



SDSFIE 3.0 Data Migration

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Agenda

Acquisition, Technology and Logistics

- **Conceptual SDSFIE Data Migration**
 - Introduce pilot projects
 - Present foundation concepts
 - Discuss three migration approaches

- **Navy Pilot Project Example**
 - Overview
 - Lessons learned



High Level Perspective

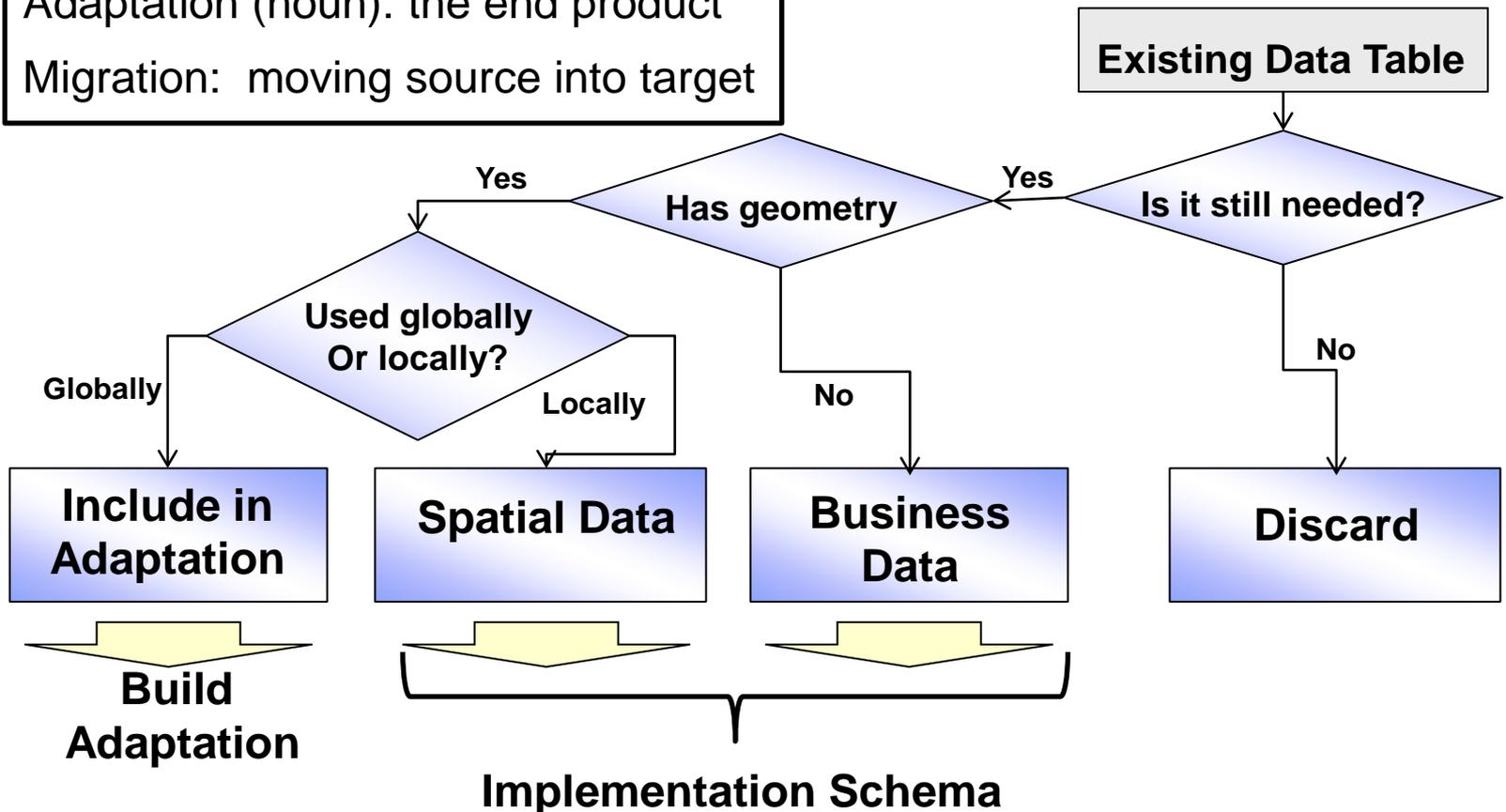
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Define Terms:

adaptation (verb): the process

Adaptation (noun): the end product

Migration: moving source into target

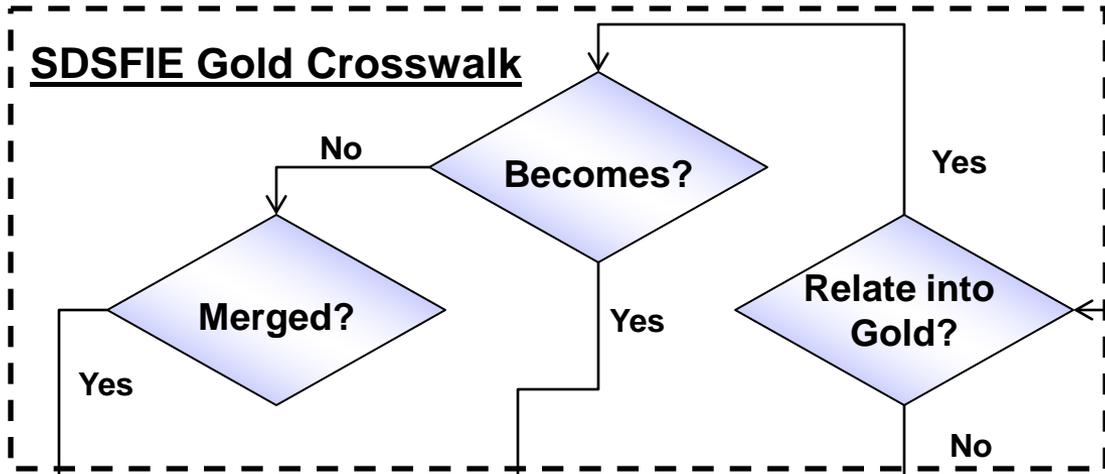




SDSFIE Adaptation – What You Get

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DoD Adaptation Guidance (Rules)



Adaptation Candidate
Feature Type

2.x
feature type?

