

LRMoo (formerly FRBRoo)

*object-oriented definition and
mapping from IFLA LRM
(version 0.6)*

International Working Group on LRM, FRBR and CIDOC CRM
Harmonisation

Supported by Delos NoE

Editors:

Chryssoula Bekiari

Martin Doerr

Patrick Le Bœuf

Pat Riva

Contributors:

*Trond Aalberg, Jérôme Barthélémy, Chryssoula Bekiari,
Guillaume Boutard, Martin Doerr, Günther Görz, Dolores Iorizzo,
Max Jacob, Carlos Lamsfus, Patrick Le Bœuf, Mika Nyman,
João Oliveira, Christian Emil Ore, Allen H. Renear, Pat Riva,
Richard Smiraglia, Stephen Stead, Maja Žumer, and others*

February 2020

Index

INDEX	3
FOREWORD	7
1. INTRODUCTION.....	8
2. DESCRIPTION OF THE MODEL	9
2.2. Naming Conventions	10
2.3. Property Quantifiers.....	11
2.4. Presentation Conventions	12
2.5. Class & Property Hierarchies	12
2.5.1. LRMOO Class Hierarchy	13
2.5.2. LRMOO Class Hierarchy Aligned with (Part of) CIDOC CRM Class Hierarchy.....	13
2.5.3. LRMOO Property Hierarchy	13
2.5.4. LRMOO Property Hierarchy Aligned with (Part of) CIDOC CRM Property Hierarchy.....	13
2.6. LRMOO Class Declaration	14
F1 Work	15
F2 Expression	15
F3 Manifestation	16
F4 Manifestation Singleton (Deprecated)	17
F5 Item.....	17
F6 Concept (Deprecated)	18
F7 Object (Deprecated).....	18
F8 Event (Deprecated)	18
F9 Place (Deprecated).....	18
F10 Person (Deprecated).....	18
F11 Corporate Body.....	18
F12 Nomen	18
F13 Identifier (Deprecated).....	20
F14 Individual Work (Deprecated)	20
F15 Complex Work (Deprecated).....	20
F16 Container Work	20
F17 Aggregation Work (Deprecated)	21
F18 Serial Work (To transfer to PRESSoo, ver. 2).....	21
F19 Publication Work (Deprecated)	21
F20 Performance Work (Deprecated)	21
F21 Recording Work (Deprecated).....	21
F22 Self-Contained Expression (Deprecated).....	21
F23 Expression Fragment (Deprecated)	21
F24 Publication Expression (Deprecated).....	21
F25 Performance Plan (Deprecated)	21
F26 Recording (Deprecated).....	21
F27 Work Conception.....	21
F28 Expression Creation.....	22

F29 Recording Event	23
F30 Manifestation Creation	23
F31 Performance	24
F32 Carrier Production Event	24
F33 Reproduction Event	25
F34 Controlled Vocabulary	25
F35 Nomen Use Statement	25
F36 Script Conversion	26
F38 Character (Deprecated, or should it transfer elsewhere?)	26
F39 Family	26
F40 Identifier Assignment (Deprecated)	27
F42 Representative Expression Assignment (Deprecated)	27
F44 Bibliographic Agency (Deprecated)	27
F50 Controlled Access Point (Deprecated)	27
F51 Pursuit (Transferred to CRMsoc)	27
F52 Name Use Activity (Transferred to CRMsoc)	27
F53 Material Copy (Deprecated)	27
F54 Utilised Information Carrier	27
F55 Collective Agent	27
F56 Externalization Event	28
Fxx Externalization (superclass of F2 Expression)	29
2.7. LRMOO Property Declaration	30
R1 is logical successor of (has successor)	31
R2 is derivative of (has derivative)	31
R3 is realised in (realises)	31
R4 embodies (is embodied in)	32
R5 has component (is component of)	33
R6 carries (is carried by) (Deprecated)	33
R7 is materialization of (is materialized in)	33
R8 combines (is combined to form)	34
R9 is realised in (realises) (Deprecated)	34
R10 has member (is member of)	34
R11 has issuing rule (is issuing rule of) (To transfer to PRESSoo, ver. 2)	35
R12 is realised in (realises) (Deprecated)	35
R13 is realised in (realises) (Deprecated)	35
R15 has fragment (is fragment of)	35
R16 initiated (was initiated by)	36
R17 created (was created by)	36
R18 created (was created by)	37
R19 created a realisation of (was realised through)	38
R20 recorded (was recorded through)	38
R21 created (was created through) (Deprecated)	39
R22 created a realisation of (was realised through) (Deprecated)	39
R23 created a realisation of (was realised through) (Deprecated)	40
R24 created (was created through)	40
R25 performed (was performed in)	40
R26 produced things of type (was produced by)	40
R27 materialized (was materialized by)	41
R28 produced (was produced by)	41
R29 reproduced object (was object reproduced by)	41
R30 produced (was produced by) (Deprecated)	42
R31 is reproduction of (has reproduction) (Deprecated)	42
R32 is warranted by (warrants)	42
R33 has content	42
R34 has validity period (is validity period of)	43
R35 is specified by (specifies)	43
R36 uses script conversion (is script conversion used in)	43
R37 states as nomen (is stated as nomen in)	44

R38 refers to thema (is thema of).....	45
R39 is intended for (is target audience in) (Deprecated)	45
R40 has representative expression (is representative expression for) (Deprecated)	45
R41 has representative manifestation product type (is representative manifestation product type for) (Deprecated)	45
R42 is representative manifestation singleton for (has representative manifestation singleton) (Deprecated)	45
R43 carried out by (performed) (Deprecated).....	46
R44 carried out by (performed) (Deprecated).....	46
R45 assigned to (was assigned by) (Transferred to CRMsoc)	46
R46 assigned (was assigned by) (Deprecated).....	46
R48 assigned to (was assigned by) (Deprecated).....	46
R49 assigned (was assigned by) (Deprecated).....	46
R50 assigned to (was assigned by) (Deprecated).....	46
R51 assigned (was assigned by) (Deprecated).....	46
R52 used rule (was the rule used in) (Deprecated)	46
R53 assigned (was assigned by) (Deprecated).....	46
R54 has nomen language (is language of nomen in)	46
R55 has nomen form (is nomen form in).....	46
R56 has related use (is related use for)	47
R57 is based on (is basis for) (Deprecated or transfer to another family model?)	48
R58 has fictional member (is fictional member of) (Deprecated).....	48
R59 had typical subject (was typical subject of) (Transferred to CRMsoc)	48
R60 used to use language (was language used by) (Transferred to CRMsoc).....	48
R61 occurred in kind of context (was kind of context for) (Transferred to CRMsoc).....	48
R62 was used for membership in (was context for) (Transferred to CRMsoc)	48
R63 named (was named by) (Transferred to CRMsoc)	48
R64 used name (was name used by) (Transferred to CRMsoc).....	48
R65 recorded aspects of (had aspects recorded through)	48
R66 included performed version of (had a performed version through)	49
R67 has part (forms part of).....	49
R68 is inspiration for (was inspired by).....	50
R69 specifies physical form (is specified physical form of)	50
R70 specifies dimension (is specified dimension of).....	50
CLP45 should consist of (should be incorporated in) (Deprecated)	51
R71 specifies material part (is specified material part for)	51
R72 specifies number of parts (is the specified number of parts for)	51
CLP104 subject to (applies to) (Deprecated).....	52
CLP105 right held by (right on) (Deprecated).....	52
CLR6 should carry (should be carried by) (Deprecated)	52
R73? takes representative attribute from (bears representative attribute for)	52
Rnn reproduced publication (was publication reproduced by)	52
Rnn uses expression (was expression used in).....	53
Rnn incorporates external expression (is external expression incorporated in)	53
Rnn has memorization in (is memorization of).....	53
3. LMRER TO LRMOO MAPPING	55
1 Entities	55
2 Attributes	55
3 Relationships	55
4. REFERRED TO CIDOC CRM CLASSES AND PROPERTIES	56
4.1. List of Referred to CIDOC CRM Classes	56
4.2. List of Referred to CIDOC CRM Properties.....	58

4.3. List of Referred to CRMsoc Classes.....	59
4.4. List of Referred to CRMsoc Properties.....	59
5. TRANSITION OF FRBROO CLASSES AND PROPERTIES	60

Index of Figures

Foreword

[PR: to be revised, once main text is stabilized]

This document contains a comprehensive description of the object-oriented definition of IFLA LRM, a model in the form of a formal ontology interpreting LRM for specific purposes, as analysed below. The document comprises the following sections:

- Section 1, The Introduction, describes the rationale, history and methodology of the development of this model.
- Section 2, The Description of the Model, explains the model in context from a functional perspective with the help of a comprehensive graphical representation of all constructs, describes the format conventions for the formal specifications, and lists the complete class and property definitions that make up the model. Whereas the first serves an overall understanding, the second is the reference for the individual declarations. Here a first reading may stop.
- Section 3 describes the mapping of the IFLA LRM entity-relationship model to the object-oriented model LRM_{OO}. This section defines the transition from one form to the other, and serves as information for further understanding of the intended meaning of the object-oriented definition. It is also a proof that the object-oriented form is an alternative view of the IFLA LRM model, and a proof of completeness of the object-oriented form with respect to the original.
- Since the object-oriented model reuses, wherever appropriate, large parts of ISO 21127, the CIDOC Conceptual Reference Model, section 4 provides a comprehensive list of all constructs used from ISO 21127. Some of these constructs appear only in the mapping in section 3 and not in section 2, because they are generic in nature.
- Section 5 traces changes that were made between FRBRoo and the LRM_{OO} model.
- Section 6 provides a bibliography.

1. Introduction

[PR: a new introduction to be written]

2. Description of the Model

[PR: a new model overview to be written]

2.2. Naming Conventions

[PR: revised, new text added re non-reuse of identifiers]

All the classes declared were given both a name and an identifier constructed according to the conventions used in the CIDOC CRM model. For classes, that identifier consists of the letter F followed by a number. Resulting properties were also given a name and an identifier, constructed according to the same conventions. That identifier consists of the letter R followed by a number, which in turn is followed by the letter “i” every time the property is mentioned in its “inverted” form, i.e., from target to domain. “F” and “R” were chosen during the development of FRBR₀₀ and are to be understood as the first two letters of “FRBR”. This choice does not have any other meaning. They correspond respectively to the letters “E” and “P” in the CIDOC CRM naming conventions, where “E” originally meant “entity” (although the CIDOC CRM “entities” are now consistently called “classes”), and “P” means “property”.

Since LRM₀₀ developed from FRBR₀₀, the same identifiers already assigned to classes and properties in FRBR₀₀ are retained when those classes and properties continue to be defined in LRM₀₀. The identifiers for those classes and properties defined in FRBR₀₀ that are deprecated in LRM₀₀ are not reused, even though this results in gaps in the numbering. All classes and properties newly declared in LRM₀₀ are assigned the next available identifier at the end of the sequence.

As in CIDOC CRM, properties with the character of states are named in the present tense, such as “has validity period”, whereas properties related to events are named in the past tense, such as “created a realisation of”.

All classes and properties that were borrowed directly from the CIDOC CRM are named as in CIDOC CRM, i.e., with an identifier beginning with “E” if it is a class, or “P” if it is a property, and with the original appellation for the class or property in CIDOC CRM.

The choice of the domain of properties, and hence the order of their names, are established in accordance with the following priority list:

- Temporal Entity and its subclasses
- Thing and its subclasses
- Actor and its subclasses
- Other

2.3. Property Quantifiers

Quantifiers for properties are provided for the purpose of semantic clarification only, and should **not** be treated as implementation recommendations. Therefore the term “cardinality constraints” is avoided here, as it typically pertains to implementations.

The following table lists all possible property quantifiers occurring in this document by their notation, together with an explanation in plain words. In order to provide optimal clarity, two widely accepted notations are used redundantly in this document, a verbal and a numeric one. The verbal notation uses phrases such as “one to many”, and the numeric one, expressions such as “(0,n:0,1)”. While the terms “one”, “many” and “necessary” are quite intuitive, the term “dependent” denotes a situation where a range instance cannot exist without an instance of the respective property. In other words, the property is “necessary” for its range.

many to many (0,n:0,n)	Unconstrained: An individual domain instance and range instance of this property can have zero, one or more instances of this property. In other words, this property is optional and repeatable for its domain and range.
one to many (0,n:0,1)	An individual domain instance of this property can have zero, one or more instances of this property, but an individual range instance cannot be referenced by more than one instance of this property. In other words, this property is optional for its domain and range, but repeatable for its domain only. In some contexts this situation is called a “fan-out”.
many to one (0,1:0,n)	An individual domain instance of this property can have zero or one instance of this property, but an individual range instance can be referenced by zero, one or more instances of this property. In other words, this property is optional for its domain and range, but repeatable for its range only. In some contexts this situation is called a “fan-in”.
many to many, necessary (1,n:0,n)	An individual domain instance of this property can have one or more instances of this property, but an individual range instance can have zero, one or more instances of this property. In other words, this property is necessary and repeatable for its domain, and optional and repeatable for its range.
one to many, necessary (1,n:0,1)	An individual domain instance of this property can have one or more instances of this property, but an individual range instance cannot be referenced by more than one instance of this property. In other words, this property is necessary and repeatable for its domain, and optional but not repeatable for its range. In some contexts this situation is called a “fan-out”.
many to one, necessary (1,1:0,n)	An individual domain instance of this property must have exactly one instance of this property, but an individual range instance can be referenced by zero, one or more instances of this property. In other words, this property is necessary and not repeatable for its domain, and optional and repeatable for its range. In some contexts this situation is called a “fan-in”.
one to many, dependent (0,n:1,1)	An individual domain instance of this property can have zero, one or more instances of this property, but an individual range instance must be referenced by exactly one instance of this property. In other words, this property is optional and repeatable for its domain, but necessary and not repeatable for its range. In some contexts this situation is called a “fan-out”.
one to many, necessary, dependent (1,n:1,1)	An individual domain instance of this property can have one or more instances of this property, but an individual range instance must be referenced by exactly one instance of this property. In other words, this property is necessary and repeatable for its domain, and necessary but not repeatable for its range. In some contexts this situation is called a “fan-out”.
many to one, necessary, dependent (1,1:1,n)	An individual domain instance of this property must have exactly one instance of this property, but an individual range instance can be referenced by one or more instances of this property. In other words, this property is necessary and not repeatable for its domain, and necessary and repeatable for its range. In some contexts this situation is called a “fan-in”.
many to many, necessary,	Both an individual domain instance of this property and an individual range instance can have one or more instances of this property. In other words, this property is necessary and

dependent (1,n:1,n)	repeatable for both its domain and its range.
one to one (1,1:1,1)	An individual domain instance and range instance of this property must have exactly one instance of this property. In other words, this property is necessary and not repeatable for its domain and for its range.
many to two (2,n:0,n)	An individual domain instance of this property must have at least two instances of this property, but an individual range instance can be referenced by zero, one or more instances of this property.

Some properties are defined as being **necessary** for their **domain** or as being **dependent** from their **range**, following the definitions in the table above. Note that if such a property is not specified for an instance of the respective domain or range, it means that the property exists, but the value on one side of the property is unknown. In the case of optional properties, the methodology proposed by LRM_{OO} does not distinguish between a value being unknown or the property not being applicable at all.

2.4. Presentation Conventions

All instances of E41 Appellation are presented within single quotation marks, whether they are used for themselves or just to refer to the things they name. Any punctuation mark that follows an instance of E41 Appellation is placed outside the single quotation marks, as it does not belong to the appellation itself.

Furthermore, all references to instances of E90 Symbolic Object in the form of a content model are presented within single quotation marks, such as ‘abc’. By content model we mean the symbol sequence the symbolic object consists of.

British spelling is used throughout the original English version of this document, except for occasional quotations and examples.

Double quotation marks are used to indicate an informal name or term. E.g.: *The “lower member” consists of sandstone with minor shale.*

2.5. Class & Property Hierarchies

Although they do not provide comprehensive definitions, compact monohierarchical presentations of the class and property isA hierarchies have been found to significantly aid in the comprehension and navigation of LRM_{OO}, and are therefore provided below.

The class hierarchy presented below has the following format:

- Each line begins with a unique class identifier, consisting of a number preceded by the letter “F”.
- A series of em dashes (“—”) follows the unique class identifier, indicating the hierarchical position of the class in the isA hierarchy.
- The English name of the class appears to the right of the em dashes.
- The index is ordered by hierarchical level, in a “depth first” manner, from the smaller to the larger subhierarchies.
- Classes that appear in more than one position in the class hierarchy as a result of multiple inheritance are shown first in roman typeface, then in italic typeface.

The property hierarchy presented below has the following format:

- Each line begins with a unique property identifier, consisting of a number preceded by the letter “R”.
- A series of em dashes (“—”) follows the unique property identifier, indicating the hierarchical position of the property in the isA hierarchy.
- The English name of the property appears to the right of the em dashes, followed by its inverse name in parentheses for reading in the range to domain direction.
- The domain class for which the property is declared.
- The range class that the property references.
- The index is ordered by hierarchical level, in a “depth first” manner, from the smaller to the larger subhierarchies, and by property number between equal siblings.
- Properties that appear in more than one position in the property hierarchy as a result of multiple inheritance are shown in an italic typeface.

In LRM_{OO} class and property hierarchies aligned with CIDOC CRM class and property hierarchies, distinct

layouts are used for classes and properties from LRM_{oo}, on the one hand, and for classes and properties from CIDOC CRM, on the other hand.

