**, **Add Relationship**, and **9 Dot** icons from the **Detailed Search** screen appear. (See “Detailed Search View” for a description of these icons and their functions.)

From this screen, users may open additional cards by selecting one of the tile icons to the right. These tiles always include **Metadata**, **Search**, **Comment**, and **Attachment**. Additional tiles may also appear. A **Notes** tile will appear for documents. Selecting one of these tile icons will open a second card on the screen.



Once two cards are open, a **Plus Sign** icon appears at the bottom right of the screen. Users can click the **Plus Sign** icon to display the icon menu and open additional cards.



Cards may be minimized using the **Minus Sign** icon at the top right of the card. This will place the card in the tray at the bottom of the screen. Clicking on the **Card** icon in the tray will bring the card back to the screen.

Cards can be expanded using the **Double Arrow** icon at the top right of the card. A single click will expand the card, a second click will reduce the card back to the original size.

Cards are closed using the **X** icon at the top, far right of the card.

Select a file to upload
or drag and drop file here

Cards can be rearranged in the screen by dragging and dropping the card to the desired location.

At the top of the document in **Result Detail** view, the user can click the **Desk Lamp** icon to turn highlighting on or off in the document. This allows users to easily see notes, objects, and entities in the document.

Select a file to upload
or drag and drop file here

2.3 Table View

The **Table** view displays search results in a tabular format with the option to sort the data according to the headers Name, Location, Geospatial, and Object Type.

What Is It Called?	Where Is It?	Geospatial	What Is It?
<input type="checkbox"/> Sort By	Al Mahram, Al Majram, A...	POINT(44.377473 13.78508)	GeoNames Populated Pla...
<input type="checkbox"/> Ascending			
<input type="checkbox"/> Descending			
<input checked="" type="checkbox"/> None			
<input type="checkbox"/> ALMAHRAM, Al Majram, A...	13.729021,44.323326,134...	POINT(44.323326 13.729...	GeoNames Populated Pla...
<input type="checkbox"/> ALMAHRAMILQIS, Al Ma...	15.404506,45.35613,1524...	POINT(45.35613 15.404506)	GeoNames Spot Features...
<input type="checkbox"/> ALMAHRAM, Al Majram, A...	15.404506,45.35613,1524...	POINT(45.35613 15.404506)	GeoNames Populated Pla...
<input type="checkbox"/> ALMAHRAM, Al Majram, A...	13.706043,43.805766,134...	POINT(43.805766 13.706...	GeoNames Populated Pla...
<input type="checkbox"/> ALMAHRAM, Al Majram, A...	15.473668,43.55,152285...	POINT(43.55 15.473668)	GeoNames Populated Pla...
<input type="checkbox"/> Al Bin Majram, Al al Wajh...	13.729673,٤٤.٣٢٨٥٩,١٣...	POLYGON((44.322808 13...	Family,27,RM01618
<input type="checkbox"/> Al Bin Majram, Al al Wajh...	14.1933559826621,٤٤.٢...	POLYGON((44.22893 14...	Family,0,RM01618
<input type="checkbox"/> Al Bin Majram, Al al Wajh...	13.7846229717049,١٣.٧٤...	POLYGON((44.380107 13...	Family,0,RM01618
<input type="checkbox"/> Al Bin Majram, Al al Wajh...	13.7846418823469,١٣.٧٤...	POLYGON((44.380464 13...	Family,0,RM01618
<input type="checkbox"/> Al Bin Majram, Al al Wajh...	14.1045483065703,٤٤.٢...	POLYGON((44.24176 14...	Family,0,RM01618
<input type="checkbox"/> Al Bin Majram, Al al Wajh...	14.1579273968265,٤٤.١...	POLYGON((44.187646 14...	Family,0,RM01618
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/> Al Bin Majram, Al al Wajh...	13.535876,٤٤.٠٤٨٤٤,١٣...	POLYGON((44.043569 13...	Family,150,RM01618
<input type="checkbox"/> Al Majram	43.804598,13.706762,25,YM	POINT(43.804598000000...	Named_Feature,PPL,1000...
<input type="checkbox"/> Al Majram Bilingual	45.355748,15.404189,14,YM	POINT(45.355748000000...	Named_Feature,RUIN,100...
<input type="checkbox"/> Al Majram, المجم...	13.729673,44.322859,١٣...	POINT(44.322859000000...	Residential Area,populate...
<input type="checkbox"/>			

Each document or object has a checkbox to the left of the title, allowing the user to select one or multiple search results.

Users can customize the columns that appear in the **Table** view by clicking the user settings **Cog** icon in the **Global Navigation Bar**. Click the **Cog** and open the **Query Preferences** menu. The third tab in the menu is called **Selected/Ordering**. Use your mouse to click and drag items to reorder columns. To delete a column, hover over the column name on the right side of the box, and click the gray X icon. Click **Save** to save changes.

2.4 Geospatial View

The **Geospatial** view is an interactive visualization that allows for multiple means of creating custom filters and views.

Beginning in the blue **Menu Bar** at the top left, the user may choose to view a list of documents in a panel by clicking the **Show Documents** icon. As in the **Detailed Search** view, the user may select results using the checkbox to the left of the document title.

The screenshot shows the user interface for managing NoSQL data. On the left, there's a sidebar with icons for Search, Workspaces, Help, and a placeholder for 'placeographytest01 Contractor NGA C ONT USA'. The main area has a blue header bar with the text 'UNCLASSIFIED' and a search bar indicating '27 of 211 results'. Below the header is a 'Filter Results' section with a 'Sort By' dropdown set to 'Relevance'. The results list contains three items:

- Tweet from @
(UNCLASSIFIED) 25 Nov. 2015 05:54
...been put there on 29 December 1992 by an obscure Afghan war veteran called Osama bin Laden. It was his first terror operation. He had wanted to murder some US marines....and one local. At the time, the incident barely made the press and Bin ...
- Can Middle East tourism ever recover?
(UNCLASSIFIED) admin 25 Nov. 2015 07:55
...been put there on 29 Dec 1992 by an problematic Afghan fight maestro called Osama bin Laden. It was his initial apprehension operation. He had wanted to murder some US marines....one local. At a time, a occurrence hardly done a press and Bin ...
- Obama releases 5 terrorists from Gitmo 48 h
(UNCLASSIFIED) Gary 17 Nov. 2015 08:25
...Jabbar Muhammad Uthman al-Qadasi, Adil Said al-Hajj Ubayd al-Busays, Sulayman Awad bin Uqayl al-Nahdi, and Fahmi Salem Said al-Asani. All were arrested fleeing the... ..., was suspected of being a possible bodyguard to al-Qaeda leader Osama bin ...

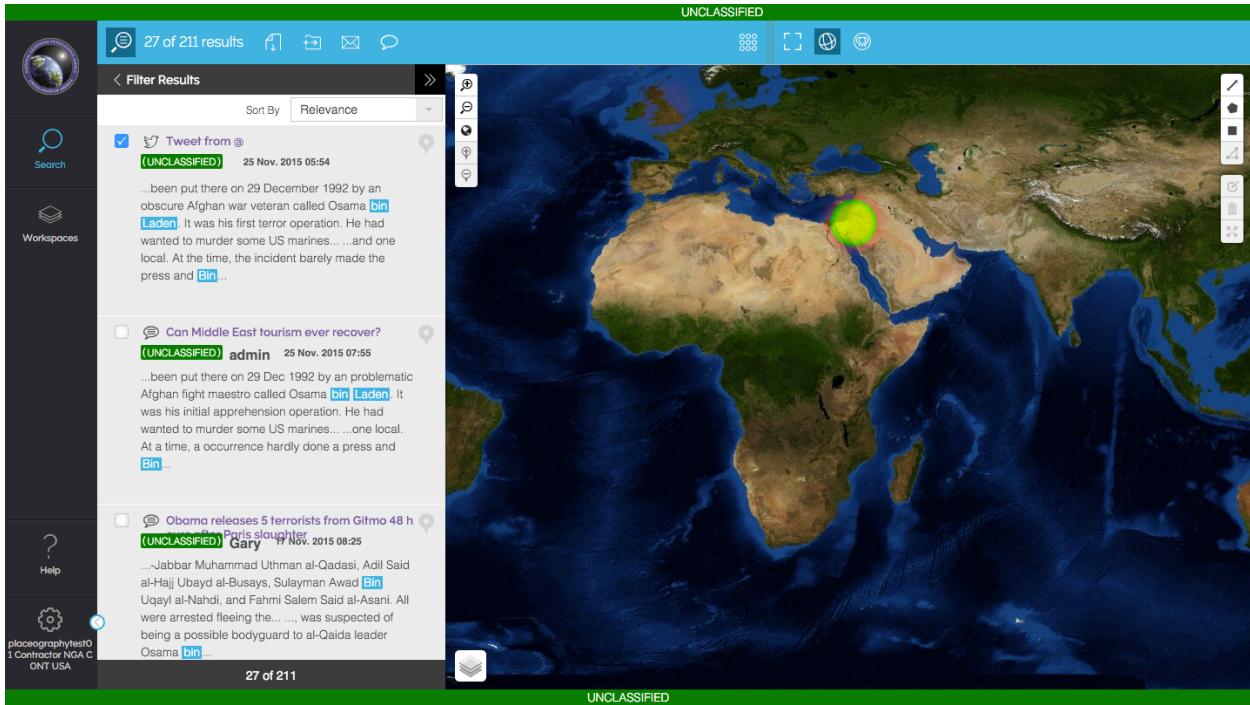
On the right side of the interface is a world map showing a heatmap concentration over the Middle East region. The bottom of the screen displays a blue footer bar with three icons: a four-cornered box, a globe, and a cluster of dots.

When results are selected, the same **Download**, **Folder**, **Email**, **Comment**, and **9 Dot** icons from the **Detailed Search** screen appear (to learn more about these icons, see “Detailed Search View”).

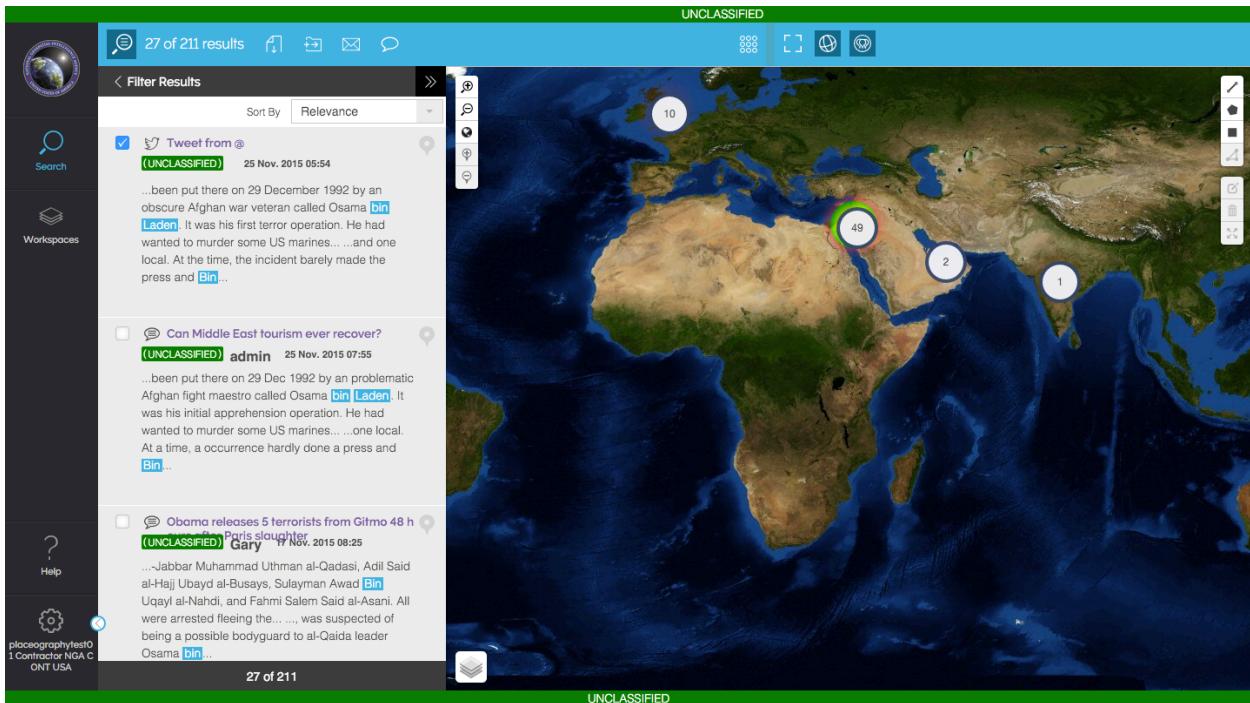
On the right half of the blue **Menu Bar**, the user may choose to view the map in **Full Screen** mode by clicking the four-cornered **Box** icon, as a **Heatmap** by clicking the **Globe** icon, or as a **Cluster** view by clicking the **Circle with Pins** icon.



The **Heatmap** view displays the concentration of data that contains information related to a particular location via heat signatures.



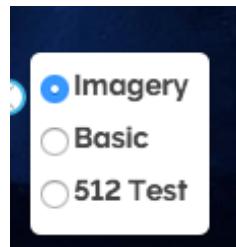
The **Cluster** view displays the concentration of data that contains information related to a particular location via a circle with a number. The number represents the number of documents or objects related to that location.



At the top left of the map, users may zoom in to the map by clicking the **Magnifying Glass with a Plus Sign**, and zoom out of the map by clicking the **Magnifying Glass with a Minus Sign**. Alternatively, the user can use the scroll wheel on their mouse to zoom in and out of the map, use their touch pad to pinch-zoom, or hold down the Shift button, click, and drag a rectangle over the area they wish to zoom into. The user can reset the map to the full globe view (the default view) by clicking the **Globe** icon under the **Zoom** icons.



At the bottom left of the map, users can choose the type of map to view by clicking the **Stacked Paper** icon. Users can choose between **Imagery**, **Basic**, and **512 Test** views.



2.4.1 Geospatial View Filters

On the right side of the map, users can choose from a range of shape filters. These filters can be drawn on the map to select geographic areas. This action will filter the search results to all documents and objects that are related to that location.



The **Polyline Filter** allows users to draw a line on the map and apply it as a filter. To draw a line, click the first point for the start of the line, click the end point of the line, and finish the line by clicking the end point a second time.

