



The Spatial Data Standards for Facilities, Infrastructure, and Environment Online (SDSFIE Online) Web Site

<http://www.sdsfieonline.org>

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Agenda

Acquisition, Technology and Logistics

- Overview of SDSFIE Online
- Models & Workflows
 - Browse/Generate
 - Data Dictionary
 - Model Builder
 - Validation Tool
 - Migration Tool
- SDSFIE-M Metadata Style for ArcGIS
 - Metadata round-tripping (SDSFIE Online ↔ ArcGIS)



Overview of SDSFIE Online

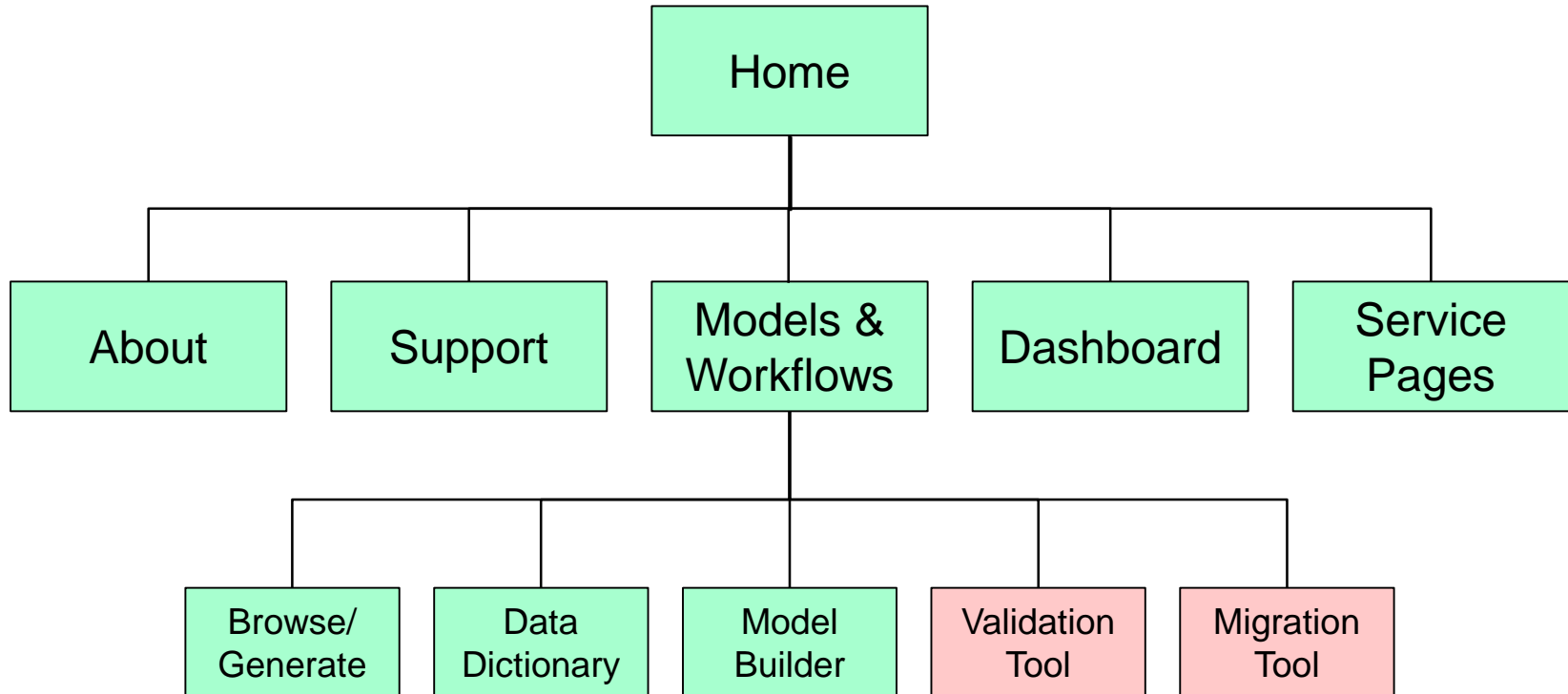
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- SDSFIE is a family of standards that are managed by the Installation Geospatial Information & Services (IGI&S) Governance Group (IGG).
- SDSFIE Online provides implementation support to the SDSFIE user community.
- The SDSFIE Governance Plan states it this way:
 - SDSFIE Online is a web-centric interface that enables users to access documentation, participate in functionality and utilize tools that support the goals of the SDSFIE family of standards.



