Direct Distribution Information

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Element Description

The Direct Distribution Information main element allows data providers to provide users information on getting direct access to data products that are stored in the Amazon Web Service (AWS) S3 buckets when they are initially looking at a collection. The end users get information such as the S3 credentials end point, a credential documentation URL, as well as bucket prefix names, and an AWS region.

Best Practices

There are multiple sub-elements that comprise Direct Distribution Information:

Region: Defines the possible values for the Amazon Web Service US Regions where the data product resides. The current valid values are: us-east-1, us-east-2, us-west-1, and us-west-2.

S3BucketAndObjectPrefixNames: Defines the possible values for the Amazon Web Service US S3 bucket and/or object prefix names.

S3CredentialsAPIEndpoint: Defines the URL where the credentials are stored.

S3CredentialsAPIDocumentationURL: Defines the URL where the credential documentation is stored.

Each of these elements describes the information that is necessary to pull out data products that are stored in the AWS cloud using a S3 URL that is located inside each granule's (data product file's) metadata.

Examples:

Region: "us-east-1"

S3BucketAndObjectPrefixNames: "Bucket 1"

S3CredentialsAPIEndpoint: "https://some-data-product-credentials-api.com/api.html"

S3CredentialsAPIDocumentationURL: "https://some-data-product-credentials-api.com/docs.html"

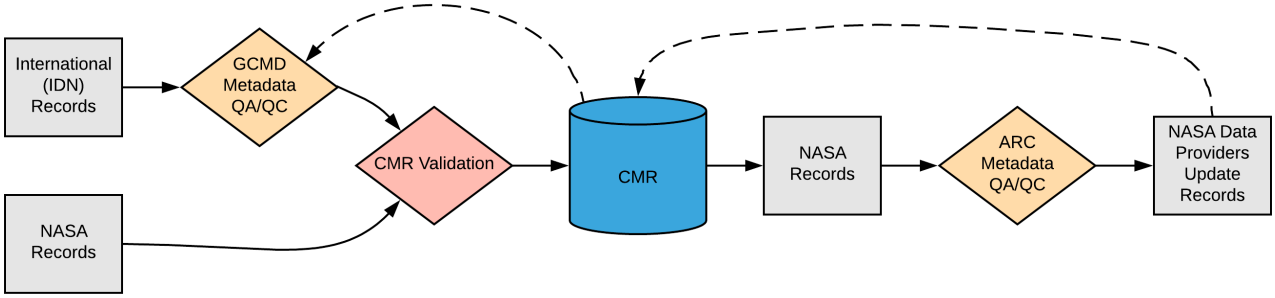
Element Specification

Cardinality of Direct Distribution Information:

Model	Element	Type	Usable Valid Values	Constraints	Required?	Cardinality	Notes
UMM-C	DirectDistributionInformation/ Region	String	us-east-1 us-east-2 us-west-1 us-west-2	n/a	Yes	1	
UMM-C	DirectDistributionInformation/ S3BucketAndObjectPrefixNames	String	n/a	1 - 1024 characters	No	0..*	
UMM-C	DirectDistributionInformation/ S3CredentialsAPIEndpoint	URI	n/a	1 - 1024 characters	Yes	1	
UMM-C	DirectDistributionInformation/ S3CredentialsAPIDocumentationURL	URI	n/a	1 - 1024 characters	Yes	1	

Metadata Validation and QA/QC

All metadata entering the CMR goes through the below process to ensure metadata quality requirements are met. All records undergo CMR validation before entering the system. The process of QA/QC is slightly different for NASA and non-NASA data providers. Non-NASA providers include interagency and international data providers and are referred to as the International Directory Network (IDN).



Please see the expandable sections below for flowchart details.

- Manual Review
- Automated Review

- TBD

ARC Priority Matrix

Priority Categorization	Justification
Red = High Priority Finding	This element is categorized as highest priority when: • The Direct Distribution Information/Region is not a valid value: us-east-1, us-east-2, us-west-1, us-west-2 • Any of the three required sub-elements (Direct Distribution Information/Region, Direct Distribution Information/S3 Credentials API Endpoint, Direct Distribution Information/S3 Credentials API Documentation URL) are not provided • The Direct Distribution Information/S3 Credentials API Documentation URL is a broken link • The Direct Distribution Information/S3 Credentials API Documentation URL links to an FTP server
Yellow = Medium Priority Finding	Not Applicable
Blue = Low Priority Finding	This element is categorized as low priority when: • The Direct Distribution Information/S3 Credentials API Documentation URL is an "http" link but should be updated to "https" • The Direct Distribution Information/S3 Credentials API Documentation URL redirects
Green = No Findings/Issues	The element is provided and follows all applicable criteria specified in the best practices section above.