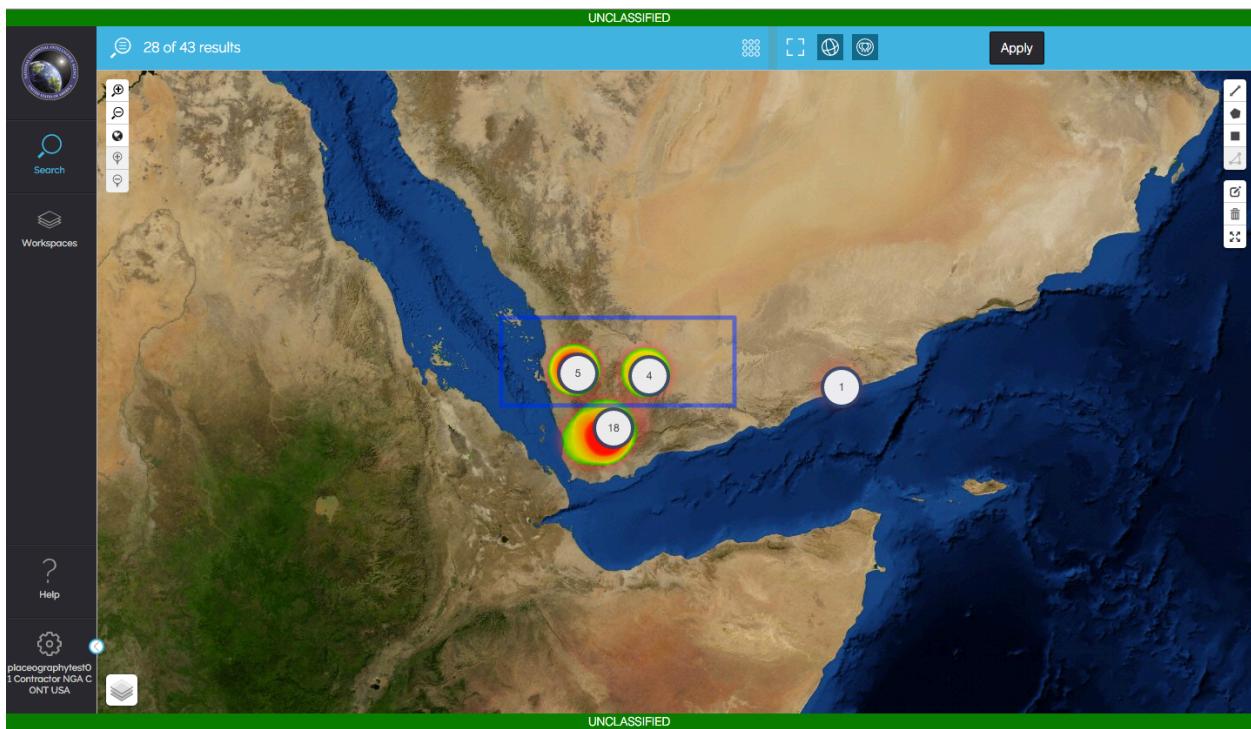
The **Polygon Filter** allows users to draw a shape on the map and apply it as a filter. To draw a shape, click the starting point of the shape, click additional points to add sides to the shape, and close the shape by clicking on the first point a second time.

The **Rectangle Filter** allows users to draw a rectangle on the map and apply it as a filter. To draw a rectangle, click the map where one corner of the rectangle will be located and drag to the desired size and in the desired direction from the starting point before letting go of the left mouse button.

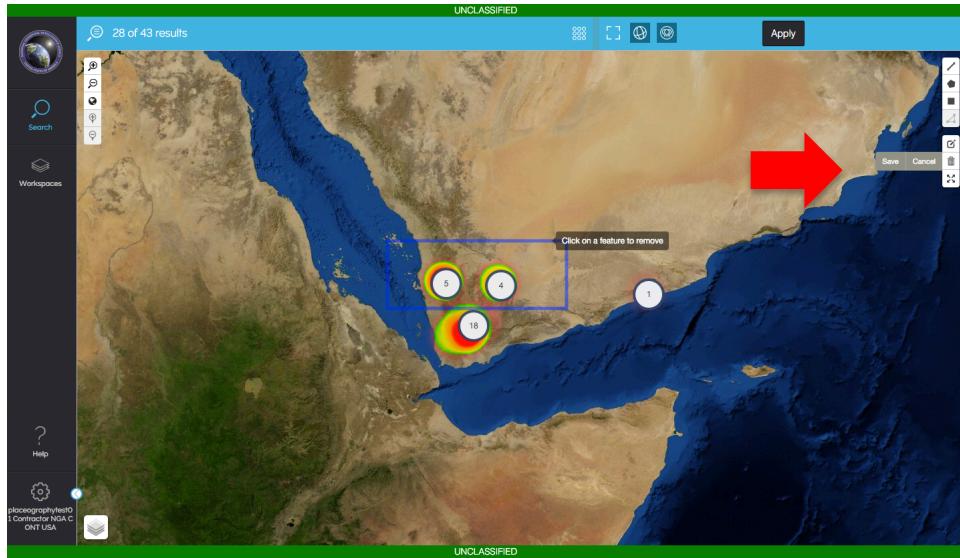
The icons located below the shape filters allow users to edit or delete shapes.



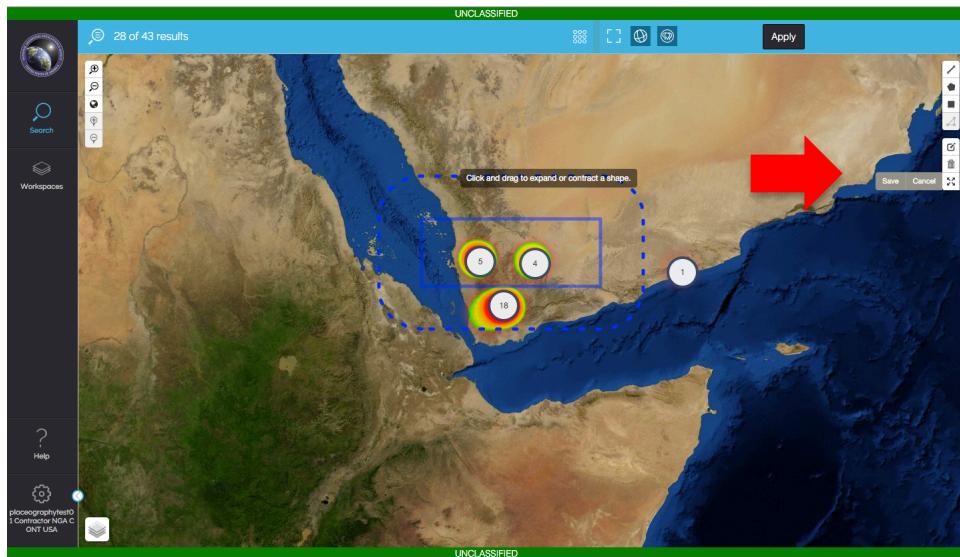
The **Edit Layer** icon allows users to alter a shape. Click the **Edit Layer** icon. The layer filters will appear as transparent shapes. Click the points of the shapes to change the size or placement. To save the changes, click on the gray **Save** box that appears next to the **Edit Layer** icon. To clear the changes, click on the gray **Cancel** box that appears next to the **Edit Layer** icon.



The **Delete Layer** icon allows users to delete filter shapes and lines in a layer. Click the **Delete Layer** icon. Click the shapes or lines within to delete. To save the changes, click on the gray **Save** box that appears next to the **Delete Layer** icon. To clear the changes, click on the gray **Cancel** box that appears next to the **Delete Layer** icon.

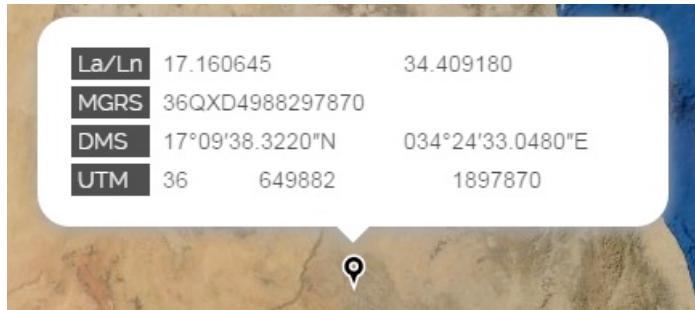


The **Expand Layer** icon allows users to expand or buffer around a shape or line filter. Click the **Expand Layer** icon. Click the shapes or lines within the layer to expand and drag out it to the desired size. To save the changes, click on the gray **Save** box that appears next to the **Expand Layer** icon. To clear the changes, click on the gray **Cancel** box that appears next to the **Expand Layer** icon.



Users may also view coordinates on the map by right clicking on the map. A popup box will appear that displays the Latitude/Longitude, Military Grid Reference System (MGRS), Degrees

Minutes Seconds (DMS), and Universal Transverse Mercator (UTM). This allows users to search for a specific location based on known coordinates. Users can click on the coordinate number, edit the coordinate, hit enter, and the point on the map will move to the new coordinate location. Another useful characteristic of this display is that all coordinate numbers automatically update when edited, creating a quick conversion capability. For example, if a user manually changes the Latitude/Longitude of a point, the MGRS, DMS, and UTM will update to correspond to the new Latitude/Longitude.



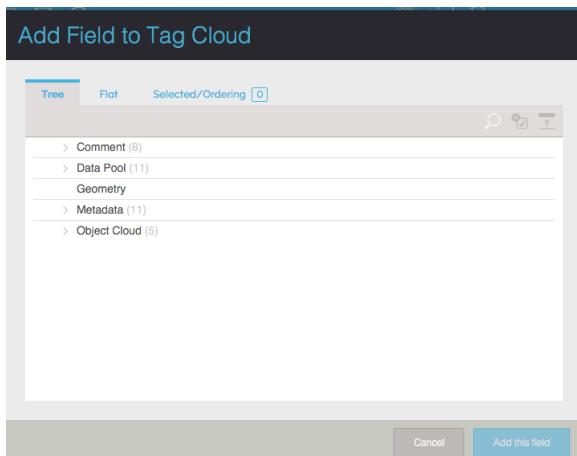
2.5 Tag Cloud View

The **Tag Cloud** view is a weighted list showing the data fields arranged by size (with those terms occurring most often appearing as the largest word) and is useful for quickly perceiving the most prominent terms.

If the user is beginning with a search on the entire data corpus, the default **Tag Cloud** screen will be blank. To select data for the **Tag Cloud**, click on the **Cog** icon on the blue **Menu Bar**.



This allows user to choose what data is represented in the **Tag Cloud** (such as Name, and Location). To choose data, click **Add Data**. A popup box called **Add Tag Cloud Field** will appear. Choose from the list of file types on the left and click **Select**.

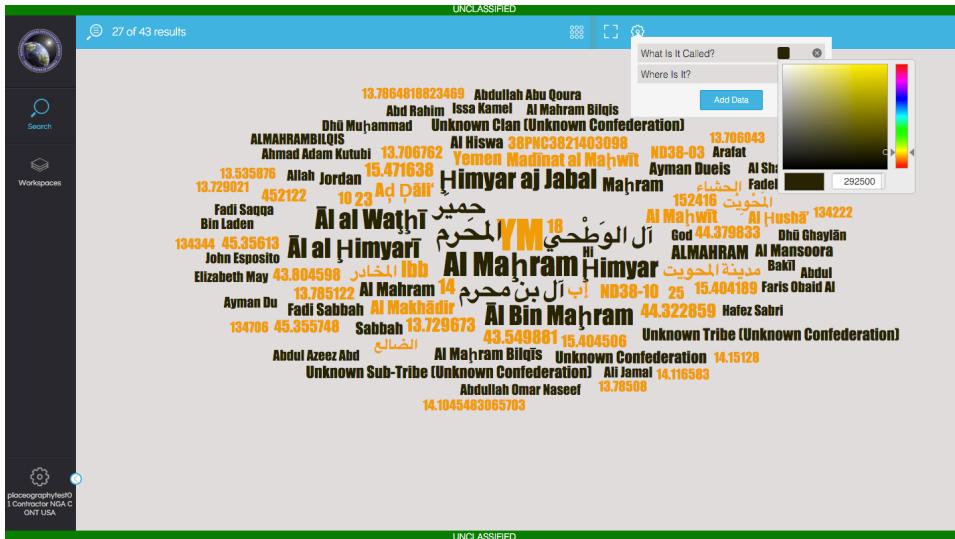




Beginning in the blue **Menu Bar** at the top left, the user may choose to view a list of documents in a panel by clicking the **Show Documents** icon. As in the **Detailed Search** view, the user may select results using the checkbox to the left of the document title. When results are selected, the same **Download**, **Folder**, **Email**, and **Comment** icons from the **Detailed Search** screen appear (to learn more about these icons, see “Detailed Search View”). When a user hovers over a document in the list, the **Tag Cloud** will adjust so that only those terms that appear in the document are featured in the cloud.

To the right of the **Tag**, **Download**, **Folder**, **Email**, and **Comment** icons is an additional icons to change views (**9 Dot** icon).

On the right half of the blue **Menu Bar**, the user may choose to view the cloud in **Full Screen** mode by clicking the **Box** icon. User can also adjust **Tag Cloud Settings** with the **Cog** icon. This allows user to choose what data is represented in the **Tag Cloud** (such as What is it called? Or Where is it?) and choose a custom color scheme for each type of data.



To set the color, click on the color swatch next to the data type and use the palette to choose the color. Click outside of the palette to close the palette.

3 Search

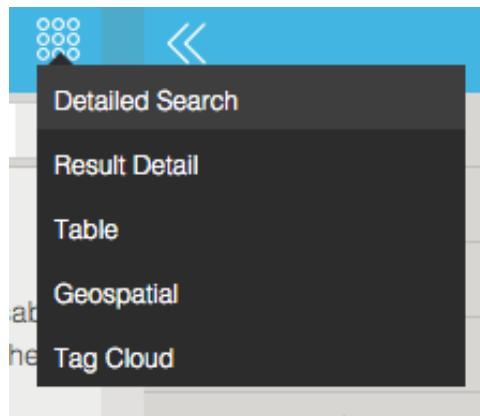
The OBI Analytic UI provides the ability to conduct broad, complex searches and filter down based on identified trends in a few simple clicks. It includes customizable search filters, including visualizations that can act as filters, for deep analysis

3.1 *Keyword*

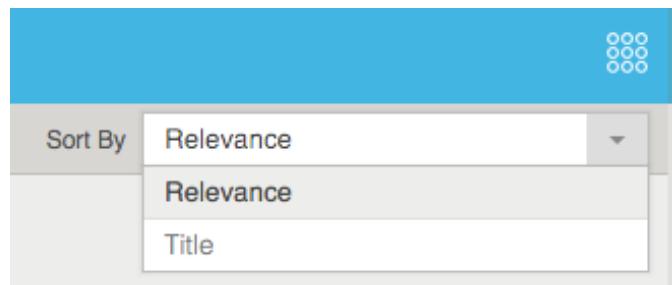
To begin a new keyword search, click on the **Magnifying Glass** icon in the **Global Navigation Bar** on the left side of the screen. Enter search text and hit enter or click on the **Magnifying Glass** icon to the right of the search bar, or to search the entire corpus of data, leave the search blank and hit enter or click the **Magnifying Glass** icon to the right of the search bar.



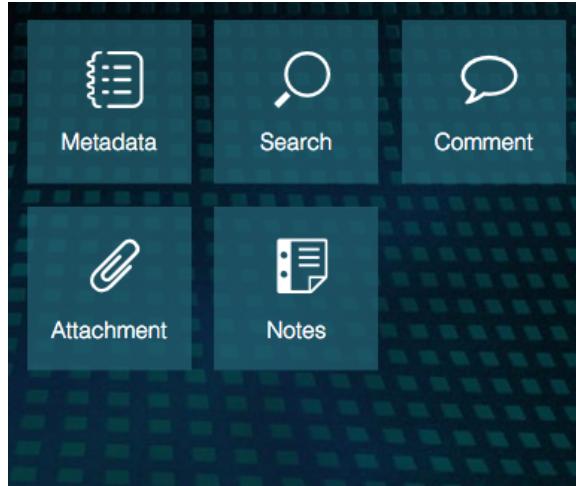
Users may also opt to choose the Detailed Search view from the **9 Dot** icon to open a new full page search.



