

CoMET

Collection Metadata Enterprise Tool

[Proceed to ICAM Login](#)

Select current certificate issued by DOD
ID CA for user authentication.

[How do I get an account?](#)

CoMET User Manual

Valid for production version 1.8.0

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If you encounter issues or need to report a bug in CoMET, please send an email to ncei.collection-manager.support@noaa.gov. In the email, describe the issue or bug and steps required to replicate it. Additionally, provide your name and contact information if you wish to be contacted for issue clarification and/or to receive updates on the status of the issue.

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Overview

This user manual was developed to assist users with getting up to speed using CoMET quickly and efficiently. Upon completing the manual, the user should be familiar with the base functionality of CoMET and be able to create and edit existing metadata as well as be able to perform a DSMM assessment with the use of the DSMQ form.

Getting Started

Logging In

- To log on, a user points a web browser to: <https://data.noaa.gov/cedit/>
- If you do not have an account, please follow these steps:

Send email to ncei.collection-manager.support@noaa.gov with the following details:

Subject: 'New User for [CoMET, Docucomp, and/or Metaserver] for *your name*'

Your contact information

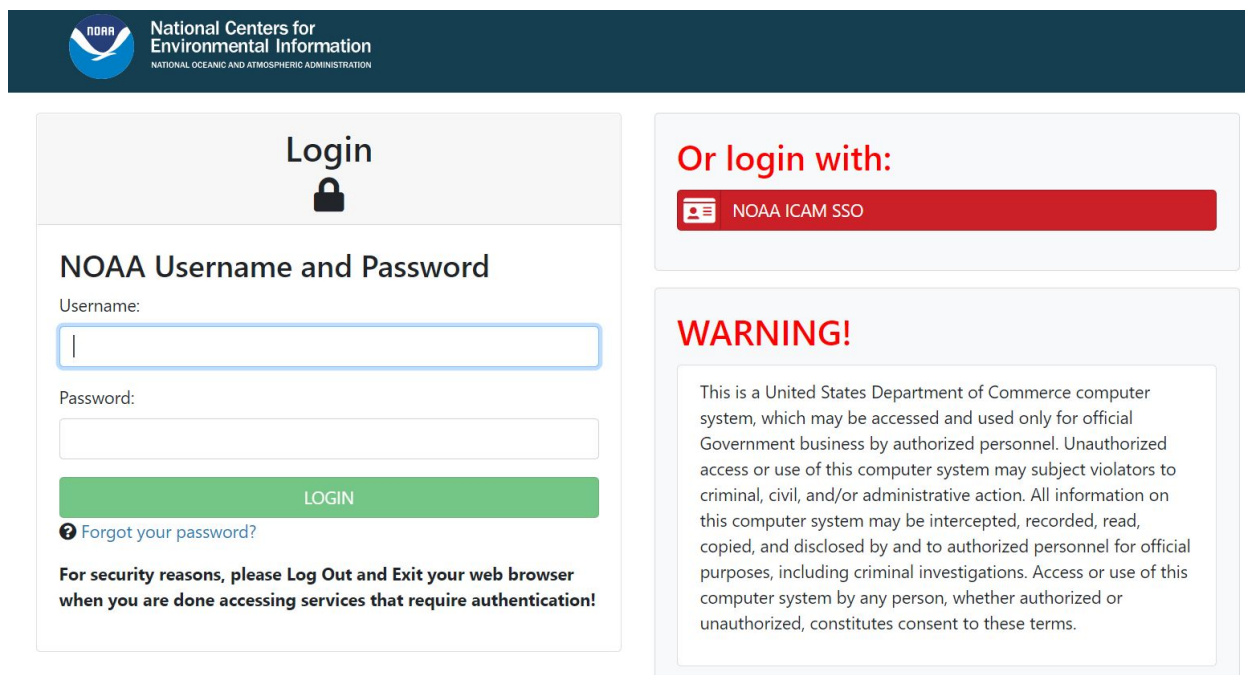
Your associated program or agency

Intended usage

Once you are set up, your username will be your email (without the @noaa.gov) and the password will be the same as your email password.

Note: Login is currently limited to users with a NOAA email, but external access is planned for a future release cycle. Send in a request if you'd like to be informed when this capability is available.

- After clicking the Login button, you will be redirected to a page that allows you to use your username and password or the NOAA ICAM SSO. Either enter your username and password; or click the NOAA ICAM SSO button.
- After authentication, a warning banner is displayed.
- Click the green "Accept" button to proceed.



Login

NOAA Username and Password

Username:

Password:

LOGIN

[Forgot your password?](#)

For security reasons, please Log Out and Exit your web browser when you are done accessing services that require authentication!

Or login with:

NOAA ICAM SSO

WARNING!

This is a United States Department of Commerce computer system, which may be accessed and used only for official Government business by authorized personnel. Unauthorized access or use of this computer system may subject violators to criminal, civil, and/or administrative action. All information on this computer system may be intercepted, recorded, read, copied, and disclosed by and to authorized personnel for official purposes, including criminal investigations. Access or use of this computer system by any person, whether authorized or unauthorized, constitutes consent to these terms.

Figure 1.1 The CoMET log in screen

For those who were not previously registered with CoMET, only READ-ONLY access is granted and the following message is shown:

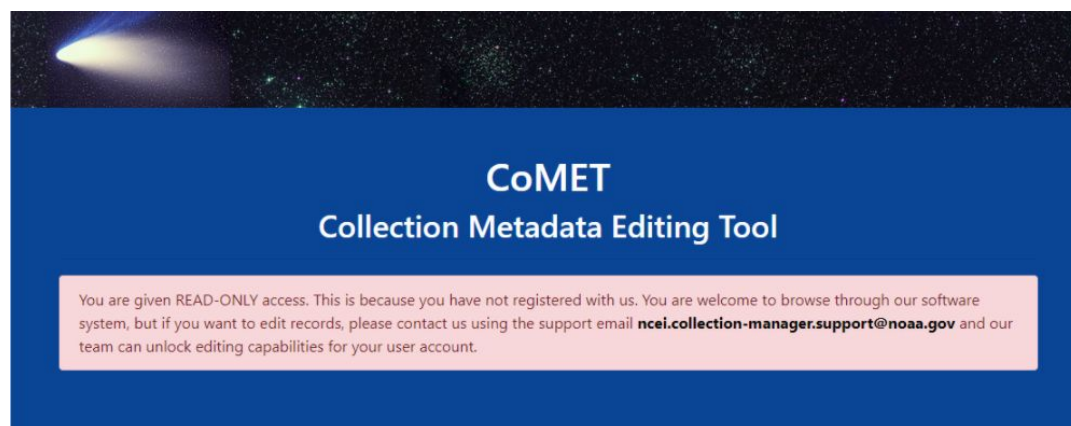


Figure 1.2 The above message is shown when a user logs in with READ-ONLY access.

If you need to edit records in CoMET, please send an email as described in the above message.

Once logged in, click on “Access Metadata Records” button to start working with metadata records.

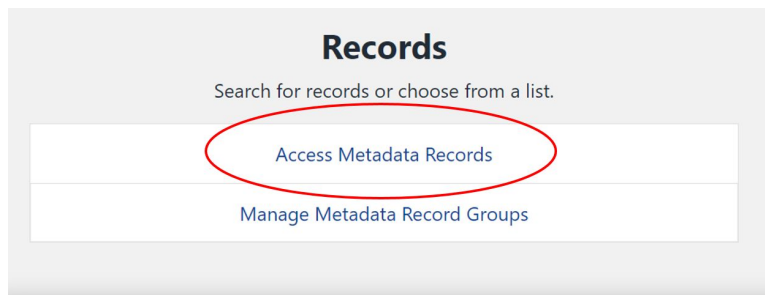


Figure 1.3 The record options on the homepage.

After clicking the Access Metadata Records link, you will be taken to the Metadata Records List page. You must select a record group from the Record Group field to do anything else on this page. Making a selection will populate the page with records in that group as well as any actions available to you*. The page features a Filters panel (1), Record Actions Panel (2), and a list of metadata records (3) on which you can perform various actions.

* Some actions/buttons may not be visible to all users because they do not have permissions to perform these actions.

Filters: ①

Record Group: CoMET Sandbox

Record Name: Examples: AMSU, ODES, Grid

Edit State: -- Select a Value --

XML Content: Examples: OISST, gov.noaa.ncdc:C00011, Weather

Last Updater: Examples: user.name, bob, curly, moe

Search Records Reset Filters

Record Actions: ②

New Record: Import Create

Bulk Actions: Change Group Download Publishing Delete

Metadata Records List ③

Showing 1 to 10 of 150 records

Record Actions	Record Name	Edit State	Last Editor	Last Updated	Create Date
Edit Manage View Assess Validate	Test for UG update copy	DRAFT	amanda.dean	2021-01-05 14:20:26 EST	2021-01-04 14:12:50 EST
	UUID: 93d44a8c-440b-45e1-86e4-6812b2d13a1				
Edit Manage View Assess Validate	Test for UG update	DRAFT	amanda.dean	2021-01-04 14:11:31 EST	2020-10-02 12:40:25 EDT
	UUID: 44d94bf-d66b-42a0-bf31-b6760314dc64				
Edit Manage View Assess Validate	COMET-NCBI-Template	DRAFT	jerri.reeves	2020-12-17 11:51:04 EST	2020-11-12 09:55:48 EST
	UUID: a265ed4e-eab1-4b52-937c-64696f54f599				

Figure 1.4 The Metadata Records List page.

Filters Panel

The Filters panel allows you to filter the number of records by various criteria. If you choose to further filter your records by Record Name, Edit State, XML Content, or Last Updater, you will need to click the Search Records button to apply your filter. To reset your filter, click the Reset Filters button.

Filters available:

- **Record Name:** filter by the internal CoMET record name. Can be a partial match such as filter records where the record name includes NOAA.
- **Edit State:** filter records by the a record's status such as DRAFT for a draft record; IN REVIEW for records that are ready to be published; or, APPROVED for records that have been approved for publishing
- **XML content:** you can search the XML content and filter records by searching for data such as a DOI, title, or any other content that would be in the XML.
- **Last Updater:** filter records by the person who last updated a record

Record Actions Panel

The Record Actions panel includes common record actions that someone may want to perform such as creating new records, changing records from one record group to another, or approving records to be published. The available functions in this panel include:

New Record

- **Import:** allows you to import one or multiple valid 19115-2 ISO XML files
- **Create:** allows you to create a new record based off of values in the NCEI Template. You would then edit the record's values, delete, or add values necessary for your data.

Bulk Actions

- **Change Group:** allows you to move records from one record group to another
- **Download:** allows you to download one or more XML files for your records
- **Publishing:** allows you to request a draft to be published, publish, and unpublish records
- **Delete:** allows you to delete or permanently delete records

Metadata Records List

The Metadata Records List is a table that contains all records that meet your filtered requirements. It displays the record name, edit status, last editor, date last updated, and date created in sortable columns. Clicking on the column titles will sort the filtered data set by that field. The table also includes a set of buttons that allow you to perform various actions on each record. This list is restricted by user permissions; some options may not be visible to all users.



Edit — allows you to edit a record's data and includes the following options:

- Data Management Plan
- Data Stewardship Maturity Questionnaire (DSMQ)
- ISO Editor

Manage — allows you to perform the following:

- Copy — allows you to use this record as a template to create a new record based off of its data
- Revision History — allows you to review a record's revision history
- Delete Record — allows you to delete the record

View — allows you to see your data in various formats:

- CoMET Format XML — a non-standard specific view of your data
- ISO 19115-2 XML
- Landing Page HTML — view the unresolved HTML landing page. Xlinks are not resolved in this view
- Plain Text HTML

Assess

- Component Analysis
- CSW Rubric
- DOI Rubric
- ISO Rubric V2

Validate

- Validate ISO: your data against the ISO 19115-2 standard

To begin, select your team's record group from the drop-down list. The record group will appear below in the Metadata Records List. You may also use additional filters to find records (explained above), then click "Search Records" .

Filters:

Record Group: -- Select a Value -- (dropdown menu open, showing options: -- Select a Value --, CoMET Sandbox, Examples: AMSU, GOES, Grid)

Record Name: Examples: AMSU, GOES, Grid

Edit State: -- Select a Value --

XML Content: Examples: OISST, gov.noaa.ncdc:C00011, Weather

Last Updater: Examples: user.name, bob, curly, moe

Search Records Reset Filters

Figure 1.5 The drop-down menu for selecting a record group.

The first 10 records will be listed in the order that they were last updated. Now you are ready to work with metadata. You may also choose to close the filters and actions boxes for a streamlined page.

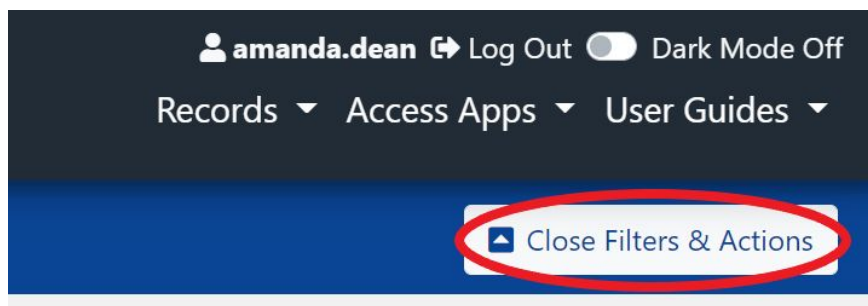


Figure 1.6 The Close Filters & Actions button.

Creating Metadata

There are three ways to create metadata in CoMET. You can create new records by using the **Create** button; this will use the NCEI template to create template data you can then edit. You may **Import** valid ISO 19115-2 file(s). And you can use an existing record as a template and **Copy** its data to make a new record.

Creating a New Metadata Record

1. In the Record Actions panel, click the “Create” button to create a new metadata record based on the NCEI Template:

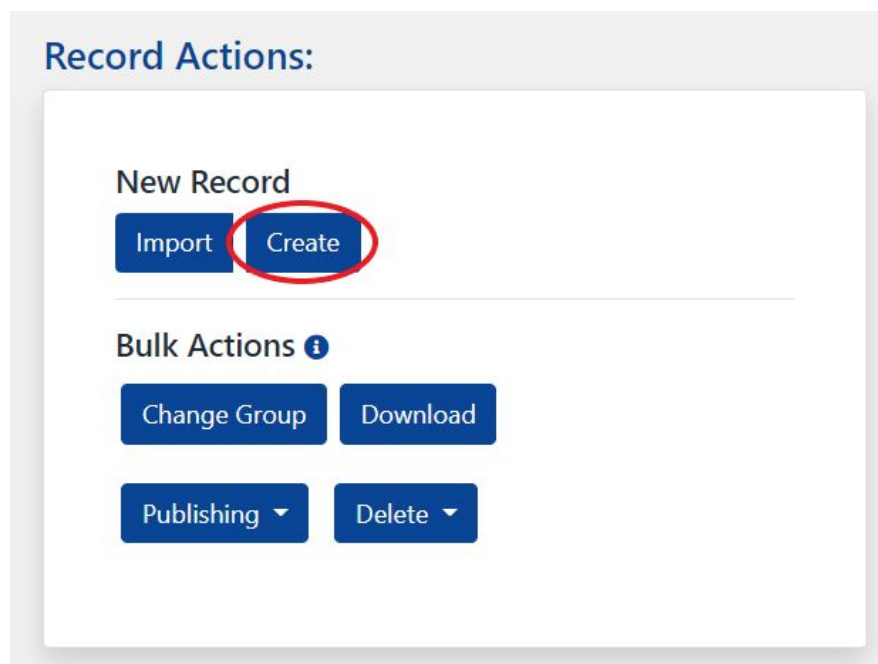


Figure 2.1 The Create button.

