

OSTI OAI Repository Manual

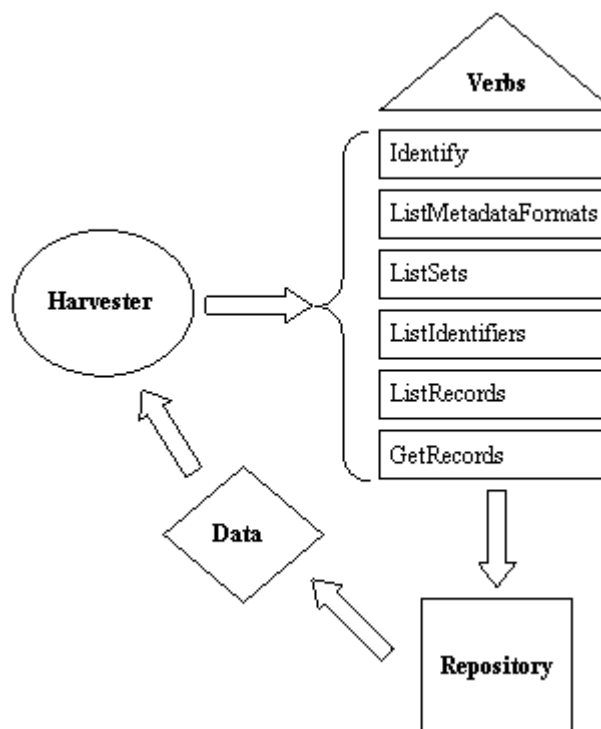
About

OSTI has established an OAI server (see OAI Repository Manual) to allow harvesting of metadata for full-text DOE R&D reports contained in [OSTI.GOV](http://www.osti.gov). Included are reports in physics, chemistry, materials, biology, environmental sciences, energy technologies, engineering, computer and information science, renewable energy, and other topics. These reports are produced by DOE, the DOE National Laboratories, DOE contractors and grantees primarily from 1991 forward. Additional legacy documents are included as they become available in electronic format.

Getting Started

OSTI's metadata can be accessed at the baseURL: <http://www.osti.gov/oai/>
The OSTI OAI Repository supports six different verbs:

1. Identify
2. ListMetadataFormats
3. ListSets
4. ListIdentifiers
5. ListRecords
6. GetRecords



*Harvesting Diagram
How data is returned to the harvester*

Using OSTI's OAI Services

Retrieving data on OSTI's OAI services requires a harvester (user) to apply one of the six request types ("verbs") to obtain data from OSTI's repository.

Identify

The verb "Identify" can be used to retrieve information about a repository.

Example

<http://www.osti.gov/oai/index.jsp?verb=identify>

The following results are returned.

```
<OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/
http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
<responseDate>2008-08-01T12:17:55Z</responseDate>
<request verb="Identify">http://www.osti.gov/oai/</request>
<Identify>
<repositoryName>OSTI OAI Repository</repositoryName>
<baseURL>http://www.osti.gov/oai/</baseURL>
<protocolVersion>2.0</protocolVersion>
<adminEmail>wongn@osti.gov</adminEmail>
<earliestDatestamp>2001-05-01T12:00:00Z</earliestDatestamp>
<deletedRecord>no</deletedRecord>
<granularity>YYYY-MM-DD</granularity>
</Identify>
</OAI-PMH>
```

These results provide the following information about the OSTI OAI Repository.

- **repositoryName**: human readable name for the repository
- **baseURL**
- **protocolVersion**: the version of the OAI supported by the repository
- **adminEmail**: the email of the administrator associated with the repository
- **earliestDatestamp**: the guaranteed lower limit of all datestamps recording changes, modifications, or deletions in the repository
- **deletedRecord**: specifies the nature of deleted records; this repository does not maintain information about deletions
- **granularity**: the harvesting granularity supported by the repository; legitimate values are YYYY-MM-DD

ListMetadataFormats

The “ListMetadataFormats” verb is used to retrieve the metadata formats available from the OSTI OAI Repository.

Example

<http://www.osti.gov/oai/index.jsp?verb=ListMetadataFormats>

The following results are returned.

```

<OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/
http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate>2008-08-01T12:35:56Z</responseDate>
  <request verb="ListMetadataFormats">http://www.osti.gov/oai/</request>
  <ListMetadataFormats>
    <metadataFormat>
      <metadataPrefix>oai_dc</metadataPrefix>
      <schema>http://www.openarchives.org/OAI/2.0/oai_dc.xsd</schema>
      <metadataNamespace>http://www.openarchives.org/OAI/2.0/oai_dc/</metadataNamespace>
    </metadataFormat>
  </ListMetadataFormats>
</OAI-PMH>

```

The response shows that the repository supports one metadata format: oai_dc
The location of an XML Schema describing the format is also provided.

ListSets

The “ListSets” verb is used to retrieve the set structure of a repository; however, the OSTI OAI Repository does not structure its data in sets.

