



International Directory Network (IDN) Report

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Outline

- CEOS/IDN/CWIC Collaborations
- OpenSearch OSDD Registration for RelatedURL Metadata
- License Information for Datasets
- UMM Updates
- GCMD Keyword Releases
- IDN Metrics



I. CEOS/IDN/CWIC Collaborations



IDN Search and CWIC Portals

IDN Search Portal

CWIC Portal

<https://search.earthdata.nasa.gov/portal/idn/search>

<https://search.earthdata.nasa.gov/portal/cwic/search>

[illegible]

The screenshot displays the EarthData Commons search results page for the query "SMOS L3 Sea Ice Thickness". The page layout includes a top navigation bar with the EarthData Commons logo and a search bar. Below the search bar, the search results are displayed in a grid format. Each result entry includes a thumbnail image, a green "OK" status indicator, and a red "X" status indicator. The search results are listed in a table with columns for the search term, the number of results, and the search date. The search results are sorted by relevance, and the search results are displayed in a grid format. The search results are listed in a table with columns for the search term, the number of results, and the search date. The search results are sorted by relevance, and the search results are displayed in a grid format. The search results are listed in a table with columns for the search term, the number of results, and the search date. The search results are sorted by relevance, and the search results are displayed in a grid format.

The screenshot displays the Earth Engine web interface. On the left, the 'SMDS L3 Sea Ice Thickness' dataset is selected, showing 3.9k downloads and a collection of 0.8 MB images. The main panel shows the 'Select a data access method' dialog. The 'Direct download' option is selected, indicating that direct download of all data associated with the selected granules is available. The 'Configure data customization options' option is also visible, with a note that customization options are available for the selected access method. The background features a map of the Mediterranean Sea and surrounding landmasses, with a data layer overlay showing sea ice thickness.

The screenshot displays the EarthData CIES OnSearch web application. At the top, there are navigation links for 'EarthData', 'CIES OnSearch', and 'Help'. Below the navigation bar, the 'Unlited Project or' section shows '1.96 GBs' and '1 Collection 6.8 MB'.

The main content area is titled 'SMOS L3 Sea Ice Thickness' and includes a '1.9 GBs' label. A table lists 10 data files, each with a file name, a size, and a status icon (a red minus sign). The files are:

- SMOS_L3_Sea_Ice_Thickness_20120101.nc
- SMOS_L3_Sea_Ice_Thickness_20120102.nc
- SMOS_L3_Sea_Ice_Thickness_20120103.nc
- SMOS_L3_Sea_Ice_Thickness_20120104.nc
- SMOS_L3_Sea_Ice_Thickness_20120105.nc
- SMOS_L3_Sea_Ice_Thickness_20120106.nc
- SMOS_L3_Sea_Ice_Thickness_20120107.nc
- SMOS_L3_Sea_Ice_Thickness_20120108.nc
- SMOS_L3_Sea_Ice_Thickness_20120109.nc
- SMOS_L3_Sea_Ice_Thickness_20120110.nc

Below the table, there is a note: 'Click "Edit Options" above to customize the output for web projects.' and a 'Download Data' button.

On the right side of the interface, there is a map of the Arctic region, showing the sea ice thickness data. The map includes labels for various countries and regions, such as Canada, Russia, and the Arctic Ocean.


[View on GitHub](#)

[View on PyPI](#)

[View on SourceForge](#)


Download Status

The page will automatically update as your orders are processed. The download status page can be accessed time by visiting <https://search.maven.org/remotecontent?filepath=io/cucumber/cucumber-junit/2.5.0/cucumber-junit-2.5.0.jar> or the [Download Status](#) and [library page](#).


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Download Status

The page will automatically update as your orders are processed. The download status page can be accessed time by visiting <https://search.maven.org/remotecontent?filepath=io/cucumber/cucumber-junit/2.5.0/cucumber-junit-2.5.0.jar> or the [Download Status](#) and [library page](#).