ARC Automated Checks

ARC uses the pyQuARC library for automated metadata checks. Please see the pyQuARC GitHub for more information.

Dialect Mappings

DIF 10

The definitions are the same between UMM-C and ECHO 10.

UMM-C Element	Path	Type	Usable Valid Values	Constraints	Required in DIF 10?	Cardinality	Notes
DirectDistributionInformation/ Region	/DIF /DirectDistributionInformation/ Region	String	us-east-1 us-east-2 us-west-1 us-west-2	n/a	Yes	1	

DirectDistributionInformation/ S3BucketAndObjectPrefixNames	/DIF /DirectDistributionInformation/ S3BucketAndObjectPrefixNames	String	n/a	1 - 1024 characters	No	0..*	
DirectDistributionInformation/ S3CredentialsAPIEndpoint	/DIF /DirectDistributionInformation/ S3CredentialsAPIEndpoint	URI	n/a	1 - 1024 characters	Yes	1	
DirectDistributionInformation/ S3CredentialsAPIDocumentationURL	/DIF /DirectDistributionInformation/ S3CredentialsAPIDocumentationURL	URI	n/a	1 - 1024 characters	Yes	1	

Example Mapping

DIF 10

```
<DirectDistributionInformation>
  <Region>us-east-2</Region>

<S3BucketAndObjectPrefixName>TestBucketOrObjectPrefix
</S3BucketAndObjectPrefixName>

<S3CredentialsAPIEndpoint>https://DAACCredentialEndpo
int.org</S3CredentialsAPIEndpoint>

<S3CredentialsAPIDocumentationURL>https://DAACCredent
ialDocumentation.org<
/S3CredentialsAPIDocumentationURL>
</DirectDistributionInformation>
```

UMM

```
"DirectDistributionInformation" : {
  "Region" : "us-east-2",
  "S3BucketAndObjectPrefixNames" : [
"TestBucketOrObjectPrefix" ],
  "S3CredentialsAPIEndpoint" :
"https://DAACCredentialEndpoint.org",
  "S3CredentialsAPIDocumentationURL" :
"https://DAACCredentialDocumentation.org"
},
```

ECHO 10

The definitions are the same between UMM-C and ECHO 10.

UMM-C Element	Path	Type	Usable Valid Values	Constraints	Required in DIF 10?	Cardinality	Notes
DirectDistributionInformation/ Region	/Collection/ DirectDistributionInformation/ Region	String	us-east-1 us-east-2 us-west-1 us-west-2	n/a	Yes	1	
DirectDistributionInformation/ S3BucketAndObjectPrefixNames	/Collection/ DirectDistributionInformation/ S3BucketAndObjectPrefixNames	String	n/a	1 - 1024 characters	No	0..*	
DirectDistributionInformation/ S3CredentialsAPIEndpoint	/Collection/ DirectDistributionInformation/ S3CredentialsAPIEndpoint	URI	n/a	1 - 1024 characters	Yes	1	

DirectDistributionInformation/ S3CredentialsAPIDocumentationURL	/Collection/ DirectDistributionInformation/ S3CredentialsAPIDocumentationURL	URI	n/a	1 - 1024 characters	Yes	1	

Example Mapping

ECHO 10

```
<DirectDistributionInformation>
  <Region>us-east-2</Region>

<S3BucketAndObjectPrefixName>TestBucketOrObjectPrefix
</S3BucketAndObjectPrefixName>

<S3CredentialsAPIEndpoint>https://DAACCredentialEndpo
int.org</S3CredentialsAPIEndpoint>

<S3CredentialsAPIDocumentationURL>https://DAACCredent
ialDocumentation.org<
/S3CredentialsAPIDocumentationURL>
</DirectDistributionInformation>
```

UMM

```
"DirectDistributionInformation" : {
  "Region" : "us-east-2",
  "S3BucketAndObjectPrefixNames" : [
"TestBucketOrObjectPrefix" ],
  "S3CredentialsAPIEndpoint" :
"https://DAACCredentialEndpoint.org",
  "S3CredentialsAPIDocumentationURL" :
"https://DAACCredentialDocumentation.org"
},
```

ISO 19115-2 MENDS

Archive and Distribution Information is an optional metadata element in ISO 19115-2 MENDS.

