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***TITLE/
SUBJECT:***

**First Working Document of Electronic Healthcare
Record Communication - Part 4: Messages for the
Exchange of Information**

SOURCE:

CEN/TC 251/WG I/PT 29

***ACTION
REQUIRED:***

REQUEST FOR COMMENTS BEFORE 1999-03-06

Request for comments on:

First Working Document of Electronic Healthcare Record Communication - Part 4: Messages for the Exchange of information

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Please send comments before 1998-03-06 to:

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Health Informatics

Electronic Healthcare Communication - Part 4: Messages for the Exchange of Information

First Working Document

Version 1.0
1998-11-30

Request For Comments

This draft document is not a standard

This draft was produced by CEN/TC 251/WG I and project team 29

CEN

European Committee for Standardization
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FOREWORD

The preparation of this European Prestandard is being undertaken by CEN TC251 Health Informatics. Its preparation has been technically supervised by CEN TC251 Working Group I (information models). The drafting work was undertaken by Project Team 29 supported by the European Commission and European Free Trade Association under voucher BC/CEN.97/23.1.1.

5

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40

0 INTRODUCTION

This European Prestandard provides a set of messages that enable the electronic transfer of healthcare record information between heterogeneous systems. These messages address the needs and capabilities of current healthcare record systems. They also take account of the more sophisticated requirements of future systems.

5 A combination of the following factors provide the motivation for this European Prestandard:

- Many hospitals, clinics and doctors now store the healthcare records or their patients in an electronic form.
Current electronic healthcare record systems are heterogeneous in nature. They store information in a variety of structures that differ in their levels of detail and sophistication. Some differences are idiosyncratic but others reflect variations in user requirements determined by organisational structures or clinical specialties.
- 10 — Timely availability of healthcare records is essential to the safe delivery of high quality healthcare.
Healthcare professionals need access to a patient's healthcare record to inform their decisions. If necessary information is not available, this leads to errors, delays or repetition of procedures. The end results of missing information include health risks, inconvenience for the patient and expense for the service provider.
- During their lifetime patients are cared for by more than one healthcare professional.
- 15 — Patients may see a different healthcare profession when they move home, travel or require care out of the normal working hours of their usual physician. Patients may receive continuing care from a team of professionals or from a combination of specialists relevant.
- Timely availability of healthcare records requires communication between different healthcare professionals who care for the same patient.
- 20 — Since the professionals involved will often have different electronic healthcare record systems, these communications usually involve paper reports or unstructured electronic exchanges. The relative inaccessibility of information received in these forms detracts from the quality, completeness and usability of the electronic healthcare record.

Implementation of the messages specified by this European Prestandard will:

- 25 a) facilitate the transfer of electronic healthcare records or parts of these records;
- b) enable the communication of requests for transfer of electronic healthcare records;
- c) reduce the need for human intervention to manually duplicate entries in different healthcare record systems;
- d) minimise the time and effort required for the introduction of information interchange agreements that support the exchange of electronic healthcare record information;
- 30 e) reduce the development effort required by suppliers to allow their systems to communicate with a wide range of other electronic healthcare record systems;
- f) reduce the cost of information interchange between clinical information systems.

When implementing information exchange based on this European Prestandard, data security services, including confidentiality provisions, will need to comply with the laws in force in the different CEN member countries. Other
35 European Prestandards currently under development address technical issues relating to meeting this need.

This European Prestandard has been developed following the methods recommended in the CEN Report on "Medical informatics - Methodology for the development of healthcare messages" (CR 12587:1996). However, in accord with the decisions of CEN TC251 WGI, a different modelling technique has been used. This is a subset of the Unified Modelling Language (UML) as documented in Annex A.

40 This European Prestandard specifies messages in a syntax independent form. Its requirements for conformance define the minimum acceptable content and structure for these messages. Compliant messages can be developed in a variety of implementation syntaxes and these syntax specific implementations may be the subject of future Standards.

This European Prestandard is directly relevant to suppliers of computer systems for use in hospitals, general practices, clinical departments and specialist clinics. Its provisions are also relevant to those planning, specifying, procuring or
45 implementing information systems for use in departments, hospitals, general practices, clinical departments and specialist clinics.

1 Scope

This European Prestandard specifies messages that enable exchange of electronic healthcare record information between healthcare parties responsible for the provision of clinical care to an individual patient. These messages allow information from an electronic healthcare record held by one health professional to be sent to another health professional.

The messages specified by this European Prestandard can be used to convey:

- a complete copy of a patient's record as stored in one information system;
- parts of a patient's record that form a logically sound extract or summary of that record;
- parts of a patient's record used for updating a parallel record on another system.

The primary purpose of these messages is to support the provision of care to individual patients. The availability of consistent, continuing clinical care, when and where it is needed, requires appropriate and unambiguous communication between clinical professionals. The messages specified by this European Prestandard are designed to meet this requirement by enabling users of different clinical information systems to exchange electronic healthcare record information. Implementation of these messages will therefore assist the maintenance of timely and appropriate patient records.

This European Prestandard considers two distinct properties of electronic health record communication.

a) Readability

- Communication of information in a form that can be rendered human-readable by the receiving system. If the exchange of electronic healthcare record information is to support individual patient care, clinicians using the receiving system need to be able to read and understand the transferred information.

b) Processability

- Communication of information that can be incorporated into a record held by the receiving system in a way that enables it to be processed and retrieved as an integral part of that record. The benefits of electronic healthcare records include retrieval and processing for decision support, audit and research. If these benefits are to be fully realised, systems need to be able to process received information in ways that, while recognising the source of that information, are otherwise consistent with the processing of locally recorded information.

The European Prestandard specifies messages that permit exchange of electronic health record information with different levels of structure. The least structured level is sufficient to enable any receiving system to render the information in a human-readable form. The more structured levels enable information to be transferred in a manner that facilitates subsequent retrieval and processing.

The ability of communicating systems to achieve a particular level of interoperability by using these messages depends on:

- the compatibility of the structures in which the systems store patient records;
- the mappability of different forms of representation used by those systems (e.g. languages, terminologies and coding schemes);
- the level of trust between the communicating parties.

These factors will therefore determine how the messages specified by this European Prestandard are used.

This European Prestandard takes account of the following issues related to the confidentiality, source and status of the transferred information.

- *Distribution* – The messages include provisions for referencing distribution rules (in the manner specified in the current draft of CEN TC251/PT28). These distribution rules are intended to govern subsequent distribution of information. These rules may be applied to the entire message or to individual components within the message. This European Prestandard does not mandate a particular mechanism for the enforcement of distribution rules.
- *Attribution* – The messages support communication of attribution details regarding the originator and time of origin of information. Attribution information, including digital signatures, may be applied to the entire message or to individual components within the message. This European Prestandard does not mandate a particular mechanism for secure verification of digital attribution information. However, the algorithm specified in ENV12388 should be used, unless the communicating parties agree to use an alternative European Prestandard.

- *Integration* – The messages support the communication of information in a way that allows receiving systems to distinguish new information from information that they have already received.

Specific security requirements and the mechanisms to be used to meet these requirements are outside the scope of this European Prestandard. Implementers of the messages specified by this European Prestandard should ensure that the security mechanisms used satisfy national and international legislation, user requirements and ethical guidance.

The messages specified by this European Prestandard are general in nature. They meet the requirements for transferring electronic health care record information in a manner appropriate to a wide-variety of situations covering all clinical professions and specialties. However, to maximise the processability of communicated information for particular purposes, a specific profile of the messages specified in this European Prestandard may be required. A profile may restrict the degrees of freedom inherent in the general message and may specify additional types of data item that can be used within a communicating community.

The development of this European Prestandard has been based on the principles stated in the European Prestandard on Electronic Healthcare Record Architecture (ENV 12265). This does not preclude the use of this message for communications between systems that do not conform to that European Prestandard. The message applies the architectural principles in a way that facilitates clinically safe communication even between systems with widely different record structures. However, the faithfulness of communication of the structural richness of an electronic record will be greater in the case of systems that comply with or are closely aligned with European Prestandards on Electronic Healthcare Record Architecture.

The messages specified by this European Prestandard are primarily aimed at conveying character-based information between systems. The messages also provide for references to binary objects, which may form part of an EHCR. However, the European Prestandard does not specify the format of such binary objects, nor does it specify the methods by which they shall be communicated or made available to a receiving system.

Communication of EHCR information is often associated with specific requests for intervention by or advice from the recipient of this information. The response from the recipient of EHCR information may similarly be accompanied by a specific report that they have undertaken (or have accepted responsibility for undertaking) a requested service. The messages specified in this European Prestandard are not designed for communication of these requests or reports, as these are standardised by previous European Prestandards¹. However, if such communications require the exchange of detailed EHCR information the messages or components defined in this European Prestandard may be used for that purpose. To facilitate this, the "EHCR extract" class specified in this European Prestandard may be used in place of the "Clinical Information" class in messages specified in previous European Prestandards for healthcare messages.

The messages specified by this European Prestandard are not designed for communication with intermittently connected devices such as patient data cards. However, due account has been taken of the relevant European Prestandard covering this domain (ENV12018).

These messages are not validated for the exchange of EHCR information for other purposes such as administration, resource allocation, research or quality monitoring.

¹ ENV1613 "Medical informatics - Messages for exchange of laboratory information", ENV12538 "Medical informatics - Messages for patient referral and discharge" and ENV 12539 "Medical informatics - Request and report messages for diagnostic service departments".

2 Normative References

This European Prestandard incorporates by dated or undated references, provisions from other publications. These normative references are cited in the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments and revisions of any of these publications apply to this European Prestandard only when they are incorporated in it by amendment and revision. For undated references the latest edition of the publication referred to, applies.

	ISO 639:1988	Symbols for languages, geographical areas and authorities
	ISO 2382-4:1987	Information processing - Vocabulary Part 4: Organisation of data
	ISO 5281:1977	Information interchange - Representation of human sexes
10	ISO/IEC 7826-1	Information technology – General structure for the interchange of code values – Part 1: Identification of coding schemes
	ISO/IEC 7826-2	Information technology – General structure for the interchange of code values – Part 2: Registration of coding schemes
	ENV 1613:1995	Medical informatics - Messages for exchange of laboratory information
15	ENV 12018:1997	Medical informatics - Identification, administrative and common clinical data structure for Intermittently Connected Devices used in healthcare (including machine readable cards)
	ENV 12265	Medical informatics - Electronic healthcare record architecture
	ENV 12381:1996	Medical informatics - Time standards for healthcare specific problems
	ENV 12388:1996	Medical informatics - Algorithm for Digital Signature Services in Health Care
20	ENV 12435	Medical informatics - Expression of the results of measurements in health sciences
	ENV 12537-1:1997	Medical informatics - Registration of information objects used for EDI in healthcare - Part 1: The Register
	ENV 2537-2:1997	Medical informatics - Registration of information objects used for EDI in healthcare - Part 2: Procedures for the registration of information objects used for electronic data interchange (EDI) in healthcare
25	ENV 12538:1997	Medical informatics - Messages for patient referral and discharge
	ENV 12539:1997	Medical informatics - Request and report messages for diagnostic service departments
	CR 12587:1996	CEN Report: Medical informatics - Methodology for the development of healthcare messages
	ENV 12612:1997	Medical informatics - Messages for the exchange of healthcare administrative information
30	prENV XXXX-1	Electronic Healthcare Record Communication – Extended Architecture
	prENV XXXX-2	Electronic Healthcare Record Communication – Term List
	prENV XXXX-3	Electronic Healthcare Record Communication – Distribution Rules
	prENV XXpt31	Health Informatics - Messages for The Exchange of Information on Medicine Prescriptions

3 Definitions

For the purpose of this European Prestandard, the following definitions apply:

3.1

clinical information

- 5 information about a patient, relevant to the health or treatment of that patient, that is recorded by or on behalf of a healthcare professional.

NOTE Clinical information about a patient may include information about the patient's environment or about related people or animals where this is relevant.

[ENV1613]

10 3.2

code meaning

element within a coded set.

EXAMPLE "Paris Charles-De-Gaulle" which is mapped on to the three-letter abbreviation "CDG" by the coding scheme for three-letter abbreviations of airport names.

15 [ENV1613]

3.3

code value

result of applying a coding scheme to a code meaning.

20 EXAMPLE "CDG" as the representation of "Paris Charles-De-Gaulle" in the coding scheme for three-letter representations of airport names.

[ENV1613]

3.4

coding scheme

collection of rules that maps the elements of one set on to the elements of a second set.

25 [ENV1613]

3.5

comment item

record component that provides a means of associating attributable comments to another record component.

3.6

30 **communicating community**

geographically or organisationally defined grouping of healthcare parties that agree to communicate subject to an agreed set of constraints or guidelines.

3.7

component complex

35 record component representing an aggregation of other record components.

NOTE A component complex is specialised as either an "original component complex" or "selected component complex" according to the nature of the aggregation.

3.8

component item

40 record component representing a single instance of information.

NOTE A component item is specialised as either a "data item", "comment item" or "link item" according to the role or the information contained.

3.9

component name

45 attribute that is used to provide a title or label to an instance of an EHCR message component.

3.10**data item****EHCR data item**

record component containing a single data item element.

3.11**data item element****element****EHCR data item element**

unit of information that cannot be subdivided without losing its meaning.

NOTE 1 A data item element is only meaningful when linked to the patient as part of an EHCR data item.

NOTE 2 The normative provisions of this European Prestandard specify six types of data item elements. Four further types, are suggested in Informative Annex B. Communicating parties may also specify and use additional data item element types.

3.12**digital signature**

data appended to, or a cryptographic transformation of, a data unit that allows a recipient of a data unit to prove the source and integrity of the unit and protect against forgery e.g. by the recipient [ISO 7498-2]

3.13**distribution rule**

logical concept or rule intended to convey and govern distribution.

NOTE The form of representation of EHCR distribution rules is the subject of Part 3 of this European Prestandard.

3.14**domain information model****DIM**

conceptual model describing common concepts and their relationships for communication parties required to facilitate exchange of information between these parties within a specific domain of healthcare. [ENV1613]

3.15**electronic healthcare record****EHCR**

healthcare record in computer readable format.

3.16**EHCR extract**

EHCR message component representing the entirety of a patient's electronic health care record or that part of the record contained within a particular instance of an EHCR message.

3.17**EHCR message component**

part of an electronic health care record contained within an EHCR message in a form that renders it identifiable for the purposes of referencing and revision.

NOTE 1 This European Prestandard specifies two types of EHCR message component. These are the "EHCR extract" and the "record component".

3.18**EHCR system**

system for recording, retrieving and manipulating information in electronic healthcare records.

[ENV12265]

3.19**general message description****GMD**

5 subset of a domain information model prescribing the information content and semantic structure of a message used to meet one or more identified information interchange requirements.

NOTE General message descriptions are independent of the syntax used for constructing an actual message. They provide statement of the information interchange requirements in a form that can be implemented using different syntaxes.

[ENV1613]

3.20**10 healthcare agent**

healthcare professional (person), healthcare organisation, healthcare device or healthcare software component that performs a role in a healthcare activity.

NOTE Modified from ENV12265.

3.21**15 healthcare agent link**

one or more healthcare agents related together in a specified manner for the purposes of performing a particular role in a healthcare activity.

3.22**healthcare agent link reference**

20 reference to a healthcare agent link, which uniquely identifies that healthcare agent link in the context within which it is used.

NOTE Use of healthcare agent link reference depends on the existence of shared information describing the healthcare agent link to which it refers.

3.23**25 healthcare agent role**

role played by a healthcare agent (or by a healthcare agent link) in a healthcare activity.

EXAMPLES Originator or author of a record entry, Requester of a service, Provider of a service, Sender of a message, Recipient of a message, Person signing a message or record entry.

3.24**30 healthcare agent relationship**

relationship between two healthcare agents.

NOTE 1 A healthcare agent relationship may apply for a specified period of time.

EXAMPLE 1 Employee / employer

NOTE 2 A healthcare agent relationship may be specific to a particular healthcare agent role.

35 EXAMPLE 2 On behalf of / responsible for.

3.25**healthcare device**

device or equipment involved in the direct or indirect provision of healthcare services to an individual or to a population.

40 EXAMPLE ECG machine, auto-analyser, syringe pump.

3.26**healthcare organisation**

organisation involved in the direct or indirect provision of healthcare services to an individual or to a population.

NOTE 1 Groupings or subdivisions of an organisation, such as departments or sub-departments, may also be considered as organisations where there is need to identify them.

NOTE 2 Modified from ENV1613.

3.27**healthcare party**

organisation or person involved in the direct or indirect provision of healthcare services to an individual or to a population.

NOTE: Modified from ENV1613.

3.28**healthcare professional**

person involved in the direct or indirect provision of healthcare services to an individual or to a population.

EXAMPLE: Primary care physician, dentist, nurse, social worker, pharmacist, medical secretary.

NOTE Modified from ENV1613.

3.29**healthcare record**

repository of information regarding the health of a subject of care.

[ENV12265]

3.30**healthcare record architecture**

a set of principles governing the logical structure and behaviour of healthcare records systems to enable communication of the whole or part of a healthcare record.

3.31**healthcare service**

service provided with the intention of directly or indirectly improving the health of the people, populations or animals to whom it is provided.

[ENV1613]

3.32**healthcare software**

software component involved in the direct or indirect provision of healthcare services to an individual or to a population.

EXAMPLE: EHCR system, decision support software, viewing tools.

3.33**implementable message specification****IMS**

specification of a general message description in a particular message syntax.

[ENV1613]

3.34**interchange format**

specification of a message type according to a given message syntax, covering the identification of the message type components, their arrangement, representation and interrelationships.

[ENV1613]

3.35**International Coding Scheme Identifier**

unique permanent identifier of a coding scheme as specified by ISO 7826-1.

[ISO7826]

3.36**message profile**

specification derived from an implementable message specification by selecting its optional elements, appropriate to the specific business requirements of the communicating parties.

[ENV1613]

3.37**message syntax**

system of rules and definitions specifying the basic component types of messages, their interrelationships and their arrangement.

[ENV1613]

3.38**message type**

identified, named and structured set of functionally related information which fulfils a specific business purpose.

[ENV1613]

3.39**multiplicity**

expression of the number of instances of one class that may be part of or associated with another class.

NOTE 1 The term cardinality has been used in earlier related European Prestandards. However, following the decision to use UML as the modelling notation the term multiplicity is more appropriate. In UML "cardinality" refers to the actual number of members of a set of relations. The term "multiplicity" is used to refer to the "allowable cardinalities" and this is the sense in which this concept is represented in this Prestandard.

3.40**organisation**

unique framework of authority within which a person or persons act, or are designated to act towards some purpose.

NOTE Groupings or subdivisions of an organisation may also be considered as organisations where there is need to identify them for information interchange.

[ISO 6523-1984]

3.41**original component complex**

record component representing an aggregation of other record components that is determined by the time and situation in which they were originally added to the EHCR.

3.42**record component
component**

part of an electronic health care record that is identifiable for the purposes of referencing and revision.

3.43**selected component complex**

record component representing an aggregation of other record components that is *not* determined by the time or situation in which they were originally added to the EHCR.

NOTE Selected component complexes are used to provide alternative view or groupings of records. They can represent the record as viewed at a particular time or they can represent groupings of clinically or logically associated record components.

3.44 Abbreviations

The following abbreviations are used for the terms defined in this European Prestandard.

	DIM	Domain Information Model
	DTD	Document Type Definition
5	EHCR	Electronic Health Care Record
	GMD	General Message Description
	GP	General Practitioner
	HCP	Healthcare Party
	HGMD	Hierarchical General Message Description
10	ICSI	International Coding Scheme Identifier
	IMS	Implementable Message Specification
	MIG	Message Implementation Guide
	UML	Unified Modelling Language
	XML	Extensible Markup Language

15

4 Communication roles

4.1 General

This clause defines the communication roles compliant to the specifications of this European Prestandard when exchanging electronic healthcare record. It establishes the relationships between the communication roles and the General Message Descriptions (GMDs), as well as the relationships between the messages defined by the GMDs.

4.2 Communication roles

The following messages are defined in this European Prestandard:

- *request EHCR message*;
- *provide EHCR message*;
- *reject request for EHCR message*;
- *accept EHCR message*;

For each of these messages there are two primary communication roles:

- The message originator role (the sender)
- The message destination role (the intended recipient)

During a series of exchanges relating to a single EHCR transfer, the same healthcare party may be both a sender and recipient of messages. For example, the originator of a request will be the recipient of a response to that request. Rather than considering the role in respect of a particular message, this European Prestandard refers to healthcare parties according to the roles played in a sequence of messages related to one EHCR transfer. These roles are:

- The *EHCR source* – the current holder of EHCR information that is requested, transferred or acknowledged.
- The *EHCR destination* – the requester or recipient of the EHCR.

The same healthcare party may act as an *EHCR source* and an *EHCR destination* in respect of different messages. For example, the *EHCR destination* for one *provide EHCR message* may be the *EHCR source* for another *provide EHCR message*.

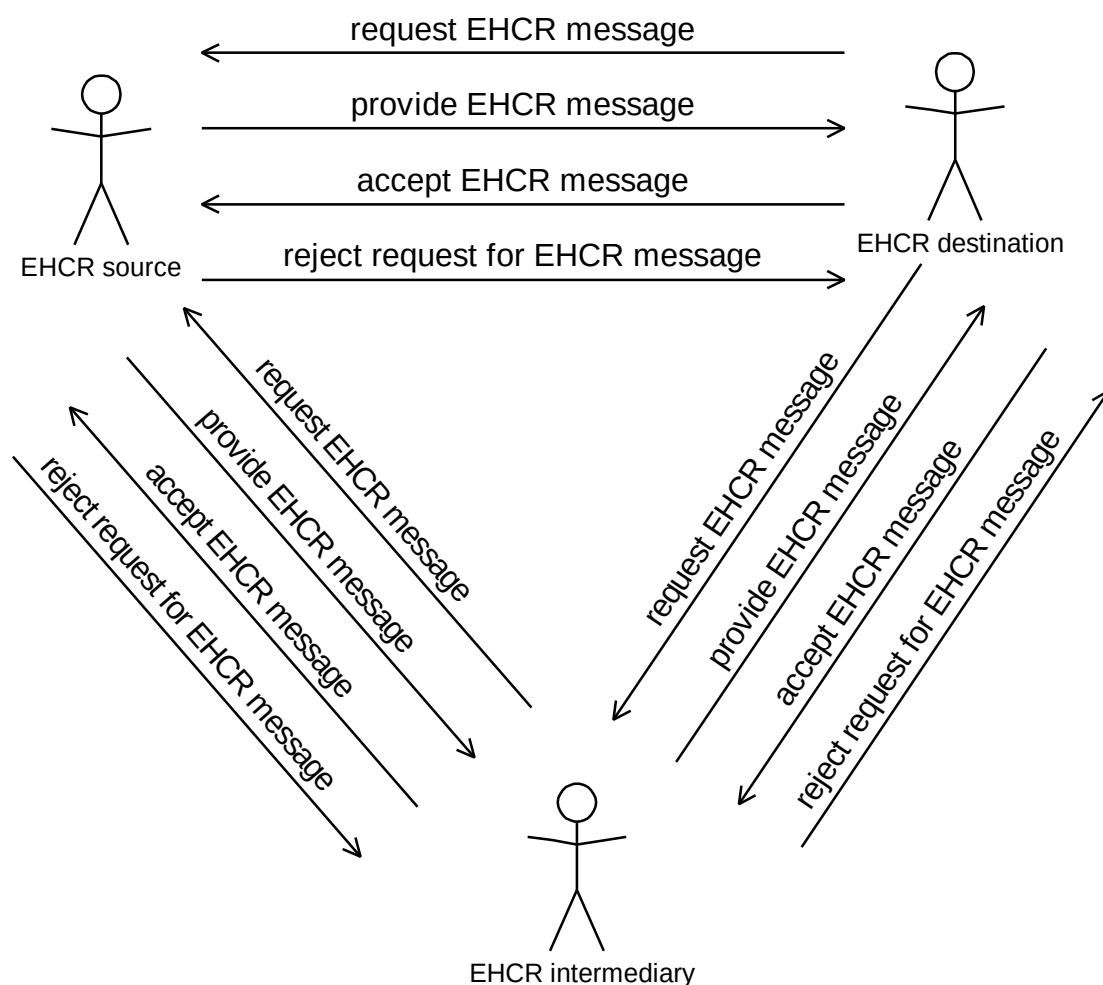
Other healthcare parties may play secondary roles in the communication of the EHCR. Examples of these roles include:

- Acting as a clearinghouse or forwarding agent.
- Validating the source of the EHCR message.
- Confirming the right of the *EHCR destination* to receive the EHCR for a patient.

Healthcare parties undertaking these roles are referred to in this European Prestandard as *EHCR intermediaries*. The involvement of *EHCR intermediaries* depends on the procedures agreed for exchanging EHCR messages within a communicating community. This European Prestandard enables but does not require the involvement of *EHCR intermediaries* and it does not specify the details of the roles an *EHCR intermediary* may play.

Table 1: Associations between Communicating parties, Communicating party roles and messages

Communicating party (actor no.)	Originating role	Destination role	Messages	To actor no.	From actor no.
1. Healthcare party acting as EHCR source	X		<i>provide EHCR message</i> <i>reject request for EHCR message</i>	2,3	
		X	<i>request EHCR message</i> <i>accept EHCR message</i>		2,3
2. Healthcare party acting as EHCR destination	X		<i>request EHCR message</i> <i>accept EHCR message</i>	1,3	
		X	<i>provide EHCR message</i> <i>reject request for EHCR message</i>		1,3
3. Healthcare party acting as EHCR intermediary (clearing house or forwarding agent)	X		<i>provide EHCR message</i> <i>reject request for EHCR message</i>	2	
	X		<i>request EHCR message</i> <i>accept EHCR message</i>	1	
		X	<i>provide EHCR message</i> <i>reject request for EHCR message</i>		1
		X	<i>request EHCR message</i> <i>accept EHCR message</i>		2

**Figure 1. Illustration of EHCR message communications and communication roles**

5 Communication Requirements and Scenarios

5.1 Introduction

This clause outlines the communication requirements supported by use of these messages.

5 The requirements are identified as part of several general scenarios outlined in this clause. However, these scenarios do not form an exhaustive list of circumstances in which these messages are applicable.

The clause outlines each scenario in a general manner followed by illustrative examples and a summary of the main communication requirements arising from the scenario. Each communication requirement is related to an instance of a specific message. The messages referred to are specified by this European Prestandard or have already been adopted as part of previously published European Prestandards.

10 Each scenario involves the transfer of EHCR related information in one or more directions between two or more healthcare parties. Figure 2 shows the general sequence of use of the messages. However, some scenarios use only one or two of the messages shown in this figure. Also, as noted in Clause 4, the communicating parties may have different roles at different stages in a communication scenario. For this reason many of the illustrations in this clause refer to the communicating parties as Party A and Party B rather than using the role name.

15 The diagrams in this section follow the general notation of Unified Modelling Language sequence diagrams. Time is represented by the vertical axis. The parties are represented by dotted lifeline. While a party has a role in relations to the patient the lifeline is overlaid by a hollow rectangle. Lines between the parties indicate the flow of messages.

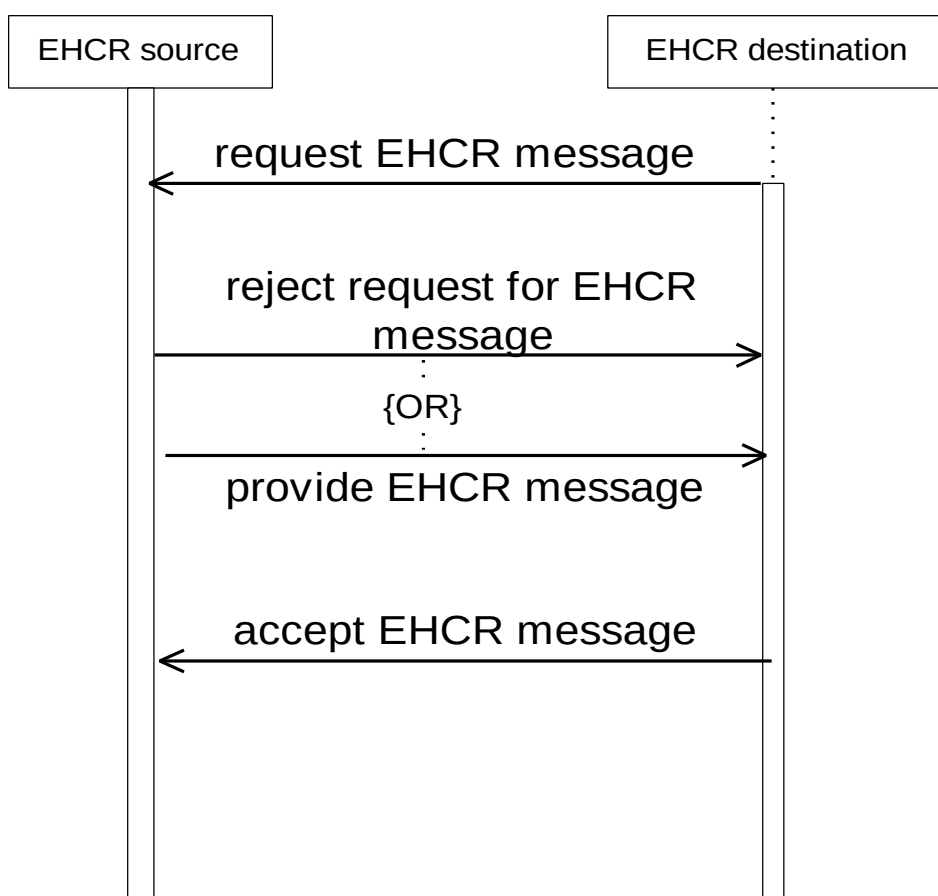


Figure 2. General sequence of messages

5.2 Transfer initiated by an EHCR source

5.2.1 Scenario outline

Party A becomes aware that for some reason a patient will in future seek the healthcare services previously provided by **Party A** from **Party B**.

- **Party A** hands over their clinical responsibility for the patient to **Party B**.
- **Party A** does not expect to have continuing clinical responsibility for the care of the patient.
- **Party B** assumes a continuing responsibility for the care of the patient.

EXAMPLES

- A patient informs their GP that they are moving to another area. The GP hands over care of a patient to a colleague in the area to which the patient is moving.
- A specialist is retiring or leaving a clinic and makes arrangements for the future care of his patients.
- A patient chooses to change the healthcare professional that they consult for a particular service. The patient informs their current provider that they wish care to be transferred. The current provider transfers the EHCR to the new provider.

5.2.2 Communication requirements and use of messages

Party A provides **Party B** with complete or summarised EHCR information about the patient and indicates that they wish **Party B** to take over responsibility for the patient.

- **Party A** (an *EHCR source*) sends a *provide EHCR message* to **Party B** (an *EHCR destination*).

Party B may respond to the by informing **Party A** that they have received the information provided and have either accepted or rejected responsibility for the care of the patient.

- **Party B** (an *EHCR destination*) sends an *accept EHCR message* to **Party A** (an *EHCR source*).

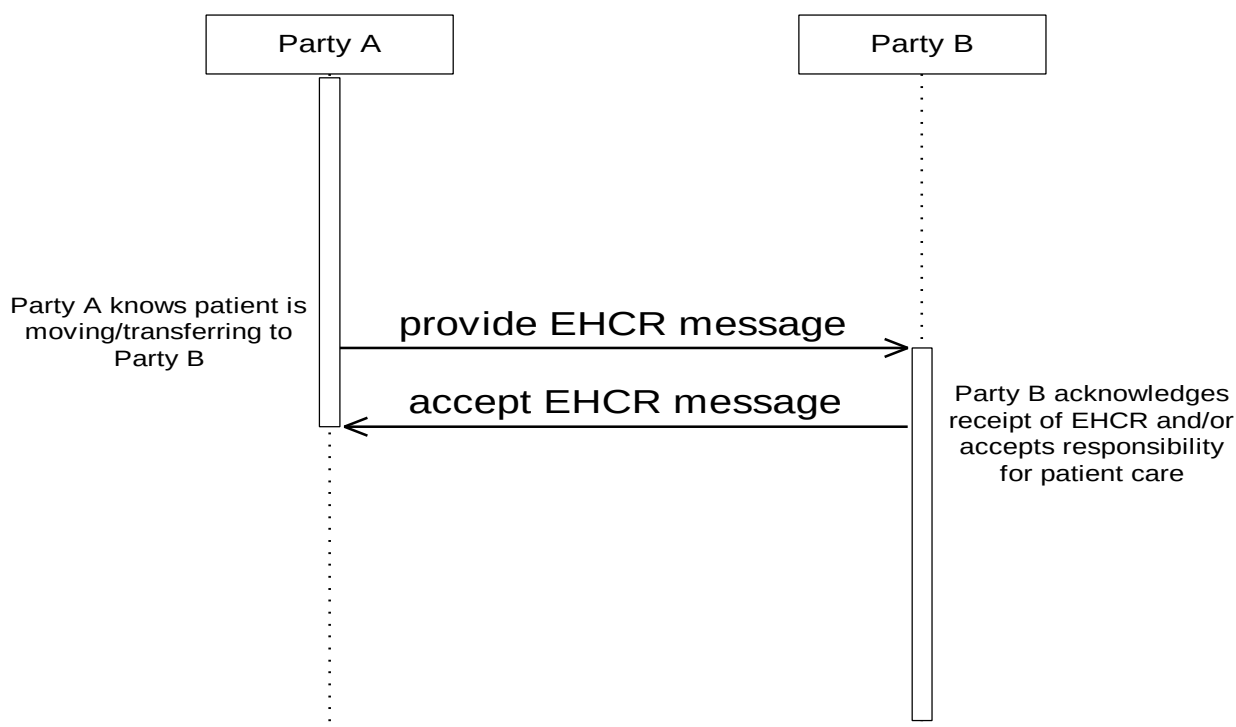


Figure 3. Patient transfer initiated by an EHCR source

5.3 Transfer of care initiated by an EHCR destination

5.3.1 Scenario outline

A patient, currently cared for by **Party A**, requests **Party B** to provide a continuing healthcare service.

- **Party B** takes over clinical responsibility for the patient from **Party A**.
- **Party A** does not have continuing clinical responsibility for the care of the patient.
- **Party B** assumes a continuing responsibility for the care of the patient.

EXAMPLES

- A patient consults or registers with a new GP after moving to another area.
- A patient chooses to change the specialist or clinic that they attend.

5.3.2 Communication requirements and use of messages

Party B requests **Party A** to provide a complete or summarised EHCR for the patient.

- **Party B** (an *EHCR destination*) sends a *request EHCR message* to **Party A** (an *EHCR source*).

Party A may accept or reject the request for the EHCR.

If the request is accepted, **Party A** provides **Party B** with complete or summarised EHCR information about the patient.

- **Party A** (an *EHCR source*) sends a *provide EHCR message* to **Party B** (an *EHCR destination*).

If the request is rejected, **Party A** informs **Party B** of this decision.

- **Party A** (an *EHCR source*) sends a *reject request for EHCR message* to **Party B** (an *EHCR destination*).

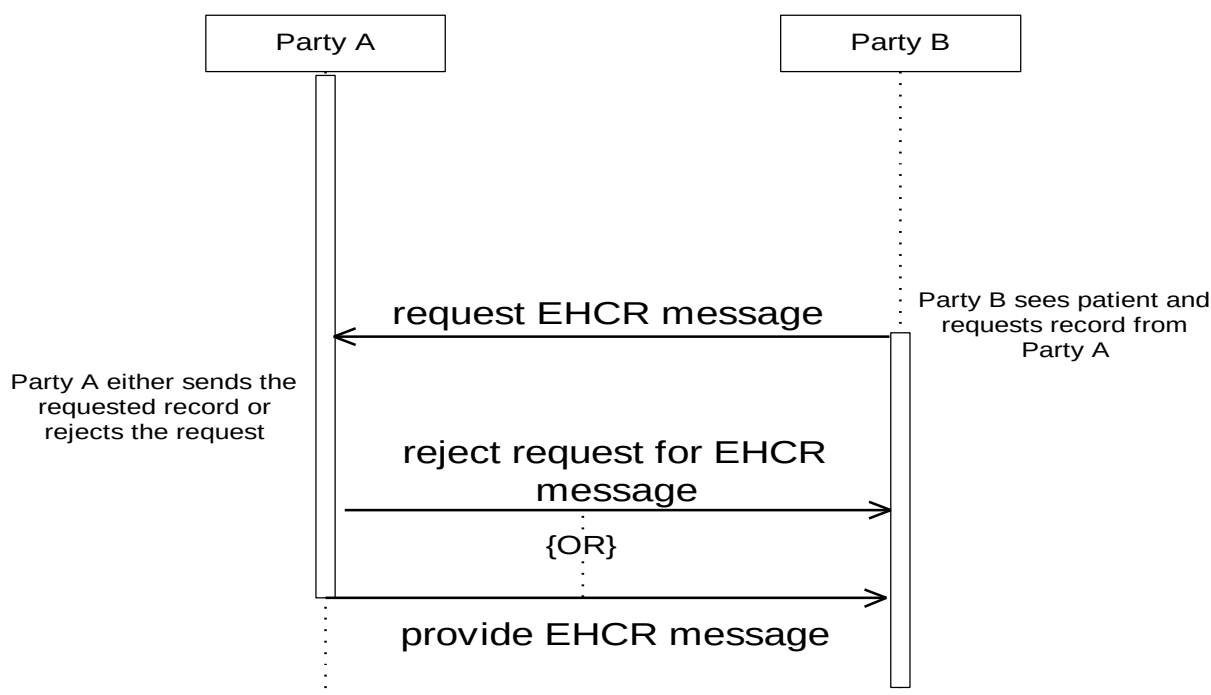


Figure 4. Transfer of care initiated by an EHCR destination

5.4 Provision of a temporary service without a request from the EHCR source

5.4.1 Scenario outline

A patient, usually cared for by **Party A**, requests **Party B** to provide a service of limited duration.

- **Party B** performs the service for the patient.
- **Party A** resumes clinical responsibility for the care of the patient.
- **Party B** does not expect to play a further role in the future care of the patient.

EXAMPLES

- A patient attends an Accident Emergency department at a hospital.
- A patient self-refers to a particular specialist .
- A patient requires healthcare services while out of their home area.
- A patient requires urgent healthcare services out of the normal office hours of their doctor.
- A patient consults another GP (in countries where patients may see more than one GP).

5.4.2 Communication requirements and use of messages

Party B may decide that they need EHCR information from **Party A** in order to perform the service. In this case, **Party B** requests **Party A** to provide a complete or summarised EHCR for the patient.

- **Party B** (an *EHCR destination*) sends a *request EHCR message* to **Party A** (an *EHCR source*).

Party A may accept or reject the request for the EHCR.

If the request is accepted, **Party A** provides **Party B** with complete or summarised EHCR information about the patient.

- **Party A** (an *EHCR source*) sends a *provide EHCR message* to **Party B** (an *EHCR destination*).

If the request is rejected, **Party A** informs **Party B** of this decision.

- **Party A** (an *EHCR source*) sends a *reject request for EHCR message* to **Party B** (an *EHCR destination*).

When the service has been performed **Party B** may send the EHCR information recorded while performing the service to **Party A**. The communication roles of the parties are now reversed.

- **Party B** (an *EHCR source*) sends a *provide EHCR message* to **Party A** (an *EHCR destination*).

