Emergency Data Exchange Language (EDXL) Hospital AVailability Exchange (HAVE) Version 2.0

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Technical Committee:

OASIS Emergency Management TC

Chair:

Elysa Jones (elysajones@yahoo.com), Individual

Editors:

Darrell O'Donnell (darrell.odonnell@continuumloop.com), Individual
Brian Wilkins (bwilkins@mitre.org), MITRE Corporation

Additional artifacts:

This prose specification is one component of a Work Product that also includes:

- XML schemas: http://docs.oasis-open.org/emergency/edxl-have/v2.0/csprd01/schemas/

Related work:

This specification replaces or supersedes:

- *Emergency Data Exchange Language (EDXL) Hospital AVailability Exchange (HAVE) Version 1.0*. Edited by Sukumar Dwarkanath. 22 December 2009. OASIS Standard Incorporating Approved Errata. http://docs.oasis-open.org/emergency/edxl-have/v1.0/errata/edxl-have-v1.0-os-errata-os.html.

This specification is related to:

- *Emergency Data Exchange Language (EDXL) Distribution Element v1.0.* Edited by Michelle Raymond, Sylvia Webb, and Patti Iles Aymond. 01 May 2006. OASIS Standard. http://docs.oasis-open.org/emergency/edxl-de/v1.0/EDXL-DE_Spec_v1.0.pdf.

- *Emergency Data Exchange Language Resource Messaging (EDXL-RM) 1.0.* Edited by Dr. Patti Aymond, Rex Brooks, Tim Grapes, Gary Ham, Dr. Renato Iannella, Dr. Karen Robinson, Werner Joerg, and Alessandro Triglia. 22 December 2009. OASIS Standard incorporating Approved Errata. http://docs.oasis-open.org/emergency/edxl-rm/v1.0/errata/EDXL-RM-v1.0-OS-errata-os.html.
- *Emergency Data Exchange Language Common Types v1.0.* Edited by Werner Joerg, Rex Brooks, Jeff Waters, and Don McGarry. 13 January 2015. OASIS Committee Specification Draft. http://docs.oasis-open.org/emergency/edxl-ct/v1.0/edxl-ct-v1.0.html.
- *Emergency Data Exchange Language Customer Information Quality v1.0.* Edited by Werner Joerg and Jeff Waters. 13 January 2015. OASIS Committee Specification Draft. http://docs.oasis-open.org/emergency/edxl-ciq/v1.0/edxl-ciq-v1.0.html.

Declared XML namespaces:

- urn:oasis:names:tc:emergency:edxl:have:2.0

Abstract:

EDXL-HAVE (HAVE) is an XML messaging standard primarily for exchange of information related to health facilities in the context of emergency management. HAVE supports sharing information about facility services, bed counts, operations, capacities, and resource needs so first responders, emergency managers, coordinating organizations, hospitals, care facilities, and the health community can provide each other with a coherent view of the health system.

Status:

This document was last revised or approved by the OASIS Emergency Management TC on the above date. The level of approval is also listed above. Check the "Latest version" location noted above for possible later revisions of this document. Any other numbered Versions and other technical work produced by the Technical Committee (TC) are listed at https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=emergency#technical.

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Citation format:

When referencing this specification the following citation format should be used:

[EDXL-HAVE]

Emergency Data Exchange Language (EDXL) Hospital AVailability Exchange (HAVE) Version 2.0. Edited by Darrell O'Donnell and Brian Wilkins. 13 January 2015. OASIS Committee Specification Draft 01 / Public Review Draft 01. http://docs.oasis-open.org/emergency/edxl-have/v2.0/csprd01/edxl-have-v2.0-csprd01.html. Latest version: http://docs.oasis-open.org/emergency/edxl-have/v2.0/edxl-have-v2.0.html.

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1 Introduction

[All text is normative unless otherwise labeled]

1.1 Terminology

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in **Error! Reference source not found.**.

1.2 Normative References

[CAP-1.2]	*Common Alerting Protocol Version 1.2*. 01 July 2010. OASIS Standard. http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.html.
[DATETIME]	P. Biron and A. Malhotra, *XML Schema Part 2: Datatypes Second Edition*. 28 October 2004. W3C REC-xmlschema-2,, Sec 3.2.7, dateTime. http://www.w3.org/TR/xmlschema-2
[EDXL-CT]	**Joerg, W. Committee Specification Draft Emergency Data Exchange Language Common Types. November 2011. OASIS.** http://docs.oasis-open.org/emergency/edxl-ct/v1.0/csd01/
[EDXL-DE]	EDXL Distribution Element (DE) Standard v1.0. March 2006. OASIS. http://www.oasis-open.org/specs/index.php#edxlde-v1.0
[EDXL-GSF]	Joerg, W. *Committee Specification Draft Emergency Data Exchange Language GML Simple Features*. September 2011. OASIS. http://docs.oasis-open.org/emergency/edxl-gsf/v1.0/csd01/
[NAMESPACES]	**T. Bray et al, *Namespaces in XML 1.0 (Second Edition)*. January 1999. W3C REC-xml-names-19990114.** http://www.w3.org/TR/xml-names/
[OASIS CIQ]	*Customer Information Quality (CIQ) Specifications Version 3.0, Name (xNL), Address (xAL), and Party (xPIL)*. June 15, 2007. OASIS. http://docs.oasis-open.org/ciq/v3.0/specs/
[OGC 07-36r1]	***Geography Markup Language (GML) Implementation Specification Version 3.2.1. 2007*.** Open Geospatial Consortium. http://portal.opengeospatial.org/files/?artifact_id=20509
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[OGC 10-100r3]	**Geography Markup Language (GML) simple features profile (with Corrigendum) (2.0). 2010.** http://portal.opengeospatial.org/files/?artifact_id=42729
[OGC CRS]	*Topic 2 - Spatial Referencing by Coordinates* (Topic 2) (CRS Abstract Specification), Version 3. 2004. Open Geospatial Consortium,. https://portal.opengeospatial.org/files/?artifact_id=6716
[RFC2119]	S. Bradner, *Key words for use in RFCs to Indicate Requirement Levels*. March 1997. IETF RFC 2119. http://www.ietf.org/rfc/rfc2119.txt
[RFC3066]	H. Alvestrand, *Tags for the Identification of Languages*. January 2001. IETF RFC 3066. http://www.ietf.org/rfc/rfc3066.txt
[WGS 84]	*Department of Defense World Geodetic System*. 1984. National Geospatial Intelligence Agency. http://earth-info.nga.mil/GandG/wgs84/index.html

[XML 1.0] T. Bray, *Extensible Markup Language (XML) 1.0 (Fourth Edition)*. February 2004. W3C REC-XML-20040204. http://www.w3.org/TR/REC-xml/

1.3 Non-Normative References

[AHIC-BIODATA] *BioSurvellience Data Elements*. American Health Information Community (AHIC), BioSurvellience Data Working Group. http://www.hhs.gov/healthit/ahic/bio_main.html

[EDXL-EXT] EDXL Extension, OASIS. https://tools.oasis-open.org/version-control/browse/wsvn/emergency/HAVE/rim/edxl-ext-v1.0.xsd

[GJXDM] *Global Justice XML Data Model (GJXDM) Data Dictionary*. Global, Office of Justice Programs. http://it.ojp.gov/topic.jsp?topic_id=43

[GML-BESTPRAC] *Best Practices: A GML Profile for use in OASIS EM Standards - EDXL-RM, EDXL-DE, HAVE, and CAP DRAFT*. Open Geospatial Consortium. http://www.oasis-open.org/apps/org/workgroup/emergency/download.php/20785/Best%20Practices%20-%20a%20GML%20Profile.doc

[HAVBED-DATA] *Hospital Bed Availability (HAvBED) Project – Definitions and Data Elements: AHRQ Releases Standardized Hospital Bed Definitions*. Agency for Healthcare Research and Quality (AHRQ): http://www.ahrq.gov/research/havbed/definitions.htm

[HAVBED2-REP] **HAvBED2** *Hospital Available Beds for Emergencies and Disasters. A Sustainable Bed Availability Reporting System*. Final report. AHRQ Publication No. 09-0058-EF. April 2009. AHRQ. http://archive.ahrq.gov/prep/havbed2/havbed2.pdf

[HAVE-REQSUP] ***EDXL HAVE Requirements Supplement*. January 2006. OASIS.** http://www.oasis-open.org/committees/download.php/16400/

[HAVE-SRS] ***EDXL HAVE Standard Requirements Specification*. January 2006.** OASIS. http://www.oasis-open.org/committees/download.php/16399/

[HL7] Health Level Seven International. - http://www.hl7.org/.

[RM-DATAREQ] *EDXL Resource Messaging (RM) Draft Requirements Specification*. OASIS. http://www.oasis-open.org/committees/download.php/14310/

[VHHA-TERM] *Statewide Hospital Status Information System Terminology and Data Collection Elements*. Virginia Hospital & Healthcare Association (VHHA). http://www.oasis-open.org/committees/download.php/18019

1.4 Purpose

The ongoing goal of the Emergency Data eXchange Language (EDXL) project is to facilitate emergency information sharing and data exchange across the local, state, tribal, national and non-governmental organizations of different professions that provide emergency response and management services. EDXL accomplishes this goal by focusing on the standardization of specific messages (messaging interfaces) to facilitate emergency communication and coordination particularly when more than one profession or governmental jurisdiction is involved.

The current roster of published EDXL Standards includes:

- The Common Alerting Protocol v1.2 specification (EDXL-CAP), with various dedicated profiles
- The Distribution Element specification v2.0 (EDXL-DE)
- The Hospital AVailability Exchange specification v1.0 (EDXL-HAVE)
- The Resource Messaging specification v1.0 (EDXL-RM)

- The Situation Reporting specification v1.0 (EDXL-SitRep)

The primary purpose of EDXL-HAVE is to provide an XML-based reporting format that allows information to be shared about a set of health facilities including the communication of the status of a health facility, its services, and its resources. These include bed capacity and availability, emergency department status, staffing levels, available service coverage, and the status of a health facilities operations and resources.

The primary audience for EDXL-HAVE is the broad community that interacts with health facilities and it is intended to be used as a tool to automate information flow in and out of the health network. It is not intended to be a tool used for internal administration of health facilities as other standards organizations (e.g. Health System Level Seven International – www.hl7.org) already handle this domain.

1.5 History

In a disaster or emergency situation, there is a need for hospitals to be able to communicate with each other, and with other members of the emergency response community. The ability to exchange data in regard to hospitals' bed availability, status, services, and capacity enables both hospitals and other emergency agencies to respond to emergencies and disaster situations with greater efficiency and speed. In particular, it will allow emergency dispatchers and managers to make sound logistics decisions - where to route victims, which hospitals have the ability to provide the needed service. Many hospitals have expressed the need for, and indeed are currently using, commercial or self-developed information technology that allows them to publish this information to other hospitals in a region, as well as EOCs, 9-1-1 centers, and EMS responders via a Web-based tool.

The Hospital Availability Exchange standard was created to make sharing information about the state of hospitals for day-to-day and crisis use. Initially it was focused purely on hospitals but it has been extended to handle sharing information about the broader health network, including long-term care facilities, urgent care clinics, and temporary aid centres.

HAVE 1.0 was released on 22DEC2009. Since the release of HAVE 1.0 there have been multiple operational uses of HAVE, including after the 2010 Haiti Earthquake. In many of the operational uses there were modified schema used to add services that were not in HAVE 1.0 and to convey other aspects of the data and to handle the sharing of information about non-hospital facilities (e.g. clinics, temporary locations). The use of the HAVE 1.0 standard was encouraging but the shortfalls needed to be addressed. To that end, in 2010 the OASIS EM-TC voted to re-open the HAVE standard with the goal of creating a HAVE 2.0 standard.

1.6 Structure of the EDXL Hospital Availability Exchange Specification

The EDXL-HAVE 2.0 standard document structure is defined using successively more detailed or constrained artifacts in the form of textual descriptions, diagrams, figures, tables and Appendices. The EDXL-HAVE XML Schema is provided separately. The overall structure of the EDXL-HAVE report is first represented in an Element Reference Model (ERM). The ERM is the foundation from which individual constraint schemas (individual situation report types) are defined.

The structure of the EDXL-HAVE standard is defined in the following sections:

- Section 2 summarizes the design principles of the standard and shows several usage scenarios;
- Section 3 provides and informal overview of EDXL-HAVE. In particular:
    - Section 3.1 presents an extensive definition of a HAVE report;
    - Section 3.2 describes essential supporting elements in the EDXL Common Types collection, including the use of EDXL Extensions;
    - Section 3.3 presents the Element Reference Model (ERM) which shows the abstract structural relationships of the main components of EDXL-HAVE;
    - Section 3.4 discusses how the distribution requirements for EDXL-HAVE messages may be met through several mechanisms, including EDXL-Distribution Element (DE) and as general data payloads;
    - Section 3.5 presents a summary of the elements that make up a HAVE message.

- Section 4 The Data Dictionary formally defines each element contained in the EDXL-HAVE standard message.
- Section 5 provides conformance information.

These sections together define the message structure, message element definitions, optionality and cardinality.

2 Design Principles & Concepts (non-normative)

Below are some of the guiding principles behind the development of EDXL-HAVE:

- Support day-to-day and crisis use of the standard.
- Facilitate sharing of information amongst the general public, all levels of government, first nation/tribal, international, and non-governmental organizations.
- Provide a simple information report that allows first responders, emergency managers, community leaders, politicians, and other stakeholders to get a quick glimpse of the state of the health network in a community.
- Provide a non-invasive way for a health facility to keep the communities that they serve abreast of developments that impact their ability to provide care.
- Be respectful of the boundaries of internal health facility information and the information that is relevant externally.
- Separation of EDXL-HAVE reports from being tied to a particular method of delivery.
- Use and reuse of data, content, and models developed by other initiatives that align with EDXL-HAVE.
- Provide a baseline set of services, operations, and resources to allow health facilities to start using HAVE quickly, while allowing for controlled extension where warranted.

2.1 Requirements for Design

The OASIS EM-TC tasked the EDXL-HAVE Sub-committee to review HAVE 1.0 and propose Errata, Minor, and Major versions. The initial tasking provided the following guidance:

EM EDXL-HAVE Sub-committee (EMHAVE)

Scope of Work

After initial implementation of EDXL-HAVE by various parties, comments have been generated that identify potential improvement and revisions to the EDXL-HAVE standard. The EDXL-HAVE Sub-committee (EMHAVE) will request and examine existing comments regarding the EDXL-HAVE 1.0 standard with the aim of producing updates to the EDXL-HAVE standard including Errata, Minor or Major versions.

Purpose

The subcommittee will research, analyze, recommend, and organize currently available information on implementation challenges or comments regarding the EDXL-HAVE standard version 1.0.

Deliverables

1. The EMHAVE subcommittee will produce recommendations for additional errata, minor revisions, or major revisions to the EDXL-HAVE standard.
2. Production of applicable committee draft documents based on the findings of #1
3. Schemas, examples, and additional documentation to support #2

Schedule

Q2 - '10 – Request for comments for EDXL-HAVE. Analysis of comments to produce Deliverable #1

Q4 - '10 – Production of deliverables #2 & #3

Figure 1 - EM EDXL-HAVE SC Scope

2.2 Example Usage Scenarios

The following scenarios illustrate how EDXL-HAVE 2.0 can be used in the field.

2.2.1 Day-to-Day – Dialysis Patient:

On a routine pickup a social worker picks up an elderly patient that needs routine maintenance. Normally the dialysis is performed at the closest facility, but the social worker knows that the small facility's dialysis unit is not operating due to an equipment failure. A quick query to view the local health facilities presents several within a 20-minute drive, so the social worker places a call and coordinates with one of the alternate facilities.

2.2.2 First Responder – Responding with Critical Care

As the result of a multi-unit residential fire, ambulances are dispatched and the Incident Commander indicates that there are 2 critical and 3 serious burn victims. The nearest hospital can only take in 2 burn victims normally, but the current state of the burn unit is not known. By examining the state of the local facilities, officials can coordinate which victims are to be taken to the surrounding health facilities.

2.2.3 Mass-Scale Vaccination Clinics

Under pandemic conditions a community is implementing a vaccination program with the hospitals, urgent care clinics, private clinics, and temporary clinics providing vaccinations. The public, key officials, and the media can have immediate visibility into the wait times and service availability at each of the vaccination sites. EDXL-HAVE provides the ability to display service availability for each facility, referenced on a map, by colour code and to provide an indication of wait times if they are available.

2.2.4 Disaster Response:

Following a major earthquake in the developing world, NGOs, various government responders, and local officials (and non-officials) establish temporary health-care facilities to meet the urgent and non-urgent health needs of those injured or killed by the earthquake and ensuing issues. Coordination of multiple dimensions are critical: what services are available, what is the capacity of the facilities, what resources they are missing or can share, where are the facilities located, who are the official points of contacts, what agency is running the facility, what are the hours operation, etc.

As the event unfolds there is a Cholera outbreak due to damaged sanitation. There is a clear need identified to track 2 particular services (e.g. Cholera Vaccination and Cholera Treatment) that were too specific to be part of the default HAVE 2.0 services taxonomy. After a meeting of the coordinating agencies, the data being shared is extended to include Cholera Vaccination and Cholera Treatment services, including the standard metrics (capacity, colour code for status, etc.)

3 EDXL HAVE

Section 3 of this Standard is ***normative unless otherwise stated***. If any differences are found between any XML schema and its associated model, diagram, table or other artifact or text, then the XML schema shall always take precedence and the other artifact(s) must be changed to match the XML schema.

Note: Please report any such errors to OASIS.

3.1 HAVE Report Definition (non-normative)

The HAVE Report is a single EDXL message that is intended to provide sharing of the services, operations, and capacities of health facilities. Health facilities in HAVE include hospitals, urgent care clinics, temporary facilities, and other facilities that may provide health services for a community.

Typical actors:

- Senders – hospital administrators, hospital networks, health providers, NGOs, clinic administrators, and emergency medical services, etc.
- Recipients – first responders, dispatch operators, emergency managers, automated systems, etc.

3.2 Supporting Elements (non-normative)

3.2.1 Common Types

Supporting Element Types borrow re-usable elements from the EDXL Common Types (ct:) that apply to and support multiple areas of the HAVE 2.0 reports, such as Location. For instance incidentLocation relies on ct:EDXLLocationType, which consists of either EDXLGeoLocation for geographical information or EDXLGeoPoliticalLocation for geopolitical information. EDXLGeoLocation is of type edxl-gsf:EDXLGeoLocationType and EDXLGeoPoliticalLocation is of type ct:EDXLGeoPoliticalLocationType. This latter type consists of either a GeoCode (of type ct:ValueListType) or an Address (of type edxl-ciq:xAL:AddressType).

The following elements are used in this specification and can be found at the locations cited in the normative references in Section 1.2 of this document.

Supporting Element/Type	Defined In
ct:EDXLDateTimeType	EDXL-CT (Simple Types)
ct:EDXLStringType	EDXL-CT (Simple Types)
ct:ValueListURIType	EDXL-CT (Simple Types)
ct:ValueType	EDXL-CT (Simple Types)
ct:ValueListType	EDXL-CT (Complex Types)
ct:ValueKeyType	EDXL-CT (Complex Types)
ct:EDXLGeoPoliticalLocationType	EDXL-CT (Complex Types)
ct:EDXLLocationType	EDXL-CT (Complex Types)
gsf:EDXLGeoLocationType	EDXL-GSF
ct:ValueListURI	EDXL-CT (Top Level Elements)

Supporting Element/Type	Defined In
xal:addressType	EDXL-CIQ

Some elements of the common type “ct:EDXLStringType” are denoted as [token] in the accompanying XML per the following reference:

[token] N. Freed, XML Schema Part 2: Datatypes Second Edition, http://www.w3.org/TR/xmlschema-2/#token, W3C REC-xmlschema-2, October 2004.

The definition for token as found in the OASIS common types is: “The value space of **token** is the set of strings that do not contain the carriage return (#xD), line feed (#xA) nor tab (#x9) characters, that have no leading or trailing spaces (#x20) and that have no internal sequences of two or more spaces.”

The implication is that the XML parser will change string entries to remove carriage returns, line feeds, tab characters, leading or trailing spaces, and internal sequences of two or more spaces.

3.2.2 Selecting Values from Lists

The ValueList and ValueKey types are part of the EDXL Common Types collection. They allow standards adopters to use topic specific lists of values for elements such as externalCode alternateCodeValue, etc.. Both types have identical structure, but ValueList allows for selection of multiple values [1..*] in the list, whereas ValueKey allows for selection of only one [1..1] value in the list.

When using a ValueList / ValueKey structure the user can specify a user-defined list by URI (either using the “urn:...” format or the more familiar “http://...” format) and then include user-defined values from that list. This structure has several advantages: (a) it provides flexibility for local communities to use community-defined terms and vocabulary; (b) it allows for the external maintenance of local or standardized lists; and (c) it avoids the problems inherent in attempting to constantly update hard-coded enumerations in a specification.