Below the **9 Dot** icon in **Detailed Search** view, there is a drop down list that allows the user to sort search results by Relevance, or Title.



To search in the **Result Detail** view while also viewing other cards, click the **Search** tile icon in the **Result Detail** view to open a new search card.



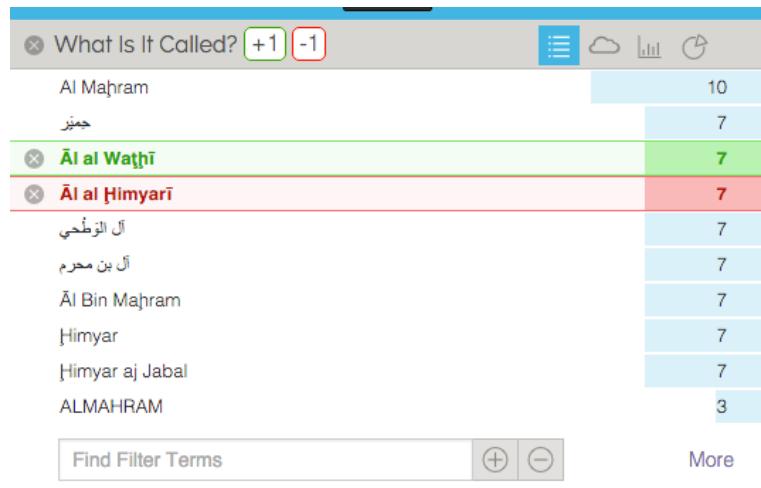
3.2 Using Filters

Search can also be conducted through the filters and visualization options. Multiple filters can be applied to the entire corpus of data or to returned results for deeper analysis. Filters fall into one of five categories: What is it called?, Where is it?, Geospatial, What is it?, and Dataset. Search filters are located on the right side of the **Detailed Search** screen. The filter menu can be expanded by clicking the left pointing arrows in the blue **Menu Bar** above the filters. The filters menu can be reset back to the default by clicking the right pointing arrows in the blue **Menu Bar**.

Category	Filter Options
What Is It Called?	MAHRAM: GeoNames Populated Places in 38PMA3271024045, ND38-10, YM
Where Is It?	MAHRAM Mahram Mahram MAHRAM Mahram Mahram What Is It? 10661668 11383217 P PPL Where Is It? 13.78508 44.377473 134706 442239 38PMA3271024045 ND38-10 YM 23
Geospatial	
What Is It?	
Dataset	

Each filter allows the user to view results in **Table**, **Geospatial**, **Tag Cloud**, and **Pie Chart** views using the icon in the top right corner. (One click shows the filters, a second click hides the filters.)

When a filter is selected, a black **Apply** button appears in the blue **Menu Bar**. Click **Apply** to apply that filter to the data set. Once a filter is applied, the user can see how many facets are included or excluded in the filter. In the Geospatial filter, a **white box with a green plus sign** will appear to the right of the filter name to show that a filter has been applied. In Text filters, a **white box with a green plus sign** will appear for included facets and a **white box with a red minus sign** will appear for excluded facets. The user can remove a filter or facet by clicking the **X** icon to left of the filter name. The user can collapse the filter window while still keeping the filter applied by clicking the **Filter Title Bar**.



3.2.1 Text

Text filters include **What Is It Called?** and **Where Is It?**. Users can filter data based on proper names or locations.

The default display for text filters is tabular, which shows filter terms on the left and the number of times the term appears in the data. The terms appear in order from the most mentioned to the least mentioned in the data with the total number of appearances listed on the right side.

Person	
Anwar al Awlaki	56
Abdu Rabbu Mansour Hadi	32
Ali Abdullah Saleh	25
Umar Farouk Abdulmutallab	23
Hussein Badr al Din al Houthi	19
Ansar al Sharia	18
Abd al Majid al Zindani	16
Katherine Zimmerman	14
Nasser al Wahayshi	14
Fazul Abdullah Mohammed ((Harrar))	13
<input type="text" value="Find Filter Terms"/> <input type="button" value="+"/> <input type="button" value="-"/>	
More	

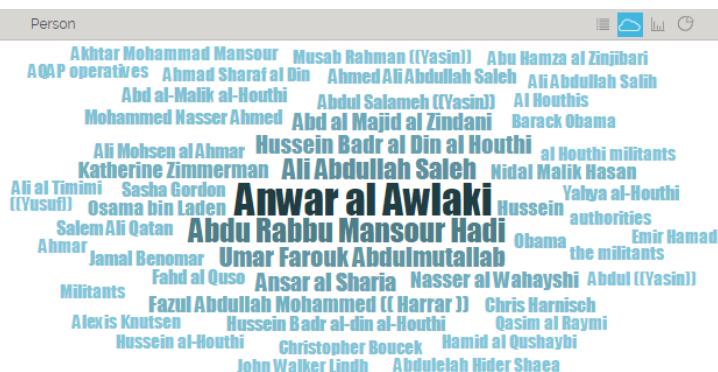
To set a filter, a user clicks on the listed name one time to search for data that contains that person, and clicks a second time to exclude that person from the results.

Users may view more filter terms by clicking the word **More** at the bottom right of the tabular display. (Please note, the application limits the total amount of filter terms to 50 for ease of viewing the filter terms. Users can utilize the **Find Filter Terms** search bar to search for additional terms.) A search bar is located at the bottom of the display allowing users to find filter terms within the list. The **Plus Sign** icon in the search bar allows user to include the filter term. The **Minus Sign** icon in the search bar allows users to exclude the filter term.

On the top right of the filter title bar, there are four icons that allow the user to view the text filters in multiple ways.

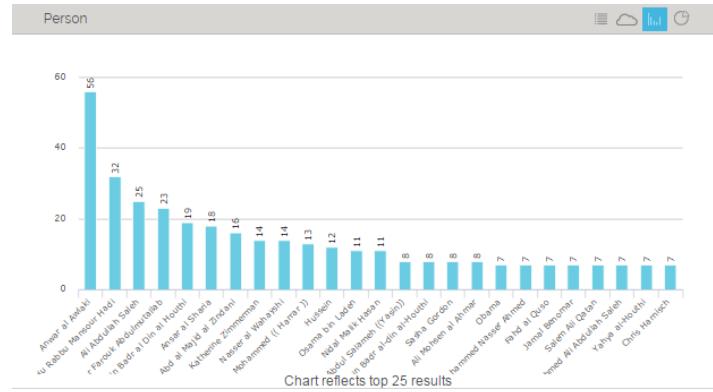
At the left is a **List** icon that allows users to view the filter terms as a tabular list.

Next is the **Cloud** icon that allows the user to view the filter terms in a **Word Cloud**. This weighted list shows the filter terms arranged by size and is useful for quickly perceiving the most prominent terms. Users can click on a word in the cloud once to select for inclusion, or twice to select for exclusion from the filter.

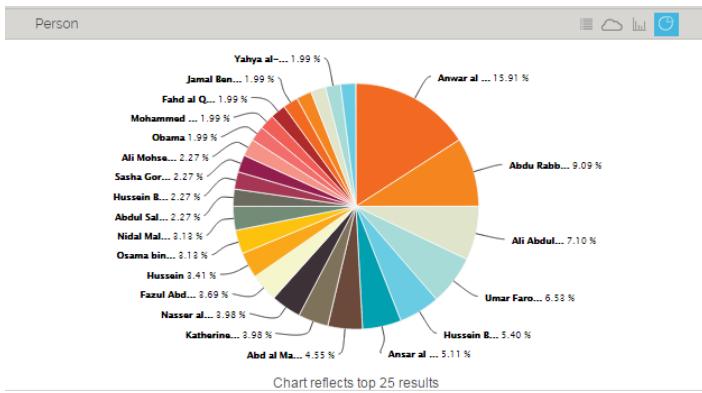


To the right of the **Cloud** icon is the **Column Chart** icon. This view allows user to view the filter terms in a chart format. Hovering over one of the columns in the chart will display the filter

term and number of documents in which the term occurs. Users can click on a column once to select for inclusion, or twice to select for exclusion from the filter.



Furthest right is the **Pie Chart** icon. Hovering over one of the pie pieces in the chart will display the filter term and percentage of documents from the data set in which the term occurs. (Please note that for ease of viewing the **Pie Chart** shows the top results based on the relative size of the pie pieces. It does not collapse all additional filter terms into an **Other** slice.) Users can click on a pie piece once to select for inclusion, or twice to select for exclusion from the filter.



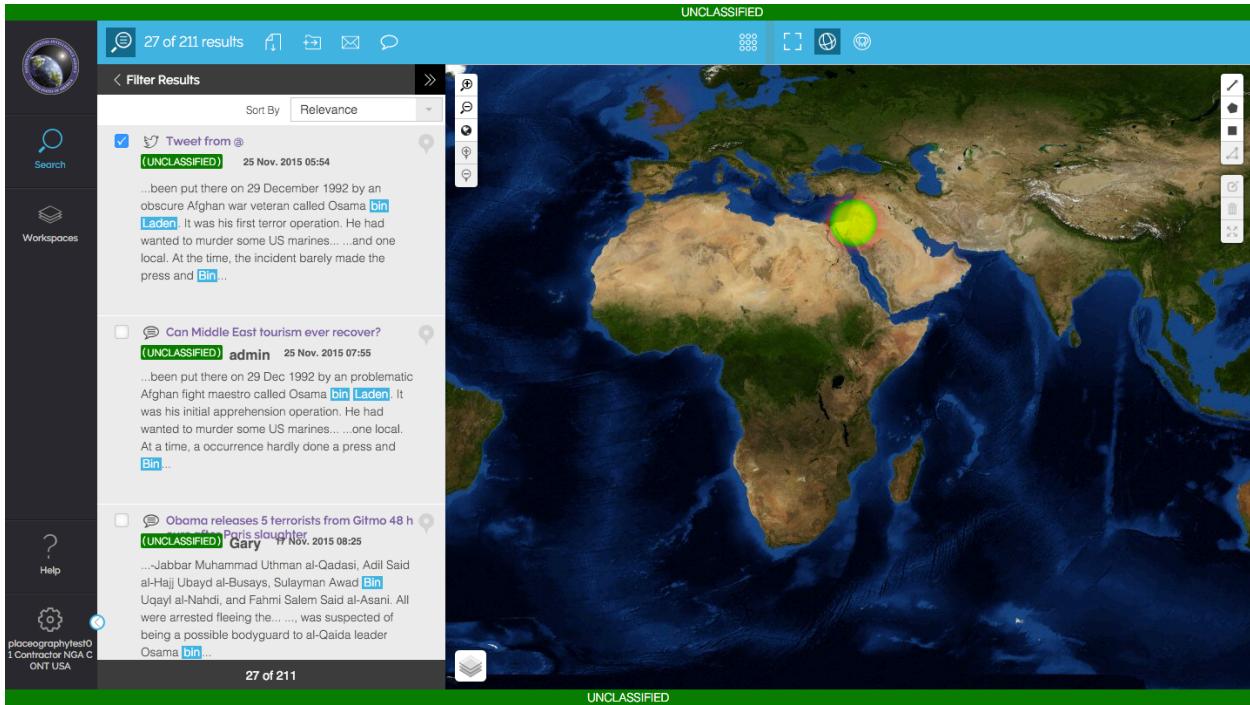
3.2.2 Geospatial

The **Geo Filter** is an interactive visualization that allows for multiple means of creating custom filters and views.

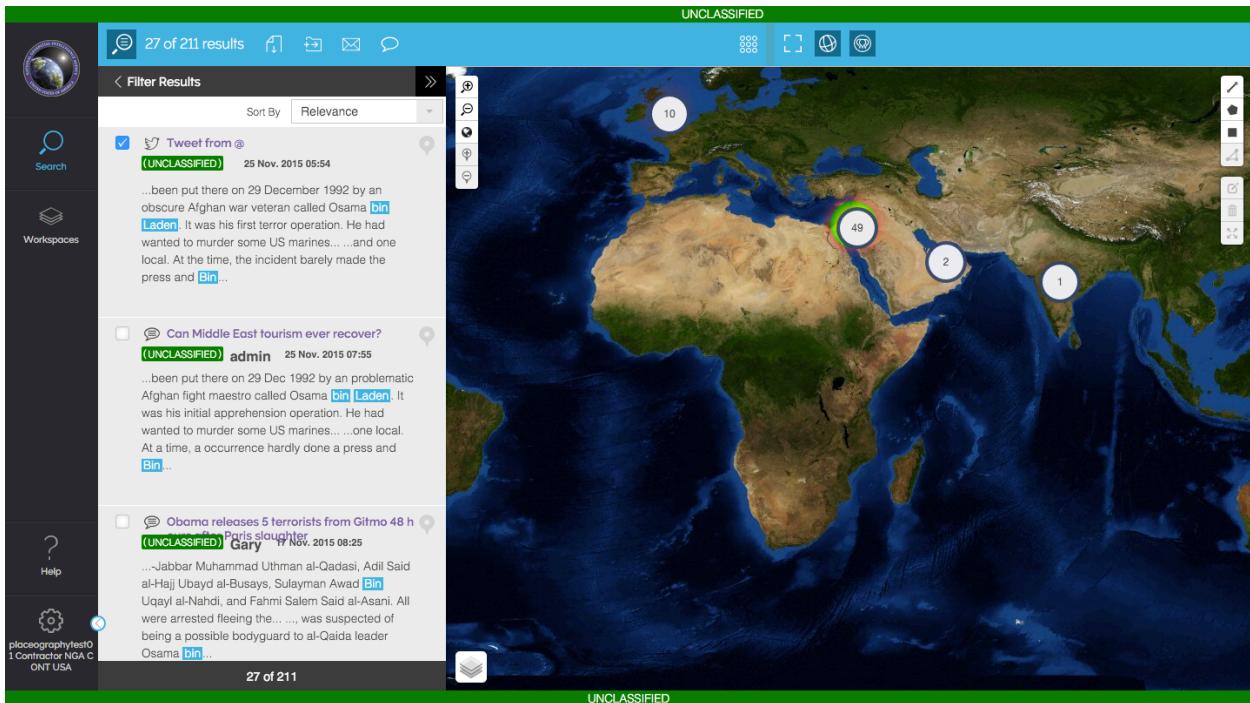
Beginning in the **Geo Coords Title Bar**, the user may choose to view the map as a **Heatmap** by clicking the **Globe** icon or a **Cluster** view by clicking the **Circle with Pins** icon.



The **Heatmap** view displays the concentration of data that contains information related to a particular location via heat signatures.



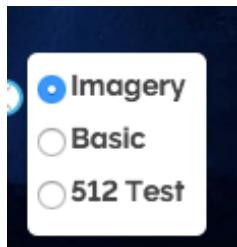
The **Cluster** view displays the concentration of data that contains information related to a particular location via a circle with a number. The number represents the number of documents or objects related to that location.



At the top left of the map, users may zoom in to the map by clicking the **Magnifying Glass with a Plus Sign**, and zoom out of the map by clicking the **Magnifying Glass with a Minus Sign**. Alternatively, the user can use the scroll wheel on their mouse to zoom in and out of the map, use their touch pad to pinch-zoom, or hold down the Shift button, click, and drag a rectangle over the area they wish to zoom into. The user can reset the map to the full globe view (the default view) by clicking the **Globe** icon under the **Zoom** icons.