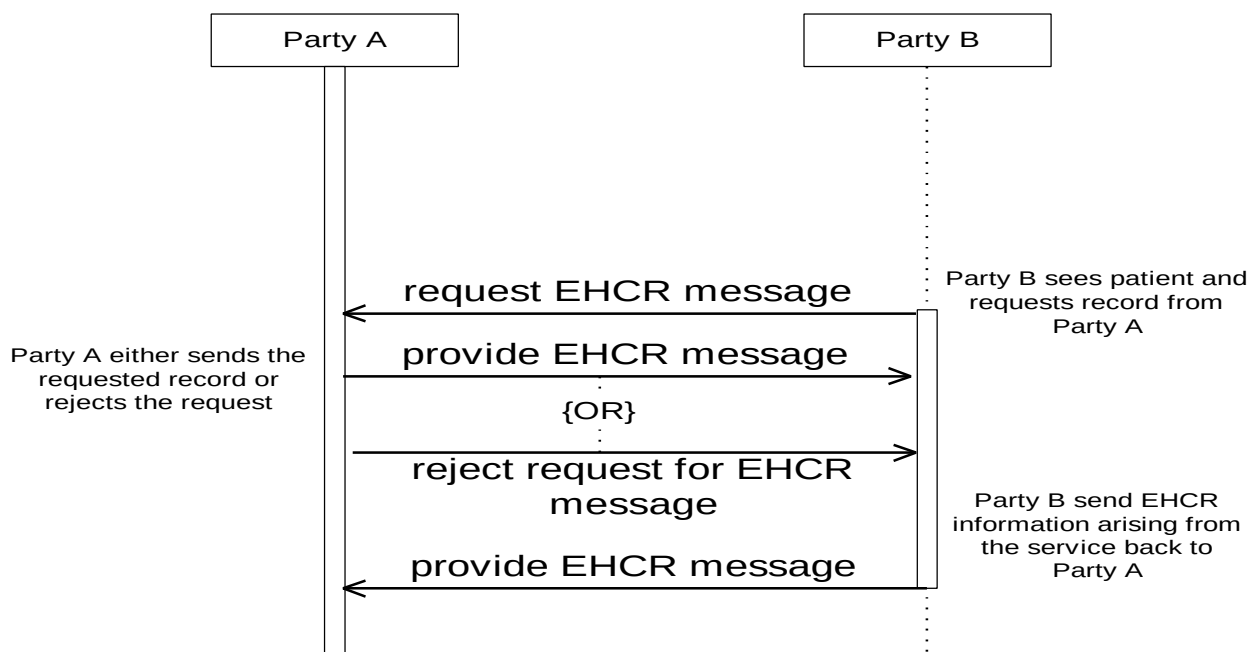


Figure 5. Service provision without a request

5.5 Provision of a temporary service following a request from the EHCR source

5.5.1 Scenario outline

A patient, usually cared for by **Party A**, receives a service of limited duration from **Party B** at the request of **Party A**.

- **Party A** requests the service from **Party B**.
- **Party B** performs the service for the patient.
- **Party A** resumes or retains clinical responsibility for the care of the patient.
- **Party B** does not expect to play a further role in the future care of the patient.

EXAMPLES

- A GP refers a patient to a specialist.
- A specialist involves a therapist in a particular aspect of a patient's care.

5.5.2 Communication requirements and use of messages

Party A requests **Party B** to provide a service and may provide a copy or summary of the EHCR as part of this request. This may be done using the *specialist service request message* specified by ENV 12538 or using the *provide EHCR message*.

- **Party A** (an *EHCR source*) sends a *provide EHCR message* to **Party B** (an *EHCR destination*).

When the service has been performed **Party B** may send the EHCR information recorded while performing the service to **Party A**. This may be done using the *specialist service report message* specified by ENV 12538 or using the *provide EHCR message*. If the *provide EHCR message* is used, the communication roles are reversed.

- **Party B** (an *EHCR source*) sends a *provide EHCR message* to **Party A** (an *EHCR destination*).

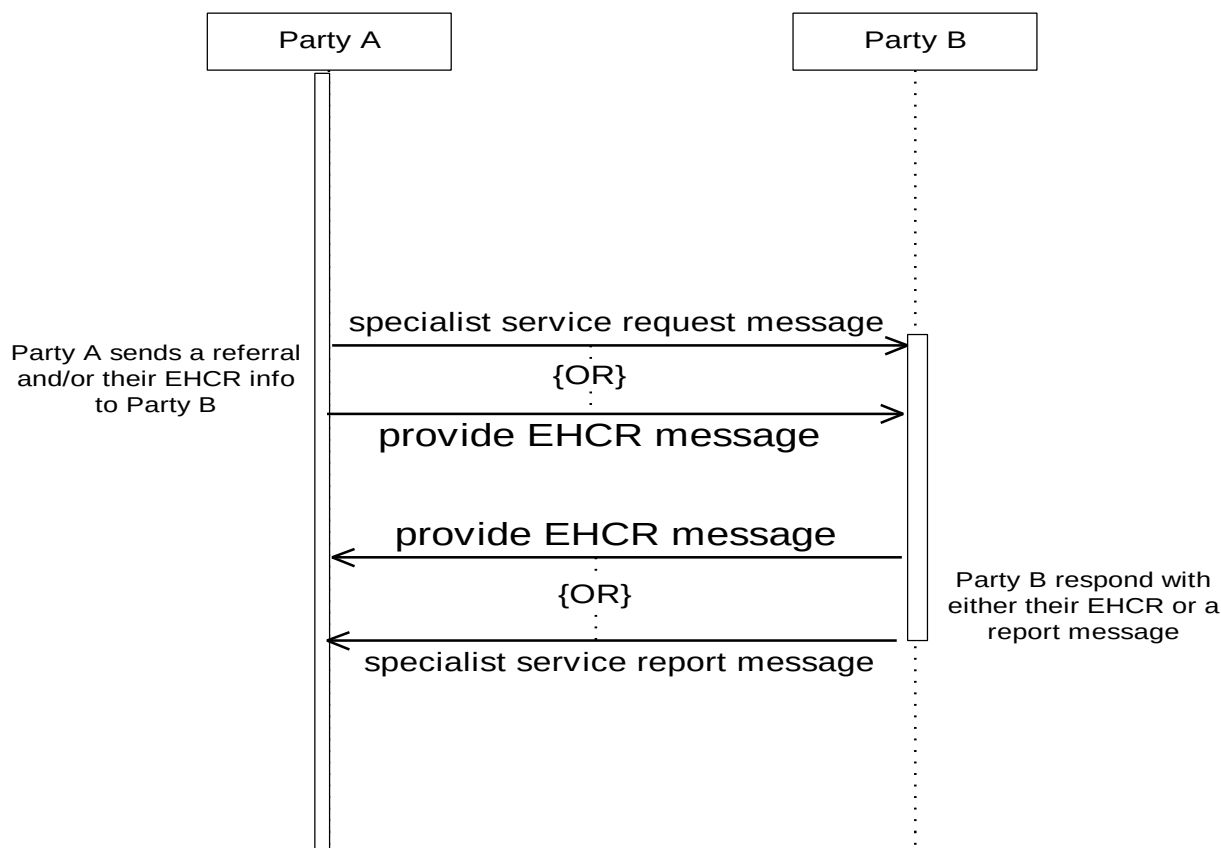


Figure 6. Service provision following a request

5.6 Provision of continuing care by two or more parties

5.6.1 Scenario outline

- **Party A** is providing care to a patient and requests **Party B** to become involved in providing for a particular aspect of that patient's care.
- **Party A**'s general responsibility for the care of the patient continues. However, a specific part of that responsibility is shared with **Party B** while a series of services are provided.
- **Party B** usually sees the patient two or more times while providing the requested service.
- During the period during which **Party B** is sharing responsibility, **Party A** may also see the patient one or more times.

EXAMPLES

- GP and diabetic specialist providing care to a diabetic patient.
- GP and Midwife and/or Obstetrician providing antenatal care.

5.6.2 Communication requirements and use of messages

Party A requests **Party B** to provide a service and may provide a copy or summary of the EHCR as part of this request. This may be done using the *specialist service request message* specified by ENV 12538 or using the *provide EHCR message*.

- **Party A** (an *EHCR source*) sends a *provide EHCR message* to **Party B** (an *EHCR destination*).

After the initial contact with the patient, **Party B** may send the EHCR information recorded during that contact to **Party A**.

- **Party B** (an *EHCR source*) sends a *provide EHCR message* to **Party A** (an *EHCR destination*).

After each subsequent consultation, or other interaction with the EHCR, **Party A** sends an update of the EHCR information recorded during that contact to **Party B**.

- **Party A** (an *EHCR source*) sends a *provide EHCR message* to **Party B** (an *EHCR destination*).

After each subsequent consultation, or other interaction with the EHCR, **Party B** sends an update of the EHCR information recorded during that contact to **Party A**.

- **Party B** (an *EHCR source*) sends a *provide EHCR message* to **Party A** (an *EHCR destination*).

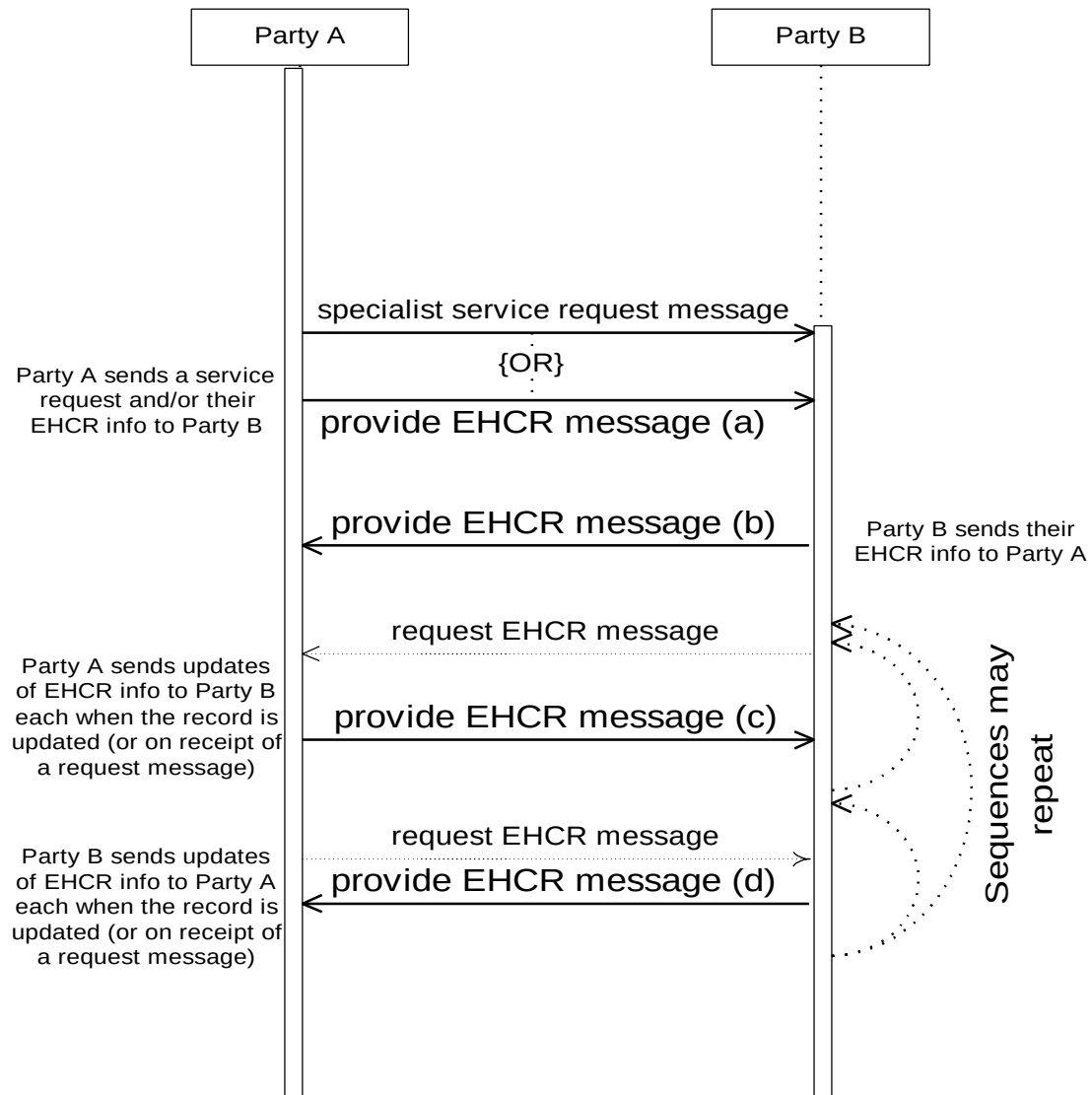
An alternative to the unsolicited transfers of updates described here is for the update to be explicitly requested.

If an update is required by **Party A**.

- **Party A** (an *EHCR destination*) sends a *request EHCR message* to **Party B** (an *EHCR source*).
- **Party B** (an *EHCR source*) responds by sending a *provide EHCR message* to **Party A** (an *EHCR destination*).

If an update is required by **Party B**.

- **Party B** (an *EHCR destination*) sends a *request EHCR message* to **Party A** (an *EHCR source*).
- **Party A** (an *EHCR source*) responds by sending a *provide EHCR message* to **Party B** (an *EHCR destination*).

**Figure 7. Continuing care by two parties**

5.7 Scenarios involving a third party

5.7.1 Description

Some scenarios may involve a third party (**Party C**). **Party C** may act as a clearing-house where parties are not sure to whom they should send requests (see 5.7.2) or EHCR information (see 5.7.3). **Party C** may also act as a Trusted Third Party either confirming that a requester is authorised to receive EHCR information (see 5.7.4) or authenticating the source of the EHCR information (see 5.7.5).

5.7.2 Indirect communication initiated by the recipient

Case

- **Party B** wishes to receive EHCR information but does not know who holds this information

Action

- **Party B** sends the *request EHCR message* to **Party C**.
- **Party C** establishes the location of a party who holds relevant EHCR information.
- **Party C** forwards the *request EHCR message* to **Party A**.
- **Party A** responds by sending a *provide EHCR message* or a *reject request for EHCR message* either directly to **Party B** or to **Party C** as an intermediary.
- If **Party C** is used as an intermediary then the message received from **Party A** is forwarded by **Party C** to **Party B**.

5.7.3 Indirect communication initiated by the sender

Case

- **Party A** is aware that another party will require EHCR information but is not aware of the identity of that party.
- **Party C** acts as a clearing-house.

Action

- **Party A** sends a *provide EHCR message* to **Party C**.
- **Party C** retains the record acting as a clearing-house.
- **Party B** sends a *request EHCR message* to **Party C**.
- **Party C** checks whether the relevant *provide EHCR message* has been received and also checks that **Party B** is authorised to receive this message.
- **Party C** either forwards the *provide EHCR message* to **Party B** or generates and sends an appropriate *reject request for EHCR message* to **Party B**

The second part of this scenario is superficially similar to the more general request scenario (see 5.3). However, there are two important differences in requirements. The first is that the *provide EHCR message* must identify its origin (**Party A**) as well as the intermediary. The second is that the intermediary may need to be aware of the distribution rules applied at the point of origin in order to determine whether **Party B** is authorised to receive the *provide EHCR message*. The messages specified allow this information to be conveyed but the security mechanisms for enforcing these provisions are outside the scope of this European Prestandard.

5.7.4 Confirming the entitlement of a requester to EHCR Information

If the *request EHCR message* is used between two parties with an existing relationship of trust, it may be sufficient for the request message to confirm its source and authenticity (for example using a digital signature). However, in the case of transfers within a wider community, the holder of the EHCR (**Party A**) may need to check the status of the requester (**Party B**) before responding to a request. This check may be done using various mechanisms that are outside the scope of this European Prestandard. However, some of the possible mechanisms impose additional requirements on the message.

- The *request EHCR message* may need to convey a reference to a third party (**Party C**) recognised by **Party A** as being authorised to vouch for the status of **Party B**.
- The *request EHCR message* may need to convey information that allows it to be routed via a third party (**Party C**) responsible for logging and checking the validity of requests before forwarding valid requests to **Party A**.

- The *request EHCR message* may need to convey a password or key provided by the patient to **Party B**, which is recognised by **Party A** as indicating authorisation by that patient for the EHCR to be provided.
- The *provide EHCR message* may need to be capable of being sent without recognisable identification information. This "unidentified" EHCR may then be recombined with the appropriate identification information provided by a recognised third party who is able to provide a link between the information in this message and the appropriate patient.

5.7.5 Authenticity of origin of EHCR Information

If the *provide EHCR message* is used between two parties with an existing relationship of trust it may be sufficient for the message to confirm its source and authenticity (for example using a digital signature). However, in the case of transfers within a wider community, the recipient (**Party B**) may need to check the status of the sender (**Party A**) before accepting the validity of the EHCR information provided. This check may be done using various mechanisms that are outside the scope of this European Prestandard. However, some of the possible mechanisms impose additional requirements on the message.

- The *provide EHCR message* may need to convey a reference to a third party (**Party C**) recognised by **Party B** as being authorised to vouch for the status of **Party A**.
- The *provide EHCR message* may need to convey information that allows it to be routed via a third party (**Party C**). **Party C** only forwards the message if it recognises the status of **Party A**.

6 Requirements and General Message Descriptions

6.1 Introduction to the GMDs

6.1.1. This clause specifies the normative requirements for messages that comply with this European Prestandard. These requirements are expressed as General Message Descriptions (GMDs) specified in textual descriptions supported by hierarchical diagrams. Clause 7 describes the composition of all classes and attributes required to support these GMDs. These class descriptions are illustrated with diagrams of the domain information model on which the messages are based. Messages that comply with this European Prestandard shall support the structures and relationships illustrated by the GMD diagrams in this clause. In respect of each of the classes referred to in this clause, compliant messages shall also support the detailed content of the class as described in Clause 7.

6.1.2. The requirements expressed in the textual descriptions incorporate by reference the relevant class descriptions in Clause 7. A reference to a class description implies a requirement to fully support the listed attributes of that class, including those that are further decomposed by references to further class and sub-class descriptions.

6.1.3. Messages that comply with this European Prestandard need not support relationships shown in the domain model diagrams in Clause 7 except those that are specified either in the GMD or as listed attributes for a class referenced by the GMD.

6.1.4. The diagrammatic representation of the GMDs shows the hierarchical decomposition of each message into its main classes. The depth of the hierarchy shown in the diagrams has been limited to highlight the main points. Therefore, as with the textual descriptions, the detailed content of each of the classes shown is incorporated by reference to the relevant description in Clause 7. However, wherever a branch of the hierarchy is shown in an expanded form all its direct descendants are included. Thus some of the boxes in these diagrams represent attributes rather than classes.

6.1.5. The text descriptions in this clause include phrases such as "*the ... message shall contain an optional instance of ...*". This means that practical implementation of messages that comply with this European Prestandard shall include appropriate provision for the specified information. However, this European Prestandard does not require the user of such a message to send an instance of this class in each instance of the message. In practice, the use of some of these optional attributes may be constrained by rules agreed with communicating communities while others may depend on a variety of factors including availability of relevant information, capabilities of communicating applications and the needs or preferences of users.

6.1.6. The text descriptions in this clause include phrases such as "*the ... message shall contain one mandatory instance of ...*". This means that practical implementation of messages that comply with this European Prestandard shall include appropriate provision for the specified information. Furthermore, this European Prestandard requires that the message shall oblige the sender of such a message to send an instance of this classes in each instance of the message.

6.2 Provide EHCR Message

6.2.1 General aspects

6.2.1.1. The *provide EHCR message* (7.3.4) may be used to communicate all or part of a single patient's EHCR:

- In response to:
 - a *request EHCR message* (7.3.8);
 - a request conveyed by other means (i.e. a verbal or written request).
- Without a specific preceding request:
 - as part of the regular sharing of information between healthcare parties caring for the same patient;
 - when the EHCR source is aware of a likely future requirement for another healthcare party to have access to a particular patient record;
 - as part of the process of transferring a patient to the care of another healthcare party.

The structure of this message is described below. Figure 8 illustrates the overall structure of the message and subsequent figures in this clause show further details of the structure of the EHCR conveyed in the message.

6.2.1.2. The *provide EHCR message* shall include the general attributes of a *healthcare message* (7.4.3).

6.2.1.3. The general attributes of a *healthcare message* (7.4.3) that are mandatory in all instances of this message are *identification of message by originator*, *issue date and time of message*, *urgency of message*, *patient matching information* (7.6.7) and *message receipt acknowledgement request*. The general attributes of a *healthcare message* that are optional in all instances of this message are *originator's comment on message*, *message language* and the details of any number of *healthcare parties* (7.10.16).

NOTE The details of a *healthcare party* may be included here if they are referred to elsewhere in the message. However, references may also be made within the message to *healthcare parties in a shared, national, regional or international registry*.

6.2.1.4. The *patient matching information* (7.6.7) included in the message shall contain optional instances of *patient identifiers*, *patient name*, *alternative person name*, *date and time of birth*, *patient administrative sex*, *patient addresses* and *patient matching comment*. At least one of these optional components shall be present in any instance of the message. Communicating communities may specify precise combinations of these attributes required to safely match a message to a patient.

6.2.1.5. The *provide EHCR message* shall include one mandatory instance of *EHCR destination* (7.2.1). This is used to identify the intended recipient of the message.

6.2.1.6. The *provide EHCR message* shall include one mandatory instance of *EHCR source* (7.2.3). This is used to identify the sender of the message.

6.2.1.7. The *provide EHCR message* shall include multiple optional instances of *EHCR intermediary* (7.2.2). Each of these may be used to identify a communicating party (other than the sender and recipient) and to indicate their role in the communication of this message.

6.2.1.8. The *provide EHCR message* shall include one optional instance of *reference to request EHCR message*. This is an instance of *message reference* (7.3.2). It refers to the *request EHCR message* (7.3.8) to which this message is a response.

6.2.1.9. The *provide EHCR message* shall include one mandatory instance of *specification of EHCR information* (7.3.9).

NOTE The *specification of EHCR information* contains an indication of whether the EHCR information provided is the entirety of the record held by the *EHCR source*, a specified subset of the record or a date limited update of the record. The specification may also indicate the language in which the EHCR is requested and the nature of the enterprise environment of the requester. This may enable the *EHCR source* to determine the types of *EHCR enterprise item* (7.6.5) that the *EHCR destination* is able to process.

6.2.1.10. The *provide EHCR message* shall include one mandatory instance of *EHCR extract* (7.6.4). This shall contain the EHCR information conveyed by the message in the structure specified in 6.2.2.

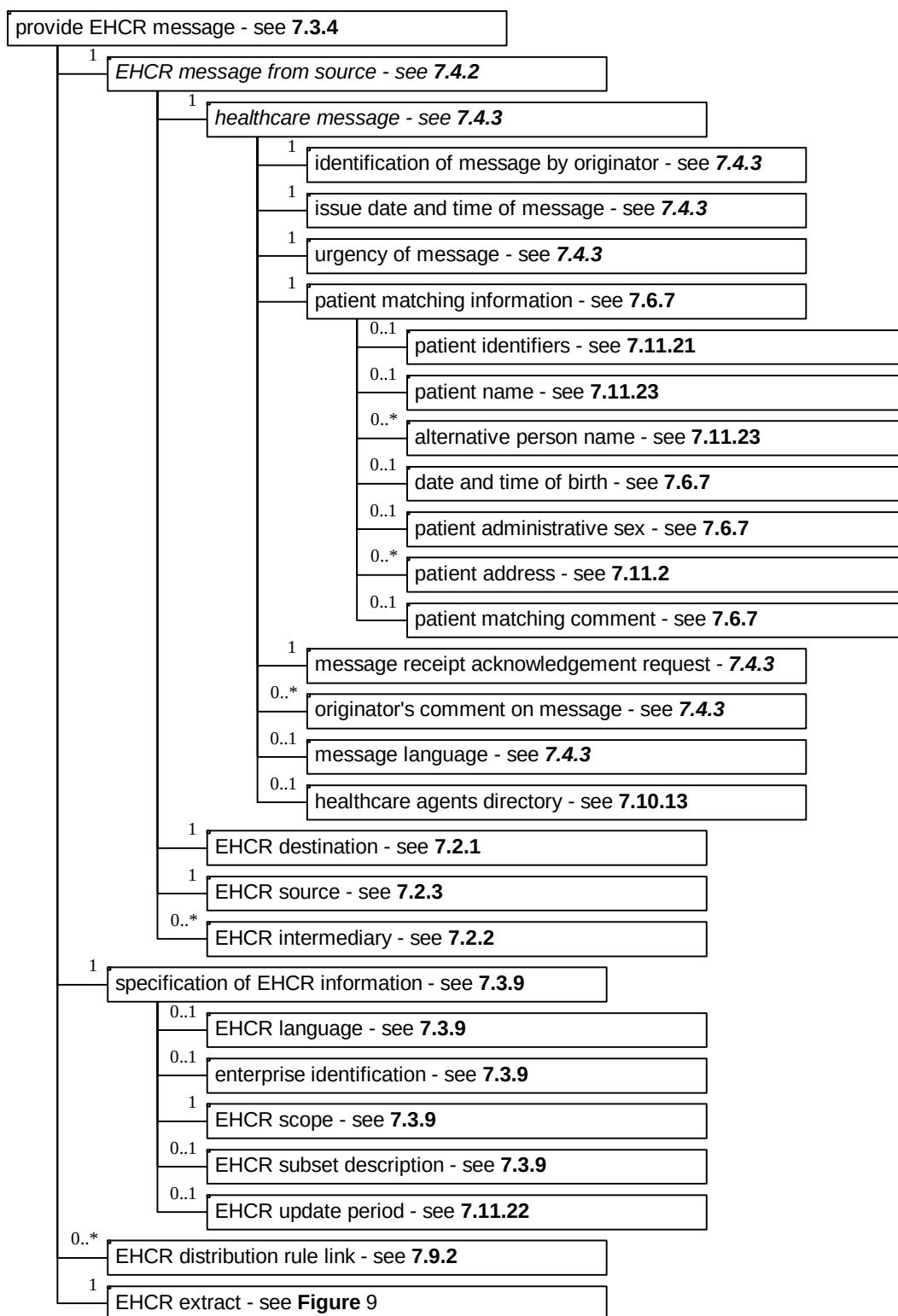


Figure 8. GMD Provide EHCR Message

6.2.2 The EHCR extract

6.2.2.1. The *EHCR extract* (7.6.4) represents the entirety of the EHCR information within the message. Thus it acts as the root of the hierarchical structure of *EHCR message components*. However, it is not necessarily synonymous with the EHCR root or root folder in the specified in the EHCR Extended Architecture. If the message contains a selected subset or an update of EHCR information the *EHCR extract* may represent only a small part of the EHCR. Its structure is illustrated in Figure 9.

6.2.2.2. The *EHCR extract* is a specialisation of the abstract class *EHCR message component* (7.5.4). Therefore each instance of *EHCR extract* shall include instances of the attributes of *EHCR message component* as specified in 6.2.3.

6.2.2.3. The *EHCR extract* shall include one or more optional instances of *record components* (6.2.4).

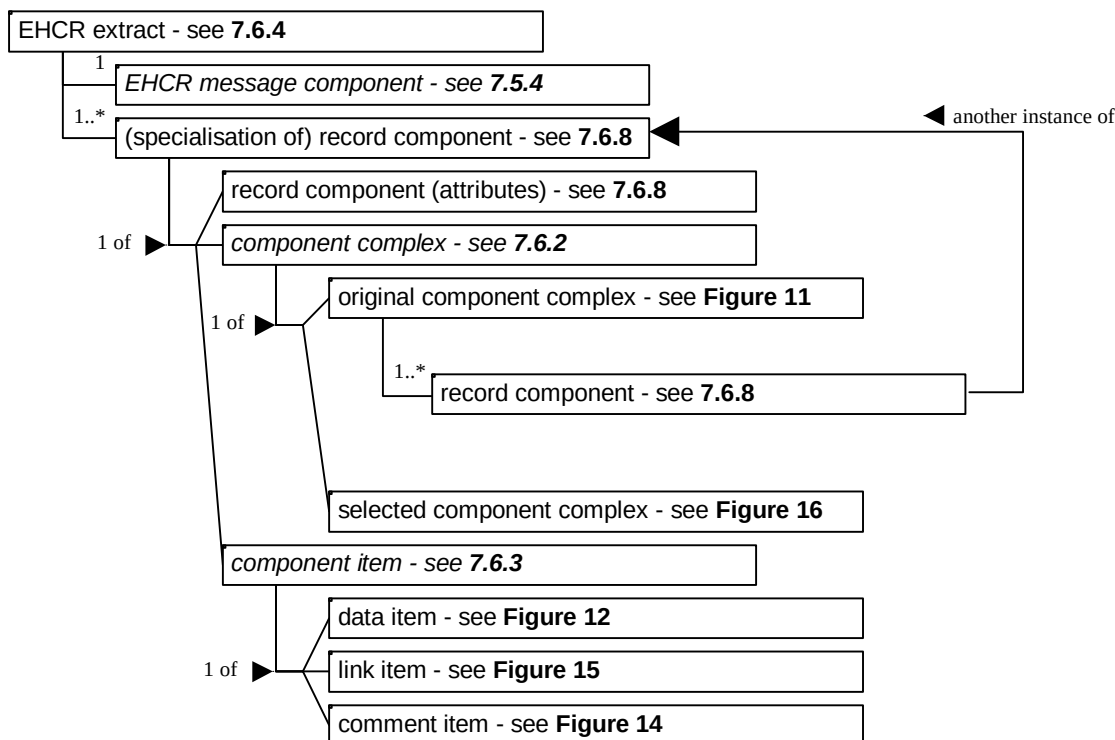


Figure 9. GMD EHCR extract

6.2.3 EHCR message components

6.2.3.1. EHCR information in the *provide EHCR message* is represented by several of types of components that share a common generalised structure. The abstract class *EHCR message component* (7.5.4) defines these common structural elements.

6.2.3.2. Each *EHCR message component* shall contain one mandatory instance of *component unique identifier* (7.5.3). This identifies the component within a specified scope.

6.2.3.3. Each *EHCR message component* shall contain an optional instance of *revision information* (7.8.7). This includes a link that refers to an earlier version, which is revised by this component.

6.2.3.4. Each *EHCR message component* shall contain one optional instance of the attribute *component name*, which may be used to indicate the nature of the component and/or to provide a heading for the collection of components that are its hierarchical descendants. The name is represented as a *component name structure* (7.11.4) including a coded name applied locally and a general high-level classification to which all component names must be mapped.

6.2.3.5. Each *EHCR message component* shall contain one instance of *originating healthcare agent* and *originating date and time*. These attributes identify the author of the information and the date and time of recording. If they are absent from any *EHCR message component*, the values are inherited from the *EHCR message component* of which the component is a part.

6.2.3.6. Each *EHCR message component* shall contain one or more optional instances of *attestation* (7.5.1) to enable an authorised party to apply a digital signature to the component. An *attestation* applied to an *original component complex* (7.6.6) attests all the components that are included within that complex.

6.2.3.7. Each *EHCR message component* shall contain several optional instances of *related healthcare party* (7.5.7).

5 These may be used to identify other healthcare parties related to or referenced by the information within the component.

6.2.3.8. Each *EHCR message component* shall contain several optional instances of *distribution rule link reference* (7.9.1).

NOTE 1 A *distribution rule link reference* refers to a set of one or more Distribution Rules that the *EHCR source* (or the *component origin*) has applied to constrain further distribution of or access to this information. The *distribution rule link reference* maps directly to the DRLinkReference attribute specified in Part 3 of this European Prestandard.

NOTE 2 A *distribution rule link reference* may refer to a member of a common set of Distribution Rule Links held by both communicating parties or to a Distribution Rule Link communicated as part of the *provide EHCR message*.

15 6.2.4 Record components

6.2.4.1. The term *record component* (7.6.8) applies to any *EHCR message component* (7.5.4) apart from the *EHCR extract* (7.6.4).

6.2.4.2. Each *record component* shall contain one mandatory *component role* attribute. This specifies the role that the content plays in relation to an *original component complex*. There are three possible roles:

- Structured content – EHCR message components that represent the content of part of the EHCR.
- Context for content – EHCR message components that provide contextual information that applies to all other members of this *original component complex*.
- Narrative text view of content – A *data item* (7.6.3) containing plain text representing the combined meaning of all the other members of this *original component complex*.

NOTE Narrative text is used to enable receiving systems to produce a human-readable rendering of the information received even if they are unable to process more detailed structural components

6.2.4.3. Each *record component* shall be able to convey zero, one or many instances of *component annotation*. This is used to attach critical contextual modifications to the component. In the absence of any annotations the default value implies that the *record component* contains information about the patient that is believed to be true, accurate and current. The annotations allow the information to be associated with another person (e.g. family history), with flags that indicate uncertainty or negative finding and with other indicators that indicate that the information refers to a future action or planned state. The values for component annotations are specified in full in Tables A-3 and A-4 of Annex A in Part 2 of this European Prestandard. Support for the annotations in Table A-3 shall be treated as a requirement for any use of this message to transfer structured codes computer processable data.

6.2.4.4. Each *record component* shall contain one optional *component order* attribute. This attribute may be used to specify the order of *record components* within an *original component complex*.

6.2.4.5. Each *record component* may contain one optional *EHCR enterprise item* (7.6.5). Sub-types of this class that may be defined by an enterprise to convey information in structures that are not supported by the standard components of the *provide EHCR message*.

6.2.4.6. Each *record component* is either a *complex* (7.6.2) that contains or refers to other components or as an *item* (7.6.3) that holds the elementary data within the record. In the case of a revision that marks a previous version of that *record component* as deleted, a *record component* can exist without one of its specialisations.

6.2.4.7. Each instance of a *complex* (7.6.2) in the message shall be further specialised as either:

- An *original component complex* – part of the primary hierarchical structure of the EHCR (see 6.2.5).
- A *selected component complex* – a point of reference for alternative grouping or views of the EHCR (see 6.2.9).

6.2.4.8. Each instance of an *item* (7.6.3) in the message shall be further specialised as either:

- A *data item* (7.7.3) – a *record component* holding the primary data content of the EHCR.
- A *link item* – a *record component* that links two or more other *record components* (see 7.8.3).
- A *comment item* – a *record component* that contains a text comment on another *record component* (see 7.6.1).

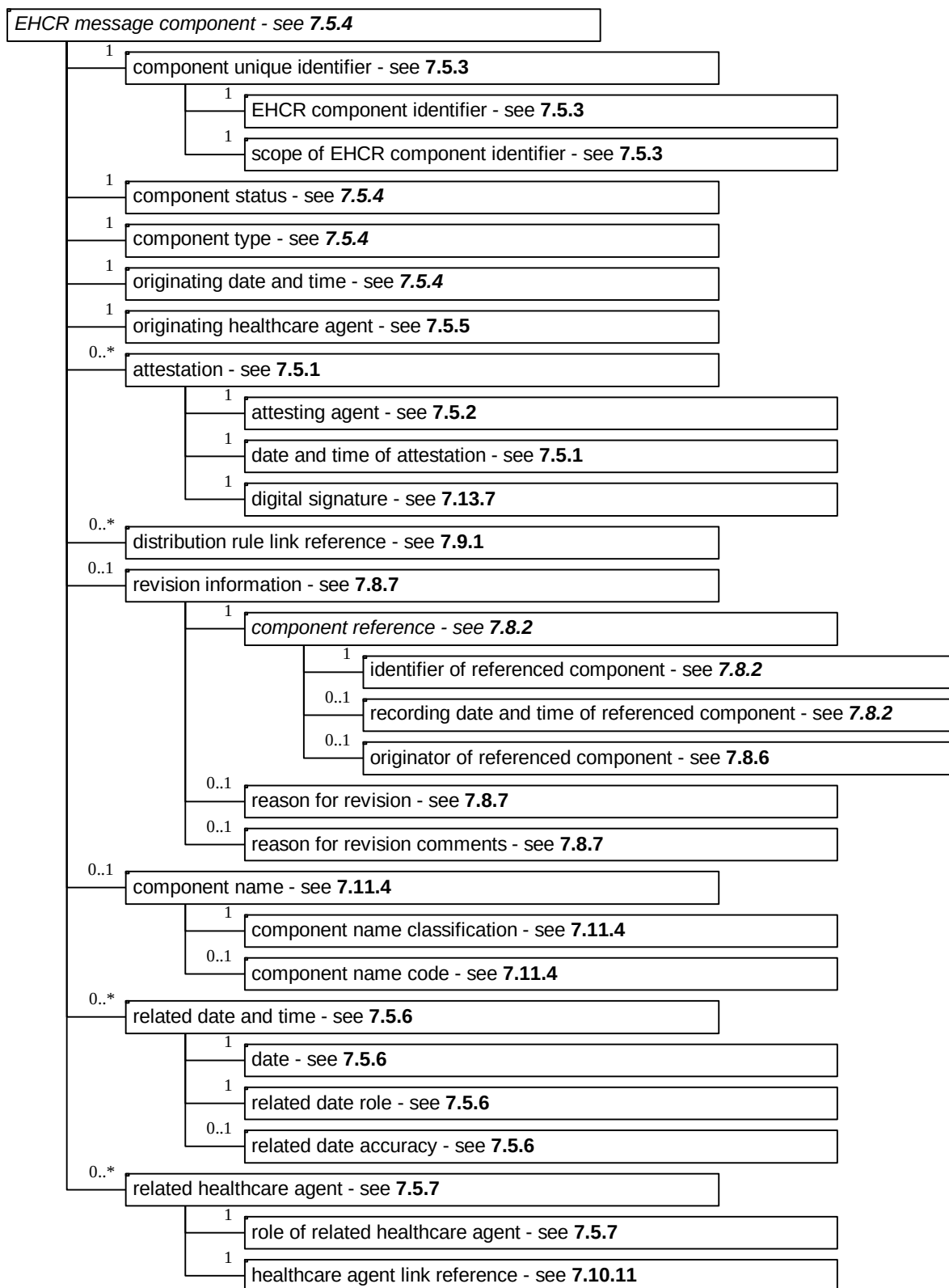


Figure 10. GMD EHCR message component

6.2.5 Original component complexes

6.2.5.1. The structure of an *original component complex* (7.6.6) is illustrated by Figure 11.

6.2.5.2. An *original component complex* (7.6.6) is a specialisation of the class *record component* (7.6.8). Therefore, each instance of *original component complex* shall include instances of the attributes of *EHCR message component* and *record component* as specified in 6.2.3 and 6.2.4.

6.2.5.3. Each *original component complex* shall be able to convey zero, one or many instances of *component annotation*. In the absence of any annotations the default value implies that the *original component complex* contains information about the patient that is believed to be true, accurate and current (see 6.2.4.3)

6.2.5.4. Each *original component complex* shall contain one or more instances of *record component* (see 6.2.4). Some or all of these *record components* may be *original component complexes*. The message shall be capable of supporting recursive nesting of these *record components*.

