

Airline Industry Data Model

AIDM Guidelines – Configuration and Utilities

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**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Name** | **Description of change** |
| 0.1 | 17 Aug 2016 | Michael Thomas | First draft with section “Repository Configuration for Workgroups” |
|  | 03 Sep 2016 | Michael Thomas | Section 3 “Find Utilities” added |
| 0.2 | 23 Nov 2016 | Jim Donnelly | Section 4 “BRD Generation” added |
| 0.3 | 30 Jan 2017 | Michael Thomas | Section 4 enhanced |
| 0.4 | 30 Aug 2017 | Michael Thomas | Section 4 added min version of MSWord + diagram |
| 0.5 | 18 Apr 2019 | Graham Ferguson | Added new and deprecated existing utilities |
| 0.6 | 16 Aug 2019 | Graham Ferguson | Added new and deprecated existing utilities |
| 0.7 | 19 Aug 2019 | Graham Ferguson | Added new and deprecated existing utilities |
|  |  |  |  |

# Introduction

## Document Purpose and Intended Audience

The purpose of this document is to describe how to model and work in the AIDM (Airline Industry Data Model) shared repository, used by multiple workgroups across multiple phases of standards development.

The intended audiences of this document are all individuals involved in defining terms:

* members of PSC (Passenger Services Conference) Standards application work-groups defining terms as part of BRD development,

These individuals have a variety of profiles including Airline and IT supplier Business Analysts, Enterprise Architects, Data Modelers.

This document is owned by the Methodology Group operating under the Architecture, Technology & Strategy Board.

## Document Context

The Airline Industry Data Model is published by IATA as a foundational layer for the development of airline messaging standards in XML or any other data format that may emerge in the future.

The data model is structured in 3 pillars (Business, Information, Technology), 4 layers (Contextual, Conceptual, Logical, Physical), and operational stakeholder views. The present document focuses on configuration and utilities applying to all pillars, layers and stakeholder views.

The AIDM uses the Sparx Enterprise Architect (EA) modeling tool with AIDM customizations. The present guidelines will be accounting for this platform.

# Repository Configuration for Workgroups

## Release Approach

As a reminder, the AIDM needs to support Alpha, Beta, and Industry standard release. The following bullets are an extract of their characteristics:

* Alpha release:
  + Developed and generated from AIDM
  + Development group can rapidly add/change without constraints
  + Subject to PADIS development methodology
  + Scope is one all or part of one working group’s deliverable.
* Beta release:
  + Tested in pilots, generally working, small adjustments still needed
  + Interoperability is expected
  + Subject to PADIS development methodology
  + Scope is AIDM, i.e. across upcoming new standards.
* Industry Standard
  + Considered stable and changing infrequently/when new business requirements arrive
  + Interoperability is required
  + Release and further change control subject to formal PADIS release process
  + Scope is AIDM.

The AIDM should also support small maintenance between releases.

## Path through the Environments

All workgroups developing standards use the same cloud repository. Workgroups primarily work in the root node / root package “Development”.

There will be 4 root packages overall representing:

* Development
* Beta and Maintenance
* Upcoming Release
* Latest Published Release.

Prior published releases will be available amongst others through downloadable EAP files.

The Development packages contain Governance, Operational, and Reference Views. When a Beta Release is to be created, the models from Development Governance and Operational views that should be part of the next release are copied and integrated – across projects and with maintenance changes – into the Beta packages. After PADIS review, the models which have been approved are copied into Upcoming Release packages if different from Beta. After PSC approval, the latter are substituted to the Latest Published Release.

The diagram below shows the flow across the packages. Step 1 is explained in the next paragraph. CopySync and XSD Transformation tools (small red arrows on the diagram) are initially executed in the Development packages, then re-executed as needed in the Beta and Upcoming Release packages.



## Development Environment Configuration

In each partition (B1, … T4) affected by a workgroup’s project, a package is set up with 2 sub-packages if needed:

* Gov Work in Progress
* Operational View.

Both will contain any artifacts created or modified by the project. Diagrams can reference already existing, unchanged artifacts located in:

* Development environment Governance View   
  (can be referenced from Gov Work in Progress diagrams)
* Last published release Operational View  
  (can be referenced from Operational View diagrams).

The Development environment Governance View is used as a place to start sharing new artifacts and integrating the next release as soon as possible. Upon completion of the Latest Published Release, it is populated with the full copy of all models, contrary to the above Gov Work in Progress and Operational View packages (which contain deltas).

If a project wants to share objects with other committees / projects and solicit feedback, it can request all or part of its model to be moved from Gov Work in Progress to Governance. At this stage, compliance with modeling guidelines is checked by the AIDM administrator, before moving the artifacts. For the case other committees object the new or changed models, it will be technically possible to roll back the move.

## All Environments Configuration and Usage Overview

The previous focused on the configuration of the Development environment which is most important for modelers. Other environments are under tighter control of the AIDM administrator. The table below provides a brief overview of the configuration and usage of all environments.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Root Nodes** | **Views** (Gov,Ops,Ref) | **Contents** (Full/Delta) | **Run Copy- Sync** | **Run XSD Trans-form & Gen** | **May export to BRD document** | **Generate eap+xmi +html** |
| **Latest published Release** | Gov+Ops | Full |  |  |  |  |
| **Upcoming Release** | Gov+Ops | Full | X | X | X | X |
| **Beta & Maintenance** | Gov+Ops | Full | X | X | X | X |
| **Development** | Gov  Ops  Ops-GovWIP  Ref | Full (ignore maintenance)  Delta vs Latest Release  Delta vs Gov  Full | X  X  X | X (Library)  X (Message)  X (Library, p\*) | X  X  X | (as needed) |

p\* = partial

# AIDM Scripts

AIDM Scripts are functions that have been added to the base capabilities of EA to assist the modeler to navigate, validate, correct, develop and maintain a message and to integrate any changes with the Integrated Model.

|  |  |
| --- | --- |
| C:\Users\Ferguson\AppData\Local\Microsoft\Windows\INetCache\IE\MLSPT8GU\warning-sign11[1].png | *Control over the context in which a Script appears in EA is not particularly refined so you may see scripts appear where they are not relevant.* |

Usually scripts are accessed from the project browser when a particular item has been selected or by selecting an item on a diagram and clicking your right mouse button or equivalent. The exact route through the context menu to the Script menu is dependent on the version of EA you are using.