2.5.1. LRM_{oo} Class Hierarchy

[PR: actual hierarchies to be carefully reviewed, based on final definition]

2.5.2. LRM_{oo} Class Hierarchy Aligned with (Part of) CIDOC CRM Class Hierarchy

2.5.3. LRM_{oo} Property Hierarchy

2.5.4. LRM_{oo} Property Hierarchy Aligned with (Part of) CIDOC CRM Property Hierarchy

2.6. LRM_{oo} Class Declaration

[PR: this explanation to be reviewed for accuracy]

The classes of LRM_{oo} are comprehensively declared in this section using the following format:

- Class names are presented as headings in bold face, preceded by the class's unique identifier;
- The line "Subclass of:" declares the superclass of the class, being the class from which this class inherits properties;
- The line "Superclass of:" is a cross-reference to the subclasses of this class;
- The line "Scope note:" contains the textual definition of the concept the class represents;
- The line "Examples:" contains a list of examples of instances of this class. If the example is also an instance of a subclass of this class, the unique identifier of the subclass is added in parenthesis. If the example instantiates two classes, the unique identifiers of both classes are added in parenthesis. Non-fictitious examples may be followed by an explanation in brackets.
- The line "Properties:" declares the list of the class's properties;
- Each property is represented by its unique identifier, its forward and reverse names, and the range class that it links to, separated by a colon;
- Inherited properties are not represented;
- Properties of properties are provided indented and in parentheses beneath their respective domain property.

F1 Work

Subclass of: [E89](#) Propositional Object

Superclass of: [F16](#) Container Work

[NB: superclass of F18 Serial Work, but that class is to transfer to PRESSoo, usually don't refer down to extensions]

Scope note: This class comprises distinct intellectual ideas conveyed in artistic and intellectual creations, such as poems, stories or musical compositions.

A Work is the outcome of an intellectual process of one or more persons. Inherent to the notion of work is the existence of recognisable realizations of the work in the form of one or more expressions. Works are often regarded as finished and discrete e.g. when declared as such by the creator of the work or based on the elaboration or logical coherence of its content. However, works may be recognized as existing but unfinished e.g. if the creators deliberately or accidentally never explicitly finished a particular Expression but have left behind partial expressions.

In the absence of explicit information about the initial conception, which is rarely available, the first expression created constitutes witness of the beginning of existence of a Work.

A Work can evolve over time, such as through revised editions. A Work may be elaborated by one or more Actors simultaneously, in parallel, or over time. Additional expressions of a Work can continue to be created over time.

The boundaries of a Work have nothing to do with the value of the intellectual achievement but only with the dominance of a concept.

The main purpose of this class is to enable bringing together intellectually equivalent Expressions in order to display to a user all available alternatives of the same intellectual or artistic content.

Examples:

- Abstract content of Giovanni Battista Piranesi's 'Carcere XVI: the pier with chains: 1st state'
- 'La Porte de l'Enfer' by Auguste Rodin conceived between 1880 and 1917
- 'Hamlet' by William Shakespeare

Properties: [R1](#) is logical successor of (has successor): [F1](#) Work
[R2](#) is derivative of (has derivative): [F1](#) Work (R2.1 has type: [E55](#) Type)
[R3](#) is realised in (realises): [F2](#) Expression
[R68](#) is inspiration for (was inspired by): [F1](#) Work
Rxx uses expression: F1 Work [PR: does not make sense, should be F2 Expression?]

F2 Expression

Subclass of: [E73](#) Information Object

Superclass of: [F3](#) Manifestation
[F34](#) Controlled Vocabulary

Scope note: This class comprises the intellectual or artistic realisations of Works in the form of identifiable immaterial objects, such as texts, poems, jokes, musical or choreographic notations, movement pattern, sound pattern, images, multimedia objects, or any combination of such forms that have objectively recognisable structures. The substance of F2 Expression is signs.

An Expression is the outcome of the intellectual or creative process of realizing a Work. Subsequent expressions conveying the same work may be created over time.

Expressions do not depend on a specific physical carrier and can exist on one or more carriers simultaneously, including human memory, but expressions cannot persist without a carrier.

The form of F2 Expression is an inherent characteristic of the F2 Expression. Differences in form implies different Expressions (e.g., from text to spoken word, a transcript of a recording). Similarly, differences in language or means of performance imply different Expressions (e.g.,

translations or arrangements for different instruments). Thus, if a text is revised or modified, the result is considered to be a new F2 Expression. While theoretically any change in signs will result in a new Expression, conventionally the context and use will determine the rules for distinguishing among expressions.

- Examples: The Italian text of Dante's 'Divina Commedia' as found in the authoritative critical edition '*La Commedia secondo l'antica vulgata a cura di Giorgio Petrocchi*', Milano: Mondadori, 1966-67 (= Le Opere di Dante Alighieri, Edizione Nazionale a cura della Società Dantesca Italiana, VII, 1-4) (F2 and E33)
- The Italian text of Dante's 'Inferno' as found in the same edition (F2 and E33)
- The signs which make up Christian Morgenstern's 'Fisches Nachtgesang' [a poem consisting simply of '—' and '' signs, arranged in a determined combination] (F2)
- Properties: [R5](#) has component (is component of): [F2](#) Expression
[R15](#) has fragment (is fragment of): E90 Symbolic Object
[Rxx](#) incorporates external expression: [F2](#) Expression

F3 Manifestation

Subclass of: [F2](#) Expression

Scope note: This class comprises products rendering one or more Expressions. A Manifestation is defined by both the overall content, and the form of its presentation. The substance of F3 Manifestation is not only signs, but also the manner in which they are presented to be consumed by users, including the kind of media adopted.

An F3 Manifestation is the outcome of a publication process where one or more F2 Expressions are prepared for public dissemination, but it may also be a unique form created directly on some carrying material without the intent of being formally published.

An instance of F3 Manifestation typically incorporates one or more instances of F2 Expression representing a distinct logical content and all additional input by a publisher such as text layout and cover design, in particular if labour is divided between an author and a publisher. Additionally an F3 Manifestation can be identified by the physical features for the medium of distribution if applicable. For example, publications in the form of hardcover and paperback editions would be two distinct instances of F3 Manifestation, even though authorial and editorial content are otherwise identical in both publications.

In the case of industrial products such as printed books or music CDs, but also digital material, an instance of F3 Manifestation can be regarded as the prototype for all copies of it. In these cases, an instance of F3 Manifestation specifies all of the features or traits that instances of F5 Item display in order to be copies of a particular publication. In the case of industrial products, instances of F3 Manifestation are also instances of E99 Product Type, normally nowadays identified by characteristic identifiers such as ISBN numbers.

Examples: The publication product containing the text entitled 'Harmonie universelle' (authored by the person named 'Marin Mersenne'), issued in 1636 in Paris by the publisher named 'Sébastien Cramoisy' (F3 and E99)

The publication product containing a modern reprint of Marin Mersenne's 'Harmonie universelle', issued in 1986 in Paris by the publisher named 'Les éditions du CNRS', and identified by ISBN '2-222-00835-2' (F3 and E99)

The publication product containing the third edition of the combination of texts and graphics titled 'Codex Manesse: die Miniaturen der großen Heidelberger Liederhandschrift, herausgegeben und erläutert von Ingo F. Walther unter Mitarbeit von Gisela Siebert', issued by the publisher named 'Insel-Verlag' in 1988 (F3 and E99)

The publication product containing the cartographic resource titled 'Ordnance Survey Explorer Map 213, Aberystwyth & Cwm Rheidol', issued in May 2005 by the publisher named 'Ordnance Survey' and identified by ISBN '0-319-23640-4' (folded), 1:25,000 scale (F3 and E99)

The publication product containing the recordings of musical works performed by the person named 'Florence Foster Jenkins' gathered under the title 'The Glory (????) of the human voice', identified by label and label number 'RCA Victor Gold Seal GD61175' (*Note: the four question marks within parentheses belong to the title itself*) (F3 and E99)

The manuscript known as 'The Book of Kells'

The manuscript score of Charles Racquet's 'Organ fantasy', included in Marin Mersenne's personal copy of his own 'Harmonie universelle' [Marin Mersenne planned a second edition of his 'Harmonie universelle' after it had been first published in 1636, and he asked the composer Charles Racquet to compose his organ fantasy especially for that planned second edition; but Mersenne died before he could finish and publish the second edition and Racquet's score remained until the 20th century as a manuscript addition to Mersenne's copy, held in Paris by the Library of the Conservatoire national des arts et métiers]

Marin Mersenne's personal copy, held in Paris by the Library of the Conservatoire national des arts et métiers, of his own 'Harmonie universelle', containing all of his manuscript additions for a planned second edition that never took place before his death, but that served as a basis for the modern reprint published in 1986

- Properties:
- R4 embodies (is embodied in): [F2](#) Expression
 - R69 specifies physical form (is specified physical form of): [E55](#) Type
 - R70 specifies dimension (is specified dimension of): [E54](#) Dimension
 - R71 specifies material part (is specified material part for): [F3](#) Manifestation
 - R72 specifies number of parts (is the specified number of parts for): [E60](#) Number

F4 Manifestation Singleton (*Deprecated*)

F5 Item

Subclass of: [E54](#) Utilised Information Carrier [if F54 is removed, it would go directly to E18 Physical Thing]

Scope note: This class comprises physical objects (printed books, scores, CDs, DVDs, CD-ROMS, etc.) that were produced by (P186i) an industrial process involving a given instance of F3 Manifestation. As a result, all the instances of F5 Item associated with a given instance of F3 Manifestation are expected to carry the content defined in that instance of F3 Manifestation, although some or even all of them may happen to carry a content that significantly differs from it, due to either an accident in the course of industrial production, or subsequent physical modification or degradation.

The notion of F5 Item is only relevant with regard to the production process, from a bibliographic point of view. Cultural heritage institutions' holdings are a distinct notion: a holding certainly can be equal to an instance of F5 Item, but it also can be either "bigger" than one (e.g., when two instances of F5 Item are bound together (in the case of printed books), or physically united in any other way, or when an instance of F5 Item is enhanced through the addition of manuscript annotations, or any material that was not intended by the publisher, such as press clippings, dried flowers, etc.), or "smaller" than one (e.g., when a one-volume instance of F5 Item (in the case of printed books) is interleaved and rebound as two volumes, or when pages were torn away from it, or when one CD from a two-CD set is missing, etc.). From an operational point of view, cultural heritage institutions do *not* deal with instances of F5 Item, but with storage units. However, it was not deemed necessary to declare an additional class for the notion of Storage Unit. Storage units can be easily accounted for through the E19 Physical Object class from CIDOC CRM, and the relationships between storage units and instances of F5 Item through the *P46 is composed of (forms part of)* property from CIDOC CRM. If needed, an instance of E19 Physical Object can be typed as a storage unit through the *P2 has type (is type of)* property.

Examples:

- John Smith's copy of Charles Dickens's *The Pickwick Papers* published in 1986 by the Oxford Clarendon Press, ISBN 0-19-812631-X
- The exemplar of Samuel Beckett's *Waiting for Godot* published in 1956 by Faber and Faber that was once possessed by Edward Gordon Craig [who pasted a press clipping on it, so that the

storage unit currently held by the National Library of France and identified by shelfmark '8-EGC-2044' consists of both this instance of F5 Item and the press clipping pasted by its former owner]

- The exemplar currently held by the Library of Congress, and identified by call number 'M3.3.H13 J4 1752 Case', of George Frideric Handel's *The Choice of Hercules* published in London by J. Walsh around 1751 [*Note: this exemplar is bound with an exemplar of Jephtha, by the same composer, published in London by J. Walsh in 1752; these two distinct instances of F5 Item therefore make up a single storage unit, i.e., they both P146i forms part of the same instance of E19 Physical Object*]

Properties: [R7](#) is materialization of (is materialized in): [F3](#) Manifestation

F6 Concept (*Deprecated*)

F7 Object (*Deprecated*)

F8 Event (*Deprecated*)

F9 Place (*Deprecated*)

F10 Person (*Deprecated*)

F11 Corporate Body

Subclass of: [F55 Collective Agent](#)

Superclass of: [E40](#) Legal Body

Scope note: This class comprises organisations and groups of two or more people and/or organisations acting as a unit.

To be considered an F11 Corporate Body a gathering of people needs to bear a name and exhibit organisational characteristics sufficient to allow the body as a whole to participate in the creation, modification or production of an E73 Information Object. Groups such as conferences, congresses, expeditions, exhibitions, festivals, fairs, etc. are modelled as F11 Corporate Bodies when they are named and can take collective action, such as approving a report or publishing their proceedings.

Examples: The International Machaut Society
The British Library
The Jackson Five
The Regional Municipality of Ottawa-Carleton
Symposium on Glaucoma

F12 Nomen

Subclass of: [E89 Propositional Object](#)

Superclass of: [F35 Nomen Use Statement](#)

Scope note: This class comprises associations between an instance of any class, and signs or arrangements of signs following a specific syntax (sequences of alphanumeric characters, chemical structure symbols, sound symbols, ideograms etc.) that are used or can be used to refer to and identify that instance. The scripts or type sets for the types of symbols used to compose an instance of F12 Nomen have to be explicitly specified. Spelling variants are regarded as different nomina, whereas the use of different fonts (visual representation variants) or different digital encodings does not change the identity.

An arbitrary combination of signs or symbols cannot be regarded as an appellation or designation until it is associated with something in some context. In that sense, the F12 Nomen class can be understood as the reification of a relationship between an instance of E1 CRM Entity and an instance of E41 Appellation. Two instances of F12 Nomen can happen to be associated with two identical instances of E62 String and yet remain distinct, as long as they either refer to distinct instances of E1 CRM Entity, or as long as they are associated with distinct instances of other classes through one or more than one of the other properties of the F12 Nomen class (while referring to the same instance of E1 CRM Entity).

An instance of F12 Nomen associates a combination of signs with an instance of E1 CRM Entity on the basis of a cultural or linguistic convention: by associating a string with anything, the instance of F12 Nomen establishes a meaning that is not inherent in the instance of E62 String that is associated with it. Depending on context of use, nomens associated with identical strings can involve instances of different things in the real world even within the same language (polysemy and homonymy). Conversely, the same thing can be referred to through any number of nomens (synonymy). In the controlled environment of a bibliographic information system, though, synonymy is avoided and the instances of E62 String associated with a given instance of F12 Nomen would generally be disambiguated, so that each string is associated with only one instance of E1 CRM Entity within the specific scheme.

The identity of an instance of F12 Nomen is determined by the combination of the thing it refers to, the choice and order of the symbols used within the instance of E62 String that represents it, and the specific instances of the various classes with which it is associated through all other properties of the F12 Nomen class. Variation in the symbols used (such as transliteration into another script), or variation in their ordering, usually results in a distinct instance of F12 Nomen, but variation in the visual representation of the symbols present in the instance of E62 String that represents the instance of F12 Nomen (such as different fonts that may be used to present alphanumeric or character strings) does not result in a different instance of F12 Nomen.

Instances of F12 Nomen are assigned and associated with instances of E1 CRM Entity either formally (such as by bibliographic agencies) or informally through common usage. When they are assigned formally, the construction of the instances of E62 String that represent them may follow predetermined rules.

The act of naming something may involve the combination of various symbolic objects, which may be instances of F12 Nomen in their own right, and therefore refer to distinct instances of E1 CRM Entity, or just be used as qualifiers. A frequent example is provided by the tradition consisting of naming persons by juxtaposing a given name (such as 'John'), and a last name (such as 'Smith') which is shared by all members of the same family. The given name alone can be sufficient to refer unambiguously to a given individual in a given context, but not in a wider context, in which the combination of given name plus last name proves necessary. Similarly, the combination of given name plus last name may be ambiguous in an even wider context, in which case the need for further qualifiers (such as a nickname, or, in the context of bibliographic control, dates and statement of occupation) can be felt. An instance of F12 Nomen can therefore be decomposed into further reifications that refer to distinct things through distinct strings, and/or instances of E90 Symbolic Object that serve merely as qualifiers and do not refer to anything in particular.

- Examples:
- ‘杜甫’ [the name of a Chinese poet of the 8th century, in simplified Chinese characters]
 - ‘Du Fu’ [Pinyin romanised form of the name of a Chinese poet of the 8th century]
 - ‘Tu Fu’ [another romanised form of the name of a Chinese poet of the 8th century]
 - ‘Thơ Đô Phủ’ [Vietnamese form of the name of a Chinese poet of the 8th century]
 - ‘جامعة صفاقس’ [Arabic name of the Sfax University (Tunisia), in Arabic script]
 - ‘Ġāmi‘at Şafāqis’ [Arabic name of the Sfax University (Tunisia), transliterated]
 - ‘Université de Sfax’ [French name of the Sfax University (Tunisia)]
 - ‘3-[(2S)-1-methylpyrrolidin-2-yl]pyridine’ [the IUPAC systematic name for nicotine]
 - ‘Murders in the rue Morgue’ [English title of a textual work]
 - ‘Poe, Edgar Allan, 1809-1849. Murders in the rue Morgue’ [controlled author/title access point]

for a textual work]

‘modelling’ [not the activity, just the written signs that represent its English name in British spelling]

‘modeling’ [not the activity, just the written signs that represent its English name in American spelling]

‘Maxwell equations’ [preferred subject access point from LCSH, <http://lccn.loc.gov/sh85082387>, as of 19 November 2012]

‘Equations, Maxwell’ [variant subject access point, from the same source]

‘Gončarova, Natal’â Sergeevna (1881-1962)’ [preferred access point for a personal name, from the authority file of the National Library of France, <http://catalogue.bnf.fr/ark:/12148/cb119547494/PUBLIC>, as of 15 June 2012]

‘Гончарова, Наталья Сергеевна (1881-1962)’ [parallel access point from the same source]

‘Goncharova, Natalia (1881-1962)’ [variant access point from the same source]

Properties: [R33](#) has content: [E62](#) String

F13 Identifier (*Deprecated*)

F14 Individual Work (*Deprecated*)

F15 Complex Work (*Deprecated*)

F16 Container Work

Subclass of: [F1](#) Work

Superclass of:

Scope note: This class comprises works whose essence is to enhance or add value to expressions from one or more other works without altering them, by the selection, arrangement and/or addition of features of different form, such as layout to words, recitation and movement to texts, performance to musical scores etc. This does not make the contents of the incorporated expressions part of the Container Work, but only part of the resulting expression. Container Work may include the addition of new, original parts to the incorporated expressions, such as introductions, graphics, etc.

