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Health informatics — Identification of medicinal products — Implementation guide for ISO 11239 data elements and structures for the unique identification and exchange of regulated information on pharmaceutical dose forms, units of presentation, routes of administration and packaging

Informatique de santé — Identification des produits médicaux — Guide de mise en oeuvre des éléments de données et structures pour l'identification unique et l'échange d'informations réglementées sur les formes des doses pharmaceutiques, les unités de présentation, les voies d'administration et les emballages de l'ISO 11239

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 215, *Health informatics*.

Introduction

The terminologies described in EN/ISO 11239:2012 (hereafter referred to as ISO 11239) and in this Technical Specification are essential for the implementation of the IDMP standards as a whole.

Each region traditionally uses its own sets of terminologies to describe the concepts covered in ISO 11239 within their regions; these terminologies are not harmonised with those of the other regions. Therefore, harmonised controlled terminologies need to be provided to ensure that all regions can refer to a given concept in the same manner. The purpose of this Technical Specification is to describe how these controlled vocabularies are constructed and illustrate their use for ISO 11239 implementation.

Health informatics — Identification of medicinal products — Implementation guide for ISO 11239 data elements and structures for the unique identification and exchange of regulated information on pharmaceutical dose forms, units of presentation, routes of administration and packaging

1 Scope

This Technical Specification describes data elements and structures for the unique identification and exchange of regulated information on pharmaceutical dose forms, units of presentation, routes of administration and packaging.

Based on the principles outlined in this Technical Specification, harmonised controlled terminologies will be developed according to an agreed maintenance process, allowing users to consult the terminologies and locate the appropriate terms for the concepts that they wish to describe. Provisions to allow for the mapping of existing regional terminologies to the harmonised controlled terminologies will also be developed in order to facilitate the identification of the appropriate terms. The codes provided for the terms can then be used in the relevant fields in the PhPID, PCID and MPID in order to identify those concepts.

This Technical Specification is intended for use by:

— any organisation that might be responsible for developing and maintaining such controlled vocabularies;

— any regional authorities or software vendors who wish to use the controlled vocabularies in their own systems and need to understand how they are created;

— owners of databases who wish to map their own terms to a central list of controlled vocabularies;

— other users who wish to understand the hierarchy of the controlled vocabularies in order to help identify the most appropriate term to describe a particular concept.

The terminology to be applied in the context of this Technical Specification and set out in ISO 11239 is under development. All codes, terms and definitions used as examples in this Technical Specification are provided for illustration purposes only, and are not intended to represent the final terminology.

2 Organisation of controlled terms

2.1 General

This Clause describes how each controlled term is built, describing the data types used to convey the information and the versioning requirements for tracking their creation and evolution. Clause 3 describes the different types of terminologies and sub-vocabularies that use these data types, and any relevant relationships between them.

Each field in Clause 2 is described under a separate subclause, consisting of the title of the field and a table containing the following:

— “User Guidance”, a description of the field;

— “Data Type”, a description of the data type;

— “Conformance”, a description of whether the field is mandatory, optional, or conditional;

— “Value Allowed”, indicating the possible values for the field;

— “Business Rules”, providing technical guidance for the field.

2.2 Code-term pair and coded concept

2.2.1 General

The code-term pair and the coded concept are the data types that are used to represent the information that is required to describe each term in each terminology or sub-vocabulary, in each language/region combination.

2.2.2 Code-term pair

2.2.2.1 Code-term pair overview

This is the underlying class for each term, and is used to describe and define a term in a specific language and for a specific region. It contains the core attributes for each concept, including the identifier, the textual representation of the term (i.e. the controlled term itself), the definition, an optional domain to indicate whether a term is restricted to veterinary use, an optional textual comment, and the language and region codes.

Each controlled term or sub-term has a unique code-term pair for each language/region combination. This combination of language and region allows for regional variants of a specific language to be catered for; for example, where the spelling of a term or definition differs between UK English and US English, it is possible to reflect this difference. Where terms and definitions already exist for a particular language for a particular region, and the same language is used in a second region, it is a regional implementation issue to decide whether terms and definitions need to be provided for the second region, or whether the terms and definitions of the first region shall be used.

When a new concept is required, a new coded concept must be created, and at least one code-term pair is required in order to hold the data to describe the concept. The language/region combination chosen to represent the “value” shall always be created first to represent the concept, even when the request originates from a different language/region combination. The maintenance organisation shall provide instructions on how to request a new term or a revision to an existing term.

2.2.2.2 Code-term pair: Code

User Guidance	This field contains a unique, machine-readable identifier for the code-term pair. In this Technical Specification, the following format is used for the code: — XXX-12345678-LL-RR where — XXX represents the class of term (see Table 1); — 12345678 represents a unique 8-digit number; for sub-vocabularies, a 4-digit number is used; — LL represents the language code; — RR represents the region/country code.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Free text
Business Rule(s)	Each code-term pair shall have one code.

The codes used in this Technical Specification to represent the various classes of term in the examples that follow are shown in Table 1.

Table 1 — Codes used to represent the class of term

Code	Class
SOM	State of matter
BDF	Basic dose form
RCA	Release characteristics
TRA	Transformation
ISI	Intended site
AME	Administration method
PDF	Pharmaceutical dose form
CDF	Combined pharmaceutical dose form
UOP	Unit of presentation
ROA	Route of administration
PCA	Packaging category
CON	Container
CLO	Closure
DEV	Administration device
MAP	Mapped term

2.2.2.3 Code-term pair: Term

User Guidance	This field contains the textual term description for the code-term pair.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Free text
Business Rule(s)	Each code-term pair shall have one term.

2.2.2.4 Code-term pair: Definition

User Guidance	This field contains the textual definition for the code-term pair. The definition is as comprehensive as possible, in order to guide the user to the most appropriate term to describe a given concept. For example, it should be detailed enough to distinguish between similar pharmaceutical dose forms, and may exceptionally make direct reference to related terms in order to exclude them, although such references may be considered more appropriate in the Comments section instead.
Data Type	String <ST>
Conformance	Mandatory for the default code-term pair; optional for the translation code-term pairs
Value Allowed	Free text
Business Rule(s)	Each code-term pair may have one definition. For each coded concept, the default code-term pair (e.g. EN-GB) shall have one definition. If a code-term pair for a given language/region combination does not have a definition provided, the definition in the code-term pair for the default language/region combination is adopted.

2.2.2.5 Code-term pair: Domain

User Guidance	This field is used to identify whether a term is considered appropriate for both human and veterinary use, or whether it is considered appropriate for veterinary use only.
Data Type	Concept Descriptor <CD>
Conformance	Optional
Value Allowed	”Human and veterinary”; “Veterinary only”
Business Rule(s)	Each code-term pair may have one domain. Although veterinary medicines are outside the scope of IDMP, certain regions use a single terminology system to cover both medicines for human use and medicines for veterinary use; this optional field is therefore included in order to allow veterinary-only terms to be easily distinguished in such systems.

2.2.2.6 Code-term pair: Comment

User Guidance	This optional field contains a textual comment for the code-term pair. It is used to provide to the user additional information and guidance that would not be strictly appropriate to appear as part of the definition.
Data Type	String <ST>
Conformance	Optional
Value Allowed	Free text
Business Rule(s)	Each code-term pair may have one comment.

2.2.2.7 Code-term pair: Language code

User Guidance	This field contains the language in which the term, definition and comment are described; in this Technical Specification, the working language is English. The language code used is in line with ISO 639-1.
Data Type	Concept Descriptor <CD>
Conformance	Mandatory
Value Allowed	ISO 639-1 code, OID reference 1.0.639.1
Business Rule(s)	Each code-term pair shall have one language code.

2.2.2.8 Code-term pair: Region code

User Guidance	This field contains the region/country that uses this code-term pair, in the language described above; it can be used to differentiate between regional variants of that language; in this Technical Specification, the default region is the United Kingdom. The region code used is in line with ISO 3166-1. Alpha-2 (i.e. 2-letter) codes are used. The additional code EU is also allowed to represent the European Union. It should be noted that the United Kingdom is represented in ISO 3166-1 by the 2-letter code GB, as in the examples used in this Technical Specification.
Data Type	Concept Descriptor <CD>
Conformance	Mandatory
Value Allowed	ISO 3166-1 alpha-2 code, OID reference 1.0.3166.1.2.2.
Business Rule(s)	Each code-term pair shall have one region code.

2.2.2.9 Code-term pair example

An example of a code-term pair for the concept “Tablet”, a pharmaceutical dose form, is shown in Table 2. Since the working language of this Technical Specification is UK English, the language is English and the region is the United Kingdom.

Table 2 — Example code-term pair for pharmaceutical dose form "Tablet" in UK English

Code	**PDF-10219000-EN-GB**
Term	Tablet
Definition	Solid single-dose uncoated preparation obtained by compressing uniform volumes of particulate solids or by other means such as extrusion or moulding. Tablets include single-layer tablets resulting from a single compression of particles and multi-layer tablets consisting of concentric or parallel layers obtained by successive compressions of particles of different composition. Tablets are intended for oral use to release active substance(s) in the gastro-intestinal fluids by a rate depending essentially on the intrinsic properties of the active substance(s) (conventional release).
languageCode	EN
regionCode	GB

2.2.3 Coded concept

2.2.3.1 Coded concept overview

This is the class that is used to represent the concept itself, and is a collection of all of the code-term pairs that define the same concept for each language/region combination. The code-term pairs for a given concept can be considered as different translations of that concept; the coded concept groups those various translations under a single, unique code. In order to represent the coded concept, one of the code-term pairs is selected as the "value", while each other code-term pair is a "translation".

The use of a coded concept in another system allows for the identification of a concept without specifying a particular language and region. The code-term pair selected as the "value" may be used by default to represent the coded concept when a textual term is requested. The default code-term pair in this Technical Specification is English/United Kingdom. Where a language/region combination is specified by the requesting system, the appropriate code-term pair for that combination can be used to represent the coded concept.