SDSFIE Gold Feature Types

Extended
Feature Types

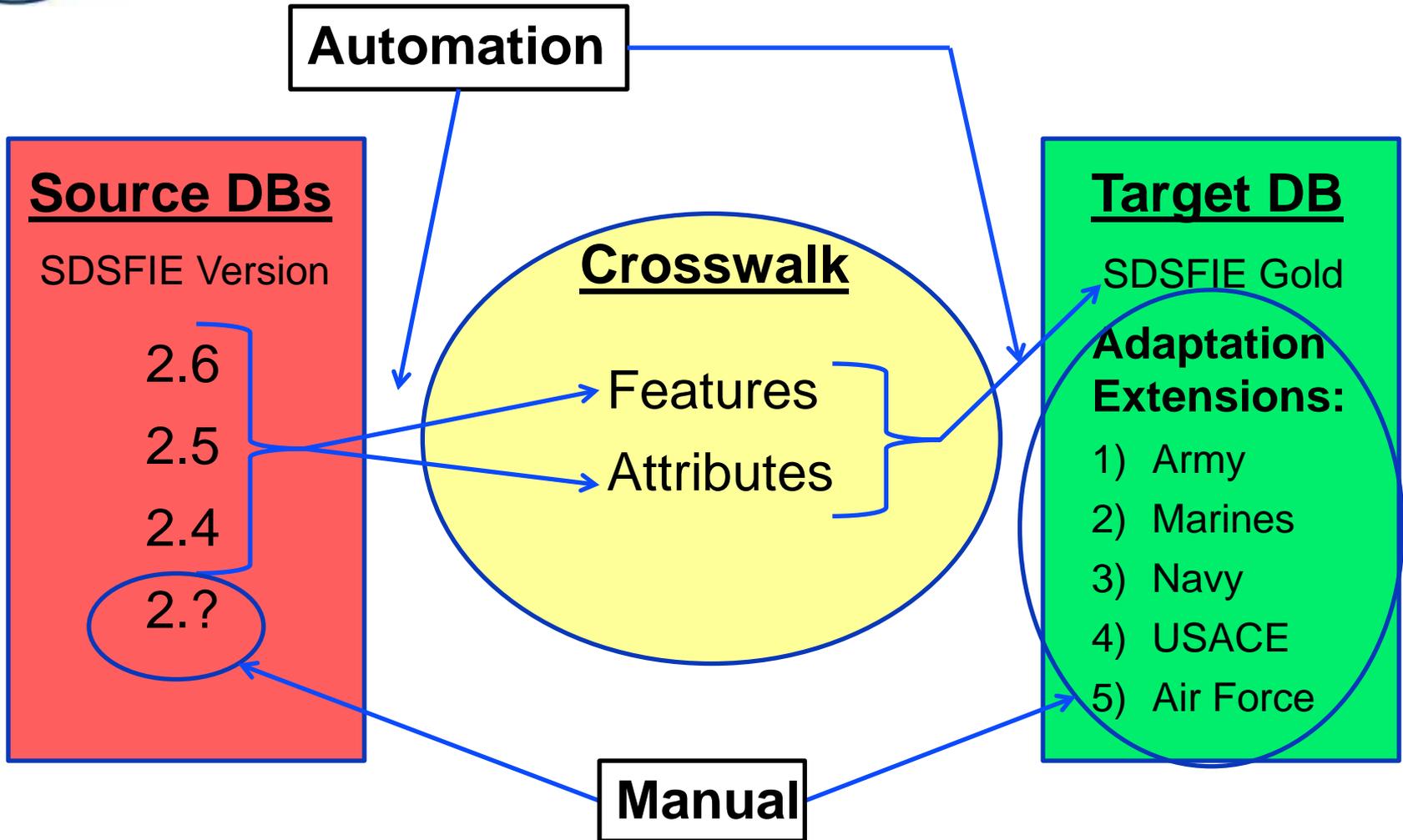
Create Profile

Create Extensions



Next Step: Data Migration

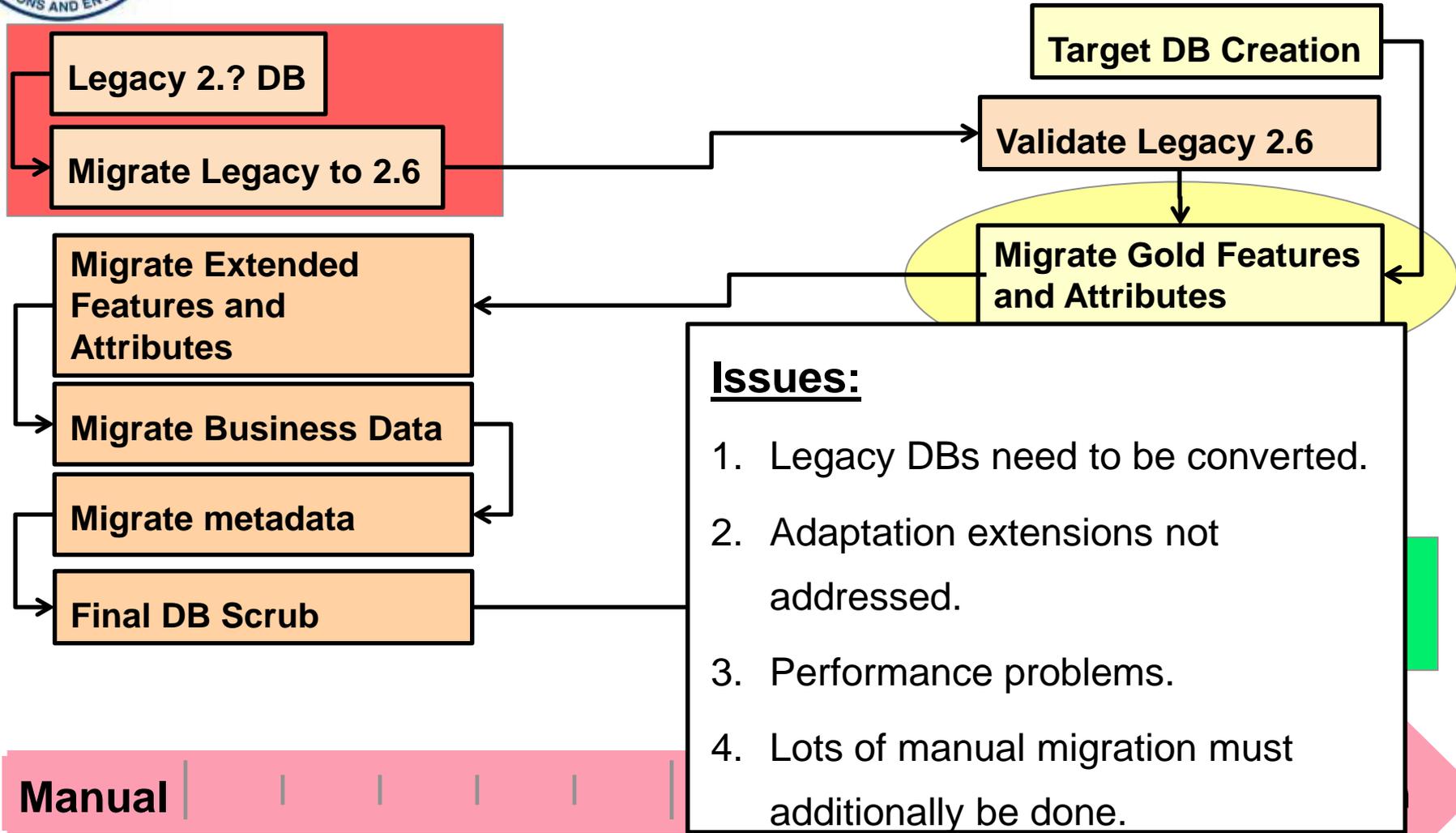
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SDSFIE Web Site Automated Migration