This class is an “abstract class,” in that it only serves as an umbrella for its three subclasses. As a consequence, it can only be instantiated by instances of any of its subclasses: nothing can be an instance of it, unless it is an instance of either F17 Aggregation Work, F19 Publication Work, or F20 Performance Work.

A new version of a container work does not make the resulting complex work a Container Work as well. The inclusion of expressions from a complex work in a Container Work does not make the Container Work itself complex.

Examples: The aggregation and arrangement concept of the anthology entitled ‘American Women Poets of the Nineteenth Century: An Anthology’, edited by Cheryl Walker and published by Rutgers University Press in July 1992 (F17)

The concept for the layout created by printer Guido Morris for the text of Michael Hamburger’s English translation of 12 poems by Georg Trakl for publication in 1952 (F19)

The concept by the publisher named ‘Dell’ of issuing together, in 2002, three novels entitled ‘The Partner’, ‘The Street Lawyer’, and ‘A time to kill’, by the author named ‘John Grisham’, with just the statement ‘Three #1 bestsellers by John Grisham’ as a collective title (F19)

The concept of Sergei Radlov’s mise-en-scène of a Yiddish translation of the textual work entitled ‘King Lear’ in Moscow in 1935 (F20)

The concept of putting together the English text of 'King Lear' and a Spanish translation thereof in a bilingual edition of 'King Lear' (F17)

F17 Aggregation Work (*Deprecated*)

F18 Serial Work (To transfer to PRESSoo, ver. 2)

[2019-10: New proposal, transfer this class, along with its property R11, to PRESSoo in ver. 2.0, which will link up to LRMoo via the superclass F1 Work: accepted]

Subclass of: F1 Work

Scope note: This class comprises works that are, or have been, planned to result in sequences of Expressions or Manifestations with common features. Whereas a work can acquire new members during the time it evolves, Expressions and Manifestations are identified with a certain state achieved at a particular point in time. Therefore there is in general no single Expression or Manifestation representing a complete serial work, unless the serial work has ended.

Serial Works may or may not have a plan for an overall expression.

The retrospective reprinting of all issues of a Serial Work at once, in the form of a monograph, is regarded to be another member of the F1 Work, which contains the Serial Work and the Work realised in the monograph. This does not make the monograph part of the Serial Work.

Examples: The periodical entitled 'The UNESCO Courier', ISSN '0041-5278'

The periodical entitled 'Courrier de l'UNESCO', ISSN '0304-3118' [French edition of the periodical titled 'The UNESCO Courier', ISSN '0041-5278']

The series entitled 'L'évolution de l'humanité', ISSN '0755-1843' [a monograph series comprising volumes that were published from 1920 on, and some of which were reprinted, with different physical features and rearranged in a different order, from 1968 on, in a distinct series also entitled 'L'évolution de l'humanité', ISSN '0755-1770']

Properties: [R11](#) has issuing rule (is issuing rule of): [E29](#) Design or Procedure

F19 Publication Work (*Deprecated*)

F20 Performance Work (*Deprecated*)

F21 Recording Work (*Deprecated*)

F22 Self-Contained Expression (*Deprecated*)

F23 Expression Fragment (*Deprecated*)

F24 Publication Expression (*Deprecated*)

F25 Performance Plan (*Deprecated*)

F26 Recording (*Deprecated*)

F27 Work Conception

Subclass of: [E65](#) Creation

Scope note: This class comprises beginnings of evolutions of works.

An instance of F27 Work Conception marks the initiation of the creation of an instance of F1 Work. The work, as an intellectual construction, evolves from this point on, until the last known expression of it. An instance of E39 Actor with which a work is associated through the chain of properties F1 Work *R16i* was initiated by F27 Work Conception *P14* carried out by E39 Actor

corresponds to the notion of the “creator” of the work. In the case of commissioned works, it is not the commissioning that is regarded as the work conception, but the acceptance of the commission.

This event does not always correlate with the date assigned in common library practice to the work, which is usually a later event (such as the date of completion of the first clean draft).

In addition, F27 Work Conception can serve to document the circumstances that surrounded the appearance of the original idea for a work, when these are known.

Examples: Ludwig van Beethoven’s having the first ideas for his fifth symphony

Pablo Picasso’s acceptance, in 1930, of Ambroise Vollard’s commission for a set of 100 etchings, now known as the ‘Vollard Suite’

René Goscinny’s and Albert Uderzo’s first collaborative ideas for the comic book entitled ‘Asterix in Britain’ [*comment: Goscinny wrote the script and Uderzo made the drawings; both are regarded as co-creators of that collaborative, at the same level of creative input, and no attempt is made to ascertain whether the ideas for the script preceded the ideas for the drawings, or vice-versa*]

The combination of activities, carried out, among others, by Alfred Hitchcock, that began the process which eventually resulted in the movie entitled ‘Psycho’ coming into being

Oscar Wilde’s having by May 1897 the initial idea of writing his poem entitled ‘The ballad of the Reading gaol’, inspired by his stay in the Reading prison from November 20, 1895 to May 18, 1897, and the execution of Charles Thomas Woolridge on July 7, 1896

Properties: [R16](#) initiated (was initiated by): [F1](#) Work

F28 Expression Creation

Subclass of: [E12](#) Production
[E65](#) Creation

Superclass of: [F29](#) Recording Event
[F30](#) Manifestation Creation

Scope note: This class comprises activities that result in instances of F2 Expression coming into existence. This class characterises the externalisation of an F1 Work. The creation of an instance of F1 Work is considered to occur at the time of creation (F28) of its first F2 Expression.

Although F2 Expression is an abstract entity, a conceptual object, the creation of an expression inevitably also affects the physical world: when you scribble the first draft of a poem on a sheet of paper, you produce an instance of F3 Manifestation. F28 Expression Creation is a subclass of E12 Production because the recording of the expression causes a physical modification of the E18 Physical Thing that serves as the carrier. The work becomes manifest by being expressed on a physical carrier other than the creator’s brain. The spatio-temporal circumstances under which the expression is created are necessarily the same spatio-temporal circumstances under which the first instance of F3 Manifestation is produced.

The mechanisms through which *oral tradition* (of myths, tales, music, etc.) operates are not further investigated in this model. As far as bibliographic practice is concerned, only those instances of F2 Expression that are externalised on physical carriers other than both the creator’s brain and the auditor’s brain are taken into account (for a discussion of the modelling of oral traditions, see: Nicolas, Yann. ‘Folklore Requirements for Bibliographic Records: oral traditions and FRBR.’ In: *Cataloging & Classification Quarterly* (2005). Vol. 39, No. 3-4. P. 179-195).

It is possible to use the *P2 has type (is type of)* property in order to specify that the creation of a given expression of a given work played a particular role with regard to the overall bibliographic history of that work (e.g., that it was the creation of the progenitor expression on which all other expressions of the same work are based; or that it was the creation of the critical edition that served as the basis for canonical references to the work).

An instance of F28 Expression Creation may use as source material a specific existing F2 Expression. The property [P16](#) *used specific object (was used for)* can be used to specify the source expression for the derivation. In cases such as a translation or a revised edition, etc., a

new F2 Expression of the same F1 Work, a derived expression, is created. In the situation where an expression of one F1 Work serves as source material for the creation of the first expression of a new instance of F1 Work, the relationship is indicated using the property *R2 is derivative of (has derivative)* between the two instances of F1 Work. Path: F1 Work(1). *R3 is realised in:* F2 Expression(1). *P16i was used for:* F28 Expression Creation. *R17 created :*F2 Expression(2). *R3i realises:* F1 Work(2). *R2 is derivative of:* F1 Work(1)

- Examples:
- The creation of the original manuscript score of ‘Uwertura tragiczna’ by Andrzej Panufnik in 1942 in Warsaw
 - The reconstruction from memory of the manuscript score of ‘Uwertura tragiczna’ by Andrzej Panufnik in 1945 after the original score was destroyed during the war
 - The creation, by Lord Byron, of the English text of his work entitled ‘Manfred’ (*P2 has type:* E55 Type {major original contribution})
 - The creation, by Woldemar Starke, of his German translation of Lord Byron’s text entitled ‘Manfred’ (*P2 has type:* E55 Type {translation})
 - The recording of the third alternate take of ‘Blue Hawaii’ performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 [each individual take is a distinct instance of F2 Expression]

Properties: [R19](#) created a realisation of (was realised through): [F1](#) Work [might move to domain F56]

F29 Recording Event

Subclass of: [F28](#) Expression Creation

Scope note: This class comprises activities that intend to convey (and preserve) the features of perdurants in a recording, such as a live recording of a performance, a documentary, or other capture of a perdurant. Such activities may follow the directions of a recording plan. They may include postproduction.

- Examples:
- The making of the recording of the third alternate take of the musical work titled ‘Blue Hawaii’ as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961
 - The making of the photograph of the three Allied leaders at Yalta in February 1945
 - The making of the recording of an East Australian humpback whale song in 1994 in the framework of the Oceania Project
 - Filming Louise Bourgeois at work in the context of the shooting of the documentary entitled ‘Louise Bourgeois: The Spider, the Mistress, and the Tangerine’

Properties: [R20](#) recorded (was recorded through): [E2](#) Temporal Entity
[R21](#) created (was created through): [F26](#) Recording
[R22](#) created a realisation of (was realised through): [F21](#) Recording Work
[R65](#) recorded aspects of (had aspects recorded through): [E18](#) Physical Thing

F30 Manifestation Creation

Subclass of: [F28](#) Expression Creation

Superclass of: [F33](#) Reproduction Event

Scope note: This class comprises the activities of selecting, arranging and elaborating one or more instances of F2 Expression to the level of the actual or intended sensory impression **of a respective carrier or other persistent presentation means of it** with the purpose of communicating it to some public.

- Examples:
- Establishing in 1972 the layout, features, and prototype for the publication of ‘The complete poems of Stephen Crane, edited with an introduction by Joseph Katz’ (ISBN ‘0-8014-9130-4’), which served for a second print run in 1978
 - Making the article by Allen Renear, Christopher Phillippe, Pat Lawton, and David Dubin, entitled ‘An XML document corresponds to which FRBR Group 1 entity?’ available online at <http://conferences.idealliance.org/extreme/html/2003/Lawton01/EML2003Lawton01.html>

Properties: [R24](#) created (was created through): [F3](#) Manifestation

F31 Performance

Subclass of: [E7](#) Activity

Scope note: This class comprises activities that follow the directions of **an activity plan that specifies a performance**, such as a theatrical play, an expression of a choreographic work or a musical work; i.e., they are intended to communicate directly or indirectly to an audience.

Such activities can be identified at various levels of granularity, and can be contiguous or not. Any individual performance (with or without intermissions) is a single instance of F31 Performance. In addition, a complete run of performances can also be seen as an instance of F31 Performance, with individual performances as parts. A complete run of performances may comprise an original run plus any of its extensions and tours.

Note that **an activity plan for a performance** may be more or less elaborate, and may even foresee just improvisation.

Examples: Performing the first performance of a Yiddish translation of the textual work entitled ‘King Lear’, as directed by Sergei Radlov, in Moscow, at the Moscow State Jewish Theatre, on February 10, 1935 [individual performance]

Performing the ballet entitled ‘Rite of spring’, as choreographed by Pina Bausch, in Avignon, at the Popes’ Palace, on July 7, 1995 [individual performance]

Performing the operatic work entitled ‘Dido and Aeneas’, as directed by Edward Gordon Craig and conducted by Martin Shaw, in London, Hampstead Conservatoire, on May 17, 18, and 19, 1900 [run of performances]

Properties: [R25](#) performed (was performed in): [E100](#) Activity Plan
[R66](#) included performed version of (had a performed version through): [E89](#) Propositional Object

F32 Carrier Production Event

Subclass of: [E12](#) Production

Scope note: This class comprises activities that result in instances of **F54 Utilised Information Carrier** coming into existence. Both the production of a series of physical objects (printed books, scores, CDs, DVDs, CD-ROMS, etc.) and the creation of a new copy of a file on an electronic carrier are regarded as instances of F32 Carrier Production Event.

Typically, the production of copies of a publication (no matter whether it is a book, a sound recording, a DVD, a cartographic resource, etc.) strives to produce items all as similar as possible to a prototype that displays all the features that all the copies of the publication should also display, which is reflected in the property **R27 materialized: F3 Manifestation**.

Examples: The printing of copies of the 3rd edition of ‘Codex Manesse: die Miniaturen der großen Heidelberger Liederhandschrift, herausgegeben und erläutert von Ingo F. Walther unter Mitarbeit von Gisela Siebert’, Insel-Verlag, 1988 [a fac-simile edition of an illuminated mediaeval manuscript]

The printing of copies of the ‘Ordnance Survey Explorer Map 213, Aberystwyth & Cwm Rheidol’, ISBN 0-319-23640-4 (folded), 1:25,000 scale, released in May 2005 [a cartographic resource]

The production of copies of the sound recording titled ‘The Glory (????) of the human voice’, RCA Victor Gold Seal GD61175, containing recordings of musical works performed by Florence Foster Jenkins [a sound recording; the question marks in parentheses belong to the original title]

My clicking now on the link http://cidoc.ics.forth.gr/docs/cidoc_crm_version_4.0.pdf, and thus downloading on my PC a reproduction of the electronic file titled ‘Definition of the CIDOC Conceptual Reference Model... version 4.0’ that is stored on the ICS FORTH’s servers in Heraklion, Crete

The second print run, in 1978, of ‘The complete poems of Stephen Crane, edited with an introduction by Joseph Katz’ (ISBN ‘0-8014-9130-4’), a publication dated 1972 [publication of a printed text]

Properties: [R26](#) produced things of type (was produced by): E99 Product Type
[R27](#) materialized (was materialized by): [F3](#) Manifestation
[R28](#) produced (was produced by): [F54](#) Utilised Information Carrier

F33 Reproduction Event

Subclass of: [E12](#) Production
[F30](#) Manifestation Creation

Scope note: This class comprises activities that consist in producing items of a new instance of F3 Manifestation that preserve both the content and layout found on items of a pre-existing instance of F3 Manifestation. The individual instance or instances of F5 Item that was or were used as a source for this process may be precisely identified or not. Such activities result in products known as facsimiles, reproductions, reprints, reissues, or new releases.

Examples: The 2014 publication of Daniel Wilson's 'Caliban: the missing link' by Cambridge University Press (a facsimile edition of the 1873 publication by Macmillan)
The 2015 publication of Harry Partch's 'Two studies on ancient Greek scales' by Schott (which reproduces Harry Partch's holograph manuscript)

The 2007 publication of Hubert Reeve's 'Malicorne: réflexions d'un observateur de la nature' published by Éditions du Seuil as number 179 in the series 'Points. Science' (ISBN 978-2-02-096760-0) (a reprint edition of the 1990 publication by Éditions du Seuil in the series 'Science ouverte' (ISBN 2-02-012644-3))

Properties: [R29](#) reproduced object (was object reproduced by): [F54](#) Utilised Information Carrier
[Rnn](#) reproduced publication (was publication reproduced by): [F3](#) Manifestation

F34 Controlled Vocabulary

Subclass of: [E29](#) Design or Procedure
[E32](#) Authority Document
[F2](#) Expression

Scope note: This class comprises documents that establish controlled terminology (nomina) for consistent use. They may also describe relationships between entities and controlled terminology and relationships between entities. Note that any meaningful change in a Controlled vocabulary that affects the validity status of its elements defines a new release (instance of F2 Expression) of the Controlled vocabulary. Note that identifiers created following a rule in a Controlled vocabulary are to be regarded as being taken from this Controlled vocabulary, even though not explicitly spelled out. This definition of Controlled vocabulary reflects current library practice and not the use of the term in general. Knowledge Organisation Systems (KOS) are regarded as special cases of F34 Controlled Vocabulary.

Examples: LCSH February 20 to March 19 2012

DDC 19 [19th English edition, published only in print by Forest Press in 1979]

Add example(s): Pat. Name authority files, other controlled lists, like ISO languages

Properties: [R34](#) has validity period (is validity period of): [E52](#) Time-Span

F35 Nomen Use Statement

Subclass of: [F12](#) Nomen

Scope note: This class comprises statements relating an instance of E1 CRM Entity with a particular instance of F12 Nomen and its prescribed usage in a given context.

Examples: Add example from DDC or UDC.

'010 __ |a sh 85082387'... '450 __ |a Equations, Maxwell' [MARC 21 encoding of a variant subject access point, from the same source]

'PTBNP|20891'... '200 1‡a Whitman, ‡b Walt, ‡f 1819-1892' [UNIMARC encoding of the preferred access point for a personal name, from the authority file of the National Library of Portugal, as found on VIAF, <http://www.viaf.org/processed/PTBNP%7C20891>, on 28

September 2015]

'001 FRBNF119547493'...'100 w.0..barus.\$aGončarova\$mNatal'â Sergeevna\$d1881-1962'
[INTERMARC encoding of the preferred access point for a personal name, from the authority
file of the National Library of France, [http://catalogue.bnf.fr/ark:/12148/cb119547494/
INTERMARC](http://catalogue.bnf.fr/ark:/12148/cb119547494/INTERMARC), as of 15 June 2012]

'001 FRBNF119547493'...'100 w.0..c.rus.\$aГончарова\$mНаталья Сергеевна\$d1881-1962'
[INTERMARC encoding of a parallel access point from the same source]

'001 FRBNF119547493'...'400 \$w....b.eng.\$aGoncharova\$mNatalia\$d1881-1962'
[INTERMARC encoding of a variant access point from the same source]

'<eac-cpf [...]> <control> <recordId>beinecke.7h44jbj</recordId> [...] </control>' ...
'<cpfDescription> <identity> <entityType>family</entityType> <nameEntry xml:lang="eng"
scriptCode="Latn"><part localType="100a">Boswell family</part> [...] </nameEntry> [...]
</identity> </cpfDescription> [...] </eac-cpf>' [EAC encoding of the preferred access point for
a family]

Properties: [R32](#) is warranted by (warrants): [F52 Name Use Activity](#)
[R35](#) is specified by (specifies): [F34 Controlled Vocabulary](#)
(R35.1 has status: [E55 Type](#))
[R36](#) uses script conversion (is script conversion used in): [F36 Script Conversion](#)
[R37](#) states as nomen (is stated as nomen in): [F12 Nomen](#)
[R38](#) refers to thema (is thema of): [E1 CRM Entity](#)
[R54](#) has nomen language (is language of nomen in): [E56 Language](#)
[R55](#) has nomen form (is nomen form in): [E55 Type](#)
[R56](#) has related use (is related use for): [F35 Nomen Use Statement](#)
(R56.1 has type: [E55 Type](#))

F36 Script Conversion

Subclass of: [E29 Design or Procedure](#)

Scope note: This class comprises rule sets for converting signs or arrangements of signs from one script or
type set to another.