Scripts that provide a list of items as an output will typically populate the results pane as shown in Figure 1. The Results Pane is used as right clicking a row in the Results Pane allows other scripts to be run or the element to be found in the browser or on a diagram.

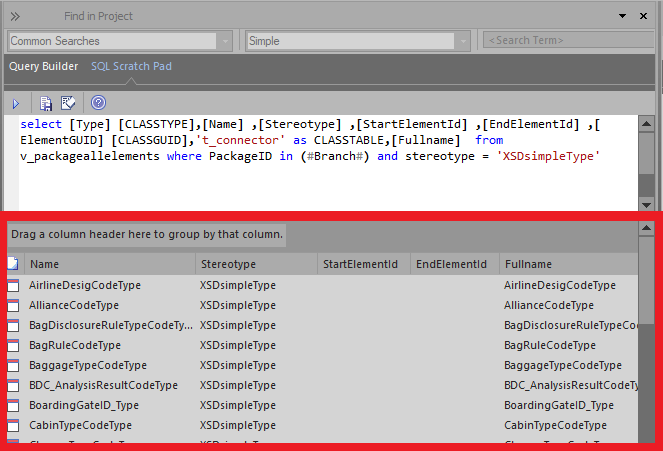


Figure 1 - Results Pane

|  |  |
| --- | --- |
|  | *A bug in EA means that if the Results Pane is automatically populated by a script right clicking on a connector to find the diagram(s) it is shown on does not work. To overcome this some scripts will place some SQL code in the windows paste buffer which if executed in the SQL Scratch Pad enables subsequent connectors in the Results Pane to be found in diagrams.* |

As a Script runs its progress is typically shown in the System Output Window’s Script Tab as shown in Figure 2.

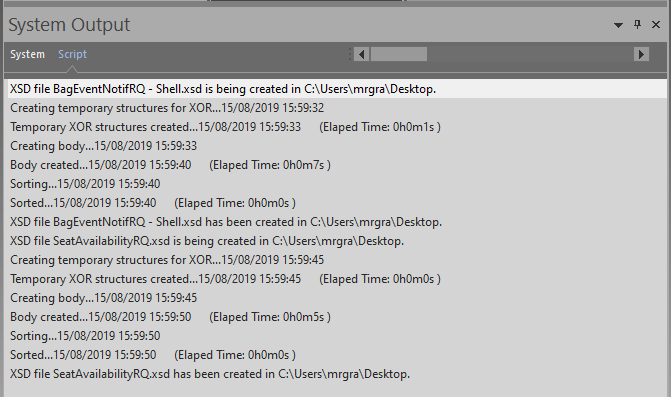


Figure 2 - System Output Window

The rest of this section identifies each Script and describes what it does and under which circumstances it might be used.

## What’s my ID

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Report the internal EA Identifier for the selected element. |
| Applicable to | Packages, Objects, Attributes and Connectors. |
| Launch from | Element selected in Project Browser, or on a diagram. |
| Launch by | What’s my ID |
| Upon Termination | Displays the EA ID of the selected element, the name of the element and the element’s stereotype in the System Output Window. The double dashes, i.e. SQL comment introducers, are provided to facilitate copying and pasting the value into an SQL statement. |
| Use Cases | Typically used by software developers when finding the root cause of issues. |
| Tips |  |

## Show me my World

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Report on the selected element’s self, origin, connectors, attributes and classifiers. |
| Applicable to | ABIE, BBIE, ASBIE, BDT, CON, SUP, ENUM, PRIM and CodelistEntry. |
| Launch from | ABIE, BBIE, ASBIE, BDT, CON, SUP, ENUM, PRIM or CodelistEntry selected in Project Browser. |
| Launch by | Running script “Show me my World”. |
| Upon Termination |  |
| Use Cases |  |
| Tips |  |

## Show me my Derivatives

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Report the elements that have been directly derived from the selected element. |
| Applicable to | ABIE, BBIE, ASBIE, BDT, CON, SUP, ENUM, PRIM and CodelistEntry. |
| Launch from | Selected ABIE, BBIE, ASBIE, BDT, CON, SUP, ENUM, PRIM and CodelistEntry in the Project Browser or on a Diagram. |
| Launch by | Running script “Show me my Derivatives”. |
| Upon Termination | Results Window shows Elements that have been derived from the selected element. |
| Use Cases | Impact analysis when wanting to modify or suppress an element. |
| Tips |  |

## Show me my Descendants

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Report the elements that have been derived from the selected element down the generations. |
| Applicable to | ABIE, BBIE, ASBIE, BDT, CON, SUP, ENUM, PRIM and CodelistEntry. |
| Launch from | Selected ABIE, BBIE, ASBIE, BDT, CON, SUP, ENUM, PRIM and CodelistEntry in the Project Browser or on a Diagram. |
| Launch by | Running script “Show me my Descendants”. |
| Upon Termination | Results Window shows Elements that have been derived from the selected element or its children or their children and so forth. |
| Use Cases | Impact analysis when wanting to modify or suppress an element. |
| Tips |  |

