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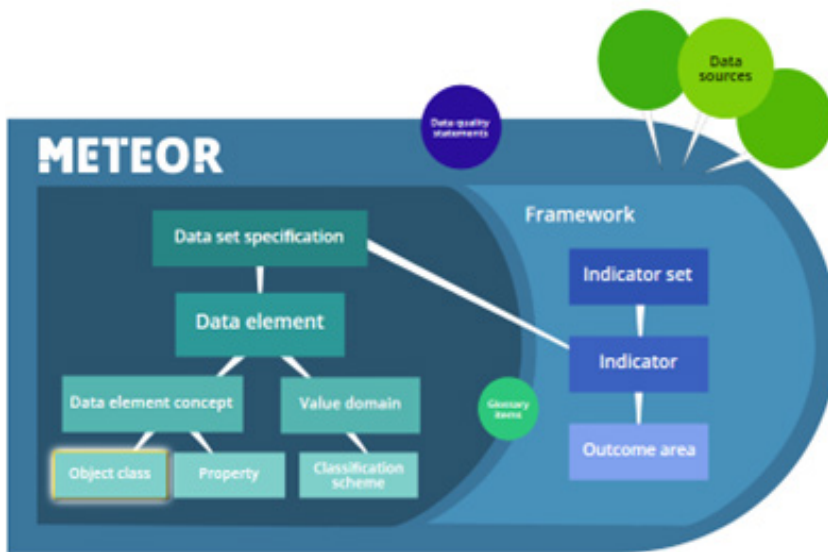
METEOR

Metadata Online Registry

meteor.aihw.gov.au

9. Data element business rules

9 Data element business rules



9.1 Introduction

A 'data element', commonly referred to as a 'DE', is the basic unit of identifiable and definable data information in METEOR, and is used to standardise the representation of data.

A data element is created by combining a data element concept and a value domain — that is, the concept and its representation. While the meaning of a data element is essentially captured within the data element concept component, the value domain component specifies its representation, e.g. its permissible values and format. An individual data element concept may be combined with different value domains, to create a number of data elements.

Remember the 'create once, use often' principle:

Before creating a new object class, it is important to check that a suitable object class does not already exist in METEOR. See section 2.2

9.1.1 For developers: Overview of data element attributes

Table 9.1.1.1 below provides an overview of the attributes requiring action by a developer when a data element is created in METEOR. The business rules relating to these attributes are provided in the relevant sections in this chapter.

Table 9.1.1.1: Overview of data element attributes for developer action

| Attribute | Definition | Obligation to complete | Section in this Chapter |
|-------------------------|--|---|-------------------------|
| Synonymous name(s) | One or more synonyms for the metadata item name within the context of the given item. | Optional | 9.2.3 |
| Definition | A concise statement that expresses the essential nature of the data element and its differentiation from other metadata items. | Mandatory | 9.2.4 |
| Context | A designation and/or description of the application environment or discipline in which the data element has meaning. | Optional | 9.2.5 |
| Data element concept | The data element concept implemented in this data element. | Mandatory (before 'incomplete' registration status) | |
| 9.2.6 | | | |
| Value domain | The value domain implemented in this data element. | Mandatory (before 'incomplete' registration status) | |
| 9.2.7 | | | |
| Guide for use | Comments, advice, or instructions for the interpretation or application of the metadata item. | Optional | 9.2.8 |
| Collection methods | Comments, advice, or instructions for the actual capture of data. | Optional | 9.2.9 |
| Comments | Any additional information that adds to the understanding of the data element. | Optional | 9.2.10 |
| Submitting organisation | One or more organisations responsible for the submission of the metadata item for endorsement as a standard. | Mandatory | 9.2.11 |
| Steward | The name of the organisation responsible for ongoing maintenance and management of a metadata item. | Optional: Complete if a steward has been endorsed and has agreed to perform steward role. | 9.2.12 |
| Origin | Any publication(s), website(s), organisation(s) and/or committee(s) from which any content of the metadata item originates. | Conditional: Complete for metadata items based on the content outside of METEOR. | 9.2.13 |