As described in 2.2.2.1, when a new concept is required, a new coded concept must be created, and at least one code-term pair is required in order to hold the data to describe the concept. The language/region combination chosen to represent the "value" must always be created, even when the request originates from a different language/region combination. The maintenance organisation shall provide instructions on how to request a new term, as well as how to request a revision to an existing term.

2.2.3.2 Coded concept: Code

User Guidance	This field contains a unique, machine-readable identifier for the coded concept.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Free text
Business Rule(s)	Each coded concept shall have one code.

2.2.3.3 Coded concept: Value

User Guidance	This field contains the identifier of the code-term pair that has been chosen to represent the coded concept. In this Technical Specification this code-term pair is always that of the English/United Kingdom combination.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Code-term pair identifier
Business Rule(s)	Each coded concept shall have one value, which is considered to be its default code-term pair. Whenever a new concept is created, the code-term pair with the language/region combination that is chosen for the "value" shall always be created first, even if the request is made for a different language/region combination.

2.2.3.4 Coded concept: Translation

User Guidance	This repeatable field contains the identifier of the code-term pair that represents the concept using a language/region combination that is different from that of the code-term pair used for the above coded concept value. In this Technical Specification, since the above value is always represented by English/United Kingdom, these code-term pairs will represent combinations such as English/United States, Japanese/Japan, French/France, etc.
Data Type	String <ST>
Conformance	Optional
Value Allowed	Code-term pair identifier
Business Rule(s)	Each coded concept may have zero to many translations.

2.2.3.5 Coded concept example

An example of a coded concept for the concept "Tablet" is shown in Table 3. Since the working language of this Technical Specification is UK English, the value is the code-term pair that has English as the language and United Kingdom as the region (as shown in Table 2). In order to simplify the example, just two translations are associated with it here: the code-term pair that has French as the language and France as the region, and the code-term pair that has Japanese as the language and Japan as the region. As can be seen from Table 3, only the code-term pair identifiers are required, since each one represents all of the necessary information for each language/region combination, (such as for English and the United Kingdom as shown in Table 2). The overall concept of "Tablet" (i.e. including all language/region combinations) has its own identifier (code PDF-10219000 in this example).

Table 3 — Example coded concept for pharmaceutical dose form "Tablet", linking the code-term pairs for the concept in English for the United Kingdom, French for France, and Japanese for Japan

code	**PDF-10219000**
value	PDF-10219000-EN-GB
translation	PDF-10219000-FR-FR PDF-10219000-JA-JP

2.3 Versioning

2.3.1 Versioning of the term

ISO/TR 14872 includes guidance on principles and procedures for versioning and change control.

Code-term pairs are used to populate a terminology database, and as such they can be considered as the current representation of specific concepts for specific language/region combinations. They contain the information that is considered to be the most important and relevant to the database user. However, as controlled vocabularies can evolve over time, the situation arises whereby terms in a database need to be revised, which means that code-term pairs therefore need to be revised.

In order to maintain a traceable history of a code-term pair, including any changes that are made to it, each code-term pair is associated with versioning information. This is done with the use of versions. Each time a code-term pair is created or modified, a version of that code-term pair is created.

A version acts as a record of a code-term pair at a specific point in time. It contains the elements of the code-term pair at that point in time, as well as a timestamp, an identifier of the operator that made the modification, and a description of the modification that took place. Also recorded in the version is the status of the term; any change in status of a code-term pair will evoke the creation of a new version of that code-term pair. Certain information, such as the identifier of the operator, may not be made publicly available, but is nevertheless recorded.

These additional elements of versioning information are described in more detail below.

The coded concept can be considered as the container for all of the translations (i.e. code-term pairs) for a given concept; it does not therefore require versioning information itself. The addition of a new translation (i.e. a new code-term pair) does not therefore result in the creation of a new version of the coded concept.

2.3.1.1 Versioning: Code

User Guidance	This field contains the unique, machine-readable identifier for the version of the code-term pair that is the subject of the versioning. In this Technical Specification, the following format is used for the code: — XXX-12345678-LL-RR-V where — XXX-12345678-LL-RR represents the code-term pair; — V represents the version number, the length of which is not limited to a single digit.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	The code is generated automatically from the code-term pair and the version number.
Business Rule(s)	Each version shall have one code.

2.3.1.2 Versioning: Creation date

User Guidance	This field contains the time and date upon which the concept was first created. The time stamp used is in line with ISO 8601.
Data Type	Timestamp <TS>
Conformance	Mandatory
Value Allowed	YYYY-MM-DD hh:mm:ss
Business Rule(s)	The creation date refers to the creation of the coded concept and the first code-term pair for the default language/region. The time standard chosen to measure the point in time (e.g. UTC, UTC+1) is used consistently throughout the database.

2.3.1.3 Versioning: Created by

User Guidance	This field contains an identification of the operator who created the concept, such as their name or identifier.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Free text
Business Rule(s)	This information is not made publicly available to all users, but is recorded in the database and is accessible to the database administrator.

2.3.1.4 Versioning: Version date

User Guidance	If a modification has been made to a term, then a new version of that term is created, and this field contains the time and date upon which that version was created. This also applies to the creation of the first version of the code-term pair. The first version of the first code-term pair represents the creation of the coded concept itself, and therefore has particular importance, which is why it is considered appropriate always to indicate that date, even for subsequent versions and for different translations. The time stamp used is in line with ISO 8601.
Data Type	Timestamp <TS>
Conformance	Mandatory
Value Allowed	YYYY-MM-DD hh:mm:ss
Business Rule(s)	Each version of a code-term pair shall have one version date.

2.3.1.5 Versioning: Modification made

User Guidance	If a modification has been made to a term, then a new version of that term is created, and this field shall be used to add a description of or explanation for the modification that was made. This also applies to the creation of the first version of the code-term pair.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Free text, although a drop-down list of common modifications may be considered appropriate in order to help harmonise the entries.
Business Rule(s)	Each version of a code-term pair shall have one entry for modification made.

2.3.1.6 Versioning: Modification by

User Guidance	If a modification has been made to a term, then a new version of that term is created, and this field contains an identification of the operator who made the modification, such as their name or identifier. This also applies to the creation of the first version of the code-term pair. The first version of the first code-term pair represents the creation of the coded concept itself, and therefore has particular importance, which is why it is considered appropriate always to record the creator, even for subsequent versions and for different translations.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Free text
Business Rule(s)	This information is not made publicly available to all users, but is recorded in the database and is accessible to the database administrator.

2.3.1.7 Versioning: Concept status

User Guidance	This field contains the status of the term.
Data Type	Concept descriptor <CD>
Conformance	Mandatory
Value Allowed	”Current”; “Deprecated”; “Rejected”; “Pending”
Business Rule(s)	Each version of a code-term pair has a status, which allows the history of any change in status of a term to be recorded. For example, if an existing, current term (version 1) is to be deprecated, then a new version of the code-term pair is created (version 2), with the status changed from “current” to “deprecated”. It is the intention that, for any given concept, the status is the same for all of the translations; therefore, a mechanism should be implemented to ensure that the status of each code-term pair of a coded concept is changed at the same time.

2.3.1.8 Versioning: Current concept

User Guidance	If a term has been deprecated or rejected, and one or more other terms are identified as a replacement, this repeatable field contains the identifier of the replacement term.
Data Type	String <ST>
Conformance	Conditional
Value Allowed	Coded concept identifier
Business Rule(s)	This field is conditional on the status of a term being "deprecated" or "rejected", and there being a replacement term identified.

2.3.1.9 Versioning: Version number

User Guidance	This field contains an identifier for the particular version of the term being described, in the form of a whole number. When a modification to a term is made, a new version is created and identified through the version number, which increases by a value of 1 from the previous version of the term. When a term is first created this field has the value 1.
Data Type	Integer <INT>
Conformance	Mandatory
Value Allowed	Positive integer greater than zero.
Business Rule(s)	Each version shall have one version number.

2.3.2 Versioning of the terminology

The terminology is intended to be updated on a continuous basis, as new concepts and translations are added. Therefore it is not envisaged that there will be periodic updates of the terminology released and identified with fixed version numbers. However, a snapshot of the database shall be recorded on a regular basis, and thus there shall be periodic versions of the database available in case reversion to a previous instance of the database is required (e.g. in case of corruption of the database due to some unforeseen circumstances).

3 Terminologies

3.1 General

Each of the sets of terminologies described in this Clause make use of the data types described in Clause 2 to carry the information required to describe each individual concept.

The following subclauses describe each set of terminologies and provide examples to illustrate them. All of the terms and definitions used are for illustration purposes only, and are not intended to reflect the exact terms and definitions that will constitute the terminologies as such.

Each element in Clause 3 is described under a separate subclause, consisting of a title and a table containing the following:

— "User Guidance", a description of the element;

— "Data Type", a description of the data type;

— "Conformance", a description of whether the element is mandatory, optional, or conditional;

— "Value Allowed", indicating the possible values for the element;

— "Business Rules", providing technical guidance for the element.

3.2 Pharmaceutical dose form

3.2.1 Pharmaceutical dose form overview

The pharmaceutical dose form is the physical manifestation of a product that contains the active ingredient(s) and/or inactive ingredient(s) that are intended to be delivered to the patient.

A product can be described at two distinct stages: the stage at which it has been manufactured (where it is referred to as the "manufactured item(s)"), and the stage at which it is administered to the patient (where it is referred to as the "pharmaceutical product"). If a manufactured item has to undergo some form of transformation in order to produce the pharmaceutical product, this means that the pharmaceutical dose form of a product will differ depending on whether it is describing the manufactured item or the pharmaceutical product.

A medicinal product can therefore be described with two "types" of pharmaceutical dose form:

— the manufactured dose form (i.e. the pharmaceutical dose form of the manufactured item, as produced by the manufacturer);

— the administrable dose form (i.e. the pharmaceutical dose form of the pharmaceutical product, ready to be administered to the patient) (see Figure 1).

