RESOURCE AND PATIENT MANAGEMENT SYSTEM

C32/CCD Clinical Summary

(BJMD)

Technical Manual

Version 1.0 Patch 3
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Preface

The purpose of this manual is to provide technical information about the C32/CCD Clinical Summary v1.0 p3 (BJMD) package. The BJMD package is designed to generate industry standard Continuity of Care Documents (CCD) in Healthcare Information Technology Standards Panel (HITSP) C32 format (version 2.5 using C83 v2.0 rules). These documents can be transmitted to Indian Health Service (IHS) Health Information Exchange (HIE) C32 repositories and to the Electronic Health Record (EHR) Graphical User Interface (GUI) using web services.

Trademark Notice

1.0 Introduction

The C32/CCD Clinical Summary (BJMD) software is a component of the IHS Resource and Patient Management System (RPMS). It provides facilities for generating industry standard CCD in HITSP C32 format (version 2.5 using C83 v2.0 rules) CCD/C32 Clinical Summary documents are subsequently transmitted to IHS C32 repositories or to the EHR GUI using web services. C32/CCD Clinical Summary documents will be referred to as ***C32 documents*** and the C32/CCD Clinical Summary software will be referred to as the ***C32 software*** from this point on.

1.1 Purpose

C32 documents can serve a variety of purposes, including enabling clinician access to patient data in an emergency scenario, quality reporting, biosurveillance, patient access to the patient's own data via a Personal Health Record (PHR) system, and medication/allergy reconciliation.

Each C32 document consists of two components: a human readable part known as a ***Narrative Block***, which can be displayed by any web browser, and a machine-readable part intended for automated data processing. The machine readable part may contain more detailed information than the human readable part.

1.2 Scope

A C32 document is an XML (Extensible Markup Language) document summarizing current and pertinent historical information about an individual patient’s health care record at a given facility. The current IHS implementation of the C32 standard supports the following thirteen C32 modules:

- Allergies
- Conditions (Problems)
- Encounters
- Healthcare Providers
- Immunizations
- Information Source
- Insurance Providers
- Medications
- Person Information (Demographics)
- Procedures
- Results

- Support
- Vital Signs

1.3 Technical Information

This manual provides IHS site managers with a technical description of the BJMD routines, files, menus, cross references, globals, Caché classes, Ensemble productions, and other necessary information required to effectively manage the system.

All routines, files, options, Caché classes, and keys are namespaced, starting with the letters BJMD. The file number range for this package is 90601 – 90609.99. All C32 Caché and Ensemble classes, productions and data transformations are contained in Caché class package BJMD.

As part of this project, all FileMan files were mapped to Caché classes using InterSystems' FileMan-to-Class (FM2C) mapper. The resulting FileMan-derived classes are contained in Caché class package BFMC. The version of the FM2C tool that was used to generate BFMC classes was 1.18. Only one change was made to the InterSystems-provided version of FM2C: the point at which classes are split was changed from 900 properties to 400 properties. This change was needed to allow FM2C-generated classes to compile under Ensemble 2010.x. This change may not be needed under Ensemble 2012.x, which raised the maximum number of properties per class. The 400-property limit is used for all IHS-supported versions of Ensemble in order to eliminate the need to have multiple versions of the classes that are Ensemble-version dependent.

The following settings were used to create FM2C-generated classes:

```
set fmSettings("package")="BFMC"
set fmSettings("tableNameFormat")="<FILENAME>_<FILENUMBER>"
set fmSettings("childTableNameFormat")="SUB_<FILENAME>_<FILENUMBER>"
do $SYSTEM.OBJ.FM2Class.All(.fmSettings,.classCount)
```

1.4 Architecture

C32 processing can be initiated in one of two ways. If EHR v1.1 p8 has been installed and configured at the site, then authorized EHR users will be able to request C32 documents for display within the EHR GUI client. If the site is a part of the IHS HIE, then C32 documents will be generated nightly for all patients whose data has changed during the previous 24 hours and sent to the IHS HIE C32 repositories.

To accommodate requests from the EHR GUI, Ensemble has a web services process listening for requests for C32 documents. When Ensemble receives a request, it creates a new entry in the C32 queue, records the ID of the patient for whom a C32 document was requested, and sets the entry status to **R** (for ***Request***).

If the site is a part of the IHS HIE, a nightly TaskMan task called **BJMD NHIE PUSH JOB** is automatically scheduled to run every night at the time specified by the site manager in option **Edit C Messaging Site Parameters**. When this task runs, it finds all patients whose data has changed since the last time it ran and creates new requests in the C32 queue.

Note:	When **BJMD NHIE PUSH JOB** runs for the first time, it creates new C32 requests for *all* patients in the RPMS database.

The only difference between C32 requests created by these two mechanisms is that requests created by **BJMD NHIE PUSH JOB** have a special flag in the body of the request so that Ensemble knows where to send the resulting C32 document.

The C32 queue is monitored by **BJMD BACKGROUND JOB**, the main C32 generator. It is a persistent TaskMan job started at TaskMan startup time or manually from menu option **Manage C Messaging transmissions**. It constantly runs in the background until the site manager chooses to stop C Messaging. Once this TaskMan job finds a new C32 request with the status of **R** in the C32 queue, it changes the request's status to **CS** (for Compile Started.) It then extracts all relevant RPMS data for the specified patient and adds it to the body of the C32 request. Depending on the amount of eligible data in the patient's records, it may take anywhere from under a second to over 10 seconds to extract all needed data from RPMS.

Once the extraction process for the patient is finished, **BJMD BACKGROUND JOB** changes the status of the request to **CE** (for Compile Ended). It then checks the C32 queue for other outstanding requests with the status of **R**. If it does not find any, it goes into hibernation for anywhere between 0.1 and 2 seconds, the exact value depending on the site-specific C32 settings maintained by the site manager as described in Section 12.2 Managing C32 Ensemble Production of this document.

The C32 queue is also monitored by the C32 Ensemble production running in the C32 namespace. When the C32 production finds a new request whose status is set to **CE**, it retrieves the C32 data from the body of the request and transforms it into a valid C32 document. It then transmits this document to its final destination using web services and changes the status of the request to **T** (for ***Transmitted***).

If a site is a part of the IHS HIE, then the site manager has been provided with the URL of the associated C32 repository. Ensemble will use this URL to send C32 documents to the repository.

The main features of the C32 architecture at the sites that participate in the IHS HIE are:

- All C32 processing occurs at night, thus minimizing its impact on RPMS performance.

- All outside requests for C32 documents are served by a separate C32 repository, thus insulating RPMS from potentially unpredictable load spikes.

2.0 Orientation

The C32 package has one RPMS menu used by site managers, **C MESSAGING MENU**, which comprises the following four menu options:

- Edit C Messaging Site Parameters [BJMD EDIT SITE PARAMETERS].
- Generate C32 for a single patient [BJMD C32ONEGEN].
- Generate C32 documents for all patients in RPMS [BJMD C32ALLGEN].
- Manage C Messaging transmissions [BJMD C MESS MGR].

The C32 package contains no menu options accessible by end users.

The following steps are used to set up C32 at an RPMS site:

1. Enable Long Strings within Ensemble.
2. Create a directory for the C32 database.
3. Install the BFMC Kernel Installation and Distribution System (KIDS) build.
4. Confirm that the post-installation TaskMan task for BFMC has completed.
5. Install the BJMD KIDS build.
6. Encrypt the C32 database, if necessary.
7. Optionally set up e-mail notifications.
8. Disable journaling for the C32 database.
9. Configure the C32 CSP application.
10. Set up site-specific C32 parameters.
11. Start C Messaging.

See the Installation Guide for details on the installation and configuration steps.

3.0 Implementation and Maintenance

The C32/CCD Clinical Summary application is designed to work with RPMS through Ensemble-based web services, Caché Objects, and FM2C.

3.1 General Information

The following table shows the prerequisite patch requirements.

Package and Version	Associated Patch Designation(s)	Brief Patch Description
Pharmacy 7	APSP*7.0*1007	Among other things, added Medications Instructions (^DD(52.0113)) to Outpatient Pharmacy and field DISPENSE UNIT NCPDP CODE (^DD(50,9999999.145)) to the Drug file. Both are needed by C32.

3.2 System Requirements

Module	Minimum Version
VA FileMan (DI)	v22.0 p1002
VA Kernel (XU)	v8.0 p1015
IHS/VA Utilities (XB)	v3.0 through p11
Taxonomy (ATX)	v5.1 through p10

3.3 Package–Wide Variables

The following package-wide variables are used in BJMD classes: %DFN, %BJMDQID. These variable names start with %, which ensures that they have a process-wide scope when Caché ObjectScript procedures are used. Their use significantly simplifies C32 error trapping.

3.4 Security Keys

BJMD does not introduce new security keys.

4.0 Menu Diagram

The C32 package has one RPMS menu used by site managers, **C MESSAGING MENU**, which comprises the following four menu options:

- Edit C Messaging Site Parameters [BJMD EDIT SITE PARAMETERS].
- Generate C32 for a single patient [BJMD C32ONEGEN].
- Generate C32 documents for all patients in RPMS [BJMD C32ALLGEN].
- Manage C Messaging transmissions [BJMD C MESS MGR].

The C32 package contains no menu options accessible by end users.

5.0 Routines

5.1 Routine List

- BJMDCLAS
- BJMDECK
- BJMDEDIT
- BJMDPAT
- BJMDPOST
- BJMDPRE
- BJMDPUSH
- BJMDTSK
- BJMDTX
- BJMDTXA
- BJMDTXAB
- BJMDTXAC
- BJMDTXAD

5.2 Routines with Description

Routine	Description
BJMDCLAS	Exports and imports Caché/Ensemble classes via KIDS builds. Uses Caché-standard compression and Base64 encryption to compress class definitions.
BJMDECK	BJMD environment check routine
BJMDEDIT	Edit C Messaging site-specific parameters
BJMDPAT	Routine for one patient upload, all patients upload and C Messaging Manager options
BJMDPOST	Main post-installation routine, which sets up taxonomies and calls other post-installation routines
BJMDPRE	Main pre-installation routine, which updates the package version used by the National Site Tracking software.
BJMDPUSH	TaskMan task active only if the site participates in the IHS HIE. Identifies recently modified patient records that need to have C32 document regenerated
BJMDTSK	TaskMan task that monitors the C32 queue for new requests and extracts data from RPMS
BJMDTX	Taxonomy program created by ^ATXSTX
BJMDTXA	Taxonomy program created by ^ATXSTX
BJMDTXAB	Taxonomy program created by ^ATXSTX
BJMDTXAC	Taxonomy program created by ^ATXSTX
BJMDTXAD	Taxonomy program created by ^ATXSTX

5.3 Function List

5.3.1 $$SPACE^BJMDECK

This function checks whether there is enough space in the database to upload all C32 documents if the site is a part of the IHS HIE.

- Input Parameter Description: NS: Namespace name
- Output Description: space per patient (in KB) ^ total space (in KB) ^ patient count ^ currently used space ^ current free space in database ^ maximum space ^ disk space.

6.0 Files and Tables

6.1 File List

File #	Filename	Description
90606	C MESSAGING MESSAGE TYPE	This file contains message-type specific parameters
90607	C MESSAGING SITE PARAMETERS	This file contains site-specific C Messaging parameters.
90608	CACHE CLASS TRANSPORT	This file contains packed Caché and Ensemble classes which are sent to the sites in a KIDS build.

6.2 File Access

File #	Filename	Global	RD	WR	LYG	DD	DEL
90606	C MESSAGING MESSAGE TYPE	^BJMDS(90606,	@	@	@	@	@
90607	C MESSAGING SITE PARAMETERS	^BJMDS(90607,	@	@	@	@	@
90608	CACHE CLASS TRANSPORT	^BJMDCLS(	@	@	@	@	@

6.3 Cross References

90606 (C Messaging Message Type)

.01 Message Type

B regular type cross reference

90607 (C Messaging Site Parameters)

.01 Home Site

B regular type cross reference

90608 (Cache Class Transport)

.01 Package

B regular type cross reference

90608.11 Class

.01 Class

B regular type cross reference

6.4 Table File

File: 90606 C MESSAGING MESSAGE TYPE

Global: ^BJMDS(90606

Field #	Field Name	Subscript	Piece	Type
.01	MESSAGE TYPE	D0,0	1	S
.02	LAST PUSH DATE TIME STAMP	"	2	D
.03	DESCRIPTION	"	3	F
.04	DAYS KEEP TRANSMISSION ENTRIES	"	4	N
.05	ENABLED?	"	5	S
1	REPOSITORY LOCATION	D0,1	1	F

File: 90607 C MESSAGING SITE PARAMETERS

Global: ^BJMDS(90607

Field #	Field Name	Subscript	Piece	Type
.01	HOME SITE	D0,0	1	N
.02	BACKGROUND JOB DELAY	"	2	N
.03	*ENSEMBLE PRODUCTION DELAY	"	3	N
.04	*LAST PUSH DATE TIME STAMP	"	4	D
.05	RECORD GLOBAL REFERENCES	"	5	S
.06	*DAYS KEEP TRANSMISSION ENTR	"	6	N
.07	C MESSAGING ENABLED	"	7	S
.08	DATE C MESSAGING INSTALLED	"	8	D
.09	TIME TO RUN NIGHTLY TASK	“	9	F
,1	FILEMAN CLASSES LOAD DATE	“	10	D
1	*REPOSITORY LOCATION	D0,1	1	F
2	INSTALL ERROR MESSAGE 90607.02			
.01	INSTALL ERROR MESSAGE	D0,2,D1,0	1	W

File: 90608 CACHE CLASS TRANSPORT

Global: ^ BJMDCLS(

Field #	Field Name	Subscript	Piece	Type
.01	PACKAGE NAME	D0,0	1	F
.02	*INSTALL WHERE	"	2	S
.04	*PATH	"	4	F
1.01	*RPMS FILENAME	D0,1	1	F
1.02	RPMS STATUS	"	2	S
1.03	RPMS DATE/TIME INSTALLED	"	3	D
2.01	*ENSEMBLE FILENAME	D0,2	1	F
2.02	*ENSEMBLE STATUS	"	2	S
2.03	*ENSEMBLE DATE/TIME INSTALLED	“	3	D
10	XML 90608.01			
.01	XML	D0,10,D1,0	1	W

Field #	Field Name	Subscript	Piece	Type
11	CLASS 90608.011			
.01	CLASS	D0,11,D1,0	1	F

No special integration agreements exist between BJMD and any other package at this time.

6.5 Callable Routines

There are no remote procedure calls used by C32.

6.6 External Relations

Required RPMS software:

Module	Minimum Version
VA FileMan (DI)	v22.0 p1002
VA Kernel (XU)	v8.0 p1015
IHS/VA Utilities (XB)	v3.0 through p11
Taxonomy (ATX)	v5.1 through p10
IHS Pharmacy Modifications (APSP)	V7.0 through p1007

6.7 Exported Options

Option Name	Description
BJMD EDIT SITE PARAMETER	Option to edit C Messaging Site Parameters, accessible by the site manager
BJMD BACKGROUND JOB	Main C Messaging background processor, runs continuously when C Messaging is running.
BJMD NHIE PUSH JOB	Nightly job that identifies patient records for which C Messaging documents need to be regenerated. Only active at sites that participate in the IHS HIE.

7.0 Internal Relations

The following package-wide variables are used by all BJMD classes: **%DFN**, **%BJMDQID**. These variable names start with **%**, that ensures that they have a process-wide scope when Caché ObjectScript procedures are used. Their use significantly simplifies C32 error trapping.

8.0 Archiving and Purging

There are three types of purging included in this package as described below:

- Temporary compile structures that are stored in persistent class **BJMD.Xfer.Queue** are automatically purged at midnight by an Ensemble Task manager task. This task is created by the C32 installation process. The number of days that these compile structures are kept in the database is determined by the value of parameter **DAYS KEEP TRANSMISSION ENTRIES** defined by the site manager in menu option **BJMD EDIT SITE PARAMETERS**.
- The bodies of C32 documents are purged immediately upon transmission to their destination. This is done to conserve disk space because C32 documents can be large. For C32 documents generated in response to requests from the EHR GUI, a compressed version of each transmitted C32 document is kept in on file. They can be viewed by the site manager in the C32 Audit Log.
- Ensemble logs are automatically purged every Sunday morning by an Ensemble Task manager task. This task is created by the C32 installation process.

9.0 Documentation Process

This section describes a few methods to generate C32 system technical documentation.

9.1 %INDEX Option

This option analyzes the structure of a routine to determine in part if the routine adheres to RPMS programming standards. The **%INDEX** output can include the following components:

- Compiled list of errors and warnings
- Routine listing
- Local variables
- Global variables
- Naked globals
- Label references
- External references

Running **%INDEX** for a specified set of routines allows users to discover any deviations from RPMS programming standards that exist in the selected routines and to see how routines interact with one another (i.e., which routines call or are called by other routines).

To run **%INDEX** for the C32 package, type **BJMD*** and then type **'BJMD.*** at the **Routine(s)?>** prompt. The second line is needed to exclude *.INT routines generated by Caché classes because **%INDEX** would not recognize them as valid MUMPS routines.

9.2 List File Attributes Option

This VA FileMan option allows users to generate documentation pertaining to files and file structure. Using the standard format of this option yields the following data dictionary information for a specified file:

- File name and description
- Identifiers
- Cross-references
- Files pointed to by the file specified
- Files that point to the file specified
- Input, print, and sort templates

In addition, the following applicable data is supplied for each field in the file:

- Field name, number, title, and description
- Global location
- Help prompt
- Cross-references
- Input transform
- Date last edited
- Notes

Using the Global Map format of this option generates an output that lists the following information:

- All cross-references for the file selected
- Global location of each field in the file
- Input, print, and sort templates

For a comprehensive listing of C32 package files, please refer to Section 6.0.

9.3 List Class Documentation for a Package

A list of all Caché classes in a package is available in the Class Reference tool within Ensemble's online documentation and in the Class Browser available in Ensemble Studio. Both lists can be further expanded to view a list of class methods, properties, queries and parameters, and examine built-in documentation for each method, property, query, or parameter.

9.4 Web Service API

This section summarizes the Web Service Application Programming Interface (API) provided for requesting C32 documents from the EHR GUI and, eventually, other outside applications. Its goal is to assist RPMS sites and outside developers in understanding what the web service is and how to use it to retrieve C32 documents from RPMS.

9.4.1 Web Service

The C32 Web Service provides an API for requesting and retrieving a C32 document from RPMS. The associated WSDL file defines the parameters of the web service, including the format of the request and response SOAP messages and the location of the web service.

To access the web service, it is necessary to develop a web client. Instructions for developing a web client are beyond the scope of this document. However, there are a number of tools available for generating a web client from a WSDL for major platforms, such as Java and .NET. Once a web client has been developed it may be used to request a C32 document by means of sending a SOAP request containing a Patient ID to the web service and receiving a SOAP response containing the C32 document.

The web service is accessed via HTTP. HTTPS (HTTP Secure, or HTTP over SSL/TLS) is not currently supported, so it is the responsibility of the site to address security between the web client and the web service.

A sample SOAP request is provided in Section 9.4.4. There are two required elements in the request: the **ReplyTo** address and the **patient ID**. Because the web service responds asynchronously, it is necessary to provide a **ReplyTo** address – the IP address and port of a listener that will receive the response SOAP message. The **patient ID** is the patient IEN in the RPMS namespace. It is a unique identifier within an RPMS namespace, but might not be unique across namespaces. To ensure the correct patient record is retrieved, there is one web service for each RPMS namespace; the web client must access the web service corresponding to the RPMS namespace that contains the patient IEN being requested. An optional **message ID** might be included in the request message. If present in the request, it will be included in the **RelatesTo** element of the response to allow the web client to match responses with their corresponding requests.

A portion of a sample SOAP response is provided in Section 9.4.5. The response header section contains several elements, including a **message ID**; a **RelatesTo ID**, containing the message ID of the request message; and the **To** address element, containing the address the response is sent to. The response body section contains the actual C32 document. The document contains information about the patient's demographics, support persons, conditions, allergies, encounters, vital signs, immunizations, insurance providers, procedures, medications, and results. Detailing each of the data elements in the C32 document is beyond the scope of this document. While all of the information is encoded in XML, some of the information is also encoded in HTML ***narrative blocks*** to allow it to be used in generating a Web page to make it easier for a person to read the information.

A sample error response is provided in Section 9.4.6. It differs from the non-error response in that it contains error information instead of a C32 document. The error information consists of two elements. The first is the **error code**, that can be used by the web client to determine the cause of the error. The second is the **error text**, that supplements the **error code**, providing more information about the cause of the error. Because the **error text** might vary, it is recommended that the web client use the **error code** when determining whether the error was the result of an insufficient SOAP request message.

> **Note**: Some errors, such as missing Reply-To information, might not be able to be reported to the web client.

9.4.2 Web Service Glossary

API

Application Programming Interface; an interface provided by a software application to allow other applications to interact with it.

HTTP

Hypertext Transfer Protocol; a widely used communication protocol on the World Wide Web.

SOAP

Simple Object Access Protocol; the communication protocol and message format used in communicating with web services.

Web Client

An application that consumes (accesses) a web service.

Web Service

An API that allows communication with an application via SOAP messages over HTTP.

WSDL

Web Service Description Language; a file that describes a web service's API.

XML

Extensible Markup Language; a set of rules for encoding data in a machine-readable form.

9.4.3 WSDL

```
<?xml version="1.0" encoding="UTF-8"?>
<definitions xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:SOAP-
ENC="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/"
xmlns:s="http://www.w3.org/2001/XMLSchema" xmlns:s0="urn:hl7-org:v3"
xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
targetNamespace="urn:hl7-org:v3">
    <types>
        <s:schema elementFormDefault="qualified" targetNamespace="urn:hl7-
org:v3">
            <s:element name="RetrieveDocument">
                <s:complexType>
                    <s:sequence>
```

```
                        <s:element minOccurs="0" name="PatientID"
type="s:string"/>
                    </s:sequence>
                </s:complexType>
            </s:element>
        </s:schema>
    </types>
    <message name="RetrieveDocumentSoapIn">
        <part name="parameters" element="s0:RetrieveDocument"/>
    </message>
    <portType name="C32DocumentRepositoryServiceSoap">
        <operation name="RetrieveDocument">
            <input message="s0:RetrieveDocumentSoapIn"/>
        </operation>
    </portType>
    <binding name="C32DocumentRepositoryServiceSoap"
type="s0:C32DocumentRepositoryServiceSoap">
        <soap:binding transport="http://schemas.xmlsoap.org/soap/http"
style="document"/>
        <operation name="RetrieveDocument">
            <soap:operation soapAction="urn:hl7-
org:v3/BJMD.Prod.Service.DocumentRepository.RetrieveDocument"
style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
        </operation>
    </binding>
    <service name="C32DocumentRepositoryService">
        <port name="C32DocumentRepositoryServiceSoap"
binding="s0:C32DocumentRepositoryServiceSoap">
            <soap:address
location="http://10.24.196.43:57772/csp/c32gold5/BJMD.Prod.Service.Document
Repository.cls"/>
        </port>
    </service>
</definitions>
```

Figure 9-1: WSDL

9.4.3.1 WSDL Generation Considerations

The following changes to the Ensemble-generated WSDL are required to produce a WSDL that corresponds to the web service response:

```
Replace:
    <service name="C32DocumentRepositoryService">
        <port name="C32DocumentRepositoryServiceSoap"
binding="s0:C32DocumentRepositoryServiceSoap">
            <soap:address
location="http://10.24.196.43:57772/csp/c32gold5/BJMD.Prod.Service.Document
Repository.cls"/>
        </port>
    </service>

With:
    <service name="C32DocumentRepositoryService">
        <port name="C32DocumentRepositoryServiceSoap"
binding="s0:C32DocumentRepositoryServiceSoap">
```

```
            <soap:address location="http://(IP
address):(port)/csp/(namespace)/BJMD.Prod.Service.DocumentRepository.cls"/>
        </port>
    </service>
```

Figure 9-2: Required WSDL changes

9.4.4 Sample Request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:urn="urn:hl7-org:v3">
<soapenv:Header xmlns:wsa="http://www.w3.org/2005/08/addressing">
<wsa:Action>urn:hl7-
org:v3/BJMD.Prod.Service.DocumentRepository.RetrieveDocument</wsa:Action>
<wsa:ReplyTo>
<wsa:Address>http://1.2.3.4:5000</wsa:Address>
</wsa:ReplyTo>
<wsa:MessageID>uuid:874a751e-f8d2-48e8-862a-45b0ea44ac40</wsa:MessageID>
</soapenv:Header>
<soapenv:Body>
<urn:RetrieveDocument>
<urn:PatientID>3</urn:PatientID>
</urn:RetrieveDocument>
</soapenv:Body>
</soapenv:Envelope>
```

Figure 9-3: Sample request

9.4.5 Sample Response: Valid

```
POST / HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; Cache;)
Host: 10.24.79.1:5005
Connection: Close
Accept-Encoding: gzip
SOAPAction:
MIME-Version: 1.0
Content-Length: 53880
Content-Type: multipart/related; type="application/xop+xml"; boundary=--
boundary5345.941176470588235361.529411764705882--;
start="<0.F5A09256.7C2D.47A6.9E10.EE7B83ED7B3D>"; start-info="text/xml"

----boundary5345.941176470588235361.529411764705882--
Content-Type: application/xop+xml; type="text/xml"; charset="UTF-8"
Content-Transfer-Encoding: 8bit
Content-Id: <0.F5A09256.7C2D.47A6.9E10.EE7B83ED7B3D>

<?xml version="1.0" encoding="UTF-8" ?>
<SOAP-ENV:Envelope xmlns:SOAP-
ENV='http://schemas.xmlsoap.org/soap/envelope/'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xmlns:s='http://www.w3.org/2001/XMLSchema'
xmlns:wsa='http://www.w3.org/2005/08/addressing'>
<SOAP-ENV:Header>
<wsa:Action>urn:anonOutInOp</wsa:Action>
<wsa:MessageID>urn:uuid:F3A0FD17-A818-4B77-B310-
C0EBB357632F</wsa:MessageID>
<wsa:RelatesTo>uuid:8bb1bb98-423e-4715-868e-96279b928e8a</wsa:RelatesTo>
```

```
<wsa:ReplyTo>
<wsa:Address
xsi:type="s:string">http://www.w3.org/2005/08/addressing/anonymous</wsa:Add
ress>
</wsa:ReplyTo>
<wsa:To>http://1.2.3.4:5000</wsa:To>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
<PatientRecordReceiverRequest>
<DocumentResponse xmlns:s01="urn:hl7-org:v3"
xsi:type="s01:DocumentResponse">
<s01:ClinicalDocument xsi:type="s01:ClinicalDocument">
<xop:Include href="cid:1.F5A09256.7C2D.47A6.9E10.EE7B83ED7B3D"
xmlns:xop="http://www.w3.org/2004/08/xop/include"/>
</s01:ClinicalDocument>
</DocumentResponse>
</PatientRecordReceiverRequest>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
----boundary5345.941176470588235361.529411764705882--
Content-Id: <1.F5A09256.7C2D.47A6.9E10.EE7B83ED7B3D>
Content-Transfer-Encoding: binary
CONTENT-TYPE: application/octet-stream

<ClinicalDocument xmlns="urn:hl7-org:v3" xmlns:sdtc="urn:hl7-org:sdtc"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:hl7-org:v3
http://xreg2.nist.gov:8080/hitspValidation/schema/cdar2c32/infrastructure/c
da/C32_CDA.xsd">
  <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"></typeId>
  <templateId root="2.16.840.1.113883.3.27.1776"
assigningAuthorityName="CDA/R2"></templateId>
  <templateId root="2.16.840.1.113883.10.20.1"
assigningAuthorityName="CCD"></templateId>
  <templateId root="2.16.840.1.113883.3.88.11.32.1"
assigningAuthorityName="HITSP/C32"></templateId>
  <id root="2.16.840.1.113883.3.72" extension="1000028665"
assigningAuthorityName="NIST Healthcare Project"></id>
  <code code="34133-9" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Summarization of episode note">
  </code>
  <title>Continuity of Care Document - CCD for JAMICE FRENCH at DEMO
HOSPITAL</title>
<!-- The rest of the document has been removed for brevity. -->
</ClinicalDocument>
----boundary5345.941176470588235361.529411764705882----
```

Figure 9-4: Sample valid response

9.4.6 Sample Response: Error

```
POST / HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; Cache;)
Host: 10.24.79.1:5005
Connection: Close
Accept-Encoding: gzip
SOAPAction:
MIME-Version: 1.0
Content-Length: 1328
```

```
Content-Type: multipart/related; type="application/xop+xml"; boundary=--
boundary4383.7647058823529415537.823529411764706--;
start="<0.52130F09.3DDF.4E77.BE11.CEE45DF296F4>"; start-info="text/xml"

----boundary4383.7647058823529415537.823529411764706--
Content-Type: application/xop+xml; type="text/xml"; charset="UTF-8"
Content-Transfer-Encoding: 8bit
Content-Id: <0.52130F09.3DDF.4E77.BE11.CEE45DF296F4>

<?xml version="1.0" encoding="UTF-8" ?>
<SOAP-ENV:Envelope xmlns:SOAP-
ENV='http://schemas.xmlsoap.org/soap/envelope/'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xmlns:s='http://www.w3.org/2001/XMLSchema'
xmlns:wsa='http://www.w3.org/2005/08/addressing'>
<SOAP-ENV:Header>
<wsa:Action>urn:anonOutInOp</wsa:Action>
<wsa:MessageID>urn:uuid:8973364F-A5DD-41F4-A751-
164065F17259</wsa:MessageID>
<wsa:RelatesTo>uuid:8bb1bb98-423e-4715-868e-96279b928e8a</wsa:RelatesTo>
<wsa:ReplyTo>
<wsa:Address
xsi:type="s:string">http://www.w3.org/2005/08/addressing/anonymous</wsa:Add
ress>
</wsa:ReplyTo>
<wsa:To>http://1.2.3.4:5000</wsa:To>
</SOAP-ENV:Header>
<SOAP-ENV:Body>
<PatientRecordReceiverRequest>
<DocumentResponse xmlns:s01="urn:hl7-org:v3"
xsi:type="s01:DocumentResponse">
<s01:Error xsi:type="s01:Error">
<s01:ErrorCode xsi:type="s:string">201</s01:ErrorCode>
<s01:ErrorText xsi:type="s:string">ProcessRequest: C32Populate returned
error: ERROR #5001: C32Populate: Unable to open a VA PATIENT record for
patient -1</s01:ErrorText>
</s01:Error>
</DocumentResponse>
</PatientRecordReceiverRequest>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
----boundary4383.7647058823529415537.823529411764706----
```

Figure 9-5: Sample error response

9.4.7 Error Codes

Code	Description
101	No WS-Addressing in request.
102	No Reply-To element in request.
103	Invalid Reply-To value in request.
110	Web Service disabled for push sites. (No longer valid)
111	C32 disabled.
120	No Patient ID value in request.
130	Unable to instantiate Queue record.
201	Error in data extraction.

202	Unable to save extracted data.
203	Error trapped by BJMDTSK (background processor).
301	Error in data transformation.
302	Error in document generation business process.
303	Error in document transmission.
310	Document in **Compile Started** status for more than 10000 seconds.

9.4.8 Additional Web Service Resources

W3Schools:

- SOAP tutorial: http://www.w3schools.com/soap/default.asp
- Web Services tutorial: http://www.w3schools.com/webservices/default.asp
- WSDL tutorial: http://www.w3schools.com/wsdl/default.asp
- XML tutorial: http://www.w3schools.com/xml/default.asp

Wikipedia:

- API: http://en.wikipedia.org/wiki/Application_programming_interface
- HTTP: http://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol
- HTTPS: http://en.wikipedia.org/wiki/HTTP_Secure
- SOAP: http://en.wikipedia.org/wiki/SOAP
- Web Service: http://en.wikipedia.org/wiki/Web_service
- WSDL: http://en.wikipedia.org/wiki/Web_Services_Description_Language
- XML: http://en.wikipedia.org/wiki/XML

10.0 SAC Requirements Exemptions

The Standards and Conventions (SAC) exemption request for use of Caché Objects.

```
Request for Exemption to RPMS Programming Standards
Package:  BJMD – C32
Date:  May 2010
Program:  N/A
Line Number:  N/A
Applicable Standard:  Section 2 of the 2009 SAC
Paragraph 2.2.1 states that “The 1995 ANSI/MDC X11.1 standards, Sections 1
and 2, will be adhered to unless explicitly modified by this document”.
Reason for Exemption:
The work order and the requirements for the C32 application required the
use of Intersystems’ Cache Objects technology for “a practical proof of
concept for the development of an object-oriented methodology”. Cache
Objects, developed in the late 1990s, are outside of the scope of the 1995
ANSI/MDC X11.1 standard.

SACC Review
Date:
Recommend   APPROVAL___  DISAPPROVAL___
Duration:
Comments:

OIT Action
Date:
Request       APPROVED___  DISAPPROVED___
Comments:
Director, DIT
```

Figure 10-1: SAC Exemption Request for use of Caché Objects

11.0 Templates, Forms, and Protocols

11.1 Print Templates

There are no print templates in this package.

11.2 Sort Templates

There are no sort templates in this package.

11.3 Input Templates

There are no input templates in this package.

11.4 List Templates

There are no list templates in this package.

11.5 Forms

There are no forms in this package.

11.6 Protocols

There are no protocols in this package.

12.0 C32 Ensemble Configuration and Management

12.1 Creation of C32 Databases, Namespaces, and Mappings

The CCD/C32 package adds a new Ensemble database, namespace, CSP application, and global/package mappings to each RPMS namespace on the system. The new database and its settings are created by the KIDS build automatically and should not require manual intervention. This section describes, for reference purposes, how the same settings can be created manually.

12.1.1 Create the C32 Ensemble Namespace

If the C32 namespace(s) have already been created by the Area Offices, skip this step. RPMS users can remain on the system during this operation.

12.1.2 Choosing the Namespace Name

The C32 software resides in a separate Ensemble namespace. There is one C32 namespace for every RPMS namespace in the instance, if there are multiple RPMS namespaces running within the same Ensemble instance, create a separate C32 namespace for each RPMS namespace.

To determine the name of the new namespace, concatenate **C32** with the name of the RPMS namespace associated with it. For example, if the RPMS namespace is called **TST**, then the C32 namespace should be called **C32TST**. If there is a second RPMS namespace called **CHI**, then its associated C32 namespace should be called **C32CHI**.

> **Note**: This naming convention is relied upon by the C32 software. The C32 software will not work if the C32 namespace is called something else.

12.1.3 Naming the Ensemble Database

Each C32 namespace will have an underlying Ensemble/Caché database. To avoid confusion, name it the same as the associated C32 namespace unless there is a specific reason to use a different name. Table 12-1 provides an example of a table or spreadsheet that may be created in which to record the database information. Sites with multiple RPMS namespaces, can one row per RPMS namespace.

Table 12-1: Sample table for recording namespace, database, and directory information

RPMS namespace name	C32 namespace name	C32 database name	OS directory for C32 database

12.1.4 Choosing the Storage Location

See the Disk Space section of the C32 installation guide for instructions on estimating how much disk space will be needed to accommodate the new C32 database(s).

> **Note**: The C32 pre-installation environment check will make sure that the directory has at least 500 MB of free space.

Based on the estimated disk space requirements and on how much disk space is available on the storage subsystem, select the disk drive (if running Windows) or file system (if running Unix) where each new C32 database will be installed. Select the directory path and name to be used on that drive/file system. If the directory does not exist, create it and verify that Ensemble can read/write from/to it.

12.1.5 Creating a New Ensemble/Caché Database

1. If using Ensemble version 2009 or 2010, navigate to the **Local Databases** page as follows:
   a. Access Ensemble's **System Management Portal** and sign on as the administrator.
   b. Select **Configuration** in the leftmost column. The **Configuration** page displays.
   c. Select **Local Databases** in the leftmost column.
2. If using Ensemble version 2012, navigate to the **Local Databases** page as follows:
   a. Access Ensemble's **Management Portal** and sign on as the administrator.
   b. Select **System Administration** at the bottom of the left column, then select **Configuration**, then select **System Configuration**, then select **Local Databases**.
   c. Click **Go** to go to the **Local Databases** page.

   The **Local Databases** page displays.

3. Select **Create New Database**. The **Database Wizard** dialog (Figure 12-1 or Figure 12-2) appears.

Figure 12-1: Database Wizard in Ensemble 2009/2010

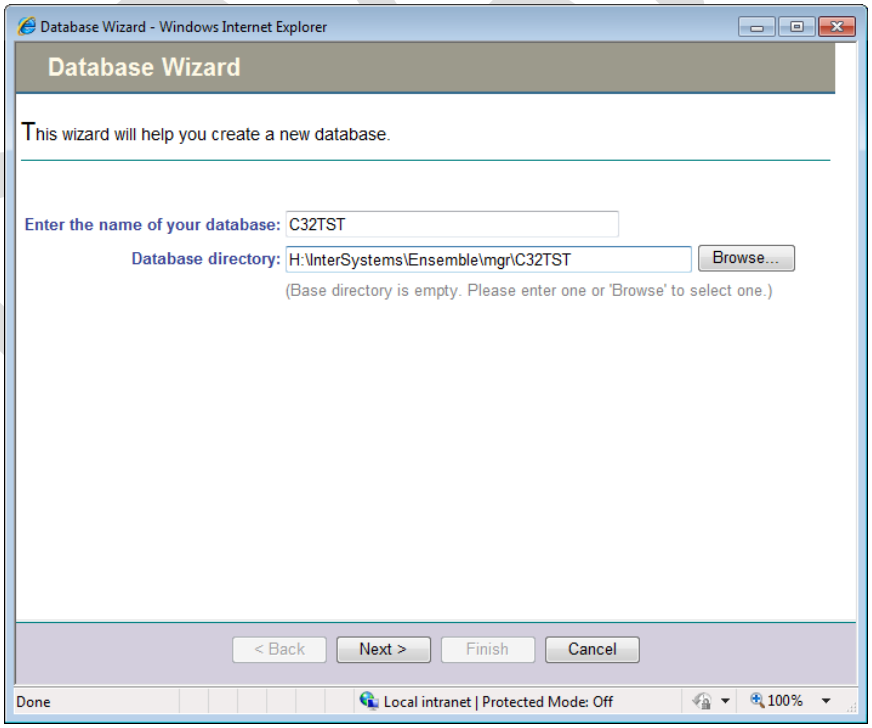

Figure 12-2: Database Wizard in Ensemble 2012

4. In the **Enter the name of your database** field, type the name of the database created in Section 12.1.3, e.g., **C32TST**.

> If using a remote connection to the **System Management Portal** in Ensemble 2009 or 2010, it may be necessary to type slowly since every letter is processed separately. The **System Management Portal** tries to use the entered letters to build the default name of the OS directory in the field **Database directory.** If typed too quickly, some letters may be lost.

5. The **System Management Portal** will display the default directory name where Ensemble will store the main CACHE.DAT file for this database. (This functionality may not be available depending on browser settings.) Change this directory to the directory set up in Section 12.1.4.

6. Check the **Encrypt database?** checkbox if the site uses database encryption (Ensemble 2009/2010).

7. Click **Next**. The Database Detail dialog (Figure 12-3 or Figure 12-4) displays.

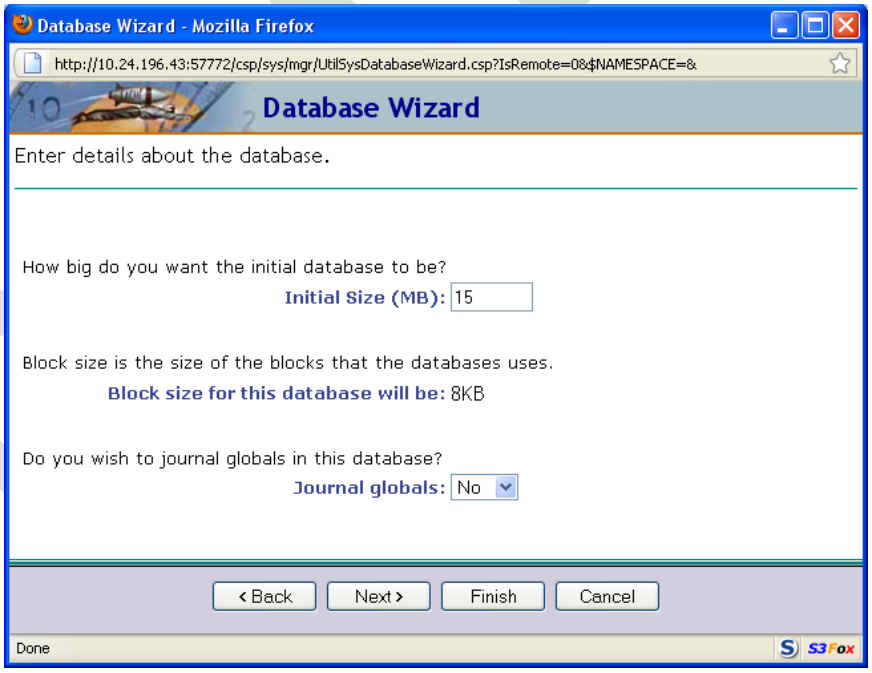

Figure 12-3: Database Wizard in Ensemble 2009/2010

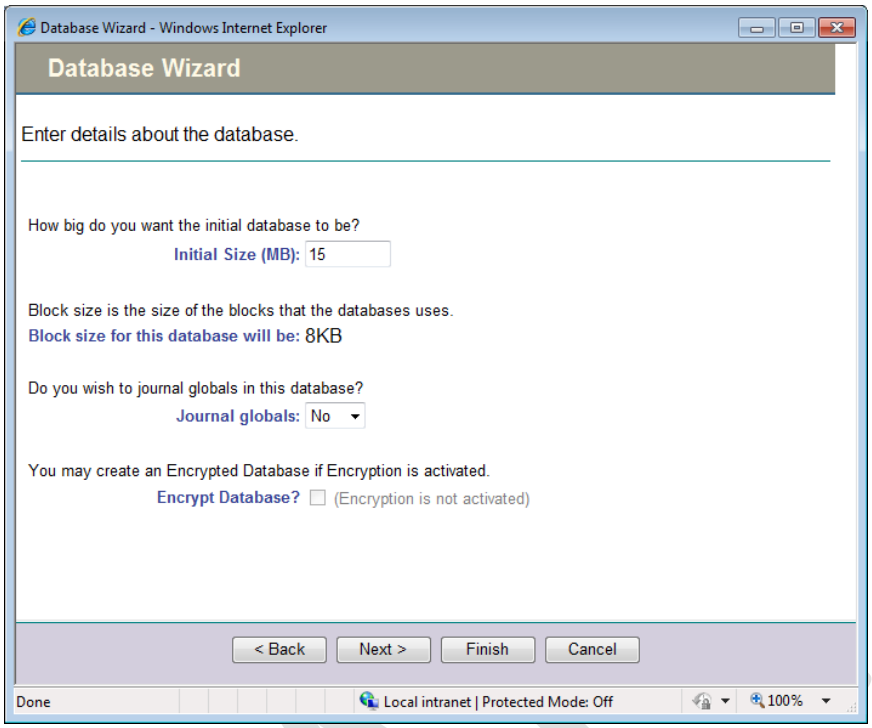

Figure 12-4: Database Wizard in Ensemble 2012

8. In the **Initial Size (MB)** field, type **15**.
9. In the **Journal globals** field select **No**.

This is a very important setting; double check that **No** is selected.

10. Check the **Encrypt database?** checkbox if the site uses database encryption (Ensemble 2012).
11. Click **Next**. The Database Resource dialog (Figure 12-5 or Figure 12-6) displays.

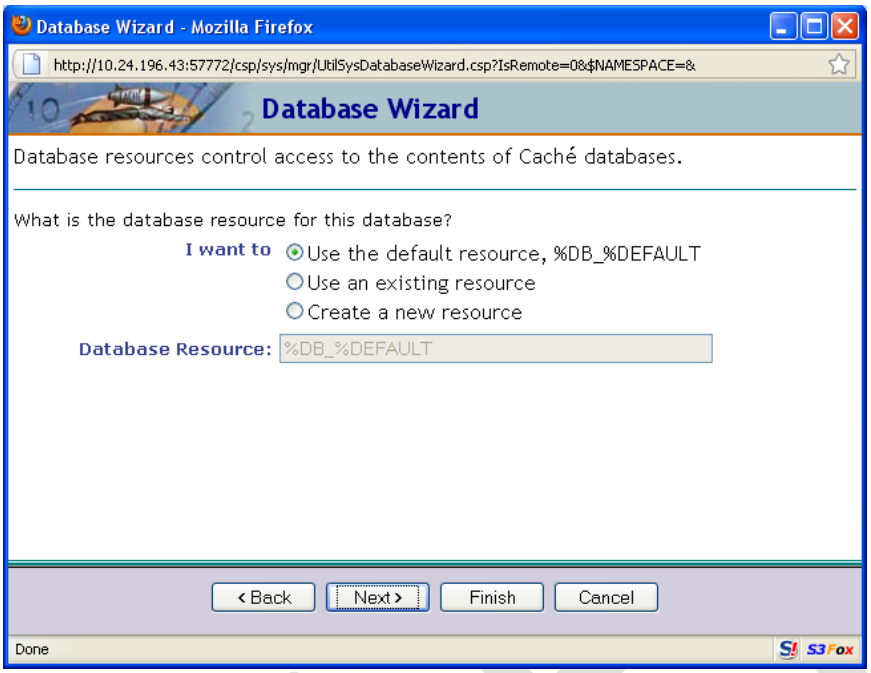

Figure 12-5: Database Wizard in Ensemble 2009/2010

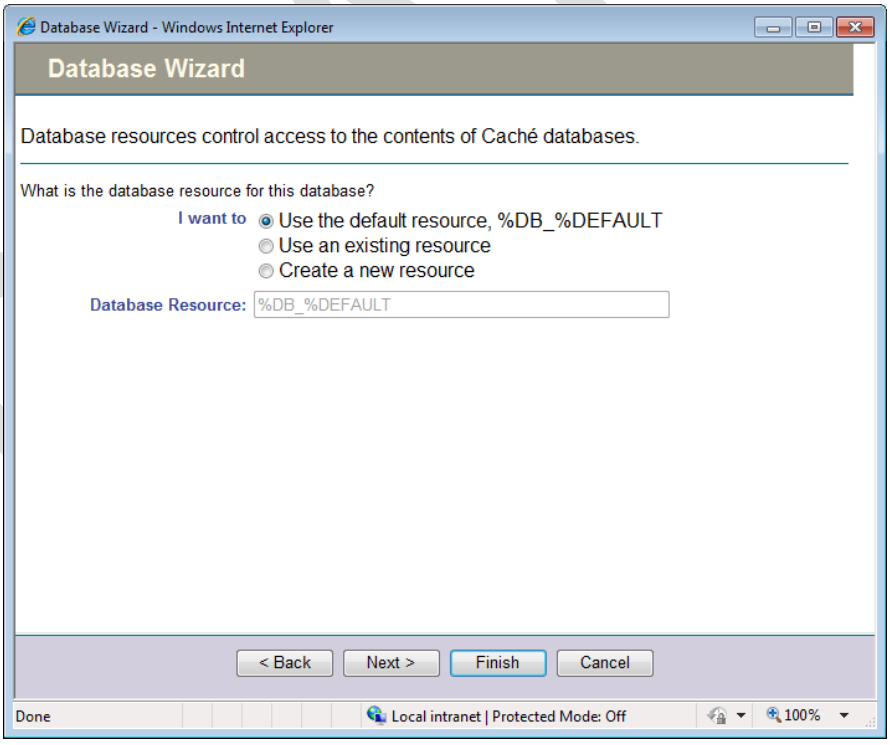

Figure 12-6: Database Wizard in Ensemble 2012

12. Choose the database resource for this new database. If the site does not have a policy on database resources, accept the default, **Use the default resource, %DB_%DEFAULT**.

13. Click **Next**. The Review Settings dialog (Figure 12-7 or Figure 12-8) displays.

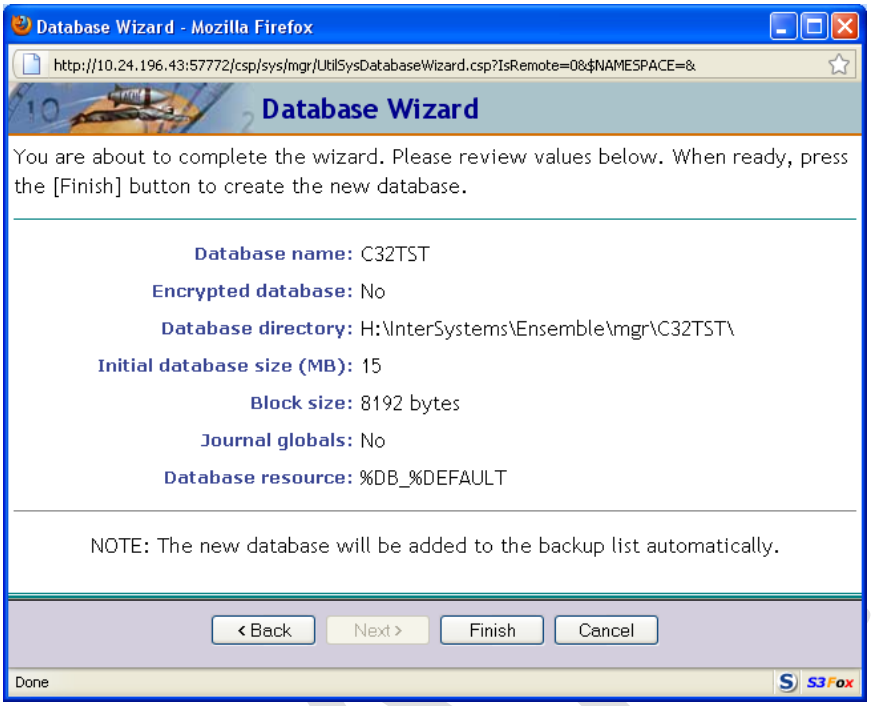

Figure 12-7: Database Wizard in Ensemble 2009/2010

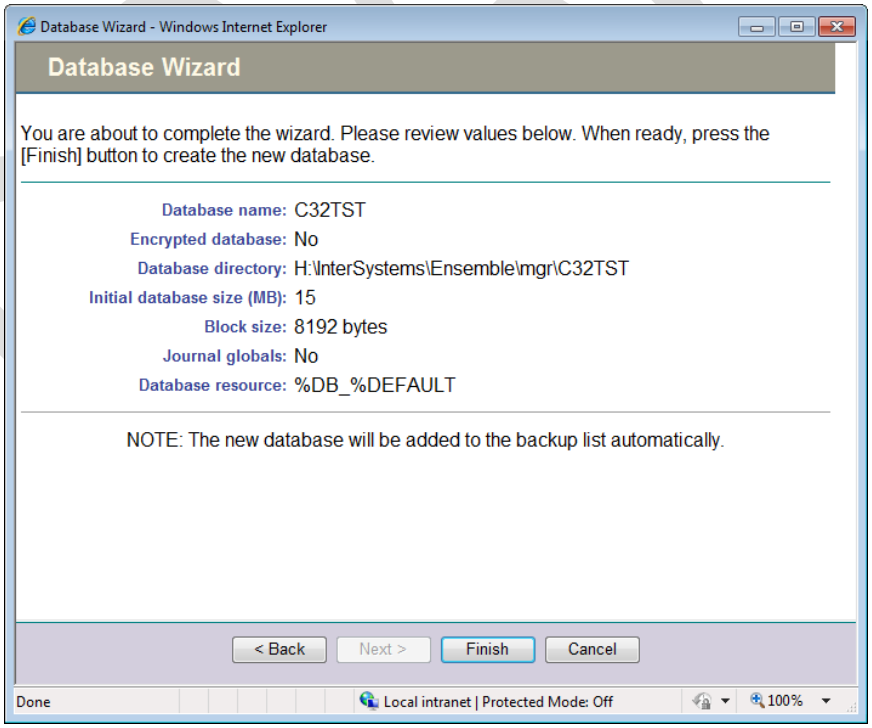

Figure 12-8: Database Wizard in Ensemble 2012

14. Review the values and, if they are correct, click **Finish**. To correct any mistakes or discrepancies, click **Back**. It may take a few seconds for Ensemble to create the database. When it finishes, the new database displays in the **Local Databases** list.

15. If the Ensemble instance hosts multiple RPMS namespaces, repeat these steps for all new C32 databases to be created.

12.1.6 Creating a New Ensemble Namespace

1. If using Ensemble version 2009 or 2010, navigate to the **Namespaces** page as follows:

   a. Access Ensemble's System Management Portal and sign on as the administrator.

   b. Select **Configuration** in the leftmost column. The **Configuration** page displays.

   c. Select **Namespaces** in the leftmost column.

2. If using Ensemble version 2012, navigate to the **Namespaces** page as follows:

   a. Access Ensemble's Management Portal and sign on as the administrator.

   b. Select **System Administration** from the bottom of the left column, then select **Configuration**, then select **System Configuration**, then select **Namespaces**.

   c. Click **Go** to go to the **Namespaces** page.

   The **Namespaces** page displays.

3. Select **Create New Namespace** at the top of the page. The **New Namespace** page (Figure 12-9 or Figure 12-10) displays.

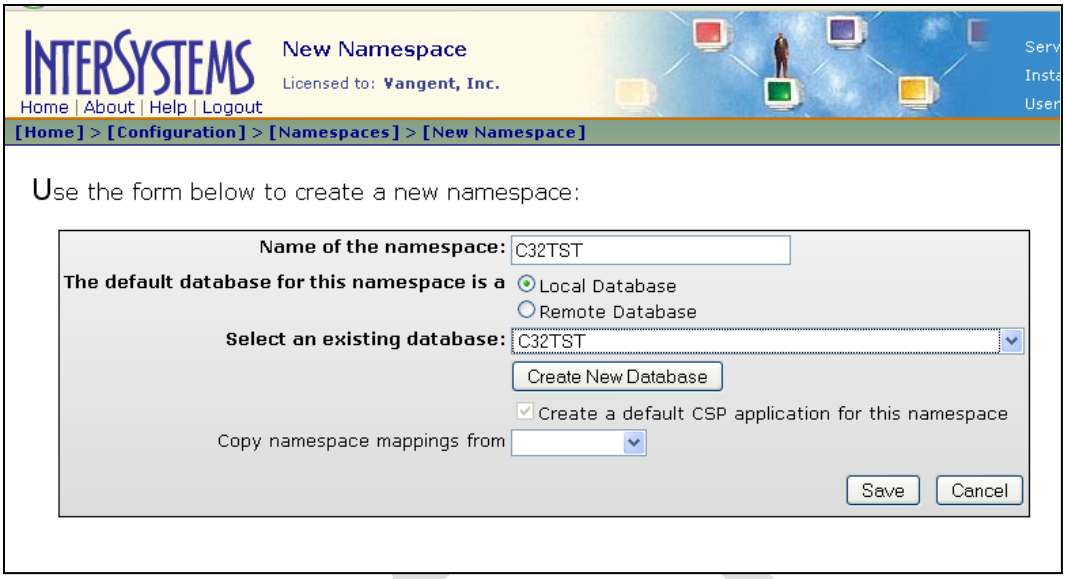

Figure 12-9: New Namespace page in Ensemble 2009/2010

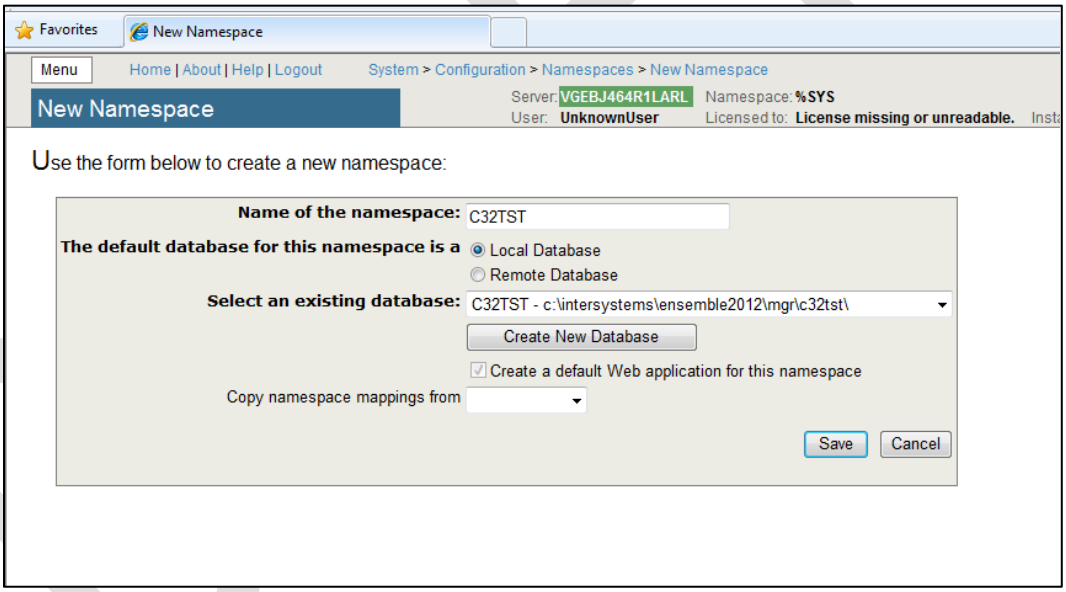

Figure 12-10: New Namespace page in Ensemble 2012

4. In the **Name of the namespace** field, type the name of the namespace established in Section 12.1.2.

5. In the **The default database for this namespace is a** field, select **Local Database**.

6. In the **Select an existing database** list, select the database created in Section 12.1.5.

7. Leave the **Copy namespace mappings from** field blank.

8. Click **Save**. It will take Ensemble a few seconds to create the new namespace.
9. If the Ensemble instance hosts multiple RPMS namespaces, repeat these steps for all new C32 namespaces to be created.

12.1.7 Creating New Global Mappings

1. If using Ensemble version 2009 or 2010, navigate to the **Namespaces** page as follows:
   a. Access Ensemble's System Management Portal and sign on as the administrator.
   b. Select **Configuration** in the leftmost column. The **Configuration** page displays.
   c. Select **Namespaces** in the leftmost column.
2. If using Ensemble version 2012, navigate to the **Namespaces** page as follows:
   a. Access Ensemble's Management Portal and sign on as the administrator.
   b. Select **System Administration** from the bottom of the left column, then select **Configuration**, then select **System Configuration**, then select **Namespaces**.
   c. Click **Go** to go to the **Namespaces** page.

   The **Namespaces** page displays.
3. In the leftmost column, find the RPMS namespace associated with the new C32 namespace created in Section 12.1.6.

   Note: This should be the pre-existing RPMS namespace, not the newly created C32 namespace.

4. Select **Global Mappings** for the identified namespace. The **Global Mappings** page (Figure 12-11 or Figure 12-12) displays.

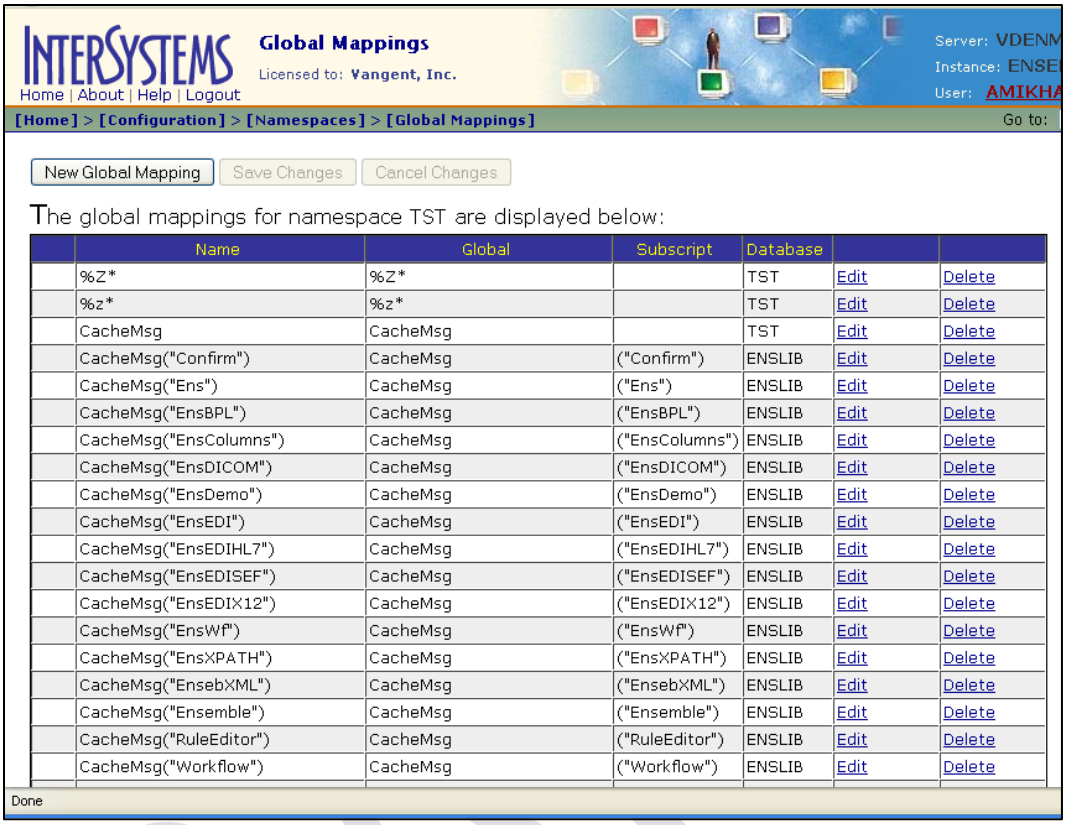

Figure 12-11: Global Mappings page in Ensemble 2009/2010

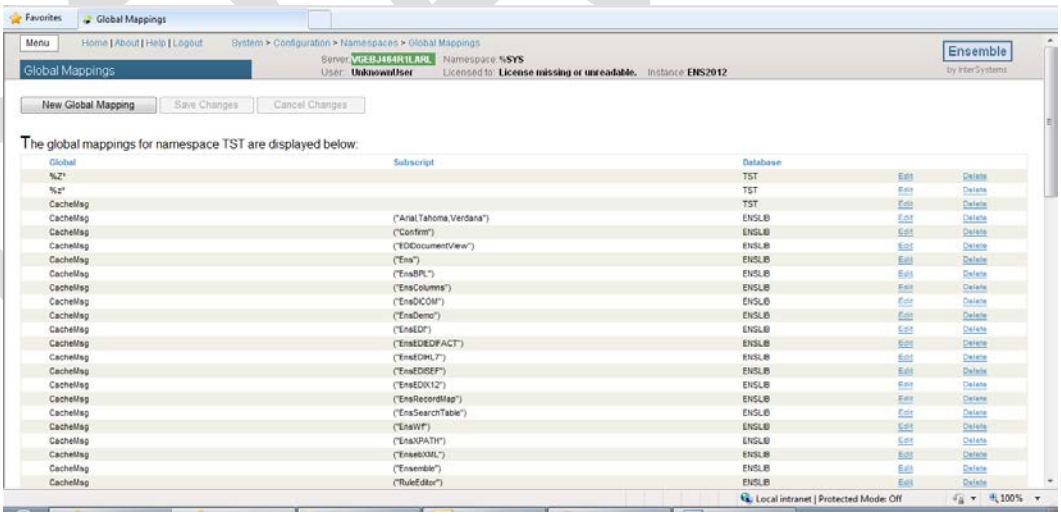

Figure 12-12: Global Mappings page Ensemble 2012

5. Click **New Global Mapping** (near the top of the page). The Global Mapping dialog (Figure 12-13 or Figure 12-14) displays.

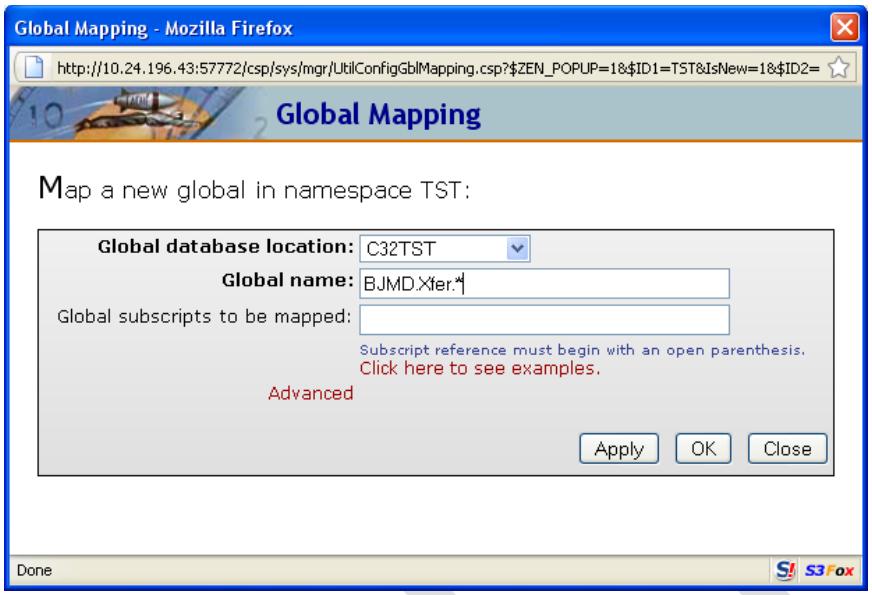

Figure 12-13: Global Mapping Wizard in Ensemble 2009/2010

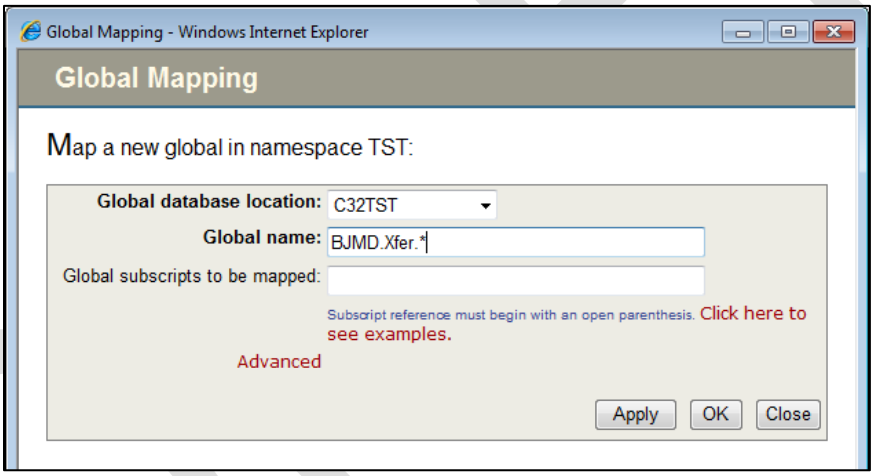

Figure 12-14: Global Mapping Wizard in Ensemble 2012

6. In the **Global database location** list, select the name of the Caché database created in Section 12.1.3**.**
7. In the in the **Global name** field type **BJMD.Xfer.***; make sure to include the asterisk.
8. Leave the **Global subscripts to be mapped** field blank.
9. Click **Apply**.
10. Click **Close**. The **Global Mappings** page displays.
11. Select **Save Changes** at the top of the page.

12. Click **Namespaces** in the blue line which reads **[Home] > [Configuration] > [Namespaces] > [Global Mappings]** at the top of the page. This will return to the **Namespaces** page.

13. In the leftmost column, find the name of the C32 namespace created in Section 12.1.2. This is the name of the newly created C32 namespace rather than the name of the RPMS namespace selected in Step 3.

14. Select **Global Mappings** for the identified namespace. The **Global Mappings** page displays.

15. Click **New Global Mapping** at the top of the page. The Global Mapping dialog (Figure 12-15 or Figure 12-16) displays.

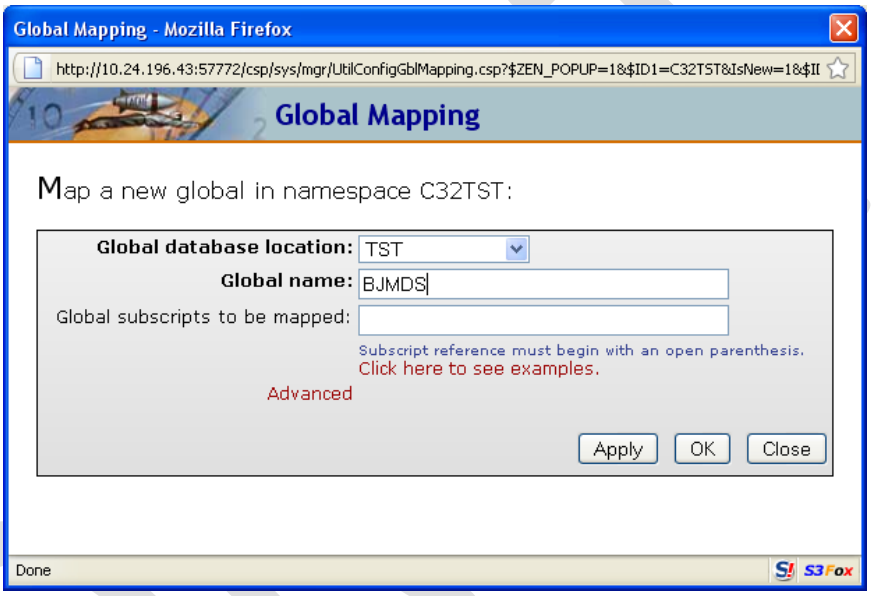

Figure 12-15: Global Mapping Wizard in Ensemble 2009/2010

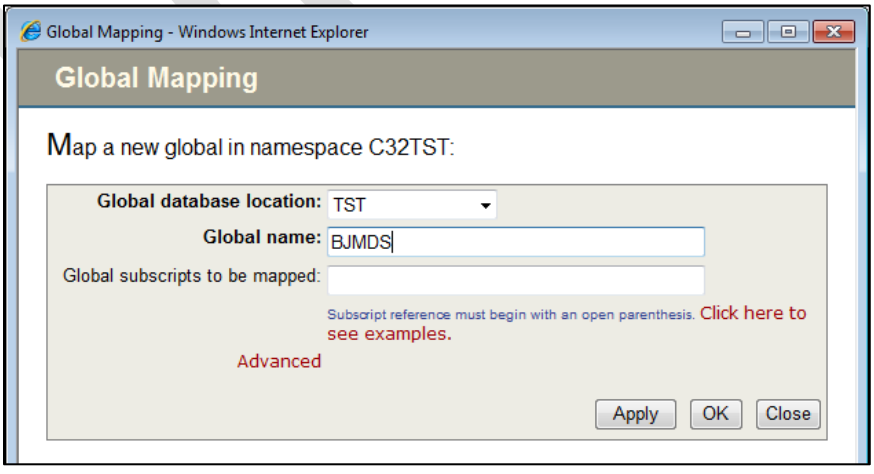

Figure 12-16: Global Mapping Wizard in Ensemble 2012

16. In the **Global database location** field, select the name of the RPMS database associated with this C32 namespace**.**
17. In the **Global name** field type **BJMDS**.
18. Leave the **Global subscripts to be mapped** field blank.
19. Click **Apply**.
20. Click **Close**.
21. Click **Close**. The **Global Mappings** page displays.
22. Click **Save Changes**.
23. Repeate Steps 3-21 for each C32 namespace added to the Ensemble instance.

12.1.8 Creating New Package Mappings

1. If using Ensemble version 2009 or 2010, navigate to the **Namespaces** page as follows:
   a. Access Ensemble's System Management Portal and sign on as the administrator.
   b. Select **Configuration** in the leftmost column. The **Configuration** page displays.
   c. Select **Namespaces** in the leftmost column.
2. If using Ensemble version 2012, navigate to the **Namespaces** page as follows:
   a. Access Ensemble's Management Portal and sign on as the administrator.
   b. Select **System Administration** from the bottom of the left column, then select **Configuration**, then select **System Configuration**, then select **Namespaces**.
   c. Click **Go** to go to the **Namespaces** page.

   The **Namespaces** page displays.
3. In the leftmost column, find the RPMS namespace associated with the new C32 namespace created in Section 12.1.6. This should be the pre-existing RPMS namespace, not the newly created C32 namespace.
4. Select **Package Mappings** for the identified namespace. The **Package Mappings** page (Figure 12-17 or Figure 12-18) displays.

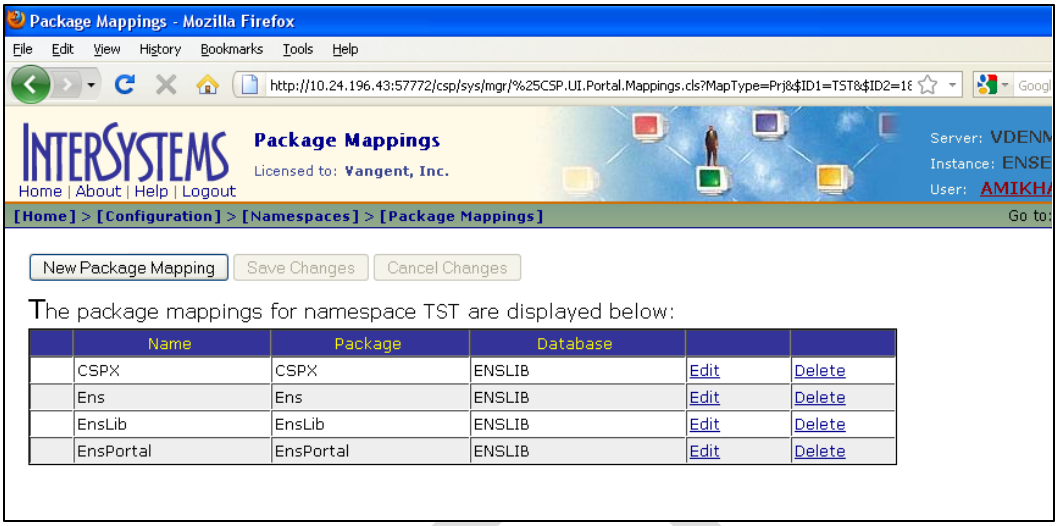

Figure 12-17: Package Mappings page in Ensemble 2009/2010

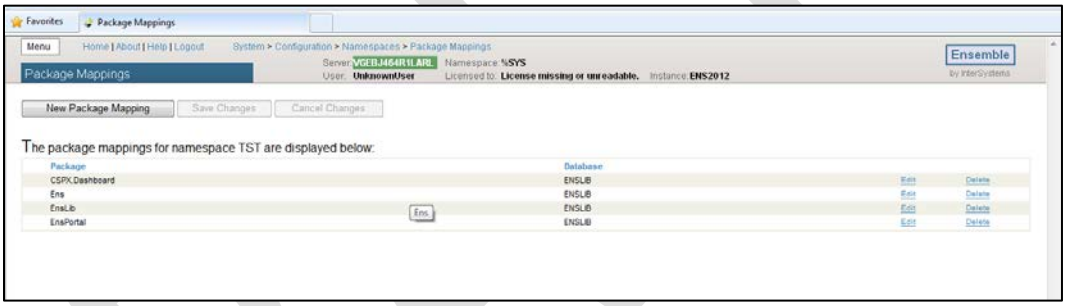

Figure 12-18: Package Mappings page in Ensemble 2012

5. Click **New Package Mapping** (at the top of the **Package Mappings** window). The Package Mapping dialog (Figure 12-19 or Figure 12-20) displays.

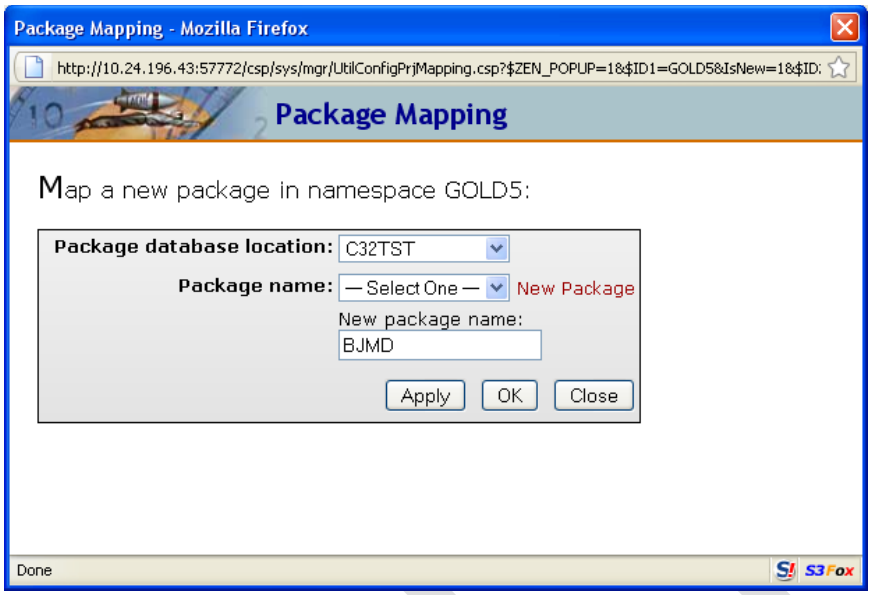

Figure 12-19: Package Mapping Wizard in Ensemble 2009/2010

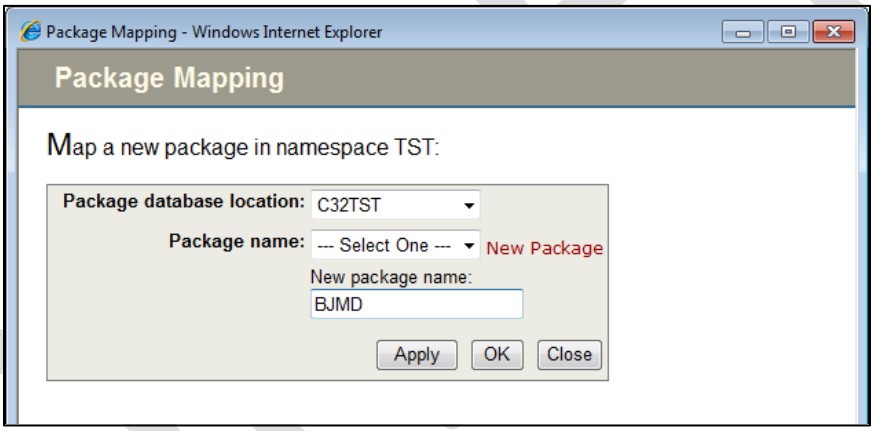

Figure 12-20: Package Mapping Wizard in Ensemble 2012

6. In the **Package database location** list, select the newly created C32 namespace associated with this RPMS namespace.

7. In the **Package name** list, do not select from the list; rather, click the **New Package** link to the right of the list. A new field called **New package name** will display.

Note:	**New Package** is not underlined or highlighted, so it may not look like a regular hyperlink at first sight.

8. In the **New package name** field, type **BJMD**.

9. Click **Apply**.

10. Click **Close**. The **Package Mappings** page displays.

11. Click **Save Changes** (at the top of the page).

12. Select **[Namespaces]** in the thin blue line which reads **[Home] > [Configuration] > [Namespaces] > [Global Mappings]** at the top of the page. The **Namespaces** page displays. Find the name of the newly created C32 namespace in the leftmost column.

13. Select **Package Mappings** for the identified namespace. The **Package Mappings** dialog displays.

14. Click **New Package Mapping** (at the top of the page). The **Package Mapping** dialog (Figure 12-21 or Figure 12-22) displays.

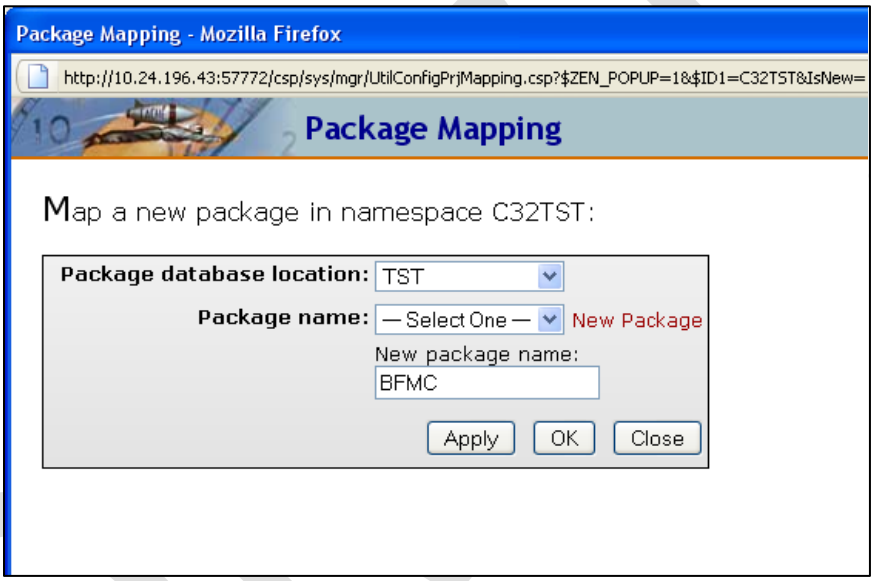

Figure 12-21: Package Mapping Wizard in Ensemble 2009/2010

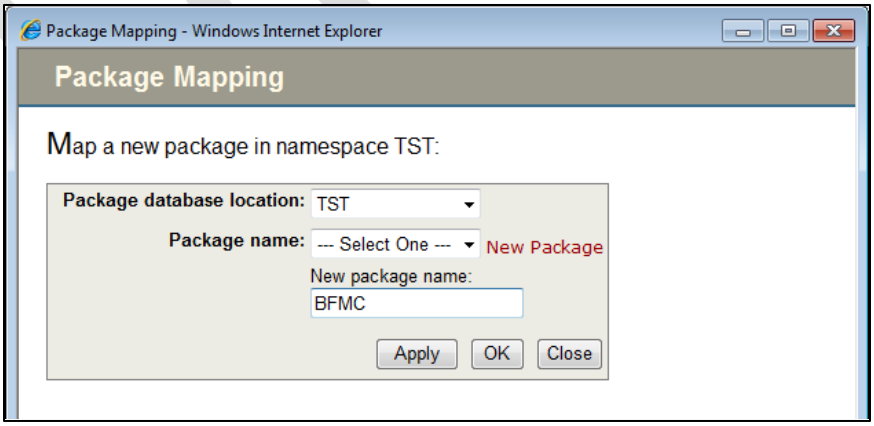

Figure 12-22: Package Mapping Wizard in Ensemble 2012

15. In the **Package database location** list, select the associated RPMS namespace for this C32 namespace.

16. In the **Package name** list, do not select from the list; rather, click the **New Package** link to the right of the list. A new field called **New package name** will display.

> **Note**: **New Package** is not underlined or highlighted, so it may not look like a regular hyperlink at first sight.

17. In the **New package name** field, type **BFMC**.

18. Click **Apply**.

19. Click **Close**. The **Package Mappings** page displays.

20. Click **Save Changes** (at the top of the page).

21. Repeat Steps 3-19 for each C32 namespace added to the Ensemble instance.

At this point the new C32 database(s) and namespace(s) are fully configured. Use the site's backup configuration process to add the newly added database(s) to the list of backed up databases.

12.2 Managing C32 Ensemble Production

As described in the Section 1.4, C32 documents are generated using the C32 Ensemble production in response to requests from the EHR GUI client. In addition, if the site participates in the IHS HIE, C32 documents are generated nightly and sent to outside repositories.

The C32 Ensemble production is automatically started when Ensemble starts up. During normal business operations, the C32 Ensemble production will remain running and will not require maintenance. If it is ever necessary to bring the C32 Ensemble production up or down manually, follow the instructions in Sections 12.2.1 and 12.2.2.

12.2.1 Stopping the C32 Production

To stop a running C32 production, follow the procedure in Section 12.2.1.1 for Ensemble 2009/2010 or in Section 12.2.1.2 for Ensemble 2012.

12.2.1.1 Ensemble 2009/2010

1. Sign on to Ensemble's **System Management Portal** as the administrator.

2. Select **Ensemble Management Portal** at the bottom of the leftmost column.

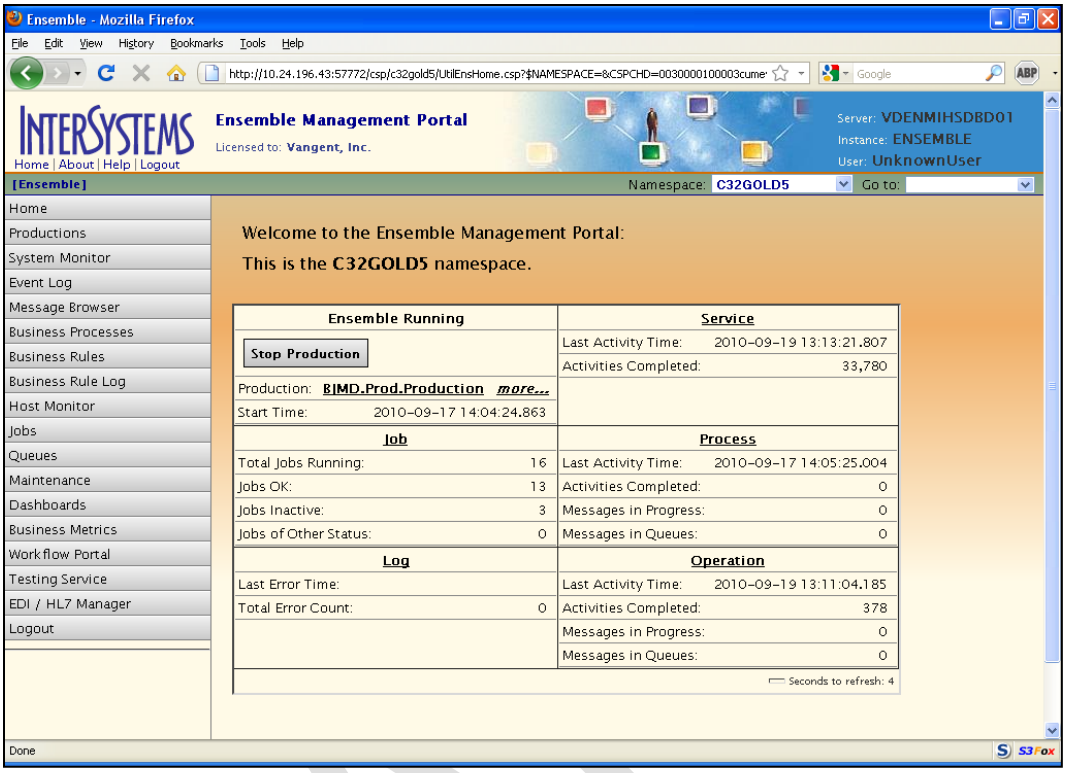

Figure 12-23: Ensemble production in a stopped state

3. In the top right quadrant of the page, find the list labeled **Namespace** and select the namespace defined previously.

   - The page refreshes with the name of the namespace prominently displayed at the top of the page.
   - At the top of the table layout the words **Ensemble Running** display.

Note:	Ensemble namespaces can look almost identical when viewed on this page; ensure that the correct namespace is selected.

4. Click **Stop Production**. It might take the production a few seconds to stop. When it stops, the text in Figure 12-24 appears on the screen. There might be additional messages on this screen if it takes Ensemble more than a few seconds to stop all associated processes.

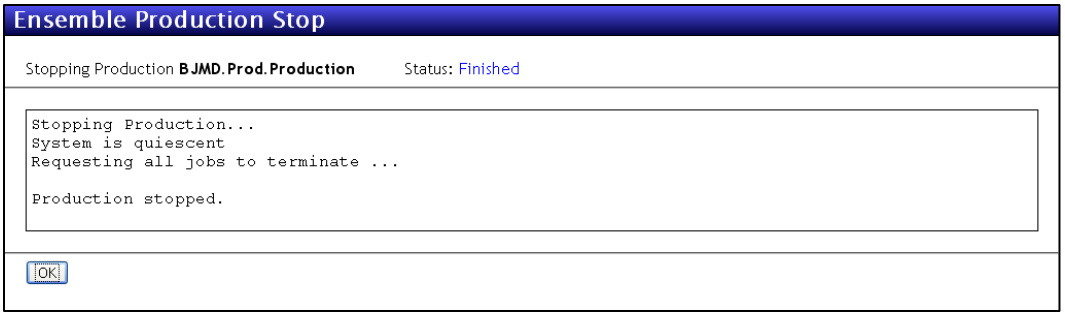

Figure 12-24: Stopping the Ensemble production

5. Click **OK** to return to the **Ensemble productions** screen.

12.2.1.2 Ensemble 2012

1. Sign on to Ensemble's **Management Portal** as the administrator. At the top center, the main **Management Portal** page (Figure 12-25) displays the server name, the current user, the current namespace, license and instance information, and a **Switch** link.

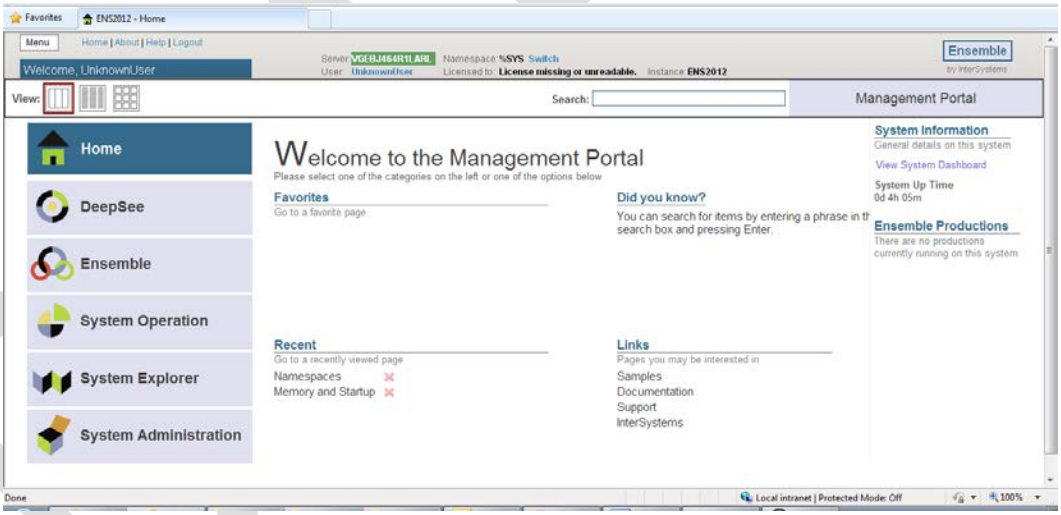

Figure 12-25: Management Portal

2. Click the **Switch** link. The **Namespace Chooser** dialog (Figure 12-26) displays.

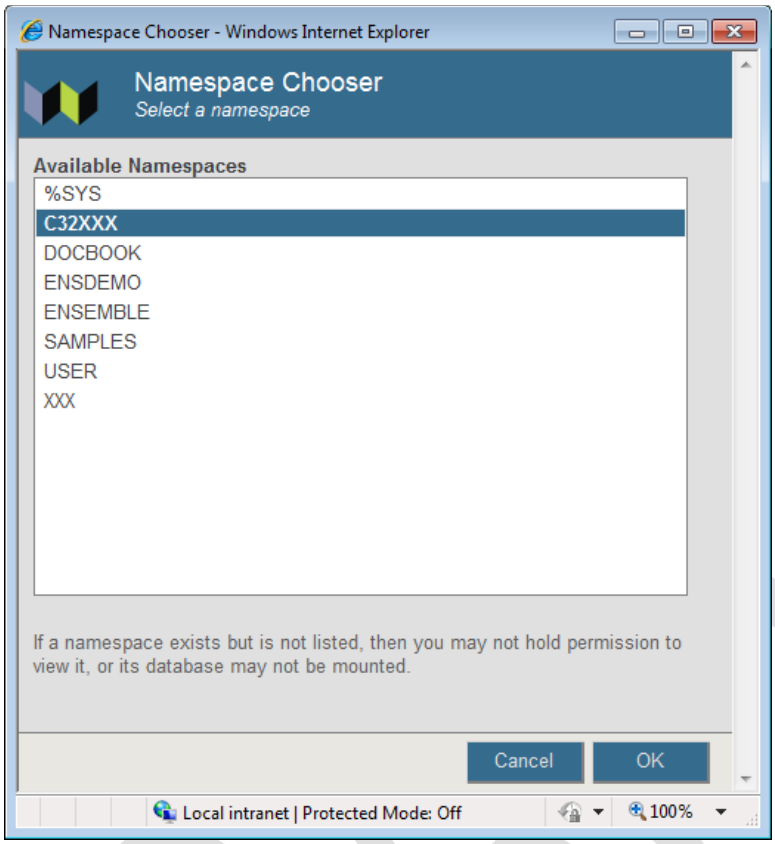

Figure 12-26: Namespace Chooser

3. Select the appropriate C32 namespace. The namespace consists of **C32** concatenated with the name of the RPMS namespace. For example, if the RPMS namespace is called **TEST5**, then the associated C32 namespace will be called **C32TEST5**.

4. Click **OK** to select the namespace. The namespace displayed on the **Management Portal** page (Figure 12-27) is updated to reflect the selection.

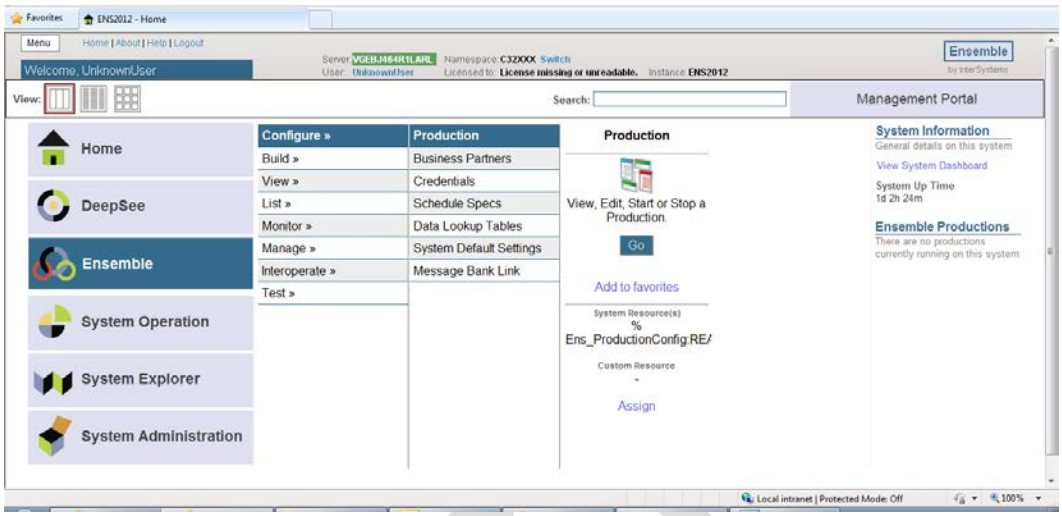

Figure 12-27: Management Portal

5. Select **Ensemble** in the left column, then select **Configure**, then select **Production**.

6. When the **View, Edit, Start, or Stop a Production** option appears, click **Go** to display the **Production Configuration** page (Figure 12-28).

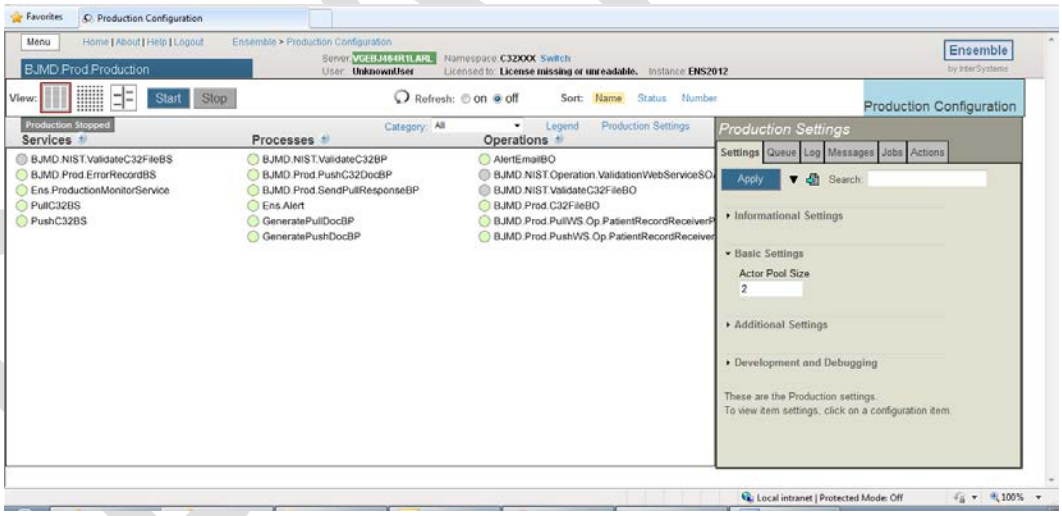

Figure 12-28: Ensemble production in a stopped state

7. Above the **Services** column on the left, the words **Ensemble Running** will be displayed. If the words **Ensemble Stopped** are displayed, then the production is already stopped. Otherwise, click **Stop**. The **Stop Production dialog** (Figure 12-29) displays.

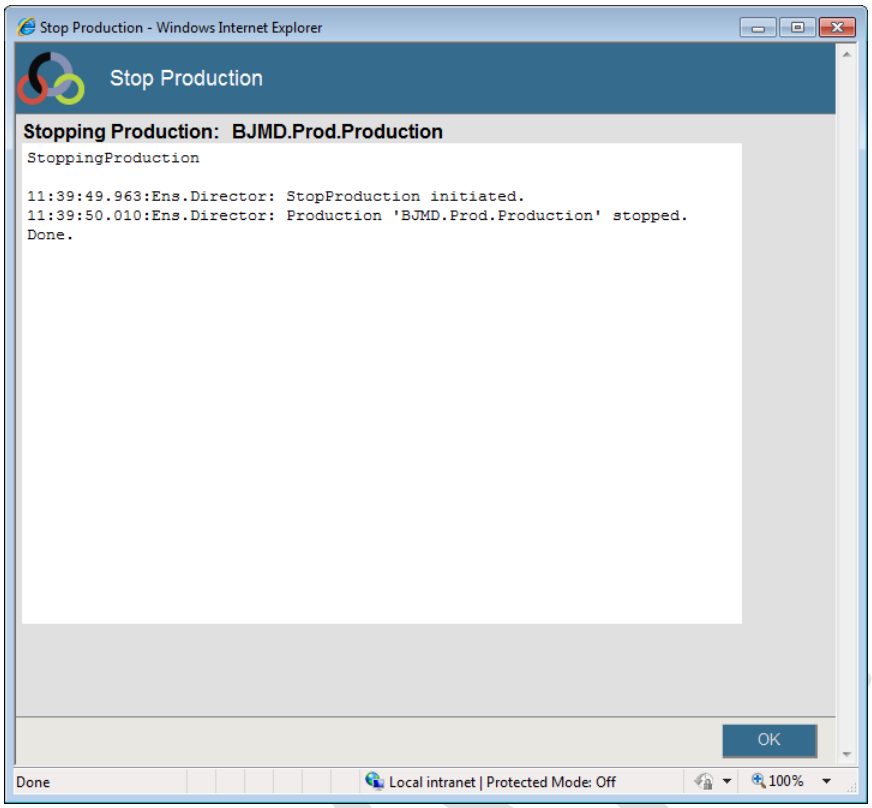

Figure 12-29: **Stop Production** dialog

It might take the production a few seconds to stop. When it stops, the text in Figure 12-29 displays. There might be additional messages on this screen if it takes Ensemble more than a few seconds to stop all associated processes.

8. Click **OK** to return to the **Production Configuration** screen.

12.2.2 Restarting the C32 Production

To start a stopped C32 production, follow the procedure in Section 12.2.2.1 for Ensemble 2009/2010 or in Section 12.2.2.2 for Ensemble 2012.

12.2.2.1 Ensemble 2009/2010

1. Sign on to Ensemble's **System Management Portal** as the administrator.
2. Select **Ensemble Management Portal** at the bottom of the leftmost column.
3. In the top right quadrant of the page, find the list labeled **Namespace** and select the namespace defined previously.
    - The page refreshes with the name of the namespace prominently displayed at the top of the page.

- At the top of the table layout the words **Ensemble Stopped** display.

Note:	Ensemble namespaces can look almost identical when viewed on this page; ensure that the correct namespace is selected.

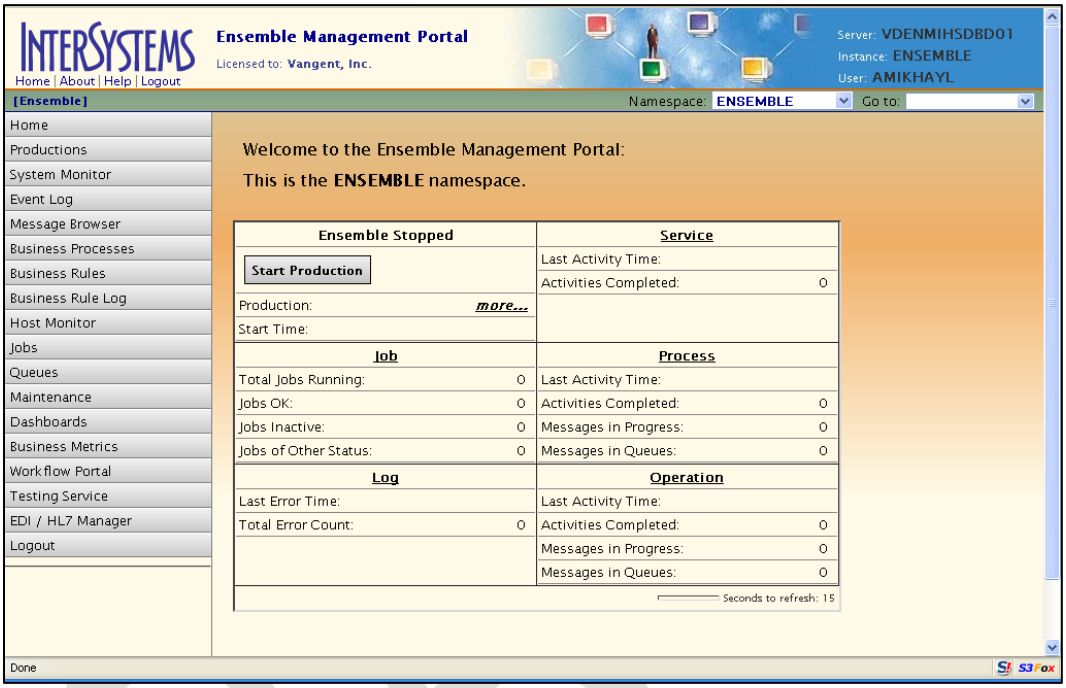

Figure 12-30: Ensemble production in a stopped state

4. Click **Start Production** immediately under the words **Ensemble Stopped**.
5. A dialog appears and asks “Do you wish to start this Production?” Click **OK**. The text in Figure 12-31 should appear.

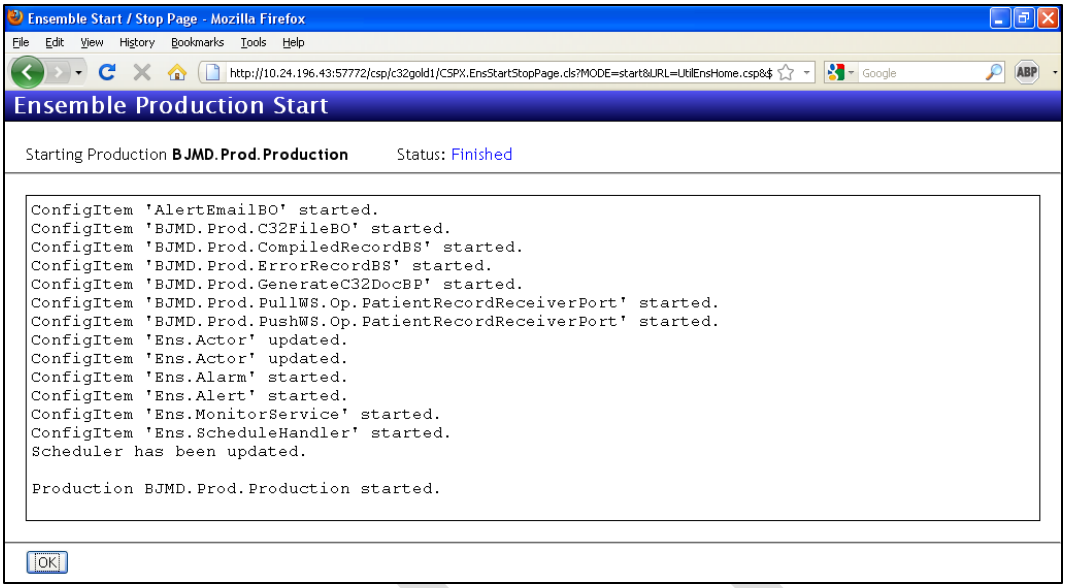

Figure 12-31: Starting the Ensemble production

6. Click **OK** to return to the **Ensemble productions** screen.

Note:	The button that used to read **Start Production** now reads **Stop Production.** The button will remain in this state as long as the production is running.

12.2.2.2 Ensemble 2012

1. Sign on to Ensemble's **Management Portal** as the administrator. At the top center, the main **Management Portal** page (Figure 12-32) displays the server name, the current user, the current namespace, license and instance information, and a **Switch** link.

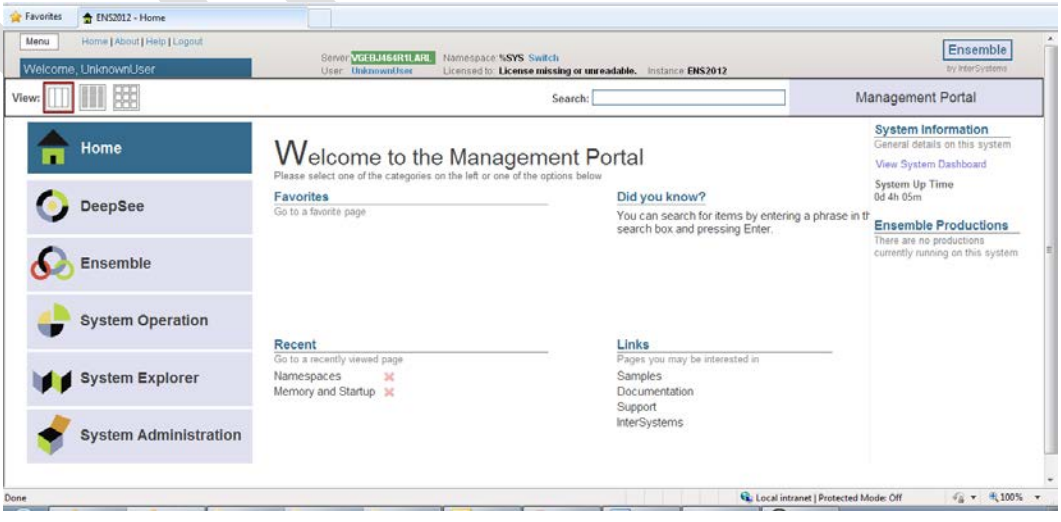

Figure 12-32: Management Portal

7. Click the **Switch** link. The **Namespace Chooser** dialog (Figure 12-33) displays.

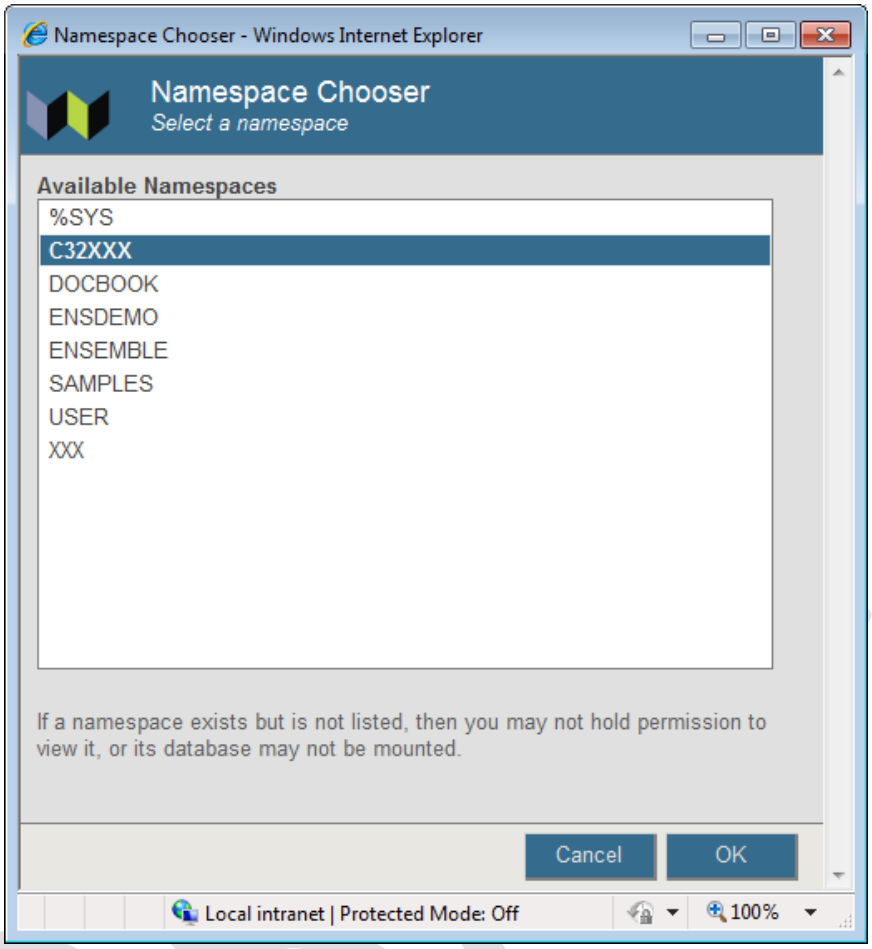

Figure 12-33: Namespace Chooser

2. Select the appropriate C32 namespace. The namespace consists of **C32** concatenated with the name of the RPMS namespace. For example, if the RPMS namespace is called **TEST5**, then the associated C32 namespace will be called **C32TEST5**.

3. Click **OK** to select the namespace. The namespace displayed on the **Management Portal** page (Figure 12-34) is updated to reflect the selection.

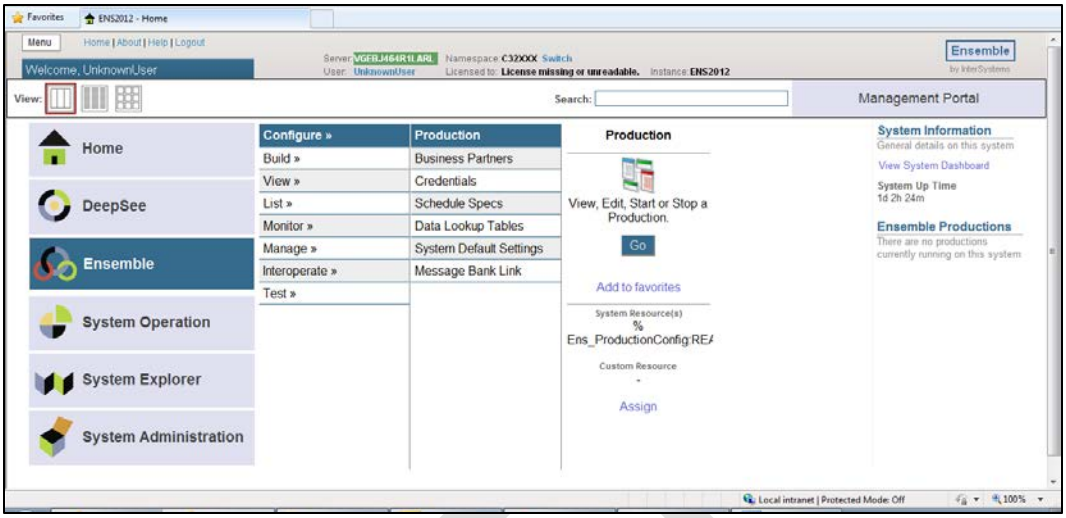

Figure 12-34: Management Portal

4. Select **Ensemble** in the left column, then select **Configure**, then select **Production**.

5. When the **View, Edit, Start, or Stop a Production** option appears, click **Go** to display the **Production Configuration** page (Figure 12-35).

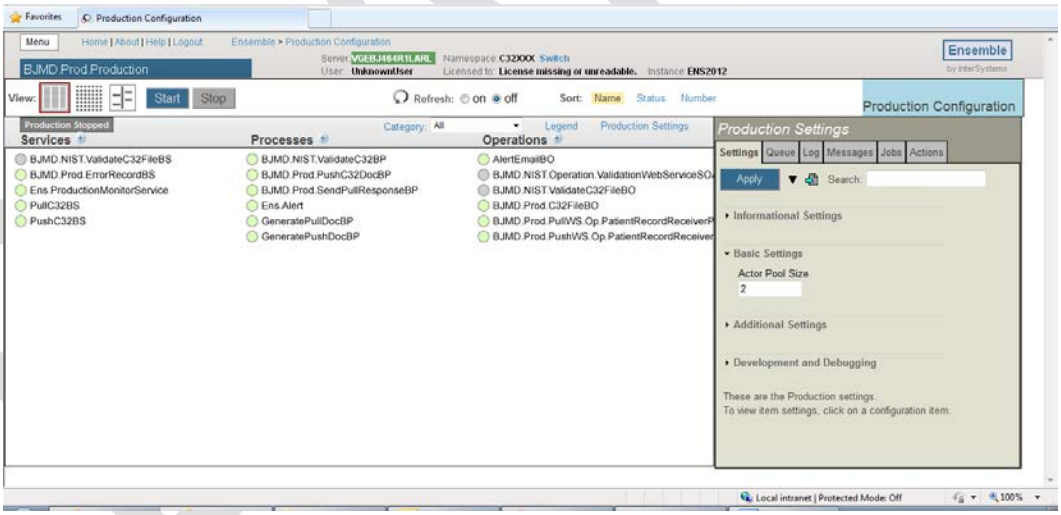

Figure 12-35: Ensemble production in a stopped state

6. Above the **Services** column on the left, the words **Ensemble Stopped** will be displayed. If the words **Ensemble Running** are displayed, then the production is already running; skip the rest of this section. Otherwise, click **Start**. The **Start Production dialog** (Figure 12-36) displays.

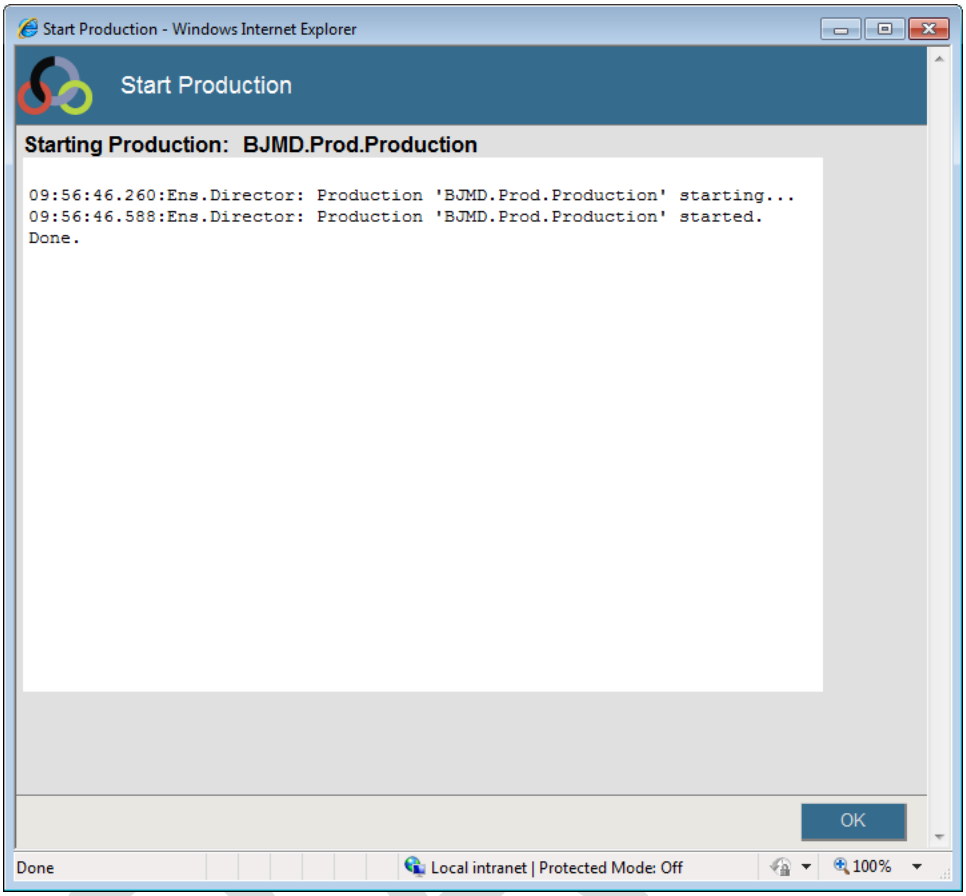

Figure 12-36: Starting the Ensemble production

There might be additional messages on this screen if it takes Ensemble more than a few seconds to stop all associated processes.

7. A dialog will appear and ask “Do you wish to start this Production?” Click **OK**. The text in Figure 12-36 should appear.

8. Click **OK** to return to the **Production Configuration** screen.

13.0 C32 Ensemble/Caché Class Development

13.1 Description of Development Environment

The C32 application was developed using Caché Objects, FM2C (versions below 1.0 were known as **FileMan-to-Caché** mapper) v1.18, and Ensemble productions and data transformations. All new classes created for the C32 application exist within the namespace BJMD. FileMan-derived classes are contained in Caché class package BFMC.

All C32 Caché and Ensemble classes, including FM2C-created classes, are delivered in two KIDS builds and are stored in a regular FileMan file in packed, compressed, and Base64 encoded XML format. The KIDS post-install routine unpacks, uncompresses, decodes, and installs C32 classes in the designated Ensemble namespace using class package mapping.

13.2 C32 Server Requirements

The C32 application requires Ensemble 2009.1.6, 2010.2.3, or 2012.2 to run. It does not run under Ensemble 2009.1.3, 2009.1.4, 2010.1, 2011.x, or 2012.1 at this time. C32 does not require a specific version of the operating system (OS).

13.3 Deployment of C32 Caché and Ensemble Classes

All Caché and Ensemble classes included in the CCD/C32 package are delivered to RPMS sites in packed format as global data within a standard KIDS build. When the KIDS build is created, classes are packed into global nodes using **DO EXPORT^BJMDCLAS**, which exports their definitions to a stream as XML, compresses the result, Base64-encodes it, and outputs it to a FileMan word processing field in File 90608.

On the receiving end, the post-installation part of the KIDS build invokes **DO IMPORT^BJMDCLAS**, which performs the same operation in reverse. It reads the data from the FileMan word processing field in File 90608, Base64-decodes it, uncompresses the result to a stream and then recreates the class definitions from the stream. Even though the KIDS installation process takes place in the RPMS namespace, all BJMD classes are compiled in the associated C32 namespace because of package mapping. The installation process also stops the C32 Ensemble production and the C32 generator before installing the C32 software.

13.4 C32 Data Elements

C32 documents are properly formed XML documents that comply with the HITSP C32 2.5 XML schema. Appendix A: contains a list of these data elements grouped by module.

13.5 C32 Classes

Appendix B: contains a list of the new classes used within the C32 application, grouped by sub-package. All of the specified class names exist within the package/namespace BJMD.

14.0 Assembly Checklist

Indian Health Service (IHS) Section 508
36 CFR Part §1194.21 Software Applications and Operating Systems Checklist

Software application and version: IHS C32 v1.0
Manufacturer/Contractor/Developer: Vangent, Inc
Tester.
Date: May 2010

Fully Compliant (FC): All instances are Fully Compliant

Non-Compliant (NC): All instances are Non-Compliant

Partially Compliant (PC): Requires further explanation

Not Applicable (N/A): Standard is not applicable to this application

Compliance is defined as meeting the requirement set forth in the Section 508 Technical Standards 36 CFR Part 1194; go to the Guide to the 508 Electronic and Information Technologies Web page, http://www.access-board.gov/sec508/guide/.

Any item not rated as fully compliant needs an explanation as to why the standard was not met. Enter the ID number and an explanation in the space provided at the end of the checklist.

ID	36 CFR Part 1194.21: Software Applications and Operating Systems Standards & Checklist Test Question	FC	PC	NC	N/A
1	**(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually**. Can you navigate and use all aspects of the application using only the keyboard?	FC			

ID	36 CFR Part 1194.21: Software Applications and Operating Systems Standards & Checklist Test Question	FC	PC	NC	N/A
2	**(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.** Are all of the accessibility options that were previously set still available?	FC			
3	**(c) A well defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that Assistive Technology can track focus and focus changes.** Is the focus well defined?	FC			
	Is there no evident change in on-screen focus as you navigate through one or more components of an application?				
4	**(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text.** Can the screen reader distinguish and read all controls to the user, such as prompts for edit fields, text, radio buttons, checkboxes, menus, and toolbars?		PC at present-Testing is Pending with Assistive Technology Products		

ID	36 CFR Part 1194.21: Software Applications and Operating Systems Standards & Checklist Test Question	FC	PC	NC	N/A