At the bottom left of the map, the user can choose the type of map to view by clicking the **Stacked Paper** icon. Users can choose between **Imagery**, **Basic**, and **512 Test** views.



Moving to the right side of the map, users can choose from a range of shape filters. These filters can be drawn on the map to select geographic areas. This action will filter the search results to all documents and objects that are related to that location.



The **Polyline Filter** allows users to draw a line on the map and apply as a filter. To draw a line, click the first point for the start of the line, next click the end point of the line, and finish the line by clicking the end point a second time.

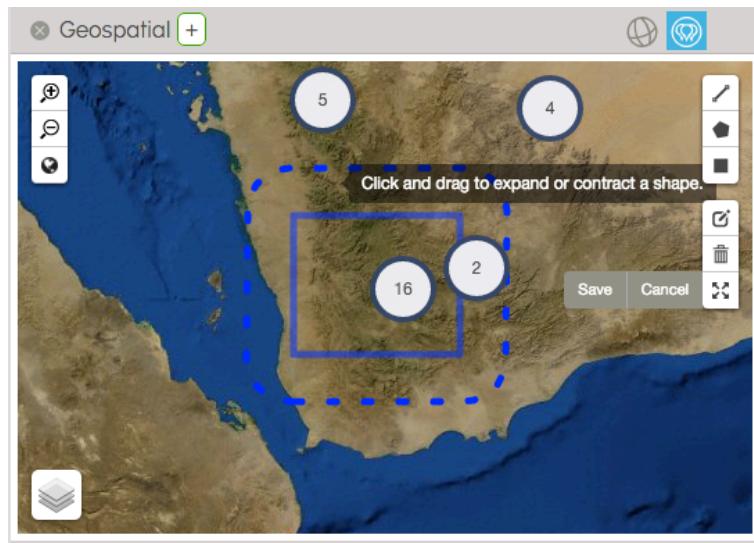
The **Polygon Filter** allows users to draw a shape on the map and apply as a filter. To draw a shape, click the starting point of the shape, click additional points to add sides to the shape, and close the shape by clicking on the first point again.

The **Rectangle Filter** allows users to draw a rectangle on the map as a filter. To draw a rectangle, click the map where one corner of the rectangle will be located and drag to the desired size and in the desired direction from the starting point.

The icons below the shape filters allow user to change the filter layers.



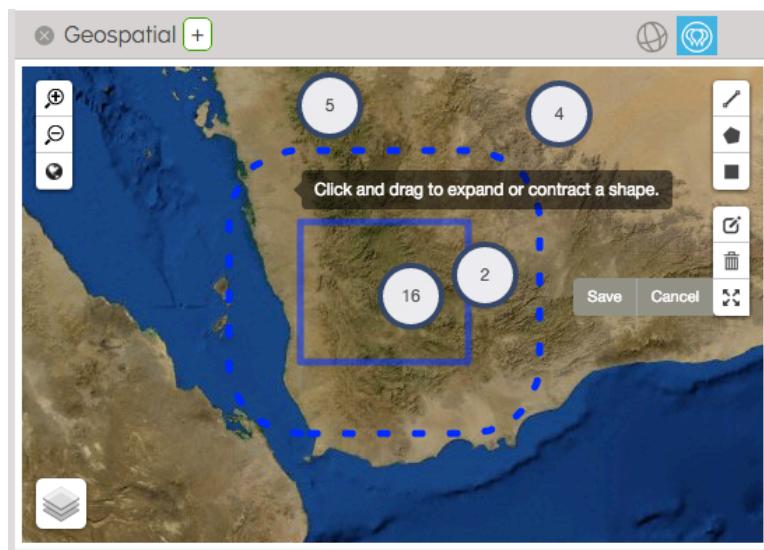
The **Edit Layer** icon allows users to alter a shape. Click the **Edit Layer** icon. The layer filters will appear as transparent shapes. Click the points of the shapes to change the size or placement. To save the changes, click on the gray **Save** box that appears next to the **Edit Layer** icon. To clear the changes, click on the gray **Cancel** box that appears next to the **Edit Layer** icon.



The **Delete Layer** icon allows users to delete filter shapes and lines in a layer. Click the **Delete Layer** icon. Click the shapes or lines within to delete. To save the changes, click on the gray **Save** box that appears next to the **Delete Layer** icon. To clear the changes, click on the gray **Cancel** box that appears next to the **Delete Layer** icon.

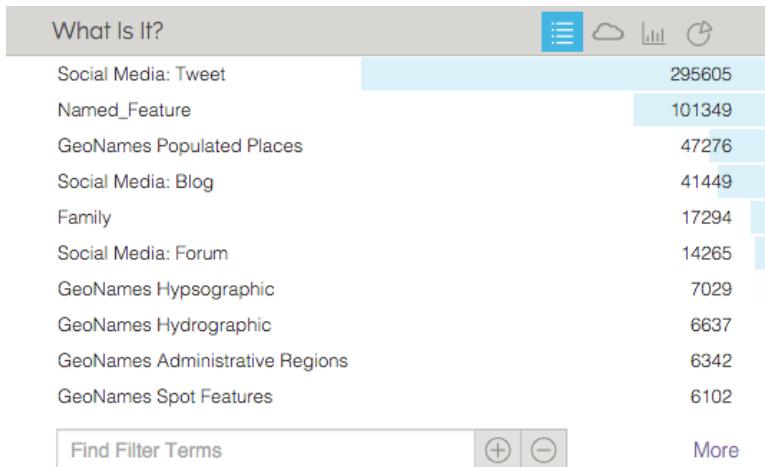


The **Expand Layer** icon allows users to expand or buffer around a shape or line filter. Click the **Expand Layer** icon. Click the shapes or lines within the layer to expand and drag out to the desired size. To save the changes, click on the gray **Save** box that appears next to the **Expand Layer** icon. To clear the changes, click on the gray **Cancel** box that appears next to the **Expand Layer** icon.



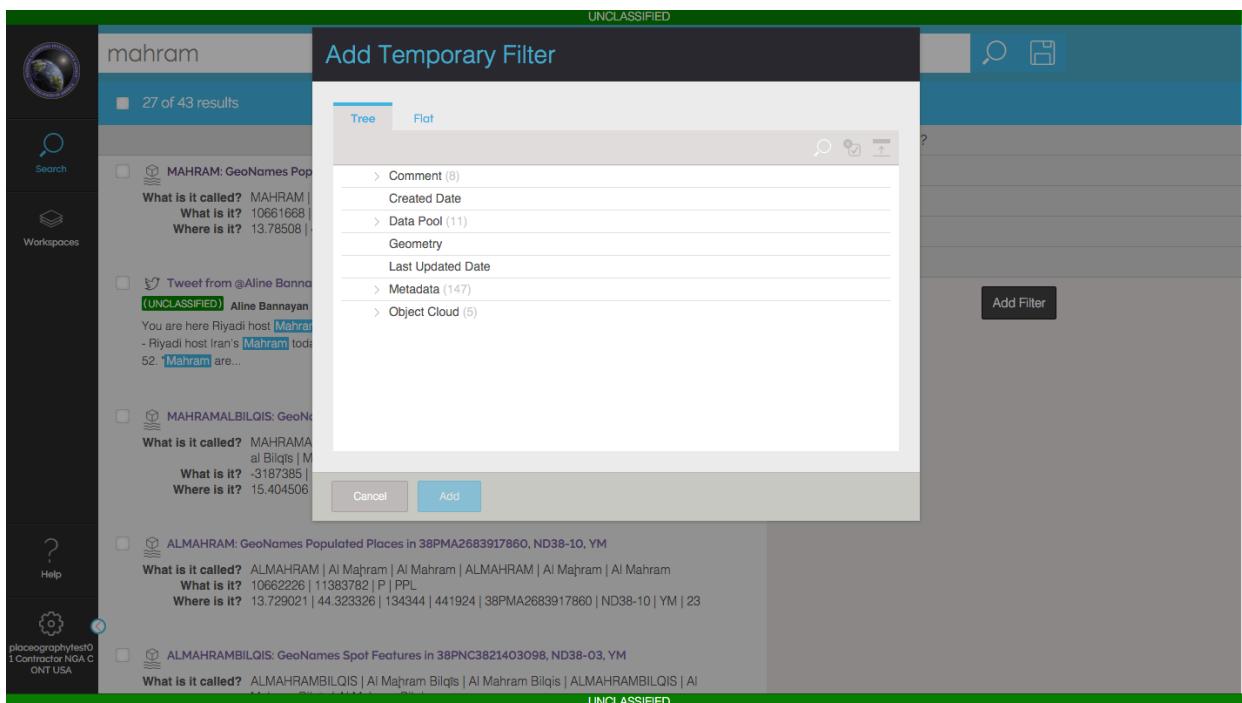
3.2.3 File Sources

Users can apply the **What Is It?** and **Dataset** filters to include or exclude specific kinds of sources.



3.3 Creating Custom Filters

Users can create a custom filter using the **Add Filter** button below the default filters. Once the user clicks **Add Filter**, a popup window displays the options for setting the filter.



The user can choose between seven filter types—Comment, Created Date, Data Pool, Geometry, Last Updated Date, Metadata, and Object Cloud. Users choose the filter type from the list and may have the option of further refining the filter with a subset of choices.

Once a user selects a filter, such as *weapon*, they can click **Apply** and the temporary filter will be added to the filter menu. To remove a temporary filter from the filter menu, click the **Trashcan** icon at the far right of the filter title bar.



3.4 Saving a Search

Users can save a search for future use or to share with other users in a workspace.

To save a search from the **Detailed Search** view, click the **Disk** icon to the right of the search bar at the top of the blue **Menu Bar**.



A **Save New Search** popup window appears. Choose a workspace from the drop down menu under **Workspace**. This is where the search will be saved. After choosing a workspace, create a name for the search and click **Save**.

The screenshot shows the application's user interface. On the left is a vertical Global Navigation Bar with icons for Search, Workspaces, Help, and placegeography1. A watermark at the bottom left reads 'placegeography1 Contractor NGA C ONT USA'. The main area displays search results for 'mahram'. At the top right of the results area, a 'Save New Search' dialog box is open. It includes fields for 'Workspace' (a dropdown menu), 'Name' (an input field), and 'Save' (a blue button). Below the search results, there are several entries, each with a checkbox, a small icon, and descriptive text. One entry is highlighted in yellow.

3.5 Retrieving a Saved Search

There are two ways to retrieve a saved search. Saved searches can be retrieved by using the **Global Navigation Bar** on the left or by opening a new search card in the **Result Detail** view.

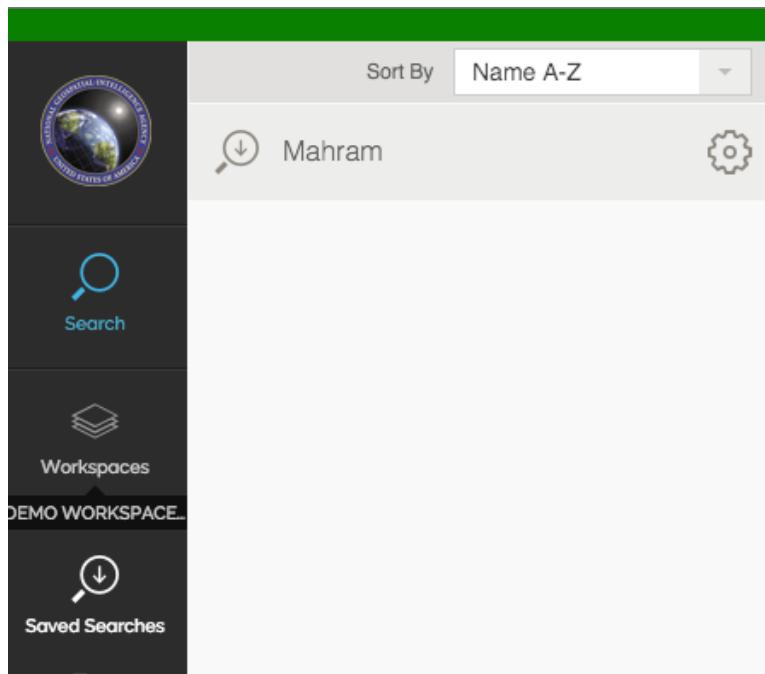
To retrieve a search through the **Global Navigation Bar**, click on **Workspace**. A panel will appear to the right of the **Global Navigation Bar** with a list of existing workspaces.

Click on the desired **Workspace**. Once a **Workspace** is selected, icons for **Saved Searches**, and **Folders**, appear in the **Global Navigation Bar**.

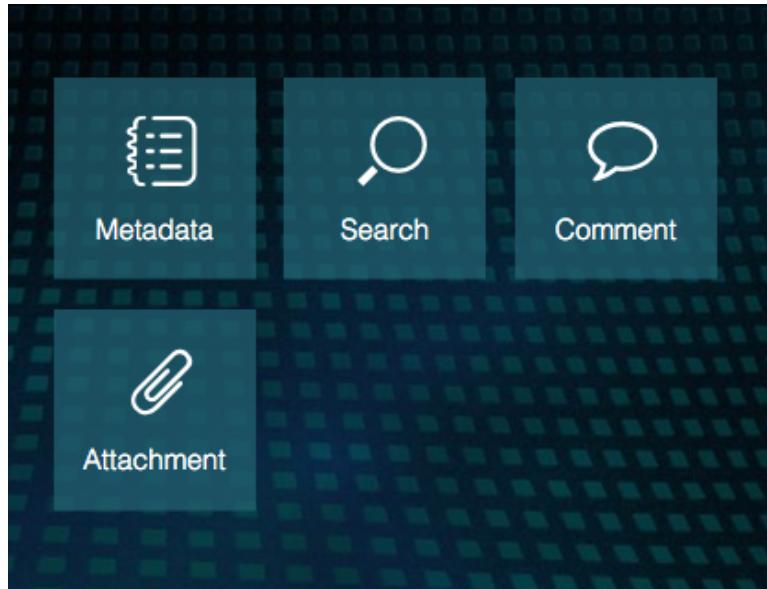
This screenshot shows the Global Navigation Bar expanded to show the 'New Workspace' panel. The panel has a dark background with a circular logo on the left. To the right of the logo, the text 'New Workspace' is displayed next to a gear icon. Below this, there is a 'Sort By' dropdown set to 'Name A-Z'. The main area contains three items: '0 Test Automation' with a document icon, '2' with a magnifying glass icon, and '1' with a folder icon. To the right of these items is a gear icon.

Click on the **Saved Searches** icon. A panel will appear to the right of the **Global Navigation Bar** with a list of searches.

Click on the desired **Saved Search** to execute that search.



To retrieve a search from the **Result Detail** view, click the **Search** icon tile on the right side of the screen. A search card will appear with a search bar.