Examples: ISO 9:1995

F38 Character (*Deprecated, or should it transfer elsewhere?*)

Subclass of: [E28 Conceptual Object](#)

Scope note: This class comprises fictional or iconographic individuals or groups of individuals (including
families) appearing in works in a way relevant as subjects. Characters may be purely fictitious or
based on real persons or groups, but as characters they may exhibit properties that would be
inconsistent with a real person or group. Rather than merging characters with real persons, they
should be described as disjoint, but related entities.

Examples: Harry Potter [in J.K. Rowling's series of novels and the films based on them]

Sinuhe the Egyptian [in Mika Waltari's novel]

The Knights of the Round Table [in fiction]

Properties: [R57](#) is based on (is basis for): [E39 Actor](#)
[R58](#) has fictional member (is fictional member of): [F38 Character](#)

F39 Family

Subclass of: [F55 Collective Agent](#)

Scope note: This class comprises groups of two or more persons presented as a family and justified by
relationships of birth, marriage, adoption, civil union, or similar social or legal status and an
assumed common tradition, including examples such as royal families, dynasties, houses of
nobility, etc.

Examples: House of Tudor

The Grimm brothers

F40 Identifier Assignment (*Deprecated*)

F42 Representative Expression Assignment (*Deprecated*)

F44 Bibliographic Agency (*Deprecated*)

F50 Controlled Access Point (*Deprecated*)

F51 Pursuit (Transferred to CRMsoc)

F52 Name Use Activity (Transferred to CRMsoc)

F53 Material Copy (*Deprecated*)

F54 Utilised Information Carrier

(comment: Change name to Manifestation Carrier 2018-05-24?)

2019-06: Discussion of whether this class should transfer to CRMdig. Issue 423

Subclass of: **E18 Physical Thing**

Superclass of: **F5 Item**

Scope note: This class comprises physical objects that carry one or more instances of F3 Manifestation.

Examples: The physical features created on my PC's hard drive when I clicked on the link <http://cidoc.ics.forth.gr/docs/cidoc_crm_version_4.0.pdf>, and thus downloaded a reproduction of the electronic file titled 'Definition of the CIDOC Conceptual Reference Model... version 4.0' that is stored on the ICS FORTH's servers in Heraklion, Crete

Any copy of the modern reprint publication of Marin Mersenne's 'Harmonie universelle', Paris, 1986, ISBN '2-222-00835-2' (F5)

Properties: **R6 carries (is carried by): F3 Manifestation [PR: R6 is deprecated, what is the right property?]**

F55 Collective Agent

Subclass of: **E74 Group**

Superclass of: **F11 Corporate Body**
F39 Family

Scope note: This class comprises recognizable groups or organizations of persons that have the potential of acting as a unit to produce some intentional result of bibliographic interest for which they can be collectively considered responsible.

A group of people becomes an instance of F55 Collective Agent when it identifies itself by a name that identifies it within an appropriate context and exhibits sufficient organizational characteristics to permit it to perform actions that reflect agency. Groups that are constituted as meetings, conferences, congresses, expeditions, festivals, fairs, etc. are examples of F55 Collective Agent as long as they self-identify by a specific name, rather than being referred to by a generic description of the gathering, and can act as a unit (such as by publishing their proceedings, or approving a report). These collective actions may be performed by representatives selected by the whole, rather than by all individual members acting together.

Instances of F55 Collective Agent include commercial or corporate entities and other legally registered bodies, as well as organizations and associations, musical, artistic or performing groups, governments, and any of their sub-units. Collective Agents may be members of other Collective Agents, although directly or indirectly all Collective Agents are composed of persons. The membership of many types of Collective Agents will continue to evolve over time. A Collective Agent may continue to exist even if it has no members for a time (for example, a committee whose members all resign prior to the expiration of their terms but then a new complement of members is appointed).

Married couples and other concepts of family (F39) are regarded as particular examples of F55 Collective Agent.

In the wider sense, this class also comprises holders of official positions viewed collectively, independent of the current holder of the office, such as the president of a country. In such cases, it is possible that the instance of F55 Collective Agent has only ever had a single member.

A group of persons known by/using a joint pseudonym (i.e., a name that seems indicative of an individual but that is actually adopted as a persona by two or more people acting together) is a particular case of F55 Collective Agent.

Examples:

- International Federation of Library Associations and Institutions (F11)
- 81st World Library and Information Conference
- Bibliothèque nationale de France
- Exxon-Mobil (E40)
- The Beatles
- King Solomon and his wives (F39)
- The President of the Swiss Confederation
- Nicolas Bourbaki
- Betty Crocker
- Ellery Queen

Properties: [P107](#) has current or former member (is current or former member of): [E39](#) Actor
(P107.1 kind of member: [E55](#) Type)

F56 Externalization Event

Subclass of: [E7 Activity](#)

Superclass of: [F28 Expression Creation](#)
[F31 Performance](#)

Scope note: This class comprises activities that produce signs or sensory impressions as organized and complete wholes, typically intended to be received, in this completeness, by some audience, either directly via their senses or via persistent media at some later time. It comprises in particular novel externalizations of thought – art in all forms – including rendering existing expressions such as musical scores, theatre plays, scripts or texts, in a particular manner, including through the performing arts, writing or other methods of externalization.

Examples:

- The creation of the original manuscript score ‘Uwertura tragiczna’ by Andrej Panufnik in Warsaw (F28)
- The reconstruction from memory of the manuscript score ‘Uwertura tragiczna’ by Andrej Panufnik in 1945 after the original score was destroyed during the war (F28)
- Performing the ballet entitled ‘Rite of Spring’, as choreographed by Pina Bausch, in Avignon, at the Popes’ Palace, on July 7, 1995 [individual performance] (F31)
- Performing the operatic work entitled ‘Dido and Aeneas’, as directed by Edward Gordon Craig and conducted by Martin Shaw, in London, Hampstead Conservatoire, on May 17, 18, and 19, 1900 [run of performances] (F31)

Properties: [R19](#) created a realisation of (was realised through): [F1](#) Work

[PR: is this correct? R19 already listed under F28 Expression Creation, a subclass of F56]

[Rnn](#) has memorization in (is memorization of): [F2 Expression](#)

Fxx Externalization (superclass of F2 Expression)

[Not clear if yet another new class—superclass of F2 and ??, we have dropped F26 Recording]

2.7. LRM₀₀ Property Declaration

[PR: this explanation to be reviewed for accuracy]

The properties of LRM₀₀ are comprehensively declared in this section using the following format:

- Property names are presented as headings in bold face, preceded by unique property identifiers;
- The line “Domain:” declares the class for which the property is defined;
- The line “Range:” declares the class to which the property points, or that provides the values for the property;
- The line “Equal to:” declares the CIDOC CRM property that covers the same concept as the LRM₀₀ property; [there should not be any more of these]
- The line “Shortcut of:” declares the chain of CIDOC CRM and/or LRM₀₀ properties of which the LRM₀₀ property is a shortcut, whenever it cannot be simply declared as a subproperty of a pre-existing property (note however that when an LRM₀₀ property is *both* a subproperty of a pre-existing property *and* a shortcut, the detailed path of which it is a shortcut is only mentioned in the scope note);
- The line “Is covered by shortcut:” declares the CIDOC CRM property that constitutes a shortcut for a more detailed path of which the LRM₀₀ property is a part;
- The line “Superproperty of:” is a cross-reference to any subproperties the property may have;
- The line “Subproperty of:” is a cross-reference to any superproperties the property may have, in either CIDOC CRM or LRM₀₀. All LRM₀₀ properties that fall under the scope of the CIDOC CRM are, either directly or indirectly, subproperties of at least one CIDOC CRM property. However, this line remains empty for LRM₀₀ properties that are shortcuts of more developed paths that involve CIDOC CRM properties and/or their LRM₀₀ subproperties;
- The line “Quantification:” declares the possible number of occurrences for domain and range class instances for the property. Possible values are enumerated in section 2.3;
- The line “Scope note:” contains the textual definition of the concept the property represents;
- The line “Examples:” contains a list of examples of instances of this property. If the example is also an instance of a subproperty of this property, the unique identifier of the subproperty is added in parenthesis. If the example instantiates two properties, the unique identifiers of both properties are added in parenthesis;
- The line “Properties:” introduces any properties the property may have.
- In some cases the superproperty of a property is listed as *Out of scope*. This indicates that the property that should be the superproperty is outside of the coverage of CIDOC CRM. [there should not be any more of these]

R1 is logical successor of (has successor)

Domain: [F1](#) Work

Range: [F1](#) Work

Subproperty of: [E70](#) Thing. [P130](#) shows features of (features are also found on): [E70](#) Thing

Quantification: (0,n:0,n)

Scope note: This property associates an instance of [F1](#) Work which logically continues the content of another instance of [F1](#) Work with the latter. **This property is transitive.**

Examples: Albrecht Dürer's woodcut from 'The Large Woodcut Passion' entitled 'The Agony in the Garden' (F1, conceived ca 1496-98) *R1 is logical successor of* Albrecht Dürer's woodcut from 'The Large Woodcut Passion' entitled 'The Last Supper' (F1, dated 1510)

The first 'Star wars' trilogy (F1, 1977-1983) *R1 is logical successor of* The second 'Star wars' trilogy (F1, 1999-2005) [Note that the logical order does not follow, in either of these two examples, the chronological order]

R2 is derivative of (has derivative)

Domain: [F1](#) Work

Range: [F1](#) Work

Subproperty of: [E70](#) Thing. [P130](#) shows features of (features are also found on): [E70](#) Thing

Quantification: (0,n:0,n)

Scope note: This property associates an instance of [F1](#) Work which modifies the content of another instance of [F1](#) Work with the latter. **This property is transitive.** The property *R2.1 has type* of this property allows for specifying the kind of derivation, such as adaptation, summarisation, etc.

Examples: William Schuman's orchestration of Charles Ives's 'Variations on America' (F1) *R2 is derivative of* Charles Ives's 'Variations on America' (F1) *R2.1 has type* orchestration (E55)

Charles Ives's musical work entitled 'Variations on America' (F1) *R2 is derivative of* the musical work titled 'America' (F1) *R2.1 has type* variations (E55)

The musical work entitled 'America' (F1) *R2 is derivative of* the musical work entitled 'God save the King' (F1) *R2.1 has type* same tune with different lyrics (E55)

Properties: *R2.1 has type*: [E55](#) Type

R3 is realised in (realises)

Domain: [F1](#) Work

Range: [F2](#) Expression

Superproperty of:

Subproperty of: [E70](#) Thing. [P130](#) shows features of (features are also found on): [E70](#) Thing

Quantification: (0,n:1, n)

Scope note: This property associates an instance of [F2](#) Expression with an instance of [F1](#) Work.

This property expresses the association that exists between an expression and the work that this expression conveys. Our factual knowledge of how a given work is historically realised into expressions is often limited. Therefore, this property makes it possible to express the association between an instance of [F2](#) Expression and the instance of [F1](#) Work it conveys without identifying the particular instances of [F2](#) Expression that **were part of a chain of derivation from the source.**

Examples: Dante's work entitled 'Inferno' (F1) *R3 is realised in* the Italian text of Dante's 'Inferno' as found in the authoritative critical edition La Commedia secondo l'antica vulgata a cura di

Giorgio Petrocchi, Milano: Mondadori, 1966-67 (= Le Opere di Dante Alighieri, Edizione Nazionale a cura della Società Dantesca Italiana, VII, 1-4)

Mozart's work entitled 'Il dissoluto punito ossia il Don Giovanni' (F1) *R3 is realised in* the notated music of the Prague version, as found on manuscript Ms 1548 of the National Library of France (F2)

From former R12, do we retain any?

Examples: The concept of Sergei Radlov's mise-en-scène of a Yiddish translation of the textual work entitled 'King Lear' in Moscow in 1935 (F20) *R12 is realised in* the set of instructions for the production of a Yiddish translation of the textual work entitled 'King Lear', as directed by Sergei Radlov in Moscow in 1935 (F25)

The concept of Pina Bausch's choreography of the ballet entitled 'Rite of spring' in Wuppertal in 1975 (F20) *R12 is realised in* the set of instructions for the production of the ballet entitled 'Rite of spring', as choreographed by Pina Bausch in Wuppertal in 1975 (F25)

The concept of Bruno Walter's performance of Gustav Mahler's 9th symphony in 1961 (F20) *R12 is realised in* the set of instructions by Bruno Walter for performing Gustav Mahler's 9th symphony, delivered by him to the Columbia Symphony Orchestra during rehearsals in Hollywood in 1961 (as partially documented in the CD entitled 'Bruno Walter conducts and talks about Mahler symphony No. 9: rehearsal & performance') (F25)

The concept of the "performance handbook" for Luigi Nono's musical work entitled 'À Pierre' (F20) *R12 is realised in* the set of instructions contained in the performance handbook for Luigi Nono's musical work entitled 'À Pierre' (F25)

From former R13, do we retain any?

Examples: The concept of the third alternate take of the musical work entitled 'Blue Hawaii' as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F21) *R13 is realised in* the set of signs that make up the third alternate take of the musical work entitled 'Blue Hawaii' as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F26)

The concept of making a photograph of the three Allied leaders at Yalta in February 1945 (F21) *R13 is realised in* the visual content of the famous photograph of the three Allied leaders at Yalta in February 1945 (F26)

Oceania Project's concept of making a large digital acoustic data archive dedicated to East Australian humpback whale songs (F21) *R13 is realised in* the audio content of the album entitled 'Songlines – Songs of the East Australian Humpback Whales' released in 2011 (F26)

The concept of recording Louise Bourgeois's artistic activity in the documentary entitled 'Louise Bourgeois: The Spider, the Mistress, and the Tangerine' (F21) *R13 is realised in* the audiovisual content of the documentary entitled 'Louise Bourgeois: The Spider, the Mistress, and the Tangerine' (F26)

Properties: R3.1 has type: [E55](#) Type

R4 embodies (is embodied in)

Domain: [F3](#) Manifestation

Range: [F2](#) Expression

Subproperty of: [E73](#) Information Object. P165 incorporates (is incorporated in): [E90](#) Symbolic Object

Quantification: (0,n;0,n)

Scope note: This property associates an instance of F3 Manifestation with one or more instances of F2 Expression which are rendered by this instance of F3 Manifestation, in the way to be presented to users. The content of the embodied instances of F2 Expression should be defined at a symbolic level (such as a text or notated music) more abstract than the embodying instance of F3 Manifestation (such as a book or a notated score).

Examples: The publication identified by ISBN '2-222-00835-2' (F3) *R4 embodies* the text of Marin

Mersenne's 'Harmonie universelle' (F2)

The CD entitled 'Musique de la Grèce antique = Ancient Greek music = Griechische Musik der Antike', released in 2000 and identified by UPC/EAN '794881601622' (F3) *R4 embodies* a recording of the Atrium Musicæ Ensemble's performance of a fragment of Euripides' textual and musical work entitled 'Orestes' (F2)

R5 has component (is component of)

Domain: [F2](#) Expression

Range: [F2](#) Expression

Subproperty of: [E89](#) Propositional Object. [P148](#) has component (is component of): [E89](#) Propositional Object

Quantification: (0,n:0,n)

Scope note: This property associates an instance of an F2 Expression X with a structural component Y that conveys a part of the overall work realized by X, such as volumes, chapters, paragraphs. **This property is transitive.**

Any part of an expression that conveys complete propositions, such as a single phrase, can be documented using the more general property [P148](#) *has component (is component of)*.

Any part of an expression that does not completely follow meaningful boundaries, such as lines or pages of text or portions visible on images, can be documented using the property [P106](#) *is composed of (forms part of)*, and not with *R5 has component (is component of)*. Fragments, in particular, can be documented with the more specific property [R15](#) *has fragment (is fragment of)*.

This property does not cover the relationship that exists between pre-existing expressions that are re-used in a new, larger expression and that new, larger expression. Such a relationship is modelled by [P165](#) *incorporates*.

Examples: The Italian text of Dante's textual work entitled 'Divina Commedia' (F2) *R5 has component* the Italian text of Dante's textual work entitled 'Inferno' (F2)

The musical notation of Mozart's Singspiel entitled 'Die Zauberflöte' (F2) *R5 has component* the musical notation of Mozart's aria entitled 'Der Hölle Rache', also known as 'The Queen of the Night's Aria' (F2)

The visual content of the map entitled 'Wales – The Midlands – South West England', scale 1:400,000, issued by Michelin in 2005 (F2) *R5 has component* the visual content of the inset entitled 'Liverpool', scale 1:200,000, set within the compass of the map titled 'Wales – The Midlands – South West England', scale 1:400,000, issued by Michelin in 2005 (F2)

R6 carries (is carried by) (Deprecated)

Reason, duplicated R7. Was F54 to F24. F24 merges with F3, F54 superclass of F5. Is this correct?

R7 is materialization of (is materialized in)

Domain: [F5](#) Item

Range: [F3](#) Manifestation

Subproperty of: [E24](#) Physical Man-Made Thing. [P128](#) carries (is carried by): [E73](#) Information Object

Quantification: (1,1:0,n)

Scope note: This property associates an instance of F3 Manifestation with an instance of F5 Item that is one of its exemplars or its only exemplar.

Instances of F5 Item correspond to the kinds of physical unit(s) specified in the manifestation, regardless of possible later changes.

Even though an item may exhibit defects with respect to the intended manifestation, it is still regarded to carry the manifestation, as long as it is produced or made accessible as a functional item by its creators.