5	**(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.** Do individual icons used to identify controls, status indicators, or other programmatic elements mean the same thing throughout the application?	FC – there is only one GUI screen in the application and it is internally consistent			
6	**(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.** Is all text presented in the application readable by assistive technologies?	FC - Testing is Pending with Assistive Technology Products			
7	**(g) Applications shall not override user selected contrast and color selections and other individual display attributes.** Does the software not override user-selected contrast and color selections and other individual display attributes or settings?	FC – Compliance depends on tool compliance			
8	**(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.** If animated objects exist, does the information conveyed by the animated object exist in another mode, i.e., captions?	FC			

ID	36 CFR Part 1194.21: Software Applications and Operating Systems Standards & Checklist Test Question	FC	PC	NC	N/A
9	**(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.** If color is the sole means used to prompt a response, indicate an action, distinguish a visual element, or convey information, is the information displayed in another mode? For example: If the color red indicates negative numbers, are those numbers also represented with a negative sign (-)?	FC			
10	**(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.** If users can adjust color and contrast settings, are a variety of color and contrast settings available to choose from?				N/A
11	**(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.** If any flashing or blinking objects or text occurs in the application, are the frequencies less than 2 Hz and greater than 55Hz?	FC			
12	**(l) When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.** Can you navigate and follow links and forms with the keyboard?	FC - Pending			
	Can the electronic forms be used with assistive technologies?				
	Can a screen reading program read all prompts, directions, explanations, or instructions on the form and understand the purpose of each field?				

ID	36 CFR Part 1194.21: Software Applications and Operating Systems Standards & Checklist Test Question	FC	PC	NC	N/A
13	**Documentation** Are all manuals and documentation provided in electronic format, as well as text files, including text descriptions of any charts, graphs, pictures, or graphics of any nature?	FC - Pending			

Enter the ID number and an explanation for any Partially Compliant (PC) or Non-Compliant (NC) results from above.

ID	Explanation
1	Currently all functionality in the application is accessible via keyboard.
4	Testing with screen-reading assistive technology software is pending.
6	See comment on Item #4.
7	The C32 application uses ZEN, an InterSystems technology, to display the C32 Audit Log. According to InterSystems documentation, "InterSystems believes that its products and services can be used by individuals regardless of differences in physical ability. We are committed to compliance with section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d), as amended by Congress in 1998." Independent testing of ZEN's 508 compliance is pending.
12	Testing is pending. See Comment #4 and #6.
13	All documentation is being prepared using IHS form templates and documentation standards and guidelines.

Application results:

Fully Compliant __ Partially Compliant __ Noncompliant __ N/A ___

Additional Comments:

This initial review is based on application status prior to beta testing. Testing related to 508 compliance will continue and improvements will continue to be made prior to national release and potentially thereafter.

Appendix A: C32 Data Elements

C32 documents are properly formed XML documents that comply with the HITSP C32 2.5 XML schema. Individual data elements are listed in this section by module.

A.1 Person

Data Element	Description	C32 Location	Code list
Document Timestamp	Date/time when the document was created.	effectiveTime	
Person ID		recordTarget/patientRole/id	
Person Address	Home address has use attribute **HP**, work address **WP**, and temporary address **TMP**.	recordTarget/patientRole/addr	
Telephone Number	Home phone has use attribute **HP**, work phone **WP**, and temporary phone **TMP**.	recordTarget/patientRole/telecom	
E-mail Address		recordTarget/patientRole/telecom	
Person Name		recordTarget/patientRole/patient/name	
Person Alias	Has use attribute **P**.	recordTarget/patientRole/patient/name	
Gender		recordTarget/patientRole/patient/administrativeGenderCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83135000
Person Date of Birth		recordTarget/patientRole/patient/birthTime	
Marital Status		recordTarget/patientRole/patient/maritalStatusCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=84222000
Religious Affiliation	Not currently sent.	recordTarget/patientRole/patient/ReligiousAffiliationCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83328001

A.2 Support

Data Element	Description	C32 Location	Code list
Next of Kin 1 (NOK1) record	First participant record where Contact Type is **NOK**	participant/associatedEntity/@classCode	
NOK1 Contact Date	Not currently sent.	participant/time	
NOK1 Contact Relationship		participant/associatedEntity/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83340000
NOK1 Contact Address		participant/associatedEntity/addr	
NOK1 Contact Phone Number	Home phone has use attribute **HP** and work phone **WP**.	participant/associatedEntity/telecom	
NOK1 Contact Name		participant/associatedEntity/associatedPerson/name	
Next of Kin 2 (NOK2) record	Second participant record where Contact Type is **NOK**.	participant/associatedEntity/@classCode	
NOK2 Contact Date	Not currently sent.	participant/time	
NOK2 Contact Relationship		participant/associatedEntity/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83340000
NOK2 Contact Address		participant/associatedEntity/addr	
NOK2 Contact Phone Number	Home phone has use attribute **HP** and work phone **WP**.	participant/associatedEntity/telecom	
NOK2 Contact Name		participant/associatedEntity/associatedPerson/name	
Emergency Contact 1 (ECON1) record	First participant record where Contact Type is **ECON**	participant/associatedEntity/@classCode	
ECON1 Contact Date	Not currently sent.	participant/time	
ECON1 Contact Relationship		participant/associatedEntity/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83340000

Data Element	Description	C32 Location	Code list
ECON1 Contact Address		participant/associatedEntity/addr	
ECON1 Contact Phone Number	Home phone has use attribute **HP** and work phone **WP**.	participant/associatedEntity/telecom	
ECON1 Contact Name		participant/associatedEntity/associatedPerson/name	
Emergency Contact 2 (ECON2) record	Second participant record where Contact Type is "ECON"	participant/associatedEntity/@classCode	
ECON2 Contact Date	Not currently sent.	participant/time	
ECON2 Contact Relationship		participant/associatedEntity/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83340000
ECON2 Contact Address		participant/associatedEntity/addr	
ECON2 Contact Phone Number	Home phone has use attribute **HP** and work phone **WP**.	participant/associatedEntity/telecom	
ECON2 Contact Name		participant/associatedEntity/associatedPerson/name	
Guardian (GUARD) record	Guardian record. Contact Type is **GUARD**.	recordTarget/patientRole/patient/guardian/@classCode	
GUARD Contact Relationship		recordTarget/patientRole/patient/guardian/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83340000
GUARD Contact Address		recordTarget/patientRole/patient/guardian/addr	
GUARD Contact Phone Number	Home phone has use attribute **HP** and work phone **WP**.	recordTarget/patientRole/patient/guardian/telecom	
GUARD Contact Name		recordTarget/patientRole/patient/guardian/guardianPerson/name	

A.3 Information Source

Data Element	Description	C32 Location	Code list
Author Time	Date/time the document was created.	author/time	
Author Name		author/assignedAuthor/representedOrganization/name	
Reference	Not currently sent.		
Reference Document ID	Not currently sent.		
Reference Document URL	Not currently sent.		
Information Source Name		informant/assignedEntity/representedOrganization/name	

A.4 Healthcare Provider

Data Element	Description	C32 Location	Code list
Provider ID		documentationOf/serviceEvent/performer/assignedEntity/id	
Date Range	Not currently sent.	documentationOf/serviceEvent/performer/time	
Provider Role Coded		documentationOf/serviceEvent/performer/functionCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83329000
Provider Role Free Text		documentationOf/serviceEvent/performer/functionCode/originalText	
Provider Type		documentationOf/serviceEvent/performer/assignedEntity/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83341000
Provider Address		documentationOf/serviceEvent/performer/assignedEntity/addr	
Provider Phone		documentationOf/serviceEvent/performer/assignedEntity/telecom	

Data Element	Description	C32 Location	Code list
Provider Email		documentationOf/serviceEvent/performer/assignedEntity/telecom	
Provider Name		documentationOf/serviceEvent/performer/assignedEntity/assignedPerson/name	
Provider's Patient ID		documentationOf/serviceEvent/performer/assignedEntity/patient/id	

A.5 Condition

Data Element	Description	C32 Location	Code list
Problem Date		component/structuredBody/component/section/entry/act/entryRelationship/observation/effectiveTime	
Problem Type		component/structuredBody/component/section/entry/act/entryRelationship/observation/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83363000
Problem Name		component/structuredBody/component/section/entry/act/entryRelationship/observation/text	
Problem Code	Not currently sent.	component/structuredBody/component/section/entry/act/entryRelationship/observation/value	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83363000
Treating Provider		component/structuredBody/component/section/entry/act/entryRelationship/observation/performer/assignedEntity	
Problem Status		component/structuredBody/component/section/entry/act/entryRelationship/observation/entryRelationship/observation/value	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=86715000

Data Element	Description	C32 Location	Code list
Problem Health Status	Not currently sent.		
Episode Observations	Not currently sent.		
Patient Awareness	Not currently sent.		
ICD-9 Code		component/structuredBody/component/section/entry/act/entryRelationship/observation/value/@code	
ICD-9 Description		component/structuredBody/component/section/entry/act/entryRelationship/observation/value/@displayName	

A.6 Allergy

Data Element	Description	C32 Location	Code list
Adverse Event Date		component/structuredBody/component/section/entry/observation/effectiveTime	
Adverse Event Type		component/structuredBody/component/section/entry/observation/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=84255000
Product Free Text		component/structuredBody/component/section/entry/observation/participant/participantRole/playingEntity/name	
Product Code	Not currently sent.	component/structuredBody/component/section/entry/observation/participant/participantRole/playingEntity/code	
Reaction Free Text		component/structuredBody/component/section/entry/observation/entryRelationship/observation/text	

Data Element	Description	C32 Location	Code list
Reaction Code	Not currently sent.	component/structuredBody/component/section/entry/observation/entryRelationship/observation/code	
Severity Free Text	Not currently sent.		
Severity Coded	Not currently sent.		
Alert Status	Not currently sent.		
Interventions	Not currently sent.		
ID		component/structuredBody/component/section/entry/observation/id/@extension	
NDC		component/structuredBody/component/section/entry/observation/participant/participantRole/playingEntity/code/@code	

A.7 Encounter

Data Element	Description	C32 Location	Code list
Encounter ID		component/structuredBody/component/section/entry/encounter/id	
Encounter Type		component/structuredBody/component/section/entry/encounter/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=hitsp&itemKey=83350000
Encounter Free Text Type		component/structuredBody/component/section/entry/encounter/text	
Encounter Date/Time		component/structuredBody/component/section/entry/encounter/effectiveTime	
Encounter Provider		component/structuredBody/component/section/entry/encounter/performer/assignedEntity/assignedPerson/name	

Data Element	Description	C32 Location	Code list
Encounter Provider Clinic		component/structuredBody/component/section/entry/encounter/participant/participantRole/playingEntity/name	
Encounter Provider Location		component/structuredBody/component/section/entry/encounter/participant/participantRole/playingEntity/name	

A.8 Vital Sign

Data Element	Description	C32 Location	Code list
Result ID		component/structuredBody/component/section/entry/organizer/component/observation/id	
Result Date/Time		component/structuredBody/component/section/entry/organizer/component/observation/effectiveTime	
Vitals Result Type		component/structuredBody/component/section/entry/organizer/component/observation/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83353000
Result Status		component/structuredBody/component/section/entry/organizer/component/observation/statusCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83352000
Result Value		component/structuredBody/component/section/entry/organizer/component/observation/value	
Result Interpretation	Not currently sent.		
Result Reference Range	Not currently sent.		

A.9 Immunization

Data Element	Description	C32 Location	Code list
Refusal	Attribute negationInd is **false** for an immunization, **true** for a refusal.	component/structuredBody/component/section/entry/substanceAdministration	
Administered Date		component/structuredBody/component/section/entry/substanceAdministration/effectiveTime	
Medication Series Number	Where the typeCode attribute of the entryRelationship element is **SUBJ**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/observation/value	
Reaction	Where the typeCode attribute of the entryRelationship element is **CAUS**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/observation/text	
Performer		component/structuredBody/component/section/entry/substanceAdministration/performer/assignedEntity/assignedPerson/name	
Coded Product Name		component/structuredBody/component/section/entry/substanceAdministration/consumable/manufacturedProduct/manufacturedMaterial/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=57983000
Free Text Product Name		component/structuredBody/component/section/entry/substanceAdministration/consumable/manufacturedProduct/manufacturedMaterial/code/originalText	
Drug Manufacturer		component/structuredBody/component/section/entry/substanceAdministration/consumable/manufacturedProduct/manufacturerOrganization/name	

Data Element	Description	C32 Location	Code list
Lot Number		component/structuredBody/component/section/entry/substanceAdministration/consumable/manufacturedProduct/manufacturedMaterial/lotNumberText	
Refusal Reason		component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/act/entryRelationship/observation/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=84260000

A.10 Insurance Provider

Data Element	Description	C32 Location	Code list
Group Number		component/structuredBody/component/section/entry/act/entryRelationship/act/id	
Health Insurance Type		component/structuredBody/component/section/entry/act/entryRelationship/act/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=25719000
Health Plan Insurance Information Source ID	Not currently sent.		
Health Plan Insurance Information Source Address	Not currently sent.		
Health Plan Insurance Information Source Phone	Not currently sent.		
Health Plan Insurance Information Source Email	Not currently sent.		
Health Plan Insurance Information Source Name	Not currently sent.		
Health Plan Coverage Dates	Where the typeCode attribute of the participant element is **COV**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/time	

Data Element	Description	C32 Location	Code list
Member ID	Where the typeCode attribute of the participant element is **COV**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/id	
Patient Relationship to Subscriber	Where the typeCode attribute of the participant element is **COV**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83272000
Patient Address	Not currently sent.		
Patient Phone	Not currently sent.		
Patient Email	Not currently sent.		
Patient Name	Where the typeCode attribute of the participant element is **COV**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/playingEntity/name	
Patient Date of Birth	Where the typeCode attribute of the participant element is **COV**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/playingEntity/birthTime	
Financial Responsibility		component/structuredBody/component/section/entry/act/entryRelationship/act/performer/assignedEntity/code	http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83368000
Subscriber ID	Where the typeCode attribute of the participant element is **HLD**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/id	
Subscriber Address	Where the typeCode attribute of the participant element is **HLD**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/addr	
Subscriber Phone	Where the typeCode attribute of the participant element is **HLD**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/telecom	

Data Element	Description	C32 Location	Code list
Subscriber Email Address	Where the typeCode attribute of the participant element is **HLD**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/telecom	
Subscriber Name	Where the typeCode attribute of the participant element is **HLD**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/playingEntity/name	
Subscriber Date of Birth	Where the typeCode attribute of the participant element is **HLD**.	component/structuredBody/component/section/entry/act/entryRelationship/act/participant/participantRole/playingEntity/birthTime	
Effective Date of Financial Responsibility (Guarantor)		component/structuredBody/component/section/entry/act/entryRelationship/act/performer/time	
Financial Responsibility Party Address (Guarantor)		component/structuredBody/component/section/entry/act/entryRelationship/act/performer/assignedEntity/addr	
Financial Responsibility Party Phone (Guarantor)		component/structuredBody/component/section/entry/act/entryRelationship/act/performer/assignedEntity/telecom	
Financial Responsibility Party Email (Guarantor)		component/structuredBody/component/section/entry/act/entryRelationship/act/performer/assignedEntity/telecom	
Financial Responsibility Party Name (Guarantor)		component/structuredBody/component/section/entry/act/entryRelationship/act/performer/assignedEntity/assignedPerson/name	
Health Plan Name		component/structuredBody/component/section/entry/act/entryRelationship/act/text	

A.11 Procedure

Data Element	Description	C32 Location	Code list
Procedure ID		component/structuredBody/component/section/entry/procedure/id/@extension	
Date		component/structuredBody/component/section/entry/procedure/effectiveTime/low/@value	
Code	Only the first significant ICD-9 code is reported in the coded data section.	component/structuredBody/component/section/entry/procedure/code/@code	
Description		component/structuredBody/component/section/entry/procedure/text/reference/@value	
Practitioner		component/structuredBody/component/section/entry/procedure/performer/assignedEntity/assignedPerson/name	
Location		component/structuredBody/component/section/entry/procedure/performer/assignedEntity/representedOrganization/asOrganizationPartOf/wholeOrganization/name	
Clinic		component/structuredBody/component/section/entry/procedure/performer/assignedEntity/representedOrganization/name	

A.12 Medication

Data Element	Description	C32 Location	Code list
Free Text Sig		component/structuredBody/component/section/entry/substanceAdministration/text/reference	
Indicate Medication Stopped	Not currently sent.		
Administration Timing	Not currently sent.		
Frequency		component/structuredBody/component/section/entry/substanceAdministration/effectiveTime	
Interval	Not currently sent.		
Duration	Not currently sent.		
Route		component/structuredBody/component/section/entry/substanceAdministration/routeCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83362000
Dose		component/structuredBody/component/section/entry/substanceAdministration/doseQuantity	
Site	Not currently sent.		
Dose Restriction	Not currently sent.		
Product Form		component/structuredBody/component/section/entry/substanceAdministration/administrationUnitCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83360000
Delivery Method	Not currently sent.		
Coded Product Name		component/structuredBody/component/section/entry/substanceAdministration/consumable/manufacturedProduct/manufacturedMaterial/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=86654000
Coded Brand Name	Not currently sent.		
Free Text Product Name		component/structuredBody/component/section/entry/substanceAdministration/consumable/manufacturedProduct/manufacturedMaterial/code/originalText	

Data Element	Description	C32 Location	Code list
Free Text Brand Name	Not currently sent.		
Drug Manufacturer		component/structuredBody/component/section/entry/substanceAdministration/consumable/manufacturedProduct/manufacturerOrganization/name	
Product Concentration	Not currently sent.		
Type of Medication	Where the typeCode attribute of the entryRelationship element is **SUBJ**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/observation/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83359000
Status of Medication	Where the typeCode attribute of the entryRelationship element is **REFR**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/observation/value	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83349000
Indication	Not currently sent.		
Patient Instructions	Where the typeCode attribute of the entryRelationship element is **SUBJ**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/act/text	
Reaction	Not currently sent.		
Vehicle	Not currently sent.		
Dose Indicator	Not currently sent.		
Order Number	Not currently sent.		
Fills	Where the typeCode attribute of the entryRelationship element is **REFR**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/repeatNumber	
Quantity	Where the typeCode attribute of the entryRelationship element is **REFR**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/quantity	
Order Expiration Date/Time	Where the typeCode attribute of the entryRelationship element is **REFR**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/effectiveTime	

Data Element	Description	C32 Location	Code list
Order Date/Time	Where the typeCode attribute of the entryRelationship element is **REFR**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/author/time	
Ordering Provider	Where the typeCode attribute of the entryRelationship element is **REFR**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/author/assignedAuthor/assignedPerson/name	
Fulfillment Instructions	Not currently sent.		
Prescription Number	Where the typeCode attribute of the entryRelationship element is **COMP**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/id	
Provider	Where the typeCode attribute of the entryRelationship element is **COMP**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/performer/assignedEntity/representedOrganization/name	
Location	Where the typeCode attribute of the entryRelationship element is **COMP**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/performer/assignedEntity/addr	
Dispense Date	Where the typeCode attribute of the entryRelationship element is **COMP**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/effectiveTime	
Quantity Dispensed	Where the typeCode attribute of the entryRelationship element is **COMP**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/quantity	
Fill Number	Where the typeCode attribute of the entryRelationship element is **COMP**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/sequenceNumber	

Data Element	Description	C32 Location	Code list
Fill Status	Where the typeCode attribute of the entryRelationship element is **COMP**.	component/structuredBody/component/section/entry/substanceAdministration/entryRelationship/supply/statusCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83357000
Inpatient Status	Represented in the coded section as an **I** or **O** in the medication ID.	component/structuredBody/component/section/entry/substanceAdministration/id/@extension	
Medication ID		component/structuredBody/component/section/entry/substanceAdministration/id/@extension	

A.13 Result

Data Element	Description	C32 Location	Code list
Result ID		component/structuredBody/component/section/entry/observation/id	
Result Date/Time		component/structuredBody/component/section/entry/observation/effectiveTime	
Result Type		component/structuredBody/component/section/entry/observation/code	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83243001
Result Status		component/structuredBody/component/section/entry/observation/statusCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83352000
Result Value		component/structuredBody/component/section/entry/observation/value	
Result Interpretation		component/structuredBody/component/section/entry/observation/interpretationCode	Go to the United States Health Information Web Page http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=83351000

Data Element	Description	C32 Location	Code list
Result Reference Range		component/structuredBody/component/section/entry/observation/referenceRange/observationRange/text	

Appendix B: C32 Classes

B.1 Audit

Classes supporting capturing C32 documents as streams and storing them in Ensemble when the request for C32 generation came from the EHR GUI client. Includes the C32 Audit Log, which allows searching and displaying C32 requests and documents.

- BJMD.Audit.Application
- BJMD.Audit.AuditLog
- BJMD.Audit.View.C32
- BJMD.Audit.View.Home
- BJMD.Audit.View.Log
- BJMD.Audit.View.Request
- BJMD.Audit.View.Template

B.2 C32

Automatically generated classes that support Clinical Document Architecture Release 2 (CDA R2) and the CCD/C32 schema.

- BJMD.C32Doc.CDA.AD
- BJMD.C32Doc.CDA.ADXP
- BJMD.C32Doc.CDA.ANY
- BJMD.C32Doc.CDA.ANYNonNull
- BJMD.C32Doc.CDA.ActClass
- BJMD.C32Doc.CDA.ActClassComposition
- BJMD.C32Doc.CDA.ActClassCondition
- BJMD.C32Doc.CDA.ActClassContract
- BJMD.C32Doc.CDA.ActClassControlAct
- BJMD.C32Doc.CDA.ActClassDocument
- BJMD.C32Doc.CDA.ActClassEntry
- BJMD.C32Doc.CDA.ActClassExtract
- BJMD.C32Doc.CDA.ActClassFinancialContract

- BJMD.C32Doc.CDA.ActClassObservation
- BJMD.C32Doc.CDA.ActClassObservationSeries
- BJMD.C32Doc.CDA.ActClassOrganizer
- BJMD.C32Doc.CDA.ActClassPublicHealthCase
- BJMD.C32Doc.CDA.ActClassROI
- BJMD.C32Doc.CDA.ActClassRoot
- BJMD.C32Doc.CDA.ActClassSupply
- BJMD.C32Doc.CDA.ActClinicalDocument
- BJMD.C32Doc.CDA.ActContainer
- BJMD.C32Doc.CDA.ActMood
- BJMD.C32Doc.CDA.ActMoodCompletionTrack
- BJMD.C32Doc.CDA.ActMoodIntent
- BJMD.C32Doc.CDA.ActMoodPredicate
- BJMD.C32Doc.CDA.ActRelationshipAccounting
- BJMD.C32Doc.CDA.ActRelationshipConditional
- BJMD.C32Doc.CDA.ActRelationshipCostTracking
- BJMD.C32Doc.CDA.ActRelationshipExcerpt
- BJMD.C32Doc.CDA.ActRelationshipFulfills
- BJMD.C32Doc.CDA.ActRelationshipHasComponent
- BJMD.C32Doc.CDA.ActRelationshipObjective
- BJMD.C32Doc.CDA.ActRelationshipOutcome
- BJMD.C32Doc.CDA.ActRelationshipPertains
- BJMD.C32Doc.CDA.ActRelationshipPosting
- BJMD.C32Doc.CDA.ActRelationshipReason
- BJMD.C32Doc.CDA.ActRelationshipReplacement
- BJMD.C32Doc.CDA.ActRelationshipSequel
- BJMD.C32Doc.CDA.ActRelationshipType
