

STI Announcement Web Services

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About

OSTI's STI Announcement Web Services provide an easy to use mechanism to submit new announcement notices, edit existing announcement notices, and retrieve metadata for Scientific and Technical Information (STI) announcement notices. A user manipulates a record by performing HTTP operations on the web service URL and providing XML metadata; POST requests to create and modify records, and GET requests to view records.

Getting Started

Each STI Announcement Web Service is available from the URLs listed below.

STI Announcement Web Service Name	Base URL
DOE 241.1 Web Service	https://www.osti.gov/elink/2411api
DOE 241.6 Web Service	https://www.osti.gov/elink/2416api

All requests require authentication through an active E-Link user. For details or to request access to E-Link and obtain an active account, please visit <https://www.osti.gov/elink/register.jsp>.

Using the STI Announcement Web Services

Authentication

Each request requires authentication through an active E-Link user. OSTI's STI Announcement Web Services support HTTP Basic authentication over SSL. With this method, the client connects using HTTPS URLs (e.g., [https://www.osti.gov/elink/2411api/...](https://www.osti.gov/elink/2411api/)). The POST and GET verb commands will pass along the standard Authentication HTTP header (base64 encoding).

Java code example:

```
// provide encoded USERNAME and PASSWORD

String auth = encoder.encode((USERNAME + ":" + PASSWORD).getBytes());
c.setRequestProperty("Authorization", "Basic " + auth);

/** write out the metadata stream */

c.setDoOutput(true);
out = new DataOutputStream(c.getOutputStream());
String s = "<records><PUT YOUR DATA HERE></records>"; // data for the request
generated in an XML-compliant string
writeString( out, s);
out.close(); out = null;
c.connect();

/** get the response and appropriate response information */

/** this example does not check for errors, can also add logic based on response
code values, see GET example */

int responseCode = c.getResponseCode();
in = new InputStreamReader(c.getInputStream());
br = new BufferedReader(in);
StringWriter writer = new StringWriter();
char[] buffer = new char[1024];
int n=0;
```

```
while ((n=br.read(buffer))!=-1) {  
writer.write(buffer, 0, n); }  
  
writer.close();
```

Creating and Modifying Records

If authentication is successful, the input body of the request is read as an XML document, parsed, and submitted appropriately (see specific STI Announcement Web Services for details). HTML status codes (200=OK, 401=Unauthorized, 500=System error, etc.) and a XML response, which includes certain metadata fields, are returned at the end of processing each request. Additional authentication steps may be taken prior to editing a metadata record. See the specific web service you are interested in for further information.

NOTE: If an OSTI ID is supplied, it is assumed to be a request to modify an existing record as opposed to a new submittal.

Java code example:

```
//CREATE & SEND POST REQUEST & GET THE RESPONSE  
  
HttpURLConnection c = null;  
DataOutputStream out = null;  
InputStreamReader in = null;  
BufferedReader br = null;  
  
try {  
  
    /** build the URL to connect to */  
  
    StringBuilder url = new StringBuilder();  
    url.append("https://www.osti.gov/elink/2411api");  
    URL u = new URL(url.toString());  
  
    c = (HttpURLConnection) u.openConnection();  
    c.setRequestMethod("POST");  
    c.setRequestProperty("Accept", "application/xml");  
    c.setRequestProperty("Content-Type", "application/xml;charset=UTF-8");  
  
    /** add login authorization */  
  
    sun.misc.BASE64Encoder encoder = new sun.misc.BASE64Encoder();
```

Requesting Metadata

Metadata can be retrieved for any existing record using a GET request and supplying the osti_id argument on the command line. Authentication is required and is handled in the same fashion as a Create/Modify command. Metadata is returned as XML.