Examples: The item held by the National Library of France and identified by shelf mark 'Res 8 P 10' (F5) *R7 is materialization of* the edition of Amerigo Vespucci's textual and cartographic work entitled 'Mundus novus' issued in Paris ca. 1503-1504 (F3)

R8 combines (is combined to form)

Domain: [F12 Nomen](#)

Range: [E90 Symbolic Object](#)

Subproperty of: [E90 Symbolic Object](#). [P106](#) is composed of (forms part of): [E90 Symbolic Object](#)

Quantification: (0,n;0,n)

Scope note: This property associates an instance of F12 Nomen with one of the non-syntactic instances of E90 Symbolic Object which are combined to form it.

Examples: The English term 'starfish' (F12) [an instance of F12 Nomen that refers to echinoderms] *R8 combines* the English term 'star' (F12) [an instance of F12 Nomen that refers to celestial bodies], and *R8 combines* the English term 'fish' (F12) [an instance of F12 Nomen that refers, in its looser sense, to animals that live exclusively in water]

The controlled access point 'The Adoration of the Shepherds (Coventry)' (F12) *R8 combines* 'The Adoration of the Shepherds' (F12) [a title, i.e., an instance of F12 Nomen that refers to a work], and *R8 combines* 'Coventry' (F12) [an instance of F12 Nomen that refers to a place]

The controlled access point 'Guillaume, de Machaut, ca. 1300-1377' (F12) *R8 combines* 'Guillaume' (E90) [a given name], and *R8 combines* 'Machaut' (F12) [an instance of F12 Nomen that refers to a place], and *R8 combines* 'ca. 1300-1377' (F12) [an instance of F12 Nomen that refers to a time-span]

The controlled access point 'Univerza v Ljubljani. Oddelek za bibliotekarstvo' (F12) *R8 combines* 'Univerza v Ljubljani' (F12) [an instance of F12 Nomen that refers to a corporate body], and *R8 consists of* 'Oddelek za bibliotekarstvo' (F12) [an instance of F12 Nomen that refers to another corporate body, affiliated to the former]

ISBN-10 '978-002-002-0' (F12) *R8 combines* '978' (E90) [an instance of E90 Symbolic Object indicating the Nigerian ISBN Agency], *R8 combines* '002' (E90) [an instance of E90 Symbolic Object indicating the Nigerian Institute of International Affairs], *R8 combines* '002' (E90) [an instance of E90 Symbolic Object used for the publication entitled 'Nigeria's international economic relations'], and *R8 combines* '0' (E90) [an instance of E90 Symbolic Object that constitutes the control character for this ISBN]

R9 is realised in (realises) (Deprecated)

R10 has member (is member of)

Domain: [F1 Work](#)

Range: [F1 Work](#)

Superproperty of: [F1 Work](#). R67 has part (is part of): [F1 Work](#)

Subproperty of: [E89 Propositional Object](#). [P148](#) has component (is component of): [E89 Propositional Object](#)

Quantification: (0,n;0,n)

Scope note: This property associates an instance of F1 Work with another instance of F1 Work that forms a part of it. This property is transitive. An instance of F1 Work may neither directly nor indirectly be a member of itself. Instances of F1 Work that are not members of one another may not share a common member.

Examples: Dante's textual work entitled 'Inferno' (F1) *R10 has member* the abstract content of the pseudo-old French text of Émile Littré's translation entitled 'L'Enfer mis en vieux langage françois et en vers' [a 19th century translation of Dante's 'Inferno' into old French] published in Paris in 1879 (F1)

Giovanni Battista Piranesi's graphic work entitled 'Carcere XVI: the pier with chains' (F1)

R10 has member the abstract content of Giovanni Battista Piranesi's graphic work entitled 'Carcere XVI: the pier with chains: 2nd state' (F1)

Joseph Haydn's musical work entitled 'The Seven Last Words of Christ' (numbered Hob. XX in Anthony van Hoboken's catalogue of Joseph Haydn's works) *R10 has member* Joseph Haydn's orchestral work entitled 'The Seven Last Words of Christ', composed in 1786 (Hob. XX/1A)

Joseph Haydn's musical work entitled 'The Seven Last Words of Christ' (numbered Hob. XX in Anthony van Hoboken's catalogue of Joseph Haydn's works) *R10 has member* Joseph Haydn's work for string quartet entitled 'The Seven Last Words of Christ', composed in 1787 (identified both as Hob. XX/1B and Hob. III/50-56 in Anthony van Hoboken's catalogue, and published as Op. 51)

Joseph Haydn's musical work entitled 'The Seven Last Words of Christ' (numbered Hob. XX in Anthony van Hoboken's catalogue of Joseph Haydn's works) *R10 has member* Joseph Haydn's oratorio entitled 'The Seven Last Words of Christ', composed in 1796 (Hob. XX/2)

R11 has issuing rule (is issuing rule of) (To transfer to PRESSoo, ver. 2)

Domain: [F18](#) Serial Work

Range: [E29](#) Design or Procedure

Shortcut of: [F18](#) Serial Work. *R19i was realised through:* F30 Manifestation Creation. P16 used specific object: E29 Design or Procedure

[PR: NB: F30 is a subclass of F28, thus R19 is appropriate (F1 to F28)]

Quantification: (0,n;0,n)

Scope note: This property associates an instance of F18 Serial Work with the instance of E29 Design or Procedure that specifies the issuing policy planned by this instance of F18 Serial Work, such as sequencing pattern, expected frequency and expected regularity.

Examples: The serial entitled 'Quarterly journal of pure and applied mathematics', identified by ISSN '1549-6724' (F18) *R11 has issuing rule* to be issued every three months, on a regular basis, with each issue being numbered according to the pattern 'Vol. 1, no. 1 (2005)' that was observed by the Library of Congress's cataloguers on an exemplar of the first issue (E29)

R12 is realised in (realises) (Deprecated)

R13 is realised in (realises) (Deprecated)

R15 has fragment (is fragment of)

Domain: [F2](#) Expression

Range: [E90](#) Symbolic Object

Subproperty of: [E90](#) Symbolic Object. [P106](#) is composed of (forms part of): [E90](#) Symbolic Object

Quantification: (0,n;0,n)

Scope note: This property associates an instance of E90 Symbolic Object with an instance of F2 Expression of which it is a fragment. The fragment is not itself an instance of F2 Expression as it does not express any instance of F1 Work. When the fragment consists of intelligible words it is an instance of E33 Linguistic Object.

An instance of E90 Symbolic Object can be extracted from an instance of F2 Expression due to an accident, such as loss of material over time, e.g. the only remaining manuscript of an ancient text being partially eaten by worms, or due to deliberate isolation, such as excerpts taken from a text by the compiler of a collection of excerpts.

An instance of E90 Symbolic Object is only considered a fragment of an instance of F2 Expression when related to its occurrence in a known or assumed whole by the *R15 has fragment* property. The size of an instance of E90 Symbolic Object ranges from more than 99% of an instance of F2 Expression to tiny bits (a few words from a text, one bar from a

musical composition, one detail from a still image, a two-second clip from a video, etc.).

Examples:

- The ancient Greek text of the four stanzas from an ode by Sappho that were quoted by Pseudo-Longinus in his textual work entitled ‘On the sublime’ (E33) *R15 is fragment of* the complete ancient Greek text, now irremediably lost, of Sappho’s ode currently identified as Sappho’s poem #2 (F2)
- The statement ‘fasc. 111’ (abridgement for ‘fascicle no. 111’) indicating the sequential position of the publication identified by ISBN ‘2-7018-0037-4’ within the series entitled ‘Bibliothèque des Écoles françaises d’Athènes et de Rome’ and identified by ISSN ‘0257-4101’ (E33) *R15 is fragment of* the overall content of the publication identified by ISBN ‘2-7018-0037-4’ (F3)
- The phrase ‘Beati pauperes spiritu’ (E33) *R15 is fragment of* the Latin text of the Gospel according to St. Matthew (excerpt from Matthew 5,3)
- The stanza ‘Nel mezzo del cammin di nostra vita / mi ritrovai per una selva oscura / ché la diritta via era smarrita’ (E33) *R15 is fragment of* the Italian text of Dante Alighieri’s ‘Inferno’ and ‘Divina Commedia’ (F2)
 - (add an example of an E90 that is not an E33?)
 - (add an example of a single page from a larger text—to show that the fragment breaks at symbol boundaries and not necessarily at word or sentence boundaries)

See this discussion for why we should add a page example:

[Issue of paging, relevant to digitisation, finding the identity criteria—matching the page to the expression that it belongs to. Can use P106 is composed of, to relate the text on a page to the whole. The text found on a page breaks at symbol boundaries, not necessarily at word or sentence boundaries. It is an E90. Two structure systems ongoing: symbolic structuring (pages, lines etc) and also logical structuring (chapters, paragraphs, sections of content)]

R16 initiated (was initiated by)

Domain: [F27](#) Work Conception

Range: [F1](#) Work

Subproperty of: [E65](#) Creation. [P94](#) has created (was created by): [E28](#) Conceptual Object

Quantification: (1,n:1,1)

Scope note: This property associates the first conception of a work and the instance of F1 Work itself that ensued from a given initial idea.

It marks the origin of the causality chain that results in a work’s coming into existence.

Examples: Ludwig van Beethoven’s decision to compose a fifth symphony (F27) *R16 initiated* Ludwig van Beethoven’s Fifth Symphony (F1)

Pablo Picasso’s acceptance, in 1930, of Ambroise Vollard’s commission for a set of 100 etchings, now known as the ‘Vollard Suite’ (F27) *R16 initiated* the ‘Vollard Suite’ (F1)

René Goscinny’s and Albert Uderzo’s decision to collaborate on the comic book entitled ‘Asterix in Britain’ (F27) *R16 initiated* the comic book entitled ‘Asterix in Britain’ (F1)

The creative spark that motivated Oscar Wilde, by May 1897, to write a poem inspired by his stay in the Reading prison in 1895-1897 (F27) *R16 initiated* Oscar Wilde’s poem entitled ‘The ballad of the Reading gaol’ (F1)

R17 created (was created by)

Domain: [F28](#) Expression Creation

Range: [F2](#) Expression

Superproperty of: [F30](#) Manifestation Creation. [R24](#) created (was created through): [F3](#) Manifestation

Subproperty of: [E65](#) Creation. [P94](#) has created (was created by): [E28](#) Conceptual Object

Quantification: (1,1:1,n)

Scope note: This property associates the instance of F2 Expression that was first externalised during a

particular instance of F28 Expression Creation event with that particular creation event.

Examples: Richard Wagner's writing the original manuscript of his opera entitled 'Der fliegende Holländer' (F28) *R17 created* the notational content of the original manuscript of Richard Wagner's opera entitled 'Der fliegende Holländer' (F2)

Oscar Wilde's writing the original manuscript of his poem entitled 'The ballad of the Reading gaol' (F28) *R17 created* the English text of Oscar Wilde's poem entitled 'The ballad of the Reading gaol' (F2)

[PR: do we keep any examples from the deprecated subproperty?]

Examples: The making of the recording of the third alternate take of the musical work entitled 'Blue Hawaii' as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F29) *R21 created* the set of signs that make up the third alternate take of the musical work entitled 'Blue Hawaii' as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F26)

The making of the photograph of the three Allied leaders at Yalta in February 1945 (F29) *R21 created* the set of signs that make up the famous photograph of the three Allied leaders at Yalta in February 1945 (F26)

The making of the recording of an East Australian humpback whale song in 1994 in the framework of the Oceania Project (F29) *R21 created* the set of signs that make up the sound recording of an East Australian humpback whale song in 1994 (F26)

Filming Louise Bourgeois at work in the context of the shooting of the documentary entitled 'Louise Bourgeois: The Spider, the Mistress, and the Tangerine' (F29) *R21 created* the set of signs that make up the sequences from the documentary entitled 'Louise Bourgeois: The Spider, the Mistress, and the Tangerine' in which Louise Bourgeois is seen at work (F26)

R18 created (was created by)

Domain: [F28 Expression Creation](#)

Range: [F5 Item](#)

Subproperty of: [E12 Production](#). [P108](#) has produced (was produced by): [E24 Physical Man-Made Thing](#)

Quantification: (1,n;0,1)

Scope note: This property associates an instance of F28 Expression Creation with the first physical objects, an instance of [F5 Item](#), in which the resulting instance of F2 Expression was embodied.

Examples: Emily Dickinson's creating the text of one of the several extant versions of her poem known as 'Safe in their alabaster chambers' (F28) *R18 created* the manuscript now identified as 'Massachusetts Cambridge Harvard University Houghton Library bMS Am 1118.3 (203c, 203d)' (F5)

Emily Dickinson's creating the text of another one of the several extant versions of her poem known as 'Safe in their alabaster chambers' (F28) *R18 created* the manuscript now identified as 'Massachusetts Cambridge Harvard University Houghton Library bMS Am 1118.5 (74c)' (F5)

The recording of the third alternate take of the musical work entitled 'Blue Hawaii' performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F28) *R18 created* the master tape of the 3rd alternate take of the musical work entitled 'Blue Hawaii' performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F5) (each individual take is a distinct expression)

The resource (a drawing) held by the New York Public Library and identified by call number '*MGZGB Far P Cop 1' (F5) *R18i was created by* the creation, by the artist named 'Peter Farmer', of a costume design for the character named 'War' in the Act III Masque of the seasons, in the Festival Ballet of London production of the choreographic work entitled 'Coppélia', with choreography by Jack Carter after Petipa (F28)

R19 created a realisation of (was realised through)

Domain: [F28 Expression Creation](#) or [F56 Externalization Event](#)

Range: [F1](#) Work

Superproperty of:

Subproperty of: [E7](#) Activity. [P16](#) used specific object (was used for): [E70](#) Thing

Quantification: (1,n:1,1)

Scope note: This property associates an instance of [F28 Expression Creation/F56 Externalization Event](#) with the instance of F1 Work which was externalised in the instance of F2 Expression created by this creation event.

Examples: Giovanni Battista Piranesi's creating the image identified as 'Carcere XVI: the pier with chains: 2nd state' (F28) *R19 created a realisation of* the concept of Giovanni Battista Piranesi's graphic work entitled 'Carcere XVI: the pier with chains: 2nd state' (F1)

Recording Glenn Gould's performance of Johann Sebastian Bach's musical work entitled 'Toccatina in C minor BWV 911' on May 15 & 16, 1979, in Toronto, Eaton's Auditorium (F29) *R19 created a realisation of* the concept of the recorded performance of Johann Sebastian Bach's musical work entitled 'Toccatina in C minor BWV 911' by Glenn Gould on May 15 & 16, 1979, in Toronto, Eaton's Auditorium (F1)

[PR: should these example from a deprecated subproperties be retained?]

Examples: Establishing in 1972 the layout, features, and prototype for the publication of Stephen Crane's complete poems (F30) *R23 created a realisation of* Cornell University Press's concepts for an edition of Stephen Crane's complete poems (F19) [F1]

Examples: The making of the recording of the third alternate take of the musical work entitled 'Blue Hawaii' as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F29) *R22 created a realisation of* the concept of the third alternate take of the musical work entitled 'Blue Hawaii' as performed by Elvis Presley in Hollywood, Calif.

The making of the photograph of the three Allied leaders at Yalta in February 1945 (F29) *R22 created a realisation of* the concept of making a photograph of the three Allied leaders at Yalta in February 1945 (F21)

The making of the recording of an East Australian humpback whale song in 1994 in the framework of the Oceania Project (F29) *R22 created a realisation of* Oceania Project's concept of making a large digital acoustic data archive dedicated to East Australian humpback whale songs (F21)

Filming Louise Bourgeois at work in the context of the shooting of the documentary entitled 'Louise Bourgeois: The Spider, the Mistress, and the Tangerine' (F29) *R22 created a realisation of* the concept of recording Louise Bourgeois's artistic activity in the documentary entitled 'Louise Bourgeois: The Spider, the Mistress, and the Tangerine' (F21)

R20 recorded (was recorded through)

Domain: [F29](#) Recording Event

Range: [E2](#) Temporal Entity

Subproperty of: [E7](#) Activity. [P15](#) was influenced by (influenced): [E5](#) Event. [P9i](#) forms part of: [E5](#) Event. [P9](#) consists of: [E5](#) Event

Quantification: (1,n:0,n)

Scope note: This property associates an instance of F29 Recording Event with the instance of E2 Temporal Entity which was captured.

Examples: The making of the recording of the third alternate take of the musical work entitled 'Blue Hawaii' as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F29) *R20 recorded* Elvis Presley's performance of the musical work entitled 'Blue Hawaii' in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F31)

R21 created (was created through) (Deprecated)

[PR: F29 retained, but not F26, R17 could be substituted directly, move examples to R17?]

Domain: [F29 Recording Event](#)

Range: [F26 Recording](#)

Subproperty of: [F28 Expression Creation](#). [R17 created \(was created by\)](#): [F2 Expression](#)

Quantification: (1,n:1,n)

Scope note: This property associates an instance of F29 Recording Event with the instance of F26 Recording that was created.

Examples: The making of the recording of the third alternate take of the musical work entitled ‘Blue Hawaii’ as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F29) *R21 created* the set of signs that make up the third alternate take of the musical work entitled ‘Blue Hawaii’ as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F26)

The making of the photograph of the three Allied leaders at Yalta in February 1945 (F29) *R21 created* the set of signs that make up the famous photograph of the three Allied leaders at Yalta in February 1945 (F26)

The making of the recording of an East Australian humpback whale song in 1994 in the framework of the Oceania Project (F29) *R21 created* the set of signs that make up the sound recording of an East Australian humpback whale song in 1994 (F26)

Filming Louise Bourgeois at work in the context of the shooting of the documentary entitled ‘Louise Bourgeois: The Spider, the Mistress, and the Tangerine’ (F29) *R21 created* the set of signs that make up the sequences from the documentary entitled ‘Louise Bourgeois: The Spider, the Mistress, and the Tangerine’ in which Louise Bourgeois is seen at work (F26)

R22 created a realisation of (was realised through) (Deprecated)

[PR: should be deprecated and R19 used, since F21 is deprecated in favour of superclass, but F29 is not deprecated. Move examples up to R19?]