- BJMD.C32Doc.CDA.AdditionalLocator
- BJMD.C32Doc.CDA.AddressPartType
- BJMD.C32Doc.CDA.AddressUse

- BJMD.C32Doc.CDA.ApplicationMediaType
- BJMD.C32Doc.CDA.AskedButUnknown
- BJMD.C32Doc.CDA.AudioMediaType
- BJMD.C32Doc.CDA.BIN
- BJMD.C32Doc.CDA.BL1
- BJMD.C32Doc.CDA.BN1
- BJMD.C32Doc.CDA.BXITCD
- BJMD.C32Doc.CDA.BXITIVLPQ
- BJMD.C32Doc.CDA.BinaryDataEncoding
- BJMD.C32Doc.CDA.BuildingNumber
- BJMD.C32Doc.CDA.CD
- BJMD.C32Doc.CDA.CE
- BJMD.C32Doc.CDA.CR
- BJMD.C32Doc.CDA.CS1
- BJMD.C32Doc.CDA.CV
- BJMD.C32Doc.CDA.CalendarCycle
- BJMD.C32Doc.CDA.CalendarCycleOneLetter
- BJMD.C32Doc.CDA.CalendarCycleTwoLetter
- BJMD.C32Doc.CDA.Classes
- BJMD.C32Doc.CDA.CommunicationFunctionType
- BJMD.C32Doc.CDA.CompressionAlgorithm
- BJMD.C32Doc.CDA.ContextControl
- BJMD.C32Doc.CDA.ContextControlAdditive
- BJMD.C32Doc.CDA.ContextControlNonPropagating
- BJMD.C32Doc.CDA.ContextControlOverriding
- BJMD.C32Doc.CDA.ContextControlPropagating
- BJMD.C32Doc.CDA.Currency
- BJMD.C32Doc.CDA.DeliveryAddressLine
- BJMD.C32Doc.CDA.ED
- BJMD.C32Doc.CDA.EIVL.event

- BJMD.C32Doc.CDA.EIVLPPDTS
- BJMD.C32Doc.CDA.EIVLTS
- BJMD.C32Doc.CDA.EN
- BJMD.C32Doc.CDA.ENXP
- BJMD.C32Doc.CDA.EntityClass
- BJMD.C32Doc.CDA.EntityClassContainer
- BJMD.C32Doc.CDA.EntityClassDevice
- BJMD.C32Doc.CDA.EntityClassLivingSubject
- BJMD.C32Doc.CDA.EntityClassManufacturedMaterial
- BJMD.C32Doc.CDA.EntityClassMaterial
- BJMD.C32Doc.CDA.EntityClassNonPersonLivingSubject
- BJMD.C32Doc.CDA.EntityClassOrganization
- BJMD.C32Doc.CDA.EntityClassPlace
- BJMD.C32Doc.CDA.EntityClassRoot
- BJMD.C32Doc.CDA.EntityDeterminer
- BJMD.C32Doc.CDA.EntityDeterminerDetermined
- BJMD.C32Doc.CDA.EntityNamePartQualifier
- BJMD.C32Doc.CDA.EntityNamePartType
- BJMD.C32Doc.CDA.EntityNameSearchUse
- BJMD.C32Doc.CDA.EntityNameUse
- BJMD.C32Doc.CDA.GLISTPQ
- BJMD.C32Doc.CDA.GLISTTS
- BJMD.C32Doc.CDA.GregorianCalendarCycle
- BJMD.C32Doc.CDA.HXITCE
- BJMD.C32Doc.CDA.HXITPQ
- BJMD.C32Doc.CDA.HomeAddressUse
- BJMD.C32Doc.CDA.II
- BJMD.C32Doc.CDA.INT1
- BJMD.C32Doc.CDA.IVLINT
- BJMD.C32Doc.CDA.IVLMO

- BJMD.C32Doc.CDA.IVLPPDPQ
- BJMD.C32Doc.CDA.IVLPPDTS
- BJMD.C32Doc.CDA.IVLPQ
- BJMD.C32Doc.CDA.IVLREAL
- BJMD.C32Doc.CDA.IVLTS
- BJMD.C32Doc.CDA.IVXBINT
- BJMD.C32Doc.CDA.IVXBMO
- BJMD.C32Doc.CDA.IVXBPPDPQ
- BJMD.C32Doc.CDA.IVXBPPDTS
- BJMD.C32Doc.CDA.IVXBPQ
- BJMD.C32Doc.CDA.IVXBREAL
- BJMD.C32Doc.CDA.IVXBTS
- BJMD.C32Doc.CDA.ImageMediaType
- BJMD.C32Doc.CDA.IntegrityCheckAlgorithm
- BJMD.C32Doc.CDA.LicensedEntityRole
- BJMD.C32Doc.CDA.MO
- BJMD.C32Doc.CDA.MediaType
- BJMD.C32Doc.CDA.ModelMediaType
- BJMD.C32Doc.CDA.MultipartMediaType
- BJMD.C32Doc.CDA.NamePseudonymUse
- BJMD.C32Doc.CDA.NameRepresentationUse
- BJMD.C32Doc.CDA.NoInformation
- BJMD.C32Doc.CDA.NullFlavor
- BJMD.C32Doc.CDA.ON
- BJMD.C32Doc.CDA.OrganizationNamePartQualifier
- BJMD.C32Doc.CDA.OrganizationNameUse
- BJMD.C32Doc.CDA.Other
- BJMD.C32Doc.CDA.PIVLPPDTS
- BJMD.C32Doc.CDA.PIVLTS
- BJMD.C32Doc.CDA.PN

- BJMD.C32Doc.CDA.POCDMT000040.Act
- BJMD.C32Doc.CDA.POCDMT000040.AssignedAuthor
- BJMD.C32Doc.CDA.POCDMT000040.AssignedCustodian
- BJMD.C32Doc.CDA.POCDMT000040.AssignedEntity
- BJMD.C32Doc.CDA.POCDMT000040.AssociatedEntity
- BJMD.C32Doc.CDA.POCDMT000040.Authenticator
- BJMD.C32Doc.CDA.POCDMT000040.Author
- BJMD.C32Doc.CDA.POCDMT000040.AuthoringDevice
- BJMD.C32Doc.CDA.POCDMT000040.Authorization
- BJMD.C32Doc.CDA.POCDMT000040.Birthplace
- BJMD.C32Doc.CDA.POCDMT000040.ClinicalDocument
- BJMD.C32Doc.CDA.POCDMT000040.Component1
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- BJMD.C32Doc.SDTC.ParticipationType
- BJMD.C32Doc.SDTC.ParticipationVerifier
- BJMD.C32Doc.SDTC.PersonNamePartAffixTypes
- BJMD.C32Doc.SDTC.PersonNamePartChangeQualifier
- BJMD.C32Doc.SDTC.PersonNamePartMiscQualifier
- BJMD.C32Doc.SDTC.PersonNamePartQualifier
- BJMD.C32Doc.SDTC.PersonNameUse
- BJMD.C32Doc.SDTC.PostalAddressUse
- BJMD.C32Doc.SDTC.ProbabilityDistributionType
- BJMD.C32Doc.SDTC.QTY
- BJMD.C32Doc.SDTC.REAL1
- BJMD.C32Doc.SDTC.RTOMOPQ
- BJMD.C32Doc.SDTC.RTOPQPQ
- BJMD.C32Doc.SDTC.RTOQTYQTY
- BJMD.C32Doc.SDTC.RelatedLinkType
- BJMD.C32Doc.SDTC.RoleClass
- BJMD.C32Doc.SDTC.RoleClassAgent
- BJMD.C32Doc.SDTC.RoleClassAssignedEntity

- BJMD.C32Doc.SDTC.RoleClassAssociative
- BJMD.C32Doc.SDTC.RoleClassContact
- BJMD.C32Doc.SDTC.RoleClassDistributedMaterial
- BJMD.C32Doc.SDTC.RoleClassEmployee
- BJMD.C32Doc.SDTC.RoleClassInactiveIngredient
- BJMD.C32Doc.SDTC.RoleClassIngredientEntity
- BJMD.C32Doc.SDTC.RoleClassInvestigationSubject
- BJMD.C32Doc.SDTC.RoleClassIsSpeciesEntity
- BJMD.C32Doc.SDTC.RoleClassLocatedEntity
- BJMD.C32Doc.SDTC.RoleClassManufacturedProduct
- BJMD.C32Doc.SDTC.RoleClassMutualRelationship
- BJMD.C32Doc.SDTC.RoleClassOntological
- BJMD.C32Doc.SDTC.RoleClassPartitive
- BJMD.C32Doc.SDTC.RoleClassPassive
- BJMD.C32Doc.SDTC.RoleClassRelationshipFormal
- BJMD.C32Doc.SDTC.RoleClassRoot
- BJMD.C32Doc.SDTC.RoleClassServiceDeliveryLocation
- BJMD.C32Doc.SDTC.RoleClassSpecimen
- BJMD.C32Doc.SDTC.RoleLinkType
- BJMD.C32Doc.SDTC.SC
- BJMD.C32Doc.SDTC.SLISTPQ
- BJMD.C32Doc.SDTC.SLISTTS
- BJMD.C32Doc.SDTC.ST1
- BJMD.C32Doc.SDTC.SXCMCD
- BJMD.C32Doc.SDTC.SXCMINT
- BJMD.C32Doc.SDTC.SXCMMO
- BJMD.C32Doc.SDTC.SXCMPPDPQ
- BJMD.C32Doc.SDTC.SXCMPPDTS
- BJMD.C32Doc.SDTC.SXCMPQ
- BJMD.C32Doc.SDTC.SXCMREAL

- BJMD.C32Doc.SDTC.SXCMTS
- BJMD.C32Doc.SDTC.SXPRTS
- BJMD.C32Doc.SDTC.SdtcAssignedEntity
- BJMD.C32Doc.SDTC.SdtcAssociatedEntity
- BJMD.C32Doc.SDTC.SdtcPatient
- BJMD.C32Doc.SDTC.SdtcRelatedEntity
- BJMD.C32Doc.SDTC.SetOperator
- BJMD.C32Doc.SDTC.State
- BJMD.C32Doc.SDTC.StreetAddressLine
- BJMD.C32Doc.SDTC.StreetName
- BJMD.C32Doc.SDTC.TEL
- BJMD.C32Doc.SDTC.TN
- BJMD.C32Doc.SDTC.TS1
- BJMD.C32Doc.SDTC.TelecommunicationAddressUse
- BJMD.C32Doc.SDTC.TemporallyPertains
- BJMD.C32Doc.SDTC.TextMediaType
- BJMD.C32Doc.SDTC.TimingEvent
- BJMD.C32Doc.SDTC.URL1
- BJMD.C32Doc.SDTC.URLScheme
- BJMD.C32Doc.SDTC.UVPTS
- BJMD.C32Doc.SDTC.Unknown
- BJMD.C32Doc.SDTC.VideoMediaType
- BJMD.C32Doc.SDTC.WorkPlaceAddressUse
- BJMD.C32Doc.SDTC.adxp.additionalLocator
- BJMD.C32Doc.SDTC.adxp.buildingNumberSuffix
- BJMD.C32Doc.SDTC.adxp.careOf
- BJMD.C32Doc.SDTC.adxp.censusTract
- BJMD.C32Doc.SDTC.adxp.city
- BJMD.C32Doc.SDTC.adxp.country
- BJMD.C32Doc.SDTC.adxp.county

- BJMD.C32Doc.SDTC.adxp.delimiter
- BJMD.C32Doc.SDTC.adxp.deliveryAddressLine
- BJMD.C32Doc.SDTC.adxp.deliveryInstallationArea
- BJMD.C32Doc.SDTC.adxp.deliveryInstallationQualifier
- BJMD.C32Doc.SDTC.adxp.deliveryInstallationType
- BJMD.C32Doc.SDTC.adxp.deliveryMode
- BJMD.C32Doc.SDTC.adxp.deliveryModeIdentifier
- BJMD.C32Doc.SDTC.adxp.direction
- BJMD.C32Doc.SDTC.adxp.houseNumber
- BJMD.C32Doc.SDTC.adxp.houseNumberNumeric
- BJMD.C32Doc.SDTC.adxp.postBox
- BJMD.C32Doc.SDTC.adxp.postalCode
- BJMD.C32Doc.SDTC.adxp.precinct
- BJMD.C32Doc.SDTC.adxp.state
- BJMD.C32Doc.SDTC.adxp.streetAddressLine
- BJMD.C32Doc.SDTC.adxp.streetName
- BJMD.C32Doc.SDTC.adxp.streetNameBase
- BJMD.C32Doc.SDTC.adxp.streetNameType
- BJMD.C32Doc.SDTC.adxp.unitID
- BJMD.C32Doc.SDTC.adxp.unitType
- BJMD.C32Doc.SDTC.bin1
- BJMD.C32Doc.SDTC.bl
- BJMD.C32Doc.SDTC.bn
- BJMD.C32Doc.SDTC.cs
- BJMD.C32Doc.SDTC.en.delimiter
- BJMD.C32Doc.SDTC.en.family
- BJMD.C32Doc.SDTC.en.given
- BJMD.C32Doc.SDTC.en.prefix
- BJMD.C32Doc.SDTC.en.suffix
- BJMD.C32Doc.SDTC.hasSupport

- BJMD.C32Doc.SDTC.int
- BJMD.C32Doc.SDTC.listint
- BJMD.C32Doc.SDTC.oid
- BJMD.C32Doc.SDTC.probability
- BJMD.C32Doc.SDTC.real
- BJMD.C32Doc.SDTC.ruid
- BJMD.C32Doc.SDTC.setEntityNamePartQualifier
- BJMD.C32Doc.SDTC.setEntityNameUse
- BJMD.C32Doc.SDTC.setPostalAddressUse
- BJMD.C32Doc.SDTC.setTelecommunicationAddressUse
- BJMD.C32Doc.SDTC.st
- BJMD.C32Doc.SDTC.thumbnail
- BJMD.C32Doc.SDTC.ts
- BJMD.C32Doc.SDTC.uid
- BJMD.C32Doc.SDTC.url
- BJMD.C32Doc.SDTC.uuid
- BJMD.C32Doc.SDTC.xActClassDocumentEntryAct
- BJMD.C32Doc.SDTC.xActClassDocumentEntryOrganizer
- BJMD.C32Doc.SDTC.xActMoodDefEvn
- BJMD.C32Doc.SDTC.xActMoodDefEvnRqoPrmsPrp
- BJMD.C32Doc.SDTC.xActMoodDocumentObservation
- BJMD.C32Doc.SDTC.xActMoodEvnOrdPrmsPrp
- BJMD.C32Doc.SDTC.xActMoodIntentEvent
- BJMD.C32Doc.SDTC.xActMoodOrdPrms
- BJMD.C32Doc.SDTC.xActMoodOrdPrmsEvn
- BJMD.C32Doc.SDTC.xActMoodRqoPrpAptArq
- BJMD.C32Doc.SDTC.xActRelationshipDocument
- BJMD.C32Doc.SDTC.xActRelationshipEntry
- BJMD.C32Doc.SDTC.xActRelationshipEntryRelationship
- BJMD.C32Doc.SDTC.xActRelationshipExternalReference

- BJMD.C32Doc.SDTC.xActRelationshipPatientTransport
- BJMD.C32Doc.SDTC.xActRelationshipPertinentInfo
- BJMD.C32Doc.SDTC.xDeterminerInstanceKind
- BJMD.C32Doc.SDTC.xDocumentActMood
- BJMD.C32Doc.SDTC.xDocumentEncounterMood
- BJMD.C32Doc.SDTC.xDocumentEntrySubject
- BJMD.C32Doc.SDTC.xDocumentProcedureMood
- BJMD.C32Doc.SDTC.xDocumentSubject
- BJMD.C32Doc.SDTC.xDocumentSubstanceMood
- BJMD.C32Doc.SDTC.xEncounterParticipant
- BJMD.C32Doc.SDTC.xEncounterPerformerParticipation
- BJMD.C32Doc.SDTC.xEntityClassDocumentReceiving
- BJMD.C32Doc.SDTC.xEntityClassPersonOrOrgReceiving
- BJMD.C32Doc.SDTC.xInformationRecipient
- BJMD.C32Doc.SDTC.xInformationRecipientRole
- BJMD.C32Doc.SDTC.xOrganizationNamePartType
- BJMD.C32Doc.SDTC.xParticipationAuthorPerformer
- BJMD.C32Doc.SDTC.xParticipationEntVrf
- BJMD.C32Doc.SDTC.xParticipationPrfEntVrf
- BJMD.C32Doc.SDTC.xParticipationVrfRespSprfWit
- BJMD.C32Doc.SDTC.xPersonNamePartType
- BJMD.C32Doc.SDTC.xRoleClassAccommodationRequestor
- BJMD.C32Doc.SDTC.xRoleClassCoverage
- BJMD.C32Doc.SDTC.xRoleClassCoverageInvoice
- BJMD.C32Doc.SDTC.xRoleClassCredentialedEntity
- BJMD.C32Doc.SDTC.xRoleClassPayeePolicyRelationship
- BJMD.C32Doc.SDTC.xServiceEventPerformer

B.3 Install

Classes that support installation of C Messaging software

- BJMD.Install.PostInstallTask

- BJMD.Install.PreInstallTask

B.4 NIST

Classes that support automated validation of C32 documents against the National Institute of Standards and Technology (NIST) validator.

- BJMD.NIST.FileInboundAdapter
- BJMD.NIST.FormatMethods
- BJMD.NIST.Operation.ValidationWebServiceSOAP11porthttp
- BJMD.NIST.Request.getAvailableValidationsRequest
- BJMD.NIST.Request.validateDocumentRequest
- BJMD.NIST.Response.getAvailableValidationsResponse
- BJMD.NIST.Response.validateDocumentResponse
- BJMD.NIST.ValidateC32BP
- BJMD.NIST.ValidateC32BP.Context
- BJMD.NIST.ValidateC32BP.ContextsysResponseHandlers
- BJMD.NIST.ValidateC32BP.Thread1
- BJMD.NIST.ValidateC32BP.Thread1sysChildThreads
- BJMD.NIST.ValidateC32BP.Thread1sysPendingResponses
- BJMD.NIST.ValidateC32BP.Thread1sysSyncResponses
- BJMD.NIST.ValidateC32BPsysSynchronizedResponses
- BJMD.NIST.ValidateC32BS
- BJMD.NIST.ValidationWebServiceSOAP11porthttp
- BJMD.NIST.ValidationWebServiceSOAP11porthttp.getAvailableValidations
- BJMD.NIST.ValidationWebServiceSOAP11porthttp.validateDocument
- BJMD.NIST.WSIndividualValidationResult
- BJMD.NIST.WSSpecification
- BJMD.NIST.WSValidationResults

B.5 Prod

Classes supporting Ensemble Data Transformations, alerts, and generation of C32 documents.

- BJMD.Prod.AlertProcess

- BJMD.Prod.AlertProcess.Context
- BJMD.Prod.AlertProcess.ContextsysResponseHandlers
- BJMD.Prod.AlertProcess.Thread1
- BJMD.Prod.AlertProcess.Thread1sysChildThreads
- BJMD.Prod.AlertProcess.Thread1sysPendingResponses
- BJMD.Prod.AlertProcess.Thread1sysSyncResponses
- BJMD.Prod.AlertProcesssysSynchronizedResponses
- BJMD.Prod.Alerts
- BJMD.Prod.BuildC32Stream
- BJMD.Prod.C32FileBO
- BJMD.Prod.CompiledRecordBS
- BJMD.Prod.CompiledRecordInbound
- BJMD.Prod.DTL.AllergyComponent
- BJMD.Prod.DTL.AllergyEntry
- BJMD.Prod.DTL.ClinicalDocument
- BJMD.Prod.DTL.ConditionComponent
- BJMD.Prod.DTL.ConditionEntry
- BJMD.Prod.DTL.EncounterComponent
- BJMD.Prod.DTL.EncounterEntry
- BJMD.Prod.DTL.ExtractionCriteriaComponent
- BJMD.Prod.DTL.Functions
- BJMD.Prod.DTL.HealthcareProviderDocumentationOf
- BJMD.Prod.DTL.HealthcareProviderPerformer
- BJMD.Prod.DTL.ImmunizationComponent
- BJMD.Prod.DTL.ImmunizationEntry
- BJMD.Prod.DTL.InsuranceProviderComponent
- BJMD.Prod.DTL.InsuranceProviderEntry
- BJMD.Prod.DTL.MedFrequency
- BJMD.Prod.DTL.MedicationComponent
- BJMD.Prod.DTL.MedicationEntry

- BJMD.Prod.DTL.ProcedureComponent
- BJMD.Prod.DTL.ResultComponent
- BJMD.Prod.DTL.ResultEntry
- BJMD.Prod.DTL.VitalSignComponent
- BJMD.Prod.DTL.VitalSignEntry
- BJMD.Prod.ErrorRecordBS
- BJMD.Prod.ErrorRecordInbound
- BJMD.Prod.GenerateC32DocBP
- BJMD.Prod.GenerateC32DocBP.Context
- BJMD.Prod.GenerateC32DocBP.ContextsysResponseHandlers
- BJMD.Prod.GenerateC32DocBP.Thread1
- BJMD.Prod.GenerateC32DocBP.Thread1sysChildThreads
- BJMD.Prod.GenerateC32DocBP.Thread1sysPendingResponses
- BJMD.Prod.GenerateC32DocBP.Thread1sysSyncResponses
- BJMD.Prod.GenerateC32DocBPsysSynchronizedResponses
- BJMD.Prod.Production
- BJMD.Prod.PullWS.Op.PatientRecordReceiverOperationRequest
- BJMD.Prod.PullWS.Op.PatientRecordReceiverOperationResponse
- BJMD.Prod.PullWS.Op.PatientRecordReceiverPort
- BJMD.Prod.PullWS.PatientRecordReceiverPort
- BJMD.Prod.PullWS.PatientRecordReceiverPort.PatientRecordReceiverOperation
- BJMD.Prod.PushC32DocBP
- BJMD.Prod.PushWS.Op.PatientRecordReceiverOperationRequest
- BJMD.Prod.PushWS.Op.PatientRecordReceiverOperationResponse
- BJMD.Prod.PushWS.Op.PatientRecordReceiverPort
- BJMD.Prod.PushWS.PatientRecordReceiverPort
- BJMD.Prod.PushWS.PatientRecordReceiverPort.PatientRecordReceiverOperation
- BJMD.Prod.PushWS.ns.DocumentComplexType
- BJMD.Prod.PushWS.ns.DocumentContent
- BJMD.Prod.PushWS.ns.DocumentType

- BJMD.Prod.PushWS.xmime.base64Binary
- BJMD.Prod.PushWS.xmime.hexBinary
- BJMD.Prod.SdtcPatient
- BJMD.Prod.SendPullResponseBP
- BJMD.Prod.Service.Document
- BJMD.Prod.Service.DocumentRepository
- BJMD.Prod.Service.DocumentRepository.RetrieveDocument
- BJMD.Prod.Service.DocumentRepository.RetrieveDocumentTest
- BJMD.Prod.Service.DocumentRequest
- BJMD.Prod.Service.DocumentResponse
- BJMD.Prod.Service.ErrorResponse
- BJMD.Prod.Service.XDSbDocumentRepository
- BJMD.Prod.Service.XDSbDocumentRepository.RetrieveDocumentSet
- BJMD.Prod.Service.XDSbDocumentRepository.TestGateway
- BJMD.Prod.StreamRequest
- BJMD.Prod.UnqualifiedTS1

B.6 RespondingGatewayQueryService

Classes that support sending and receiving C32 requests and documents over Web Services.

- BJMD.RespondingGatewayQueryService.ihe.Document
- BJMD.RespondingGatewayQueryService.ihe.DocumentRequest
- BJMD.RespondingGatewayQueryService.ihe.DocumentResponse
- BJMD.RespondingGatewayQueryService.ihe.ProvideAndRegisterDocumentSetRequestType
- BJMD.RespondingGatewayQueryService.ihe.RetrieveDocumentSetRequestType
- BJMD.RespondingGatewayQueryService.ihe.RetrieveDocumentSetResponseType
- BJMD.RespondingGatewayQueryService.lcm.AcceptObjectRequest
- BJMD.RespondingGatewayQueryService.lcm.ApproveObjectsRequest
- BJMD.RespondingGatewayQueryService.lcm.DeprecateObjectsRequest
- BJMD.RespondingGatewayQueryService.lcm.RelocateObjectsRequest

- BJMD.RespondingGatewayQueryService.lcm.RemoveObjectsRequest
- BJMD.RespondingGatewayQueryService.lcm.SubmitObjectsRequest
- BJMD.RespondingGatewayQueryService.lcm.UndeprecateObjectsRequest
- BJMD.RespondingGatewayQueryService.lcm.UpdateObjectsRequest
- BJMD.RespondingGatewayQueryService.query.AdhocQueryQueryType
- BJMD.RespondingGatewayQueryService.query.AssociationQueryType
- BJMD.RespondingGatewayQueryService.query.AuditableEventQueryType
- BJMD.RespondingGatewayQueryService.query.BooleanFilterType
- BJMD.RespondingGatewayQueryService.query.BranchType
- BJMD.RespondingGatewayQueryService.query.ClassificationNodeQueryType
- BJMD.RespondingGatewayQueryService.query.ClassificationQueryType
- BJMD.RespondingGatewayQueryService.query.ClassificationSchemeQueryType
- BJMD.RespondingGatewayQueryService.query.CompoundFilterType
- BJMD.RespondingGatewayQueryService.query.DateTimeFilterType
- BJMD.RespondingGatewayQueryService.query.ExternalIdentifierQueryType
- BJMD.RespondingGatewayQueryService.query.ExternalLinkQueryType
- BJMD.RespondingGatewayQueryService.query.FederationQueryType
- BJMD.RespondingGatewayQueryService.query.FilterQueryType
- BJMD.RespondingGatewayQueryService.query.FilterType
- BJMD.RespondingGatewayQueryService.query.FloatFilterType
- BJMD.RespondingGatewayQueryService.query.IntegerFilterType
- BJMD.RespondingGatewayQueryService.query.InternationalStringBranchType
- BJMD.RespondingGatewayQueryService.query.NotificationQueryType
- BJMD.RespondingGatewayQueryService.query.OrganizationQueryType
- BJMD.RespondingGatewayQueryService.query.PersonQueryType
- BJMD.RespondingGatewayQueryService.query.QueryExpressionBranchType
- BJMD.RespondingGatewayQueryService.query.RegistryObjectQueryType
- BJMD.RespondingGatewayQueryService.query.RegistryPackageQueryType
- BJMD.RespondingGatewayQueryService.query.RegistryQueryType
- BJMD.RespondingGatewayQueryService.query.ResponseOptionType

- BJMD.RespondingGatewayQueryService.query.ServiceBindingQueryType
- BJMD.RespondingGatewayQueryService.query.ServiceQueryType
- BJMD.RespondingGatewayQueryService.query.SimpleFilterType
- BJMD.RespondingGatewayQueryService.query.SlotBranchType
- BJMD.RespondingGatewayQueryService.query.SpecificationLinkQueryType
- BJMD.RespondingGatewayQueryService.query.StringFilterType
- BJMD.RespondingGatewayQueryService.query.SubscriptionQueryType
- BJMD.RespondingGatewayQueryService.query.UserQueryType
- BJMD.RespondingGatewayQueryService.rim.ActionType
- BJMD.RespondingGatewayQueryService.rim.AdhocQueryType
- BJMD.RespondingGatewayQueryService.rim.AssociationType1
- BJMD.RespondingGatewayQueryService.rim.AuditableEventType
- BJMD.RespondingGatewayQueryService.rim.ClassificationNodeType
- BJMD.RespondingGatewayQueryService.rim.ClassificationSchemeType
- BJMD.RespondingGatewayQueryService.rim.ClassificationType
- BJMD.RespondingGatewayQueryService.rim.EmailAddressType
- BJMD.RespondingGatewayQueryService.rim.ExternalIdentifierType
- BJMD.RespondingGatewayQueryService.rim.ExternalLinkType
- BJMD.RespondingGatewayQueryService.rim.ExtrinsicObjectType
- BJMD.RespondingGatewayQueryService.rim.FederationType
- BJMD.RespondingGatewayQueryService.rim.FreeFormText
- BJMD.RespondingGatewayQueryService.rim.IdentifiableType
- BJMD.RespondingGatewayQueryService.rim.InternationalStringType
- BJMD.RespondingGatewayQueryService.rim.LocalizedStringType
- BJMD.RespondingGatewayQueryService.rim.LongName
- BJMD.RespondingGatewayQueryService.rim.NotificationType
- BJMD.RespondingGatewayQueryService.rim.NotifyActionType
- BJMD.RespondingGatewayQueryService.rim.ObjectRefListType
- BJMD.RespondingGatewayQueryService.rim.ObjectRefType
- BJMD.RespondingGatewayQueryService.rim.OrganizationType

- BJMD.RespondingGatewayQueryService.rim.PersonNameType
- BJMD.RespondingGatewayQueryService.rim.PersonType
- BJMD.RespondingGatewayQueryService.rim.PostalAddressType
- BJMD.RespondingGatewayQueryService.rim.QueryExpressionType
- BJMD.RespondingGatewayQueryService.rim.RegistryObjectListType
- BJMD.RespondingGatewayQueryService.rim.RegistryObjectType
- BJMD.RespondingGatewayQueryService.rim.RegistryPackageType
- BJMD.RespondingGatewayQueryService.rim.RegistryType
- BJMD.RespondingGatewayQueryService.rim.ServiceBindingType
- BJMD.RespondingGatewayQueryService.rim.ServiceType
- BJMD.RespondingGatewayQueryService.rim.ShortName
- BJMD.RespondingGatewayQueryService.rim.SlotListType
- BJMD.RespondingGatewayQueryService.rim.SlotType1
- BJMD.RespondingGatewayQueryService.rim.SpecificationLinkType
- BJMD.RespondingGatewayQueryService.rim.String16
- BJMD.RespondingGatewayQueryService.rim.String32
- BJMD.RespondingGatewayQueryService.rim.String4
- BJMD.RespondingGatewayQueryService.rim.String8
- BJMD.RespondingGatewayQueryService.rim.SubscriptionType
- BJMD.RespondingGatewayQueryService.rim.TelephoneNumberListType
- BJMD.RespondingGatewayQueryService.rim.TelephoneNumberType
- BJMD.RespondingGatewayQueryService.rim.UserType
- BJMD.RespondingGatewayQueryService.rim.ValueListType
- BJMD.RespondingGatewayQueryService.rim.VersionInfoType
- BJMD.RespondingGatewayQueryService.rim.referenceURI
- BJMD.RespondingGatewayQueryService.rs.RegistryError
- BJMD.RespondingGatewayQueryService.rs.RegistryErrorList
- BJMD.RespondingGatewayQueryService.rs.RegistryRequestType
- BJMD.RespondingGatewayQueryService.rs.RegistryResponseType
- BJMD.RespondingGatewayService.RespondingGatewayPortSoap12

- BJMD.RespondingGatewayService.RespondingGatewayPortSoap12.RespondingGatewayCrossGa1
- BJMD.RespondingGatewayService.RespondingGatewayPortSoap12.RespondingGatewayCrossGatewyQry
- BJMD.RespondingGatewayService.RespondingGatewayPortSoap12.RespondingGatewyCrssGtwyQrysync
- BJMD.RespondingGatewayService.RespondingGatewayPortSoap12.RespondingGatwyCrssGtwyRtrvsync
- BJMD.RespondingGatewayService.ihe.Document
- BJMD.RespondingGatewayService.ihe.DocumentRequest
- BJMD.RespondingGatewayService.ihe.DocumentResponse
- BJMD.RespondingGatewayService.ihe.ProvideAndRegisterDocumentSetRequestType
- BJMD.RespondingGatewayService.lcm.AcceptObjectsRequest
- BJMD.RespondingGatewayService.lcm.ApproveObjectsRequest
- BJMD.RespondingGatewayService.lcm.DeprecateObjectsRequest
- BJMD.RespondingGatewayService.lcm.RelocateObjectsRequest
- BJMD.RespondingGatewayService.lcm.RemoveObjectsRequest
- BJMD.RespondingGatewayService.lcm.SubmitObjectsRequest
- BJMD.RespondingGatewayService.lcm.UndeprecateObjectsRequest
- BJMD.RespondingGatewayService.lcm.UpdateObjectsRequest
- BJMD.RespondingGatewayService.query.AdhocQueryQueryType
- BJMD.RespondingGatewayService.query.AssociationQueryType
- BJMD.RespondingGatewayService.query.AuditableEventQueryType
- BJMD.RespondingGatewayService.query.BooleanFilterType
- BJMD.RespondingGatewayService.query.BranchType
- BJMD.RespondingGatewayService.query.ClassificationNodeQueryType
- BJMD.RespondingGatewayService.query.ClassificationQueryType
- BJMD.RespondingGatewayService.query.ClassificationSchemeQueryType
- BJMD.RespondingGatewayService.query.CompoundFilterType
- BJMD.RespondingGatewayService.query.DateTimeFilterType
- BJMD.RespondingGatewayService.query.ExternalIdentifierQueryType

- BJMD.RespondingGatewayService.query.ExternalLinkQueryType
- BJMD.RespondingGatewayService.query.ExtrinsicObjectQueryType
- BJMD.RespondingGatewayService.query.FederationQueryType
- BJMD.RespondingGatewayService.query.FilterQueryType
- BJMD.RespondingGatewayService.query.FilterType
- BJMD.RespondingGatewayService.query.FloatFilterType
- BJMD.RespondingGatewayService.query.IntegerFilterType
- BJMD.RespondingGatewayService.query.InternationalStringBranchType
- BJMD.RespondingGatewayService.query.NotificationQueryType
- BJMD.RespondingGatewayService.query.OrganizationQueryType
- BJMD.RespondingGatewayService.query.PersonQueryType
- BJMD.RespondingGatewayService.query.QueryExpressionBranchType
- BJMD.RespondingGatewayService.query.RegistryObjectQueryType
- BJMD.RespondingGatewayService.query.RegistryPackageQueryType
- BJMD.RespondingGatewayService.query.RegistryQueryType
- BJMD.RespondingGatewayService.query.ResponseOptionType
- BJMD.RespondingGatewayService.query.ServiceBindingQueryType
- BJMD.RespondingGatewayService.query.ServiceQueryType
- BJMD.RespondingGatewayService.query.SimpleFilterType
- BJMD.RespondingGatewayService.query.SlotBranchType
- BJMD.RespondingGatewayService.query.SpecificationLinkQueryType
- BJMD.RespondingGatewayService.query.StringFilterType
- BJMD.RespondingGatewayService.query.SubscriptionQueryType
- BJMD.RespondingGatewayService.query.UserQueryType
- BJMD.RespondingGatewayService.rim.ActionType
- BJMD.RespondingGatewayService.rim.AdhocQueryType
- BJMD.RespondingGatewayService.rim.AssociationType1
- BJMD.RespondingGatewayService.rim.AuditableEventType
- BJMD.RespondingGatewayService.rim.ClassificationNodeType
- BJMD.RespondingGatewayService.rim.ClassificationSchemeType

- BJMD.RespondingGatewayService.rim.ClassificationType
- BJMD.RespondingGatewayService.rim.EmailAddressType
- BJMD.RespondingGatewayService.rim.ExternalIdentifierType
- BJMD.RespondingGatewayService.rim.ExternalLinkType
- BJMD.RespondingGatewayService.rim.ExtrinsicObjectType
- BJMD.RespondingGatewayService.rim.FederationType
- BJMD.RespondingGatewayService.rim.FreeFormText
- BJMD.RespondingGatewayService.rim.IdentifiableType
- BJMD.RespondingGatewayService.rim.InternationalStringType
- BJMD.RespondingGatewayService.rim.LocalizedStringType
- BJMD.RespondingGatewayService.rim.LongName
- BJMD.RespondingGatewayService.rim.NotificationType
- BJMD.RespondingGatewayService.rim.NotifyActionType
- BJMD.RespondingGatewayService.rim.ObjectRefListType
- BJMD.RespondingGatewayService.rim.ObjectRefType
- BJMD.RespondingGatewayService.rim.OrganizationType
- BJMD.RespondingGatewayService.rim.PersonNameType
- BJMD.RespondingGatewayService.rim.PersonType
- BJMD.RespondingGatewayService.rim.PostalAddressType
- BJMD.RespondingGatewayService.rim.QueryExpressionType
- BJMD.RespondingGatewayService.rim.RegistryObjectListType
- BJMD.RespondingGatewayService.rim.RegistryObjectType
- BJMD.RespondingGatewayService.rim.RegistryPackageType
- BJMD.RespondingGatewayService.rim.RegistryType
- BJMD.RespondingGatewayService.rim.ServiceBindingType
- BJMD.RespondingGatewayService.rim.ServiceType
- BJMD.RespondingGatewayService.rim.ShortName
- BJMD.RespondingGatewayService.rim.SlotListType
- BJMD.RespondingGatewayService.rim.SlotType1
- BJMD.RespondingGatewayService.rim.SpecificationLinkType

- BJMD.RespondingGatewayService.rim.String16
- BJMD.RespondingGatewayService.rim.String32
- BJMD.RespondingGatewayService.rim.String4
- BJMD.RespondingGatewayService.rim.String8
- BJMD.RespondingGatewayService.rim.SubscriptionType
- BJMD.RespondingGatewayService.rim.TelephoneNumberListType
- BJMD.RespondingGatewayService.rim.TelephoneNumberType
- BJMD.RespondingGatewayService.rim.UserType
- BJMD.RespondingGatewayService.rim.ValueListType
- BJMD.RespondingGatewayService.rim.VersionInfoType
- BJMD.RespondingGatewayService.rim.referenceURI
- BJMD.RespondingGatewayService.rs.RegistryError
- BJMD.RespondingGatewayService.rs.RegistryErrorList
- BJMD.RespondingGatewayService.rs.RegistryRequestType
- BJMD.RespondingGatewayService.rs.RegistryResponseType

B.7 Tasks

Classes that support extraction of RPMS data and storing it in intermediate compile structures (C Messaging queue).BJMD.RespondingGatewayQueryService.query.ExtrinsicObjectQueryType

- BJMD.Tasks.Purge
- BJMD.Tasks.UpdateProductionState

B.8 Xfer

Classes that maintain and weekly purge the C32 production

- BJMD.Xfer.Address
- BJMD.Xfer.Allergy
- BJMD.Xfer.AllergyReaction
- BJMD.Xfer.C32Main
- BJMD.Xfer.C32Populate
- BJMD.Xfer.Condition
- BJMD.Xfer.Encounter

- BJMD.Xfer.EncounterFreeText
- BJMD.Xfer.FieldTransformations
- BJMD.Xfer.GeneratePatientList
- BJMD.Xfer.HealthcareProvider
- BJMD.Xfer.Immunization
- BJMD.Xfer.InsuranceProvider
- BJMD.Xfer.MedFrequency
- BJMD.Xfer.MedFulfillment
- BJMD.Xfer.Medication
- BJMD.Xfer.Parameters
- BJMD.Xfer.PerformanceData
- BJMD.Xfer.PerformanceDataX
- BJMD.Xfer.PersonAlias
- BJMD.Xfer.PersonName
- BJMD.Xfer.PopAllergy
- BJMD.Xfer.PopCondition
- BJMD.Xfer.PopEncounter
- BJMD.Xfer.PopHealthcareProvider
- BJMD.Xfer.PopImmunization
- BJMD.Xfer.PopInformationSource
- BJMD.Xfer.PopInsuranceProvider
- BJMD.Xfer.PopMedication
- BJMD.Xfer.PopPerson
- BJMD.Xfer.PopProcedure
- BJMD.Xfer.PopResult
- BJMD.Xfer.PopSupport
- BJMD.Xfer.PopVitalSign
- BJMD.Xfer.Procedure
- BJMD.Xfer.PushQueue
- BJMD.Xfer.Queue

- BJMD.Xfer.Result
- BJMD.Xfer.SupportPerson
- BJMD.Xfer.VitalSign

Appendix C: C32/CCD Schemas

This appendix documents the contents of the XSD files that define the C32/CCD structure.

C.1 C32_CDA.xsd

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<!-- edited with XMLSPY v2004 rel. 3 U (http://www.xmlspy.com) by Bob Dolin
(HL7 CDA TC) -->
<xs:schema targetNamespace="urn:hl7-org:v3"
xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns="urn:hl7-org:v3"
xmlns:mif="urn:hl7-org:v3/mif" elementFormDefault="qualified">
   <xs:include schemaLocation="C32_POCD_MT000040.xsd"/>
   <xs:element name="ClinicalDocument"
type="POCD_MT000040.ClinicalDocument"/>
</xs:schema>
```

