EHI Data Export

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Introduction

Drs® Enterprise provides the capability to export Electronic Health Information (EHI) for a single patient as well as for multiple patients in compliance with 170.315(b)(10) EHI Export for the ONC Cures Update. Drs® Enterprise exports the patient's EHI data using the Consolidated Clinical Document Architecture (C-CDA) standard, which is a widely used HL7 format for healthcare information exchange. In addition, stored documents in the patient's chart can be exported.

EHI Data

The EHI will be exported into a C-CDA file containing the patient's data, such as demographics, problems, medications, allergies, etc. in compliance with the USCDv1 standard. The C-CDA is saved in an XML file in a computable format, called **account_ccda.xml**.

The specifications for the C-CDA Implementation Guide and standards can be viewed and downloaded from the official HL7.org website:

- https://www.hl7.org/implement/standards/product_brief.cfm?product_id=492
- https://www.hl7.org/ccdasearch/pdfs/CCDA_Volume_One.pdf
- https://www.hl7.org/ccdasearch/pdfs/Companion_Guide.pdf

C-CDA Online navigation tool for C-CDA 2.1:

- https://www.hl7.org/ccdasearch/

Current official published version with errata:

- https://www.hl7.org/documentcenter/public/standards/dstu/CDAR2_IG_CCDA_CLINNOTES_R1_DSTU2.1_2015AUG_2022Sepwith_errata.zip

Data Export Directories

The exported data is saved in folders using the patient's Account ID in a hexadecimal folder structure. The folders are named using 2 hexadecimal (HEX) numbers (00 to FF) and they are organized in 4 folder levels using the significant digits leading by zeros to build the folder path. For example, the Account ID 200 is equal to the HEX number C8, and the folder path will be 00\00\00\C8. Use a decimal-to-hexadecimal converter to convert the Account ID to get the hexadecimal folder path, or vice versa to convert the folder path into the decimal number to get the Account ID.

Another example, for Account ID **9999** the HEX number will be **270F** and the folder path will be: C:\<data_export_folder_name>**\00\00\27\0F**

```
C:\<data_export_folder_name>
├── 00
|    └──00
|        └─ 27
|            └─ 0F
|                ├──account_ccda.xml
|                └── …
└── Readme.txt
```

The **Readme.txt** includes the publicly accessible hyperlink to get this document.

The **export_xml** folder will be created if there are errors during the export. For each export session, it will create an XML file called: errors_< Session_ID>.xml.

Files

There could be multiple exported files per account depending on the options selected during the export and the available data stored in the Drs Enterprise.

File Name	Description
account_ccda.xml	This XML file is the C-CDA containing the EHI data. See the EHI Data section for more details.
account_tasks.xml	This XML file contains the information for tasks linked to the account. See the <tasks> element for more information.
Account_U.img	This file is the patient's picture in the account if it's stored in the EHR.
<Document_ID>.<ext>	The document(s) are listed with the Document ID in the file name and the file type <ext> can be PDF, XML, TIF, RTF, or any other file type depending on the source.
<Document_ID>_info.xml	This XML file contains the information for the exported document. The file name matches with the Document ID.

<Document_ID>_info.xml File

The <Document_ID>_info.xml file contains the following elements:

XML Elements for <Document>

It contains the metadata information for the document.

Name	Type	Description	Optional
Document_id	uint64	Document ID	No
file_name	Text	Filename	No
file_name_raw	Text	Filename for raw data. Example hl7	Yes
Secured	Text	Secured information	Yes
doc_name	Text	Preferred Document description	No
last_modified_date	Date time	Last Modified Time	No
last_modified_by	Text	Last Modified User	No
document_folder_desc	Text	Folder Document Located	No
created_by	Text	Created User	No
created_date	Date	Created Date	No
user_string	Text	User Defined Description	Yes
user_date	Date	User Defined Date	Yes
user_long	Int32	User Defined Number	Yes
description	Text	Description	Yes
description_long	Text	Long Description	Yes

Example:

```
<Document>
  <Document_id>939</Document_id>
  <file_name>939.pdf</file_name>
  <doc_name>Vitals</doc_name>
  <last_modified_date>2022-04-21 11:35:14</last_modified_date>
  <last_modified_by>1-USER</last_modified_by>
  <document_folder_desc>Progress Notes</document_folder_desc>
  <created_by>1-USER</created_by>
  <created_date>2022-04-21</created_date>
  <user_date>2022-04-21</user_date>
  <description>Vitals</description>
</Document>
```

XML Elements for <office_notes>

This information is present if the document has office notes linked to it.

Name	Type	Description	Optional
note_id	uint64	Note ID	No
account_id	uint64	Account ID	No
doc_id	uint64	Document ID	No
notes	Text	Office note	No
type_id	Int32	Type ID	No
type_name	Text	Type Name	No
created_date	Date Time	Created Date	No
created_by	Text	Created By	No
last_modified_date	Date Time	Last Modified Date	No
last_modified_by	Text	Last Modified By	No
deleted	Boolean	If deleted is equal to True	No
uniq	Boolean	If a unique note per document is equal to a True	No
priority	Int32	0-10	No

Example:

```
<office_notes>
 <office_note>
  <note_id>55</note_id>
  <account_id>999</account_id>
  <doc_id>481</doc_id>
  <notes>This is an internal office note</notes>
  <type_id>1</type_id>
  <type_name>INTERNAL OFFICE NOTE</type_name>
  <created_date>2022-10-24 18:12:36</created_date>
  <created_by>1-USER</created_by>
  <last_modified_date>2022-10-24 18:12:36</last_modified_date>
  <last_modified_by>1-USER</last_modified_by>
  <deleted>False</deleted>
  <uniq>False</uniq>
  <priority>1</priority>
 </office_note>
</office_notes>
```

XML Elements for <tasks>

This information is present if the document has tasks linked to it. Also, this element is used in the **account_tasks.xml** files.