UMM-C Element	Path	Type	Notes
DirectDistributionInformation/	/gmi:MI_Metadata/gmd:distributionInfo/gmd:MD_Distribution/gmd:distributor xlink:href="DirectDistributionInformation" [=>		
DirectDistributionInformation/ Region	[=>/gmd:MD_Distributor/gmd:distributionOrderProcess/gmd:MD_StandardOrderProcess/gmd:orderingInstructions/gmd: CharacterString = Region: <region such as us-east-2>	String	
DirectDistributionInformation/ S3BucketAndObjectPrefixNames	[=>/gmd:MD_Distributor/gmd:distributionOrderProcess/gmd:MD_StandardOrderProcess/gmd:orderingInstructions/gmd: CharacterString = S3BucketAndObjectPrefixNames: <such as BucketPrefix1 BucketPrefix2 >	String	
DirectDistributionInformation/ S3CredentialsAPIEndpoint	[=>/gmd:MD_Distributor/gmd:distributorTransferOptions xlink:href=" DirectDistributionInformation_S3CredentialsAPIEndpoint"/gmd:MD_DigitalTransferOptions/gmd:onLine/gmd: CI_OnlineResource/gmd:linkage/gmd:URL	URI	
DirectDistributionInformation/ S3CredentialsAPIDocumentationURL	[=>/gmd:MD_Distributor/gmd:distributorTransferOptions xlink:href=" DirectDistributionInformation_S3CredentialsAPIDocumentationURL"/gmd:MD_DigitalTransferOptions/gmd:onLine/gmd: CI_OnlineResource/gmd:linkage/gmd:URL	URI	

Example Mapping

ISO 19115-2 MENDS

```
<gmi:MI_Metadata>
  ...
 <gmd:distributionInfo>
                <gmd:MD_Distribution>
                    <gmd:distributor xlink:href="
DirectDistributionInformation">
                        <gmd:MD_Distributor>
                            <gmd:distributorContact
gco:nilReason="inapplicable"/>
                            <gmd:
distributionOrderProcess>
                                <gmd:
MD_StandardOrderProcess>
                                    <gmd:
orderingInstructions>
                                    <gco:
CharacterString>Region: us-east-2
S3BucketAndObjectPrefixNames:
TestBucketOrObjectPrefix</gco:CharacterString>
                                    </gmd:
orderingInstructions>
                                </gmd:
MD_StandardOrderProcess>
                            </gmd:
distributionOrderProcess>
                            <gmd:
distributorTransferOptions xlink:href="
DirectDistributionInformation_S3CredentialsAPIEndpoin
t">
                                <gmd:
MD_DigitalTransferOptions>
                                    <gmd:onLine>
                                    <gmd:
CI_OnlineResource>
                                    <gmd:linkage>
                                    <gmd:
URL>https://DAACCredentialEndpoint.org</gmd:URL>
                                    </gmd:linkage>
                                    <gmd:description>
                                    <gco:
CharacterString>The S3 credentials API endpoint.<
/gco:CharacterString>
                                    </gmd:
description>
                                    </gmd:
CI_OnlineResource>
                                    </gmd:onLine>
                                </gmd:
MD_DigitalTransferOptions>
                            </gmd:
distributorTransferOptions>
                            <gmd:
distributorTransferOptions xlink:href="
DirectDistributionInformation_S3CredentialsAPIDocumen
tationURL">
                                <gmd:
MD_DigitalTransferOptions>
                                    <gmd:onLine>
                                    <gmd:
CI_OnlineResource>
                                    <gmd:linkage>
                                    <gmd:
URL>https://DAACCredentialDocumentation.org</gmd:URL>
                                    </gmd:linkage>
                                    <gmd:description>
                                    <gco:
CharacterString>The S3 credentials API Documentation
URL.</gco:CharacterString>
                                    </gmd:
```

```
description>
                                    </gmd:
CI_OnlineResource>
                                    </gmd:onLine>
                                </gmd:
MD_DigitalTransferOptions>
                            </gmd:
distributorTransferOptions>
                        </gmd:MD_Distributor>
                    </gmd:distributor>
                  ...
```

UMM

```
"DirectDistributionInformation" : {
  "Region" : "us-east-2",
  "S3BucketAndObjectPrefixNames" : [
"TestBucketOrObjectPrefix" ],
  "S3CredentialsAPIEndpoint" :
"https://DAACCredentialEndpoint.org",
  "S3CredentialsAPIDocumentationURL" :
"https://DAACCredentialDocumentation.org"
},
```