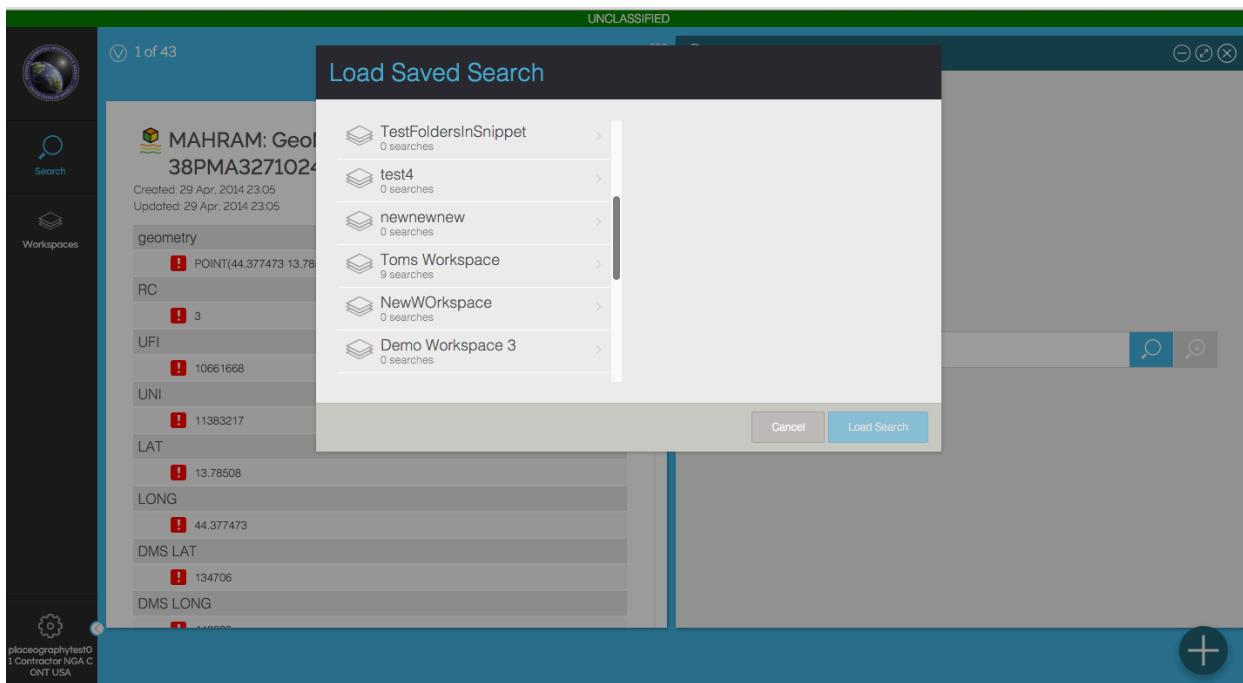


Click on the **Magnifying Glass with an Arrow** to the right of the search bar.



A **Load Saved Search** popup window appears. Click on the desired **Workspace** from the list in the window. A list of saved searches in that **Workspace** will appear to the right of the workspaces list.

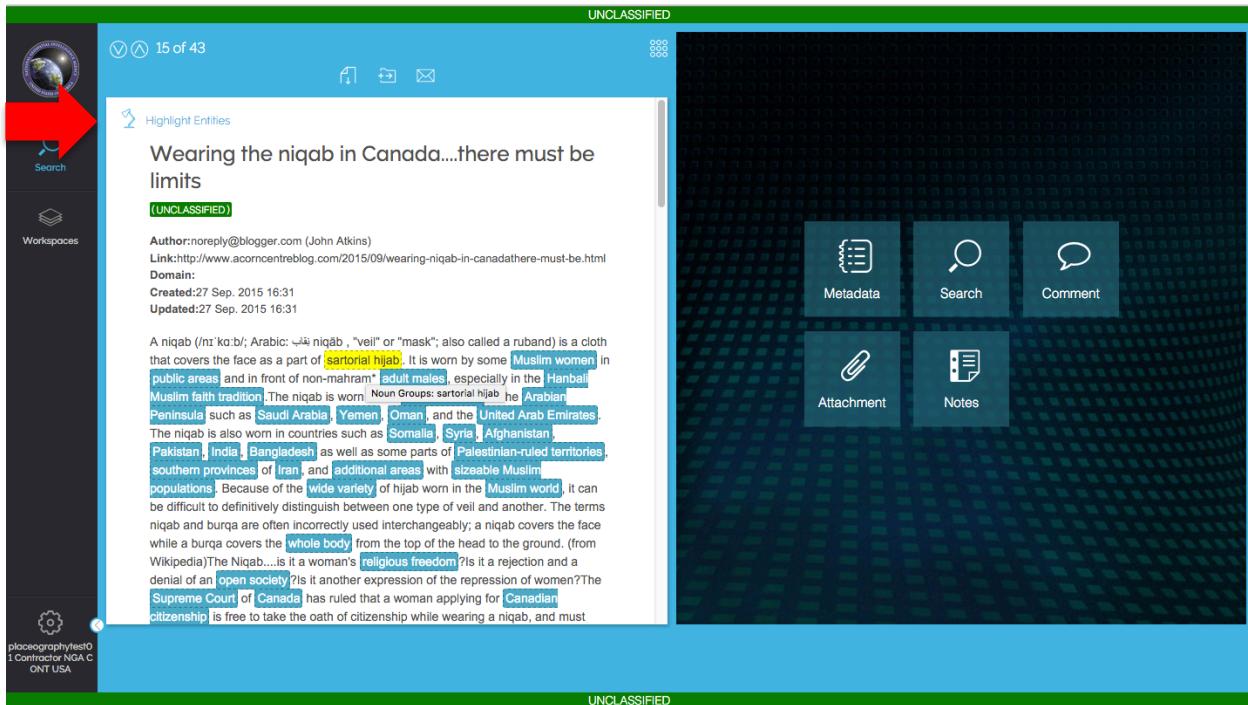
Click on the desired saved search and then click **Load Search**.



4 Search Results

4.1 View Results

When viewing a document in the **Result Detail** view, users can turn on the **Highlight Entities** function to view **Entities** in the document.



Opening the **Metadata Card** will open up the ontology viewer, allowing the user to view any associated metadata for an object.

Clicking on **Search** will allow the user to launch a new search. This is particularly useful if the user finds a search term in the text of the current file and wishes to locate additional information on that topic.

Comment allows the user to add notes for future reference and that can be made discoverable by other users.

Attachment allows the user to add files to the object.

Users can add **Notes** to documents or .csv files

When viewing a document or object, several items appear at the top of the menu bar.



From left to right these are:

Download: Allows the user to download the selected documents

Folder: Allows the user to add the selected documents to a folder

Email: Allows the user to email links of the selected documents to other system users

Comment: Allows the user to add comments to the document

To the right of the **Download**, **Folder**, **Email**, and **Comment** icons there is an additional icon allowing users to change the returned results display.

9 Dot: Allows the user to choose between five views including **Detailed Search**, **Result Detail**, **Table**, **Geospatial**, and **Tag Cloud**.

Below the **Object** icon name and image, a section for **Attributes** and **Values** is available to view, add, and edit (to learn more about **Object Attributes**, see “Attributes”).

Name
an al Qaeda training camp north of Sana'a
type
Entity
subType
Organization-Facility-Training_location
Date of Formation
Description
Image

Below the section for **Attributes** and **Values** is a section detailing **Relationships** associated with the **Object** (to learn more about **Object Relationships**, see “Relationships”).

Below the area for **Relationships** is an area detailing **Inverse Relationships** associated with the **Object**.

Relationships 
ontology-event-conflict-attack_target-sectarian_violence--target--reverse
also carried
Inverse Relationships  
ontology-event-conflict-attack_target-sectarian_violence--target an al Qaeda training camp north of Sana'a
 also carried

4.2 Object Card Iconography

In the **Attributes** and **Relationships** area of the **Object** card, **Badges** indicate edits or changes to the information associated with the **Object**. Users have the option of viewing different versions of the **Object** in time by selecting dates in the **Timeline** (to learn more about object versioning, see “Timeline”).

Black badges appear next to the information that changed in the version of the **Object** that the user is currently viewing.

Blue Badges appear next to the information the current user is responsible for editing in the version of the **Object** that the user is currently viewing.

What Is It? 

What Is It Called? 

Name Codename

Codename

Codename

Codename



Name Transliterated Roman



Mirhu



Mirhu

Marḥūm

Marḥūm

Name Sounds Like



Marhum



Marhum

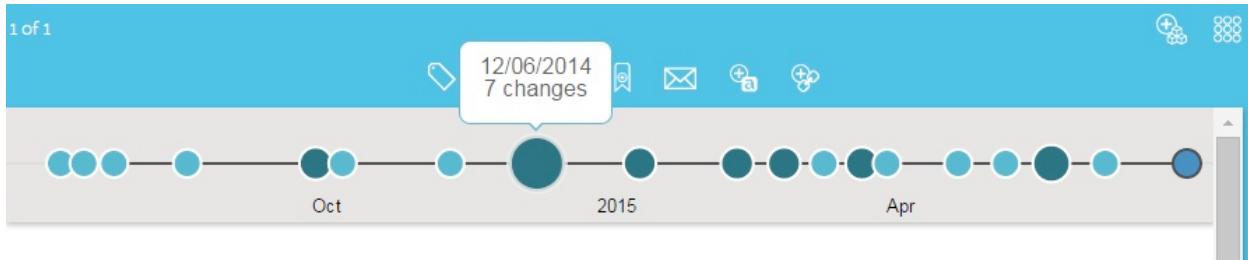
Marhum

Where Is It?  

What Is Its Story?  Updated in this version

4.3 Timeline

Near the top of an **Object** card is a **Timeline** of changes the **Object** has undergone since its creation. The circles on the **Timeline** represent these changes and are weighted/clustered to reflect the number of changes that occurred near a particular date (larger, darker circles represent more changes to the object occurring near a particular date, and small circles represent fewer changes to the object near a particular date). By hovering over the circle, a **Dialog Bubble** will appear that indicates the date that the change was made to an object and how many changes occurred on that date.



To view a previous version of the **Object**, click on the circle associated with the desired version date. A black outline appears around the circle to indicate the user has selected that version of the object to view. **Black Badges** will appear next to information in the object that was changed or added on that date, and **Blue Badges** will appear next to information in the object that was changed or added on that date by the current user.

4.3.1 Navigating the Timeline

A user can explore the length of the **Timeline** by clicking and holding on the **Timeline** and dragging the **Timeline** left or right.

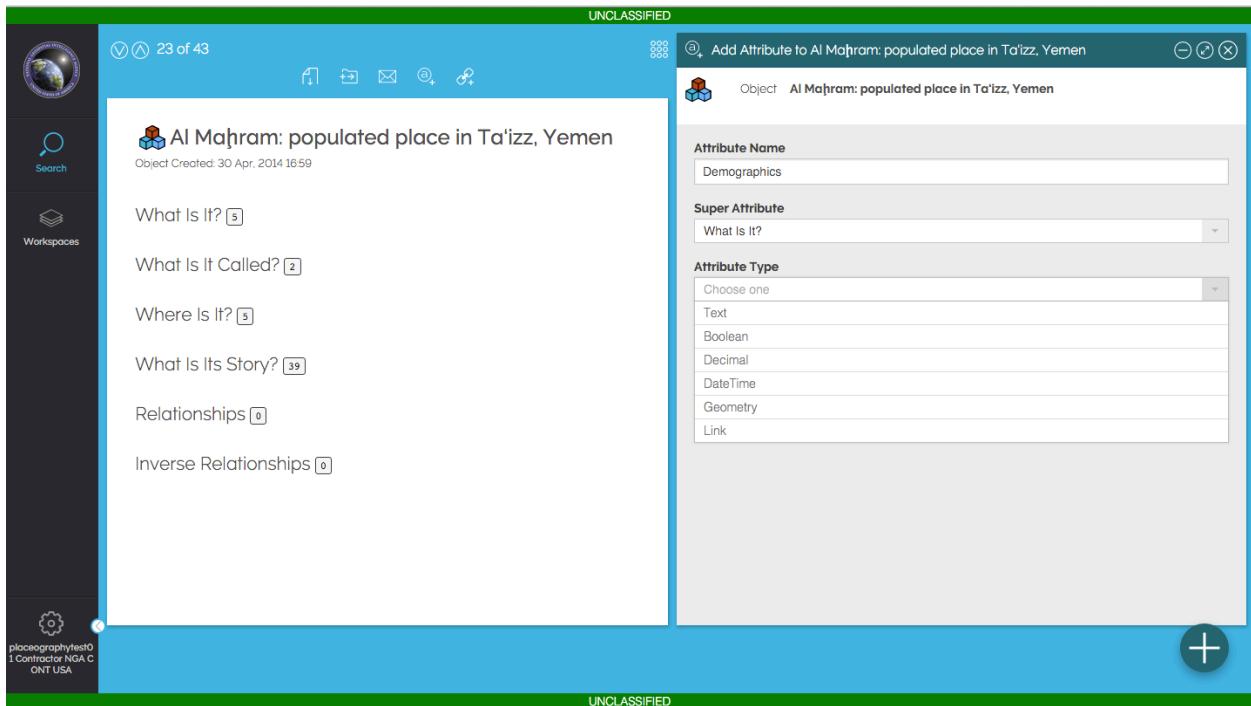
A user can zoom in or out of the **Timeline** by scrolling their mouse wheel or using their touch pad to pinch-zoom. Zooming in will cause a larger circle, or cluster with multiple change dates, to separate into smaller circles. Zooming out will cause smaller circles that occur near to one another on the **Timeline** to combine into a cluster, grouping them by a closest change date.

4.4 Attributes

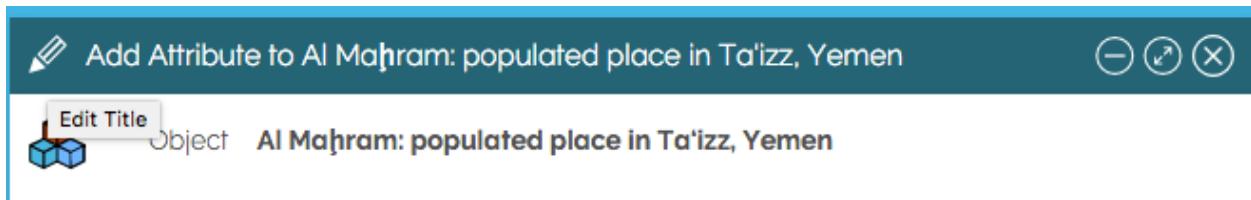
Attributes are associated with objects to provide a more complete understanding of the object. **Attributes** may take the form of general category names such as name, age, geo coordinates, dates, etc. **Attributes** are higher level, while attribute **Values** are specific. An example of an **Attribute** might be *Date of Birth*, and an example of an attribute **Value** might be *6/30/79*.

4.4.1 Adding or editing an attribute

To add an **Attribute**, click the **Add Attribute** icon in the blue **Menu Bar** at the top of the object card. An **Add Attribute** card appears. Type the name of the **Attribute** in the text box. A drop down menu appears that allow the user to select the **Super Attribute** (for example, *What is it?*). Another drop down box prompts the user to select the **Attribute Type** (for example, *Text*). After selecting the attribute type, click **Submit** to create the **Attribute**. The new **Attribute** will appear in the **Object** card view.



The title of the **Attribute** can be changed by hovering **Attribute** icon on the top left of the card until it becomes a **Pencil**, and then click on the pencil. This brings up a text box where the user can edit and save the new title by clicking **OK**.



4.4.2 Editing an attribute value

To edit a **Value**, select the **Value** itself from the **Object** card by clicking on the **Value**. A user may also select the **Attribute** to open the **Attribute** card and then select the **Value** from that card by clicking on the **Value**. Once the **Value** card appears, a user can provide feedback on the **Value** by **Rating** it, view the value-level metadata, and add a **Comment**, before clicking **Submit** to save changes to the **Value** (to learn more about **Ratings** and **Comments**, see “Collaboration”).