2. Using the “Select a form” drop-down list, click “ISO Editor”; then click “Create Record”.

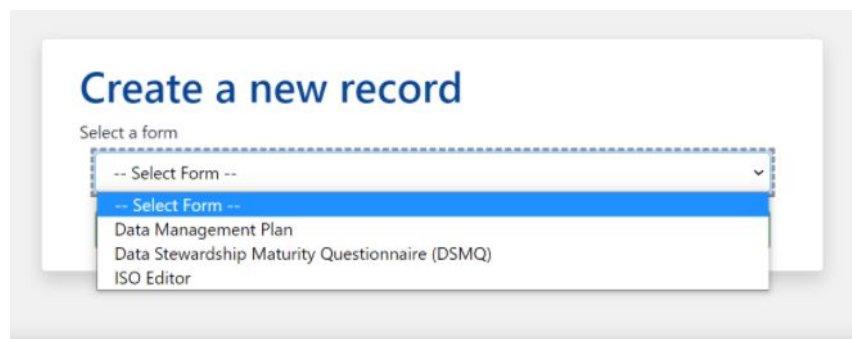
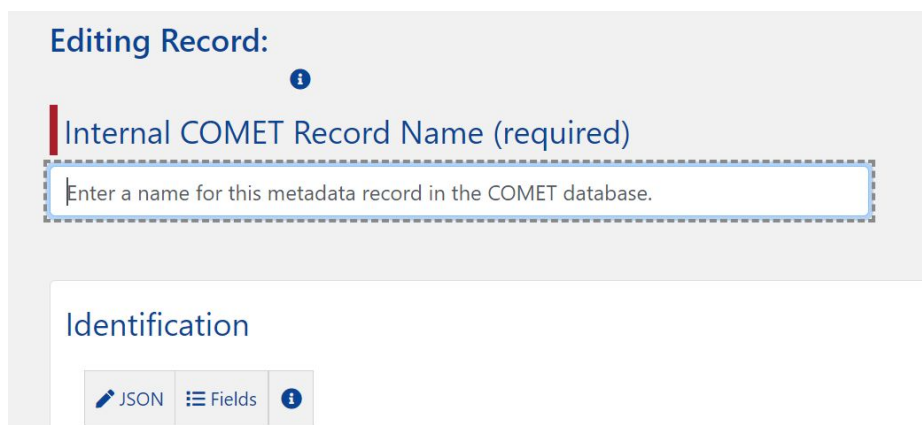


Figure 2.2 The Select a Form menu.

3. Type in a description in the “Internal CoMET Record Name (required)” field at the top of the page. You may want to use the dataset title for the description but you are not required to do so.



Editing Record:

Internal COMET Record Name (required)

Enter a name for this metadata record in the COMET database.

Identification

JSON Fields

Figure 2.3 The Record Name field.

After creating the record, you can begin editing it. To save, click the “Save Record” button at the top. Saving a record for the first time will redirect you back to the Metadata records list.

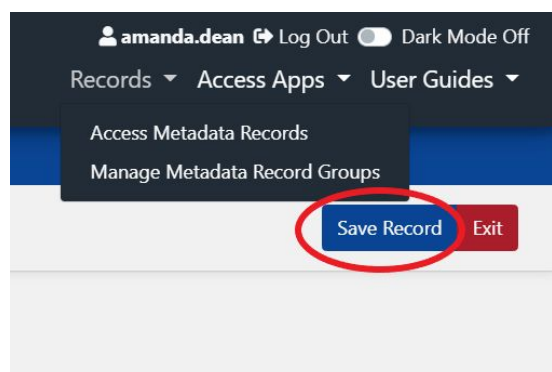
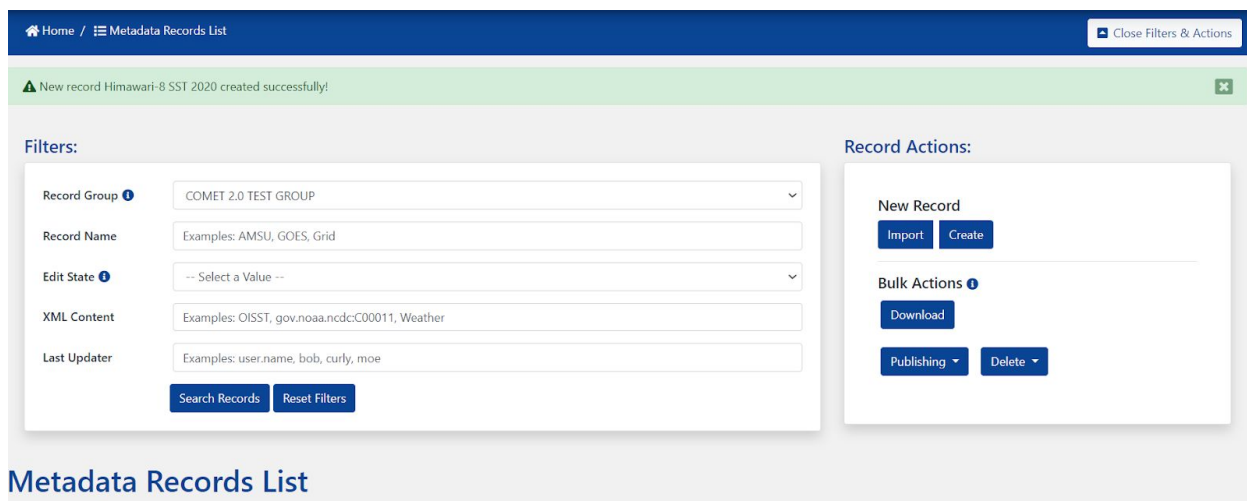


Figure 2.4 The Save Record button.



Home / Metadata Records List

New record Himawari-8 SST 2020 created successfully!

Filters:

Record Group: COMET 2.0 TEST GROUP

Record Name: Examples: AMSU, GOES, Grid

Edit State: -- Select a Value --

XML Content: Examples: OISST, gov.noaa.ncdc:C00011, Weather

Last Updater: Examples: user.name, bob, curly, moe

Search Records Reset Filters

Record Actions:

New Record

Import Create

Bulk Actions

Download

Publishing Delete

Metadata Records List

Figure 2.5 The record has been saved

To access your record for editing from the main page, click the “Edit” button to display the drop-down menu and select the form that you want to use to edit the record: Data Management Plan, Data Stewardship Maturity Questionnaire (DSMQ), or ISO Editor.



Figure 2.6 Editing options.

A new window will open displaying the selected editing page. The minimum required fields for a valid ISO metadata record are marked with a red bar as well as the text “(required)”.

You may toggle among each of the headings while editing the forms.

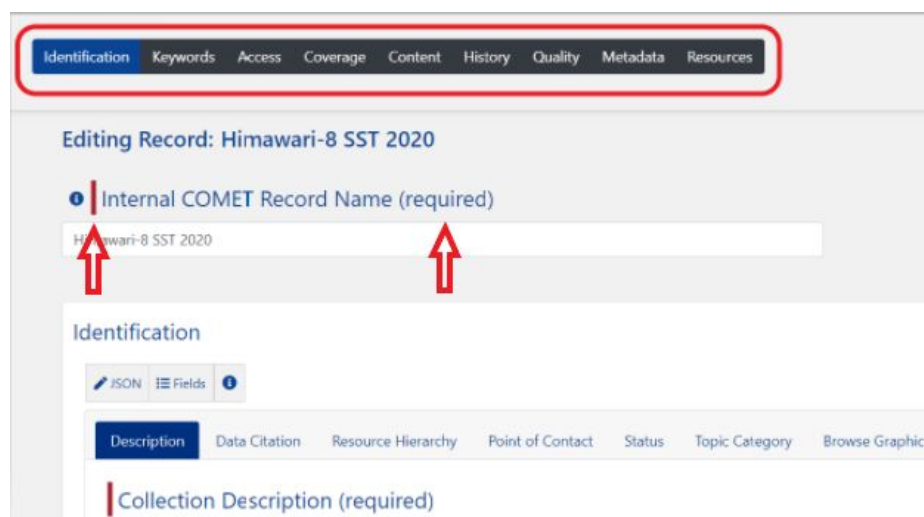


Figure 2.7 Editor tab headings. Red bars and “required” indicate required fields.

Use the tabs to navigate through the form completing as many fields as you can.

Be sure to save frequently because the form will not automatically save your changes.

4. Click "Save" to save your metadata record (located at the top and bottom of page).

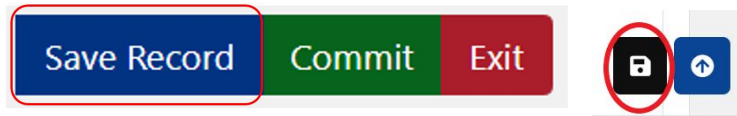


Figure 2.8 The Save button. The Save icon appears at the bottom of the page.

5. Once you are finished with the metadata record, choose "Commit." Although it is not required, it is a best practice to do so. Commit allows you to save your metadata record with a comment attached. Think of Commit as versioning code changes within a repository.



Figure 2.9 The Commit button.

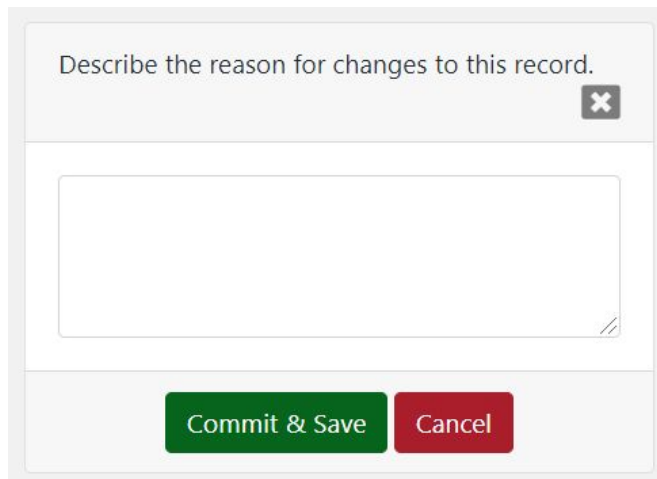
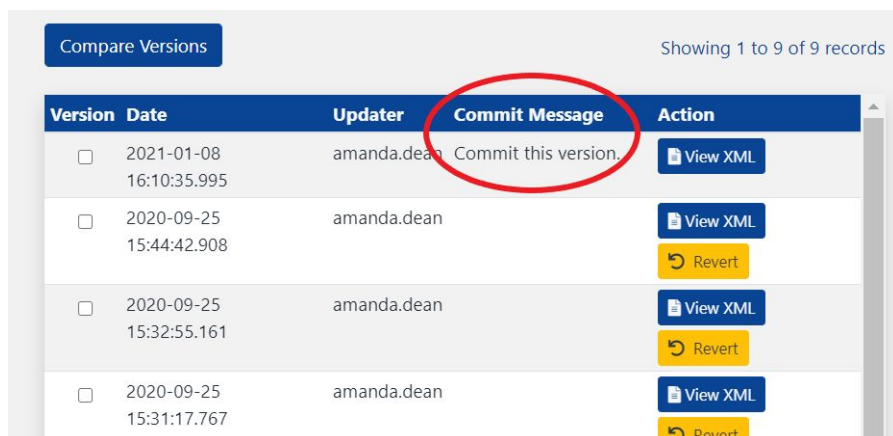


Figure 2.10 The Commit message.

When you view the Revision History under the Manage menu on the Records List page, you will see the commit comment for that revision:



Version	Date	Updater	Commit Message	Action
<input type="checkbox"/>	2021-01-08 16:10:35.995	amanda.dean	Commit this version.	View XML
<input type="checkbox"/>	2020-09-25 15:44:42.908	amanda.dean		View XML Revert
<input type="checkbox"/>	2020-09-25 15:32:55.161	amanda.dean		View XML Revert
<input type="checkbox"/>	2020-09-25 15:31:17.767	amanda.dean		View XML Revert

Figure 2.11 The Commit message is found in the Revision History.

NOTE: It is important to note that Xlinks are not resolved in CoMET, so transforms are not the full picture of your record. One shortcut that you can use is to go to “Record Services” in the Collection Manager Metaserver application to resolve the Xlinks in the record. Record services will resolve a record on the fly.

Importing an Existing Metadata Record

Users with metadata editing access can import existing ISO 19115-2 metadata records external to CoMET. Locate and click the “Import” button on the top right of the page:

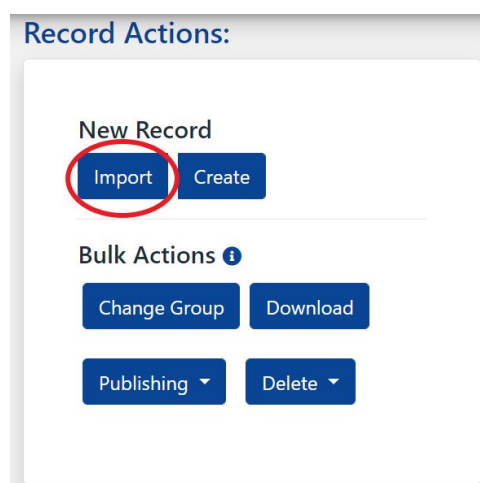


Figure 2.12 The Import button.

The web application will present an import screen:

Import Record

Upload your XML File Here

No file chosen

Or provide a URL to remote XML file here:

Internal CoMET Record Name: This field is optional and defaults to FileIdentifier if included in the content.

Select the record format for import

▼

Figure 2.13 The Import user interface. The user uploads a file or provides a URL.

There are two options to specify where the record for import is located. Use the “Choose Files” function if the record is on your computer disk. If the record is available from a web server, a ftp server, etc., use the input field for a URL. If an upload file and a URL are provided, the application will use the URL only.

Importing Metadata in ISO

CoMET stores a metadata record in a standards-neutral format that is compatible with the ISO 19115-2 format. In order to import an ISO record, a format converter needs to be selected (this is required). Select the format that you have, either “ACDD NCML”, “CoMET Format XML”, or “ISO-19115-2-XML” (shown as the default option in CoMET). When the converter is selected, a description text will appear below the selector:

Import Record

Upload your XML File Here

[Choose File](#) No file chosen

Or provide a URL to remote XML file here:

Internal CoMET Record Name: This field is optional and defaults to FileIdentifier if included in the content.

Select the record format for import

- Select Format --
- ACDD NCML
- CoMET Format XML
- ISO 19115-2 XML**

Figure 2.14 Selection of an import view. The example in the above shows an ISO record is to be imported.

Enter the title of the record to be imported to the “Record Name” field. If none is entered, the collection metadata ID from the FieldIdentifier will be used instead. Click the “Import” button. The web application will apply the format converter and convert the ISO record into the standards-neutral format. If the conversion is completed without an error, “Metadata Record uploaded successfully!” will be shown:

[Home](#) / [Metadata Records List](#) / [Upload Confirmation](#)

[Access Metadata Records](#) [Import Records](#)

File Uploaded AHI_L2_CM_train.xml

- Metadata Record uploaded succesfully!

Figure 2.15 A successful import of an XML record

To access the newly created record, click on “Access Metadata Records”. To continue importing records, click on “Import Records”.

The screenshot shows the CoMET Editor interface. At the top, there's a navigation bar with "Home / Metadata Records List / CoMET Editor: test today". Below this is a tabbed interface with "Identification" selected. Other tabs include Keywords, Access, Coverage, Content, History, Quality, Metadata, and Resources. On the right, there are buttons for "Save Record", "Commit", and "Exit", along with dropdowns for "View", "Assess", and "Validate". The main content area is titled "Editing Record: test today". It contains a form with a required field "Internal COMET Record Name (required)" with the value "test today". Below this is another section titled "Identification" with a sub-tab "Description" selected. It contains a required field "Collection Description (required)" with a placeholder text: "((Describe the content of this data collection. Good practice: Start with ... This data collection contains (measured or calculated variables, model outputs, or ...".

