

SAP NetWeaver MDM - Importing IEC 61360 Class Taxonomy and Creation of a New Material Record in Enterprise Portal - I

Applies to

SAP NetWeaver 2004s / MDM 5.5 SP04 Patch 01+

Summary

Building upon the existing knowledge on import of taxonomies using the SAP NetWeaver MDM Import Manager, part I of this document aims to present a practical example of the use of “Taxonomy” table type available in SAP NetWeaver MDM which can be used to accommodate various components of a taxonomy with utmost ease. The integration of SAP NetWeaver MDM with SAP Enterprise Portal (EP) has also been visited to showcase new part request creation based on the IEC taxonomy in the second part of this document.

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Author Bio



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Business Scenario

The business need for the import and maintenance of IEC 61360 taxonomy into MDM emerges from the needs of procurement department of a high tech (semi conductor) manufacturer / assembler to find relevant components and or replacement / alternative parts best suited for electronic components. With SAP NetWeaver MDM in the landscape, it becomes easy for all the involved stakeholders in the procurement and supply scenario to communicate using common international standards interpreted similarly by everyone in the chain.

The International Electrotechnical Commission (<http://std.iec.ch/iec61360>) provides the high tech industry relevant Component Data Dictionary – the IEC 61360 class.

IEC Component Data Dictionary Scope

The dictionary and database follow the methodology of part 1 of IEC 61360 and the information model of Parts 2 and 5, and include:

- a hierarchical classification of components in a classification tree
- a set of characteristic properties (DETs) associated with each class that fully describe components belonging to a class. Within the classification hierarchy, sub-classes inherit properties from those classes above them in the tree
- where relevant, conditions for which the property values are valid.

The structure of the database follows the information model very closely so that data can be extracted from it in a compliant computer-sensible form. Selective downloads are available as HTML files which can also be converted to tables in Excel / Access. The Excel format was used for the import in this case.

Assumptions

- The information contained in this document does not assume any prior knowledge of taxonomy import using the MDM Import Manager.
- A novice level familiarity with the SAP NetWeaver MDM interface has been assumed when presenting information in this document and it can be used to get started with import of taxonomies into SAP NetWeaver MDM.

Methodology – Pre - Requisites

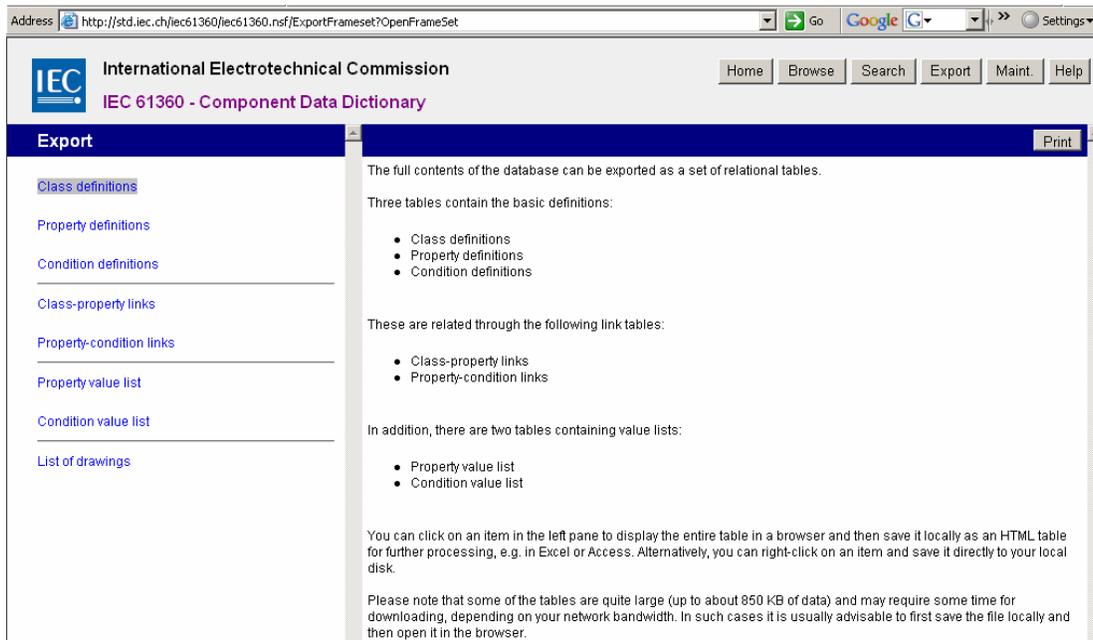
1. Extraction and conversion of relevant tables from IEC website

The above mentioned class can be browsed at the location -

<http://std.iec.ch/iec61360/iec61360.nsf/TreeFrameset?OpenFrameSet> and the export of HTML format can be generated using the “Export” button on the above page.



Clicking on the “Export” link in the page above leads to the following page from where the respective database table contents can be accessed as HTML.



As an example, the “Class Definitions” link leads to the following HTML, which in turn is copied and pasted into an Excel sheet as shown below:

Address <http://std.iec.ch/iec61360/iec61360.nsf/ExportClassDefinition?openagent>

IEC 61360 Class Definitions (2007-01-03 / 07:29 C.E.T.)
 Copyright © IEC 2007 All Rights Reserved.

Code	Version	Revision	PrefName	SynName1	SynName2	ShortName	Definition	
AAA001	001	02	Components	component		CO	A set of industrial products of which each product can be described with the same group of data element types.	COMPO a specific f decompos intended fo product.
AAA002	003	01	Electric/electronic components	electric-electronic		EE	A set of electric/electronic components of which each component can be described with the same group of data element types.	ELECTRI groups of indicate a data eleme
AAA003	001	02	Amplifiers	amplifier		AMP	A set of amplifiers of which each amplifier can be described with the same group of data element types.	AMPLIFI essentially greater po 60050(70
AAA004	001	02	Low-frequency amplifiers	low frequency		LF	A set of low-frequency amplifiers of which each amplifier can be described with the same group of data element types.	LOW-FRE designed fo for exampl
AAA005	001	02	Power amplifiers	power		PWA	A set of power amplifiers of which each amplifier can be described with the same group of data element types.	POWER deliver out voltage gai mainly due
AAA006	001	02	Voltage amplifiers	voltage		VTA	A set of voltage amplifiers of which each amplifier can be described with the same group of data element types.	VOLTAG primarily to supplying i

Done Internet

After pasting, reorganization of columns and elimination of blank entries in the classes column, the class definitions appear as follows in the excel workbook that would form the source for taxonomy import for Import Manager later. A copy of the final source files may be found as an attachment to this document. The file could also have been converted to MS Access format for import in case pivot tables are required within the import manager for this taxonomy.