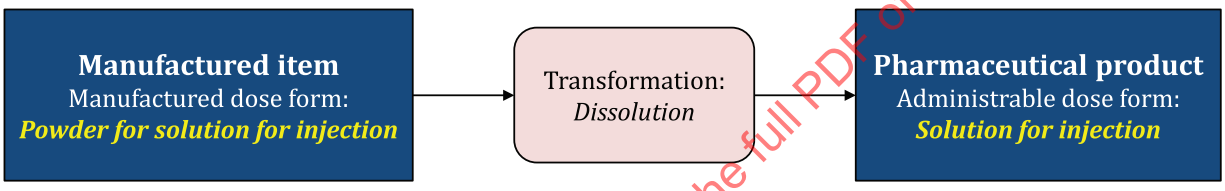

Figure 1 — Diagram illustrating the relationship between manufactured item and manufactured dose form, and pharmaceutical product and administrable dose form, for a medicinal product

In cases where no transformation is required, and the manufactured item is the same as the pharmaceutical product, the manufactured dose form and the administrable dose form are the same.

When a pharmaceutical dose form is described, there is no specific reference made to whether it can be a manufactured dose form or an administrable dose form, although it can be deduced that, while any pharmaceutical dose form can be a manufactured dose form, only a pharmaceutical dose form that specifies no transformation can be an administrable dose form (this property may be used by the maintenance organisation to help identify whether a term can be considered as a manufactured dose form only, or as either a manufactured dose form or an administrable dose form). The purpose of using these terms is to simplify the language used:

— "manufactured dose form" = "pharmaceutical dose form of the manufactured item";

— "administrable dose form" = "pharmaceutical dose form of the pharmaceutical product".

3.2.2 Pharmaceutical dose form schema

3.2.2.1 Schema overview

The pharmaceutical dose form is organised according to its basic dose form, which in turn is organised according to its state of matter. This is the simple, three-level hierarchy by which the pharmaceutical dose forms are categorised.

In addition to this hierarchy, each pharmaceutical dose form has a number of characteristics attributed to it, which can be used to help index the pharmaceutical dose form. These characteristics are: release characteristics, transformation, intended site, and administration method; they allow for

pharmaceutical dose forms to be more easily identified, and for related pharmaceutical dose forms to be identified together more easily and in a number of different ways (see Figure 2).

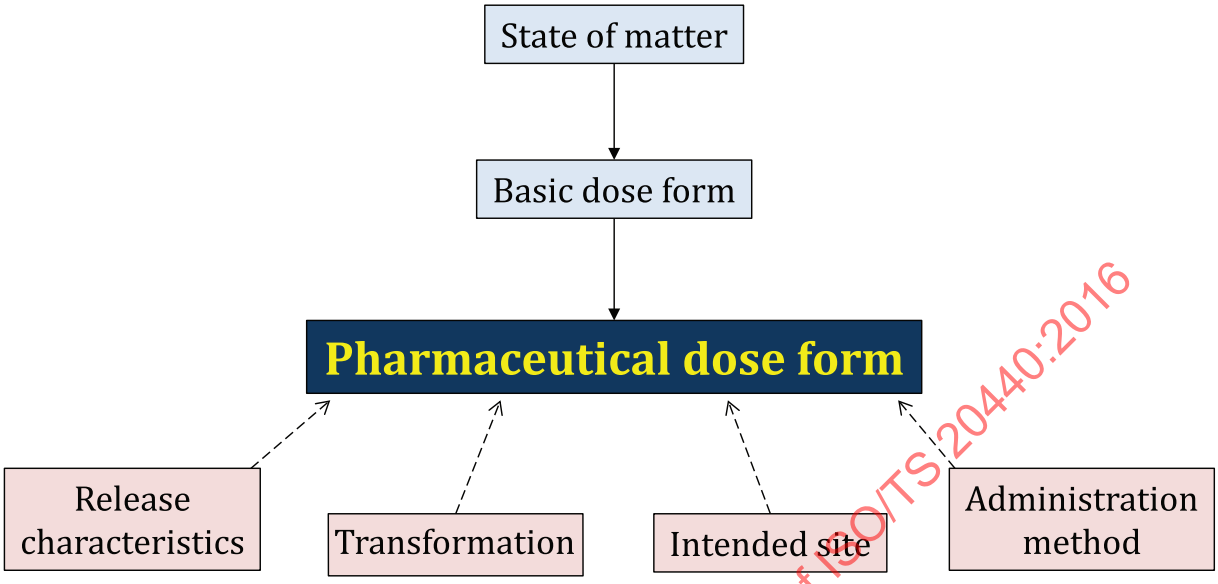

Figure 2 — Pharmaceutical dose form basic schema showing the principal hierarchy (solid arrows) and characteristics (dotted arrows)

This same schema is shown in the form of a unified modelling language (UML) class diagram in Figure 3, with the additional information of the value for each class (in each case a coded concept) and the relationship between the classes. The relationships are shown using the crow's feet format, which is explained in the legend of the figure.

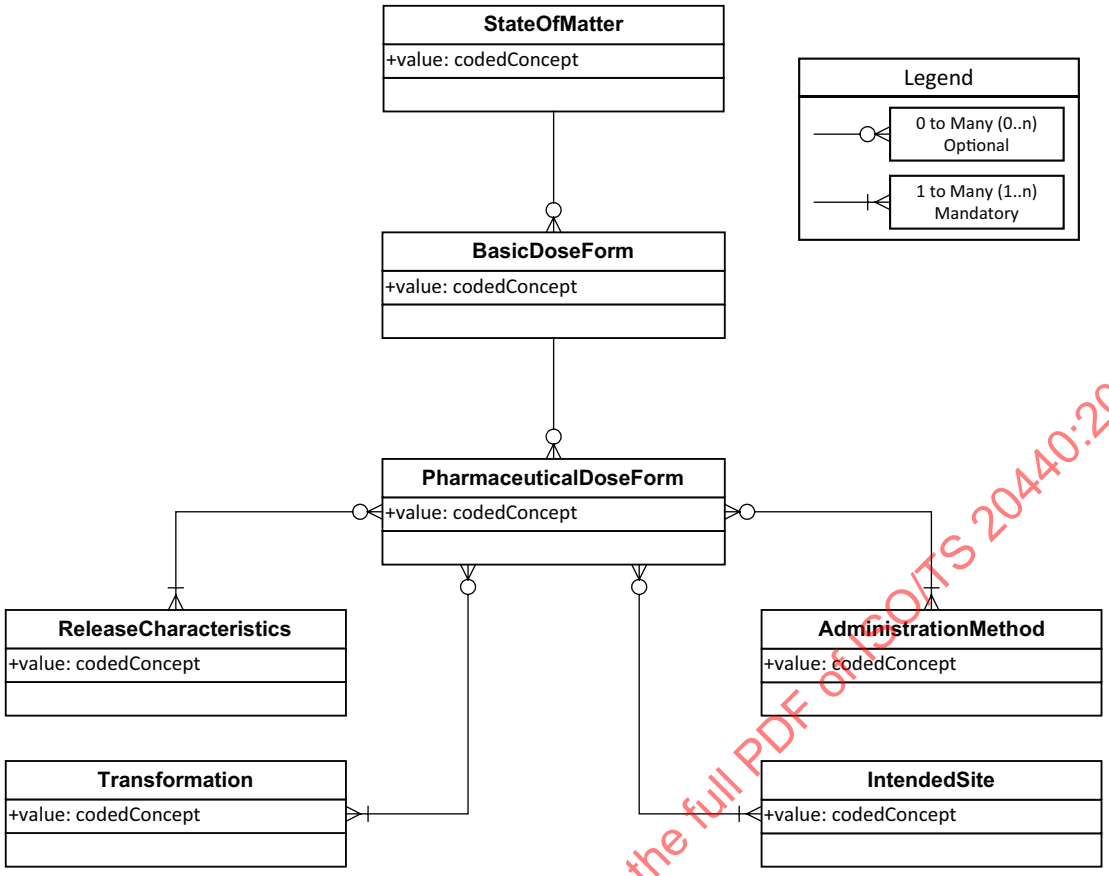

Figure 3 — Pharmaceutical dose form schema with crow's feet entity-relationship notation

These relationships reflect the following conditions.

— A state of matter may have one or more (i.e. 0 to many, optional) basic dose forms associated to it; while it is possible that a given state of matter may have no basic dose forms associated to it, this is unlikely in practice, bearing in mind the very limited number of states of matter.

— Each basic dose form shall be associated with one state of matter.

— A basic dose form may have one or more (i.e. 0 to many, optional) pharmaceutical dose forms associated to it; while it is possible that a given basic dose form may have no pharmaceutical dose forms associated to it, this is only likely to occur when a new basic dose form concept has been created and there are as yet no related pharmaceutical dose forms in the terminology.

— Each pharmaceutical dose form shall be associated with one basic dose form.

— Each pharmaceutical dose form shall be associated with one or more (i.e. 1 to many, mandatory) of each of the following: Release characteristics, Transformation, Intended site, and Administration method; where there is, for example, no transformation required, an appropriate null value shall be available for selection.

— Each release characteristic, transformation, administration method and intended site may be associated with one or more (i.e. 0 to many, optional) pharmaceutical dose forms; a given characteristic may be associated with no pharmaceutical dose forms, for example when the characteristic is first created, before the creation of any pharmaceutical dose form that requires it.

These characteristics are principally used for indexing purposes, and will not always need to be reflected in the pharmaceutical dose form term itself, but in some cases they will. For example, a solution that is intended to be instilled into the eye in the form of drops might be called "Eye drops, solution", a term in which the basic dose form (solution), intended site (ocular, i.e. the eye) and

administration method (instillation, i.e. in the form of drops) all appear. In contrast, a solution that is intended to be taken orally by swallowing might be called “Oral solution”, a term in which the basic dose form (solution) and intended site (oral) appear, but the administration method (swallowing) does not, since it is considered unnecessary. It is still used to characterise and index the term, but it is not necessary for it to be specifically stated as part of the term. Only where attributes are considered to be important in distinguishing between pharmaceutical dose form terms will they be represented in the term. Information on the basic principles that govern these sorts of decisions when creating a pharmaceutical dose form term (e.g. editorial rules) shall be provided by the maintenance organisation in the form of a user guide.