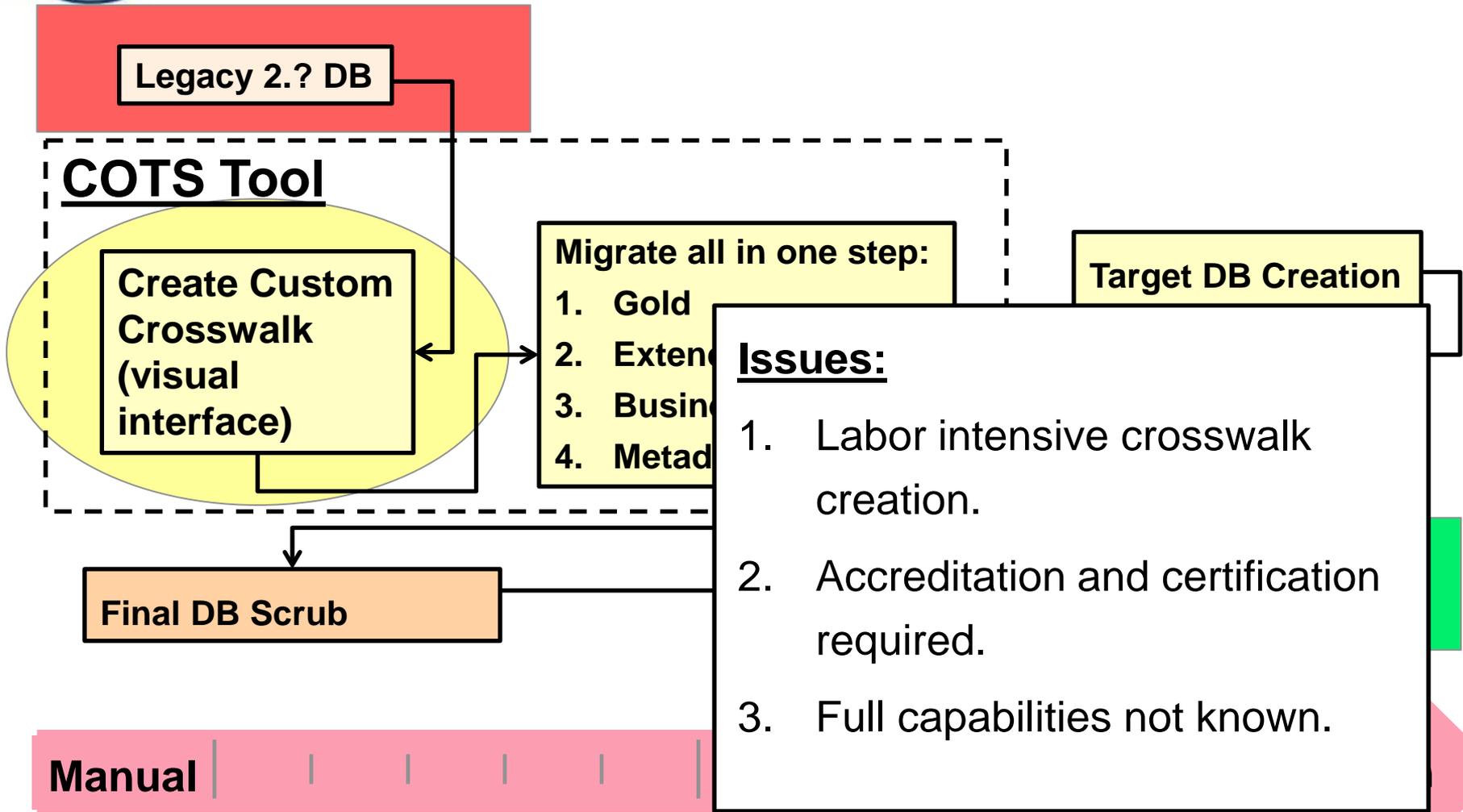
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COTS Automation Assisted Migration

