



# EOSDIS

NASA'S EARTH OBSERVING SYSTEM  
DATA AND INFORMATION SYSTEM

# WGISS-46 ACCESS Section: IDN Report

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- I. Overview of NASA's Vision of Services (UMM-S)**
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# I. Overview of NASA's Vision of Services (UMM-S)

# What is the UMM-S? (Unified Metadata Model for Services)

## What is a Service?

We need to recognize SERF legacy for services, but extend NASA web services to include future support for access of NASA data from the cloud. These services provide a method of transforming the data (e.g. subsetting, reprojection or reformatting, or a combination of these).

## How to I Discover and Utilize a Service?

In order to locate web services or portals, software or tools, we can use the GCMD client to search and return metadata for services. <https://gcmd.nasa.gov/>

In order to discover and transform data, we can use the EDSC client to search and return *transformed* data via services. <https://earthdata.nasa.gov/>

## How to I Describe a Service?

Services are described by their attributes, e.g.

**Service Name:** “SERVIR”

**Service LongName:** “Mesoamerican Visualization and Monitoring System (SERVIR)”

**Service Type:** “WEB PORTAL”

**Service Version:** “1.8”

**Service RelatedURL:**  
“https://www.servirglobal.net/default.aspx”

# UMM-S Required Fields

Field Name	Description
Name	The name of the service, software, or tool. (Example: "AIRS_L3_OPENDAP".)
LongName	The long name of the service, software, or tool. It provides a human readable name for the service. (Example: "OPENDAP (Hyrax) framework for AIRS Level 3 data products".)
Type	The type of the service, software, or tool. (Example: OPeNDAP)
Version	The edition or version of the service, software, or tool. The version should be defined in the form x, y, and z, where 'x.y.z' means 'major.minor.incremental' version numbers. Typically, 'x' and 'y' are numbers (0 through 9) and 'z' is a number (0 through 99). (Example: 1.1.1)
Description	A brief description of the service, software, or tool. For example, a description might contain information about what is the service, the purpose of the service, and the parameters (or variables) being invoked, and what are the sources of these data.
RelatedURLS	This element contains important information about the Uniform Resource Locator (URL) for the service.
ServiceKeywords	Allows for the specification of Earth Science Service keywords that are representative of the service, software, or tool being described. The controlled vocabulary for Service Keywords is maintained in the Keyword Management System (KMS). (Example: "ServiceCategory: Earth Science Services, ServiceTopic: Data Management/Data Handling, ServiceTerm: Data Search and Retrieval". )
ServiceOrganizations	The service provider, or organization, or institution responsible for developing, archiving, and/or distributing the service, software, or tool. (Example: "Role: SERVICE PROVIDER, ShortName: INPE, LongName: National Institute for Space Research, Brazil".)