Domain: [F29 Recording Event](#)

Range: [F21 Recording Work](#)

Subproperty of: [F28 Expression Creation](#). [R19 created a realisation of \(was realised through\)](#): [F1 Work](#)

Quantification: (0,1:0,n)

Scope note: This property associates an instance of F29 Recording Event with the instance of F21 Recording Work it realised.

Examples: The making of the recording of the third alternate take of the musical work entitled ‘Blue Hawaii’ as performed by Elvis Presley in Hollywood, Calif., Radio Recorders, on March 22nd, 1961 (F29) *R22 created a realisation of* the concept of the third alternate take of the musical work entitled ‘Blue Hawaii’ as performed by Elvis Presley in Hollywood, Calif.

The making of the photograph of the three Allied leaders at Yalta in February 1945 (F29) *R22 created a realisation of* the concept of making a photograph of the three Allied leaders at Yalta in February 1945 (F21)

The making of the recording of an East Australian humpback whale song in 1994 in the framework of the Oceania Project (F29) *R22 created a realisation of* Oceania Project’s concept of making a large digital acoustic data archive dedicated to East Australian humpback whale songs (F21)

Filming Louise Bourgeois at work in the context of the shooting of the documentary entitled ‘Louise Bourgeois: The Spider, the Mistress, and the Tangerine’ (F29) *R22 created a realisation of* the concept of recording Louise Bourgeois’s artistic activity in the documentary entitled ‘Louise Bourgeois: The Spider, the Mistress, and the Tangerine’ (F21)

R23 created a realisation of (was realised through) (*Deprecated*)

R24 created (was created through)

Domain: [F30 Manifestation Creation](#)

Range: [F3 Manifestation](#)

Subproperty of: [F28 Expression Creation](#). [R17 created](#) (was created by): [F2 Expression](#)

Quantification: (1,n:1,n)

Scope note: This property associates the instance of F3 Manifestation that was created during a particular instance of F30 Manifestation Creation with that instance of F30 Manifestation Creation event.

Examples: Establishing in 1972 the layout, features, and prototype for the publication of Stephen Crane's complete poems (F30) *R24 created* the set of signs and instructions as to manufacturing established by Cornell University Press for a publication of Stephen Crane's complete poems (F3)

R25 performed (was performed in)

Domain: [F31 Performance](#)

Range: F2 Expression or [E100 Activity Plan?](#)

Subproperty of: [E7 Activity](#). [P33 used specific technique](#) (was used by): [E29 Design or Procedure](#)

[KEEP THE SUPERPROPERTY, DISPOSE OF THE SUBPROPERTY.]

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F31 Performance with the instance of E100 Activity Plan to which all those participating in the performance were supposed to conform.

Examples: Performing the first performance of a Yiddish translation of 'King Lear', as directed by Sergei Radlov, in Moscow, at the Moscow State Jewish Theatre, on February 10, 1935 (F31) *R25 performed* the set of instructions for the production of a Yiddish translation of 'King Lear', directed by Sergei Radlov in Moscow in 1935 ([E100](#))

Performing the ballet 'Rite of spring', as choreographed by Pina Bausch, in Avignon, at the Popes' Palace, on July 7, 1995 (F31) *R25 performed* the set of instructions for the production of the ballet 'Rite of spring', as choreographed by Pina Bausch ([E100](#))

R26 produced things of type (was produced by)

Domain: [F32 Carrier Production Event](#)

Range: [E99 Product Type](#)

Subproperty of: [E12 Production](#). [P186 produced thing of product type](#) (is produced by): [E99 Product Type](#)

Quantification: (1,n:0,n)

Scope note: This property associates an instance of F32 Carrier Production Event with the instance of F3 Manifestation, which must also be an instance of E99 Product Type, it produced items (F5) of.

Examples: The production of copies of the publication entitled 'Codex Manesse: die Miniaturen der großen Heidelberger Liederhandschrift, herausgegeben und erläutert von Ingo F. Walther unter Mitarbeit von Gisela Siebert', 3rd edition, Insel-Verlag, 1988 (F32) *R26 produced things of type* the publication identified as 'Codex Manesse: die Miniaturen der großen Heidelberger Liederhandschrift, herausgegeben und erläutert von Ingo F. Walther unter Mitarbeit von Gisela Siebert', 3rd edition, Insel-Verlag, 1988 (F3 and E99)

The production of copies of the publication entitled 'Ordnance Survey Explorer Map 213, Aberystwyth & Cwm Rheidol', ISBN '0-319-23640-4' (folded), 1:25,000 scale, released in May 2005 (F32) *R26 produced things of type* the publication identified by ISBN '0-319-23640-4' (F3 and E99)

The production of copies of the sound recording entitled 'The Glory (????) of the human voice', RCA Victor Gold Seal GD61175, containing recordings of musical works performed

by Florence Foster Jenkins (F32) *R26 produced things of type* the publication entitled ‘The Glory (????) of the human voice’ and identified by the label and label number ‘RCA Victor Gold Seal GD61175’ (F3 and E99)

The production of a second print run, in 1978, of the publication titled ‘The complete poems of Stephen Crane, edited with an introduction by Joseph Katz’ (identified by ISBN ‘0-8014-9130-4’) (F32) *R26 produced things of type* the publication, dated 1972, entitled ‘The complete poems of Stephen Crane, edited with an introduction by Joseph Katz’ (identified by ISBN ‘0-8014-9130-4’) (F3 and E99)

R27 materialized (was materialized by)

Domain: [F32](#) Carrier Production Event

Range: [F3](#) Manifestation

Subproperty of: [E7](#) Activity. [P16](#) used specific object (was used for): [E70](#) Thing

Quantification: (0,n;0,n)

Scope note: This property associates an instance of F32 Carrier Production Event with the set of signs provided by the publisher to be carried by all of the produced items (i.e., the instances of F5 Item) and any other physical features foreseen as integral to the instance of F3 Manifestation that is materialised.

Examples: The production of copies of the publication identified by ISBN ‘1-86197-612-7’ (F32) *R27 materialized* the final set of signs sent by the publisher named ‘Profile Books’ to their printer for the production of copies of the publication identified by ISBN ‘1-86197-612-7’ (F3)

R28 produced (was produced by)

Domain: [F32](#) Carrier Production Event

Range: [F54](#) Utilised Information Carrier

Subproperty of: [E12](#) Production. [P108](#) has produced (was produced by): [E24](#) Physical Man-Made Thing

Quantification: (0,n;1,1)

Scope note: This property associates an instance of F32 Carrier Production Event with any one of the produced items (i.e., the instances of F5 Item).

Examples: The production of copies of the publication entitled ‘Codex Manesse: die Miniaturen der großen Heidelberger Liederhandschrift, herausgegeben und erläutert von Ingo F. Walther unter Mitarbeit von Gisela Siebert’, 3rd edition, Insel-Verlag, 1988 (F32) *R28 produced* the National Library of France’s holding identified by shelf mark ‘C-1604(2)’ (F5)

The production of copies of the publication entitled ‘Ordnance Survey Explorer Map 213, Aberystwyth & Cwm Rheidol’, ISBN 0-319-23640-4 (folded), 1:25,000 scale, released in May 2005 (F32) *R28 produced* the National Library of Wales’ holding identified by holding information ‘MAP, STORFA/STACK ; FLAT MAP, C16 (20/1), Sheet 213, c.135/5/2’ (F5)

The production of copies of the sound recording entitled ‘The Glory (????) of the human voice’, RCA Victor Gold Seal GD61175 (F32) *R28 produced* the London Public Library’s holding identified by call number ‘R J416.G1’ (F5)

The second print run, occurring in 1978, of the publication dated of 1972 and entitled ‘The complete poems of Stephen Crane, edited with an introduction by Joseph Katz’ (identified by ISBN ‘0-8014-9130-4’) (F32) *R28 produced* Universitätsbibliothek Passau’s holding identified by call number ‘00/HT 4801.978 K2’ (F5)

R29 reproduced object (was object reproduced by)

Domain: [F33](#) Reproduction Event

Range: [F54](#) Utilised Information Carrier

Subproperty of: [E7](#) Activity. [P16](#) used specific object (was used for): [E70](#) Thing

Quantification: (1,n;0,n)

Scope note: This property associates an instance of F33 Reproduction Event with an instance of [F54 Utilised Information Carrier](#) it reproduces.

Examples: The activity performed by Schott when producing the 2015 publication of Harry Partch's 'Two studies on ancient Greek scales' *R29 reproduced object* Harry Partch's holograph manuscript of 'Two studies on ancient Greek scales'

R30 produced (was produced by) (Deprecated)

Why isn't this reused as Rnn reproduced publication? Same domain and range

R31 is reproduction of (has reproduction) (Deprecated)

R32 is warranted by (warrants)

(straddles to CRMsoc)

Domain: [F35](#) Nomen Use Statement

Range: [F52](#) Name Use Activity (CRMsoc)

Subproperty of: [E89](#) Propositional Object. [P67](#) refers to (is referred to by): [E1](#) CRM Entity

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F35 Nomen Use Statement with an instance of [the CRMsoc class F52 Name Use Activity](#) which provides evidence for the use of the particular nomen in the stated sense. The association between this name use activity and a source for it may be described by the property *P70 documents (is documented in)*.

Examples: The variant controlled access point in record n 79021736, tagged in MARC 21 format, '400 1_ |a Пруст, Марсель, |d 1871-1922' found in the Library of Congress authorities as of 15 June 2012 (F35) *R32 is warranted by* the use of the name 'Марсель Пруст' in Cyrillic script (F52), for which evidence can be found in the publication referred to as 'Andreev, L.G. Marsel' Prust, 1968' in the authority record established by the Library of Congress for Marcel Proust

The preferred access point in record sh 85109469, tagged in MARC 21 format, '150 __ |a Quantum theory' found in the Library of Congress authorities as of 15 June 2012 (F35) *R32 is warranted by* the use of the phrase 'quantum theory' in the English language (F52), as attested to by references to the NASA and INSPEC thesauri in the authority record established by the Library of Congress

The preferred access point in record sh 85074230 in the LCSH authority file tagged in MARC 21 in the field '150 __ |a Lamniformes' (F35) *R32 is warranted by* the use of the term 'Lamniformes' for mackerel sharks in the entry on page 51 of Fishes of the world by J.S. Nelson published in 1994 (F52)

The preferred access point in record n 85118480 in the Library of Congress name authority file as of 19 November 2012 tagged in MARC 21 in the field '110 2_ |a Canadian Academic Centre in Italy' (F35) *R32 is warranted by* the use of the name 'Canadian Academic Centre in Italy' on page 6 of the book 'Lo Scavo di S. Giovanni di Ruoti ed il periodo tardoantico in Basilicata' published in 1983

R33 has content

Domain: [F12](#) Nomen

Range: [E62](#) String

Subproperty of: [E1](#) CRM Entity. [P3](#) has note: [E62](#) String

(NB: new P190 cannot be the new superproperty because the domains are not compatible: F12 is a subproperty of E89 and P190 is of E90 Symbolic Object)

Quantification: (1,1:0,n)

Scope note: This property associates an instance of F12 Nomen with a sign or arrangement of signs that is used to refer to something through that instance of F12 Nomen.

Examples: The English term ‘poison’ in written form in the Latin alphabet (F12) *R33 has content* the letters p, o, i, s, o, n with no intervening spaces (E62)
The English term ‘poison’ notated in the International Phonetic Alphabet (F12) *R33 has content* the string of characters [ˈpɔɪzən] (E62)
The French term ‘poison’ in written form in the Latin alphabet (F12) *R33 has content* the letters p, o, i, s, o, n with no intervening spaces (E62)
The French term ‘poison’ notated in the International Phonetic Alphabet (F12) *R33 has content* the string of characters [pwaˈzɔ̃] (E62)

Properties: R33.1 has encoding: [E55](#) Type

R34 has validity period (is validity period of)

Domain: [F34](#) Controlled Vocabulary

Range: [E52](#) Time-Span

Subproperty of: Out of CRM Scope

Quantification: (1,1:0,n)

Scope note: This property associates an instance of F34 Controlled Vocabulary with the instance of E52 Time-Span describing the period for which the particular expression of the controlled vocabulary was regarded as valid by its maintainers. Each change of validity status of a nomen use statement within the controlled vocabulary should be associated with a release change of the controlled vocabulary. The individual time-span of a validity state of a nomen would be the union of the time-spans of the controlled vocabulary in which the nomen was declared to have the particular validity status (provisional, accepted, obsolete, etc.).

Examples: LCSH February 20 to March 19 2012 (F34) *R34 has validity period* February 20 to March 19 2012 (E52)
DDC 19 (F34) *R34 has validity period* 1979 to 1989 (E52)

R35 is specified by (specifies)

Domain: [F35](#) Nomen Use Statement

Range: [F34](#) Controlled Vocabulary

Subproperty of: [E89](#) Propositional Object. [P148](#) has component (is component of): [E89](#) Propositional Object

Quantification: (1,1:1,n)

Scope note: This property associates an instance of F35 Nomen Use Statement with an instance of F34 Controlled Vocabulary in which the Nomen Use Statement has a given status. The property R35.1 allows for specifying the particular status of the nomen use statement within the controlled vocabulary. An instance of *R35 is specified by* should have only one status.

Examples: ‘acoustic surface wave device’ (F35) *R35 is specified by* INSPEC Thesaurus version January 1973 (F34) *R35.1 has status* valid (E55)
‘acoustic surface wave device’ (F35) *R35 is specified by* INSPEC Thesaurus version June 1978 (F34) *R35.1 has status* obsolete (E55)

Properties: R35.1 has status: [E55](#) Type

R36 uses script conversion (is script conversion used in)

Domain: [F35](#) Nomen Use Statement

Range: [F36](#) Script Conversion

Subproperty of: [E7](#) Activity. [P33](#) used specific technique (was used by): [E29](#) Design or Procedure

[PR: superproperty was missing in FRBRoo, but is this correct? F35 is not an E7, but F36 is an E29, or put the shortcut statement from the Scope note?]

Quantification: (0,1:0,n)

Scope note: This property associates an instance of F35 Nomen Use Statement with the instance of F36 Script Conversion that was used to create the instance of F12 Nomen referred to in the Nomen Use Statement. The source of this conversion may or may not be explicitly mentioned.

Is shortcut of: F35 Nomen Use Statement. *R17 was created by (created):* F28 Expression Creation. *P33 used specific technique (was used by):* E29 Design or Procedure.

Examples: ‘001 FRBNF120864715’...‘100 \$w.0..ba....\$aDu\$mFu\$d0712-0770’ [an instance of F35 Nomen Use Statement in INTERMARC format] (F35) *R36 uses script conversion* Pinyin (F36)

‘001 FRBNF119547493’...‘100 w.0..barus.\$aGončarova\$mNatal'â Sergeevna\$d1881-1962’ [an instance of F35 Nomen Use Statement in INTERMARC format] (F35) *R36 uses script conversion* ISO 9:1995 (F36)

R37 states as nomen (is stated as nomen in)

Domain: [F35](#) Nomen Use Statement

Range: [F12](#) Nomen

Subproperty of: [E89](#) Propositional Object. [P67](#) refers to (is referred to by): [E1](#) CRM Entity

Quantification: (1,1:0,n)

Scope note: This property associates an instance of F35 Nomen Use Statement with the instance of F12 Nomen for which it declares usage.

Examples: ‘Definition of 'poison' ’...‘1. variable noun: Poison is a substance that harms or kills people or animals if they swallow it or absorb it.’ [Part of the definition of the English term 'poison' from the Collins English dictionary, <https://www.collinsdictionary.com/dictionary/english/poison>, as of 2 December 2017] (F35) *R37 states as nomen* the English term 'poison' (F12)

‘PTBNP|20891’...‘200 1‡a Whitman, ‡b Walt, ‡f 1819-1892’ [an instance of F35 Nomen Use Statement in UNIMARC format] (F35) *R37 states as nomen* ‘Whitman, Walt (1819-1892)’ (F12)

‘001 FRBNF120864715’...‘100 \$w.0..ba....\$aDu\$mFu\$d0712-0770’ [an instance of F35 Nomen Use Statement in INTERMARC format] (F35) *R37 states as nomen* ‘Du, Fu (0712-0770)’ (F12)

‘001 FRBNF119547493’...‘100 w.0..barus.\$aGončarova\$mNatal'â Sergeevna\$d1881-1962’ [an instance of F35 Nomen Use Statement in INTERMARC format] (F35) *R37 states as nomen* ‘Gončarova, Natal'â Sergeevna (1881-1962)’ (F12)

‘010 __ |a n 79021736’...‘400 1_ |a Пруст, Марсель, |d 1871-1922’ [an instance of F35 Nomen Use Statement in INTERMARC format] (F35) *R37 states as nomen* ‘Пруст, Марсель, 1871-1922’ (F12)

‘010 __ |a sh 85074230’...‘150 __ |a Lamniformes’ [an instance of F35 Nomen Use Statement in MARC 21 format] (F35) *R37 states as nomen* ‘Lamniformes’ (F12)

‘010 __ |a sh 85074230’...‘053 _0 |a QL638.94.L36 |c Zoology’ [an instance of F35 Nomen Use Statement in MARC 21 format] (F35) *R37 states as nomen* the Library of Congress classification number ‘QL638.94.L36’ (F12)

‘ID: 300024668’...‘navaja (C,U,Spanish,UF,U,SN)’ (F35) *R37 states as nomen* ‘navaja’ (F12) (“used for” term, Getty Art & Architecture Thesaurus Online, retrieved 19/11/2012)

‘ID: 7010879’...‘Candia (H,V,Greek (transliterated),U) ...Venetian corruption of Arabic name, used from 13th cen.’ (F35) *R37 states as nomen* ‘Candia’ (F12) (“historical term”, Getty Thesaurus of Geographic Names Online, retrieved 19/11/2012)

‘ID: 7010879’...‘Ērakleion (NA,V,Greek (transliterated),U)’ (F35) *R37 states as nomen* ‘Ērakleion’ (F12) (“not-applicable term”, Getty Thesaurus of Geographic Names Online, retrieved 19/11/2012)

‘<eac-cpf [...]> <control> <recordId>beinecke.7h44jbj</recordId> [...] </control>’ ...