C.2 C32_POCD_MT000040.xsd

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<xs:schema xmlns="urn:hl7-org:v3" targetNamespace="urn:hl7-org:v3"
   xmlns:mif="urn:hl7-org:v3/mif"
   xmlns:xs="http://www.w3.org/2001/XMLSchema"
   xmlns:sdtc="urn:hl7-org:sdtc"
   elementFormDefault="qualified"
   >

   <!--
************************************************************************
* XML schema for message type POCD_MT000040.
* Generated by XMLITS version 2.0
*
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reserved.
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*  ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
*  IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE
*  ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
*  FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL
*  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
```

```
*  OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
*  HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT
*  LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY
WAY
*  OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
*  SUCH DAMAGE.
*
******************************************************************************
     -->
   <xs:annotation>
      <xs:documentation>Generated using schema builder version 2.0.
Stylesheets:
RoseTreeToMIFStaticModel.xsl version: 1.1
StaticMifToXsd.xsl version 2.0</xs:documentation>
   </xs:annotation>

   <xs:include
schemaLocation="../../processable/coreschemas/datatypes.xsd"/>
   <xs:include schemaLocation="../../processable/coreschemas/voc.xsd"/>
   <xs:include
schemaLocation="../../processable/coreschemas/NarrativeBlock.xsd"/>
   <xs:import namespace="urn:hl7-org:sdtc"
schemaLocation="./SDTC_Extension.xsd" />

   <xs:complexType name="POCD_MT000040.InfrastructureRoot.typeId">
      <xs:complexContent>
         <xs:restriction base="II">
            <xs:attribute name="root" type="uid" use="required"
fixed="2.16.840.1.113883.1.3"/>
            <xs:attribute name="extension" type="st" use="required"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Act">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CD"/>
         <xs:element name="text" type="ED" minOccurs="0"/>
         <xs:element name="statusCode" type="CS" minOccurs="0"/>
         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
         <xs:element name="priorityCode" type="CE" minOccurs="0"/>
         <xs:element name="languageCode" type="CS" minOccurs="0"/>
         <xs:element name="subject" type="POCD_MT000040.Subject"
minOccurs="0"/>
         <xs:element name="specimen" type="POCD_MT000040.Specimen"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="performer" type="POCD_MT000040.Performer2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
```

```
         <xs:element name="participant" type="POCD_MT000040.Participant2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="entryRelationship"
type="POCD_MT000040.EntryRelationship" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="reference" type="POCD_MT000040.Reference"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="precondition" type="POCD_MT000040.Precondition"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="x_ActClassDocumentEntryAct"
use="required"/>
      <xs:attribute name="moodCode" type="x_DocumentActMood"
use="required"/>
      <xs:attribute name="negationInd" type="bl" use="optional"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.AssignedAuthor">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="addr" type="AD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:choice>
            <xs:element name="assignedPerson" type="POCD_MT000040.Person"
minOccurs="0"/>
            <xs:element name="assignedAuthoringDevice"
type="POCD_MT000040.AuthoringDevice" minOccurs="0"/>
         </xs:choice>
         <xs:element name="representedOrganization"
type="POCD_MT000040.Organization" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClassAssignedEntity"
use="optional" fixed="ASSIGNED"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.AssignedCustodian">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="representedCustodianOrganization"
type="POCD_MT000040.CustodianOrganization"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClassAssignedEntity"
use="optional" fixed="ASSIGNED"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.AssignedEntity">
      <xs:sequence>
```

```
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="addr" type="AD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="assignedPerson" type="POCD_MT000040.Person"
minOccurs="0"/>
         <xs:element name="representedOrganization"
type="POCD_MT000040.Organization" minOccurs="0"/>

      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClassAssignedEntity"
use="optional" fixed="ASSIGNED"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.AssociatedEntity">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="addr" type="AD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="associatedPerson" type="POCD_MT000040.Person"
minOccurs="0"/>
         <xs:element name="scopingOrganization"
type="POCD_MT000040.Organization" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClassAssociative"
use="required"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Authenticator">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="time" type="TS"/>
         <xs:element name="signatureCode" type="CS"/>
         <xs:element name="assignedEntity" type="sdtc:SdtcAssignedEntity"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationType" use="optional"
fixed="AUTHEN"/>
```

```
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Author">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="functionCode" type="CE" minOccurs="0"/>
         <xs:element name="time" type="TS"/>
         <xs:element name="assignedAuthor"
type="POCD_MT000040.AssignedAuthor"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationType" use="optional"
fixed="AUT"/>
      <xs:attribute name="contextControlCode" type="ContextControl"
use="optional" fixed="OP"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.AuthoringDevice">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="manufacturerModelName" type="SC" minOccurs="0"/>
         <xs:element name="softwareName" type="SC" minOccurs="0"/>
         <xs:element name="asMaintainedEntity"
type="POCD_MT000040.MaintainedEntity" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="EntityClassDevice"
use="optional" fixed="DEV"/>
      <xs:attribute name="determinerCode" type="EntityDeterminer"
use="optional" fixed="INSTANCE"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Authorization">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="consent" type="POCD_MT000040.Consent"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ActRelationshipType"
use="optional" fixed="AUTH"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Birthplace">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
```

```
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="place" type="POCD_MT000040.Place"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClass" use="optional"
fixed="BIRTHPL"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.ClinicalDocument">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II"/>
         <xs:element name="code" type="CE"/>
         <xs:element name="title" type="ST" minOccurs="0"/>
         <xs:element name="effectiveTime" type="TS"/>
         <xs:element name="confidentialityCode" type="CE"/>
         <xs:element name="languageCode" type="CS" minOccurs="0"/>
         <xs:element name="setId" type="II" minOccurs="0"/>
         <xs:element name="versionNumber" type="INT" minOccurs="0"/>
         <xs:element name="copyTime" type="TS" minOccurs="0"/>
         <xs:element name="recordTarget" type="POCD_MT000040.RecordTarget"
maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
maxOccurs="unbounded"/>
         <xs:element name="dataEnterer" type="POCD_MT000040.DataEnterer"
minOccurs="0"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="custodian" type="POCD_MT000040.Custodian"/>
         <xs:element name="informationRecipient"
type="POCD_MT000040.InformationRecipient" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="legalAuthenticator"
type="POCD_MT000040.LegalAuthenticator" minOccurs="0"/>
         <xs:element name="authenticator"
type="POCD_MT000040.Authenticator" minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="participant" type="POCD_MT000040.Participant1"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="inFulfillmentOf"
type="POCD_MT000040.InFulfillmentOf" minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="documentationOf"
type="POCD_MT000040.DocumentationOf" minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="relatedDocument"
type="POCD_MT000040.RelatedDocument" minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="authorization"
type="POCD_MT000040.Authorization" minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="componentOf" type="POCD_MT000040.Component1"
minOccurs="0"/>
         <xs:element name="component" type="POCD_MT000040.Component2"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClinicalDocument"
use="optional" fixed="DOCCLIN"/>
      <xs:attribute name="moodCode" type="ActMood" use="optional"
fixed="EVN"/>
   </xs:complexType>
```

```
   <xs:complexType name="POCD_MT000040.Component1">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="encompassingEncounter"
type="POCD_MT000040.EncompassingEncounter"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ActRelationshipHasComponent"
use="optional" fixed="COMP"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Component2">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:choice>
            <xs:element name="nonXMLBody" type="POCD_MT000040.NonXMLBody"/>
            <xs:element name="structuredBody"
type="POCD_MT000040.StructuredBody"/>
         </xs:choice>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ActRelationshipHasComponent"
use="optional" fixed="COMP"/>
      <xs:attribute name="contextConductionInd" type="bl" use="optional"
fixed="true"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Component3">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="section" type="POCD_MT000040.Section"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ActRelationshipHasComponent"
use="optional" fixed="COMP"/>
      <xs:attribute name="contextConductionInd" type="bl" use="optional"
fixed="true"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Component4">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="sequenceNumber" type="INT" minOccurs="0"/>
         <xs:element name="seperatableInd" type="BL" minOccurs="0"/>
```

```
         <xs:choice>
            <xs:element name="act" type="POCD_MT000040.Act"/>
            <xs:element name="encounter" type="POCD_MT000040.Encounter"/>
            <xs:element name="observation"
type="POCD_MT000040.Observation"/>
            <xs:element name="observationMedia"
type="POCD_MT000040.ObservationMedia"/>
            <xs:element name="organizer" type="POCD_MT000040.Organizer"/>
            <xs:element name="procedure" type="POCD_MT000040.Procedure"/>
            <xs:element name="regionOfInterest"
type="POCD_MT000040.RegionOfInterest"/>
            <xs:element name="substanceAdministration"
type="POCD_MT000040.SubstanceAdministration"/>
            <xs:element name="supply" type="POCD_MT000040.Supply"/>
         </xs:choice>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ActRelationshipHasComponent"
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fixed="true"/>
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use="optional" fixed="COMP"/>
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fixed="true"/>
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maxOccurs="unbounded"/>
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fixed="CONS"/>
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fixed="EVN"/>
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type="POCD_MT000040.ManufacturedProduct"/>
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fixed="CSM"/>
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maxOccurs="unbounded"/>
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use="optional" default="OBS"/>
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fixed="EVN.CRT"/>
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type="POCD_MT000040.AssignedCustodian"/>
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maxOccurs="unbounded"/>
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use="optional" fixed="INSTANCE"/>
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maxOccurs="unbounded"/>
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fixed="ENT"/>
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use="optional" fixed="OP"/>
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maxOccurs="unbounded"/>
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      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
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use="optional" default="DEV"/>
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use="optional" fixed="INSTANCE"/>
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maxOccurs="unbounded"/>
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type="POCD_MT000040.ServiceEvent"/>
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use="optional" fixed="DOC"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
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maxOccurs="unbounded"/>
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```
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minOccurs="0"/>
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type="POCD_MT000040.ResponsibleParty" minOccurs="0"/>
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type="POCD_MT000040.EncounterParticipant" minOccurs="0"
maxOccurs="unbounded"/>
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fixed="ENC"/>
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fixed="EVN"/>
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maxOccurs="unbounded"/>
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         <xs:element name="text" type="ED" minOccurs="0"/>
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minOccurs="0"/>
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minOccurs="0" maxOccurs="unbounded"/>
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minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
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minOccurs="0" maxOccurs="unbounded"/>
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minOccurs="0" maxOccurs="unbounded"/>
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maxOccurs="unbounded"/>
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minOccurs="0" maxOccurs="unbounded"/>
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use="required"/>
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maxOccurs="unbounded"/>
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use="required"/>
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maxOccurs="unbounded"/>
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default="ENT"/>
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use="optional" fixed="INSTANCE"/>
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maxOccurs="unbounded"/>
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            <xs:element name="encounter" type="POCD_MT000040.Encounter"/>
            <xs:element name="observation"
type="POCD_MT000040.Observation"/>
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type="POCD_MT000040.ObservationMedia"/>
            <xs:element name="organizer" type="POCD_MT000040.Organizer"/>
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            <xs:element name="regionOfInterest"
type="POCD_MT000040.RegionOfInterest"/>
            <xs:element name="substanceAdministration"
type="POCD_MT000040.SubstanceAdministration"/>
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      </xs:sequence>
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use="optional" default="COMP"/>
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type="POCD_MT000040.Observation"/>
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type="POCD_MT000040.ObservationMedia"/>
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            <xs:element name="regionOfInterest"
type="POCD_MT000040.RegionOfInterest"/>
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type="POCD_MT000040.SubstanceAdministration"/>
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type="x_ActRelationshipEntryRelationship" use="required"/>
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default="true"/>
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maxOccurs="unbounded"/>
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maxOccurs="unbounded"/>
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default="ACT"/>
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fixed="EVN"/>
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default="DOC"/>
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fixed="EVN"/>
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maxOccurs="unbounded"/>
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use="optional" default="OBS"/>
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fixed="EVN"/>
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maxOccurs="unbounded"/>
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maxOccurs="unbounded"/>
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fixed="PROC"/>
      <xs:attribute name="moodCode" type="ActMood" use="optional"
fixed="EVN"/>
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
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maxOccurs="unbounded"/>
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maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:choice>
            <xs:element name="guardianPerson" type="POCD_MT000040.Person"/>
            <xs:element name="guardianOrganization"
type="POCD_MT000040.Organization"/>
         </xs:choice>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
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fixed="GUARD"/>
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maxOccurs="unbounded"/>
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maxOccurs="unbounded"/>
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minOccurs="0"/>
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type="POCD_MT000040.Organization" minOccurs="0"/>
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type="RoleClassServiceDeliveryLocation" use="optional" default="SDLOC"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
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maxOccurs="unbounded"/>
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type="sdtc:SdtcAssignedEntity"/>
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type="sdtc:SdtcRelatedEntity"/>
         </xs:choice>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
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fixed="INF"/>
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use="optional" fixed="OP"/>
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maxOccurs="unbounded"/>
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maxOccurs="unbounded"/>
         <xs:element name="intendedRecipient"
type="POCD_MT000040.IntendedRecipient"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
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use="optional" default="PRCP"/>
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maxOccurs="unbounded"/>
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use="optional" fixed="FLFS"/>
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maxOccurs="unbounded"/>
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maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="informationRecipient"
type="POCD_MT000040.Person" minOccurs="0"/>
         <xs:element name="receivedOrganization"
type="POCD_MT000040.Organization" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="x_InformationRecipientRole"
use="optional" default="ASSIGNED"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.LabeledDrug">
      <xs:sequence>
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maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="name" type="EN" minOccurs="0"/>
```

```
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="EntityClassManufacturedMaterial"
use="optional" fixed="MMAT"/>
      <xs:attribute name="determinerCode" type="EntityDeterminerDetermined"
use="optional" fixed="KIND"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.LanguageCommunication">
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="languageCode" type="CS" minOccurs="0"/>
         <xs:element name="modeCode" type="CE" minOccurs="0"/>
         <xs:element name="proficiencyLevelCode" type="CE" minOccurs="0"/>
         <xs:element name="preferenceInd" type="BL" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.LegalAuthenticator">
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maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="time" type="TS"/>
         <xs:element name="signatureCode" type="CS"/>
         <xs:element name="assignedEntity" type="sdtc:SdtcAssignedEntity"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationType" use="optional"
fixed="LA"/>
      <xs:attribute name="contextControlCode" type="ContextControl"
use="optional" fixed="OP"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Location">
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="healthCareFacility"
type="POCD_MT000040.HealthCareFacility"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationTargetLocation"
use="optional" fixed="LOC"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.MaintainedEntity">
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
```

```
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
         <xs:element name="maintainingPerson" type="POCD_MT000040.Person"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClass" use="optional"
fixed="MNT"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.ManufacturedProduct">
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
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maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
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            <xs:element name="manufacturedLabeledDrug"
type="POCD_MT000040.LabeledDrug"/>
            <xs:element name="manufacturedMaterial"
type="POCD_MT000040.Material"/>
         </xs:choice>
         <xs:element name="manufacturerOrganization"
type="POCD_MT000040.Organization" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClassManufacturedProduct"
use="optional" fixed="MANU"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Material">
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
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         <xs:element name="name" type="EN" minOccurs="0"/>
         <xs:element name="lotNumberText" type="ST" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="EntityClassManufacturedMaterial"
use="optional" fixed="MMAT"/>
      <xs:attribute name="determinerCode" type="EntityDeterminerDetermined"
use="optional" fixed="KIND"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.NonXMLBody">
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
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maxOccurs="unbounded"/>
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```

```
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClass" use="optional"
fixed="DOCBODY"/>
      <xs:attribute name="moodCode" type="ActMood" use="optional"
fixed="EVN"/>
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   <xs:complexType name="POCD_MT000040.Observation">
      <xs:sequence>
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
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         <xs:element name="derivationExpr" type="ST" minOccurs="0"/>
         <xs:element name="text" type="ED" minOccurs="0"/>
         <xs:element name="statusCode" type="CS" minOccurs="0"/>
         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
         <xs:element name="priorityCode" type="CE" minOccurs="0"/>
         <xs:element name="repeatNumber" type="IVL_INT" minOccurs="0"/>
         <xs:element name="languageCode" type="CS" minOccurs="0"/>
         <xs:element name="value" type="ANY" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="interpretationCode" type="CE" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="methodCode" type="CE" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="targetSiteCode" type="CD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="subject" type="POCD_MT000040.Subject"
minOccurs="0"/>
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minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="performer" type="POCD_MT000040.Performer2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="participant" type="POCD_MT000040.Participant2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="entryRelationship"
type="POCD_MT000040.EntryRelationship" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="reference" type="POCD_MT000040.Reference"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="precondition" type="POCD_MT000040.Precondition"
minOccurs="0" maxOccurs="unbounded"/>
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type="POCD_MT000040.ReferenceRange" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClassObservation"
use="required"/>
      <xs:attribute name="moodCode" type="x_ActMoodDocumentObservation"
use="required"/>
      <xs:attribute name="negationInd" type="bl" use="optional"/>
```

```
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   <xs:complexType name="POCD_MT000040.ObservationMedia">
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="languageCode" type="CS" minOccurs="0"/>
         <xs:element name="value" type="ED"/>
         <xs:element name="subject" type="POCD_MT000040.Subject"
minOccurs="0"/>
         <xs:element name="specimen" type="POCD_MT000040.Specimen"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="performer" type="POCD_MT000040.Performer2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="participant" type="POCD_MT000040.Participant2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="entryRelationship"
type="POCD_MT000040.EntryRelationship" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="reference" type="POCD_MT000040.Reference"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="precondition" type="POCD_MT000040.Precondition"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="ID" type="xs:ID"/>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClassObservation"
use="required"/>
      <xs:attribute name="moodCode" type="ActMood" use="required"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.ObservationRange">
      <xs:sequence>
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maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CD" minOccurs="0"/>
         <xs:element name="text" type="ED" minOccurs="0"/>
         <xs:element name="value" type="ANY" minOccurs="0"/>
         <xs:element name="interpretationCode" type="CE" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClassObservation"
use="optional" default="OBS"/>
      <xs:attribute name="moodCode" type="ActMood" use="optional"
fixed="EVN.CRT"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Order">
      <xs:sequence>
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```
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
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      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClassRoot" use="optional"
default="ACT"/>
      <xs:attribute name="moodCode" type="ActMood" use="optional"
fixed="RQO"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Organization">
      <xs:sequence>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="name" type="ON" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="addr" type="AD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="standardIndustryClassCode" type="CE"
minOccurs="0"/>
         <xs:element name="asOrganizationPartOf"
type="POCD_MT000040.OrganizationPartOf" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="EntityClassOrganization"
use="optional" fixed="ORG"/>
      <xs:attribute name="determinerCode" type="EntityDeterminer"
use="optional" fixed="INSTANCE"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.OrganizationPartOf">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="statusCode" type="CS" minOccurs="0"/>
         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
         <xs:element name="wholeOrganization"
type="POCD_MT000040.Organization" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
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```
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fixed="PART"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CD" minOccurs="0"/>
         <xs:element name="statusCode" type="CS"/>
         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
         <xs:element name="subject" type="POCD_MT000040.Subject"
minOccurs="0"/>
         <xs:element name="specimen" type="POCD_MT000040.Specimen"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="performer" type="POCD_MT000040.Performer2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="participant" type="POCD_MT000040.Participant2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="reference" type="POCD_MT000040.Reference"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="precondition" type="POCD_MT000040.Precondition"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="component" type="POCD_MT000040.Component4"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode"
type="x_ActClassDocumentEntryOrganizer" use="required"/>
      <xs:attribute name="moodCode" type="ActMood" use="required"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.ParentDocument">
      <xs:sequence>
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maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" maxOccurs="unbounded"/>
         <xs:element name="code" type="CD" minOccurs="0"/>
         <xs:element name="text" type="ED" minOccurs="0"/>
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         <xs:element name="versionNumber" type="INT" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClinicalDocument"
use="optional" fixed="DOCCLIN"/>
      <xs:attribute name="moodCode" type="ActMood" use="optional"
fixed="EVN"/>
   </xs:complexType>
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
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maxOccurs="unbounded"/>
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         <xs:element name="associatedEntity"
type="sdtc:SdtcAssociatedEntity"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationType"
use="required"/>
      <xs:attribute name="contextControlCode" type="ContextControl"
use="optional" fixed="OP"/>
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   <xs:complexType name="POCD_MT000040.Participant2">
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maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="time" type="IVL_TS" minOccurs="0"/>
         <xs:element name="awarenessCode" type="CE" minOccurs="0"/>
         <xs:element name="participantRole"
type="POCD_MT000040.ParticipantRole"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationType"
use="required"/>
      <xs:attribute name="contextControlCode" type="ContextControl"
use="optional" fixed="OP"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.ParticipantRole">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="addr" type="AD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:choice>
            <xs:element name="playingDevice" type="POCD_MT000040.Device"
minOccurs="0"/>
            <xs:element name="playingEntity"
type="POCD_MT000040.PlayingEntity" minOccurs="0"/>
         </xs:choice>
         <xs:element name="scopingEntity" type="POCD_MT000040.Entity"
minOccurs="0"/>
      </xs:sequence>
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      <xs:attribute name="classCode" type="RoleClassRoot" use="optional"
default="ROL"/>
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   <xs:complexType name="POCD_MT000040.Patient">
      <xs:sequence>
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maxOccurs="unbounded"/>
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type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
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maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"/>
         <xs:element name="name" type="PN" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="administrativeGenderCode" type="CE"
minOccurs="0"/>
         <xs:element name="birthTime" type="TS" minOccurs="0"/>
         <xs:element name="maritalStatusCode" type="CE" minOccurs="0"/>
         <xs:element name="religiousAffiliationCode" type="CE"
minOccurs="0"/>
         <xs:element name="raceCode" type="CE" minOccurs="0"/>
         <xs:element ref="sdtc:raceCode" xmlns:sdtc="urn:hl7-org:sdtc"
minOccurs="0" maxOccurs="unbounded" />
         <xs:element name="ethnicGroupCode" type="CE" minOccurs="0"/>
         <xs:element name="guardian" type="POCD_MT000040.Guardian"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="birthplace" type="POCD_MT000040.Birthplace"
minOccurs="0"/>
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type="POCD_MT000040.LanguageCommunication" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="EntityClass" use="optional"
fixed="PSN"/>
      <xs:attribute name="determinerCode" type="EntityDeterminer"
use="optional" fixed="INSTANCE"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.PatientRole">
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maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" maxOccurs="unbounded"/>
         <xs:element name="addr" type="AD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="patient" type="POCD_MT000040.Patient"
minOccurs="0"/>
         <xs:element name="providerOrganization"
type="POCD_MT000040.Organization" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClass" use="optional"
fixed="PAT"/>
   </xs:complexType>
```

```
   <xs:complexType name="POCD_MT000040.Performer1">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="functionCode" type="CE" minOccurs="0"/>
         <xs:element name="time" type="IVL_TS" minOccurs="0"/>
         <xs:element name="assignedEntity" type="sdtc:SdtcAssignedEntity"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="x_ServiceEventPerformer"
use="required"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Performer2">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="time" type="IVL_TS" minOccurs="0"/>
         <xs:element name="modeCode" type="CE" minOccurs="0"/>
         <xs:element name="assignedEntity" type="sdtc:SdtcAssignedEntity"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationPhysicalPerformer"
use="optional" fixed="PRF"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Person">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="name" type="PN" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element ref="sdtc:birthTime" minOccurs="0" />
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="EntityClass" use="optional"
fixed="PSN"/>
      <xs:attribute name="determinerCode" type="EntityDeterminer"
use="optional" fixed="INSTANCE"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Place">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="name" type="EN" minOccurs="0"/>
         <xs:element name="addr" type="AD" minOccurs="0"/>
      </xs:sequence>
```

```
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="EntityClassPlace" use="optional"
fixed="PLC"/>
      <xs:attribute name="determinerCode" type="EntityDeterminer"
use="optional" fixed="INSTANCE"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.PlayingEntity">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="quantity" type="PQ" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="name" type="PN" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element ref="sdtc:birthTime" minOccurs="0" />
         <xs:element name="desc" type="ED" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="EntityClassRoot" use="optional"
default="ENT"/>
      <xs:attribute name="determinerCode" type="EntityDeterminer"
use="optional" fixed="INSTANCE"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Precondition">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="criterion" type="POCD_MT000040.Criterion"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ActRelationshipType"
use="optional" fixed="PRCN"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Procedure">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CD" minOccurs="0"/>
         <xs:element name="text" type="ED" minOccurs="0"/>
         <xs:element name="statusCode" type="CS" minOccurs="0"/>
         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
         <xs:element name="priorityCode" type="CE" minOccurs="0"/>
         <xs:element name="languageCode" type="CS" minOccurs="0"/>
         <xs:element name="methodCode" type="CE" minOccurs="0"
maxOccurs="unbounded"/>
```

```
         <xs:element name="approachSiteCode" type="CD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="targetSiteCode" type="CD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="subject" type="POCD_MT000040.Subject"
minOccurs="0"/>
         <xs:element name="specimen" type="POCD_MT000040.Specimen"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="performer" type="POCD_MT000040.Performer2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="participant" type="POCD_MT000040.Participant2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="entryRelationship"
type="POCD_MT000040.EntryRelationship" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="reference" type="POCD_MT000040.Reference"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="precondition" type="POCD_MT000040.Precondition"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClass" use="required"/>
      <xs:attribute name="moodCode" type="x_DocumentProcedureMood"
use="required"/>
      <xs:attribute name="negationInd" type="bl" use="optional"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Product">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="manufacturedProduct"
type="POCD_MT000040.ManufacturedProduct"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationType" use="optional"
fixed="PRD"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.RecordTarget">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="patientRole" type="POCD_MT000040.PatientRole"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationType" use="optional"
fixed="RCT"/>
      <xs:attribute name="contextControlCode" type="ContextControl"
use="optional" fixed="OP"/>
   </xs:complexType>
```

```
   <xs:complexType name="POCD_MT000040.Reference">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="seperatableInd" type="BL" minOccurs="0"/>
         <xs:choice>
            <xs:element name="externalAct"
type="POCD_MT000040.ExternalAct"/>
            <xs:element name="externalObservation"
type="POCD_MT000040.ExternalObservation"/>
            <xs:element name="externalProcedure"
type="POCD_MT000040.ExternalProcedure"/>
            <xs:element name="externalDocument"
type="POCD_MT000040.ExternalDocument"/>
         </xs:choice>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode"
type="x_ActRelationshipExternalReference" use="required"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.ReferenceRange">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="observationRange"
type="POCD_MT000040.ObservationRange"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ActRelationshipType"
use="optional" fixed="REFV"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.RegionOfInterest.value">
      <xs:complexContent>
         <xs:extension base="INT">
            <xs:attribute name="unsorted" type="xs:boolean"
default="false"/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.RegionOfInterest">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" maxOccurs="unbounded"/>
         <xs:element name="code" type="CS"/>
         <xs:element name="value"
type="POCD_MT000040.RegionOfInterest.value" maxOccurs="unbounded"/>
         <xs:element name="subject" type="POCD_MT000040.Subject"
minOccurs="0"/>
```

```
         <xs:element name="specimen" type="POCD_MT000040.Specimen"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="performer" type="POCD_MT000040.Performer2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="participant" type="POCD_MT000040.Participant2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="entryRelationship"
type="POCD_MT000040.EntryRelationship" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="reference" type="POCD_MT000040.Reference"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="precondition" type="POCD_MT000040.Precondition"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="ID" type="xs:ID"/>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClass" use="required"
fixed="ROIOVL"/>
      <xs:attribute name="moodCode" type="ActMood" use="required"
fixed="EVN"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.RelatedDocument">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="parentDocument"
type="POCD_MT000040.ParentDocument"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="x_ActRelationshipDocument"
use="required"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.RelatedEntity">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="addr" type="AD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
         <xs:element name="relatedPerson" type="POCD_MT000040.Person"
minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClassMutualRelationship"
use="required"/>
   </xs:complexType>
```