An existing vetted list should be referenced for defaults, but users could also reference their own value list

3.2.3 ValueKeyType

The schema for ValueKeyType is defined as

```
<xs:complexType name="ValueKeyType">
    <xs:sequence>
            <xs:element ref="ct:ValueListURI" minOccurs="1" maxOccurs="1"/>
            <xs:element ref="ct:Value" minOccurs="1" maxOccurs="1"/>
    </xs:sequence>
</xs:complexType>
```

and its application to the XML description of an element *elementName* of type ct:ValueKeyType would be:

```
<elementName>
    <ct:ValueListURI>valueListURI</ct:ValueListURI>
    <ct:Value>value</ct:Value>
</elementName>
```

This example uses a published list of values and definitions and selects one specific entry to describe a resource need of a facility:

- *valueListURI* = https://www.medwish.org/give/medical-supplies/
- *value* = Bandages

which stands for

```
<resourceKind>
        <ct:ValueListURI>https://www.medwish.org/give/medical-supplies/</ct:ValueListURI>
        <ct:Value>Bandages</ct:Value>
</resourceKind>
```

Following the approach in ValueList, we'd point ValueListURI to some other list to make a different selection of eye colors available.

3.2.4 EDXL Extensions

HAVE 2.0 supports supplemental inclusion of community-defined sets of name/value pairs, referred to here as “Community Extensions” or simply “Extensions” for short. For example, the HAVE Status element contains a stability field, which indicates if the status is stable, improving, or deteriorating. The “Extension” concept would allow a sender to augment this information with a qualifier, such as “rapidly” or “slowing”, providing finer grain detail on the situation. The “Community Extensions” concept solves several major problems for improving information sharing and developing standards for the emergency management community. First, the nature of emergencies is that the unexpected will happen and emergency managers need flexibility to send whatever information is needed. Second, an emergency begins and often stays local, so local authorities and users need control to send the information they decide is important to address the current emergency. Third, communities need the opportunity to explore potential new standards. The parameter name/value extension mechanism, along with the registration and best practice guidance, provides an on-ramp for communities to determine what works well for them. The Community Extensions that are most successful can be incorporated formally into future standards.

Typical needs are:

1. Standard augmentation: community adds new information that is associated with the EDXL standard. Examples: adding HL7 translation information to the HAVE payload.
2. List augmentation: community adds new values (enumerations) to the default set of values in the standard. Example: adding community-specific information to the ServiceType element.

In HAVE 2.0, “Extensions” are used under the following elements:

- ServiceType
- ResourceInformationType
- OperationType
- OffloadInfoType
- TraumaCenterLevelType

The schema for Extension is defined as

```
<xs:element name="extension">
        <xs:complexType>
                <xs:sequence>
                        <xs:element name="community" type="xs:anyURI" />
                        <xs:element name="id" type="xs:anyURI /">
                        <xs:element name="parameter" type="ext:ParameterType"
maxOccurs="unbounded"/>
```



```
                </xs:sequence>
        </xs:complexType>
</xs:element>
```

and its application to the XML description of an extension would be:

```
<extension>
    <community>communityURI</community>
    <id>idURI</id>
    <parameter>
        <nameURI>nameURI</nameURI>
        <value>some value</value>
    </parameter>
</extension>
```

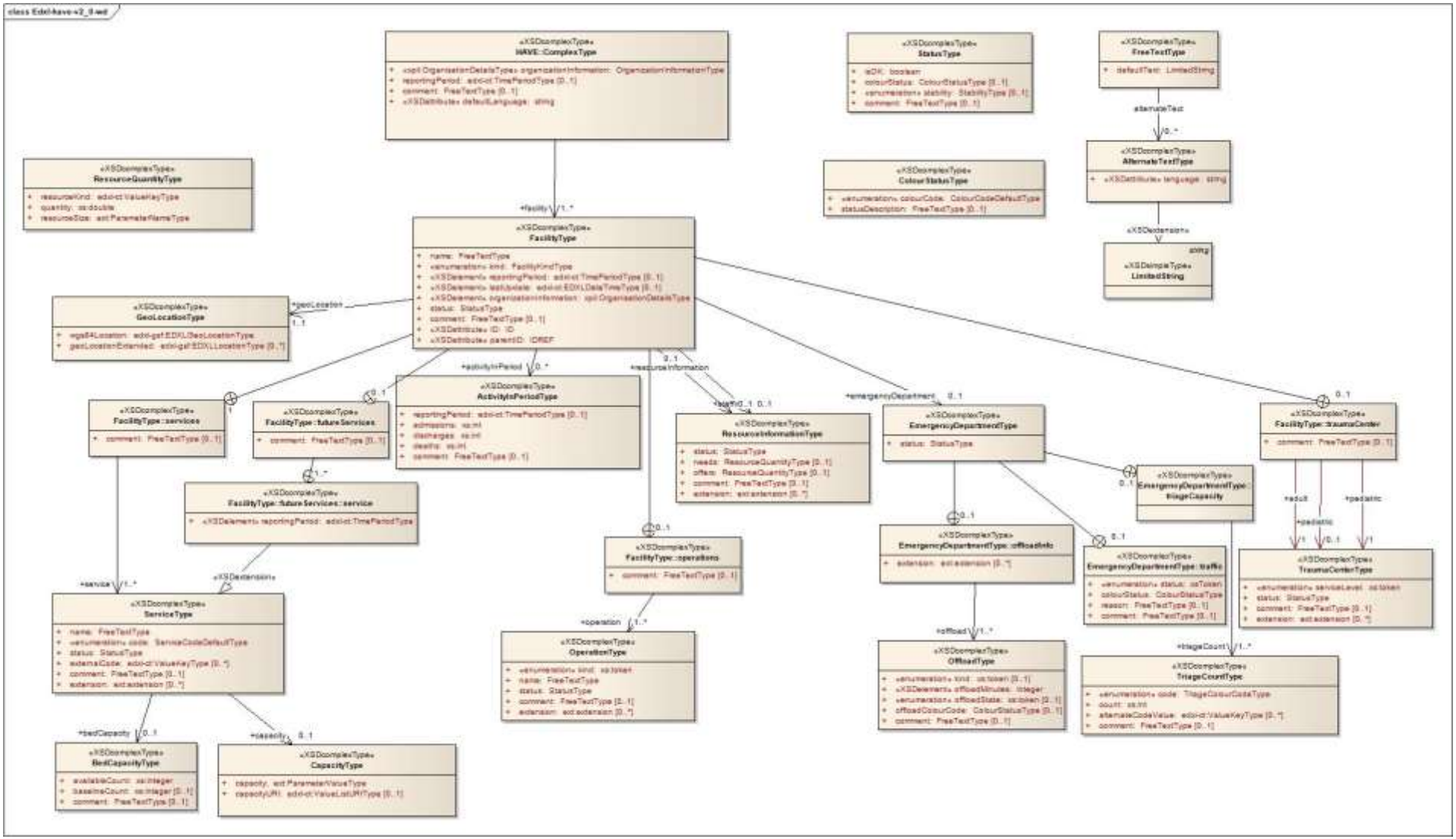
This example uses a qualify for status stability for a service:

- *community* = facility:service:status:refined
- *id* = extension:1
- *parameter-nameURI* = have:service:status
- *parameter-value* = Rapidly

which stands for

```
<extension>
        <community>facility:service:status:refined</community>
        <id>extension:1</id>
        <parameter>
                <nameURI>have:service:status</nameURI>
                <value>Rapidly</value>
        </parameter>
</extension>
```


3.3 Element Reference Model (non-normative)



3.4 Distribution of EDXL-HAVE (non-normative)

HAVE messages are intended to be payloads of various messaging and/or delivery systems. Messaging systems such as EDXL-DE can treat a HAVE message as a payload. Similarly, non-message-based systems (e.g. RESTful web service) can deliver a HAVE message just as easily. An individual facility may provide an up-to-date report via a web service. An aggregator could poll the facilities that are of interest for a particular reason, or in a Publish-Subscribe scenario, subscribe to the facilities of interest.

3.5 HAVE Elements

A HAVE message consists of an organization that uniquely identifies the organization that is responsible for the reporting facilities, a reporting period (**reportingPeriod** – *optional*) that identifies reporting period applicable for this HAVE report, and a group of elements (**facility** – *required*) that uniquely identifies and describes the facility's status including

- facility name and location,
- overall facility status, ..
- services, ..
- operations, ..
- resources, ..
- staffing, ..
- and emergency department.

These elements are detailed further in the Element Reference Model (Section 3.3) and in the Data Dictionary (Section 4).

4 Data Dictionary

Appendix A contains a computer-generated PDF that is generated directly from the XML Schema document.

5 Conformance

An XML 1.0 element is a conforming EDXL-HAVE-v2.0 Message if and only if:

a) it meets the general requirements specified in Section 4;

b) if its namespace name is "urn:oasis:names:tc:emergency:edxl:have:2.0", and the element is valid according to the schema located at http://docs.oasis-open.org/emergency/edxl-have-v2.0/edxl-have-v2.0.xsd

c) if its namespace name is "urn:oasis:names:tc:emergency:edxl:have:2.0", then its content (which includes the content of each of its descendants) meets all the additional mandatory requirements provided in the specific subsection of Section 4 corresponding to the element's name.

Note: only messages that fully comply with the EDXL-HAVE 2.0 specification and that are complete and schematically valid may be referred to as a "EDXL-HAVE 2.0 Message".

Appendix A. Data Dictionary

The following PDF is generated from the formal EDXL-HAVE 2.0 Schema.

The PDF file is available in the “schemas” directory listed in the “Additional artifacts” section on the title page.

Schema documentation for edxl-have-v2.0-csd01.xsd

13 January 2015

Table of Contents

Resource hierarchy:

Legend: *Import*, *Include*, *Redefine*, *Override*, *Cycle detected*

- edxl-have-v2.0-csd01.xsd
  - edxl-gsf.v1.0.xsd
    - edxl-gsf-base.xsd
      - xlink.xsd
        - xml.xsd
  - edxl-ext-v1.0.xsd
    - edxl-et-v1.0-wd06.xsd
      - edxl_xPIL.xsd
        - CommonTypes.xsd
        - edxl_xNL.xsd
          - xNL-types.xsd
          - CommonTypes.xsd
        - edxl_xAL.xsd
          - xAL-types.xsd
          - CommonTypes.xsd
        - xPIL-types.xsd
      - edxl_xAL.xsd
        - xAL-types.xsd
        - CommonTypes.xsd
      - edxl-gsf.v1.0.xsd
        - edxl-gsf-base.xsd
          - xlink.xsd
            - xml.xsd
  - edxl_xPIL.xsd
    - CommonTypes.xsd
    - edxl_xNL.xsd
      - xNL-types.xsd
      - CommonTypes.xsd
    - edxl_xAL.xsd
      - xAL-types.xsd
      - CommonTypes.xsd

xPIL-types.xsd

edxl_xAL.xsd

xAL-types.xsd

CommonTypes.xsd

edxl-ct-v1.0-wd06.xsd

edxl_xPIL.xsd

CommonTypes.xsd

edxl_xNL.xsd

xNL-types.xsd

CommonTypes.xsd

edxl_xAL.xsd

xAL-types.xsd

CommonTypes.xsd

xPIL-types.xsd

edxl_xAL.xsd

xAL-types.xsd

CommonTypes.xsd

edxl-gsf.v1.0.xsd

edxl-gsf-base.xsd

xlink.xsd

xml.xsd

Namespace: "urn:oasis:names:tc:emergency:edxl:have:2.0"

Schema(s)

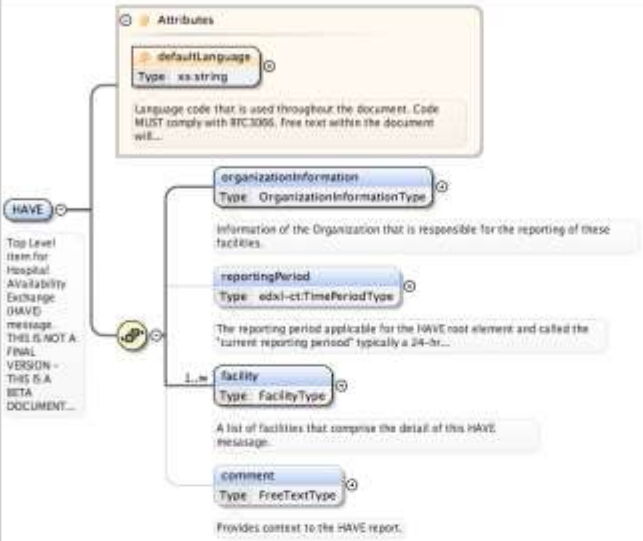
Main schema **edxl-have-v2.0-csd01.xsd**

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Specification Name: EDXL Hospital AVailability Exchange (HAVE) 2.0 Description: Defines the XML schema for the EDXL HAVE message exchange Produced by: Emergency Management HAVE Subcommittee URL: http://docs.oasis-open.org Version: 2.0 WD Status: SC DRAFT Copyright: 2012-2015, OASIS, http://www.oasis-open.org Last Modified: 05JAN2015 Last Modified by: Darrell O'Donnell, P.Eng. Guiding Concepts/Principles: Schema Validation: should provide deep validation capabilities as opposed to being a basic schema where different groups make up extensions to the point where nothing is valid in between systems. Extensible: Key areas of the schema should support extensibility in a controlled manner. The use of managed taxonomies can allow a group to define a new set of services that are used in a network for example. Simple: Though the standard could support aggregation the provision of individual facility elements REVIEW: new elements ID and IDREF: References (IDREF) to unique elements (ID) should be used, especially where establishing of a hierarchy.
Properties	attribute form default: **qualified** element form default: **qualified**

Element(s)

Element **HAVE**

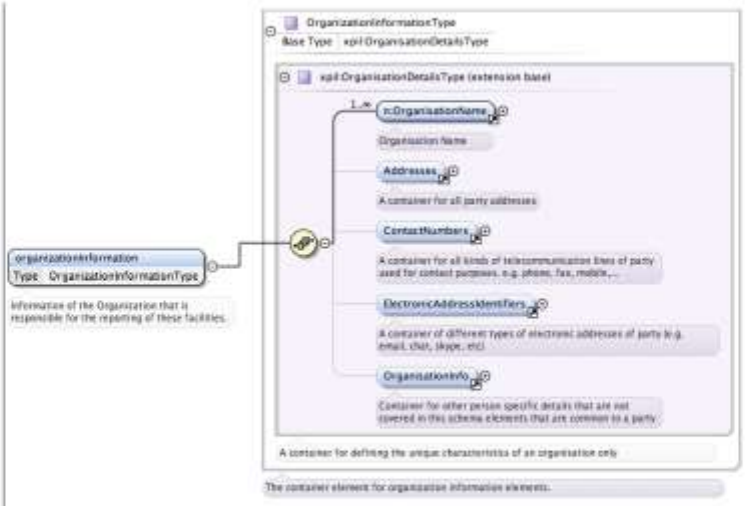
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

Annotations	Top Level item for Hospital AVailability Exchange (HAVE) message. THIS IS NOT A FINAL VERSION - THIS IS A BETA DOCUMENT AND THIS BETA NATURE NEEDS TO BE CONSIDERED.
Diagram	
Properties	content complex
Model	organizationInformation , reportingPeriod{0,1} , facility+ , comment{0,1}
Children	comment, facility, organizationInformation, reportingPeriod
Instance	<HAVE defaultLanguage="" xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <organizationInformation>{1,1}</organizationInformation> <reportingPeriod>{0,1}</reportingPeriod> <facility ID="" parentID="">{1,unbounded}</facility> <comment>{0,1}</comment> </HAVE>

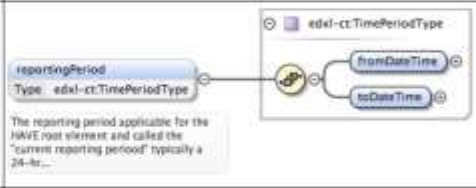
Attributes	QName	Type	Use	
	defaultLanguage	xs:string	required	
		Language code that is used throughout the document. Code MUST comply with RFC3066. Free text within the document will be assumed to be in this defaultLanguage.		

Element HAVE / organizationInformation

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Information of the Organization that is responsible for the reporting of these facilities.

Diagram	
Type	OrganizationInformationType
Type hierarchy	• OrganizationDetailsType • OrganizationInformationType
Properties	content: complex
Model	OrganizationName+ , Addresses{0,1} , ContactNumbers{0,1} , ElectronicAddressIdentifiers{0,1} , OrganizationInfo{0,1}
Children	Addresses, ContactNumbers, ElectronicAddressIdentifiers, OrganizationInfo, OrganizationName
Instance	<organisationInformation xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ns0="urn:oasis:names:tc:emergency <ns0:OrganisationName OrganisationID="" organisationIDType="">{1,unbounded}</ns0:OrganisationName> <xpil:Addresses>{0,1}</xpil:Addresses> <xpil:ContactNumbers>{0,1}</xpil:ContactNumbers> <xpil:ElectronicAddressIdentifiers>{0,1}</xpil:ElectronicAddressIdentifiers> <xpil:OrganisationInfo CategoryType="" DataQualityType="" IndustryCode="" IndustryCodeType="" IndustryType="" Mu xpil:OrganisationInfo> </organisationInformation>

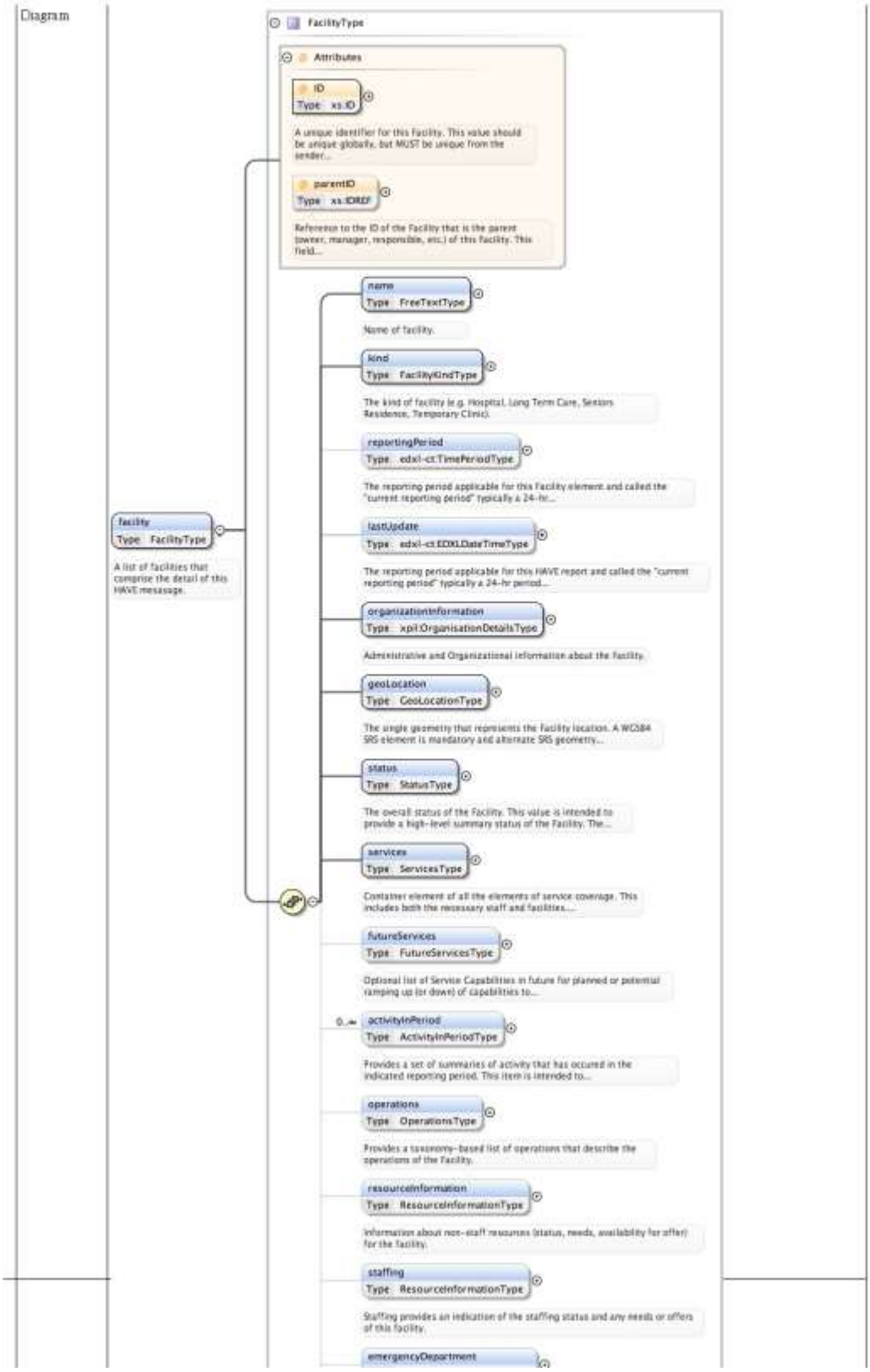
Element HAVE / reportingPeriod

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The reporting period applicable for the HAVE root element and called the "current reporting period" typically a 24-hr period but the duration may change for operational reasons. If blank the assumption is that the file is for "today" - local to the issuer.
Diagram	
Type	ct:TimePeriodType
Properties	content: complex minOccurs: 0
Model	ct:fromDateTime , ct:toDateTime
Children	ct:fromDateTime, ct:toDateTime
Instance	<reportingPeriod xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:edxl- ct="urn:oasis:names:tc:emergency:edxl:ct:1.0"> <edxl-ct:fromDateTime>{1,1}</edxl-ct:fromDateTime> <edxl-ct:toDateTime>{1,1}</edxl-ct:toDateTime> </reportingPeriod>

Element HAVE / facility

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	A list of facilities that comprise the detail of this HAVE mesasage.