(8) User Display of Data using NASA's Panoply Tool

(7) Direct download from
ESA's EO Client

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IDN's CEOS Provider Searches

- CCMEQ (3 datasets): <https://search.earthdata.nasa.gov/portal/idn/search?fdc=CA/NRCAN/ESS/GC/CCMEQ>
- ChinaGEOSS (5 datasets): <https://search.earthdata.nasa.gov/portal/idn/search?fdc=CN/ChinaGEOSS>
- NRSCC (24 datasets): https://search.earthdata.nasa.gov/portal/idn/search?q=NRSCC_GLASS
- FedEO:
 - ESA (163 datasets):
[https://search.earthdata.nasa.gov/portal/idn/search?fdc=ROSCOSMOS!ESA%2FESRIN&fpj=FedEO&as\[organization\]\[0\]=ESA/ESRIN&as\[project\]\[0\]=FedEO](https://search.earthdata.nasa.gov/portal/idn/search?fdc=ROSCOSMOS!ESA%2FESRIN&fpj=FedEO&as[organization][0]=ESA/ESRIN&as[project][0]=FedEO)
 - DLR (53 datasets): <https://search.earthdata.nasa.gov/portal/idn/search?fdc=DE%2FDLR>
 - VITO (43 datasets): <https://search.earthdata.nasa.gov/portal/idn/search?fdc=VITO>
- ISRO (37 datasets): <https://search.earthdata.nasa.gov/portal/idn/search?fdc=IN%2FISRO%2FNRSB-BHUVAN!IN%2FISRO%2FNDC!IN%2FISRO%2FMOSDAC>
- NOAA_NCEI (21,608 datasets): https://search.earthdata.nasa.gov/portal/idn/search?q=NOAA_NCEI
- NOAA GHRSSST (112 datasets): <https://search.earthdata.nasa.gov/portal/idn/search?q=GHRSSSTCWIC>



IDN/CWIC Metrics

(Based on August 22, 2022 counts)

- CWIC Providers and counts:

<u>Providers</u>	<u>Total Collections</u>	<u>Total Granules</u>
ISRO	37	2,833,916
NRSCC	29	1,686,707
USGS	33	12,885,838
NOAA	112	3,576,400

- Total Collections and Granules offered by the IDN Search and CWIC Portals:

	<u>Total Collections</u>	<u>Total Granules</u>
CWIC	209	+20,982,861
IDN	+52,000	+1,115,000,000

- The IDN offers FedEO collections: 263 (209 offering +32,002,095 granules)



CEOS/IDN/CWIC Collaborations

- ChinaGEOSS and NRSCC will update OpenSearch response for IDN Search and CWIC Portal granule results and ordering.
- ESA/FedEO continue re-ingesting dataset records into CMR/IDN:
 - 163 ESA dataset records were re-ingested into IDN Provider ESA
 - 53 DLR and 45 VITO dataset records were re-ingested
- ISRO updated collections with new RelatedURL entries for OpenSearch OSDD Descriptor_documents.xml URLs defining granule searches.
- NOAA NCEI:
 - IDN has ingested 29851 of 36101 records from NOAA_NCEI WAFs into test system in May 2022.
 - Most of the issues with the failed datasets are Paleoclimate time ranges (CMR is working on a fix) or dataset ShortName issues. A report was generated in June 2022.
 - NOAA_NCEI (and NOAA GHRSSST) OpenSearch Description Document (OSDD) URLs have changed and will be updated in CMR for the IDN and CWIC.



II. OpenSearch OSDD Registration for RelatedURL Metadata



RelatedURL OSDD implementation for IDN granule search

- CMR's support for OpenSearch collection-specific, granule search API for a collection through an Open Search Descriptor Document (OSDD) in the collection metadata.
- Adding the CMR OSDD tag is no longer need to implement OpenSearch collection-specific, granule searches for CEOS providers.
 - No over-writing of CMR tag values
- The UMM-C RelatedURL elements and sub-elements will be used to populate the OSSD link.
 - Eliminates having to separately provide OSDD links with no extra wait time for the OSDD linkages.
 - No extra time to add the The OSDD links can be added using the dMMT (<https://draftmmt.earthdata.nasa.gov/>) or through agreed automatic ingest.
 - Any provider can add the OSDD URLs to their collections for IDN granule discovery.
 - Must follow CEOS Open Search Best Practices (<https://ceos.org/ourwork/workinggroups/wgiss/access/opensearch/>)
- IDN will eventually stop supporting OSDD tagging in the CMR.