## Take me to my Package

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Repositions the selection in the Project Browser from the current element to the Package the element resides in. |
| Applicable to | Packages, Objects and Attributes. |
| Launch from | Element selected in the Project Browser |
| Launch by | Take me to my Package |
| Upon Termination | Positions the project browser on the selected element’s containing package. |
| Use Cases | Fast way to get to the parent package when the Project Browser is a long way down a long list of elements. |
| Tips |  |

## Show me what I Classify

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Report the elements that a selected element classifies. |
| Applicable to | Objects and Attributes. |
| Launch from | Selected Object or Attribute in the Project Browser. |
| Launch by | Running script “Show me what I Classify”. |
| Upon Termination | Results Window shows Elements classified by the selected element. |
| Use Cases | Impact analysis when wanting to modify or suppress a BDT or ENUM |
| Tips |  |

## Take me to my Classifier

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | To change the selected element in the Project Browser to the Classifier of the currently selected element. |
| Applicable to | Attributes. |
| Launch from | Attribute selected in Project Browser. |
| Launch by | Running script “Take me to my Classifier”. |
| Upon Termination | Project browser positioned on the classifying element. |
| Use Cases : | Typically used to Locate the type, e.g. the BDT referenced from a BBIE, the ENUM or PRIM referenced from a BDT’s CON or SUP but will work for any classifier set in EA.  Checking that the type of an attribute is in the same package as the attribute |
| Tips : |  |

## Correct Classifiers

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Reports on invalid classifiers and classifiers that are invalid but a valid classifier was found by a name match. If desired the invalid classifiers with valid alternatives can be corrected automatically. |
| Applicable to | Integrated, Functional Domain Model or Message Model package. |
| Launch from | Package selected in Project Browser |
| Launch by | Running script “Correct Classifiers”. |
| Upon Termination | If update not requested then List of invalid classifiers shown in Results Pane, otherwise classifiers that can be corrected automatically are corrected. |
| Use Cases | Validation Script identifies issues with classifiers. |
| Tips | Useful when attributes have been accidentally types by an element outside of the package. |

## Take me to my Origin

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | To change the selected element in the Project Browser to the element that is identified by the contents of the “originID” tagged value of the currently selected element. |
| Applicable to | ABIE, BBIE, ASBIE, BDT, CON, SUP, ENUM, PRIM and CodelistEntry. |
| Launch from | ABIE, BBIE, ASBIE, BDT, CON, SUP, ENUM, PRIM or CodelistEntry selected in Project Browser. |
| Launch by | Running script “Take me to my Origin”. |
| Upon Termination | Project browser positioned on the origin element. |
| Use Cases |  |
| Tips |  |

## Correct Origin IDs

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Update “origin ID” tagged values so they point to elements with the same name in the source package. |
| Applicable to | Integrated Model, Functional Domain Models, Message Models. |
| Launch from | Selected package in the Project Browser. |
| Launch by | Running script “Correct Origin IDs”. |
| Upon Termination | Any elements which were pointing to source elements outside of the source package or not pointing to a source element at all, will have their origin ID changed to the ID of an element in the source package should one with the same fully qualified name exist. |
| Use Cases | The procedures for model development have not been followed and the model has lost integrity. |
| Tips |  |

## List Promotion Candidates

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Produce a list of all the potential changes to the integrated model if a functional domain were to be promoted. |
| Applicable to | An Excel spreadsheet containing promotion candidates on an accessible drive. |
| Launch from | A Functional Domain package selected in the Project Browser. |
| Launch by | Running script “List Promotion Candidates” |
| Upon Termination | An Excel spreadsheet containing promotion candidates is created. |
| Use Cases |  |
| Tips |  |

## Import Promotion Candidates

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Imports the promotion status of changes being considered for promotion from a Functional Domain to the Integrated Model. |
| Applicable to | An Excel spreadsheet containing promotion candidates on an accessible drive. |
| Launch from | Not applicable. |
| Launch by | Running script “Import Promotion Candidates” from the AIDM Utilities menu in the Scripting Window. |
| Upon Termination | The Selection diagram will have all the relevant elements shown or hidden in accordance with the contents of the derived package. |
| Use Cases | When changes have been made to elements that appear on a selection diagram EA automatically applies those changes to diagrams containing those elements. Those changes may not be required in a particular derived model. Instead of manually hiding all the unwanted new elements on the selection diagram use this utility to do it for you. |
| Tips | Typically used by the Administrator. |

## Promote Package

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Make the changes to the Integrated Model according to the promotion directives in a given Functional Domain package. |
| Applicable to | A Functional Domain package. |
| Launch from | A Functional Domain Package selected in the Project Browser. |
| Launch by | Running script “Promote Package” from the AIDM Utilities menu in the Scripting Window. |
| Upon Termination | The Integrated Model reflects the changes defined in the Functional Domain package. |
| Use Cases |  |
| Tips |  |

## Synchronize with Package

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Synchronize a Selection diagram with the contents of the derived package. |
| Applicable to | Selection diagram. |
| Launch from | An open Selection diagram. |
| Launch by | Running script “Synchronize with Package” from the diagram’s context menu. |
| Upon Termination | The Selection diagram will have all the relevant elements shown or hidden in accordance with the contents of the derived package. |
| Use Cases | When changes have been made to elements that appear on a selection diagram EA automatically applies those changes to diagrams containing those elements. Those changes may not be required in a particular derived model. Instead of manually hiding all the unwanted new elements on the selection diagram use this utility to do it for you. |
| Tips |  |

## Synchronize

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Align the content of a derived package with the content of its source. |
| Applicable to | A derived package, that is, a Functional Domain or MsgModel package.  Figure 5 - Using Synchronization |
| Launch from | Selected package in the Project Browser. |
| Launch by | Running script “Synchronize”. |
| Upon Termination | The derived package will contain the elements identified on the Selection diagram plus any new elements that already existed unless the parent element has been removed from the Selection diagram. |
| Use Cases |  |
| Tips | Create a Tagged Value called “Standard SUP Retention Option” and set its value to one of the following to control which SUPs will be included:   * Default SUPs * All standard SUPs * No SUPs |