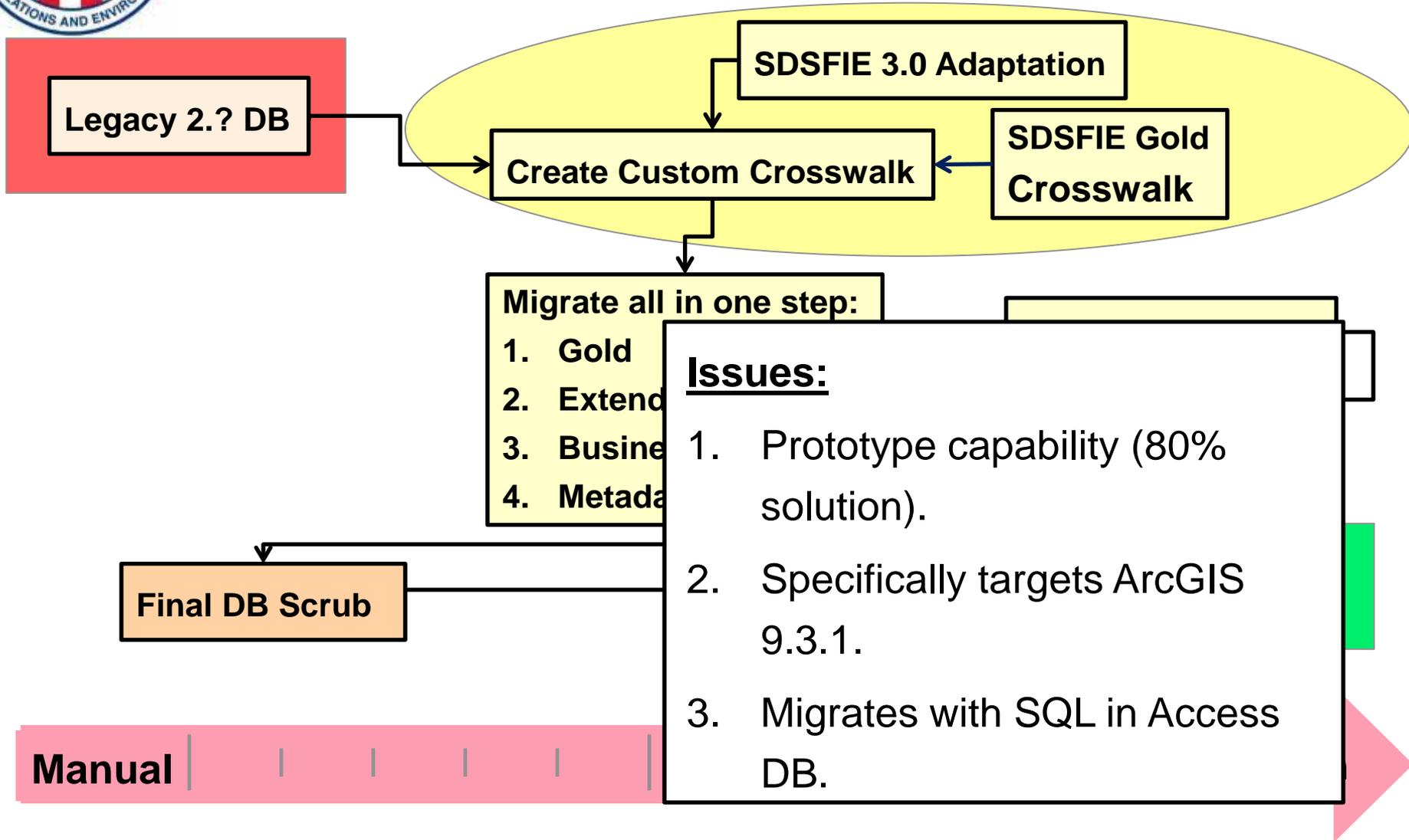
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DISDI Automation Assisted Migration Study

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Navy Pilot Project and Lessons Learned

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10 July, 2011



Project Overview

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- Concept: Migrate sample data to discover best structure for Navy Adaptation; test new Adaptation schema by migrating physical databases
- Migrating data from four Navy installations to the draft Navy Adaptation of SDSFIE 3.0
- Data migration was performed using standard online tools built by the STARS Team
- **The approach of this Pilot Study is NOT the only solution to data migration**