Related_URL OSDD DIF-10 Example

```
<Related_URL>
  <URL_Content_Type>
    <Type>GET CAPABILITIES</Type>
    <Subtype>OpenSearch</Subtype>
  </URL_Content_Type>
  <URL>https://fedeo.esa.int/opensearch/description.xml?parentIdentifier=urn:eop:VITO:CGS_S2_LAI
    &startDate=2015-07-06T00:00:00.000Z&endDate=2021-12-31T23:59:00.000Z</URL>
  <Description>tag_key: opensearch.granule.osdd</Description>
  <Mime_Type>application/opensearchdescription+xml</Mime_Type>
</Related_URL>
```



RelatedURL OSDD UMM-C Example

RelatedUrls: [

{

...

{

Description: "Collection-specific granule Open Search Descriptor Document",

URLContentType: "DistributionURL",

Type: "GET CAPABILITIES",

Subtype: "OpenSearch",

URL: "https://fedeo.esa.int/opensearch/description.xml?parentIdentifier=EOP:ESA:EARTH-
ONLINE:ADAM.Surface.Reflectance.Database",

GetData: {

Format: "Not provided",

MimeType: "application/opensearchdescription+xml",

Size: 0,

Unit: "KB"

}

},

...

],



RelatedURL OSDD ISO Example

```
<gmd:MD_Distributor>
  <gmd:distributorContact gco:nilReason="missing"/>
  <gmd:distributorFormat>
    <gmd:MD_Format>
      <gmd:name>
        <gco:CharacterString>Format: Not provided MimeType:
application/opensearchdescription+xml</gco:CharacterString>
      </gmd:name>
      <gmd:version gco:nilReason="unknown"/>
      <gmd:specification/>
    </gmd:MD_Format>
  </gmd:distributorFormat>
  <gmd:distributorTransferOptions>
    <gmd:MD_DigitalTransferOptions>
      <gmd:unitsOfDistribution>
        <gco:CharacterString>KB</gco:CharacterString>
      </gmd:unitsOfDistribution>
      <gmd:transferSize>
        <gco:Real>0</gco:Real>
      </gmd:transferSize>
      <gmd:onLine>
        <gmd:CI_OnlineResource>
          <gmd:linkage>
```

```
<gmd:URL>https://fedeo.esa.int/opensearch/description.xml?parentIdentifier=EO
P:ESA:EARTH-ONLINE:ADAM.Surface.Reflectance.Database</gmd:URL>
```

```
</gmd:linkage>
<gmd:protocol>
<gco:CharacterString>https</gco:CharacterString>
</gmd:protocol>
<gmd:name>
<gco:CharacterString>??</gco:CharacterString>
</gmd:name>
<gmd:description>
  <gco:CharacterString>Description: tag_key: opensearch.granule.osdd
URLContentType: DistributionURL Type: GET CAPABILITIES Subtype:
OpenSearch</gco:CharacterString>
</gmd:description>
<gmd:function>
  <gmd:CI_OnLineFunctionCode

codeList="http://www.ngdc.noaa.gov/metadata/published/xsd/schema/resources/
Codelist/gmxCodelists.xml#CI_OnLineFunctionCode"
codeListValue="download"/>
</gmd:function>
</gmd:CI_OnlineResource>
</gmd:onLine>
</gmd:MD_DigitalTransferOptions>
</gmd:distributorTransferOptions>
</gmd:MD_Distributor>
</gmd:distributor>
```



II. License/Data Usage metadata for Datasets



Adding License/Data Usage Metadata

- The IDN continues to encourage Providers to add License/Data Usage Policy information, as a link or text, to their datasets in the CMR for the IDN.
- It is important to inform the user of the permitted uses of the data, licensor's ownership/controls of the data, the manner of delivery, data security policies, and maintenance of the data.
 - Either as a link to License/Data Usage Policy statement, or the statement itself (via the Use Constraints License Text field) providing data users with permission/license constraints and copyright policy for data and/or services.
 - Direct statements can be added to the UseConstraints sub-element Description.
 - The links can be added to the UseConstraints sub-elements group LicenseURL sub-elements:
 - Description: describes of the link
 - Linkage: the License/Data Usage Policy link
 - MineType: media format return by the link
 - Name: title or name of the page link



License/Data Usage Policy Metadata Example

```
"UseConstraints" : {  
  "LicenseURL" : {  
    "Description" : "ODbL with Database Contents License (DbCL)",  
    "Linkage" : "https://opendefinition.org/licenses/odc-odbl",  
    "MimeType" : "text/html",  
    "Name" : "Data Use Policy"  
  }  
}
```