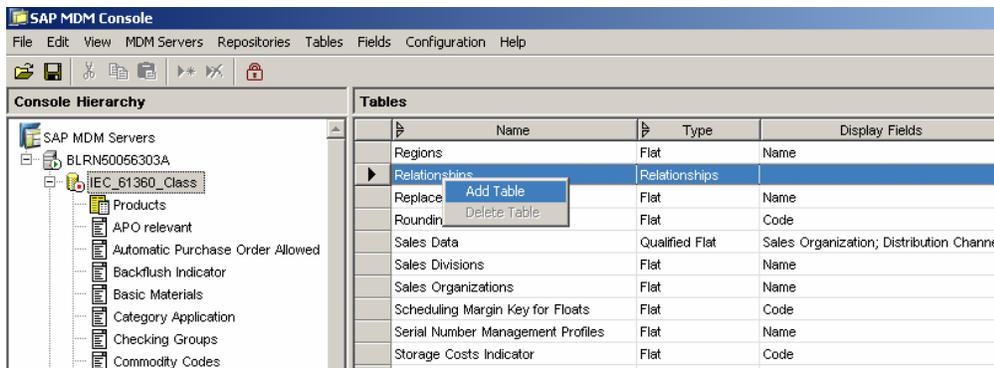
Code	Classes	Version	Revision	PrefName	SgnName1	ShortName	Definition	Creation Date	Confirmation Date	Version Date	Version Conf Date	Creator ID	Status Code	Standard Doc
AAA001	AAA001	1	2	Component	component	CO	Industrial products of which each product	04/01/97	01/01/97	08/01/96	01/01/97	Philips	CONF	IEC 61360-
AAA002	AAA001,AAA002	3	1	Electric/electronic components	electric-electronic	EE	electrical/electronic components of which each	04/01/97	01/01/97	01/29/03	01/01/97	Philips	CONF	IEC 61360-
AAA003	AAA001,AAA002,AAA003	1	2	Amplifiers	amplifier	AMP	amplifiers of which each amplifier can be	04/01/97	01/01/97	08/01/96	01/01/97	Philips	CONF	IEC 61360-
AAA004	AAA001,AAA002,AAA003,AAA004	1	2	Low-frequency amplifiers	low frequency	LF	low-frequency amplifiers of which each	04/01/97	01/01/97	08/01/96	01/01/97	Philips	CONF	IEC 61360-
AAA005	AAA001,AAA002,AAA003,AAA004,AAA005	1	2	Power amplifiers	power	PWA	power amplifiers of which each	04/01/97	01/01/97	08/01/96	01/01/97	Philips	CONF	IEC 61360-
AAA006	AAA001,AAA002,AAA003,AAA004,AAA006	1	2	Voltage amplifiers	voltage	VTA	voltage amplifiers of which each	04/01/97	01/01/97	08/01/96	01/01/97	Philips	CONF	IEC 61360-
AAA007	AAA001,AAA002,AAA003,AAA004,AAA006,AAA007	1	2	Differential amplifiers	differential	DFA	differential amplifiers of which each amplifier is operational	04/01/97	01/01/97	08/01/96	01/01/97	Philips	CONF	IEC 61360-

All other respective links are also inserted as sheets in the same excel workbook as they appear on the IEC website. The import manager in MDM is able to recognize different sheets in the same excel workbook as different source tables and allows independent import of the same without the need to refer to multiple sources repeatedly. Further steps of selection and import of relevant content into corresponding tables is illustrated at a later stage in this document.

2. Preparing the MDM system for taxonomy import

The standard Material Master repository was enhanced to include the IEC 61360 class taxonomy table using the MDM Console. Appropriate fields were added to the created taxonomy table to accommodate the structure of the class definitions table in the Excel sheet created in the previous step. The following screen shots illustrate the steps to enhance the standard repository for the import.

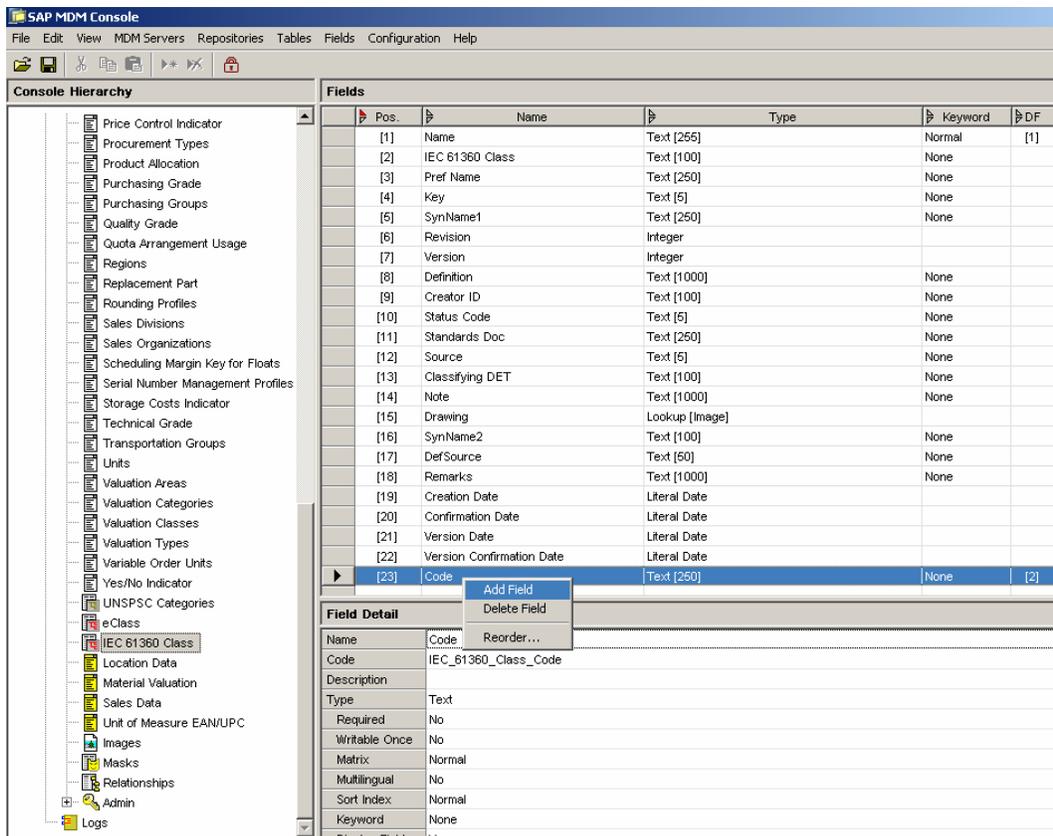
1. The repository to be enhanced should be present in the list of available repositories on one of the mounted MDM servers. While the repository is in the unloaded state, the new taxonomy table is added to it using the context menu in the tables column of the console as shown in the screens below.



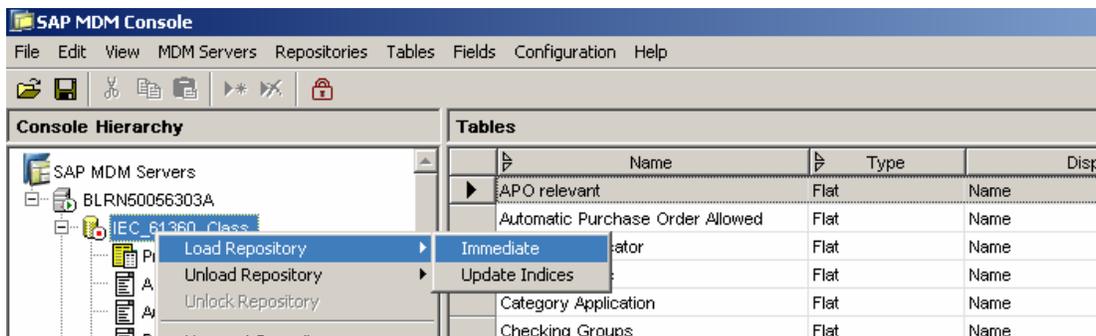
- The new taxonomy table added to the repository is named as "IEC 61360 Class", a unique code is entered and the changes are saved using SHIFT + ENTER or the pencil icon to the left of the new entry in the tables column.

Table Detail	
Name	IEC 61360 Class
Code	IEC_61360_Class
Description	
Type	Taxonomy
Display Fields	Name
Unique Fields	
Key Mapping	No

- New fields are added to the table created in the previous step using the context menu after selecting the newly created taxonomy table from the left hierarchical structure for the repository.



- Appropriate names are given to the fields according to the columns in the class definitions sheet in the input excel file. Changes are saved using the same procedure as stated above. More details on the usage of MDM Console can be obtained by referring to the MDM Console Guide available on the service marketplace (<http://service.sap.com>) or online MDM help on SAP help portal (<http://help.sap.com/>). The above screen shot lists all the fields in the final IEC class taxonomy table.
- After including all the required enhancements to the standard repository, the repository is loaded using the context menu for the respective repository. The final status of the repository should read “Loaded Running” after the loading process completes.



The above mentioned steps are pre-requisites to initiate the process of import of taxonomy contents using the import manager. Technical details for the treatment of taxonomy tables can be obtained in the MDM Console guide.

3. Taxonomy import as a pre-requisite to master data import

Similar to reference data like units of measure, currencies, ISO codes etc, the import of taxonomy contents like class / category definitions, attributes, attribute values and class attribute links precedes the import of master data records into the MDM system.

Once the hierarchical structure for the taxonomy classes has been established and the attributes imported along with their values and links to the taxonomy structure it becomes easier to relate and classify the master data records to the appropriate class in the taxonomy and subsequently use the taxonomy to search and manage existing master data as well as create fresh master data based on the same industry standard taxonomy that the existing data follows. This helps to ensure ongoing master data classification as well as to ensure that any changes in the taxonomy are appropriately reflected in the associated master data records.