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   <xs:complexType name="POCD_MT000040.RelatedSubject">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="addr" type="AD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="telecom" type="TEL" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="subject" type="POCD_MT000040.SubjectPerson"
minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="x_DocumentSubject"
use="optional" default="PRS"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.ResponsibleParty">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="assignedEntity" type="sdtc:SdtcAssignedEntity"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationType" use="optional"
fixed="RESP"/>
   </xs:complexType>

   <xs:complexType name="POCD_MT000040.Section">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="title" type="ST" minOccurs="0"/>
         <xs:element name="text" type="StrucDoc.Text" minOccurs="0"/>
         <xs:element name="confidentialityCode" type="CE" minOccurs="0"/>
         <xs:element name="languageCode" type="CS" minOccurs="0"/>
         <xs:element name="subject" type="POCD_MT000040.Subject"
minOccurs="0"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="entry" type="POCD_MT000040.Entry" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="component" type="POCD_MT000040.Component5"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="ID" type="xs:ID"/>
```

```
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClass" use="optional"
fixed="DOCSECT"/>
      <xs:attribute name="moodCode" type="ActMood" use="optional"
fixed="EVN"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.ServiceEvent">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CE" minOccurs="0"/>
         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
         <xs:element name="performer" type="POCD_MT000040.Performer1"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClassRoot" use="optional"
default="ACT"/>
      <xs:attribute name="moodCode" type="ActMood" use="optional"
fixed="EVN"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Specimen">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="specimenRole"
type="POCD_MT000040.SpecimenRole"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationType" use="optional"
fixed="SPC"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.SpecimenRole">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="specimenPlayingEntity"
type="POCD_MT000040.PlayingEntity" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="RoleClassSpecimen"
use="optional" fixed="SPEC"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.StructuredBody">
      <xs:sequence>
```

```
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="confidentialityCode" type="CE" minOccurs="0"/>
         <xs:element name="languageCode" type="CS" minOccurs="0"/>
         <xs:element name="component" type="POCD_MT000040.Component3"
maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClass" use="optional"
fixed="DOCBODY"/>
      <xs:attribute name="moodCode" type="ActMood" use="optional"
fixed="EVN"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Subject">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="awarenessCode" type="CE" minOccurs="0"/>
         <xs:element name="relatedSubject"
type="POCD_MT000040.RelatedSubject"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="typeCode" type="ParticipationTargetSubject"
use="optional" fixed="SBJ"/>
      <xs:attribute name="contextControlCode" type="ContextControl"
use="optional" fixed="OP"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.SubjectPerson">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="name" type="PN" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="administrativeGenderCode" type="CE"
minOccurs="0"/>
         <xs:element name="birthTime" type="TS" minOccurs="0"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="EntityClass" use="optional"
fixed="PSN"/>
      <xs:attribute name="determinerCode" type="EntityDeterminer"
use="optional" fixed="INSTANCE"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.SubstanceAdministration">
      <xs:sequence>
         <xs:element name="realmCode" type="CS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
```

```
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         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CD" minOccurs="0"/>
         <xs:element name="text" type="ED" minOccurs="0"/>
         <xs:element name="statusCode" type="CS" minOccurs="0"/>
         <xs:element name="effectiveTime" type="SXCM_TS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="priorityCode" type="CE" minOccurs="0"/>
         <xs:element name="repeatNumber" type="IVL_INT" minOccurs="0"/>
         <xs:element name="routeCode" type="CE" minOccurs="0"/>
         <xs:element name="approachSiteCode" type="CD" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="doseQuantity" type="IVL_PQ" minOccurs="0"/>
         <xs:element name="rateQuantity" type="IVL_PQ" minOccurs="0"/>
         <xs:element name="maxDoseQuantity" type="RTO_PQ_PQ"
minOccurs="0"/>
         <xs:element name="administrationUnitCode" type="CE"
minOccurs="0"/>
         <xs:element name="subject" type="POCD_MT000040.Subject"
minOccurs="0"/>
         <xs:element name="specimen" type="POCD_MT000040.Specimen"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="consumable" type="POCD_MT000040.Consumable"/>
         <xs:element name="performer" type="POCD_MT000040.Performer2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="participant" type="POCD_MT000040.Participant2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="entryRelationship"
type="POCD_MT000040.EntryRelationship" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="reference" type="POCD_MT000040.Reference"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="precondition" type="POCD_MT000040.Precondition"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClass" use="required"
fixed="SBADM"/>
      <xs:attribute name="moodCode" type="x_DocumentSubstanceMood"
use="required"/>
      <xs:attribute name="negationInd" type="bl" use="optional"/>
   </xs:complexType>
   <xs:complexType name="POCD_MT000040.Supply">
      <xs:sequence>
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maxOccurs="unbounded"/>
         <xs:element name="typeId"
type="POCD_MT000040.InfrastructureRoot.typeId" minOccurs="0"/>
         <xs:element name="templateId" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="id" type="II" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="code" type="CD" minOccurs="0"/>
         <xs:element name="text" type="ED" minOccurs="0"/>
         <xs:element name="statusCode" type="CS" minOccurs="0"/>
```

```
         <xs:element name="effectiveTime" type="SXCM_TS" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="priorityCode" type="CE" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="repeatNumber" type="IVL_INT" minOccurs="0"/>
         <xs:element name="independentInd" type="BL" minOccurs="0"/>
         <xs:element name="quantity" type="PQ" minOccurs="0"/>
         <xs:element name="expectedUseTime" type="IVL_TS" minOccurs="0"/>
         <xs:element name="subject" type="POCD_MT000040.Subject"
minOccurs="0"/>
         <xs:element name="specimen" type="POCD_MT000040.Specimen"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="product" type="POCD_MT000040.Product"
minOccurs="0"/>
         <xs:element name="performer" type="POCD_MT000040.Performer2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="author" type="POCD_MT000040.Author"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="informant" type="POCD_MT000040.Informant12"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="participant" type="POCD_MT000040.Participant2"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="entryRelationship"
type="POCD_MT000040.EntryRelationship" minOccurs="0"
maxOccurs="unbounded"/>
         <xs:element name="reference" type="POCD_MT000040.Reference"
minOccurs="0" maxOccurs="unbounded"/>
         <xs:element name="precondition" type="POCD_MT000040.Precondition"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional"/>
      <xs:attribute name="classCode" type="ActClassSupply" use="required"
fixed="SPLY"/>
      <xs:attribute name="moodCode" type="x_DocumentSubstanceMood"
use="required"/>
   </xs:complexType>
</xs:schema>
```

C.3 datatypes.xsd

```
<?xml version="1.0" encoding="UTF-8"?><!-- $Id: $ --><!--
    This schema is generated from a Generic Schema Definition (GSD)
    by gsd2xsl. Do not edit this file.
  -->
<xs:schema xmlns:sch="http://www.ascc.net/xml/schematron"
xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
   <xs:annotation>
      <xs:documentation>
           Copyright (c) 2001, 2002, 2003, 2004, 2005 Health Level Seven.
           All rights reserved.

           Redistribution and use in source and binary forms, with or
           without modification, are permitted provided that the following
           conditions are met:
           1. Redistributions of source code must retain the above
              copyright notice, this list of conditions and the following
              disclaimer.
           2. Redistributions in binary form must reproduce the above
              copyright notice, this list of conditions and the following
```

```
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               provided with the distribution.
            3. All advertising materials mentioning features or use of this
               software must display the following acknowledgement:

            This product includes software developed by Health Level Seven.

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            NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND
            FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.  IN NO EVENT
            SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
            INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
            DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE
            GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
            INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
            WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
            NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
            OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
            DAMAGE.

            Generated by $Id: gsd2xsd.xsl,v 1.4 2005/04/17 03:20:15 lmckenzi
Exp $
</xs:documentation>
   </xs:annotation>
   <xs:include schemaLocation="datatypes-base.xsd"/>
<!--
      Instantiated templates
    -->
   <xs:complexType name="PIVL_TS">
      <xs:annotation>
         <xs:documentation>
            Note: because this type is defined as an extension of SXCM_T,
            all of the attributes and elements accepted for T are also
            accepted by this definition.  However, they are NOT allowed
            by the normative description of this type.  Unfortunately,
            we cannot write a general purpose schematron contraints to
            provide that extra validation, thus applications must be
            aware that instance (fragments) that pass validation with
            this might might still not be legal.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="SXCM_TS">
            <xs:sequence>
               <xs:element name="phase" minOccurs="0" maxOccurs="1"
type="IVL_TS">
                  <xs:annotation>
                     <xs:documentation>
                        A prototype of the repeating interval specifying
the
                        duration of each occurrence and anchors the
periodic
                        interval sequence at a certain point in time.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="period" minOccurs="0" maxOccurs="1"
type="PQ">
                  <xs:annotation>
```

```
                     <xs:documentation>
                        A time duration specifying a reciprocal measure of
                        the frequency at which the periodic interval
repeats.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="alignment" type="CalendarCycle"
use="optional">
               <xs:annotation>
                  <xs:documentation>
                     Specifies if and how the repetitions are aligned to
                     the cycles of the underlying calendar (e.g., to
                     distinguish every 30 days from "the 5th of every
                     month".) A non-aligned periodic interval recurs
                     independently from the calendar. An aligned periodic
                     interval is synchronized with the calendar.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="institutionSpecified" type="bl"
use="optional" default="false">
               <xs:annotation>
                  <xs:documentation>
                     Indicates whether the exact timing is up to the party
                     executing the schedule (e.g., to distinguish "every 8
                     hours" from "3 times a day".)
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="EIVL_TS">
      <xs:annotation>
         <xs:documentation>
            Note: because this type is defined as an extension of SXCM_T,
            all of the attributes and elements accepted for T are also
            accepted by this definition.  However, they are NOT allowed
            by the normative description of this type.  Unfortunately,
            we cannot write a general purpose schematron contraints to
            provide that extra validation, thus applications must be
            aware that instance (fragments) that pass validation with
            this might might still not be legal.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="SXCM_TS">
            <xs:sequence>
               <xs:element name="event" type="EIVL.event" minOccurs="0"
maxOccurs="1">
                  <xs:annotation>
                     <xs:documentation>
                        A code for a common (periodical) activity of daily
                        living based on which the event related periodic
                        interval is specified.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
```

```
               <xs:element name="offset" minOccurs="0" maxOccurs="1"
type="IVL_PQ">
                  <xs:annotation>
                     <xs:documentation>
                        An interval of elapsed time (duration, not absolute
                        point in time) that marks the offsets for the
                        beginning, width and end of the event-related
periodic
                        interval measured from the time each such event
                        actually occurred.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVL_PQ">
      <xs:complexContent>
         <xs:extension base="SXCM_PQ">
            <xs:choice minOccurs="0">
               <xs:sequence>
                  <xs:element name="low" minOccurs="1" maxOccurs="1"
type="IVXB_PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The low limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:choice minOccurs="0">
                     <xs:element name="width" minOccurs="0" maxOccurs="1"
type="PQ">
                        <xs:annotation>
                           <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                     <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_PQ">
                        <xs:annotation>
                           <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                  </xs:choice>
               </xs:sequence>
               <xs:element name="high" minOccurs="1" maxOccurs="1"
type="IVXB_PQ">
                  <xs:annotation>
                     <xs:documentation/>
```

```
                  </xs:annotation>
               </xs:element>
               <xs:sequence>
                  <xs:element name="width" minOccurs="1" maxOccurs="1"
type="PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
               <xs:sequence>
                  <xs:element name="center" minOccurs="1" maxOccurs="1"
type="PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The arithmetic mean of the interval (low plus
high
                           divided by 2). The purpose of distinguishing the
center
                           as a semantic property is for conversions of
intervals
                           from and to point values.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="width" minOccurs="0" maxOccurs="1"
type="PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
            </xs:choice>
```

```
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SXCM_PQ">
      <xs:complexContent>
         <xs:extension base="PQ">
            <xs:attribute name="operator" type="SetOperator" use="optional"
default="I">
               <xs:annotation>
                  <xs:documentation>
                     A code specifying whether the set component is
included
                     (union) or excluded (set-difference) from the set, or
                     other set operations with the current set component
and
                     the set as constructed from the representation stream
                     up to the current point.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVXB_PQ">
      <xs:complexContent>
         <xs:extension base="PQ">
            <xs:attribute name="inclusive" type="bl" use="optional"
default="true">
               <xs:annotation>
                  <xs:documentation>
                     Specifies whether the limit is included in the
                     interval (interval is closed) or excluded from the
                     interval (interval is open).
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="PPD_TS">
      <xs:annotation>
         <xs:appinfo>
            <diff>PPD_PQ</diff>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="TS">
            <xs:sequence>
               <xs:element name="standardDeviation" minOccurs="0"
maxOccurs="1" type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                        The primary measure of variance/uncertainty of the
                        value (the square root of the sum of the squares of
                        the differences between all data points and the
mean).
                        The standard deviation is used to normalize the
data
                        for computing the distribution function.
Applications
                        that cannot deal with probability distributions can
```

```
                        still get an idea about the confidence level by
looking
                        at the standard deviation.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="distributionType"
type="ProbabilityDistributionType" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A code specifying the type of probability
distribution.
                     Possible values are as shown in the attached table.
                     The NULL value (unknown) for the type code indicates
                     that the probability distribution type is unknown. In
                     that case, the standard deviation has the meaning of
an
                     informal guess.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="PPD_PQ">
      <xs:annotation>
         <xs:appinfo>
            <diff>PPD_PQ</diff>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="PQ">
            <xs:sequence>
               <xs:element name="standardDeviation" minOccurs="0"
maxOccurs="1" type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                        The primary measure of variance/uncertainty of the
                        value (the square root of the sum of the squares of
                        the differences between all data points and the
mean).
                        The standard deviation is used to normalize the
data
                        for computing the distribution function.
Applications
                        that cannot deal with probability distributions can
                        still get an idea about the confidence level by
looking
                        at the standard deviation.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="distributionType"
type="ProbabilityDistributionType" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A code specifying the type of probability
distribution.
                     Possible values are as shown in the attached table.
```

```
                     The NULL value (unknown) for the type code indicates
                     that the probability distribution type is unknown. In
                     that case, the standard deviation has the meaning of
an
                     informal guess.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="PIVL_PPD_TS">
      <xs:annotation>
         <xs:documentation>
            Note: because this type is defined as an extension of SXCM_T,
            all of the attributes and elements accepted for T are also
            accepted by this definition.  However, they are NOT allowed
            by the normative description of this type.  Unfortunately,
            we cannot write a general purpose schematron contraints to
            provide that extra validation, thus applications must be
            aware that instance (fragments) that pass validation with
            this might might still not be legal.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="SXCM_PPD_TS">
            <xs:sequence>
               <xs:element name="phase" minOccurs="0" maxOccurs="1"
type="IVL_PPD_TS">
                  <xs:annotation>
                     <xs:documentation>
                        A prototype of the repeating interval specifying
the
                        duration of each occurrence and anchors the
periodic
                        interval sequence at a certain point in time.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="period" minOccurs="0" maxOccurs="1"
type="PPD_PQ">
                  <xs:annotation>
                     <xs:documentation>
                        A time duration specifying a reciprocal measure of
                        the frequency at which the periodic interval
repeats.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="alignment" type="CalendarCycle"
use="optional">
               <xs:annotation>
                  <xs:documentation>
                     Specifies if and how the repetitions are aligned to
                     the cycles of the underlying calendar (e.g., to
                     distinguish every 30 days from "the 5th of every
                     month".) A non-aligned periodic interval recurs
                     independently from the calendar. An aligned periodic
                     interval is synchronized with the calendar.
                  </xs:documentation>
```

```
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="institutionSpecified" type="bl"
use="optional" default="false">
               <xs:annotation>
                  <xs:documentation>
                     Indicates whether the exact timing is up to the party
                     executing the schedule (e.g., to distinguish "every 8
                     hours" from "3 times a day".)
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SXCM_PPD_TS">
      <xs:complexContent>
         <xs:extension base="PPD_TS">
            <xs:attribute name="operator" type="SetOperator" use="optional"
default="I">
               <xs:annotation>
                  <xs:documentation>
                     A code specifying whether the set component is
included
                     (union) or excluded (set-difference) from the set, or
                     other set operations with the current set component
and
                     the set as constructed from the representation stream
                     up to the current point.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVL_PPD_TS">
      <xs:complexContent>
         <xs:extension base="SXCM_PPD_TS">
            <xs:choice minOccurs="0">
               <xs:sequence>
                  <xs:element name="low" minOccurs="1" maxOccurs="1"
type="IVXB_PPD_TS">
                     <xs:annotation>
                        <xs:documentation>
                           The low limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:choice minOccurs="0">
                     <xs:element name="width" minOccurs="0" maxOccurs="1"
type="PPD_PQ">
                        <xs:annotation>
                           <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
```

```
                           to be stated and the third can be derived.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                     <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_PPD_TS">
                        <xs:annotation>
                           <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                  </xs:choice>
               </xs:sequence>
               <xs:element name="high" minOccurs="1" maxOccurs="1"
type="IVXB_PPD_TS">
                  <xs:annotation>
                     <xs:documentation/>
                  </xs:annotation>
               </xs:element>
               <xs:sequence>
                  <xs:element name="width" minOccurs="1" maxOccurs="1"
type="PPD_PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_PPD_TS">
                     <xs:annotation>
                        <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
               <xs:sequence>
                  <xs:element name="center" minOccurs="1" maxOccurs="1"
type="PPD_TS">
                     <xs:annotation>
                        <xs:documentation>
                           The arithmetic mean of the interval (low plus
high
                           divided by 2). The purpose of distinguishing the
center
                           as a semantic property is for conversions of
intervals
                           from and to point values.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
```

```
                  <xs:element name="width" minOccurs="0" maxOccurs="1"
type="PPD_PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
            </xs:choice>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVXB_PPD_TS">
      <xs:complexContent>
         <xs:extension base="PPD_TS">
            <xs:attribute name="inclusive" type="bl" use="optional"
default="true">
               <xs:annotation>
                  <xs:documentation>
                     Specifies whether the limit is included in the
                     interval (interval is closed) or excluded from the
                     interval (interval is open).
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="EIVL_PPD_TS">
      <xs:annotation>
         <xs:documentation>
            Note: because this type is defined as an extension of SXCM_T,
            all of the attributes and elements accepted for T are also
            accepted by this definition.  However, they are NOT allowed
            by the normative description of this type.  Unfortunately,
            we cannot write a general purpose schematron contraints to
            provide that extra validation, thus applications must be
            aware that instance (fragments) that pass validation with
            this might might still not be legal.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="SXCM_PPD_TS">
            <xs:sequence>
               <xs:element name="event" type="EIVL.event" minOccurs="0"
maxOccurs="1">
                  <xs:annotation>
                     <xs:documentation>
                        A code for a common (periodical) activity of daily
                        living based on which the event related periodic
                        interval is specified.
                     </xs:documentation>
```

```
                  </xs:annotation>
               </xs:element>
               <xs:element name="offset" minOccurs="0" maxOccurs="1"
type="IVL_PPD_PQ">
                  <xs:annotation>
                     <xs:documentation>
                        An interval of elapsed time (duration, not absolute
                        point in time) that marks the offsets for the
                        beginning, width and end of the event-related
periodic
                        interval measured from the time each such event
                        actually occurred.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVL_PPD_PQ">
      <xs:complexContent>
         <xs:extension base="SXCM_PPD_PQ">
            <xs:choice minOccurs="0">
               <xs:sequence>
                  <xs:element name="low" minOccurs="1" maxOccurs="1"
type="IVXB_PPD_PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The low limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:choice minOccurs="0">
                     <xs:element name="width" minOccurs="0" maxOccurs="1"
type="PPD_PQ">
                        <xs:annotation>
                           <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                     <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_PPD_PQ">
                        <xs:annotation>
                           <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                  </xs:choice>
               </xs:sequence>
               <xs:element name="high" minOccurs="1" maxOccurs="1"
type="IVXB_PPD_PQ">
```

```
                  <xs:annotation>
                     <xs:documentation/>
                  </xs:annotation>
               </xs:element>
               <xs:sequence>
                  <xs:element name="width" minOccurs="1" maxOccurs="1"
type="PPD_PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_PPD_PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
               <xs:sequence>
                  <xs:element name="center" minOccurs="1" maxOccurs="1"
type="PPD_PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The arithmetic mean of the interval (low plus
high
                           divided by 2). The purpose of distinguishing the
center
                           as a semantic property is for conversions of
intervals
                           from and to point values.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="width" minOccurs="0" maxOccurs="1"
type="PPD_PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
```

```
               </xs:sequence>
            </xs:choice>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SXCM_PPD_PQ">
      <xs:complexContent>
         <xs:extension base="PPD_PQ">
            <xs:attribute name="operator" type="SetOperator" use="optional"
default="I">
               <xs:annotation>
                  <xs:documentation>
                     A code specifying whether the set component is
included
                     (union) or excluded (set-difference) from the set, or
                     other set operations with the current set component
and
                     the set as constructed from the representation stream
                     up to the current point.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVXB_PPD_PQ">
      <xs:complexContent>
         <xs:extension base="PPD_PQ">
            <xs:attribute name="inclusive" type="bl" use="optional"
default="true">
               <xs:annotation>
                  <xs:documentation>
                     Specifies whether the limit is included in the
                     interval (interval is closed) or excluded from the
                     interval (interval is open).
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SXPR_TS">
      <xs:complexContent>
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            <xs:sequence>
               <xs:element name="comp" minOccurs="2" maxOccurs="unbounded"
type="SXCM_TS">
                  <xs:annotation>
                     <xs:documentation/>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SXCM_CD">
      <xs:complexContent>
         <xs:extension base="CD">
            <xs:attribute name="operator" type="SetOperator" use="optional"
default="I">
               <xs:annotation>
```

```
                  <xs:documentation>
                     A code specifying whether the set component is
included
                     (union) or excluded (set-difference) from the set, or
                     other set operations with the current set component
and
                     the set as constructed from the representation stream
                     up to the current point.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SXCM_MO">
      <xs:complexContent>
         <xs:extension base="MO">
            <xs:attribute name="operator" type="SetOperator" use="optional"
default="I">
               <xs:annotation>
                  <xs:documentation>
                     A code specifying whether the set component is
included
                     (union) or excluded (set-difference) from the set, or
                     other set operations with the current set component
and
                     the set as constructed from the representation stream
                     up to the current point.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SXCM_INT">
      <xs:complexContent>
         <xs:extension base="INT">
            <xs:attribute name="operator" type="SetOperator" use="optional"
default="I">
               <xs:annotation>
                  <xs:documentation>
                     A code specifying whether the set component is
included
                     (union) or excluded (set-difference) from the set, or
                     other set operations with the current set component
and
                     the set as constructed from the representation stream
                     up to the current point.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SXCM_REAL">
      <xs:complexContent>
         <xs:extension base="REAL">
            <xs:attribute name="operator" type="SetOperator" use="optional"
default="I">
               <xs:annotation>
                  <xs:documentation>
```

```
                     A code specifying whether the set component is
included
                     (union) or excluded (set-difference) from the set, or
                     other set operations with the current set component
and
                     the set as constructed from the representation stream
                     up to the current point.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVL_INT">
      <xs:complexContent>
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            <xs:choice minOccurs="0">
               <xs:sequence>
                  <xs:element name="low" minOccurs="1" maxOccurs="1"
type="IVXB_INT">
                     <xs:annotation>
                        <xs:documentation>
                           The low limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:choice minOccurs="0">
                     <xs:element name="width" minOccurs="0" maxOccurs="1"
type="INT">
                        <xs:annotation>
                           <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                     <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_INT">
                        <xs:annotation>
                           <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                  </xs:choice>
               </xs:sequence>
               <xs:element name="high" minOccurs="1" maxOccurs="1"
type="IVXB_INT">
                  <xs:annotation>
                     <xs:documentation/>
                  </xs:annotation>
               </xs:element>
               <xs:sequence>
```

```
                  <xs:element name="width" minOccurs="1" maxOccurs="1"
type="INT">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_INT">
                     <xs:annotation>
                        <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
               <xs:sequence>
                  <xs:element name="center" minOccurs="1" maxOccurs="1"
type="INT">
                     <xs:annotation>
                        <xs:documentation>
                           The arithmetic mean of the interval (low plus
high
                           divided by 2). The purpose of distinguishing the
center
                           as a semantic property is for conversions of
intervals
                           from and to point values.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="width" minOccurs="0" maxOccurs="1"
type="INT">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
            </xs:choice>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
```

```
   <xs:complexType name="IVXB_INT">
      <xs:complexContent>
         <xs:extension base="INT">
            <xs:attribute name="inclusive" type="bl" use="optional"
default="true">
               <xs:annotation>
                  <xs:documentation>
                     Specifies whether the limit is included in the
                     interval (interval is closed) or excluded from the
                     interval (interval is open).
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVL_REAL">
      <xs:complexContent>
         <xs:extension base="SXCM_REAL">
            <xs:choice minOccurs="0">
               <xs:sequence>
                  <xs:element name="low" minOccurs="1" maxOccurs="1"
type="IVXB_REAL">
                     <xs:annotation>
                        <xs:documentation>
                           The low limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:choice minOccurs="0">
                     <xs:element name="width" minOccurs="0" maxOccurs="1"
type="REAL">
                        <xs:annotation>
                           <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                     <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_REAL">
                        <xs:annotation>
                           <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                  </xs:choice>
               </xs:sequence>
               <xs:element name="high" minOccurs="1" maxOccurs="1"
type="IVXB_REAL">
                  <xs:annotation>
                     <xs:documentation/>
                  </xs:annotation>
```

```
               </xs:element>
               <xs:sequence>
                  <xs:element name="width" minOccurs="1" maxOccurs="1"
type="REAL">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_REAL">
                     <xs:annotation>
                        <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
               <xs:sequence>
                  <xs:element name="center" minOccurs="1" maxOccurs="1"
type="REAL">
                     <xs:annotation>
                        <xs:documentation>
                           The arithmetic mean of the interval (low plus
high
                           divided by 2). The purpose of distinguishing the
center
                           as a semantic property is for conversions of
intervals
                           from and to point values.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="width" minOccurs="0" maxOccurs="1"
type="REAL">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
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```

```
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVXB_REAL">
      <xs:complexContent>
         <xs:extension base="REAL">
            <xs:attribute name="inclusive" type="bl" use="optional"
default="true">
               <xs:annotation>
                  <xs:documentation>
                     Specifies whether the limit is included in the
                     interval (interval is closed) or excluded from the
                     interval (interval is open).
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVL_MO">
      <xs:complexContent>
         <xs:extension base="SXCM_MO">
            <xs:choice minOccurs="0">
               <xs:sequence>
                  <xs:element name="low" minOccurs="1" maxOccurs="1"
type="IVXB_MO">
                     <xs:annotation>
                        <xs:documentation>
                           The low limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:choice minOccurs="0">
                     <xs:element name="width" minOccurs="0" maxOccurs="1"
type="MO">
                        <xs:annotation>
                           <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                     <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_MO">
                        <xs:annotation>
                           <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                  </xs:choice>
               </xs:sequence>
               <xs:element name="high" minOccurs="1" maxOccurs="1"
type="IVXB_MO">
                  <xs:annotation>
```

```
                     <xs:documentation/>
                  </xs:annotation>
               </xs:element>
               <xs:sequence>
                  <xs:element name="width" minOccurs="1" maxOccurs="1"
type="MO">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_MO">
                     <xs:annotation>
                        <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
               <xs:sequence>
                  <xs:element name="center" minOccurs="1" maxOccurs="1"
type="MO">
                     <xs:annotation>
                        <xs:documentation>
                           The arithmetic mean of the interval (low plus
high
                           divided by 2). The purpose of distinguishing the
center
                           as a semantic property is for conversions of
intervals
                           from and to point values.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="width" minOccurs="0" maxOccurs="1"
type="MO">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
```

```
            </xs:choice>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVXB_MO">
      <xs:complexContent>
         <xs:extension base="MO">
            <xs:attribute name="inclusive" type="bl" use="optional"
default="true">
               <xs:annotation>
                  <xs:documentation>
                     Specifies whether the limit is included in the
                     interval (interval is closed) or excluded from the
                     interval (interval is open).
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="HXIT_PQ">
      <xs:complexContent>
         <xs:extension base="PQ">
            <xs:sequence>
               <xs:element name="validTime" minOccurs="0" maxOccurs="1"
type="IVL_TS">
                  <xs:annotation>
                     <xs:documentation>
                        The time interval during which the given
information
                        was, is, or is expected to be valid. The interval
can
                        be open or closed, as well as infinite or undefined
on
                        either side.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="HXIT_CE">
      <xs:complexContent>
         <xs:extension base="CE">
            <xs:sequence>
               <xs:element name="validTime" minOccurs="0" maxOccurs="1"
type="IVL_TS">
                  <xs:annotation>
                     <xs:documentation>
                        The time interval during which the given
information
                        was, is, or is expected to be valid. The interval
can
                        be open or closed, as well as infinite or undefined
on
                        either side.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
```

```
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="BXIT_CD">
      <xs:complexContent>
         <xs:extension base="CD">
            <xs:attribute name="qty" type="int" use="optional" default="1">
               <xs:annotation>
                  <xs:documentation>
                     The quantity in which the bag item occurs in its
containing bag.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="BXIT_IVL_PQ">
      <xs:complexContent>
         <xs:extension base="IVL_PQ">
            <xs:attribute name="qty" type="int" use="optional" default="1">
               <xs:annotation>
                  <xs:documentation>
                     The quantity in which the bag item occurs in its
containing bag.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SLIST_PQ">
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:sequence>
               <xs:element name="origin" minOccurs="1" maxOccurs="1"
type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                     The origin of the list item value scale, i.e., the
                     physical quantity that a zero-digit in the sequence
                     would represent.
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="scale" minOccurs="1" maxOccurs="1"
type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                     A ratio-scale quantity that is factored out of the
                     digit sequence.
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="digits" minOccurs="1" maxOccurs="1"
type="list_int">
                  <xs:annotation>
                     <xs:documentation>
                     A sequence of raw digits for the sample values. This
is
                     typically the raw output of an A/D converter.
```

```
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="list_int">
      <xs:list itemType="int"/>
   </xs:simpleType>
   <xs:complexType name="SLIST_TS">
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:sequence>
               <xs:element name="origin" minOccurs="1" maxOccurs="1"
type="TS">
                  <xs:annotation>
                     <xs:documentation>
                     The origin of the list item value scale, i.e., the
                     physical quantity that a zero-digit in the sequence
                     would represent.
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="scale" minOccurs="1" maxOccurs="1"
type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                     A ratio-scale quantity that is factored out of the
                     digit sequence.
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="digits" minOccurs="1" maxOccurs="1"
type="list_int">
                  <xs:annotation>
                     <xs:documentation>
                     A sequence of raw digits for the sample values. This
is
                     typically the raw output of an A/D converter.
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="GLIST_TS">
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:sequence>
               <xs:element name="head" minOccurs="1" maxOccurs="1"
type="TS">
                  <xs:annotation>
                     <xs:documentation>
                     This is the start-value of the generated list.
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="increment" minOccurs="1" maxOccurs="1"
type="PQ">
```

```
                  <xs:annotation>
                     <xs:documentation>
                     The difference between one value and its previous
                     different value. For example, to generate the sequence
                     (1; 4; 7; 10; 13; ...) the increment is 3; likewise to
                     generate the sequence (1; 1; 4; 4; 7; 7; 10; 10; 13;
                     13; ...) the increment is also 3.
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="period" type="int" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     If non-NULL, specifies that the sequence alternates,
                     i.e., after this many increments, the sequence item
                     values roll over to start from the initial sequence
                     item value. For example, the sequence (1; 2; 3; 1; 2;
                     3; 1; 2; 3; ...) has period 3; also the sequence
                     (1; 1; 2; 2; 3; 3; 1; 1; 2; 2; 3; 3; ...) has period
                     3 too.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="denominator" type="int" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     The integer by which the index for the sequence is
                     divided, effectively the number of times the sequence
                     generates the same sequence item value before
                     incrementing to the next sequence item value. For
                     example, to generate the sequence (1; 1; 1; 2; 2; 2;
3; 3;
                     3; ...)  the denominator is 3.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="GLIST_PQ">
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:sequence>
               <xs:element name="head" minOccurs="1" maxOccurs="1"
type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                     This is the start-value of the generated list.
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="increment" minOccurs="1" maxOccurs="1"
type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                     The difference between one value and its previous
                     different value. For example, to generate the sequence
                     (1; 4; 7; 10; 13; ...) the increment is 3; likewise to
                     generate the sequence (1; 1; 4; 4; 7; 7; 10; 10; 13;
                     13; ...) the increment is also 3.
```

```
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="period" type="int" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     If non-NULL, specifies that the sequence alternates,
                     i.e., after this many increments, the sequence item
                     values roll over to start from the initial sequence
                     item value. For example, the sequence (1; 2; 3; 1; 2;
                     3; 1; 2; 3; ...) has period 3; also the sequence
                     (1; 1; 2; 2; 3; 3; 1; 1; 2; 2; 3; 3; ...) has period
                     3 too.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="denominator" type="int" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     The integer by which the index for the sequence is
                     divided, effectively the number of times the sequence
                     generates the same sequence item value before
                     incrementing to the next sequence item value. For
                     example, to generate the sequence (1; 1; 1; 2; 2; 2;
3; 3;
                     3; ...)  the denominator is 3.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="RTO_PQ_PQ">
      <xs:annotation>
         <xs:appinfo>
            <diff>RTO_PQ_PQ</diff>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="QTY">
            <xs:sequence>
               <xs:element name="numerator" type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                        The quantity that is being divided in the ratio.
The
                        default is the integer number 1 (one).
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="denominator" type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                        The quantity that devides the numerator in the
ratio.
                        The default is the integer number 1 (one).
                        The denominator must not be zero.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
```

```
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="RTO_MO_PQ">
      <xs:annotation>
         <xs:appinfo>
            <diff>RTO_MO_PQ</diff>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="QTY">
            <xs:sequence>
               <xs:element name="numerator" type="MO">
                  <xs:annotation>
                     <xs:documentation>
                        The quantity that is being divided in the ratio.
The
                        default is the integer number 1 (one).
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="denominator" type="PQ">
                  <xs:annotation>
                     <xs:documentation>
                        The quantity that devides the numerator in the
ratio.
                        The default is the integer number 1 (one).
                        The denominator must not be zero.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="UVP_TS">
      <xs:complexContent>
         <xs:extension base="TS">
            <xs:attribute name="probability" type="probability"
use="optional">
               <xs:annotation>
                  <xs:documentation>
               The probability assigned to the value, a decimal number
               between 0 (very uncertain) and 1 (certain).
            </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
</xs:schema>
```