## Hide / Unhide

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Toggles the hidden state of an element on a SELECTION diagram. |
| Applicable to | ABIE, ASBIE and BBIEs on a SELECTION diagram. |
| Launch from | Selected element on a SELECTION diagram. |
| Launch by | Running script “Hide / Unhide” from the context menu of an element on a diagram. |
| Upon Termination | The element will be hidden if it was visible. In the case of an ABIE it will have its border hidden or revealed if it was already hidden. |
| Use Cases | An attribute or connector is not required in a SELECTION diagram or an attribute and or connector has been denormalized and the source ABIE is not required in the derived model. |
| Tips | Making changes using this script cannot be undone unlike when using the diverse methods provided by EA which are only applied when the diagram is saved. |

## Create daughter ABIE

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Replicate an ABIE with all of its BBIEs and ASBIEs and “originID” tagged values. |
| Applicable to | ABIE |
| Launch from | Selected ABIE on a diagram or in the Project Browser. |
| Launch by | Running script “Create daughter ABIE”. |
| Upon Termination | The new ABIE will be named with a numeric suffix to distinguish it from its parent.  Figure 3 - Mitosis Process |
| Use Cases | When trimming message branches. |
| Tips |  |

## Validate Package

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Report errors and warnings about the quality of a model. |
| Applicable to | Integrated Data Model, Functional Domain Model, Message Model. |
| Launch from | Selected package for the Integrated Data Model, a Functional Domain Model or a Message Model in the Project Browser. |
| Launch by | Running script “Validate Package”. |
| Upon Termination | Results Window shows issues. |
| Use Cases | Before running Synchronization or XSD Transformation make sure the model adheres to the standard. |
| Tips | Group the output by Category to make it easier to visualize the sets of errors and warnings. |

## Show me Redundant Elements

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Function | Report which elements in the message package are not used by the message. |
| Applicable to | Message Model. |
| Launch from | Selected package for a Message Model in the Project Browser. |
| Launch by | Running script “Show me Redundant Elements”. |
| Upon Termination | Results Window shows elements not reached when traversing the message from the specified root ABIE(s); categorized as “Unused”. Each root element is also shown and categorized as “Root”. Root ABIEs are identified by creating a tagged value named “isRoot” and setting its value to “True” on the relevant ABIE. |
| Use Cases |  |
| Tips | * Check you have marked the appropriate ABIEs as roots before making any changes to the model based on this report. * Group the output by Category to make it easier to visualize the sets of redundant elements. |

## XSD Transformation

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Create an EA XSDschema model from a Logical Message Model. |
| Applicable to | A Message Model package. |
| Launch from | A selected Message Model package in the Project Browser. |
| Launch by | Running script “XSD Transformation”. |
| Upon Termination | An XSDschema model created in T4. |
| Use Cases |  |
| Tips | The existing XSDschema contents, excluding the root element, MUST be deleted first.  All errors identified by the utility “Validate Package” SHOULD be fixed first. |

## Generate XSD (MsgModel)

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Generate an XSD File from a Message Model package. |
| Applicable to | A Message Model package. |
| Launch from | A selected Message Model package in the Project Browser. |
| Launch by | Running script “Generate XSD”. |
| Upon Termination | An XSD File will be created for the Message Model package. |
| Use Cases |  |
| Tips |  |

## Generate XSDs

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Run the script “Generate XSD (MsgModel)” for all Message Model packages on a diagram and create the XSD files in a specified directory. |
| Applicable to | A diagram containing the set of Message Model packages and a hyperlink of type “File” containing the path of the directory in the Name. |
| Launch from | The open diagram.    Figure 4 - Sample Diagram for Generate XSDs |
| Launch by | Running script “Generate XSDs”. |
| Upon Termination | An XSD File will be created for each Message Model package on the diagram. |
| Use Cases |  |
| Tips | Use the Alias field of the hyperlink to provide meaning to the directory path. In the above example the alias has been set to “Create XSD Files in this Directory”. |

## Compare with Source

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Report the differences between a Derived Model and its Source Model. |
| Applicable to | A derived package, that is, a Functional Domain or MsgModel package. |
| Launch from | Selected package in the Project Browser. |
| Launch by | Running script “Compare with Source”. |
| Upon Termination | Variance report shown in Results Pane.    Figure 6 - Sample Compare with Source Report |
| Use Cases | Evaluate the validity of the differences between a derived and source model to ensure variances are appropriate. |
| Tips | Exporting into Excel to manipulate the matrix may be helpful. |

## Compare Structures

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Report which messages in a package use which elements. |
| Applicable to | Set of MsgModel packages in a specified package. |
| Launch from | Parent package of a set of MsgModel packages. |
| Launch by | Running script “Compare Structures”. |
| Upon Termination | Figure 7 - Sample Compare Structures Report |
| Use Cases | To understand the differences between related messages to ensure consistency of design. |
| Tips | Exporting into Excel to manipulate the matrix may be helpful. |

## Generate XSD (XSDschema)

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Generate an XSD File from an XSDschema package. |
| Applicable to | An XSDschema package. |
| Launch from | A selected XSDschema package in the Project Browser. |
| Launch by | Running script “Generate XSD”. |
| Upon Termination | An XSD File will be created for the Message Model package. |
| Use Cases |  |
| Tips |  |

## Unused Types in XSD File

|  |  |
| --- | --- |
| Aspect | Description |
| Function | List Types in the XSD File that are not referenced by any other element. |
| Applicable to | An XSD file stored on an accessible drive. |
| Launch from | Script Window. |
| Launch by | Running script “Unused Types in XSD File” from the AIDM Utilities menu in the Scripting Window. |
| Upon Termination | A list of unused XSD Types will be displayed in the Results Window. |
| Use Cases |  |
| Tips |  |