3.2.2.2 State of matter

User Guidance	The state of matter class is the highest-level grouping category that can be used to classify pharmaceutical dose forms, allowing them to be identified according to whether they are a solid, semi-solid, liquid or gas, or whether the state of matter is unclear. For example, all solid pharmaceutical dose forms, whether they are tablets, capsules, granules, powders, etc., can be classified together under a single category of state of matter. The state of matter class is the parent of the basic dose form class. Each state of matter can have between zero and many basic dose forms associated with it. The reason that a state of matter may have zero basic dose forms associated with it is that a state of matter must be created before any basic dose form can be associated with it. This situation usually exists for a short period of time only, since it is expected that a state of matter will be created only when it is needed in order to categorise an anticipated new basic dose form. Because of the limited possible states of matter, this is only likely to occur during the initial population of the database.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The state of matter of a manufactured dose form is that of the manufactured item, and not of the eventual pharmaceutical product; e.g. the state of matter for the pharmaceutical dose form “Powder for solution for injection” is “Solid”, since it is the manufactured item (the powder) that is described, and not the pharmaceutical product (the solution). The state of matter class is a sub-vocabulary that is used solely in this schema; the identifiers of the coded concepts used for this class are not intended to be used outside of this schema.

3.2.2.3 Basic dose form

User Guidance	The basic dose form class is the second-highest grouping category that can be used to classify pharmaceutical dose forms, and is itself classified according to the state of matter. The basic dose form allows pharmaceutical dose forms to be classified according to the general type of form that they take, without going into specific characteristics. For example, all tablets, whether they are intended for oral use, vaginal use, etc., whether they are intended to be swallowed, chewed, inserted, etc., whether they are intended to be administered as they are, dissolved, dispersed, etc., can be classified together under a single category of basic dose form. The basic dose form class is the child of the state of matter class and the parent of the pharmaceutical dose form class. Each basic dose form is associated with one state of matter, and can have between zero and many pharmaceutical dose forms associated with it. The reason that a basic dose form may have zero pharmaceutical dose forms associated with it is that a basic dose form must be created before any pharmaceutical dose form can be associated with it. This situation usually exists for a short period of time only, since it is expected that a basic dose form will be created only when it is needed in order to categorise an anticipated new pharmaceutical dose form.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The basic dose form of a manufactured dose form is that of the manufactured item, and not of the eventual pharmaceutical product. For example, the basic dose form for the pharmaceutical dose form “Powder for solution for injection” is “Powder”, since it is the manufactured item (the powder) that is described, and not the pharmaceutical product (the solution). The basic dose form class is a sub-vocabulary that is used solely in this schema; the identifiers of the coded concepts used for this class are not intended to be used outside of this schema.

3.2.2.4 Pharmaceutical dose form

User Guidance	The pharmaceutical dose form class represents the physical manifestation of a product that contains the active ingredient(s) and/or inactive ingredients that are intended to be delivered to the patient. The pharmaceutical dose form class is the child of the basic dose form class. Each pharmaceutical dose form is associated with one basic dose form. It also has one to many associations with each of the four characteristics classes: release characteristics, transformation, intended site, and administration method.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	This is the central class in the schema, and it is the identifiers of the coded concepts used for this class that are used elsewhere to represent the pharmaceutical dose form. These are the only identifiers in the schema that are intended to be used outside of the schema.

3.2.2.5 Release characteristics

User Guidance	The release characteristics class is used to describe how the active substance(s) are liberated from a medicinal product, and allows a distinction to be made between conventional release (i.e. based on the intrinsic properties of the active ingredient(s)) and a range of non-conventional types of release (where the pharmaceutical product has been formulated in such a way as to release the active ingredients at a different time or rate). Non-conventional release is most frequently encountered with solid oral medicinal products, where the time or duration of absorption of the active substance(s) from the gastrointestinal tract can be manipulated by a number of different formulation techniques, although this is not the only possible type of pharmaceutical dose form for which release characteristics can be varied. The release characteristics class is not a child of the pharmaceutical dose form, but is associated with it to provide characterizing information that can be indexed. This allows pharmaceutical dose forms to be categorised according to the release characteristics. However, it is possible for a release characteristic to exist but not be used to describe any pharmaceutical dose form; therefore, each release characteristic can be associated with zero to many pharmaceutical dose forms. Since each pharmaceutical dose form is associated with at least one release characteristic, an appropriate term is required for those forms that have conventional release characteristics. For example, the English/United Kingdom term may be “Conventional release”.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The release characteristics class is a sub-vocabulary that is used solely in this schema; the identifiers of the coded concepts used for this class are not intended to be used outside of this schema.

3.2.2.6 Transformation

User Guidance	The transformation class is used to describe whether a pharmaceutical dose form of a medicinal product is intended to undergo one or more specified transformations in order to render it suitable for administration to the patient. Such transformations are required where the medicinal product as manufactured and packaged (the “manufactured item”) is different from the product that is administered to the patient (the “pharmaceutical product”). For example, a manufactured item in the form of a powder needs to be dissolved in a given solvent to create a pharmaceutical product in the form of a solution; the pharmaceutical dose form of the manufactured item would have a transformation attribute to indicate this (e.g. “dissolution”). The transformation class is not a child of the pharmaceutical dose form, but is associated with it to provide characterizing information that can be indexed. This allows pharmaceutical dose forms to be categorised according to the transformation. However, it is possible for a transformation to exist but not be used to describe any pharmaceutical dose form; therefore, each transformation can be associated with zero to many pharmaceutical dose forms. Since each pharmaceutical dose form is associated with at least one transformation, an appropriate term is required for those forms that are not intended to undergo a transformation. For example, the English/United Kingdom term may be “No transformation”.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The transformation class is a sub-vocabulary that is used solely in this schema; the identifiers of the coded concepts used for this class are not intended to be used outside of this schema.

3.2.2.7 Intended site

User Guidance	The intended site class is used to describe the general body site at which a pharmaceutical dose form is intended to be administered, albeit in a high-level, generalised manner. It is not equivalent to a precise route or site of administration, which is specified elsewhere in the medicinal product's documentation; indeed the authorised route of administration is a separate terminology that serves a different purpose, as described in 3.5. The intended site class is not a child of the pharmaceutical dose form, but is associated with it to provide characterizing information that can be indexed. This allows pharmaceutical dose forms to be categorised according to the intended site. However, it is possible for an intended site to exist but not be used to describe any pharmaceutical dose form; therefore, each intended site can be associated with zero to many pharmaceutical dose forms. Since each pharmaceutical dose form is associated with at least one intended site, an appropriate term is required for those forms for which there is no specific intended site. For example, the English/United Kingdom term may be "Unknown/Miscellaneous".
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The intended site class is a sub-vocabulary that is used solely in this schema; the identifiers of the coded concepts used for this class are not intended to be used outside of this schema.

3.2.2.8 Administration method

User Guidance	The administration method class is used to describe the way that a pharmaceutical dose form is intended to be administered to the patient, albeit in a high-level, generalised manner. It is not equivalent to a precise method of administration, which might be specified elsewhere in a medicinal product's documentation. The administration method class is not a child of the pharmaceutical dose form, but is associated with it to provide characterizing information that can be indexed. This allows pharmaceutical dose forms to be categorised according to the administration method. However, it is possible for an administration method to exist but not be used to describe any pharmaceutical dose form; therefore, each administration method can be associated with zero to many pharmaceutical dose forms. Since each pharmaceutical dose form is associated with at least one administration method, an appropriate term is required for those forms for which there is no specific administration method. For example, the English/United Kingdom term may be "Not specified".
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The administration method class is a sub-vocabulary that is used solely in this schema; the identifiers of the coded concepts used for this class are not intended to be used outside of this schema.

3.2.3 Pharmaceutical dose form example: Prolonged-release tablet

3.2.3.1 Example overview

This Clause gives an example of how a pharmaceutical dose form concept, that of a prolonged-release tablet, is constructed using code-term pairs and coded concepts for each of the categories and characteristics shown in Figure 2, for the language/region combinations of English/United Kingdom, French/France and Japanese/Japan. For each category or characteristic, the code-term pairs for the language/region combinations are used to create a coded concept to represent that category or characteristic, which in turn are used to help characterise the pharmaceutical dose form.

3.2.3.2 State of matter code-term pairs

Table 4 — Example code-term pairs for the state of matter category "Solid"

Code	SOM-0097-EN-GB	SOM-0097-FR-FR	SOM-0097-JA-JP
term	solid	solide	固体
definition	solid category state of matter	catégorie solide pour l'état de la matière	製品の状態：固体。
languageCode	EN	FR	JA
regionCode	GB	FR	JP

The codes for state of matter code-term pairs shown in Table 4 are used to build the state of matter coded concept, as shown in 3.2.3.3.

3.2.3.3 State of matter coded concept

Table 5 — Example coded concept for the state of matter category "Solid"

code	SOM-0097
value	SOM-0097-EN-GB
translation	SOM-0097-FR-FR SOM-0097-JA-JP

The code for state of matter coded concept shown in Table 5 is used to characterise the pharmaceutical dose form, as shown in 3.2.3.16.

