Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE)

Browse/Generate User Guide

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Prepared For:
US Army Corps of Engineers
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### Revision History

<table>
<thead>
<tr>
<th>Description</th>
<th>Date</th>
<th>Version</th>
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<tr>
<td>Initial Version</td>
<td>2/16/2016</td>
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</tr>
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</tr>
</tbody>
</table>
Table of Contents

1 Introduction ........................................................................................................... 4

2 Getting Started ...................................................................................................... 5
  2.1 Login .................................................................................................................. 5
  2.2 Launching the Application .................................................................................. 6

3 How to use The Browse/Generate Tool ............................................................... 7
  3.1 View a Model ..................................................................................................... 7
    3.1.2 Conduct a Search ................................................................................................. 8
    3.1.1 Folder Grouping .................................................................................................... 8
    3.1.1 Sorting Folders or Entities Alphabetically .............................................................. 9
  3.2 How to Use Alternate Names ........................................................................... 10
    3.2.1 Exporting Alternate Names List ............................................................................10
    3.2.2 Importing Alternate Names List ............................................................................12
    3.2.3 Generate Alternate Names Template ................................................................... 14
    3.2.2 Delete ANL ...........................................................................................................17
  3.3 Generate a Document ...................................................................................... 17
    3.3.2 Export Dialog Box ..............................................................................................20

4 Appendix .............................................................................................................. 25
  4.1 Refining the Search Parameters ........................................................................ 26
  4.2 Advanced Search Options ................................................................................. 27
  4.3 Export Dialog Box Parameters ........................................................................... 28
1 Introduction
The Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE) Online web site is a resource that provides support to implementers of SDSFIE standards, particularly the SDSFIE Vector (SDSFIE-V). According to Installation Geographic Information & Services (IGI&S) Governance Group (IGG) policy, each Component may adapt the SDSFIE-V Gold model according to currently in-force implementation guidance to form new models called “Headquarters” adaptations. Additionally, some Components allow adaptation of their Headquarters adaptation to form new models called “subordinate” adaptations. According to Component policy, some or all of these models are stored on the SDSFIE Online web site in a database called the SDSFIE Registry. The SDSFIE Registry contains models of SDSFIE from all Components, and Gold versions since 2.61.

The SDSFIE Browse/Generate tool allows you, as a user of SDSFIE Online, to examine (“browse”) a single model at a time and then to publish (“generate”) a physical or logical data model representation of that model.

The SDSFIE Online Data Dictionary tool allows you to search for elements in the Registry across more than one of the models in the SDSFIE Registry.

The SDSFIE Model Builder tool allows you to create your own draft models that are adaptations of another model (which is dependent on Component policy). These draft models are also visible, in the SDSFIE Browse/Generate tool, to you as the owner of the model and to an approval authority (which also varies by Component). These draft models are not visible to you or anyone else via the Data Dictionary tool.

The SDSFIE Migration Workflow allows you to migrate an implementation that is at least partially compliant with a registered model to an implementation of a next version of the registered model (for example, an adaptation of USACE Headquarters 4.0 to an adaptation of USACE Headquarters 4.1).
2 Getting Started
In order to access the Browse/Generate tool, you will need to navigate to the SDSFIE Online website home page.

![Figure 1 Home Page](image)

2.1 Login
If you have previously registered for access to the SDSFIE Online website, you should login by:

Entering your: **Username**
Entering your: **Password**
Then, select **Login** to advance to the next screen.

Site Registration
If you have not previously registered for access to the SDSFIE Online website, then you will need to register by selecting ‘Register’ to access the registration page.

Forgotten Password Forgotten Username
To retrieve a forgotten password, you should select ‘Reset My Password’.
To recover a forgotten username, you should select ‘Recover My Username’.
2.2 Launching the Application

Once the login process has been completed, navigate to the ‘Models & Workflows’ dropdown menu and select Browse Generate. You will then be automatically directed to the Browse/Generate tool interface.
3 How to use The Browse/Generate Tool

The Browse/Generate Tool allows you to individually search and view a draft model, which is either an approved model, or a draft model that you own. Additionally, you are able to generate a physical model (the currently available representation is an Esri XML Workspace document that can be used to create a geodatabase) or a logical model (the currently available representation is an Excel spreadsheet).