4. Methodology of import and considerations

This document overlaps with the use case for taxonomy import in general (e.g. eCI@ss import into MDM) to the extent of following the same step by step approach to import the taxonomy elements one after the other in the appropriate sequence. However, adequate details have been included at respective places for the first time user of MDM Import Manager and other components.

In addition to the steps for importing classes, attributes (properties) and class – attribute links, steps have also been included to present the way SAP NetWeaver MDM treats special attributes like conditions (e.g. Ambient Temperature, Humidity etc.) which in the present case of electronic components do not form direct properties of the classes or the electronic components themselves but are important from high tech industry customer's needs as they affect the performance and hence the direct properties like resistance, inductance etc. of the components.

5. Preparation of MDM system (Import Manager) for import

1. Please ensure that the corresponding repository into which the taxonomy contents are to be imported is loaded and running in the console before running the Import Manager.
2. Logon to the MDM Import Manager by providing the relevant MDM server name, repository name, language, user name and password on the Import Manager login screen as shown below. Select "Next" to continue to the next screen

The screenshot shows the 'Connect to MDM Repository' dialog box. It features a title bar with a close button (X). Below the title bar is the SAP MDM Import Manager logo. The main area contains the following fields and controls:

- Repository: A dropdown menu showing 'IEC_61360_Class [BLRN50056303A]' and a browse button (...).
- Language: A dropdown menu showing 'English [US]'.
- User: A text input field containing 'Admin'.
- Password: An empty text input field.
- A checkbox labeled 'Save password' which is currently unchecked.
- An 'About...' button.

At the bottom of the dialog, there are three buttons: '< Back', 'Next >', and 'Cancel'.

3. Select the options on the screen that appears as shown below. The location of the source file would depend on its location on the local machine / network storage location as applicable. Click "Finish" to continue. The Import Manager screen should appear after some time as shown in the second screen below.

The screenshot shows the 'Connect to Source' dialog box. It features a title bar with a close button (X). Below the title bar is the SAP MDM Import Manager logo. The main area contains the following fields and controls:

- Type: A dropdown menu showing 'Excel'.
- Remote system: A dropdown menu showing 'MDM'.
- Port: An empty dropdown menu.
- XML schema: An empty dropdown menu.
- File name: A text input field containing 'onomy Contents\Source Files\IEC_Taxonomy.xls' and a browse button (...).
- DSN: An empty text input field.
- DBMS server: An empty text input field.
- Database: An empty text input field.
- User: An empty text input field.
- Password: An empty text input field.
- A checked checkbox labeled 'Read-only'.

At the bottom of the dialog, there are three buttons: '< Back', 'Finish', and 'Cancel'.

The screenshot shows the SAP MDM Import Manager interface. The 'Source Hierarchy' pane on the left lists various taxonomy components from the 'IEC_Taxonomy.xls' file, including 'Class - Property Links\$', 'Class Definitions\$', 'Condition Definitions\$', 'Condition Value List\$', 'List of Drawings\$', and 'Property Definitions\$'. The 'Destination Hierarchy' pane on the right shows the 'IEC_61360_Class [BLRN50056303A]' structure with categories like 'Products', 'APO relevant', 'Automatic Purchase Order Allowed', 'Backflush Indicator', 'Basic Materials', and 'Category Application'. Below these panes, the 'Records' table is displayed with columns for ClassCode, ClassVers, PropertyDET, and PropVers. The table contains 2162 records, with the first few rows showing ClassCode AAA000 and AAA001, ClassVers 1, and various PropertyDET values like AAE000, AAF405, AAF418, etc. The status bar at the bottom indicates '2162 records', '4 fields', '8 tables', and 'SCRL'.

ClassCode	ClassVers	PropertyDET	PropVers
AAA000	1	AAE000	1
AAA001	1	AAF405	1
AAA001	1	AAF418	1
AAA001	1	AAF417	1
AAA001	1	AAF416	1
AAA001	1	AAF415	1
AAA001	1	AAF414	1
AAA001	1	AAF413	1
AAA001	1	AAF412	1
AAA001	1	AAF411	1
AAA001	1	AAF410	1
AAA001	1	AAF396	1
AAA001	1	AAF407	1
AAA001	1	AAF421	1
AAA001	1	AAF404	1
AAA001	1	AAF403	1
AAA001	1	AAF402	1
AAA001	1	AAF401	1
AAA001	1	AAF400	1
AAA001	1	AAF399	1
AAA001	1	AAF398	1
AAA001	1	AAF397	1
AAA001	1	AAF409	1
AAA001	1	AAF430	1

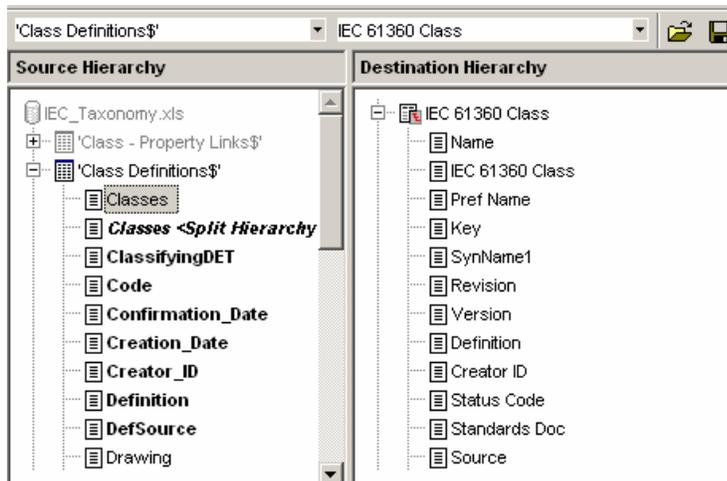
The next steps can be executed using the import maps provided with this document, or using the tabs in the import manager to create the import maps for each taxonomy component manually for the first import

Methodology – The Import Process

1. Import of 61360 classes – taxonomy hierarchical structure

a. Selection of source and destination tables

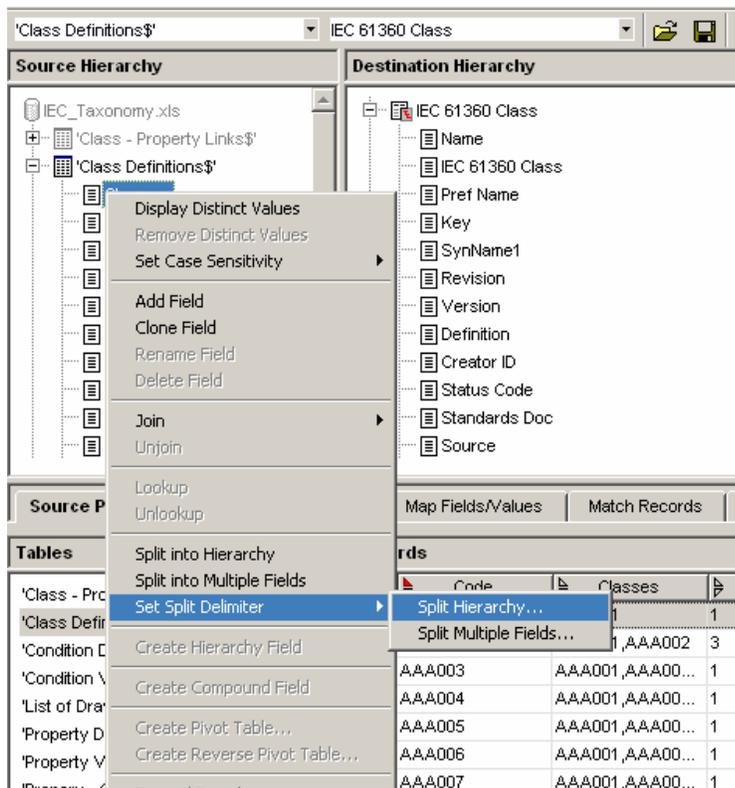
The source table “Class Definitions” and destination table “IEC 61360 Class” are selected as the first step to import of taxonomy hierarchy in the taxonomy table.