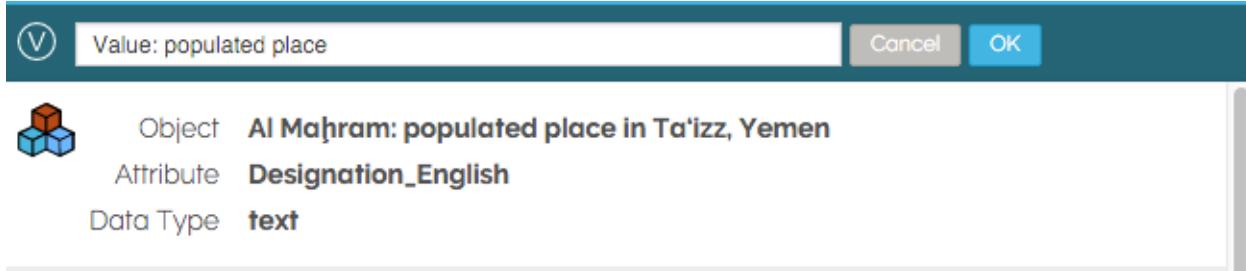
The screenshot shows a detailed view of a populated place record. On the left, there's a sidebar with icons for search, workspaces, and a logo for 'placegraphytest01 Contractor NGA C ONT USA'. The main area displays the title 'Al Maḩram: populated place in Ta'izz, Yemen' and the object creation date 'Object Created: 30 Apr. 2014 16:59'. Below the title is a 'What Is It?' section with a 'Designation English' field containing 'populated place'. To the right is a card titled 'Value: populated place' with details: Object 'Al Maḩram: populated place in Ta'izz, Yemen', Attribute 'Designation_English', and Value 'populated place'. The card also includes 'MICRODATA' with source information ('GEONet Names Server (aka GeoNames Database or GNDB)'), occurrence ('No Date'), periodicity, classification ('UNCLASSIFIED'), creator ('David.Eldridge'), date of creation ('30 Apr. 2014 16:59'), valid start ('29 Apr. 2014 21:20'), and valid end ('No valid end'). There are sections for 'Your Feedback' (with a rating of 5 stars) and 'Comments' (which are empty). A large green 'Save' button is at the bottom right.

To edit the value-level metadata associated with a **Value**, click the **Open Settings** icon and make changes to the name, source, valid start and end dates, and **Classification**. Click **Submit** to save **Value** changes.

This screenshot shows the same populated place record as above, but the 'Value: populated place' card is now open for editing. The 'Reason for editing' section has a radio button selected for 'Aspect of value is incorrect (edit)'. The 'Data' field contains 'populated place'. The 'Source' field is a text input placeholder 'Start typing to search for sources'. The 'Valid Start Date' is set to '04/29/2014' and the 'Valid End Date' is set to 'MM/DD/YYYY'. The 'Classification' dropdown is set to '(UNCLASSIFIED)'. At the bottom right are 'Cancel' and 'Save' buttons, with 'Save' being highlighted in blue.

The title of the **Value** card can be changed two ways. The first is to hover over the **Attribute** icon on top left of the card until it becomes a **Pencil**, and click on the **Pencil**. This brings up a

text box where the user can edit and save the new title by clicking **OK**. Alternatively, a user can click the **Open Settings** icon. A **Settings** card will temporarily replace the **Attribute** card. Users can edit the title in the text box and click **Save** to save and close the **Settings** card.



4.5 Relationships

Relationships are links between the **Object** and other **Objects**, **Entities**, or documents. **Relationships** and **Inverse Relationships** appear on the **Object** card.

The number of associated relationships appears in a box next to **Relationships**. A user can click on the gray lines containing the nature of the **Relationship** (darker gray) or the linked Object (lighter gray) to bring up the **Relationship** card. This card presents the user with information about the relationship, including source, occurrence, periodicity, **Classification**, creator, date of creation, valid start, and valid end.

Users can click on the **Open Object** icon to open the **Object** card of the linked **Object**.

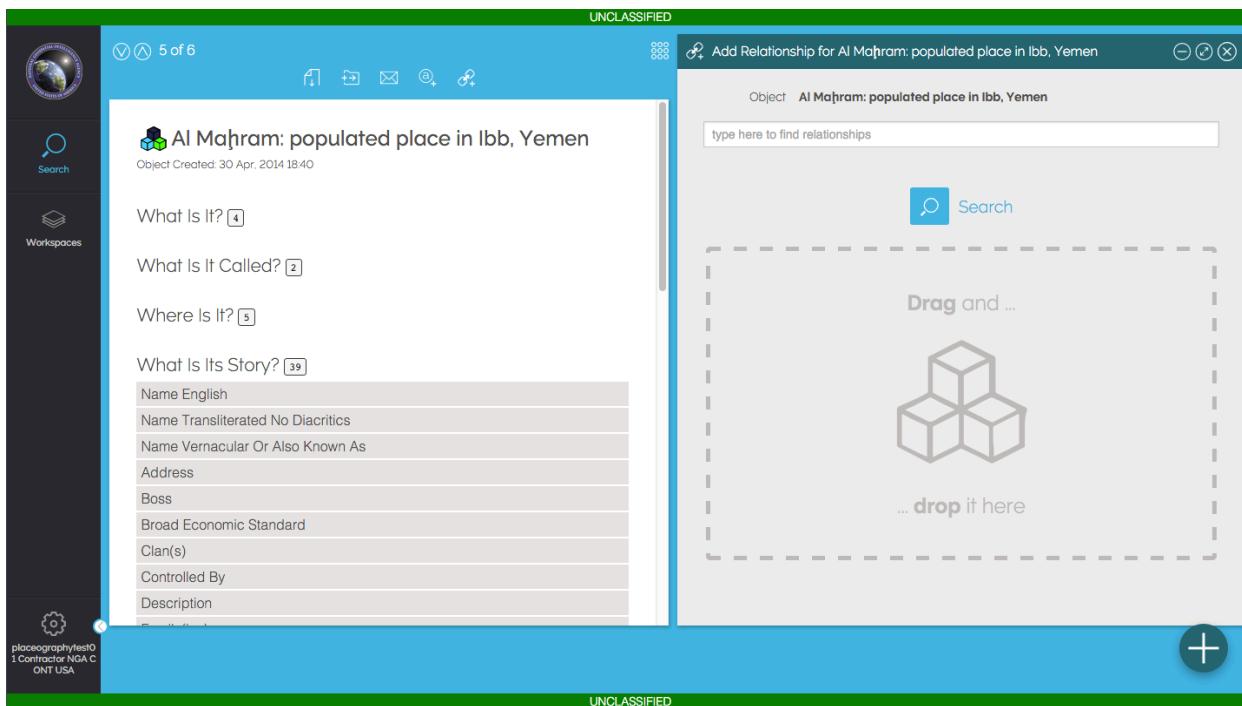
4.5.1 Inverse Relationships:

The number of associated inverse relationships appears in a box next to **Inverse Relationships**. Inverse relationships are automatically created when a new **Relationship** is defined. A user can click on the gray lines containing the relationship type (darker gray) or the linked object (lighter gray) to bring up the **Inverse Relationship** card. This card presents the user with information about the inverse relationship.

Users can click on the **Open Object** icon to open the **Object** card of the linked **Object**.

4.5.2 Adding a Relationship:

To add a **Relationship** to an **Object**, a user can click the **Add Relationship** icon on in **Object** card view. Doing so will bring up the **Add Relationship** panel. A user can **Search** for another **Object** to link, or simply drag the **Object** icon associated with that **Object** to the box outlined in dashes to make the connection.



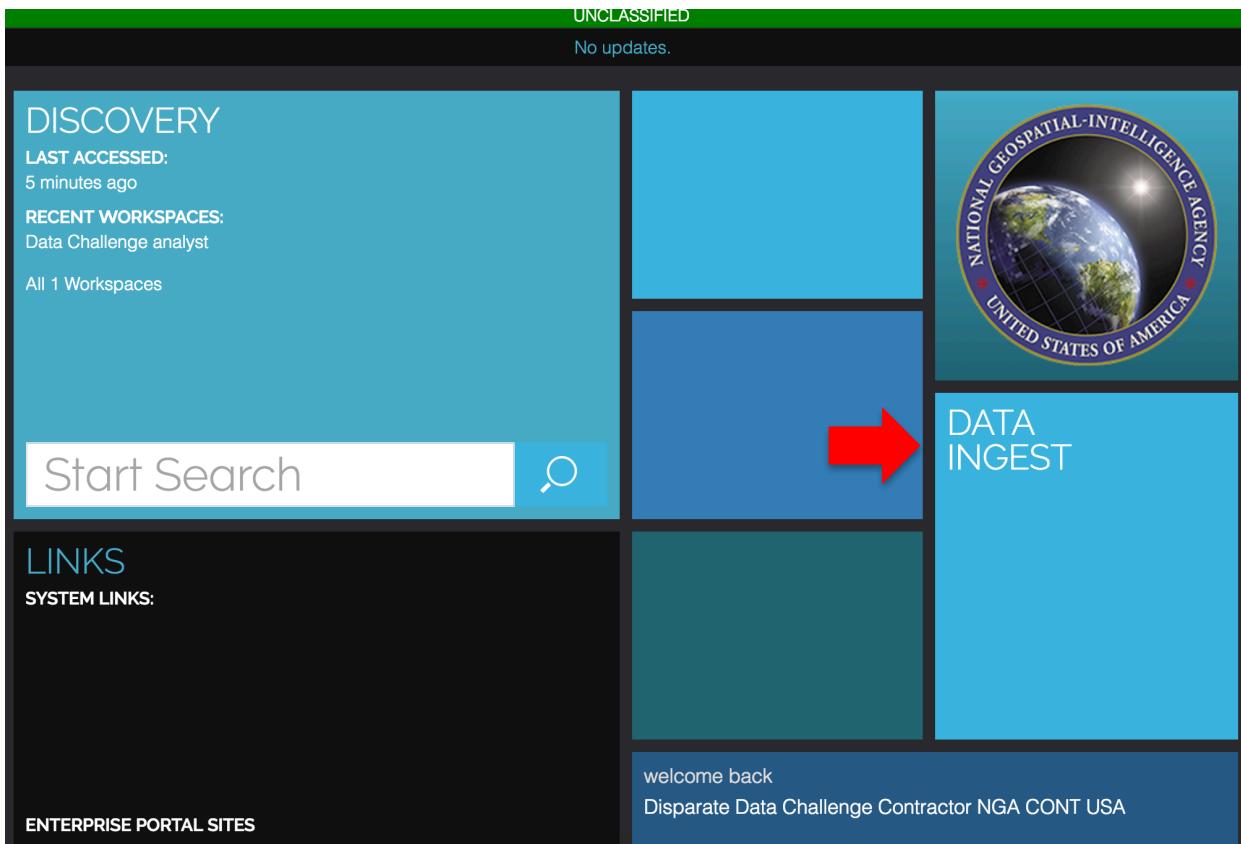
4.5.3 Editing a Relationship:

The title of a **Relationship** can be changed by hovering over the **Link** icon on the **Relationship** card until it becomes a **Pencil**. The user can click the **Pencil** and open a text box where the title can be changed and saved by clicking **OK**.



5 Data Ingest

Data Ingest allows the user to create new objects and to bulk upload objects from an .xlsx file. To begin, click on the **Data Ingest** tile located on the **Home Screen**.



5.1 *Create Object*

Click on **Object** from the **Global Navigation Bar** that appears in the **Data Ingest** screen. Enter the **Object Name**, and then select **Object Type** from the drop-down list. If using a **Template**, select the appropriate item from the drop down list. Click **Next** to open the **Defaults** screen.

NEW OBJECT TYPE object

Info

Title

Object Type
object

Template
Select Template (optional)

Next

Ally Jones

DEMO

The **Defaults** screen opens to a new dialogue in which the user can enter the **Classification** (required field), **Source**, and the **Start/End Date and Time** (periodicity of the object). The user can also select **Recurring Event** if applicable. Click **Next** to open successive dialogue pages to provide information on **Value-level metadata** (Super Attributes). Once all information is updated, click **Submit**.