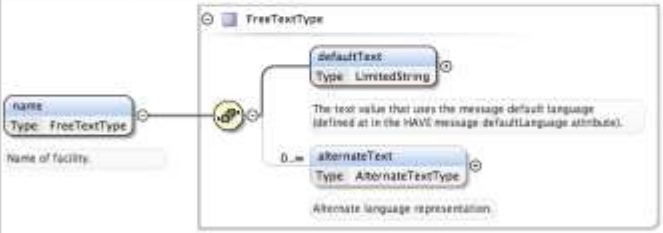
Diagram



Type	FacilityType
Properties	content complex maxOccurs unbounded
Model	name , kind , reportingPeriod{0,1} , lastUpdate{0,1} , organizationInformation , geoLocation , status , services , futureServices{0,1} , activityInPeriod* , operations{0,1} , resourceInformation{0,1} , staffing{0,1} , emergencyDepartment{0,1} , traumaCenter{0,1} , comment{0,1}
Children	activityInPeriod, comment, emergencyDepartment, futureServices, geoLocation, kind, lastUpdate, name, operations, organizationInformation, reportingPeriod, resourceInformation, services, staffing, status, traumaCenter
Instance	<facility ID="" parentID="" xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <name>{1,1}</name> <kind>{1,1}</kind> <reportingPeriod>{0,1}</reportingPeriod> <lastUpdate>{0,1}</lastUpdate> <organizationInformation>{1,1}</organizationInformation> <geoLocation>{1,1}</geoLocation> <status>{1,1}</status> <services>{1,1}</services> <futureServices>{0,1}</futureServices> <activityInPeriod>{0,unbounded}</activityInPeriod> <operations>{0,1}</operations> <resourceInformation>{0,1}</resourceInformation> <staffing>{0,1}</staffing> <emergencyDepartment>{0,1}</emergencyDepartment> <traumaCenter>{0,1}</traumaCenter> <comment>{0,1}</comment> </facility>

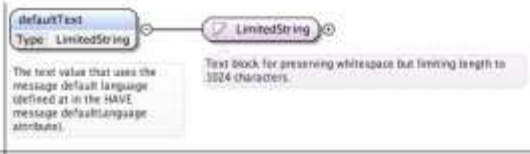
Attributes	QName	Type	Use	
	ID	xs:ID	required	
		A unique identifier for this Facility. This value should be unique globally, but MUST be unique from the sender perspective.		
	parentID	xs:IDREF	optional	
		Reference to the ID of the Facility that is the parent (owner, manager, responsible, etc.) of this Facility. This field is optional and used to provide a hierarchy for formal facility organizations.		

Element FacilityType / name

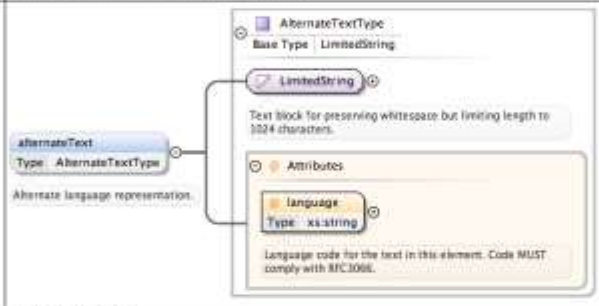
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Name of facility.
Diagram	
Type	FreeTextType
Properties	content complex
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<name xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </name>

Element FreeTextType / defaultText

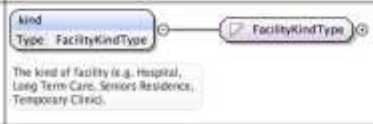
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The text value that uses the message default language (defined at in the HAVE message defaultLanguage attribute).

Diagram	
Type	LimitedString
Properties	content simple
Facets	whiteSpace preserve maxLength 1024

Element FreeTextType / alternateText

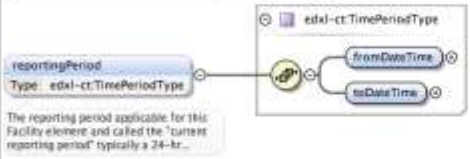
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Alternate language representation.
Diagram	
Type	AlternateTextType
Type hierarchy	• xs:string • LimitedString • AlternateTextType
Properties	content complex minOccurs 0 maxOccurs unbounded
Attributes	QName: language; Type: xs:string; Use: required Language code for the text in this element. Code MUST comply with RFC3066.

Element FacilityType / kind

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The kind of facility (e.g. Hospital, Long Term Care, Seniors Residence, Temporary Clinic).
Diagram	
Type	FacilityKindType
Type hierarchy	• xs:token • ct:EDXLStringType • FacilityKindType
Properties	content simple

Facets	minLength	1
	maxLength	1023
	enumeration	hospital
	enumeration	longTermCare
	enumeration	urgentCareClinic
	enumeration	temporaryFacility
	enumeration	other

Element FacilityType / reportingPeriod

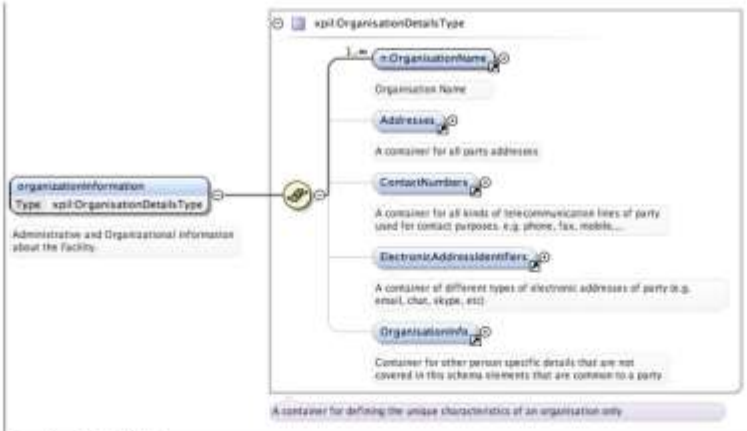
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Annotations	The reporting period applicable for this Facility element and called the "current reporting period" typically a 24-hr period but the duration may change for operational reasons. If this value is not provided the HAVE message reporting period will be assumed.	
Diagram		
Type	ct:TimePeriodType	
Properties	content	complex
	minOccurs	0
Model	ct:fromDateTime , ct:toDateTime	
Children	ct:fromDateTime, ct:toDateTime	
Instance	<reportingPeriod xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:edxl-ct="urn:oasis:names:tc:emergency:edxl:ct:1.0"> <edxl-ct:fromDateTime>{1,1}</edxl-ct:fromDateTime> <edxl-ct:toDateTime>{1,1}</edxl-ct:toDateTime> </reportingPeriod>	

Element FacilityType / lastUpdate

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Annotations	The reporting period applicable for this HAVE report and called the "current reporting period" typically a 24-hr period but the duration may change for operational reasons. If blank the assumption is that the file is for "today" - local to the issuer.	
Diagram		
Type	ct:EDXLDateTimeType	
Properties	content	simple
	minOccurs	0
Facets	pattern	\d\d\d\d-\d\d-\d\dT\d\d: \d\d:\d\d[-,+]\d\d:\d\d

Element FacilityType / organizationInformation

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Administrative and Organizational information about the Facility.

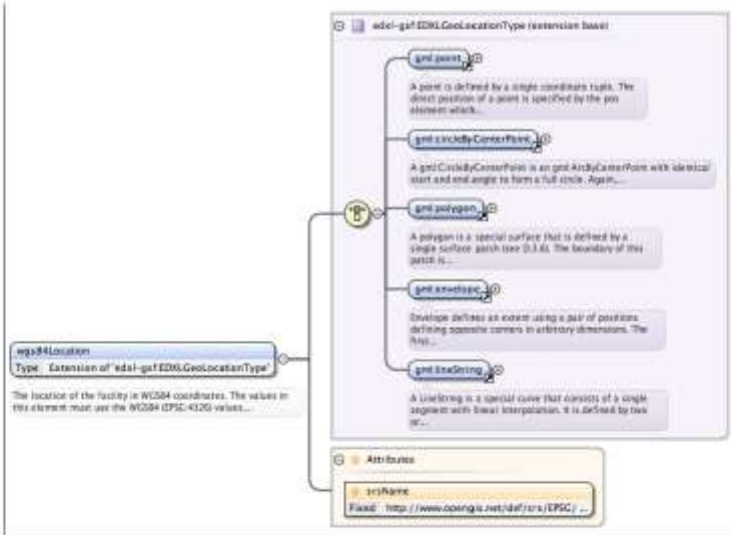
Diagram	
Type	OrganisationDetailsType
Properties	content: complex
Model	OrganisationName+ , Addresses{0,1} , ContactNumbers{0,1} , ElectronicAddressIdentifiers{0,1} , OrganisationInfo{0,1}
Children	Addresses, ContactNumbers, ElectronicAddressIdentifiers, OrganisationInfo, OrganisationName
Instance	<organizationInformation xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ns0="urn:oasis:names:tc:emergency <ns0:OrganisationName OrganisationID="" OrganisationIDType="">{1,unbounded}</ns0:OrganisationName> <xpil:Addresses>{0,1}</xpil:Addresses> <xpil:ContactNumbers>{0,1}</xpil:ContactNumbers> <xpil:ElectronicAddressIdentifiers>{0,1}</xpil:ElectronicAddressIdentifiers> <xpil:OrganisationInfo CategoryType="" DataQualityType="" IndustryCode="" IndustryCodeType="" IndustryType="" Nat xpil:OrganisationInfo> </organizationInformation>

Element FacilityType / geoLocation

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The single geometry that represents the Facility location. A WGS84 SRS element is mandatory and alternate SRS geometry elements can be provided. All geometry elements should be reflecting the same physical location.
Diagram	
Type	GeoLocationType
Properties	content: complex
Model	wgs84Location , geoLocationExtended*
Children	geoLocationExtended, wgs84Location
Instance	<geoLocation xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <wgs84Location srsName="http://www.opengis.net/def/crs/EPSG/0/4326">{1,1}</wgs84Location> <geoLocationExtended srsName="">{0,unbounded}</geoLocationExtended> </geoLocation>

Element GeoLocationType / wgs84Location

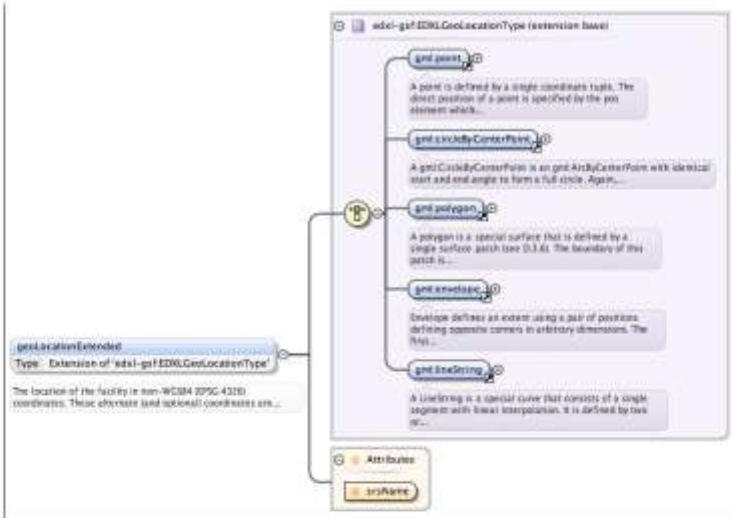
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The location of the facility in WGS84 coordinates. The values in this element must use the WGS84 (EPSG:4326) values. This element is mandatory to ensure compatibility globally. If alternate SRS are needed, use the geoLocationExtended elements to support 1 or more SRS that are needed in your community. FUTURE versions of HAVE may support additional or alternate globally supported SRS.

Diagram	
Type	extension of edxl-gsf:EDXLGeoLocationType
Type hierarchy	• edxl-gsf:EDXLGeoLocationType
Properties	content: complex
Model	gml:point | gml:circleByCenterPoint | gml:polygon | gml:envelope | gml:lineString
Children	gml:circleByCenterPoint, gml:envelope, gml:lineString, gml:point, gml:polygon
Instance	<wgs84Location srsName="http://www.opengis.net/def/crs/EPSG/0/4326" xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:gml="http://www.opengis.net/gml/3.2"> <gml:point AxisLabels="" gml:id="" SrsDimension="" SrsName="" UomLabels="">{1,1}</gml:point> <gml:circleByCenterPoint Interpolation="CircularArcCenterPointWithRadius" NumArc="1" NumDerivativeInterior="0" N gml:circleByCenterPoint> <gml:polygon AxisLabels="" gml:id="" SrsDimension="" SrsName="" UomLabels="">{1,1}</gml:polygon> <gml:envelope AxisLabels="" SrsDimension="" SrsName="" UomLabels="">{1,1}</gml:envelope> <gml:lineString AxisLabels="" gml:id="" SrsDimension="" SrsName="" UomLabels="">{1,1}</ gml:lineString> </wgs84Location>

Attributes	QName	Type	Fixed	Use
	srsName		http://www.opengis.net/def/crs/EPSG/0/4326	required

Element GeoLocationType / geoLocationExtended

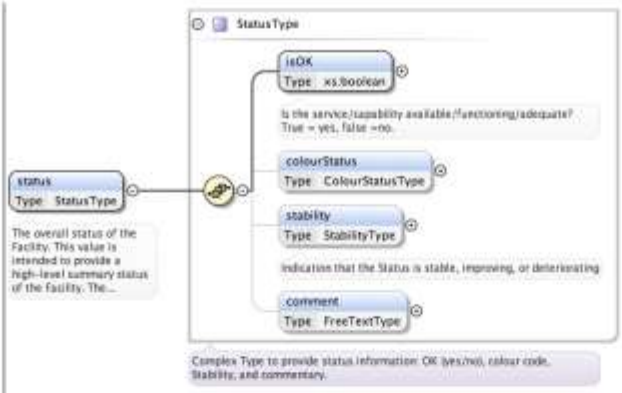
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The location of the facility in non-WGS84 (EPSG:4326) coordinates. These alternate (and optional) coordinates are intended for the purposes of systems that require the sending system to provide specialise SRS coordinates.

Diagram	
Type	extension of edxl-gsf:EDXLGeoLocationType
Type hierarchy	• edxl-gsf:EDXLGeoLocationType
Properties	content: complex minOccurs: 0 maxOccurs: unbounded
Model	gml:point | gml:circleByCenterPoint | gml:polygon | gml:envelope | gml:lineString
Children	gml:circleByCenterPoint, gml:envelope, gml:lineString, gml:point, gml:polygon
Instance	<geoLocationExtended srsName="" xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:gml="http://www.opengis.net/gml/3.2"> <gml:point AxisLabels="" gml:id="" SrsDimension="" SrsName="" UomLabels="">{1,1}</gml:point> <gml:circleByCenterPoint Interpolation="CircularArcCenterPointWithRadius" NumArc="1" SemiDerivativeFeature="0" M gml:circleByCenterPoint> <gml:polygon AxisLabels="" gml:id="" SrsDimension="" SrsName="" UomLabels="">{1,1}</gml:polygon> <gml:envelope AxisLabels="" SrsDimension="" SrsName="" UomLabels="">{1,1}</gml:envelope> <gml:lineString AxisLabels="" gml:id="" SrsDimension="" SrsName="" UomLabels="">{1,1}</ gml:lineString> </geoLocationExtended>

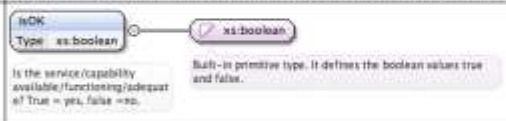
Attributes	QName	Type	Use
	srsName		required

Element FacilityType / status

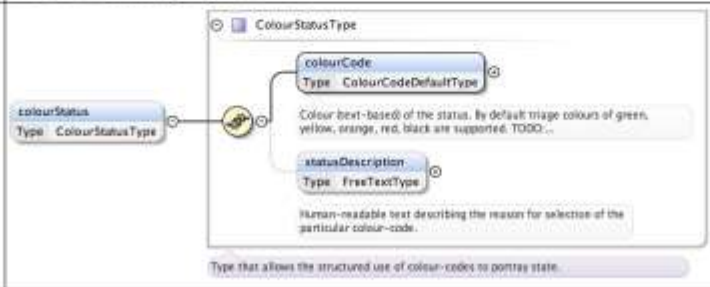
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The overall status of the Facility. This value is intended to provide a high-level summary status of the Facility. The particulars driving that Facility status should be provided where appropriate (Services, Operations, etc.). Comments (comment element) should be used to provide only the high-level summary.

Diagram	
Type	StatusType
Properties	content complex
Model	isOK , colourStatus {0,1} , stability {0,1} , comment {0,1}
Children	colourStatus, comment, isOK, stability
Instance	<status xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <isOK>{1,1}</isOK> <colourStatus>{0,1}</colourStatus> <stability>{0,1}</stability> <comment>{0,1}</comment> </status>

Element StatusType / isOK

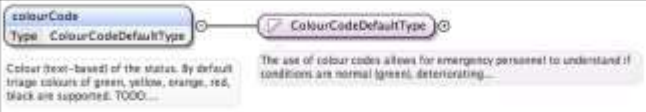
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Is the service/capability available/functioning/adequate? True = yes, false =no.
Diagram	
Type	xs:boolean
Properties	content simple

Element StatusType / colourStatus

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	ColourStatusType
Properties	content complex minOccurs 0
Model	colourCode , statusDescription {0,1}

Children	colourCode, statusDescription
Instance	<colourStatus xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <colourCode>{1,1}</colourCode> <statusDescription>{0,1}</statusDescription> </colourStatus>

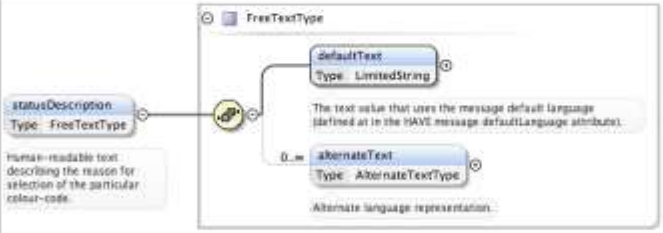
Element ColourStatusType / colourCode

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Annotations	Colour (text-based) of the status. By default triage colours of green, yellow, orange, red, black are supported. TODO: CREATE a new ColourCodeType to capture the full ISO 22324 data (colour, meaning, ...)	
Diagram		
Type	ColourCodeDefaultType	

Type hierarchy	• xs:token
	  • ct:EDXLStringType
	  • ColourCodeDefaultType	

Properties	content	simple
	minOccurs	1
Facets	minLength	1
	maxLength	1023
	enumeration	red — RED - severe/extreme deviation from normal condition. Marks a noted exception from normal conditions.
	enumeration	yellow — YELLOW - moderate deviation from normal condition but not at SEVERE/EXTREME level.
	enumeration	green — GREEN - normal conditions.

Element ColourStatusType / statusDescription

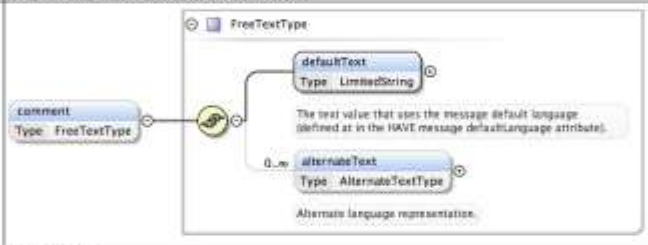
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Annotations	Human-readable text describing the reason for selection of the particular colour-code.	
Diagram		
Type	FreeTextType	
Properties	content	complex
	minOccurs	0
Model	defaultText , alternateText*	
Children	alternateText, defaultText	
Instance	<statusDescription xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </statusDescription>	

Element StatusType / stability

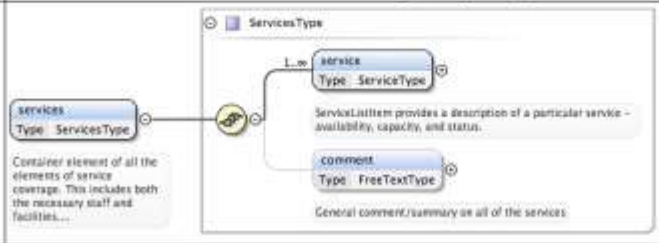
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

Annotations	Indication that the Status is stable, improving, or deteriorating		
Diagram			
Type	StabilityType		
Properties	content	simple	
	minOccurs	0	
Facets	enumeration	stable	Stable/unchanging - conditions remain within norms and are not varying out of normal patterns.
	enumeration	improving	Conditions are improving towards normal.
	enumeration	deteriorating	Conditions are deviating negatively from normal.