| Attribute | Definition | Obligation to complete | Section in this Chapter |
|---|---|--|-------------------------|
| Reference documents | Significant publication(s) and/or website(s) used in the aid of the development of the metadata item. | Conditional: Complete for metadata items developed in consultation with a significant publication and/or website outside of METEOR. | 9.2.14 |
| Relationship type | An indicator for relationships between metadata items | Mandatory | 9.2.15 |
| Unresolved issues | Comments which highlight issues for data committee or registrar consideration. | Completed by registrar | 9.2.16 |
| Submitting organisation contact details | The details of at least one contact person for each listed submitting organisation | Completed by registrar | 9.2.17 |
| Steward contact details | The details of at least one contact person for the Steward organisation. | Completed by registrar | 9.2.18 |

9.1.2 For registrars: Overview of data element attributes

Table 9.1.2.1 below provides an overview of the attributes requiring action by a registrar when a data element is submitted for review. The business rules relating to these attributes are provided in the relevant sections in this chapter.

Table 9.1.2.1: Overview of data element attributes for registrar action

| Attribute | Definition | Obligation to complete | Section in this Chapter |
|--------------------|--|------------------------|-------------------------|
| Name | A single or multi-word designation assigned to the value domain. | Mandatory | 8.2.1 |
| Synonymous name(s) | One or more synonyms for the value domain name within the context of the metadata item. | Optional | 8.2.2 |
| Definition | A concise statement that expresses the essential nature of the value domain and its differentiation from other metadata items. | Mandatory | 8.2.3 |
| Context | A designation and/or description of the application environment or discipline in which the value domain has meaning. | Optional | 8.2.4 |

9.2 Attributes requiring developer or registrar action

Attributes in the data element template requiring action by a developer or registrar are described below.

9.2.1 Name

| A single or multi-word designation assigned to the data element. | |
|--|-----------|
| Obligation to complete: | Mandatory |
| Completed by: | Developer |
| Visibility: | All users |

A single or multi-word designation assigned to the data element.

Rules:

1. A data element name must begin with a capital letter. The use of capital letters is only permitted at:
 - the beginning of the name
 - for proper nouns
 - within the value domain name component (such as the format term), but not at the beginning of the value domain name which must be lower case
 - when necessary for an acceptable abbreviation or acronym (see rule 8 below).
2. A comma must only be used to separate the data element concept name component from the value domain name component (e.g., 'Person—body height, total centimetres NN[N].N'), or where a comma has been used to separate two or more terms in a name (e.g., the term 'ear, nose and throat').
3. Full stops should only be used within the format term component of the value domain name (e.g., 'Episode of admitted patient care—clinical assessment tool used, code N.N').
4. Parentheses should only be used to enclose the format term and classification scheme components of the value domain name (e.g., 'Person—country of birth, code (SACC 2016) NNNN').
5. Square and curly brackets (braces) should only be used within the format term component of the value domain name (e.g., 'Episode of care—additional diagnosis, code (ICD-10-AM Twelfth edition) ANN{.N[N]}').
6. If any word (apart from the representation class in the value domain name) in the union of the data element concept name and value domain name becomes redundant, either explicitly through the duplication of a word, or implicitly through another word or phrase, delete the redundant part within the value domain name component. For example, the union of the data element concept 'Person—sex' and the value domain 'Sex code N' is 'Person—sex, code N', not 'Person—sex, sex code N'. In this example the word 'sex' in the value domain name is redundant as it appears as part of the data element concept name. For data elements of all representation classes other than 'date' and 'time', the representation class term component of the value domain name must not be deleted. For example, the union of the data element concept 'Address—electronic communication usage code' and the value domain 'Electronic communication usage type code N' is 'Address—electronic communication usage code, code N', not 'Address—electronic communication usage code, N'. For the representation classes 'date' and 'time', if the representation class term is duplicated in the data element name, the duplicate term becomes redundant and must be deleted. For example, the union of the data element concept 'Address—address start date' and the value domain 'Date DDMMYYYY' is 'Address—address start date, DDMMYYYY', not 'Address—address start date, date DDMMYYYY'