Overview of SDSFIE Online

Acquisition, Technology and Logistics





Models & Workflows

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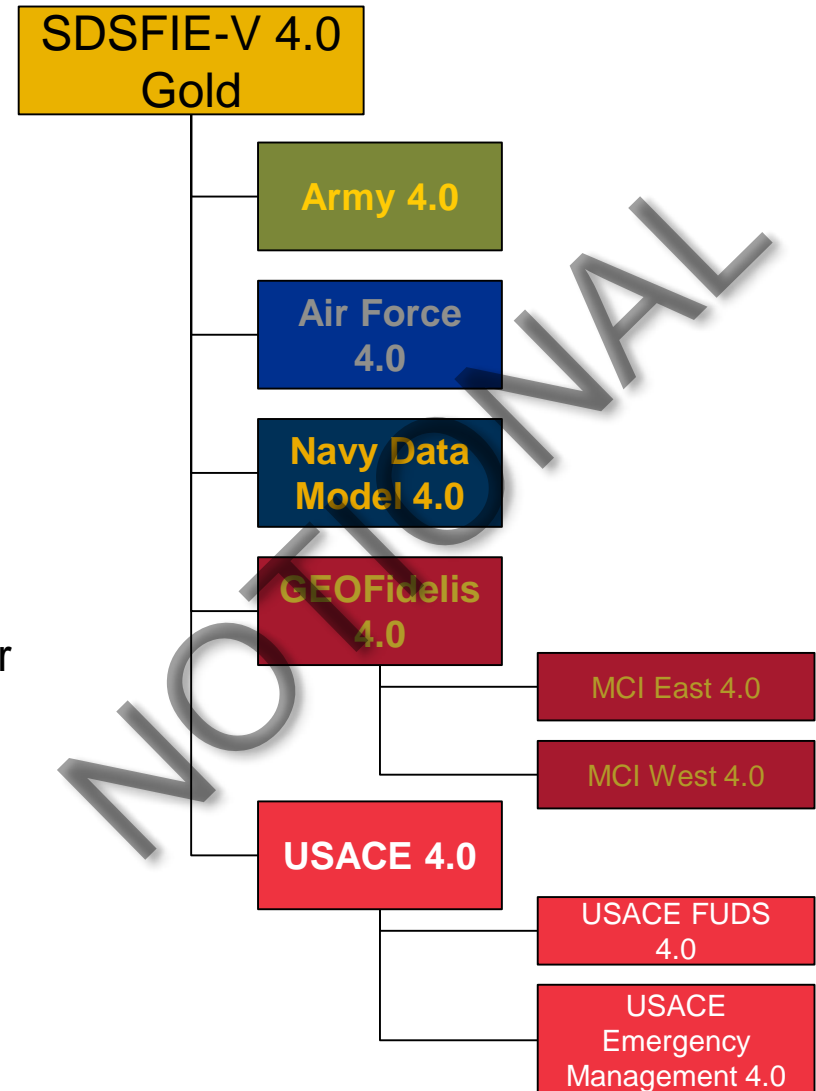
- Currently, all are oriented towards the SDSFIE-Vector standard
- Browse/Generate
 - Browse one approved *or draft* model at a time
 - Generate physical (Excel) and logical (XML Workspace) models
- Data Dictionary
 - Search for keywords across all approved SDSFIE-V Models
- Model Builder
 - Build a new model by adapting an existing approved model
 - Import a model defined as an adaptation using an Excel template
 - Create a model via import of an XML Workspace document
- Validation Tool (under construction)
 - Validate an XML Workspace document against an approved model
- Migration Tool (under construction)
 - Migrate a geodatabase from one version of SDSIFE-V to another



A Word On “Models”

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- In SDSFIE-V, a “Model” is a logical model that consists of:
 - A set of Entities (Feature Classes and Object Tables)
 - with Attributes (Fields)
 - that may be constrained by Enumerations (Domains)
 - that have Enumerants (Domain Values)
 - and, potentially, participate in Associations (Relationships).
- In each Version of SDSFIE-V, there is a Gold version that is the root of all other versions.
- Each Component of the IGG develops their own Headquarters Adaptation of the Gold version.
- Components can allow lower echelons to develop their own adaptations.
- All adaptations must adhere to SDSFIE-V Implementation Guidance