Java code example:

```
//Build the URL to connect to

String url = new StringBuilder();
url.append("https://www.osti.gov/elink/2416api");
url.append("?osti_id=1000000");
URL u = new URL(url.toString());

URLConnection c = (URLConnection) u.openConnection();
c.setRequestMethod("GET");
c.setRequestProperty("Accept", "application/xml");
c.setRequestProperty("Content-Type", "application/xml; charset=UTF-8");

/** add login authorization */

sun.misc.BASE64Encoder encoder = new sun.misc.BASE64Encoder();
String auth = encoder.encode(("USERNAME" + ":" + "PASSWORD").getBytes());
c.setRequestProperty("Authorization", "Basic " + auth);
c.connect();

/** get the response and appropriate response information */

int responseCode = c.getResponseCode();
if (responseCode >= 400)
    in = new InputStreamReader(c.getErrorStream());
else
    in = new InputStreamReader(c.getInputStream());
br = new BufferedReader(in);

StringWriter writer = new StringWriter();
char[] buffer = new char[1024];
int n=0;

while ((n=br.read(buffer)) != -1) {
    writer.write(buffer, 0, n);
}

writer.close();
```

DOE 241.1 STI Announcement Web Service Specifics

About DOE 241.1

Announcement Notice 241.1 provides the Office of Scientific and Technical Information (OSTI) information required to appropriately identify, process, and/or announce and disseminate the results of work funded by the U.S. Department of Energy (DOE) or performed in DOE facilities. DOE, DOE Major Site/Facility Management contractors, multiprogram laboratories, single program laboratories, and other DOE facilities should complete the entire notice and submit it either with the URL for the site-maintained copy of the STI product or as a file upload with the STI product to OSTI for processing in accordance with the requirements of DOE Order 241.1B, Scientific and Technical Information Management. Reporting that may be required under the terms of the contract but which is not appropriate for transmittal to OSTI includes contract proposals, funding status, routine construction or inventory reports, and similar products. Instructions for announcement of U.S. Department of Energy (DOE) publicly available scientific research datasets can be found at <https://www.osti.gov/elink/F2411instruct.jsp?printerfriendly=true>.

DOE 241.1 Required and Optional Fields

The following is a list of the required and optional fields for the DOE 241.1 STI Announcement Web Service. Required fields are designated by an asterisk (*). The OSTI ID is a required field for all Modify requests.

DOE 241.1 Required and Optional Fields		
Field Name	XML Field	Additional Information
OSTI ID+	<osti_id>	
Site Code*	<site_input_code>	Determined by the authenticated E-Link user.
Product Type*	<product_type/>	Allowed values are "TR", "CO", "JA", "AR", "B", "P", "TD", or "PD". See table below for details.
STI Product Title*	<title/>	
Author(s)*	<author/>	
Author E-mail Address(es)	<author_emails/>	
Related Resource	<related_resource/>	
Report/Product Number(s)*	<report_nos/>	
DOE Contract Number(s)*	<doe_contract_nos/>	

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R&D Project ID(s)	<rd_project_ids/>	
Work Proposal Number	<work_proposal_number/>	
Work Proposal Revision Number	<proposal_revision_number/>	
Work Authorization Number	<work_authorization_number/>	
Work Authorization Revision Number	<authorization_revision_number/>	
Other Identifying Numbers(s)	<other_identifying_nos/>	
Originating Research Organization*	<originating_research_org/>	
Publication Date	<publication_date/>	Formats: * mm/dd/yyyy (required if Product Type = Technical Report (TR)) * YYYY * yyyy MON
Language	<language/>	Up to 75 characters; Language from authority; eg. English
Country of Origin	<country_publication_code/>	2 character code from authority, e.g., US
Sponsoring Organization(s)*	<sponsor_org/>	Include Non-DOE sponsors after the DOE Program Offices
Publisher Name and Location	<publisher_information/>	Required if product type = Book (B) and no media provided (Medium Code = No Full Text (X))
Availability	<availability/>	
Subject Categories	<subject_category_code/>	List primary first. Authority values must be used. See listing below for details.
Keywords	<keywords/>	
Description/Abstract	<description/>	4000 character limit
Related Document Information	<related_doc_info/>	
Released by Name*	<released_by/>	
Released Date*	<released_date/>	mm/dd/yyyy
Released by Email*	<released_by_email/>	
Released by Phone*	<released_by_phone/>	

* denotes a required field

Attributes of <access_limitation/> if Access Limitation is OpenNet (OPN)

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OpenNet Accession Number	opn_accession_no	Required if Access Limitation equals OpenNet (OPN)
OpenNet Document Location	opn_doc_location	If Access Limitation equals OpenNet (OPN)
OpenNet Field Office Acronym	opn_fieldoffice_acronym	If Access Limitation equals OpenNet (OPN)
OpenNet Declassification Status	opn_declass_status	Required if Access Limitation equals OpenNet (OPN) Allowed values: "D", "S", "N", or "U".
OpenNet Declassification Date (mm/dd/yyyy)	opn_declass_date	Required if Access Limitation equals OpenNet (OPN) and opn_declass_status = 'D' or 'S'
OpenNet Document Categories	opennet_document_categories	If Access Limitation equals OpenNet (OPN)