The following sections provide a walk-through of how to use the Browse/Generate tool to view a model, approved or draft, and generate a physical or logical model.

3.1 View a Model

In order to view a model you must first select whether the status of the model is approved or a draft. All users will have an ‘Approved’ and ‘My Drafts’ radio button. [See Figure 4, on the following page.] If you are a Component Manager you will be able to view all of the draft models within your Component. In that case, a third radio button, ‘Other Drafts’, will be displayed along with an owner drop-down box.

After you have selected ‘Approved’, ‘My Drafts’ or ‘Other Drafts’, you will choose your data model from the provided drop down menu by clicking on the component and then clicking on the model.

![Figure 4: The Browse/Generate Page displaying Data Model drop down](image-url)
3.1.2 Conduct a Search

Once the approval status and data model have been selected, you can begin conducting a search for model elements by entering search terms in the “Search;” box. The Browse/Generate tool has an advanced search option (circled in yellow below) which allows you to set specific search parameters (see list in Appendix 4.1). One or more parameters from four categories may be selected and deselected by clicking on them. For more detail on Advanced Search Options, see Appendix 4.2. Steps 1-4 in Figure 5 (below) provide instructions for how to conduct an advanced search. Only those results that satisfy both the search terms and all parameters will be displayed. For example, if you select ‘Approved’ as the status category, your results will only include model elements that have that approval status.

3.1.3 Folder Grouping

After conducting a search, you may wish to group the results into preexisting folders that have been specified as a part of an Adaptation to provide categorical organization of the entities. This display option is accessed by clicking the folder button (circled in red below) to toggle on or off the folder grouping.

By default, folders are presented in alphabetical order, as are entities within folders.
3.1.3.1 Sorting Folders or Entities Alphabetically

Folders and entities may be sorted alphabetically. This feature allows you to reverse the order, alphabetically, in which the results are displayed. If folder grouping is toggled on, then the alphabetical sorting operates on the folders. If folder grouping is toggled off, then the alphabetical sorting operates on the entities. Click on the Alphabetic Sort button (circled in red below) to reverse the alphabetical sort order of entities or folders.

By clicking the ‘Remove Folder Grouping’ button, the folder grouping will be removed from the search results.

By clicking the ‘Add Folder Grouping’ button, the folder grouping will be applied to the search results.
3.2 How to Use Alternate Names

3.2.1 Exporting Alternate Names List

When a model is selected that has alternate names included in it, the Alternate Names List (ANL) is automatically populated, and the valid actions become active.
The four buttons that will appear will be ‘Import ANL’, ‘Export ANL’, ‘Delete ANL’, and ‘Generate ANL Template’. These buttons represent different actions that you can perform with Alternate Names Lists.

If you wish to view what alternate names are included in your model, the ‘Export ANL’ button will allow you to export it to an Excel spreadsheet. Every Entity, Attribute, Enumeration, and Enumerant that has an alternate name will be exported. Select ‘Export ANL’ and a dialog box will appear.
After the file has downloaded, open it and you should see only those elements that have an alternate name under the Alternate Name column.

If you wish to add alternate names to elements in your model, fill out a row with the element information and create an alternate name under the Alternate Name column. The format of this spreadsheet is identical to that of the one used to import alternate names; you can add them in this file and use the ‘Import ANL’ function.

3.2.2 Importing Alternate Names List

Save the file that you just made changes to and navigate back to the Browse/Generate page. Select the ‘Import ANL’ button. A confirmation dialog box is opened which asks if you would like to delete the Alternate Names List that is already in your model. Each user is permitted only one ANL per model.
Then, follow the directions on the Import Alternate Names Template dialog box to import the new ANL.