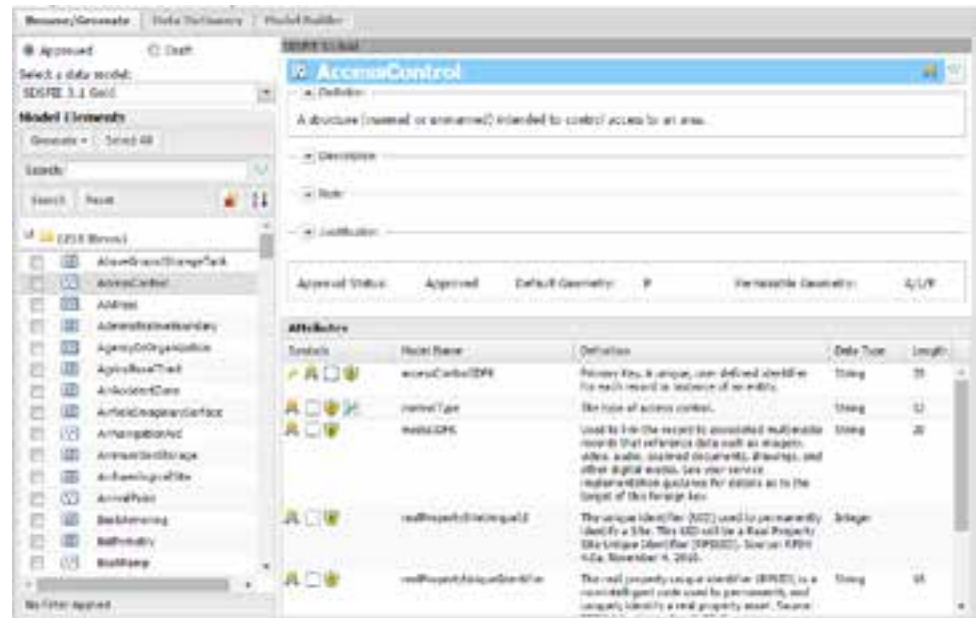




Browse/Generate Tool

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- Provides capability to browse a single model
 - Approved or
 - Draft
- Generates a logical model representation in Microsoft Excel for selected Entities
- Generates a physical model representation in XML Workspace document for selected Entities





Browse/Generate Tool

Approved Draft

Select a data model:
SDSFIE 3.1 Gold

Model Elements

Generate Select All

Search:

Search Reset

(218 Items)

- AboveGroundStorageTank
- AccessControl**
- Address
- AdministrativeBoundary
- AgencyOrOrganization
- AgriculturalTract
- AirAccidentZone
- AirfieldImaginarySurface
- AirNavigationAid
- AmmunitionStorage
- ArchaeologicalSite
- ArrivalPoint
- BankArmoring
- Bathymetry
- BoatRamp

No Filter Applied

SDSFIE 3.1 Gold

AccessControl

Definition:
A structure (manned or unmanned) intended to control access to an area.

Description:

Note:

Justification:

Approval Status: Approved Default Geometry: P Permissible Geometry: A/L/P

Attributes

Symbols	Model Name	Definition	Data Type	Length
	accessControlIDPK	Primary Key. A unique, user defined identifier for each record or instance of an entity.	String	20
	controlType	The type of access control.	String	12
	mediaIDFK	Used to link the record to associated multimedia records that reference data such as imagery, video, audio, scanned documents, drawings, and other digital media. See your service implementation guidance for details as to the target of this foreign key.	String	20
	realPropertySiteUniqueId	The unique identifier (UID) used to permanently identify a Site. This UID will be a Real Property Site Unique Identifier (RPSUID). Source: RPIM 4.0a, November 4, 2010.	Integer	
	realPropertyUniqueIdentifier	The real property unique identifier (RPUID) is a non-intelligent code used to permanently and uniquely identify a real property asset. Source:	String	18



Data Dictionary

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- Provides capability to search across all approved models
- Keyword search
- Filter By:
 - Type (Entity, Attribute, etc)
 - Property (Name, Definition, etc.)
 - Status
 - Component
 - Version

SDSFIE Data Dictionary Results Page

Search Filters:

Search Term: Item Type: Item Property: Save Search

Item Status: Start Date: Approval Status: Edit Search

Version: Model ID: Component:

Entity Name	Field Name	Item Name	Definition
Approved/Disapproved	Approved/Disapproved/Status	Approved/Disapproved/Status	Primary key. The unique identifier for data records and is link to other.
Approved/Disapproved	Approved/Disapproved/Status	Approved/Disapproved/Status	Primary key. The unique identifier for data records and is link to other.
Approved/Disapproved	Approved/Disapproved/Status	Approved/Disapproved/Status	Primary key. The unique identifier for data records and is link to other.
Approved/Disapproved	Approved/Disapproved/Status	Approved/Disapproved/Status	Primary key. The unique identifier for data records and is link to other.
Approved/Disapproved	Approved/Disapproved/Status	Approved/Disapproved/Status	Primary key. The unique identifier for data records and is link to other.
Approved/Disapproved	Approved/Disapproved/Status	Approved/Disapproved/Status	Primary key. The unique identifier for data records and is link to other.

Export Results

Search Results

Level of information: Summary Full

What to do with partial elements: Remove elements Link through elements Display elements

Clicking the check boxes in the grid above indicates which results will be exported when the "Export Results" button is clicked. Exporting significant processing times when exporting large amounts of data (i.e. 100 or more records).



Data Dictionary

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Browse/Generate | **Data Dictionary** | Model Builder

Intro | Search | Results

Welcome to the SDSFIE Data Dictionary

The SDSFIE Data Dictionary specifies an Installation and Environment Community-wide data element dictionary for geospatial data. This dictionary includes entity concepts, attribute concepts with their enumeration types, and accompanying metadata. SDSFIE Data Dictionary contains models of SDSFIE from all Components and versions since 2.61.

