Guidelines for Standard and User-Defined Properties Definition in erwin Data Modeler

During the data model review process, **CMS Enterprise Data Architecture** (**EDA**) looks for a standard set of metadata to ensure a model is understood and self-documenting via its **Standard** and **User-Defined Properties** (**UDPs**). EDA's primary focus in model reviews is on **Logical Data Models** (**LDMs**).

This document reflects review guidelines for erwin models. For models in other tools, EDA will work with you to clarify any necessary mappings.

Standard properties are properties defined by default in erwin. UDPs are specific information that provide additional contextual information for an element within a data model, including the data model itself.

This document provides guidelines for metadata in data models to promote consistency in naming conventions across data models and adherence to data modeling best practices and CMS standards.

Model-Level Property Guidelines

1.1 Standard Properties

Property	Guideline
Model Name	A data model should be named in the following manner: system acronym + ("relational"/ "dimensional") + model type (EDM/CDM/LDM/PDM) + (approval date or storage date for models in development) in **YYYYMMDD** format. **Example: CMIS relational LDM 20140726**
Model Definition	The model definition should describe the purpose and status of the model in a few sentences of text. **Example: An integrated view of core data required for the main business functions of Centers of Medicare and Medicaid. Currently approved LDM.** **Inadequate definition: A model developed for CMS ABC project by XYZ company.**
Model Author	The identity of the Local Data Architect or Modeler responsible for creating and/or maintaining the data model, taking the format: <First Name> <Last Name>, <Company> **Example: Bob Smith, XYZ Company**

1.2 User-Defined Properties

Property	Guideline
Model Release Number	Release or version number of the model. **Example: 1.7**
Model Type	Should be either: **Logical**, **Physical**, or **Logical/Physical**
Model Business Owner Name	The name of the Business Owner and/or organization responsible for approving the definitions in the model, considering format: <Name of the person>, <Company/organization> **Example: R. R. Kirk (CMS/CMM)**
Model Central DA Name	The name of the person responsible for reviewing the model components according to DA guidelines.
Model Created Date	The date the model was created and initially released.
Model Version Effective Date	The date that identifies a version of a model. Can be a system release date.
Model CDA Sign Off Date	Provided by EDA team upon review.

Entity-Level Property Guidelines

1.3 Standard Properties

Property	Guideline(s)
Entity Name	A standard term, other than an integer, should be defined in the **CMS Standard Terms Glossary**. Names are made of one or more terms separated by single spaces. Term abbreviations that are not acronyms should only be used in a name when it is necessary to fit the name within the modeling tool character limitation. Integers (“five”), ordinal terms (“fifth”) and numbers (“5”, “5th") cannot be a name’s first term.

Property	Guideline(s)
Entity Definition	An entity should be defined in a manner that distinguishes its unique role within the business enterprise. Two entities with different names should have different definitions. An **application entity**[1] that reuses an **enterprise entity**[2] must have the same definition. The definition should be clear, concise, and unambiguous. Examples or exclusions may be added to the definition to improve clarity. The definition should describe a single occurrence of the entity. The definition should start with either "**A**" or "**An.**" The definition should not start with a verb. The definition should not include references to technology or media. For example, references to "tapes" or "disks" are not appropriate in the definition of a business entity. Acronyms and abbreviations must be spelled out in the definition the first time they appear. If an acronym appears in the entity name it must be spelled out in the entity definition.

1.4 User-Defined Properties

Property	Guideline(s)
Entity Security Category	A reference to **FIPS Publication 199 – Standards for Security Categorization of Federal Information and Information System**, which describes the risk of unauthorized access, unauthorized modification, or unavailability of the data represented by the Entity. The format of this UDP consists of three values separated by semicolons: CONFIDENTIALITY=**<impact>**; INTEGRITY=**<impact>**; AVAILABILITY=**<impact>** where **<impact>** has a value of "**LOW**", "**MODERATE**", "**HIGH**", or "**N/A**". **Example: CONFIDENTIALITY=HIGH; INTEGRITY=MEDIUM; AVAILABLITY=LOW**

[1] An **application entity** is one in any logical data model other than the Enterprise Logical Data Model (**ELDM**) maintained by the EDA team.

[2] An **enterprise entity** is one defined in the ELDM.

Property	Guideline(s)
Entity Requirement ID **(Optional)**	A reference to the requirement(s) or change request identifier(s) that justify the existence of the entity in the model. Valid entry formats are as follows: • Business Requirements: **BR-####** • Functional Requirements: **FR-####** • System Requirements: **SR-####** • Change Requests: **CR-####** • Data Change Requests: **DR-####** • Remedy Tickets: **RT_######** • MAPD: **MAPD_####**

Attribute-Level Property Guidelines

1.5 Standard Properties

Property	Guideline
Attribute Definition	An attribute should be defined in a manner that distinguishes its unique role within the enterprise. An attribute definition should be clear, concise, and unambiguous. Examples or exclusions may be added to the definition to improve clarity. The definition should describe a single occurrence of the attribute. If an acronym appears in the attribute name it must be spelled out in the attribute definition unless the acronym has already been spelled out in the entity definition. If an acronym appears in the attribute name of a primary key it must be spelled out in the attribute definition. The definition should not include references to technology or media. For example, references to “tapes” or “disks” are not appropriate in the definition of a business attribute. An attribute with the representation term of “**Switch**” should be defined in terms of its “**true**” value. **Example: Whether the drug is only available by prescription.**
Attribute Primary Key Indicator	An indication that the attribute is a primary key.

1.6 User-Defined Properties

Property Name	Guideline
Attribute Data Source Name	The CMS database, external data feed, manual data entry process, or software process from which the column takes its value. Valid entry formats follow: • CMS Sources: **database.table.column or filename.recordtype.field** • Software Processes: **application name, service name**, or "**System Generated**" • Manual Data Entry Processes: **application-formname.fieldname**, or "**User-Supplied**" • External system or document sources: **org.specification.pubdate.record.subpart.field**[3] (If this level of detail is not available, indicate the source in terms of a user role, type of stakeholder, organization, business process, system, program, database, or file.) These are manual or automated system sources of data element names or departmental document sources of data element types. The following example shows a column data source field located three levels deep within an XML document: **Example: HealthLevelSEven.CDAL1R1.20061219.<level one_1.0.xsd>.<clinical_document_header>. <provider>.<type_cd>**

Relationship-Level Property Guidelines

1.7 Standard Properties

Property Name	Guideline
Relationship Parent-to-Child Verb	Express the relationship in the parent-child direction.
Relationship Cardinality	Define the minimum and maximum number of entity occurrences that can participate in a relationship.
Relationship Optionality	Defines the existence of the relationship as being optional or mandatory.

[3] **Subpart** is used where there are multiple record formats or levels of element structure and may be omitted if there is only one flat format for the records specification, level of element structure, or record format.