C.4 datatypes-base.xsd

```
<?xml version="1.0" encoding="UTF-8"?><!--
    This schema is generated from a Generic Schema Definition (GSD)
    by gsd2xsl. Do not edit this file.
  -->
<xs:schema xmlns:sch="http://www.ascc.net/xml/schematron"
xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
   <xs:annotation>
      <xs:documentation>
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           All rights reserved.

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           without modification, are permitted provided that the following
           conditions are met:
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           SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
           INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
           DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE
           GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
           INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
           WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
           NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
           OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
           DAMAGE.

           Generated by $Id: gsd2xsd.xsl,v 1.4 2005/04/17 03:20:15 lmckenzi
Exp $
</xs:documentation>
   </xs:annotation>
   <xs:include schemaLocation="voc.xsd"/>
   <xs:annotation>
      <xs:documentation>
           Generated by $Id: v3dt-schema.xsl,v 1.5 2005/05/24 05:44:38
lmckenzi Exp $
</xs:documentation>
   </xs:annotation>
   <xs:complexType name="ANY" abstract="true">
      <xs:annotation>
         <xs:documentation>
            Defines the basic properties of every data value. This
            is an abstract type, meaning that no value can be just
            a data value without belonging to any concrete type.
            Every concrete type is a specialization of this
```

```
            general abstract DataValue type.
         </xs:documentation>
      </xs:annotation>
      <xs:attribute name="nullFlavor" type="NullFlavor" use="optional">
         <xs:annotation>
            <xs:documentation>
               An exceptional value expressing missing information
               and possibly the reason why the information is missing.
            </xs:documentation>
         </xs:annotation>
      </xs:attribute>
   </xs:complexType>
   <xs:simpleType name="bl">
      <xs:annotation>
         <xs:documentation>
            The Boolean type stands for the values of two-valued logic.
            A Boolean value can be either true or
            false, or, as any other value may be NULL.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:boolean">
         <xs:pattern value="true|false"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="BL">
      <xs:annotation>
         <xs:documentation>
            The Boolean type stands for the values of two-valued logic.
            A Boolean value can be either true or
            false, or, as any other value may be NULL.
         </xs:documentation>
         <xs:appinfo>
            <sch:pattern name="validate BL">
               <sch:rule abstract="true" id="rule-BL">
                  <sch:report test="(@nullFlavor or @value) and
not(@nullFlavor and @value)"/>
               </sch:rule>
            </sch:pattern>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:attribute name="value" use="optional" type="bl"/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="bn">
      <xs:annotation>
         <xs:documentation>
            The BooleanNonNull type is used where a Boolean cannot
            have a null value. A Boolean value can be either
            true or false.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="bl"/>
   </xs:simpleType>
   <xs:complexType name="ANYNonNull">
      <xs:annotation>
         <xs:documentation>
            The BooleanNonNull type is used where a Boolean cannot
            have a null value. A Boolean value can be either
```

```
            true or false.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:restriction base="ANY">
            <xs:attribute name="nullFlavor" type="NullFlavor"
use="prohibited"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="BN">
      <xs:annotation>
         <xs:documentation>
            The BooleanNonNull type is used where a Boolean cannot
            have a null value. A Boolean value can be either
            true or false.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ANYNonNull">
            <xs:attribute name="value" use="optional" type="bn"/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="BIN" abstract="true" mixed="true">
      <xs:annotation>
         <xs:documentation>
            Binary data is a raw block of bits. Binary data is a
            protected type that MUST not be used outside the data
            type specification.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:attribute name="representation" use="optional"
type="BinaryDataEncoding" default="TXT">
               <xs:annotation>
                  <xs:documentation>
                     Specifies the representation of the binary data that
                     is the content of the binary data value.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="bin">
      <xs:annotation>
         <xs:documentation>
            Binary data is a raw block of bits. Binary data is a
            protected type that MUST not be used outside the data
            type specification.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:base64Binary"/>
   </xs:simpleType>
   <xs:simpleType name="BinaryDataEncoding">
      <xs:restriction base="xs:NMTOKEN">
         <xs:enumeration value="B64"/>
         <xs:enumeration value="TXT"/>
      </xs:restriction>
```

```
   </xs:simpleType>
   <xs:complexType name="ED" mixed="true">
      <xs:annotation>
         <xs:documentation>
            Data that is primarily intended for human interpretation
            or for further machine processing is outside the scope of
            HL7. This includes unformatted or formatted written language,
            multimedia data, or structured information as defined by a
            different standard (e.g., XML-signatures.)  Instead of the
            data itself, an ED may contain
            only a reference (see TEL.) Note
            that the ST data type is a
            specialization of the ED data type
            when the ED media type is text/plain.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="BIN">
            <xs:sequence>
               <xs:element name="reference" type="TEL" minOccurs="0"
maxOccurs="1">
                  <xs:annotation>
                     <xs:documentation>
                        A telecommunication address (TEL), such as a URL
                        for HTTP or FTP, which will resolve to precisely
                        the same binary data that could as well have been
                        provided as inline data.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="thumbnail" minOccurs="0" maxOccurs="1"
type="thumbnail"/>
            </xs:sequence>
            <xs:attribute name="mediaType" type="cs" use="optional"
default="text/plain">
               <xs:annotation>
                  <xs:documentation>
                     Identifies the type of the encapsulated data and
                     identifies a method to interpret or render the data.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="language" type="cs" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     For character based information the language property
                     specifies the human language of the text.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="compression" type="CompressionAlgorithm"
use="optional">
               <xs:annotation>
                  <xs:documentation>
                     Indicates whether the raw byte data is compressed,
                     and what compression algorithm was used.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="integrityCheck" type="bin" use="optional">
               <xs:annotation>
```

```
                  <xs:documentation>
                     The integrity check is a short binary value
representing
                     a cryptographically strong checksum that is calculated
                     over the binary data. The purpose of this property,
when
                     communicated with a reference is for anyone to
validate
                     later whether the reference still resolved to the same
                     data that the reference resolved to when the
encapsulated
                     data value with reference was created.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="integrityCheckAlgorithm"
type="IntegrityCheckAlgorithm" use="optional" default="SHA-1">
               <xs:annotation>
                  <xs:documentation>
                     Specifies the algorithm used to compute the
                     integrityCheck value.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="thumbnail" mixed="true">
      <xs:annotation>
         <xs:documentation>
                     A thumbnail is an abbreviated rendition of the full
                     data. A thumbnail requires significantly fewer
                     resources than the full data, while still maintaining
                     some distinctive similarity with the full data. A
                     thumbnail is typically used with by-reference
                     encapsulated data. It allows a user to select data
                     more efficiently before actually downloading through
                     the reference.
                  </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:restriction base="ED">
            <xs:sequence>
               <xs:element name="reference" type="TEL" minOccurs="0"
maxOccurs="1"/>
               <xs:element name="thumbnail" type="thumbnail" minOccurs="0"
maxOccurs="0"/>
            </xs:sequence>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="st">
      <xs:annotation>
         <xs:documentation>
            The character string data type stands for text data,
            primarily intended for machine processing (e.g.,
            sorting, querying, indexing, etc.) Used for names,
            symbols, and formal expressions.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:string">
```

```
         <xs:minLength value="1"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="ST" mixed="true">
      <xs:annotation>
         <xs:documentation>
            The character string data type stands for text data,
            primarily intended for machine processing (e.g.,
            sorting, querying, indexing, etc.) Used for names,
            symbols, and formal expressions.
         </xs:documentation>
         <xs:appinfo>
            <sch:pattern name="validate ST">
               <sch:rule abstract="true" id="rule-ST">
                  <sch:report test="(@nullFlavor or text()) and
not(@nullFlavor and text())">
                     <p>Text content is only allowed in non-NULL
values.</p>
                  </sch:report>
               </sch:rule>
            </sch:pattern>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:restriction base="ED">
            <xs:sequence>
               <xs:element name="reference" type="TEL" minOccurs="0"
maxOccurs="0"/>
               <xs:element name="thumbnail" type="ED" minOccurs="0"
maxOccurs="0"/>
            </xs:sequence>
            <xs:attribute name="representation" type="BinaryDataEncoding"
fixed="TXT"/>
            <xs:attribute name="mediaType" type="cs" fixed="text/plain"/>
            <xs:attribute name="language" type="cs" use="optional"/>
            <xs:attribute name="compression" type="CompressionAlgorithm"
use="prohibited"/>
            <xs:attribute name="integrityCheck" type="bin"
use="prohibited"/>
            <xs:attribute name="integrityCheckAlgorithm"
type="IntegrityCheckAlgorithm" use="prohibited"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="cs">
      <xs:annotation>
         <xs:documentation>
            Coded data in its simplest form, consists of a code.
            The code system and code system version is fixed by
            the context in which the CS value occurs. CS is used
            for coded attributes that have a single HL7-defined
            value set.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:token">
         <xs:pattern value="[^\s]+"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="CD">
      <xs:annotation>
         <xs:documentation>
```

```
            A concept descriptor represents any kind of concept usually
            by giving a code defined in a code system.  A concept
            descriptor can contain the original text or phrase that
            served as the basis of the coding and one or more
            translations into different coding systems. A concept
            descriptor can also contain qualifiers to describe, e.g.,
            the concept of a "left foot" as a postcoordinated term built
            from the primary code "FOOT" and the qualifier "LEFT".
            In exceptional cases, the concept descriptor need not
            contain a code but only the original text describing
            that concept.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:sequence>
               <xs:element name="originalText" type="ED" minOccurs="0"
maxOccurs="1">
                  <xs:annotation>
                     <xs:documentation>
                        The text or phrase used as the basis for the
coding.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="qualifier" type="CR" minOccurs="0"
maxOccurs="unbounded">
                  <xs:annotation>
                     <xs:documentation>
                        Specifies additional codes that increase the
                        specificity of the primary code.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="translation" type="CD" minOccurs="0"
maxOccurs="unbounded">
                  <xs:annotation>
                     <xs:documentation>
                        A set of other concept descriptors that translate
                        this concept descriptor into other code systems.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="code" type="cs" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     The plain code symbol defined by the code system.
                     For example, "784.0" is the code symbol of the ICD-9
                     code "784.0" for headache.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystem" type="uid" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     Specifies the code system that defines the code.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystemName" type="st" use="optional">
```

```
               <xs:annotation>
                  <xs:documentation>
                     A common name of the coding system.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystemVersion" type="st"
use="optional">
               <xs:annotation>
                  <xs:documentation>
                     If applicable, a version descriptor defined
                     specifically for the given code system.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="displayName" type="st" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A name or title for the code, under which the sending
                     system shows the code value to its users.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="CE">
      <xs:annotation>
         <xs:documentation>
            Coded data, consists of a coded value (CV)
            and, optionally, coded value(s) from other coding systems
            that identify the same concept. Used when alternative
            codes may exist.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:restriction base="CD">
            <xs:sequence>
               <xs:element name="originalText" type="ED" minOccurs="0"
maxOccurs="1">
                  <xs:annotation>
                     <xs:documentation>
                        The text or phrase used as the basis for the
coding.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="qualifier" type="CR" minOccurs="0"
maxOccurs="0"/>
               <xs:element name="translation" type="CD" minOccurs="0"
maxOccurs="unbounded">
                  <xs:annotation>
                     <xs:documentation>
                        A set of other concept descriptors that translate
                        this concept descriptor into other code systems.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="code" type="cs" use="optional">
               <xs:annotation>
```

```
                  <xs:documentation>
                     The plain code symbol defined by the code system.
                     For example, "784.0" is the code symbol of the ICD-9
                     code "784.0" for headache.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystem" type="uid" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     Specifies the code system that defines the code.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystemName" type="st" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A common name of the coding system.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystemVersion" type="st"
use="optional">
               <xs:annotation>
                  <xs:documentation>
                     If applicable, a version descriptor defined
                     specifically for the given code system.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="displayName" type="st" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A name or title for the code, under which the sending
                     system shows the code value to its users.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="CV">
      <xs:annotation>
         <xs:documentation>
            Coded data, consists of a code, display name, code system,
            and original text. Used when a single code value must be sent.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:restriction base="CE">
            <xs:sequence>
               <xs:element name="originalText" type="ED" minOccurs="0"
maxOccurs="1">
                  <xs:annotation>
                     <xs:documentation>
                        The text or phrase used as the basis for the
coding.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
```

```
               <xs:element name="translation" type="CD" minOccurs="0"
maxOccurs="0"/>
            </xs:sequence>
            <xs:attribute name="code" type="cs" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     The plain code symbol defined by the code system.
                     For example, "784.0" is the code symbol of the ICD-9
                     code "784.0" for headache.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystem" type="uid" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     Specifies the code system that defines the code.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystemName" type="st" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A common name of the coding system.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystemVersion" type="st"
use="optional">
               <xs:annotation>
                  <xs:documentation>
                     If applicable, a version descriptor defined
                     specifically for the given code system.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="displayName" type="st" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A name or title for the code, under which the sending
                     system shows the code value to its users.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="CS">
      <xs:annotation>
         <xs:documentation>
            Coded data, consists of a code, display name, code system,
            and original text. Used when a single code value must be sent.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:restriction base="CV">
            <xs:attribute name="code" type="cs" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     The plain code symbol defined by the code system.
                     For example, "784.0" is the code symbol of the ICD-9
                     code "784.0" for headache.
```

```
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystem" type="uid" use="prohibited"/>
            <xs:attribute name="codeSystemName" type="st"
use="prohibited"/>
            <xs:attribute name="codeSystemVersion" type="st"
use="prohibited"/>
            <xs:attribute name="displayName" type="st" use="prohibited"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="CO">
      <xs:annotation>
         <xs:documentation>
            Coded data, where the domain from which the codeset comes
            is ordered. The Coded Ordinal data type adds semantics
            related to ordering so that models that make use of such
            domains may introduce model elements that involve statements
            about the order of the terms in a domain.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="CV"/>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="CR">
      <xs:annotation>
         <xs:documentation>
            A concept qualifier code with optionally named role.
            Both qualifier role and value codes must be defined by
            the coding system.  For example, if SNOMED RT defines a
            concept "leg", a role relation "has-laterality", and
            another concept "left", the concept role relation allows
            to add the qualifier "has-laterality: left" to a primary
            code "leg" to construct the meaning "left leg".
         </xs:documentation>
         <xs:appinfo>
            <sch:pattern name="validate CR">
               <sch:rule abstract="true" id="rule-CR">
                  <sch:report test="(value or @nullFlavor) and
not(@nullFlavor and node())">
                     <p>
                        A value component is required or else the
                        code role is NULL.
                     </p>
                  </sch:report>
               </sch:rule>
            </sch:pattern>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:sequence>
               <xs:element name="name" type="CV" minOccurs="0"
maxOccurs="1">
                  <xs:annotation>
                     <xs:documentation>
                        Specifies the manner in which the concept role
value
                        contributes to the meaning of a code phrase.  For
```

```
                        example, if SNOMED RT defines a concept "leg", a
role
                        relation "has-laterality", and another concept
"left",
                        the concept role relation allows to add the
qualifier
                        "has-laterality: left" to a primary code "leg" to
                        construct the meaning "left leg".  In this example
                        "has-laterality" is the CR.name.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="value" type="CD" minOccurs="0"
maxOccurs="1">
                  <xs:annotation>
                     <xs:documentation>
                        The concept that modifies the primary code of a
code
                        phrase through the role relation.  For example, if
                        SNOMED RT defines a concept "leg", a role relation
                        "has-laterality", and another concept "left", the
                        concept role relation allows adding the qualifier
                        "has-laterality: left" to a primary code "leg" to
                        construct the meaning "left leg".  In this example
                        "left" is the CR.value.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="inverted" type="bn" use="optional"
default="false">
               <xs:annotation>
                  <xs:documentation>
                     Indicates if the sense of the role name is inverted.
                     This can be used in cases where the underlying code
                     system defines inversion but does not provide
reciprocal
                     pairs of role names. By default, inverted is false.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="SC" mixed="true">
      <xs:annotation>
         <xs:documentation>
            A ST that optionally may have a code attached.
            The text must always be present if a code is present. The
            code is often a local code.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ST">
            <xs:attribute name="code" type="cs" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     The plain code symbol defined by the code system.
                     For example, "784.0" is the code symbol of the ICD-9
                     code "784.0" for headache.
                  </xs:documentation>
```

```
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystem" type="uid" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     Specifies the code system that defines the code.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystemName" type="st" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A common name of the coding system.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="codeSystemVersion" type="st"
use="optional">
               <xs:annotation>
                  <xs:documentation>
                     If applicable, a version descriptor defined
                     specifically for the given code system.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="displayName" type="st" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A name or title for the code, under which the sending
                     system shows the code value to its users.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="uid">
      <xs:annotation>
         <xs:documentation>
            A unique identifier string is a character string which
            identifies an object in a globally unique and timeless
            manner. The allowable formats and values and procedures
            of this data type are strictly controlled by HL7. At this
            time, user-assigned identifiers may be certain character
            representations of ISO Object Identifiers (OID) and DCE
            Universally Unique Identifiers (UUID). HL7 also reserves
            the right to assign other forms of UIDs, such as mnemonic
            identifiers for code systems.
         </xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="oid uuid ruid"/>
   </xs:simpleType>
   <xs:simpleType name="oid">
      <xs:annotation>
         <xs:documentation>
            A globally unique string representing an ISO Object Identifier
            (OID) in a form that consists only of non-negative numbers with
            no leading zeros and dots (e.g., "2.16.840.1.113883.3.1").
            According to ISO, OIDs are paths in a tree structure, with the
            left-most number representing the root and the right-most
number
```

```
            representing a leaf.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:string">
         <xs:pattern value="[0-2](\.(0|[1-9][0-9]*))*"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="uuid">
      <xs:annotation>
         <xs:documentation>
            A DCE Universal Unique Identifier is a globally unique
            string consisting of 5 groups of upper- or lower-case
            hexadecimal digits having 8, 4, 4, 4, and 12 places
            respectively. UUIDs are assigned using Ethernet MAC
            addresses, the point in time of creation and some random
            components. This mix is believed to generate sufficiently
            unique identifiers without any organizational policy for
            identifier assignment (in fact this piggy-backs on the
            organization of MAC address assignment.)
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:string">
         <xs:pattern value="[0-9a-zA-Z]{8}-[0-9a-zA-Z]{4}-[0-9a-zA-Z]{4}-
[0-9a-zA-Z]{4}-[0-9a-zA-Z]{12}"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="ruid">
      <xs:annotation>
         <xs:documentation>
            HL7 reserved identifiers are strings consisting only of
            (US-ASCII) letters, digits and hyphens, where the first
            character must be a letter. HL7 may assign these reserved
            identifiers as mnemonic identifiers for major concepts of
            interest to HL7.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:string">
         <xs:pattern value="[A-Za-z][A-Za-z0-9\-]*"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="II">
      <xs:annotation>
         <xs:documentation>
            An identifier that uniquely identifies a thing or object.
            Examples are object identifier for HL7 RIM objects,
            medical record number, order id, service catalog item id,
            Vehicle Identification Number (VIN), etc. Instance
            identifiers are defined based on ISO object identifiers.
         </xs:documentation>
         <xs:appinfo>
            <sch:pattern name="validate II">
               <sch:rule abstract="true" id="rule-II">
                  <sch:report test="(@root or @nullFlavor) and not(@root
and @nullFlavor)">
                     A root component is required or else the II value is
NULL.
                  </sch:report>
               </sch:rule>
            </sch:pattern>
         </xs:appinfo>
      </xs:annotation>
```

```
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:attribute name="root" type="uid" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A unique identifier that guarantees the global
uniqueness
                     of the instance identifier. The root alone may be the
                     entire instance identifier.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="extension" type="st" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A character string as a unique identifier within the
                     scope of the identifier root.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="assigningAuthorityName" type="st"
use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A human readable name or mnemonic for the assigning
                     authority. This name may be provided solely for the
                     convenience of unaided humans interpreting an II value
                     and can have no computational meaning. Note: no
                     automated processing must depend on the assigning
                     authority name to be present in any form.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="displayable" type="bl" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     Specifies if the identifier is intended for human
                     display and data entry (displayable = true) as
                     opposed to pure machine interoperation (displayable
                     = false).
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="url">
      <xs:annotation>
         <xs:documentation>
            A telecommunications address  specified according to
            Internet standard RFC 1738
            [http://www.ietf.org/rfc/rfc1738.txt]. The
            URL specifies the protocol and the contact point defined
            by that protocol for the resource.  Notable uses of the
            telecommunication address data type are for telephone and
            telefax numbers, e-mail addresses, Hypertext references,
            FTP references, etc.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:anyURI"/>
   </xs:simpleType>
```

```
   <xs:complexType name="URL" abstract="true">
      <xs:annotation>
         <xs:documentation>
            A telecommunications address  specified according to
            Internet standard RFC 1738
            [http://www.ietf.org/rfc/rfc1738.txt]. The
            URL specifies the protocol and the contact point defined
            by that protocol for the resource.  Notable uses of the
            telecommunication address data type are for telephone and
            telefax numbers, e-mail addresses, Hypertext references,
            FTP references, etc.
         </xs:documentation>
         <xs:appinfo>
            <sch:pattern name="validate URL">
               <sch:rule abstract="true" id="rule-URL">
                  <sch:report test="(@nullFlavor or @value) and
not(@nullFlavor and @value)"/>
               </sch:rule>
            </sch:pattern>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:attribute name="value" type="url" use="optional"/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="ts">
      <xs:annotation>
         <xs:documentation>
            A quantity specifying a point on the axis of natural time.
            A point in time is most often represented as a calendar
            expression.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:string">
         <xs:pattern value="[0-9]{1,8}|([0-9]{9,14}|[0-9]{14,14}\.[0-
9]+)([+\-][0-9]{1,4})?"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="TS">
      <xs:annotation>
         <xs:documentation>
            A quantity specifying a point on the axis of natural time.
            A point in time is most often represented as a calendar
            expression.
         </xs:documentation>
         <xs:appinfo>
            <diff>PQ</diff>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="QTY">
            <xs:attribute name="value" use="optional" type="ts"/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="TEL">
      <xs:annotation>
         <xs:documentation>
            A telephone number (voice or fax), e-mail address, or
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            other locator for a resource (information or service)
            mediated by telecommunication equipment. The address
            is specified as a Universal Resource Locator (URL)
            qualified by time specification and use codes that help
            in deciding which address to use for a given time and
            purpose.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="URL">
            <xs:sequence>
               <xs:element name="useablePeriod" minOccurs="0"
maxOccurs="unbounded" type="SXCM_TS">
                  <xs:annotation>
                     <xs:documentation>
                     Specifies the periods of time during which the
                     telecommunication address can be used.  For a
                     telephone number, this can indicate the time of day
                     in which the party can be reached on that telephone.
                     For a web address, it may specify a time range in
                     which the web content is promised to be available
                     under the given address.
                  </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="use" use="optional"
type="set_TelecommunicationAddressUse">
               <xs:annotation>
                  <xs:documentation>
                     One or more codes advising a system or user which
                     telecommunication address in a set of like addresses
                     to select for a given telecommunication need.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="ADXP" mixed="true">
      <xs:annotation>
         <xs:documentation>
            A character string that may have a type-tag signifying its
            role in the address. Typical parts that exist in about
            every address are street, house number, or post box,
            postal code, city, country but other roles may be defined
            regionally, nationally, or on an enterprise level (e.g. in
            military addresses). Addresses are usually broken up into
            lines, which are indicated by special line-breaking
            delimiter elements (e.g., DEL).
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ST">
            <xs:attribute name="partType" type="AddressPartType">
               <xs:annotation>
                  <xs:documentation>
                     Specifies whether an address part names the street,
                     city, country, postal code, post box, etc. If the type
                     is NULL the address part is unclassified and would
                     simply appear on an address label as is.
```

```
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.delimiter">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="DEL"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.country">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="CNT"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.state">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="STA"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.county">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="CPA"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.city">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="CTY"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.postalCode">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="ZIP"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.streetAddressLine">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="SAL"/>
         </xs:restriction>
      </xs:complexContent>
```

```
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.houseNumber">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="BNR"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.houseNumberNumeric">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="BNN"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.direction">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="DIR"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.streetName">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="STR"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.streetNameBase">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="STB"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType><!--
   jaxb implementors note: the jaxb code generator (v1.0.?) will
   fail to append "Type" to streetNameType so that there will be
   duplicate definitions in the java source for streetNameType.
   You will have to fix this manually.
  -->
   <xs:complexType mixed="true" name="adxp.streetNameType">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="STTYP"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.additionalLocator">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="ADL"/>
         </xs:restriction>
      </xs:complexContent>
```

```
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.unitID">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="UNID"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.unitType">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="UNIT"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.careOf">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="CAR"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.censusTract">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="CEN"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.deliveryAddressLine">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="DAL"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.deliveryInstallationType">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="DINST"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.deliveryInstallationArea">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="DINSTA"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.deliveryInstallationQualifier">
      <xs:complexContent>
         <xs:restriction base="ADXP">
```

```
            <xs:attribute name="partType" type="AddressPartType"
fixed="DINSTQ"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.deliveryMode">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="DMOD"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.deliveryModeIdentifier">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="DMODID"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.buildingNumberSuffix">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="BNS"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.postBox">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="POB"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType mixed="true" name="adxp.precinct">
      <xs:complexContent>
         <xs:restriction base="ADXP">
            <xs:attribute name="partType" type="AddressPartType"
fixed="PRE"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="AD" mixed="true">
      <xs:annotation>
         <xs:documentation>
            Mailing and home or office addresses. A sequence of
            address parts, such as street or post office Box, city,
            postal code, country, etc.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:sequence>
               <xs:choice minOccurs="0" maxOccurs="unbounded">
                  <xs:element name="delimiter" type="adxp.delimiter"/>
                  <xs:element name="country" type="adxp.country"/>
                  <xs:element name="state" type="adxp.state"/>
                  <xs:element name="county" type="adxp.county"/>
```

```
                  <xs:element name="city" type="adxp.city"/>
                  <xs:element name="postalCode" type="adxp.postalCode"/>
                  <xs:element name="streetAddressLine"
type="adxp.streetAddressLine"/>
                  <xs:element name="houseNumber" type="adxp.houseNumber"/>
                  <xs:element name="houseNumberNumeric"
type="adxp.houseNumberNumeric"/>
                  <xs:element name="direction" type="adxp.direction"/>
                  <xs:element name="streetName" type="adxp.streetName"/>
                  <xs:element name="streetNameBase"
type="adxp.streetNameBase"/>
                  <xs:element name="streetNameType"
type="adxp.streetNameType"/>
                  <xs:element name="additionalLocator"
type="adxp.additionalLocator"/>
                  <xs:element name="unitID" type="adxp.unitID"/>
                  <xs:element name="unitType" type="adxp.unitType"/>
                  <xs:element name="careOf" type="adxp.careOf"/>
                  <xs:element name="censusTract" type="adxp.censusTract"/>
                  <xs:element name="deliveryAddressLine"
type="adxp.deliveryAddressLine"/>
                  <xs:element name="deliveryInstallationType"
type="adxp.deliveryInstallationType"/>
                  <xs:element name="deliveryInstallationArea"
type="adxp.deliveryInstallationArea"/>
                  <xs:element name="deliveryInstallationQualifier"
type="adxp.deliveryInstallationQualifier"/>
                  <xs:element name="deliveryMode"
type="adxp.deliveryMode"/>
                  <xs:element name="deliveryModeIdentifier"
type="adxp.deliveryModeIdentifier"/>
                  <xs:element name="buildingNumberSuffix"
type="adxp.buildingNumberSuffix"/>
                  <xs:element name="postBox" type="adxp.postBox"/>
                  <xs:element name="precinct" type="adxp.precinct"/>
               </xs:choice>
               <xs:element name="useablePeriod" minOccurs="0"
maxOccurs="unbounded" type="SXCM_TS">
                  <xs:annotation>
                     <xs:documentation>
                        A General Timing Specification (GTS) specifying the
                        periods of time during which the address can be
used.
                        This is used to specify different addresses for
                        different times of the year or to refer to
historical
                        addresses.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="use" use="optional"
type="set_PostalAddressUse">
               <xs:annotation>
                  <xs:documentation>
                     A set of codes advising a system or user which address
                     in a set of like addresses to select for a given
purpose.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
```

```
            <xs:attribute name="isNotOrdered" type="bl" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     A boolean value specifying whether the order of the
                     address parts is known or not. While the address parts
                     are always a Sequence, the order in which they are
                     presented may or may not be known. Where this matters,
the
                     isNotOrdered property can be used to convey this
                     information.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="ENXP" mixed="true">
      <xs:annotation>
         <xs:documentation>
            A character string token representing a part of a name.
            May have a type code signifying the role of the part in
            the whole entity name, and a qualifier code for more detail
            about the name part type. Typical name parts for person
            names are given names, and family names, titles, etc.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ST">
            <xs:attribute name="partType" type="EntityNamePartType">
               <xs:annotation>
                  <xs:documentation>
                     Indicates whether the name part is a given name,
family
                     name, prefix, suffix, etc.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="qualifier" use="optional"
type="set_EntityNamePartQualifier">
               <xs:annotation>
                  <xs:documentation>
                     The qualifier is a set of codes each of which
specifies
                     a certain subcategory of the name part in addition to
                     the main name part type. For example, a given name may
                     be flagged as a nickname, a family name may be a
                     pseudonym or a name of public records.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="en.delimiter" mixed="true">
      <xs:complexContent>
         <xs:restriction base="ENXP">
            <xs:attribute name="partType" type="EntityNamePartType"
fixed="DEL"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
```

```
   <xs:complexType name="en.family" mixed="true">
      <xs:complexContent>
         <xs:restriction base="ENXP">
            <xs:attribute name="partType" type="EntityNamePartType"
fixed="FAM"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="en.given" mixed="true">
      <xs:complexContent>
         <xs:restriction base="ENXP">
            <xs:attribute name="partType" type="EntityNamePartType"
fixed="GIV"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="en.prefix" mixed="true">
      <xs:complexContent>
         <xs:restriction base="ENXP">
            <xs:attribute name="partType" type="EntityNamePartType"
fixed="PFX"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="en.suffix" mixed="true">
      <xs:complexContent>
         <xs:restriction base="ENXP">
            <xs:attribute name="partType" type="EntityNamePartType"
fixed="SFX"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="EN" mixed="true">
      <xs:annotation>
         <xs:documentation>
            A name for a person, organization, place or thing. A
            sequence of name parts, such as given name or family
            name, prefix, suffix, etc. Examples for entity name
            values are "Jim Bob Walton, Jr.", "Health Level Seven,
            Inc.", "Lake Tahoe", etc. An entity name may be as simple
            as a character string or may consist of several entity name
            parts, such as, "Jim", "Bob", "Walton", and "Jr.", "Health
            Level Seven" and "Inc.", "Lake" and "Tahoe".
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ANY">
            <xs:sequence>
               <xs:choice minOccurs="0" maxOccurs="unbounded">
                  <xs:element name="delimiter" type="en.delimiter"/>
                  <xs:element name="family" type="en.family"/>
                  <xs:element name="given" type="en.given"/>
                  <xs:element name="prefix" type="en.prefix"/>
                  <xs:element name="suffix" type="en.suffix"/>
               </xs:choice>
               <xs:element name="validTime" minOccurs="0" maxOccurs="1"
type="IVL_TS">
                  <xs:annotation>
                     <xs:documentation>
                        An interval of time specifying the time during
which
```

```
                        the name is or was used for the entity. This
                        accomodates the fact that people change names for
                        people, places and things.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="use" use="optional"
type="set_EntityNameUse">
               <xs:annotation>
                  <xs:documentation>
                     A set of codes advising a system or user which name
                     in a set of like names to select for a given purpose.
                     A name without specific use code might be a default
                     name useful for any purpose, but a name with a
specific
                     use code would be preferred for that respective
purpose.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="PN" mixed="true">
      <xs:annotation>
         <xs:documentation>
            A name for a person. A sequence of name parts, such as
            given name or family name, prefix, suffix, etc. PN differs
            from EN because the qualifier type cannot include LS
            (Legal Status).
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="EN"/>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="ON" mixed="true">
      <xs:annotation>
         <xs:documentation>
            A name for an organization. A sequence of name parts.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:restriction base="EN">
            <xs:sequence>
               <xs:choice minOccurs="0" maxOccurs="unbounded">
                  <xs:element name="delimiter" type="en.delimiter"/>
                  <xs:element name="prefix" type="en.prefix"/>
                  <xs:element name="suffix" type="en.suffix"/>
               </xs:choice>
               <xs:element name="validTime" minOccurs="0" maxOccurs="1"
type="IVL_TS">
                  <xs:annotation>
                     <xs:documentation>
                        An interval of time specifying the time during
which
                        the name is or was used for the entity. This
                        accomodates the fact that people change names for
                        people, places and things.
                     </xs:documentation>
```

```
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="use" use="optional"
type="set_EntityNameUse">
               <xs:annotation>
                  <xs:documentation>
                     A set of codes advising a system or user which name
                     in a set of like names to select for a given purpose.
                     A name without specific use code might be a default
                     name useful for any purpose, but a name with a
specific
                     use code would be preferred for that respective
purpose.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="TN" mixed="true">
      <xs:annotation>
         <xs:documentation>
            A restriction of entity name that is effectively a simple
string used
            for a simple name for things and places.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:restriction base="EN">
            <xs:sequence>
               <xs:element name="validTime" minOccurs="0" maxOccurs="1"
type="IVL_TS">
                  <xs:annotation>
                     <xs:documentation>
                        An interval of time specifying the time during
which
                        the name is or was used for the entity. This
                        accomodates the fact that people change names for
                        people, places and things.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="QTY" abstract="true">
      <xs:annotation>
         <xs:documentation>
            The quantity data type is an abstract generalization
            for all data types (1) whose value set has an order
            relation (less-or-equal) and (2) where difference is
            defined in all of the data type's totally ordered value
            subsets.  The quantity type abstraction is needed in
            defining certain other types, such as the interval and
            the probability distribution.
         </xs:documentation>
         <xs:appinfo>
            <diff>QTY</diff>
         </xs:appinfo>
```

```
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="ANY"/>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="int">
      <xs:annotation>
         <xs:documentation>
            Integer numbers (-1,0,1,2, 100, 3398129, etc.) are precise
            numbers that are results of counting and enumerating.
            Integer numbers are discrete, the set of integers is
            infinite but countable.  No arbitrary limit is imposed on
            the range of integer numbers. Two NULL flavors are
            defined for the positive and negative infinity.
         </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:integer"/>
   </xs:simpleType>
   <xs:complexType name="INT">
      <xs:annotation>
         <xs:documentation>
            Integer numbers (-1,0,1,2, 100, 3398129, etc.) are precise
            numbers that are results of counting and enumerating.
            Integer numbers are discrete, the set of integers is
            infinite but countable.  No arbitrary limit is imposed on
            the range of integer numbers. Two NULL flavors are
            defined for the positive and negative infinity.
         </xs:documentation>
         <xs:appinfo>
            <diff>INT</diff>
            <sch:pattern name="validate INT">
               <sch:rule abstract="true" id="rule-INT">
                  <sch:report test="(@value or @nullFlavor) and not(@value
and @nullFlavor)"/>
               </sch:rule>
            </sch:pattern>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="QTY">
            <xs:attribute name="value" use="optional" type="int"/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="real">
      <xs:annotation>
         <xs:documentation>
            Fractional numbers. Typically used whenever quantities
            are measured, estimated, or computed from other real
            numbers.  The typical representation is decimal, where
            the number of significant decimal digits is known as the
            precision. Real numbers are needed beyond integers
            whenever quantities of the real world are measured,
            estimated, or computed from other real numbers. The term
            "Real number" in this specification is used to mean
            that fractional values are covered without necessarily
            implying the full set of the mathematical real numbers.
         </xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="xs:decimal xs:double"/>
   </xs:simpleType>
```

```
   <xs:complexType name="REAL">
      <xs:annotation>
         <xs:documentation>
            Fractional numbers. Typically used whenever quantities
            are measured, estimated, or computed from other real
            numbers.  The typical representation is decimal, where
            the number of significant decimal digits is known as the
            precision. Real numbers are needed beyond integers
            whenever quantities of the real world are measured,
            estimated, or computed from other real numbers. The term
            "Real number" in this specification is used to mean
            that fractional values are covered without necessarily
            implying the full set of the mathematical real numbers.
         </xs:documentation>
         <xs:appinfo>
            <diff>REAL</diff>
            <sch:pattern name="validate REAL">
               <sch:rule abstract="true" id="rule-REAL">
                  <sch:report test="(@nullFlavor or @value) and
not(@nullFlavor and @value)"/>
               </sch:rule>
            </sch:pattern>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="QTY">
            <xs:attribute name="value" use="optional" type="real"/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="PQR">
      <xs:annotation>
         <xs:documentation>
            A representation of a physical quantity in a unit from
            any code system. Used to show alternative representation
            for a physical quantity.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="CV">
            <xs:attribute name="value" type="real" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     The magnitude of the measurement value in terms of
                     the unit specified in the code.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="PQ">
      <xs:annotation>
         <xs:documentation>
            A dimensioned quantity expressing the result of a
            measurement act.
        </xs:documentation>
         <xs:appinfo>
            <diff>PQ</diff>
         </xs:appinfo>
      </xs:annotation>
```

```
      <xs:complexContent>
         <xs:extension base="QTY">
            <xs:sequence>
               <xs:element name="translation" type="PQR" minOccurs="0"
maxOccurs="unbounded">
                  <xs:annotation>
                     <xs:documentation>
                        An alternative representation of the same physical
                        quantity expressed in a different unit, of a
different
                        unit code system and possibly with a different
value.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
            <xs:attribute name="value" type="real" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     The magnitude of the quantity measured in terms of
                     the unit.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="unit" type="cs" use="optional" default="1">
               <xs:annotation>
                  <xs:documentation>
                     The unit of measure specified in the Unified Code for
                     Units of Measure (UCUM)
                     [http://aurora.rg.iupui.edu/UCUM].
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="MO">
      <xs:annotation>
         <xs:documentation>
            A monetary amount is a quantity expressing the amount of
            money in some currency. Currencies are the units in which
            monetary amounts are denominated in different economic
            regions. While the monetary amount is a single kind of
            quantity (money) the exchange rates between the different
            units are variable.  This is the principle difference
            between physical quantity and monetary amounts, and the
            reason why currency units are not physical units.
         </xs:documentation>
         <xs:appinfo>
            <diff>MO</diff>
            <sch:pattern name="validate MO">
               <sch:rule abstract="true" id="rule-MO">
                  <sch:report test="not(@nullFlavor and (@value or
@currency))"/>
               </sch:rule>
            </sch:pattern>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="QTY">
            <xs:attribute name="value" type="real" use="optional">
```

```
               <xs:annotation>
                  <xs:documentation>
                     The magnitude of the monetary amount in terms of the
                     currency unit.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
            <xs:attribute name="currency" type="cs" use="optional">
               <xs:annotation>
                  <xs:documentation>
                     The currency unit as defined in ISO 4217.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="RTO">
      <xs:annotation>
         <xs:documentation>
            A quantity constructed as the quotient of a numerator
            quantity divided by a denominator quantity. Common
            factors in the numerator and denominator are not
            automatically cancelled out.  RTO supports titers
            (e.g., "1:128") and other quantities produced by
            laboratories that truly represent ratios. Ratios are
            not simply "structured numerics", particularly blood
            pressure measurements (e.g. "120/60") are not ratios.
            In many cases REAL should be used instead
            of RTO.
         </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="RTO_QTY_QTY"/>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="probability">
      <xs:annotation>
         <xs:documentation>
               The probability assigned to the value, a decimal number
               between 0 (very uncertain) and 1 (certain).
            </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:double">
         <xs:minInclusive value="0.0"/>
         <xs:maxInclusive value="1.0"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:complexType name="EIVL.event">
      <xs:annotation>
         <xs:documentation>
                        A code for a common (periodical) activity of daily
                        living based on which the event related periodic
                        interval is specified.
                     </xs:documentation>
      </xs:annotation>
      <xs:complexContent>
         <xs:restriction base="CE">
            <xs:attribute name="code" type="TimingEvent" use="optional"/>
            <xs:attribute name="codeSystem" type="uid"
fixed="2.16.840.1.113883.5.139"/>
```

```
            <xs:attribute name="codeSystemName" type="st"
fixed="TimingEvent"/>
         </xs:restriction>
      </xs:complexContent>
   </xs:complexType>
<!--
      Instantiated templates
    -->
   <xs:complexType name="SXCM_TS">
      <xs:complexContent>
         <xs:extension base="TS">
            <xs:attribute name="operator" type="SetOperator" use="optional"
default="I">
               <xs:annotation>
                  <xs:documentation>
                     A code specifying whether the set component is
included
                     (union) or excluded (set-difference) from the set, or
                     other set operations with the current set component
and
                     the set as constructed from the representation stream
                     up to the current point.
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="set_TelecommunicationAddressUse">
      <xs:list itemType="TelecommunicationAddressUse"/>
   </xs:simpleType>
   <xs:simpleType name="set_PostalAddressUse">
      <xs:list itemType="PostalAddressUse"/>
   </xs:simpleType>
   <xs:simpleType name="set_EntityNamePartQualifier">
      <xs:list itemType="EntityNamePartQualifier"/>
   </xs:simpleType>
   <xs:complexType name="IVL_TS">
      <xs:complexContent>
         <xs:extension base="SXCM_TS">
            <xs:choice minOccurs="0">
               <xs:sequence>
                  <xs:element name="low" minOccurs="1" maxOccurs="1"
type="IVXB_TS">
                     <xs:annotation>
                        <xs:documentation>
                           The low limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:choice minOccurs="0">
                     <xs:element name="width" minOccurs="0" maxOccurs="1"
type="PQ">
                        <xs:annotation>
                           <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
```

```
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                     <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_TS">
                        <xs:annotation>
                           <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                        </xs:annotation>
                     </xs:element>
                  </xs:choice>
               </xs:sequence>
               <xs:element name="high" minOccurs="1" maxOccurs="1"
type="IVXB_TS">
                  <xs:annotation>
                     <xs:documentation/>
                  </xs:annotation>
               </xs:element>
               <xs:sequence>
                  <xs:element name="width" minOccurs="1" maxOccurs="1"
type="PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="high" minOccurs="0" maxOccurs="1"
type="IVXB_TS">
                     <xs:annotation>
                        <xs:documentation>
                           The high limit of the interval.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
               <xs:sequence>
                  <xs:element name="center" minOccurs="1" maxOccurs="1"
type="TS">
                     <xs:annotation>
                        <xs:documentation>
                           The arithmetic mean of the interval (low plus
high
                           divided by 2). The purpose of distinguishing the
center
                           as a semantic property is for conversions of
intervals
                           from and to point values.
                        </xs:documentation>
```

```
                     </xs:annotation>
                  </xs:element>
                  <xs:element name="width" minOccurs="0" maxOccurs="1"
type="PQ">
                     <xs:annotation>
                        <xs:documentation>
                           The difference between high and low boundary.
The
                           purpose of distinguishing a width property is to
                           handle all cases of incomplete information
                           symmetrically. In any interval representation
only
                           two of the three properties high, low, and width
need
                           to be stated and the third can be derived.
                        </xs:documentation>
                     </xs:annotation>
                  </xs:element>
               </xs:sequence>
            </xs:choice>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:complexType name="IVXB_TS">
      <xs:complexContent>
         <xs:extension base="TS">
            <xs:attribute name="inclusive" type="bl" use="optional"
default="true">
               <xs:annotation>
                  <xs:documentation>
                     Specifies whether the limit is included in the
                     interval (interval is closed) or excluded from the
                     interval (interval is open).
                  </xs:documentation>
               </xs:annotation>
            </xs:attribute>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
   <xs:simpleType name="set_EntityNameUse">
      <xs:list itemType="EntityNameUse"/>
   </xs:simpleType>
   <xs:complexType name="RTO_QTY_QTY">
      <xs:annotation>
         <xs:appinfo>
            <diff>RTO_QTY_QTY</diff>
         </xs:appinfo>
      </xs:annotation>
      <xs:complexContent>
         <xs:extension base="QTY">
            <xs:sequence>
               <xs:element name="numerator" type="QTY">
                  <xs:annotation>
                     <xs:documentation>
                        The quantity that is being divided in the ratio.
The
                        default is the integer number 1 (one).
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
               <xs:element name="denominator" type="QTY">
```

```
                  <xs:annotation>
                     <xs:documentation>
                        The quantity that devides the numerator in the
ratio.
                        The default is the integer number 1 (one).
                        The denominator must not be zero.
                     </xs:documentation>
                  </xs:annotation>
               </xs:element>
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
</xs:schema>
```

C.5 voc.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:mif="urn:hl7-
org:v3/mif">
   <xs:annotation>
      <xs:documentation> $Id: Vocabulary.xml,v 1.1 2005/08/25 11:33:46
mcraig Exp $
RoseTree XML to Schema: $Id: VocabXMLtoXSD.xsl,v 1.6 2005/05/24 00:14:18
lmckenzi Exp $</xs:documentation>
   </xs:annotation>
   <xs:include schemaLocation="datatypes.xsd"/>
   <xs:simpleType name="Classes">
      <xs:restriction base="cs"/>
   </xs:simpleType>
   <xs:annotation>
      <xs:documentation>The following types are used internally in data
types</xs:documentation>
   </xs:annotation>
   <xs:simpleType name="AddressPartType">
      <xs:annotation>
         <xs:documentation>vocSet: D10642 (C-0-D10642-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="AdditionalLocator DeliveryAddressLine
StreetAddressLine">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="CAR"/>
               <xs:enumeration value="CEN"/>
               <xs:enumeration value="CNT"/>
               <xs:enumeration value="CPA"/>
               <xs:enumeration value="CTY"/>
               <xs:enumeration value="DEL"/>
               <xs:enumeration value="POB"/>
               <xs:enumeration value="PRE"/>
               <xs:enumeration value="STA"/>
               <xs:enumeration value="ZIP"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="AdditionalLocator">
      <xs:annotation>
```

```
         <xs:documentation>specDomain: V10651 (C-0-D10642-V10651-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="ADL"/>
         <xs:enumeration value="UNID"/>
         <xs:enumeration value="UNIT"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="DeliveryAddressLine">
      <xs:annotation>
         <xs:documentation>specDomain: V17887 (C-0-D10642-V17887-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="DAL"/>
         <xs:enumeration value="DINST"/>
         <xs:enumeration value="DINSTA"/>
         <xs:enumeration value="DINSTQ"/>
         <xs:enumeration value="DMOD"/>
         <xs:enumeration value="DMODID"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="StreetAddressLine">
      <xs:annotation>
         <xs:documentation>specDomain: V14822 (C-0-D10642-V14822-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="BuildingNumber StreetName">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="SAL"/>
               <xs:enumeration value="DIR"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="BuildingNumber">
      <xs:annotation>
         <xs:documentation>specDomain: V10649 (C-0-D10642-V14822-V10649-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="BNR"/>
         <xs:enumeration value="BNN"/>
         <xs:enumeration value="BNS"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="StreetName">
      <xs:annotation>
         <xs:documentation>specDomain: V10648 (C-0-D10642-V14822-V10648-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="STR"/>
         <xs:enumeration value="STB"/>
         <xs:enumeration value="STTYP"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="CalendarCycle">
      <xs:annotation>
```

```
         <xs:documentation>vocSet: D10684 (C-0-D10684-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="CalendarCycleOneLetter
CalendarCycleTwoLetter"/>
   </xs:simpleType>
   <xs:simpleType name="CalendarCycleOneLetter">
      <xs:annotation>
         <xs:documentation>abstDomain: V10701 (C-0-D10684-V10701-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="D"/>
         <xs:enumeration value="H"/>
         <xs:enumeration value="J"/>
         <xs:enumeration value="M"/>
         <xs:enumeration value="N"/>
         <xs:enumeration value="S"/>
         <xs:enumeration value="W"/>
         <xs:enumeration value="Y"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="CalendarCycleTwoLetter">
      <xs:annotation>
         <xs:documentation>abstDomain: V10685 (C-0-D10684-V10685-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="GregorianCalendarCycle">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="CD"/>
               <xs:enumeration value="CH"/>
               <xs:enumeration value="CM"/>
               <xs:enumeration value="CN"/>
               <xs:enumeration value="CS"/>
               <xs:enumeration value="CW"/>
               <xs:enumeration value="CY"/>
               <xs:enumeration value="DM"/>
               <xs:enumeration value="DW"/>
               <xs:enumeration value="DY"/>
               <xs:enumeration value="HD"/>
               <xs:enumeration value="MY"/>
               <xs:enumeration value="NH"/>
               <xs:enumeration value="SN"/>
               <xs:enumeration value="WY"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="GregorianCalendarCycle">
      <xs:annotation>
         <xs:documentation>abstDomain: V10758 (C-0-D10684-V10685-V10758-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs"/>
   </xs:simpleType>
   <xs:simpleType name="CompressionAlgorithm">
      <xs:annotation>
         <xs:documentation>vocSet: D10620 (C-0-D10620-
cpt)</xs:documentation>
      </xs:annotation>
```