3.2.3.4 Basic dose form code-term pairs

Table 6 — Example code-term pairs for the basic dose form category "Tablet"

Code	BDF-0069-EN-GB	BDF-0069-FR-FR	BDF-0069-JA-JP
Term	tablet	Comprimé	錠剤
definition	category of solid pharmaceutical dose forms that are usually compressed volumes of particulate solids (but may be obtained by other means), formed into a shape that is appropriate for their intended use	catégorie des formes pharmaceutiques solides qui sont généralement des volumes compressés des particules solides (mais qui peuvent être obtenues par d'autres moyens), créées dans une forme qui est appropriée pour l'usage prévu	固形製剤の分類は、通常、固体粒子を圧縮し（なお、他の製造方法を用いる場合もある）、使用目的に適した形状に成形する。
languageCode	EN	FR	JA
regionCode	GB	FR	JP

The codes for basic dose form code-term pairs shown in Table 6 are used to build the basic dose form coded concept, as shown in 3.2.3.5.

3.2.3.5 Basic dose form coded concept

Table 7 — Example coded concept for the basic dose form category "Tablet"

code	**BDF-0069**
value	BDF-0069-EN-GB
translation	BDF-0069-FR-FR BDF-0069-JA-JP

The code for basic dose form coded concept shown in Table 7 is used to characterise the pharmaceutical dose form, as shown in 3.2.3.16.

3.2.3.6 Release characteristics code-term pairs

Table 8 — Example code-term pairs for the release characteristic "Prolonged release"

code	**RCA-0045-EN-GB**	**RCA-0045-FR-FR**	**RCA-0045-JA-JP**
term	prolonged release	libération prolongée	徐放性
definition	a slower release of the active substance(s) compared to that which is seen with a conventional-release pharmaceutical dose form, achieved by a special formulation design and/or manufacturing method	une libération plus lente de la(des) substance(s) active(s) par rapport à ce qui est vu avec une forme pharmaceutique à libération conventionnelle, réalisé par une formulation ou méthode de fabrication special	通常の製剤（即放性製剤）と比較して有効成分の遅い放出性が特別な処方設計と製造法により達成される。
languageCode	EN	FR	JA
regionCode	GB	FR	JP

The codes for release characteristics code-term pairs shown in Table 8 are used to build the release characteristics coded concept, as shown in 3.2.3.7.

3.2.3.7 Release characteristics coded concept

Table 9 — Example coded concept for the release characteristic "Prolonged release"

code	**RCA-0045**
value	RCA-0045-EN-GB
translation	RCA-0045-FR-FR RCA-0045-JA-JP

The code for release characteristics coded concept shown in Table 9 is used to characterise the pharmaceutical dose form, as shown in 3.2.3.16.

3.2.3.8 Transformation code-term pairs

Table 10 — Example code-term pairs for the transformation characteristic "No transformation"

code	**TRA-0042-EN-GB**	**TRA-0042-FR-FR**	**TRA-0042-JA-JP**
term	no transformation	aucune transformation	なし
definition	no transformation of the manufactured item is required	aucune transformation de l'article fabriqué est nécessaire	製剤の剤形変換は不要。
languageCode	EN	FR	JA
regionCode	GB	FR	JP

The codes for transformation code-term pairs shown in Table 10 are used to build the transformation coded concept, as shown in 3.2.3.9.

3.2.3.9 Transformation coded concept

Table 11 — Example coded concept for the transformation characteristic "No transformation"

code	**TRA-0042**
value	TRA-0042-EN-GB
translation	TRA-0042-FR-FR TRA-0042-JA-JP

The code for transformation coded concept shown in Table 11 is used to characterise the pharmaceutical dose form, as shown in 3.2.3.16.

3.2.3.10 Intended site code-term pairs

Table 12 — Example code-term pairs for the intended site characteristic "Oral"

code	**ISI-0031-EN-GB**	**ISI-0031-FR-FR**	**ISI-0031-JA-JP**
term	oral	oral	経口
definition	the item is intended to be taken into the body through the mouth	l'article est destiné à être pris dans le corps par la bouche	口を介して体内に取り込まれることを意味している。
languageCode	EN	FR	JA
regionCode	GB	FR	JP

The codes for intended site code-term pairs shown in Table 12 are used to build the intended site coded concept, as shown in 3.2.3.11.

3.2.3.11 Intended site coded concept

Table 13 — Example coded concept for the intended site characteristic "Oral"

code	**ISI-0031**
value	ISI-0031-EN-GB
translation	ISI-0031-FR-FR ISI-0031-JA-JP

The code for intended site coded concept shown in Table 13 is used to characterise the pharmaceutical dose form, as shown in 3.2.3.16.

3.2.3.12 Administration method code-term pairs

Table 14 — Example code-term pairs for the administration method characteristic "Swallowing"

code	**AME-0019-EN-GB**	**AME-0019-FR-FR**	**AME-0019-JA-JP**
term	swallowing	deglutition	嚥下
definition	the item is intended to be swallowed	l'article est destiné à être avalé	飲み込むことを意味している。
languageCode	EN	FR	JA
regionCode	GB	FR	JP

The codes for administration method code-term pairs shown in Table 14 are used to build the administration method coded concept, as shown in 3.2.3.13.

3.2.3.13 Administration method coded concept

Table 15 — Example coded concept for the administration method characteristic "Swallowing"

code	**AME-0019**
value	AME-0019-EN-GB
translation	AME-0019-FR-FR AME-0019-JA-JP

The code for administration method coded concept shown in Table 15 is used to characterise the pharmaceutical dose form, as shown in 3.2.3.16.

3.2.3.14 Pharmaceutical dose form code-term pairs

Table 16 — Example code-term pairs for the pharmaceutical dose form "Prolonged-release tablet"

code	**PDF-10226000-EN-GB**	**PDF-10226000-FR-FR**	**PDF-10226000-JA-JP**
term	prolonged-release tablet	comprimé à liberation pro-longée	経口徐放錠
definition	solid, single-dose, modi-fied-release tablet showing a slower release of the active substance(s) than that of the conventional-release tablet; prolonged release is achieved by a special formulation design and/or manufacturing method; prolonged-release tablets are intended for oral administration	comprimé solide, à dose unique, à libération modi-fiée, montrant une libération plus lente de la substance(s) active(s) par rapport à ce qui est vu avec une forme pharmaceutique à libération conventionnelle ; la libération prolongée est réalisée par une formulation ou méth-ode de fabrication spéciale ; les comprimés à libération prolongée sont destinés à une administration orale	固体で単回投与の放出調節錠は、通常錠（即放錠）より有効成分の遅い放出性を示す；徐放性は特別な処方設計と製造法により達成される; 徐放錠は経口投与に用いる。
languageCode	EN	FR	JA
regionCode	GB	FR	JP

The codes for pharmaceutical dose form code-term pairs shown in Table 16 are used to build the pharmaceutical dose form coded concept, as shown in 3.2.3.15.

3.2.3.15 Pharmaceutical dose form coded concept

Table 17 — Example coded concept for the pharmaceutical dose form "Prolonged-release tablet"

code	**PDF-10226000**
value	PDF-10226000-EN-GB
translation	PDF-10226000-FR-FR PDF-10226000-JA-JP

The code for pharmaceutical dose form coded concept shown in Table 17 is used to identify the pharmaceutical dose form. The pharmaceutical dose form concept of "Prolonged-release tablet" is therefore represented by the identifier PDF-10226000, and it is this identifier that is used to represent the concept in, for example, the building of the PhPID and the individual case safety report (ICSR). The language- and region-specific codes (i.e. the code-term pairs) such as PDF-10226000-EN-GB are intended for use only within the terminology to arrange regional translations.

3.2.3.16 Pharmaceutical dose form concept summary

The codes provided by the coded concepts outlined above are used to associate the pharmaceutical dose form concept with its various attributes, as shown in the summary in Table 18 and the schema in Figure 4. This association of coded concepts, and therefore code-term pairs, allows the pharmaceutical dose form to be organised, categorised and searched according to any of its attributes, in any of the available language/region combinations.

Table 18 — Summary of pharmaceutical dose form "Prolonged-release tablet" and its attributes

Pharmaceutical dose form	**PDF-10226000**
State of matter	SOM-0097
Basic dose form	BDF-0069
Release characteristics	RCA-0045
Transformation	TRA-0042
Intended site	ISI-0031
Administration method	AME-0019

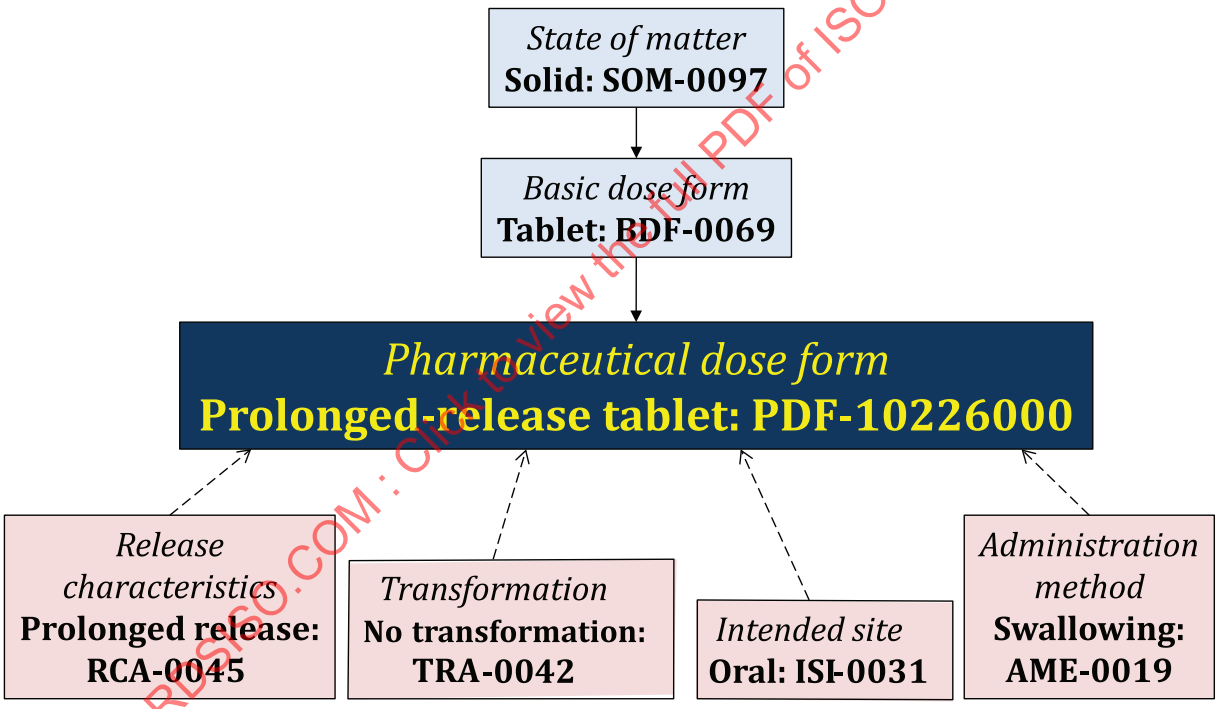

Figure 4 — Summary schema of pharmaceutical dose form "Prolonged-release tablet" and its attributes

3.3 Combined pharmaceutical form

3.3.1 Combined pharmaceutical dose form overview

Combined pharmaceutical dose form terms are used in some regions (e.g. Europe) to describe a medicinal product that consists of two or more manufactured items that are intended to be transformed into a single pharmaceutical product to be administered. Where such a term is required, the combined pharmaceutical dose form can be used, and this Clause describes how it is created.