![Figure 15: Import ANL Template](image_url)

Refresh the page to view changes. The Alternate Name dropdown will show the new ANL with your component name.
Navigate to the Entity that you created a new alternate name for. To view alternate names you must select the drop down for the Alternate Name header at the entity.

You also can go to the Attributes grid and select the arrow next the Model Name column heading, select Alternate Names from the drop down, and a new Alternate Names column will be visible.

### 3.2.3 Generate Alternate Names Template
If you wish to create several alternate names, you can efficiently do this through the 'Generate ANL Template' function. Select the checkboxes for the feature types for which you want to create alternate names. Note that the ANL Template will have a row for each of the elements in the feature types that you have selected. **If you have an existing ANL, be sure you select the feature types in that existing ANL that have alternate names that you want to be in the new ANL so that the existing alternate names will not be deleted. Also, make sure that you only check the “W/O Alt Name” box if you want to make an entirely new ANL.**

![Figure 19: Selecting Which Feature Types to Export](image)

Select ‘Generate ANL Template’ and an Excel file will be exported. Open the Excel file and you can view all of the Entities and contained Attributes, Enumerants, and Enumerations that you selected to be exported.

![Figure 10: Export Alternate Name Template dialog box](image)

When you open the Excel file, it will look like Figure 21.
To add alternate names, create the alternate name under the Alternate Name column. After this, delete the pound sign from the column A. The pound sign tells the script to ignore those rows that do not have an alternate name when being imported, or should otherwise be ignored.

When you have finished entering all alternate names, Save the Excel file. Navigate back to Browse/Generate and import your new ANL template using the dialog box.

Follow the same steps above to view the alternate names and ensure they were imported correctly.
3.2.2 Delete ANL

If you wish to remove an entire ANL, select the ANL from the dropdown list, and press the “Delete ANL” button.

3.3 Generate a Document

To generate an ESRI XML Workspace Document, Metadata Document, or an Excel Document, select those entities from the search results or the data model that you wish to export. This is done by clicking the checkboxes of one or more entities.

3.3.1 Physical Model

Once you have selected your entities, click on the ‘Generate’ button and hover over the ‘Physical Model’ button then click the ‘Esri XML Workspace Document (Geodatabase XML)’ menu item.
Click the checkboxes of the entities that you desire to select, then click Generate, hover over Physical Model, and click ESRI XML Workspace Document (Geodatabase XML)

3.3.1.1 Large Model Generation Window Form

If the user has selected a large number of entities for the data model selected in the data model dropdown so that multiple files are required to be created to contain all the model information, the “Large Model Generation Form” will display. The user will have the ability to download already generated files containing the data model’s information or generate an XML file of the selected entities.
Click on the “Generate” button to display the XML Export Dialog Form.

### 3.3.1.2 XML Export Dialog Form

Each dialog box has its own set of parameters in which you can manipulate to fit your specific exporting needs (See Appendix 4.2).

Once you have completed your parameters, click the export button. The reset button will clear any entries/changes you have made to the dialog box.
3.3.2 Logical Model
Once you have selected your entities, click on the 'Generate' button and hover over the 'Logical Model' then click either the 'Excel Entity Sheet(s)' item or the 'Excel Element Sheet(s)' item.
Click the checkboxes of the entities that you desire to select, then click Generate, hover over Logical Model and click either the Excel Entity Sheet(s) or the Excel Element Sheet(s)

3.3.2.1 Excel Entity Sheet Export Dialog Form

The Entity Sheet dialog box has its own set of parameters in which you can manipulate to fit your specific exporting needs (See Appendix 4.2).

Once you have completed your parameters, click the export button. The reset button will clear any entries/changes you have made to the dialog box.
3.3.2.2 Excel Element Sheet Export Dialog Form
The Element Sheet Dialog will display the progress of the system as it generates the requested element sheets.