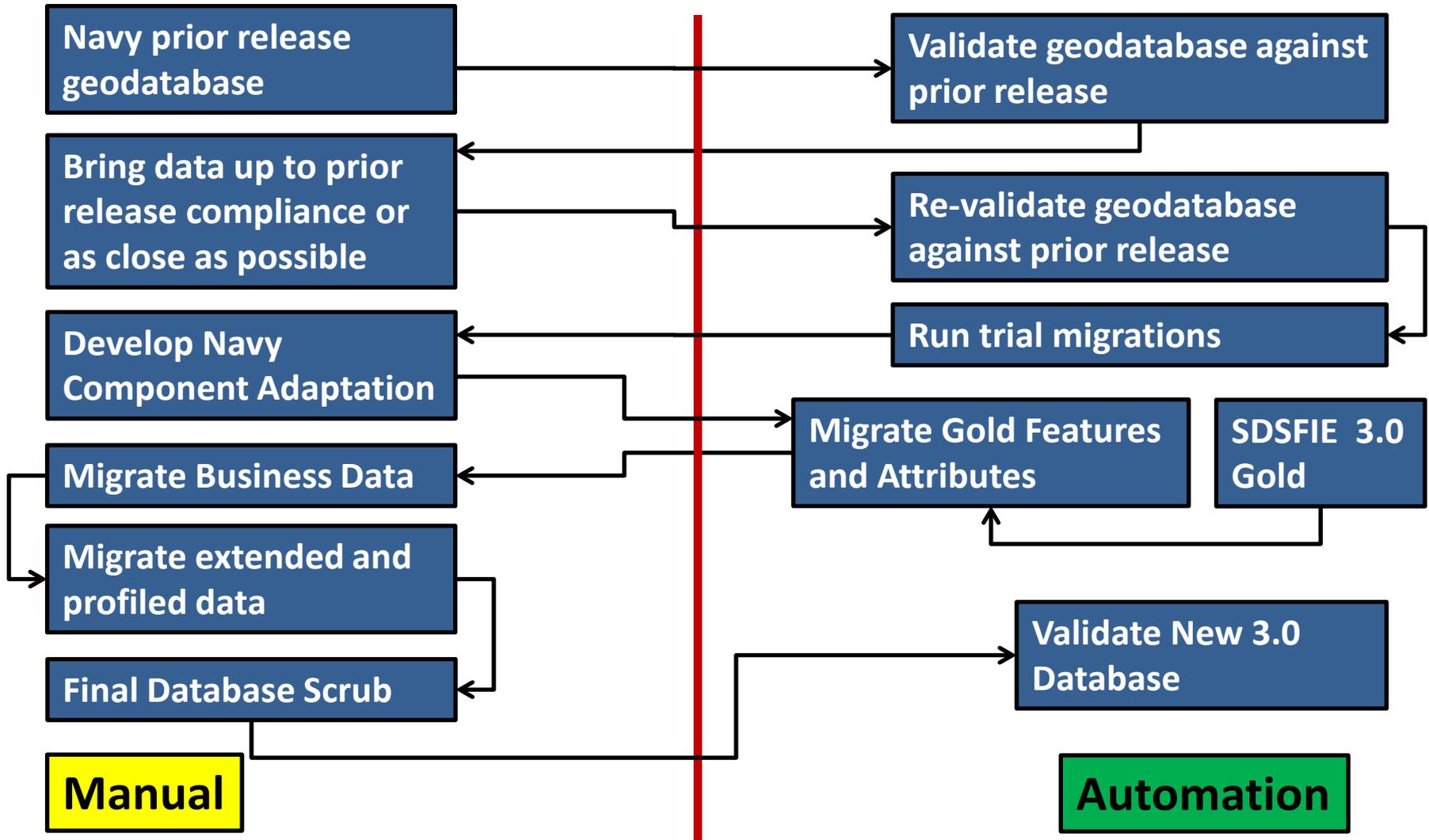
Approach to Migration

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■ Seven Main Steps

- Run tools to identify data compliance with prior release
- Edit data to increase degree of compliance with prior release as much as possible
- Run trial migrations to identify what data would be lost in a migration to SDSFIE 3.0 Gold
- Develop a Navy specific Adaptation based on results of the compliance and trial migration reports
- Migrate data to Navy Adaptation
- Develop reports outlining migration results
- Create lessons learned whitepaper outlining efforts and ideas for making future migrations run smoother

Navy Pilot Project Process





Lessons Learned



SDSFIE 3.0 Gold Limitations

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- The feature types `road_area` and `road_centerline` are utilized in each of the four installation's source data, but do not have corresponding feature types in SDSFIE 3.0 Gold. Previous modeling practices do not allow for a direct migration from a prior release feature type to a "Gold" feature type.

Prior Release Feature (Selected)

`road_area`

- **Definition:** A portion of a road with similar characteristics such as the number of lanes or surface type.
- **Default Subtype:** *(none)*
- **Permissible Subtype:** *(none)*
- **Container:** *(none)*
- **Default Geometry:** Area/Polygon
- **Permissible Geometries:** Area/Polygon, Point

SDSFIE Gold Feature(s)

SMEs deemed it to not be a standardized feature for DoD use.
(Deleted)



SDSFIE 3.0 Gold Limitations

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- All four installations utilize the `instln_id` attribute field in the majority of their feature types. By default, SDSFIE 3.0 Gold does not crosswalk to the prior release attribute field. A custom attribute field, `installationID`, was added to the adaptation to address this need.