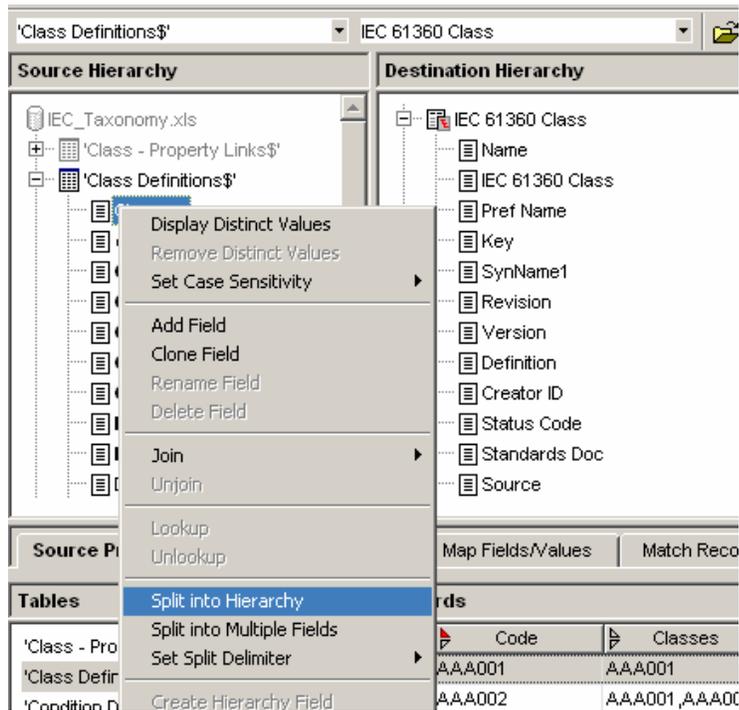
b. Splitting classes into hierarchy

The “Classes” field in the class definitions source table contains multiple values as observed in the preview section of the import manager. This can be split into a hierarchy as follows:

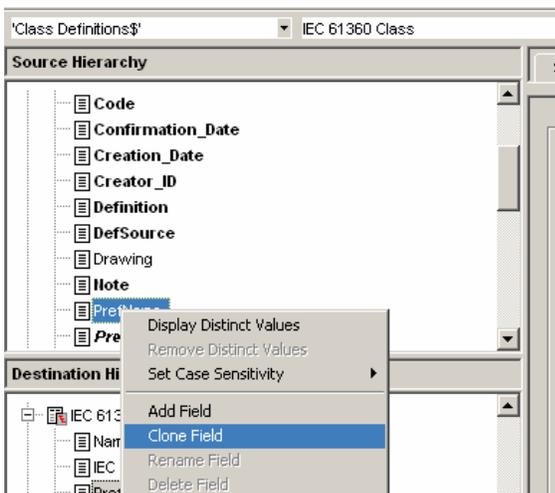
The context menu for selected source table “Class Definitions” is used to set the split delimiter to comma (,) in this case.



Selecting “Split into Hierarchy” would create a new field called “Classes <Split Hierarchy>” containing the hierarchical structure of the taxonomy classes.



Also the PrefName field in the source table needs to be cloned using the context menu on the field “PrefName” and selecting “Clone Field”. A new field called “PrefName <Clone> will be created below the PrefName field.



Ignore the partition tab and select the map fields / values tab for mapping fields and values.

c. Field mapping

Field mapping is performed according to the following mapping table (alternatively, the import map supplied with this document can be utilized):

Source Field Name	Destination Field Name
Classes <Split Hierarchy>	Code [DF] (English)
ClassifyingDET	ClassifyingDET
Code	IEC 61360 Class
Confirmation_Date	Confirmation Date
Creation_Date	Creation Date
Creator_ID	Creator ID
Definition	Definition
DefSource	DefSource
Note	Note
PrefName	Name [DF] (English)
PrefName <Clone>	Pref Name
Remark	Remarks
Revision	Revision
ShortName	Key
Source	Source
Standards_Doc	Standards Doc
Status_Code	Status Code
SynName1	SynName1
SynName2	SynName2
Version	Version
Version_Conf_Date	Version Confirmation Date
Version_Date	Version Date

Field mapping

Source fields:

Mapped	Name	Type	Destination Field
↕	Classes <Split Hierarc...	Text	Name
↕	ClassifyingDET	Text	Classifying DET
↕	Code	Text	IEC 61360 Class
↕	Confirmation_Date	System Time	Confirmation Date
↕	Creation_Date	System Time	Creation Date
↕	Creator_ID	Text	Creator ID
↕	Definition	Text	Definition
↕	DefSource	Text	DefSource
↕	Note	Text	Note
↕	PrefName <Clone>	Text	Pref Name
↕	Remark	Text	Remarks

Field mapping

Source fields:

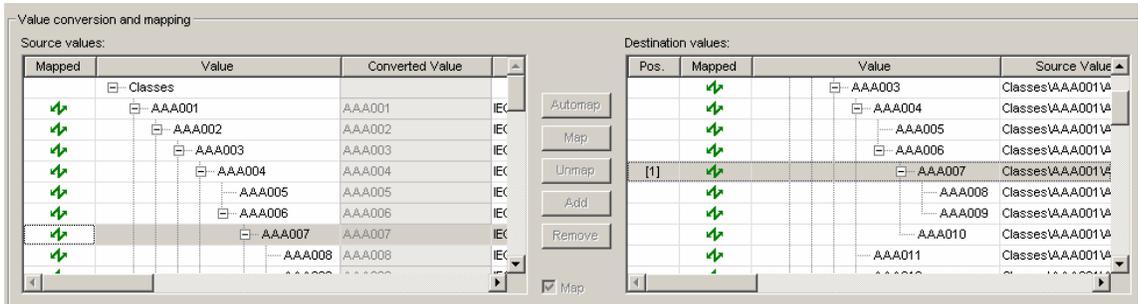
Mapped	Name	Type	Destination Field
↕	Remark	Text	Remarks
↕	Revision	Numeric	Revision
↕	ShortName	Text	Key
↕	Source	Text	Source
↕	Standards_Doc	Text	Standards Doc
↕	Status_Code	Text	Status Code
↕	SynName1	Text	SynName1
↕	SynName2	Text	SynName2
↕	Version	Numeric	Version
↕	Version_Conf_Date	System Time	Version Confirmation D
↕	Version_Date	System Time	Version Date

d. Value mapping

Values corresponding to the mapped fields are mapped according to the following table:

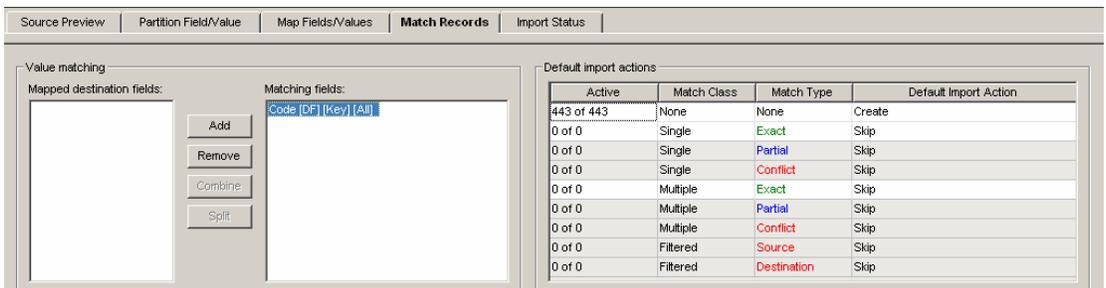
Field Name	Source Value(s)	Destination Value(s)
Classes <Split Hierarchy>	Classes (Hierarchy should be visible)	IEC 61360 Class (For the initial import, select all parent nodes on the source values and click "Add" > "Branch As Child" mapping option. All nodes from the source should be added to the Parent IEC 61360 Class node as children. In case the destination side already contains the IEC Hierarchy (due to a previous import), Automap can be used to map the values.
All Other Fields	All Values	All values for rest of the fields mapped in the previous step would be automatically converted by the system and need not be mapped. In case the Import Status tab flags a warning / error for non converted values, the context menu (right click) for that particular Field can be used to select "Set Value Conversion Filter > Accept Truncated Values" option for allowing the automatic

conversion of the remaining values for that particular field. This is a one time mapping configuration that is saved in the import map for reuse



e. Record matching

Select the mapped field “Code [DF]” which becomes the key for record matching. Set the default import action for records being imported to “Create”.



f. Import status

In case all the previous steps were executed without error, the import status should read “Ready to Import”, In case of errors the appropriate message would point to the relevant stage where the error might have occurred.