Example

<http://www.osti.gov/oai/index.jsp?verb=ListSets>

The following response is returned.

```

<OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/
http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate>2008-08-01T13:04:09Z</responseDate>
  <request>http://www.osti.gov/oai/index.jsp</request>
  <error code="noSetHierarchy">This repository does not support list sets</error>
</OAI-PMH>

```

ListIdentifiers

The verb “ListIdentifiers” is like the verb “ListRecords”, retrieving headers rather than records.

Arguments

- **from:** *optional* argument that specifies a lower-bound for the datestamp
- **until:** *optional* argument that specifies an upper-bound for the datestamp
- **metadataPrefix:** *required* argument, which specifies that headers should be returned only if the metadata format matching the given metadataPrefix is available
- **set:** *optional* argument that specifies set criteria for selective harvesting
- **resumptionToken:** *exclusive* argument with a token value returned by an incomplete list request for ListIdentifiers that allows the harvester to retrieve the next group of identifiers

Example

http://www.osti.gov/oai/index.jsp?verb=listIdentifiers&metadataPrefix=oai_dc

The following results are returned (truncated for brevity).

```
<OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/
http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate>2008-08-01T13:27:23Z</responseDate>
  <request metadataPrefix="oai_dc" verb="listIdentifiers">http://www.osti.gov/oai/</request>
  <ListIdentifiers>
    <header>
      <identifier>oai:osti.gov:697</identifier>
      <datestamp>2008-03-03</datestamp>
    </header>
    <header>
      <identifier>oai:osti.gov:698</identifier>
      <datestamp>2007-04-23</datestamp>
    </header>
    <header>
      <identifier>oai:osti.gov:699</identifier>
      <datestamp>2008-03-03</datestamp>
    </header>
    <resumptionToken>B5E8F25AF16C1B6B664876BFC907D3D4</resumptionToken>
  </ListIdentifiers>
</OAI-PMH>
```

The results provide the identifier and datestamp for each returned record. The results also give the resumption token used to retrieve the next group of identifiers.

resumptionToken

Every request that supports flow control will have a unique resumptionToken. The harvester can enter this resumptionToken at the end of the listIdentifiers or listRecords request.

Example

http://www.osti.gov/oai/index.jsp?verb=listIdentifiers&metadataPrefix=oai_dc&resumptionToken=B5E8F25AF16C1B6B664876BFC907D3D4

The resumptionToken will return the next group of identifiers.

ListRecords

The verb “ListRecords” is used to harvest records from a repository.

Arguments

- **from:** *optional* argument that specifies a lower-bound for the datestamp
- **until:** *optional* argument that specifies an upper-bound for the datestamp

- **metadataPrefix:** *required* argument, which specifies that headers should be returned only if the metadata format matching the given metadataPrefix is available
- **set:** *optional* argument that specifies set criteria for selective harvesting
- **resumptionToken:** *exclusive* argument with a token value returned by an incomplete list request for ListRecords that allows the harvester to retrieve the next group of records

Example

http://www.osti.gov/oai/index.jsp?verb=ListRecords&metadataPrefix=oai_dc&from=2007-12-01&until=2007-12-31

The example above returns results for records with timestamps between December,1 2007 and December, 31 2007. The following returned results are truncated for brevity.

```
<OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/
http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate>2008-08-01T13:56:14Z</responseDate>
  <request metadataPrefix="oai_dc" until="2007-12-31" verb="ListRecords" from="2007-12-
01">http://www.osti.gov/oai/</request>
  <ListRecords>
    <record>
      <header>
        <identifier>oai:osti.gov:2760</identifier>
        <timestamp>2007-12-03</timestamp>
      </header>
      <metadata>
        <oai_dc:dc xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/oai_dc/
http://www.openarchives.org/OAI/2.0/oai_dc.xsd">
          <dc:title>
Vendor-based laser damage metrology equipment supporting the National Ignition Facility
          </dc:title>
          <dc:creator>
Campbell, J. H; Jennings, R. T.; Kimmons, J. F.; Kozlowski, M. R.; Mouser, R. P.; Schwatz, S.; Stolz,
C. J.; Weinzapfel, C. L.
          </dc:creator>
          <dc:subject>
70 PLASMA PHYSICS AND FUSION TECHNOLOGY; INERTIAL CONFINEMENT; SOLID
STATE LASERS; US NATIONAL IGNITION FACILITY; OPTICS; QUALITY ASSURANCE;
DIAGNOSTIC TECHNIQUES
          </dc:subject>
          <dc:description>
A sizable laser damage metrology effort is required as part of optics production and installation for the
192 beam National Ignition Facility (NIF) laser. The large quantities, high damage thresholds, and large
apertures of polished and coated optics necessitates vendor-based metrology equipment to assure
component quality during production. This equipment must be optimized to provide the required
information as rapidly as possible with limited operator experience. The damage metrology tools
include: (1) platinum inclusion damage test systems for laser amplifier slabs, (2) laser conditioning
stations for mirrors and polarizers, and (3) mapping and damage testing stations for UV transmissive
optics. Each system includes a commercial Nd:YAG laser, a translation stage for the optics, and
diagnostics to evaluate damage. The scanning parameters, optical layout, and diagnostics vary with the
test fluences required and the damage morphologies expected. This paper describes the technical
objectives and milestones involved in fulfilling these metrology requirements.
          </dc:description>
        </oai_dc:dc>
      </metadata>
    </record>
  </ListRecords>
</OAI-PMH>
```

```

<dc:date>2007-12-03</dc:date>
<dc:identifier>www.osti.gov/servlets/purl/2760-zTsCSV/native/</dc:identifier>
<dc:format>application/pdf</dc:format>
</oai_dc:dc>
</metadata>
</record>
<resumptionToken>D43C417F5DC5B3F2523DB67DDBFEA9DD</resumptionToken>
</ListRecords>
</OAI-PMH>