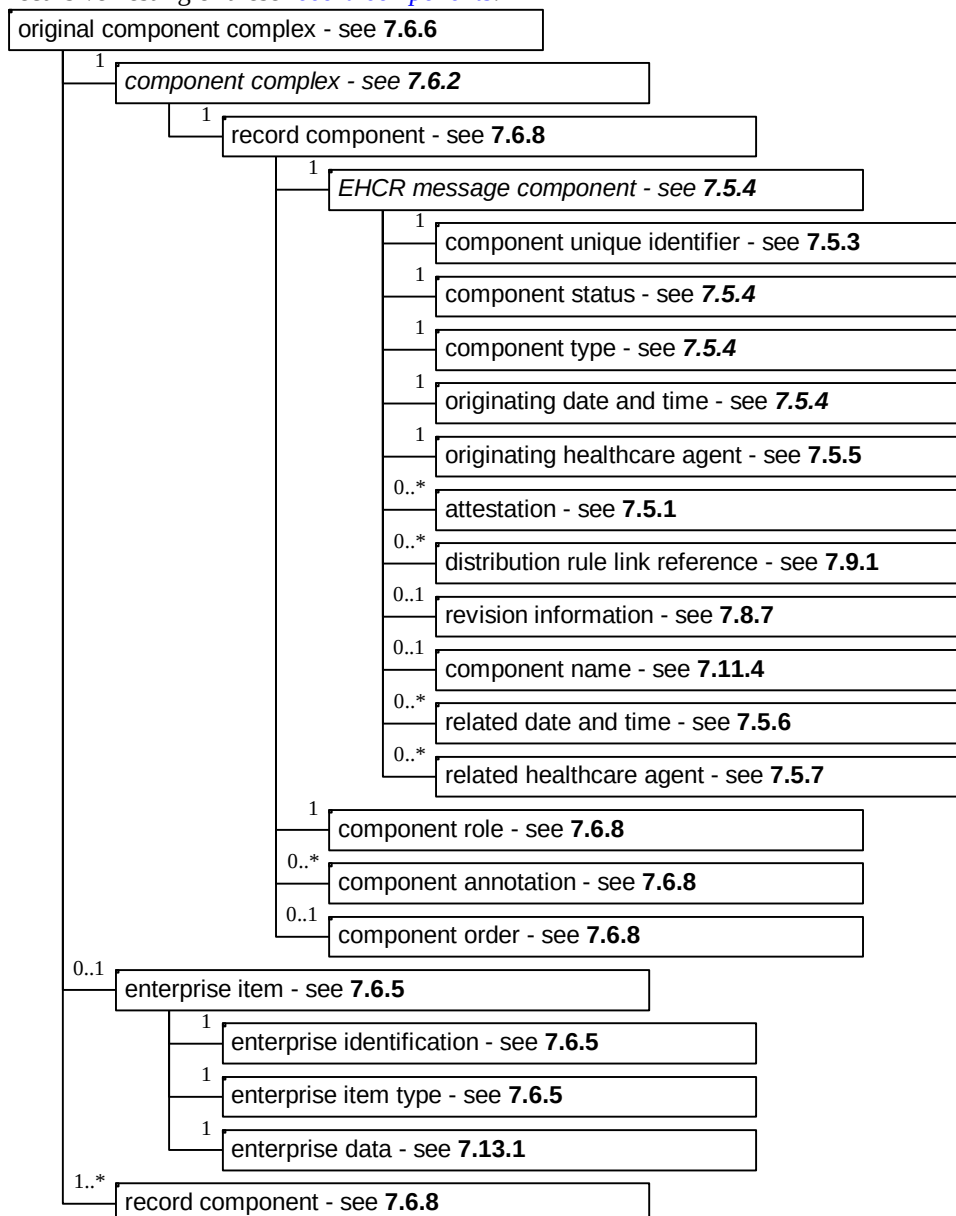


Figure 11. GMD Original Component Complex

6.2.6 Data items

6.2.6.1. The structure of a *data item* (7.7.3) is illustrated by Figure 12.

6.2.6.2. A *data item* is a specialisation of the class *record component* (7.6.8). Therefore, each instance of *data item* shall include instances of the attributes of *EHCR message component* and *record component* as specified in 6.2.3 and 6.2.4.

5 6.2.6.3. Each *original component complex* shall be able to convey zero, one or many instances of *component annotation*. In the absence of any annotations the default value implies that the *original component complex* contains information about the patient that is believed to be true, accurate and current (see 6.2.4.3)

10 6.2.6.4. Each *data item* shall include a mandatory instance of the *data item element type* attribute and an optional instance of the *record element type reference* attribute. These shall be set in a manner that indicates the type of *data item element* (7.7.4) that forms the content of the *data item*. The permissible values of *data item element type* are defined in 7.6.3 and these cover the *data item element* types defined in this European Prestandard. The *record element type reference* attribute is used to refer to additional types of *data item element* defined within a communicating community.

15 6.2.6.5. Each *data item* shall include one mandatory instance of a *data item element* of one of the types illustrated in Figure 13 and specified in 7.7.

6.2.6.6. All implementations of the messages specified by this European Prestandard shall support the following mandatory types of *data item element* as specified in the referenced normative clauses:

- *address element* (7.7.1)
- *date of birth element* (7.7.5)
- 20 — *external data reference element* (7.7.7)
- *language element* (7.7.8)
- *patient related party element* (7.7.10)
- *person identifier element* (7.7.11)
- *person name element* (7.7.12)
- 25 — *person sex element* (7.7.13)
- *physical entity reference element* (7.7.14)
- *plain text element* (7.7.15)
- *quantifiable observation element* (7.7.16)
- *structured coded element* (7.7.17)
- 30 — *telecom element* (7.7.18)

6.2.6.7. When implementing the messages specified by this European Prestandard consideration should be given to supporting the following additional types of *data item element* as specified in the referenced clauses of Informative Annex B. :

- *event element* (B.2)
- 35 — *medication element* (7.7.9)
- *date of death element* (7.7.6)

40 6.2.6.8. Those involved in implementing the messages specified by this European Prestandard may specify additional *community defined elements* (7.7.2) for use within a communicating community. These additional types of *data item element* should be defined using the sub-classes and data types specified in this European Prestandard. To facilitate future extension of communicating communities the specification of *community defined elements* should follow a documentary form similar to that used in this European Prestandard.

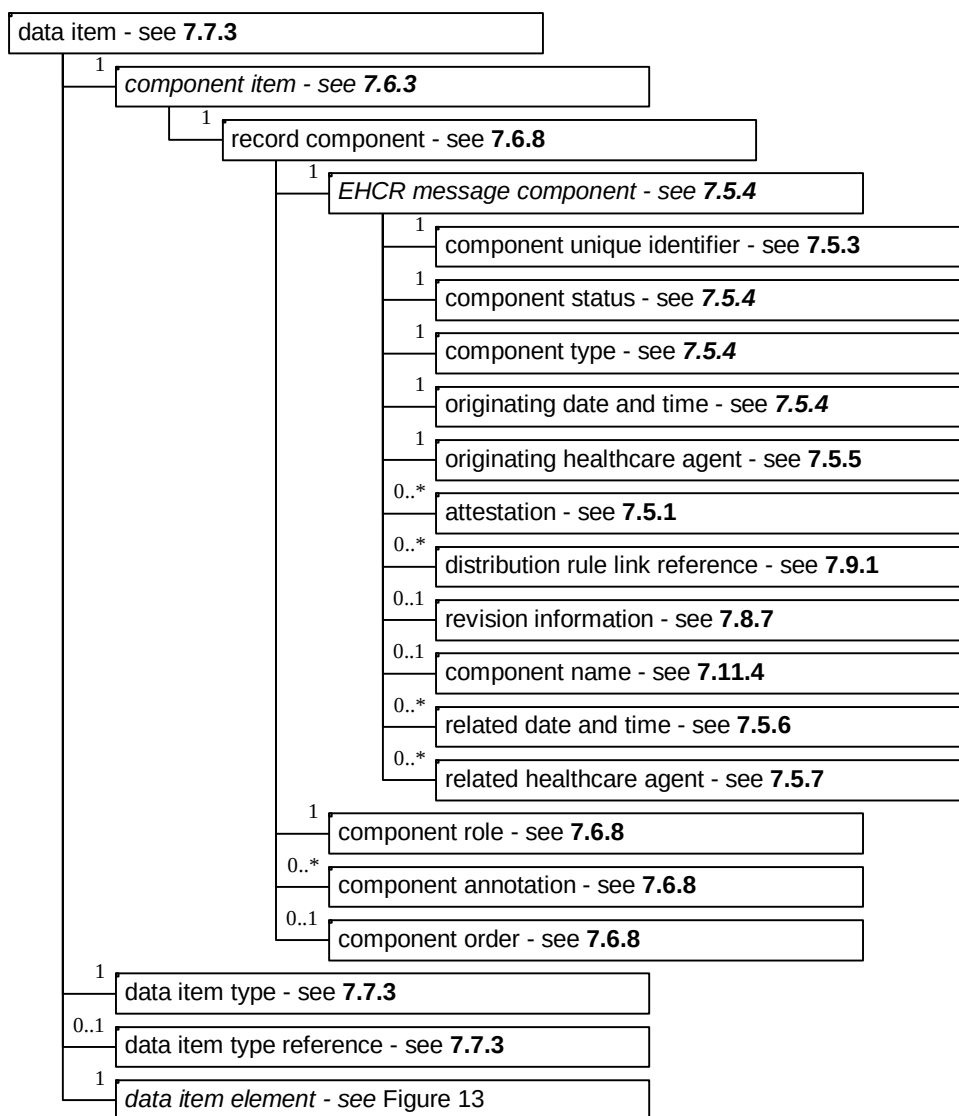


Figure 12. GMD Data Item

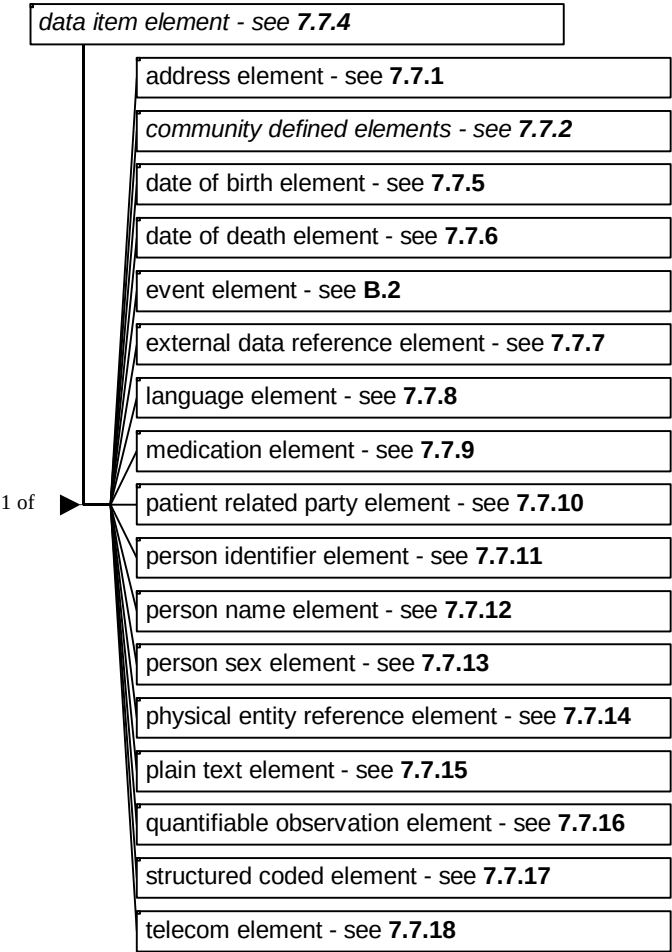


Figure 13. GMD Data Item Element

6.2.7 Comment items

- 5 6.2.7.1. A *comment item* (7.6.1) is a specialisation of the class *record component* (7.6.8). Therefore, each instance of *comment item* shall include instances of the attributes of *EHCR message component* and *record component* as specified in 6.2.3 and 6.2.4.
- 6.2.7.2. The *comment item* shall also include a single mandatory instance of both the *comment text* (7.8.3) attribute and the *comment target* (7.8.1) attribute.

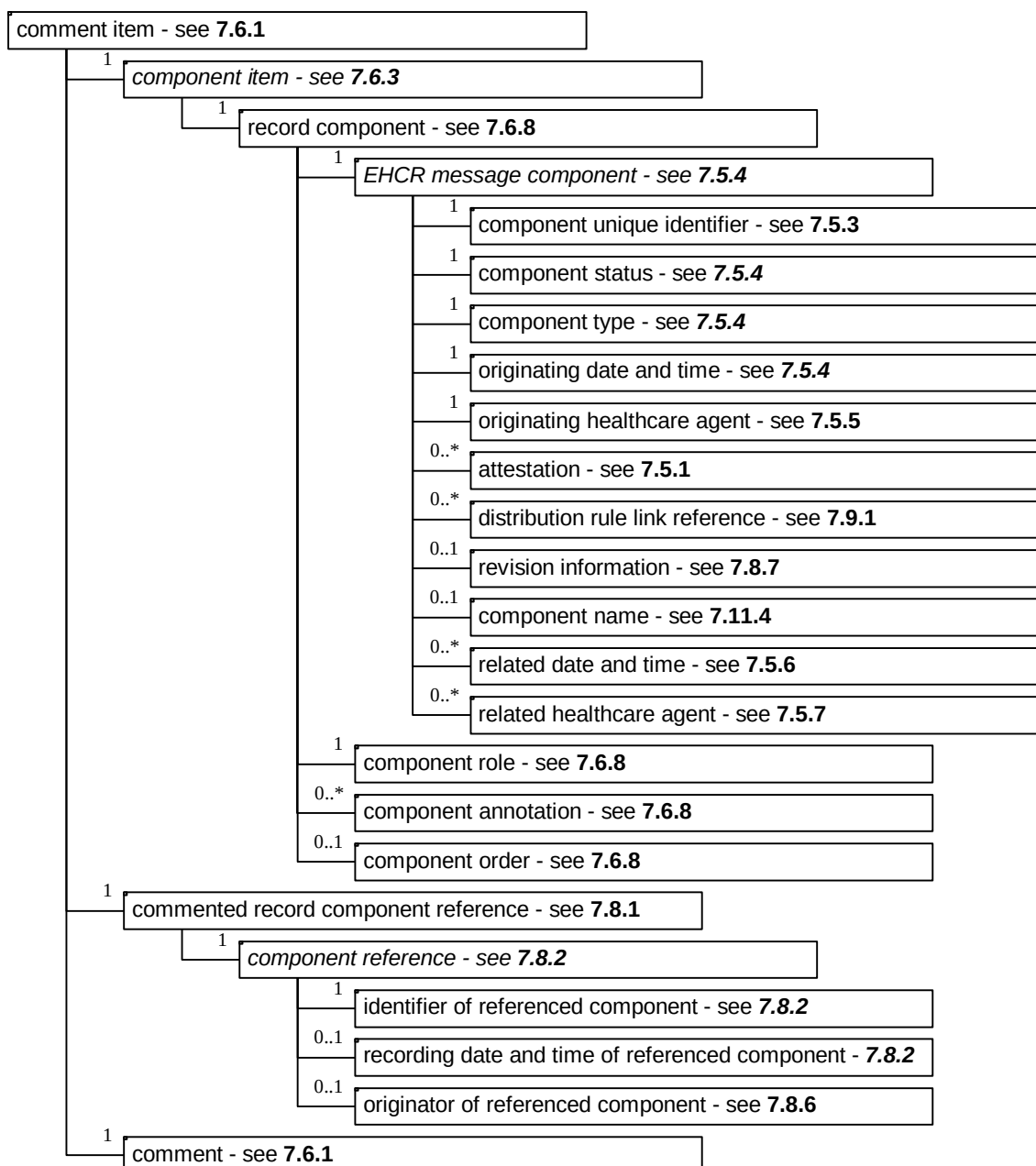
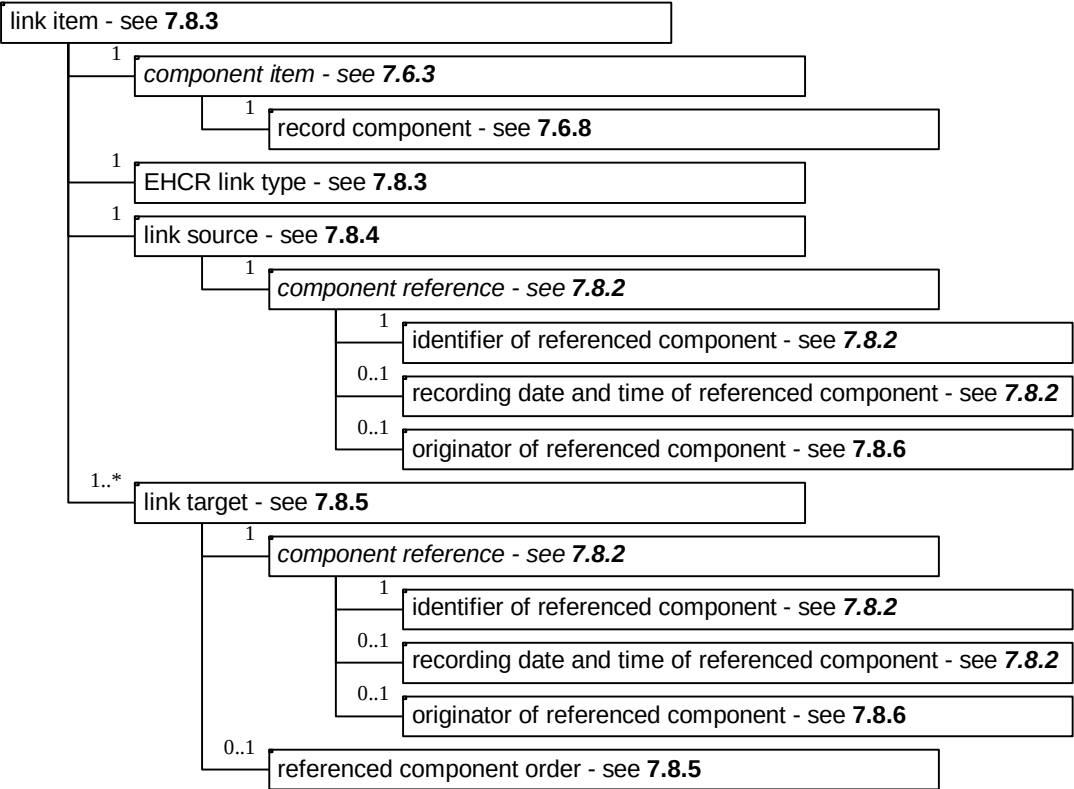


Figure 14. GMD Comment Item

6.2.8 Link items

6.2.8.1. A *link item* (7.8.3) is a specialisation of the class *record component* (7.6.8). Therefore, each instance of *link item* shall include instances of the attributes of *EHCR message component* and *record component* as specified in 6.2.3 and 6.2.4.

- 5
- 6.2.8.2. The *link item* shall also include a single mandatory instance of the *link source* (7.8.4) and *link type* (7.8.3) attributes and one or more instances of the *link target* (7.8.5) attribute.
- 6.2.8.3. The nature of the link between the *record components* shall be denoted by the *link type* attribute. The *link type* shall have one of the values specified in Table A-5 of Annex A of this European Prestandard.



10

Figure 15. GMD Link Item

6.2.9 Selected component complexes

6.2.9.1. A *selected component complex* (7.6.9) is a specialisation of the class *record component* (7.6.8). Therefore, each instance of *selected component complex* shall include instances of the attributes of *EHCR message component* as specified in 6.2.3.

6.2.9.2. The *component name* attribute denotes the title of the view of the EHCR provided by the *selected component complex*. This shall be mapped to the high-level classification of document and section titles specified in Tables A-1 and A-2 of Part 2 of this European Prestandard.

6.2.9.3. The representation of a *selected component complex* within the *provide EHCR message* contains only one attributes other than those inherited from the *EHCR message component* class. The *component selection criteria* attribute is an optional specification of the criteria used for selecting a dynamic view of the EHCR.

6.2.9.4. In the message *record components* that are part of a view or logical grouping shall be linked to the appropriate *selected component complex* by a *link item* (7.8.3).

NOTE The *link item* includes a pointer to a *selected component complex* and one or more pointers to other *record components*. The *EHCR link type* attribute of the *link item* indicates whether these *record component* are to be added to or removed from the specified view. This mechanism allows the addition and removal or individual *record component* from/to a view to be attributed an originator rather than assigning the entire view to one originator. This approach is compatible with various other ways of representing views in an EHCR system.

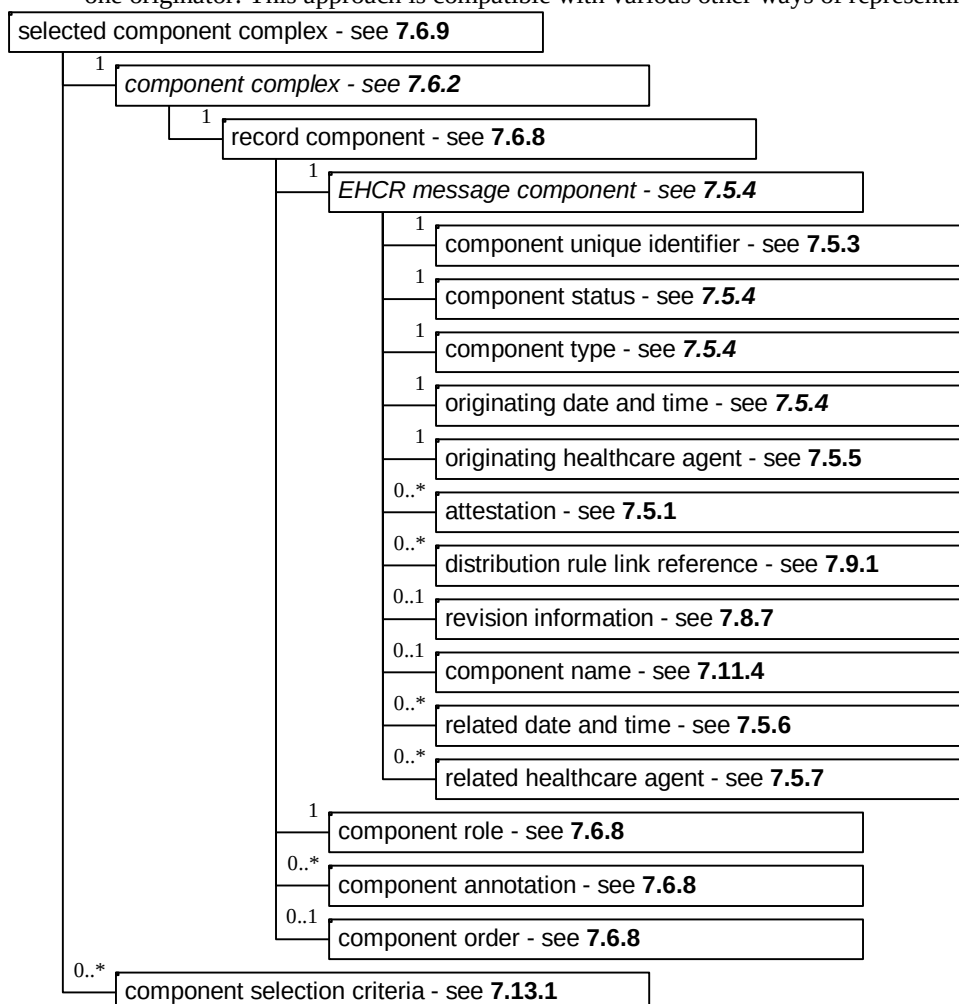


Figure 16. GMD Selected Component Complex

6.3 Request EHCR Message

6.3.1. The *request EHCR message* (7.3.8) should be used to request all or part of the EHCR for a single specified patient. Its structure is described below and illustrated in Figure 17

6.3.2. The *request EHCR message* shall include the general attributes of a *healthcare message* (7.4.3).

- 5 6.3.3. The general attributes of a *healthcare message* (7.4.3) that are mandatory in all instances of this message are *identification of message by originator*, *issue date and time of message*, *urgency of message*, *patient matching information* (7.6.7) and *message receipt acknowledgement request*. The general attributes of a *healthcare message* that are optional in all instances of this message are *originator's comment on message*, *message language* and the details of any number of *healthcare parties* (7.10.16).

- 10 NOTE The details of a *healthcare party* may be included here if they are referred to elsewhere in the message. However, references may also be made within the message to *healthcare parties in a shared, national, regional or international registry*.

- 15 6.3.4. The *patient matching information* (7.6.7) included in the message shall contain optional instances of *patient identifiers*, *patient name*, *alternative person name*, *date and time of birth*, *patient administrative sex*, *patient addresses* and *patient matching comment*. At least one of these optional components shall be present in any instance of the message. Communicating communities may specify precise combinations of these attributes required to safely match a message to a patient.

6.3.5. The *request EHCR message* shall include one mandatory instance of *EHCR destination* (7.2.1). This is used to identify the sender of the message.

- 20 6.3.6. The *request EHCR message* shall include one mandatory instance of *EHCR source* (7.2.3). This is used to identify the intended recipient of the message.

6.3.7. The *request EHCR message* shall include multiple optional instances of *EHCR intermediary* (7.2.2). Each of these may be used to identify a communicating party (other than the sender and recipient) and to indicate their role in the communication of this message or the intended response to this message.

- 25 6.3.8. The *request EHCR message* shall include one mandatory instance of *specification of EHCR information* (7.3.9).

- NOTE The *specification of EHCR information* contains an indication of whether the EHCR request is for the entire record, a specified subset of the record or a date limited update of the record. The specification may also indicate the language in which the EHCR is requested and the nature of the enterprise environment of the requester. Identification of the EHCR enterprise may enable the *EHCR source* to determine the types of *EHCR enterprise item* (7.6.5) that the *EHCR destination* is able to process.
- 30

6.3.9. The *request EHCR message* shall include one optional instance of the attribute *reason for request* to inform the *EHCR source* about the nature of the request.

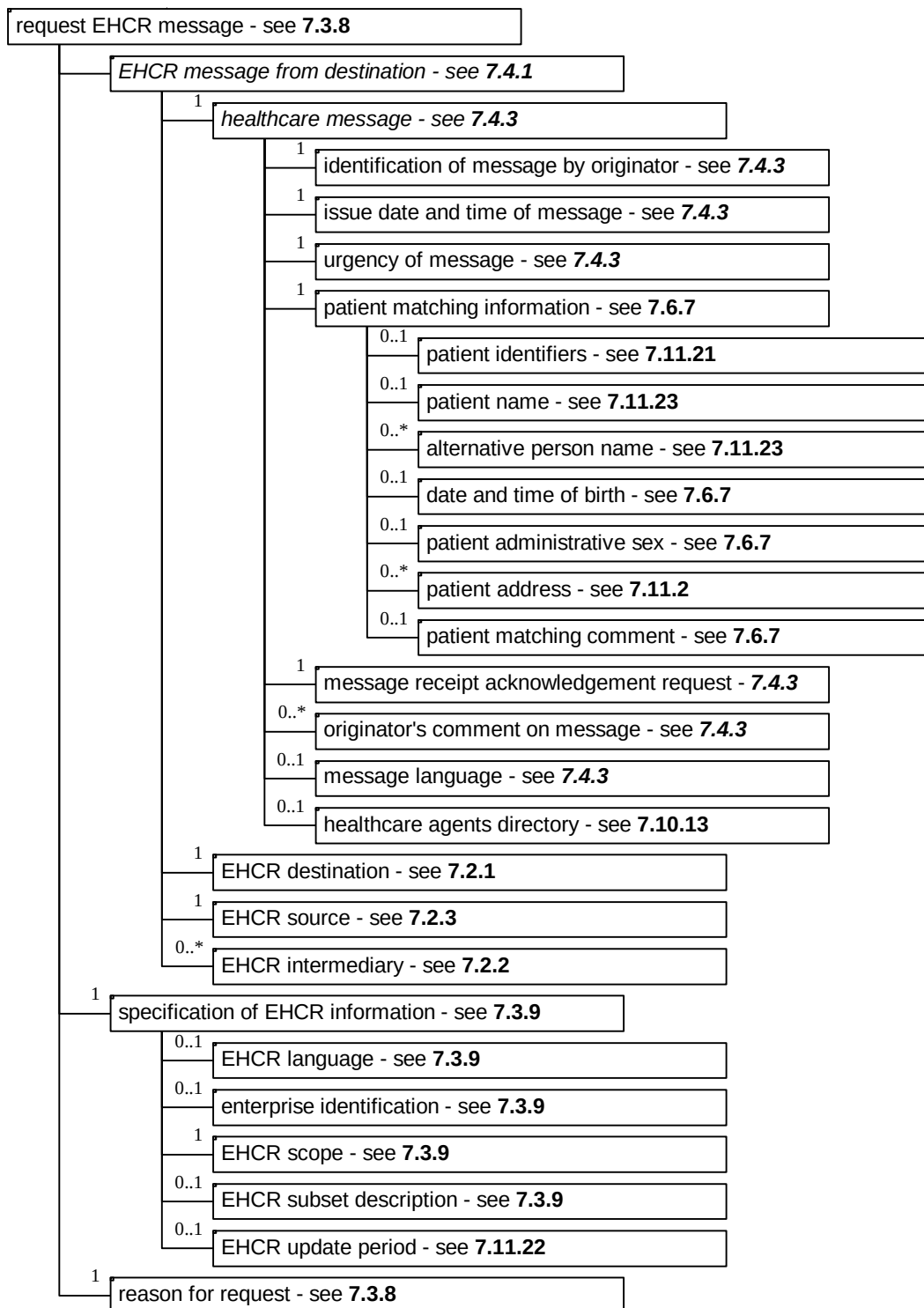


Figure 17. GMD Request EHCR Message

6.4 Reject Request for EHCR Message

6.4.1. The *reject request for EHCR message* (7.3.7) should be used to respond to a *request EHCR message* (7.3.8) if the *EHCR source* is unwilling or unable to provide the requested EHCR information. Its structure is described below and illustrated in Figure 18

6.4.2. The *reject request for EHCR message* shall include the general attributes of a *healthcare message* (7.4.3).

6.4.3. The general attributes of a *healthcare message* (7.4.3) that are mandatory in all instances of this message are *identification of message by originator*, *issue date and time of message*, *urgency of message*, *patient matching information* (7.6.7) and *message receipt acknowledgement request*. The general attributes of a *healthcare message* that are optional in all instances of this message are *originator's comment on message*, *message language* and the details of any number of *healthcare parties* (7.10.16).

NOTE The details of a *healthcare party* may be included here if they are referred to elsewhere in the message. However, references may also be made within the message to *healthcare parties in a shared, national, regional or international registry*.

6.4.4. The *patient matching information* (7.6.7) included in the message shall contain optional instances of *patient identifiers*, *patient name*, *alternative person name*, *date and time of birth*, *patient administrative sex*, *patient addresses* and *patient matching comment*. At least one of these optional components shall be present in any instance of the message. Communicating communities may specify precise combinations of these attributes required to safely match a message to a patient.

6.4.5. The *reject request for EHCR message* shall include one mandatory instance of *EHCR destination* (7.2.1). This is used to identify the intended recipient of the message.

6.4.6. The *reject request for EHCR message* shall include one mandatory instance of *EHCR source* (7.2.3). This is used to identify the sender of the message.

6.4.7. The *reject request for EHCR message* shall include multiple optional instances of *EHCR intermediary* (7.2.2). Each of these may be used to identify a communicating party (other than the sender and recipient) and to indicate their role in the communication of this message.

6.4.8. The *reject request for EHCR message* shall include one optional instance of *reference to request EHCR message*. This is an instance of *message reference* (7.3.2). It refers to the *request EHCR message* (7.3.8) to which this message is a response.

6.4.9. The *reject request for EHCR message* shall include one mandatory instance of the attribute *reason for rejection of request* to inform the *EHCR destination* about the reason for rejection of their request.

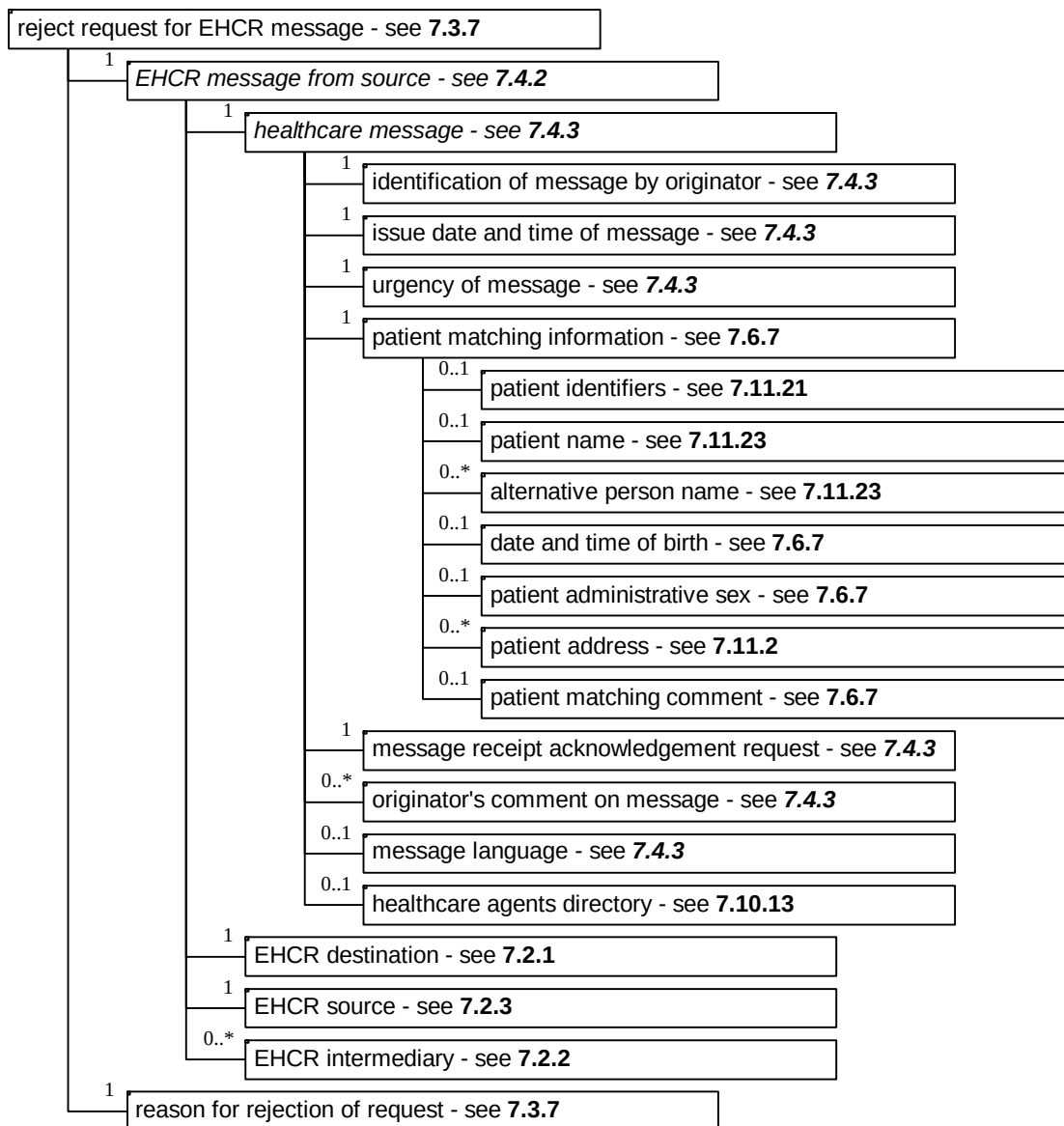


Figure 18. GMD Reject Request for EHCR Message

6.5 Accept EHCR Message

6.5.1. The *accept EHCR message* (7.3.1) should be used to respond to a *provide EHCR message* (7.3.4) if the *EHCR source* requires confirmation of acceptance of the EHCR information. Its structure is described below and illustrated in Figure 19.

5 6.5.2. The *accept EHCR message* shall include the general attributes of a *healthcare message* (7.4.3).

6.5.3. The general attributes of a *healthcare message* (7.4.3) that are mandatory in all instances of this message are *identification of message by originator*, *issue date and time of message*, *urgency of message*, *patient matching information* (7.6.7) and *message receipt acknowledgement request*. The general attributes of a *healthcare message* that are optional in all instances of this message are *originator's comment on message*, *message language* and the details of any number of *healthcare parties* (7.10.16).

10 NOTE The details of a *healthcare party* may be included here if they are referred to elsewhere in the message. However, references may also be made within the message to *healthcare parties in a shared, national, regional or international registry*.

15 6.5.4. The *patient matching information* (7.6.7) included in the message shall contain optional instances of *patient identifiers*, *patient name*, *alternative person name*, *date and time of birth*, *patient administrative sex*, *patient addresses* and *patient matching comment*. At least one of these optional components shall be present in any instance of the message. Communicating communities may specify precise combinations of these attributes required to safely match a message to a patient.

20 6.5.5. The *accept EHCR message* shall include one mandatory instance of *EHCR destination* (7.2.1). This is used to identify the sender of the message.

6.5.6. The *accept EHCR message* shall include one mandatory instance of *EHCR source* (7.2.3). This is used to identify the intended recipient of the message.

25 6.5.7. The *accept EHCR message* shall include multiple optional instances of *EHCR intermediary* (7.2.2). Each of these may be used to identify a communicating party (other than the sender and recipient) and to indicate their role in the communication of this message.

6.5.8. The *accept EHCR message* shall include one optional instance of the attribute *acceptance status* to inform the *EHCR source* about the receipt and acceptance of the EHCR information.

30 6.5.9. The *accept EHCR message* shall include one optional instance of *reference to provide EHCR message*. This is an instance of *message reference* (7.3.2). It refers to the *provide EHCR message* (7.3.4) to which this message is a response.