`installationID`

String (20)

none

A foreign key used to link the record to the applicable INSTALLATION record



Validation – Lessons Learned

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- The Validation process is tiered and each portion of the data model must meet or comply with the prior release of SDSFIE

Validation Report Details for Case ID # 1349

Type	Element Entry	Associated Class	Problem Type
Feature	ATTRIBUTE	ATTRIBUTE	NameNotFound
Feature	DATA_QUALITY_INFORMATION	DATA_QUALITY_INFORMATION	NameNotFound

Validation Report Details for Case ID # 1348

Type	Element Entry	Associated Class	Problem Type
Attribute	<u>gate_typ_d</u>	<u>closure_structure_line</u>	<u>NameNotFound</u>
Attribute	<u>lev_sta</u>	<u>gravity_drain_area</u>	<u>NameNotFound</u>
Attribute	<u>levee_sta</u>	<u>gravity_drain_area</u>	<u>NameNotFound</u>
Attribute	<u>lev_sta</u>	<u>gravity_drain_line</u>	<u>NameNotFound</u>
Attribute	<u>levee_sta</u>	<u>gravity_drain_line</u>	<u>NameNotFound</u>
Attribute	<u>lev_sta</u>	<u>gravity_drain_point</u>	<u>NameNotFound</u>
Attribute	<u>levee_sta</u>	<u>gravity_drain_point</u>	<u>NameNotFound</u>



Validation – Lessons Learned

Acquisition, Technology and Logistics

- A Validation must “PASS” before any type of migration can be run on it
- Validated, fully compliant, prior release feature types will not necessarily Migrate to a 3.0 feature. The same can be said for compliant, prior release attribute fields.
- Data enumeration values are checked in validation, but are NOT checked in trial migration



Validation – Lessons Learned

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- Every effort should be made to ensure compliance prior to Validation and Migration.
 - A manual scrub will need to be performed after a migration to check for any data loss if the migration was not validated to 100% compliance
 - Pilot databases were not able to be made 100% compliant because of populated attribution in non-compliant attribute fields



Adaptation – Lessons Learned

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- Custom domains can only be created and used once in an Adaptation
- “Definitions” (ESRI term) cannot be added to custom domain values
- All features added to the Adaptation will receive the foundation attributes by default



Adaptation – Lessons Learned

Acquisition, Technology and Logistics

- Alternate that are not in the permissible list of geometries cannot be added to Gold feature types through the Adaptation tools. This will need to occur by making a formal change request.

***Rule 4-23.** Addition of an Alternate Geometry for a Gold Feature Type: Many Gold feature types offer several permissible geometries (point, polyline, polygon) but only a single default geometry. Alternate geometries may be included in Adaptations provided that the alternate geometry is one of the permissible geometries detailed in the SDSFIE Gold. However, all geometry variations of a feature type refer to the same set of attributes.*



Migration – Lessons Learned

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- The document produced from a trial migration is the only document that accurately depicts what will occur during a migration.

structure_existing_area merges into **Building**
using Geometry Type A

Data values were NOT included in the submitted file for this Feature Class. Therefore, specific limitations on migration of values in the attributes of this Feature Class is NOT possible. While aggregate replacements will be included in the final Migration Script, it is YOUR RESPONSIBILITY to confirm the compliance level of the content of all attribution.

Attribute **building_id** renamed to **buildingIDPK**
Attribute **map_id** gets Deleted
Attribute **meta_id** renamed to **sdsMetadataID**
Attribute **media_id** gets Deleted
Attribute **coord_id** gets Deleted
Attribute **structname** renamed to **sdsFeatureName**
Attribute **str_stat_d** gets Deleted
Attribute **str_type_d** gets Deleted
Attribute **str_use_d** gets Deleted
Attribute **str_cnd_d** gets Deleted
Attribute **designcode** gets Deleted
Attribute **presntcode** gets Deleted
Attribute **heattype_d** gets Deleted
Attribute **cooltype_d** gets Deleted
Attribute **no_occup** gets Deleted
Attribute **areainside** gets Deleted
Attribute **areafloor** gets Deleted
Attribute **areausable** gets Deleted



Migration – Lessons Learned

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- The successful method of migration for this pilot was the “Straight” Python scripts used to migrate or “Move” to a new SDSFIE 3.0 geodatabase

Generate Command Line Generate Python

Construct using Adaptation/Default Feature Datasets

Add M Capability Add Z Capability

Tables

[Python GeoDB Script](#)