3.3.2 Combined pharmaceutical dose form schema

3.3.2.1 Schema overview

A combined pharmaceutical dose form is represented by a coded concept in the same way as any other controlled term.

While a pharmaceutical dose form is associated with the various characterizing attributes shown in Figure 2 and Figure 3, and summarised in Table 18, the combined pharmaceutical dose form term is associated with the pharmaceutical dose form terms that describe its manufactured items (see Figure 5).

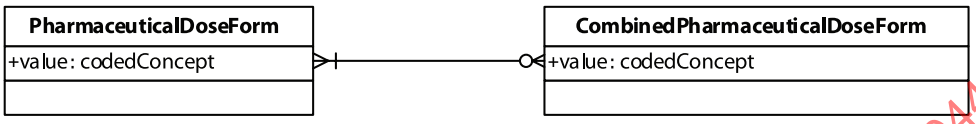

Figure 5 — Combined pharmaceutical dose form schema with crow's feet entity-relationship notation

These relationships reflect the following conditions.

— A combined pharmaceutical dose form shall have one or more (i.e. 1 to many, mandatory) pharmaceutical dose forms associated with it.

— A pharmaceutical dose form may have one or more (i.e. 0 to many, optional) combined pharmaceutical dose forms associated with it.

3.3.2.2 Combined pharmaceutical dose form

User Guidance	This class contains the identifier of the coded concept that represents the combined pharmaceutical dose form. It is associated with one to many pharmaceutical dose forms.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The combined pharmaceutical dose form is used where a single term is required to describe a medicinal product that consists of two or more manufactured items that are combined to form a single pharmaceutical product. It is the identifiers of the coded concepts used for this class that are used elsewhere to represent the combined pharmaceutical dose form. This is not used in all regions.

3.3.2.3 Pharmaceutical dose form

User Guidance	Each instance of this repeatable class contains the identifier of the coded concept that represents one of the manufactured dose forms that makes up the combined pharmaceutical dose form. It may also be used to represent the administrable dose form of the combined pharmaceutical dose form. Such additional information allows a user to navigate between related terms more easily. Any pharmaceutical dose form may be associated with one or more combined pharmaceutical dose forms.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	In most cases there will be a minimum of two pharmaceutical dose forms associated with a combined pharmaceutical dose form. However, if a medicinal product comprises two or more manufactured items that all have the same pharmaceutical dose form, then only one instance of that pharmaceutical dose form may be needed. For example, a medicinal product consisting of two manufactured items, each of which has the pharmaceutical dose form "Solution for solution for injection", has only one instance of a pharmaceutical dose form in this field: "Solution for solution for injection". (The combined pharmaceutical dose form will be "Solutions for solution for injection".) If the administrable dose form is also associated with the combined pharmaceutical dose form, then two or more pharmaceutical dose forms can always be expected, since the manufactured and administrable dose forms will always be different.

3.3.3 Combined pharmaceutical dose form example: Powder and solvent for solution for injection

3.3.3.1 Example overview

This Clause gives an example of how a combined pharmaceutical dose form term is used to describe a medicinal product that consists of a powder for solution for injection and a solvent (the manufactured items, i.e. the items contained in the packaging). The powder is intended to be dissolved in the solvent to create a solution for injection (the pharmaceutical product, i.e. the item that is administered to the patient).

The relationship between the manufactured items (which make up the medicinal product) and the pharmaceutical product (which is formed from those manufactured items) is shown in Figure 6, along with the different pharmaceutical dose form terms that are used to describe each item.

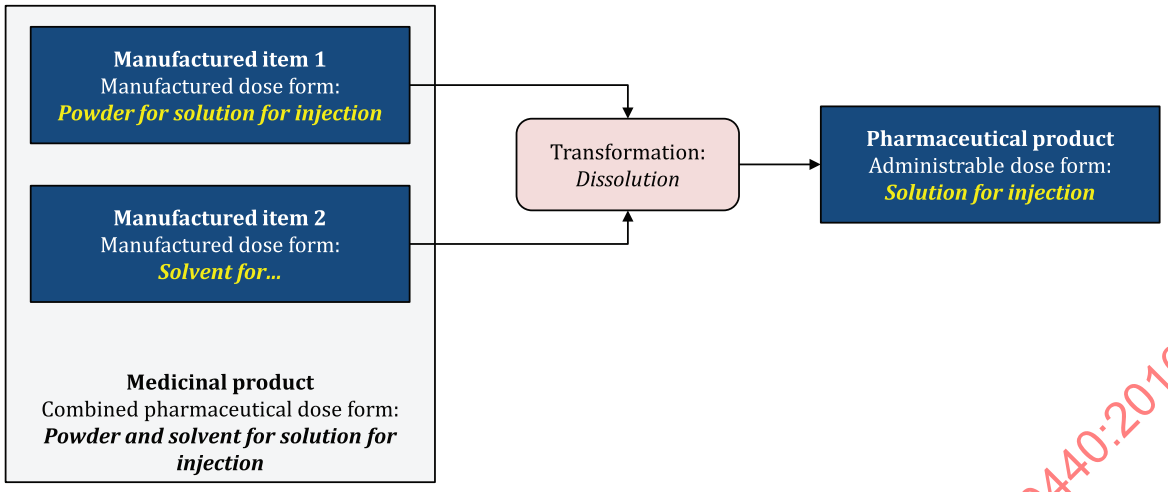

Figure 6 — Diagram illustrating the relationship between manufactured dose form, administrable dose form and combined pharmaceutical dose form for a medicinal product consisting of two manufactured items

In this example, the solvent contains no active ingredient, and is present as an excipient in order to prepare the solution for injection. In order to avoid a proliferation of unnecessary terms to describe such solvents that are used in the reconstitution of many different pharmaceutical products, a single term is used to describe all such solvents (i.e. "Solvent for..."), with the addition of the product name at the end of the term. So, for example, for an imaginary medicine called "Antihemodrug" that has the combined pharmaceutical dose form "Powder and solvent for solution for injection", the manufactured dose form for the solvent would be "Solvent for..." and the product label for the solvent would state "Solvent for Antihemodrug".

3.3.3.2 Combination of manufactured items: Pharmaceutical dose form coded concepts

The medicinal product consists of two manufactured items, each with its own pharmaceutical dose form (referred to as the manufactured dose forms): "Powder for solution for injection" and "Solvent for...". The combination also has its own pharmaceutical dose form (referred to as the combined pharmaceutical dose form): "Powder and solvent for solution for injection". In addition, the pharmaceutical product that is administered to the patient has its own pharmaceutical dose form: "Solution for injection". All four of these concepts are represented by coded concepts (built from the language/region-specific code-term pairs as described above), and bear the coded concept identifiers shown in Table 19.

Table 19 — Terms and identifiers of the coded concepts for the combined pharmaceutical dose form "Powder and solvent for solution for injection" and its component pharmaceutical dose forms

Item	Term	Identifier
Medicinal product	powder and solvent for solution for injection	CDF-11207000
Manufactured item 1	powder for solution for injection	PDF-11205000
Manufactured item 2	solvent for...	PDF-13035000
Pharmaceutical product	solution for injection	PDF-11201000

As shown in Figure 5, the pharmaceutical dose forms are linked to the combined pharmaceutical dose form. The identifiers are shown in Table 20.

Table 20 — Summary of combined pharmaceutical dose form "Powder and solvent for solution for injection" showing the identifiers for the combined pharmaceutical dose form and the associated pharmaceutical dose forms

Combined pharmaceutical dose form	CDF-11207000
Pharmaceutical dose forms	PDF-11205000
	PDF-13035000
	PDF-11201000

This is equivalent to the summary for the pharmaceutical dose form as shown in Table 18, since the combined pharmaceutical dose form is built from other pharmaceutical dose forms, rather than being built directly from the various attributes (basic dose form, release characteristics, etc.), as explained in 3.3.2.

3.3.4 Other authorised combinations of terms — Combined terms and combination packs

3.3.4.1 General

Some regions also use other combinations of terms in order to describe medicinal products. For example, in Europe, pharmaceutical dose forms and packaging items are sometimes combined into a single term ("combined terms"), and in some countries in Europe, distinct pharmaceutical products are packaged together and described with a single term ("combination packs"). In the US, the term "kit" is used when describing such combinations; however, in Europe, the word "kit" is restricted for use in the field of radiopharmaceuticals. Where such combinations are required, they may be built in the same way as described for combined pharmaceutical dose forms, by association with existing terms. In order to avoid mixing the different types of term together, combined pharmaceutical dose forms, combined terms and combination packs should be kept in separate lists.