This Data Dictionary provides the following services:

- Perform a New Search on entire list or subset of:
 - Entity Concepts (e.g., above ground storage tank, land parcel, structure, well)
 - Attribute Concepts (e.g., entity name, definition, operational status)
 - Enumerations [with Enumerants (Values)] (e.g., Operational Status Type Code [Abandoned, Closed, InService, NA, NotInService, Programmed, Proposed, Removed, TBD, Temporary, UnderConstruction, Unknown])
- Execute a Saved Search using criteria from a previous search session

New Search

Click the "New Search" button to define an SDSFIE Data Dictionary search.

Saved Search

Select the name of the saved search that you would like to execute and click the "Saved Search" button.



Data Dictionary

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Browse/Generate | **Data Dictionary** | Model Builder

Intro | **Search** | Results

Search the SDSFIE Data Dictionary

To conduct a search, enter a search term and make one or more selections in each search form field then click the Search button.
Click the Reset Search Form button to return all search form fields to their default values.

Search Form

Search Terms: Advanced Search [Get help on "Advanced Search".](#)

Item Type(s): ANY **Item Property(ies):** ANY

Item Status: ANY **Component(s):** ANY

Version(s): ANY **Model(s):** ANY

Approval Status: ANY **As-of Date:** 06/11/2015



Data Dictionary

Browse/Generate | **Data Dictionary** | Model Builder

Intro | Search | **Results**

SDSFIE Data Dictionary Results Page

Search Criteria

Search Term(s): Item Type(s): Item Property(ies):

Item Status: As-of Date: Approval Status:

Version(s): Model(s): Component(s):

Entities (89) | **Attributes (278)** | Enumerations (0) | Enumerants (0) | Associations (0)

<input type="checkbox"/>	Entity Name	Model Name	Alias Name	Definition
<input type="checkbox"/>	AboveGroundStorageTank	aboveGroundStorageTankIDPK	aboveGroundStorageTankIDPK (SDSFIE 3.0 Gold)	Primary Key. The unique identifier for data records and to link to other c
<input type="checkbox"/>	AboveGroundStorageTank	aboveGroundStorageTankIDPK	aboveGroundStorageTankIDPK (GEOFidelis 3.0)	Primary Key. The unique identifier for data records and to link to other c
<input type="checkbox"/>	AboveGroundStorageTank	aboveGroundStorageTankIDPK	aboveGroundStorageTankIDPK (Air Force 3.0)	Primary Key. The unique identifier for data records and to link to other c
<input type="checkbox"/>	AboveGroundStorageTank	aboveGroundStorageTankIDPK	aboveGroundStorageTankIDPK (DISDI 3.0)	Primary Key. The unique identifier for data records and to link to other c
<input type="checkbox"/>	wstewat_pump_electr_slr_point	almrvlev	almrvlev (SDSFIE 2.6 Gold)	The elevation in the wet well that

Export Results

Level of information: Simple Full

What to do with profiled elements: Remove elements Strikethrough elements Display elements

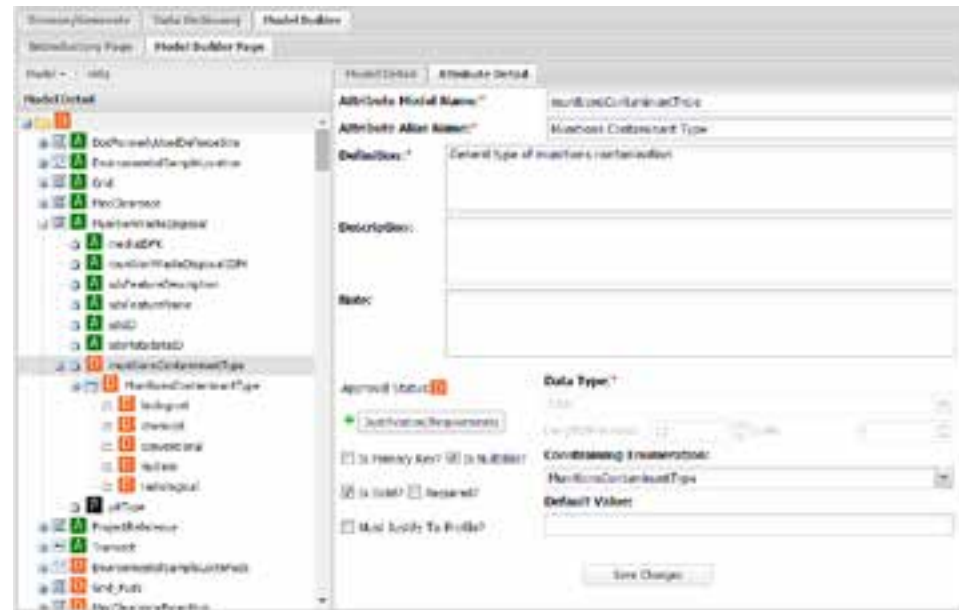
Clicking the checkboxes in the grid above indicates which results will be exported when the "Export Results" button is clicked. Expect significant processing times when exporting large amounts of data (i.e. 100 or more Entities).



