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## **Central Data Administration**

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# **Dimensional Model Review Procedure**

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## 1. Introduction

This procedure is for a quality review of a Dimensional Data Model. It ensures compliance with the Data Management Operating Procedures and Guidelines documents maintained by CMS/DA and that the model satisfies business owner requirements.

Possible results of model reviews include:

- Model Approved – There were no deviations from Standards
- Model Not Approved – There were deviations in standards.

Multiple reviews may be required before Approval is obtained. The review results and a cover letter explaining why the model was not approved is sent to the project team for each iteration of the model review. When the model is approved an acceptance/sign-off form is sent to the business owner for their approval.

## 2. Prepare Results Spreadsheet

Set up the spreadsheet that will contain the results of the review:

1. Create a copy of the Dimensional Model Review Results Template that is available from the Central Data Administration group (CDA) and rename it using the following format: CDA Dimensional Model Review Results [model name] [subject area name] [review date]
2. Initialize the following Result tabs with information from the data model.

<b>Results Tab</b>	<b>Initial Entry</b>
Entity Definition Standards	All entity names and definitions
Manual Entity Name-Domain	All entity names
Entity Key Standards	All entity names and Primary key attribute names
Attribute Definition Standards	All entity and attributes names and attribute definitions
Manual Attribute Name-Domain	All entity and attribute names

### 3. Review Model

CDA performs the following steps to review the dimensional model and document results.

#### 3.1 Validate Standards

The Validate Standards steps consist of checking data model metadata against the Standards Check-List Items (appendices A – C). This is done at the model, entity and attributes level. Fill out the Results Tabs using the following values:

Value	Condition
Y or blank	Meets the standard
N	Violates the standard
E	An exception to the standard has been granted for the object

Issues are documented in the ‘Comments’ column in the appropriate Results Spreadsheet tab.

##### 3.1.1 Model Level

Validate the Model Level Standards in Appendix A, and populate the results in the “Model Level Standards” tab of the Results Spreadsheet. Look in “Model/Model Properties”, UDPs and the Entity-Relationship Diagram in the data model to find the information.

##### 3.1.2 Entity Level

The Entity Level Standards are in Appendix B. Entity Level Standards are broken into four groups each on a separate worksheet:

- Entity Definition Standards (refer to Appendix B ID #1-5).
- Entity Name Standards – Document results from the Name Checker tool
- Manual Entity Name and Domain (refer to Appendix B ID #12-13 and 15)Entity Key Standards (refer to Appendix B ID #14)

##### 3.1.3 Attribute Level

The Attribute Level Standards are in Appendix C. Attribute Level Standards are broken into three groups each on a separate worksheet:

- Attribute Definition Standards (refer to Appendix C ID #1-5)
- Attribute Name Standards – Document results from the Name Checker tool
- Manual Attribute Name and Domain (Refer to Appendix C ID #11-12, 14-15)

#### 3.2 Determine Review Result

Determine the results of the Review. The results are based on what deviations were identified in the above steps. Possible choices include:

- Approved – There were no deviations. Obtain business owner sign off (next step).
- Unapproved – Deviations were found for Standard Items in the Appendices. Send the review results spreadsheet to the Project Local DA with a cover letter explaining necessary changes that need to be made before the model can be approved. After the Local DA has fixed the problems, the model review process should restart from the beginning.

### **3.3 Obtain Business Owner/Representative Sign Off**

This step occurs once CDA approves the model.

1. Prepare reports for the Business Owner to review (format reports for printing):
  - Entity Definitions
  - Attribute Definitions
2. Fill out a Cover Letter explaining what you want the Business Owner to review.
3. Fill out the Data Administration Dimensional Model Acceptance/Sign-Off Form (per the included instructions) and send it to the Business Owner/Business Representative for approval, or waiver, to indicate the satisfaction of the model's Business Requirements. Include the reports and Cover Letter from above.

### **3.4 Provide Central Data Administration Sign Off**

Upon receipt of Business Owner/Business Representative's approval or waiver, the Central Data Administration team member should complete the Data Administration Data Model Acceptance/Sign-off Form by specifying the Central DA signature and date of approval. The Central Data Administration team member should distribute a copy of the form to the impacted parties and post the form and model to its corresponding project library.

### **3.5 Register Approved Model**

After approval, send a copy of the model to CMS DA.