Element StatusType / comment

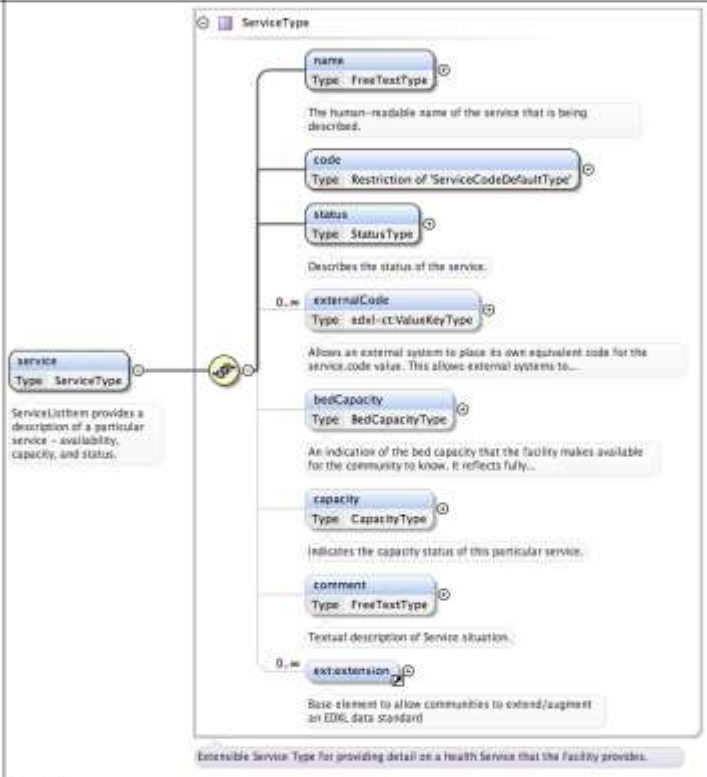
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Diagram			
Type	FreeTextType		
Properties	content	complex	
	minOccurs	0	
Model	defaultText , alternateText*		
Children	alternateText, defaultText		
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>		

Element FacilityType / services

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Container element of all the elements of service coverage. This includes both the necessary staff and facilities. Indicator of the availability of specialty service coverage.
Diagram	
Type	ServicesType
Properties	content complex
Model	service+ , comment{0,1}
Children	comment, service

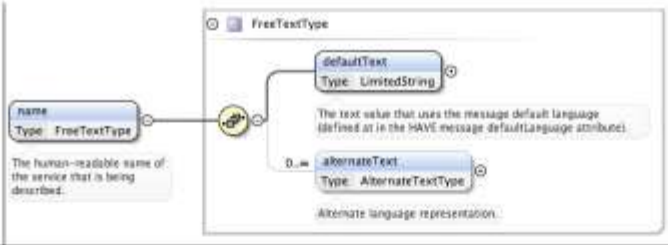
Instance	<services xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <service>{1,unbounded}</service> <comment>{0,1}</comment> </services>

Element ServicesType / service

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	ServiceListItem provides a description of a particular service - availability, capacity, and status.
Diagram	
Type	ServiceType
Properties	content: complex minOccurs: 1 maxOccurs: unbounded
Model	name , code , status , externalCode* , bedCapacity{0,1} , capacity{0,1} , comment{0,1} , ext:extension*
Children	bedCapacity, capacity, code, comment, ext:extension, externalCode, name, status
Instance	<service xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ext="urn:oasis:names:tc:emergency:edxl:extension <name>{1,1}</name> <code>{1,1}</code> <status>{1,1}</status> <externalCode>{0,unbounded}</externalCode> <bedCapacity>{0,1}</bedCapacity> <capacity>{0,1}</capacity> <comment>{0,1}</comment> <ext:extension>{0,unbounded}</ext:extension> </service>

Element ServiceType / name

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The human-readable name of the service that is being described.

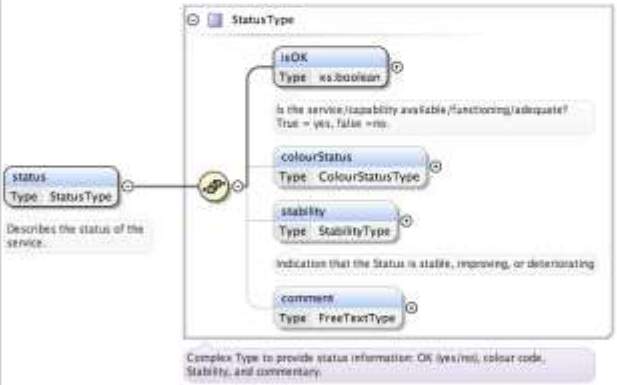
Diagram	
Type	FreeTextType
Properties	content complex
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<name xml:lang="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </name>

Element ServiceType / code

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Diagram			
Type	ServiceCodeDefaultType		
Type hierarchy	• xs:string • ct:ValueType • ServiceCodeDefaultType		
Properties	content	simple	
Facets	enumeration	airborneInfectionIsolation	
	enumeration	burnUnit	Burn Center services.
	enumeration	cardiology	Cardiology services.
	enumeration	cardiology.invasive	Cardiology with invasive capabilities.
	enumeration	cardiology.noninvasive	Cardiology with NO invasive capabilities.
	enumeration	cardiologymi.STEMI	STEMI support
	enumeration	cardiologymi.nonSTEMI	NO STEMI support
	enumeration	cardiology.telemetry	For remote monitoring of cardiology telemetry data for patient.
	enumeration	dialysis	Dialysis services
	enumeration	emergencyDepartment	
	enumeration	hyperBaricChamber	Hyperbaric Chamber
	enumeration	infectiousDisease	Infectious Disease Services
	enumeration	intensiveCare.adult	Adult ICU services.
	enumeration	intensiveCare.neonatal	Neonatal Intensive Care Unit (ICU) services.
	enumeration	intensiveCare.pediatric	Pediatric Intensive Care Unit (ICU) services.
	enumeration	intermediateCare	For low-risk, chronically or critically ill patients
	enumeration	neonatology	Neonatology
	enumeration	neurology	Neurology Services
	enumeration	neurology.invasive	Neurology-Invasive services, including invasive catheterization.
	enumeration	neurology.noninvasive	Neurology-Non-Invasive services with no invasive catheterization capability.
	enumeration	obgyn	OBGYN services

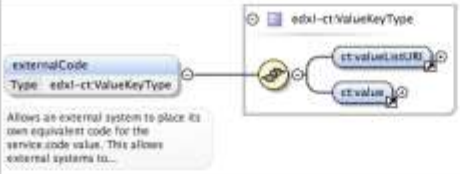
	enumeration	obgyn.withLaborDelivery	OBGYN with labor delivery.
	enumeration	obgyn.withoutLaborDelivery	OBGYN without labor delivery capabilities.
	enumeration	operatingRooms	
	enumeration	opthalmology	Opthalmology services
	enumeration	orthopedic	Orthopedic services
	enumeration	pediatrics	Pediatric services
	enumeration	psychiatric	Psychiatric services
	enumeration	surgery	Surgery capabilities
	enumeration	surgery.adultGeneral	General Adult surgery capabilities
	enumeration	surgery.pediatrics	General Pediatric surgery capabilities
	enumeration	surgery.orthopedics	Orthopedic surgery capabilities
	enumeration	surgery.neurosurgery	Neurosurgery capabilities
	enumeration	surgery.facial	Facial surgery capabilities
	enumeration	surgery.cardiothoracic	Cardiothoracic surgey capabilities
	enumeration	surgery.hand	Hand surgery capabilities
	enumeration	surgery.reimplantation	Reimplantation surgery capabilities.
	enumeration	surgery.spinal	Spinal surgery capabilities
	enumeration	surgery.vascular	Vascular surgery capabilities
	enumeration	surgery.anesthesia	Anesthesia services
	enumeration	traumaCenter	Trauma Center

Element ServiceType / status

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Describes the status of the service.
Diagram	
Type	StatusType
Properties	content complex minOccurs 1
Model	isOK , colourStatus {0,1} , stability {0,1} , comment {0,1}
Children	colourStatus, comment, isOK, stability
Instance	<status xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <isOK>{1,1}</isOK> <colourStatus>{0,1}</colourStatus> <stability>{0,1}</stability> <comment>{0,1}</comment> </status>

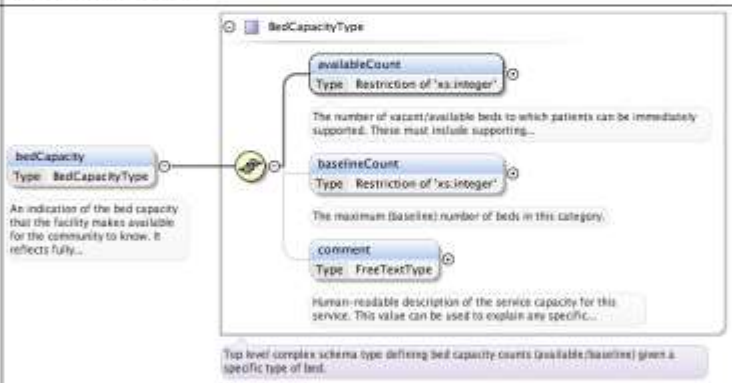
Element ServiceType / externalCode

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

Annotations	Allows an external system to place its own equivalent code for the service.code value. This allows external systems to correlate their data directly in the HAVE report.
Diagram	
Type	ct:ValueKeyType
Properties	content: complex minOccurs: 0 maxOccurs: unbounded
Model	ct:valueListURI , ct:value
Children	ct:value, ct:valueListURI

Instance	`<externalCode xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:edxl-ct="urn:oasis:names:tc:emergency:edxl:ct:1.0">`
	`<edxl-ct:valueListURI>{1,1}</edxl-ct:valueListURI>`
	`<edxl-ct:value>{1,1}</edxl-ct:value>`
	`</externalCode>`

Element ServiceType / bedCapacity

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	An indication of the bed capacity that the facility makes available for the community to know. It reflects fully staffed and equipped beds. The intention here is to provide an external view of where beds may be available in a health network. The intent is not for HAVE to become a hospital administration tool.
Diagram	
Type	BedCapacityType
Properties	content: complex minOccurs: 0
Model	availableCount , baselineCount{0,1} , comment{0,1}
Children	availableCount, baselineCount, comment

Instance	`<bedCapacity xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0">`
	`<availableCount>{1,1}</availableCount>`
	`<baselineCount>{0,1}</baselineCount>`
	`<comment>{0,1}</comment>`
	`</bedCapacity>`

Element BedCapacityType / availableCount

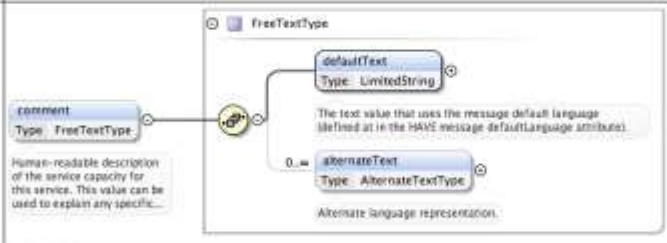
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The number of vacant/available beds to which patients can be immediately supported. These must include supporting space, equipment, medical material, ancillary and support services and staff to

	operate under normal circumstances. These beds are licensed, physically available and have staff on hand to attend to the patient who occupies the bed. NEGATIVE values means the service is operating beyond normal capacity.
Diagram	
Type	xs:integer
Properties	content simple minOccurs 1

Element BedCapacityType / baselineCount

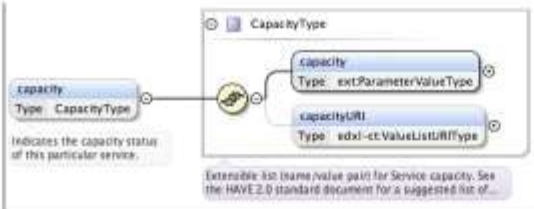
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The maximum (baseline) number of beds in this category.
Diagram	
Type	restriction of xs:integer
Properties	content simple minOccurs 0
Facets	minInclusive 0

Element BedCapacityType / comment

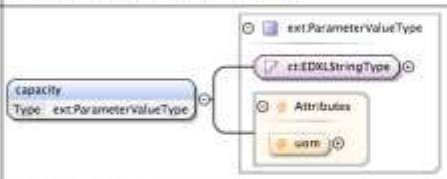
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Human-readable description of the service capacity for this service. This value can be used to explain any specific information for the reader about the Bed Capacity.
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>

Element ServiceType / capacity

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Indicates the capacity status of this particular service.

Diagram	
Type	CapacityType
Properties	content complex minOccurs 0
Model	capacity , capacityURI{0,1}
Children	capacity, capacityURI
Instance	<capacity xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <capacity uom="">{1,1}</capacity> <capacityURI>{0,1}</capacityURI> </capacity>

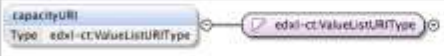
Element CapacityType / capacity

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Diagram			
Type	ext:ParameterValueType		

Type hierarchy	• xs:token
	  • ct:EDXLStringType
	  • ext:ParameterValueType		

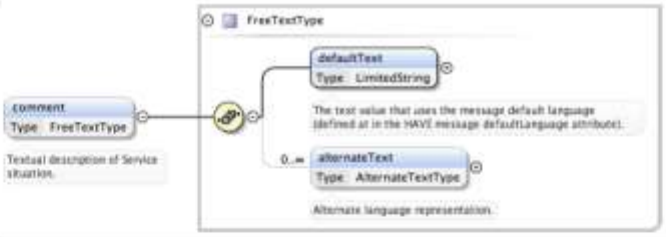
Properties	content complex		
Attributes	**QName**	**Type**	**Use**
	uom	xs:string	optional

Element CapacityType / capacityURI

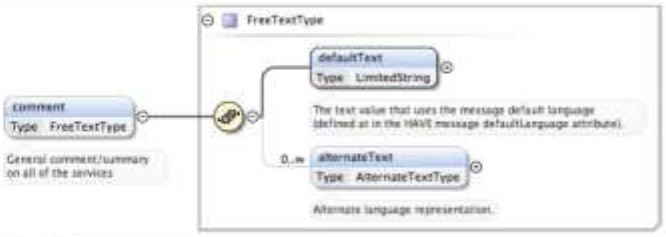
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	ct:ValueListURIType
Properties	content simple minOccurs 0 maxOccurs 1

Element ServiceType / comment

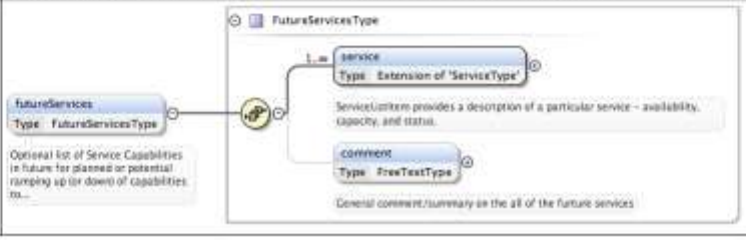
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Textual description of Service situation.

Diagram	
Type	FreeTextType
Properties	content: complex minOccurs: 0
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>

Element ServicesType / comment

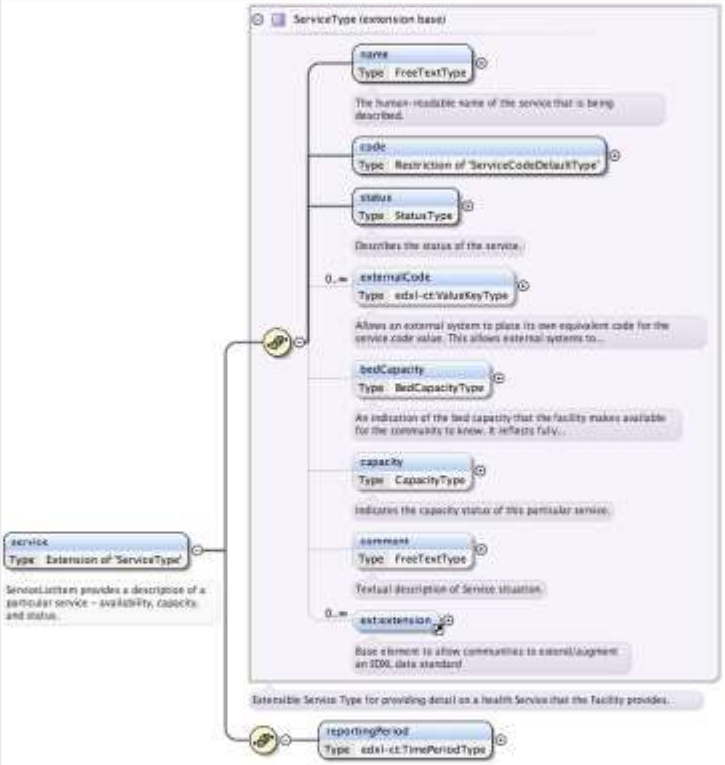
Namespace	um:oasis:names:tc:emergency:edxl:have:2.0
Annotations	General comment/summary on all of the services
Diagram	
Type	FreeTextType
Properties	content: complex minOccurs: 0 maxOccurs: 1
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>

Element FacilityType / futureServices

Namespace	um:oasis:names:tc:emergency:edxl:have:2.0
Annotations	optional list of service capabilities in future for planned or potential ramping up (or down) of capabilities to accomodate surge needs or degraded capabilities. 0...n
Diagram	

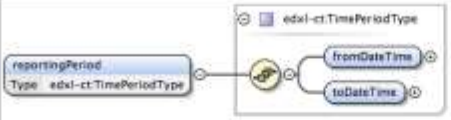
Type	PotureServicesType
Properties	content: complex minOccurs: 0
Model	service+ , comment{0,1}
Children	comment, service
Instance	<futureServices xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <service>{1,unbounded}</service> <comment>{0,1}</comment> </futureServices>

Element FutureServicesType / service

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	ServiceListItem provides a description of a particular service - availability, capacity, and status.
Diagram	
Type	extension of ServiceType
Type hierarchy	• ServiceType
Properties	content: complex minOccurs: 1 maxOccurs: unbounded
Model	name , code , status , externalCode* , bedCapacity{0,1} , capacity{0,1} , comment{0,1} , ext:extension* , reportingPeriod
Children	bedCapacity, capacity, code, comment, ext:extension, externalCode, name, reportingPeriod, status
Instance	<service xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ext="urn:oasis:names:tc:emergency:edxl:extension <name>{1,1}</name> <code>{1,1}</code> <status>{1,1}</status> <externalCode>{0,unbounded}</externalCode>

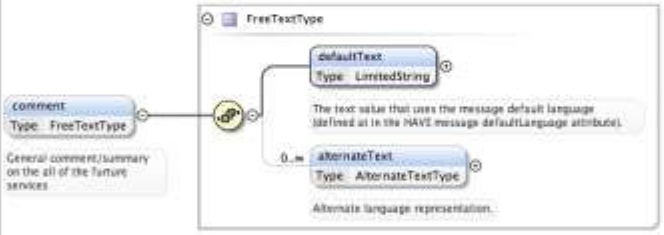
```
  <bedCapacity>{0,1}</bedCapacity>
  <capacity>{0,1}</capacity>
  <comment>{0,1}</comment>
  <ext:extension>{0,unbounded}</ext:extension>
  <reportingPeriod>{1,1}</reportingPeriod>
</service>
```

Element FutureServicesType / service / reportingPeriod

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	ct:TimePeriodType
Properties	content complex
Model	ct:fromDateTime , ct:toDateTime
Children	ct:fromDateTime, ct:toDateTime

Instance	`<reportingPeriod xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:edxl-ct="urn:oasis:names:tc:emergency:edxl:ct:1.0">`
	`  <edxl-ct:fromDateTime>{1,1}</edxl-ct:fromDateTime>`
	`  <edxl-ct:toDateTime>{1,1}</edxl-ct:toDateTime>`
	`</reportingPeriod>`

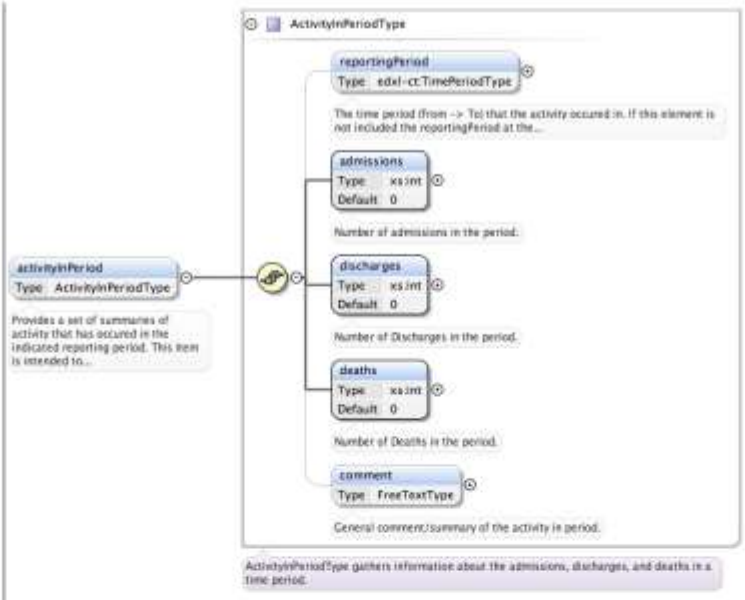
Element FutureServicesType / comment

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	General comment/summary on the all of the furture services
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0 maxOccurs 1
Model	defaultText , alternateText*
Children	alternateText, defaultText

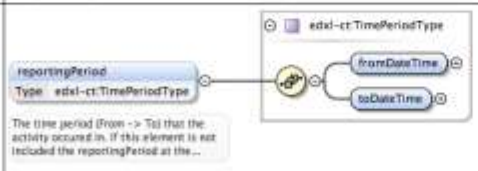
Instance	`<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0">`
	`  <defaultText>{1,1}</defaultText>`
	`  <alternateText language="">{0,unbounded}</alternateText>`
	`</comment>`

Element FacilityType / activityInPeriod

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Provides a set of summaries of activity that has occured in the indicated reporting period. This item is intended to provide a very high-level summary of facility activity.