ISO 19115-2 SMAP

UMM-C Element	Path	Type	Notes
DirectDistributionInformation/	/gmd:DS_Series/gmd:seriesMetadata/gmi:MI_Metadata/gmd:distributionInfo/gmd:MD_Distribution/gmd:distributor xlink:href="DirectDistributionInformation" [=>		
DirectDistributionInformation/ Region	[=>/gmd:MD_Distributor/gmd:distributionOrderProcess/gmd:MD_StandardOrderProcess/gmd:orderingInstructions/gmd:CharacterString = Region: <region such as us-east-2>	String	
DirectDistributionInformation/ S3BucketAndObjectPrefixNames	[=>/gmd:MD_Distributor/gmd:distributionOrderProcess/gmd:MD_StandardOrderProcess/gmd:orderingInstructions/gmd:CharacterString = S3BucketAndObjectPrefixNames: <such as BucketPrefix1 BucketPrefix2 >	String	
DirectDistributionInformation/ S3CredentialsAPIEndpoint	[=>/gmd:MD_Distributor/gmd:distributorTransferOptions xlink:href="DirectDistributionInformation_S3CredentialsAPIEndpoint"/gmd:MD_DigitalTransferOptions/gmd:onLine/gmd:CI_OnlineResource/gmd:linkage/gmd:URL	URI	
DirectDistributionInformation/ S3CredentialsAPIDocumentationURL	[=>/gmd:MD_Distributor/gmd:distributorTransferOptions xlink:href="DirectDistributionInformation_S3CredentialsAPIDocumentationURL"/gmd:MD_DigitalTransferOptions/gmd:onLine/gmd:CI_OnlineResource/gmd:linkage/gmd:URL	URI	

Example Mapping

ISO 19115-2 SMAP

```
<gmd:DS_Series>
  <gmd:seriesMetadata>
    <gmi:MI_Metadata>
      ...
      <gmd:distributionInfo>
                <gmd:MD_Distribution>
                    <gmd:distributor xlink:href="
DirectDistributionInformation">
                        <gmd:MD_Distributor>
                            <gmd:distributorContact
gco:nilReason="inapplicable"/>
                            <gmd:
```

```
distributionOrderProcess>
                                <gmd:
MD_StandardOrderProcess>
                                    <gmd:
orderingInstructions>
                                    <gco:
CharacterString>Region: us-east-2
S3BucketAndObjectPrefixNames:
TestBucketOrObjectPrefix</gco:CharacterString>
                                    </gmd:
orderingInstructions>
                                </gmd:
MD_StandardOrderProcess>
                            </gmd:
distributionOrderProcess>
                            <gmd:
distributorTransferOptions xlink:href="
DirectDistributionInformation_S3CredentialsAPIEndpoin
t">
                                <gmd:
MD_DigitalTransferOptions>
                                    <gmd:onLine>
                                    <gmd:
CI_OnlineResource>
                                    <gmd:linkage>
                                    <gmd:
URL>https://DAACCredentialEndpoint.org</gmd:URL>
                                    </gmd:linkage>
                                    <gmd:description>
                                    <gco:
CharacterString>The S3 credentials API endpoint.<
/gco:CharacterString>
                                    </gmd:
description>
                                    </gmd:
CI_OnlineResource>
                                    </gmd:onLine>
                                </gmd:
MD_DigitalTransferOptions>
                            </gmd:
distributorTransferOptions>
                            <gmd:
distributorTransferOptions xlink:href="
DirectDistributionInformation_S3CredentialsAPIDocumen
tationURL">
                                <gmd:
MD_DigitalTransferOptions>
                                    <gmd:onLine>
                                    <gmd:
CI_OnlineResource>
                                    <gmd:linkage>
                                    <gmd:
URL>https://DAACCredentialDocumentation.org</gmd:URL>
                                    </gmd:linkage>
                                    <gmd:description>
                                    <gco:
CharacterString>The S3 credentials API Documentation
URL.</gco:CharacterString>
                                    </gmd:
description>
                                    </gmd:
CI_OnlineResource>
                                    </gmd:onLine>
                                </gmd:
MD_DigitalTransferOptions>
                            </gmd:
distributorTransferOptions>
                        </gmd:MD_Distributor>
                    </gmd:distributor>
                ...
```

```
"DirectDistributionInformation" : {
  "Region" : "us-east-2",
  "S3BucketAndObjectPrefixNames" : [
"TestBucketOrObjectPrefix" ],
  "S3CredentialsAPIEndpoint" :
"https://DAACCredentialEndpoint.org",
  "S3CredentialsAPIDocumentationURL" :
"https://DAACCredentialDocumentation.org"
},
```

UMM Migration

None

History

UMM Versioning

1.16.2 is the current UMM-C version. No changes were made to this element since the last documented changes below.

Version	Date	What Changed
1.16.0	03/24/2021	This element was added to the UMM-C specification.

ARC Documentation

Version	Date	What Changed	Author
1.0	6/30/21	Recommendations/priority matrix transferred from internal ARC documentation to wiki space	Jeanne' le Roux