Attributes of <access_limitation/> if Access Limitation is Protected Data (OUOPROT)

Protected Data CRADA	protected_data_crada	Required if Access Limitation equals Protected Data (OUOPROT) Allowed values: "Y" or "N"
Protected Data Other	protected_data_desc	Required if Access Limitation equals Protected Data (OUOPROT) and protected_data_crada = 'N'
Access Limitation Release Date (mm/dd/yyyy)	access_limitation_rel_date	Required if Access Limitation equals Protected Data (OUOPROT)
PDOUO Exemption Number	exemption_number	Required if Access Limitation equals Protected Data (OUOPROT)

Attributes of <access_limitation/> if Access Limitation is Program Determined Official Use Only (OUOPDOUO)

Access Limitation Release Date (mm/dd/yyyy)	access_limitation_rel_date	Required if Access Limitation equals Program Determined Official Use Only (OUOPDOUO)
PDOUO Exemption Number	exemption_number	Required if Access Limitation equals Program Determined Official Use Only (OUOPDOUO)

If product_type = Journal Article (JA)

Journal Type	<journal_type/>	Allowed values: Announcement Citation Only (AC) or Fulltext (FT)
Journal Name	<journal_name/>	Required if Product Type = Journal Article (JA) and no DOI or media provided
Journal Volume	<journal_volume/>	
Journal Issue	<journal_issue/>	
Journal Serial ID	<journal_serial_id/>	e.g., ISSN or CODEN

If product_type is Patent (P)

Patent Assignee	<patent_assignee/>	
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Product Media/Format and Transmission and Location

Medium*	<medium_code/>	Allowed values: Electronic document (ED), Audiovisual material (AV), or No full-text (X).
File Format	<file_format/>	Allowed values: "PDFN", "PDFI", "HTML", "PPT", "WMA", "WMV", "MP2", "MP3", "MP4", "MPEG", "ASF", "AVI", "ACV", "DV", "FLV", "MOV", "RM", "WAV"
Audio/Video Content	<av_content/>	Allowed Values: "Audio" (for audio only), "Video" (for both video and audio), or "Video-NS" (for video without sound/audio)
Size of STI Product	<product_size/>	
Format Other	<format_other/>	
Transmission Mode	<transmission_mode/>	Allowed Values "Upload" or "FTP". FTP option is reserved for AV files only
File Name	<file_name/>	
URL where dataset is posted for access*	<site_url/>	Location must be specific to STI Product. Only available if Access Limitation equals Unlimited Announcement (UNL) or OpenNet (OPN)

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Digital Object Identifier (DOI)	<doi/>	Must be a valid DOI value
Access/Distribution Limitation	<access_limitation/>	See table below for details
Access/Distribution Limitation Other Information	<access_limitation_other/>	Note: This is not a distribution/access limitation. Specify other criteria that would necessitate limiting access or restrict announcement of this product

* denotes a required field

If Medium is Electronic Document (ED)

File Format	<file_format/>	Allowed values: "PDFN", "PDFI", "HTML", "PPT"
-------------	----------------	-----------------------------------------------

If Medium is Audio/Visual (AV)

File Format	<file_format/>	Allowed values: "WMA", "WMV", "MP2", "MP3", "MP4", "MPEG", "ASF", "AVI", "ACV", "DV", "FLV", "MOV", "RM", "WAV"
Audio/Video Content	<av_content/>	Allowed Values: "Audio" (for audio only), "Video" (for both video and audio), or "Video-NS" (for video without sound/audio)

* Designates a required field

+ Required for a Modify request

DOE 241.1 Specifics and Allowed Field Values

Product Type should be one of the following code values

Code	Description
TR	Technical/Workshop Report
CO	Conference/Event Paper or Presentation/Proceedings
JA	Journal Article
PD	Program Document
AR	S&T Accomplishment Report
B	Book/Monograph/Fact Sheet
P	Patent
TD	Thesis/Dissertation