Diagram	
Type	ActivityInPeriodType
Properties	content: complex minOccurs: 0 maxOccurs: unbounded
Model	reportingPeriod{0,1} , admissions , discharges , deaths , comment{0,1}
Children	admissions, comment, deaths, discharges, reportingPeriod
Instance	<activityInPeriod xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <reportingPeriod>{0,1}</reportingPeriod> <admissions>{1,1}</admissions> <discharges>{1,1}</discharges> <deaths>{1,1}</deaths> <comment>{0,1}</comment> </activityInPeriod>

Element ActivityInPeriodType / reportingPeriod

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The time period (From -> To) that the activity occured in. If this element is not included the reportingPeriod at the Facility level should be assumed to define the time range.
Diagram	
Type	ct:TimePeriodType
Properties	content: complex minOccurs: 0
Model	ct:fromDateTime , ct:toDateTime
Children	ct:fromDateTime, ct:toDateTime
Instance	<reportingPeriod xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:edxl-ct="urn:oasis:names:tc:emergency:edxl:ct:1.0"> <edxl-ct:fromDateTime>{1,1}</edxl-ct:fromDateTime> <edxl-ct:toDateTime>{1,1}</edxl-ct:toDateTime>

```
</reportingPeriod>
```

Element ActivityInPeriodType / admissions

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Number of admissions in the period.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1 default: 0

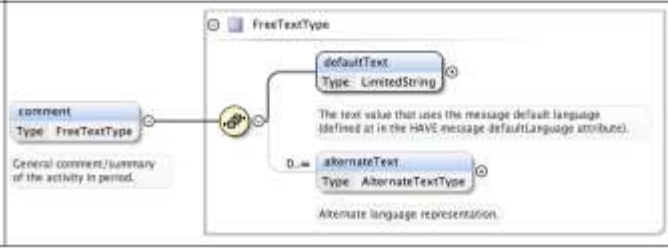
Element ActivityInPeriodType / discharges

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Number of Discharges in the period.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1 default: 0

Element ActivityInPeriodType / deaths

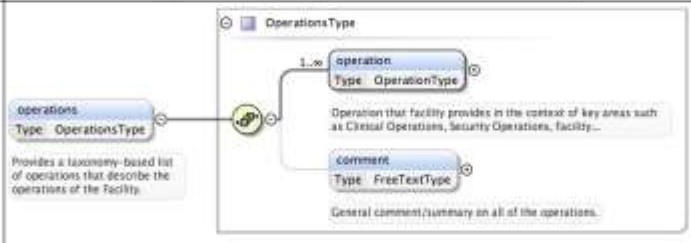
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Number of Deaths in the period.
Diagram	
Type	xs:int
Properties	content: simple minOccurs: 1 default: 0

Element ActivityInPeriodType / comment

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	General comment/summary of the activity in period.
Diagram	

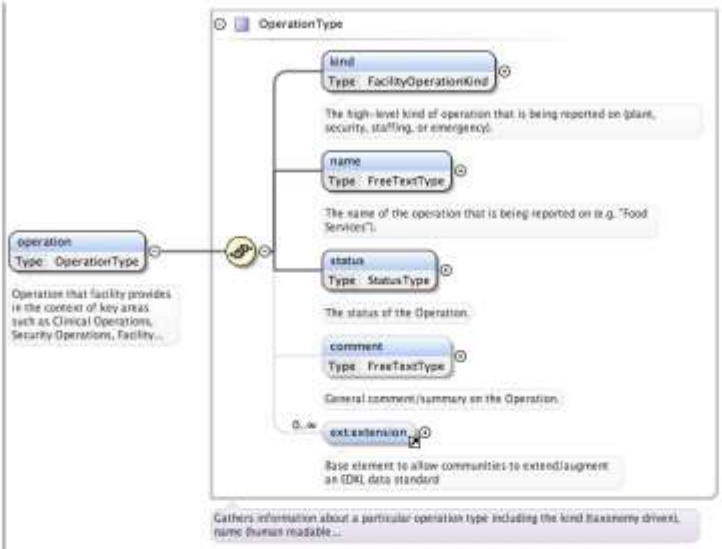
Type	FreeTextType
Properties	content complex minOccurs 0
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>

Element FacilityType / operations

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Provides a taxonomy-based list of operations that describe the operations of the Facility.
Diagram	
Type	OperationsType
Properties	content complex minOccurs 0
Model	operation+ , comment{0,1}
Children	comment, operation
Instance	<operations xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <operation>{1,unbounded}</operation> <comment>{0,1}</comment> </operations>

Element OperationsType / operation

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Operation that facility provides in the context of key areas such as Clinical Operations, Security Operations, Facility Operations.

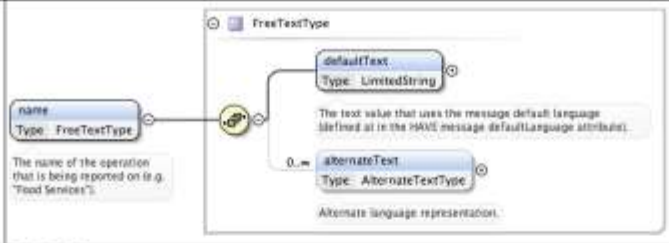
Diagram	
Type	OperationType
Properties	content complex minOccurs 1 maxOccurs unbounded
Model	kind , name , status , comment{0,1} , ext:extension*
Children	comment, ext:extension, kind, name, status
Instance	<operation xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ext="urn:oasis:names:tc:emergency:edxl:extensi <kind>{1,1}</kind> <name>{1,1}</name> <status>{1,1}</status> <comment>{0,1}</comment> <ext:extension>{0,unbounded}</ext:extension> </operation>

Element OperationType / kind

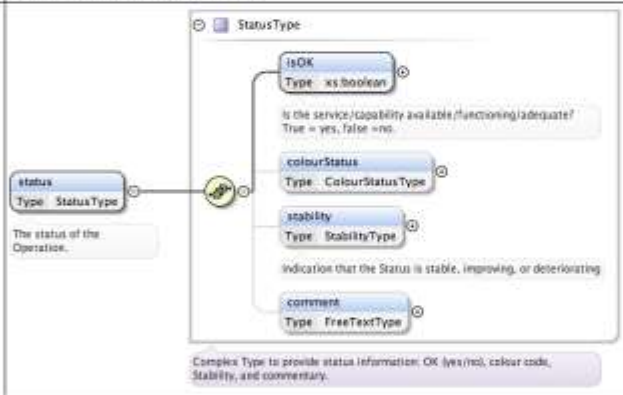
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Annotations	The high-level kind of operation that is being reported on (plant, security, staffing, or emergency).		
Diagram			
Type	FacilityOperationKind		
Properties	content simple		
Facets	enumeration	plant	Plant - the key equipment and capabilities needed to operate the facility (e.g. HVAC, cafeteria).
	enumeration	security	Security operations for facility (e.g. patrol, surveillance).
	enumeration	staffing	Staff-related operations (e.g. medical personnel, support staffing, administrative).
	enumeration	emergency	Emergency Department operations.

Element OperationType / name

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

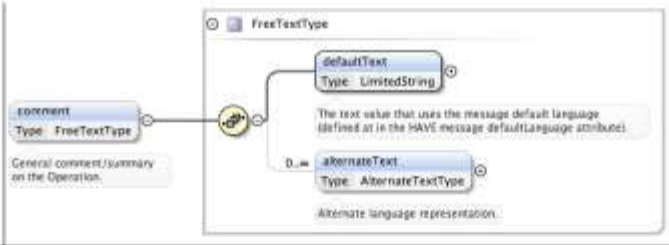
Annotations	The name of the operation that is being reported on (e.g. "Food Services").
Diagram	
Type	FreeTextType
Properties	content complex
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<name xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </name>

Element OperationType / status

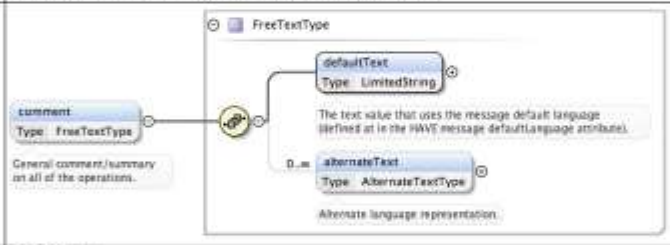
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The status of the Operation.
Diagram	
Type	StatusType
Properties	content complex
Model	isOK , colourStatus{0,1} , stability{0,1} , comment{0,1}
Children	colourStatus, comment, isOK, stability
Instance	<status xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <isOK>{1,1}</isOK> <colourStatus>{0,1}</colourStatus> <stability>{0,1}</stability> <comment>{0,1}</comment> </status>

Element OperationType / comment

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	General comment/summary on the Operation.

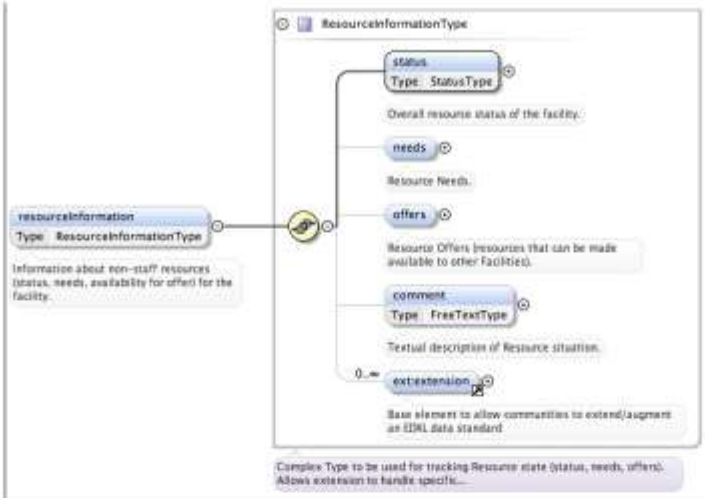
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>

Element OperationsType / comment

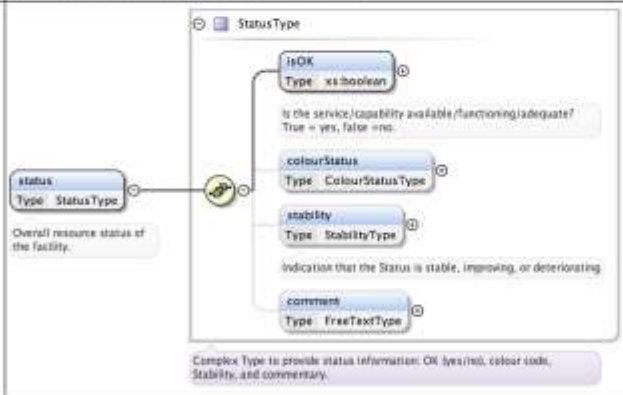
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	General comment/summary on all of the operations.
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0 maxOccurs 1
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>

Element FacilityType / resourceInformation

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Information about non-staff resources (status, needs, availability for offer) for the facility.

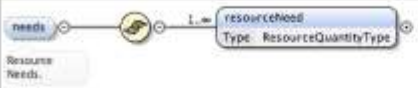
Diagram	
Type	ResourceInformationType
Properties	content complex minOccurs 0
Model	status , needs{0,1} , offers{0,1} , comment{0,1} , ext:extension*
Children	comment, ext:extension, needs, offers, status
Instance	<resourceInformation xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ext="urn:oasis:names:tc:emergency:ed: <status>{1,1}</status> <needs>{0,1}</needs> <offers>{0,1}</offers> <comment>{0,1}</comment> <ext:extension>{0,unbounded}</ext:extension> </resourceInformation>

Element ResourceInformationType / status

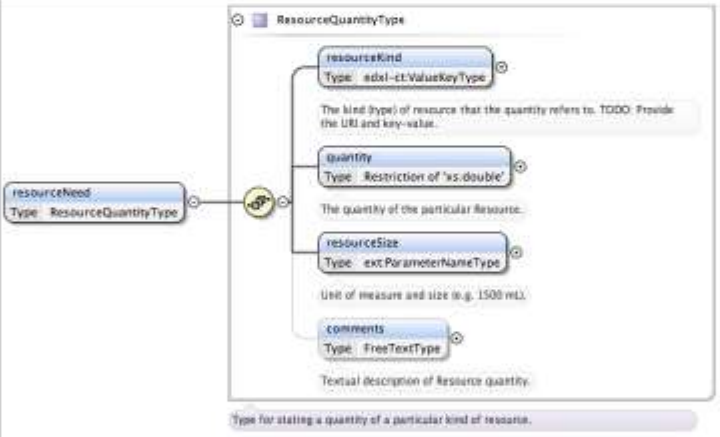
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Overall resource status of the facility.
Diagram	
Type	StatusType
Properties	content complex minOccurs 1
Model	isOK , colourStatus{0,1} , stability{0,1} , comment{0,1}
Children	colourStatus, comment, isOK, stability

Instance	<status xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <isOR>{1,1}</isOR> <colourStatus>{0,1}</colourStatus> <stability>{0,1}</stability> <comment>{0,1}</comment> </status>

Element ResourceInformationType / needs

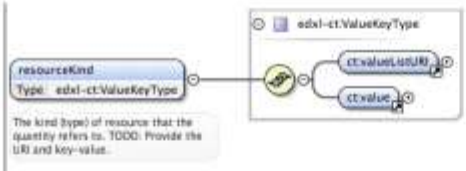
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Resource Needs.
Diagram	
Properties	content complex minOccurs 0
Model	resourceNeed+
Children	resourceNeed
Instance	<needs xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <resourceNeed>{1,unbounded}</resourceNeed> </needs>

Element ResourceInformationType / needs / resourceNeed

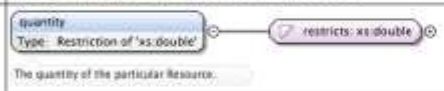
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	ResourceQuantityType
Properties	content complex maxOccurs unbounded
Model	resourceKind , quantity , resourceSize , comments{0,1}
Children	comments, quantity, resourceKind, resourceSize
Instance	<resourceNeed xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <resourceKind>{1,1}</resourceKind> <quantity>{1,1}</quantity> <resourceSize xPath="">{1,1}</resourceSize> <comments>{0,1}</comments> </resourceNeed>

Element ResourceQuantityType / resourceKind

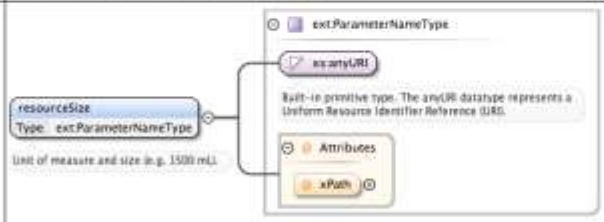
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The kind (type) of resource that the quantity refers to. TODO: Provide the URI and key-value.

Diagram	
Type	ct: ValueKeyType
Properties	content complex
Model	ct:valueListURI , ct:value
Children	ct:value, ct:valueListURI
Instance	<resourceKind xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:edxl-ct="urn:oasis:names:tc:emergency:edxl:ct:1.0"> <edxl-ct:valueListURI>{1,1}</edxl-ct:valueListURI> <edxl-ct:value>{1,1}</edxl-ct:value> </resourceKind>

Element ResourceQuantityType / quantity

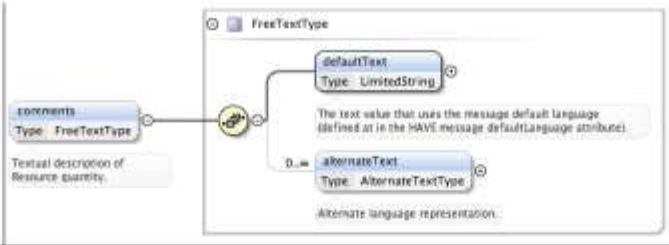
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The quantity of the particular Resource.
Diagram	
Type	restriction of xs:double
Properties	content simple
Facets	minInclusive 0

Element ResourceQuantityType / resourceSize

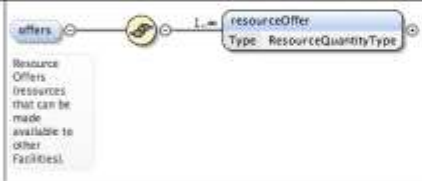
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Unit of measure and size (e.g. 1500 mL).
Diagram	
Type	ext: ParameterNameType
Properties	content complex
Attributes	QName: xPath; Type: xs:string; Use: optional

Element ResourceQuantityType / comments

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Textual description of Resource quantity.

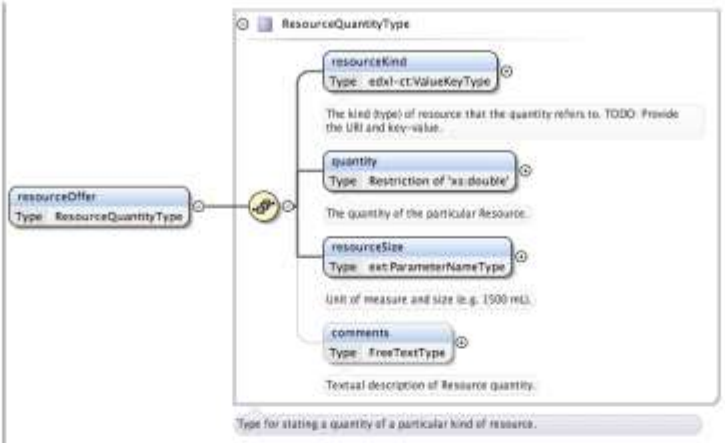
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comments xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comments>

Element ResourceInformationType / offers

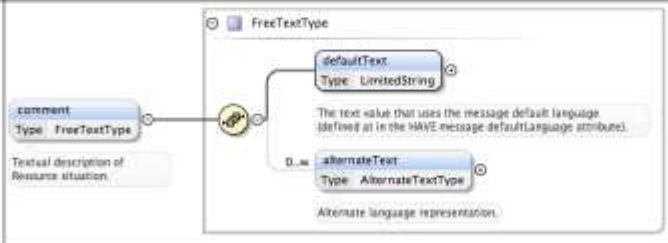
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Resource Offers (resources that can be made available to other Facilities).
Diagram	
Properties	content complex minOccurs 0
Model	resourceOffer+
Children	resourceOffer
Instance	<offers xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <resourceOffer>{1,unbounded}</resourceOffer> </offers>

Element ResourceInformationType / offers / resourceOffer

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

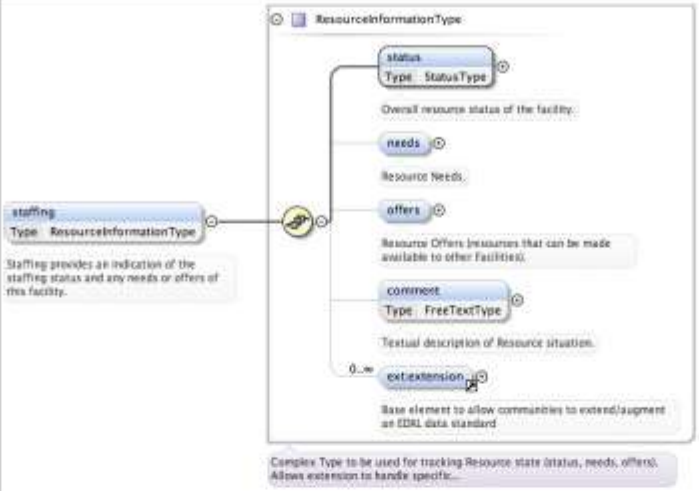
Diagram	
Type	ResourceQuantityType
Properties	content complex maxOccurs unbounded
Model	resourceKind , quantity , resourceSize , comments{0,1}
Children	comments, quantity, resourceKind, resourceSize
Instance	<resourceOffer xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <resourceKind>{1,1}</resourceKind> <quantity>{1,1}</quantity> <resourceSize xPath="">{1,1}</resourceSize> <comments>{0,1}</comments> </resourceOffer>

Element ResourceInformationType / comment

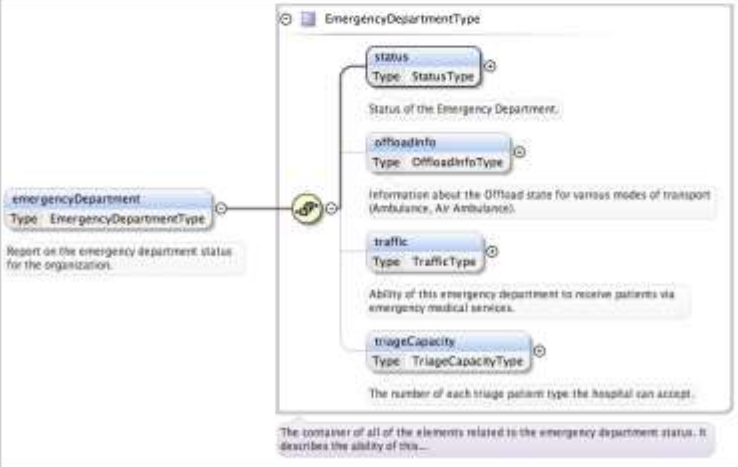
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Textual description of Resource situation.
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0 maxOccurs 1
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>