Figure 2.16 The Identification tab is highlighted first when a record is opened in ISO Editor

Input fields are organized by tabs. When CoMET opens a record, the "Identification" tab is shown by default. Explore all tabs and edit the record as necessary. Almost all the features described in "[Updating Metadata](#)" are applicable here. Keyword autocompletion and component selection might prove useful. If everything looks good, click the "Create" button. The program will check if all mandatory input fields are populated. If one or more required input fields are empty or they are not in an expected format, required fields will be highlighted in red while the page is being created. The program will ignore the input validation errors and will create a record. Then a list of metadata records will be shown. **Errors will need to be corrected before CoMET will save any new data.**

A banner will be displayed when the record is created:

The screenshot shows the CoMET interface after a record has been created. A green banner at the top displays the message: "New record gov.noaa.nceiC0001 created successfully!". Below the banner is a "Filters:" section with input fields for "Record Group" (Awesome Sauce), "Record Name" (Examples: AMSU, GOES, Grid), "Edit State" (-- Select a Value --), "XML Content" (Examples: OISST, gov.noaa.ndbcC00011, Weather), and "Last Updater" (Examples: user.name, bob, curly, moe). There are "Search Records" and "Reset Filters" buttons. To the right is a "Record Actions:" section with "New Record" buttons (Import, Create) and "Bulk Actions" buttons (Change Group, Download, Publishing, Delete). At the bottom, the "Metadata Records List" is shown, indicating "Showing 1 to 10 of 17 records".

Figure 2.17 The record created banner

Importing Records in Bulk

You may choose to bulk import several records at once. To do this, the initial steps are the same as above. In Record Actions, under New Record, select “Import”:

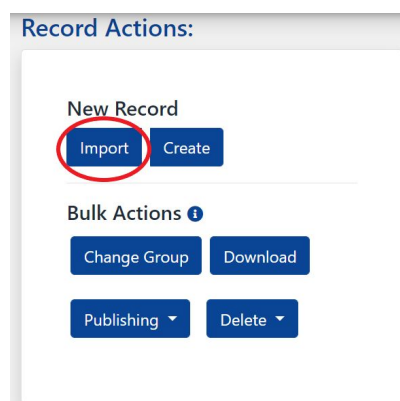


Figure 2.18 The Import record button

Select the files that you want to import. Note: multiple URLs are not supported by bulk importing, so uploading XML files is the only way to import multiple records:

Import Record

Upload your XML File Here

Choose Files 2 files Clear Files

- AHI_L2_DMW_CoMET_train.xml
- AHI_L2_RR_CoMET_train.xml

Or provide a URL to remote XML file here:

Internal CoMET Record Name: This field is optional and defaults to FileIdentifier if included in the content.

Figure 2.19 Multiple files selected for import

Multiple Internal CoMET record names cannot be added from this page, so CoMET will default to the FieldIdentifier for each record that is being imported. Select the record format for importing (typically ISO 19115-2 XML), and click “Import”.

Figure 2.20 Options for selecting the import format.

Copying Existing Metadata

If a new record to be created is similar to an existing one, making a few changes to a copy would be efficient. The “Record List” page shows ten records at a time. Each record has five buttons, namely, “Edit”, “Manage”, “View”, “Assess”, and “Validate”.



Figure 2.21 The buttons shown for each record on the Record List page.

1. Under the “Manage” button drop-down, click the “Copy” button. The application will show the “Select a form” page.

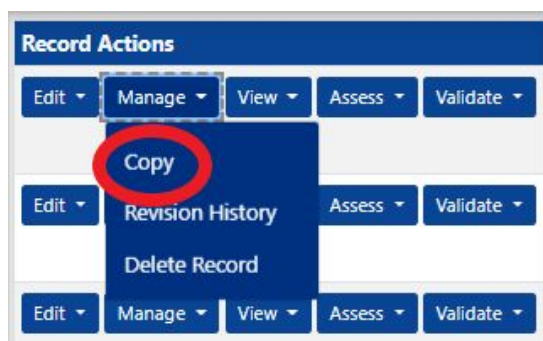


Figure 2.22 The Copy button.

2. Select the appropriate form from the drop-down menu.
3. Click the green “Create Record” button.

Figure 2.23 Select a form drop-down menu and "Create Record" button.

4. An identical record will be created and you will be taken to the CoMET ISO Editor to make changes.
5. If you want the form to have a different title, change it in the record name field.

Figure 2.24 The Record Name field.

6. Once you are ready to save your changes, click "Save Record" to create your new record and save it.

Figure 2.25 The Save Record button.

Using an API

CoMET gives users the ability to use API scripts to import single ISO records or records in a directory.

Login

All endpoints are authenticated endpoints and use LDAP credentials. Therefore, a user must first establish a user session to create, read/view, update, or delete metadata.

Establish a user session by sending credentials via an HTTP request to the login URL:

<https://data.noaa.gov/cedit/wsLogin>

A cookie will be created and used while interacting with the CoMET API as long as the session stays alive. Login example:

```
#!/usr/bin/env bash

export COMET_LOGIN_URL="https://data.noaa.gov/cedit/login/wsLogin"

DEFAULT_USERNAME="firstname.lastname"
echo -n "Enter username [$DEFAULT_USERNAME]:"
read USERNAME
if [ "$USERNAME" == "" ]; then
    USERNAME=$DEFAULT_USERNAME;
fi

echo -n "Enter password for $USERNAME: "
read -s PASSWORD
echo ""

CREDENTIALS="username=$USERNAME&password=$PASSWORD"

curl --data "$CREDENTIALS" \
    -X "POST" \
    --insecure \
    "$COMET_LOGIN_URL" \
    --cookie-jar cookies.txt \
```

Figure 2.26 Logging in to CoMET via API

Basic CRUD Operations

To perform these operations, a user must be part of the **“recordGroup”** with which they are trying to interact. Please contact the Collection Manager Team at

ncei.collection-manager.support@noaa.gov if you need to be added to a record group.

The operations supported by the API are:

- **Create:** Create a metadata record via an HTTP POST request.
- **Read:** View or Export a metadata record via an HTTP GET request. (Export API)
- **Update:** Change an existing record via an HTTP PUT request.
- **Delete:** Remove an existing record via an HTTP DELETE request.

Create — API endpoint - HTTP POST

Operation URL: <https://data.noaa.gov/cedit/metadata/import>

Optional query parameters:

- **recordGroup** — String value representing the record group in CoMET that records will be imported into.
- **description** — String value of the title of the record in the CoMET database.
- **transform** — String value (typically “convert-iso19115-2-to-comet”) which converts ISO metadata into an internal format.
- **format** — String value, options are: xml, json, text
- **uuid** — String value. Only provide this if you want to generate your own uuid value for this record.
- **editState** — String value. Only provide this if you want your metadata published automatically. (&editState=APPROVED)

Create Example:

```
export COMET_URL="https://data.noaa.gov/cedit/"

RECORD_GROUP=`urlencode "TEST_IMPORT_GROUP"`
IMPORT_FILE="$1"
IMPORT_TITLE=`urlencode "$2"`
TRANSFORM="convert-iso19115-2-to-comet"
UUID="$3"

curl --cookie cookies.txt \
  -X "POST" \
  -H "Content-Type: application/xml" \
  -k \
  --data-binary @"$IMPORT_FILE" \
  "$COMET_URL/metadata/import?recordGroup=$RECORD_GROUP&description=$IMPORT_TITLE&transform=$TRANSFORM&format=&uuid=$UUID"
```

Figure 2.27 Create example

Update — API endpoint - HTTP PUT

Operation URL: [https://data.noaa.gov/cedit/metadata/\\$uuid](https://data.noaa.gov/cedit/metadata/$uuid)

URL Path parameter:

\$uuid — String value and only provide this if you want to generate your own uuid value for this record.

Example uuid: 94306b70-1441-458f-83bf-9a338dda4dab

Optional query parameters:

- **editState** — String value and only provide this if you want your metadata published automatically. (&editState=APPROVED)

Update Example:

```
export COMET_URL="https://data.noaa.gov/cedit/"

if [ $# -ne 3 ]; then
    echo "usage: $0 ISO_XML TITLE UUID"
    exit 2
fi

XML_FILE="$1"
DESCRIPTION=`urlencode "$2"`
UUID="$3"
TRANSFORM="convert-iso19115-2-to-comet"

curl --cookie cookies.txt \
    -X "PUT" \
    -H "Content-Type: application/xml" \
    -k \
    --data-binary @"$XML_FILE" \
    "$COMET_URL/metadata/$UUID?description=FAPAR&transform=$TRANSFORM&editState=DRAFT"
```

Figure 2.28 Update example

Export — API endpoint - HTTP GET

Operation URL: [https://data.noaa.gov/cedit/metadata/\\$uuid](https://data.noaa.gov/cedit/metadata/$uuid)

URL Path parameter:

\$uuid — String value and only provide this if you want to generate your own uuid value for this record.

Example uuid: 94306b70-1441-458f-83bf-9a338dda4dab

Optional query parameter:

- **transform** — String value. Typically “transform=convert-comet-to-iso19115-2”, which converts the metadata record from the CoMET internal format to ISO 19115-2

Export Example:

```
export COMET_URL="https://data.noaa.gov/cedit/"

if [ $# -ne 2 ]; then
    echo "Exporting with UUID as Filename."
    FILENAME=$1
    echo -e "\n"
else
    echo "Exporting with $2 as Filename."
    FILENAME=$2
fi

curl --cookie cookies.txt \
    -X "GET" \
    -k \
    "$COMET_URL/metadata/$1?transform=convert-comet-to-iso19115-2" > ${FILENAME}.xml
```

Figure 2.29 Export example

Delete — API endpoint - HTTP DELETE

Operation URL: [https://data.noaa.gov/cedit/metadata/\\$uuid](https://data.noaa.gov/cedit/metadata/$uuid)

URL Path parameter:

\$uuid — String value and only provide this if you want to generate your own uuid value for this record.

Example uuid: 94306b70-1441-458f-83bf-9a338dda4dab

Delete Example:


```
#!/bin/bash

export COMET_URL="https://data.noaa.gov/cedit/"

if [ $# -lt 1 ]; then
    echo "usage: $0 UUID [UUID ...]"
    exit 2
fi

for uuid in $@; do
    curl --cookie cookies.txt \
        -X "DELETE" -k \
        "$COMET_URL/metadata/$uuid?format=text"
done
```

Figure 2.30 Delete example

Search — API endpoint - HTTP GET

Operation URL: <https://data.noaa.gov/cedit/metadata/search>

Optional query parameters:

recordGroup — String value representing the record group in CoMET.

Since — String value representing a date value (2016-03-01T09:10:00).

max — String value representing the maximum results returned.

format — String value, options are: xml, json, text

Search Example:

```
#!/bin/bash

export COMET_URL="https://data.noaa.gov/cedit"

TIME_SINCE="2016-03-01T09:10:00"
EDIT_STATE="COMPLETED"
MAX_RECORDS="1000"
OUTPUT="xml"

output=$(curl --cookie cookies.txt \
    -X "GET" \
    -k \
    "$COMET_URL/metadata/search?recordGroup=NOAA/NESDIS/nci/oer/&max=$MAX_RECORDS&format=text")
```

Figure 2.31 Search example

More Examples

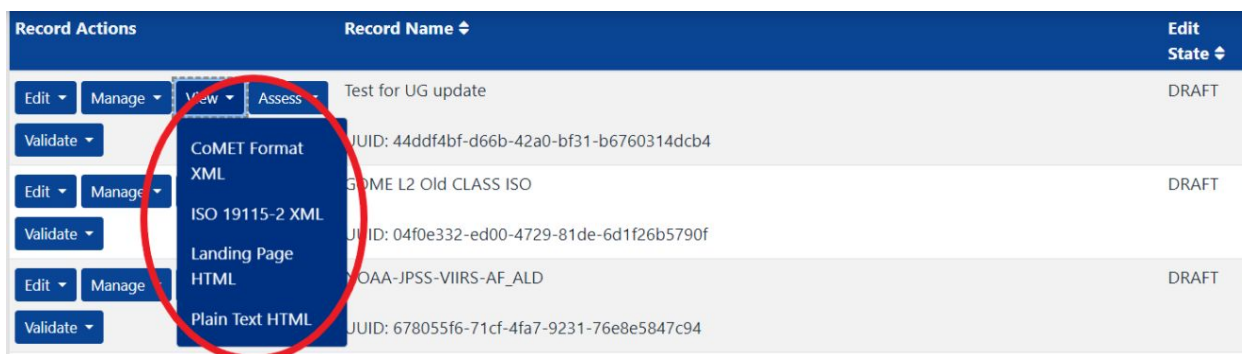
If you would like more code examples, please contact us via email at

ncei.collection-manager.support@noaa.gov to request access to a code repository used for testing CoMET APIs (**available to NCEI employees only**).

Viewing Metadata

On the “Record List” page, each metadata record is shown with five action buttons. To view the information about your metadata record, follow these steps.

1. Click the “View” button drop-down for the record of interest:



Record Actions	Record Name	Edit State
<div>Edit Manage View Assess</div>	Test for UG update	DRAFT
<div>Validate</div>	UUID: 44ddf4bf-d66b-42a0-bf31-b6760314dcb4	
<div>Edit Manage View Assess</div>	GO ME L2 Old CLASS ISO	DRAFT
<div>Validate</div>	UUID: 04f0e332-ed00-4729-81de-6d1f26b5790f	
<div>Edit Manage View Assess</div>	NOAA-JPSS-VIIRS-AF_ALD	DRAFT
<div>Validate</div>	UUID: 678055f6-71cf-4fa7-9231-76e8e5847c94	

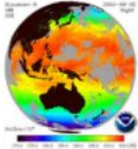
Figure 3.1 The action buttons. They appear on each line for a record in the Record List page.

The application will open a new window with the record format that you chose in the drop-down menu. In the figure below, the “Landing page HTML” was chosen:

Home > Catalog > Dataset Overview

NOAA/NESDIS Advanced Himawari Imager (AHI) Level 3C GHR SST ACSPO Sea Surface Temperature (SST) from Himawari 8

GHR SST-Himawari8-AHI-L3C-SST



Example of the Sea Surface Temperature (SST) product as generated by the Himawari-8 SST algorithm.

This dataset contains a high quality level 3C sea surface temperature (SST) product from the Advanced Himawari Imager (AHI) instrument onboard the Himawari-8 satellite that is operated by the Japanese Meteorological Agency (JMA) and is produced operationally by the NOAA Environmental Satellite, Data, and Information Service (NESDIS). The algorithm retrieval utilizes AHI channel brightness temperatures and reflectances to produce SST. AHI has 16 spectral bands with spatial resolutions ranging from 0.5 or 1 km for visible and near-infrared bands, and 2 km for infrared bands. Himawari-8 provides Full Disk and regional mesoscale coverage of the Asia-Pacific region approximately every 10 and 2.5 minutes respectively. Himawari-8 data produced by NESDIS are in NetCDF version 4 (NetCDF4) format with [Show more...](#)

[Dataset Citation](#)

[Dataset Identifiers](#)

[ISO 19115-2 Metadata](#)

Access [Time & Location](#) [Documentation](#) [Description](#) [Credit](#) [Keywords](#) [Constraints](#) [Lineage](#)

Download Data	Real-time Himawari-8 Satellite Imagery from NOAA/NESDIS (download)
Other Access	File access from AWS S3 Bucket (fileAccess)
Distribution Formats	<ul style="list-style-type: none"> NetCDF (Version: 4) <ul style="list-style-type: none"> File Specification:
Distributor	DOC/NOAA/NESDIS/STAR > Center for Satellite Applications and Research, NESDIS, NOAA, U.S. Department of Commerce 1-828-271-4800 ncei.orders@noaa.gov
Dataset Point of Contact	NOAA Big Data Project Contact noaa.bdp@noaa.gov

Last Modified: 2020-03-30T11:27:26
For questions about the information on this page, please email: amanda.dean@noaa.gov

Figure 3.2 The Landing Page XML. The screen capture shows an example record. The title, abstract, version, etc. are shown.

Viewing Metadata as ISO XML

From the “View” drop-down menu on the selected document, choose the “ISO 19115-2 XML” option.