Model Builder

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- Provides capability to:
 - Build a new model by adapting an existing approved model
 - Import a model defined as an adaptation using an Excel template
 - Create a model via import of an XML Workspace document
- Edit most aspects of the model in an interactive interface





Model Builder

Browse/Generate Data Dictionary **Model Builder**

Introductory Page **Model Builder Page**

Welcome to the SDSFIE Model Builder

Name and Describe Your Model

Enter the name of your new Model:*

USACE 3.1 FUDS District

Enter the definition of your new Model:*

District adaptation for Formerly Used Defense Sites

Enter a version number for your new Model (optional):

4.0

Save Changes

View/Edit an Existing Model

Select Existing Model to View or Edit:

- USACE 3.1 FUDS HQ
- USACE 3.1 FUDS District
- USACE 3.1 - Emergency Management FIXED AGAIN
- Waterway Debris Collection

Build from Existing Parent Model

Component:

SDSFIE

Select Parent Model:

SDSFIE 3.1 Gold

Version:

3.1

Reset Fields

Build New Model

Import Adaption from File

Import Excel File

Import Workspace File

Status Key:

- Draft (Editable)
- Submitted (Viewable)
- Approved (Editable)
- Rejected (Editable)
- Approved, Children (Viewable)
- Profiled (Viewable)

Show Deleted Models

Restore Model

Edit Existing Model



Model Builder

Browse/Generate | Data Dictionary | **Model Builder**

Introductory Page | **Model Builder Page**

Model ▾ | Help

Model Detail | Attribute Detail

Model Detail

- DodFormerlyUsedDefenseSite
- EnvironmentalSampleLocation
- Grid
- MecClearance
- MunitionWasteDisposal
 - mediaIDFK
 - munitionWasteDisposalIDFK
 - sdsFeatureDescription
 - sdsFeatureName
 - sdsID
 - sdsMetadataID
 - munitionsContaminantType**
 - MunitionsContaminantType**
 - biological
 - chemical
 - conventional
 - nuclear
 - radiological
 - pitType
- ProjectReference
- Transect
- EnvironmentalSampleLocnFuds
- Grid_Fuds
- MecClearanceExemption

Attribute Model Name: munitionsContaminantType

Attribute Alias Name: Munitions Contaminant Type

Definition: General type of munitions contamination

Description:

Note:

Approval Status: Justification/Requirements

Is Primary Key? Is Nullable?

Is Gold? Required?

Must Justify To Profile?

Data Type: Char

Length/Precision: 12 Scale: 0

Constraining Enumeration: MunitionsContaminantType

Default Value:

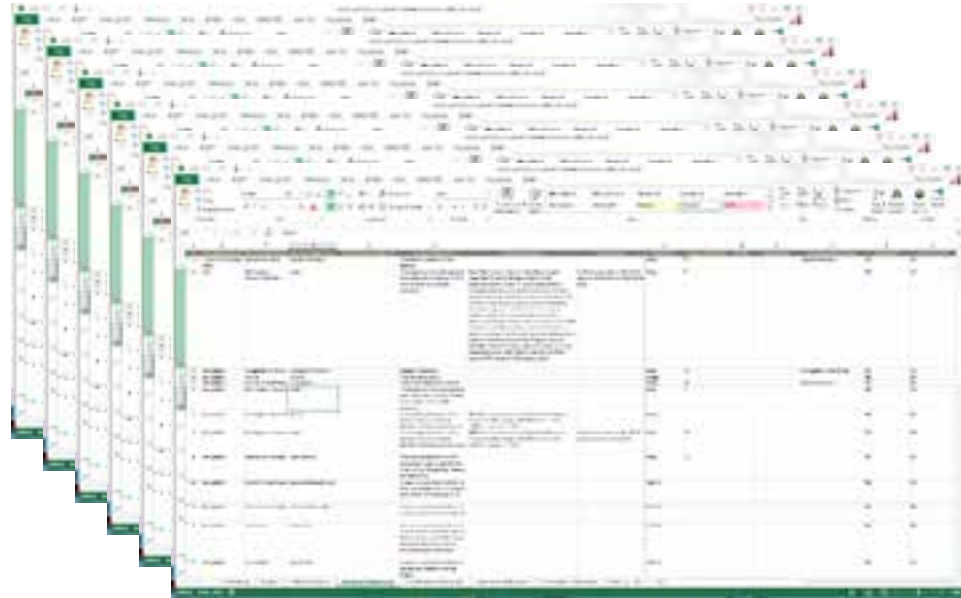
Save Changes



Adaptation Template Import

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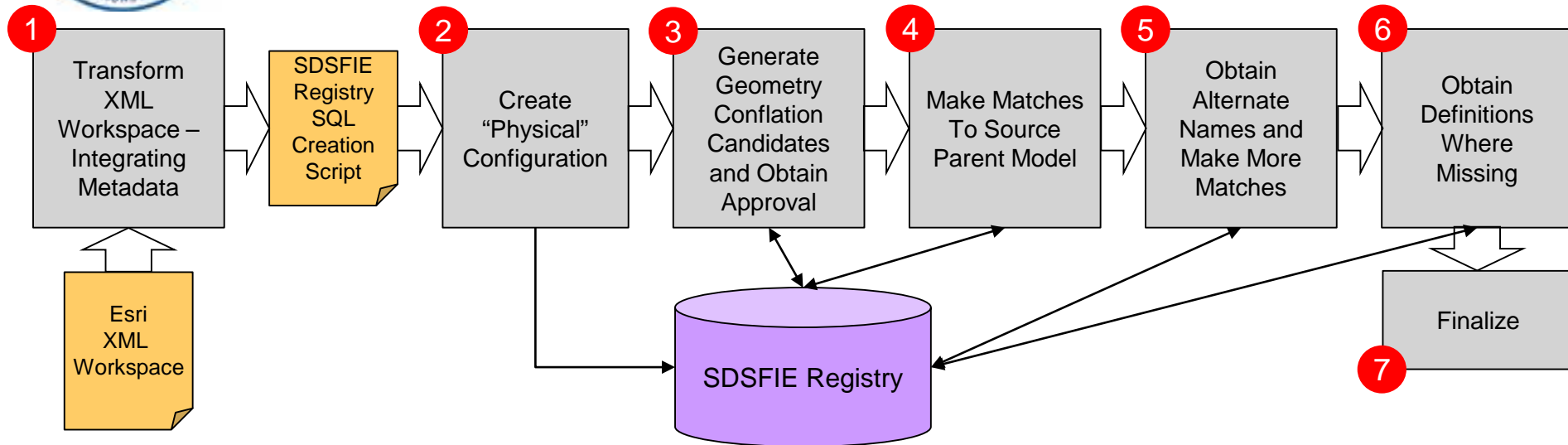
- Provide capability to import a model adaptation expressed in Excel as:
 - Profiles – elements to remove
 - Changes – elements to modify
 - Extensions – elements to add
- Useful when model results are coming from an external modeling source
 - For example, USACE 3.1 Inland Electronic Navigation Chart adaptation was created as a transformation of multiple XML sources





XML Workspace Import

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- Provide capability to import a model adaptation as XML Workspace document (Geodatabase XML)
- Useful when model (or partial model) exists as a geodatabase
- Coincides with Phase 1 of Migration (as we'll see later)
- Deployed July, 2015



Validation Tool

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- Will provide capability to validate an XML Workspace document against an approved model
- Useful for determining if a geodatabase complies with a version of SDSFIE-V and to what degree
- Output will be Excel format
- Will depict
 - Profiles – what elements are in the approved model but not in the geodatabase.
 - Extensions – what elements are in the geodatabase, but not in the approved model
 - Changes – what properties of matching elements have changed
- Will highlight problem areas
- Deployed in late summer



Goals of the Migration Workflow

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- Enable the migration of data that is in an SDSFIE-compliant database to a database that complies with a new version of SDSFIE.
- Enable partially- or non-compliant data to be migrated.
- Ensure that the workflow enforces existing policies, where applicable.
- Ensure that the workflow does not specifically allow or encourage users to avoid or violate existing policies.
- The workflow must work without installing software on the users machine.
- The workflow should be platform independent without significantly reducing the functionality.



Assumptions

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- At least partial non-compliance of databases is the norm, not the exception.
- Users want to migrate non-compliant data together with compliant data and do not want two separate databases in the end.
- For the initial version of the Migration Workflow:
 - The starting point is an ESRI geodatabase and users can export an XML Workspace document describing that geodatabase.
 - The end point is an ESRI geodatabase and users can import an XML Workspace document to be used in the creation of the target geodatabase.
- Component managers will want the end point database to conform to a fully-defined, fully-justified schema that is in turn compliant with an approved adaptation.