3.3.3 Metadata Model
Once you have selected your entities, click on the ‘Generate’ button and hover over the ‘Metadata Model’ then click either the ‘Esri Metadata XML Document (Full Metadata SML)’ item or the ‘Esri EAInfo XML Document (EAInformation Only XML)’ item.
Click the checkboxes of the entities that you desire to select, then click Generate, hover over Metadata Model and click either the Esri Metadata XML Document or the Esri EAInfo XML Document.

3.3.3.1 Metadata Export Dialog Form

Each dialog box has its own set of parameters in which you can manipulate to fit your specific exporting needs (See Appendix 4.2).

Once you have completed your parameters, click the export button. The reset button will clear any entries/changes you have made to the dialog box.
3.4 Business Requirements and Requirements Documents

Navigate to the Entity from which you want to view the business requirements and requirements documents.
Figure 15: No assigned Business Requirements or Requirements Documents to Entity
4 Appendix

4.1 Refining the Search Parameters

The categories in which you can refine your search:

- **Item Type(s)**
  - Association
  - Attribute
  - Entity
  - Enumerant
  - Enumeration
• **Item Property(ies)**
  o Alias Name
  o Definition
  o Description
  o Justification
  o Model Name
  o Note

• **Item Status**
  o Active
  o Retired
  o Revised
  o Superseded

• **Approval Status**
  o Approve
  o Deprecated
  o Draft
  o Profiled
  o Rejected
  o Submitted
  o As-of Date

### 4.2 Advanced Search Options

**Search Terms, Phrases, and Operators**

To match text strings in the specified Item Type(s) and Property(s) (see Figure 4), enter one or more search terms separated by spaces. This will return results that contain BOTH terms; thus an ‘AND’ operator is implicitly used (automatically inserted, but transparent to the user).

An ‘OR’ operator may be entered to return results with EITHER or BOTH terms.
Place double quotes around a phrase (two or more consecutive terms separated by space) to return matches of that exact phrase, e.g., “environmental restoration”.

Allowed characters are letters, numbers, spaces, and double quotes. All other characters (e.g., [ ] \ ^ $ . ! ? * ( ) { } % , ; > < @ # & ' - +) are removed from the query submitted to the API.

In the Browse/Generate tool, the following 5 Properties (fields) of each entity is searched for matches: Model Name, Alias Name, Definition, Description, and Note.

Here are some examples of the queries that are issued, given different entries into the “Search:” box:

<table>
<thead>
<tr>
<th>Search Terms, and Optional Operators Entered in the “Search:” Box</th>
<th>Query Issued to API</th>
<th>Relative Number of Results</th>
<th>Description of Matched Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>above OR ground</td>
<td>“above” OR “ground”</td>
<td>Most</td>
<td>One occurrence of EITHER or BOTH of the words “above” and “ground” exist somewhere in the 5 Properties (fields) of the matched entities.</td>
</tr>
<tr>
<td>above ground</td>
<td>“above” AND “ground”</td>
<td>Some</td>
<td>One occurrence of BOTH of the words “above” and “ground” exist somewhere in the 5 Properties of the matched entities.</td>
</tr>
<tr>
<td>“above ground”</td>
<td>“above ground”</td>
<td>Few</td>
<td>The exact text string “above ground” exists somewhere in the 5 Properties of the matched entities.</td>
</tr>
</tbody>
</table>

4.3 Export Dialog Box Parameters

Generate XML Workspace Document

When generating an XML Workspace document, the target physical data model is an Esri Geodatabase. In a Geodatabase, entities with geometry (called feature classes) can only exist as a single geometry. In SDSFIE, logical data model entities have a default geometry and some number of allowed geometries. It is essential to output feature classes with the correct geometry.
Furthermore, no two feature classes in an ESRI geodatabase can have the same name, meaning that if we are to generate multiple feature classes, one per geometry type, there must be a way to differentiate between the feature classes. The Geometry Options allow us to configure our SDSFIE entities the way we want them to end up in the Esri geodatabase.