# Example: NOAA\_Shoreline\_GIS Service

```
{
  "meta" : {
    "native-id" : "NOAA_Shoreline_GIS",
    "provider-id" : "SCIOPS",
    "concept-type" : "service",
    "concept-id" : "S1535675684-SCIOPS",
    "revision-date" : "2018-07-10T19:32:05Z",
    "user-id" : "tstevens",
    "deleted" : false,
    "revision-id" : 2,
    "format" : "application/vnd.nasa.cmr.umm+json"
  },
  "umm" : {
    "AncillaryKeywords" : [ "GIS", "Hydrologic Data", "Environmental Risk Data", "Shoreline", "Sea", "Vector", "Coast" ],
    "RelatedURLs" : [ {
      "Description" : "Access the NOAA Shoreline Data Explorer.",
      "URLContentType" : "DistributionURL",
      "Type" : "GET SERVICE",
      "Subtype" : "ACCESS MAP VIEWER",
      "URL" : "http://www.ngs.noaa.gov/newsys_ims/shoreline/index.cfm"
    } ],
    "Type" : "TOOL",
    "ServiceKeywords" : [ {
      "ServiceCategory" : "EARTH SCIENCE SERVICES",
      "ServiceTopic" : "DATA ANALYSIS AND VISUALIZATION",
      "ServiceTerm" : "GEOGRAPHIC INFORMATION SYSTEMS",
      "ServiceSpecificTerm" : "WEB-BASED GEOGRAPHIC INFORMATION SYSTEMS"
    } ],
    {
      "ServiceCategory" : "EARTH SCIENCE SERVICES",
      "ServiceTopic" : "DATA MANAGEMENT/DATA HANDLING",
      "ServiceTerm" : "DATA SEARCH AND RETRIEVAL"
    } ],
    {
      "ServiceCategory" : "EARTH SCIENCE SERVICES",
      "ServiceTopic" : "METADATA HANDLING",
      "ServiceTerm" : "DATA DISCOVERY"
    } ],
    "ServiceOrganizations" : [ {
      "Roles" : [ "SERVICE PROVIDER" ],
      "ShortName" : "DOC/NOAA/NOS/NGS",
      "LongName" : "National Geodetic Survey, National Ocean Service, NOAA, U.S. Department of Commerce",
      "ServiceContactPersons" : [ {
        "Roles" : [ "SERVICE PROVIDER" ],
        "ContactInformation" : {
          "ContactMechanisms" : [ {
            "Type" : "Email",
            "Value" : "ngs.infocenter@noaa.gov"
          } ],
          "Type" : "Fax",
          "Value" : "301-713-4172"
        } ],
        {
          "Type" : "Telephone",
          "Value" : "301-713-3242"
        } ],
        "Addresses" : [ {
          "StreetAddresses" : [ "National Geodetic Survey, NOAA", "Information Services Branch", "1315 East-West Highway" ],
          "City" : "Silver Spring",
          "StateProvince" : "MD",
          "PostalCode" : "20910-3282"
        } ]
      } ],
      "FirstName" : "INFORMATION SERVICES BRANCH",
      "LastName" : "NATIONAL GEODETIC SURVEY"
    } ],
    "ContactInformation" : {
      "RelatedURLs" : [ {
        "URLContentType" : "DataCenterURL",
        "Type" : "HOME PAGE",
        "URL" : "https://www.ngs.noaa.gov"
      } ]
    },
    "ScienceKeywords" : [ {
      "Category" : "EARTH SCIENCE",
      "Topic" : "SOLID EARTH",
      "Term" : "GEOMORPHIC LANDFORMS/PROCESSES",
      "VariableLevel1" : "COASTAL LANDFORMS"
    } ],
    {
      "Category" : "EARTH SCIENCE",
      "Topic" : "TERRESTRIAL HYDROSPHERE",
      "Term" : "SURFACE WATER"
    } ],
    {
      "Category" : "EARTH SCIENCE",
      "Topic" : "TERRESTRIAL HYDROSPHERE",
      "Term" : "SURFACE WATER",
      "VariableLevel1" : "SURFACE WATER FEATURES",
      "VariableLevel2" : "LAKES/RESERVOIRS"
    } ],
    {
      "Category" : "EARTH SCIENCE",
      "Topic" : "TERRESTRIAL HYDROSPHERE",
      "Term" : "SURFACE WATER",
      "VariableLevel1" : "SURFACE WATER FEATURES",
      "VariableLevel2" : "RIVERS/STREAMS"
    } ],
    "Description" : "The NOAA Shoreline Data Explorer system is an online management and sharing system of shoreline data that cartographically depicting the dynamic interface between land and water at the time of survey. The tool provides high-resolution digital shoreline from multi-temporal surveys of our nation's coastline. It provides the following capabilities:\n\n-View available shoreline project boundaries\n\n-View vector shoreline data\n\n-View and download FGDC compliant metadata\n\n-Make printable maps\n\n-Download vector shoreline shapefiles",
    "Version" : "NOT PROVIDED",
    "UseConstraints" : "The data contained on this site should NOT TO BE USED FOR NAVIGATION.",
    "Name" : "NOAA_Shoreline_GIS",
    "ContactPersons" : [ {
      "Roles" : [ "AUTHOR" ],
      "ContactInformation" : {
        "ContactMechanisms" : [ {
          "Type" : "Email",
          "Value" : "Tyler.B.Stevens@noaa.gov"
        } ],
        {
          "Type" : "Telephone",
          "Value" : "301-851-8113"
        } ],
        "Addresses" : [ {
          "StreetAddresses" : [ "5700 Rivertech Court" ],
          "City" : "Riverdale",
          "StateProvince" : "MD",
          "Country" : "USA",
          "PostalCode" : "20737"
        } ]
      } ],
      "FirstName" : "TYLER",
      "MiddleName" : "B.",
      "LastName" : "STEVENS",
      "LongName" : "NOAA Shoreline Data Explorer"
    } ],
    } ]
  }
}
```