## Sort XSD File

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Alphabetically sort all elements in an XSD file. |
| Applicable to | An XSD file stored on an accessible drive. |
| Launch from | Script Window. |
| Launch by | Running script “Sort XSD File” from the AIDM Utilities menu in the Scripting Window. |
| Upon Termination | The contents of the file will be sorted by element name alphabetically.  A back up of the original file is created in the same directory with a suffix of ”.bak” unless a backup file already exists in which case an additional “.bak” is added until a unique name is defined. |
| Use Cases |  |
| Tips |  |

## Find – Element Occurrence

|  |  |
| --- | --- |
| Aspect | Description |
| Function | display in the system output window the list of all packages in the current model / root node containing an element with the same stereotype and name |
| Applicable to | any elements based on EA Classes, such as Terms, Information Concepts, ABIEs, BDTs, ENUMs. NB this will not work with attributes. |
| Launch from | element selected in Project Browser |
| Launch by | right-click on element / Script / Find - Element Occurrence |
| Upon Termination | displays a dialog box “Element Occurrence complete” |
| Use Cases | * see which projects might have work in progress on this element, * identify duplicates |
| Tips | * right-click into the system output window allows you to copy all to clipboard |

# “Self Help” Utilities

The utilities described in this section have been implemented in addition to native EA. They are made available to modelers and reviewers to facilitate navigating the AIDM. Their usage is not mandatory.

Diagram Self Help

## Align Diagram Layouts – works on Master and Slave diagrams

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Aligns elements of a DERIVED diagram in I3/T3 with the elements in the corresponding SELECTION diagram. Acts on position and size of ABIEs. |
| Applicable to | DERIVED diagrams only |
| Launch from | DERIVED diagram |
| Launch by : | right-click on diagram / Script / Self Help – Diagram Alignment |
| Upon Termination | Dialog box confirms completion |
| Use Cases | Tidy up after running CopySync |
| Tips | * For best results ensure diagram properties of DERIVED diagrams are the same as for the SELECTION diagram * can be run multiple times, e.g. after initial CopySync and after subsequent CopySyncs |

## Self Help - I2 Conceptual Relationship Sentences

|  |  |
| --- | --- |
| Aspect | Description |
| Function | creates the I2 conceptual relationship sentences for verification of their validity |
| Applicable to | Any I2 Concept diagram |
| Launch from | Concept diagrams only |
| Launch by | right-click on element / Script / Self Help - I2 Conceptual Relationship Sentences |
| Upon Termination | displays a dialog box “Self Help Complete” and a list of fact ~~conceptual~~ sentences in the System Output window sentences of the clicked-on entity only ? |
| Use Cases | * pre compliance check * pre starting to model ~~move~~ to I3 |
| Tips | * right-click into the system output window allows you to copy all to clipboard |

## Self Help - I3 ASBIE Relationships

What is different between this and previous ? Could it be one tool ?

Why is this called “Relationships” and the previous one “Sentences” (note different formulation of “Function” text) ?

|  |  |
| --- | --- |
| Aspect | Description |
| Function | creates the I3 ASBIE relationships in a readable sentence format for verification of their logic/validity is the word “logic” purposely present here and absent for I2 ? |
| Applicable t | Any I3 logical data model and not T3 ? |
| Launch fro | Any LDM diagram |
| Launch by : | right-click on element / Script / Self Help - I3 ASBIE Relationships |
| Upon Termination | displays a dialog box “Self Help Complete” and a list of ASBIE relationships in the System Output window relationships or relationship sentences ? |
| Use Cases | * pre compliance check * pre CopySync |
| Tips | * right-click into the system output window allows you to copy all to clipboard * useful when diagrams are extremely large and complex |

## Self Help - List Additional BDTs

|  |  |
| --- | --- |
| Aspect | Description |
| Function | creates a list of the unique BDTs used by the set of ABIEs on a diagram |
| Applicable to | Any I3 ABIE logical data model |
| Launch from | Any LDM diagram which contains ABIEs i.e. DERIVED diagram  Most LDM diagram contain ABIEs => why only DERIVED ? |
| Launch by | right-click on any???element / Script / Self Help - List Additional BDTs |
| Upon Termination | displays a dialog box “Self Help Complete” and a list of unique BDTs in the System Output window |
| Use Cases | * pre compliance check * pre BRD Generation to create ‘- BDT’ diagram |
| Tips | * right-click into the system output window allows you to copy all to clipboard * useful when diagrams are extremely large and complex |

## Self Help - List Element Addresses is Address = Node Path ?

|  |  |
| --- | --- |
| Aspect | Description |
| Function | creates a list of the ABIEs on a diagram and where they are located in the model |
| Applicable to | Any I3 ABIE logical data model or T3 ??? or wherever I suppose ? |
| Launch from | Any LDM diagram which contains ABIEs i.e. DERIVED diagram |
| Launch by | right-click on element / Script / Self Help - List Element Addresses |
| Upon Termination | displays a dialog box box “Self Help Complete” and a list ABIE addresses in the System Output window |
| Use Cases | * pre compliance check * determine which ABIEs are from sources other than the current operational view |
| Tips | * right-click into the system output window allows you to copy all to clipboard * useful when diagrams are extremely large and complex |

## Self Help - List ENUMs

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Creates a list of the unique ENUMs used by BDTs on a diagram.  Similar to Self Help - List Additional BDTs. |
| Applicable to | Any I3 BDT logical data model - BDT ??? |
| Launch from | Any LDM diagram which contains BDTs i.e. BDT compliance diagram e.g. ? |
| Launch by | right-click on element / Script / Self Help - List ENUMs |
| Upon Termination | displays a dialog box “Self Help Complete” and a list of unique ENUMs in the System Output window |
| Use Cases | * pre compliance check * pre BRD Generation to create ‘- ENUM’ diagram |
| Tips | * right-click into the system output window allows you to copy all to clipboard * useful when diagrams are extremely large and complex |

Browser Self Help or “Package” …

Note the all the below operate on packages excluding any potential sub-packages. ???