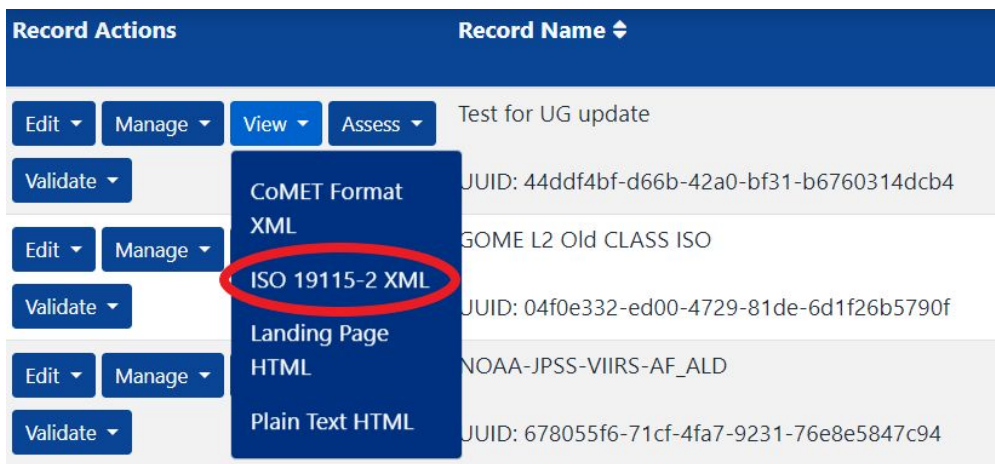


Figure 3.3 The View panel with a selection. The example above shows that a record will be exported in the ISO format.

Mouse over ISO 19115-2 XML and select. The web browser will show the record in the ISO XML format in a new window.

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<gmi:Metadata xmlns:gco="http://www.isotc211.org/2005/gco" xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:gss="http://www.isotc211.org/2005/gss" xmlns:gts="http://www.isotc211.org/2005/gts" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.isotc211.org/2005/gmi http://data.noaa.gov/resource
  <gco:CharacterString>gov.noaa.ncdc:C00864</gco:CharacterString>
  </gmd:fileIdentifier>
  <gmd:language>
    <gco:CharacterString>eng; USA</gco:CharacterString>
  </gmd:language>
  <gmd:characterSet>
    <gmd:MD_CharacterSetCode codeList="https://data.noaa.gov/resources/iso19139/schema/resources/CodeList/gmxCodeLists.xml#MD_CharacterSe
    </gmd:characterSet>
  </gmd:hierarchyLevel>
  <gmd:MD_ScopeCode codeList="https://data.noaa.gov/resources/iso19139/schema/resources/CodeList/gmxCodeLists.xml#MD_ScopeCode" codeLis
  </gmd:hierarchyLevel>
  <gmd:contact>
    <gmd:CI_ResponsibleParty>
      <gmd:organisationName>
        <gco:CharacterString>
          DOC/NOAA/NESDIS/NCEI > National Centers for Environmental Information, NESDIS, NOAA, U.S. Department of Commerce
        </gco:CharacterString>
      </gmd:organisationName>
      <gmd:positionName>
        <gco:CharacterString>ISO 19115 Metadata Contact</gco:CharacterString>
      </gmd:positionName>
      <gmd:contactInfo>
        <gmd:CI_Contact>
          <gmd:phone>
            <gmd:CI_Telephone>
              <gmd:voice>
                <gco:CharacterString>1-828-271-4800</gco:CharacterString>
              </gmd:voice>
              <gmd:facsimile>
                <gco:CharacterString>1-828-271-4876</gco:CharacterString>
              </gmd:facsimile>
            </gmd:CI_Telephone>
          </gmd:phone>
          <gmd:address>
            <gmd:CI_Address>
              <gmd:deliveryPoint>
                <gco:CharacterString>151 Patton Avenue</gco:CharacterString>
              </gmd:deliveryPoint>
              <gmd:deliveryPoint>
```

Figure 3.4 View record in the ISO XML format example.

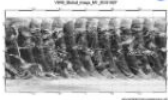
Viewing Metadata in NCEI Landing Page View

To check how the landing page would look from a CoMET record as described in Section 3.1, first select the “Landing Page HTML” view. The view is used to transform a CoMET record to ISO. It would look like:

[Home](#) > [Catalog](#) > [Dataset Overview](#)

NOAA JPSS Visible Infrared Imaging Radiometer Suite (VIIRS) Sensor Data Record (SDR) from IDPS

JPSS-VIIRS-SDR



Global image of Suomi-NPP VIIRS Single Band M1 from October 27, 2013. Image courtesy of NOAA JPSS LTM system.

Sensor Data Records (SDRs), or Level 1b data, from the Visible Infrared Imaging Radiometer Suite (VIIRS) are the calibrated and geolocated radiance and reflectance data produced from the Raw Data Records. There are 22 VIIRS SDRs: 16 moderate-resolution, narrow-spectral-band products at 750 meter resolution, five imaging-resolution, narrow-spectral-band products at 375 meter resolution and one Day-Night Band imaging broadband product at 750 meter resolution. These SDRs are used as input to produce several Environmental Data Records (EDR) products. A SDR contains the following elements: calibrated sensor radiometric data, geolocation data, quality flags and metadata at both the granule and aggregation levels. By default, VIIRS SDR data obtained from the NOAA Comprehensive Large Array-Data [Show more...](#)

[Dataset Citation](#)
[Dataset Identifiers](#)
[ISO 19115-2 Metadata](#)

Access	Time & Location	Documentation	Description	Credit	Keywords	Constraints	Lineage
Download Data	NOAA CLASS FTP Server (download) Access and download data tar files by date and product for the previous 85 days. The directory structure is as follows, date(yyyymmdd)->instrument family->product.						
Order Data	NOAA CLASS Data Search and Order (order) Search the data archive and submit an order for the dataset via the interface.						
Distribution Formats	<ul style="list-style-type: none"> HDF (Version: 5) 						
Distributor	Customer Engagement Branch DOC/NOAA/NESDIS/NCEI > National Centers for Environmental Information, NESDIS, NOAA, U.S. Department of Commerce 1-828-271-4800 ncei.orders@noaa.gov						

Figure 3.5 Landing Page HTML view.

Viewing Metadata in Plain Text HTML View

From the “View” drop-down menu on the selected record, choose the “Plain Text HTML” option.

referenceSystemInfo
identificationInfo
contentInfo
distributionInfo
dataQualityInfo
dataQualityInfo
dataQualityInfo
metadataMaintenance

NOAA JPSS Visible Infrared Imaging Radiometer Suite (VIIRS) Sensor Data Record (SDR) from IDPS

(MI_Metadata)
fileIdentifier: gov.noaa.ncdc:C00864
language: eng: USA
characterSet: (MD_CharacterSetCode) utf8
hierarchyLevel: (MD_ScopeCode) dataset
contact: (CI_ResponsibleParty)
organisationName: DOC/NOAA/NESDIS/NCEI > National Centers for Environmental Information, NESDIS, NOAA, U.S. Department of Commerce
positionName: ISO 19115 Metadata Contact
contactInfo: (CI_Contact)
phone: (CI_Telephone)
voice: 1-828-271-4800
facsimile: 1-828-271-4876
address: (CI_Address)
deliveryPoint: 151 Patton Avenue
deliveryPoint: Veach-Baley Federal Building, Room 468
city: Asheville
administrativeArea: NC
postalCode: 28801-5001
country: USA
electronicMailAddress: ncei.orders@noaa.gov
onlineResource: (CI_OnlineResource)
linkage: <https://www.ncei.noaa.gov>
protocol: HTTPS
applicationProfile: Web Browser
name: NOAA National Centers for Environmental Information (NCEI)
description: NCEI home page with information, data access and contact information.
function: (CI_OnlineFunctionCode) information
hoursOfService: 8:00 - 6:00 Eastern
role: (CI_RoleCode) pointOfContact

Figure 3.6 Plain Text HTML view of the record.

Note: Xlinks are not currently resolved in CoMET. Any metadata record containing Xlinks will not be fully resolved until published to OneStop or Inventory Manager.

Validating Metadata

ISO Validation

With CoMET, a metadata record can be validated using the XML Schema Definition (XSD) schema. From the “Record List” page, click the “Validate” button associated with the record of interest. Locate the “Validate ISO” button and click it.



Figure 4.1 Validate button within drop-down menu.

When a validation run finishes, the “Validate” page is shown in a new window. If the record is compliant with the ISO XSD schema and thus no issue is found, the “Validation Result:” field displays “true”.

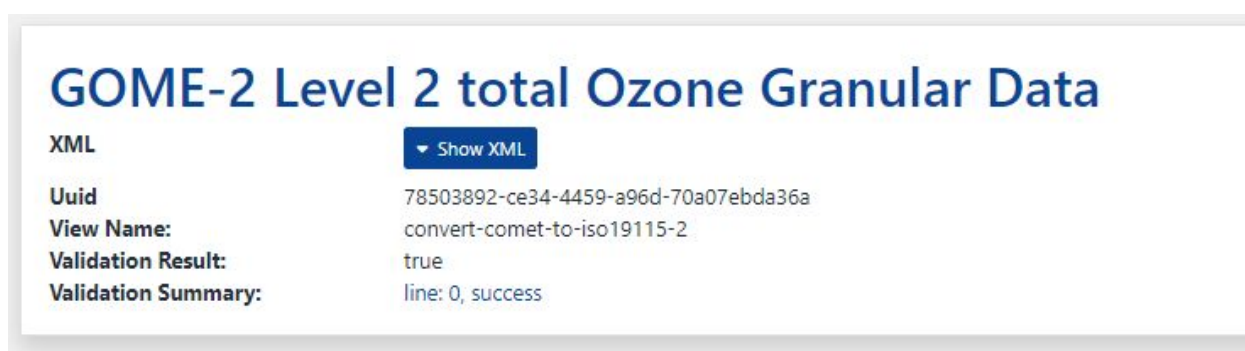


Figure 4.2 The result of an ISO validation test on a record. The example record shows no validation errors and it is fully compliant with ISO.

However, if the record is not compliant with ISO, error messages are shown with line numbers:

JPSS ATMS SDR for ref ALD

XML

▼ Show XML

Uuid 8bf93f83-4de0-493e-ae4d-d9730fe06730

View Name: convert-comet-to-iso19115-2

Validation Result: false

Validation Summary: line: 3552, cvc-id.2: There are multiple occurrences of ID value 'boundingGeographicBoundingBox'.
line: 3552, cvc-attribute.3: The value 'boundingGeographicBoundingBox' of attribute 'id' on element 'gmd:EX_GeographicBoundingBox' is not valid with respect to its type, 'ID'.
line: 3659, cvc-id.2: There are multiple occurrences of ID value 'boundingGeographicBoundingBox'.
line: 3659, cvc-attribute.3: The value 'boundingGeographicBoundingBox' of attribute 'id' on element 'gmd:EX_GeographicBoundingBox' is not valid with respect to its type, 'ID'.

Figure 4.3 Error messages. Error messages are listed when an ISO validation run fails. Line numbers and error messages are listed in the Validation Summary.

An error message line is a link and it is clickable. Click a message line. The metadata record in the ISO format will be shown under the “XML” field:

JPSS ATMS SDR for ref ALD

XML

▼ Show XML