# CMR API SEARCH

- Service records can be search using the  
CMR SEARCH API

## Search for all

```
curl 'https://cmr.earthdata.nasa.gov/search/services'
```

## Search by Keyword

```
curl 'https://cmr.earthdata.nasa.gov/search/services?keyword=OpenDAP&pretty=true'
```

## Search for specific service

```
curl  
'https://cmr.earthdata.nasa.gov/search/services.umm_json?name=AIRX3STD.006&pretty=true'
```

## CMR Search API Documentation:

```
https://cmr.earthdata.nasa.gov/search/site/docs/search/api.html#searching-for-services
```

# Latest Capabilities and Features

- RelatedURLs increased cardinality to 1 to N
- Options class expanded to include supported Input and Output projections, Input and Output formats.
- ServiceQuality class added
- Platforms and Instruments classes added
- Addition of OperationMetadata class to support a wide variety of server-side operations (e.g. GetCapabilities, GetMap, GetCoverage)
- UMM-S schema 1.2  
<https://git.earthdata.nasa.gov/projects/EMFD/repos/unified-metadata-model/browse/service/v1.2>
- UMM-S document:  
[https://wiki.earthdata.nasa.gov/download/attachments/49448405/UMM-S\\_V1.2\\_20180530.docx](https://wiki.earthdata.nasa.gov/download/attachments/49448405/UMM-S_V1.2_20180530.docx)












## II. Migration of IDN SERFs to UMM-S

# What is the SERF? (Service Entry Resource Format)

- Metadata standard used to describe Earth science tools, software, and models (e.g. EDSC, Giovanni, Panoply, USGS Model Viewer)
- Supports the discovery and access of these tools, software, and models
- Originated (in year 2000) as a prototype within NASA's Earth Science Technology Office (ESTO) and supported by NASA and the Committee on Earth Observation Satellites (CEOS)

## Data Service Types

 <b><a href="#">DATA ANALYSIS AND VISUALIZATION</a></b> (680) calibration/validation, geographic information systems, global positioning systems, statistical applications, visualization/image processing <a href="#">show all...</a>	 <b><a href="#">DATA MANAGEMENT/DATA HANDLING</a></b> (349) archiving, cataloging, data compression, data delivery, data interoperability <a href="#">show all...</a>
 <b><a href="#">EDUCATION/OUTREACH</a></b> (58) curriculum support, exhibit materials, interactive programs <a href="#">show all...</a>	 <b><a href="#">ENVIRONMENTAL ADVISORIES</a></b> (110) agricultural advisories, fire advisories, geological advisories, health advisories, hydrological advisories <a href="#">show all...</a>
 <b><a href="#">HAZARDS MANAGEMENT</a></b> (49) disaster recovery/relief, disaster response, hazards mitigation, hazards planning <a href="#">show all...</a>	 <b><a href="#">METADATA HANDLING</a></b> (87) authoring tools, data discovery, metadata transformation/conversion, service discovery <a href="#">show all...</a>
 <b><a href="#">MODELS</a></b> (340) atmospheric chemistry models, atmospheric general circulation models, carbon cycle/carbon budget models, climate change impact assessment models, component process models <a href="#">show all...</a>	 <b><a href="#">REFERENCE AND INFORMATION SERVICES</a></b> (93) bibliographic, digital/virtual reference desks, gazetteer, identification/classification systems, knowledge/decision systems <a href="#">show all...</a>
 <b><a href="#">WEB SERVICES</a></b> (35) data application services, data processing services, information management services <a href="#">show all...</a>	

# Why Migrate to UMM-S in CMR?

- Use the Expanded Model and Infrastructure To Make Services More Useful
  - Extended service capabilities (service invocation, subsetting, reprojection, time aggregation, etc...)
- Link Services With Applicable Data Sets
  - Allows for service capabilities and specific tools to be accessible to/from their applicable data sets, which renders the services discoverable, available, and useful to users that might not already be aware of them
- Search Across a Common Repository for Services
  - Centralized catalogue of all services, tools, software, models across U.S. and international agencies that work with Earth science data

# What's Being Migrated?

- All Viable SERFs in GCMD/IDN
  - SCIOPS/IDN provider records
  - EOSDIS provider records
- Should I Stay or Should I Go
  - Does the service describe a tool or software?
  - Is the service still viable/supported?
  - Is the service being deprecated
  - Do the links still work?
  - Is the service from a commercial provider?
  - Are the other attributes still accurate?

# Migration Schedule: Fall 2018

- The IDN staff will email IDN Providers with their list of SERF records.
  - The Providers are to review the SERF records.
    - Determine to migration or deprecation the records.
    - Work with IDN staff to cleanup/migrate or deprecate/archive SERF records
  - The IDN staff will ingest viable UMM-S records into CMR.