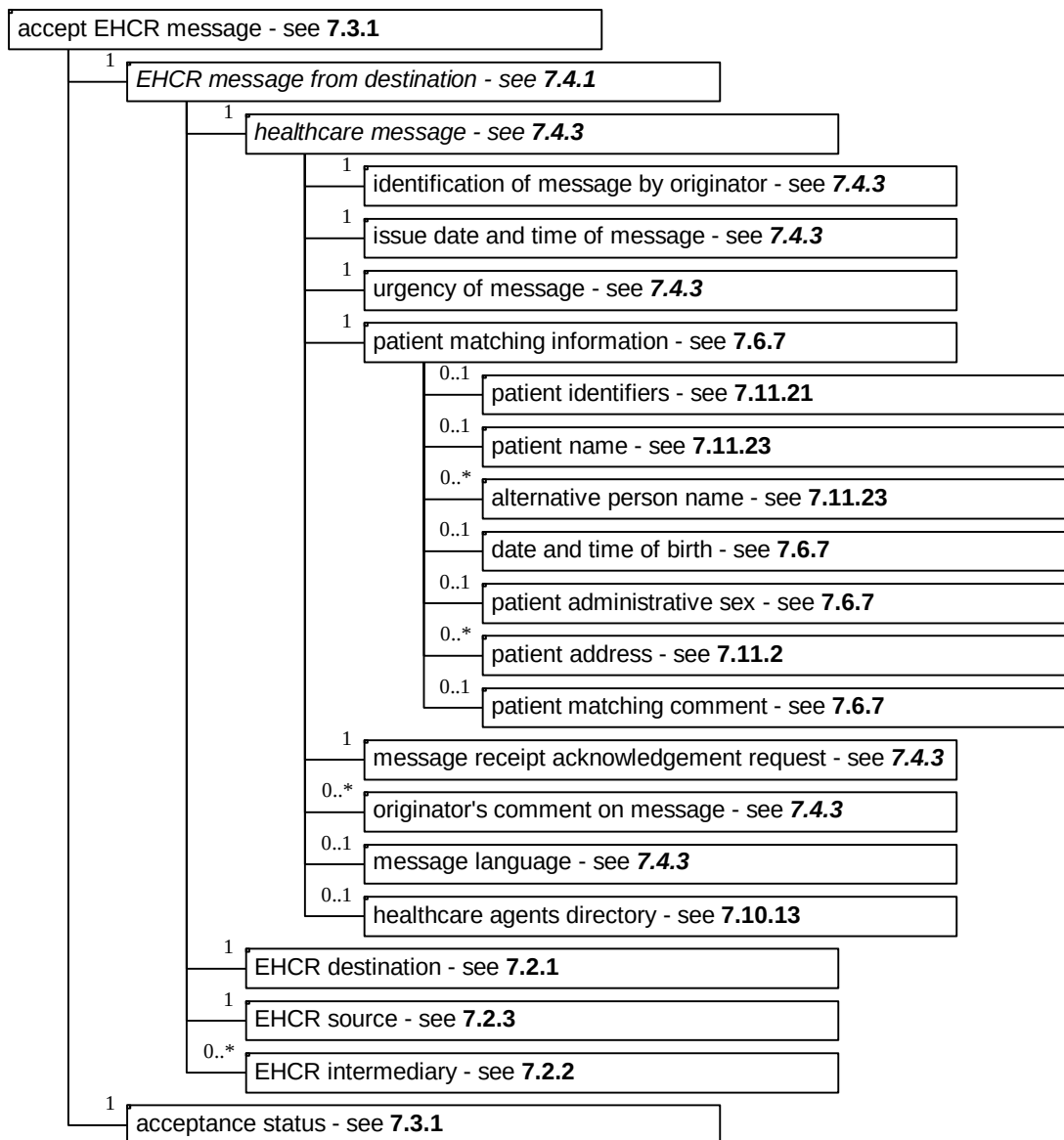


Figure 19. GMD Accept EHCR Message

7 The Domain Model

7.1 EHCR Message Domain

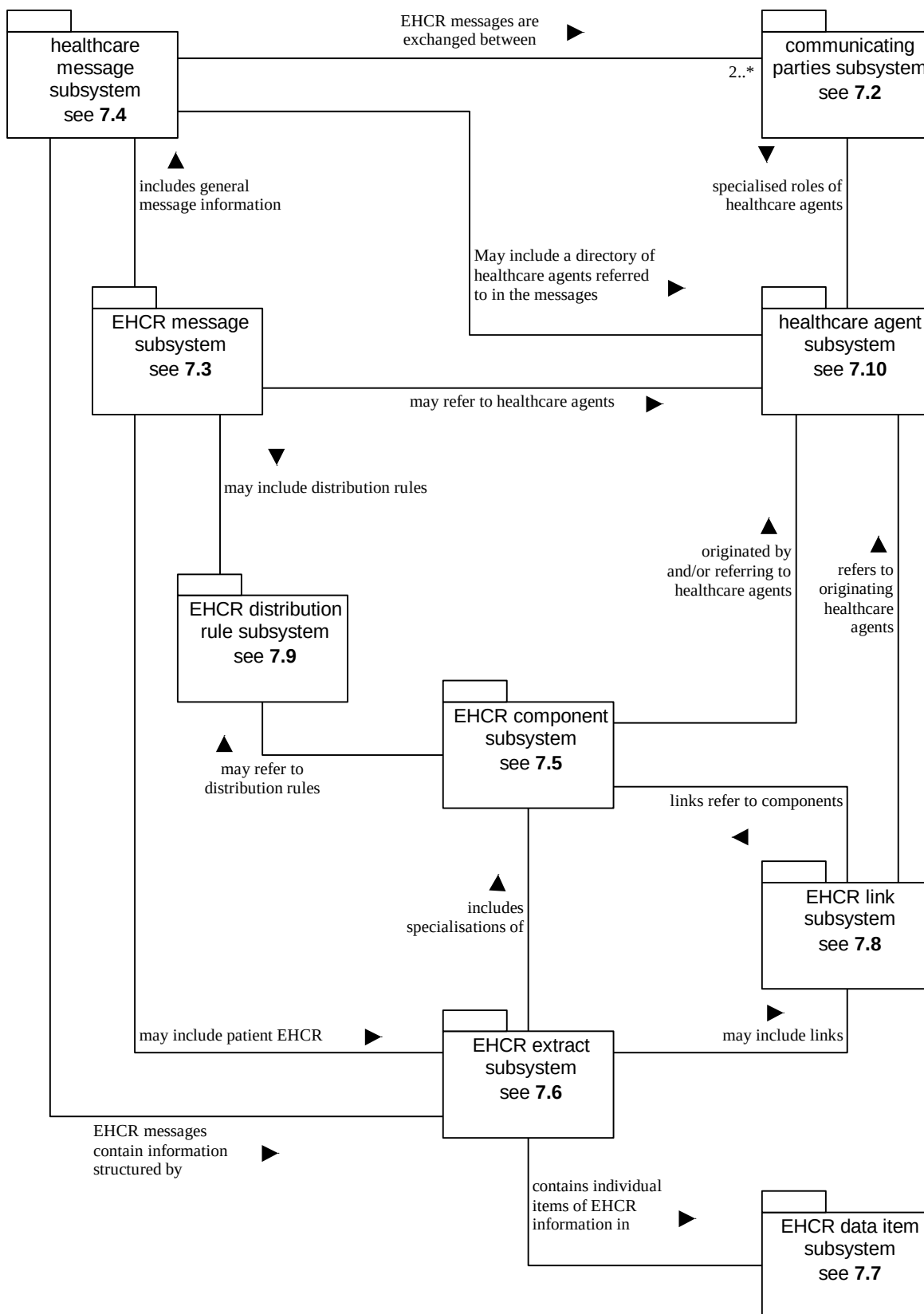


Figure 20. Domain Model - EHCR Message Top Level

7.2 communicating parties subsystem

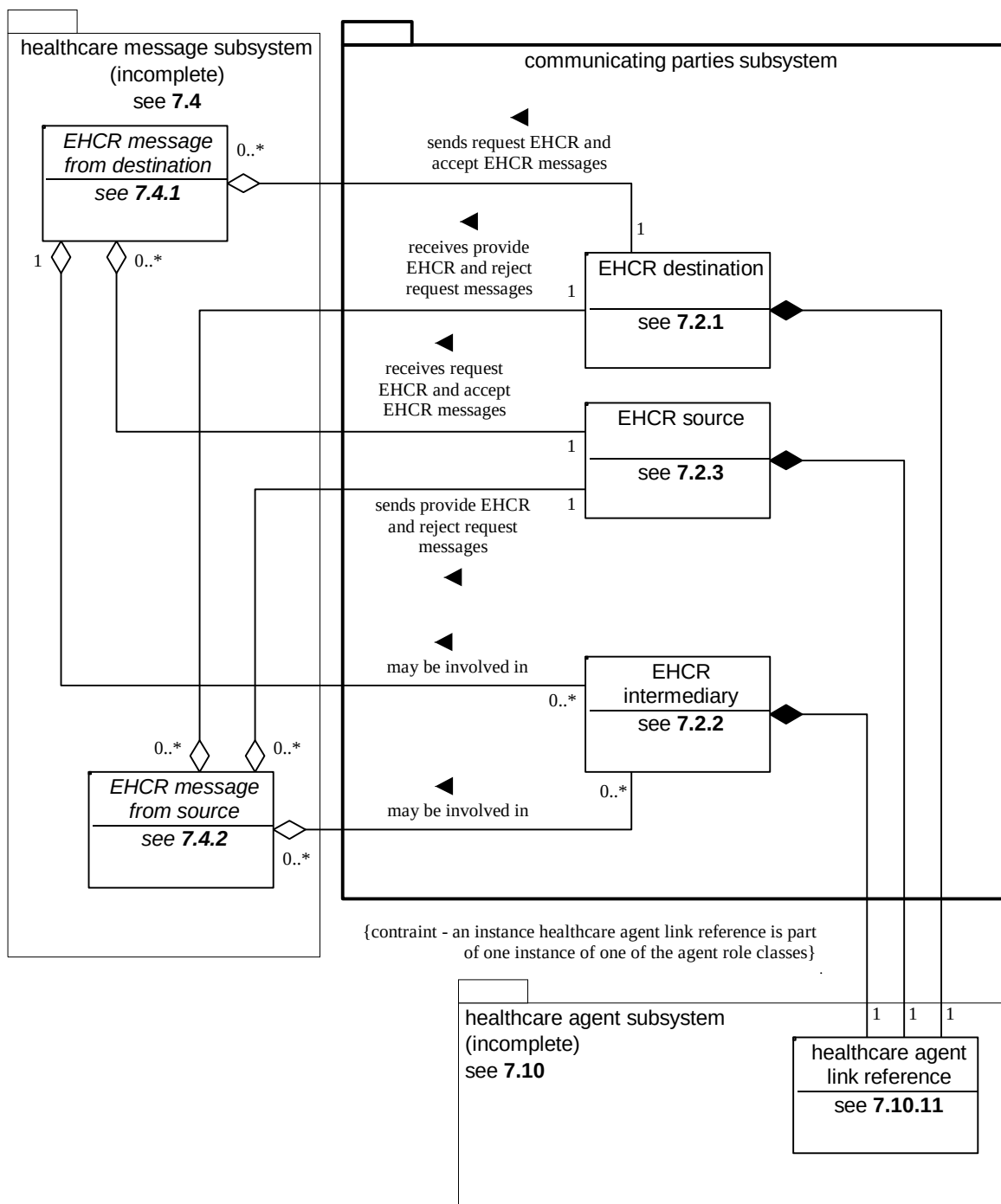


Figure 21. Domain Model - Communicating Parties Subsystem

5 7.2.1 EHCR destination

Type:	class
Description:	A healthcare agent (7.10.9) that requests or receives EHCR information from another healthcare agent (7.10.9) (an EHCR source (7.2.3)).
Usage	An <i>EHCR destination</i> sends any number of <i>EHCR messages from destination</i> (7.4.1). An <i>EHCR destination</i> receives any number of <i>EHCR messages from source</i> (7.4.2).
Components	An <i>EHCR destination</i> contains a healthcare agent link reference (7.10.11).

Attributes	Type	Occurrence
healthcare agent link reference (7.10.11)	class	1
<i>Description:</i> A reference to a healthcare agent link (7.10.10) using an unambiguous identifier.		

7.2.2 EHCR intermediary

Type: class		
Description: A healthcare agent (7.10.9) other than the EHCR source (7.2.3) or EHCR destination (7.2.1) that is involved in the communication of EHCR information.		
Note: An <i>EHCR intermediary</i> may act as a forwarding agent for messages that request or provide EHCR information. An <i>EHCR intermediary</i> may be a Trusted Third Party which confirms that: — the EHCR destination (7.2.1) is entitled to receive a particular EHCR information regarding a particular patient; — the EHCR source (7.2.3) is qualified and/or registered to provide EHCR information.		
Usage An <i>EHCR intermediary</i> may have a role in communication of any number of EHCR messages from source (7.4.2) . An <i>EHCR intermediary</i> is part of an EHCR message from destination (7.4.1) .		
Components An <i>EHCR intermediary</i> contains a healthcare agent link reference (7.10.11) .		
Attributes	Type	Occurrence
EHCR intermediary role	E [Enumerated]	1
<i>Description:</i> The role of the <i>EHCR intermediary</i> in relation to the current message. <i>Note:</i> In some cases the <i>EHCR intermediary role</i> may apply to a response to the current message or to preceding request message. <i>Values:</i> 0. Clearing-house or routing agent conveying a <i>request EHCR message</i>. 1. Clearing-house or routing agent conveying or nominated to convey a <i>provide EHCR message</i>. 2. Authorising body able to verify that the status of the <i>EHCR destination</i>. 3. Authorising body able to verify that the status of the <i>EHCR source</i>. 4. Party that can enable identification of the subject of an anonymous <i>provide EHCR message</i>. 5+. Other roles specified by agreement between communicating parties.		
healthcare agent link reference (7.10.11)	class	1
<i>Description:</i> A reference to a healthcare agent link (7.10.10) using an unambiguous identifier.		

7.2.3 EHCR source

Type: class		
Description: A healthcare agent (7.10.9) to whom a request for EHCR information is submitted or from whom EHCR information is received.		
Usage An <i>EHCR source</i> sends any number of EHCR messages from source (7.4.2) . An <i>EHCR source</i> receives any number of EHCR messages from destination (7.4.1) .		
Components An <i>EHCR source</i> contains a healthcare agent link reference (7.10.11) .		
Attributes	Type	Occurrence
healthcare agent link reference (7.10.11)	class	1
<i>Description:</i> A reference to a healthcare agent link (7.10.10) using an unambiguous identifier.		

7.3 EHCR message subsystem

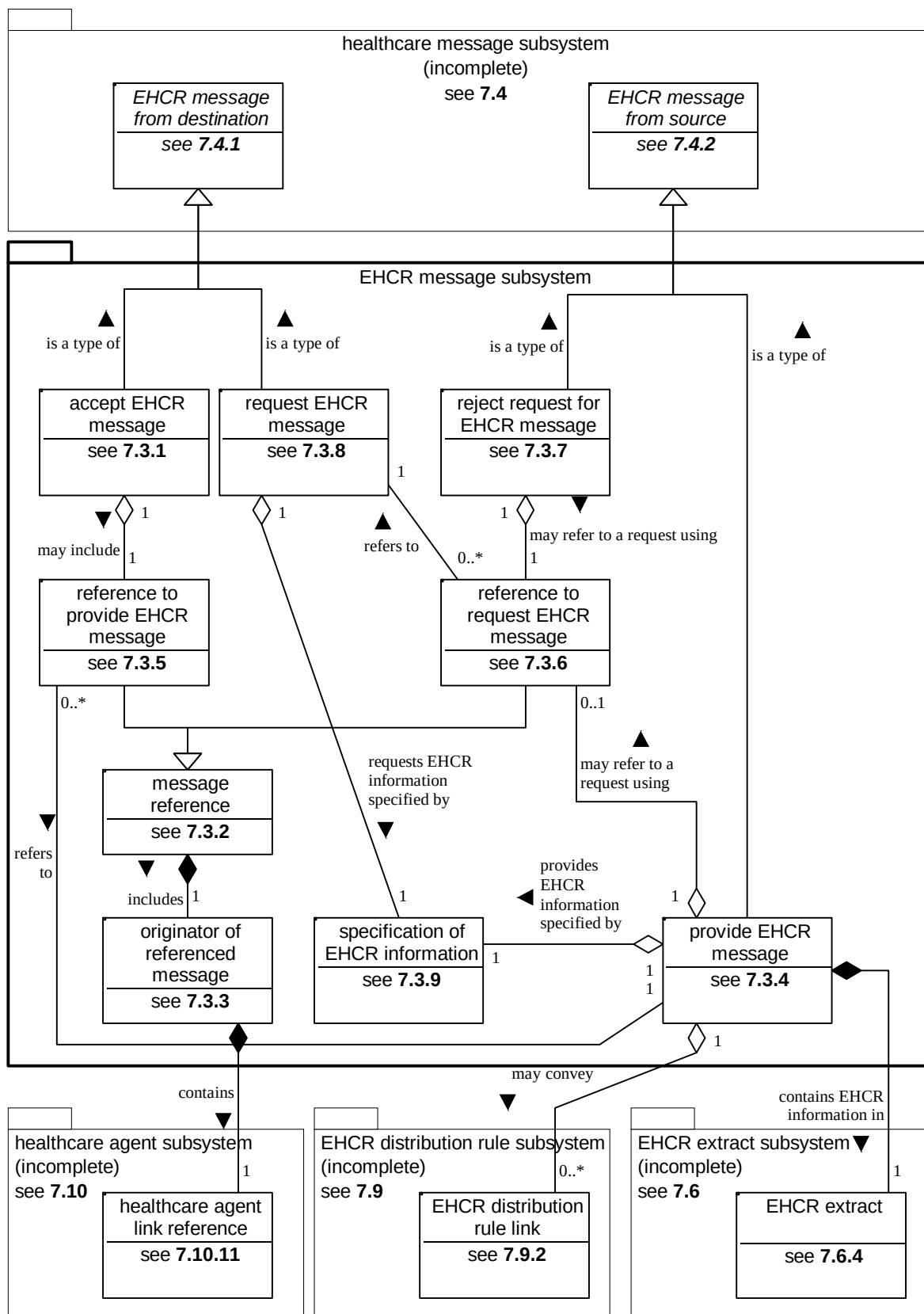


Figure 22. Domain Model - EHCR Message Subsystem

7.3.1 accept EHCR message

Type: message		
Specialisation of: EHCR message from destination (7.4.1)		
Description: A message used to indicate that a healthcare agent (7.10.9) has received a provide EHCR message (7.3.4). Note: According to the way in which communicating parties interact, the EHCR destination (7.2.1) may use the accept EHCR message to notify the EHCR source (7.2.3) of an action they have taken or a responsibility they have accepted following receipt of the provide EHCR message (7.3.4). However, this message is not intended to undertake or replace any administrative or contractual exchange required to support transfer of care or referral. The primary purpose of this message is to notify that the EHCR has been received by a clinical application and seen by a duly authorised healthcare professional (7.10.17).		
Components An accept EHCR message may include a reference to provide EHCR message (7.3.5).		
Attributes	Type	Occurrence
Attributes of generalisation	EHCR message from destination (7.4.1)	
acceptance status	C/S [Code or String] (7.12.2)	1
<i>Description:</i> Indication of whether the EHCR destination (7.2.1) has accepted the provide EHCR message (7.3.4).		
reference to provide EHCR message (7.3.5)	class	1
<i>Description:</i> A message reference (7.3.2) identifying the provide EHCR message (7.3.4) accepted by this message.		

7.3.2 message reference

Type: class		
Description: A reference to an identified message from within another message.		
Specialisations A message reference is specialised as a reference to request EHCR message (7.3.6) or a reference to provide EHCR message (7.3.5).		
Components A message reference refers to an originator of referenced message (7.3.3).		
Attributes	Type	Occurrence
originator of referenced message (7.3.3)	class	1
<i>Description:</i> A class containing a healthcare agent link reference (7.10.11) that identifies the originator or another message referred to in the current message. This information is required to enable a message to be uniquely identified.		
identification of referenced message by its originator	S [String]	1
<i>Description:</i> A unique identifier of a message assigned by its originator. The identifier should be unique across the full range of healthcare messages sent by the originator.		
identification of referenced message by originator of current message	S [String]	0 or 1
<i>Description:</i> This identifier may be assigned to a message by a recipient to provide an alternative mechanism by which they can refer to it in subsequent communications. <i>Note:</i> The preferred means of identifying a message is by a combination of the identification of the originator of referenced message and the identification of referenced message by its originator .		
issue date and time of message	TOCD [Time+Date]	0 or 1
<i>Description:</i> Date and time at which a message is issued by the sending application. <i>Note:</i> This need not be the same as the date/time at which the message is dispatched to the message handling service or network service provider.		

7.3.3 originator of referenced message

Type: class		
Description: A class containing a healthcare agent link reference (7.10.11) that identifies the originator or another message referred to in the current message. This information is required to enable a message to be uniquely identified.		
Components An <i>originator of referenced message</i> contains a healthcare agent link reference (7.10.11).		
Attributes	Type	Occurrence
healthcare agent link reference (7.10.11)	class	1
<i>Description:</i> A reference to a healthcare agent link (7.10.10) using an unambiguous identifier.		

7.3.4 provide EHCR message

Type: message		
Specialisation of: EHCR message from source (7.4.2)		
Description: A message used to convey all or part of the information in an EHCR for a specified patient from one healthcare agent (7.10.9) to another healthcare agent (7.10.9).		
Associations A <i>provide EHCR message</i> may be related to any number of reference to provide EHCR messages (7.3.5).		
Components A <i>provide EHCR message</i> provides EHCR information specified by specification of EHCR information (7.3.9). A <i>provide EHCR message</i> may refer to a request using a reference to request EHCR message (7.3.6). A <i>provide EHCR message</i> may convey any number of EHCR distribution rule links (7.9.2). A <i>provide EHCR message</i> contains EHCR information in an EHCR extract (7.6.4).		
Attributes	Type	Occurrence
Attributes of generalisation	EHCR message from source (7.4.2)	
specification of EHCR information (7.3.9)	class	1
<i>Description:</i> A specification of the language and completeness of content of the EHCR information requested or provided. The specification may also include an identification of the nature of the enterprise environment of the party sending the message.		
reference to request EHCR message (7.3.6)	class	0 or 1
<i>Description:</i> A message reference (7.3.2) identifying the request EHCR message (7.3.8) to which this message is a response.		
EHCR distribution rule link (7.9.2)	class	0 or many
<i>Description:</i> This class is to be represented in the manner specified in Part 3 of this European Prestandard.		
EHCR extract (7.6.4)	class	1
<i>Description:</i> An EHCR message component (7.5.4) that represents the entire EHCR content of the message. If the message contains the entire EHCR for a patient, the <i>EHCR extract</i> is equivalent to the EHCR class in the Extended Architecture which forms Part 1 of this European Prestandard. However, in other messages the <i>EHCR Extract</i> may represent a subset of the EHCR.		

7.3.5 reference to provide EHCR message

Type: class		
Specialisation of: message reference (7.3.2)		
Description: A message reference (7.3.2) identifying the provide EHCR message (7.3.4) accepted by this message.		

Usage <i>A reference to provide EHCR message may be part of an accept EHCR message (7.3.1).</i>		
Associations <i>A reference to provide EHCR message refers to a provide EHCR message (7.3.4).</i>		
Attributes	Type	Occurrence
Attributes of generalisation	message reference (7.3.2)	

7.3.6 reference to request EHCR message

Type: class Specialisation of: message reference (7.3.2)		
Description: A message reference (7.3.2) identifying the request EHCR message (7.3.8) to which this message is a response.		
Usage <i>A reference to request EHCR message is part of a provide EHCR message (7.3.4). A reference to request EHCR message is part of a reject request for EHCR message (7.3.7).</i>		
Associations <i>A reference to request EHCR message refers to a request EHCR message (7.3.8).</i>		
Attributes	Type	Occurrence
Attributes of generalisation	message reference (7.3.2)	

7.3.7 reject request for EHCR message

Type: message Specialisation of: EHCR message from source (7.4.2)		
Description: A message that indicates that the sender is declining to send all or part of an EHCR in response to a request EHCR message (7.3.8) .		
Note: A request may be rejected for various different reasons. These include the following: — the party from whom the record was requested does not hold an EHCR for the specified patient. — the EHCR does not hold the information requested. — the EHCR or the requested information cannot be divulged due to confidentiality constraints imposed by the patient, by legislation or by ethical guidelines.		
Components <i>A reject request for EHCR message may refer to a request using a reference to request EHCR message (7.3.6).</i>		
Attributes	Type	Occurrence
Attributes of generalisation	EHCR message from source (7.4.2)	
reason for rejection of request	C/S [Code or String] (7.12.2)	1
<i>Description: An indication of the reason for rejecting a request for the EHCR.</i>		
reference to request EHCR message (7.3.6)	class	1
<i>Description: A message reference (7.3.2) identifying the request EHCR message (7.3.8) to which this message is a response.</i>		

7.3.8 request EHCR message

Type: message Specialisation of: EHCR message from destination (7.4.1)		
Description: A message used by one healthcare agent (7.10.9) to request another healthcare agent (7.10.9) to provide them with all or part of the EHCR that they hold for a specified patient.		

Associations A request EHCR message may be referred to by any number of <i>reference to request EHCR messages</i> (7.3.6).		
Components A request EHCR message requests EHCR information specified by <i>specification of EHCR information</i> (7.3.9).		
Attributes	Type	Occurrence
Attributes of generalisation	EHCR message from destination (7.4.1)	
specification of EHCR information (7.3.9)	class	1
<i>Description:</i> A specification of the language and completeness of content of the EHCR information requested or provided. The specification may also include an identification of the nature of the enterprise environment of the party sending the message.		
reason for request	C+S [Code+String] (7.12.3)	1
<i>Description:</i> An indication of the reason for requesting the EHCR.		

7.3.9 specification of EHCR information

Type: class		
Description: A specification of the language and completeness of content of the EHCR information requested or provided. The specification may also include an identification of the nature of the enterprise environment of the party sending the message.		
Usage <i>specification of EHCR information</i> specifies the EHCR information requested by a <i>request EHCR message</i> (7.3.8). <i>specification of EHCR information</i> specifies the EHCR information provided by a <i>provide EHCR message</i> (7.3.4).		
Attributes	Type	Occurrence
EHCR language	V [Code Value] (7.12.6)	0 or 1
<i>Description:</i> The language in which the EHCR is requested or provided. <i>Note:</i> Represented by the abbreviations specified in ISO 639.		
enterprise identification	C [Coded] (7.12.1)	0 or 1
<i>Description:</i> An indication of the enterprise environment applicable to an EHCR message or to an <i>enterprise item</i> (7.6.5) within a message. <i>Note:</i> When used in a <i>provide EHCR message</i> (7.3.4) the <i>enterprise identification</i> indicates the source of reference for <i>enterprise items</i> (7.6.5) in the message. When used in a <i>request EHCR message</i> (7.3.8) the <i>enterprise identification</i> indicates the enterprise capabilities of the <i>EHCR destination</i> (7.2.1).		
EHCR scope	E [Enumerated]	1
<i>Description:</i> An indication of whether the EHCR information contained in (or requested by) the message is complete, a selected subset or an update of changes during a specified <i>EHCR update period</i> . <i>Note:</i> The message does not provide a mechanism for constructing and submitting detailed selection criteria for subset of the EHCR. However, the scope of the EHCR information provided may be a subset of the record selected by a <i>healthcare professional</i> (7.10.17) acting as the <i>EHCR source</i> (7.2.3). When the message is used to convey a subset of the message the EHCR subset description may be used to describe the nature of the subset. <i>Values:</i> 0. Complete 1. Subset 2. Update determined by EHCR update period		

EHCR subset description	S [String]	0 or 1
<i>Description:</i> A description the nature of a subset of the EHCR included a provide EHCR message (7.3.4) or requested by a request EHCR message (7.3.8). <i>Note:</i> A subset of the EHCR may be a general-purpose summary or may be created to provide a particular view of the patient. The <i>EHCR subset description</i> provides a free text label to indicate the nature of the subset. It is not intended to be used for automated selection. This attribute should only be used if the <i>EHCR scope</i> attribute is set as "subset". <i>Example(s):</i> General summary, nursing care records, summary from diabetic specialist for ophthalmologist.		
EHCR update period	period (7.11.22)	0 or 1
<i>Description:</i> <i>EHCR update period</i> the period of time to which the requested or provided part of the EHCR applies. <i>Note:</i> Unless otherwise agreed between the communicating parties, the period applies to the date and time or origin of the relevant EHCR message components (7.5.4).		

7.4 healthcare message subsystem

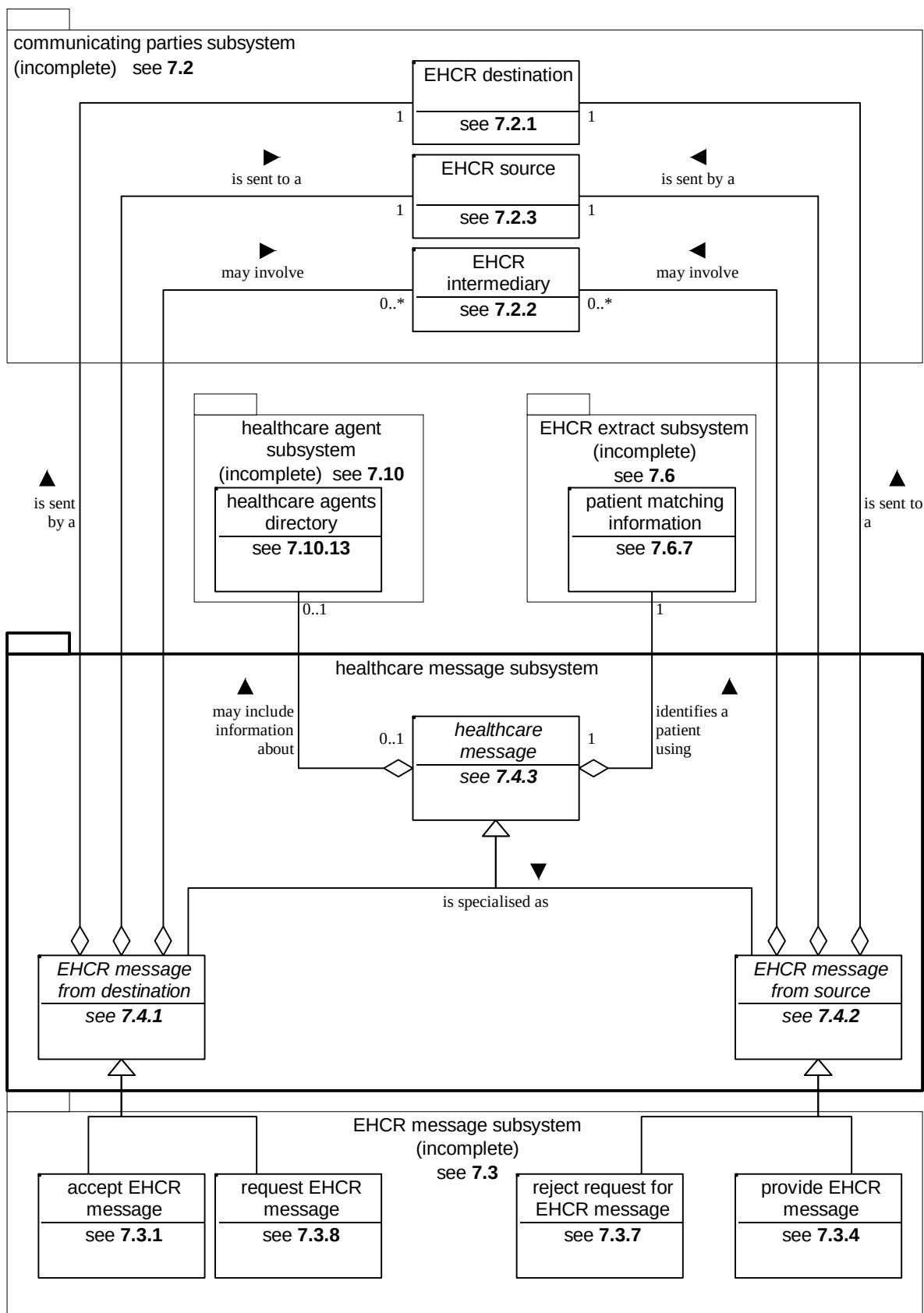


Figure 23. Domain Model - Healthcare Message Subsystem

7.4.1 EHCR message from destination

Type: class		
Specialisation of: healthcare message (7.4.3)		
Description: An abstract class representing the attributes and relationships common to all messages sent by an EHCR destination (7.2.1) to an EHCR source (7.2.3).		
Note: This is an abstract class. It is only instantiated as instances of one of its specialisations.		
Specialisations An <i>EHCR message from destination</i> is specialised as a request EHCR message (7.3.8) or an accept EHCR message (7.3.1).		
Components An <i>EHCR message from destination</i> is sent by an EHCR destination (7.2.1). An <i>EHCR message from destination</i> is sent to an EHCR source (7.2.3). An <i>EHCR message from destination</i> may involve any number of EHCR intermediaries (7.2.2).		
Attributes	Type	Occurrence
Attributes of generalisation	healthcare message (7.4.3)	
EHCR destination (7.2.1)	class	1
<i>Description:</i> A healthcare agent (7.10.9) that requests or receives EHCR information from another healthcare agent (7.10.9) (an EHCR source (7.2.3)).		
EHCR source (7.2.3)	class	1
<i>Description:</i> A healthcare agent (7.10.9) to whom a request for EHCR information is submitted or from whom EHCR information is received.		
EHCR intermediary (7.2.2)	class	0 or many
<i>Description:</i> A healthcare agent (7.10.9) other than the EHCR source (7.2.3) or EHCR destination (7.2.1) that is involved in the communication of EHCR information.		

7.4.2 EHCR message from source

Type: class		
Specialisation of: healthcare message (7.4.3)		
Description: An abstract class representing the attributes and relationships common to all messages sent by an EHCR source (7.2.3) to an EHCR destination (7.2.1).		
Note: This is an abstract class. It is only instantiated as instances of one of its specialisations.		
Specialisations An <i>EHCR message from source</i> is specialised as a provide EHCR message (7.3.4) or a reject request for EHCR message (7.3.7).		
Components An <i>EHCR message from source</i> is sent to an EHCR destination (7.2.1). An <i>EHCR message from source</i> is sent by an EHCR source (7.2.3). An <i>EHCR message from source</i> may involve any number of EHCR intermediaries (7.2.2).		
Attributes	Type	Occurrence
Attributes of generalisation	healthcare message (7.4.3)	
EHCR destination (7.2.1)	class	1
<i>Description:</i> A healthcare agent (7.10.9) that requests or receives EHCR information from another healthcare agent (7.10.9) (an EHCR source (7.2.3)).		
EHCR source (7.2.3)	class	1
<i>Description:</i> A healthcare agent (7.10.9) to whom a request for EHCR information is submitted or from whom EHCR information is received.		
EHCR intermediary (7.2.2)	class	0 or many
<i>Description:</i> A healthcare agent (7.10.9) other than the EHCR source (7.2.3) or EHCR destination (7.2.1) that is involved in the communication of EHCR information.		

7.4.3 healthcare message

Type: class		
Description: Information applicable to all messages.		
Note: Includes urgency of the message, request for acknowledgement, comments and language.		
Specialisations A healthcare message is specialised as an EHCR message from source (7.4.2) or an EHCR message from destination (7.4.1) . A healthcare message may be specialised as any number of EHCR messages from destination (7.4.1) .		
Components A healthcare message identifies a patient using patient matching information (7.6.7) . A healthcare message may include information about a healthcare agents directory (7.10.13) .		
Attributes	Type	Occurrence
identification of message by originator	S [String]	1
<i>Description:</i> Identifier assigned by the originator of a message. <i>Note:</i> This identifier must be globally unique across all messages originating from a particular healthcare agent (7.10.9) . The originator shall not assign the same identifier to any other message that conforms with a European Standard or European Prestandard promulgated by CEN Technical Committee 251 Healthcare Informatics.		
issue date and time of message	TOCD [Time+Date]	1
<i>Description:</i> Date and time at which a message is issued by the sending application. <i>Note:</i> This need not be the same as the date/time at which the message is dispatched to the message handling service or network service provider.		
urgency of message	E [Enumerated]	1
<i>Description:</i> Indication by sender of the urgency with which the receiver should deal with the request. <i>Note:</i> This attribute allows a receiving system to draw the attention of users to urgent messages. <i>Values:</i> 0. Low 1. Medium 2. High		
patient matching information (7.6.7)	class	1
<i>Description:</i> Information provided for the purpose of matching an EHCR related message to a uniquely identified individual patient.		
message receipt acknowledgement request	B [Boolean]	1
<i>Description:</i> Indication of whether or not the issuer of a message requests an acknowledgement of receipts by the recipient.		
originator's comment on message	C/S [Code or String] (7.12.2)	0 or many
<i>Description:</i> A comment from the sender of the message. <i>Note:</i> The comment should only be used to convey information that cannot be represented in other attributes of the <i>healthcare message</i> class.		
message language	V [Code Value] (7.12.6)	0 or 1
<i>Description:</i> The language in which the message contents are expressed. <i>Note:</i> Represented by the abbreviations specified in ISO 639.		
healthcare agents directory (7.10.13)	class	0 or 1
<i>Description:</i> A collection of information about any number of healthcare agents (7.10.9) or healthcare agent links (7.10.10) .		

7.5.1 attestation

Type: class		
Description: Information about the attestation of the Architectural Component.		
Note: An attestation may be in the form of a signature, although alternative methods of attestation are permitted.		
Usage An attestation is part of an <i>EHCR message component</i> (7.5.4).		
Components An attestation signed by an <i>attesting agent</i> (7.5.2).		
Attributes	Type	Occurrence
attesting agent (7.5.2)	class	1
<i>Description:</i> A <i>healthcare agent</i> (7.10.9) signing to attest a record component or message.		
date and time of attestation	TOCD [Time+Date]	1
digital signature	signature (7.13.7)	1

7.5.2 attesting agent

Type: class		
Description: A <i>healthcare agent</i> (7.10.9) signing to attest a record component or message.		
Usage An attesting agent is part of an <i>attestation</i> (7.5.1).		
Components An attesting agent contains a <i>healthcare agent link reference</i> (7.10.11).		
Attributes	Type	Occurrence
healthcare agent link reference (7.10.11)	class	1
<i>Description:</i> A reference to a <i>healthcare agent link</i> (7.10.10) using an unambiguous identifier.		

7.5.3 component unique identifier

Type: class		
Description: A unique identification of an <i>EHCR message component</i> (7.5.4).		
Note: The <i>component unique identifier</i> includes <i>scope of EHCR component identifier</i> attribute that allows the <i>EHCR source</i> (7.2.3) to indicate that the identifier is unique within a particular scope.		
Usage A component unique identifier is part of an <i>EHCR message component</i> (7.5.4).		
Associations A component unique identifier may be referred to by any number of <i>component references</i> (7.8.2).		
Attributes	Type	Occurrence
EHCR component identifier	S [String]	1
<i>Description:</i> This identification shall uniquely identify an instance of an <i>EHCR message component</i> (7.5.4) from all other instances belonging to the same EHCR. The scope within which this identification is unique may be limited as indicated by the attribute <i>scope of EHCR component identifier</i> .		

scope of EHCR component identifier	E [Enumerated]	1
Description: An indication of whether the identifier is unique within this message or a globally unique identifier within the EHCR held by its originator. Note: The identifier should be unique within the scope of the EHCR held by the <i>EHCR source</i> (7.2.3). However, systems that do not support unique internal identification of record components may use this attribute to indicate that the identifier is unique within a more limited scope. Values: 0. Unique within message 1. Unique within originator's EHCR for this patient 2. Unique within originator's system		

7.5.4 EHCR message component

Type: class		
Description: The <i>EHCR message component</i> is abstract class representing the attributes and relationships common to the all parts of an electronic health care record contained within an EHCR message. Each <i>EHCR message component</i> contains sufficient information to render it identifiable for the purposes of referencing and revision. Note: The <i>EHCR message component</i> is an abstract class. Therefore it is only exists as instances of one of its two specialisations. These are the <i>EHCR extract</i> (7.6.4) which represents the top-level of the EHCR hierarchy within the message and the <i>record component</i> (7.6.8) which represents the subdivision of the EHCR within the message. Conceptually the <i>EHCR message component</i> is similar to the "EHCR architectural component", which is specified in the Extended Architecture which forms Part 1 of this European Prestandard. However, it incorporates some modifications specific to the requirements of messaging.		
Specialisations An <i>EHCR message component</i> is specialised as an <i>EHCR extract</i> (7.6.4) or a <i>record component</i> (7.6.8).		
Components An <i>EHCR message component</i> is identified by a <i>component unique identifier</i> (7.5.3). An <i>EHCR message component</i> includes the author as an <i>originating healthcare agent</i> (7.5.5). An <i>EHCR message component</i> may be attested by any number of <i>attestations</i> (7.5.1). An <i>EHCR message component</i> may be subject to rules indicated by any number of <i>distribution rule link references</i> (7.9.1). An <i>EHCR message component</i> may refer to the preceding version using <i>revision information</i> (7.8.7). An <i>EHCR message component</i> may include any number of <i>related date and times</i> (7.5.6). An <i>EHCR message component</i> may include any number of <i>related healthcare agents</i> (7.5.7).		
Attributes	Type	Occurrence
component unique identifier (7.5.3)	class	1
<i>Description:</i> A unique identification of an <i>EHCR message component</i> .		

component status	E [Enumerated]	1
<i>Description:</i> Indication of whether the <i>EHCR message component</i> is the current valid version, has been superseded or is an empty component that deletes a previous component. <i>Note:</i> A "current" <i>EHCR message component</i> may later be superseded by another component that refers to it using the revision information (7.8.7). A "superseded" <i>EHCR message component</i> may be conveyed in a message to provide a record of previous versions of component. A "void" <i>EHCR message component</i> is used to delete a previous component. If the status is "void" the component is an unspecialised instance of the class record component (7.6.8). <i>Values:</i> 0. Current 1. Superseded		
component type	E [Enumerated]	1
<i>Description:</i> An indication of the nature of this component. <i>Values:</i> 0. EHCR Extract 1. Original Component Complex 2. Selected Component Complex 3. Data Item 4. Comment Item 5. Link Item		
originating date and time	TOCD [Time+Date]	1
<i>Description:</i> Date and time on which the <i>EHCR message component</i> was added to the EHCR system on which it originated. <i>Note:</i> The time should be specified as using hours, minutes and where possible seconds. However, the message should permit systems that do not time stamp individual components at this level of details to apply less a less accurate timestamp, if a communicating community considers this acceptable. For a component complex this is the date and time of creation. For a component item this is the date and time of recording.		
originating healthcare agent (7.5.5)	class	1
<i>Description:</i> A reference to the healthcare agent (7.10.9) responsible for adding the <i>EHCR message component</i> to the record.		
attestation (7.5.1)	class	0 or many
<i>Description:</i> Information about the attestation of the Architectural Component.		
distribution rule link reference (7.9.1)	class	0 or many
<i>Description:</i> A <i>distribution rule link reference</i> applies a referenced EHCR distribution rule link (7.9.2) to an <i>EHCR message component</i>.		
revision information (7.8.7)	class	0 or 1
<i>Description:</i> A link to the <i>EHCR message component</i> that contains the immediately preceding version of this <i>revision information</i>.		
component name	component name structure (7.11.4)	0 or 1
<i>Description:</i> The name of the EHCR component provides an optional title, heading or label appropriate to the component. <i>Note:</i> The <i>component name</i> consists of a <i>component name classification</i> and a <i>component name code</i>. The <i>component name classification</i> provides a mandatory mapping between specific component names and the high-level document and section titles listed in Part 2 of this European Prestandard. The <i>component name</i> shall be used to represent structure present in the EHCR from which the message is sent or explicitly created by the sending healthcare professional (7.10.17). It shall not be used to automatically add structures or headings not present in source system.		

related date and time (7.5.6)	class	0 or many
<i>Description:</i> A date related to an <i>EHCR message component</i> .		
related healthcare agent (7.5.7)	class	0 or many
<i>Description:</i> Information about a <i>healthcare agent (7.10.9)</i> that has a role in relation to an <i>EHCR message component</i> other than as the originator of that <i>EHCR message component</i> .		