```

codeListValue="information">information</gmd:CI_OnlineFunctionCode>
</gmd:function>
</gmd:CI_OnlineResource>
</gmd:onlineResource>
</gmd:CI_Contact>
</gmd:contactInfo>
<gmd:role gco:nilReason="missing"/>
3545. </gmd:CI_ResponsibleParty>
</gmd:citedResponsibleParty>
</gmd:CI_Citation>
</gmd:sourceCitation>
<gmd:sourceExtent>
3558. <gmd:EX_Extent>
<gmd:geographicElement>
<gmd:EX_GeographicBoundingBox id="boundingGeographicBoundingBox">
<gmd:extentTypeCode>
<gco:Boolean>1</gco:Boolean>
3555. </gmd:extentTypeCode>
<gmd:westBoundLongitude>
<gco:Decimal>-180</gco:Decimal>
</gmd:westBoundLongitude>
<gmd:eastBoundLongitude>
<gco:Decimal>180</gco:Decimal>
3560. </gmd:eastBoundLongitude>
<gmd:southBoundLatitude>
<gco:Decimal>-90</gco:Decimal>
</gmd:southBoundLatitude>
<gmd:northBoundLatitude>

```

Uuid 8bf93f83-4de0-493e-ae4d-d9730fe06730

View Name: convert-comet-to-iso19115-2

Validation Result: false

Validation Summary: line: 3552, cvc-id.2: There are multiple occurrences of ID value 'boundingGeographicBoundingBox'.
line: 3552, cvc-attribute.3: The value 'boundingGeographicBoundingBox' of attribute 'id' on element 'gmd:EX_GeographicBoundingBox' is not valid with respect to its type, 'ID'.
line: 3659, cvc-id.2: There are multiple occurrences of ID value 'boundingGeographicBoundingBox'.
line: 3659, cvc-attribute.3: The value 'boundingGeographicBoundingBox' of attribute 'id' on element 'gmd:EX_GeographicBoundingBox' is not valid with respect to its type, 'ID'.

Figure 4.4 Line 3552 is highlighted with a dashed rectangle. When an error message is listed next to the Validation Summary and below, the corresponding line is highlighted on the XML view.

The screenshot above is taken after clicking the first error message on line 3552. Notice that line 3552 on the panel showing the ISO record is highlighted with a dashed border. Try to click another error message. The panel will scroll automatically to show the corresponding line if the line is outside the panel view. When you are finished, you may close the window.

ISO Rubric V2 Assessment

Rubric V2 assessment is a tool to see if a record is adherent to NOAA metadata best practices. ISO Rubric V2 analysis is launched from the record “Assess” page drop-down menu of the Record List page.

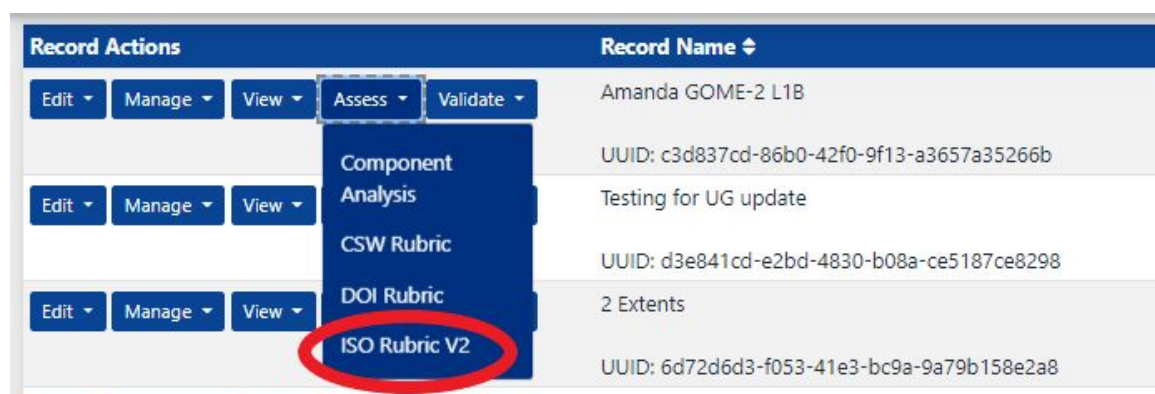


Figure 4.5 “Assess” button with drop-down menu choices.

A new window opens with the Rubric assessment. Once the analysis finishes, the web browser shows the overall completeness score as well as the scores for each category.

Completeness Rubric for: NOAA JPSS Visible Infrared Imaging Radiometer Suite (VIIRS) Sensor Data Record (SDR) from IDPS

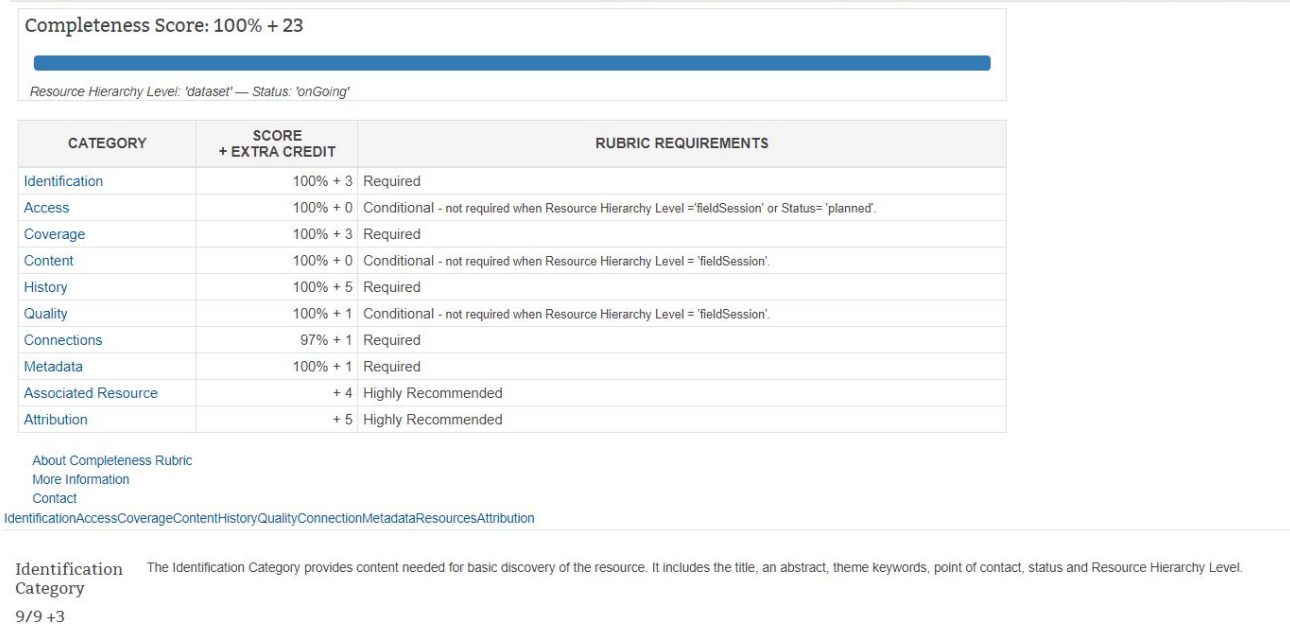


Figure 4.6 ISO Rubric V2 completeness score page.

Updating Metadata

A metadata record is opened for updating by clicking an “Edit” button:



Figure 5.1 Edit button with drop-down menu.

To edit, find the record to be updated by using the input fields in the Filters area or by using the page navigation bar appearing at the end of the record list. Click the “Edit” button associated with the record.

From the “Edit” menu, select “ISO Editor” to be taken to the edit form:



Figure 5.2 Select a form view.

As mentioned in an earlier Section, input fields are organized by tabs. When CoMET opens a record, the “Identification” tab is shown by default.

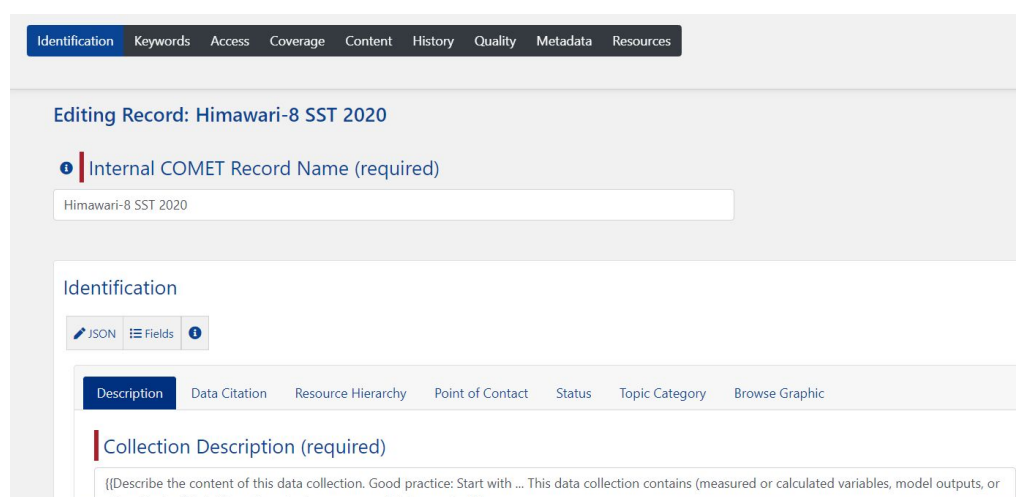


Figure 5.3 CoMET Editor record view: Identification tab.

Make necessary changes across all tabs. Once editing is completed, click the “Save” or “Commit” button appearing in the top center or near the bottom right:

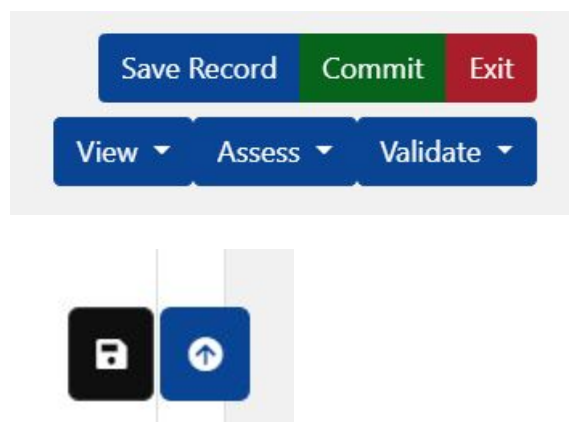


Figure 5.4 The Save and Commit buttons. See text for the difference between the two buttons.

Both buttons would save the record. The difference is that, when a record is committed, a dialogue appears to collect “Reason for Change.” The Reason for Change is saved along with the record and a flag indicating this particular version is committed.

Keyword Autocompletion

Keywords are listed under the “Keywords” tab. To help users to easily enter keywords, CoMET provides the keyword auto completion feature. The GCMD keywords are provided by default for the first Keywords group. Check the left side of the page to find the appropriate group, and click on the group where your keywords should be found. Any keywords thesauri that are not needed should be deleted by opening that thesauri and clicking the trash icon for Keywords Group at the bottom of the page.

Keywords Group

+ Keywords Group → Last Keywords Group All

This tab contains a keyword autocomplete feature dependent on values entered in the type and thesaurus title or xlink:title fields. It is recommended to enter the keyword type first.

Thesaurus: GCMD Science Keywords
Type: theme

Thesaurus: WMO Category Code
Type: theme

Thesaurus: Essential Climate Variables (ECV)
Type: theme

Thesaurus: GCMD Location Keywords
Type: place

Thesaurus: GCMD Platform Keywords
Type: platform

Thesaurus: SeaDataNet Ship and Platform Codes
Type: platform

Thesaurus: GCMD Instrument Keywords
Type: instrument

Thesaurus: GCMD Project Keywords
Type: project

Thesaurus: GCMD Data Center Keywords
Type: dataCentre

Thesaurus: GCMD Horizontal Resolution Keywords
Type: dataResolution

Thesaurus: GCMD Vertical Resolution Keywords
Type: dataResolution

Thesaurus: GCMD Temporal Resolution Keywords
Type: dataResolution

Thesaurus: {(thesaurus title)}
Type: dataCentre

Keywords Group 1 Enter Type, Thesaurus, and Keyword Values

Type theme

Thesaurus Use an Xlink

@xlink:href (required)
https://data.noaa.gov/docucomp/227737d0-428b-1

@xlink:title
GCMD Science Keywords

Keyword Values + Keyword Value → Last Keyword Value All

Keyword Value 1 Keyword Value 2 Keyword Value 3

Keyword Value 3 Enter Keyword

EARTH SCIENCE > AGRICULTURE > AGRICULTURAL AQUATIC SCIENCES

Autocomplete starts after 3 characters are entered

Keyword Value

Keywords Group

Figure 5.5 An input field for entering a keyword. The left side of the screen is a list of thesauri from which to choose keywords.

Keywords can be autocompleted. For example, we want to enter the “NITRATE PARTICLES” keyword. Type “NIT” and pause for a few seconds. CoMET searches keywords within the given vocabulary and displays the first 20 keywords containing “NIT.” Continue typing so that the input field contains “NITRATE.” There are only four keywords containing the word:

theme Keywords using the Global Change Master Directory (GCMD) Science Keywords 8.6 (1)

nitrate

EARTH SCIENCE > ATMOSPHERE > AEROSOLS > NITRATE PARTICLES

EARTH SCIENCE > ATMOSPHERE > ATMOSPHERIC CHEMISTRY > HALOCARBONS AND HALOGENS > CHLORINE NITRATE

EARTH SCIENCE > ATMOSPHERE > ATMOSPHERIC CHEMISTRY > NITROGEN COMPOUNDS > Peroxyacyl Nitrate

EARTH SCIENCE > OCEANS > OCEAN CHEMISTRY > NITRATE

Figure 5.6 Autocompletion feature. When the user enters one or more search terms, the autocomplete feature shows keywords containing the search terms.

At this point, you can place your mouse cursor over the “NITRATE PARTICLES” option and click it. Or add another word to the input field to narrow the search. The input field shows the selected keyword:

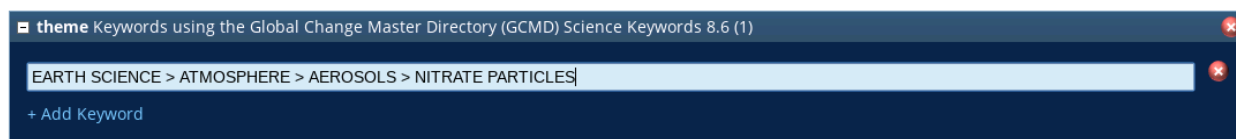


Figure 5.7 Keyword entry with autocompletion. When a keyword is selected from a drop-down menu returned by the autocomplete feature, the keyword is entered to the input field and the drop-down menu disappears.

Using Docucomp Components

Component selection works much like the keyword autocompletion described in Subsection 5.1. In CoMET, there are many areas where Xlinks can be used. The following screenshot shows the Xlink field in the Identification tab for the responsible party:

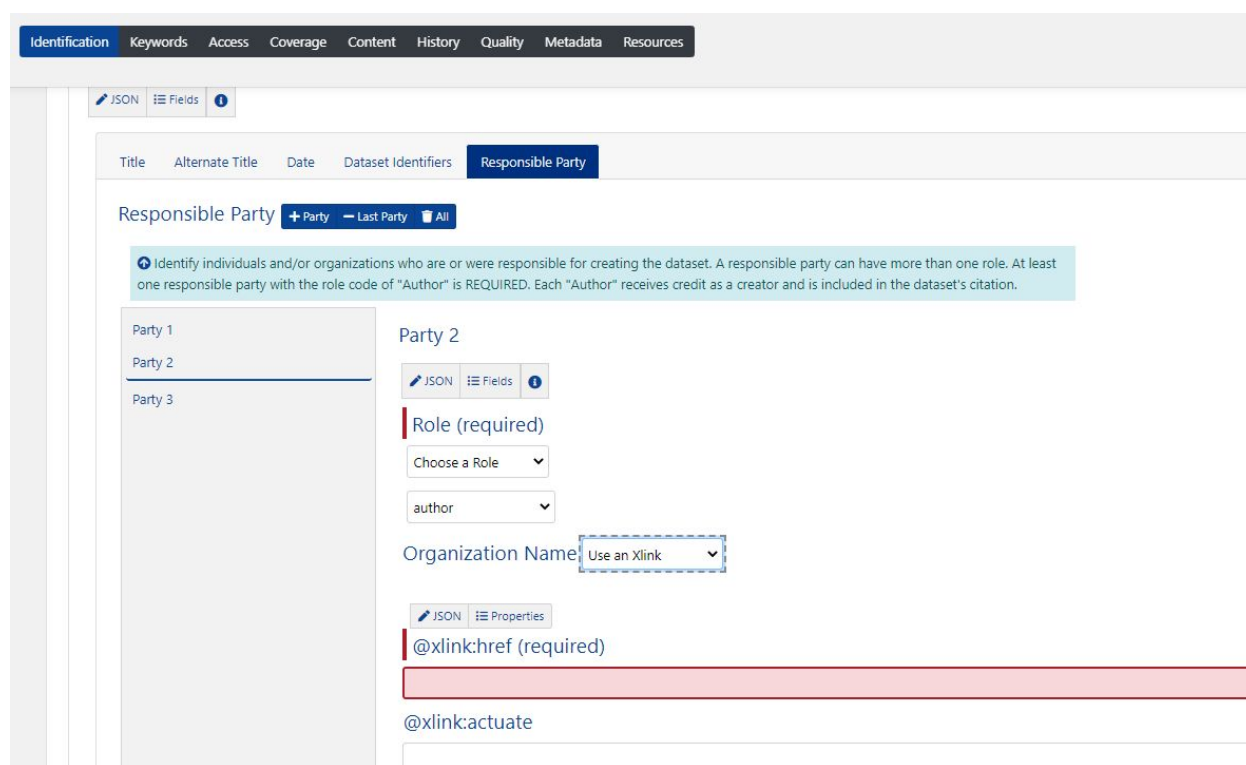


Figure 5.8 The Xlink field for Organization Name (in red).

The role of Author is chosen in this instance. When you select “Use an Xlink” from the drop-down menu and begin typing in the organization name, information that is linked from Docucomp will begin to appear after typing in the first three letters of the organization name. Below, NOAA/NESDIS was typed in:

Figure 5.9 An input field for entering a reference to a component. Autocompletion is enabled. A search is done by using the brief column of Docucomp. Enter any combination of words appearing in the brief of a component you want to use. An example search with “bob” responded with a drop-down:

Figure 5.10 drop-down menu with autocomplete matching feature. When one or more search terms are entered, the autocomplete feature makes a query to an external database and shows matches on a drop-down menu.

When an entity from the drop-down is selected, the component lookup UI displays its title and URL:

Responsible Party + Party ← Last Party All

Identify individuals and/or organizations who are or were responsible for creating the dataset. A responsible party can have more than one role. At least one responsible party with the role code of "Author" is REQUIRED. Each "Author" receives credit as a creator and is included in the dataset's citation.

Party 1
Party 2
Party 3
Party 4
Party 5

Party 5

JSON Fields ?

Role (required)

Choose a Role ▼

author ▼

Individual

JSON Fields ?

Name Use an Xlink ▼

@xlink:href (required)

<https://data.noaa.gov/docucomp/8171fe30-6ff-11e0-a1f0-0800200c9a6d>

Autocomplete starts after 3 characters are entered

@xlink:actuate

Figure 5.11 External reference URL automatically entered. When a component is selected from a drop-down menu shown by the autocomplete feature, reference to the selected component is automatically entered.

When and How to specify a “Nil Reason”

ISO metadata format allows to specify a reason when the value of a field is empty. The specification is done by using the “gco:nilReason” attribute. CoMET provides a mechanism to enter a nil reason. For example, let's say the contact information of a responsible party is not provided because it is withheld (by user request, for example). An empty box for entering a Responsible Party looks like:

Responsible Party + Party ← Last Party All

Identify individuals and/or organizations who are or were responsible for creating the dataset. A responsible party can have more than one role. At least one responsible party with the role code of "Author" is REQUIRED. Each "Author" receives credit as a creator and is included in the dataset's citation.

Party 1
Party 2
Party 3
Party 4
Party 5
Party 6

Party 6

JSON Fields ?

Role (required)

Choose a nilReason ▼

JSON Properties ?

Nil Reason (required)

missing
inapplicable
unknown
template
withheld

Name Enter Text ▼

Position Enter Text ▼

Figure 5.12 A blank section for editing a responsible party. Each input field shown here has a clickable icon to specify a nil reason.

Click the link. It adds a box within the Responsible Party:

The screenshot displays the 'Responsible Party' section of the CoMET interface. At the top, there are tabs for 'JSON', 'Fields', and 'Info'. Below this, the 'Resource Name' is set to 'Citation'. The main section is titled 'Responsible Party' and includes buttons for '+ Responsible Party', '- Last Responsible Party', and 'All'. Underneath, there are two tabs: 'Responsible Party 1' and 'Responsible Party 2'. The 'Responsible Party 1' tab is active, showing a form for editing the responsible party. The form includes a 'Role (required)' dropdown, a 'Nil Reason (required)' dropdown (highlighted with a red circle), and an 'Organization Name' dropdown. The 'Nil Reason (required)' dropdown is currently set to 'withheld'. Below the 'Organization Name' dropdown, there is a text input field with the placeholder text '{{cruise organization that facilitated the cruise}}'.

Figure 5.13 The nil reason selector. The drop-down contains a list of predefined values for a nil reason.

The selector lists all options supported by ISO. Use the selector to choose the “withheld” option for this example.

Undo a Change Using Revision History

Whenever a record is updated from the “Edit” page by using the “Save” or “Commit” button, the prior version is saved using the revision history feature. In fact, CoMET keeps all

updates. It is possible to recall an earlier version and to make it the current version. For example, let's say a record has 10 versions. The version numbers would be 1 through 10 with 10 being the latest. If version 9 is recalled, a copy of version 9 becomes version 11. Next time when the record is edited, version 11 will be used.

1. In order to view the revision history of a record, go to the "Manage" page of a record. This is done from the "Form Content: Record List" page by clicking the "Manage" drop-down menu button for the record of interest.

Metadata Records List

Showing 21 to 30 of 150 records

Record Actions	Record Name	Edit State
Edit ▾ Manage ▾ View ▾ Assess ▾ Validate ▾	Test record from scratch by Don Collins UUID: 7e2296ca-d10c-48cc-84d5-1ad677caf0af	DRAFT
Edit ▾ Manage ▾ View ▾ Assess ▾ Validate ▾ Copy	Amanda GOME-2 L1B UUID: c3d837cd-86b0-42f0-9f13-a3657a35266b	DRAFT
Edit ▾ Revision History ▾ Assess ▾ Validate ▾ Delete Record	GOME L2 Old CLASS ISO UUID: 04f0e332-ed00-4729-81de-6d1f26b5790f	DRAFT
Edit ▾ Manage ▾ View ▾ Assess ▾ Validate ▾	NOAA-JPSS-VIIRS-AF_ALD UUID: 678055f6-71cf-4fa7-9231-76e8e5847c94	DRAFT

Figure 6.1 The Manage button.

2. Then click The Revision History button.

Metadata Records List

Showing 21 to 30 of 150 records

Record Actions	Record Name	Edit State
Edit ▾ Manage ▾ View ▾ Assess ▾ Validate ▾	Test record from scratch by Don Collins UUID: 7e2296ca-d10c-48cc-84d5-1ad677caf0af	DRAFT
Edit ▾ Manage ▾ View ▾ Assess ▾ Validate ▾ Copy	Amanda GOME-2 L1B UUID: c3d837cd-86b0-42f0-9f13-a3657a35266b	DRAFT
Edit ▾ Revision History ▾ Assess ▾ Validate ▾ Delete Record	GOME L2 Old CLASS ISO UUID: 04f0e332-ed00-4729-81de-6d1f26b5790f	DRAFT
Edit ▾ Manage ▾ View ▾ Assess ▾ Validate ▾	NOAA-JPSS-VIIRS-AF_ALD UUID: 678055f6-71cf-4fa7-9231-76e8e5847c94	DRAFT

Figure 6.2 The Revision History button.

3. You can select a version or versions by checking a box next to the version number.

GOME-2 L1B Old ISO from CLASS

Compare Versions Showing 1 to 8 of 8 records

Version	Date	Updater	Commit Message	Action
<input checked="" type="checkbox"/>	2020-09-25 15:44:42.908	amanda.dean		View XML
<input checked="" type="checkbox"/>	2020-09-25 15:32:55.161	amanda.dean		View XML Revert
<input checked="" type="checkbox"/>	2020-09-25 15:31:17.767	amanda.dean		View XML Revert
<input type="checkbox"/>	2020-09-25 14:16:25.236	amanda.dean		View XML Revert
<input type="checkbox"/>	2020-09-25 14:14:59.512	amanda.dean		View XML Revert

Figure 6.3 Checkboxes to select and compare different versions.

4. You can revert to a previous version or compare any 2 versions.

Action

View XML
View XML
Revert
View XML
Revert
View XML
Revert

Figure 6.4 The Revert Button.

Publishing Metadata

Once the record is completed, it is ready to be published.

1. From the Record List view, click on "Record Actions" so that a drop-down menu appears. Select "Request to Publish" shown below:

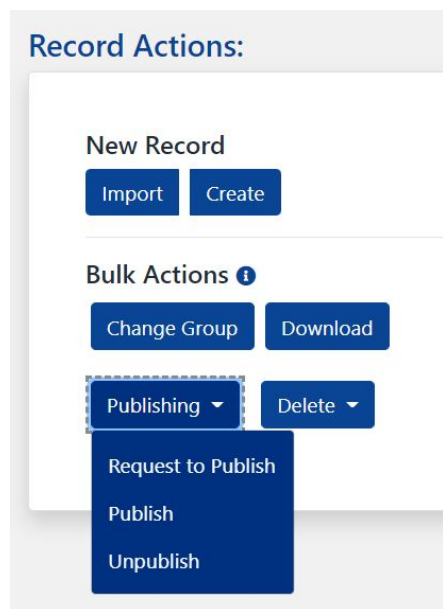


Figure 7.1 The Request to Publish button.

2. Select the record or records you wish to publish by placing a checkmark next to it, and then click the green "Request to Publish" button on the bottom right of the form list.

Publishable Record List				
Showing 1 to 10 of 142 records				
Actions	Description ↕	Edit State ↕	Last Updated by ↕	
<input type="checkbox"/> View	GOME-2 L1B Old ISO from CLASS	DRAFT	amanda.dean	
<input type="checkbox"/> View	Test for UG update copy	DRAFT	amanda.dean	
<input checked="" type="checkbox"/> View	Test for UG update	DRAFT	amanda.dean	
<input checked="" type="checkbox"/> View	COMET-NCEI-Template	DRAFT	kathy.martinolich	
<input checked="" type="checkbox"/> View	Enterprise Geostationary Satellite Rainfall	DRAFT	jerri.reeves	

Figure 7.2 The checkbox next to the View record(s).

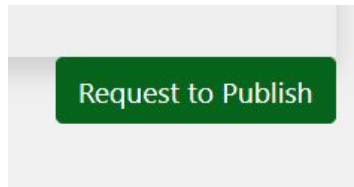


Figure 7.3 The Request to Publish button is found on the bottom right of the page.

3. A box will pop up requesting information. Provide an optional comment (highly recommended) about the publishing request for the reviewer, and click OK.

Enter Reason for Change

Provide optional text to document this request to publish the record(s).

Cancel
OK

Figure 7.4 The Provide optional comment text field.

You will be returned to the Record List view where your records that were requested to be published will change to an edit state of "In Review":

Record Actions					Record Name	Edit State	Last Editor
Edit	Manage	View	Assess	Validate	Test for UG update	IN REVIEW	amanda.dean
UUID: 44ddf4bf-d66b-42a0-bf31-b6760314dcb4							
Edit	Manage	View	Assess	Validate	GOME-2 L1B Old ISO from CLASS	DRAFT	amanda.dean
UUID: 17eb58a6-0c0f-4dd8-9b78-5e39df3d6db8							
Edit	Manage	View	Assess	Validate	COMET-NCEI-Template	IN REVIEW	jerri.reeves
UUID: a265ed4e-eab1-4b52-937c-64696f54fc99							

Figure 7.5 The record has been submitted and is in review.

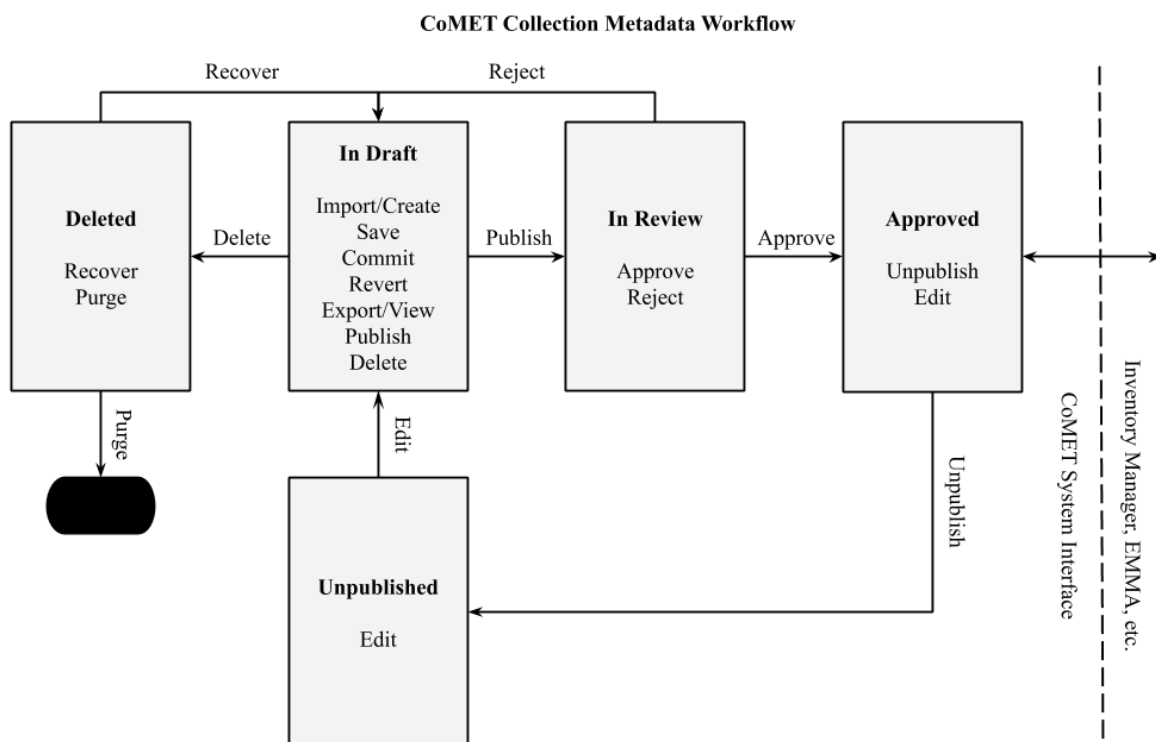


Figure 7.6 CoMET Collection Metadata Workflow showing record states and transitions.

Unpublishing Metadata

There may come a time when you need to delete metadata for various reasons. These steps will walk you through that process.

1. From the Record List view, click the “Record Actions” drop-down menu towards the right of the screen.
 - a. **Note:** You cannot unpublish a record until your original publish request was approved.
 - b. **Note:** If you only see “Request to Publish” and “Undelete Records” in the drop-down menu, your current user access does not allow for certain permissions to change records. Please contact ncei.collection-manager.support@noaa.gov for assistance.

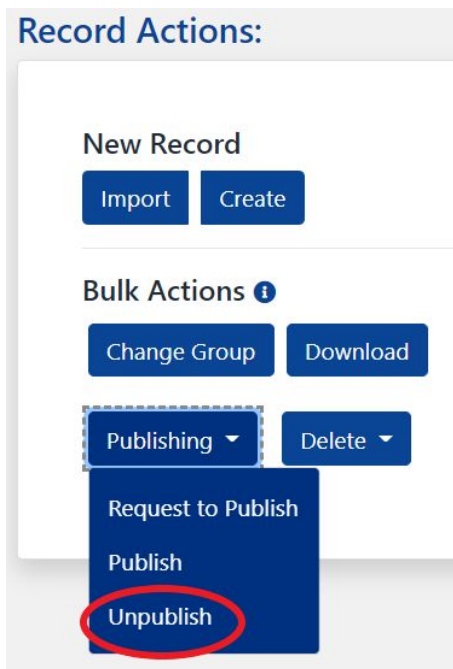


Figure 7.7 The Unpublish Records button.

2. On the unpublish list view page, place a checkmark next to the record(s) you wish to unpublish and click the green “Unpublish” button on the bottom right of the page.

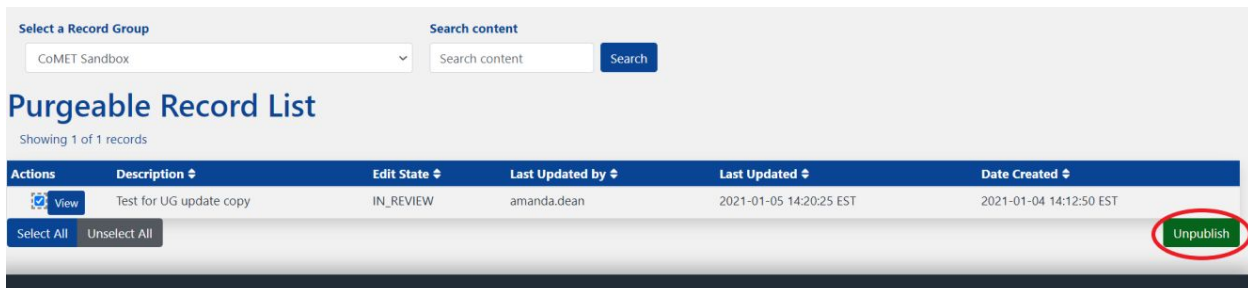


Figure 7.8 Checkmarks to unpublish records and Unpublish button.

3. Type a reason for unpublishing the record in the dialog box that appears (optional) and click OK.


Figure 7.9 Reason for Change optional comment text field.

4. You will be returned to the Record List page, and a green banner will appear when the record has been reverted to the draft status.

Figure 7.10 Green banner with status change back to Draft.

Deleting Metadata

A metadata record may be deleted from CoMET. A “Delete” button is available from several pages. The obvious choice is the Record List page. From the Record List view click the “Manage” button for the record you wish to delete.



Metadata Records List

Showing 1 to 10 of 150 records

Record Actions	Record Name	Edit State	Last Editor
<div> <div>Edit</div> <div>Manage</div> <div>View</div> <div>Assess</div> <div>Validate</div> </div> <div> <div>Copy</div> <div>Revision History</div> <div>Delete Record</div> </div>	GOME-2 L1B Old ISO from CLASS	DRAFT	amanda.dean
<div> <div>Edit</div> <div>Manage</div> <div>View</div> <div>Assess</div> <div>Validate</div> </div>	UUID: 17eb58a6-0c0f-4dd8-9b78-5e39df3d6db8 COMET-NCEI-Template	IN REVIEW	jerri.reeves
<div> <div>Edit</div> <div>Manage</div> <div>View</div> <div>Assess</div> <div>Validate</div> </div>	UUID: a265ed4e-eab1-4b52-937c-64696f54fc99 Test for UG update copy	DRAFT	amanda.dean
	UUID: 93d44a8c-440b-45e1-86e4-6812b2dd13a1		

Figure 8.1 The Manage button with drop-down menu.

From the Manage option, click the “Delete Record” button.

When the “Delete Record” button is clicked, the application asks for a confirmation with “Cancel” or “OK”:

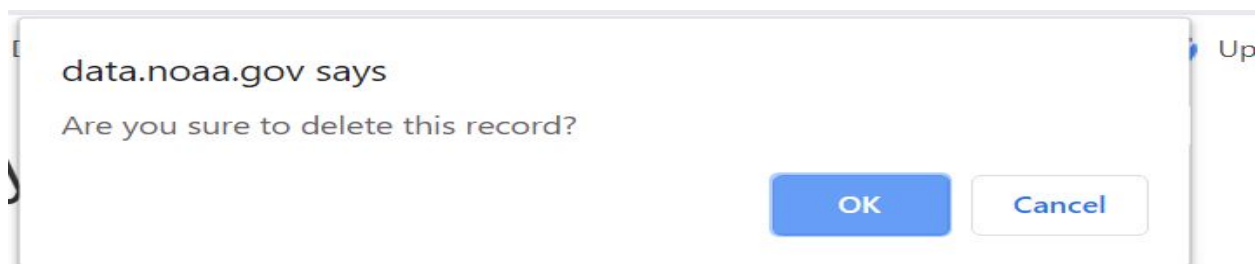


Figure 8.2 The Delete Confirmation dialog.

The confirmation dialogue is to prevent a record from being accidentally deleted. When the “OK” button is clicked, the record is deleted and the web browser changes to the “Record List” page.

Using the Data Stewardship Maturity Questionnaire (DSMQ)

Background

The application of the Data Stewardship Maturity Matrix (DSMM) is an essential part of making NOAA data and metadata *OneStop* ready. It allows for greater transparency and discoverability of data sets. The DSMM assessment can be carried out either by using the [DSMM template](#) or by answering the [Data Stewardship Maturity Questionnaire \(DSMQ\)](#). However, DSMQ offers a more consistent and scalable approach to the DSMM assessment and ratings integration process. To help utilize DSMQ, this guide attempts to shed some light on commonly used terms in the DSMQ as well as answer some frequently asked questions by early beta testers. Suggestions for improving this document are encouraged and can be sent to the OneStop Metadata Content Editor Team (paul.lemieux@noaa.gov and amanda.dean@noaa.gov)

Workflows

1. Request CoMET account if you do not already have one by following these steps:

Send email to ncei.collection-manager.support@noaa.gov with the following details:

Subject: 'New User for [CoMET, Docucomp, and/or Metaserver] for *your name*'

Your contact information

Your associated program or agency

Intended usage

Once you are set up, your login name will be your email (without the @noaa.gov) and the password will be the same as your email password.

Note: Login is currently limited to users with a NOAA email, but external access is planned for a future release cycle. Send in a request if you'd like to be informed when this capability is available.

- After clicking the Login button, you will be redirected to a page that allows you to use your username and password or the NOAA ICAM SSO. Either enter your username and password; or click the NOAA ICAM SSO button.
- After authentication, a warning banner is displayed.
- Click the green "Accept" button to proceed.

2. When you login, please select "Records: Access Metadata Records"

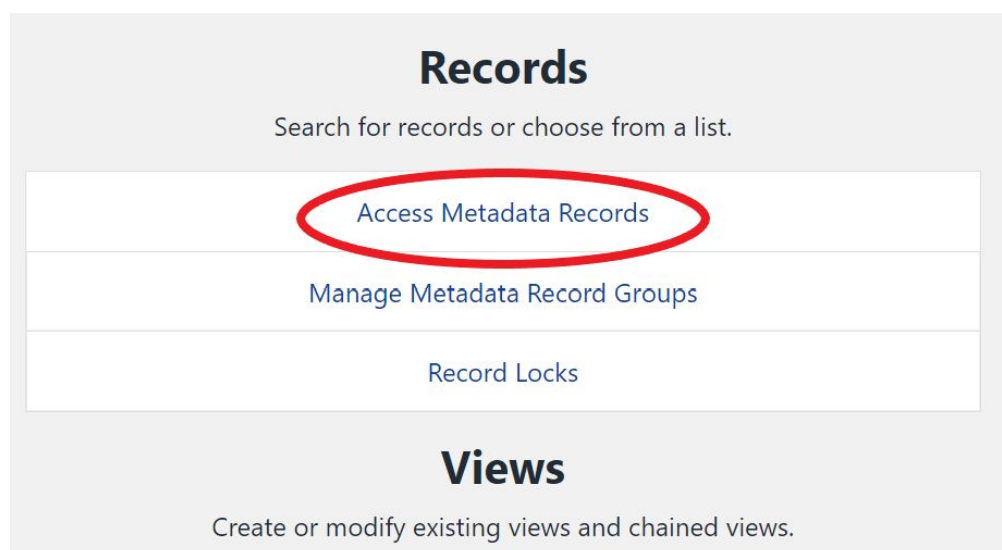


Figure 1.1 Main Menu.

3. From the "Select a Record Group", choose the desired group from the drop-down menu.

Record Group: CoMET Sandbox

Record Name: Examples: AMSU, GOES, Grid

Edit State: -- Select a Value --

XML Content: Examples: OISST, gov.noaa.ncdc:C00011, Weather