NEW OBJECT TYPE object TITLE My New Object

Info

Defaults

Classification *
No Classification Selected

Select a favorite

Source * / None

Start Date/Time *

End Date/Time *

Recurring Event / None

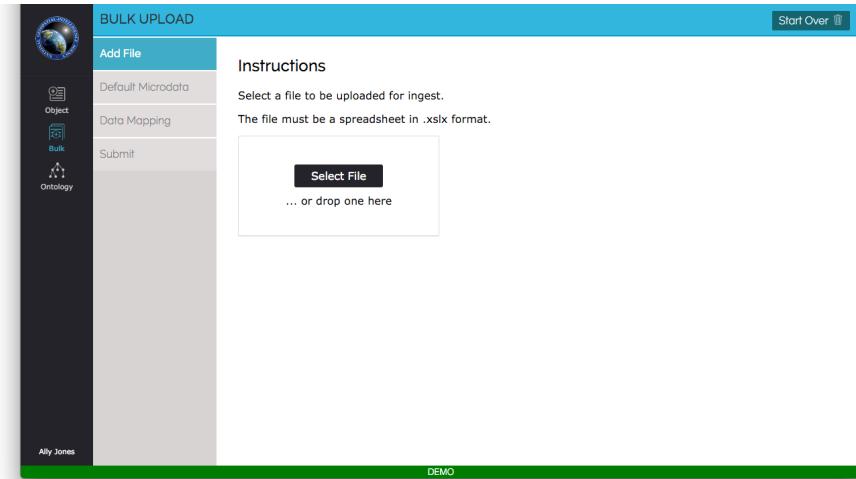
Next

Ally Jones

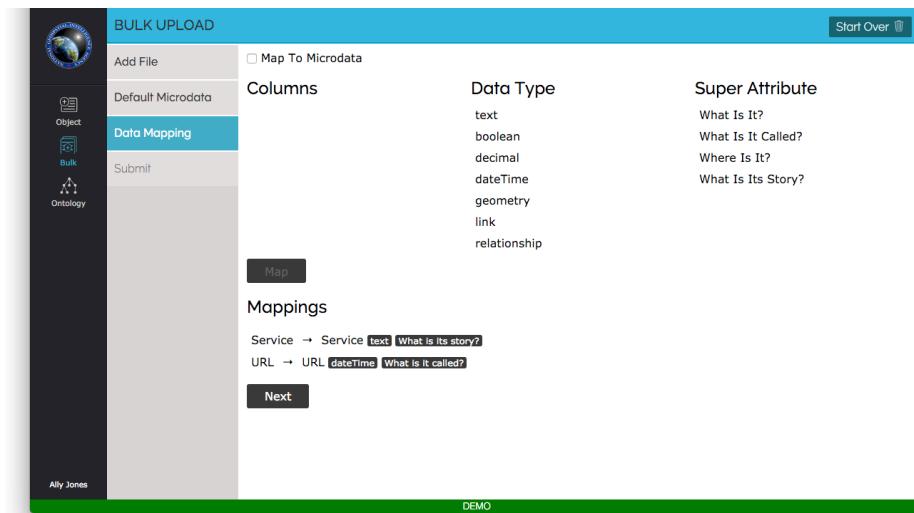
DEMO

5.2 Bulk Ingest

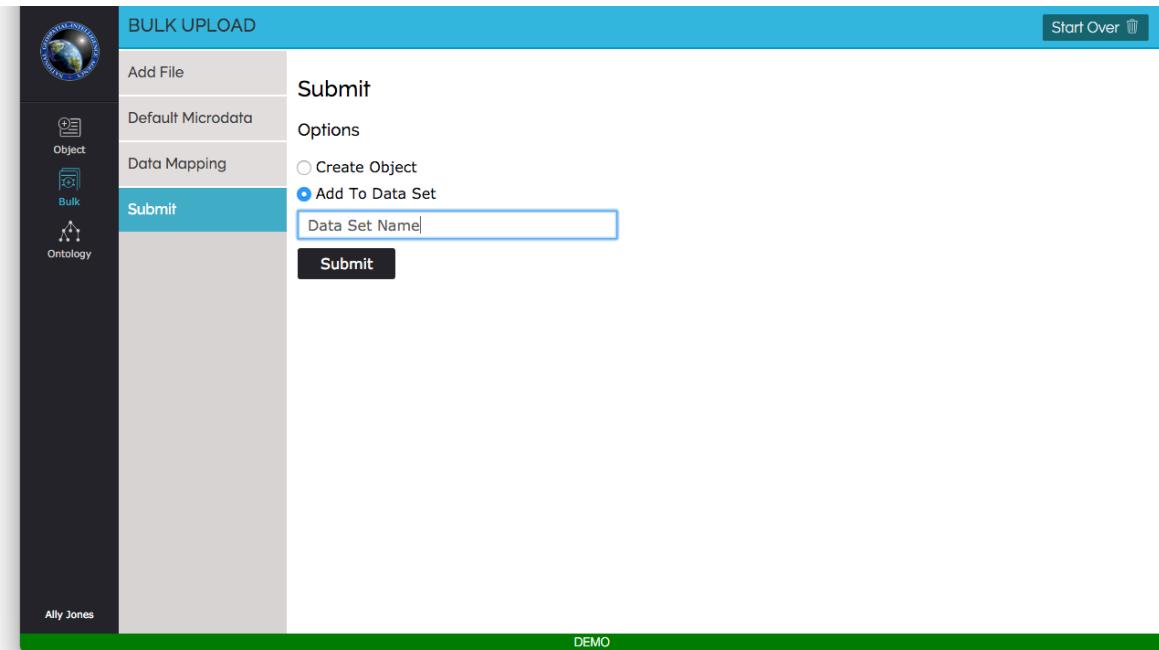
Click on **Bulk** from the **Global Navigation Bar**. Click on **Select File** to browse for the .xlsx file to upload. The **Default Value-level metadata** screen opens to a new dialogue in which the user can enter the **Classification** (required field), **Source**, and the **Start/End Date and Time** (periodicity of the object/objects). The user can also select **Recurring Event** if applicable. Click **Next**.



The **Data Mapping** screen opens and shows the titles of the columns from the uploaded file. Click on the first column title, select the **Data Type**, then select the matching **Super Attribute**. Do the same for all of the column titles. As they are updated, they will appear under **Mappings** at the bottom of the screen. Click **Next** when finished.



The user can then opt to create a new object or to add to an existing **Data Set**, then click **Submit** to save.

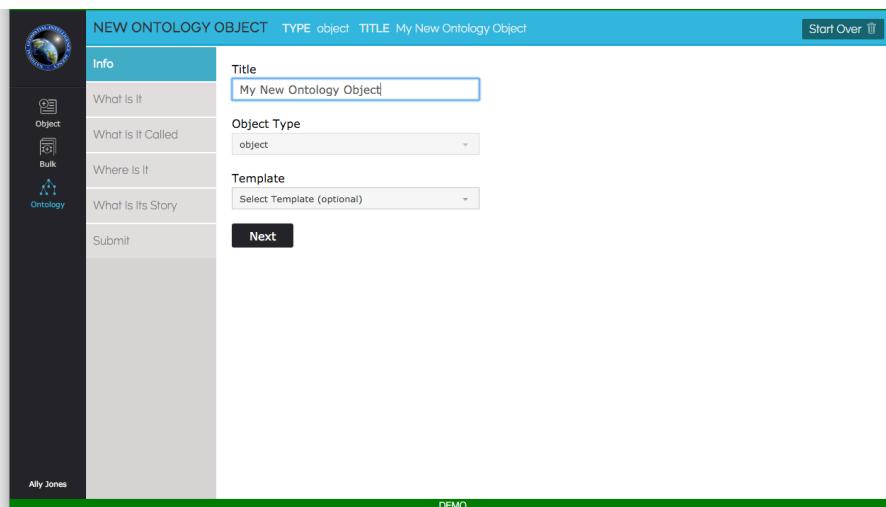


The screenshot shows the 'BULK UPLOAD' interface. On the left, there's a vertical navigation bar with icons for Object, Bulk, and Ontology, and a user profile for 'Ally Jones'. The main area has a blue header with 'BULK UPLOAD' and a 'Start Over' button. A dropdown menu is open, showing 'Add File', 'Default Microdata', 'Data Mapping', and 'Submit'. Under 'Submit', the 'Add To Data Set' option is selected, and a 'Data Set Name' input field contains 'Data Set Name'. A 'Submit' button is at the bottom of the dropdown.

5.3 Ontology

Ontology allows the user to add and define new **Attributes**.

Click on **Ontology** from the **Global Navigation Bar**. Enter the name in the **Title** box, then select **Object Type** from the dropdown box. Clicking **Template** will allow the user to select a pre-defined **Template**.



The screenshot shows the 'NEW ONTOLOGY OBJECT' creation interface. It has a blue header with 'TYPE object' and 'TITLE My New Ontology Object' and a 'Start Over' button. On the left is a vertical navigation bar with icons for Object, Bulk, and Ontology, and a user profile for 'Ally Jones'. The main area has a section titled 'Info' with fields for 'Title' (containing 'My New Ontology Object'), 'Object Type' (set to 'object'), and 'Template' (with a dropdown menu). A 'Next' button is at the bottom of the 'Info' section.

The user will then be prompted to define the attributes associated with the **Ontology**. Clicking **Add Attribute** will bring up a text box to name the **Attribute**. Click on the dropdown box next to the name to select the **Attribute Type**. Continue adding **Attributes** until they are all entered. Click **Next** and **Submit** the **Ontology Object**.

NEW ONTOLOGY OBJECT TYPE object TITLE My New Ontology Object

Info Attribute A text

What Is It Attribute B geometry

Attribute C decimal

Start Over

Object

Bulk

Ontology

Ally Jones

Add Attribute

Next

DEM0

6 Analytic Workflow

Rather than producing static, external versions of an analyst's work for presentation, briefing, etc., the NoSQL Data Management UI gives analysts the tools to create projects in the form of **Folders** that continually provide access to information in real time (to learn more about **Folders**, see "Folders"). Here, users can curate the data, include relevant information for their purpose, and share access to the **Folder** with other interested users. Unlike external static production, information is being shared with interested users directly through the UI allowing for interactive and investigative presentation. Presenters/**Folder** owners can easily switch views, apply filters, and view data in real time, displaying up-to-the-minute information to better guide discussions, inform decision making, and answer questions that might arise during presentation. Briefings occur in the UI so that all information including the original source documents are accessible and persistent through each analytic product.

6.1 Data Provenance

The NoSQL Data Management UI makes sure users have access to all versions of the data at all times. The **Object card** acts as a Baseball card for promoted entities. When users collaborate, adding attributes, values and relationships all information in the **Object card** is automatically updated. Previous information is not lost, but persists as versions are automatically saved. These versions can be viewed at any time by using the UI's **Timeline** to select previous versions

of the data by date. The **Timeline** also displays the number of changes that occurred on a particular date. The changes that were made to that version are indicated by **Black Badges** next to changed information and blue badges next to information that the current user changed.

6.2 Collaboration

The NoSQL Data Management application provides the ability to collaborate on data at the data level. Through **Comments**, **Notes**, and **Ratings**, users enrich documents and objects with observations and other metadata that is persisted in the application and accessible to other users with sharing preferences set at the workspace level.

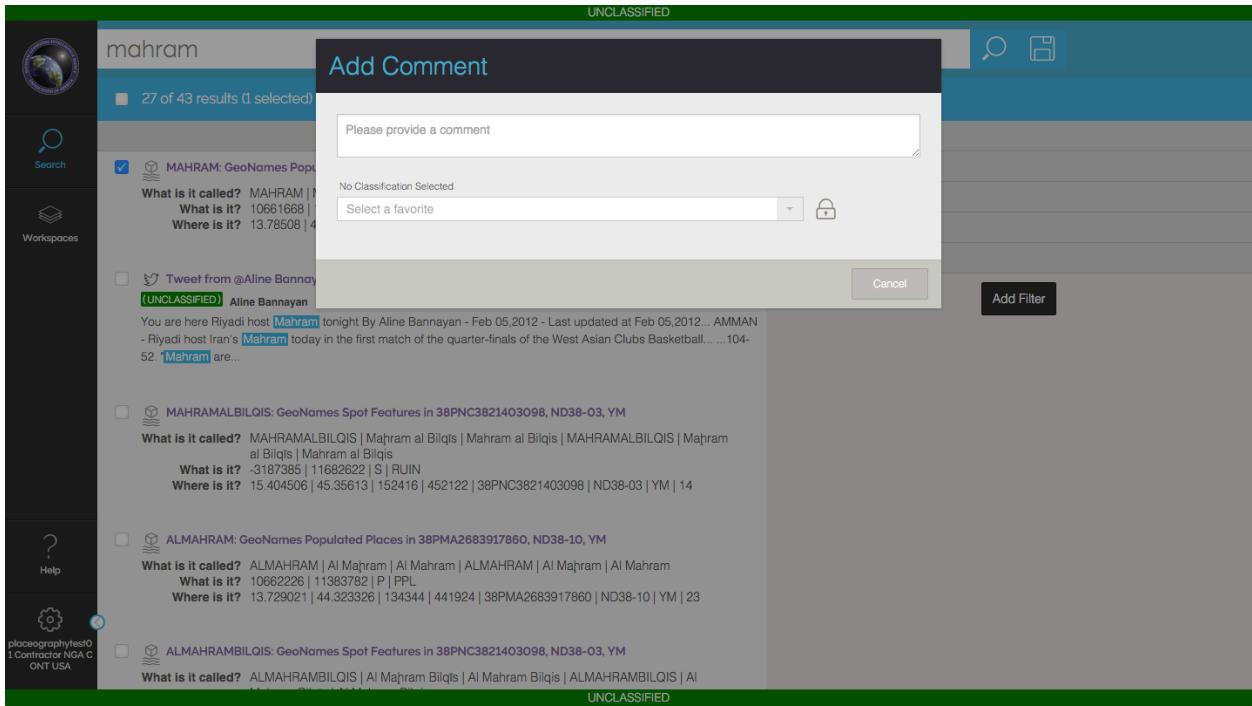
6.2.1 Comments

Users can use the **Comment** icon to create comments for the data. **Comments** are visible to the entire community and are a means of collaboration and persisting metadata in the application.

When a document or object is selected by checking its checkbox in the **Detailed Search** view, a **Comment** icon appears in the blue **Menu Bar**. Users can **Comment** on multiple documents or objects by checking the checkboxes for the individual documents/objects and then clicking the **Comment** icon.



When a document or object is selected by clicking the title to switch to the **Result Detail** view, the **Comment** icon appears on the right in the icon tiles. Click the **Comment** icon to open the popup window or card.



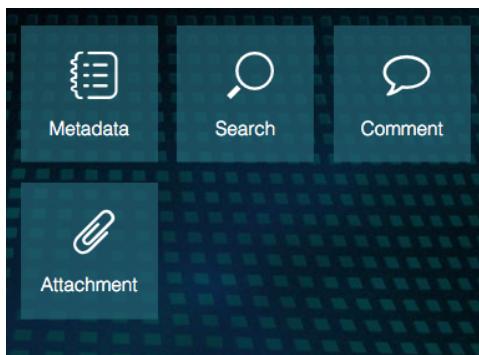
For documents, **Comments** are made on the entire document and cannot be made on portions of text. For objects, **Comments** can be made on the entire object or on a specific object value. An object value is assigned to the object attribute. For instance, the attribute *CountryIdentifierCode* may have the value of *USA*. Object values can be assigned when the object is created, or by other users as they discover more information about the object.

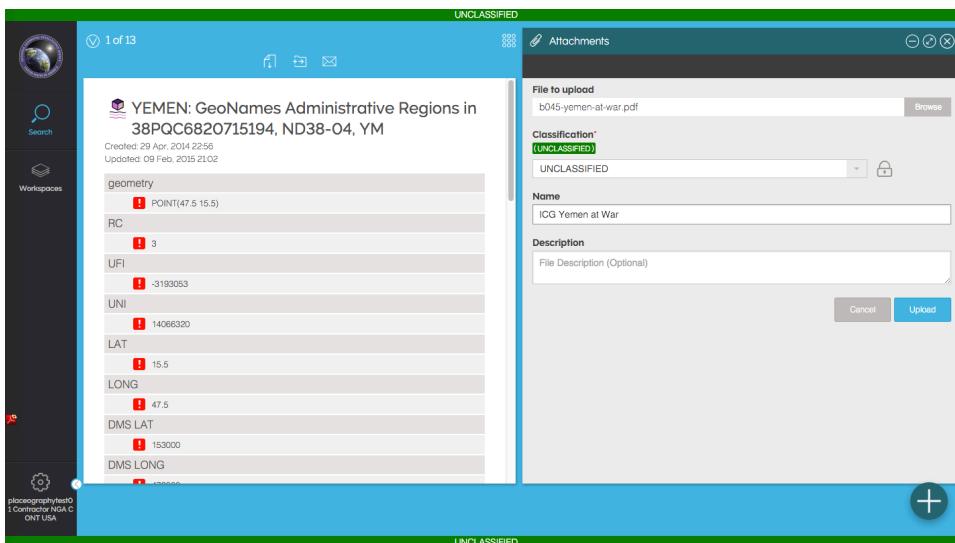
To **Comment** on the entire object, click the **Comment** tile in the panel to the right of the object card. A **Comment** card will open to the right of the object card. Type the comment, select the classification of the comment, and then click **Save**. To **Comment** on an object value, click on the value. A value card will display to the right of the object card. Type a new comment in the value card, select the classification of the comment, and then click **Save**.

The screenshot shows a detailed view of a populated place record titled "Al Maḩram: populated place in Ibb, Yemen". The record was created on 30 Apr. 2014 18:40. The interface includes a navigation bar with "Search" and "Workspaces" buttons, and a footer with "placegeophysics01 Contractor NGA C ONT USA". The main content area displays microdata such as Source (CIB-01 Imagery), Occurrence (No Date), Periodicity (UNCLASSIFIED), Classification (UNCLASSIFIED), Creator (David.Eldridge), Date of Creation (30 Apr. 2014 18:40), Valid Start (29 Apr. 2014 20:51), and Valid End (No valid end). It also includes sections for "Your Feedback" (Rate) and "Comments" (New Comment). A sidebar on the left lists location details: Location Latitude (13.729673), Location Longitude (44.322859), geometry (POINT(44.32285900000005 13.729673000000048)), Muhfazat Or Governorate ADM1 (Ibb), Country Or Nation (ADM0) (Yemen), and What Is Its Shape?.