7.5.5 originating healthcare agent

Type: class		
Description: A reference to the <i>healthcare agent (7.10.9)</i> responsible for adding the <i>EHCR message component (7.5.4)</i> to the record.		
Note: Other parties associated with the component are represented as <i>related healthcare agents (7.5.7)</i>		
Components An <i>originating healthcare agent</i> contains a <i>healthcare agent link reference (7.10.11)</i> .		
Attributes	Type	Occurrence
healthcare agent link reference (7.10.11)	class	1
<i>Description:</i> A reference to a <i>healthcare agent link (7.10.10)</i> using an unambiguous identifier.		

7.5.6 related date and time

Type: class		
Description: A date related to an <i>EHCR message component (7.5.4)</i> .		
Note: The meaning of the date is determined by the related date role. The system timestamp representing the creation or modification of a component shall not be expressed as a <i>related date and time</i> . The <i>originating date and time</i> attribute of the <i>EHCR message component</i> shall be used for this purpose.		
Example(s): The date of a past event, the start and end dates (or dates and times) of a procedure, a planned or scheduled future date, etc.		
Usage A <i>related date and time</i> specifies a date applicable to an <i>EHCR message component (7.5.4)</i> .		
Attributes	Type	Occurrence
date	TOCD [Time+Date]	1
<i>Description:</i> A date associated with an <i>EHCR message component (7.5.4)</i> . <i>Note:</i> The date may be expressed at any valid level of precision. (e.g. Year only, year + month, year + month + day, year + month + day + hour, year + month + day + hour + minutes, year + month + day + hour + minutes + seconds).		
related date role	E [Enumerated]	1
<i>Description:</i> The role or relationship of a date to an <i>EHCR message component (7.5.4)</i> <i>Values:</i> 0. Began or was commenced on 1. Ended or completed on 2. Diagnosed on 3. Scheduled to start on 4. Scheduled to end on 4. Schedule planned on 5. Stated record date (If information is being entered from a paper record or another source this may differ from the system generated time stamp for the recording date and time.)		

related date accuracy	E [Enumerated]	0 or 1
Description: The accuracy of a date. Note: It is possible to express a date using different levels of precision. This attribute is used to indicate whether the date is accurate or approximate to the level of detail stated. Example(s): If the date of a historical event is stated as 1975 this may mean it occurred sometime in 1975 or it may mean that the patient indicated that it occurred at sometime in the mid 1970's. In the latter case this can be indicated with the value "Approximate". Similarly even when an apparently complete time is given it may mean that event occurred at that time (accurate) or around about that time (approximate). Values: 0. Accurate 1. Approximate		

7.5.7 related healthcare agent

Type: class		
Description: Information about a healthcare agent (7.10.9) that has a role in relation to an EHCR message component (7.5.4) other than as the originator of that EHCR message component (7.5.4). Note: A <i>related healthcare agent</i> has a role in relation to the information recorded in an EHCR message component (7.5.4). The originator of the component is recorded separately using the originating healthcare agent (7.5.5) class. Example(s): Carried out procedure, assisted with the procedure, reported the recorded information, authorised a report, responsible for a period of care, provided a service, source of a request or referral, destination of a request or referral, originator of the information (i.e. if information from another source is entered from a paper form).		
Usage A <i>related healthcare agent</i> may be referred to by any number of EHCR message components (7.5.4).		
Components A <i>related healthcare agent</i> contains a healthcare agent link reference (7.10.11).		
Attributes	Type	Occurrence
role of related healthcare agent	V [Code Value] (7.12.6)	1
Description: Indication of the relationship between an EHCR message component (7.5.4) and the <i>related healthcare agent</i>. Example(s): Carried out procedure, assisted with the procedure, reported the recorded information, authorised a report, responsible for a period of care, provided a service, source of a request or referral, destination of a request or referral, originator of the information (i.e. if information from another source is entered from a paper form).		
healthcare agent link reference (7.10.11)	class	1
Description: A reference to a healthcare agent link (7.10.10) using an unambiguous identifier.		

7.6.1 comment item

Type: class		
Specialisation of: component item (7.6.3)		
Description: A <i>component item</i> (7.6.3) containing a textual comment linked to another <i>record component</i> (7.6.8). Note: The <i>comment item</i> provides an efficient way of adding human-readable comments to existing information in the EHCR without modifying the information to which the comment applies.		
Components A <i>comment item</i> includes a <i>commented record component reference</i> (7.8.1).		
Attributes	Type	Occurrence
commented record component reference (7.8.1)	class	1
<i>Description:</i> A link that associates a <i>comment item</i> with an existing <i>record component</i> (7.6.8) to which the comment relates.		
comment	S [String]	1
<i>Description:</i> A plain text comment appended to other information in the message.		

7.6.2 component complex

Type: class		
Specialisation of: record component (7.6.8)		
Description: The <i>component complex</i> is a class of <i>record component</i> (7.6.8) that may contain other <i>record components</i> (7.6.8) thus providing the structure of the EHCR. In contrast, <i>component items</i> (7.6.3) are the <i>record components</i> (7.6.8) that contain the data content of the EHCR. Note: A <i>component complex</i> is an abstract class that exists either as an <i>original component complex</i> (7.6.6) or as a <i>selected component complex</i> (7.6.9). This class contains no specific attributes but is included to maintain alignment with the EHCR Extended Architecture specified in Part 1 of this European Prestandard.		
Specialisations A <i>component complex</i> is a specialisation of an <i>original component complex</i> (7.6.6) or a <i>selected component complex</i> (7.6.9).		
Abstract class with no attributes other than those of the generalisation record component (7.6.8)		

7.6.3 component item

Type: class		
Specialisation of: record component (7.6.8)		
Description: A <i>component item</i> is a class of <i>record component</i> (7.6.8) which contains the data content of the EHCR. In contrast, <i>component complexes</i> (7.6.2) are <i>record components</i> (7.6.8) that provide the structure that interrelates this content. Note: A <i>component item</i> is an abstract class that exists either as a <i>data item</i> (7.7.3), a <i>link item</i> (7.8.3) or a <i>comment item</i> (7.6.1). This class contains no specific attributes but is included to maintain alignment with the EHCR Extended Architecture specified in Part 1 of this European Prestandard.		
Specialisations A <i>component item</i> is specialised as a <i>data item</i> (7.7.3), a <i>link item</i> (7.8.3) or a <i>comment item</i> (7.6.1).		
Abstract class with no attributes other than those of the generalisation record component (7.6.8)		

7.6.4 EHCR extract

Type: class		
Specialisation of: EHCR message component (7.5.4)		
Description: An <i>EHCR message component</i> (7.5.4) that represents the entire EHCR content of the message. If the message contains the entire EHCR for a patient, the <i>EHCR extract</i> is equivalent to the EHCR class in the Extended Architecture which forms Part 1 of this European Prestandard. However, in other messages the <i>EHCR Extract</i> may represent a subset of the EHCR. Note: A <i>provide EHCR message</i> (7.3.4) contains one and only one <i>EHCR extract</i> whether it contains the entire EHCR, a summary of the EHCR or an update to a previously communicated EHCR. The simplest instance of a message based on this standard consists of an <i>EHCR extract</i> class containing one <i>original component complex</i> (7.6.6) which itself contains a single component with the <i>component role</i> "Narrative Text". In this simplistic version of the message the <i>component item</i> (7.6.3) within that component contains a plain text version of all the EHCR information to be communicated.		
Usage An <i>EHCR extract</i> conveys the EHCR in a <i>provide EHCR message</i> (7.3.4).		
Associations An <i>EHCR extract</i> contains EHCR information about a patient identified by <i>patient matching information</i> (7.6.7).		
Components An <i>EHCR extract</i> contains one or more <i>record components</i> (7.6.8).		
Attributes	Type	Occurrence
Attributes of generalisation	EHCR message component (7.5.4)	
record component (7.6.8)	class	1 or many
Description: A <i>record component</i> is an <i>EHCR message component</i> (7.5.4) that contains a part of an EHCR. A <i>record component</i> may be either a <i>component complex</i> (7.6.2) or a <i>component item</i> (7.6.3). In the case of a <i>record component</i> that is used to indicate the deletion of a previous linked <i>record component</i>, the <i>record component</i> exists as an unspecialised instance. Each <i>record component</i> contains an indication of its role, and optionally its order, within the <i>original component complex</i> (7.6.6). The role of a <i>record component</i> determines whether it is the structured content of the <i>original component complex</i> (7.6.6), contextual qualification to the structured content of the <i>original component complex</i> (7.6.6) or a narrative text substitute for the entire content of the <i>original component complex</i> (7.6.6).		

7.6.5 enterprise item

Type: class		
Description: A class containing data in a format defined by the identified enterprise. The data content may replace or supplement the standard content of a <i>record component</i> (7.6.8). Note: The enterprise environment is defined by an organisation recognised by a communicating community as having a legitimate requirement to define extensions to the standard structure of this message. The enterprise may define rules about the manner in which particular types of enterprise data are identified and structured. The enterprise may also define whether a particular type of enterprise data replaces or supplements the standard content of the <i>record component</i> (7.6.8). Example(s): A data structure for representing a particular procedure used by an specialist EHCR system supplier. A data structure used by clinicians in a particular specialty to exchange specialty specific sets of information.		
Usage An <i>enterprise item</i> is part of an <i>original component complex</i> (7.6.6).		

Attributes	Type	Occurrence
enterprise identification	C [Coded] (7.12.1)	1
<i>Description:</i> An indication of the enterprise environment applicable to an EHCR message or to an <i>enterprise item</i> within a message. <i>Note:</i> When used in a <i>provide EHCR message</i> (7.3.4) the <i>enterprise identification</i> indicates the source of reference for <i>enterprise items</i> in the message. When used in a <i>request EHCR message</i> (7.3.8) the <i>enterprise identification</i> indicates the enterprise capabilities of the <i>EHCR destination</i> (7.2.1).		
enterprise item type	V [Code Value] (7.12.6)	1
<i>Description:</i> An indication of the type or structure of the <i>enterprise data</i>. <i>Note:</i> The coding used to represent different data structures may be specific to the enterprise indicated by <i>enterprise identification</i>.		
enterprise data	[defined by enterprise] (7.13.1)	1
<i>Description:</i> Data in a format defined by the identified enterprise. <i>Note:</i> The enterprise may define rules about the manner in which particular types of <i>enterprise data</i> are identified and structured. Where appropriate components and elements defined within this European Prestandard should be used as the building blocks for enterprise extensions.		

7.6.6 original component complex

Type: class Specialisation of: component complex (7.6.2)		
Description: The <i>original component complex</i> is a <i>record component</i> (7.6.8) representing an aggregation of other components arranged in a manner not determined by the time and situation in which they were originally added to the EHCR. Note: The <i>original component complexes</i> in a <i>provide EHCR message</i> (7.3.4) form a hierarchy with a single axis linking each <i>EHCR message component</i> (7.5.4) to the <i>EHCR extract</i> (7.6.4). If the attributes of an <i>original component complex</i> are omitted the values of the parent are inherited by that <i>original component complex</i>. Thus most attributes are optional within any instance but attributes values should be specified explicitly at a levels in the hierarchical tree where the appropriate values change. If an <i>original component complex</i> contains <i>record components</i> (7.6.8) with the <i>component role</i> set as "Context for content", the context values are also inherited by lower levels in the hierarchy.		
Components An <i>original component complex</i> may contain an <i>enterprise item</i> (7.6.5). An <i>original component complex</i> contains one or more <i>record components</i> (7.6.8).		
Attributes	Type	Occurrence
enterprise item (7.6.5)	class	0 or 1
<i>Description:</i> A class containing data in a format defined by the identified enterprise. The data content may replace or supplement the standard content of a <i>record component</i> (7.6.8).		
record component (7.6.8)	class	1 or many
<i>Description:</i> A <i>record component</i> is an <i>EHCR message component</i> (7.5.4) that contains a part of an EHCR. A <i>record component</i> may be either a <i>component complex</i> (7.6.2) or a <i>component item</i> (7.6.3). In the case of a <i>record component</i> that is used to indicate the deletion of a previous linked <i>record component</i>, the <i>record component</i> exists an unspecialised instance. Each <i>record component</i> contains an indication of its role, and optionally its order, within the <i>original component complex</i>. The role of a <i>record component</i> determines whether it is the structured content of the <i>original component complex</i>, contextual qualification to the structured content of the <i>original component complex</i> or a narrative text substitute for the entire content of the <i>original component complex</i>.		

7.6.7 patient matching information

Type: class		
Description: Information provided for the purpose of matching an EHCR related message to a uniquely identified individual patient. Note: This class includes patient identifiers, names and other supporting information. All the attributes are optional but at least one element shall be included in any instance of this class. This class is not intended for providing or updating administrative or demographic information about the patient. For this purpose the relevant <i>data item elements</i> (7.7.4) should be used within the structure of the EHCR.		
Usage <i>patient matching information</i> identifies the subject of a <i>healthcare message</i> (7.4.3).		
Associations <i>patient matching information</i> identifies the subject of an <i>EHCR extract</i> (7.6.4).		
Attributes	Type	Occurrence
patient identifiers	party identifiers (7.11.21)	0 or 1
<i>Description:</i> A set of one or more <i>party identifiers</i> (7.11.21) used to identify the patient. <i>Note:</i> Each <i>identifier</i> (7.11.9) is qualified to indicate the identification scheme from which it is derived.		
patient name	person name details (7.11.23)	0 or 1
<i>Description:</i> The structured or unstructured name of a person. <i>Note:</i> This includes the type of name and period of validity as well as an option for use of either structured or unstructured names.		
alternative person name	person name details (7.11.23)	0 or many
<i>Description:</i> An alternative name by which the person is, or has been, known.		
date and time of birth	TOCD [Time+Date]	0 or 1
<i>Note:</i> In case the exact date and time is unknown, year only or year + month or year + month + day are sufficient.		
patient administrative sex	E [Enumerated]	0 or 1
<i>Description:</i> The gender of the patient as recognised by the organisation responsible for administration of healthcare services. <i>Note:</i> In rare cases this may differ from genetic or anatomical gender which may be recorded as clinical information. Represented by the abbreviations specified in ISO 5281. <i>Values:</i> 0. Unknown 1. Male 2. Female 9. Unspecified		
patient address	address (7.11.2)	0 or many
<i>Description:</i> The address or address of a patient. Each address contains an address type and a period of validity. These attributes can be used to specify former addresses, temporary addresses and to distinguish between home and work addresses.		
patient matching comment	S [String]	0 or 1
<i>Description:</i> Comments or other information that the sender believes may assist the intended recipient to match the message to a particular patient.		

7.6.8 record component

Type: class Specialisation of: EHCR message component (7.5.4)		
Description: A <i>record component</i> is an <i>EHCR message component</i> (7.5.4) that contains a part of an EHCR. A <i>record component</i> may be either a <i>component complex</i> (7.6.2) or a <i>component item</i> (7.6.3). In the case of a <i>record component</i> that is used to indicate the deletion of a previous linked <i>record component</i> , the <i>record component</i> exists an unspecialised instance. Each <i>record component</i> contains an indication of its role, and optionally its order, within the <i>original component complex</i> (7.6.6). The role of a <i>record component</i> determines whether it is the structured content of the <i>original component complex</i> (7.6.6), contextual qualification to the structured content of the <i>original component complex</i> (7.6.6) or a narrative text substitute for the entire content of the <i>original component complex</i> (7.6.6).		
Specialisations A <i>record component</i> may be specialised as a <i>component complex</i> (7.6.2) or a <i>component item</i> (7.6.3).		
Usage A <i>record component</i> may be part of an <i>original component complex</i> (7.6.6). A <i>record component</i> may be part of an <i>EHCR extract</i> (7.6.4).		
Attributes	Type	Occurrence
Attributes of generalisation	EHCR message component (7.5.4)	
component role	E [Enumerated]	1
Description: The role of the <i>record component</i> within its <i>original component complex</i> (7.6.6). Note: Specific rules apply to each member role value. 0. Structured content - the member shall be an ORIC, RI or VRIC that contains information conforming to this European Prestandard. Structured content members may be ordered but are otherwise treated as having equivalent status to one another. 1. Context for content - the member shall be a <i>component item</i> (7.6.3) specialised as a <i>data item</i> (7.7.3) containing a <i>data item element</i> (7.7.4) conforming to this Standard. The content of the member shall be information that sets the context of the information contained by all content members of the containing <i>original component complex</i> (7.6.6). 2. Narrative text - the member shall be a <i>component item</i> (7.6.3) that contain a single instance of the <i>plain text element</i> (7.7.15). The <i>plain text element</i> (7.7.15) shall be a textual rendering of the content of the <i>original component complex</i> (7.6.6) which is human-readable. There may only be one Narrative Text member in an <i>original component complex</i> (7.6.6). The objective of Narrative Text members is to provide a readable account of the <i>original component complex</i> (7.6.6) contents for users of systems unable to process the more detailed structural layer. Narrative text members shall not be used to add to or qualify other information within the <i>original component complex</i> (7.6.6). Values: 0. Structured content. 1. Context for content. 2. Narrative text view of content.		

component annotation	TL (Term List Value) (7.12.5)	0 or many
Description: A <i>component annotation</i> applies a modification on the meaning of a <i>record component</i>. Each <i>component annotation</i> is a value from Table A-3 or A-4 of Part 2 of this European Prestandard. Note: Tables A-3 and A-4 of Part 2 of this European Prestandard are subdivided into specific features. The features supported by primary annotations include: — focus annotation type (situation, condition or state, allergy, etc) — subject of information (patient, relative, fetus, etc) — life cycle (done, in progress, planned, terminated) [only for activities] — potentiality (actual, goal, at risk) [only for states] — process status (former, ongoing, new) — certainty (certain, uncertain) — negation (affirmative, negated) — knowing mode annotation type (observation or action by author, opinion or conclusion by author, etc). Any information in the sending system that is relevant to these features shall be mapped to the appropriate <i>term list tag value(s)</i> to ensure unambiguous communication. Only one value for each feature may be specified for any one <i>record component</i>. By default the annotations applied to an <i>original component complex</i> (7.6.6) apply to all members of that complex. However, this default value is overridden for any members that specify their own value for the same feature. In the absence of any setting for a feature, the default values are specified in the relevant tables of Annex A of Part 2 of this European Prestandard. According to these defaults any <i>record component</i> is assumed to contain information about the patient that is believed to be true, accurate and current.		
component order	I [Integer]	0 or 1
Description: A number representing the order of a <i>record component</i> within its <i>original component complex</i> (7.6.6). Note: The <i>component order</i> should be specified if reordering <i>record components</i> within the <i>original component complex</i> (7.6.6) could lead to loss of pertinent information. For example, if the <i>record components</i> within the <i>original component complex</i> (7.6.6) describe a logical sequence of events.		

7.6.9 selected component complex

Type: class Specialisation of: <i>component complex</i> (7.6.2)
Description: The <i>selected component complex</i> is a <i>record component</i> (7.6.8) representing an aggregation of other components arranged in a manner not determined by the time and situation in which they were originally added to the EHCR. Note: The use of <i>selected component complexes</i> enables alternative views of the EHCR to be represented in the message. They can represent the record as viewed at a particular time or they can represent groupings of clinically or logically associated record components. Within the message the members of a <i>selected component complex</i> are communicated using <i>link items</i> (7.8.3) that associate the member of a view or grouping to the <i>selected component complex</i>. Therefore the <i>selected component complex</i> acts only as a node to which members are attached and has no specialised attributes of its own. This mechanism allows components to be added to a view without changing the components themselves or the <i>selected component complex</i>. Each <i>link item</i> (7.8.3) is a <i>record component</i> (7.6.8) in its own right. Therefore, attribution of origin and modification of changes to views is taken care of by the general provisions for <i>record components</i> (7.6.8).

Attributes	Type	Occurrence
component selection criteria	[defined by enterprise] (7.13.1)	0 or many
<i>Description:</i> A specification of criteria designed to support a dynamic view of the record. <i>Example(s):</i> Criteria to select all current medication.		

7.7 EHCR data item subsystem

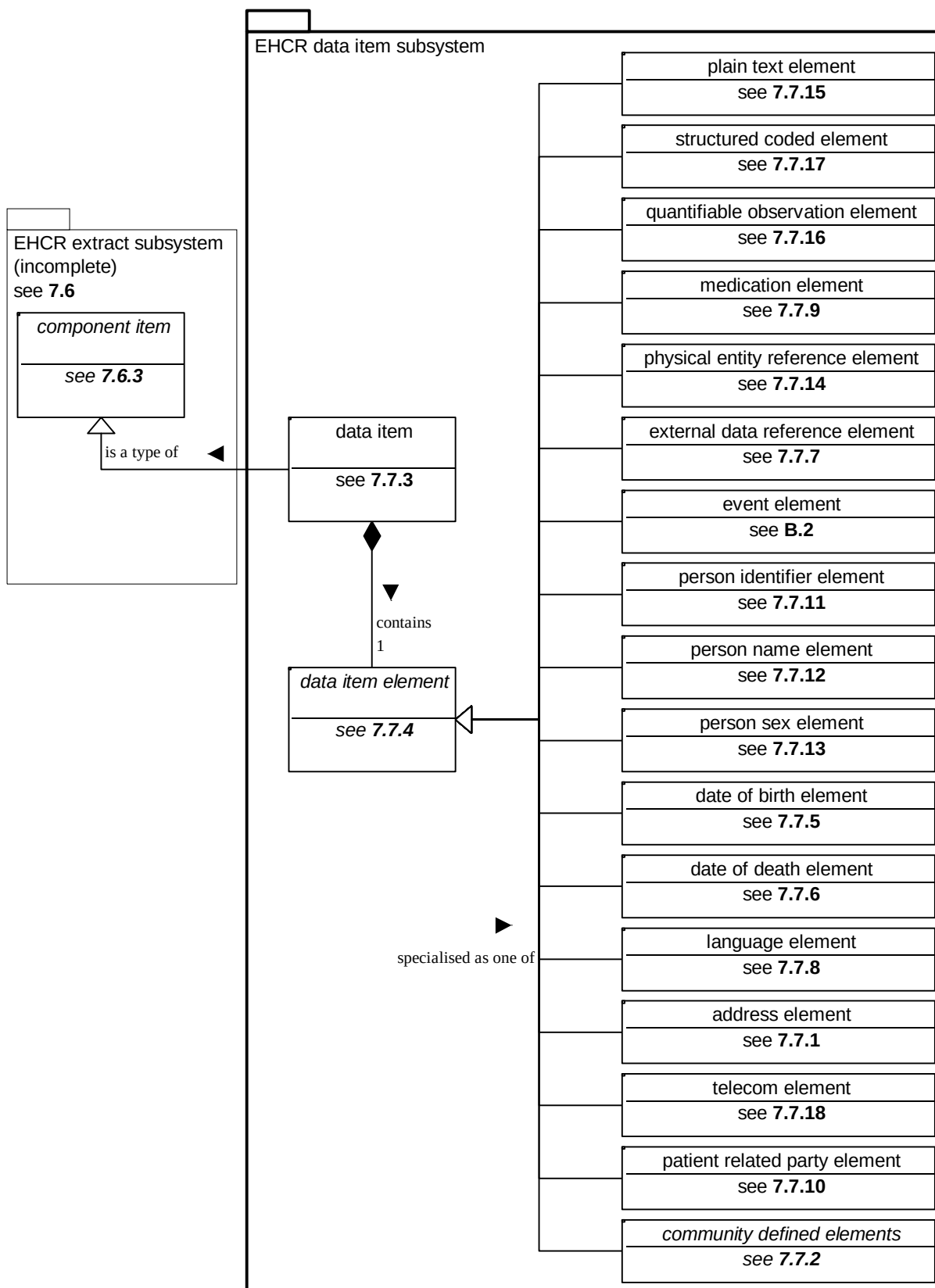


Figure 26. Domain Model - EHCR Data Item Subsystem

7.7.1 address element

Type: class		
Specialisation of: data item element (7.7.4)		
Description: The address of the patient.		
Note: May also be used for alternative addresses specified using the <i>address type</i> attribute.		
Components An <i>address element</i> includes an <i>address</i> (7.11.2).		
Attributes	Type	Occurrence
address (7.11.2)	sub class	1
<i>Description:</i> An <i>address</i> expressed in a structured or unstructured form.		

7.7.2 community defined elements

Type: class		
Specialisation of: data item element (7.7.4)		
Description: This abstract class represents the optional extension of the EHCR message with <i>data item elements</i> (7.7.4) defined for use between members of a particular communicating community.		
Attributes	Type	Occurrence

7.7.3 data item

Type: class		
Specialisation of: component item (7.6.3)		
Description: A <i>data item</i> is the <i>EHCR message component</i> (7.5.4) that represents the smallest structural unit into which the content of the EHCR can be broken down without losing its meaning. A <i>data item</i> may be an aggregate information that cannot be safely disaggregated.		
Note: The <i>data item</i> is a type of <i>record component</i> (7.6.8) and is thus part of an <i>original component complex</i> (7.6.6). It inherits, from the <i>original component complex</i> (7.6.6) hierarchy, values for any of the <i>EHCR message component</i> (7.5.4) attributes that are not explicitly present in the <i>component item</i> (7.6.3). Thus while attributes are optional within any instance all values should be specified explicitly at one or more levels in the hierarchical tree. Additional contextual information relevant to a <i>component item</i> (7.6.3) is also derived from the <i>original component complex</i> (7.6.6) hierarchy within which the <i>component item</i> (7.6.3) is located if the higher level of the hierarchy contains <i>record components</i> (7.6.8) with the role "Context for Content".		
Components A <i>data item</i> contains a <i>data item element</i> (7.7.4).		

Attributes	Type	Occurrence
data item type	E [Enumerated]	1
<i>Description:</i> The type or role of this data item element (7.7.4). <i>Note:</i> Several types of data item element (7.7.4) are defined in normative provisions of this European Prestandard. Additional composite types are proposed in Informative Annex B. Other data item element (7.7.4) types may be defined by agreement within communicating communities. <i>Values:</i> 0. community defined elements 1. address element 2. date of birth element 3. date of death element 4. event element 5. external data reference element 6. language element 7. medication element 8. patient related party element 9. person identifier element 10. person name element 11. person sex element 12. physical entity reference element 13. plain text element 14. quantifiable observation element 15. structured coded element 16. telecom element		
data item type reference	V [Code Value] (7.12.6)	0 or 1
<i>Description:</i> A reference to one of an agreed set of element types. <i>Note:</i> The <i>data item type reference</i> may be used with the <i>data item type</i> "community defined elements" to refer to either an element type defined in Informative Annex B or to an element type defined at a National, Regional or enterprise level. New data item element (7.7.4) types should be defined using combinations of data types and sub-classes defined in the Normative parts of this European Prestandard. The <i>data item type reference</i> may also be used with one of the defined <i>data item types</i> to specify an extension to one of the <i>data item type</i> types defined in this European Prestandard.		
data item element (7.7.4)	class	1
<i>Description:</i> A <i>data item element</i> is the unit of data of contained by a component item (7.6.3).		

7.7.4 data item element

Type: class
Description: A <i>data item element</i> is the unit of data of contained by a component item (7.6.3). Note: This is an abstract class. Specialised <i>data item elements</i> exist to represent the most frequently used compound types of information found within the EHCR. Other compound types can be produced by aggregation of <i>data item elements</i> within a component item (7.6.3).
Specialisations A <i>data item element</i> is specialised as an address element (7.7.1), a community defined elements (7.7.2), a date of birth element (7.7.5), a date of death element (7.7.6), an event element (B.2), an external data reference element (7.7.7), a language element (7.7.8), a medication element (7.7.9), a patient related party element (7.7.10), a person identifier element (7.7.11), a person name element (7.7.12), a person sex element (7.7.13), a physical entity reference element (7.7.14), a plain text element (7.7.15), a quantifiable observation element (7.7.16), a structured coded element (7.7.17) or a telecom element (7.7.18).

7.7.5 date of birth element

Type: class		
Specialisation of: data item element (7.7.4)		
Description: The date of birth of the patient.		
Attributes	Type	Occurrence
date and time of birth	TOCD [Time+Date]	1
<i>Note:</i> In case the exact date and time is unknown, year only or year + month or year + month + day are sufficient.		

7.7.6 date of death element

Type: class		
Specialisation of: data item element (7.7.4)		
Description: The date of death of the patient.		
Attributes	Type	Occurrence
date and time of death	TOCD [Time+Date]	1
<i>Note:</i> In case the exact date and time is unknown, year only or year + month or year + month + day are sufficient.		

7.7.7 external data reference element

Type: class		
Specialisation of: data item element (7.7.4)		
Description: External reference to information stored in a digital form.		
Note: A digital representation of an image such as an X-ray or a signal such as an electrocardiograph may be stored on or transferred between computer systems in a manner that makes it accessible to the sender and recipient of a message. The reference pointer attribute group allows a message to refer to information of this type. The message has no internal knowledge of the format of the digital information and use of the reference pointers requires that the sender and recipient of the message have a shared understanding of the information types referred to.		
Attributes	Type	Occurrence
EHCR external information identifier	identifier (7.11.9)	1
<i>Description:</i> A unique identifier applied to an item or collection externally referenced digital information.		
external reference information type	C/S [Code or String] (7.12.2)	1
<i>Description:</i> A code or text representation of the type of information or object referred to. <i>Note:</i> The coding scheme should include appropriate imaging and signal standards and should be extended to include commonly used proprietary formats and new standards as they emerge. <i>Example(s):</i> X-ray image, electrocardiograph signal etc.		
external reference pointer	S [String]	1
<i>Description:</i> Unique identifier for the referenced information as assigned by the system/application that stores the data. <i>Note:</i> The precise form of expression is determined by the <i>external reference application</i> attribute. <i>Example(s):</i> A directory path-name and file-name, a database and a uniquely identified record within that database, a uniquely identified instance of an object.		
external reference application	S [String]	0 or 1
<i>Description:</i> Unique identifier of a system and/or application in or through which the externally referenced information is accessible to the recipient of a message. <i>Note:</i> The <i>identifier</i> (7.11.9) must be understood unambiguously by the communicating parties.		

external reference indirect pointer	S [String]	0 or 1
<i>Description:</i> A reference to an internal pointer or marker within an external referenced source of information. <i>Note:</i> This attribute can only be used if the information type referenced contains an internal referencing system for annotations. The form of expression depends on the information type referenced. <i>Example(s):</i> A reference to an annotation or marked area of an X-ray film.		

7.7.8 language element

Type: class Specialisation of: data item element (7.7.4)		
Description: A language spoken by the patient.		
Components <i>A language element includes language details (7.11.10).</i>		
Attributes	Type	Occurrence
language details (7.11.10)	sub class	1
<i>Description:</i> language(s) in which a person is willing and able to converse for the purposes of providing or receiving healthcare services.		

7.7.9 medication element

Type: class Specialisation of: data item element (7.7.4)		
Description: Information about a patient's previous, planned or current treatment with a substance or chemical compound for the prevention, alleviation or treatment of a medical condition.		
Note: May include 'presentation' (e.g. tablets, capsules, injection, inhaler, syrup) as well as the drug itself. This should not be used for conveying prescriptions as this is outside the scope of this European Prestandard. This is now aligned with the structured drug identification and structured dosage administration sub class are based directly on the current proposals of the European Prestandard from Prescription Messages (ENVxxxxx ²)		
Components <i>A medication element may include a structured dosage administration (7.11.26).</i>		
Attributes	Type	Occurrence
drug information status	E [Enumerated]	1
<i>Description:</i> Information that describes the status of the <i>medication element</i> information. <i>Values:</i> 0. Record of current medication (at the time of origin of this item). 1. Past medication. 2. Record of an issued prescription. 3. Record of a decision to prescribe or change dosage. 4. Record of medication administered to the patient. 5. Record of a recommendation. 6. Other		

² ##currently in draft form CEN TC251 PT31 ##

Choice of		1
	unstructured identification of drug	C/S [Code or String] (7.12.2)
<i>Description:</i> This identification may provide either a brand identification or the generic identification of the drug. In addition, it may identify the form of presentation (e.g. tablets, inhaler, patch). The scope of this attribute includes the possibility of it conveying both drug identification information and form of presentation information since code lists that combine these are in widespread current use. It is expected that in the future this information will be carried in several distinct attributes. <i>Example(s):</i> Salbutamol inhaler, salbutamol syrup, Ventolin, paracetamol, warfarin tablets, soluble insulin, lignocaine, dobutamine, gluten-free flour.		
	identification of drug	manufactured medicinal product identification (7.11.13)
<i>Description:</i> Information about a medicinal product supplied in accordance with a specification furnished for use by a prescriber and/or as dispensed by the Dispensing agent, giving it a unique identification.		
Choice of		0 or many
	structured dosage administration (7.11.26)	sub class
	unstructured dosage administration	C/S [Code or String] (7.12.2)
days supply	I [Integer]	0 or 1
quantity of drug supplied	measurement (7.11.16)	0 or 1
<i>Note:</i> This attribute group consists of the attributes <i>numerical value</i> and <i>unit of measurement</i>.		
comment to drug treatment	S [String]	0 or 1
<i>Note:</i> To convey any unstructured comment about the patient's treatment with the drug.		

7.7.10 patient related party element

Type: class Specialisation of: data item element (7.7.4)		
Description: Information about a person or organisation who has a role in the care of a patient other than as a <i>healthcare party (7.10.16)</i>. Note: Additional detailed information about a <i>patient related party element</i> can be provided by using other <i>data item elements (7.7.4)</i>. To do this the <i>patient related party element</i> shall be attached to the <i>component complex (7.6.2)</i> that contains this additional information and shall have the role value context for content. Example(s): - Next of kin. - Relative. - Employer. - Carer.		
Attributes	Type	Occurrence
identification of patient related party	party identifiers (7.11.21)	0 or 1
<i>Description:</i> Identification of a <i>patient related party element</i> assigned by a national healthcare authority.		
relationship type of patient related party	V [Code Value] (7.12.6)	1
<i>Description:</i> Relationship of the patient person in connection with the patient. <i>Example(s):</i> Next of kin, wife, carer, father, guardian, prison officer, friend.		
relationship period	period (7.11.22)	0 or 1
<i>Description:</i> Period during which when this party performed the specified role in relation to the patient.		
name of patient related person	person name details (7.11.23)	0 or 1
organisation name details	S [String]	0 or 1

7.7.11 person identifier element

Type: class		
Specialisation of: data item element (7.7.4)		
Description: Demographic Information about a person. Includes name, date of birth, sex, address, telecommunication.		
Components <i>A person identifier element includes an identifier (7.11.9).</i>		
Attributes	Type	Occurrence
identifier (7.11.9)	sub class	1
<i>Description:</i> A general-purpose identifier that can be qualified by the identification scheme from which the identifier is derived.		

7.7.12 person name element

Type: class		
Description: The name of the patient.		
Note: May also be used for alternative names specified using the <i>person name type</i> attribute.		
Components <i>A person name element includes person name details (7.11.23).</i>		
Attributes	Type	Occurrence
person name details (7.11.23)	sub class	1
<i>Description:</i> The structured or unstructured name of a person.		

7.7.13 person sex element

Type: class		
Specialisation of: data item element (7.7.4)		
Description: The sex of the patient.		
Attributes	Type	Occurrence
patient administrative sex	E [Enumerated]	1
<i>Description:</i> The gender of the patient as recognised by the organisation responsible for administration of healthcare services. <i>Note:</i> In rare cases this may differ from genetic or anatomical gender which may be recorded as clinical information. Represented by the abbreviations specified in ISO 5281. <i>Values:</i> 0. Unknown 1. Male 2. Female 9. Unspecified		

7.7.14 physical entity reference element

Type: class		
Specialisation of: data item element (7.7.4)		
Description: A reference to a physical entity such as a paper file, a sample, a film or tracing.		
Attributes	Type	Occurrence
EHCR physical entity identifier	identifier (7.11.9)	0 or 1
<i>Description:</i> A general-purpose identifier that can be qualified by the identification scheme from which the identifier is derived.		

EHCR physical entity nature	C/S [Code or String] (7.12.2)	1
<i>Description:</i> The nature of the referenced physical entity. <i>Example(s):</i> A sample, paper record, etc		
EHCR physical entity location	location details (7.11.11)	0 or 1
<i>Description:</i> The current location of the referenced physical entity.		
external reference information type	C/S [Code or String] (7.12.2)	0 or 1
<i>Description:</i> A code or text representation of the type of information or object referred to. <i>Note:</i> The coding scheme should include appropriate imaging and signal standards and should be extended to include commonly used proprietary formats and new standards as they emerge. <i>Example(s):</i> X-ray image, electrocardiograph signal etc.		

7.7.15 plain text element

Type: class Specialisation of: data item element (7.7.4)		
Description: A <i>data item element</i> (7.7.4) that consists of plain text. The text may optionally be divided into separate blocks representing logical paragraphs. Note: This element is only suitable for human-readable information and should not be machine processed for analysis or decision support. The, <i>structured coded element</i> (7.7.17) should be used to represent text that is directly associated with structured coded information intended for searches and retrieval of data. A <i>plain text element</i> may be used to provide narrative text describing the content of an <i>original component complex</i> (7.6.6) which is also represented in structured form. This plain text information can then be used as a fallback to ensure communication of human-readable information, even if the receiving system cannot fully interpret the structured content of that complex.		
Attributes	Type	Occurrence
text block	S [String]	1 or many
<i>Description:</i> A block of plain printable text, which represents a single paragraph.		