Last Updater: Examples: user.name, bob, curly, moe

Search Records Reset Filters

Figure 1.2 CoMET Sandbox selection from drop-down menu.

4. If you want to create a new DSMQ record, click "Create Record".

The screenshot shows the 'Metadata Records List' interface. On the left, under 'Filters:', there are input fields for 'Record Group' (set to 'CoMET Sandbox'), 'Record Name' (with examples: AMSU, GOES, Grid), 'Edit State' (set to '-- Select a Value --'), 'XML Content' (with examples: OISST, gov.noaa.ncdc:C00011, Weather), and 'Last Updater' (with examples: user.name, bob, curlv, moe). On the right, under 'Actions:', there is a 'New Record' section with 'Import Record' and 'Create Record' buttons. The 'Create Record' button is circled in red. Below it is a 'Bulk Record Actions' section with a 'Bulk Actions' dropdown menu.

Figure 1.3 The Create Record button.

- From "Select a form" menu, choose "Data Stewardship Maturity Questionnaire (DSMQ)" and click "Create Record"

The screenshot shows the 'Create a new record' form. At the top, the breadcrumb is 'Home / Metadata Records List / Choose Form: Create'. The main heading is 'Create a new record'. Below it, 'Select a form' is followed by a dropdown menu showing 'Data Stewardship Maturity Questionnaire (DSMQ)'. At the bottom, there is a large green 'Create Record' button.

Figure 1.4 Select a form menu.

- Once the form loads, your default view will show the "General" tab.

The screenshot shows the 'Create in CoMET Sandbox' form. At the top, there is a 'Record Name*' field with the placeholder '-Internal CoMET Record Name-' and an 'Edit Status: DRAFT' label. A 'Create' button is next to it. Below this is the 'DSMM Questionnaire' section. It has two tabs: 'Evaluate Questionnaire' (active) and 'DSMM Questionnaire User Guide'. Under the 'Evaluate Questionnaire' tab, there are several sub-tabs: 'General' (circled in red), 'Preservability (0/5)', 'Accessibility (0/5)', 'Usability (0/5)', 'Production Sustainability (0/5)', 'Data Quality Assurance (0/5)', 'Data Quality Control/Monitoring (0/5)', 'Data Quality Assessment (0/5)', 'Transparency/Traceability (0/5)', and 'Data Integrity (0/5)'. The 'General' tab is selected, showing a form for 'A. Dataset short name.' with a text input field and a 'Submit' button. Below it, there is a section for 'B. Dataset title.' with a text input field.

Figure 1.5 General Tab of the Questionnaire.

While you are free to complete the tabs in any order you choose, we recommend starting with “General” and working your way to the right through all the tabs in their displayed order.

7. Follow steps 9-17 to complete, save and commit the form.
8. If you have already created a DSMQ, and would like to pick up where you left off previously, then locate the form you want to edit and click “Edit.”

Metadata Records List

Showing 1 to 10 of 129 records

Record Actions	Record Name	Edit State	Last Editor	Last Updated	Create Date
Edit Manage View Assess Validate	GOME-2 Level 2 total Ozone Granular Data UUID: 78503892-ce34-4459-a96d-70a07ebda36a	DRAFT	amanda.dean	2020-09-17 16:38:35 EDT	2020-09-17 15:20:35 EDT
CoMET ISO Editor	2 Extents UUID: 6d72d6d3-f053-41e3-bc9a-9a79b158e2a8	DRAFT	jerri.reeves	2020-09-16 17:21:42 EDT	2020-09-14 14:36:52 EDT
Data Management Plan	JPSS ATMS SDR for ref ALD UUID: 8bf93f83-4de0-493e-ae4d-d9730fe06730	DRAFT	amanda.dean	2020-09-11 14:19:11 EDT	2020-07-28 13:04:52 EDT
Data Stewardship Maturity Questionnaire (DSMQ)	Test_CORS_Fran UUID: 50ea65a2-fa50-427b-838f-7b07f4d04996	DRAFT	francine.coloma	2020-09-02 13:17:37 EDT	2020-06-09 12:18:13 EDT
CoMET 2.0	Harper ATRAC test JPSS Visible Infrared Imaging Radiometer Suite (VIIRS) Vegetation Health and Drought Products (VHDP) UUID: 50ea65a2-fa50-427b-838f-7b07f4d04996	IN REVIEW	elizabeth.harper	2020-09-02 09:59:47 EDT	2020-08-11 16:30:00 EDT

Figure 1.6 The Edit button.

9. From “Edit” menu, choose “Data Stewardship Maturity Questionnaire (DSMQ)” and a new window will open.

Editing Record: GOME-2 Level 2 total Ozone Granular Data

Record Name*

DSMM Questionnaire [Evaluate Questionnaire](#) [DSMM Questionnaire User Guide](#)

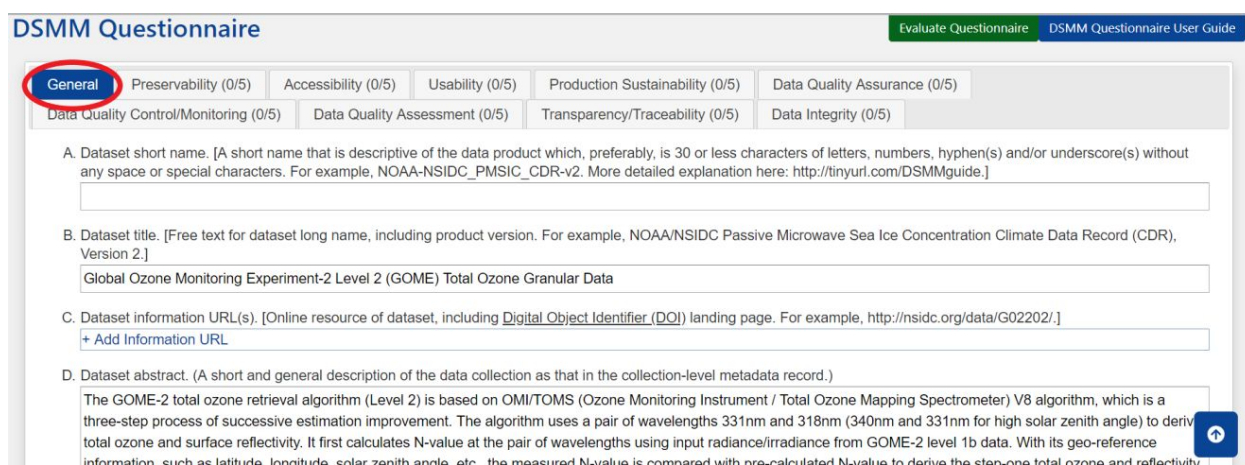
[General](#)
[Preservability \(0/5\)](#)
[Accessibility \(0/5\)](#)
[Usability \(0/5\)](#)
[Production Sustainability \(0/5\)](#)
[Data Quality Assurance \(0/5\)](#)

[Data Quality Control/Monitoring \(0/5\)](#)
[Data Quality Assessment \(0/5\)](#)
[Transparency/Traceability \(0/5\)](#)
[Data Integrity \(0/5\)](#)

A. Dataset short name. [A short name that is descriptive of the data product which, preferably, is 30 or less characters of letters, numbers, hyphen(s) and/or underscore(s) without any space or special characters. For example, NOAA-NSIDC_PMSIC_CDR-v2. More detailed explanation here: <http://tinyurl.com/DSMMGuide>]

B. Dataset title. [Free text for dataset long name, including product version. For example, NOAA/NSIDC Passive Microwave Sea Ice Concentration Climate Data Record (CDR), Version 2.]

Figure 1.7 General Tab View.



DSMM Questionnaire Evaluate Questionnaire DSMM Questionnaire User Guide

General Preservability (0/5) Accessibility (0/5) Usability (0/5) Production Sustainability (0/5) Data Quality Assurance (0/5)
 Data Quality Control/Monitoring (0/5) Data Quality Assessment (0/5) Transparency/Traceability (0/5) Data Integrity (0/5)

A. Dataset short name. [A short name that is descriptive of the data product which, preferably, is 30 or less characters of letters, numbers, hyphen(s) and/or underscore(s) without any space or special characters. For example, NOAA-NSIDC_PMSIC_CDR-v2. More detailed explanation here: <http://tinyurl.com/DSMMguide>.]

B. Dataset title. [Free text for dataset long name, including product version. For example, NOAA/NSIDC Passive Microwave Sea Ice Concentration Climate Data Record (CDR), Version 2.]

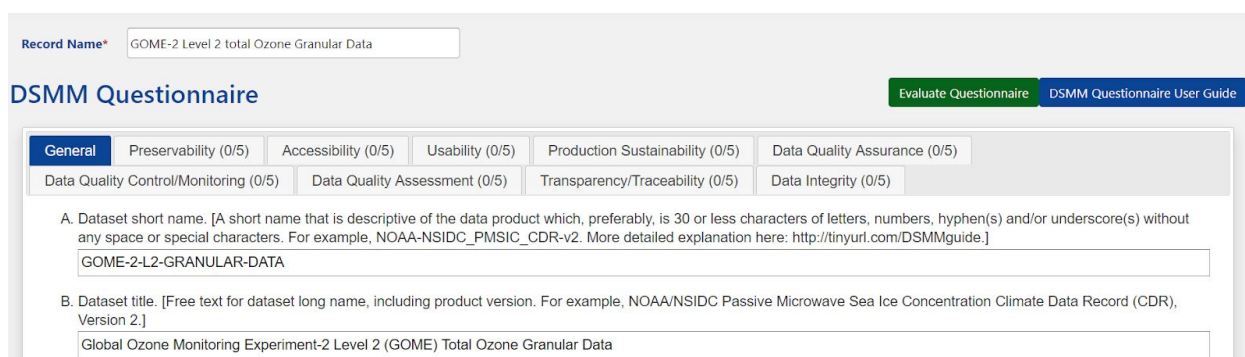
C. Dataset information URL(s). [Online resource of dataset, including [Digital Object Identifier \(DOI\)](#) landing page. For example, <http://nsidc.org/data/G02202/>.]

D. Dataset abstract. (A short and general description of the data collection as that in the collection-level metadata record.)

The GOME-2 total ozone retrieval algorithm (Level 2) is based on OMI/TOMS (Ozone Monitoring Instrument / Total Ozone Mapping Spectrometer) V8 algorithm, which is a three-step process of successive estimation improvement. The algorithm uses a pair of wavelengths 331nm and 318nm (340nm and 331nm for high solar zenith angle) to derive total ozone and surface reflectivity. It first calculates N-value at the pair of wavelengths using input radiance/irradiance from GOME-2 level 1b data. With its geo-reference information, such as latitude, longitude, solar zenith angle, etc., the measured N-value is compared with pre-calculated N-value to derive the step-one total ozone and reflectivity.

Figure 1.8 Extended General Tab View.

10. Complete the tabs. Please insert both Dataset short name and title as shown below:



Record Name* GOME-2 Level 2 total Ozone Granular Data

DSMM Questionnaire Evaluate Questionnaire DSMM Questionnaire User Guide

General Preservability (0/5) Accessibility (0/5) Usability (0/5) Production Sustainability (0/5) Data Quality Assurance (0/5)
 Data Quality Control/Monitoring (0/5) Data Quality Assessment (0/5) Transparency/Traceability (0/5) Data Integrity (0/5)

A. Dataset short name. [A short name that is descriptive of the data product which, preferably, is 30 or less characters of letters, numbers, hyphen(s) and/or underscore(s) without any space or special characters. For example, NOAA-NSIDC_PMSIC_CDR-v2. More detailed explanation here: <http://tinyurl.com/DSMMguide>.]

B. Dataset title. [Free text for dataset long name, including product version. For example, NOAA/NSIDC Passive Microwave Sea Ice Concentration Climate Data Record (CDR), Version 2.]

Figure 1.9 Completed Fields View, General Tab.

11. Required fields that are empty will turn red while the record is being created.
12. Once a tab is completed to your satisfaction, you may advance to the next tab by simply selecting the tab or by clicking the "Next" button at the bottom of the page.

DSMM Questionnaire Evaluate Questionnaire

General	Preservability (0/5)	Accessibility (0/5)	Usability (0/5)	Production Sustainability (0/5)	Data Quality Assurance (0/5)
Data Quality Control/Monitoring (0/5)	Data Quality Assessment (0/5)	Transparency/Traceability (0/5)	Data Integrity (0/5)		

Preservability: The state of the dataset being preservable.

1.1 How is this dataset stored?

- ☐ a) These data reside on an individual's hard drive or other ad hoc storage method.
- ☐ b) These data reside in an institutional repository or other non-designated repository.
- ☒ c) These data reside in a designated archive compliant to national or international standards. (e.g., NARA or similar.)

1.1c What national or international standard is the data archive compliant with? [e.g., National Archives and Records Administration (NARA).]

1.2 Do backups exist for this dataset?

- ☐ a) These data are not backed up in any way.
- ☒ b) These data are redundant and have at least one backup copy on a different system.

Figure 1.10 The Preservability Tab View.

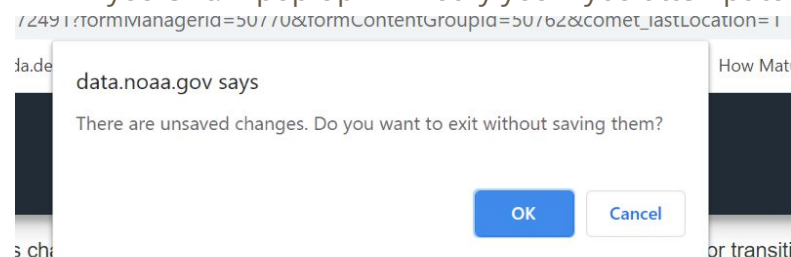
Optional comments [Please, include any additional information available about this category that was not covered in the questions above. Information may include: links to websites and documents, programs/project descriptions as well as comments from data providers and/or Subject Matter Experts (SMEs).]

Previous Next

Save Commit Exit ↑

Figure 1.11 The Optional Comments Text Box View.

13. If at any time you need to quit and return later, be sure to select “Save” at the top of the page. Clicking “Exit” will exit the editor without saving, so be sure to save before you exit. A pop-up will notify you if you attempt to exit the screen without saving.



monitored and future archiving standard changes are planned.

Figure 1.12 Pop-up that notifies that changes will not be saved.

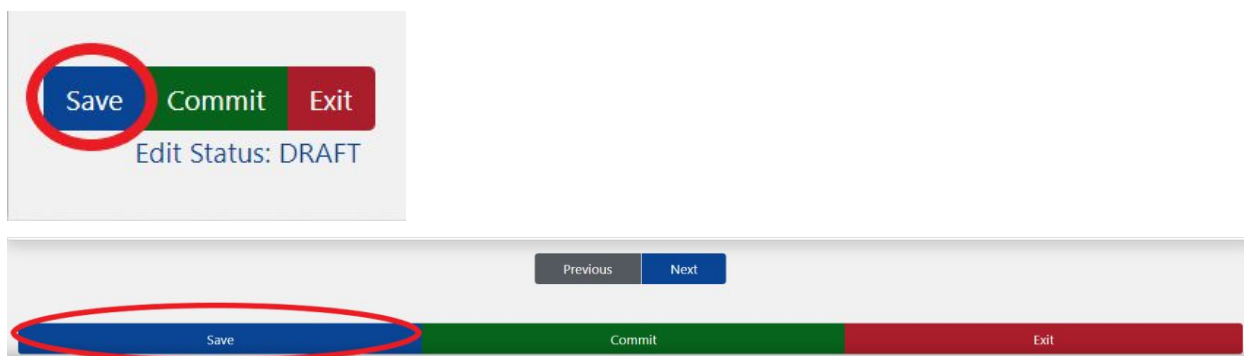


Figure 1.13 The Save Button.

14. Once the form is finished, click the "Commit" button.

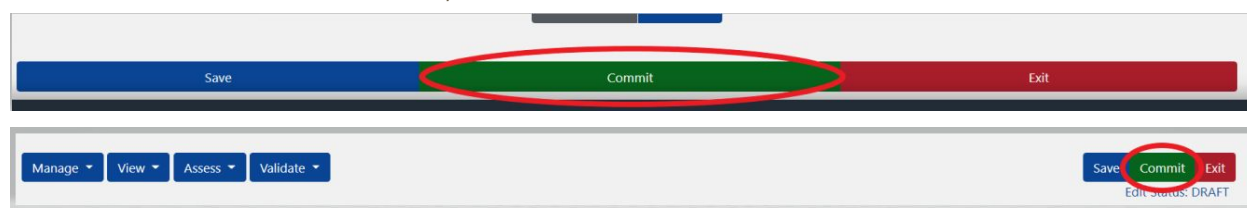


Figure 1.14 The Commit Button.

15. Enter a reason for a change in the pop-up window.



Figure 1.15 The Commit message.

16. Click “Commit” button. This will save your form, baseline it, and return you to your record DSMQ form view.

17. Click “Save” button.

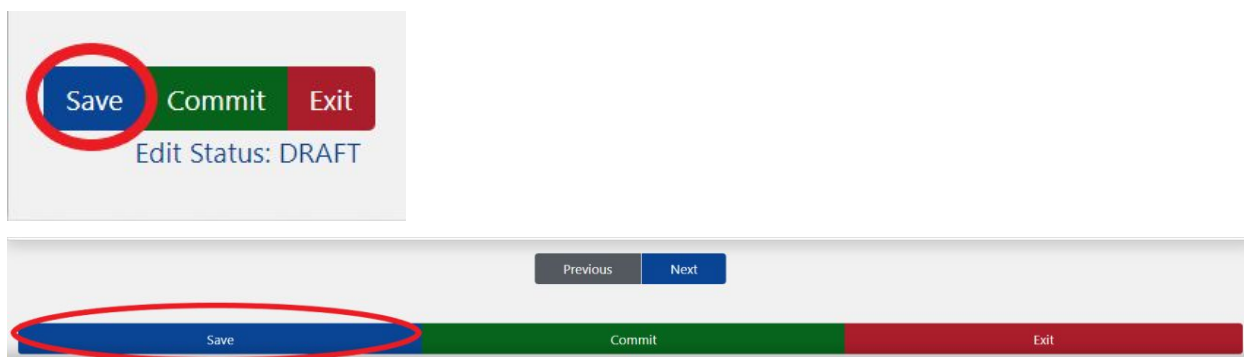


Figure 1.16 The Save Button.

18. Click “Record List” link to return to your Record List View.



Figure 1.20 The Record List Menu Link

19. Once you complete filling in the information in all the tabs and you want to see the score of your dataset, press the “Evaluate Questionnaire” button.

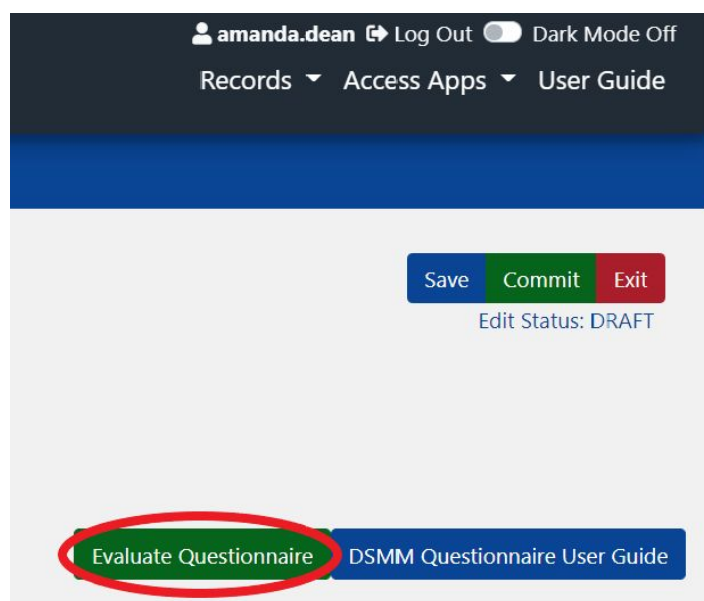


Figure 1.21 The Evaluate Questionnaire Button.

References

- Li., Y., Milan, A., and Jones, P., (2017). Light under ISOLite. 2017 NOAA Environmental Data Management Workshop, 9–10 January 2017, Bethesda, MD.