IV. UMM Updates



Description of the UMM Updates

- UMM-Collections
 - New UseConstraints sub-element FreeAndOpenData
 - Change log link: <https://git.earthdata.nasa.gov/projects/EMFD/repos/unified-metadata-model/browse/collection/CHANGELOG.md>
- UMM-Services
 - New RelatedURLs sub-elements Format and MimeType
 - Both sub-elements are using KMS valids.
 - Change log link: <https://git.earthdata.nasa.gov/projects/EMFD/repos/unified-metadata-model/browse/service/CHANGELOG.md>
- UMM-Tools
 - New RelatedURLs sub-elements Format and MimeType
 - RelatedURLType sub-elements URLContentType, Type, Subtype, new sub-elements Format and MimeType are using KMS valids. (Enumerations were removed from schema.)
 - Change log link: <https://git.earthdata.nasa.gov/projects/EMFD/repos/unified-metadata-model/browse/tool/CHANGELOG.md>
- UMM-Variables
 - VariableType and VariableSubtype has new enumerations.
 - New RelatedURLs sub-elements Format and MimeType
 - New MetadataSpecification element.
 - Change log link: <https://git.earthdata.nasa.gov/projects/EMFD/repos/unified-metadata-model/browse/variable/CHANGELOG.md>



Description of the UMM Updates

- UMM-Collections
 - New UseConstraints sub-element FreeAndOpenData
 - Description: This sub-element if true, describes to end users and machines that this collection's data is free of charge and open for any use the user sees fit.
 - Type: Boolean (true or false)
 - Example: "UseConstraints": {"FreeAndOpenData": false}



Description of the UMM Updates

- UMM-Services, UMM-Tools, and UMM-Variable changes:
 - New RelatedURLs sub-elements:
 - Format (Example: "Format": "netCDF-4",)
 - Description: Describes the organization of the data content so that users and applications know how to read and use the content. The controlled vocabulary for formats is maintained in the Keyword Management System (KMS):
https://gcmd.earthdata.nasa.gov/KeywordViewer/scheme/DataFormat?gtm_scheme=DataFormat
 - Type: string
 - MimeType (Example: "MimeType": "text/html",)
 - Description: The multi-purpose internet mail extensions indicates the nature and format of the data that is accessed through the URL. The controlled vocabulary for MimeTypes is maintained in the Keyword Management System (KMS):
https://gcmd.earthdata.nasa.gov/KeywordViewer/scheme/MimeType?gtm_scheme=MimeType
 - Type: string
 - RelatedURLContentType and sub-elements (URLContentType, Type, Subtype) are using KMS for valids.



Description of the UMM Updates

- UMM-Variable
 - New enumerations for Variable:
 - VariableType: "COORDINATE"
 - VariableSubtype : "LATITUDE, LONGITUDE, TIME"
 - MetadataSpecification element added to schema:

```
"MetadataSpecification": {  
  "URL": "https://cdn.earthdata.nasa.gov/umm/variable/v1.8 ",  
  "Name": "UMM-Var",  
  "Version": "1.8"  
}
```



V. GCMD Keyword Releases



GCMD Keyword Update

- GCMD Keyword Releases:
 - Version 13 release ([March 16, 2022](https://wiki.earthdata.nasa.gov/pages/viewpage.action?pageId=239403854)):
<https://wiki.earthdata.nasa.gov/pages/viewpage.action?pageId=239403854>
 - Updates for Locations and Platforms Keywords.
 - Version 14 release ([July 29, 2022](https://wiki.earthdata.nasa.gov/pages/viewpage.action?pageId=254943886)):
<https://wiki.earthdata.nasa.gov/pages/viewpage.action?pageId=254943886>
 - New Machine Learning Models and Training Data Keywords
 - All releases:
<https://wiki.earthdata.nasa.gov/display/ED/Keyword+Release+Announcements>
- GCMD Keyword Forum: <https://forum.earthdata.nasa.gov/app.php/tag/GCMD+Keywords>
 - Forum lets GCMD metadata providers request new or updates to the GCMD Keywords and allows users to provide feedback and comments.
 - Forums User Guide: <https://forum.earthdata.nasa.gov/docs/assets/sitedocs/userguide.pdf>