```
      <xs:restriction base="cs">
         <xs:enumeration value="DF"/>
         <xs:enumeration value="GZ"/>
         <xs:enumeration value="Z"/>
         <xs:enumeration value="ZL"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="Currency">
      <xs:annotation>
         <xs:documentation>vocSet: D17388 (C-0-D17388-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="ARS"/>
         <xs:enumeration value="AUD"/>
         <xs:enumeration value="BRL"/>
         <xs:enumeration value="CAD"/>
         <xs:enumeration value="CHF"/>
         <xs:enumeration value="CLF"/>
         <xs:enumeration value="CNY"/>
         <xs:enumeration value="DEM"/>
         <xs:enumeration value="ESP"/>
         <xs:enumeration value="EUR"/>
         <xs:enumeration value="FIM"/>
         <xs:enumeration value="FRF"/>
         <xs:enumeration value="GBP"/>
         <xs:enumeration value="ILS"/>
         <xs:enumeration value="INR"/>
         <xs:enumeration value="JPY"/>
         <xs:enumeration value="KRW"/>
         <xs:enumeration value="MXN"/>
         <xs:enumeration value="NLG"/>
         <xs:enumeration value="NZD"/>
         <xs:enumeration value="PHP"/>
         <xs:enumeration value="RUR"/>
         <xs:enumeration value="THB"/>
         <xs:enumeration value="TRL"/>
         <xs:enumeration value="TWD"/>
         <xs:enumeration value="USD"/>
         <xs:enumeration value="ZAR"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="EntityNamePartQualifier">
      <xs:annotation>
         <xs:documentation>vocSet: D15888 (C-0-D15888-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="OrganizationNamePartQualifier
PersonNamePartQualifier"/>
   </xs:simpleType>
   <xs:simpleType name="OrganizationNamePartQualifier">
      <xs:annotation>
         <xs:documentation>abstDomain: V15889 (C-0-D15888-V15889-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="LS"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="PersonNamePartQualifier">
      <xs:annotation>
```

```
         <xs:documentation>abstDomain: V10659 (C-0-D15888-V10659-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="PersonNamePartAffixTypes
PersonNamePartChangeQualifier PersonNamePartMiscQualifier">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="IN"/>
               <xs:enumeration value="TITLE"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="PersonNamePartAffixTypes">
      <xs:annotation>
         <xs:documentation>abstDomain: V10666 (C-0-D15888-V10659-V10666-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="AC"/>
         <xs:enumeration value="NB"/>
         <xs:enumeration value="PR"/>
         <xs:enumeration value="VV"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="PersonNamePartChangeQualifier">
      <xs:annotation>
         <xs:documentation>abstDomain: V10660 (C-0-D15888-V10659-V10660-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="AD"/>
         <xs:enumeration value="BR"/>
         <xs:enumeration value="SP"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="PersonNamePartMiscQualifier">
      <xs:annotation>
         <xs:documentation>abstDomain: V10671 (C-0-D15888-V10659-V10671-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="CL"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="EntityNamePartType">
      <xs:annotation>
         <xs:documentation>vocSet: D15880 (C-0-D15880-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="x_OrganizationNamePartType
x_PersonNamePartType">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="DEL"/>
               <xs:enumeration value="FAM"/>
               <xs:enumeration value="GIV"/>
               <xs:enumeration value="PFX"/>
               <xs:enumeration value="SFX"/>
            </xs:restriction>
         </xs:simpleType>
```

```
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="x_OrganizationNamePartType">
      <xs:annotation>
         <xs:documentation>abstDomain: V15881 (C-0-D15880-V15881-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="DEL"/>
         <xs:enumeration value="PFX"/>
         <xs:enumeration value="SFX"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_PersonNamePartType">
      <xs:annotation>
         <xs:documentation>abstDomain: V10653 (C-0-D15880-V10653-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="DEL"/>
         <xs:enumeration value="FAM"/>
         <xs:enumeration value="GIV"/>
         <xs:enumeration value="PFX"/>
         <xs:enumeration value="SFX"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="EntityNameUse">
      <xs:annotation>
         <xs:documentation>vocSet: D15913 (C-0-D15913-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="EntityNameSearchUse NameRepresentationUse
OrganizationNameUse PersonNameUse">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="C"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="OrganizationNameUse">
      <xs:annotation>
         <xs:documentation>abstDomain: V15914 (C-0-D15913-V15914-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="EntityNameSearchUse NameRepresentationUse">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="C"/>
               <xs:enumeration value="L"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="PersonNameUse">
      <xs:annotation>
         <xs:documentation>abstDomain: V200 (C-0-D15913-V200-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="EntityNameSearchUse NamePseudonymUse
NameRepresentationUse">
```

```
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="A"/>
               <xs:enumeration value="ASGN"/>
               <xs:enumeration value="C"/>
               <xs:enumeration value="I"/>
               <xs:enumeration value="L"/>
               <xs:enumeration value="R"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="EntityNameSearchUse">
      <xs:annotation>
         <xs:documentation>specDomain: V19619 (C-0-D15913-V200-V19619-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="SRCH"/>
         <xs:enumeration value="PHON"/>
         <xs:enumeration value="SNDX"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="NamePseudonymUse">
      <xs:annotation>
         <xs:documentation>specDomain: V19591 (C-0-D15913-V200-V19591-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="P"/>
         <xs:enumeration value="A"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="IntegrityCheckAlgorithm">
      <xs:annotation>
         <xs:documentation>vocSet: D17385 (C-0-D17385-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="SHA-1"/>
         <xs:enumeration value="SHA-256"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="MediaType">
      <xs:annotation>
         <xs:documentation>vocSet: D14824 (C-0-D14824-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="ApplicationMediaType AudioMediaType
ImageMediaType ModelMediaType MultipartMediaType TextMediaType
VideoMediaType"/>
   </xs:simpleType>
   <xs:simpleType name="ApplicationMediaType">
      <xs:annotation>
         <xs:documentation>abstDomain: V14832 (C-0-D14824-V14832-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="application/dicom"/>
         <xs:enumeration value="application/msword"/>
         <xs:enumeration value="application/pdf"/>
```

```
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="AudioMediaType">
      <xs:annotation>
         <xs:documentation>abstDomain: V14835 (C-0-D14824-V14835-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="audio/basic"/>
         <xs:enumeration value="audio/k32adpcm"/>
         <xs:enumeration value="audio/mpeg"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="ImageMediaType">
      <xs:annotation>
         <xs:documentation>abstDomain: V14839 (C-0-D14824-V14839-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="image/g3fax"/>
         <xs:enumeration value="image/gif"/>
         <xs:enumeration value="image/jpeg"/>
         <xs:enumeration value="image/png"/>
         <xs:enumeration value="image/tiff"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="ModelMediaType">
      <xs:annotation>
         <xs:documentation>abstDomain: V14848 (C-0-D14824-V14848-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="model/vrml"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="MultipartMediaType">
      <xs:annotation>
         <xs:documentation>abstDomain: V14850 (C-0-D14824-V14850-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="multipart/x-hl7-cda-level1"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="TextMediaType">
      <xs:annotation>
         <xs:documentation>abstDomain: V14825 (C-0-D14824-V14825-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="text/html"/>
         <xs:enumeration value="text/plain"/>
         <xs:enumeration value="text/rtf"/>
         <xs:enumeration value="text/sgml"/>
         <xs:enumeration value="text/x-hl7-ft"/>
         <xs:enumeration value="text/xml"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="VideoMediaType">
      <xs:annotation>
```

```
         <xs:documentation>abstDomain: V14845 (C-0-D14824-V14845-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="video/mpeg"/>
         <xs:enumeration value="video/x-avi"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="PostalAddressUse">
      <xs:annotation>
         <xs:documentation>vocSet: D10637 (C-0-D10637-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="AddressUse NameRepresentationUse">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="PHYS"/>
               <xs:enumeration value="PST"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="NameRepresentationUse">
      <xs:annotation>
         <xs:documentation>abstDomain: V17860 (C-0-D10637-V17860-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="ABC"/>
         <xs:enumeration value="IDE"/>
         <xs:enumeration value="SYL"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="ProbabilityDistributionType">
      <xs:annotation>
         <xs:documentation>vocSet: D10747 (C-0-D10747-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="B"/>
         <xs:enumeration value="E"/>
         <xs:enumeration value="F"/>
         <xs:enumeration value="G"/>
         <xs:enumeration value="LN"/>
         <xs:enumeration value="N"/>
         <xs:enumeration value="T"/>
         <xs:enumeration value="U"/>
         <xs:enumeration value="X2"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="SetOperator">
      <xs:annotation>
         <xs:documentation>vocSet: D17416 (C-0-D17416-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="A"/>
         <xs:enumeration value="E"/>
         <xs:enumeration value="H"/>
         <xs:enumeration value="I"/>
         <xs:enumeration value="P"/>
```

```
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="TelecommunicationAddressUse">
      <xs:annotation>
         <xs:documentation>vocSet: D201 (C-0-D201-cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="AddressUse">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="AS"/>
               <xs:enumeration value="EC"/>
               <xs:enumeration value="MC"/>
               <xs:enumeration value="PG"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="AddressUse">
      <xs:annotation>
         <xs:documentation>abstDomain: V190 (C-0-D201-V190-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="HomeAddressUse WorkPlaceAddressUse">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="BAD"/>
               <xs:enumeration value="TMP"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="HomeAddressUse">
      <xs:annotation>
         <xs:documentation>specDomain: V10628 (C-0-D201-V190-V10628-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="H"/>
         <xs:enumeration value="HP"/>
         <xs:enumeration value="HV"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="WorkPlaceAddressUse">
      <xs:annotation>
         <xs:documentation>specDomain: V19613 (C-0-D201-V190-V19613-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="WP"/>
         <xs:enumeration value="DIR"/>
         <xs:enumeration value="PUB"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="TimingEvent">
      <xs:annotation>
         <xs:documentation>vocSet: D10706 (C-0-D10706-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="AC"/>
         <xs:enumeration value="ACD"/>
```

```
         <xs:enumeration value="ACM"/>
         <xs:enumeration value="ACV"/>
         <xs:enumeration value="HS"/>
         <xs:enumeration value="IC"/>
         <xs:enumeration value="ICD"/>
         <xs:enumeration value="ICM"/>
         <xs:enumeration value="ICV"/>
         <xs:enumeration value="PC"/>
         <xs:enumeration value="PCD"/>
         <xs:enumeration value="PCM"/>
         <xs:enumeration value="PCV"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="URLScheme">
      <xs:annotation>
         <xs:documentation>vocSet: D14866 (C-0-D14866-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="fax"/>
         <xs:enumeration value="file"/>
         <xs:enumeration value="ftp"/>
         <xs:enumeration value="http"/>
         <xs:enumeration value="mailto"/>
         <xs:enumeration value="mllp"/>
         <xs:enumeration value="modem"/>
         <xs:enumeration value="nfs"/>
         <xs:enumeration value="tel"/>
         <xs:enumeration value="telnet"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:annotation>
      <xs:documentation>The following types are used for structural RIM
attributes</xs:documentation>
   </xs:annotation>
   <xs:simpleType name="ActClass">
      <xs:annotation>
         <xs:documentation>vocSet: D11527 (C-0-D11527-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="ActClassRoot"/>
   </xs:simpleType>
   <xs:simpleType name="ActClassRoot">
      <xs:annotation>
         <xs:documentation>specDomain: V13856 (C-0-D11527-V13856-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="ActClassContract ActClassControlAct
ActClassObservation ActClassSupply ActContainer x_ActClassDocumentEntryAct
x_ActClassDocumentEntryOrganizer">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="ACT"/>
               <xs:enumeration value="ACCM"/>
               <xs:enumeration value="ACCT"/>
               <xs:enumeration value="ACSN"/>
               <xs:enumeration value="ADJUD"/>
               <xs:enumeration value="CONS"/>
               <xs:enumeration value="CONTREG"/>
               <xs:enumeration value="CTTEVENT"/>
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cpt)</xs:documentation>
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cpt)</xs:documentation>
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cpt)</xs:documentation>
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cpt)</xs:documentation>
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V10614-cpt)</xs:documentation>
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ParticipationIndirectTarget ParticipationInformationGenerator
ParticipationInformationRecipient ParticipationPhysicalPerformer
ParticipationTargetDirect ParticipationTargetLocation ParticipationVerifier
x_EncounterParticipant x_EncounterPerformerParticipation
x_InformationRecipient x_ParticipationAuthorPerformer x_ParticipationEntVrf
x_ParticipationPrfEntVrf x_ParticipationVrfRespSprfWit
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         <xs:enumeration value="ELOC"/>
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         <xs:enumeration value="RML"/>
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         <xs:enumeration value="SPRF"/>
         <xs:enumeration value="WIT"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_ServiceEventPerformer">
      <xs:annotation>
         <xs:documentation>abstDomain: V19606 (C-0-D10901-V19606-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="PRF"/>
         <xs:enumeration value="PPRF"/>
         <xs:enumeration value="SPRF"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClass">
      <xs:annotation>
         <xs:documentation>vocSet: D11555 (C-0-D11555-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassRoot"/>
   </xs:simpleType>
   <xs:simpleType name="RoleClassRoot">
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         <xs:documentation>specDomain: V13940 (C-0-D11555-V13940-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassAssociative RoleClassOntological
RoleClassPartitive x_DocumentEntrySubject x_DocumentSubject
x_InformationRecipientRole x_RoleClassAccommodationRequestor
x_RoleClassCoverage x_RoleClassCoverageInvoice
x_RoleClassCredentialedEntity x_RoleClassPayeePolicyRelationship">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="ROL"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassAssociative">
      <xs:annotation>
         <xs:documentation>abstDomain: V19313 (C-0-D11555-V13940-V19313-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassMutualRelationship RoleClassPassive">
         <xs:simpleType>
            <xs:restriction base="cs"/>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassMutualRelationship">
      <xs:annotation>
         <xs:documentation>abstDomain: V19316 (C-0-D11555-V13940-V19313-
V19316-cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassRelationshipFormal">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="CAREGIVER"/>
```

```
               <xs:enumeration value="PRS"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassRelationshipFormal">
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         <xs:documentation>abstDomain: V10416 (C-0-D11555-V13940-V19313-
V19316-V10416-cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="LicensedEntityRole RoleClassAgent
RoleClassEmployee RoleClassInvestigationSubject">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="CIT"/>
               <xs:enumeration value="COVPTY"/>
               <xs:enumeration value="CRINV"/>
               <xs:enumeration value="CRSPNSR"/>
               <xs:enumeration value="GUAR"/>
               <xs:enumeration value="PAT"/>
               <xs:enumeration value="PAYEE"/>
               <xs:enumeration value="PAYOR"/>
               <xs:enumeration value="POLHOLD"/>
               <xs:enumeration value="QUAL"/>
               <xs:enumeration value="SPNSR"/>
               <xs:enumeration value="STD"/>
               <xs:enumeration value="UNDWRT"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassAgent">
      <xs:annotation>
         <xs:documentation>specDomain: V14006 (C-0-D11555-V13940-V19313-
V19316-V10416-V14006-cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassAssignedEntity">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="AGNT"/>
               <xs:enumeration value="GUARD"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassAssignedEntity">
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V19316-V10416-V14006-V11595-cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassContact">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="ASSIGNED"/>
               <xs:enumeration value="COMPAR"/>
               <xs:enumeration value="SGNOFF"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassContact">
```

```
      <xs:annotation>
         <xs:documentation>specDomain: V12205 (C-0-D11555-V13940-V19313-
V19316-V10416-V14006-V11595-V12205-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
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         <xs:enumeration value="ECON"/>
         <xs:enumeration value="NOK"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClassEmployee">
      <xs:annotation>
         <xs:documentation>specDomain: V11569 (C-0-D11555-V13940-V19313-
V19316-V10416-V11569-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="EMP"/>
         <xs:enumeration value="MIL"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClassInvestigationSubject">
      <xs:annotation>
         <xs:documentation>specDomain: V19587 (C-0-D11555-V13940-V19313-
V19316-V10416-V19587-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="INVSBJ"/>
         <xs:enumeration value="CASESBJ"/>
         <xs:enumeration value="RESBJ"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClassPassive">
      <xs:annotation>
         <xs:documentation>abstDomain: V19105 (C-0-D11555-V13940-V19313-
V19105-cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassDistributedMaterial
RoleClassManufacturedProduct RoleClassServiceDeliveryLocation">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="ACCESS"/>
               <xs:enumeration value="BIRTHPL"/>
               <xs:enumeration value="EXPR"/>
               <xs:enumeration value="HLD"/>
               <xs:enumeration value="HLTHCHRT"/>
               <xs:enumeration value="IDENT"/>
               <xs:enumeration value="MNT"/>
               <xs:enumeration value="OWN"/>
               <xs:enumeration value="RGPR"/>
               <xs:enumeration value="TERR"/>
               <xs:enumeration value="WRTE"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassDistributedMaterial">
      <xs:annotation>
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V19105-V10418-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
```

```
         <xs:enumeration value="DST"/>
         <xs:enumeration value="RET"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClassManufacturedProduct">
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V19105-V11580-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="MANU"/>
         <xs:enumeration value="THER"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClassServiceDeliveryLocation">
      <xs:annotation>
         <xs:documentation>specDomain: V16927 (C-0-D11555-V13940-V19313-
V19105-V16927-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="SDLOC"/>
         <xs:enumeration value="DSDLOC"/>
         <xs:enumeration value="ISDLOC"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClassOntological">
      <xs:annotation>
         <xs:documentation>abstDomain: V10428 (C-0-D11555-V13940-V10428-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassIsSpeciesEntity">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="INST"/>
               <xs:enumeration value="SUBS"/>
               <xs:enumeration value="SUBY"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassIsSpeciesEntity">
      <xs:annotation>
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V10441-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="GEN"/>
         <xs:enumeration value="GRIC"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClassPartitive">
      <xs:annotation>
         <xs:documentation>abstDomain: V10429 (C-0-D11555-V13940-V10429-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassIngredientEntity
RoleClassLocatedEntity RoleClassSpecimen">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="CONT"/>
               <xs:enumeration value="MBR"/>
```

```
               <xs:enumeration value="PART"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassIngredientEntity">
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V10430-cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RoleClassInactiveIngredient">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="INGR"/>
               <xs:enumeration value="ACTI"/>
               <xs:enumeration value="ACTM"/>
               <xs:enumeration value="ADTV"/>
               <xs:enumeration value="BASE"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="RoleClassInactiveIngredient">
      <xs:annotation>
         <xs:documentation>specDomain: V19089 (C-0-D11555-V13940-V10429-
V10430-V19089-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="IACT"/>
         <xs:enumeration value="COLR"/>
         <xs:enumeration value="FLVR"/>
         <xs:enumeration value="PRSV"/>
         <xs:enumeration value="STBL"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClassLocatedEntity">
      <xs:annotation>
         <xs:documentation>specDomain: V16815 (C-0-D11555-V13940-V10429-
V16815-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="LOCE"/>
         <xs:enumeration value="STOR"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleClassSpecimen">
      <xs:annotation>
         <xs:documentation>specDomain: V11591 (C-0-D11555-V13940-V10429-
V11591-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="SPEC"/>
         <xs:enumeration value="ALQT"/>
         <xs:enumeration value="ISLT"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_DocumentEntrySubject">
      <xs:annotation>
         <xs:documentation>abstDomain: V19367 (C-0-D11555-V13940-V19367-
cpt)</xs:documentation>
      </xs:annotation>
```

```
      <xs:restriction base="cs">
         <xs:enumeration value="SPEC"/>
         <xs:enumeration value="PAT"/>
         <xs:enumeration value="PRS"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_DocumentSubject">
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         <xs:documentation>abstDomain: V19368 (C-0-D11555-V13940-V19368-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="PAT"/>
         <xs:enumeration value="PRS"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_InformationRecipientRole">
      <xs:annotation>
         <xs:documentation>abstDomain: V16772 (C-0-D11555-V13940-V16772-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="ASSIGNED"/>
         <xs:enumeration value="HLTHCHRT"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_RoleClassAccommodationRequestor">
      <xs:annotation>
         <xs:documentation>abstDomain: V19382 (C-0-D11555-V13940-V19382-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="AGNT"/>
         <xs:enumeration value="PAT"/>
         <xs:enumeration value="PROV"/>
         <xs:enumeration value="PRS"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_RoleClassCoverage">
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cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="COVPTY"/>
         <xs:enumeration value="POLHOLD"/>
         <xs:enumeration value="SPNSR"/>
         <xs:enumeration value="UNDWRT"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_RoleClassCoverageInvoice">
      <xs:annotation>
         <xs:documentation>abstDomain: V14013 (C-0-D11555-V13940-V14013-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="PAYEE"/>
         <xs:enumeration value="PAYOR"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_RoleClassCredentialedEntity">
```

```
      <xs:annotation>
         <xs:documentation>abstDomain: V16930 (C-0-D11555-V13940-V16930-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="LicensedEntityRole">
         <xs:simpleType>
            <xs:restriction base="cs">
               <xs:enumeration value="ASSIGNED"/>
               <xs:enumeration value="QUAL"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:union>
   </xs:simpleType>
   <xs:simpleType name="LicensedEntityRole">
      <xs:annotation>
         <xs:documentation>specDomain: V16773 (C-0-D11555-V13940-V16930-
V16773-cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="LIC"/>
         <xs:enumeration value="NOT"/>
         <xs:enumeration value="PROV"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="x_RoleClassPayeePolicyRelationship">
      <xs:annotation>
         <xs:documentation>abstDomain: V19395 (C-0-D11555-V13940-V19395-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="COVPTY"/>
         <xs:enumeration value="GUAR"/>
         <xs:enumeration value="POLHOLD"/>
         <xs:enumeration value="PROV"/>
         <xs:enumeration value="PRS"/>
      </xs:restriction>
   </xs:simpleType>
   <xs:simpleType name="RoleLinkType">
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cpt)</xs:documentation>
      </xs:annotation>
      <xs:union memberTypes="RelatedLinkType"/>
   </xs:simpleType>
   <xs:simpleType name="RelatedLinkType">
      <xs:annotation>
         <xs:documentation>specDomain: V19615 (C-0-D11603-V19615-
cpt)</xs:documentation>
      </xs:annotation>
      <xs:restriction base="cs">
         <xs:enumeration value="REL"/>
         <xs:enumeration value="BACKUP"/>
         <xs:enumeration value="DIRAUTH"/>
         <xs:enumeration value="INDAUTH"/>
         <xs:enumeration value="PART"/>
         <xs:enumeration value="REPL"/>
      </xs:restriction>
   </xs:simpleType>
</xs:schema>
```

C.6 NarrativeBlock.xsd

```
<?xml version="1.0" encoding="ASCII"?>
<!-- $Id: NarrativeBlock.xsd,v 1.4 2005/04/17 03:13:19 lmckenzi Exp $ -->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns="urn:hl7-
org:v3" targetNamespace="urn:hl7-org:v3" elementFormDefault="qualified">
   <xs:complexType name="StrucDoc.Text" mixed="true">
      <xs:choice minOccurs="0" maxOccurs="unbounded">
         <xs:element name="content" type="StrucDoc.Content"/>
         <xs:element name="linkHtml" type="StrucDoc.LinkHtml"/>
         <xs:element name="sub" type="StrucDoc.Sub"/>
         <xs:element name="sup" type="StrucDoc.Sup"/>
         <xs:element name="br" type="StrucDoc.Br"/>
         <xs:element name="footnote" type="StrucDoc.Footnote"/>
         <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
         <xs:element name="renderMultiMedia"
type="StrucDoc.RenderMultiMedia"/>
         <xs:element name="paragraph" type="StrucDoc.Paragraph"/>
         <xs:element name="list" type="StrucDoc.List"/>
         <xs:element name="table" type="StrucDoc.Table"/>
      </xs:choice>
      <xs:attribute name="ID" type="xs:ID"/>
      <xs:attribute name="language" type="xs:NMTOKEN"/>
      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
      <xs:attribute name="mediaType" type="xs:string" fixed="text/x-hl7-
text+xml"/>
   </xs:complexType>
   <xs:complexType name="StrucDoc.Title" mixed="true">
      <xs:choice minOccurs="0" maxOccurs="unbounded">
         <xs:element name="content" type="StrucDoc.TitleContent"/>
         <xs:element name="sub" type="StrucDoc.Sub"/>
         <xs:element name="sup" type="StrucDoc.Sup"/>
         <xs:element name="br" type="StrucDoc.Br"/>
         <xs:element name="footnote" type="StrucDoc.TitleFootnote"/>
         <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
      </xs:choice>
      <xs:attribute name="ID" type="xs:ID"/>
      <xs:attribute name="language" type="xs:NMTOKEN"/>
      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
      <xs:attribute name="mediaType" type="xs:string" fixed="text/x-hl7-
title+xml"/>
   </xs:complexType><!-- DELETE THIS, we don't need to define a global
element for text
   <xs:element name="text" type="text"/>
 -->
   <xs:complexType name="StrucDoc.Br"/>
   <xs:complexType name="StrucDoc.Caption" mixed="true">
      <xs:choice minOccurs="0" maxOccurs="unbounded">
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         <xs:element name="sub" type="StrucDoc.Sub"/>
         <xs:element name="sup" type="StrucDoc.Sup"/>
         <xs:element name="footnote" type="StrucDoc.Footnote"/>
         <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
      </xs:choice>
      <xs:attribute name="ID" type="xs:ID"/>
      <xs:attribute name="language" type="xs:NMTOKEN"/>
      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
   </xs:complexType>
   <xs:complexType name="StrucDoc.Col">
      <xs:attribute name="ID" type="xs:ID"/>
      <xs:attribute name="language" type="xs:NMTOKEN"/>
```

```
      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
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               <xs:enumeration value="right"/>
               <xs:enumeration value="justify"/>
               <xs:enumeration value="char"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
      <xs:attribute name="char" type="xs:string"/>
      <xs:attribute name="charoff" type="xs:string"/>
      <xs:attribute name="valign">
         <xs:simpleType>
            <xs:restriction base="xs:NMTOKEN">
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               <xs:enumeration value="middle"/>
               <xs:enumeration value="bottom"/>
               <xs:enumeration value="baseline"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
   </xs:complexType>
   <xs:complexType name="StrucDoc.Colgroup">
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         <xs:element name="col" type="StrucDoc.Col"/>
      </xs:sequence>
      <xs:attribute name="ID" type="xs:ID"/>
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
      <xs:attribute name="span" type="xs:string" default="1"/>
      <xs:attribute name="width" type="xs:string"/>
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               <xs:enumeration value="right"/>
               <xs:enumeration value="justify"/>
               <xs:enumeration value="char"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
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      <xs:attribute name="charoff" type="xs:string"/>
      <xs:attribute name="valign">
         <xs:simpleType>
            <xs:restriction base="xs:NMTOKEN">
               <xs:enumeration value="top"/>
               <xs:enumeration value="middle"/>
               <xs:enumeration value="bottom"/>
               <xs:enumeration value="baseline"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
   </xs:complexType>
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```

```
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         <xs:element name="sub" type="StrucDoc.Sub"/>
         <xs:element name="sup" type="StrucDoc.Sup"/>
         <xs:element name="br" type="StrucDoc.Br"/>
         <xs:element name="footnote" type="StrucDoc.Footnote"/>
         <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
         <xs:element name="renderMultiMedia"
type="StrucDoc.RenderMultiMedia"/>
      </xs:choice>
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      <xs:attribute name="language" type="xs:NMTOKEN"/>
      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
      <xs:attribute name="revised">
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            <xs:restriction base="xs:NMTOKEN">
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               <xs:enumeration value="delete"/>
            </xs:restriction>
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      </xs:attribute>
   </xs:complexType>
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         <xs:element name="sub" type="StrucDoc.Sub"/>
         <xs:element name="sup" type="StrucDoc.Sup"/>
         <xs:element name="br" type="StrucDoc.Br"/>
         <xs:element name="footnote" type="StrucDoc.TitleFootnote"/>
         <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
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         <xs:element name="linkHtml" type="StrucDoc.LinkHtml"/>
         <xs:element name="sub" type="StrucDoc.Sub"/>
         <xs:element name="sup" type="StrucDoc.Sup"/>
         <xs:element name="br" type="StrucDoc.Br"/>
         <xs:element name="renderMultiMedia"
type="StrucDoc.RenderMultiMedia"/>
         <xs:element name="paragraph" type="StrucDoc.Paragraph"/>
         <xs:element name="list" type="StrucDoc.List"/>
         <xs:element name="table" type="StrucDoc.Table"/>
      </xs:choice>
      <xs:attribute name="ID" type="xs:ID"/>
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
   </xs:complexType>
   <xs:complexType name="StrucDoc.TitleFootnote" mixed="true">
      <xs:choice minOccurs="0" maxOccurs="unbounded">
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         <xs:element name="sub" type="StrucDoc.Sub"/>
         <xs:element name="sup" type="StrucDoc.Sup"/>
         <xs:element name="br" type="StrucDoc.Br"/>
      </xs:choice>
      <xs:attribute name="ID" type="xs:ID"/>
```

```
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
   </xs:complexType>
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
      <xs:attribute name="IDREF" type="xs:IDREF" use="required"/>
   </xs:complexType>
   <xs:complexType name="StrucDoc.Item" mixed="true">
      <xs:sequence>
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         <xs:choice minOccurs="0" maxOccurs="unbounded">
            <xs:element name="content" type="StrucDoc.Content"/>
            <xs:element name="linkHtml" type="StrucDoc.LinkHtml"/>
            <xs:element name="sub" type="StrucDoc.Sub"/>
            <xs:element name="sup" type="StrucDoc.Sup"/>
            <xs:element name="br" type="StrucDoc.Br"/>
            <xs:element name="footnote" type="StrucDoc.Footnote"/>
            <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
            <xs:element name="renderMultiMedia"
type="StrucDoc.RenderMultiMedia"/>
            <xs:element name="paragraph" type="StrucDoc.Paragraph"/>
            <xs:element name="list" type="StrucDoc.List"/>
            <xs:element name="table" type="StrucDoc.Table"/>
         </xs:choice>
      </xs:sequence>
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
   </xs:complexType>
   <xs:complexType name="StrucDoc.LinkHtml" mixed="true">
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         <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
      </xs:choice>
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      <xs:attribute name="href" type="xs:string"/>
      <xs:attribute name="rel" type="xs:string"/>
      <xs:attribute name="rev" type="xs:string"/>
      <xs:attribute name="title" type="xs:string"/>
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
   </xs:complexType>
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         <xs:element name="item" type="StrucDoc.Item"
maxOccurs="unbounded"/>
      </xs:sequence>
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
      <xs:attribute name="listType" default="unordered">
         <xs:simpleType>
            <xs:restriction base="xs:NMTOKEN">
               <xs:enumeration value="ordered"/>
               <xs:enumeration value="unordered"/>
            </xs:restriction>
         </xs:simpleType>
```

```
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   </xs:complexType>
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            <xs:element name="linkHtml" type="StrucDoc.LinkHtml"/>
            <xs:element name="sub" type="StrucDoc.Sub"/>
            <xs:element name="sup" type="StrucDoc.Sup"/>
            <xs:element name="br" type="StrucDoc.Br"/>
            <xs:element name="footnote" type="StrucDoc.Footnote"/>
            <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
            <xs:element name="renderMultiMedia"
type="StrucDoc.RenderMultiMedia"/>
         </xs:choice>
      </xs:sequence>
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      <xs:attribute name="language" type="xs:NMTOKEN"/>
      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
   </xs:complexType>
   <xs:complexType name="StrucDoc.RenderMultiMedia">
      <xs:sequence>
         <xs:element name="caption" type="StrucDoc.Caption" minOccurs="0"/>
      </xs:sequence>
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use="required"/>
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
   </xs:complexType>
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   <xs:complexType name="StrucDoc.Sup" mixed="true"/>
   <xs:complexType name="StrucDoc.Table">
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         <xs:choice>
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maxOccurs="unbounded"/>
            <xs:element name="colgroup" type="StrucDoc.Colgroup"
minOccurs="0" maxOccurs="unbounded"/>
         </xs:choice>
         <xs:element name="thead" type="StrucDoc.Thead" minOccurs="0"/>
         <xs:element name="tfoot" type="StrucDoc.Tfoot" minOccurs="0"/>
         <xs:element name="tbody" type="StrucDoc.Tbody"
maxOccurs="unbounded"/>
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      <xs:attribute name="frame">
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               <xs:enumeration value="above"/>
               <xs:enumeration value="below"/>
               <xs:enumeration value="hsides"/>
               <xs:enumeration value="lhs"/>
```

```
            <xs:enumeration value="rhs"/>
            <xs:enumeration value="vsides"/>
            <xs:enumeration value="box"/>
            <xs:enumeration value="border"/>
         </xs:restriction>
      </xs:simpleType>
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   <xs:attribute name="rules">
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            <xs:enumeration value="groups"/>
            <xs:enumeration value="rows"/>
            <xs:enumeration value="cols"/>
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   </xs:sequence>
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   <xs:attribute name="language" type="xs:NMTOKEN"/>
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      <xs:simpleType>
         <xs:restriction base="xs:NMTOKEN">
            <xs:enumeration value="left"/>
            <xs:enumeration value="center"/>
            <xs:enumeration value="right"/>
            <xs:enumeration value="justify"/>
            <xs:enumeration value="char"/>
         </xs:restriction>
      </xs:simpleType>
   </xs:attribute>
   <xs:attribute name="char" type="xs:string"/>
   <xs:attribute name="charoff" type="xs:string"/>
   <xs:attribute name="valign">
      <xs:simpleType>
         <xs:restriction base="xs:NMTOKEN">
            <xs:enumeration value="top"/>
            <xs:enumeration value="middle"/>
            <xs:enumeration value="bottom"/>
            <xs:enumeration value="baseline"/>
         </xs:restriction>
      </xs:simpleType>
   </xs:attribute>
</xs:complexType>
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      <xs:element name="sub" type="StrucDoc.Sub"/>
      <xs:element name="sup" type="StrucDoc.Sup"/>
      <xs:element name="br" type="StrucDoc.Br"/>
      <xs:element name="footnote" type="StrucDoc.Footnote"/>
      <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
```

```
         <xs:element name="renderMultiMedia"
type="StrucDoc.RenderMultiMedia"/>
         <xs:element name="paragraph" type="StrucDoc.Paragraph"/>
         <xs:element name="list" type="StrucDoc.List"/>
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      <xs:attribute name="headers" type="xs:IDREFS"/>
      <xs:attribute name="scope">
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               <xs:enumeration value="colgroup"/>
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      <xs:attribute name="colspan" type="xs:string" default="1"/>
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         <xs:simpleType>
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               <xs:enumeration value="char"/>
            </xs:restriction>
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      </xs:attribute>
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      <xs:attribute name="charoff" type="xs:string"/>
      <xs:attribute name="valign">
         <xs:simpleType>
            <xs:restriction base="xs:NMTOKEN">
               <xs:enumeration value="top"/>
               <xs:enumeration value="middle"/>
               <xs:enumeration value="bottom"/>
               <xs:enumeration value="baseline"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
   </xs:complexType>
   <xs:complexType name="StrucDoc.Tfoot">
      <xs:sequence maxOccurs="unbounded">
         <xs:element name="tr" type="StrucDoc.Tr"/>
      </xs:sequence>
      <xs:attribute name="ID" type="xs:ID"/>
      <xs:attribute name="language" type="xs:NMTOKEN"/>
      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
      <xs:attribute name="align">
         <xs:simpleType>
            <xs:restriction base="xs:NMTOKEN">
               <xs:enumeration value="left"/>
               <xs:enumeration value="center"/>
               <xs:enumeration value="right"/>
               <xs:enumeration value="justify"/>
```

```
               <xs:enumeration value="char"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
      <xs:attribute name="char" type="xs:string"/>
      <xs:attribute name="charoff" type="xs:string"/>
      <xs:attribute name="valign">
         <xs:simpleType>
            <xs:restriction base="xs:NMTOKEN">
               <xs:enumeration value="top"/>
               <xs:enumeration value="middle"/>
               <xs:enumeration value="bottom"/>
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   </xs:complexType>
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         <xs:element name="linkHtml" type="StrucDoc.LinkHtml"/>
         <xs:element name="sub" type="StrucDoc.Sub"/>
         <xs:element name="sup" type="StrucDoc.Sup"/>
         <xs:element name="br" type="StrucDoc.Br"/>
         <xs:element name="footnote" type="StrucDoc.Footnote"/>
         <xs:element name="footnoteRef" type="StrucDoc.FootnoteRef"/>
         <xs:element name="renderMultiMedia"
type="StrucDoc.RenderMultiMedia"/>
      </xs:choice>
      <xs:attribute name="ID" type="xs:ID"/>
      <xs:attribute name="language" type="xs:NMTOKEN"/>
      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
      <xs:attribute name="abbr" type="xs:string"/>
      <xs:attribute name="axis" type="xs:string"/>
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      <xs:attribute name="scope">
         <xs:simpleType>
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               <xs:enumeration value="col"/>
               <xs:enumeration value="rowgroup"/>
               <xs:enumeration value="colgroup"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
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            <xs:restriction base="xs:NMTOKEN">
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               <xs:enumeration value="center"/>
               <xs:enumeration value="right"/>
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            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
      <xs:attribute name="char" type="xs:string"/>
      <xs:attribute name="charoff" type="xs:string"/>
      <xs:attribute name="valign">
```

```
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            <xs:restriction base="xs:NMTOKEN">
               <xs:enumeration value="top"/>
               <xs:enumeration value="middle"/>
               <xs:enumeration value="bottom"/>
               <xs:enumeration value="baseline"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
   </xs:complexType>
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      <xs:sequence maxOccurs="unbounded">
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      </xs:sequence>
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
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               <xs:enumeration value="center"/>
               <xs:enumeration value="right"/>
               <xs:enumeration value="justify"/>
               <xs:enumeration value="char"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
      <xs:attribute name="char" type="xs:string"/>
      <xs:attribute name="charoff" type="xs:string"/>
      <xs:attribute name="valign">
         <xs:simpleType>
            <xs:restriction base="xs:NMTOKEN">
               <xs:enumeration value="top"/>
               <xs:enumeration value="middle"/>
               <xs:enumeration value="bottom"/>
               <xs:enumeration value="baseline"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
   </xs:complexType>
   <xs:complexType name="StrucDoc.Tr">
      <xs:choice maxOccurs="unbounded">
         <xs:element name="th" type="StrucDoc.Th"/>
         <xs:element name="td" type="StrucDoc.Td"/>
      </xs:choice>
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      <xs:attribute name="styleCode" type="xs:NMTOKENS"/>
      <xs:attribute name="align">
         <xs:simpleType>
            <xs:restriction base="xs:NMTOKEN">
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               <xs:enumeration value="right"/>
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               <xs:enumeration value="char"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
      <xs:attribute name="char" type="xs:string"/>
```

```
      <xs:attribute name="charoff" type="xs:string"/>
      <xs:attribute name="valign">
         <xs:simpleType>
            <xs:restriction base="xs:NMTOKEN">
               <xs:enumeration value="top"/>
               <xs:enumeration value="middle"/>
               <xs:enumeration value="bottom"/>
               <xs:enumeration value="baseline"/>
            </xs:restriction>
         </xs:simpleType>
      </xs:attribute>
   </xs:complexType>
</xs:schema>
```

C.7 SDTC_Extension.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns="urn:hl7-
org:sdtc"
    xmlns:sdtc="urn:hl7-org:sdtc" targetNamespace="urn:hl7-org:sdtc"
    xmlns:cda="urn:hl7-org:v3" elementFormDefault="qualified">
    <xs:import namespace="urn:hl7-org:v3"
schemaLocation="C32_POCD_MT000040.xsd"/>

    <xs:include
schemaLocation="../../processable/coreschemas/datatypes.xsd"/>

    <xs:complexType name="SdtcAssignedEntity">
        <xs:complexContent>
            <xs:extension base="cda:POCD_MT000040.AssignedEntity">
                <xs:sequence>
                    <xs:element name="patient" type="SdtcPatient"
minOccurs="0"/>
                </xs:sequence>

            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="SdtcRelatedEntity">
        <xs:complexContent>
            <xs:extension base="cda:POCD_MT000040.RelatedEntity">
                <xs:sequence>
                    <xs:element name="patient" type="SdtcPatient"
minOccurs="0"/>
                </xs:sequence>

            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="SdtcAssociatedEntity">
        <xs:complexContent>
            <xs:extension base="cda:POCD_MT000040.AssociatedEntity">
                <xs:sequence>
                    <xs:element name="patient" type="SdtcPatient"
minOccurs="0"/>
                </xs:sequence>

            </xs:extension>
        </xs:complexContent>
```

```
    </xs:complexType>

    <xs:complexType name="SdtcPatient">
        <xs:sequence>
            <xs:element name="id" type="cda:II" minOccurs="1"
maxOccurs="1"/>
        </xs:sequence>
    </xs:complexType>

    <xs:element name="raceCode" type="cda:CE" />
    <xs:element name="birthTime" type="cda:TS" />

</xs:schema>
```

Glossary

BFMC

Namespace for FM2C-generated classes.

BJMD

Namespace for C32 files, routines and classes.

FileMan-to-Class mapper

Prior to version 1.0, the abbreviation stood for FileMan-to-Caché mapper.

Office of Information Technology

The organization within IHS that is responsible for developing and maintaining RPMS and related IT functions.

RPMS Patient Care Component

Refers to functions within RPMS as a clinical data repository, storing visit-related data about a patient.

PCC form

The paper form used in most IHS/Tribal/Urban clinics on which the provider(s) document all data from the patient's visit. Used by data entry staff to enter patient data into RPMS PCC.

PCC+

The RPMS PCC+ software produces automated, customizable PCC forms.

Resource and Patient Management System

A series of integrated software components that includes clinical, administrative, and financial functions.

Software Quality Assurance

The office within the IHS Office of Information Technology responsible for ensuring that the system conforms to RPMS Programming Standards and Conventions.

Taxonomy

In RPMS, a grouping of functionally related data elements, such as ICD codes. For C32, taxonomies will be used to list procedures, test results and other data elements with non-standard data extraction criteria.

TuneTable

A Caché utility class which optimizes subsequent query performance by examining a persistent class' data and setting class selectivity and extent size.

Acronym List

API	Application Programming Interface
CCD	Continuity of Care Document
CDA R2	Clinical Document Architecture Release 2
DTL	Data Transformation Language
EHR	Electronic Health Record
FM2C	FileMan-to-Class mapper
GUI	Graphical User Interface
HIE	Health Information Exchange
HITSP	Healthcare Information Technology Standards Panel
IHS	Indian Health Service
KIDS	Kernel Installation and Distribution System.
NIST	National Institute of Standards and Technology
PCC	RPMS Patient Care Component
PHR	Personal Health record.
RPMS	Resource and Patient Management System
SAC	Standards and Conventions
WS	Web Services
XML	Extensible Markup Language

Contact Information

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Email: support@ihs.gov