*The CMR Metadata Quality Team will be assisting with the migration of the service records. Please reach out to IDN User services ([gsfc-gcmduso@mail.nasa.gov](mailto:gsfc-gcmduso@mail.nasa.gov)) and/or myself ([Michael.P.Morahan@nasa.gov](mailto:Michael.P.Morahan@nasa.gov)) .*

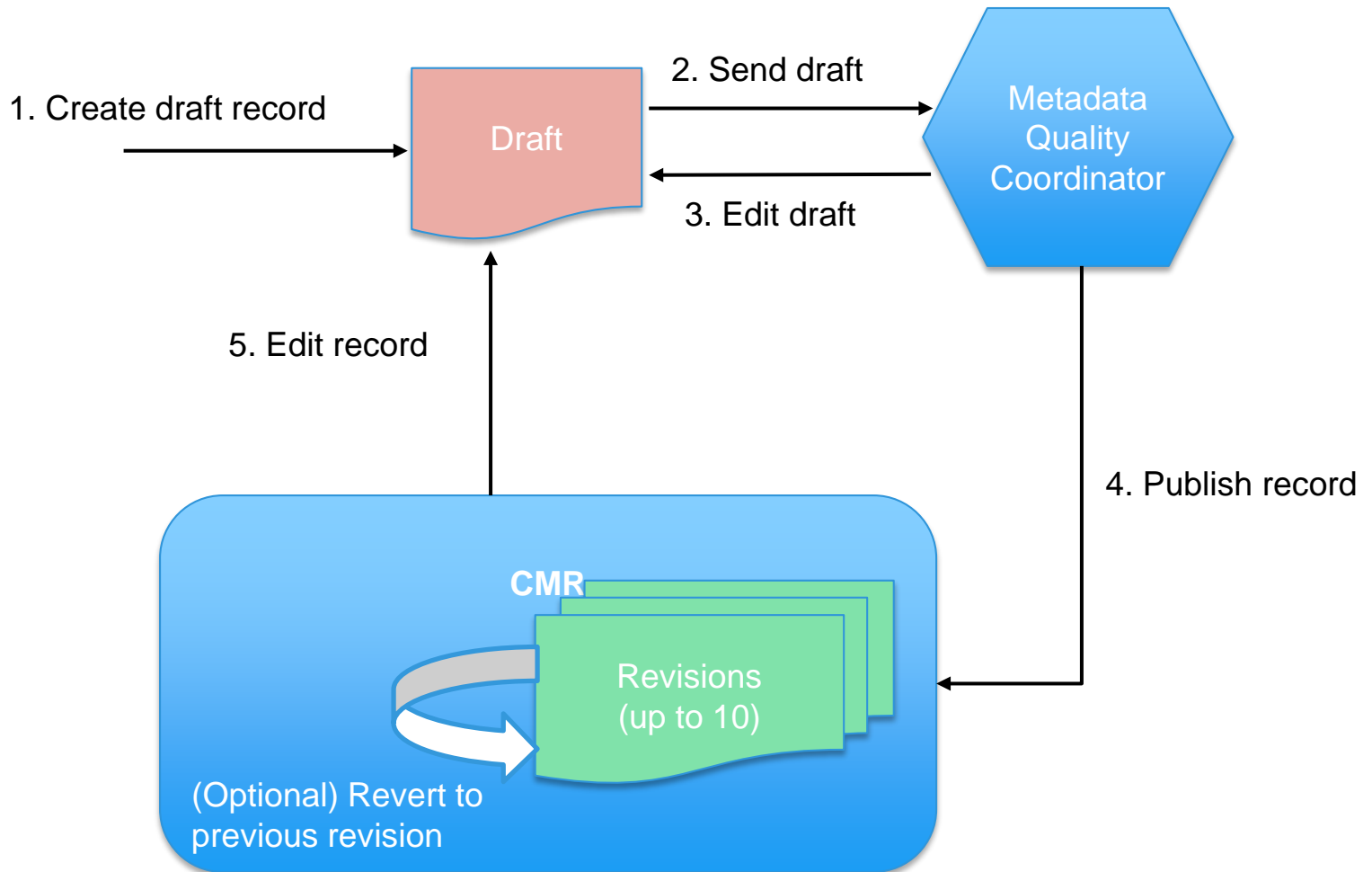
# III. Metadata Management Tool (MMT): Successor to DocBuilder

# Metadata Management Tool (MMT): Coming Attraction (2019)

- Login using same ID and password as docBUILDER (NASA Agency login Not required)
- Submit new/updated data and services descriptions to the IDN for review and ingest by the CMR Metadata Team.
- Assess quality of metadata using inline validation.
- Export metadata in DIF-10, NASA MENDs ISO, ATOM formats.
- View metadata using HTML “Pretty View” permanent link.