VI. IDN Metrics



IDN Homepage Usage

(June 2021 to August 22, 2022)

(<https://idn.ceos.org/>)

Users

15,808

Sessions

20,051

Pageviews

29,826

Pages / Session

1.49

Avg. Session Duration

00:01:29

Bounce Rate

58.20%



- **User:** An individual person browsing the website.
- **Sessions:** A single visit to the website, consisting of one or more pageviews.
- **Pageviews:** A pageview is reported when a page has been viewed by a user on the website.
- **Pages/Session:** the average number of pageviews in each session.
- **Avg. Session Duration:** how long users are spending on your website.
- **Bounce Rate:** is the percentage of sessions with only one interaction

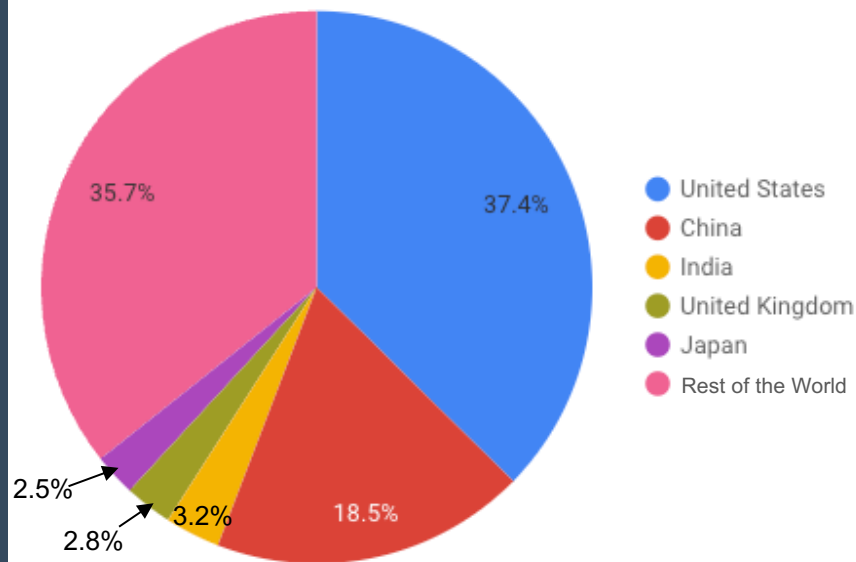


IDN Homepage Usage (continue)

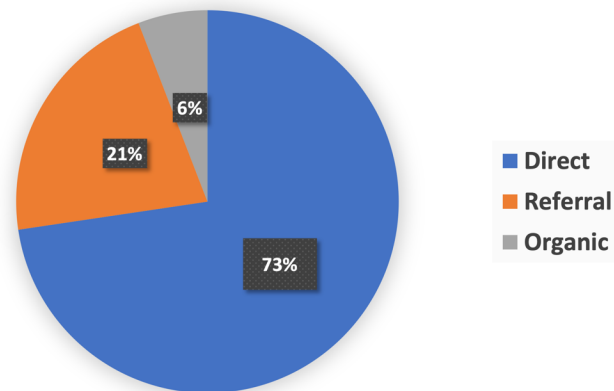
June 2021 to August 22, 2022

<https://idn.ceos.org/>

IDN Sessions by



How are users finding the IDN?