For import status “Ready to Import”, the import is executed as shown below.



g. Result of import

The result of importing classes can be viewed in the Data Manager > Taxonomy or Hierarchy Modes. The same is also presented below for reference.

The screenshot displays the SAP MDM Data Manager interface for the 'Material_IEC_61360_Class [BLRN50056303A] - English [US]'. The main window is divided into two primary sections: 'Taxonomy' on the left and 'Attributes' on the right.

The 'Taxonomy' section shows a hierarchical tree structure of components. The root node is 'IEC 61360 Class', which branches into several categories:

- AAA001, Components
 - AAA002, Electric/electronic components
 - AAA003, Amplifiers
 - AAA004, Low-frequency amplifiers
 - AAA005, Power amplifiers
 - AAA006, Voltage amplifiers
 - AAA007, Differential amplifiers
 - AAA008, Operational amplifiers
 - AAA009, Ac-coupled amplifiers
 - AAA010, Single-sided amplifiers
 - AAA011, Radio frequency amplifiers
 - AAA012, Wideband amplifiers
 - AAA013, Antennas
 - AAA014, Capacitive antennas
 - AAA015, Inductive antennas
 - AAA016, Resistive antennas
 - AAA017, Batteries
 - AAA018, Primary batteries
 - AAA019, Secondary batteries
 - AAA020, Capacitors
 - AAA021, Fixed capacitors
 - AAA022, Fixed air capacitors
 - AAA023, Fixed ceramic capacitors
 - AAA024, Fixed class1 ceramic capacit
 - AAA025, Fixed class2 ceramic capacit
 - AAA026, Fixed electrolytic capacitors
 - AAA027, Fixed film capacitors
 - AAA028, Fixed glass capacitors
 - AAA029, Fixed mica capacitors
 - AAA030+B440, Fixed paper capacitors
 - AAA031, Variable capacitors
 - AAA032, Conductors
 - AAA041, Delay lines
 - AAA042, Diode devices

The 'Attributes' section on the right contains a table with columns for 'Linked', 'Name', 'Type', and 'A'. Below the table is the 'Attribute Detail' panel, which includes fields for 'Name', 'Coupled Name', 'Alias', and 'Definition'. There are also radio buttons for 'Text', 'Numeric', and 'Coupled numeric', and buttons for 'Add', 'Modify', and 'Delete'. A 'Multi-valued' checkbox is located at the bottom right of the panel.

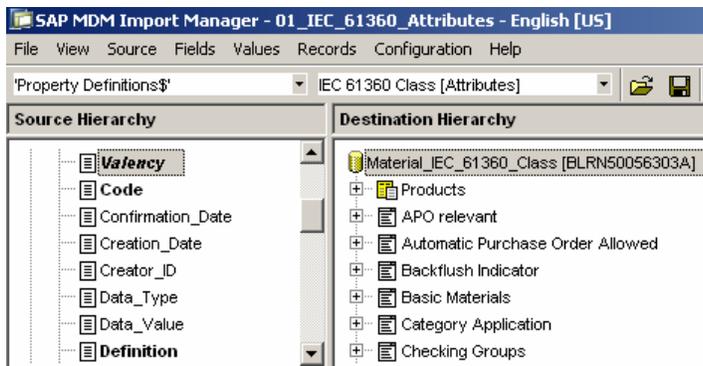
The status bar at the bottom of the window indicates 'Ready', '0 selected', and '0 of 0 attributes link'.

The two display fields name and code appear together in the Nodes of the hierarchy. This explains the purpose of using two display fields as well as cloning the PrefName Field in the Import Manager prior to mapping and import.

2. Import of properties (attributes)

a. Selection of source and destination tables

The "Property Definitions" source table is selected with the IEC 61360 class [attributes] table for the import of component properties. Alternatively, the import map available with this document can also be utilized for reuse of attribute mapping.



b. Field mapping

Field mapping is performed according to the following screen shot (alternatively, the import map supplied with this document can be utilized):

Field mapping

Source fields:

Mapped	Name	Type	Destination Field
✔	Code	Text	Alias
✔	Definition	Text	Definition
✔	Format	Text	Type
✔	PrefName	Text	Name
✔	Units	Text	Default Unit
✔	Valency	Text	Multi-Valued
	Class	Text	
	Confirmation_Date	System Time	
	Creation_Date	System Time	
	Creator_ID	Text	
	Data_Type	Text	
	Data_Value	Text	
	DefSource	Text	

c. Value mapping

Value mapping for each mapped field is performed according to the following screen shots. For the fields not displayed in the list below, no mapping is required as the system converts the values automatically.

Value conversion and mapping

Source values:

Mapped	Value	Destination Value
	<NULL>	Text
	A 1	Text
	A 2	Text
	A..4	Text
	A..8	Text
	A1	Text
	A2	Text
	A3	Text
	M 10	Text
	M 4	Text
	M 7	Text
	M..10	Text
	M..12	Text

Value conversion and mapping

Source values:

Mapped	Value	Destination Value
	M..12	Text
	M..17	Text
	M..175	Text
	M..20	Text
	M..2000	Text
	M..3	Text
	M..32	Text
	M..35	Text
	M..4	Text
	M..5	Text
	M..7	Text
	M..70	Text
	M..8	Text

Value mapping for field – “Format”

Value conversion and mapping

Source values:

Mapped	Value	Destination Value
	M..8	Text
	M..80	Text
	M1	Text
	NR1 S..4	Numeric
	NR1 S...	Numeric
	NR1..2	Numeric
	NR1..3	Numeric
	NR1..4	Numeric
	NR1..6	Numeric
	NR2 S....	Numeric
	NR2..2.2	Numeric
	NR2..3.3	Numeric
	NR3	Numeric

Value conversion and mapping

Source values:

Mapped	Value	Destination Value
	NR2 S...	Numeric
	NR2..2.2	Numeric
	NR2..3.3	Numeric
	NR3	Numeric
	NR3 S....	Numeric
	NR3 S...	Numeric
	NR3..3...	Numeric
	X 3	Text
	X..3	Text
	X..4	Text
	X..5	Text
	X..8	Text
	X1	Text

Value mapping for field – “Valency”

Value conversion and mapping

Source values:

Mapped	Value	Converted Value	Destination Value
	<NULL>	<NULL>	Yes

Value	Destination Value
<NULL>	Measurement\<NULL>
(A/m)/K	Measurement\<NULL>
(V/V)/(A/m)	Measurement\<NULL>
%	Measurement\Tolerance\percent
%/K	Measurement\<NULL>
1	Measurement\Acceleration\None
1/s	Measurement\Frequency\cycles/second
A	Measurement\Current\amperes
A/Cel	Measurement\<NULL>
A/K	Measurement\<NULL>
A/m	Measurement\Magnetic Field Strength\ampere-turns/meter
A/m**2}}	Measurement\Magnetic Field Strength\ampere-turns/meter
A/s	Measurement\Current (Flow)\amperes/second

Value	Destination Value
A/s	Measurement\Current (Flow)\amperes/second
A/W	Measurement\<NULL>
Ah	Measurement\Current (Charge)\ampere-hours
bit	Measurement\Transmission Speed (Bits)\None
cd	Measurement\Luminous Intensity\candles
Cel	Measurement\Temperature\Celsius
cm	Measurement\Length\centimeters
d	Measurement\Time\days
dB	Measurement\Power Gain\gain
dB(mV)	Measurement\Power Gain\gain
dB/m	Measurement\Attenuation\decibels/meter
deg	Measurement\Angle\degrees
F	Measurement\Capacitance\farads

Value mapping for field – “Units” – presents an opportunity to revise our physics fundamentals!!