- Peng, G., Privette, J. L., Kearns, E. J., Ritchey, N. A., & Ansari, S. (2015). A unified framework for measuring stewardship practices applied to digital environmental datasets. *Data Science Journal*, 13, 231-253. DOI: <https://doi.org/10.2481/dsj.14-049>

Glossary of Terms

1. User Roles

- a. Viewer - default role assigned to external users that provides read only access to forms and records.
- b. Editor - default role assigned to internal users that provides edit capabilities to records.
- c. Group - role assigned to group leaders that allows form editing and adding/removing users from the form group
- d. Publisher - role assigned to specially trained metadata specialists that allow them to approve publish requests from editors and also affords them the ability to unpublish records upon request.
- e. Admin - role saved for developers and product owners that grants additional administrative abilities such as user permissions, form manipulation, thesaurus maintenance, etc.

- 2. **Record Group** - a collection of records that share the same provenance, structure and content. Record groups can also be created that only certain users can access.

- 3. **Publish** - saves a metadata record and sends it to the review queue for a reviewer (publisher role) to approve it (or not) for addition to the WAF(s) and discovery portals.

4. Edit States

- a. Draft - The default state once a record is imported or created. It signifies that the record is available for editing.
- b. In Review - After requesting to publish a record, this state designates that the record is awaiting approval by a reviewer.
- c. Approved - Once a reviewer approves a publication request, your record is sent to the WAF for publication and harvest.
- d. Unpublished - A state of limbo that appears once a record has been removed from the WAF and is awaiting editing and republishing. Once a change has been saved, the record will return to draft status.

- 5. **Checksum Technology** - Checksum technology verifies data fixation and confirms that those data are not corrupted during data ingest, storage, and dissemination procedures. Checksum files created using the MD5 algorithm usually have .md5 extension. It implies that any user receives this checksum file electronically, runs it and generates the same string of characters. If the generated checksum string is identical to that in the original file, then it meets the integrity check standards.

- 6. **Citability** - Within the context of the DSMM, citability refers to whether or not a persistent identifier (i.e., DOI) is assigned to the dataset. Note however, that the existence of a DOI is not the sole determining factor of a dataset's citability. A fully

formed reference is necessary in order to track and monitor dataset use across other research spectrums.

7. **Collection** - A collection is a grouping of environmental data or products that share common characteristics, is represented by a single metadata record, and consists of one or more granules. Collections are also referred to as datasets. *OneStop* refers to a data collection as the minimum citable unit of data (Li et al, 2017).
8. **Configuration Management** - A technical and management process applying appropriate resources, processes, and tools to establish and maintain consistency between the product requirements, the product, and associated product configuration information.
9. **Cross-Validation of Temporal and Spatial Characteristics** - Refers to data being validated across different periods of time (temporal) or across different areas (spatial) or both areas (Information can be located in documentation and publications).
10. **Data Characterization** - Characterization denotes spatial and temporal characteristics such as global or regional means; seasonal or annual means; decadal trends. May include power spectral density distributions of time series. May be captured in the metadata.
11. **Data Customization** - Customization revolves around being able to search data by temporal and/or spatial distributions, the ability to aggregate or disaggregate granules, and to be able to download data in multiple formats. The more customization options are available to the user the more mature the data set is considered to be.
12. **Data Integrity** - Maintenance of, and the assurance of the accuracy and consistency of, data over its entire life-cycle, and is a critical aspect to the design, implementation and usage of any system which stores, processes, or retrieves data. Checksum technology is applied to verify Data Integrity. Data integrity also refers to how the file is fixed, what proves that it is unchanged over time, and that the file is not corrupt during its transfer.
13. **Data Quality Assessment** - Refers to the availability of data set assessment results online. For example, scholarly publications describing the algorithm theoretical basis, the research product and/or the operational product.
14. **Data Quality Assurance** - A set of activities or procedures focused on defect prevention to be followed in order to ensure product quality during development (Peng et al, 2015).
15. **Data Quality Assurance (DQA) Procedures** - Information on error, error budget, quality flags and/or validation and the procedures to identify/quantify them. Usually found in Algorithm documents, user manuals, technical manuals, handbooks and other related documents.
16. **Data Quality Control/Monitoring** - Monitoring for updates and generating reports in order to alert users about quality issues when those arise. (Could include issues with the quality flags). The same documentation is used for Data Quality Control/Monitoring as for Data Quality Assurance. (Algorithm documents, user

manuals, technical manuals, handbooks). In addition, quality monitor information could be found on other websites.

17. **Data Provenance** - Provenance refers to data's origin and history of entities, as well as people involved in producing a piece of data; and also refers to where they have moved over time to reach their current state; data lineage is one of the entities in the ISO 19115 metadata that can be used for this purpose.
18. **Digital Object Identifier (DOI)** - Persistent unique identifier assigned by an external organization and standardized by the International Organization for Standardization (ISO).
19. **Dissemination Report** - An analysis of weblogs from ftp and web servers. These reports or logs document the number of times a given file or product was downloaded. Data dissemination information captures the statistics about the distribution or transmitting data to end users. For example, data file download counts from ftp servers. These reports may also contain information on data download volume and/or unique data users.
20. **External Audit/Ranking** - Ranking performed by outside organizations. It ranks data for being complete or useful. External ranking must rank the stewardship of the dataset and not just the usefulness of the dataset. No known NCEI data sets have any external ranking applied.
21. **Granule** - A granule is the smallest aggregation of data that can be independently managed (described, inventoried, and retrieved) in the *OneStop* system. Granules are often referred to as inventory or file level metadata though granules can actually be pieces of files. Granules cannot exist without being associated with a collection. Granules may have a different metadata model than the parent collection in order to support values for additional attributes as needed for those granules.
22. **Limited Quality Assurance Metadata** - This special type of metadata may include but is not limited to, file level quality flags, and any other information included in the ISO 19115 data quality section that allows the user to recognize unreliable data in the collection.
23. **Limited Quality Monitoring Metadata** - Information in the metadata record specifically about the methods and/or results associated with the quality control/monitoring as it applies to the dataset. Usually found in ISO 19115 metadata or in an auxiliary text file.
24. **National/International Monitoring Metrics** - Statistical methods employed to identify defects according to national/international standards. (Peng et al, 2015).
25. **Open Archival Information System Reference Model (OAIS RM)** - The OAIS is an archive consisting of an organization of people and systems, that has accepted the responsibility to preserve information and make it available for a designated community. NCEI follows the OAIS conceptual framework outlined by the OAIS Reference Model.
26. **Operational Assessment** - The difference between a research and an operational product lies in the maturity of the product (Peng et al, 2015). An operational product also underlines a managed and reliable process associated with its production.

Common ways of assessing operational products are through technical reports or other scholarly literature that assesses the operational readiness of the product.

27. **Physical Consistency Checks** - Internal consistency tests to identify values in the data that appear atypical when compared to values from the entire data set. Also compares current data with historical data to verify consistency over time.
28. **Preservability** - In the context of the DSMQ the focus of preservability is on assessing the practices associated with data storage requirements and compliance to community-accepted archive practices and metadata standards (Peng et al, 2015).
29. **Production Sustainability** - Describes the various degrees of commitment for and associated requirements on the product (Peng et al, 2015).
30. **Quality Metadata for Data Quality Assessment** - Data quality assessment metadata capture and provide information on methods or procedures used for evaluating and validating data products and the results from those analyses (Peng et al, 2015).
31. **Quality Flag** - Information that is used to help identify non-nominal data as a result of poor-calibration, pixel saturation, and other data artifacts. Commonly found in NetCDF variables and can also be identified in ISO 19115 metadata in the <contentInfo> section.
32. **Standard-Based Metrics for Data Quality Control** - Data quality checks that employ statistical tools with well-established standard-based (e.g., AIMQ, SAS, etc...) metrics (e.g., accuracy, consistency, completeness, integrity, timeliness, etc...) for the user community.
33. **Traceability** - Synonymous with provenance. Data provenance can be used to form assessment about its quality, reliability, or trustworthiness.
34. **Trackability** - Data sets with OID's and/or DOI's are considered to have better overall trackability than data sets that do not have those unique identifiers.
35. **Unique Object Identifier (OID)** - OID's are usually non-DOI numbers that are unique to an organization that are used to identify the data set in some way. DSI numbers are examples of OID's used by NCEI. They are used to identify the location of the dataset within the archive.