<cpfDescription> <identity> <entityType>family</entityType> <nameEntry xml:lang="eng" scriptCode="Latn"><part localType="100a">Boswell family</part> [...] </nameEntry> [...] </identity> </cpfDescription> [...] </eac-cpf>’ [an instance of F35 Nomen Use Statement in EAC] (F35) *R37 states as nomen* ‘Boswell family’ (F12)

R38 refers to thema (is thema of)

Domain: [F35](#) Nomen Use Statement

Range: [E1](#) CRM Entity

Is covered by shortcut: [E32](#) Authority Document. [P71](#) lists: [E1](#) CRM Entity, which is shortcut of: [F34](#) Controlled Vocabulary. [R35B](#) specifies: [F35](#) Nomen Use Statement. [R38](#) refers to thema: [E1](#) CRM Entity

[There is surely a better superproperty for R38 but I can't think of any one right now]

Quantification: (1,1:0,n)

Scope note: This property associates an instance of F35 Nomen Use Statement with the instance of E1 CRM Entity for which it declares the usage of an instance of F12 Nomen.

Examples: 'Definition of 'poison"...'1. variable noun: Poison is a substance that harms or kills people or animals if they swallow it or absorb it.' [Part of the definition of the English term 'poison' from the Collins English dictionary, <https://www.collinsdictionary.com/dictionary/english/poison>, as of 2 December 2017] (F35) *R38 refers to thema* any substance that harms or kills people or animals if they swallow it or absorb it (E18)

‘PTBNP|20891’...‘200 1‡a Whitman, ‡b Walt, ‡f 1819-1892’ [an instance of F35 Nomen Use Statement in UNIMARC format] (F35) *R38 refers to thema* the person who wrote the collection of poems titled ‘Leaves of Grass’ (E21)

‘010 __ |a sh 85109469’...‘150 __ |a Quantum theory’ [preferred subject access point from LCSH, in MARC 21 format, <http://lcn.loc.gov/sh85109469>, as of 15 June 2012] (F35) *R38 refers to thema* the branch of physics known as quantum theory (E28)

<eac-cpf [...]> <control> <recordId>beinecke.7h44jbj</recordId> [...] </control>’ ... <cpfDescription> <identity> <entityType>family</entityType> <nameEntry xml:lang="eng" scriptCode="Latn"><part localType="100a">Boswell family</part> [...] </nameEntry> [...] </identity> </cpfDescription> [...] </eac-cpf>’ [an instance of F35 Nomen Use Statement in EAC] (F35) *R38 refers to thema* the family who held the barony of Auchinleck in Scotland from 1504 on (F39)

R39 is intended for (is target audience in) (Deprecated)

R40 has representative expression (is representative expression for) (Deprecated)

R41 has representative manifestation product type (is representative manifestation product type for) (Deprecated)

R42 is representative manifestation singleton for (has representative manifestation singleton) (Deprecated)

R43 carried out by (performed) (Deprecated)

R44 carried out by (performed) (Deprecated)

R45 assigned to (was assigned by) (Transferred to CRMsoc)

R46 assigned (was assigned by) (Deprecated)

R48 assigned to (was assigned by) (Deprecated)

R49 assigned (was assigned by) (Deprecated)

R50 assigned to (was assigned by) (Deprecated)

R51 assigned (was assigned by) (Deprecated)

R52 used rule (was the rule used in) (Deprecated)

R53 assigned (was assigned by) (Deprecated)

R54 has nomen language (is language of nomen in)

Domain: [F35](#) Nomen Use Statement

Range: [E56](#) Language

Subproperty of: [E89](#) Propositional Object. [P67](#) refers to (is referred to by): [E1](#) CRM Entity

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F35 Nomen Use Statement with an instance of E56 Language which is a target language for the associated nomen use.

Examples: ‘001 FRBNF119304566’...‘100 \$w.0..b.spa.\$aColón\$mCristóbal\$d1450?-1506’ (F35) *R54 has nomen language* the language referred to in subfield \$w by the ISO code ‘spa,’ i.e., Spanish (E56)

‘001 FRBNF119304566’...‘400 \$w....b.eng.\$aColumbus\$mChristopher\$d1450?-1506’ (F35) *R54 has nomen language* the language referred to in subfield \$w by the ISO code ‘eng,’ i.e., English (E56)

‘001 FRBNF118726828’...‘110 \$w20..b.fre.\$aConseil international des musées’ (F35) *R54 has nomen language* the language referred to in subfield \$w by the ISO code ‘fre,’ i.e., French (E56)

‘001 FRBNF118726828’...‘110 \$w20..b.ger.\$aInternationaler Museumsrat’ (F35) *R54 has nomen language* the language referred to in subfield \$w by the ISO code ‘ger,’ i.e., German (E56)

‘ID: 300024668’...‘navaja (C,U,Spanish,UF,U,SN)’ (F35) *R54 has nomen language* Spanish (E56) (“used for” term, Getty Art & Architecture Thesaurus Online, retrieved 19/11/2012)

R55 has nomen form (is nomen form in)

Domain: [F35](#) Nomen Use Statement

Range: [E55](#) Type

Subproperty of: [E89](#) Propositional Object. [P67](#) refers to (is referred to by): [E1](#) CRM Entity

Quantification: (0,1:0,n)

Scope note: This property associates an instance of F35 Nomen Use Statement with the instance of E55 Type that characterizes the instance of F12 Nomen referred to in the instance of F35 Nomen Use Statement, such as abbreviation, full name, etc. In the case of abbreviations, the source of this form may or may not be explicitly mentioned.

Examples: '010 __ |a n 78004438'...'410 2_ |a IFLA' to refer to the International Federation of Library Associations and Institutions (F35) *R55 has nomen form acronym* (E55)

R56 has related use (is related use for)

Domain: [F35](#) Nomen Use Statement

Range: [F35](#) Nomen Use Statement

Subproperty of: [E29](#) Design or Procedure. [P69](#) has association with (is associated with): [E29](#) Design or Procedure

Quantification: (0,n;0,n)

Scope note: This property associates an instance of F35 Nomen Use Statement with another instance of F35 Nomen Use Statement which has a related use in some context, such as being an alternative, a lexical variant, replacing former use, etc. **This property is transitive.** The property R56.1 allows for specifying the particular kind of relationship that holds between the nomen use statements.

Examples: '001 FRBNF122597517'...'14506\$w.1..b.fre.\$aDu sublime' [an instance of F35 Nomen Use Statement in INTERMARC format] (F35) *R56 has related use* '001 FRBNF122597517'...'14506\$w.0..g.grp \$aΠερὶ Ὑπσους' [an instance of F35 Nomen Use Statement in INTERMARC format] (F35) *R56.1 has type parallel form* (E55)

'001 FRBNF126866954'...'100 \$w.0..b.....\$aTyrrell\$mGeorge\$d1861-1909' [an instance of F35 Nomen Use Statement in INTERMARC format] (F35) *R56 has related use* '001 FRBNF126866954'...'466 \$w....b \$aTyrell\$oAffaire\$g1907' [an instance of F35 Nomen Use Statement in INTERMARC format] (F35) *R56.1 has type variant access point for a personal name, intended to be displayed in a subject index only, and not in a personal names index* (E55) [Explanation: in the INTERMARC format used at the National Library of France, tag 466 in an authority record for a person serves to introduce a topical term which is displayed as a variant form for the personal name in the subject index, but is not displayed in the name index]

'010 __ |a n 78004438'...'110 2_ |a International Federation of Library Associations and Institutions' [an instance of F35 Nomen Use Statement in MARC 21 format] (F35) *R56 has related use* '010 __ |a n 78004438'...'410 2_ |a IFLA' [an instance of F35 Nomen Use Statement in MARC 21 format] (F35) *R56.1 has type acronym* (E55) (in MARC 21 field 410 serves as a reference to the accepted form which appears in field 110)

'PTBNP|20891'...'200 1‡a Whitman, ‡b Walt, ‡f 1819-1892' (F35) *R56 has related use* 'PTBNP|20891'...'675 ‡a 820(73) Whitman, Walt.09 ‡v BN ‡z por' (F35) *R56.1 has type has associated UDC number* (E55) (in UNIMARC field 675 serves to associate a UDC number with the accepted form which appears in field 200)

'<eac-cpf [...]> <control> <recordId>beinecke.7h44jbj</recordId> [...] </control>' ...
'<cpfDescription> <identity> <entityType>family</entityType> <nameEntry xml:lang="eng" scriptCode="Latn"><part localType="100a">Boswell family</part> [...] </nameEntry> [...] </identity> </cpfDescription> [...] </eac-cpf>' [an instance of F35 Nomen Use Statement in EAC] (F35) *R56 has related use* '<eac-cpf [...]> <control> <recordId>beinecke.7h44jbj</recordId> [...] </control>' ... '<cpfDescription> <identity> <entityType>family</entityType> <nameEntry xml:lang="eng" scriptCode="Latn"> <part localType="400a">Buzwell family </part> [...] </nameEntry> [...] </identity> </cpfDescription> [...] </eac-cpf>' [an instance of F35 Nomen Use Statement in EAC] (F35) *R56.1 has type alternative form* (E55)

Properties: R56.1 has type: [E55](#) Type

R57 is based on (is basis for) (Deprecated or transfer to another family model?)

Domain: [F38](#) Character

Range: [E39](#) Actor

Shortcut of: [F38](#) Character. P94i was created by (has created): E65 Creation. P17 was motivated by

(motivated): E39 Actor

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F38 Character with an instance of E39 Actor that the character is motivated by or is intended to represent. An instance of F38 Character may be based on a combination of features taken from several actors. This property is a shortcut of the more fully developed path from E28 Conceptual Object, restricted to F38 Character, through the inverse of *P94 has created (was created by)*: E65 Creation. *P17 was motivated by (motivated)* to E1 CRM Entity restricted to E39 Actor.

Examples: The Character 'Sinuhe' (F38) in Mika Waltari's 'Sinuhe the Egyptian: A Novel' *R57 is based on Sinuhe* (E21) (documented in the autobiographic narrative in fragments carried by The Ramesside Papyrus, Pap. Berlin 10499, Pap. Berlin 3022, The Amherst fragments (m-q) and other Egyptian sources)

The Character 'Alexander' (F38) in Mary Renault's 'Fire from Heaven' *R57 is based on Alexander the Great of Macedon (356-323)* (E21)

R58 has fictional member (is fictional member of) (Deprecated)

Domain: [F38](#) Character

Range: [F38](#) Character

Subproperty of: out of CIDOC CRM Scope

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F38 Character representing a group with another instance of F38 Character that is presented in relevant fiction as a member of the fictional group.

Examples: Argonauts (F38) *R58 has fictional member Jason* (F38)

R59 had typical subject (was typical subject of) (Transferred to CRMsoc)

R60 used to use language (was language used by) (Transferred to CRMsoc)

R61 occurred in kind of context (was kind of context for) (Transferred to CRMsoc)

R62 was used for membership in (was context for) (Transferred to CRMsoc)

R63 named (was named by) (Transferred to CRMsoc)

R64 used name (was name used by) (Transferred to CRMsoc)

R65 recorded aspects of (had aspects recorded through)

Domain: [F29](#) Recording Event

Range: [E18](#) Physical Thing

Shortcut of: [F29](#) Recording Event. [R20](#) recorded: [E3](#) Condition State. [P44i](#) is condition of: [E18](#) Physical Thing

Subproperty of shortcut of: [F29](#) Recording Event. [R20](#) recorded: [E5](#) Event. [P12](#) occurred in the presence of: [E18](#) Physical Thing

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F29 Recording Event with an instance of E18 Physical Thing some of whose features, at the time of recording, were recorded in that process.

Examples: The making of the photograph of the three Allied leaders at Yalta in February 1945 (F29) *R65 recorded aspects of Stalin* (E21)

Filming Louise Bourgeois at work in the context of the shooting of the documentary entitled ‘Louise Bourgeois: The Spider, the Mistress, and the Tangerine’ (F29) *R65 recorded aspects of Louise Bourgeois* (E21)

R66 included performed version of (had a performed version through)

Domain: [F31 Performance](#)

Range: [E89 Propositional Object](#)

Subproperty of: [E7 Activity](#). [P16 used specific object](#) (was used for): [E70 Thing](#)

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F31 Performance with a product of the mind that was performed in the course of that instance of F31 Performance.

According to the level of knowledge available about the performance, the range of this property can actually be specialised as either an instance of F1 Work (if nothing is known as to which specific expression of the work was performed), or an instance of F2 Expression (if there is a reasonable amount of certainty as to which specific expression—e.g., a well identified translation of a play—of the work was performed).

In addition to being a subproperty of *P16 used specific object (was used for)*, this property also is a shortcut of the fully developed path that goes from F31 Performance to F1 Work through: [R25 performed: E100 Activity Plan](#). *P165 incorporates: F2 Expression*. *R3i realises*. In this fully developed path, the specific instance of F2 Expression can be precisely identified and described for its own sake, or it can just be known to have necessarily existed.

Examples: The performance of ‘Hamlet’ on 17 June 1909 in Berlin, Deutsches Theater, by Alexander Moissi, directed by Max Reinhardt (F31) *R66 included performed version of* William Shakespeare’s work ‘Hamlet’ (F1) [Note: the specific German translation that was performed is not mentioned in the documentation available from <http://www.glopad.org/pi/en/record/production/1001207>]

The performance of ‘Hamlet’ on 6 June 1964 in Zurich, Schauspielhaus, by Compagnia Proclermer-Albertazzi, directed by Franco Zeffirelli (F31) *R66 included performed version of* Gerardo Guerrieri’s Italian translation (F2) of William Shakespeare’s work ‘Hamlet’

R67 has part (forms part of)

Domain: [F1 Work](#)

Range: [F1 Work](#)

Subproperty of: [F1 Work](#). [R10 has member \(is member of\)](#): [F1 Work](#)

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F1 Work with another instance of F1 Work that forms part of it in a complementary role to other sibling parts, conceived at some point in time to form together a logical whole, such as the parts of a trilogy. This property is transitive. In contrast, the property *R10 has member (is member of)* may, for instance, also associate with the overall instance of F1 Work translations, adaptations and other derivative works that do not form a logical whole with sibling parts.

Examples: Dante Alighieri’s textual work entitled ‘Divina Commedia’ (F1) *R67 has part* Dante Alighieri’s textual work entitled ‘Inferno’ (F1)

Giovanni Battista Piranesi’s graphic work entitled ‘Carceri’ (F1) *R67 has part* Giovanni Battista Piranesi’s graphic work entitled ‘Carcere XVI: the pier with chains’ (F1)

R68 is inspiration for (was inspired by)

Domain: [F1 Work](#)

Range: [F1 Work](#)

Shortcut of: [F1 Work](#) (2). *R16i was initiated by: F27 Work Creation*. *P15 was influenced by: F1 Work* (1)

Superproperty of: [F1 Work](#). **R2 is derivative of (has derivative):** [F1 Work](#)

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F1 Work with another instance of F1 Work whose content was inspired by that instance of F1 Work. The content of the first work served in some way as a source of ideas for the second work. Neither instance of F1 Work may be a part of the other.

Examples: The musical “West Side Story” (F1) *R68i was inspired by* the play “Romeo and Juliet” by William Shakespeare (F1)

The painting “Plan for a City Gate in Kiev” (F1) by Viktor Hartmann *R68 is inspiration for* the musical piece “The Great Gate of Kiev” (F1) from “Pictures at an Exhibition” by Modest Mussorgsky

R69 specifies physical form (is specified physical form of)

Domain: [F3 Manifestation](#)

Range: [E55 Type](#)

Subproperty of: [F3 Manifestation](#). R??: [E55 Type](#)

Quantification: (0,n:0,n)

Scope note: This property associates an instance of F3 Manifestation with an instance of E55 Type describing the kind of physical form that characterizes examples carrying this F3 Manifestation. In the case that the F3 Manifestation is intended to be used and distributed in digital form, the property describes the form of the physical carrier on which it can be obtained, e.g.: CD, USB, online file, etc. In the case that the F3 Manifestation is an abstraction of a singleton item, the property describes the actual physical form the F3 Manifestation was abstracted from.

This inference is an induction along the path that can be modelled as: F3 Manifestation. *R7i is materialized in:* F5 Item. *P2 has type:* E55 Type.

It can happen that a given exemplar, or subset of exemplars, originally produced, or intended to be produced, with the specific characteristic, accidentally lacks it. This fact should be recorded as a property of F5 Item, and not of F3 Manifestation.

Examples: The sound recording entitled ‘The Glory (????) of the human voice’, identified by label and label number ‘RCA Victor Gold Seal GD61175’, containing recordings of musical works performed by Florence Foster Jenkins (F3) *R69 specifies physical form* Compact Disc (E55)

R70 specifies dimension (is specified dimension of)

Domain: [F3 Manifestation](#)

Range: [E54 Dimension](#)

Subproperty of: [F3 Manifestation](#). R??: [E54 Dimension](#)

Quantification: (1,n:1,1)

Scope note: This property associates an instance of F3 Manifestation with an instance of E54 Dimension that describes aspects of its symbolic content, such as word counts, or describes the kind of physical form that characterizes examples carrying this F3 Manifestation, such as number of pages. In the case that the F3 Manifestation is an abstraction of a singleton item, the property describes the dimensions of the actual physical form the F3 Manifestation was abstracted from.

This inference is an induction along the path that can be modelled as: F3 Manifestation. *R7i is materialized in:* F5 Item. *P43 has dimension:* E54 Dimension.

It can happen that a given exemplar, or subset of exemplars, originally produced, or intended to be produced, with the specific characteristic, accidentally lacks it. This fact should be recorded as a property of F5 Item, and not of F3 Manifestation.