Value	Destination Value
F/m	Measurement\Capacitance\Length\farads/meter
F/m**2}}	Measurement\<NULL>
H	Measurement\Inductance\henries
Hz	Measurement\Frequency\Hertz
inch	Measurement\Length\inches
J	Measurement\Energy (Work)\joules [newton meters]
JK	Measurement\Heat Capacity\kilojoule/Kelvin
J/m**3}}	Measurement\<NULL>
K	Measurement\Temperature\Kelvin
K**-1}}	Measurement\<NULL>
K/W	Measurement\<NULL>
kg	Measurement\Weight (Mass)\kilograms
kg.m**2}}	Measurement\<NULL>

Value	Destination Value
kg/m**3}}	Measurement\Density\kilograms/cu meter
m	Measurement\Thread Standard\M
m**-1}}	Measurement\<NULL>
m**2}}	Measurement\Area\sq meters
m**3}}	Measurement\Volume\cu meters
m/s	Measurement\Velocity (Linear)\meters/second
m/s**2}}	Measurement\Acceleration\meters/second2
N	Measurement\Force\newtons [joules/meter]
N.m	Measurement\Torque\newton meters
ohm	Measurement\Resistance\Ohms
ohm.m	Measurement\Specific Resistance\Ohm-meters
ohm/m	Measurement\<NULL>
ohm/s	Measurement\<NULL>

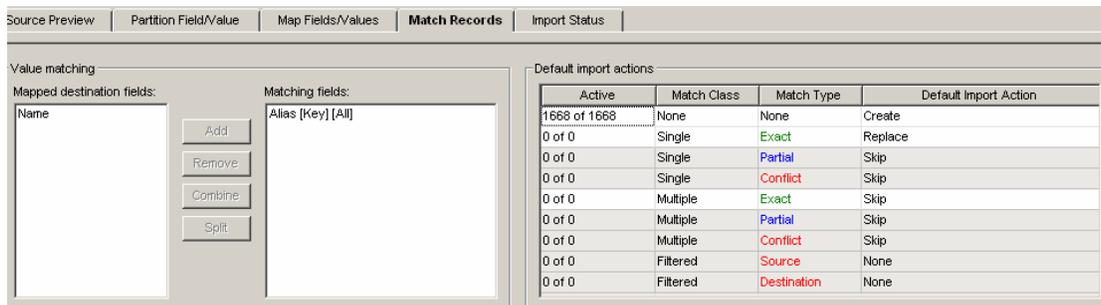
Value	Destination Value
Pa	Measurement\Pressure\pascals [newtons/sq meter]
ppm	Measurement\Tolerance\parts per million
r/min	Measurement\Frequency\cycles/minute
rad	Measurement\Angle\radians
s	Measurement\Time\seconds
step/s	Measurement\Frequency\operations/second
T	Measurement\Magnetic Inductance\tesla
T**-1}}	Measurement\<NULL>
V	Measurement\Voltage\volt
V/(r/min)	Measurement\<NULL>
V/(VPa)	Measurement\<NULL>
V/Cel	Measurement\<NULL>
V/K	Measurement\<NULL>

Value	Destination Value
V/(r/min)	Measurement\<NULL>
V/(VPa)	Measurement\<NULL>
V/Cel	Measurement\<NULL>
V/K	Measurement\<NULL>
V/s	Measurement\Voltage (Slew Rate)\volts/second
V/V	Measurement\<NULL>
V/W	Measurement\<NULL>
VA	Measurement\Power (Apparent)\volt-amperes
W	Measurement\Power (Apparent)\watts [joules/second]
W/(Hz**-1 ...	Measurement\<NULL>
WK	Measurement\<NULL>
W/m**3}}	Measurement\<NULL>
W/sr	Measurement\<NULL>

It is noteworthy that some of the source values have been mapped to the NULL value on the destination side. This can also be replaced with the step of creating valid values in the Data Manager for the property and then mapping the same in the Import Manager. For the purpose of this document the above mapping should suffice.

d. Record matching

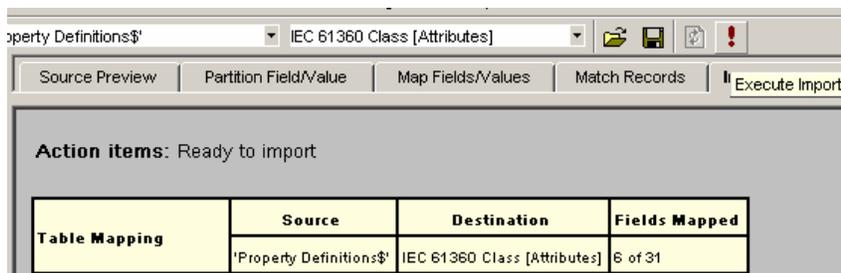
The alias field is used to match the incoming destination records with the IEC hierarchy structure already existing in the MDM system. The settings on the match records step are illustrated in the screen shot below:



e. Import status

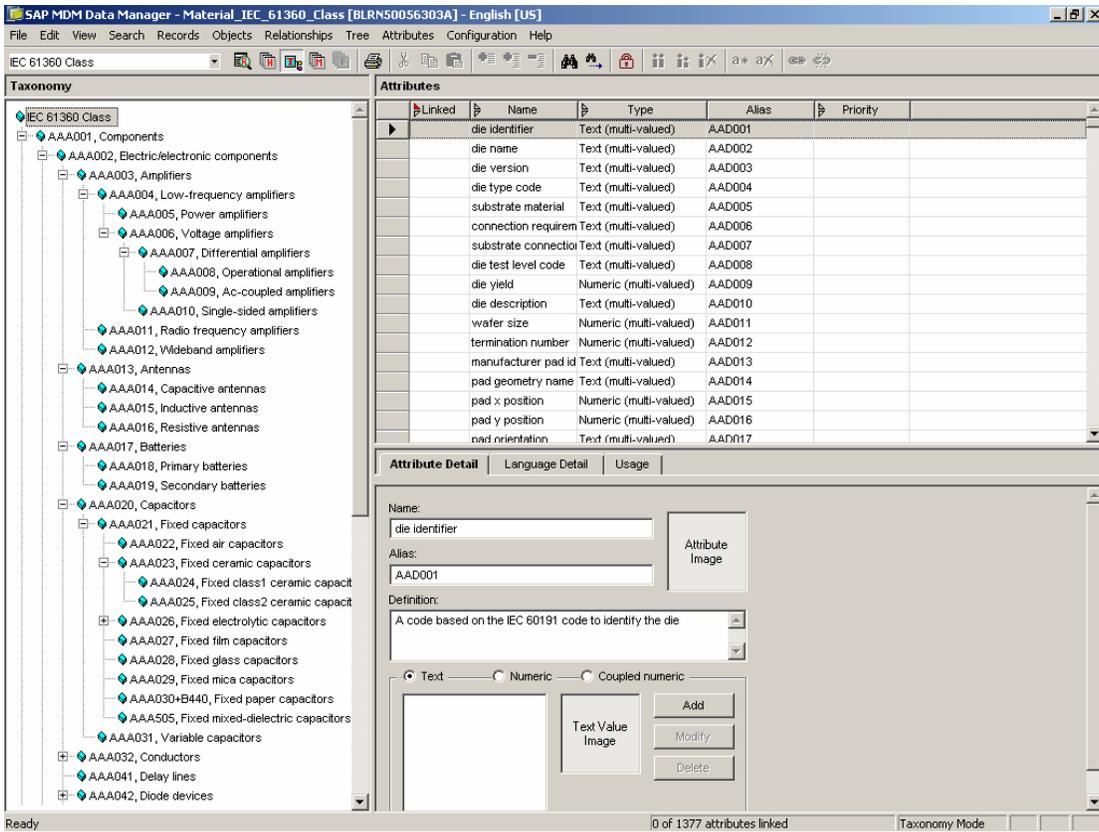
In case all the previous steps were executed without error, the import status should read "Ready to Import". In case of errors the appropriate message would point to the relevant stage where the error might have occurred.

For import status "Ready to Import", the import is executed as shown below.



f. Result of import

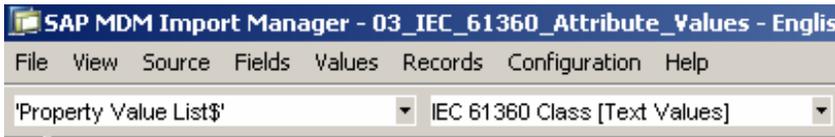
The result of importing attributes can be viewed in the Data Manager > Taxonomy or Hierarchy Modes. The same is also presented below for reference.