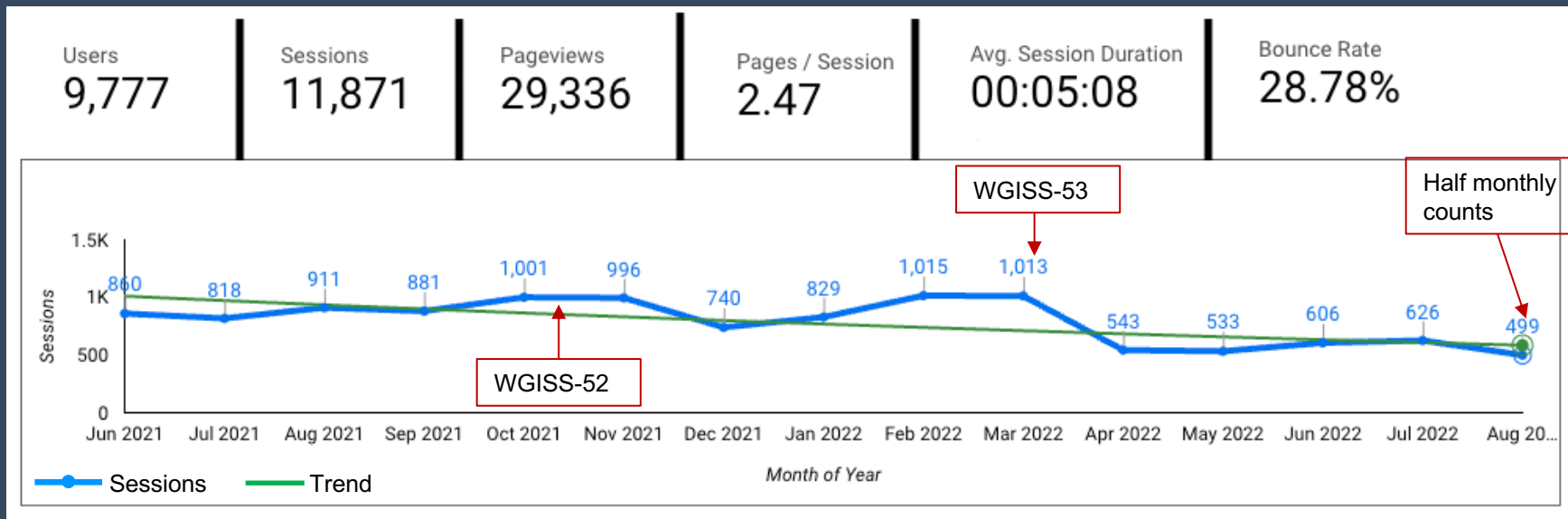
- **Direct:** includes people who typed your website's URL into their browser or clicked a link in an email application.
- **Referral:** A referral is reported when a user clicks through to your website from another third-party website.
- **Organic:** refers to people clicking on a free link from a search results page. For example, people clicking through to your website from a free result on a Google search results page.



IDN Search Portal Usage

(June 2021 to August 22, 2022)

(<https://search.earthdata.nasa.gov/portal/idn/search>)



- **User:** An individual person browsing the website.
- **Sessions:** A single visit to the website, consisting of one or more pageviews.
- **Pageviews:** A pageview is reported when a page has been viewed by a user on the website.
- **Pages/Session:** the average number of pageviews in each session.
- **Avg. Session Duration:** how long users are spending on your website.
- **Bounce Rate:** is the percentage of sessions with only one interaction



IDN Search Portal Usage

(June 2021 to August 22, 2022)

(<https://search.earthdata.nasa.gov/portal/idn/search>)

Page	Users	Sessions	Pageviews
search.earthdata.nasa.gov/portal/idn/search	9660	10632	18124
search.earthdata.nasa.gov/portal/idn/search/granules	4156	831	7656
search.earthdata.nasa.gov/portal/idn/search/granules/collection-details	744	122	803
search.earthdata.nasa.gov/portal/idn/projects	835	85	1385
search.earthdata.nasa.gov/portal/idn/downloads	871	170	1228
search.earthdata.nasa.gov/portal/idn/search/granules/granule-details	345	28	97
search.earthdata.nasa.gov/portal/idn/preferences	32	2	24
search.earthdata.nasa.gov/portal/idn/contact_info	20	0	8
search.earthdata.nasa.gov/portal/idn/subscriptions	28	1	11
Total	16691	11871	29336