Medium should be one of the following code values

Code	Description
AV	Audio Visual
CM	Computer Medium
ED	Electronic Document
X	Announcement Notice Only

Access/Distribution Limitation(s) should be one of the following code values

Code	Description
UNL	Unlimited Announcement
OPN	OpenNet
CPY	Copyright Material w. Restrictions
OUO	Official Use Only
OUOECI	Export Controlled Information
OUOSSI	Security Sensitive Information
OUOPROT	Protected Data – CRADA or Other
OUOPAT	Patent Pending
OUOLRD	Limited Rights Data (Proprietary/Trade Secret)

OUOAT	Applied Technology
OUOPDOUO	Program Determined Official Use Only
NNPI	Naval Nuclear Propulsion Info

The following fields allow for multiple entries. Multiple entries must be separated by a semicolon and a space

- Author(s)
- Author E-mail Address(es)
- Report/Product Number(s)
- DOE Contract Number(s)
- Other Identifying Number(s)
- Originating Research Organization
- Sponsoring Organizations
- Language
- Sponsoring Organization(s)
- Subject Categories
- Keywords

Authority values are available at <https://www.osti.gov/mlink/authorities.jsp> for the following fields

- Country of Publication (Authority code values must be used; will be defaulted to "US")
- Originating Research Organization
- Language
- Sponsoring Organization(s)
- Subject Categories (Authority values must be used)

DOE 241.1 Example XML Submittal

```

- <record>
  <new />
  <site_input_code>PNNL</site_input_code>
  <product_type>TR</product_type>
  <title>Document Reconstruction: Summary Final Report</title>
  <author>Test2, R.A.</author>
  <report_nos>PNNL-XXXX</report_nos>
  <doe_contract_nos>XX06-7XXXXXXXX</doe_contract_nos>
  <other_identifying_nos>214510</other_identifying_nos>
  <originating_research_org>Pacific Northwest National Laboratory (PNNL)</originating_research_org>
  <publication_date>10/26/2005</publication_date>
  <language>English</language>
  <country_publication_code>US</country_publication_code>
  <sponsor_org>USDOE</sponsor_org>
  <description>This describes work relating to document reconstruction.</description>
  <medium_code>ED</medium_code>
- <access_limitation>
  <ouopdoo exemption_number="7" />
</access_limitation>
  <access_limitation_other>other accss lim</access_limitation_other>
  <released_by>Nancy Doran</released_by>
  <released_date>10/30/2008</released_date>
  <released_by_email>Test.User@pnl.gov</released_by_email>
  <released_by_phone>(555)555-5555</released_by_phone>
</record>

```

DOE 241.1 Example XML Response

```

<?xml version="1.0" encoding="UTF-8" ?>
- <records>
- <record>
  <osti_id>10XXXXXX</osti_id>
  <product_nos>PNNL-XXXXXX</product_nos>
  <title>Document Reconstruction: Summary Final Report</title>
  <contract_nos>XX06-XXXXXXXXXX</contract_nos>
  <status>SUCCESS</status>
  <status_message />
</record>
</records>

```

DOE 241.6 STI Announcement Web Service Specifics

About DOE 241.6

Announcement Notice (AN) 241.6 provides to the U.S. Department of Energy (DOE) Office of Scientific and Technical Information (OSTI) metadata needed to identify/announce publicly available datasets resulting from work funded by the DOE or performed in DOE facilities. The information, submitted through the OSTI [Data ID Service](#), allows OSTI to assign Digital Object Identifiers (DOIs) to datasets and register them with [DataCite](#) as a service to researchers. This value-added step facilitates visibility, helps ensure long-term preservation, and supports better linkage between DOE's published research results and the underlying data. The DOI assigned to each announced dataset is included in the XML response to each successful submittal.

Instructions for announcement of U.S. Department of Energy (DOE) publicly available scientific research datasets can be found at

<https://www.osti.gov/elink/F2416instruct.jsp?printerfriendly=true>.

DOE 241.6 Required and Optional Fields

The following is a list of the required and optional fields for the DOE 241.6 STI Announcement Web Service. Required fields are designated by an asterisk (*). The OSTI ID is a required field for all Modify requests.