Element FacilityType / staffing

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

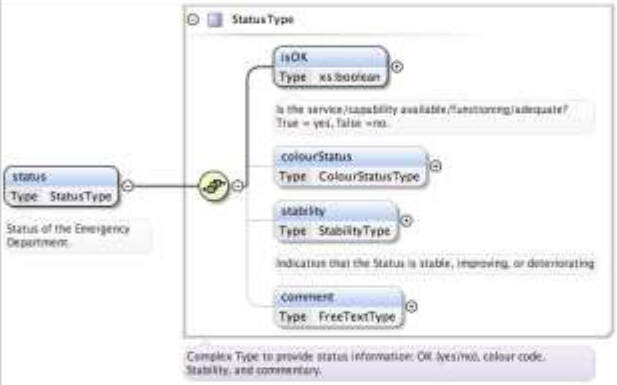
Annotations	Staffing provides an indication of the staffing status and any needs or offers of this facility.
Diagram	
Type	ResourceInformationType
Properties	content complex minOccurs 0
Model	status , needs{0,1} , offers{0,1} , comment{0,1} , ext:extension*
Children	comment, ext:extension, needs, offers, status
Instance	<staffing xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ext="urn:oasis:names:tc:emergency:edxl:extension <status>{1,1}</status> <needs>{0,1}</needs> <offers>{0,1}</offers> <comment>{0,1}</comment> <ext:extension>{0,unbounded}</ext:extension> </staffing>

Element FacilityType / emergencyDepartment

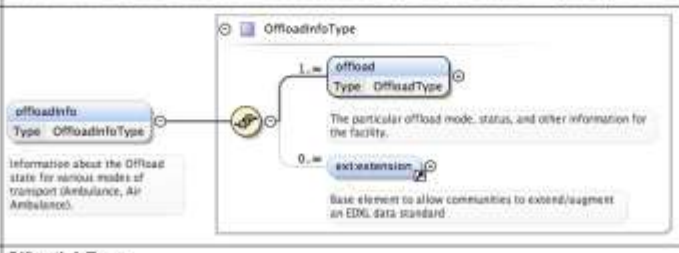
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Report on the emergency department status for the organization.
Diagram	
Type	EmergencyDepartmentType

Properties	content	complex
	minOccurs	0
Model	status , offloadInfo{0,1} , traffic{0,1} , triageCapacity{0,1}	
Children	offloadInfo, status, traffic, triageCapacity	
Instance	<emergencyDepartment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <status>{1,1}</status> <offloadInfo>{0,1}</offloadInfo> <traffic>{0,1}</traffic> <triageCapacity>{0,1}</triageCapacity> </emergencyDepartment>	

Element EmergencyDepartmentType / status

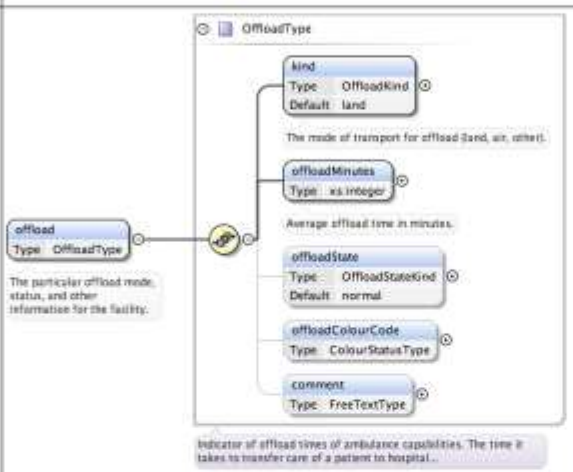
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Status of the Emergency Department.
Diagram	
Type	StatusType
Properties	content complex minOccurs 1
Model	isOK , colourStatus{0,1} , stability{0,1} , comment{0,1}
Children	colourStatus, comment, isOK, stability
Instance	<status xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <isOK>{1,1}</isOK> <colourStatus>{0,1}</colourStatus> <stability>{0,1}</stability> <comment>{0,1}</comment> </status>

Element EmergencyDepartmentType / offloadInfo

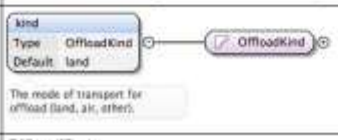
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Information about the Offload state for various modes of transport (Ambulance, Air Ambulance).
Diagram	
Type	OffloadInfoType
Properties	content complex

	minOccurs 0
Model	offload+ , ext:extension*
Children	ext:extension, offload
Instance	<offloadInfo xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ext="urn:oasis:names:tc:emergency:edxl:exten <offload>{1,unbounded}</offload> <ext:extension>{0,unbounded}</ext:extension> </offloadInfo>

Element offloadInfoType / offload

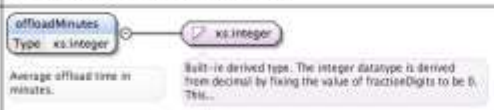
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The particular offload mode, status, and other information for the facility.
Diagram	
Type	OffloadType
Properties	content complex minOccurs 1 maxOccurs unbounded
Model	kind , offloadMinutes , offloadState{0,1} , offloadColourCode{0,1} , comment{0,1}
Children	comment, kind, offloadColourCode, offloadMinutes, offloadState
Instance	<offload xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <kind>{1,1}</kind> <offloadMinutes>{1,1}</offloadMinutes> <offloadState>{0,1}</offloadState> <offloadColourCode>{0,1}</offloadColourCode> <comment>{0,1}</comment> </offload>

Element offloadType / kind

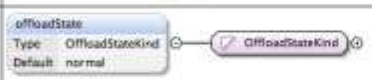
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The mode of transport for offload (land, air, other).
Diagram	
Type	OffloadKind
Properties	content simple default land

Facets	enumeration	land
	enumeration	air
	enumeration	other

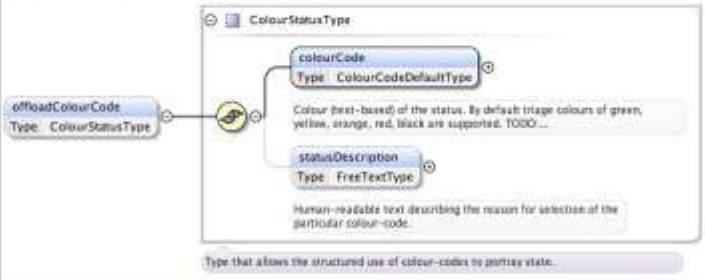
Element offloadType / offloadMinutes

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Average offload time in minutes.
Diagram	
Type	xs:integer
Properties	content: simple minOccurs: 1 maxOccurs: 1

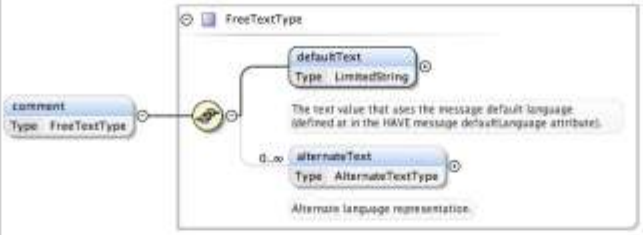
Element offloadType / offloadState

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	OffloadStateKind
Properties	content: simple minOccurs: 0 default: normal
Facets	enumeration: normal enumeration: delayed

Element offloadType / offloadColourCode

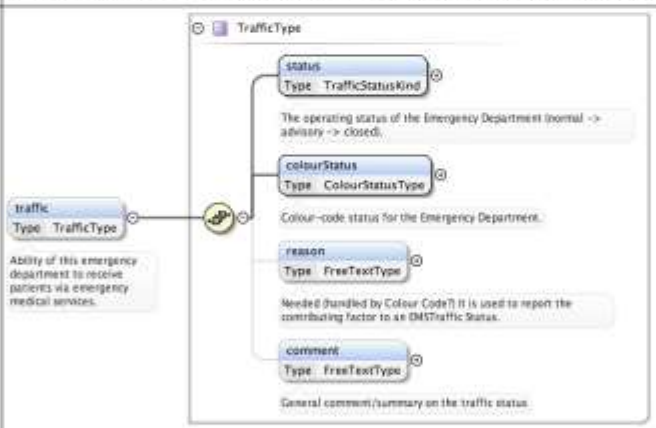
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	ColourStatusType
Properties	content: complex minOccurs: 0
Model	colourCode , statusDescription{0,1}
Children	colourCode, statusDescription
Instance	<offloadColourCode xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <colourCode>{1,1}</colourCode> <statusDescription>{0,1}</statusDescription> </offloadColourCode>

Element `OffloadType / comment`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0
Model	defaultText , alternateText*
Children	alternateText, defaultText

Instance	`<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0">`
	`<defaultText>{1,1}</defaultText>`
	`<alternateText language="">{0,unbounded}</alternateText>`
	`</comment>`

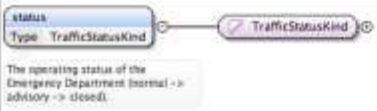
Element `EmergencyDepartmentType / traffic`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Ability of this emergency department to receive patients via emergency medical services.
Diagram	
Type	TrafficType
Properties	content complex minOccurs 0
Model	status , colourStatus , reason{0,1} , comment{0,1}
Children	colourStatus, comment, reason, status

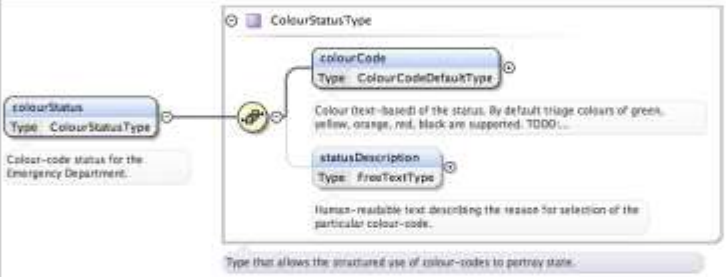
Instance	`<traffic xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0">`
	`<status>{1,1}</status>`
	`<colourStatus>{1,1}</colourStatus>`
	`<reason>{0,1}</reason>`
	`<comment>{0,1}</comment>`
	`</traffic>`

Element `TrafficType / status`

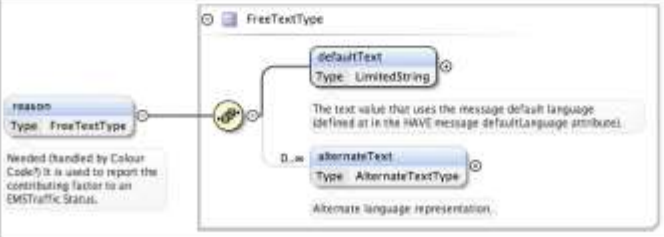
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

Annotations	The operating status of the Emergency Department (normal -> advisory -> closed).		
Diagram			
Type	TrafficStatusKind		
Properties	content	simple	
Facets	enumeration	normal	Traffic is at levels that are within norms.
	enumeration	advisory	Traffic levels are high enough to warrant notifying the community that the facility is experiencing higher than expected traffic.
	enumeration	closed	Facility is not accepting patient traffic.

Element TrafficType / colourStatus

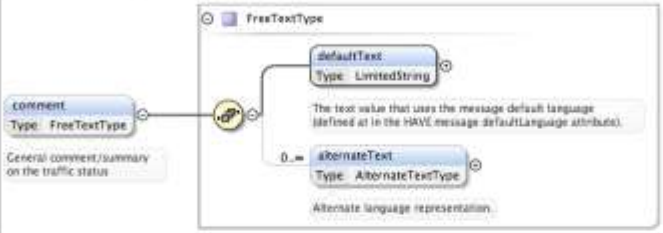
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Annotations	Colour-code status for the Emergency Department.		
Diagram			
Type	ColourStatusType		
Properties	content	complex	
Model	colourCode , statusDescription{0,1}		
Children	colourCode, statusDescription		
Instance	<colourStatus xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <colourCode>{1,1}</colourCode> <statusDescription>{0,1}</statusDescription> </colourStatus>		

Element TrafficType / reason

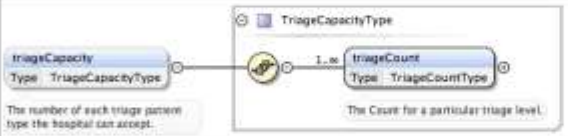
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Annotations	Needed (handled by Colour Code?) It is used to report the contributing factor to an EMSTraffic Status.		
Diagram			
Type	FreeTextType		
Properties	content	complex	
	minOccurs	0	

Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<reason xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </reason>

Element TrafficType / comment

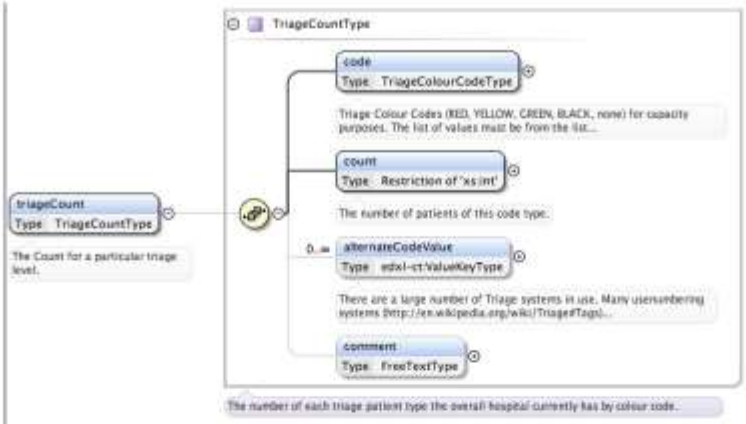
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	General comment/summary on the traffic status
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>

Element EmergencyDepartmentType / triageCapacity

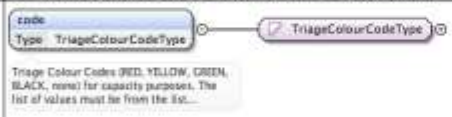
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The number of each triage patient type the hospital can accept.
Diagram	
Type	TriageCapacityType
Properties	content complex minOccurs 0
Model	triageCount+
Children	triageCount
Instance	<triageCapacity xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <triageCount>{1,unbounded}</triageCount> </triageCapacity>

Element TriageCapacityType / triageCount

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The Count for a particular triage level.

Diagram	
Type	TriageCountType
Properties	content complex minOccurs 1 maxOccurs unbounded
Model	code , count , alternateCodeValue* , comment{0,1}
Children	alternateCodeValue, code, comment, count
Instance	<triageCount xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <code>{1,1}</code> <count>{1,1}</count> <alternateCodeValue>{0,unbounded}</alternateCodeValue> <comment>{0,1}</comment> </triageCount>

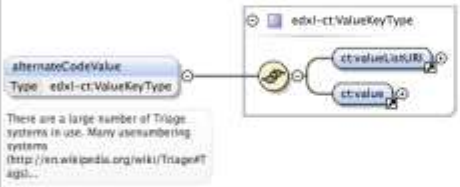
Element TriageCountType / code

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Annotations	Triage Colour Codes (RED, YELLOW, GREEN, BLACK, none) for capacity purposes. The list of values must be from the list identified in TriageCodeListURN. Default Values - red: Number of victims with immediate needs - yellow: Number of victims with delayed needs - green: Number of victims with minor needs - black: Number of deceased victims. If a TriageCountType/code value is specified, a TriageCountType/count element must be specified.		
Diagram			
Type	TriageColourCodeType		
Type hierarchy	• xs:token • ct:EDXLStringType • TriageColourCodeType		
Properties	content simple		
Facets	minLength 1		
	maxLength 1023		
	enumeration red		RED Triage - Immediate attention for Triage.
	enumeration yellow		YELLOW Triage - Needs medical attention after RED/Immediate.
	enumeration green		GREEN Triage - Walking wounded or self-treatable
	enumeration black		BLACK Triage - Lost/Dead

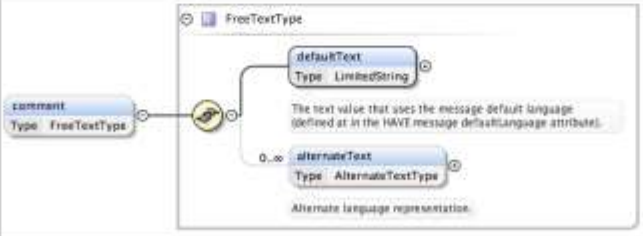
Element TriageCountType / count

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The number of patients of this code type.
Diagram	
Type	restriction of xs:int
Properties	content simple
Facets	minInclusive 0

Element TriageCountType / alternateCodeValue

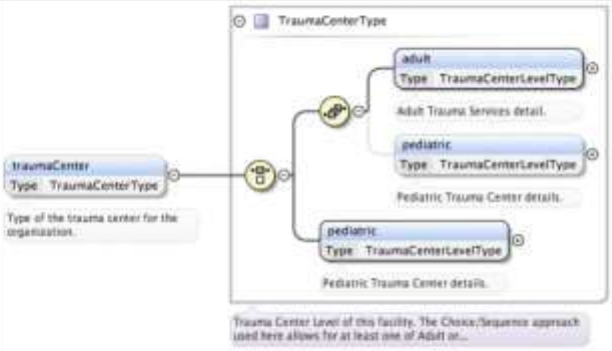
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	There are a large number of Triage systems in use. Many usenumbering systems (http://en.wikipedia.org/wiki/Triage#Tags) and colours. The premise of HAVE is that we will share the general state with the broad emergency management community who may not know the intimate details of a triage system, but understand the general concepts that RED=urgent, Green=walking wounded, Black=Dead/Lost (already dead or untreatable). The alternateCodeValues element is intended to be used by these systems. Providing the ValueListURI and Value will allow mapping of external systems to the base HAVE Triage colour codes.
Diagram	
Type	ct:ValueKeyType
Properties	content complex minOccurs 0 maxOccurs unbounded
Model	ct:valueListURI , ct:value
Children	ct:value, ct:valueListURI
Instance	<alternateCodeValue xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:edxl-ct="urn:oasis:names:tc:emergency:edxl:ct:1.0"> <edxl-ct:valueListURI>{1,1}</edxl-ct:valueListURI> <edxl-ct:value>{1,1}</edxl-ct:value> </alternateCodeValue>

Element TriageCountType / comment

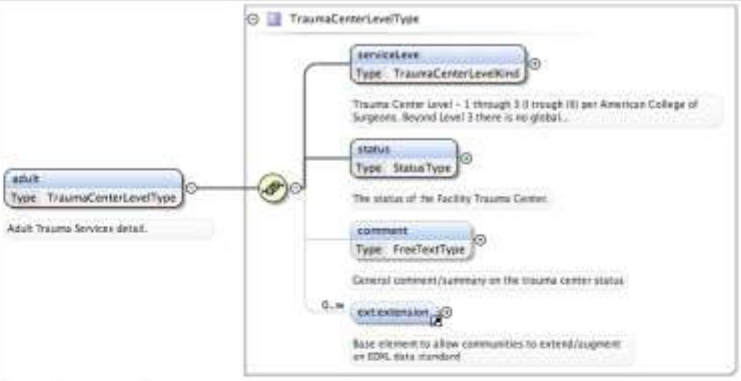
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0 maxOccurs 1

Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText language="">{0,unbounded}</alternateText> </comment>

Element FacilityType / traumaCenter

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Type of the trauma center for the organization.
Diagram	
Type	TraumaCenterType
Properties	content complex minOccurs 0
Model	(adult , pediatric{0,1}) | pediatric
Children	adult, pediatric
Instance	<traumaCenter xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <adult>{1,1}</adult> <pediatric>{0,1}</pediatric> <pediatric>{1,1}</pediatric> </traumaCenter>

Element TraumaCenterType / adult

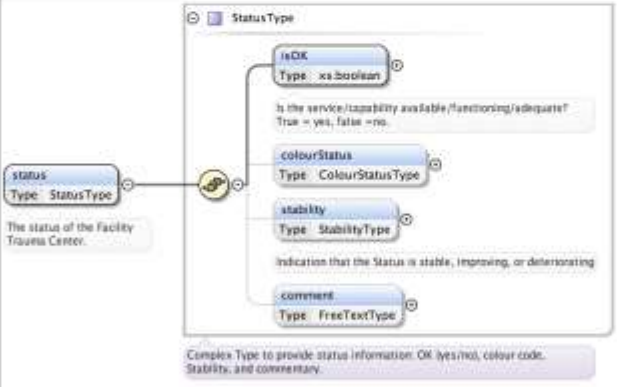
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Adult Trauma Services detail.
Diagram	
Type	TraumaCenterLevelType
Properties	content complex

Model	serviceLevel , status , comment{0,1} , ext:extension*
Children	comment, ext:extension, serviceLevel, status
Instance	<adult xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ext="urn:oasis:names:tc:emergency:edxl:extension:1 <serviceLevel>{1,1}</serviceLevel> <status>{1,1}</status> <comment>{0,1}</comment> <ext:extension>{0,unbounded}</ext:extension> </adult>