The following common rules for metadata also apply:

7. The name must:
 - be unique
 - reflect the concept being defined
 - be stated in the singular
 - avoid the use of words that imply a preselected single instance
 - be concise as possible.
8. The name should avoid abbreviations (including acronyms and initialisms), unless they are commonly understood or widely accepted within the context of the metadata item. See Appendix A 'Use of abbreviations in name and definition attributes' for further information on the use of abbreviations.
9. Slashes (/) are permitted. Do not leave any spaces before or after the slash.
10. Hyphens are permitted only when used in a compound word (e.g., non-admitted) or when part of the classification scheme term in the value domain component of a data element (e.g., 'Episode of care—additional diagnosis, code (ICD-10-AM Twelfth edition) ANN{.N[N]}'). Do not leave any spaces before or after the hyphen.
11. The following are not permitted:
 - colons
 - quotation marks

A single or multi-word designation assigned to the data element.

| | |
|-------|---|
| Notes | 1. A Suggest button appears in the data element template alongside the 'name' attribute. Use this button to bring together the data element concept name and value domain name components to create the data element name. An em dash is automatically placed between the data element concept name and value domain name. (A quick way to insert an em dash is to use the keyboard shortcut: Alt + 0151) |
|-------|---|

9.2.2 Short name

A short or common name or designation by which the data element is known and might be identified.

| | |
|-------------------------|---|
| Obligation to complete: | Mandatory |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | <ol style="list-style-type: none"> The short name must be a single unique name by which a data element can be identified. For example, the short name for the data element 'Person—country of birth, code (SACC 2016) NNNN' is 'Country of birth.' To ensure uniqueness, the short name may be qualified to distinguish the data element from other similar data elements (e.g., the data element's 'Adult—body mass index self-reported, ratio NN[N].N[N]' and 'Child—body mass index self-reported, ratio NN[N].N[N]'). In this example, the short name 'Body mass index' is not unique for both data elements so a qualifier, such as 'Body mass index-adult (self-reported)' and may be used to 'Body mass index-child (self-reported) may need to be used respectively to distinguish the two data elements. |

9.2.3 Synonymous name(s)

One or more synonyms for the data element name within the context of the metadata item.

| | |
|-------------------------|---|
| Obligation to complete: | Optional |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | <ol style="list-style-type: none"> List any synonyms for the metadata item name which may be used to identify the item. Spell the first word of each synonymous name with a capital letter. Spell all other words in a synonymous name with a lower-case letter, unless referring to a proper noun. Spell out in capital letters if acronyms/abbreviations are used in synonymous name(s). Separate each synonymous name with a semi-colon and space. For example, synonymous names for property may include: Clinical intervention; Operation; Surgery End the list of synonymous names without a full stop. |
| Notes | This attribute is only visible to registrars. |

9.2.4 Definition

A concise statement that expresses the essential nature of the data element and its differentiation from other metadata items.