## Self Help - List Additional BDTs (same name but different tool ?)

|  |  |
| --- | --- |
| Aspect | Description |
| Function | Sister tool to the browserdiagram??? version, creates a list of the unique BDTs used by ABIEs in the selected package. Invert desc. |
| Applicable to | any package which contains ABIEs |
| Launch from | package selected in Project Browser |
| Launch by | right-click on package / Script / Self Help - List Additional BDTs |
| Upon Termination | displays a dialog box “Self Help Complete” and a list of unique BDTs in the System Output window |
| Use Cases | * pre compliance check * pre BRD Generation to create ‘- BDT’ diagram |
| Tips | * right-click into the system output window allows you to copy all to clipboard * useful when diagrams are extremely large and complex |

# De-Normalizing

The process for creating a denormalized attribute is described in Figure 8 by following the numbered sequence of steps.

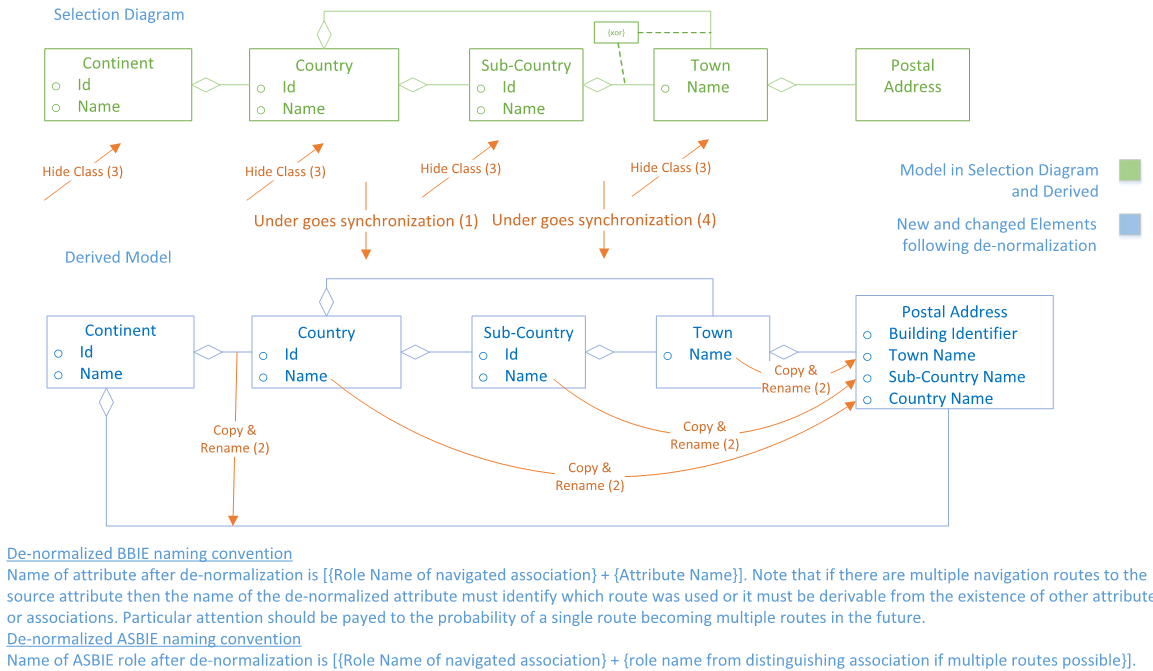


Figure 8 - How to De-normalize an Attribute.

# Business Requirements Document Generation “Cookbook”

The tool described in this section allows modelers to automatically generate contents from the AIDM EA repository into an MS Word Business Requirements Document (BRD).

The spirit of the tool – together with the BRD templates – is to provide a default structure for the BRD to be created, while at the same time leaving great flexibility for the working group to adapt the structure and select the contents to be included, so they are meaningful in the particular context.  
This is achieved through tailoring the templates and creating EA diagrams pointing to the content to be included from the AIDM. Some time should therefore be planned for this setup. Some time should also be planned for handwritten introductions in the BRD document, as appropriate for the specific working group.

In order to generate a BRD from the AIDM you require a BRD Word document template, a BRD - EXPORT selection diagram in the AIDM, and MS Word 2013 or higher on your workstation.

There are two relevant BRD Word templates:

* Stage II – diagrams & elements generated from B1, B2, B3 & I1
* Stage III – diagrams & elements generated from I3, T3 & T4.

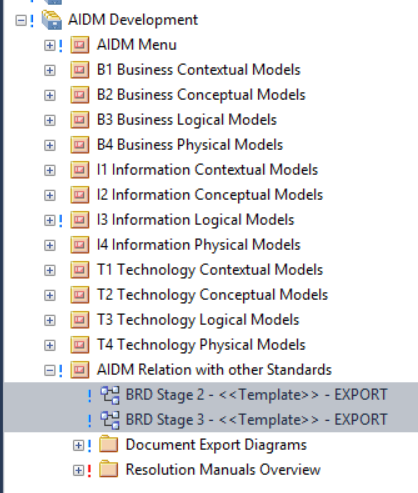
The approach consists in tailoring the standard BRD MS Word template provided with the AIDM methodology, in case you want to modify the structure of sections, and very importantly to reference the diagrams whose pictures or models are to be included in the BRD, from the sections where you want the contents to be included. This approach is illustrated in the diagram below.