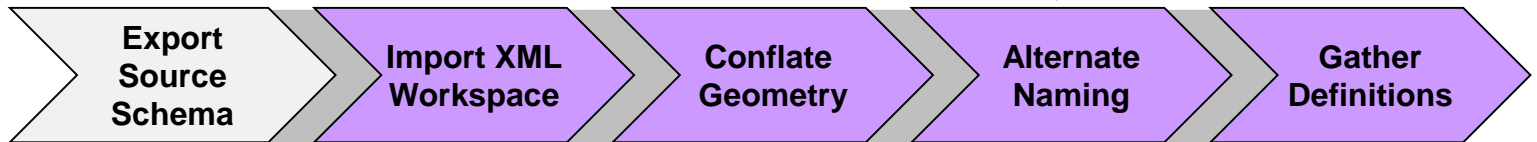


Migration Workflow

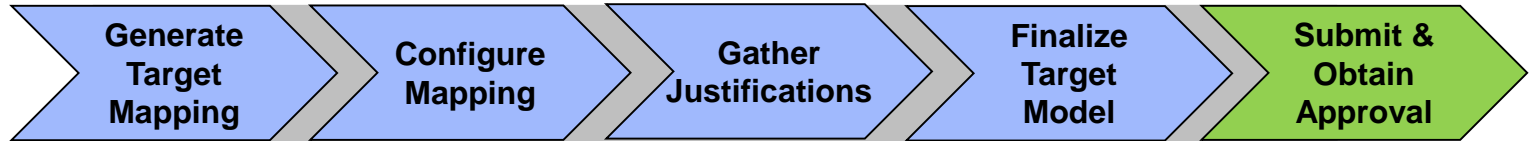
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Increasingly well defined...

Phase 1 (Source Model)

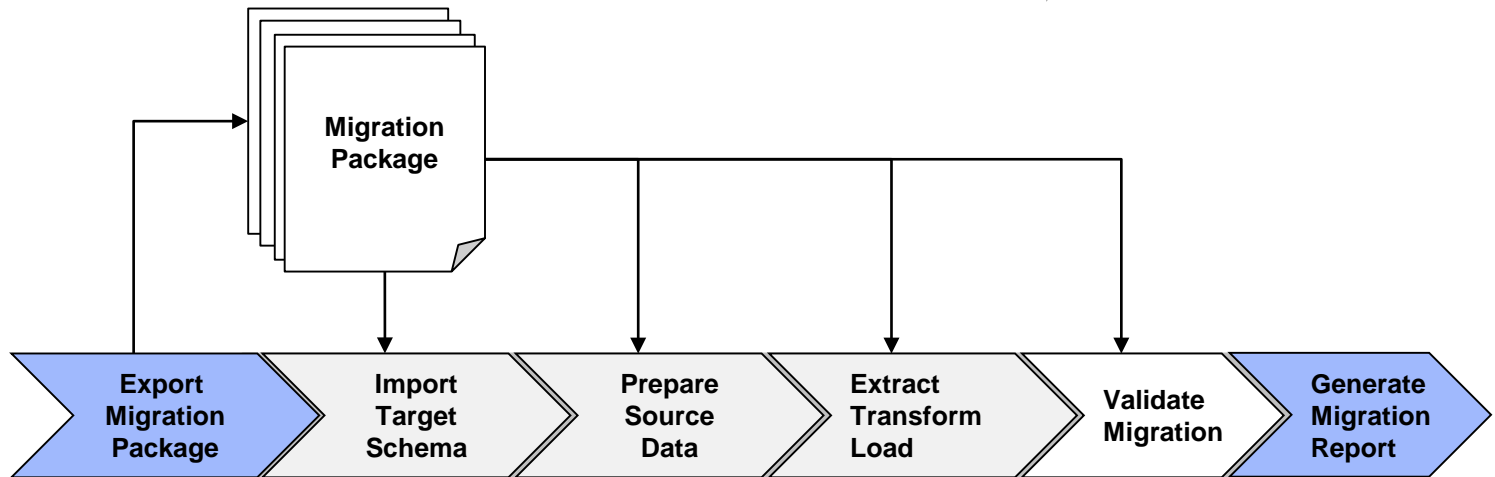


Phase 2 (Target Model)



Increasingly well justified...

Phase 3 (Migration)



- Part of SDSFIE Online Model Builder (deployed July 2015)

- Performed in the GIS/Database Environment

- Part of SDSFIE Online Migration Workflow (deployed by Dec 2015 pending funding)

- Performed outside of SDSFIE Online (for now)



Phase 3 Migration

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- In SDSFIE Online:
 - Export Target Schema as XML Workspace
 - Import Data Reviewer output
 - Generate Migration Report

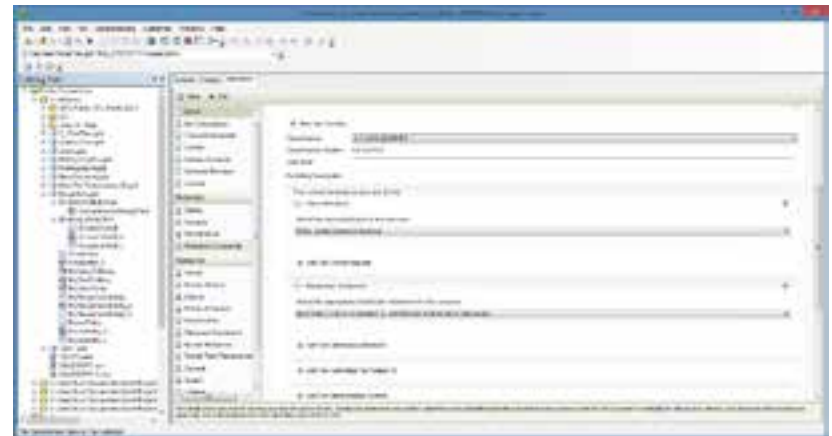
- In ArcCatalog:
 - Import Target Schema
 - Prepare Source Data
 - o Perform pre-migration task, such as Stash OBJECTID and GlobalID retention mitigation, etc.
 - Extract Transform Load
 - o Use Production Mapping XREF Tool
 - Validate Migration
 - o Use Data Reviewer to check migration results against the target