| | |
|-------------------------|---|
| Obligation to complete: | Mandatory |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | <ol style="list-style-type: none"> 1. A data element definition must make reference to its specific representation and begin or end by stating the representation class for the data element and its value domain; for example, 'The type of organisation responsible for the management of a dwelling tenancy, as represented by a code'. The definite article 'the' is generally used for the definition as it refers to one instance of a data item. See Table 9.2.4.1 Examples of recommended wording for data element definitions. <p>The following common rules for metadata also apply:</p> <ol style="list-style-type: none"> 2. The definition should be expressed: <ul style="list-style-type: none"> • precisely and unambiguously so that the exact meaning of the metadata item is apparent from the definition • concisely without embedding the definitions of related concepts or supportive information, such as rationale, functional usage, domain or procedural information • through terms and a structure that is consistent with related definitions. 3. Do not repeat the name of the metadata item at the start of the definition. 4. The definition must be expressed as a complete, grammatically correct, descriptive phrase, sentence or paragraph, not merely through the use of synonyms or paraphrasing the name of the metadata item. 5. The definition must not contain definitions of other metadata items or underlying concepts. Rather, it should provide an explanation of WHAT is being described. It should generally not include information about the WHO, WHERE, WHEN, WHY and HOW of data collection. 6. If there is a need to define a term within the definition, a glossary item may be used. 7. The definition may use abbreviations (including acronyms and initialisms) provided they are first spelled out in full, or else are commonly understood or widely accepted within the context of the metadata item. See Appendix A 'Use of abbreviations in name and definition attributes' for further information on the use of abbreviations. |
| Notes | <ol style="list-style-type: none"> 1. See chapter 11 'Glossary item business rules' if a new glossary item needs to be created. |

Table 9.2.4.1: Examples of recommended wording for data element definitions

| Value | Definition begins or ends with ... |
|--|--|
| Binary/indicator (e.g., yes/no response) | 'A flag of whether' |
| Code | 'The code that represents....' OR '..., as represented by a code.' |
| Date | '..., expressed as DDMMYYYY.' (or however the date is represented). |
| Measure | 'The measure of the (area, mass, distance)....' |
| Name | 'The name of' |
| Number (but not total) | 'The number assigned by' OR 'The number that represents' OR '..., as represented by a number.' |
| Quantity | 'The (sum, amount, capacity) of....' |
| Total | 'The total number of ...,' |
| Text | '..., as represented by text.' |

9.2.5 Context

| A designation and/or description of the application environment or discipline in which the data element definition has meaning. | |
|---|--|
| Obligation to complete: | Optional |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | <ol style="list-style-type: none"> 2. State or describe the application environment or discipline in which the data element has meaning, (e.g., Palliative care). 3. Do not include the justification or reasoning for the data element. |
| Notes | <ol style="list-style-type: none"> 1. The context defines the setting within which the subject data has meaning. 2. The context attribute should be left blank if a metadata item is applicable in all contexts, or the context is implied by the metadata item name or definition. 3. See also section 2.6.3 |

9.2.6 Data element concept

| The data element concept implemented in this data element. | |
|--|---|
| Obligation to complete: | Mandatory (before <i>Incomplete</i> registration status). |
| Completed by: | Developer |
| Rules: | <ol style="list-style-type: none"> 1. Only one data element concept may be selected. 2. A data element concept must be selected before the data element will be accepted by the registrar. <p>To add a data element concept:</p> <ul style="list-style-type: none"> • Click the Choose button. This will open a Data element concept browser window. • There will be three options to choose from: Item ID, A-Z listing or Data element concepts by property. • Choose your option, select your DEC and click the Add button. • Your selection will appear in the template. • To remove your selection, press the Cancel button. |

9.2.7 Value domain

| The value domain implemented in this data element. | |
|--|--|
| Obligation to complete: | Mandatory (before <i>Incomplete</i> registration status). |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | <ol style="list-style-type: none"> 1. Only one value domain may be selected. 2. A value domain must be selected before the data element will be accepted by the registrar. <p>To add a value domain:</p> <ul style="list-style-type: none"> • Click the Choose button. This will open a value domain browser window. • There are three options to choose from: Item ID, A-Z listing or Value domains by representation class/data type. • Choose your option, select your Value domain and click the Add button. • Your selection will appear in the template. • To remove your selection, press the Cancel button. |
| Notes | The value domain implemented in the data element defines how the data element concept is to be represented. |