Generation of contents from EA is triggered through a push-bottom in the MS Word document. Manually written contents can be entered into the BRD, and will remain next to the contents generated from EA. Manual content can continue to be edited, and content generated from EA can be refreshed as often as desired, to reflect changes made in the repository. All generation of content from EA is driven through a set of diagrams, referenced through hyperlinks from one “BRD - EXPORT selection diagram” per BRD MS Word document.

## Creating a BRD - EXPORT Selection Diagram

The BRD - EXPORT selection diagram is a collection of hyperlinks to diagrams in the AIDM that are required to appear in the Business Requirements Document.

Copy the diagram template

* In the AIDM after the final cube element “T4 Technology Physical Models” there is a package called *“AIDM Relation with other Standards”*. Expanding this package, you will find two diagrams called :
  + *“BRD Stage 2 - <<Template>> - EXPORT”*
  + *“BRD Stage 3 - <<Template>> - EXPORT”*

These diagrams should be copied and pasted into the *‘Document Export Diagrams’* package.

* During the paste, <<Template>> should be replaced with a name reflecting the BRD project.
* For naming consistency and for the generation to work, both the “BRD” prefix and “ - EXPORT” suffix must be retained in the diagram name.

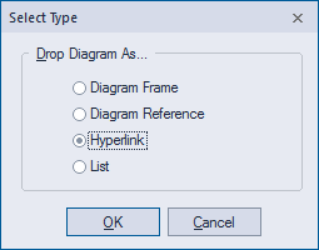
Set up new BRD - EXPORT selection diagram(s)

* Rename the title in your new diagram.
* Set the “Last BRD Update Date:” in the diagram, keeping the format (dd/Mmm/yyyy)  
  (see below section Detailed Features and Rules, § “Change Marks”).

There are sections in the two diagrams for pointing to different types of diagrams. The output to the BRD document depends on the type of diagram added as a hyperlink to the selection diagram.

* Stage 2: Business Process Diagrams – B1, B2
* Stage 2: Use Case Diagrams – B3
* Stage 2: Term Diagrams – I1
* Stage 3: Information Logical Model Diagrams – I3
* Stage 3: Message Logical Model Diagrams – T3

The sections i.e. borders are there only to help modelers organize the diagrams. They have no impact on BRD generation.

Adding the hyperlinks:

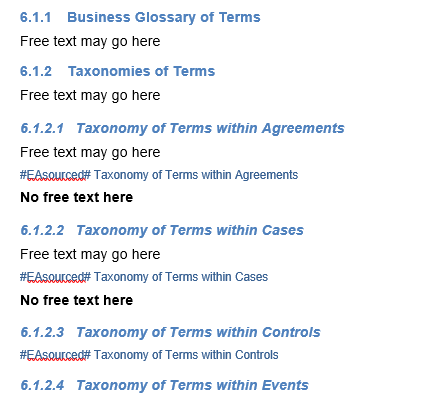
* To add a diagram to a section, drag the required diagram from the project browser onto the selection diagram. When prompted select “Hyperlink” from the dialog box.
* Rename the hyperlink to something understandable.
* Repeat for each required diagram.

## Preparing the BRD Template

Obtain a copy of the generation-enabled BRD template, either from the AIDM Administrator or the AIDM Methodology extranet pages.

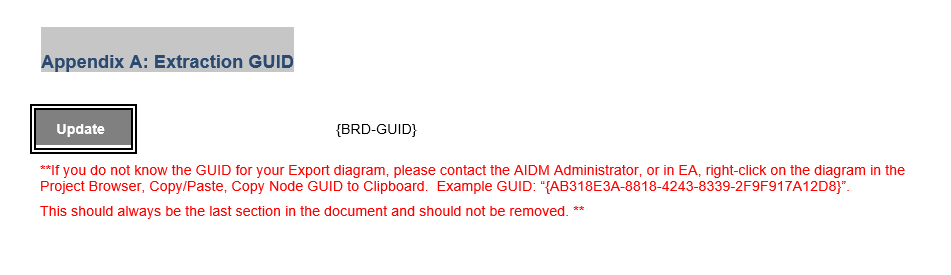
To automatically include contents from the AIDM :

* Add the name of the relevant hyperlink on your Export selection diagram after #EAsourced# directive in the BRD template. There are sample directives in all relevant sections of the BRD template.
* Remove irrelevant sections and “#EAsourced# xxx directives.
* If you have combined business artifact catalog diagrams in EA, or if you have multiple diagrams of the same type (e.g. multiple information conceptual data model diagrams), adapt the BRD document sections accordingly. There must be one MS Word section (delimited by section headers of any level) for each diagram (that drives the content to be generated into the BRD).
* No handwritten contents must exist between the directive and the next section heading (because they would be overridden and lost at next update of the contents generated from EA). Illustration :



## Generating / refreshing the BRD

At the end of the BRD template is the “Extraction GUID” Appendix.

* Copy the GUID of the AIDM BRD - EXPORT selection diagram by right-clicking the diagram  
  in the Project Browser and selecting ‘Copy Node GUID to Clipboard’ from the ‘Copy/Paste’ contextual menu item.
* Over-paste the GUID into the “Extraction GUID” Appendix where it says {BRD-GUID}.
* Save the document (as .docm).
* Make sure in EA that the BRD - EXPORT selection diagram (and its contents including the Last BRD Update Date text box) is not locked by any third party. It can be either locked or not locked by you.
* Double-click  
  on the Update  
  button.

The process can be repeated at any time. Updates made in the AIDM will be reflected in the BRD.