```

GetRecords

The “GetRecords” verb is used to retrieve an individual record from the repository.

Arguments

- **identifier:** *required* argument that specifies the identifier of the record in the repository
- **metadataPrefix:** *required* argument that specifies the metadataPrefix for the metadata format supported by the repository

Example

http://www.osti.gov/oai/index.jsp?verb=getRecord&metadataPrefix=oai_dc&identifier=oai:osti.gov:719

The following result is returned.

```

<OAI-PMH xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/
http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
  <responseDate>2008-08-01T15:40:55Z</responseDate>
  <request identifier="oai:osti.gov:719" metadataPrefix="oai_dc"
  verb="getRecord">http://www.osti.gov/oai/</request>
  <GetRecord>
  <record>
  <header>
  <identifier>oai:osti.gov:719</identifier>
  <datestamp>2007-04-23</datestamp>
  </header>
  <metadata>
  <oai_dc:dc xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/oai_dc/
  http://www.openarchives.org/OAI/2.0/oai_dc.xsd">
  <dc:title>
  Basic Data Report for Drillholes on the H-19 Hydropad (Waste Isolation Pilot Plant--WIPP)
  </dc:title>
  <dc:creator>Mercer, J.W.; Cole, D.L.; Holt, R.M.</dc:creator>
  <dc:subject>
  12 MANAGEMENT OF RADIOACTIVE WASTES, AND NON-RADIOACTIVE WASTES FROM
  NUCLEAR FACILITIES; WELL DRILLING; BOREHOLES; SITE CHARACTERIZATION; WIPP;
  HYDROLOGY; STRATIGRAPHY; RADIONUCLIDE MIGRATION; RADIOACTIVE WASTE
  DISPOSAL; DRILL CORES
  </dc:subject>

```

<dc:description>

Seven holes were drilled and wells (H-19b0, H-19b2, H-19b3, H-19b4, H-19b5, H-19b6, and H-19b7) were constructed on the H-19 hydropad to conduct field activities in support of the Culebra Transport Program. These wells were drilled and completed on the Waste Isolation Pilot Plant (WIPP) site during February to September 1995. An eighth hole, H-19b1, was drilled but had to be abandoned before the target depth was reached because of adverse hole conditions. The geologic units penetrated at the H-19 location include surficial deposits of Holocene age, rocks from the Dockum Group of Upper Triassic age, the Dewey Lake Redbeds, and Rustler Formation of the Permian age. The Rustler Formation has been further divided into five informal members which include the Forty-niner Member, Magenta Member, Tamarisk Member, Culebra Dolomite Member, and an unnamed lower member. The Rustler Formation, particularly the Culebra Dolomite Member, is considered critical for hydrologic site characterization. The Culebra is the most transmissive saturated unit above the WIPP repository and, as such, is considered to be the most likely pathway for radionuclide transport to the accessible environment in the unlikely event the repository is breached. Seven cores from the Culebra were recovered during drilling activities at the H-19 hydropad and detailed descriptions of these cores were made. On the basis of geologic descriptions, four hydrostratigraphic units were identified in the Culebra cores and were correlated with the mapping units from the WFP air intake shaft. The entire length of H-19b1 was cored and was described in detail. During coring of H-19b1, moisture was encountered in the upper part of the Dewey Lake Redbeds. A 41-ft-thick section of this core was selected for detailed description to qualify the geologic conditions related to perched water in the upper Dewey Lake. In addition to cuttings and core, a suite of geophysical logs run on the drillholes was used to identify and correlate different lithologies among the seven wells.

</dc:description>

<dc:date>2007-04-23</dc:date>

<dc:identifier>www.osti.gov/servlets/purl/719-yNIAWK/webviewable/</dc:identifier>

<dc:format>application/pdf</dc:format>

</oai_dc:dc>

</metadata>

</record>

</GetRecord>

</OAI-PMH>

By entering the unique identifier ([oai:osti.gov:719](http://www.osti.gov/servlets/purl/719-yNIAWK/webviewable/)), the harvester can retrieve an individual record.

Additional information on the OAI may be found at the [Open Archives Initiative](http://www.openarchives.org/) website.