3. Import of attribute values

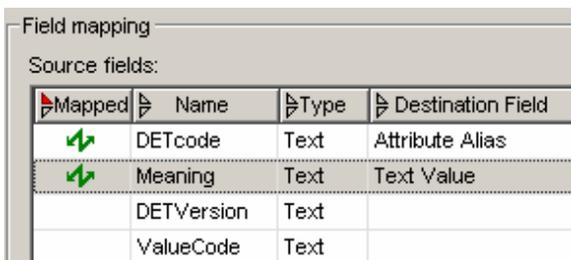
a. Selection of source and destination tables

The "Property Value List" source table is selected with the IEC 61360 class [Text Values] table for the import of component properties. Alternatively, the import map available with this document can also be utilized for reuse of attribute mapping.



b. Field mapping

Field mapping is performed according to the following screen shot (alternatively, the import map supplied with this document can be utilized):



c. Value mapping

In this case no value mapping is required as the system converts the values automatically.

Value conversion and mapping

Source values:

Conv.	Value	Converted Value
•	A.AD004	A.AD004
•	A.AD006	A.AD006
•	A.AD020	A.AD020
•	A.AD022	A.AD022
•	A.AD024	A.AD024
•	A.AD031	A.AD031
•	A.AD055	A.AD055
•	A.AD056	A.AD056
•	A.AD081	A.AD081
•	A.AD115	A.AD115
•	A.AD132	A.AD132
•	A.AD133	A.AD133

d. Record matching

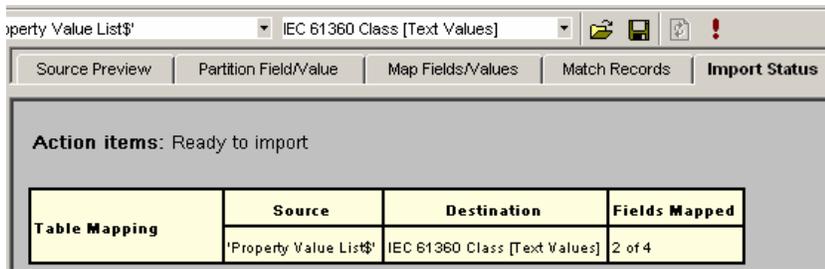
The “Attribute Alias” field is used to match the incoming destination records with the IEC hierarchy structure already existing in the MDM system. The default import action for active records needs to be set as “Update (All Mapped Fields)”. The settings on the match records step are illustrated in the screen shot below:

Source Preview	Partition Field/Value	Map Fields/Values	Match Records	Import Status
Value matching				
Mapped destination fields:		Matching fields:		
<input type="button" value="Add"/> <input type="button" value="Remove"/> <input type="button" value="Combine"/> <input type="button" value="Split"/>		Attribute Alias [Key] [All]		
Default import actions				
Active	Match Class	Match Type	Default Import Action	
0 of 0	None	None	Create	
1779 of 1779	Single	Exact	Update (All Mapped Fields)	
0 of 0	Single	Partial	Skip	
0 of 0	Single	Conflict	Skip	
0 of 0	Multiple	Exact	Skip	
0 of 0	Multiple	Partial	Skip	
0 of 0	Multiple	Conflict	Skip	
0 of 0	Filtered	Source	None	
0 of 0	Filtered	Destination	None	

e. Import status

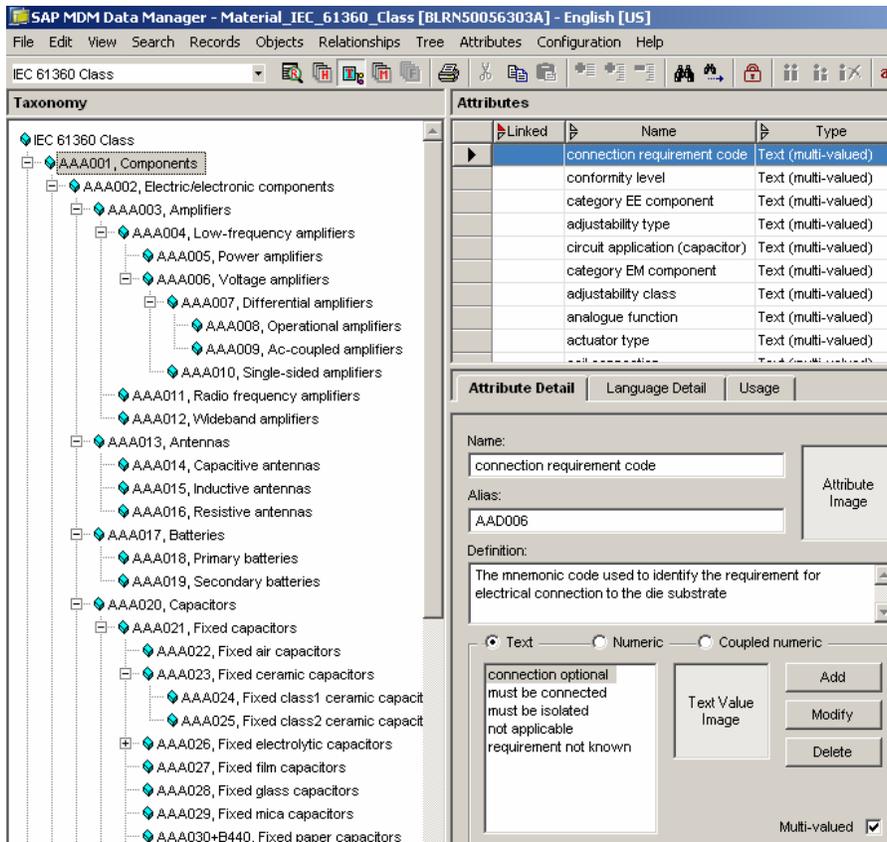
In case all the previous steps were executed without error, the import status should read “Ready to Import”, In case of errors the appropriate message would point to the relevant stage where the error might have occurred.

For import status “Ready to Import”, the import is executed as shown below.



f. Result of import

The result of importing attribute values can be viewed in the Data Manager > Taxonomy or Hierarchy Modes. The same is also presented below for reference. In the displayed list of attributes, the “connection requirement code” text attribute has been selected and the multiple values corresponding to the same are visible in the values field below the attribute type (“Text” radio button).



4. Import of attribute – class links

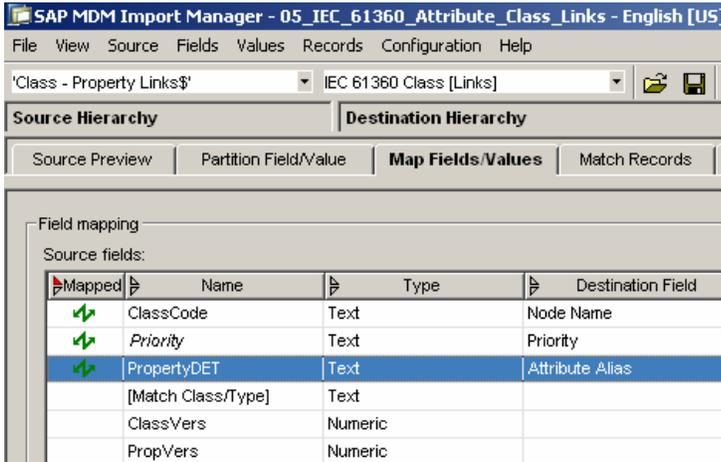
a. Selection of source and destination tables

The “Class – Property Links” source table is selected with the “IEC 61360 Class [Links]” table for the import of component properties and class links. Alternatively, the import map available with this document can also be utilized for reuse.



b. Field mapping

Field mapping is performed according to the following screen shot (alternatively, the import map supplied with this document can be utilized):



c. Value mapping

Value mapping is performed according to the following screen shots (alternatively, the supplied import maps can also be used).