Enums/Domains

[Python GeoDB Script](#)

Domain Assignments

[Python GeoDB Script](#)

Relationships

[Python GeoDB Script](#)

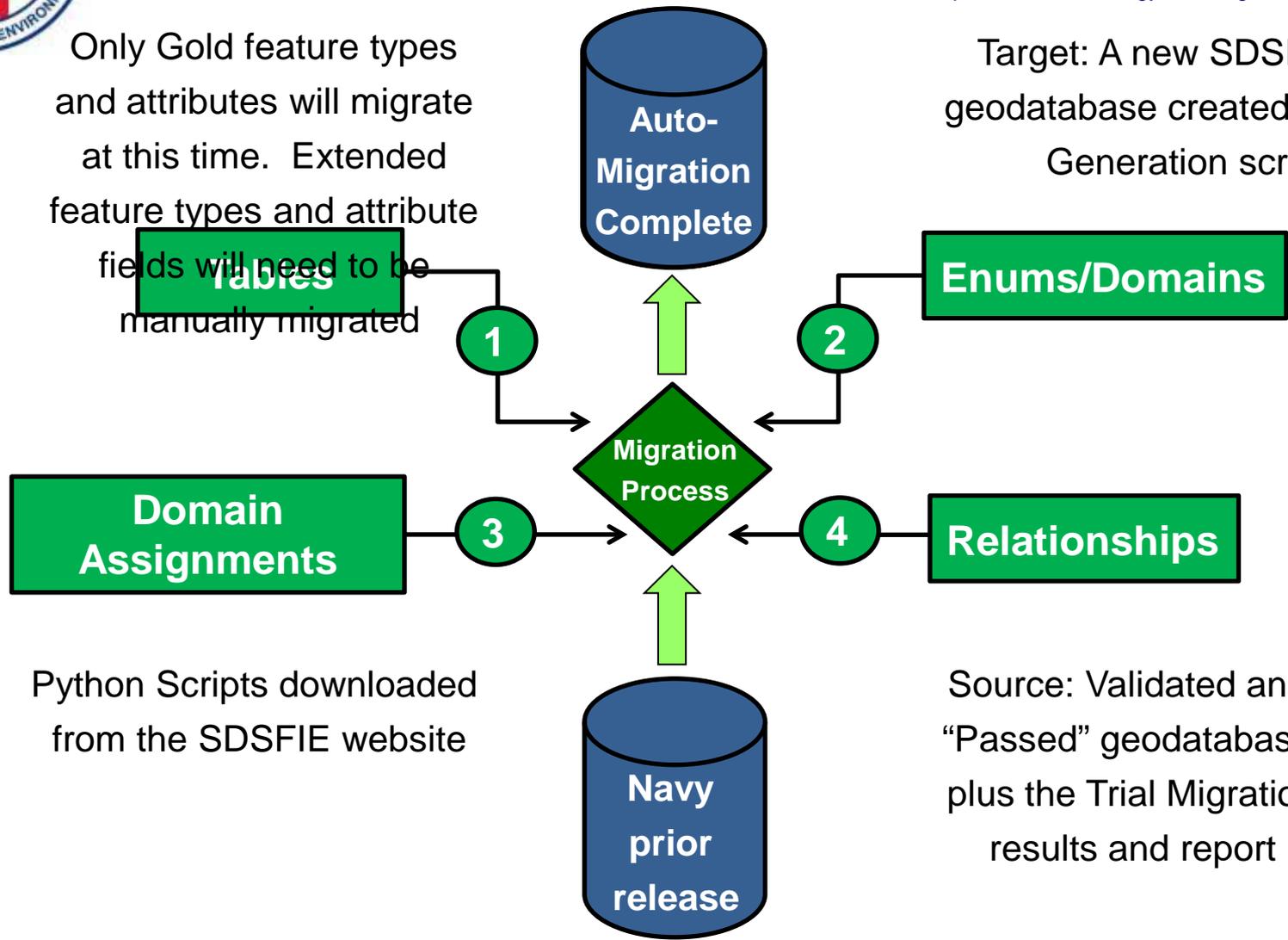


“Straight” or “Move” Python Migration Script Process

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Only Gold feature types and attributes will migrate at this time. Extended feature types and attribute fields will need to be manually migrated

Target: A new SDSFIE 3.0 geodatabase created from the Generation scripts



Tables

Enums/Domains

Domain Assignments

Relationships

Python Scripts downloaded from the SDSFIE website

Source: Validated and “Passed” geodatabase, plus the Trial Migration results and report



Final Point

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- Currently, a user does not have the capability to manipulate the feature and attribute mappings of the migration.
- Closing thoughts



Questions?