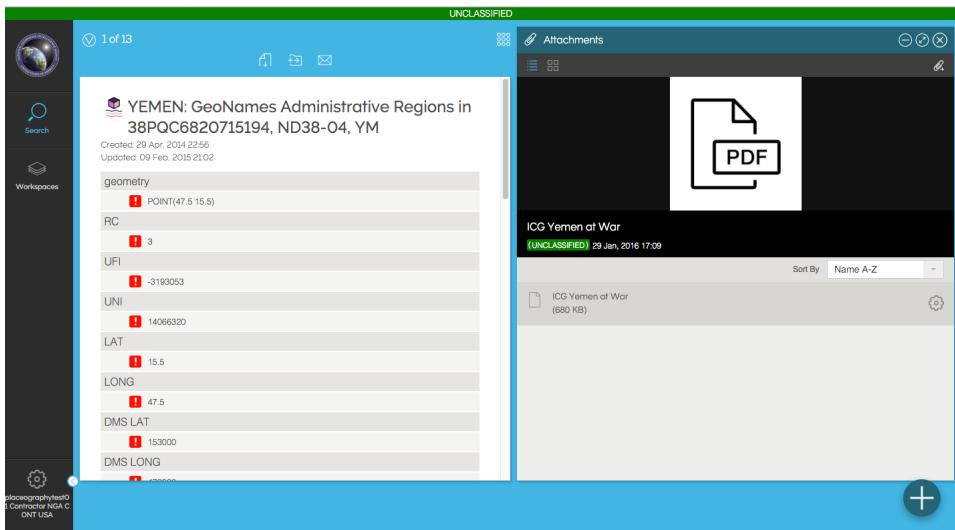
6.2.2 Attachments

Users can add **Attachments** to files from the **Result Detail** view or from the **Navigation Bar** in **Workspaces**. Click on the **Attachment** button and brows for (or drag-and-drop) the desired file. Use the drop-down box to select the appropriate classification, and name the **Attachment**. Users can also provide any additional comments or descriptions. Click **Upload** to save the **Attachment**. Once the file has been uploaded, it is discoverable within the system.





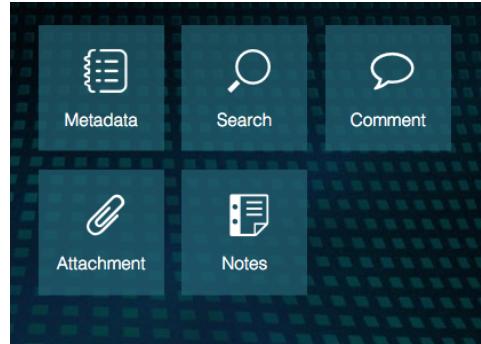
To view any **Attachments** associated with a file, click on the **Attachment** button from the **Result Detail** view. Any associated **Attachments** will appear in a separate panel on the right of the screen. To close this view, click on the **X** in the top right corner of the panel.



6.2.3 Notes

Notes can only be made on portions of a text in a document.

To access the **Notes**, click on a document to open it in the **Result Detail** view. The **Notes** tile will display in the panel to the right of the document card.



Starting at the top of the **Notes** card, the user can change the title of the note by hovering over the **Note** icon at the top left. The **Note** icon becomes a **Pencil** icon. Click the **Pencil** icon to open a text box and edit the title.

Below the title bar, the user has the option to enable note highlighting and show all of the text in the document that has **Notes** associated with it.

To create a **Note**, click and drag the cursor over the desired document text. A **New Note** popup will appear. Type a **Note** in the notes space, choose the classification, and then click **Save**. The new **Note** will appear in the **Notes** card. Other users' **Notes** may also appear in the **Notes** card. Clicking on **Note** text in the **Notes** card will display a popup window with details about that **Note**.

Notes are not public to all users, however they are shared as part of a shared workspace. (To learn more about shared workspaces, see “Workspaces.”)

6.2.4 Ratings

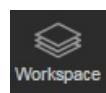
Users have the option to rate object values. This allows users to communicate their confidence on the validity of object values. To rate an object value, begin by clicking on the **Value**.

The **Value** card will open to the right of the **Object** card. Under **Your Feedback**, the user has the option to rate the value by clicking on the row of stars to the right of the word **Rate**. Users may rate a value between a $\frac{1}{2}$ star (lowest) and 5 stars (highest) and add a comment that corresponds to the rating. For example, if the attribute is *First President of the United States* and the value is *Barack Obama*, the user could rate that value with a $\frac{1}{2}$ star to show they have low confidence in the value being correct. Once the user selects a rating, enters a comment, chooses the classification, and then clicks **Save**, the rating and comment appear on the **Value** card. (Please note that these ratings comments are different from **Comments** on the object.)

6.2.5 Workspaces

Workspaces provide a private or shared space for storing saved searches and folders. Shared **Workspaces** allow multiple users to collaborate on a single project, mission, task, etc.

To create a **Workspace**, click on the **Workspace** icon in the **Global Navigation Bar**.



A panel will display to the right. At the top of the panel, click **New Workspace**. A second panel, **Workspace Settings**, will appear. Type the name of the **Workspace** in the text box and click **Save**. The new **Workspace** will be added to the list of **Workspaces** in the first panel.

Workspace	Documents	Folders
New Workspace	0	1
Demo Workspace 2	1	2
Toms Workspace	9	9
Demo Workspace 3	0	1
Demo Workspace 1	0	1
0 Test Automation	2	1

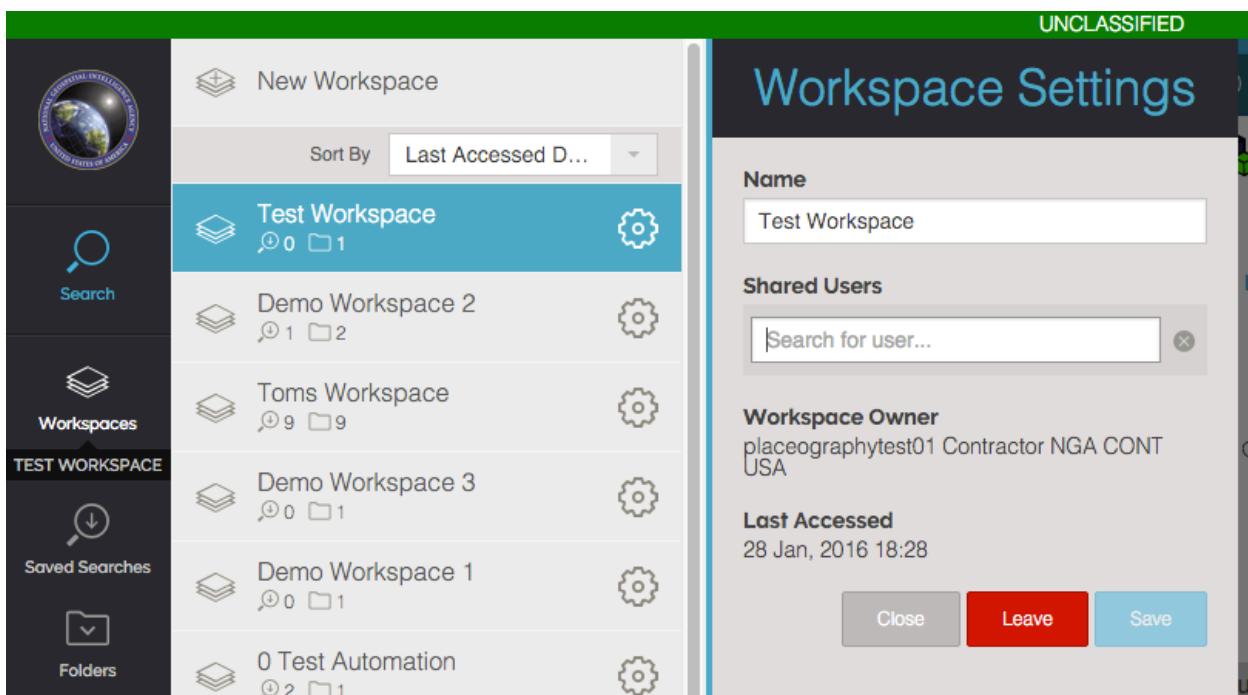
Once a user has saved a **Workspace**, it will appear in a list of **Workspaces** when the **Workspace** icon is clicked. From this list, users can sort their **Workspaces** and quickly see how many saved **Searches** and **Folders** are in each.

To adjust settings on the **Workspace**, click the **Settings** icon for the **Workspace**. A second panel will display, called **Workspace Settings**. From this panel, the user can change the name of the **Workspace**, add or remove other users in the **Workspace**, and transfer ownership of the **Workspace**.

There are three different types of users in **Workspaces**. A **User** can save **Searches**, create and delete **Folders**, and add **Bookmarks** to a workspace. An **Admin** has the same permissions as a **User**, but they can also add other users. An **Owner** has the same permissions as an **Admin**, but they can also transfer ownership, delete users, and delete the **Workspace**.

To add a user, click **Add User to Workspace**, and type their name in the **Search** box to search for them. When the user's name appears below the **Search** box, select them and then click **Add**. Once the user is added, their role can be determined by clicking the drop down list under **Role** and choosing the appropriate role.

To remove a user from a **Workspace**, click the gray **X** in the circle to the far right of their name in the **Shared Users** list. After being added, the new user must either refresh their screen or log into the application to see the new **Workspace** in their **Workspaces** menu. (Shared **Workspaces** have a different icon than **Workspaces** owned by the user. The shared **Workspace** icon looks like a **Workspace** icon with a head.)



To transfer ownership of a workspace, click **Transfer Ownership of this Workspace** from the **Workspace Settings** panel, and type the name of the new owner into the **Search** box to search for them. When the new owner's name appears below the **Search** box, click **Transfer** to transfer ownership to them. (Transferring ownership is not reversible. The application will ask for verification of the transfer.)

Workspaces include additional features that enable quick organization of data. Once a user has opened a **Workspace**, a new **Bookmark** icon appears in the blue **Menu Bar**.

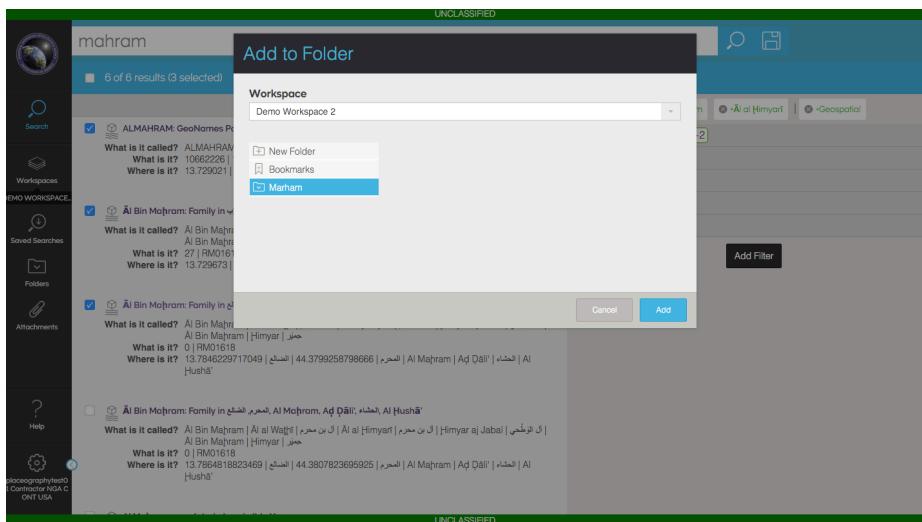


When a new **Workspace** is created, a **Bookmarks Folder** is automatically created inside of the **Workspace**. If a user wants to bypass the action and time it takes to choose a folder when saving documents or objects, they can opt to click the **Bookmark** icon to quickly save it to the bookmarks folder. All **Workspace** users' **Bookmarks** are visible to anyone with access to the **Workspace**. As with the other icons in the blue **Menu Bar**, users can **Bookmark** multiple documents or objects by clicking on the document or object checkboxes and then clicking the **Bookmark** icon.

6.2.6 Folders

Folders can be added to **Workspaces** to further organize saved information.

To create a new **Folder**, navigate to the desired **Workspace** where the **Folder** will be housed using the **Workspace** icon on the **Global Navigation Bar**. Once in a **Workspace**, click on the **Folders** icon. A **Folders** panel will display to the right. Click **New Folder**. A text box will appear. Type the name of the **Folder** in the text box and click the **Disk** icon to save the **Folder**.



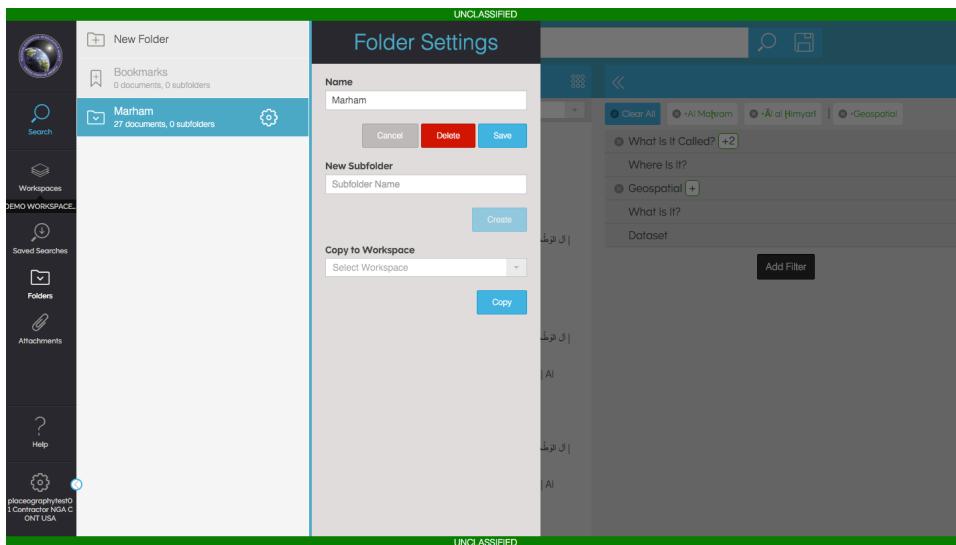
Once the **Folder** has been saved, it appears in the list of **Folders** in the panel.

To adjust settings on the **Folder**, click the **Settings** icon for the **Folder**. A second panel, **Folder Settings**, will appear. From this panel, the user can change the name of the **Folder**, add a subfolder, or copy the **Folder** to another **Workspace**.

To change the name of the **Folder**, click in the text box under **Name**, type the new name, and click **Save**.

To add a new subfolder, click the text box under **New Subfolder**, type the new **Folder** name, and click **Create**.

To copy to a **Workspace**, click the drop down menu under **Copy to Workspace**, select the **Workspace** in which the **Folder** will be copied, and click **Copy**.



Folders can be used for organizing documents and objects. Documents and objects can be saved to **Folders** from all views in the application. When a document or object is selected by checking its checkbox, an **Add to Folder** icon appears in the blue **Menu Bar**.



Click the **Add to Folder** icon to save to a **Folder**. An **Add to Folder** popup window appears. Select the **Workspace** using the drop down menu under **Workspace**, then select the **Folder** from the list of **Folders** in the workspace and click **Add**.

Users can also create a new **Folder** from this window. To create a new **Folder**, click the **New Folder** button, name the **Folder** in the text box that appears in the **Folder** list, and click the **Disk** icon to save.