Examples: The publication entitled ‘Functional Requirements for Bibliographic Records: final report’, published by K. G. Saur in 1998, identified by ISBN ‘3-598-11382-X’ (F3) *R70 specifies*

dimension height (E54): *P90* has value '24' (E60) and *P91* has unit 'cm' (E58)

The jigsaw puzzle entitled 'Map of the New York city subway system', designed by Stephen J. Voorhies and released around 1954 by the Union Dimes Savings Bank (F3) *R70* specifies *dimension* length and height (E54) *P3* has note '46 x 29 cm' (E62)

CLP45 should consist of (should be incorporated in) (Deprecated)

R71 specifies material part (is specified material part for)

Domain: [F3](#) Manifestation

Range: [F3](#) Manifestation

Subproperty of: [F3](#) Manifestation. R??: [F3](#) Manifestation

Quantification: (0,n;0,n)

Scope note: This property describes an instance of F3 Manifestation which prescribes that all its physical exemplars will contain, as a separable part, an exemplar of the associated instance of F3 Manifestation. This property is transitive. In the case that the F3 Manifestation is intended to be used and distributed in digital form on a physical carrier, the property describes the physical carrier on which it can be obtained. In the case that the F3 Manifestation is an abstraction of a singleton item, the property describes the actual physical form the F3 Manifestation was abstracted from.

This inference is an induction along the path that can be modelled as: F3 Manifestation (the whole). *R7i* is materialized in: F5 Item. *P46* is composed of: F5 Item. *R7* is materialization of: F3 Manifestation (the part).

Examples: The publication product identified by ISBN '0618260587' and consisting of a 3-volume edition of J.R.R. Tolkien's 'The Lord of the rings' (F3) *R71* specifies material part the publication product identified by ISBN '0618260595' and consisting of an edition of J.R.R. Tolkien's 'The two towers' (F3)

The publication product issued by Deutsche Grammophon in 1998 and consisting of a recording of Richard Wagner's 'Der fliegende Holländer' as performed in 1991 by Plácido Domingo, Cheryl Studer et al., and conducted by Giuseppe Sinopoli (F3) *R71* specifies material part the publication product consisting of printed programme notes and libretto with French and English translations (F3)

The publication product issued as a 2-CD set identified as 'M2K 42270' by CBS Records in 1987 and consisting of recordings of J. S. Bach's concertos for keyboard/clavier and strings performed by Glenn Gould (F3) *R71* specifies material part the CD identified as 'DIDC 10370' consisting of the Glenn Gould recordings of Bach's Concertos nos. 1-4 (F3)

R72 specifies number of parts (is the specified number of parts for)

Domain: [F3](#) Manifestation

Range: [E60](#) Number

Subproperty of: [F3](#) Manifestation. R??: [E60](#) Number

Quantification: (1,1;0,n)

Scope note: This property associates an instance of F3 Manifestation with an instance of E60 Number which denotes the number of physical units that characterizes examples carrying this F3 Manifestation. In the case that the F3 Manifestation is intended to be used and distributed in digital form, the property describes the number of parts a physical carrier on which it can be obtained would have. In the case that the F3 Manifestation is an abstraction of a singleton item, the property describes the actual number of physical parts that form the carrier the F3 Manifestation was abstracted from.

This inference is an induction along the path that can be modelled as: F3 Manifestation. *R7i* is materialized in: F5 Item. *P57* has number of parts: E60 Number.

Examples: The jigsaw puzzle entitled 'Map of the New York city subway system', designed by Stephen J.

Voorhies and released around 1954 by the Union Dimes Savings Bank (F3) *R72 specifies number of parts 76* (E60) [Number of physical units of the exemplar held by the Library of Congress, as observed by a cataloguer from the Library of Congress when he/she catalogued that particular exemplar and recorded the statement: '1 jigsaw puzzle (ca. 76 pieces)']

The publication entitled 'History of costume: in slides, notes, and commentaries' by Jeanne Button, Patricia Quinn Stuart, and Stephen Sbarge, released by Slide Presentations (New York) ca. 1975 (F3) *R72 specifies number of parts 1,491* (E60) [Number of physical units of the exemplar held by the Gelman Library of the George Washington University, as observed by a cataloguer from the Gelman Library of the George Washington University when he/she catalogued that particular exemplar and recorded the statement: '1,491 slides in 14 slide trays + 6 ring binders in cases (30 x 29 cm)']

CLP104 subject to (applies to) (Deprecated)

CLP105 right held by (right on) (Deprecated)

CLR6 should carry (should be carried by) (Deprecated)

R73? takes representative attribute from (bears representative attribute for)

Domain: [F1 Work](#)

Range: [F2 Expression](#)

Shortcut of: [F1 Work](#). P140i was attributed by: E13 Attribute Assignment. P16 uses specific object: [F2 Expression](#)

Quantification: (1,n;0,1)

Scope note: This property associates an instance of F1 Work with an instance of F2 Expression that bears an attribute which is used to characterize the work. The instance of F2 Expression in question must be one that realizes that instance of F1 Work. An instance of F2 Expression may or may not serve as source of representative expression attributes for its associated instance of F1 Work. If it does, it may provide one attribute or many. The F1 Work may be imputed attributes from one or more of its associated F2 Expressions.

Examples: The work Reading for life, a first book for adults and their tutors, by Virginia French Allen (F1) *R73 takes representative attribute from* the expression first published in 1987 by Spring Institute for International Studies, ISBN '094072300X' (F2) [one attribute is the value for intended audience which is adult literacy learners in the English language, another attribute is the language English]

The expression of the work Piglet has a bath, by A.A. Milne, with illustrations by Ernest H. Shepard, realised in the edition published on sealed plastic pages by Dutton Children's Books in 1998, ISBN '0525460926' *R73i bears representative attribute for* the work Piglet has a bath, by A.A. Milne [one attribute is the language English, another is the value for intended audience which is children]

+ 1 music example

Rnn reproduced publication (was publication reproduced by)

Domain: [F33 Reproduction Event](#)

Range: [F3 Manifestation](#)

Subproperty of: [E7 Activity](#). P16 used specific object (was used for): [E70 Thing](#)

Quantification: (1,n;0,n)

Scope note: This property associates an instance of F33 Reproduction Event with an instance of F3 Manifestation it reproduces.

[PR: reproduction at the manifestation level, as opposed to R29 reproduced object, when a specific item is the

source. same superproperty? Same quantification. Cf. With deprecated property R30 produced: D: F33; R: F3, superproperty P 186 produced things of product type E99]

Examples: The activity performed by Cambridge University Press when producing the 2014 publication of Daniel Wilson's 'Caliban: the missing link' (F33) *Rnn reproduced publication* the 1873 publication of Daniel Wilson's 'Caliban: the missing link' by Macmillan (F3)

This example was at formerly at R29 before it was narrowed to a specific item

The activity performed by Éditions du Seuil when producing the 2007 publication of Hubert Reeve's 'Malicorne: réflexions d'un observateur de la nature' as number 179 in the series 'Points. Science' (ISBN 978-2-02-096760-0) (F33) *Rnn reproduced publication* the 1990 publication by Éditions du Seuil in the series 'Science ouverte' (ISBN 2-02-012644-3) (F3)

Rnn uses expression (was expression used in)

Domain: [F1](#) Work

Range: [F2](#) Expression

Subproperty of:

Quantification: ()

Scope note: [PR: seems to relate to aggregates, was added under F1]

Examples:

Rnn incorporates external expression (is external expression incorporated in)

Domain: [F2](#) Expression

Range: [F2](#) Expression

Subproperty of:

Quantification: ()

Scope note: [PR: seems to relate to aggregates, was added under F2]

Examples:

Rnn has memorization in (is memorization of)

Domain: [F56](#) Externalization Event

Range: [F2](#) Expression

Subproperty of: E7 Activity. ???: [F2](#) Expression or a superclass

Shortcut of: [F56](#) Externalization Event. [R19](#) created a realisation of (was realised through): [F1](#) Work. R3 is realised in: [F2](#) Expression

Quantification: (1,n;1,n)

Scope note: This property associates an instance of F56 Externalization Event with the instance of F2 Expression that captures that particular externalization event.

[proposed property linking the Externalization Event directly to F2 Expression, to be modelled after R17 created (was created by) [D: F28, R: F2]] R17 would become the subproperty of Rnn. Unclear as to how Rnn is distinct from R17, because not clear that the domain can be F31 Performance instead of only F28 Expression Creation?

Examples: The original manuscript score of 'Uwertura tragiczna' by Andrej Panufnik (F2) *Rnni is memorization of* the externalization event of Andrej Panufnik first expressing the 'Uwertura tragiczna' in Warsaw (F28)

The 1945 manuscript score of 'Uwertura tragiczna' by Andrej Panufnik (F2) *Rnni is memorization of* the externalization event of Andrej Panufnik reconstructing the score from

memory after the original score was destroyed during the war (F28)

3. LMRer to LRMoo mapping

[PR: insert completed mapping when finished]

1 *Entities*

2 *Attributes*

3 *Relationships*

4. Referred to CIDOC CRM Classes and Properties

Since LRM₀₀ refers to and reuses, wherever appropriate, large parts of ISO 21127, the CIDOC Conceptual Reference Model, this section provides a comprehensive list of all constructs used from ISO 21127. Use in this context includes: appearance in the mapping from LRM(er) or as an element of a path expression in a mapping statement, reference as immediate superclass or superproperty.

Some of these constructs appear only in the mapping in section 3 (above) and not in section 4, because they are generic in nature. For instance, we regarded it as better not to overload the description of LRM₀₀ with generic notions such as carrying out activities or using things.

4.1. List of Referred to CIDOC CRM Classes

In this section, we present as a list, the classes of the CIDOC CRM Conceptual Reference Model **version 7.0** referred to by LRM₀₀. The classes that appear indirectly in the LRM₀₀ Model, i.e. either as superclasses of classes defined in the model, or as the domain or range of referred CRM properties are marked in bold.

[PR: to be revised, use latest CRMbase, v.7.0 when ready, and final mapping]

E1	CRM Entity
E2	Temporal Entity
E3	Condition State
E4	Period
E5	Event
E7	Activity
E11	Modification
E12	Production
E13	Attribute Assignment
E15	Identifier Assignment
E18	Physical Thing
E19	Physical Object
E21	Person
E22	Man-Made Object
E24	Physical Man-Made Thing
E26	Physical Feature
E27	Site
E28	Conceptual Object
E29	Design or Procedure
E30	Right
E31	Document
E32	Authority Document
E33	Linguistic Object
E35	Title
E36	Visual Item
E37	Mark
E39	Actor
E40	Legal Body
E41	Appellation
E42	Identifier
E44	Place Appellation
E47	Spatial Coordinates
E49	Time Appellation
E50	Date

E52 Time-Span
E53 Place
E54 Dimension
E55 Type
E56 Language
E57 Material
E59 Primitive Value
E60 Number
E61 Time Primitive
E62 String
E63 Beginning of Existence
E64 End of Existence
E65 Creation
E66 Formation
E67 Birth
E69 Death
E70 Thing
E71 Man-Made Thing
E72 Legal Object
E73 Information Object
E74 Group
E77 Persistent Item
E82 Actor Appellation
E84 Information Carrier
E89 Propositional Object
E90 Symbolic Object

4.2. List of Referred to CIDOC CRM Properties

In this section, we present as a list, the properties of the CIDOC CRM **version 7.0** referred to by LRM₀₀. The properties that appear indirectly in the LRM₀₀ Model, i.e. as superproperties of properties defined in the model, are marked in bold.

[PR: to be revised, use latest CRMbase, v.7.0 when ready, and final mapping]

Property id	Property Name	Entity – Domain	Entity – Range
P1	is identified by (identifies)	E1 CRM Entity	E41 Appellation
P2	has type (is type of)	E1 CRM Entity	E55 Type
P3	has note	E1 CRM Entity	E62 String
P4	has time-span (is time-span of)	E2 Temporal Entity	E52 Time-Span
P7	took place at (witnessed)	E4 Period	E53 Place
P9	consists of (forms part of)	E4 Period	E4 Period
P12	occurred in the presence of (was present at)	E5 Event	E77 Persistent Item
P14	carried out by (performed)	E7 Activity	E39 Actor
P15	was influenced by (influenced)	E7 Activity	E1 CRM Entity
P16	used specific object (was used for)	E7 Activity	E70 Thing
P31	has modified (was modified by)	E11 Modification	E24 Physical Man-Made Thing
P33	used specific technique (was used by)	E7 Activity	E29 Design or Procedure
P37	assigned (was assigned by)	E15 Identifier Assignment	E42 Identifier
P43	has dimension (is dimension of)	E70 Thing	E54 Dimension
P44	has condition (condition of)	E18 Physical Thing	E3 Condition State
P45	consists of (is incorporated in)	E18 Physical Thing	E57 Material
P46	is composed of (forms part of)	E18 Physical Thing	E18 Physical Thing
P49	has former or current keeper (is former or current keeper of)	E18 Physical Thing	E39 Actor
P50	has current keeper (is current keeper of)	E18 Physical Thing	E39 Actor
P51	has former or current owner (is former or current owner of)	E18 Physical Thing	E39 Actor
P57	has number of parts	E19 Physical Object	E60 Number
P59	has section (is located on or within)	E18 Physical Thing	E53 Place
P65	shows visual item (is shown by)	E24 Physical Man-Made Thing	E36 Visual Item
P67	refers to(is referred to by)	E89 Propositional Object	E1 CRM Entity
P69	has association with (is associated with)	E29 Design or Procedure	E29 Design or Procedure
P71	lists (is listed in)	E32 Authority Document	E1 CRM Entity
P72	has language (is language of)	E33 Linguistic Object	E56 Language
P74	has current or former residence (is current or former residence of)	E39 Actor	E53 Place
P75	possesses (is possessed by)	E39 Actor	E30 Right
P78	is identified by (identifies)	E52 Time-Span	E49 Time Appellation
P82	at some time within	E52 Time-Span	E61 Time Primitive
P87	is identified by (identifies)	E53 Place	E44 Place Appellation
P94	has created (was created by)	E65 Creation	E28 Conceptual Object
P95	has formed (was formed by)	E66 Formation	E74 Group

P98	brought into life (was born)	E67 Birth	E21 Person
P100	was death of (died in)	E69 Death	E21 Person
P102	has title (is title of)	E71 Man-Made Thing	E35 Title
P103	was intended for (was intention of)	E71 Man-Made Thing	E55 Type
P104	is subject to (applies to)	E72 Legal Object	E30 Right
P105	right held by (has right on)	E72 Legal Object	E39 Actor
P106	is composed of (forms part of)	E90 Symbolic Object	E90 Symbolic Object
P107	has current or former member (is current or former member of)	E74 Group	E39 Actor
P108	has produced (was produced by):	E12 Production	E24 Physical Man-Made Thing
P125	used object of type (was type of object used in)	E7 Activity	E55 Type
P127	has broader term (has narrower term)	E55 Type	E55 Type
P128	carries (is carried by)	E24 Physical Man-Made Thing	E73 Information Object
P129	is about (is subject of)	E73 Information Object	E1 CRM Entity
P130	shows features of (features are also found on)	E70 Thing	E70 Thing
P131	is identified by (identifies)	E39 Actor	E82 Actor Appellation
P138	represents (has representation)	E36 Visual Item	E1 CRM Entity
P140	assigned attribute to (was attributed by)	E13 Attribute Assignment	E1 CRM Entity
P141	assigned (was assigned by)	E13 Attribute Assignment	E1 CRM Entity
P142	used constituent (was used in)	E15 Identifier Assignment	E90 Symbolic Object
P148	has component (is component of)	E89 Propositional Object	E89 Propositional Object
P151	was formed from (participated in)	E66 Formation	E74 Group
P165	incorporates (is incorporated in)	E73 Information Object	E90 Symbolic Object

4.3. List of Referred to CRMsoc Classes

In this section, we present as a list, the classes of the CRMsoc used in LRM_{OO}. The classes that appear indirectly in the LRM_{OO} Model, i.e. as the domain or range of referred CRMsoc properties are marked in bold.

F51	Pursuit
F52	Name Use Activity

4.4. List of Referred to CRMsoc Properties

In this section, we present as a list, the properties of the CRMsoc referred to by LRM_{OO}. [Check whether these properties appear in the LRM(er) mapping, or only in transition from FRBRoo.] The properties that appear indirectly in the LRM_{OO} Model, i.e. as superproperties of properties defined in the model are marked in bold.

Property id	Property Name	Entity – Domain	Entity – Range
R45	assigned to (was assigned by)	F52 Name Use Activity	E1 CRM Entity
R59	had typical subject (was typical subject of)	F51 Pursuit	E1 CRM Entity
R60	used to use language (was language used by)	F51 Pursuit	E56 Language
R61	occurred in kind of context (was kind of context for)	F51 Pursuit	E55 Type
R62	was used for membership in (was context for)	F52 Name Use Activity	E74 Group
R63	named (was named by)	F52 Name Use Activity	E1 CRM Entity
R64	used name (was name used by)	F52 Name Use Activity	E41 Appellation

5. Transition of FRBR₀₀ Classes and Properties

This section provides a comprehensive list of the classes and properties that were declared in the last approved version of FRBR₀₀ (version 2.4, 2015) and indicates briefly whether the class or property was retained or deprecated in LRM₀₀. For those classes and properties that were retained in a transformed version, the change (which might involve renaming) is briefly indicated. For the deprecated classes and properties, the corresponding class and property (or appropriate path) to substitute when implementing LRM₀₀ is noted, with a brief explanation. This substitute class, property or path is in a number of cases drawn from CIDOC CRM, and in a few cases from CRM_{soc}.

[complete this section with the transition tables for classes and properties]

Colours in editing

Yellow: reminder of something to be done or revised later

Green: (yellow green 4) correction made for consistency, no discussion needed

Pale Green: (yellow green 10) hyper link in document to be corrected to match approved text

Red: problems

Magenta 1: new proposals

Cyan 1: Parts transferring to CRM_{soc} or PRESS₀₀ version 2.0