3.3.4.2 Combined terms

Combined terms are used in Europe in two situations: to distinguish between medicinal products that share the same trade name but are presented in different packaging that affects their use; or for safety reasons where the packaging is considered to have an important impact on the product and its use and is considered worthy of mention.

As an example, a particular brand of oral suspension may be marketed in both a multidose bottle and a single-use sachet; in order to distinguish between the products, the combined term "Oral suspension in sachet" is used in Europe. The combined term "Oral suspension in sachet" is built from the pharmaceutical dose form "Oral suspension" and the container "Sachet".

As another example, a solution for injection may be marketed in a pre-filled syringe; since this is considered to be a particularly important feature, the combined term "Solution for injection in pre-filled syringe" is used in Europe. The combined term "Solution for injection in pre-filled syringe" is built from the pharmaceutical dose form "Solution for injection" and the container "Pre-filled syringe".

3.3.4.3 Combination packs

Combination packs are used in some countries in order to describe a medicinal product that consists of two or more pharmaceutical products that are packaged together but are administered independently of each other.

As an example, a particular product may consist of a hard capsule and a powder for oral solution, both packaged together in a single item of packaging, and licensed as a single medicinal product. The combination pack "Capsule, hard + powder for oral solution" is used to describe the authorised medicinal product, and is built from the pharmaceutical dose forms "Capsule, hard" and "Powder for oral solution". In this example a plus symbol is used to separate the pharmaceutical dose forms rather that the word "and". This is an important detail, since the term "Capsule, hard and powder for oral

solution" would imply that it was a combined pharmaceutical dose form, and that the hard capsule and the powder were both intended to be dissolved in order to prepare an oral solution.

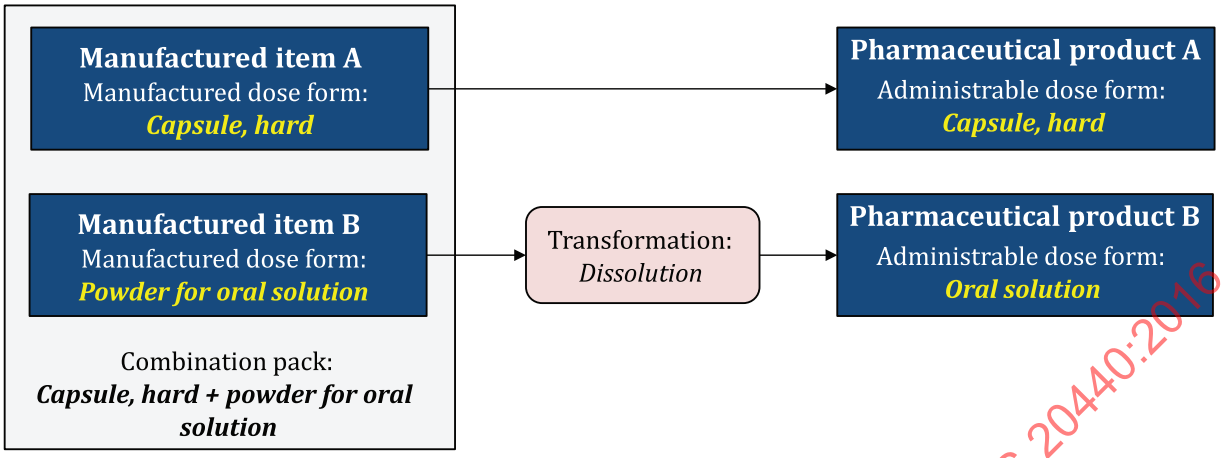

Figure 7 — Combination pack consisting of two manufactured items, resulting in two independent pharmaceutical products to be administered separately

3.4 Unit of presentation

3.4.1 Unit of presentation overview

The unit of presentation is a qualitative term that is used to describe a discrete countable entity in which a pharmaceutical product or manufactured item is presented, in cases where strength or quantity is expressed referring to one instance of that countable entity.

In the description of strength, a unit of presentation is used in cases where a quantitative unit of measurement, such as gram or millilitre, is not appropriate. For example, the amount of active substance in a cream might be described as *x* milligrams per **gram**, while the amount of active substance in a tablet might be described as *x* milligrams per **tablet**. A unit of measurement ("gram") can be used to refer to the cream, but not to the tablet, where a unit of presentation is required instead. Compare the units of measurements and units of presentation in Table 21.

Table 21 — Comparison of some units of measurement and units of presentation

Unit of measurement	Unit of presentation
x mg per **gram**	*x* mg per **tablet**
x mg per **millilitre**	*x* mg per **actuation**
x mg per **hour**	*x* mg per **patch**

The last line of the table shows how the strength of a transdermal patch might be described using a unit of measurement (amount of substance released per **hour**) or a unit of presentation (amount of substance contained per **patch**). For these descriptions, a unit of measurement and a unit of presentation are both used to describe different aspects of the strength of a single product.

In the description of quantity, a unit of presentation is used in a similar way. For example, it might be necessary to describe the quantity of a solution per **ampoule**. For this, a unit of presentation is also required.

3.4.2 Unit of presentation schema

3.4.2.1 Schema overview

A unit of presentation is represented by a coded concept in the same way as any other controlled term (see Figure 8).

Unlike the pharmaceutical dose form, the unit of presentation is a simple flat list.

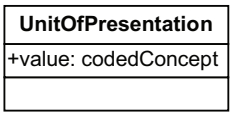

Figure 8 — Unit of presentation schema

3.4.2.2 Unit of presentation

User Guidance	This class contains the identifier of the coded concept that represents the unit of presentation. The unit of presentation often uses the same name for a term as another vocabulary, particularly the basic dose form and container vocabularies. The terms are not, however, equivalent, and bear different identifiers and different definitions.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The unit of presentation is used in the description of strength where a unit of measurement is not appropriate, and in the description of quantity where the quantity in a given container is expressed. The unit of presentation is a simple flat list without a hierarchy. It is the identifiers of the coded concepts used for this class that are used elsewhere to represent the unit of presentation.

3.4.3 Unit of presentation example: Tablet

3.4.3.1 Example overview

This Clause gives an example of a unit of presentation, and shows how a unit of presentation can share a term with another vocabulary, in this case a pharmaceutical dose form. The code-term pairs that share the same name for the English/United Kingdom combination are shown in Table 22.

Table 22 — Example of code-term pairs for a pharmaceutical dose form (left) and a unit of presentation (right) that share the same name in English

code	**PDF-10219000-EN-GB**	**UOP-15001000-EN-GB**
term	tablet	tablet
definition	Solid single-dose uncoated preparation obtained by compressing uniform volumes of particulate solids or by other means such as extrusion or moulding. Tablets include single-layer tablets resulting from a single compression of particles and multi-layer tablets consisting of concentric or parallel layers obtained by successive compressions of particles of different composition. Tablets are intended for oral use to release active substance(s) in the gastrointestinal fluids by a rate depending essentially on the intrinsic properties of the active substance(s) (conventional release).	single dosing unit in the form of a tablet
languageCode	EN	EN
regionCode	GB	GB

3.4.3.2 Unit of presentation code-term pairs

Table 23 — Example code-term pairs for the unit of presentation "Tablet"

code	**UOP-15001000-EN-GB**	**UOP-15001000-FR-FR**	**UOP-15001000-JA-JP**
term	tablet	comprimé	錠剤
definition	single dosing unit in the form of a tablet	une unité de dosage unique sous la forme d'un comprimé	錠剤の一回投与単位
comment			
languageCode	EN	FR	JA
regionCode	GB	FR	JP

3.4.3.3 Unit of presentation coded concept

Table 24 — Example coded concept for the unit of presentation "Tablet"

code	**UOP-15001000**
value	UOP-15001000-EN-GB
translation	UOP-15001000-FR-FR UOP-15001000-JA-JP

The unit of presentation concept of "Tablet" is therefore represented by the identifier UOP-15001000, and it is this identifier that is used to represent the concept, for example as part of the medicinal product data. The language- and region-specific codes (i.e. the code-term pairs) such as UOP-15001000-EN-GB are intended for use only within the terminology to arrange regional translations.

3.5 Route of administration

3.5.1 Route of administration overview

The route of administration is the path by which the pharmaceutical product is taken into or makes contact with the body when it is administered. It is not intended to include specific sites or methods of administration, which are captured elsewhere in a medicinal product's documentation. For example, the route of administration for a pharmaceutical product in the form of a solution for injection might

be “intramuscular”; it would not be “slow, intramuscular, z-tracking”, which contains administration information that should be captured elsewhere in the product information.

3.5.2 Route of administration schema

3.5.2.1 Schema overview

A route of administration is represented by a coded concept in the same way as any other controlled term (see Figure 9).

Unlike the pharmaceutical dose form, and like the unit of presentation, the route of administration is a simple flat list.

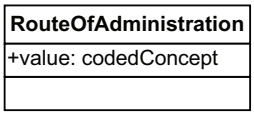

Figure 9 — Route of administration schema

3.5.2.2 Route of administration

User Guidance	This class contains the identifier of the coded concept that represents the route of administration.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The route of administration is a simple flat list of terms without a hierarchy. It is the identifiers of the coded concepts used for this class that are used elsewhere to represent the route of administration.

3.5.3 Route of administration example: Intravenous use

3.5.3.1 Route of administration code-term pairs

Table 25 — Example code-term pairs for the route of administration “Intravenous”

code	**ROA-20045000-EN-GB**	**ROA-20045000-FR-FR**	**ROA-20045000-JA-JP**
term	intravenous	voie intraveineuse	静脈内
definition	administration, usually by injection, of a medicinal product into a vein	administration, généralement par injection, d’un médicament dans une veine	通常は注射によって静脈内へ医薬品を投与すること。
comment			
languageCode	EN	FR	JA
regionCode	GB	FR	JP

3.5.3.2 Route of administration coded concept

Table 26 — Example coded concept for the route of administration “Intravenous”

code	**ROA-20045000**
value	ROA-20045000-EN-GB
translation	ROA-20045000-FR-FR ROA-20045000-JA-JP

The route of administration concept of “Intravenous” is therefore represented by the identifier ROA-20045000, and it is this identifier that is used to represent the concept, for example as part of the medicinal product data. The language- and region-specific codes (i.e. the code-term pairs) such as ROA-20045000-EN-GB are intended for use only within the terminology to arrange regional translations.