Element TraumaCenterLevelType / serviceLevel

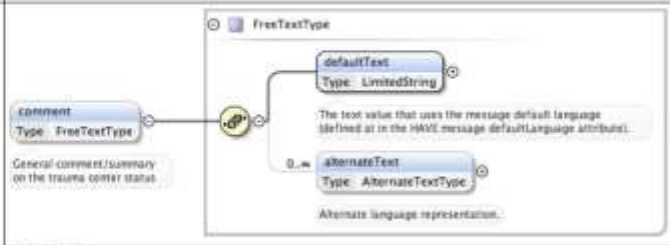
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Annotations	Trauma Center Level - 1 through 3 (I trough III) per American College of Surgeons. Beyond Level 3 there is no global standard but this is a good first approximation.		
Diagram			
Type	TraumaCenterLevelKind		
Properties	content	simple	
Facets	enumeration	level1	Level 1 Trauma Services
	enumeration	level2	Level 2 Trauma Services
	enumeration	level3	Level 3 Trauma Services
	enumeration	no-trauma	Level 4 Trauma Services

Element TraumaCenterLevelType / status

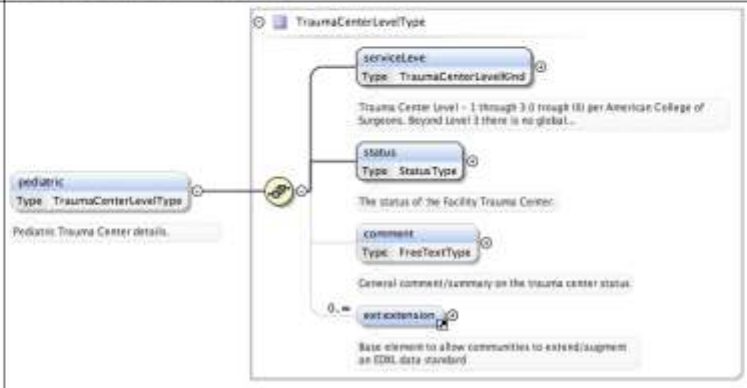
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The status of the Facility Trauma Center.
Diagram	
Type	StatusType
Properties	content complex
Model	isOK , colourStatus{0,1} , stability{0,1} , comment{0,1}
Children	colourStatus, comment, isOK, stability
Instance	<status xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <isOK>{1,1}</isOK> <colourStatus>{0,1}</colourStatus> <stability>{0,1}</stability> <comment>{0,1}</comment> </status>

Element TraumaCenterLevelType / comment

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

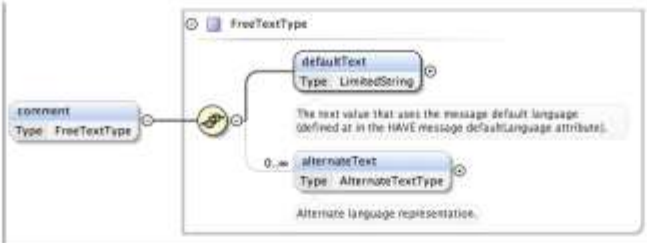
Annotations	General comment/summary on the trauma center status
Diagram	
Type	FreeTextType
Properties	content: complex minOccurs: 0 maxOccurs: 1
Model	defaultText , alternateText*
Children	alternateText, defaultText
Instance	<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0"> <defaultText>{1,1}</defaultText> <alternateText xml:lang="">{0,unbounded}</alternateText> </comment>

Element TraumaCenterType / pediatric

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Pediatric Trauma Center details.
Diagram	
Type	TraumaCenterLevelType
Properties	content: complex minOccurs: 0
Model	serviceLevel , status , comment{0,1} , ext:extension*
Children	comment, ext:extension, serviceLevel, status
Instance	<pediatric xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0" xmlns:ext="urn:oasis:names:tc:emergency:edxl:extensi <serviceLevel>{1,1}</serviceLevel> <status>{1,1}</status> <comment>{0,1}</comment> <ext:extension>{0,unbounded}</ext:extension> </pediatric>

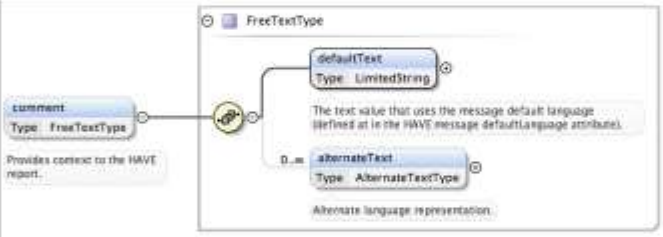
Element FacilityType / comment

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0
Model	defaultText , alternateText*
Children	alternateText, defaultText

Instance	`<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0">`
	`  <defaultText>{1,1}</defaultText>`
	`  <alternateText language="">{0,unbounded}</alternateText>`
	`</comment>`

Element HAVE / comment

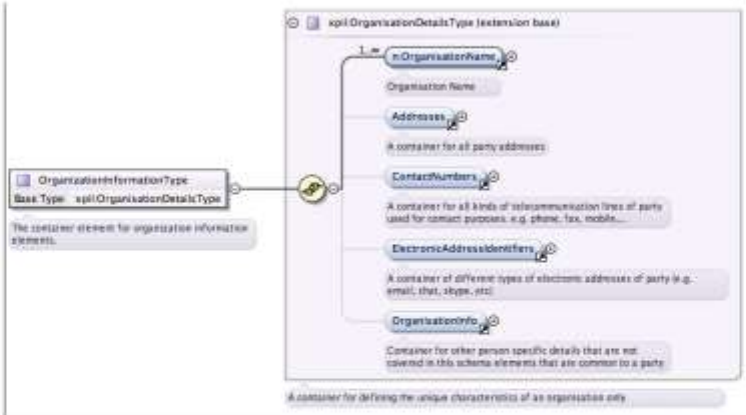
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Provides context to the HAVE report.
Diagram	
Type	FreeTextType
Properties	content complex minOccurs 0
Model	defaultText , alternateText*
Children	alternateText, defaultText

Instance	`<comment xmlns="urn:oasis:names:tc:emergency:edxl:have:2.0">`
	`  <defaultText>{1,1}</defaultText>`
	`  <alternateText language="">{0,unbounded}</alternateText>`
	`</comment>`

Complex Type(s)

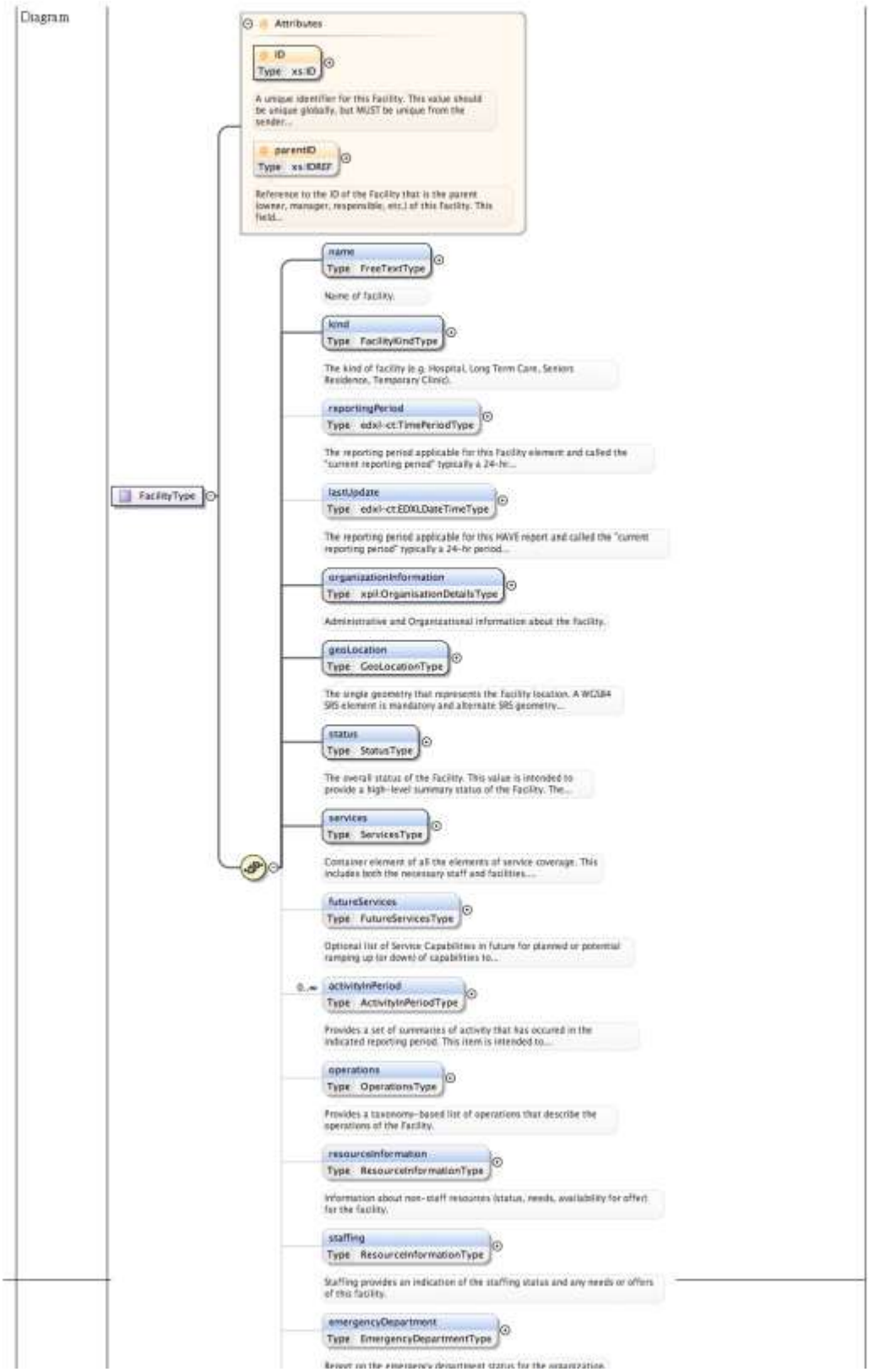
Complex Type OrganizationInformationType

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The container element for organization information elements.

Diagram	
Type	extension of OrganisationDetailsType
Type hierarchy	• OrganisationDetailsType • OrganizationInformationType
Used by	Element HAVE/organizationInformation
Model	OrganisationName+ , Addresses{0,1} , ContactNumbers{0,1} , ElectronicAddressIdentifiers{0,1} , OrganisationInfo{0,1}
Children	Addresses, ContactNumbers, ElectronicAddressIdentifiers, OrganisationInfo, OrganisationName

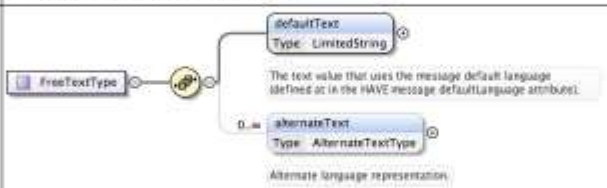
Complex Type `FacilityType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

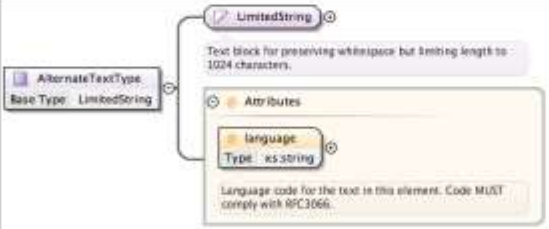


Used by	Element	HAVE/facility		
Model	name , kind , reportingPeriod{0,1} , lastUpdate{0,1} , organizationInformation , geoLocation , status , services , futureServices{0,1} , activityInPeriod* , operations{0,1} , resourceInformation{0,1} , staffing{0,1} , emergencyDepartment{0,1} , traumaCenter{0,1} , comment{0,1}			
Children	activityInPeriod, comment, emergencyDepartment, futureServices, geoLocation, kind, lastUpdate, name, operations, organizationInformation, reportingPeriod, resourceInformation, services, staffing, status, traumaCenter			
Attributes	**QName**	**Type**	**Use**	
	ID	xs:ID	required	
		A unique identifier for this Facility. This value should be unique globally, but MUST be unique from the sender perspective.		
	parentID	xs:IDREF	optional	
		Reference to the ID of the Facility that is the parent (owner, manager, responsible, etc.) of this Facility. This field is optional and used to provide a hierarchy for formal facility organizations.		

Complex Type `FreeTextType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Diagram		
Used by	Elements	ActivityInPeriodType/comment, BedCapacityType/comment, ColourStatusType/statusDescription, FacilityType/comment, FacilityType/name, FutureServicesType/comment, HAVE/comment, OffloadType/comment, OperationsType/comment, OperationType/name, OperationsType/comment, ResourceInformationType/comment, ResourceQuantityType/comments, ServiceType/comment, ServiceType/name, ServicesType/comment, StatusType/comment, TrafficType/comment, TrafficType/reason, TraumaCenterLevelType/comment, TriageCountType/comment
Model	defaultText , alternateText*	
Children	alternateText, defaultText	

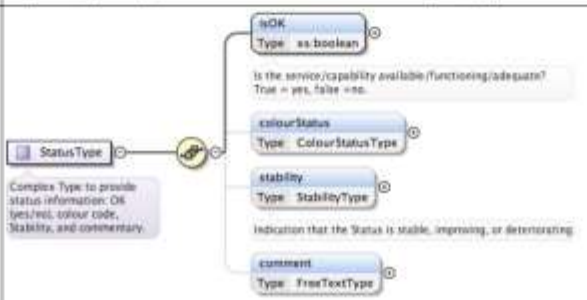
Complex Type `AlternateTextType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0			
Diagram				
Type	extension of LimitedString			
Type hierarchy	• xs:string • LimitedString • AlternateTextType			
Used by	Element	FreeTextType/alternateText		
Attributes	**QName**	**Type**	**Use**	
	language	xs:string	required	
		Language code for the text in this element. Code MUST comply with RFC3066.		

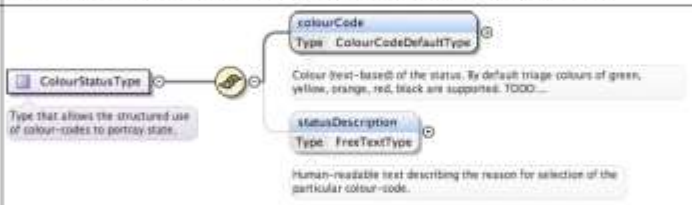
Complex Type GeoLocationType

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Used by	Element FacilityType/geoLocation
Model	wgs84Location , geoLocationExtended*
Children	geoLocationExtended, wgs84Location

Complex Type StatusType

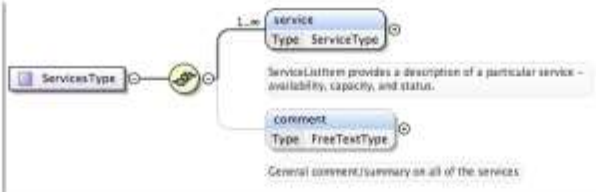
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Complex type to provide status information: OK (yes/no), colour code, Stability, and commentary.
Diagram	
Used by	Elements EmergencyDepartmentType/status, FacilityType/status, OperationType/status, ResourceInformationType/status, ServiceType/status, TraumaCenterLevelType/status
Model	isOK , colourStatus{0,1} , stability{0,1} , comment{0,1}
Children	colourStatus, comment, isOK, stability

Complex Type ColourStatusType

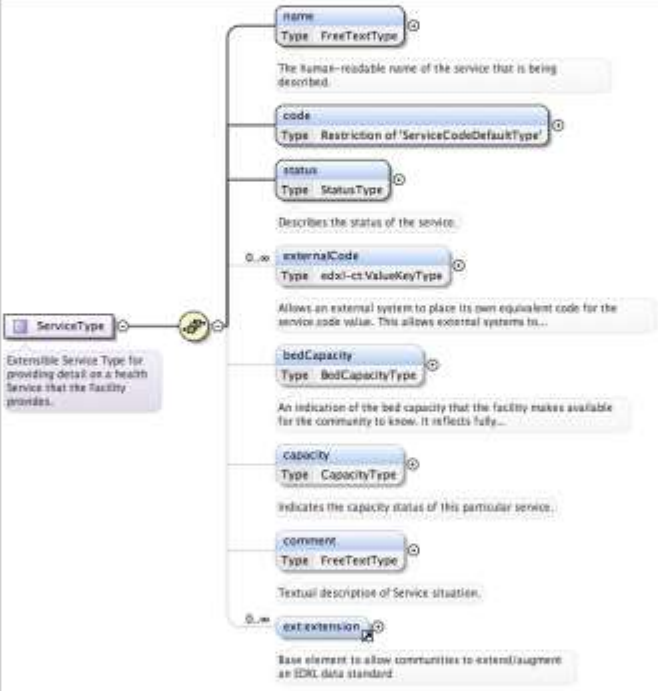
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Type that allows the structured use of colour-codes to portray state.
Diagram	
Used by	Elements OffloadType/offloadColourCode, StatusType/colourStatus, TrafficType/colourStatus
Model	colourCode , statusDescription{0,1}
Children	colourCode, statusDescription

Complex Type ServicesType

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

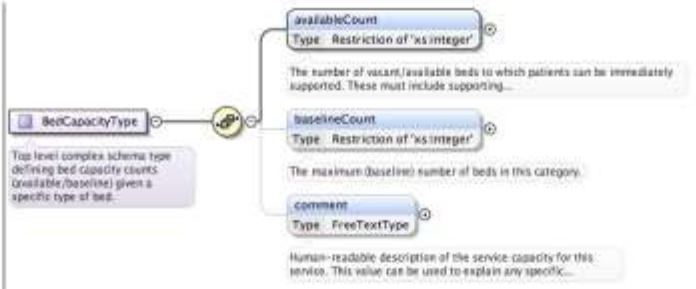
Diagram	
Used by	Element FacilityType/services
Model	service+ , comment{0,1}
Children	comment, service

Complex Type `ServiceType`

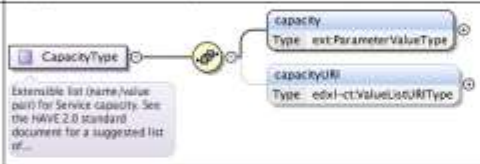
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	`Extensible Service Type for providing detail on a health Service that the Facility provides.`
Diagram	
Used by	Elements FutureServicesType/service, ServicesType/service
Model	name , code , status , externalCode* , bedCapacity{0,1} , capacity{0,1} , comment{0,1} , ext:extension*
Children	bedCapacity, capacity, code, comment, ext:extension, externalCode, name, status

Complex Type `BedCapacityType`

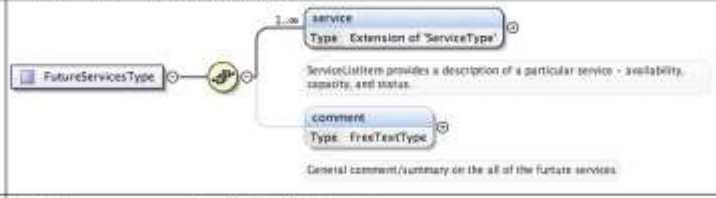
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	`Top level complex schema type defining bed capacity counts (available/baseline) given a specific type of bed.`

Diagram	
Used by	Element ServiceType/bedCapacity
Model	availableCount , baselineCount{0,1} , comment{0,1}
Children	availableCount, baselineCount, comment

Complex Type `CapacityType`

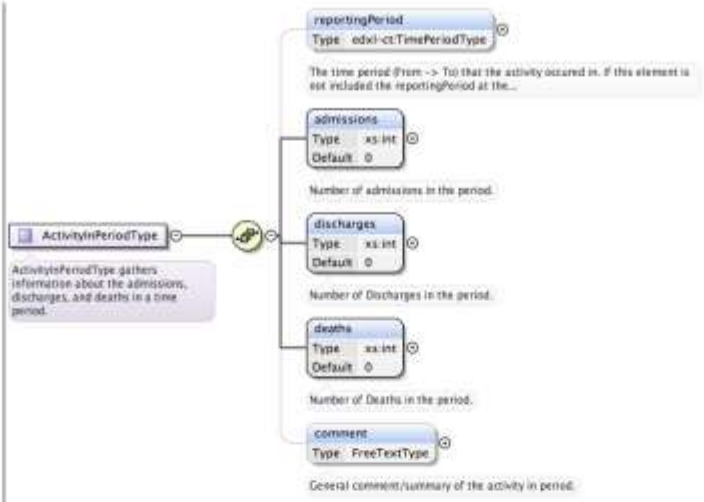
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Extensible list (name/value pair) for Service capacity. See the HAVE 2.0 standard document for a suggested list of capacities.
Diagram	
Used by	Element ServiceType/capacity
Model	capacity , capacityURI{0,1}
Children	capacity, capacityURI

Complex Type `FutureServicesType`

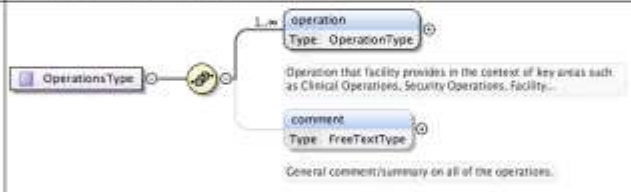
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Used by	Element FacilityType/futureServices
Model	service+ , comment{0,1}
Children	comment, service

Complex Type `ActivityInPeriodType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	ActivityInPeriodType gathers information about the admissions, discharges, and deaths in a time period.