## Appendix A – Model Level Standards Checklist Items

ID	Area	Item	Standard
1	Model Properties	Does the model name conform to standards?	DM OP-028 STD #1
2	Model Properties	Does the model use IDEF1X notation?	DM OP-005 STD #3
3	Model Properties	Is the Model Author populated?	DM OP-031
4	Model Properties	Is the Model defined?	DM OP-028 STD #2
5	ERD	Is there text in the upper left corner of the model diagram that includes: the project name; subject area name, if applicable; update date; and modeler identification?	DM OP-005 STD#4
6	UDPs	Model Business Owner Name	DM OP 031
7	UDPs	Is the Model Central DA Name populated?	DM OP-031
8	UDPs	Is the Model Version Effective Date populated?	DM OP-031
9	Model Properties	Is the model identified as dimensional?	DM OP-029

## Appendix B – Entity Level Standards Checklist Items

<b>ID</b>	<b>Area</b>	<b>Item</b>	<b>Standard</b>
1	Definition	Is the definition clear, concise and unambiguous?	DM OP-008 STD #1& 3
2	Definition	Does the definition describe a singular occurrence of the entity?	DM OP-008 STD #4
3	Definition	Does the definition exclude references to technology or media?	DM OP-008 STD #6
4	Definition	Is an acronym in an Entity Name or Definition spelled out in the definition the first time it is used?	DM OP-008 STD #7, #8
5	Definition	Does the definition begin with “A” or “An”?	DM OP-008 STD #5
6	Name	Is the entity name unique throughout the Project Data Model?	DM OP-009 STD #1
7	Name	Does the entity name represent a single occurrence of the entity?	DM OP-009 STD #3
8	Name	Does the entity name consist of an Object Class Word fully spelled out?	DM OP-009 STD #2 & #4
9	Name	Is the first letter of each term Capitalized, and are terms separated by single spaces?	DM OP-035 STD #5 and DM OP-009 Common STD # 2
10	Name	Are all terms other than integers in the Glossary?	DM OP-009 Common STD #1
11	Name	Are all terms except acronyms spelled out in entity names?	DM OP-009 Common STD #3
12	Name	Does the first term of the entity name begin with a letter and is not an ordinal term (e.g. Fifth)?	DM OP-009 Common STD #4
13	Name	If the entity is a code table is the last term in the name Reference?	DM OP-009 STD#5
14	Key	Does the entity have a primary key?	DM OP-016
15	Domain	For reference entities, is the primary key a Code and is there a non-key attribute for Description?	DM OP-18 STD#2

## Appendix C – Attribute Level Standards Checklist Items

ID	Area	Item	Standard
1	Definition	Is the definition clear, concise and unambiguous?	DM OP-010 STD #1 & 2
2	Definition	Does the definition describe a singular occurrence of the attribute?	DM OP-010 STD #3
3	Definition	Does the definition exclude references to technology or media?	DM OP-010 STD # 6
4	Definition	Is an acronym spelled out the first time it appears? And if an acronym is used in the name is it spelled out in the definition.	DM OP-010 STD #4 & #5
5	Definition	Is a “Switch” type attribute defined in terms of its “True” value	DM OP-010 STD #7
6	Name	Is the Representation Term consistent with the attribute definition?	DM OP-012 STD #5
7	Name	Does the attribute name consist of Representation Term optionally preceded by qualifiers or property terms?	DM OP-012 STD #2 & #3
8	Name	Is the first letter of each term Capitalized, and are terms separated by spaces?	DM OP-012 Common STD #2, DM OP-035 STD #5
9	Name	Are terms other than integers in the Glossary?	DM OP-012 Common STD #1
10	Name	Are all terms except acronyms spelled out in attribute names?	DM OP-012 Common STD #3
11	Name	Does the first term in the attribute name begin with a letter and is not an ordinal term (e.g., Fifth)?	DM OP-012 Common STD #4
12	Name	Is the attribute name unique within the entity?	DM OP-012 STD #1
13	Name	Is the representation term in the attribute name completely spelled out?	DM OP-012 STD #4
14	Name	For non-reference entities do the entity owned primary key attributes start with the entity name?	DM OP-012 STD #6
15	Domain	If the non-key attribute is a Code or Indicator are valid values and descriptions documented?	DM OP-018 STD#4