3.6 Packaging

3.6.1 Packaging overview

The packaging covers those parts of a packaged medicinal product that make up the packaging or are included in the packaging along with the manufactured items, and that are used to ensure the correct and safe storage, transport and/or administration of the manufactured items and/or pharmaceutical products. As such they are an important part of the packaged medicinal product.

It should be noted that packaging may not currently be described using a specific terminology in some regions such as Japan. For this reason, the examples below do not contain code-term pairs in Japanese. The opportunity is taken to include examples of English terms for the US, to indicate how the same language may be used in different regions. This is intended to allow for differences in regional spellings (e.g. UK English compared to US English), but in most cases such terms will be identical.

3.6.2 Packaging schema

3.6.2.1 Schema overview

The packaging schema consists of a two-level hierarchy (see Figure 10) that classifies the packaging concept according to the role that it plays. This hierarchy is similar to the relationship between the basic dose form and the pharmaceutical dose form.

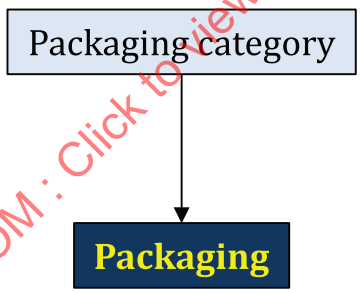

Figure 10 — Packaging

Both the packaging category and the packaging concept itself are represented by coded concepts in the same way as any other controlled term (see Figure 11). There are three packaging categories, and each contains a simple flat list of packaging terms.

Figure 11 — Packaging schema with crow’s feet entity-relationship notation

These relationships reflect the following conditions.

— A packaging category may have one or more (i.e. 0 to many, optional) packagings associated with it; while it is possible that a given packaging category may have no packagings associated with it, this is unlikely in practice, bearing in mind the very limited number of packaging categories.

— Each packaging shall be associated with one packaging category.

3.6.2.2 Packaging category

User Guidance	The packaging category class is the grouping category that allows a packaging term to be classified according to the general type of packaging that it is. There are three packaging categories: container; closure; and administration device. The packaging category class is the parent of the packaging class. Each packaging category can have between zero and many packagings associated with it. The reason that a packaging category may have zero packaging associated with it is that a packaging category must be created before any packaging can be associated with it. This situation usually exists for a short period of time only, since it is expected that a packaging category will be created only when it is needed in order to categorise an anticipated new packaging. Because of the limited possible packaging categories, this is only likely to occur during the initial population of the database.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	The packaging category class is a sub-vocabulary that is used solely in this schema; the identifiers of the coded concepts used for this class are not intended to be used outside of this schema.

3.6.2.3 Packaging

User Guidance	The packaging class contains the identifier of the coded concept that represents the packaging. The packaging class is the child of the packaging category class. Each packaging has one packaging category associated with it.
Data Type	String <ST>
Conformance	Mandatory
Value Allowed	Coded concept identifier
Business Rule(s)	This is the central class in the schema, and it is the identifiers of the coded concepts used for this class that are used elsewhere to represent the packaging. These are the only identifiers in the schema that are intended to be used outside of the schema.

3.6.3 Packaging example: Ampoule (Packaging category: Container)

3.6.3.1 Example overview

The concepts contained in the packaging category “Container” are those packaging items that are used for storage, identification and/or transport of the components of a medicinal product. They include the immediate container (the container in direct contact with the medicinal product), the outer packaging (the outermost container in which the medicinal product is supplied, and which is not in direct contact with the medicinal product except where it also acts as the immediate container), and any intermediate containers between the immediate container and the outer packaging. An immediate container may have a closure or administration device incorporated into it.

This Clause gives an example of a packaging concept, that of an ampoule, and its hierarchical position under the packaging category “Container”.

3.6.3.2 Packaging category code-term pairs

Table 27 — Example code-term pairs for the packaging category "Container"

code	**PAC-0001-EN-GB**	**PAC-0001-EN-US**	**PAC-0001-FR-FR**
term	container	container	récipient
definition	packaging category including items used for storage, identification and/or transport of the components of a medicinal product	packaging category including items used for storage, identification and/or transport of the components of a medicinal product	catégorie d'emballage incluant les articles utilizés pour le stockage, l'identification et/ou le transport des composants d'un médicament
comment			
languageCode	EN	EN	FR
regionCode	GB	US	FR

Here is an example of a single language (English) being used in two regions (GB and US). Since there is no difference in the spelling in this case, the terms and definitions are the same. It might be decided that no definition is required for the US translation where that of the GB term is sufficient.

The codes for packaging category code-term pairs shown in Table 27 are used to build the packaging category coded concept, as shown in 3.6.3.3.

3.6.3.3 Packaging category coded concept

Table 28 — Example coded concept for the packaging category "Container"

code	**PAC-0001**
value	PAC-0001-EN-GB
translation	PAC-0001-EN-US PAC-0001-FR-FR

The code for the packaging category coded concept shown in Table 28 is used to categorise the packaging as a container.

3.6.3.4 Packaging code-term pairs

Table 29 — Example code-term pairs for the container "Ampoule"

code	**CON-30001000-EN-GB**	**CON-30001000-EN-US**	**CON-30001000-FR-FR**
term	ampoule	ampule	ampoule
definition	container sealed by fusion and to be opened exclusively by breaking, whose contents are intended for use on one occasion only	container sealed by fusion and to be opened exclusively by breaking, whose contents are intended for use on one occasion only	récipient scellé par fusion, à être ouvert exclusivement par la cassure, dont le contenu est destiné à être utilizé une seule fois
comment			
languageCode	EN	EN	FR
regionCode	GB	US	FR

Here is an example of a single language (English) being used in two regions (GB and US) where the spelling of the term differs, although the definition remains the same.

The codes for packaging code-term pairs shown in Table 29 are used to build the packaging coded concept, as shown in 3.6.3.5.

3.6.3.5 Packaging coded concept

Table 30 — Example coded concept for the container "Ampoule"

code	**CON-30001000**
value	CON-30001000-EN-GB
translation	CON-30001000-EN-US CON-30001000-FR-FR

The container concept of "Ampoule" is therefore represented by the identifier CON-30001000, and it is this identifier that is used to represent the concept, for example as part of the medicinal product data. The language- and region-specific codes (i.e. the code-term pairs) such as CON-30001000-EN-GB are intended for use only within the terminology to arrange regional translations.

3.6.4 Packaging example: Screw cap (Packaging category: Closure)

3.6.4.1 Example overview

The concepts contained in this packaging category are those packaging items that are used to close a container for the purpose of the correct storage and, where appropriate, use of the product. A closure may have an administration device incorporated into it, and a closure may be an integral part of an immediate container.

This Clause gives an example of a packaging concept, that of a screw cap, and its hierarchical position under the packaging category "Closure".

3.6.4.2 Packaging category code-term pairs

Table 31 — Example code-term pairs for the packaging category "Closure"

code	**PAC-0002-EN-GB**	**PAC-0002-EN-US**	**PAC-0002-FR-FR**
term	closure	closure	fermeture
definition	packaging category including items used for closing a container for the purpose of the correct storage and, where appropriate, use of the product	packaging category including items used for closing a container for the purpose of the correct storage and, where appropriate, use of the product	catégorie d'emballage comprenant les articles utilizés pour la fermeture d'un récipient dans le but du stockage correct et, le cas échéant, l'utilisation correcte du produit
comment			
languageCode	EN	EN	FR
regionCode	GB	US	FR

The codes for packaging category code-term pairs shown in Table 31 are used to build the packaging category coded concept, as shown in 3.6.4.3.

3.6.4.3 Packaging category coded concept

Table 32 — Example coded concept for the packaging category "Closure"

code	**PAC-0002**
value	PAC-0002-EN-GB
translation	PAC-0002-EN-US PAC-0002-FR-FR

The code for the packaging category coded concept shown in Table 32 is used to categorise the packaging as a closure.

3.6.4.4 Packaging code-term pairs

Table 33 — Example code-term pairs for the closure "Screw cap"

code	**CLO-30056000-EN-GB**	**CLO-30056000-EN-US**	**CLO-30056000-FR-FR**
term	screw cap	screw cap	bouchon à vis
definition	hollow, cylindrical object with a screw thread, meant to close a container	hollow, cylindrical object with a screw thread, meant to close a container	objet cylindrique, creux, avec un filetage, destiné à fermer un récipient
comment			
languageCode	EN	EN	FR
regionCode	GB	US	FR

The codes for packaging code-term pairs shown in Table 33 are used to build the packaging coded concept, as shown in 3.6.4.5.

3.6.4.5 Packaging coded concept

Table 34 — Example coded concept for the closure "Screw cap"

code	**CLO-30056000**
value	CLO-30056000-EN-GB
translation	CLO-30056000-EN-US CLO-30056000-FR-FR

The closure concept of "Screw cap" is therefore represented by the identifier CLO-30056000, and it is this identifier that is used to represent the concept, for example as part of the medicinal product data. The language- and region-specific codes (i.e. the code-term pairs) such as CLO-30056000-EN-GB are intended for use only within the terminology to arrange regional translations.

3.6.5 Packaging example: Oral syringe (Packaging category: Administration device)

3.6.5.1 Example overview

The concepts contained in this packaging category are those packaging items that are used for the correct administration of the product. An administration device may be an integral part of a closure or of an immediate container. It is emphasised that the administration device concept is only used to describe the equipment supplied as part of the medicinal product, in the packaging; it is not intended to describe complex, large pieces of equipment that are supplied independently, such as electrically powered nebulisers or infusion pumps.