SDSFIE-M Metadata Style for ArcGIS

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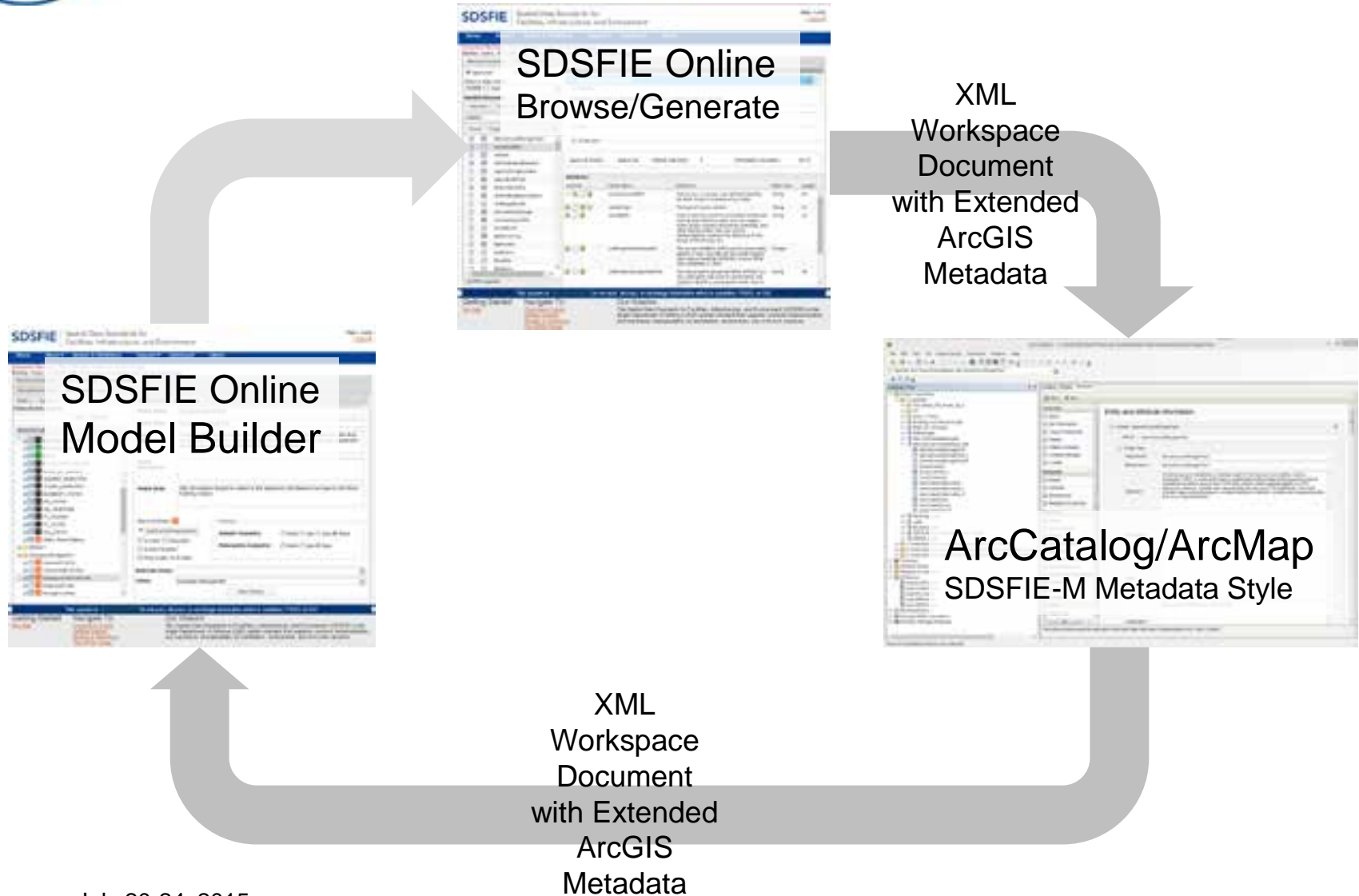
- Provides the capability to edit SDSFIE-Metadata compliant metadata in ArcGIS
- Export to SMIS 1.0.2
- SDSFIE-M (SMIS) is a profile of:
 - ISO metadata
 - National System for Geospatial-Intelligence Metadata Foundation
- Supports Information Security Markup tagging for unclassified data





Metadata Round-Tripping

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Questions?

The SDSFIE Online Web Site is at:

<http://www.sdsfieonline.org>