Features my change pending design review.

# Metadata Management Tool (MMT): Data Flow Diagram





# Metadata Management Tool (MMT): Manage Collections

The screenshot shows the Earthdata Metadata Management Tool (MMT) interface. The top navigation bar includes the NASA logo, the text "EARTHDATA Metadata Management Tool", a user dropdown menu showing "Michael Morahan" and "SCIOPS", and a search bar with the text "Enter Search Term" and a "Search Collections" button. Below the navigation bar are four tabs: "MANAGE COLLECTIONS", "MANAGE VARIABLES", "MANAGE SERVICES", and "MANAGE CMR". The "MANAGE COLLECTIONS" tab is active. The main content area is divided into three columns:

- Create Collection Record:** Contains a "Create New Record" button and instructions: "OR use the search in the top right corner to find published collections to clone or edit." An annotation arrow labeled "Create new draft" points to this section.
- SCIOPS Collection Drafts:** Lists several draft records with dates and titles, such as "2018-09-14 | Scott\_Test\_2018-08 <Untitled Collection Record>". An annotation arrow labeled "Open drafts" points to this section.
- SCIOPS Bulk Updates:** Displays "No SCIOPS Bulk Updates found." and an "Initiate a Bulk Update" button.

Additional annotations include an arrow labeled "User and Provider" pointing to the user dropdown, and an arrow labeled "Search in CMR" pointing to the search bar.

# Metadata Management Tool (MMT): Draft Collection

Short Name\_Version  
Long Name

Publish CMR record

Progress Panel

Preview Panel

Delete Draft

Spatial Preview

# Metadata Management Tool (MMT): Editing Fields

The screenshot shows the 'Collection Information' form in the Metadata Management Tool (MMT). The form is divided into several sections, each with a required field indicator (a circled 'i').

- Collection Information:** This section contains several fields:
  - Short Name:** gov.noaa.nodc:GHRSS-ABOM-L4HRfnd-AUS-RAMSSA\_09km
  - Version:** 1.0
  - Version Description:** (empty text area)
  - Entry Title:** GHRSS Level 4 RAMSSA Australian Regional Foundation Sea Surface Temperature Analysis (GDS version 1)
  - DOI:** Radio buttons for 'DOI Available' and 'DOI Not Available'. The 'Missing Reason' dropdown menu is open, showing 'Select Missing Reason'. An arrow labeled 'Information' points to this dropdown.
  - Explanation:** (empty text area)
- Abstract:** A Group for High Resolution Sea Surface Temperature (GHRSS) Level 4 sea surface temperature analysis produced daily on an operational basis at the Australian Bureau of Meteorology using optimal interpolation (OI) on a regional 1/12 degree grid over the Australian region (20N - 70S, 60E - 170W). This BLUELink Regional Australian Multi-Sensor SST Analysis (RAMSSA) v1.0 system blends satellite SST observations from the Advanced Very High Resolution Radiometer (AVHRR), the Advanced Along Track Scanning Radiometer (AATSR), and the Advanced
- Purpose:** Basic research
- Data Language:** Select Data Language

Annotations with blue arrows point to various elements:

- 'Required section' points to the 'Collection Information' header.
- 'Required field' points to the 'Entry Title' field.
- 'Change form' points to the 'Next' button.
- 'Information' points to the 'Missing Reason' dropdown menu.
- 'Select value from drop-down' points to the 'Select Missing Reason' dropdown menu.

The form includes navigation buttons: 'Previous', 'Save & Jump To: Collection Information', 'Next', 'Save', 'Done', and 'Cancel'. A timestamp 'Last saved 2018-05-30 08:28 EDT' is visible at the bottom right.

# Metadata Management Tool (MMT)

MMT allows users to manage and curate UMM-S metadata records in the Common Metadata Repository (CMR).

## Manage Services Page

The screenshot shows the 'Manage Services Page' of the Metadata Management Tool. The header includes the NASA logo, 'EARTHDATA Metadata Management Tool', and a search bar. Below the header is a navigation menu with 'MANAGE COLLECTIONS', 'MANAGE VARIABLES', 'MANAGE SERVICES' (highlighted), and 'MANAGE CMR'. The main content area is split into two columns. The left column has a 'Create Service Record' section with a 'Create New Record' button and a note: 'OR use the search in the top right corner to find a published variables to clone or edit.' The right column has a 'SCIOPS Service Drafts' section with the text 'SCIOPS has no drafts to display.'