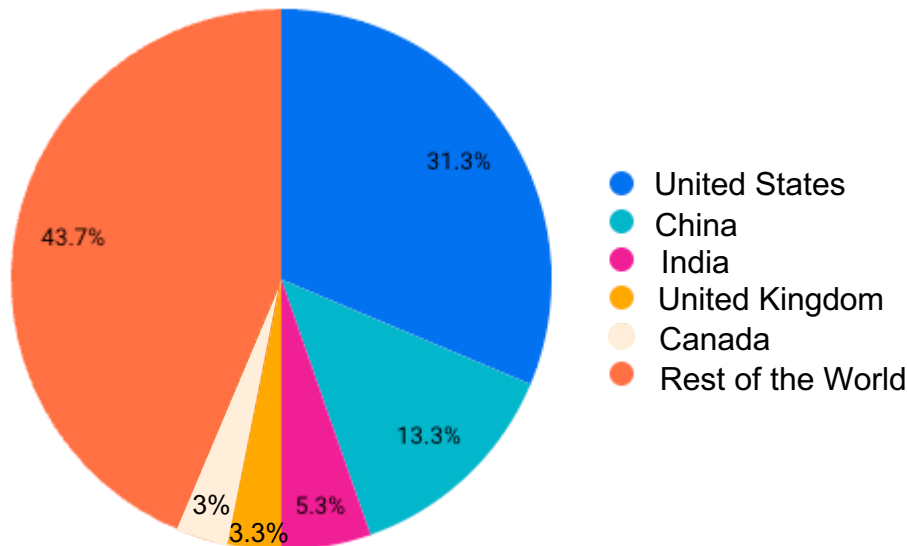


IDN Search Portal Usage

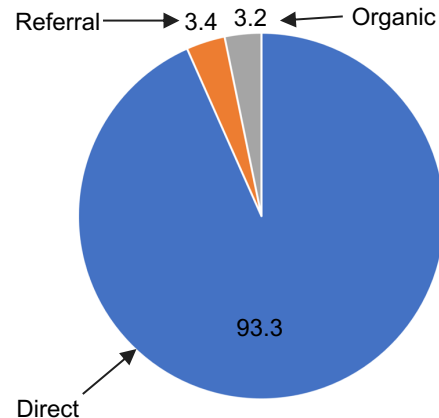
June 2021 to August 22, 2022

<https://search.earthdata.nasa.gov/portal/idn/search>

IDN Sessions by



How are users finding the IDN?



- **Direct:** includes people who typed your website's URL into their browser or clicked a link in an email application.
- **Referral:** A referral is reported when a user clicks through to your website from another third-party website.
- **Organic:** refers to people clicking on a free link from a search results page. For example, people clicking through to your website from a free result on a Google search results page.



Draft MMT Usage

<https://draftmmt.earthdata.nasa.gov>

DraftMMT Usage from March 2022 to August 2022.

User	Unique Login	Total Logins
IDN Metadata Author	32	153

Break down of Drafts created, submitted, and approved.

	Created	Submitted	Approved
New Draft Proposals	62	47	47
Update Collections	37	32	32

- **Draft MMT will only save unsubmitted collection metadata for 30 days.**



Questions

Please provide questions/comments to:

michael.p.morahan@nasa.gov (KBR)

valerie.dixon@nasa.gov (NASA)



Background Slides



Useful Links

- **International Directory Network (IDN)**
 - <https://idn.ceos.org/>
- **International Directory Network (IDN) Search Portal**
 - <https://search.earthdata.nasa.gov/portal/idn/search>
- **EarthData Login**
 - <https://urs.earthdata.nasa.gov/home>
- **Draft MMT**
 - <https://draftmmt.earthdata.nasa.gov/>
 - **Draft Metadata Management Tool (dMMT) User's Guide**
 - <https://wiki.earthdata.nasa.gov/display/CMR/Draft+Metadata+Management+Tool+%28dMMT%29+User%27s+Guide>



Useful Links (continue)

- **GCMD Keywords**

- <https://earthdata.nasa.gov/earth-observation-data/find-data/gcmd/gcmd-keywords>

- **GCMD Keyword Viewer**

- <https://gcmd.earthdata.nasa.gov/KeywordViewer/>

- **New KMS URLs**

- GET Capabilities
 - <https://gcmd.earthdata.nasa.gov/kms/>
- All Science Keyword in CSV format
 - https://gcmd.earthdata.nasa.gov/kms/concepts/concept_scheme/sciencekeywords?case=native&format=csv



Useful Links (continue)

- **UMM-C, UMM-G, UMM-S, UMM-T, UMM-V Documents**
 - <https://wiki.earthdata.nasa.gov/display/CMR/CMR+Documents>
- **CMR Collection Metadata Schemas**
 - <https://git.earthdata.nasa.gov/projects/EMFD>
- **CMR Search API**
 - <https://cmr.earthdata.nasa.gov/search/site/docs/search/api.html>
- **CMR OpenSearch Documentation**
 - <https://cmr.earthdata.nasa.gov/opensearch/home/docs>



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