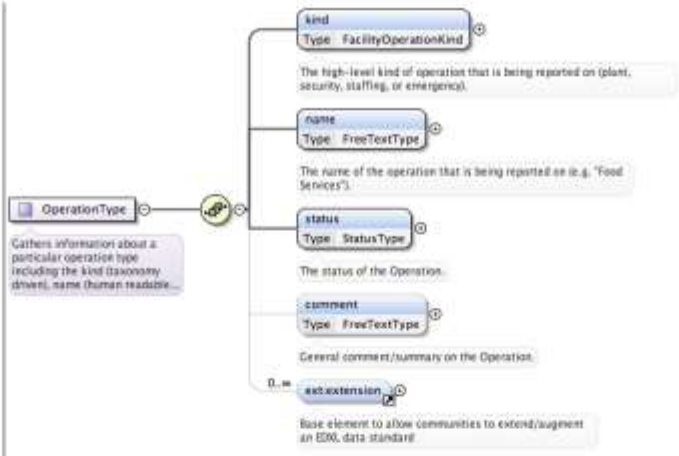
Diagram	
Used by	Element FacilityType/activityInPeriod
Model	reportingPeriod{0,1} , admissions , discharges , deaths , comment{0,1}
Children	admissions, comment, deaths, discharges, reportingPeriod

Complex Type `OperationsType`

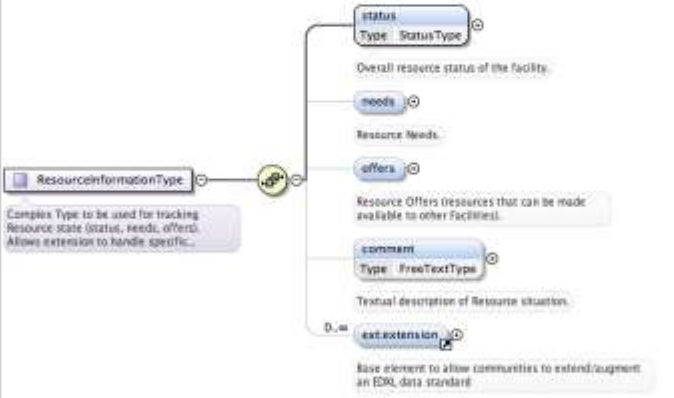
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Used by	Element FacilityType/operations
Model	operation+ , comment{0,1}
Children	comment, operation

Complex Type `OperationType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Gathers information about a particular operation type including the kind (taxonomy driven), name (human readable representations), status, and commentary.

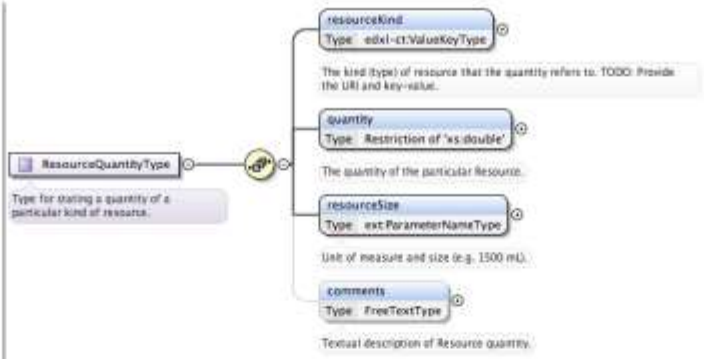
Diagram	
Used by	Element OperationsType/operation
Model	kind , name , status , comment{0,1} , ext:extension*
Children	comment, ext:extension, kind, name, status

Complex Type `ResourceInformationType`

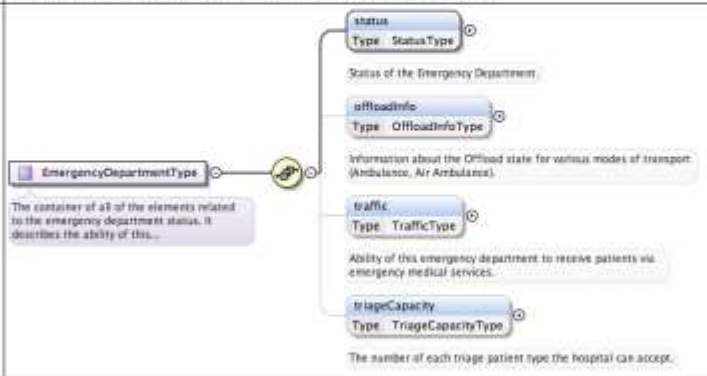
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	`Complex type to be used for tracking Resource state (status, needs, offers). Allows extension to handle specific information that is non-HAVE (e.g. NIEM payloads, lookups for interoperability with other systems).`
Diagram	
Used by	Elements FacilityType/resourceInformation, FacilityType/staffing
Model	status , needs{0,1} , offers{0,1} , comment{0,1} , ext:extension*
Children	comment, ext:extension, needs, offers, status

Complex Type `ResourceQuantityType`

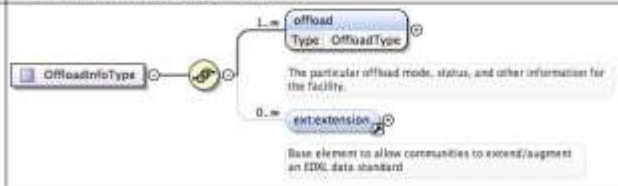
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	`Type for stating a quantity of a particular kind of resource.`

Diagram	
Used by	Elements ResourceInformationType/needs/resourceNeed, ResourceInformationType/offers/resourceOffer
Model	resourceKind , quantity , resourceSize , comments{0,1}
Children	comments, quantity, resourceKind, resourceSize

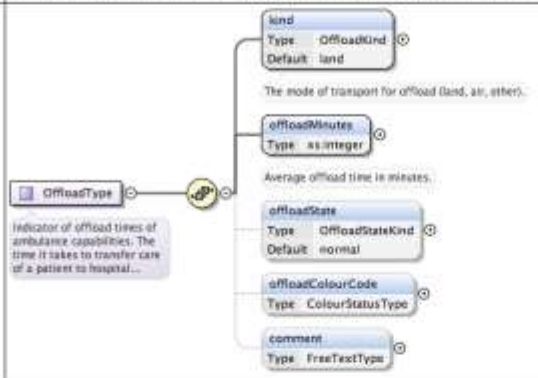
Complex Type `EmergencyDepartmentType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The container of all of the elements related to the emergency department status. It describes the ability of this emergency department to treat patients.
Diagram	
Used by	Element FacilityType/emergencyDepartment
Model	status , offloadInfo{0,1} , traffic{0,1} , triageCapacity{0,1}
Children	offloadInfo, status, traffic, triageCapacity

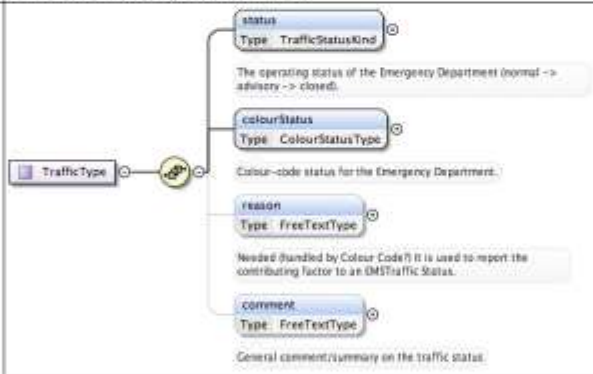
Complex Type `OffloadInfoType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Used by	Element EmergencyDepartmentType/offloadInfo
Model	offload+ , ext:extension*
Children	ext:extension, offload

Complex Type `OffloadType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Indicator of offload times of ambulance capabilities. The time it takes to transfer care of a patient to hospital staff, thereby freeing the transport for assignment.
Diagram	
Used by	Element OffloadInfoType/offload
Model	kind , offloadMinutes , offloadState{0,1} , offloadColourCode{0,1} , comment{0,1}
Children	comment, kind, offloadColourCode, offloadMinutes, offloadState

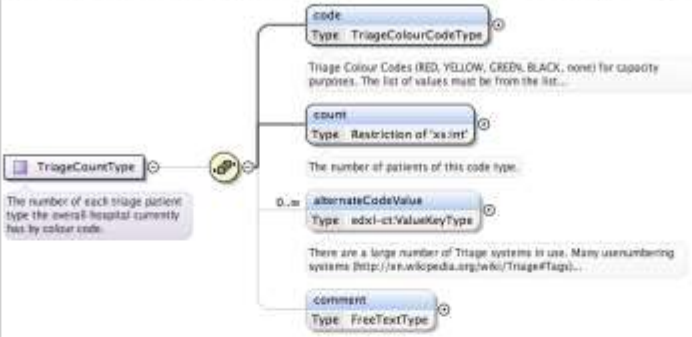
Complex Type `TrafficType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Used by	Element EmergencyDepartmentType/traffic
Model	status , colourStatus , reason{0,1} , comment{0,1}
Children	colourStatus, comment, reason, status

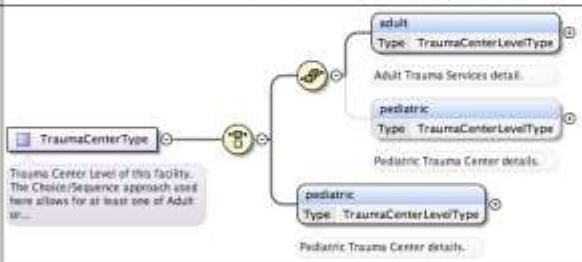
Complex Type `TriageCapacityType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Used by	Element EmergencyDepartmentType/triageCapacity
Model	triageCount+
Children	triageCount

Complex Type `TriageCountType`

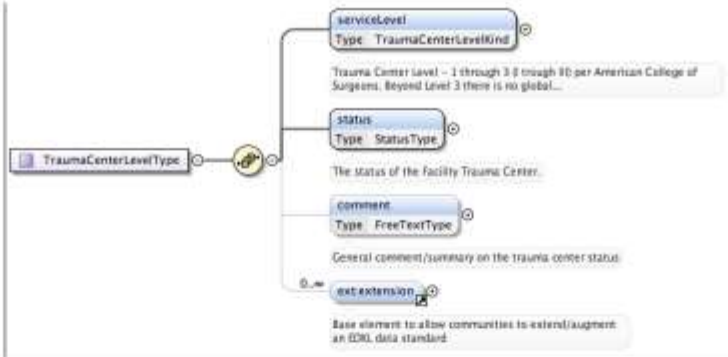
Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	The number of each triage patient type the overall hospital currently has by colour code.
Diagram	
Used by	Element TriageCapacityType/triageCount
Model	code , count , alternateCodeValue* , comment{0,1}
Children	alternateCodeValue, code, comment, count

Complex Type `TraumaCenterType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	Trauma Center Level of this facility. The Choice/Sequence approach used here allows for at least one of Adult or Pediatric Trauma Center Levels to be provided.
Diagram	
Used by	Element FacilityType/traumaCenter
Model	(adult , pediatric{0,1}) | pediatric
Children	adult, pediatric

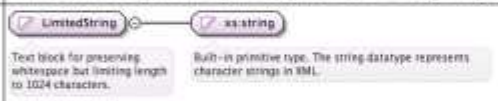
Complex Type `TraumaCenterLevelType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0

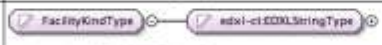
Diagram		
Used by	Elements	TraumaCenterType/adult, TraumaCenterType/pediatric
Model	serviceLevel , status , comment{0,1} , ext:extension*	
Children	comment, ext:extension, serviceLevel, status	

Simple Type(s)

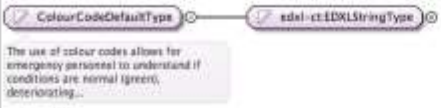
Simple Type `LimitedString`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Annotations	`Text block for preserving whitespace but limiting length to 1024 characters.`	
Diagram		
Type	restriction of xs:string	
Facets	whiteSpace	`preserve`
	maxLength	`1024`
Used by	Element	FreeTextType/defaultText
	Complex Type	AlternateTextType

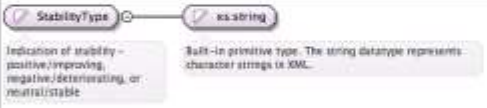
Simple Type `FacilityKindType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Diagram		
Type	restriction of ct:EDXLStringType	
Type hierarchy	• xs:token • ct:EDXLStringType • FacilityKindType	
Facets	minLength	`1`
	maxLength	`1023`
	enumeration	`hospital`
	enumeration	`longTermCare`
	enumeration	`urgentCareClinic`
	enumeration	`temporaryFacility`
	enumeration	`other`
Used by	Element	FacilityType/kind

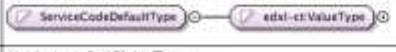
Simple Type ColourCodeDefaultType

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Annotations	The use of colour codes allows for emergency personnel to understand if conditions are normal (green), deteriorating (yellow), or in an exceptional mode (red). Colour codes can be rendered graphically or through text to support visual impairments.		
Diagram			
Type	restriction of ct:EDXLStringType		
Type hierarchy	• xs:token • ct:EDXLStringType • ColourCodeDefaultType		
Facets	minLength	1	
	maxLength	1023	
	enumeration	red	RED - severe/extreme deviation from normal condition. Marks a noted exception from normal conditions.
	enumeration	yellow	YELLOW - moderate deviation from normal condition but not at SEVERE/EXTREME level.
	enumeration	green	GREEN - normal conditions.
Used by	Element	ColourStatusType/colourCode	

Simple Type StabilityType

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Annotations	Indication of stability - positive/improving, negative/deteriorating, or neutral/stable		
Diagram			
Type	restriction of xs:string		
Facets	enumeration	stable	Stable/unchanging - conditions remain within norms and are not varying out of normal patterns.
	enumeration	improving	Conditions are improving towards normal.
	enumeration	deteriorating	Conditions are deviating negatively from normal.
Used by	Element	StatusType/stability	

Simple Type ServiceCodeDefaultType

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Diagram			
Type	restriction of ct:ValueType		
Type hierarchy	• xs:string • ct:ValueType • ServiceCodeDefaultType		
Facets	enumeration	airborneInfectionIsolation	
	enumeration	burnUnit	Burn Center services.
	enumeration	cardiology	Cardiology services.
	enumeration	cardiology.invasive	Cardiology with invasive capabilities.

	enumeration	cardiology.noninvasive	Cardiology with NO invasive capabilities.
	enumeration	cardiologymi.STEMI	STEMI support
	enumeration	cardiologymi.nonSTEMI	NO STEMI support
	enumeration	cardiology.telemetry	For remote monitoring of cardiology telemetry data for patient.
	enumeration	dialysis	Dialysis services
	enumeration	emergencyDepartment	
	enumeration	hyperBaricChamber	Hyperbaric Chamber
	enumeration	infectiousDisease	Infectious Disease Services
	enumeration	intensiveCare.adult	Adult ICU services.
	enumeration	intensiveCare.neonatal	Neonatal Intensive Care Unit (ICU) services.
	enumeration	intensiveCare.pediatric	Pediatric Intensive Care Unit (ICU) services.
	enumeration	intermediateCare	For low-risk, chronically or critically ill patients
	enumeration	neonatology	Neonatology
	enumeration	neurology	Neurology Services
	enumeration	neurology.invasive	Neurology-Invasive services, including invasive catheterization.
	enumeration	neurology.noninvasive	Neurology-Non-Invasive services with no invasive catheterization capability.
	enumeration	obgyn	OBGYN services
	enumeration	obgyn.withLaborDelivery	OBGYN with labor delivery.
	enumeration	obgyn.withoutLaborDelivery	OBGYN without labor delivery capabilities.
	enumeration	operatingRooms	
	enumeration	opthalmology	Opthalmology services
	enumeration	orthopedic	Orthopedic services
	enumeration	padiatrics	Pediatric services
	enumeration	psychiatric	Psychiatric services
	enumeration	surgery	Surgery capabilities
	enumeration	surgery.adultGeneral	General Adult surgery capabilities
	enumeration	surgery.pediatrics	General Pediatric surgery capabilities
	enumeration	surgery.orthopedics	Orthopedic surgery capabilities
	enumeration	surgery.neurosurgery	Neurosurgery capabilities
	enumeration	surgery.facial	Facial surgery capabilities
	enumeration	surgery.cardiothoracic	Cardiothoracic surgey capabilities
	enumeration	surgery.hand	Hand surgery capabilities
	enumeration	surgery.reimplantation	Reimplantation surgery capabilities.
	enumeration	surgery.spinal	Spinal surgery capabilities
	enumeration	surgery.vascular	Vascular surgery capabilities
	enumeration	surgery.anesthesia	Anesthesia services
	enumeration	traumaCenter	Trauma Center
Used by	Element	ServiceType/code	

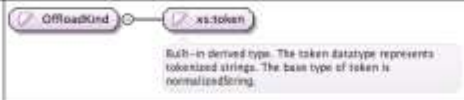
Simple Type FacilityOperationKind

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	restriction of xs:token

Facets			
	enumeration	plant	Plant - the key equipment and capabilities needed to operate the facility (e.g. HVAC, cafeteria).

	enumeration	security	Security operations for facility (e.g. patrol, surveillance).
	enumeration	staffing	Staff-related operations (e.g. medical personnel, support staffing, administrative).
	enumeration	emergency	Emergency Department operations.
Used by	Element	OperationType/kind	

Simple Type `OffloadKind`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Diagram		
Type	restriction of xs:token	
Facets	enumeration	land
	enumeration	air
	enumeration	other
Used by	Element	OffloadType/kind

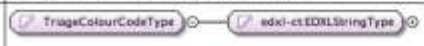
Simple Type `OffloadStateKind`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Diagram		
Type	restriction of xs:token	
Facets	enumeration	normal
	enumeration	delayed
Used by	Element	OffloadType/offloadState

Simple Type `TrafficStatusKind`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Diagram			
Type	restriction of xs:token		
Facets	enumeration	normal	Traffic is at levels that are within norms.
	enumeration	advisory	Traffic levels are high enough to warrant notifying the community that the facility is experiencing higher than expected traffic.
	enumeration	closed	Facility is not accepting patient traffic.
Used by	Element	TrafficType/status	

Simple Type `TriageColourCodeType`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Diagram	
Type	restriction of ct:EDXLStringType
Type hierarchy	• xs:token

	• ct:EDXLStringType • TriageColourCodeType		
Facets	minLength	1	
	maxLength	1023	
	enumeration	red	RED Triage - Immediate attention for Triage.
	enumeration	yellow	YELLOW Triage - Needs medical attention after RED/Immediate.
	enumeration	green	GREEN Triage - Walking wounded or self-treatable
	enumeration	black	BLACK Triage - Lost/Dead
Used by	Element	TriageCountType/code	

Simple Type `TraumaCenterLevelKind`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0		
Diagram			
Type	restriction of xs:token		
Facets	enumeration	level1	Level 1 Trauma Services
	enumeration	level2	Level 2 Trauma Services
	enumeration	level3	Level 3 Trauma Services
	enumeration	no-trauma	Level 4 Trauma Services
Used by	Element	TraumaCenterLevelType/serviceLevel	

Attribute(s)

Attribute `AlternateTextType / @language`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Annotations	Language code for the text in this element. Code MUST comply with RFC3066.	
Type	xs:string	
Properties	use	required
Used by	Complex Type	AlternateTextType

Attribute `GeoLocationType / wgs84Location / @srsName`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Properties	use	required
	fixed	http://www.opengis.net/def/crs/EPSG/0/4326
Used by	Element	GeoLocationType\wgs84Location

Attribute `GeoLocationType / geoLocationExtended / @srsName`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Properties	use	required
Used by	Element	GeoLocationType/geoLocationExtended

Attribute `FacilityType / @ID`

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0
Annotations	A unique identifier for this Facility. This value should be unique globally, but MUST be unique from the sender perspective.

Type	xs:ID	
Properties	use:	**required**
Used by	Complex Type	FacilityType

Attribute FacilityType / @parentID

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Annotations	Reference to the ID of the Facility that is the parent (owner, manager, responsible, etc.) of this Facility. This field is optional and used to provide a hierarchy for formal facility organizations.	
Type	xs:IDREF	
Properties	content:	**simple**
Used by	Complex Type	FacilityType

Attribute HAVE / @defaultLanguage

Namespace	urn:oasis:names:tc:emergency:edxl:have:2.0	
Annotations	Language code that is used throughout the document. Code MUST comply with RFC3066. Free text within the document will be assumed to be in this defaultLanguage.	
Type	xs:string	
Properties	use:	**required**
Used by	Element	HAVE

Appendix B. Acknowledgments

The HAVE Subcommittee is Chaired by Darrell O'Donnell who has worked tirelessly and through holidays to bring this specification to the EM-TC for approval and advancement to a Standard under the close guidance of the OASIS process. He has been ably assisted by Brian Wilkins who has also participated intently to bring this work to conclusion. The following individuals have participated in the subcommittee creating this specification and are gratefully acknowledged:

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Mike Gerber, NOAA's National Weather Service

Timothy Grapes, Individual

Robert Gustafson, MITRE Corporation

Steve Hakusa, Google Inc.

Gary Ham, Individual

Werner Joerg, Individual

Elysa Jones, Individual

Michael Kristan, MITRE Corporation

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Appendix C. Revision History

Revision	Date	Editor	Changes Made
WD02	23DEC2014	Darrell O'Donnell	Preparation for submission to OASIS EM-TC
WD02	13JAN2015	Darrell O'Donnell	Updates to reflect RIM (CT, CIQ, and GSF) working drafts.
CSD01	13JAN2014	Darrell O'Donnell	Updates to reflect EM TC Committee Specification Draft