## Edit Service Record Page

The screenshot shows the 'Edit Service Record Page' for a service draft named 'Demo\_1'. The header includes the NASA logo, 'EARTHDATA Metadata Management Tool', a user profile 'Tyler Stevens', and a search bar. Below the header is a navigation menu with 'MANAGE COLLECTIONS', 'MANAGE VARIABLES', 'MANAGE SERVICES' (highlighted), and 'MANAGE CMR'. The main content area shows 'Service Drafts Demo\_1' and 'Long Name Not Provided'. A green notification bar says 'Service Draft Updated Successfully!'. Below this are buttons for 'Publish Service Draft' and 'Delete Service Draft'. The 'Metadata Fields' section lists various fields with checkboxes: Service Information (checked), Service Keywords (unchecked), Service Organizations (unchecked), Coverage (checked), Service Identification (checked), Science and Ancillary Keywords (checked), Service Contacts (checked), Related URLs (unchecked), Acquisition Information (checked), and Options (checked).

# IV. DocBuilder-10: Create/Update Dataset Records

# Create/Update Dataset Records

- **DocBuilder-10** is a web-based metadata authoring tool that allows metadata authors to add (or modify) dataset descriptions (DIFs) records for the IDN.

[https://idn.ceos.org/DocumentBuilder/Home.do?Portal=ceos\\_idn](https://idn.ceos.org/DocumentBuilder/Home.do?Portal=ceos_idn)

Please enter Record Entry ID: (What is an Entry ID?)  
Short Name:   
Version:

Create a new record  
or  
 Modify an existing record

If you would like to use an existing template, Please select a template from the menu below:  
No template ▾ [What is a template?](#)

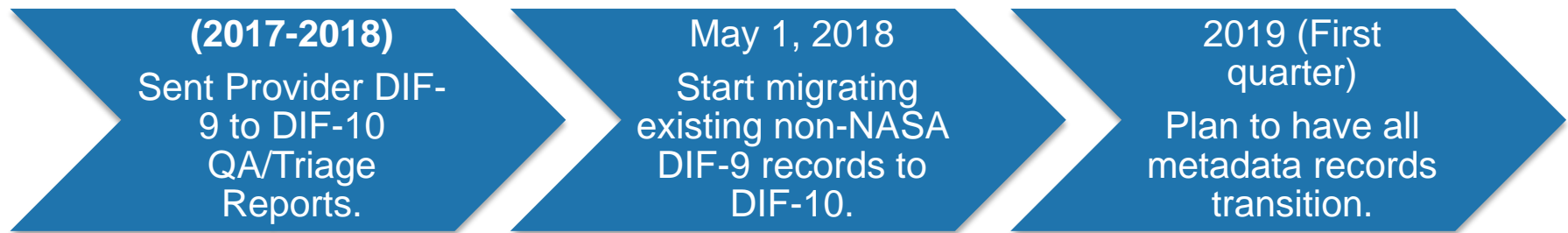
[continue >](#)

Required fields (12 of 12 pass)	Highly Recommended fields (0 of 10 pass)	Recommended fields (0 of 13 pass)
<input checked="" type="checkbox"/> Entry ID ⓘ	<input type="checkbox"/> Dataset Citation ⓘ	<input type="checkbox"/> Originating Center ⓘ
<input checked="" type="checkbox"/> Entry Title ⓘ	<input type="checkbox"/> Personnel ⓘ	<input type="checkbox"/> Multimedia Sample ⓘ
<input checked="" type="checkbox"/> Science Keywords ⓘ	<input type="checkbox"/> Location ⓘ	<input type="checkbox"/> Metadata Association ⓘ
<input checked="" type="checkbox"/> ISO Topic Category ⓘ	<input type="checkbox"/> Data Resolution ⓘ	<input type="checkbox"/> IDN Node ⓘ
<input checked="" type="checkbox"/> Organization ⓘ	<input type="checkbox"/> Quality ⓘ	<input type="checkbox"/> DIF Revision History ⓘ
<input checked="" type="checkbox"/> Summary ⓘ	<input type="checkbox"/> Access Constraints ⓘ	<input type="checkbox"/> Version Description ⓘ
<input checked="" type="checkbox"/> Related URL ⓘ	<input type="checkbox"/> Use Constraints ⓘ	<input type="checkbox"/> Additional Attributes ⓘ
<input checked="" type="checkbox"/> Platform/Instrument ⓘ	<input type="checkbox"/> Distribution Information ⓘ	<input type="checkbox"/> Product Level Id ⓘ
<input checked="" type="checkbox"/> Temporal Coverage ⓘ	<input type="checkbox"/> Dataset Progress ⓘ	<input type="checkbox"/> Collection Data Type ⓘ
<input checked="" type="checkbox"/> Spatial Coverage ⓘ	<input type="checkbox"/> Dataset Language ⓘ	<input type="checkbox"/> Extended Metadata ⓘ
<input checked="" type="checkbox"/> Project ⓘ		<input type="checkbox"/> Ancillary Keyword ⓘ
<input checked="" type="checkbox"/> Metadata Dates ⓘ		<input type="checkbox"/> Publication/Reference ⓘ
		<input type="checkbox"/> Privacy Status ⓘ