9.2.8 Guide for use

| Advice or instructions for the interpretation or application of the data element. | |
|---|---|
| Obligation to complete: | Optional |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | <ol style="list-style-type: none"> Describe any restrictions as to how the data element is intended to be interpreted or applied which are specific to the union of the data element concept and the value domain. For example, describe how other data elements should be used in conjunction with the current data element, any formulae which guide calculations, or coding guidelines. If information about the permissible and supplementary value code list has not been included in 'guide for use' at the value domain level, it may need to be included at the data element level. Consistent formatting should be used and all code values included. For example, if one code value requires defining or explaining, then all code values should be listed, not just the one. The recommended format is for the definition/explanation to appear beneath the code value-meaning pair, as shown in the example below: <p>CODE 1 Co-resident carer A co-resident carer is a person who provides care and assistance on a regular and sustained basis to a person who lives in the same household.</p> <p>CODE 2 Non-resident carer A non-resident or visiting carer is a person who provides care and assistance on a regular and sustained basis to someone who usually lives in a different household.</p> <p>CODE 9 Not stated/inadequately described. Use this code when the information is not stated or otherwise inadequately described (e.g. when a response has not been recorded).</p> |
| Notes | Guide for use information is generally more applicable at the data element level where it provides information about how to use a data standard. |

9.2.9 Collection methods

| Advice or instructions for the actual capture of data. | |
|--|---|
| Obligation to complete: | Optional |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | Outline any guidelines for the collection of the data element which are specific to the union of the data element concept and the value domain. For example, data collection formats, minimum data collection requirements, requirements for supporting material or how missing data are to be treated. |

9.2.10 Comments

| Any additional information that adds to the understanding of the data element. | |
|--|--|
| Obligation to complete: | Optional |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | Describe any additional information that facilitates understanding of the metadata item. For example, considerations for further development of the metadata item, potential terminology issues, or justification for the inclusion or exclusion of content. |

9.2.11 Submitting organisation

| One or more organisations responsible for the submission of the metadata item for endorsement as a standard. | |
|--|---|
| Obligation to complete: | Mandatory |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | <ol style="list-style-type: none">1. For each organisation responsible for the submission of the metadata item, state the full official organisation title at the time of submission.2. Abbreviations and symbols should only be used when they are part of the official organisation title.3. Conclude and separate each organisation's name with a new line (without a full stop). |
| Notes | <ol style="list-style-type: none">1. Click on down arrow to show drop-down list of departments and organisations.2. Click on chosen organisation.3. If you skip this process, you will not be able to proceed to change registration status to <i>Standard</i> when you update the status later down the track. You must fill this template in.4. In the case of a metadata with missing submitting organisation, go back to the item and choose 'edit item' to add the submitting organisation, in order to update registration status. |

9.2.12 Steward

| The name of the organisation responsible for ongoing maintenance and management of a metadata item. | |
|---|---|
| Obligation to complete: | Optional: Complete if a steward has been endorsed and has agreed to perform steward role. |
| Completed by: | Registrar |
| Visibility: | Registrar |
| Rules: | <ol style="list-style-type: none"> 1. Each metadata item may be associated with only one steward. 2. The steward has responsibility for ensuring that the metadata item is kept up-to-date for all registration authorities to which it has been proposed. 3. Leave this field blank until an organisation has agreed and has been approved by a registration authority to provide ongoing maintenance and management of the metadata item. 4. State the complete and official organisation title for the steward (including a committee where necessary). 5. Abbreviations and symbols should only be used when they are part of the official organisation title. |

9.2.13 Origin

| Any publication(s), website(s), organisation(s) and/or committee(s) from which any content of the metadata item originates. | |
|---|--|
| Obligation to complete: | Conditional: Complete for metadata items based on the content outside of METEOR. |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | <ol style="list-style-type: none"> 1. Origin references should comply with the referencing guidelines in Appendix C 'Referencing guidelines'. 2. List the full reference for any in-text references cited in the body of that metadata item. 3. Conclude and separate each reference with a new line (without a full stop). |
| Notes | References included in the 'origin' attribute are not included in the 'references' attribute and vice versa. |