7.7.16 quantifiable observation element

Type: class Specialisation of: data item element (7.7.4)		
Description: Result of a single clinical measurement or laboratory investigation. Note: A <i>quantifiable observation element</i> comprises one numeric, textual or coded representation of a result. It includes the units of measurement and/or a designation of the coding scheme from which code values in the result item are derived.		
Attributes	Type	Occurrence
measured property	measurable quantity (7.11.14)	1
<i>Description:</i> The property observed or measured. <i>Note:</i> This may be expressed either as a single coded attribute or using the formal measurable quantity structure recommended by IFCC/IUPAC. <i>Example(s):</i> A measurement of "haemoglobin concentration in blood" can be expressed as a single code encapsulating the full meaning or as using the systematic approach it can be described as (System = venous blood) + (Component = haemoglobin) + (Kind of quantity = substance concentration).		
Choice of		1
	numerical result of observation	measurement with comparator (7.11.18)
<i>Description:</i> A measurement expressed as a numeric value and <i>unit of measurement</i> with an optional mathematical comparator		

	numerical range result of observation	measurement range (7.11.17)
<i>Description:</i> A measurement expressed a range between two numeric values qualified by a <i>unit of measurement</i> .		
	date value of observation	TOCD [Time+Date]
<i>Description:</i> An observation or investigation result expressed as a date. <i>Example(s):</i> Estimated date of obstetric delivery.		
	text value of EHCR investigation result item	C/S [Code or String] (7.12.2)
<i>Description:</i> An observation or investigation result expressed using text or codes.		

7.7.17 structured coded element

Type: class		
Specialisation of: data item element (7.7.4)		
Description: Clinical information presented in a coded and textual structure. Note: The main difference between this and the <i>plain text element</i> (7.7.15) is that the information in a <i>structured coded element</i> is suitable for structured searches and retrieval of data as well as human-readability. In contrast, the <i>plain text element</i> (7.7.15) is only suitable for human interpretation and should not be subject to automated processing. Example(s): Family history (e.g. father diabetic), symptoms (e.g. headache), signs (e.g. hepatomegaly), problems (e.g. weight loss or loss of body mass), diagnoses (e.g. thyrotoxicosis, both known and tentative), operative procedures (e.g. pancreatectomy), information given to the patient or relative.		
Attributes	Type	Occurrence
original code	composite code (7.11.5)	1
<i>Description:</i> Coded information represented as one or more code values from within the coding scheme in which this information was originally recorded. <i>Note:</i> More than one code value may be used to construct a single clinical concept. For example, when using a compositional coding scheme such as SNOMED or a scheme that incorporates qualifiers such as the UK NHS Clinical Terms. However, multiple code values in the same <i>data item element</i> (7.7.4) should only be used to convey a single relevant concept.		
alternative or mapped code	composite code (7.11.5)	0 or 1
<i>Description:</i> Coded information represented as one or more code values from within a coding scheme to which this information has been mapped or translated for the purposes of communication.		
additional related text	S [String]	0 or many
<i>Description:</i> Text that adds to the content expressed by the code values in this <i>structured coded element</i> .		

7.7.18 telecom element

Type: class		
Description: A telecommunication number associated with the patient.		
Note: Various telecommunication numbers can be specified using the <i>telecommunication type</i> attribute.		
Components A <i>telecom element</i> includes a <i>telecommunication</i> (7.11.29).		
Attributes	Type	Occurrence
telecommunication (7.11.29)	sub class	1
<i>Description:</i> Telephone, facsimile and other <i>telecommunication</i> numbers in a structured or unstructured form.		

7.8 EHCR link subsystem

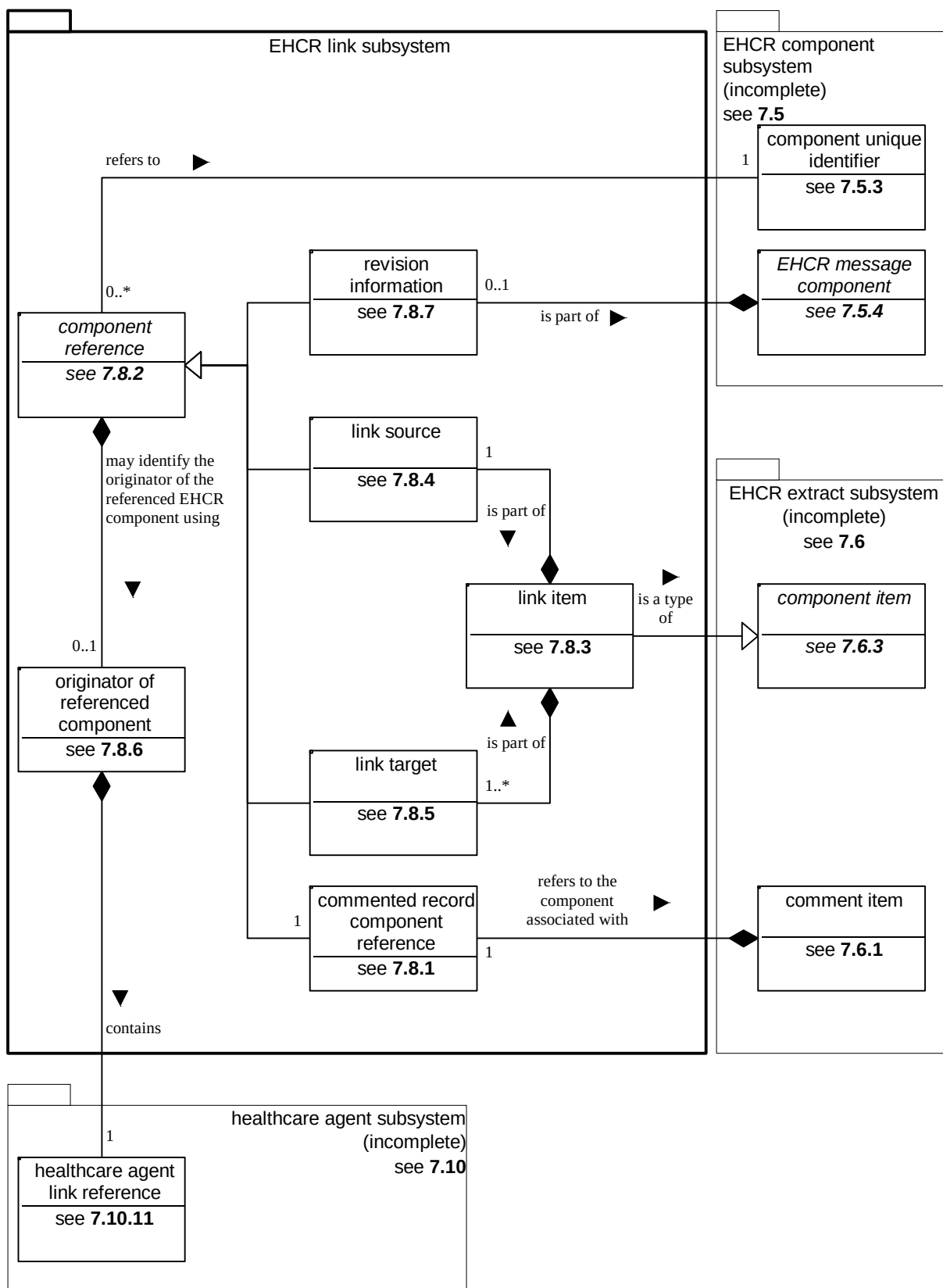


Figure 27. Domain Model - EHCR Link Subsystem

7.8.1 commented record component reference

Type: class		
Specialisation of: component reference (7.8.2)		
Description: A link that associates a <i>comment item</i> (7.6.1) with an existing <i>record component</i> (7.6.8) to which the comment relates.		
Usage <i>A commented record component reference refers to the component associated with a <i>comment item</i> (7.6.1).</i>		
Attributes	Type	Occurrence
Attributes of generalisation	component reference (7.8.2)	

7.8.2 component reference

Type: class		
Description: An abstract class containing a reference to an <i>EHCR message component</i> (7.5.4).		
Specialisations <i>A component reference is specialised as a <i>commented record component reference</i> (7.8.1). A component reference is specialised as <i>revision information</i> (7.8.7). A component reference is specialised as a <i>link target</i> (7.8.5). A component reference is specialised as a <i>link source</i> (7.8.4).</i>		
Associations <i>A component reference refers to a <i>component unique identifier</i> (7.5.3).</i>		
Components <i>A component reference may identify the originator of the referenced EHCR component using an <i>originator of referenced component</i> (7.8.6).</i>		
Attributes	Type	Occurrence
identifier of referenced component	S [String]	1
<i>Description:</i> The identifier assigned to a previous revision of this component by the originator of the component.		
recording date and time of referenced component	TOCD [Time+Date]	0 or 1
<i>Description:</i> The date and time of origin of the EHCR component that is to be superseded. <i>Note:</i> This attribute may be required by some communicating parties to support unique identification of EHCR components when communicating between systems that have different record structures and which as a result may not use a common scheme of EHCR component identifiers.		
originator of referenced component (7.8.6)	class	0 or 1
<i>Description:</i> The identification of the originator of a referenced <i>EHCR message component</i> (7.5.4).		

7.8.3 link item

Type: class		
Specialisation of: component item (7.6.3)		
Description: A <i>data item</i> (7.7.3) that links together two other <i>EHCR message components</i> (7.5.4). Note: The <i>link item</i> contains references to the two <i>EHCR message components</i> (7.5.4) to be linked and an indication of the type of link. A <i>link item</i> is a type of <i>record component</i> (7.6.8) and is thus part of an <i>original component complex</i> (7.6.6). It inherits from the <i>original component complex</i> (7.6.6) hierarchy values for any of the <i>EHCR message component</i> (7.5.4) attributes which are not explicitly present in the <i>component item</i> (7.6.3). Thus while attributes are optional within any instance all values should be specified explicitly at one or more levels in the hierarchical tree.		
Components <i>A link item contains a <i>link source</i> (7.8.4). A link item contains one or more <i>link targets</i> (7.8.5).</i>		

Attributes	Type	Occurrence
EHCR link type	TL (Term List Value) (7.12.5)	1
<i>Description:</i> The type of link to the referenced EHCR component. <i>Note:</i> The names shall be taken from the standard high-level concepts for types of links see Tables A-5 in Part 2 of this European Prestandard. <i>Values:</i> General relationships XL1 Related to XL2 Part of XL3 Contains XL4 Cause of XL5 Result of XL6 Progress of XL7 Progressed by XL8 Supersedes Temporal relationships from ENV12381 XT1 At XT 2 Before XT 3 After XT 4 During XT 5 Includes XT 6 Until XT 7 Follows XT 8 Since XT 9 Up-to XT 10 Co-continues XT 11 Co-precedes XT 12 Co-starts XT 13 Co-ends View management relationships XS 11 Add to view XS 12 Remove from view		
link source (7.8.4)	class	1
<i>Description:</i> A reference to the EHCR message component (7.5.4) from which the link is to be made.		
link target (7.8.5)	class	1 or many
<i>Description:</i> A reference to the EHCR message component (7.5.4) (s) to which the link applies.		

7.8.4 link source

Type: class		
Specialisation of: component reference (7.8.2)		
Description: A reference to the EHCR message component (7.5.4) from which the link is to be made.		
Usage A link source is part of a link item (7.8.3) .		
Attributes	Type	Occurrence
Attributes of generalisation	component reference (7.8.2)	

7.8.5 link target

Type: class		
Specialisation of: component reference (7.8.2)		
Description: A reference to the EHCR message component (7.5.4) (s) to which the link applies.		
Usage A link target is part of a link item (7.8.3) .		

Attributes	Type	Occurrence
Attributes of generalisation	component reference (7.8.2)	
referenced component order	I [Integer]	0 or 1
<i>Description:</i> A number indicating the position of a referenced EHCR message component (7.5.4) where several references of the same type exist. <i>Note:</i> Two or more referenced components may share the same <i>referenced component order</i> . In this case the order of these referenced components in relation to one another is arbitrary.		

7.8.6 originator of referenced component

Type: class		
Description: The identification of the originator of a referenced EHCR message component (7.5.4) .		
Note: This attribute is required unless the EHCR component identifiers are unique to both the EHCR source (7.2.3) and EHCR destination (7.2.1) .		
Usage An originator of referenced component may be part of any number of component references (7.8.2) .		
Components An originator of referenced component contains a healthcare agent link reference (7.10.11) .		
Attributes	Type	Occurrence
healthcare agent link reference (7.10.11)	class	1
<i>Description:</i> A reference to a healthcare agent link (7.10.10) using an unambiguous identifier.		

7.8.7 revision information

Type: class		
Specialisation of: component reference (7.8.2)		
Description: A link to the EHCR message component (7.5.4) that contains the immediately preceding version of this <i>revision information</i> .		
Note: A system may also support explicit forward links from a superseded version to later revisions. However, in the message these links are not conveyed explicitly. This fully supports the communication requirement while reducing the risk of duplicated or conflicting links that could result from different implementation of a bi-directional approach.		
Usage <i>revision information</i> is part of an EHCR message component (7.5.4) .		
Attributes	Type	Occurrence
Attributes of generalisation	component reference (7.8.2)	
reason for revision	V [Code Value] (7.12.6)	0 or 1
<i>Description:</i> Reason for revision as a coded value. <i>Example(s):</i> Error of recording		
reason for revision comments	S [String]	0 or 1
<i>Description:</i> Textual comment on reason for revision		

7.9 EHCR distribution rule subsystem

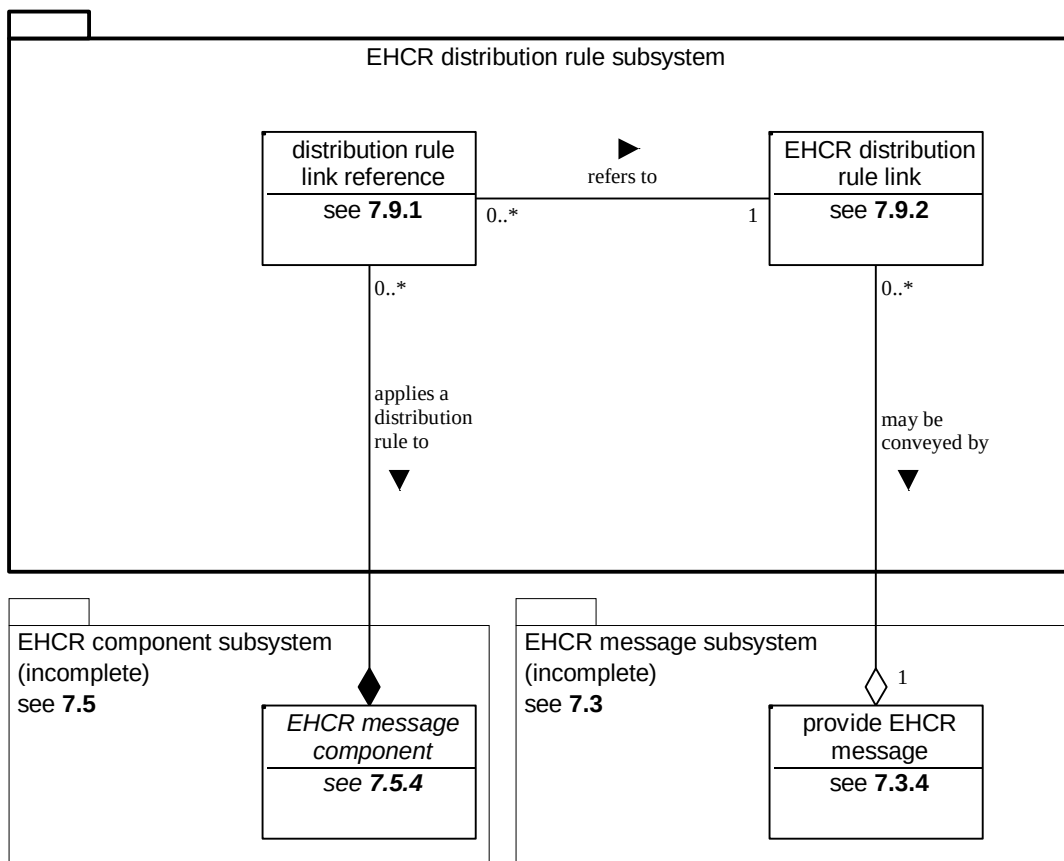


Figure 28. Domain Model - EHCR Distribution Rules

5 7.9.1 distribution rule link reference

Type: class Description: A <i>distribution rule link reference</i> applies a referenced EHCR distribution rule link (7.9.2) to an EHCR message component (7.5.4). Note: A <i>distribution rule link reference</i> may refer to an EHCR distribution rule link (7.9.2) conveyed in the message or to an EHCR distribution rule link (7.9.2) held in a shared directory of commonly applied rules. The restrictions imposed by an EHCR distribution rule link (7.9.2) apply to any hierarchical descendants of the EHCR message component (7.5.4) from which that rule is referenced. Therefore if an EHCR distribution rule link (7.9.2) is referenced by the EHCR extract (7.6.4), the restrictions apply to all EHCR information in that message. The <i>distribution rule link reference</i> is defined with the "DR Link Reference" specified by Part 3 of this European Prestandard.		
Usage A <i>distribution rule link reference</i> applies a distribution rule to an EHCR message component (7.5.4).		
Associations A <i>distribution rule link reference</i> refers to an EHCR distribution rule link (7.9.2).		
Attributes	Type	Occurrence
DRLinkReference	S [String]	1
<i>Description:</i> A reference to a distribution rule using the format specified in Part 3 of this European Prestandard.		

7.9.2 EHCR distribution rule link

Type: class
Description: This class is to be represented in the manner specified in Part 3 of this European Prestandard. Note: Each instance of <i>EHCR distribution rule link</i> may refer to any number of distribution rules, linked together in accordance with Part 3 of this specification. <i>EHCR distribution rule links</i> may be applied to individual <i>EHCR message components</i> (7.5.4) by using the <i>distribution rule link reference</i> (7.9.1) attribute. Example(s): Limited access to a named list of <i>healthcare professionals</i> (7.10.17). Limit access to a particular professional group, specialty or organisation.
Usage An <i>EHCR distribution rule link</i> may be conveyed by a <i>provide EHCR message</i> (7.3.4).
Associations An <i>EHCR distribution rule link</i> referred to by any number of <i>distribution rule link references</i> (7.9.1).
Attributes are specified in Part 3 of this European Prestandard.

7.10 healthcare agent subsystem

7.10.1 Introduction

The healthcare agent subsystem supports different ways of referring to healthcare professionals, healthcare organisations, healthcare devices and healthcare software from within a message. The method used may be constrained by the GMD of a particular message. If the GMD permits more than one of these methods, the approach to be taken may be subject to agreement between communicating parties.

As a general rule only three of the classes in this subsystem may be directly related to classes in other subsystems of a message. These are the *healthcare agent link*, *healthcare agent link reference* and the *healthcare agents directory*. A simple message need only refer to the *healthcare agent link*.

7.10.2 Healthcare agent roles

Wherever a message needs to refer to a particular healthcare agent it includes a role specific specialisation of either *healthcare agent link* or *healthcare agent link reference*. These specialisations are referred to here as *healthcare agent roles*.

Healthcare agent roles are equivalent to *healthcare party roles* in earlier messages of CEN TC251. Thus any *healthcare party role* in such a message can be represented as either a *healthcare agent link* or *healthcare agent link reference*. However, the *healthcare agent roles* includes several features missing from *healthcare party role*:

- An explicit distinction between a reference and complete representation;
- Allows the same healthcare professional or organisation to be referred to in different contexts within the same message;
- Allows a device or software module to be referred to as a source of information or a participant in a procedure.

NOTE:

The healthcare agent subsystem is illustrated in a generic form applicable to any healthcare message. Therefore, since *healthcare agent roles* vary from message to message they do not appear in the model.

7.10.3 Healthcare agent links

A *healthcare agent link* is an explicit representation of a *healthcare agent* acting within a particular context. This context is described as a relationship with other *healthcare agents*. For example, a secretary acting on behalf of a clinician, a professional working in a particular organisation or a department within a hospital. The same *healthcare agent* can be the subject of several *healthcare agent links* and thus distinctions can be drawn between activities of the *healthcare professional* while serving in two different capacities.

EXAMPLES:

The same nurse, working in different departments.

The same doctor, acting in his own right or as a locum on behalf of a colleague.

7.10.4 Healthcare agent link references

A *healthcare agent link reference* is a reference to a *healthcare agent link*. It allows the same *healthcare agent link* to be included several times in a message without repeating the details. The *healthcare agent link* to which the *healthcare agent link reference* refers may either be in a shared directory to which the communicating parties have access or may be communicated in a message within an instance of *healthcare agents directory*.

The simplest instance of *healthcare agent link* includes only one *healthcare agent* with no specified *healthcare agent relationships*. Therefore the *healthcare agent link* or *healthcare agent link reference* can be used for a simple case where it is deemed unnecessary to set the *healthcare agent* in the context of any relationships. However, the reverse does not apply. Therefore, unless there is an instance in a message in which an unqualified reference to a *healthcare agent* is always sufficient, specialisations of the *healthcare agent link* or *healthcare agent link reference* should be specified in the message rather than instances of *healthcare agent*.

7.10.5 Messages with a fixed number of instances of healthcare agent roles

In a message that only refers a fixed number of references to professionals, organisations, devices or software the full *healthcare agent link* may be included for each such instance. In this case there is no need to exchange or share a *healthcare agents directory*.

7.10.6 Messages with an indeterminate number of instances of healthcare agent roles

In a message that includes an indeterminate number of references to professionals, organisations, devices or software the *healthcare agent link reference* should be used. The sender then need only include the full details of any *healthcare agent link* once.

The information about each *healthcare agent link* can be conveyed in the *healthcare agents directory* class as part of such a message. Alternatively, the *healthcare agents directory* information may be communicated in a separate message used for maintaining and aligning this information. A third option is to provide real-time access to a shared or distributed directory containing the relevant information.

7.10.7 Using the healthcare agents directory in a message

A message may contain a single instance of the *healthcare agents directory*. This may contain any number of *healthcare agent links* and *healthcare agents*.

The same *healthcare agent* may be part of many *healthcare agent links*. To avoid repetition of the details about a *healthcare agent* can be carried once in the *healthcare agents directory*. Then each *healthcare agent link* that refers to that agent need only include an unspecialised instance of the class *healthcare agent* containing the appropriate identifier.

EXAMPLES:

The several doctors may work in one department.

The department details can be carried once as a *healthcare agent* specialised as a *healthcare organisation*.

The *healthcare agent link* representing each doctor within the department includes *healthcare agent relationship* with an unspecialised instance of the *healthcare agent*. This refers to the relevant details by sharing the same identifier.

7.10.8 Restricted healthcare agent roles

Some specific *healthcare party roles* that can only be played by particular types of *healthcare agents*. Where such restriction apply these are stated as a constraint in the role specific class and this is also made explicit in the GMD by including only those specialisations that are permitted.

EXAMPLE:

Prescriber is a specialisation of *healthcare agent links* that is always a *healthcare professional*.

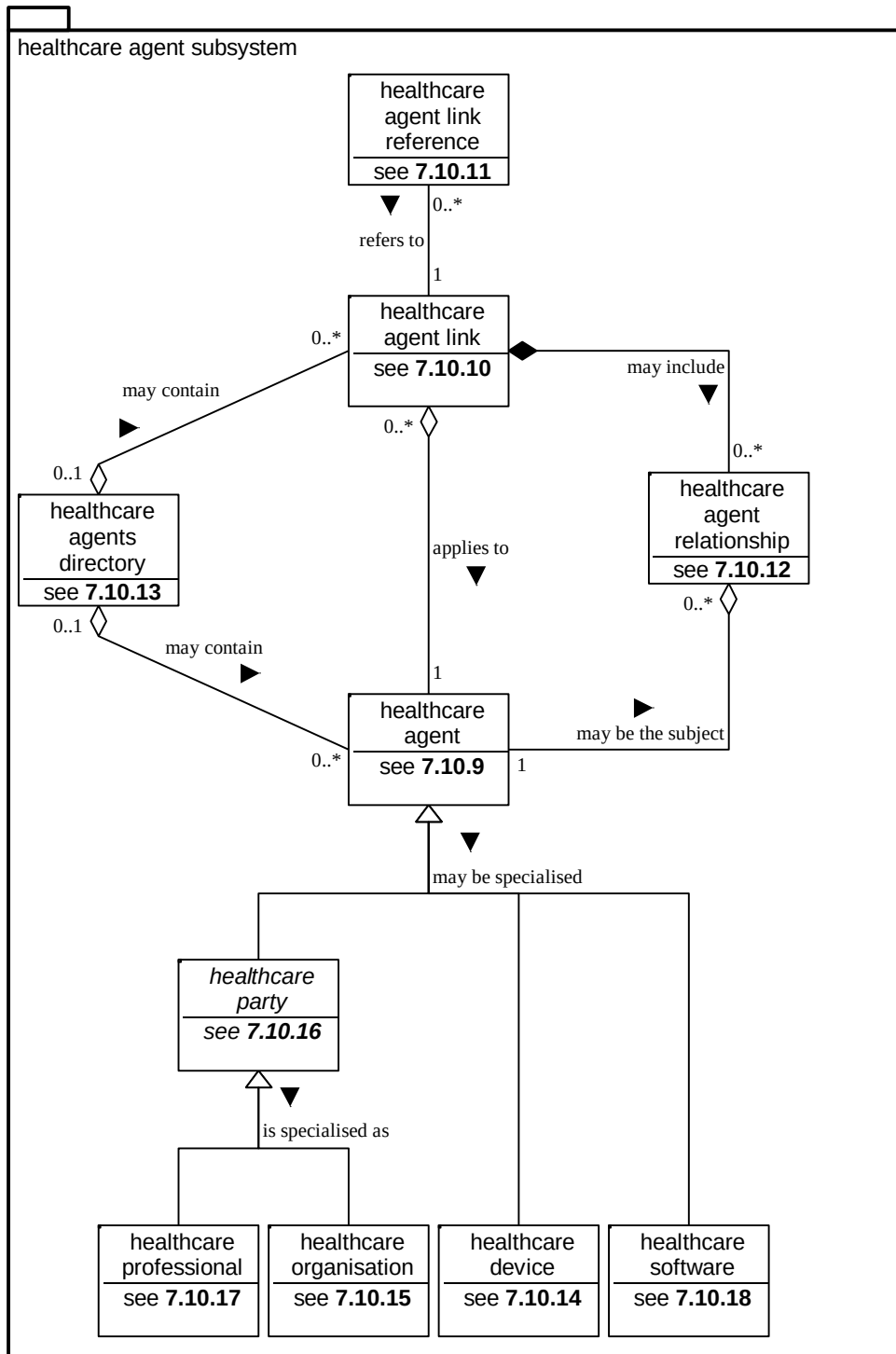


Figure 29. Domain Model - Healthcare agent subsystem

7.10.9 healthcare agent

Type: class		
Description: Information about a <i>healthcare professional</i> (7.10.17) (person), <i>healthcare organisation</i> (7.10.15), <i>healthcare device</i> (7.10.14) or <i>healthcare software</i> (7.10.18) component that performs a role in a healthcare activity.		
Note: The class <i>healthcare agent</i> contains only an identifier but its specialisations contain other attributes enabling details about different types of <i>healthcare agents</i> to be conveyed. This is not an abstract class as it may exist without a specialisation. In this case the identifier must refer to a <i>healthcare agent</i> about which the communicating parties already share a common set of information. This shared information may be provided or maintained using messages that contain an instance of the class <i>healthcare agents directory</i> (7.10.13). Alternatively the shared information about <i>healthcare agents</i> may be derived from a commonly accessible directory service maintained in a manner separate from the messaging process.		
Specialisations A <i>healthcare agent</i> may be specialised as a <i>healthcare party</i> (7.10.16), a <i>healthcare device</i> (7.10.14) or <i>healthcare software</i> (7.10.18).		
Usage A <i>healthcare agent</i> may be contained in a <i>healthcare agents directory</i> (7.10.13). A <i>healthcare agent</i> may be the subject of any number of <i>healthcare agent relationships</i> (7.10.12). A <i>healthcare agent</i> may be the subject of any number of <i>healthcare agent links</i> (7.10.10).		
Attributes	Type	Occurrence
healthcare agent identifier	identifier (7.11.9)	1
<i>Description:</i> A unique identifier of a <i>healthcare agent</i> .		

7.10.10 healthcare agent link

Type: class		
Description: Information about one or more <i>healthcare agents</i> (7.10.9) related together in a specified manner for the purposes of performing a particular role in a healthcare activity.		
Note: A class that represent a <i>healthcare agent</i> (7.10.9) in a particular role may be a specialisation of this class. These specialisations are not shown explicitly here, as this is a generic model that is used in different messages in which the available specialisations differ. A <i>healthcare agent link</i> represents a <i>healthcare agent</i> (7.10.9) in the context of its relationships with other <i>healthcare agents</i> (7.10.9).		
Example(s): A doctor while working in a particular hospital or department. A secretary acting for a clinical specialist. A specified department within a hospital. A radiologist using a specified piece of X-ray equipment. A specified piece of software running on a particular device.		
Usage A <i>healthcare agent link</i> may be contained in a <i>healthcare agents directory</i> (7.10.13).		
Associations A <i>healthcare agent link</i> may be referenced by any number of <i>healthcare agent link references</i> (7.10.11).		
Components A <i>healthcare agent link</i> applies to a <i>healthcare agent</i> (7.10.9). A <i>healthcare agent link</i> may include any number of <i>healthcare agent relationships</i> (7.10.12).		

Attributes	Type	Occurrence
healthcare agent link identifier	identifier (7.11.9)	1
<i>Description: A unique identifier of a healthcare agent link.</i>		
healthcare agent (7.10.9)	class	1
<i>Description: Information about a healthcare professional (7.10.17) (person), healthcare organisation (7.10.15), healthcare device (7.10.14) or healthcare software (7.10.18) component that performs a role in a healthcare activity.</i>		
healthcare agent relationship (7.10.12)	class	0 or many
<i>Description: A relationship between two healthcare agents.</i>		

7.10.11 healthcare agent link reference

Type: class		
Description: A reference to a healthcare agent link (7.10.10) using an unambiguous identifier.		
Note: Use of <i>healthcare agent link reference</i> depends on the existence of shared information describing the healthcare agent link (7.10.10) to which it refers. This may be provided by the healthcare agents directory (7.10.13) class, which represents a collection of any number of healthcare agents (7.10.9) or healthcare agent links (7.10.10).		
Associations <i>A healthcare agent link reference refers to a healthcare agent link (7.10.10).</i>		
Attributes	Type	Occurrence
healthcare agent link identifier	identifier (7.11.9)	1
<i>Description: A unique identifier of a healthcare agent link (7.10.10).</i>		

7.10.12 healthcare agent relationship

Type: class		
Description: A relationship between two healthcare agents.		
Note: NOTE 1: A healthcare agent relationship may apply for a specified period of time. NOTE 2: A healthcare agent relationship may be specific to a particular healthcare agent role.		
Example(s): EXAMPLE 1: Employee / employer EXAMPLE 2: On behalf of / responsible for.		
Usage <i>A healthcare agent relationship is part of a healthcare agent link (7.10.10).</i>		
Components <i>A healthcare agent relationship includes a healthcare agent (7.10.9).</i>		
Attributes	Type	Occurrence
healthcare agent relationship type	V [Code Value] (7.12.6)	1
<i>Description: The nature of the association between two healthcare agents.</i> <i>Example(s): Employer of, responsible for, employee of, responsible to, sub-division of, parent organisation of, etc.</i>		
healthcare agent (7.10.9)	class	1
<i>Description: Information about a healthcare professional (7.10.17) (person), healthcare organisation (7.10.15), healthcare device (7.10.14) or healthcare software (7.10.18) component that performs a role in a healthcare activity.</i>		

7.10.13 healthcare agents directory

Type: class		
Description: A collection of information about any number of <i>healthcare agents</i> (7.10.9) or <i>healthcare agent links</i> (7.10.10).		
Note: The <i>healthcare agents directory</i> class acts as a directory containing information about <i>healthcare agents</i> (7.10.9) and their relationships in a form that can be referred to by other classes in a message. — <i>healthcare agents directory</i> may contain information about one or more <i>healthcare agent links</i> (7.10.10) (i.e. a <i>healthcare agent</i> (7.10.9) in the context of their relationships with other <i>healthcare agent</i> (7.10.9)s. — <i>healthcare agents directory</i> may also contain information about individual <i>healthcare agents</i> (7.10.9) (i.e. <i>healthcare professionals</i> (7.10.17), <i>healthcare organisations</i> (7.10.15), <i>healthcare devices</i> (7.10.14) or <i>healthcare software</i> (7.10.18)) in a form that can be referred to be a <i>healthcare agent link</i> (7.10.10).		
Example(s): Detailed information about a hospital may be conveyed as a <i>healthcare agent</i> (7.10.9) in the <i>healthcare agents directory</i> . Information about a doctor working in that hospital may be conveyed in a <i>healthcare agent link</i> (7.10.10) related to the <i>healthcare agent</i> (7.10.9) that represents the hospital.		
Components A <i>healthcare agents directory</i> may contain any number of <i>healthcare agents</i> (7.10.9). A <i>healthcare agents directory</i> may contain any number of <i>healthcare agent links</i> (7.10.10).		
Attributes	Type	Occurrence
healthcare agent (7.10.9)	class	0 or many
<i>Description:</i> Information about a <i>healthcare professional</i> (7.10.17) (person), <i>healthcare organisation</i> (7.10.15), <i>healthcare device</i> (7.10.14) or <i>healthcare software</i> (7.10.18) component that performs a role in a healthcare activity.		
healthcare agent link (7.10.10)	class	0 or many
<i>Description:</i> Information about one or more <i>healthcare agents</i> (7.10.9) related together in a specified manner for the purposes of performing a particular role in a healthcare activity.		

7.10.14 healthcare device

Type: class		
Specialisation of: <i>healthcare agent</i> (7.10.9)		
Description: Device or equipment involved in the direct or indirect provision of healthcare services to an individual or to a population.		
Example(s): Computer, ECG machine, auto-analyser, syringe pump.		
Attributes	Type	Occurrence
Attributes of generalisation	healthcare agent (7.10.9)	
device type	C [Coded] (7.12.1)	1
<i>Description:</i> The nature or function of a device. <i>Example(s):</i> ECG machine, Computer, Cardiac monitor.		
device manufacturer	S [String]	0 or 1
manufacturer's model name	S [String]	0 or 1
device version	S [String]	0 or 1
<i>Description:</i> Version number assigned to a device or to its constituent firmware.		
device serial number	S [String]	0 or 1
device location	location details (7.11.11)	0 or 1

7.10.15 healthcare organisation

Type: class		
Specialisation of: healthcare party (7.10.16)		
Description: Information about an organisation involved in the direct or indirect provision of healthcare services to an individual or to a population.		
Note: Groupings or subdivisions of an organisation, such as departments or sub-departments, may also be considered as organisations where there is need to identify them.		
Attributes	Type	Occurrence
name of healthcare organisation	S [String]	0 or 1
type of organisation	V [Code Value] (7.12.6)	0 or 1
<i>Example(s):</i> University hospital, private clinic, laboratory service provider.		

7.10.16 healthcare party

Type: class		
Specialisation of: healthcare agent (7.10.9)		
Description: Information about an organisation or person responsible for the direct or indirect provision of healthcare services to an individual or to a population.		
Note: This may be a healthcare sub-department, department, organisation or person.		
Specialisations <i>A healthcare party is specialised as a healthcare organisation (7.10.15) or a healthcare professional (7.10.17).</i>		
Attributes	Type	Occurrence
Attributes of generalisation	healthcare agent (7.10.9)	
address of healthcare party	address (7.11.2)	0 or many
<i>Description:</i> An address expressed in a structured or unstructured form.		
telecommunication of healthcare party	telecommunication (7.11.29)	0 or many
<i>Description:</i> Telephone, facsimile and other telecommunication numbers or electronic addresses in a structured or unstructured form.		
<i>Note:</i> Email and web site addresses are specified using the <i>unstructured telecommunication number</i> with the appropriate <i>telecommunication type</i> .		
language details of healthcare party	language details (7.11.10)	0 or many
<i>Description:</i> Information about the ability of a person to communicate in a particular language.		
medical specialty of healthcare party	C/S [Code or String] (7.12.2)	0 or many
<i>Description:</i> Particular subject area or branch of medical science, offered by a <i>healthcare party</i> .		

7.10.17 healthcare professional

Type: class		
Specialisation of: healthcare party (7.10.16)		
Description: Person involved in the direct or indirect provision of healthcare services to an individual or to a population.		
Example(s): GP, consultant endocrinologist, dentist, nurse, radiographer, laboratory scientist, social worker, pharmacist, medical secretary.		
Attributes	Type	Occurrence
type of healthcare professional	V [Code Value] (7.12.6)	0 or 1
<i>Example(s):</i> Doctor, dentist, nurse, radiographer, laboratory scientist, social worker, pharmacist, secretary.		
name of healthcare professional	person name details (7.11.23)	0 or 1

position of healthcare professional	C/S [Code or String] (7.12.2)	0 or 1
<i>Example(s):</i> Head of department, hospital consultant, trainee.		
qualification of healthcare professional	C/S [Code or String] (7.12.2)	0 or many
<i>Note:</i> This information is provided as supplied by the <i>healthcare professional</i> or the organisation within which they work and is not proof of qualification to undertake healthcare services. <i>Example(s):</i> MD, M.Sc.		
military rank of healthcare professional	C/S [Code or String] (7.12.2)	0 or 1
<i>Example(s):</i> Captain, Major.		

7.10.18 healthcare software

Type: class		
Specialisation of: healthcare agent (7.10.9)		
Description: Software component involved in the direct or indirect provision of healthcare services to an individual or to a population.		
Example(s): EHCR system, decision support software, viewing tools.		
Attributes	Type	Occurrence
Attributes of generalisation	healthcare agent (7.10.9)	
software product name	S [String]	1
<i>Description:</i> The name of the software product as provided by the manufacturer.		
software manufacturer	S [String]	1
<i>Description:</i> The name of the manufacturer or developer of the software.		
software internal name	S [String]	0 or 1
<i>Description:</i> The name or identifier by which the software is referred to by other software. This may also be an programming object name.		
software filename	S [String]	0 or 1
<i>Description:</i> The filename of the file that contains the software (or the main or initial part of the software). <i>Example(s):</i> Winzip.exe		
software version	S [String]	1
<i>Description:</i> The version number of the software as allocated by the manufacturer.		
software date	TOCD [Time+Date]	0 or 1
<i>Description:</i> The date of creation or last modification of the software.		

7.11 Common subclasses

7.11.1 actual event details

Type: sub class		
Description: Information about an <i>event element</i> (B.2) that has already taken place.		
Attributes	Type	Occurrence
occurrence outcome of actual action event	occurrence outcome (7.11.19)	0 or 1
<i>Description:</i> Whether an event has occurred and optionally a <i>reason for non-occurrence</i> .		