Field Name	XML Field
OSTI ID+	<osti_id>
Dataset Type*	<dataset_type/>

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Dataset Title*	<title/>
Creator(s)/Principal Investigator(s)*	<creators/>
Creator(s)/PI E-mail Address(es)	<creators_emails/>
Related Resource	<related_resource/>
Dataset Product Number(s)*	<product_nos/>
DOE Contract Number(s)*	<contract_nos/>
Other Identifying Numbers(s)	<other_identifying_nos/>
Originating Research Organization*	<originating_research_org/>
Availability	<availability/>
Contributor Organizations	<contributor_organizations/>
Publication Date (mm/dd/yyyy)	<publication_date/>
Language	<language/>
Country of Publication	<country/>
Sponsoring Organization(s)	<sponsor_org/>
Subject Categories	<subject_categories_code/>
Keywords	<keywords/>
Description/Abstract	<description/>
URL where dataset is posted for access*	<site_url/>
DOI	<doi/>
Dataset's File Extension	<file_extension/>
Software needed to utilize dataset	<software_needed/>
Dataset Size	<dataset_size/>
Contact Name and Position*	<contact_name/>
Contact Organization*	<contact_org/>
Contact E-mail*	<contact_email/>
Contact Phone	<contact_phone/>

* Designates a required field
 + Required for a Modify request

DOE 241.6 Specifics and Allowed Field Values

The Site Code is determined by the authenticated E-Link user.

Dataset Type should be one of the following code values

Code	Description
AS	Animations/Simulations
GD	Genome Data
IM	Interactive Data Map(s)
ND	Numeric Data
IP	Still Images/Photos

The following fields allow for multiple entries. Multiple entries must be separated by a Semicolon and a space

- Creator(s)/Principal Investigator(s)
- Creator(s)/PI E-mail Address(es)
- Dataset Product Number(s)
- DOE Contract Number(s)
- Other Identifying Number(s)
- Originating Research Organization
- Contributor Organizations
- Language
- Sponsoring Organization(s)
- Subject Categories
- Keywords

Authority values are available at <https://www.osti.gov/mlink/authorities.jsp> for the following fields

- Country of Publication (Authority code values must be used; will be defaulted to "US")
- Originating Research Organization
- Language
- Sponsoring Organization(s)
- Subject Categories (Authority values must be used)

DOE 241.6 Example XML Submittal

```

<?xml version="1.0" encoding="UTF-8" ?>
<!--      Document      : DOE2416test.xml
      Created on : June 1, 2011, 8:21 AM
      Author      : vowell1
      Description:
              To test acquisition api.
-->
- <records>
- <record>
  <osti_id>0123456</osti_id>
  <dataset_type>Numeric Data</dataset_type>
  <title>This is a test record</title>
  <creators>Author, First; Author, Second</creators>
  <creators_emails>author1@example.com; author2@example.com</creators_emails>
  <related_resource />
  <product_nos>RPT-0123456</product_nos>
  <contract_nos>DOE-0123456</contract_nos>
  <other_identifying_nos />
  <originating_research_org>ORNL</originating_research_org>
  <availability>ORNL</availability>
  <contributor_organizations>OSTI</contributor_organizations>
  <publication_date>01/01/2011</publication_date>
  <language>English</language>
  <country>United States</country>
  <sponsor_org>USDOE Office of Science (SC)</sponsor_org>
  <subject_categories_code>25 Energy Storage</subject_categories_code>
  <keywords>Energy; Test; Storage</keywords>
  <description>This is a test record.</description>
  <site_url>http://www.osti.gov/dataset_example</site_url>
  <doi />
  <file_extension>html</file_extension>
  <software_needed>none</software_needed>
  <dataset_size>10G</dataset_size>
  <contact_name>John Doe</contact_name>
  <contact_org>OSTI</contact_org>
  <contact_email>john_doe@osti.gov</contact_email>
  <contact_phone>865-576-1000</contact_phone>
</record>
</records>

```


DOE 241.6 Example XML Response

```
<?xml version="1.0" encoding="UTF-8" ?>
<!-- Document : DOE2416test.xml
Created on : June 1, 2011, 8:21 AM
Author : vowell1
Description:
To test acquisition api.
-->
- <records>
- <record>
  <osti_id>0123456</osti_id>
  <product_nos>RPT-0123456</product_nos>
  <title>This is a test announcement notice</title>
  <contract_nos>DOE-0123456</contract_nos>
  <doi>http://dx.doi.org/10.5072/0123456</doi>
</record>
</records>
```