9.2.14 Reference documents

| Significant publication(s) and/or website(s) used in the aid of the development of the metadata item. | |
|---|--|
| Obligation to complete: | Conditional: Complete for metadata items developed in consultation with a significant publication and/or website outside of METEOR. |
| Completed by: | Developer |
| Visibility: | All users |
| Rules: | <ol style="list-style-type: none">1. References should comply with the referencing guidelines in Appendix C 'Referencing guidelines'.2. Conclude and separate each reference with a new line (without a full stop). |
| Notes | References included in the 'reference' attribute are not included in the 'origin' attribute and vice versa. |

9.2.15 Relationship type

| An indicator for relationships between metadata items. | |
|--|-----------|
| Obligation to complete: | Optional |
| Completed by: | Developer |
| Visibility: | All users |

| | |
|--------|--|
| Rules: | <ol style="list-style-type: none"> 1. Relationships may be created between any two metadata items. Note that some relationship types can only be created to link items of the same metadata type (e.g., between two data elements). See also relationships may be created to link items of a different metadata type (e.g., a between a property and a value domain). 2. Related metadata relationships should not duplicate information stored or available elsewhere in METEOR. For example, where data element A implements data element concept B, this is already explicit in both the name of the data element and the Data element concept attributes of the data element. A related metadata relationship would thus be superfluous. Similarly, if data element C is normally collected together with data element D, this will be apparent from the fact that both occur in the same DSS. Valid relationships are listed in the table F1. METEOR will automatically create the complementary relationship within the second metadata item (listed in the second column of the table F1). 3. A See also relationship may be used to draw the reader's attention to another element, however should not take the place of another valid relationship type, or duplicate information stored elsewhere. A See also relationship should be applied judiciously, i.e. where it is critical for the reader to know that the other item exists, and not just because there are similarities between the linked elements. 4. When creating a Superseded relationship, the registration status of the superseded item must be changed to Superseded once the new item becomes Standard. <p>To create a relationship:</p> <ul style="list-style-type: none"> • select a value from the 'relationship type' drop-down list • click the Add button to open the metadata item browser • select the metadata item and click the Add button • select or enter the item you wish to create a relationship to and click the Add button • the relationship will then be listed on the metadata item creation window. <p>The relationship can be deleted by clicking on the Cancel button.</p> |
| Notes | See Appendix F for more detailed information on relationship types and their associated meanings. |

9.2.16 Unresolved issues

| Comments which highlight issues for data committees or registrar consideration. | |
|---|---|
| Obligation to complete: | Optional |
| Completed by: | Registrar |
| Visibility: | Registrar |
| Rules: | This field should be used to document issues which are relevant to the quality of the metadata item and its management within METEOR (e.g., any recommended changes awaiting approval from a data committee). |
| Notes | This attribute can only be created and viewed by registrars. |

9.2.17 Submitting organisation contact details

| The details of at least one contact person for each listed submitting organisation. | |
|---|--|
| Obligation to complete: | Optional |
| Completed by: | Registrar |
| Visibility: | Registrar |
| Rules: | <ol style="list-style-type: none">1. Approval from each submitting organisation contact person must be provided before any contact information is stored within METEOR.2. For each submitting organisation contact, list their name, position title, organisational unit, telephone number and email address. |
| Notes | This attribute is only visible to registrars. |

9.2.18 Steward contact details

| The details of at least one contact person for the steward organisation. | |
|--|---|
| Obligation to complete: | Optional |
| Completed by: | Registrar |
| Visibility: | Registrar |
| Rules: | <ol style="list-style-type: none">1. Approval from the steward contact person must be received before any contact information is stored within METEOR.2. For each steward contact, list their name, position title, organisational unit, telephone number and email address. |
| Notes | This attribute is only visible to registrars. |