'Class - Property Links' IEC 61360 Class [Links]

Source Hierarchy Destination Hierarchy

Source Preview Partition Field/Value **Map Fields/Values** Match Records

Field mapping

Source fields:

Mapped	Name	Type	Destination Field
✓	ClassCode	Text	Node Name
✓	Priority	Text	Priority
✓	PropertyDET	Text	Attribute Alias
	[Match Class/Type]	Text	
	ClassVers	Numeric	
	PropVers	Numeric	

Value conversion and mapping

Source values:

Mapped	Value	Converted Value	Destination Value
✓	AAA000	AAA000	IEC 61360 Class\<NU
✓	AAA001	AAA001	IEC 61360 Class\A.A.
✓	AAA002	AAA002	IEC 61360 Class\A.A.
✓	AAA003	AAA003	IEC 61360 Class\A.A.
✓	AAA004	AAA004	IEC 61360 Class\A.A.
✓	AAA006	AAA006	IEC 61360 Class\A.A.
✓	AAA007	AAA007	IEC 61360 Class\A.A.
✓	AAA008	AAA008	IEC 61360 Class\A.A.
✓	AAA012	AAA012	IEC 61360 Class\A.A.
✓	AAA013	AAA013	IEC 61360 Class\A.A.
✓	AAA014	AAA014	IEC 61360 Class\A.A.

'Class - Property Links' IEC 61360 Class [Links]

Source Hierarchy Destination Hierarchy

Source Preview Partition Field/Value **Map Fields/Values** Match Records

Field mapping

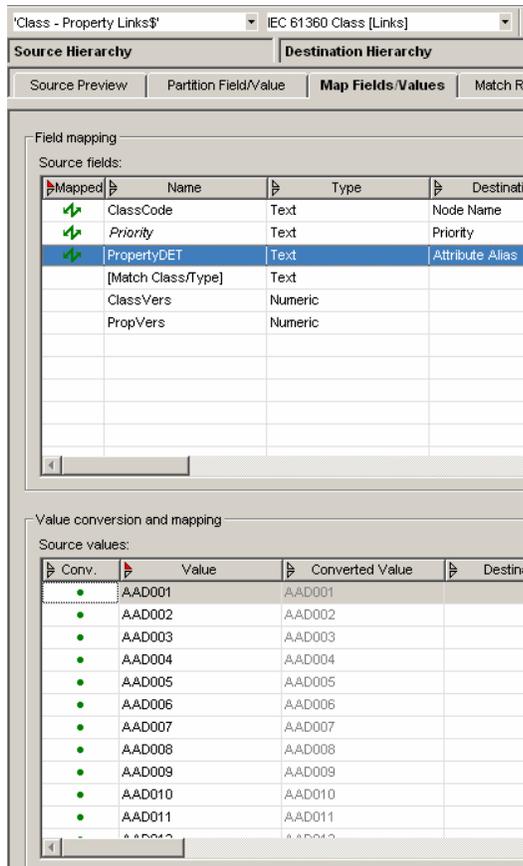
Source fields:

Mapped	Name	Type	Destination Field
✓	ClassCode	Text	Node Name
✓	Priority	Text	Priority
✓	PropertyDET	Text	Attribute Alias
	[Match Class/Type]	Text	
	ClassVers	Numeric	
	PropVers	Numeric	

Value conversion and mapping

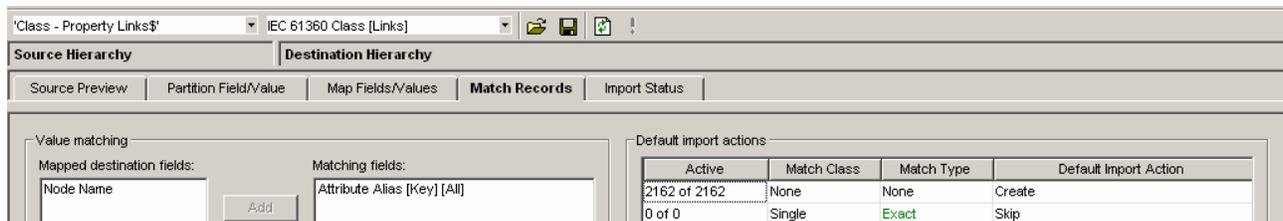
Source values:

Mapped	Value	Converted Value	Destination Value
✓	<NULL>	<NULL>	Highest



d. Record matching

The “Node Name” field is used to match the incoming destination records with the IEC hierarchy structure already existing in the MDM system. The Default Import Action for Active Records needs to be set as “Create”. The Settings on the Match Records Step are illustrated in the screen shot below:



e. Import status

In case all the previous steps were executed without error, the import status should read “Ready to Import”, In case of errors the appropriate message would point to the relevant stage where the error might have occurred.

For import status “Ready to Import”, the import is executed as shown below.

Source Hierarchy		Destination Hierarchy	
Source Preview		Partition Field/Value	
Map Fields/Values		Match Records	
Import Status			
Action items: Ready to import			
Table Mapping	Source	Destination	Fields Mapped
	'Class - Property Links'	IEC 61360 Class [Links]	3 of 4

f. Result of import

The result of importing attribute values can be viewed in the Data Manager > Taxonomy or Hierarchy Modes. The same is also presented below for reference. In the displayed list of attributes, the “connection requirement code” text attribute has been selected and the multiple values corresponding to the same are visible in the values field below the attribute type (“Text” radio button).

Attributes Table:

Linked	Name	Type	Alias	Priority
<input type="checkbox"/>	angle axis to x-axis	Numeric (multi-valued)	AAF411	Highest
<input checked="" type="checkbox"/>	angle axis to y-axis	Numeric (multi-valued)	AAF412	Highest
<input type="checkbox"/>	angle axis to z-axis	Numeric (multi-valued)	AAF413	Highest
<input type="checkbox"/>	body breadth	Numeric (multi-valued)	AAE021	Highest
<input type="checkbox"/>	body height	Numeric (multi-valued)	AAE020	Highest
<input type="checkbox"/>	body length	Numeric (multi-valued)	AAE019	Highest
<input type="checkbox"/>	case size	Text (multi-valued)	AAF368	Highest
<input type="checkbox"/>	centre of gravity (x-)	Numeric (multi-valued)	AAF362	Highest
<input type="checkbox"/>	centre of gravity (y-)	Numeric (multi-valued)	AAF363	Highest
<input type="checkbox"/>	column type	Numeric (multi-valued)	AAF437	Highest
<input type="checkbox"/>	component descripti	Text (multi-valued)	AAE834	Highest
<input type="checkbox"/>	component status	Text (multi-valued)	AAE965	Highest
<input type="checkbox"/>	cone height	Numeric (multi-valued)	AAF415	Highest
<input type="checkbox"/>	cone radius	Numeric (multi-valued)	AAF414	Highest

Attribute Detail for 'angle axis to y-axis':

- Name: angle axis to y-axis
- Alias: AAF412
- Definition: The value of the angle (in deg) between the orientation of the axis of a constructive solid geometry primitive and the Y-axis of the placement coordinate system.
- Type: Numeric
- Options: Dimension: Angle, Default unit: degrees, Decimal Places: 3
- Multi-valued:

To be continued in part II...

Appendix

Re-usable components

The import maps can be imported using the import / export feature of the MDM Import Manager – this would make them available under the list of import maps for the selected source file and the repository while loading the import manager.

The provided repository archives can be copied to the location “<MDM Installation Drive>/Program Files/SAP NetWeaver MDM 5.5/Server/Archives” before un-archiving the same using the MDM Console. The names of the included files are self explanatory for the purpose served by them.

Please download the following [Components](#).

Component	Copy
Source Files – Excel and Access formats	IEC_Taxonomy.xls IEC_Taxonomy.mdb
Repository (Enhanced)	Material_061120_Empty.a2a Material_IEC61360_Class_Complete.a2a
Taxonomy Import Maps	00_IEC_61360_Classes_Import.map 01_IEC_61360_Attributes_Import.map 02_IEC_61360_Attribute_Values_Import.map 03_IEC_61360_Attribute_Class_Links.map

Software components used

- SAP NetWeaver MDM 5.5 SP04 (release 5.5.34.46) for Windows
 - Console
 - Import Manager
 - Data Manager
 - Syndicator
- Microsoft SQL Server – DB server for SAP NetWeaver MDM for Windows

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