7.11.2 address

Type: sub class		
Description: An <i>address</i> expressed in a structured or unstructured form.		
Components An <i>address</i> includes a <i>structured address</i> (7.11.25) or an <i>unstructured address</i> (7.11.32).		
Attributes	Type	Occurrence
address type	E [Enumerated]	0 or 1
<i>Values:</i> 0. Home 1. Work 2. Vacation 3. Other 4. Unspecified		
period of address validity	period (7.11.22)	0 or 1
<i>Description:</i> The period during which the associated address is applicable to the associated person or organisation.		
postal code	S [String]	0 or 1
area of country / county	C/S [Code or String] (7.12.2)	0 or 1
Choice of		1
	structured address (7.11.25)	sub class
	unstructured address (7.11.32)	sub class

7.11.3 bed location

Type: sub class		
Description: A location expressed as a combination of a bed, a room and ward.		
Attributes	Type	Occurrence
ward	C/S [Code or String] (7.12.2)	0 or 1
<i>Description:</i> Separate division in a hospital.		
room	S [String]	0 or 1
bed	S [String]	0 or 1
<i>Description:</i> An identification or description of a particular bed within a ward.		

7.11.4 component name structure

Type: sub class		
Attributes	Type	Occurrence
component name classification	TL (Term List Value) (7.12.5)	1
<i>Description:</i> A standard high-level classification of — <i>component name</i> to support communication. <i>Note:</i> The possible values of <i>component name classification</i> vary according to the component type. — An <i>EHCR extract</i> (7.6.4) or an <i>original component complex</i> (7.6.6) that represents several documents shall be assigned the <i>component name classification</i> "folder". — An <i>EHCR extract</i> (7.6.4) or an <i>original component complex</i> (7.6.6) that represents a single document or transaction, shall be classified under one of the high-level document titles specified by Table A-1 in Part 2 of this European Prestandard. — Examples (see Part 2 for full list): Note, Report, Request, Chart, Study product (e.g. an X-ray) — A <i>component complex</i> (7.6.2) that organises information within a document or transaction under headed sections shall be classified under one of the high-level section titles specified by Table A-2 in Part 2 of this European Prestandard. — Examples (see Part 2 for full list): Personal History, Family History, Social History, Examination, Investigations, Plans, Chart, Study product (e.g. an X-ray) — A <i>component complex</i> (7.6.2) that represents a small collection of closely related <i>data items</i> (7.7.3) shall be assigned the <i>component name classification</i> "cluster". — Any <i>component names</i> that do not map to any of the specified values, shall be assigned the <i>component name classification</i> "other".		
component name code	C [Coded] (7.12.1)	0 or 1
<i>Description:</i> A descriptor, title or heading applied to the component in the originating system. <i>Note:</i> There are no restrictions on the values that may be used to populate this attribute but in all cases this value shall be mapped to a valid <i>component name classification</i>.		

7.11.5 composite code

Type: sub class		
Components		
A <i>composite code</i> includes one or more <i>composite code elements</i> (7.11.6).		
Attributes	Type	Occurrence
ICSI	S [String]	1
<i>Description:</i> International Coding Scheme Identifier. This is usually part of a message that includes a coded value taken from the identified coding scheme. <i>Note:</i> ICSIs are issued in accordance with ISO 7826 to registered coding schemes. The ISO7826 provides ranges of values for unregistered local schemes.		
composite code element (7.11.6)	sub class	1 or many
composite code meaning	S [String]	0 or 1
<i>Description:</i> A textual description associated with a composite of one or more codes. <i>Note:</i> Individual codes within a composite may have their own textual descriptions. The <i>composite code meaning</i> should only be used where there is a human-readable representation of the composite. <i>Example(s):</i> If the composite includes a code for "neck of the femur", a code for "fracture" and another code for "left". A composite including these codes might be represented by the <i>composite code meaning</i> "fracture of the neck of the left femur".		

7.11.6 composite code element

Type: sub class		
Attributes	Type	Occurrence
ICSI	S [String]	0 or 1
<i>Description:</i> International Coding Scheme Identifier. This is usually part of a message that includes a coded value taken from the identified coding scheme. <i>Note:</i> ICSIs are issued in accordance with ISO 7826 to registered coding schemes. The ISO7826 provides ranges of values for unregistered local schemes.		
coding axis	S [String]	0 or 1
<i>Description:</i> If multiple codes are used to represent a single clinical concept, the <i>coding axis</i> may be used to distinguish between different coding axes.		
code value	S [String]	1
<i>Description:</i> A string that contains a coded value. This is usually part of a sub-class that contains an instance of <i>ICSI</i> to identify the coding scheme from which the value is taken.		
code meaning	S [String]	0 or 1

7.11.7 duration

Type: sub class		
Description: A period of time expressed as a time interval, date range or textual description.		
Attributes	Type	Occurrence
Choice of		1
	duration as time interval	time interval (7.11.31)
<i>Description:</i> An interval of time expressed a number and a unit of time. <i>Note:</i> This sub-class consists of a numerical value and unit of duration.		
	duration as date range	period (7.11.22)
	duration as text description	S [String]

7.11.8 expected delay

Type: sub class		
Description: The <i>time interval</i> (7.11.31) of, and reason for, a delay.		
Attributes	Type	Occurrence
duration of expected delay	time interval (7.11.31)	1
comments to expected delay	S [String]	0 or 1

7.11.9 identifier

Type: sub class		
Description: A general-purpose identifier that can be qualified by the identification scheme from which the identifier is derived.		
Attributes	Type	Occurrence
identification scheme	V [Code Value] (7.12.6)	0 or 1
<i>Description:</i> The identification scheme from which an associated identifier is derived. <i>Note:</i> This may be omitted where there is appropriate agreement between communicating parties which include partner agreed identifiers for the party or object identified by the associated <i>identifier</i> .		
identifier value	S [String]	1

7.11.10 language details

Type: sub class		
Description: language(s) in which a person is willing and able to converse for the purposes of providing or receiving healthcare services.		
Attributes	Type	Occurrence
language	V [Code Value] (7.12.6)	1
<i>Note:</i> Represented by the abbreviations specified in ISO 639.		
ability in language	V [Code Value] (7.12.6)	0 or 1
<i>Example(s):</i> First language, preferred, fluent, fair, poor, none.		

7.11.11 location details

Type: sub class		
Description: Information about a geographical location or type of location, expressed without a formal postal address (7.11.2) .		
Example(s): In the patient's home, in hospital, on a <i>ward</i> , in a diagnostic department, on a particular <i>ward</i> , in a particular <i>room</i> within a department.		
Attributes	Type	Occurrence
location type	C [Coded] (7.12.1)	0 or 1
<i>Example(s):</i> Hospital ward, patient's residence, outpatient clinic, accident & emergency department, prison, nursing home, diagnostic department.		
location identification	S [String]	0 or 1
<i>Description:</i> A partner agreed identification of the location.		
<i>Note:</i> The <i>location identification</i> may, if necessary, be specified as a concatenation of the identifier of a general location and a sub-location (e.g. a hospital identification followed by a ward identification within that hospital). Communicating parties need to agree the format of these combined identifiers.		
location description	S [String]	0 or 1
<i>Description:</i> A textual description of the location.		

7.11.12 location related information

Type: sub class		
Description: Information about a <i>location</i> including associated information.		
Note: Associated information may include period (7.11.22) of time at a <i>location</i> , the address (7.11.2) , telecommunication (7.11.29) and healthcare organisation (7.10.15) responsible for a <i>location</i> .		
Components <i>location related information</i> may include a bed location (7.11.3) .		
Attributes	Type	Occurrence
location role	V [Code Value] (7.12.6)	0 or 1
<i>Description:</i> The role of a location in relation to an event.		
<i>Example(s):</i> Location at which diagnostic service was performed, intended location of diagnostic service, location prior to diagnostic service, location after completion of diagnostic service.		
period at location	period (7.11.22)	0 or 1
<i>Note:</i> If the location is a hospital or ward this is the date of admission or transfer to that location.		
location	location details (7.11.11)	0 or 1
<i>Description:</i> Information about a geographical location or type of location, expressed without a formal postal address.		
bed location (7.11.3)	sub class	0 or 1
<i>Description:</i> A location expressed as a combination of a bed, a room and ward.		

address of location	address (7.11.2)	0 or 1
<i>Description:</i> An address expressed in a structured or unstructured form.		
telecommunication of location	telecommunication (7.11.29)	0 or many
<i>Description:</i> Telephone, facsimile and other <i>telecommunication (7.11.29)</i> numbers in a structured or unstructured form.		
organisation at location	organisation reference (7.11.20)	0 or 1
<i>Description:</i> A <i>healthcare organisation (7.10.15)</i> responsible provision of services at a specified location.		

7.11.13 manufactured medicinal product identification

Type: sub class		
Description: Information about a medicinal product supplied in accordance with a specification furnished for use by a prescriber and/or as dispensed by the Dispensing agent, giving it a unique identification.		
Attributes	Type	Occurrence
medicinal product name	S [String]	0 or 1
<i>Description:</i> Medicinal product designation in the form of a name <i>Note:</i> A synonym is a non-proprietary name. The short term "generic" is frequently used for this kind of medicinal product. In some countries e.g. the UK a medicinal product can be identified by "Approved names", the so-called "British Approved Names" (BAN), which are considered as a special instance of the "generic name" type of designation. Official medicinal product name: e.g. Sodium Bicarbonate Tablets, Compound, BP (BP = British Pharmacopoeia). Definition given in Directive 92/27EEC: ("the name given to a medicinal product, which may be either an invented name or a common name or scientific name, together with a trade mark or the name of the manufacturer; the invented name shall not cause confusion with the common name"). <i>Example(s):</i> — Trade name: proprietary medicinal product name given for marketing purposes. Other terms used to label a trade medicinal product are: — brand name; — proprietary product name; — pharmaceutical specialty product name; — medicinal specialty product name. — Recommended International Non-proprietary Name (rINN) — Proprietary medicinal product: as defined in Directive 65/65/EEC ("any ready-prepared product placed on the market under a special name and in a special pack"). — Generic name: medicinal product name based on the active ingredient (generic) name(s).		
medicinal product identification type	V [Code Value] (7.12.6)	0 or 1

identification of medicinal product	C [Coded] (7.12.1)	0 or 1
<i>Description:</i> Code for the medicinal product (proprietary name or generic) or medicinal product package <i>Note:</i> The source of data and responsibility for that source shall always be included. A coding scheme within this Draft European Prestandard should be identified either by its designation or preferably by its ICSI (International Coding Scheme Identifier) allocated in accordance with ISO 7826. When a coding scheme designation is used, the version or year of issue, if relevant, should be stated as a part of the designation. <i>Example(s):</i> WHO Drug Directory, NHS Clinical Terms Version 3. ATC1992.		
supplementary identifying information	S [String]	0 or 1
<i>Description:</i> Free text description which aids in the identification of the medicinal product		
pharmaceutical dosage form/route of administration	LC/S [List of Codes or Strings] (7.12.4)	0 or 1
<i>Description:</i> Information that, together with the medicinal product name, provides a full specification of the medicinal product. <i>Note:</i> Here, route of administration means one or more potential routes of administration. It is not the actual route of administration even if identical May include one or more of: — form of presentation (e.g. tablets, powder for inhalation); — auxiliary device (e.g. inhaler, syringe, medium for dissolving); — immediate container (e.g. plastic ampoule, single dose container, syringe); — route of administration (e.g. oral, sublingual, topical, intravenous injection).		
Choice of		1
	structured pharmaceutical strength	measurement (7.11.16)
	unstructured pharmaceutical strength	S [String]
manufacturer of medicinal product	C/S [Code or String] (7.12.2)	0 or 1
<i>Description:</i> The name of the manufacturer of the medicinal product. May also be the supplier.		
supplier of medicinal product	C/S [Code or String] (7.12.2)	0 or 1
<i>Description:</i> The name of the supplier of the medicinal product. Only used when different from the manufacturer		
comment to medicinal product	S [String]	0 or 1
<i>Description:</i> To convey any unstructured comment about the medicinal product for the purpose of unambiguous identification of the medicinal product		

7.11.14 measurable quantity

Type: sub class		
Description: A representation of a phenomenon, body or substance that may be distinguished qualitatively and determined quantitatively. Example(s): Fetal biparietal diameter in systematic notation: Fetus ; head ; diameter ; measured by ultrasound ; biparietal diameter.		
Attributes	Type	Occurrence
Choice of		1
	measurable quantity attribute	C/S [Code or String] (7.12.2)
<i>Description:</i> The property observed or measured expressed as a single coded attribute.		

	measurable quantity structure (7.11.15)	sub class
<i>Description:</i> A measurable quantity expressed using three distinct axes as recommended by IFCC/IUPAC.		

7.11.15 measurable quantity structure

Type: sub class		
Description: A measurable quantity expressed using three distinct axes as recommended by IFCC/IUPAC.		
Attributes	Type	Occurrence
system	C/S [Code or String] (7.12.2)	1
<i>Description:</i> Demarcated arrangement of a set of components and a set of relationships between these components. <i>Note:</i> See ENV1614. The component parts of a system and therefore the system itself may be subjected to a study or measurement. A system that contains other systems (sub-systems) may be referred to as a "super-system" of those systems. <i>Example(s):</i> Examples of systems: a man, an anatomical structure, a biopsy sample, an anatomic pathological section, an electrocardiograph tracing, an X-ray image.		
component	C/S [Code or String] (7.12.2)	1
<i>Description:</i> Definable part of a system. <i>Note:</i> See ENV1614. <i>Example(s):</i> Pathological cells in a biopsy from an organ, the shape of the T-wave in a part of an ECG, bone density in part of an X-ray image.		
kind of quantity	C/S [Code or String] (7.12.2)	1
<i>Description:</i> The type of measurement (7.11.16) . <i>Example(s):</i> Length, height, weight, volume.		

7.11.16 measurement

Type: sub class		
Description: A <i>measurement</i> expressed as a numeric value and <i>unit of measurement</i> .		
Attributes	Type	Occurrence
numerical value	R [Real]	1
<i>Example(s):</i> "140" when a result is 140 mmol/l.		
unit of measurement	V [Code Value] (7.12.6)	1

7.11.17 measurement range

Type: sub class		
Description: A <i>measurement range</i> expressed as two numeric values and <i>unit of measurement</i> .		
Attributes	Type	Occurrence
lower limit value	R [Real]	0 or 1
upper limit value	R [Real]	0 or 1
unit of measurement	V [Code Value] (7.12.6)	1

7.11.18 measurement with comparator

Type: sub class		
Description: A <i>measurement</i> (7.11.16) expressed as a numeric value and <i>unit of measurement</i> with an optional mathematical comparator		
Note: Used where it is rational for a <i>measurement</i> (7.11.16) to be expressed as greater than or less than a specified value.		
Attributes	Type	Occurrence
numerical value	R [Real]	1
<i>Example(s):</i> "140" when a result is 140 mmol/l.		
unit of measurement	V [Code Value] (7.12.6)	1
arithmetic comparator	V [Code Value] (7.12.6)	0 or 1
<i>Example(s):</i> >, >=, =, <=, <.		

7.11.19 occurrence outcome

Type: sub class		
Description: Whether an event has occurred and optionally a <i>reason for non-occurrence</i> .		
Attributes	Type	Occurrence
occurrence status	V [Code Value] (7.12.6)	1
<i>Description:</i> Describes whether a planned event such as a patient contact actually occurred or not. <i>Example(s):</i> event occurred, originator initiated cancellation, cancelled by patient without notification, cancelled by requester.		
reason for non-occurrence	S [String]	0 or 1

7.11.20 organisation reference

Type: sub class		
Description: A <i>healthcare organisation</i> (7.10.15) responsible provision of services at a specified location.		
Attributes	Type	Occurrence
Identification of organisation at location	party identifiers (7.11.21)	0 or 1
name of organisation at location	S [String]	0 or 1
type of organisation	V [Code Value] (7.12.6)	0 or 1
<i>Example(s):</i> University hospital, private clinic, laboratory service provider.		

7.11.21 party identifiers

Type: sub class		
Description: A set of one or more <i>party identifiers</i> used to identify a person or organisation.		
Note: Each <i>identifier</i> (7.11.9) is qualified to indicate the identification scheme from which it is derived.		
Components <i>party identifiers</i> includes one or more <i>identifiers</i> (7.11.9).		
Attributes	Type	Occurrence
identifier (7.11.9)	sub class	1 or many
<i>Description:</i> A general-purpose identifier that can be qualified by the identification scheme from which the identifier is derived.		

7.11.22 period

Type: sub class		
Description: A <i>period</i> expressed as a start and end date.		
Attributes	Type	Occurrence
start date and time	TOCD [Time+Date]	0 or 1
<i>Description:</i> Date and time of the start of the specified period.		
end date and time	TOCD [Time+Date]	0 or 1
<i>Description:</i> Date and time of the end of the specified period.		

7.11.23 person name details

Type: sub class		
Description: The structured or unstructured name of a person.		
Components <i>person name details</i> includes a <i>structured person name</i> (7.11.27).		
Attributes	Type	Occurrence
person name type	V [Code Value] (7.12.6)	0 or 1
<i>Example(s):</i> — Alias name (artificial or assumed name by which a patient has been or is known; any code may serve as an alias, sometimes temporarily because proper identity is unknown or to preserve anonymity; a given person may have more than one alias). — Maiden name (when female patients change their family name - e.g. upon marriage - this item carries their previous family name), — Former name, — Mother's maiden name (may be required to distinguish between patients with the same birth date and family name when registry files are very large and when no other means of unique patient identifiers by name is available), — Preferred name.		
period of name validity	period (7.11.22)	0 or 1
<i>Description:</i> The period during which this name is or was valid.		
<i>Note:</i> This may be used to refer to previous names for the same person.		
Choice of		1
	structured person name (7.11.27)	sub class
<i>Description:</i> A person name composed of separately identifiable elements.		
	unstructured name	S [String]
<i>Description:</i> A person name represented as a plain string of text without decomposition into separate name elements. <i>Note:</i> Used instead of structured names when communication parties do not support structured names. In some cases it may be impossible to distinguish which parts or a name should be placed in which name elements. <i>Example(s):</i> "Adelin Albert", "Alexandre le Grand", "Lord George Christopher"		

7.11.24 planned event details

Type: sub class		
Description: Information about an <i>event element</i> (B.2) that is planned.		
Attributes	Type	Occurrence
planning stage	C [Coded] (7.12.1)	0 or 1
<i>Description:</i> The stage that has been reached in planning the delivery of this event. <i>Example(s):</i> Accepted, proposed, scheduled, completed, rejected, postponed, cancelled.		
status of plan	V [Code Value] (7.12.6)	0 or 1
<i>Note:</i> Scheduled dates and dates of planning are represented as <i>related date and times</i> (7.5.6) in the containing <i>EHCR message component</i> (7.5.4). <i>Example(s):</i> Interim, confirmed.		
expected delay before event	expected delay (7.11.8)	0 or 1
<i>Description:</i> The <i>time interval</i> (7.11.31) of, and reason for, a delay.		
expected duration of event	time interval (7.11.31)	0 or 1
<i>Description:</i> An interval of time expressed a number and a unit of time.		

7.11.25 structured address

Type: sub class		
Attributes	Type	Occurrence
street name	S [String]	1
number or name of house	S [String]	0 or 1
apartment number	S [String]	0 or 1
PO box number	S [String]	0 or 1
<i>Note:</i> PO is post office.		
city district	S [String]	0 or 1
<i>Description:</i> Part of a city.		
city or town	S [String]	0 or 1

7.11.26 structured dosage administration

Type: sub class		
Attributes	Type	Occurrence
route of administration	V [Code Value] (7.12.6)	0 or 1
<i>Example(s):</i> oral, topical, intravenous injection		
single dose	measurement (7.11.16)	0 or 1
<i>Description:</i> The quantity of medicinal product administered to the patient at one event of administration of medicine. <i>Example(s):</i> 2 tablets, 2.5 ml, 3 puffs		
dosage pattern	C/S [Code or String] (7.12.2)	0 or 1
<i>Description:</i> Semi-structured way of describing dosage administration. <i>Example(s):</i> one tablet three times a day, two puffs two to four times daily.		
maximum daily dose	measurement (7.11.16)	0 or 1
infusion rate	measurement (7.11.16)	0 or 1

trigger for administration	C/S [Code or String] (7.12.2)	0 or many
<i>Description:</i> The event or condition that should initiate or terminate the treatment or elicit the administration of a single dose. <i>Example(s):</i> by heartburn, when blood glucose lower than 2 mmol/l, by meals, when needed		
duration of drug treatment	duration (7.11.7)	0 or 1
<i>Description:</i> Information on the length of time that the party recommending or prescribing the drug intends it to be taken.		
associated equipment/devices	C/S [Code or String] (7.12.2)	0 or 1
time of administration	TOCD [Time+Date]	0 or many

7.11.27 structured person name

Type: sub class		
Description: A person name composed of separately identifiable elements.		
Attributes	Type	Occurrence
family name	S [String]	1
<i>Note:</i> "last name" is ambiguous, especially in the case of persons of Far Eastern extraction.		
first given name	S [String]	0 or 1
<i>Note:</i> "first name" is ambiguous, especially in the case of persons of Far Eastern extraction; "Christian name" may cause offence.		
middle name	S [String]	0 or 1
<i>Note:</i> If the complete name consists of more than one name besides <i>family name</i> and given name, initials of the other names may be substituted for the <i>middle name</i> .		
title	S [String]	0 or 1
<i>Example(s):</i> Mr, Mrs, Sir, Lord, Dr, Ms, Miss, Rev.		
generation qualifier	S [String]	0 or 1
<i>Note:</i> Usage of this name component is common in the United States of America. <i>Example(s):</i> Jnr, Snr, II, III, IV.		

7.11.28 structured telecommunication number

Type: sub class		
Attributes	Type	Occurrence
telecommunication country code	S [String]	0 or 1
telecommunication area code	S [String]	1
telecommunication number	S [String]	1
telecommunication extension number	S [String]	0 or 1

7.11.29 telecommunication

Type: sub class		
Description: Telephone, facsimile and other <i>telecommunication</i> numbers in a structured or unstructured form.		
Components <i>A telecommunication includes a structured telecommunication number (7.11.28).</i>		

Attributes	Type	Occurrence
telecommunication type	E [Enumerated]	0 or 1
<i>Values:</i> 0. Voice 1. Mobile 2. Pager 3. Facsimile 4. E-mail 5. Web-site 6. Other		
address type of telecommunication	E [Enumerated]	0 or 1
<i>Description:</i> Relates a telecommunication number to a particular address or location specified using an associated instance of the address class. <i>Values:</i> 0. Home 1. Work 2. Vacation 3. Other 4. Unspecified 5. Mobile		
period of telecommunication number validity	period (7.11.22)	0 or 1
Choice of		1
	structured telecommunication number (7.11.28)	sub class
	unstructured telecommunication number	S [String]
<i>Note:</i> Used instead of structured number when communication parties do not support structured <i>telecommunication</i> numbers or when the structure of the number does not match the components available in the <i>telecommunication</i> common attribute group. <i>Example(s):</i> X.400 address.		

7.11.30 text blocks with heading

Type: sub class		
Description: Blocks of text with a related text or coded heading.		
Attributes	Type	Occurrence
text block heading	C/S [Code or String] (7.12.2)	0 or 1
<i>Description:</i> A heading for a section of text. <i>Note:</i> This attribute provides an optional heading for one or more paragraphs of text. It may also be applied as a heading to a group of related coded items. <i>Example(s):</i> Macroscopic appearance, microscopic appearance, interpretation.		
text block	S [String]	1 or many
<i>Description:</i> A block of plain printable text, which represents a single paragraph.		

7.11.31 time interval

Type: sub class		
Description: An interval of time expressed a number and a unit of time.		
Attributes	Type	Occurrence
numerical value of time interval	R [Real]	1
<i>Description:</i> Number of the value for the <i>time interval</i>		

unit of time interval	V [Code Value] (7.12.6)	1
<i>Description:</i> The unit of time in which the value of the <i>time interval</i> is expressed		

7.11.32 unstructured address

Type: sub class		
Attributes	Type	Occurrence
unstructured address line	S [String]	1 or many
<i>Note:</i> Used instead of <i>structured address</i> (7.11.25) when communication parties do not support structured addresses		

7.12 Compound data types

7.12.1 C [Coded]

Type: sub class		
Description: Code with text description.		
Attributes	Type	Occurrence
ICSI	S [String]	1
<i>Description:</i> International Coding Scheme Identifier. This is usually part of a message that includes a coded value taken from the identified coding scheme. <i>Note:</i> ICSIs are issued in accordance with ISO 7826 to registered coding schemes. The ISO7826 provides ranges of values for unregistered local schemes.		
code value	S [String]	1
<i>Description:</i> A string that contains a coded value. This is usually part of a sub-class that contains an instance of <i>ICSI</i> to identify the coding scheme from which the value is taken.		
code meaning	S [String]	1

7.12.2 C/S [Code or String]

Type: sub class		
Description: Code (with text description) or uncoded text string.		
Attributes	Type	Occurrence
Choice of		1
coded element	C [Coded] (7.12.1)	
text description	S [String]	

7.12.3 C+S [Code+String]

Type: sub class		
Description: Code (with text description) and optional textual qualification		
Attributes	Type	Occurrence
coded element	C [Coded] (7.12.1)	1
text qualifier to coded information	S [String]	1

5 7.12.4 LC/S [List of Codes or Strings]

Type: sub class		
Description: List of codes (with text descriptions) or uncoded text strings.		
Attributes	Type	Occurrence
code or string	C/S [Code or String] (7.12.2)	0 or 1

7.12.5 TL (Term List Value)

Type: sub class		
Description: A value from a specified table in Annex A of Part 3 of this European Prestandard.		
Attributes	Type	Occurrence
term list tag value	S [String]	1
<i>Description:</i> A tag value specified in a table in Annex A of Part 2 of this European Prestandard.		

term list description	S [String]	0 or 1
<i>Description:</i> The text description applicable to a tag value specified in a table in Annex A of Part 2 of this European Prestandard.		

7.12.6 V [Code Value]

Type: sub class		
Description: Code without description		
Usage A V [Code Value] is part of a component reference (7.8.2) .		
Attributes	Type	Occurrence
ICSI	S [String]	1
<i>Description:</i> International Coding Scheme Identifier. This is usually part of a message that includes a coded value taken from the identified coding scheme. <i>Note:</i> ICSIs are issued in accordance with ISO 7826 to registered coding schemes. The ISO7826 provides ranges of values for unregistered local schemes.		
code value	S [String]	1
<i>Description:</i> A string that contains a coded value. This is usually part of a sub-class that contains an instance of ICSI to identify the coding scheme from which the value is taken.		

7.13 Simple data types

7.13.1 [defined by enterprise]

Description: Class or data type defined by an enterprise and identified in accordance with the provisions of this European Prestandard.

7.13.2 B [Boolean]

Description: Boolean.

Values: True or False

7.13.3 E [Enumerated]

Description: Enumerated list

Note: The possible values for each attribute of this type are specified as a finite list.

5 7.13.4 I [Integer]

Description: Integer

Note: The value may be any whole positive or negative number including zero.

7.13.5 R [Real]

Description: Real number.

Note: The value may be any positive or negative number or zero with any number of decimal places.

7.13.6 S [String]

Description: String of characters.

Note: The value may be a string of zero or more characters. The permitted character set shall be determined by agreement within a communicating community subject to the constraints of the implementation syntax. However, the character set chosen shall be either a character set defined in ISO8859 or the Unicode character set.

7.13.7 signature

Description: Representation of a digital signature.

Note:

Includes any hash key derived from the signature.

Full structure may be dependent on the digital signature algorithm used by agreement between communicating parties.

7.13.8 TOCD [Time+Date]

Description: Time and date

Note:

The precise representation of the TOCD data type is not specified by this Prestandard and is dependent on the implementation syntax. However, the following points should be taken into account when mapping the attributes of data type TOCD into an implementable message.

It shall be possible to include the date, time and optionally the time zone.

It shall be possible to omit the time unless otherwise specified for a specific attribute.

If the time is specified, it shall be possible to include the time in hours, minutes and seconds.

However, it should also be possible to omit the seconds element.

For certain attributes of the type TOCD the message permits the date to be expressed imprecisely as year only or as year and month. The message shall be capable of representing these imprecise dates.

10

Annex A.
(informative)
How to read the models

A.1 Introduction

The modelling technique and the definition of terms in the models follow the conventions described within the Unified Modelling Language (UML).

This annex contains a brief overview of the modelling conventions used in this document. However, modelling is used in this European Prestandard only to demonstrate consistency and to illustrate the domain. It is not the intention of this European Prestandard, or this Annex to present this modelling method, or its implementation, as a general method for modelling healthcare information for other purposes.

A.2 Classes and Packages

A.2.1 Classes

A **class** is the descriptor for a set of objects with similar structure, behaviour, and relationships. This document provides a graphical notation for the relationships between instances of the classes where this adds to the clarity of the description of the domain. All classes are described textually. Note: an instance of a class may be called ‘an object’.

Within UML, a Class is shown as a solid-outline rectangle with 3 compartments separated by horizontal lines. The upper *name* compartment holds the class name; the middle compartment holds a list of *attributes*; the bottom list compartment holds a list of *operations*.

In the DIM diagrams in Clause 7, the representation of a class includes only two compartments, the *name* compartment and the *attribute* compartment, the latter indicating the sub-clause within the document where the attributes are described.

In the GMD diagrams in Clause 6 document, where a class is included in a diagrammatic representation of the structure within a subsystem, only the name compartment is shown and reference to the sub-clause follows the class name.

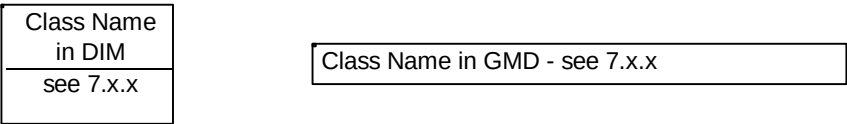


Figure A-1. Representation of classes in DIM and GMD diagrams

A.2.2 Packages

A **package** is a grouping of model elements. Packages themselves may be nested within other packages. All kinds of UML model elements and diagrams can be organised into package.

A package is shown as a large rectangle with a small rectangle (a “tab”) attached on one corner. If the contents of the package are not shown, then the name is placed within the large rectangle.

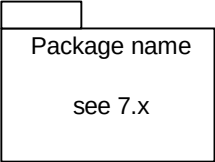


Figure A-2. Representation of packages in diagrams

A.3 Relationships

A.3.1 Generalisation/Specialisation

A generalisation/specialisation relationship between classes implies that the specialisation is a kind or subtype of the generalised class. For example a dog is a specialisation of animal.

- 5 A solid line between classes with a hollow triangle at the generalisation end indicates as generalisation/specification relationship.

The lines from several classes may converge on and connect to the generalisation through a single hollow triangle. This indicates that a single instance can only be one of the specialisations shown. Other specialisations may be able to coexist in the same instance. For example "cat" and "female animal" are both specialisations of "animal" and a female cat is a single instance that has the characteristics of both these specialisations.

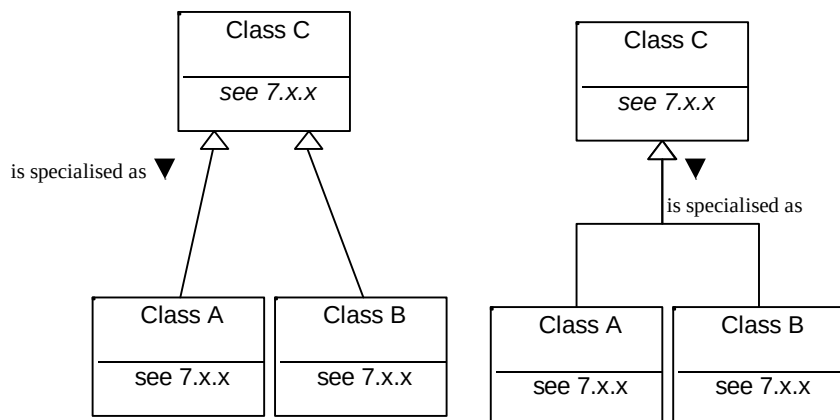


Figure A-3. Illustrations of classes A and B as specialisations of Class C

Specialisation classes inherit all attributes, relationships and services from their generalisation class(es). A generalisation may be an *abstract* class. In this case, no instances of the generalised class exist except as instances of one of the specialisations. The names of abstract classes are italicised in the diagrammatic representations of the model.

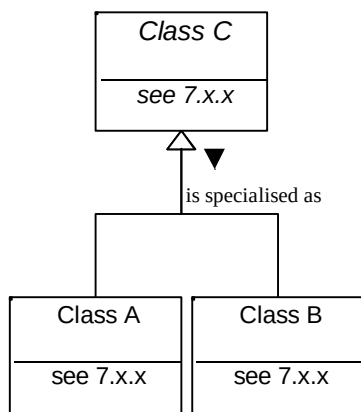


Figure A-4. Illustrations of classes A and B as specialisations of the abstract Class C

In messages specified by this European Prestandard the generalisation/specialisation relationship may be encountered in either or the following ways:

- A generalised class may be explicitly included in the structure of a message. This usually implies the inclusion of an instance of one of the specialisations of that generalisation (if the generalisation is an abstract class then this is always the case).

EXAMPLE 1 If a message includes the generalised class "animal" then it may include an instance of an available specialisation such as "cat" or "dog".

- A specialisation may be explicitly included in the structure of a message. In this case, the specialisation includes an instance of the generalisation and all its attributes. However, it does not follow that a further specialisation instance is included.

EXAMPLE 2 If a message includes "dog" then attributes of the general class "animal" are included. However, this instance of animal does not lead to a further instance of "dog" (or "cat").

A.3.2 Aggregation

Aggregation refers to relationship in which one class is a "a part of" another class.

- 5 Unlike a composition relationship the parts of an aggregate have an existence even if the aggregate is deleted. For instance a healthcare professional may be part of a healthcare organisation but the same healthcare professional may be referred to outside the context of that organisation.

A solid line between two classes with a hollow diamond at one end represents an aggregation. The diamond is attached to the aggregate class.

- 10 The line is labelled with an indication of the nature of the association and with a triangular arrowhead indicating the direction of association

The ends of the line may be labelled with the multiplicities of the association (that is the numbers of instances of one class that may be part of the same instance of the aggregate or the number of aggregation of which the other class may be a part).

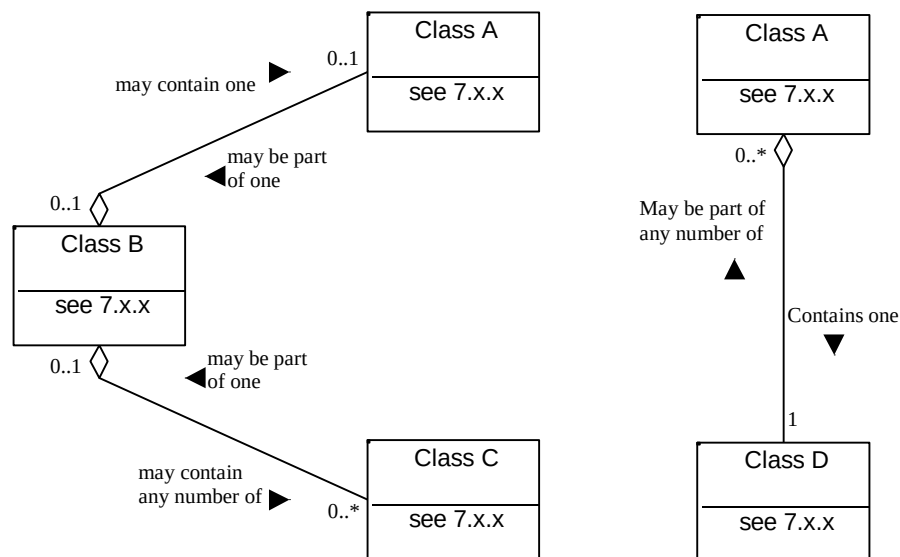


Figure A-5. Illustration of aggregation relationships

A.3.3 Composition

Composition is a type of aggregation relationship in which the aggregate owns the parts. Deletion of the aggregate also deletes all its constituent parts.

A solid line between two classes with a solid diamond at one end represents a composition. The diamond is attached to the composite class.

The line may be labelled with an indication of the nature of the association and with a triangular arrowhead indicating the direction of association

The part end of the line may be labelled with the multiplicities of the association (that is the numbers of instances of one class that may be part of the same instance of the composite). The multiplicity at the end represented by the solid diamond is implicitly "1" since a part only exists within the composite.

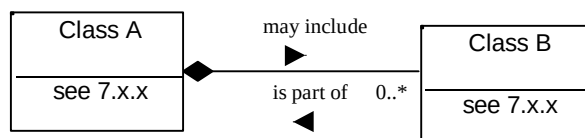


Figure A-6. Illustration of a composition relationship

A.3.4 Associations between classes

An association is any relationship between classes other than the Generalisation/Specialisation and Aggregation and Composition relationships described earlier in this annex.

A solid line between two class symbols illustrates an association between those classes.

The line is labelled with an indication of the nature of the association and with a triangular arrowhead indicating the direction of association

The ends of the line are labelled with the multiplicities of the association (that is the numbers of instances of one class that may be associated with a single instance of the associated class).

Associations between classes in this European Prestandard are usually supported in the messages by one or more reference attributes within one or both of the classes which point to or identify one or more instances of the other class.

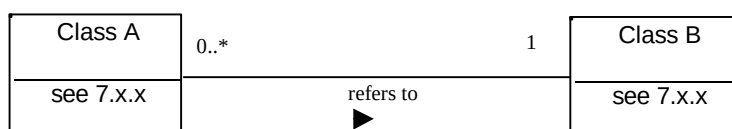


Figure A-7. Illustration of associations between classes

A.3.5 Associations between packages

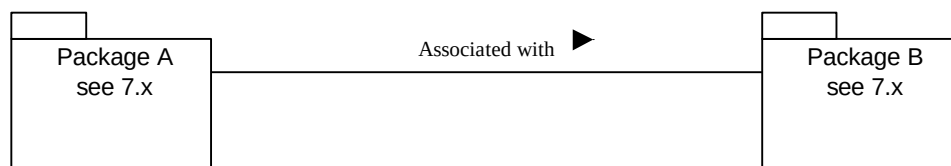
The only types of association shown between packages in this European Prestandard are association.

There is an association between two packages if any of the classes within one package are related to classes within the other package.

- 5 A dashed line between the package symbols illustrates an association between those packages.

The line is labelled with an indication of the nature of the association and with a triangular arrowhead indicating the direction of association.

Associations between packages are provided for illustrative purposes only and have no impact on the content of the messages specified in this European Prestandard.



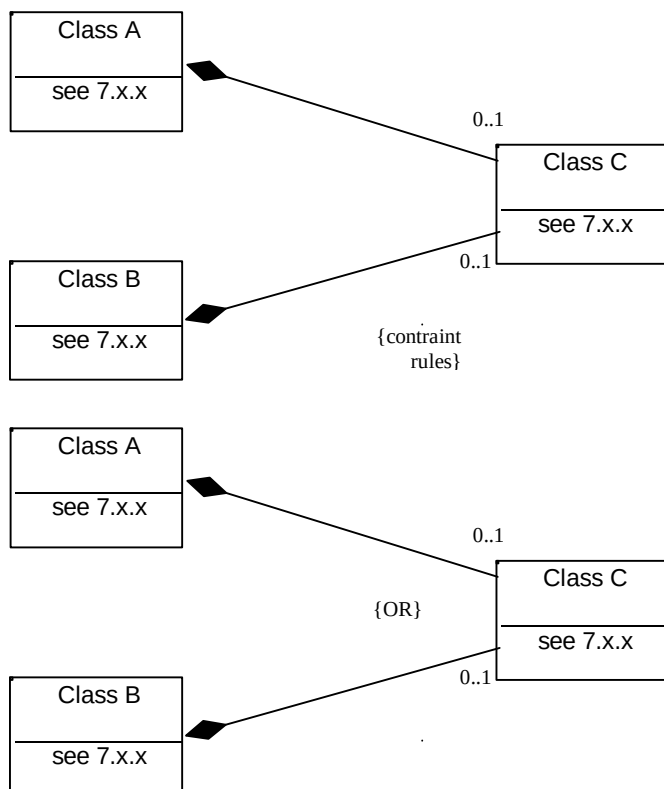
10 **Figure A-8. Illustration of associations between packages**

A.3.6 Constraints on relationships

A constraint may be attached to any type of relationship including association, aggregation, composition or specialisation.