Legend: ⓘ = Description of field    ○ = Field not validated    ✓ = Passes Validation    ◐ = Partially Passes Validation    ✗ = Fails Validation

# V. Transition of DIF-9 to DIF-10

# DIF-9 to DIF-10 Transition Schedule



- Providers need to submit new metadata in DIF-10 or any format compatible with NASA's Common Metadata Repository (CMR).
  - Compatible formats: DIF-10, NASA ISO (MENDs), and UMM-JSON.
- docBUILDER supports DIF-10 format.



# Transitioned Status

Provider	# of records	# of records transition	# of records not transition	Completion Percentage	State
SCIOPS	17282	10797	6485	62%	On-going
AU_AADC	2772	0	2772	0%	Under Review
CNES	20	20	0	100%	Completed
ESA	112	20	92	18%	On-going
EUMETSAT	62	0	0	0%	Under Review
INPE	43	43	0	100%	Completed
ISRO	34	34	0	100%	Completed
JAXA	340	340	0	100%	Completed
NOAA_NCEI	5578	0	5578	0%	Testing
USGS_EROS	142	13	129	9%	On-going
<b>Total</b>	<b>26385</b>	<b>11267</b>	<b>15056</b>	<b>42.70%</b>	

# VI. Schedule for UMM-C and GCMD/IDN Keywords

# UMM-C: Proposed New Fields (2019)

average size of a  
downloadable file (granule)

total size of all of the  
downloadable collection files

More information on UMM: <https://earthdata.nasa.gov/umm>

# Keyword Version 8.7 Proposed Topics (2019)

Cryosphere

Earth Science Services/  
Web Services

**If you are interested in becoming a keyword reviewer,  
please contact the ESO at [eso-staff@lists.nasa.gov](mailto:eso-staff@lists.nasa.gov).**

# VII. IDN's WGISS/WGCV Joint Session: Collaborative Actions

# IDN Actions Status

- Quality Indicators in Discovery Metadata
  - Action: WGISS (Michael) to start defining best approach for representing and including QIs for the selected test case in discovery metadata searchable by end users.
    - WGISS need one specific and one broader example of SST QI to start analysis. Awaiting input from WGCV
- CEOS Data Cubes and CEOS Test Sites Data Access in support to WGCV Activities
  - Action: WGISS (Michael) to define how to get this info into the IDN for discover and possibly access by August.
    - Will be started after receiving initial input by WGCV, completed by end November

# Questions/Discussion

Please Provide feedback to:

[gsfc-gcmduso@mail.nasa.gov](mailto:gsfc-gcmduso@mail.nasa.gov)

Or

[Michael.P.Morahan@nasa.gov](mailto:Michael.P.Morahan@nasa.gov)