The following are the parameters in the Generate XML Dialog box (Figure 12):

**Geometry Options**

- **Generate all Permissible Geometries** - this means that the system will generate an XML Workspace Document that contains one feature class per geometry for all entities being generated.

- **Add Extension to the Default Geometry** - this option is only enabled when the previous option is selected, and it adds an extension to the model name of the feature class that has the entity’s default geometry.

- **Model Name Extensions** - the model name extensions create a unique name for each feature class being generated. This is done by specifying a name extension that is added to the model name.
  - **Point** - the extension for a point geometry; by default this is “.P”.
  - **Line** - the extension for a line geometry; by default this is “.L”.
  - **Area** - the extension for an area geometry; by default this is “.A”.

**Field Name Options**

In an Esri geodatabase, it is possible to provide custom naming for certain attributes that are managed by ArcGIS.

- **OID Field Name**
  - Every entity has an OID that uniquely identifies it within the feature class or table. The default OID field name "OBJECTID", can be overridden by entering a different name in the "OID Field Name" textbox.

- **Global ID Field Name**
  - In a geodatabase, a Global ID field can be created that will contain a globally unique identifier (GUID) value that is managed by ArcGIS. If you want this field to exist in your geodatabase, then you should click the "Use a Global ID" checkbox. The default Global ID field name, "GlobalID", can be overridden by entering a different name in the "Global ID Field Name" textbox.

- **Shape Field Name**
The SHAPE field is where the geometry type information is stored for features. The default SHAPE field name, "SHAPE ", can be overridden by entering a different name in the "SHAPE Field Name" textbox.

• Shape Length Field Name
  o If you create a line feature class in a geodatabase, an additional field is automatically added to the feature class to record the length of the line feature. The default SHAPE Length field name, "SHAPE_Length", can be overridden by entering a different name in the "SHAPE Length Field Name" textbox.

• Shape Area Field Name
  o If you create an area (polygon) feature class, two additional fields are automatically added to record the length (perimeter) and the area of each polygon feature. The SHAPE Length field name can be modified per the instructions above. The default SHAPE Area field name, "SHAPE_Area", can be overridden by entering a different name in the "SHAPE Area Field Name" textbox.

Other Options

• By default, the XML Workspace generation capability will ignore any folders (that are in the selected data model) when generating an XML Workspace document. If you check the "Generate Folders as Feature Datasets" option, the system will (1) generate feature datasets with the same names as the corresponding data model folders, and (2) will place Esri feature classes into those feature datasets in the same way that the SDSFIE-V entities are organized into folders in the data model.

• By default, the system will generate domains for all enumerations used by the attributes of the entities selected for generation. The domains generated will have coded values corresponding to each enumerant. The coded value "code" will be the same as the model name of the enumerant, and the coded value "name" will be equal to the enumerant alias name. If the "Enumerant Alias Names as Coded Values" is not checked, the system will use the enumerant definition as the coded value "name".

Coordinate System (CS)

• By default, the system will not associate a coordinate system with feature classes generated. You may explicitly add a WGS 84 horizontal geographic coordinate system for all generated feature classes by clicking the "WGS84 Horizontal Geographic CS" checkbox.
• If you add the WGS 84 horizontal geographic coordinate system to all generated feature classes, you may also (optionally) add a WGS 84 vertical coordinate system by clicking the "WGS84 Vertical CS" checkbox.

**ESRI Software Version**

• Select the version of ESRI software that you are using on your device.

**Generate Excel Dialog box (Figure 13)**

**Options**

• Show Alternate Names – when selected, this option displays any and all alternate names that exist for the (elements that comprise the) entities selected to be included in the Excel document.

• Display Simplified Model Version (selected by default) – unselecting this option will generate the Excel document with more detailed information for each selected entity.

• Show Profiled Model Elements – when selected, this option will show the profiled model elements within a non-simplified model version.