A dashed line crossing the affected relationships indicates the constraint.

- 15 A note or reference enclosed in brace characters "{}" indicates the nature of the constraint.



NOTE

The predefined constraint {OR} implies that each instance of Class C is part of either Class A or Class B.

Figure A-9. Illustrations of constraints on relationships

Annex B. (Informative) Suggested extended EHCR item elements

B.1 Introduction

- 5 This Annex contains additional *data item elements* (7.7.4) that are suggested as a basis for consideration when implementing the *provide EHCR message* (7.3.4). These elements are based on classes included in earlier CEN TC251 message Prestandards. Support for these elements is not a requirement for conformance with this Prestandard but implementors should anticipate requirements for these or similar extensions when these messages are introduced into communicating communities.

10 B.2 event element

Type: class		
Specialisation of: data item element (7.7.4)		
Description: Information about a planned or actual event that relates to the care process for an individual.		
Note: EHCR related events include: — individual contacts between health professionals and patients (e.g. consultations, phone calls) — admission, transfers and discharges — identifiable periods of care (e.g. episodes)		
Attributes	Type	Occurrence
administrative category of event	V [Code Value] (7.12.6)	0 or 1
<i>Description:</i> Administrative type of the event that is requested, proposed or carried out. <i>Example(s):</i> First out-patient attendance, subsequent out-patient attendance, admission, day care, domiciliary visit, telephone consultation, direct access to procedure/operation, emergency admission.		
urgency status of event	V [Code Value] (7.12.6)	0 or 1
<i>Description:</i> Classification of event in terms of urgency. <i>Example(s):</i> Emergency, elective.		
administrative outcome	C/S [Code or String] (7.12.2)	0 or many
<i>Description:</i> Information relevant to further action. <i>Note:</i> If a request that is rejected or a planned investigation is postponed there may be further plans (e.g. a new appointment may be issued automatically or only on further request). The reason for postponement may impact future plans (e.g. non-attendance for the appointment, admission or death of the patient). <i>Example(s):</i> patient did not attend appointment, patient died, another appointment given, open appointment, appointment to be given at a later date, no further arrangements will be made.		
event location	location related information (7.11.12)	0 or many
<i>Description:</i> Information about a location including associated information. <i>Example(s):</i> the location immediately prior to an <i>event element</i> , the location at which the event takes place or the location immediately subsequent to the event.		
Choice of		1
	event completion details	actual event details (7.11.1)
<i>Note:</i> Dates of the start and end of the even are represented as <i>related date and times</i> (7.5.6) in the containing <i>record component</i> (7.6.8).		
	event planning details	planned event details (7.11.24)
<i>Description:</i> Information about an event that is planned.		

Annex C. (informative) Draft XML DTDs for EHCR Messages

C.1 Introduction

5 This Annex contains examples of the messages specified in this European Prestandard represented using the Document Type Definition (DTD) of the Extensible Markup Language (XML). These specifications are illustrative only. Further development, refinement and documentation is required to enable succesful implementation.

C.2 Document Type Definition of the Provide EHCR Message

```

10 <!ELEMENT ProvideEhcr (IDbyOriginator,
    IssueDate,
    PatientMatching,
    RequestAck,
    MessageComment*,
15    Language?,
    AgentDirectory?,
    Destination,
    Source,
    Intermediary*,
    SpecEhcrInfo,
20    RefToRequest?,
    DistribRule*,
    EhcrExtract,
    RefToProvide*)>

<!ATTLIST ProvideEhcr Urgency (LOW|MEDIUM|HIGH) #REQUIRED>
25 <!ELEMENT IDbyOriginator (#PCDATA)>
<!ELEMENT IssueDate (#PCDATA)>
<!ATTLIST IssueDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!ELEMENT PatientMatching (PartyIDs?,
30    PersonName?,
    AlternativeName*,
    BirthDate?,
    Sex?,
    Address*,
    Comment?)>
35 <!ELEMENT RequestAck (#PCDATA)>
<!ATTLIST RequestAck XML-SQLTYPE CDATA #FIXED "BOOLEAN">
<!ELEMENT MessageComment (CodedElement
    String)>
<!ELEMENT Language (#PCDATA)>
40 <!ATTLIST Language ICSI CDATA #REQUIRED>
<!ELEMENT AgentDirectory (
    (Agent|
    Organisation|
    Professional|
45    HealthcareDevice|
    Software)*,
    AgentLink*)>

<!ELEMENT Destination (AgentLinkRef)>

```

```

<!ELEMENT Source (AgentLinkRef)>
<!ELEMENT Intermediary (AgentLinkRef)>
<!ATTLIST Intermediary Role
(FOR_REQUEST|FOR_PROVIDE|AUTH_DESTINATION|AUTH_SOURCE|ID HOLDER|OTHER) #REQUIRED>
5 <!ELEMENT SpecEhcrInfo (Language?,
    EnterpriseID?,
    SubsetDescript?,
    UpdatePeriod?)>
    <!ATTLIST SpecEhcrInfo Scope (COMPLETE|SUBSET|UPDATE) #REQUIRED>
10 <!ELEMENT RefToRequest (Originator,
    IDbyOriginator,
    IDbyThisSender?,
    IssueDate?)>
    <!ELEMENT DistribRule EMPTY>
15 <!ELEMENT EhcrExtract (ComponentID,
    ComponentType,
    TimeStamp,
    OriginatingHcp,
    Attestation*,
20    DRLinkRef*,
    RevisionLink?,
    ComponentName?,
    RelatedDate*,
    RelatedHcp*
25    (Component|
    OCC|
    SCC|
    DataItem|
    LinkItem|
30    CommentItem)+>
    <!ATTLIST EhcrExtract Status (CURRENT|SUPERSEDED) #REQUIRED>
    <!ELEMENT RefToProvide (Originator,
    IDbyOriginator,
    IDbyThisSender?,
35    IssueDate?,
    ProvideEhcr)>
    <!ELEMENT PartyIDs (ID+)>
    <!ELEMENT PersonName (PersonNameType?,
    ValidPeriod?,
40    (StructName|
    String))>
    <!ELEMENT AlternativeName (PersonNameType?,
    ValidPeriod?,
    (StructName|
45    String))>
    <!ELEMENT BirthDate (#PCDATA)>
    <!ATTLIST BirthDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
    <!ELEMENT Sex (#PCDATA)>
    <!ELEMENT Address (ValidPeriod?,
50    PostCode?,
    AreaOfCountry?,
    (StructAddress|

```

```

    UnstructAddress)>
<!--ATTLIST Address Type (HOME|WORK|VACATION|OTHER|UNSPECIFIED) #IMPLIED>
<!--ELEMENT Comment (#PCDATA)>
<!--ELEMENT CodedElement (Code,
5      Rubric)>
<!--ATTLIST CodedElement ICSI CDATA #REQUIRED>
<!--ELEMENT String (#PCDATA)>
<!--ELEMENT Agent (ID)>
<!--ATTLIST Agent IDSCHEME CDATA #IMPLIED>
10 <!--ELEMENT Organisation (ID,
      Address*,
      Telecom*,
      Language*,
      HcpSpecialty*,
15      OrganisationName?,
      OrganisationType?)>
<!--ATTLIST Organisation IDSCHEME CDATA #IMPLIED>
<!--ELEMENT Professional (ID,
      Address*,
20      Telecom*,
      Language*,
      HcpSpecialty*,
      HcpType?,
      PersonName?,
25      HcpPosition?,
      HcpQualification*,
      MilitaryRank?)>
<!--ATTLIST Professional IDSCHEME CDATA #IMPLIED>
<!--ELEMENT HealthcareDevice (ID,
30      DeviceType,
      DeviceManufacturer?,
      ManufacturerSModelName?,
      DeviceVersion?,
      DeviceSerialNumber?,
35      DeviceLocation?)>
<!--ATTLIST HealthcareDevice IDSCHEME CDATA #IMPLIED>
<!--ELEMENT Software (ID,
      SoftwareProduct,
      SoftwareSupplier,
40      SoftwareName?,
      SoftwareFilename?,
      SoftwareVersion,
      SoftwareDate?)>
<!--ATTLIST Software IDSCHEME CDATA #IMPLIED>
45 <!--ELEMENT AgentLink (ID
      (Agent|
      Organisation|
      Professional|
      HealthcareDevice|
50      Software),
      AgentRelationship*)>
<!--ELEMENT EnterpriseID (Code,

```

```

        Rubric)>
<!ATTLIST EnterpriseID ICSI CDATA #REQUIRED>
<!ELEMENT SubsetDescript (#PCDATA)>
<!ELEMENT UpdatePeriod (StartDate?,
5      EndDate?)>
<!ELEMENT Originator (AgentLinkRef)>
<!ELEMENT IDbyThisSender (#PCDATA)>
<!ELEMENT ComponentID (#PCDATA)>
<!ATTLIST ComponentID IdScope (MESSAGE|EHCR|SYSTEM) #REQUIRED>
10 <!ELEMENT ComponentType (#PCDATA)>
<!ELEMENT TimeStamp (#PCDATA)>
<!ATTLIST TimeStamp XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!ELEMENT OriginatingHcp (AgentLinkRef)>
<!ATTLIST OriginatingHcp XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
15 <!ELEMENT Attestation (AttestingAgent,
      AttestationDate,
      DigitalSignature)>
<!ELEMENT DRLinkRef (#PCDATA)>
<!ELEMENT RevisionLink (IdValue,
20      TimeStamp?,
      RefComponentOrig?,
      RevisionReason?,
      Comment?)>
<!ELEMENT ComponentName (ComponentNameCode?)>
25 <!ATTLIST ComponentName CLASSIFICATION ENUM #REQUIRED>
<!ELEMENT RelatedDate (#PCDATA)>
<!ATTLIST RelatedDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP"
      Accuracy (ACCURATE|APPROXIMATE) #IMPLIED
      Role
30 (START|END|DIAGNOSED|SCHEDSTART|SCHEDEND|PLANNING|ORIGINALRECORD) #REQUIRED>
<!ELEMENT RelatedHcp (RelationshipType,
      AgentLinkRef)>
<!ELEMENT Component (ComponentID,
      ComponentType,
35      TimeStamp,
      OriginatingHcp,
      Attestation*,
      DRLinkRef*,
      RevisionLink?,
40      ComponentName?,
      RelatedDate*,
      RelatedHcp*,
      ComponentAnnotation*)>
<!ATTLIST Component Order CDATA #IMPLIED
45      Role (STRUCTURED|CONTEXT|NARRATIVE) #REQUIRED
      Status (CURRENT|SUPERSEDED) #REQUIRED>
<!ELEMENT OCC (ComponentID,
      ComponentType,
      TimeStamp,
50      OriginatingHcp,
      Attestation*,
      DRLinkRef*,

```

```

RevisionLink?,
ComponentName?,
RelatedDate*,
RelatedHcp*,
5 ComponentAnnotation*,
EnterpriseItem?
(Component|
OCC|
10 SCC|
DataItem|
LinkItem|
CommentItem)+>>
<!ATTLIST OCC Order CDATA #IMPLIED
Role (STRUCTURED|CONTEXT|NARRATIVE) #REQUIRED
15 Status (CURRENT|SUPERSEDED) #REQUIRED>
<!ELEMENT SCC (ComponentID,
ComponentType,
TimeStamp,
OriginatingHcp,
20 Attestation*,
DRLinkRef*,
RevisionLink?,
ComponentName?,
RelatedDate*,
25 RelatedHcp*,
ComponentAnnotation*,
SccCriteria*)>
<!ATTLIST SCC Order CDATA #IMPLIED
Role (STRUCTURED|CONTEXT|NARRATIVE) #REQUIRED
30 Status (CURRENT|SUPERSEDED) #REQUIRED>
<!ELEMENT DataItem (ComponentID,
ComponentType,
TimeStamp,
OriginatingHcp,
35 Attestation*,
DRLinkRef*,
RevisionLink?,
ComponentName?,
RelatedDate*,
40 RelatedHcp*,
ComponentAnnotation*,
RieReferenceType?
((AddressElement|
CommunityDefined|
45 DateOfBirth|
DateOfDeath|
Event|
RefToExternalData|
LanguageDetail|
50 Medication|
PatientRelParty|
PersonID|

```

```

    PersonName|
    SexElem|
    RefToPhysicalEntity|
    PlainText|
5    Quantifiable|
    StructCodedElem|
    TelecomElem)))>
<!--ATTLIST DataItem Type
(DEF|ADDRESS|DOB|DEATH|EVENT|EXTERNAL|LANGUAGE|MEDICATION|RELATEDPARTY|ID|NAME|SE
10 X|PHYSICAL|TEXT|QUANTIFIABLE|CODED|TELECOM) #REQUIRED
    Order CDATA #IMPLIED
    Role (STRUCTURED|CONTEXT|NARRATIVE) #REQUIRED
    Status (CURRENT|SUPERSEDED) #REQUIRED>
<!--ELEMENT LinkItem (ComponentID,
15    ComponentType,
    TimeStamp,
    OriginatingHcp,
    Attestation*,
    DRLinkRef*,
20    RevisionLink?,
    ComponentName?,
    RelatedDate*,
    RelatedHcp*,
    ComponentAnnotation*,
25    EhcrLinkType,
    LinkFrom,
    LinkTarget+)>
<!--ATTLIST LinkItem Order CDATA #IMPLIED
    Role (STRUCTURED|CONTEXT|NARRATIVE) #REQUIRED
30    Status (CURRENT|SUPERSEDED) #REQUIRED>
<!--ELEMENT CommentItem (ComponentID,
    ComponentType,
    TimeStamp,
    OriginatingHcp,
35    Attestation*,
    DRLinkRef*,
    RevisionLink?,
    ComponentName?,
    RelatedDate*,
40    RelatedHcp*,
    ComponentAnnotation*,
    CommentTarget,
    CommentText)>
<!--ATTLIST CommentItem Order CDATA #IMPLIED
45    Role (STRUCTURED|CONTEXT|NARRATIVE) #REQUIRED
    Status (CURRENT|SUPERSEDED) #REQUIRED>
<!--ELEMENT ID (#PCDATA)>
<!--ATTLIST ID IDScheme CDATA #IMPLIED>
<!--ELEMENT PersonNameType (#PCDATA)>
50 <!--ATTLIST PersonNameType ICSI CDATA #REQUIRED>
<!--ELEMENT ValidPeriod (StartDate?,
    EndDate?)>

```

```

<ELEMENT StructName (FamilyName,
    FirstName?,
    MiddleName?,
    Title?,
    GenerationQual?)>
5  <ELEMENT PostCode (#PCDATA)>
    <ELEMENT AreaOfCountry (CodedElement|
        String)>
    <ELEMENT StructAddress (Street,
10  House?,
    Apartment?,
    PoBox?,
    CityDistrict?,
    City?)>
15  <ELEMENT UnstructAddress (String+)>
    <ELEMENT Code (#PCDATA)>
    <ELEMENT Rubric (#PCDATA)>
    <ELEMENT Telecom (ValidPeriod?,
        (StructTelecom|
20  String))>
    <ATTLIST Telecom AddrType (HOME|WORK|VACATION|OTHER|UNSPECIFIED|MOBILE) #IMPLIED
        Type (VOICE|MOBILE|PAGER|FACSIMILE|E-MAIL|WEB-SITE|OTHER) #IMPLIED>
    <ELEMENT HcpSpecialty (CodedElement|
        String)>
25  <ELEMENT OrganisationName (#PCDATA)>
    <ELEMENT OrganisationType (#PCDATA)>
    <ATTLIST OrganisationType ICSI CDATA #REQUIRED>
    <ELEMENT HcpType (#PCDATA)>
    <ATTLIST HcpType ICSI CDATA #REQUIRED>
30  <ELEMENT HcpPosition (CodedElement|
        String)>
    <ELEMENT HcpQualification (CodedElement|
        String)>
    <ELEMENT MilitaryRank (CodedElement|
35  String)>
    <ELEMENT DeviceType (Code,
        Rubric)>
    <ATTLIST DeviceType ICSI CDATA #REQUIRED>
    <ELEMENT DeviceManufacturer (#PCDATA)>
40  <ELEMENT ManufacturerSModelName (#PCDATA)>
    <ELEMENT DeviceVersion (#PCDATA)>
    <ELEMENT DeviceSerialNumber (#PCDATA)>
    <ELEMENT DeviceLocation (LocationType?,
        LocationID?,
45  Description?)>
    <ELEMENT SoftwareProduct (#PCDATA)>
    <ELEMENT SoftwareSupplier (#PCDATA)>
    <ELEMENT SoftwareName (#PCDATA)>
    <ELEMENT SoftwareFilename (#PCDATA)>
50  <ELEMENT SoftwareVersion (#PCDATA)>
    <ELEMENT SoftwareDate (#PCDATA)>
    <ATTLIST SoftwareDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">

```

```

<!ELEMENT AgentRelationship (HcPartyRelType
    (Agent|
     Organisation|
     Professional|
5    HealthcareDevice|
     Software))>
<!ELEMENT StartDate (#PCDATA)>
<!ATTLIST StartDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!ELEMENT EndDate (#PCDATA)>
10 <!ATTLIST EndDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!ELEMENT AttestingAgent (AgentLinkRef)>
<!ATTLIST AttestingAgent XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!ELEMENT AttestationDate (#PCDATA)>
<!ATTLIST AttestationDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
15 <!ELEMENT DigitalSignature EMPTY>
<!ELEMENT IdValue (#PCDATA)>
<!ELEMENT RefComponentOrig (AgentLinkRef)>
<!ELEMENT RevisionReason (#PCDATA)>
<!ATTLIST RevisionReason ICSI CDATA #REQUIRED>
20 <!ELEMENT ComponentNameCode (Code,
    Rubric)>
<!ATTLIST ComponentNameCode ICSI CDATA #REQUIRED>
<!ELEMENT RelationshipType (#PCDATA)>
<!ATTLIST RelationshipType ICSI CDATA #REQUIRED>
25 <!ELEMENT AgentLinkRef (ID)>
<!ATTLIST AgentLinkRef IDSCHHEME CDATA #IMPLIED>
<!ELEMENT ComponentAnnotation (TermListTagValue,
    TermListDescription?)>
<!ELEMENT EnterpriseItem (EnterpriseID,
30    EnterpriseType,
    EnterpriseData)>
<!ELEMENT SccCriteria EMPTY>
<!ELEMENT RieReferenceType (#PCDATA)>
<!ATTLIST RieReferenceType ICSI CDATA #REQUIRED>
35 <!ELEMENT AddressElement (Address)>
<!ELEMENT CommunityDefined ()>
<!ELEMENT DateOfBirth (BirthDate)>
<!ELEMENT DateOfDeath (DeathDate)>
<!ELEMENT Event (EventCategory?,
40    EventStatus?,
    AdminOutcome*,
    LocationInfo*,
    (EventCompletion|
    PlannedEvent))>
45 <!ELEMENT RefToExternalData (ID,
    ExternalInfoType,
    ExternalRef,
    ApplicationID?,
    Bookmark?)>
50 <!ELEMENT LanguageDetail (LanguageDetail)>
<!ELEMENT Medication ((UnstructDrugID|
    DrugId),

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```

        (StructuredDosage|
        UnstructDose)*,
        Days?,
        DrugQuantity?,
        Comment?)>
5  <!--ATTLIST Medication Status (RECORD|PAST|RECORD|RECORD|RECORD|RECORD|OTHER) #REQUIRED>
    <!--ELEMENT PatientRelParty (PartyIDs?,
        RelationshipType,
        Period?,
10        PersonName?,
        OrganisationName?)>
    <!--ELEMENT PersonID (ID)>
    <!--ELEMENT SexElem (Sex)>
    <!--ELEMENT RefToPhysicalEntity (ID?,
15        EntityNature,
        Location?,
        ExternalInfoType?)>
    <!--ELEMENT PlainText (TextBlock+)>
    <!--ELEMENT Quantifiable (MeasurableQuant,
20        AsValue|
        AsRange|
        AsDate|
        AsText))>
    <!--ELEMENT StructCodedElem (OriginalCode,
25        MappedCode?,
        Comment*)>
    <!--ELEMENT TelecomElem (ValidPeriod?,
        (StructTelecom|
        String))>
30  <!--ATTLIST TelecomElem AddrType (HOME|WORK|VACATION|OTHER|UNSPECIFIED|MOBILE) #IMPLIED
        Type (VOICE|MOBILE|PAGER|FACSIMILE|E-MAIL|WEB-SITE|OTHER) #IMPLIED>
    <!--ELEMENT EhcrLinkType (TermListTagValue,
        TermListDescription?)>
    <!--ELEMENT LinkFrom (IdValue,
35        TimeStamp?,
        RefComponentOrig?)>
    <!--ELEMENT LinkTarget (IdValue,
        TimeStamp?,
        RefComponentOrig?)>
40  <!--ATTLIST LinkTarget Order CDATA #IMPLIED>
    <!--ELEMENT CommentTarget (IdValue,
        TimeStamp?,
        RefComponentOrig?)>
    <!--ELEMENT CommentText (#PCDATA)>
45  <!--ELEMENT FamilyName (#PCDATA)>
    <!--ELEMENT FirstName (#PCDATA)>
    <!--ELEMENT MiddleName (#PCDATA)>
    <!--ELEMENT Title (#PCDATA)>
    <!--ELEMENT GenerationQual (#PCDATA)>
50  <!--ELEMENT Street (#PCDATA)>
    <!--ELEMENT House (#PCDATA)>
    <!--ELEMENT Apartment (#PCDATA)>

```

```

<!ELEMENT PoBox (#PCDATA)>
<!ELEMENT CityDistrict (#PCDATA)>
<!ELEMENT City (#PCDATA)>
<!ELEMENT StructTelecom (TelCountry?,
5      TelArea,
      TelNumber,
      TelExtension?)>
<!ELEMENT LocationType (Code,
      Rubric)>
10 <!ATTLIST LocationType ICSI CDATA #REQUIRED>
<!ELEMENT LocationID (#PCDATA)>
<!ELEMENT Description (#PCDATA)>
<!ELEMENT HcPartyRelType (#PCDATA)>
<!ATTLIST HcPartyRelType ICSI CDATA #REQUIRED>
15 <!ELEMENT TermListTagValue (#PCDATA)>
<!ELEMENT TermListDescription (#PCDATA)>
<!ELEMENT EnterpriseType (#PCDATA)>
<!ATTLIST EnterpriseType ICSI CDATA #REQUIRED>
<!ELEMENT EnterpriseData EMPTY>
20 <!ELEMENT DeathDate (#PCDATA)>
<!ATTLIST DeathDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!ELEMENT EventCategory (#PCDATA)>
<!ATTLIST EventCategory ICSI CDATA #REQUIRED>
<!ELEMENT EventStatus (#PCDATA)>
25 <!ATTLIST EventStatus ICSI CDATA #REQUIRED>
<!ELEMENT AdminOutcome (CodedElement|
      String)>
<!ELEMENT LocationInfo (LocRole?,
      Period?,
30      Location?,
      BedLocation?,
      Address?,
      Telecom*,
      OrganisationRef?)>
35 <!ELEMENT EventCompletion (EventOutcome?)>
<!ELEMENT PlannedEvent (PlanStage?,
      PlanStatus?,
      ExpectedDelay?,
      TimeInterval?)>
40 <!ELEMENT ExternalInfoType (CodedElement|
      String)>
<!ELEMENT ExternalRef (#PCDATA)>
<!ELEMENT ApplicationID (#PCDATA)>
<!ELEMENT Bookmark (#PCDATA)>
45 <!ELEMENT UnstructDrugID (CodedElement|
      String)>
<!ELEMENT DrugId (MedProductName?,
      MedProductID?,
      SupplementID?,
50      PharmFormRoute?,
      (PharmStrength|
      PharmStrength),

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```

        Manufacturer?,
        Supplier?,
        Comment?)>
<!--ATTLIST DrugId IDSCHEME CDATA #IMPLIED>
5 <!--ELEMENT StructuredDosage (Route?,
        SingleDose?,
        DosagePattern?,
        MaximumDailyDose?,
10        InfusionRate?,
        AdminTrigger*,
        TreatmentDuration?,
        Equipment?,
        Time*)>
<!--ELEMENT UnstructDose (CodedElement|
15        String)>
<!--ELEMENT Days (#PCDATA)>
<!--ATTLIST Days XML-SQLTYPE CDATA #FIXED "INTEGER">
<!--ELEMENT DrugQuantity (Number,
        Unit)>
20 <!--ELEMENT Period (StartDate?,
        EndDate?)>
<!--ELEMENT EntityNature (CodedElement|
        String)>
<!--ELEMENT Location (LocationType?,
25        LocationID?,
        Description?)>
<!--ELEMENT TextBlock (#PCDATA)>
<!--ELEMENT MeasurableQuant (CorS|
        MeasurableQuantStruct)>
30 <!--ELEMENT AsValue (Number,
        Unit,
        Comparator?)>
<!--ELEMENT AsRange (LowerLimit?,
        UpperLimit?,
35        Unit)>
<!--ELEMENT AsDate (#PCDATA)>
<!--ATTLIST AsDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!--ELEMENT AsText (CodedElement|
        String)>
40 <!--ELEMENT OriginalCode (CompCodeElement+,
        CompCodeRubric?)>
<!--ATTLIST OriginalCode ICSI CDATA #REQUIRED>
<!--ELEMENT MappedCode (CompCodeElement+,
        CompCodeRubric?)>
45 <!--ATTLIST MappedCode ICSI CDATA #REQUIRED>
<!--ELEMENT TelCountry (#PCDATA)>
<!--ELEMENT TelArea (#PCDATA)>
<!--ELEMENT TelNumber (#PCDATA)>
<!--ELEMENT TelExtension (#PCDATA)>
50 <!--ELEMENT LocRole (#PCDATA)>
<!--ATTLIST LocRole ICSI CDATA #REQUIRED>
<!--ELEMENT BedLocation (Ward?,

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    Room?,
    Bed?)>
<!--ELEMENT OrganisationRef (PartyIDs?,
    OrganisationName?,
    OrganisationType?)>
5 <!--ELEMENT EventOutcome (OccurrenceStatus,
    Reason?)>
<!--ELEMENT PlanStage (Code,
    Rubric)>
10 <!--ATTLIST PlanStage ICSI CDATA #REQUIRED>
<!--ELEMENT PlanStatus (#PCDATA)>
<!--ATTLIST PlanStatus ICSI CDATA #REQUIRED>
<!--ELEMENT ExpectedDelay (TimeInterval,
    Comment?)>
15 <!--ELEMENT TimeInterval (Number,
    TimeUnit)>
<!--ELEMENT MedProductName (#PCDATA)>
<!--ELEMENT MedProductID (Code,
    Rubric)>
20 <!--ATTLIST MedProductID ICSI CDATA #REQUIRED>
<!--ELEMENT SupplementID (#PCDATA)>
<!--ELEMENT PharmFormRoute (CodeOrString?)>
<!--ELEMENT PharmStrength (Number,
    Unit)>
25 <!--ELEMENT Manufacturer (CodedElement|
    String)>
<!--ELEMENT Supplier (CodedElement|
    String)>
<!--ELEMENT Route (#PCDATA)>
30 <!--ATTLIST Route ICSI CDATA #REQUIRED>
<!--ELEMENT SingleDose (Number,
    Unit)>
<!--ELEMENT DosagePattern (CodedElement|
    String)>
35 <!--ELEMENT MaximumDailyDose (Number,
    Unit)>
<!--ELEMENT InfusionRate (Number,
    Unit)>
<!--ELEMENT AdminTrigger (CodedElement|
    String)>
40 <!--ELEMENT TreatmentDuration (TimeInterval|
    Period|
    Description)>
<!--ELEMENT Equipment (CodedElement|
    String)>
45 <!--ELEMENT Time (#PCDATA)>
<!--ATTLIST Time XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!--ELEMENT Number (#PCDATA)>
<!--ATTLIST Number XML-SQLTYPE CDATA #FIXED "VARDECIMAL">
50 <!--ELEMENT Unit (#PCDATA)>
<!--ATTLIST Unit ICSI CDATA #REQUIRED>
<!--ELEMENT CorS (CodedElement|

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    String)>
<!ELEMENT MeasurableQuantStruct (System,
    Component,
    QuantityKind)>
5 <!ELEMENT Comparator (#PCDATA)>
  <!ATTLIST Comparator ICSI CDATA #REQUIRED>
  <!ELEMENT LowerLimit (#PCDATA)>
  <!ATTLIST LowerLimit XML-SQLTYPE CDATA #FIXED "VARDECIMAL">
  <!ELEMENT UpperLimit (#PCDATA)>
10 <!ATTLIST UpperLimit XML-SQLTYPE CDATA #FIXED "VARDECIMAL">
  <!ELEMENT CompCodeElement (CodingAxis?,
    Code,
    Rubric?)>
  <!ATTLIST CompCodeElement ICSI CDATA #IMPLIED>
15 <!ELEMENT CompCodeRubric (#PCDATA)>
  <!ELEMENT Ward (CodedElement|
    String)>
  <!ELEMENT Room (#PCDATA)>
  <!ELEMENT Bed (#PCDATA)>
20 <!ELEMENT OccurrenceStatus (#PCDATA)>
  <!ATTLIST OccurrenceStatus ICSI CDATA #REQUIRED>
  <!ELEMENT Reason (#PCDATA)>
  <!ELEMENT TimeUnit (#PCDATA)>
  <!ATTLIST TimeUnit ICSI CDATA #REQUIRED>
25 <!ELEMENT CodeOrString (CodedElement|
    String)>
  <!ELEMENT System (CodedElement|
    String)>
  <!ELEMENT QuantityKind (CodedElement|
30 String)>
  <!ELEMENT CodingAxis (#PCDATA)>

```

C.3 An XML Document Type Definition of the Request EHCR Message

```

<!ELEMENT RequestEhcr (IDbyOriginator,
35 IssueDate,
  PatientMatching,
  RequestAck,
  MessageComment*,
  Language?,
40 AgentDirectory?,
  Destination,
  Source,
  Intermediary*,
  SpecEhcrInfo,
45 ReasonForRequest)>
  <!ATTLIST RequestEhcr Urgency (LOW|MEDIUM|HIGH) #REQUIRED>
  <!ELEMENT IDbyOriginator (#PCDATA)>
  <!ELEMENT IssueDate (#PCDATA)>
  <!ATTLIST IssueDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
50 <!ELEMENT PatientMatching (PartyIDs?,
  PersonName?,

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```

        AlternativeName*,
        BirthDate?,
        Sex?,
        Address*,
5      Comment?)>
<!ELEMENT RequestAck (#PCDATA)>
<!ATTLIST RequestAck XML-SQLTYPE CDATA #FIXED "BOOLEAN">
<!ELEMENT MessageComment (CodedElement|
        String)>
10 <!ELEMENT Language (#PCDATA)>
<!ATTLIST Language ICSI CDATA #REQUIRED>
<!ELEMENT AgentDirectory (
        (Agent|
        Organisation|
15      Professional|
        HealthcareDevice|
        Software)*,
        AgentLink*)>
<!ELEMENT Destination (AgentLinkRef)>
20 <!ELEMENT Source (AgentLinkRef)>
<!ELEMENT Intermediary (AgentLinkRef)>
<!ATTLIST Intermediary Role
(FOR_REQUEST|FOR_PROVIDE|AUTH_DESTINATION|AUTH_SOURCE|ID HOLDER|OTHER) #REQUIRED>
<!ELEMENT SpecEhcrInfo (Language?,
25      EnterpriseID?,
        SubsetDescript?,
        UpdatePeriod?)>
<!ATTLIST SpecEhcrInfo Scope (COMPLETE|SUBSET|UPDATE) #REQUIRED>
<!ELEMENT ReasonForRequest (CodedElement,
30      AddedText)>
<!ELEMENT PartyIDs (ID+)>
<!ELEMENT PersonName (PersonNameType?,
        ValidPeriod?,
        (StructName|
35      String))>
<!ELEMENT AlternativeName (PersonNameType?,
        ValidPeriod?,
        (StructName|
        String))>
40 <!ELEMENT BirthDate (#PCDATA)>
<!ATTLIST BirthDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!ELEMENT Sex (#PCDATA)>
<!ELEMENT Address (ValidPeriod?,
        PostCode?,
45      AreaOfCountry?,
        (StructAddress|
        UnstructAddress))>
<!ATTLIST Address Type (HOME|WORK|VACATION|OTHER|UNSPECIFIED) #IMPLIED>
<!ELEMENT Comment (#PCDATA)>
50 <!ELEMENT CodedElement (Code,
        Rubric)>
<!ATTLIST CodedElement ICSI CDATA #REQUIRED>

```

```

<!ELEMENT String (#PCDATA)>
<!ELEMENT Agent (ID)>
<!ATTLIST Agent IDSCHEME CDATA #IMPLIED>
<!ELEMENT Organisation (ID,
5      Address*,
      Telecom*,
      Language*,
      HcpSpecialty*,
      OrganisationName?,
10     OrganisationType?)>
<!ATTLIST Organisation IDSCHEME CDATA #IMPLIED>
<!ELEMENT Professional (ID,
      Address*,
      Telecom*,
15     Language*,
      HcpSpecialty*,
      HcpType?,
      PersonName?,
      HcpPosition?,
20     HcpQualification*,
      MilitaryRank?)>
<!ATTLIST Professional IDSCHEME CDATA #IMPLIED>
<!ELEMENT HealthcareDevice (ID,
25     DeviceType,
      DeviceManufacturer?,
      ManufacturerSModelName?,
      DeviceVersion?,
      DeviceSerialNumber?,
      DeviceLocation?)>
30 <!ATTLIST HealthcareDevice IDSCHEME CDATA #IMPLIED>
<!ELEMENT Software (ID,
      SoftwareProduct,
      SoftwareSupplier,
      SoftwareName?,
35     SoftwareFilename?,
      SoftwareVersion,
      SoftwareDate?)>
<!ATTLIST Software IDSCHEME CDATA #IMPLIED>
<!ELEMENT AgentLink (ID
40     (Agent|
      Organisation|
      Professional|
      HealthcareDevice|
      Software),
45     AgentRelationship*)>
<!ELEMENT EnterpriseID (Code,
      Rubric)>
<!ATTLIST EnterpriseID ICSI CDATA #REQUIRED>
<!ELEMENT SubsetDescript (#PCDATA)>
50 <!ELEMENT UpdatePeriod (StartDate?,
      EndDate?)>
<!ELEMENT AddedText (#PCDATA)>

```

```

<!ELEMENT ID (#PCDATA)>
<!ATTLIST ID IDScheme CDATA #IMPLIED>
<!ELEMENT PersonNameType (#PCDATA)>
<!ATTLIST PersonNameType ICSI CDATA #REQUIRED>
5 <!ELEMENT ValidPeriod (StartDate?,
    EndDate?)>
<!ELEMENT StructName (FamilyName,
    FirstName?,
    MiddleName?,
10 Title?,
    GenerationQual?)>
<!ELEMENT PostCode (#PCDATA)>
<!ELEMENT AreaOfCountry (CodedElement|
    String)>
15 <!ELEMENT StructAddress (Street,
    House?,
    Apartment?,
    PoBox?,
    CityDistrict?,
20 City?)>
<!ELEMENT UnstructAddress (String+)>
<!ELEMENT Code (#PCDATA)>
<!ELEMENT Rubric (#PCDATA)>
<!ELEMENT Telecom (ValidPeriod?,
25 (StructTelecom|
    String))>
<!ATTLIST Telecom AddrType (HOME|WORK|VACATION|OTHER|UNSPECIFIED|MOBILE) #IMPLIED
    Type (VOICE|MOBILE|PAGER|FACSIMILE|E-MAIL|WEB-SITE|OTHER) #IMPLIED>
<!ELEMENT HcpSpecialty (CodedElement|
30 String)>
<!ELEMENT OrganisationName (#PCDATA)>
<!ELEMENT OrganisationType (#PCDATA)>
<!ATTLIST OrganisationType ICSI CDATA #REQUIRED>
<!ELEMENT HcpType (#PCDATA)>
35 <!ATTLIST HcpType ICSI CDATA #REQUIRED>
<!ELEMENT HcpPosition (CodedElement|
    String)>
<!ELEMENT HcpQualification (CodedElement|
    String)>
40 <!ELEMENT MilitaryRank (CodedElement|
    String)>
<!ELEMENT DeviceType (Code,
    Rubric)>
<!ATTLIST DeviceType ICSI CDATA #REQUIRED>
45 <!ELEMENT DeviceManufacturer (#PCDATA)>
<!ELEMENT ManufacturerSModelName (#PCDATA)>
<!ELEMENT DeviceVersion (#PCDATA)>
<!ELEMENT DeviceSerialNumber (#PCDATA)>
<!ELEMENT DeviceLocation (LocationType?,
50 LocationID?,
    Description?)>
<!ELEMENT SoftwareProduct (#PCDATA)>

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```

<!ELEMENT SoftwareSupplier (#PCDATA)>
<!ELEMENT SoftwareName (#PCDATA)>
<!ELEMENT SoftwareFilename (#PCDATA)>
<!ELEMENT SoftwareVersion (#PCDATA)>
5 <!ELEMENT SoftwareDate (#PCDATA)>
<!ATTLIST SoftwareDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!ELEMENT AgentRelationship (HcPartyRelType
    (Agent|
    10      Organisation|
      Professional|
      HealthcareDevice|
      Software))>
<!ELEMENT StartDate (#PCDATA)>
<!ATTLIST StartDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
15 <!ELEMENT EndDate (#PCDATA)>
<!ATTLIST EndDate XML-SQLTYPE CDATA #FIXED "VARTIMESTAMP">
<!ELEMENT FamilyName (#PCDATA)>
<!ELEMENT FirstName (#PCDATA)>
<!ELEMENT MiddleName (#PCDATA)>
20 <!ELEMENT Title (#PCDATA)>
<!ELEMENT GenerationQual (#PCDATA)>
<!ELEMENT Street (#PCDATA)>
<!ELEMENT House (#PCDATA)>
<!ELEMENT Apartment (#PCDATA)>
25 <!ELEMENT PoBox (#PCDATA)>
<!ELEMENT CityDistrict (#PCDATA)>
<!ELEMENT City (#PCDATA)>
<!ELEMENT StructTelecom (TelCountry?,
    TelArea,
    30      TelNumber,
      TelExtension?)>
<!ELEMENT LocationType (Code,
    Rubric)>
<!ATTLIST LocationType ICSI CDATA #REQUIRED>
35 <!ELEMENT LocationID (#PCDATA)>
<!ELEMENT Description (#PCDATA)>
<!ELEMENT HcPartyRelType (#PCDATA)>
<!ATTLIST HcPartyRelType ICSI CDATA #REQUIRED>
<!ELEMENT TelCountry (#PCDATA)>
40 <!ELEMENT TelArea (#PCDATA)>
<!ELEMENT TelNumber (#PCDATA)>
<!ELEMENT TelExtension (#PCDATA)>

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