**Backup SLIDES**





# UMM-S Fields

<b>Name [R]</b>	ConnectPoint	DataResourceSpatialExtent [R]	ParameterDescription [R]	AncillaryKeywords	SupportedOutputProjections
<b>LongName [R]</b>	ResourceName	DataResourceSpatialExtentType [R]	ParameterOptionality [R]	ServiceOptions	ProjectionName
<b>Type [R]</b>	ResourceLinkage [R]	SpatialResolution [R]	ParameterRepeatability [R]	SubsetTypes	ProjectionLatitudeOfCenter
<b>Version [R]</b>	ResourceDescription	SpatialResolutionUnit [R]	ScienceKeywords	VariableAggregation	ProjectionLongitudeOfCenter
<b>Description [R]</b>	OperationChainMetadata	DataResourceTemporalExtent [R]	ServiceContacts [R]	SupportedInputProjections	ProjectionFalseEasting
<b>RelatedURLs [R]</b>	OperationChainName [R]	DataResourceTemporalExtentType [R]	ContactPersons	ProjectionName	ProjectionFalseNorthing
<b>ServiceKeywords [R]</b>	OperationChainDescription	TemporalResolution [R]	ContactGroups	ProjectionLatitudeOfCenter	ProjectionAuthority
<b>ServiceOrganizations [R]</b>	CoupledResource	TemporalResolutionUnit [R]	Platforms	ProjectionLongitudeOfCenter	ProjectionUnit
OperationMetadata	ScopedName	RelativePath	Instruments	ProjectionFalseEasting	ProjectionDatumName
OperationName	DataResourceDOI	CouplingType	ServiceQuality	ProjectionFalseNorthing	InterpolationTypes
DistributedComputingPlatform	DataResource	Parameter	ServiceCitation [R]	ProjectionAuthority	SupportedInputFormats
OperationDescription	DataResourceIdentifier [R]	ParameterName [R]	AccessConstraints	ProjectionUnit	SupportedOutputFormats
InvocationName	DataResourceType [R]	ParameterDirection [R]	UseConstraints	ProjectionDatumName	MaxGranules

# Metadata Management Tool (MMT): Preview Draft Record

**Abstract**  
 A Group for High Resolution Sea Surface Temperature (GHR SST) Level 4 sea surface temperature analysis produced daily on an operational basis at the Australian Bureau of Meteorology using optimal interpolation (OI) on a regional 1/12 degree grid over the Australian region (20N - 70S, 60E - 170W). This BLUELink Regional Australian Multi-Sensor SST Analysis (RAMSSA) v1.0 system blends satellite SST observations from the Advanced Very High Resolution Radiometer (AVHRR), the Advanced Along Track Scanning Radiometer (AATSR), and the Advanced Microwave Scanning Radiometer-EOS (AMSRE), and in situ data from ships, and drifting and moored buoy from the Global Telecommunications System (GTS). The processing results in daily foundation SST estimates that are largely free of nocturnal cooling and diurnal warming effects.

**Purpose**  
 Basic research

**Data Identification Fields:**

**Data Dates**

Last Revision	2018-04-02T00:00:00.000Z
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**Processing Level**                      **Quality**  
 Not provided

**Collection Progress**  
 Active

**Use Constraints**  
 Distribution liability: NOAA and NCEI make no warranty, expressed or implied, regarding these data, nor does the fact of distribution constitute such a warranty. NOAA and NCEI cannot assume liability for any damages caused by any errors or omissions in these data. If appropriate, NCEI can only certify that data it distributes are an authentic copy of the records that were accepted for inclusion in the NCEI archives.

**Metadata Associations**

Association Type	Entry ID	Description	Version
	GHR SST Level 4 RAMSSA Australian Regional Foundation Sea Surface Temperature Analysis		1.0



**Spatial Coordinates**

Bounding Rectangle  
 N: 20.0   S: -70.0   E: -170.0   W: 60.0

**Temporal Coverages**

Date Time Ranges  
 2008-04-01 to

**Related URLs**

**Visualization URL**

Preview graphic  
[https://data.nodc.noaa.gov/cgi-bin/gfx?id=gov.noaa.nodc.GHR SST-ABOM-L4HRfrnd-AUS-RAMSSA\\_09km](https://data.nodc.noaa.gov/cgi-bin/gfx?id=gov.noaa.nodc.GHR SST-ABOM-L4HRfrnd-AUS-RAMSSA_09km)  
[Get Related Visualization](#)

**Publication URL**

Portal to the GHR SST Global Data Assembly Center and data access  
<http://ghrsst.jpl.nasa.gov>  
[View Related Information](#)

**Publication URL**

GHR SST Project homepage  
<http://www.ghrsst-pp.org>  
[View Related Information](#)

**Publication URL**

(Search Granule)  
<https://podaac.jpl.nasa.gov/ws/search/granule?datasetId=PODAAC-GHRAM-4FA01&apidoc>  
[View Related Information](#)

**Science Keywords**

oceanography   Not provided   Not provided

EARTH SCIENCE   OCEANS   OCEAN TEMPERATURE   SEA SURFACE TEMPERATURE

Earth Science   Oceans   Ocean Temperature   Sea Surface Temperature

Foundation Sea Surface Temperature

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