## Detailed Features and Rules

Content generated per diagram type

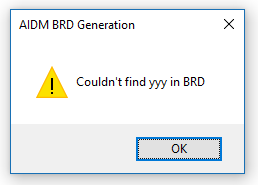
For any given diagram referenced in a “#EAsourced# xxx directive, the BRD generation tool will determine the type of the corresponding EA diagram referenced from the AIDM BRD - EXPORT selection diagram. It will then automatically generate the kind of content relevant for this type of diagram. The table below shows what content is generated by type of diagram.

|  |  |  |
| --- | --- | --- |
| Diagram Type  in IATAML / Diagram title bar | Diagram Name Suffix | Content generated into the BRD |
| Business Item Catalog /  Business Item Catalog Diagram | (none) | * Content/text in the Properties/ Notes of the diagram * Diagram picture * Table of Items in the diagram with their characteristics |
| Business Process L2 / Business Process Level 2 Diag. | (none) | * Content/text in the Properties/ Notes of the diagram * Diagram picture |
| Use Case/Use Case Diagram | (tbc) | * *(not yet enabled for generation)* |
| Business Glossary/  Business Glossary Diagram | (none) | * Content/text in the Properties/ Notes of the diagram * Table of Terms in the diagram and their characteristics |
| Taxonomy of Terms / Taxonomy of Terms Diagram | (none) | * Content/text in the Properties/ Notes of the diagram * Diagram picture * Table of Terms in the diagram with their characteristics |
| Information Concept /  Info Concept Diagram | (none) | * Content/text in the Properties/ Notes of the diagram * Diagram picture * Table of Relationship sentences * Table of Concepts in the diagram with their description (\*) |
| IATA\_LDM / Logical Data Model Diagram | (none) | * Content/text in the Properties/ Notes of the diagram * Diagram picture |
| (same as above) | “ - ABIE” | * List of ABIEs in the diagram * For each ABIE: Textbox with ABIE description + table with BBIEs and their characteristics |
| (same as above) | “ - BDT” | * Table of BDTs in the diagram with their characteristics |
| (same as above) | “ - ENUM” | * Table of ENUMs in the diagram with their characteristics (ENUM definitions, without potential Codelist entries) |
| (same as above  for Logical Message Models) | (tbc) | * *(not yet specifically enabled for generation /   may use same diagram types as Logical Data Models)* |

\* Note : For Information Concepts, you can inhibit generation of the Table of Concept descriptions  
by including the string “(without concept descriptions)” in the name of the hyperlink to the diagram. This can be useful for example when Concept descriptions equal Term descriptions, so there would  
be duplicate content in the BRD if the descriptions of terms have already been included in previous sections.

Matching diagram names in BRD generation directives and Export diagram hyperlinks

For any given diagram referenced in a “#EAsourced# xxx directive the name of the diagram must match exactly that of the hyperlink (e.g. no spaces at the end). It is possible to change the name in the hyperlink by right clicking the hyperlink and selecting the ‘properties’ field.

If the names do not match, you will get a message in the generated  
BRD document saying that the Diagram yyy named on the hyperlink cannot be found.   
  
Note: some of the diagram names will have a dash/hyphen character in their name such as “xyz - ABIE”. This is a standard dash character. If copy-pasting the hyperlink name from EA into MS Word – depending on how you copy – MS Word may replace the standard dash “-“ by a long dash “–“ which is a different character. If this happens, correct the dash character to enforce the right name in your MS Word template, with perfect match against EA.

BRD Formatting : Page layout, Size of diagrams, Spacing after generated contents

The standard AIDM template includes multiple Word “sections” with some of them being in portrait page setup, and others in landscape when they are intended to receive large generated tables.

Diagram pictures exported from EA into Word will keep their size if it fits in the page, or be automatically shrunk to fit within the page (acknowledging portrait/landscape format and margins).

You can change the page setup in the BRD document and if needed add section breaks. If switching  
a section between portrait and landscape, the BRD generation tool will automatically adjust the width of tables generated. As stated above it will also take into consideration the new height and width available for reducing diagrams where needed.

With regards to individual title headings in the BRD document : if you want to enforce precise spacing vs content generated from EA and preceding the heading, you should proceed as follows :

* Do not simply insert blank lines or page breaks between the title header and the preceding “#EAsourced# xxx directive (indeed, those would be removed at next “update).
* Instead, edit the “paragraph” properties of the title header to specify “spacing before” and/or “page break before”.
* When flagging a title heading for “page break before”, or when inserting a section break before it, also insert one blank line before this page/section break (needed by the tool for technical reasons).

Do not hesitate to ask our EA administrator for help in the case where you cannot obtain the exact outcome required.

Change Marks

The BRD - EXPORT selection diagram contains a Notes box “Last BRD Update Date: DD-MMM-YYYY” which should be the date of last generation of the BRD so that in any future regenerations changes to artifacts past that date can be spotted.

This feature will mark each artifact in the generated BRD with a Y/N dependent on whether the artifact has been changed since the last BRD generation/update. Changes are flagged by a highlighted Y. Upon termination, the BRD Generation tool will update the date in the BRD - EXPORT selection diagram to reflect the new date of last generation.

You can manually change the date by right clicking the Notes box and editing the “properties” field. This would allow you to influence at next generation which date is taken as baseline to select and highlight changes. When changing the date, it is essential that the structure “Last BRD Update Date: dd/Mmm/yyyy” is maintained for the change marks to be correctly updated.

# Annexes

## Annex A - Glossary

|  |  |
| --- | --- |
| Term | Description |
| BRD | Business Requirements Document; describing requirements and models for a new data exchange schema standard. |
| EA | Sparx Enterprise Architect; modeling tool used for the AIDM. |
| Governance View | Partition of the model with integrated and shared foundation content. Meaningful to Governance Stakeholders interested in the entire model. |
| Operational View | Partition of the model with content specific to individual business areas. Meaningful to Operational Stakeholders interested in these areas. Reuses shared content from the Governance View. |
| Reference View | Partition of the model with any content used as input or reference for developing the AIDM. For example best practices by contributing organization. |
| Package | A package is a container for the definitions of elements such as classes, use cases, and components. A package can also contain other packages. Packages are represented in UML 2.1 as folders and contain the elements that share a namespace. |