Name	Type	Description	Optional
task_id	uInt64	Task ID	No
task_priority_desc	Text	Task Priority	No
task_type_desc	Text	Task Type: Account or Document	No
task_desc	Text	Task Description	No
doc_id	uInt64	Document ID. 0 = account task	No
pageno	uint32	Number of pages if provided	No
account_id	uInt64	Account ID	No
trview	Date Time	When the task was viewed	No
tfinished	Date Time	When the task was finished	No
user_tasked	uint32	User ID for the tasked User	No
ttasked	Date Time	When the task was sent/tasked	No
user_id	uint32	User ID	No
from_user	Text	User Name from	No
to_user	Text	User Name to	No

Example for the account_tasks.xml:

```
<Account>
 <tasks>
  <task>
   <task_id>29</task_id>
   <task_priority_desc>Normal</task_priority_desc>
   <task_type_desc>Account</task_type_desc>
   <task_desc>New appointment</task_desc>
   <doc_id>0</doc_id>
   <pageno>0</pageno>
   <account_id>999</account_id>
   <trview>1899-12-30 00:00:00</trview>
   <tfinished>1899-12-30 00:00:00</tfinished>
   <user_tasked>4</user_tasked>
   <ttasked>2022-10-24 18:02:41</ttasked>
   <user_id>1</user_id>
   <from_user>user</from_user>
   <to_user>Doctor</to_user>
  </task>
 </tasks>
</Account>
```

XML Elements for <doc_data>

This information is present if the document contains the Drs Data Lookup.

Name	Type	Description	Optional
drs_data_lookup_id	uInt64	Internal ID for the Drs Data Lookup	No
field_name	Text	Field Name	No
convert_type	Enum	Convert Type	No
TFieldType	Enum	Field Type	No
field_value	Text	Field Value	No
convert_value	Text	Convert Value	No
user_defined	Boolean	User Defined	No
loinc_code	Text	LOINC Code	Yes

Example:

```
<doc_datas>
 <doc_data>434
  <drs_data_lookup_id>106
   <field_name>Body mass index (BMI) [Ratio]</field_name>
   <convert_type>cv_none</convert_type>
   <TFieldType>ftFMTBcd</TFieldType>
   <field_value>32.11</field_value>
   <convert_value>32.11</convert_value>
   <user_defined>False</user_defined>
   <loinc_code>39156-5
    <loinc_description>Body mass index (BMI) [Ratio]</loinc_description>
   </loinc_code>
  </drs_data_lookup_id>
 </doc_data>
</doc_datas>
```

XML Element for <loinc_code>

This element is used to display the LOINC code description.

Name	Type	Description	Optional
loinc_description	Text	Description of the LOINC code	Yes

Example:

```
   <loinc_code>39156-5
    <loinc_description>Body mass index (BMI) [Ratio]</loinc_description>
   </loinc_code>
```

XML Element for <convert_type> Enumerator

This enumerator is used to identify the conversion type for the field value.

Type	Description
cv_none	No conversion
cv_inches	Inches
cv_pounds	Pounds
cv_Centimeters	Centimeters
cv_Celsius	Celsius
cv_Fahrenheit	Fahrenheit
cv_Celsius_Fahrenheit	Celsius_Fahrenheit
cv_snomed_enum	N/A
cv_Milimeters	Millimeters
cv_microns	Microns
cv_question_enum	N/A
cv_Kilogram	Kilogram

Example:

```
<convert_type>cv_none</convert_type>
```

XML Element for <TFieldType> Enumerator

This enumerator is used to identify the field type.

Type	Description
ftUnknown	Unknown
ftString	String
ftSmallint	Small Integer
ftInteger	Integer
ftWord	Word
ftBoolean	Boolean
ftFloat	Float
ftWideMemo	WideMemo
ftFMTBcd	FMTBcd
ftDate	Date
ftTime	Time
ftDateTime	DateTime
ftBytes	Bytes
ftWideString	WideString
ftLargeint	Large Integer
ftFixedWideChar	FixedWideChar
ftLongWord	LongWord
ftShortint	Short Integer

ftByte	Byte
ftExtended	Extended

Example:

```
<TFieldType>ftFMTBcd</TFieldType>
```

Faxes

Directories

The faxes are exported into directories sorted into Years and Months. Each Month's folder could contain several files for the Inbox and Outbox faxes.

For example, faxes\2023\July

Files

File Name	Description
Fax_inbox.xml	The XML information for the faxes in the inbox
Fax_outbox.xml	The XML information for the faxes in the outbox
<fax_id>_Fax_Inbox.tif	The inbox fax file listed by the Fax ID in TIF format
<fax_id>_Fax_Outbox.tif	The outbox file listed by the Fax ID in TIF format

Fax_inbox.xml File

The fax_inbox.xml file contains the following elements:

Name	Type	Description	Optional
fax_inbox_id	uint64	Unique ID for the fax in the inbox	Yes
file_name	Text	File name	Yes
access_id	Int32	Fax Account ID for the organization	Yes
faxdetailsid	uint64	Fax Details ID	Yes
receive_status	Text	Receive status	Yes
pages	Int32	Number of pages	Yes
fax_date	Date Time	Fax Date	Yes
epochtime	int64	Unix time	Yes
callerid	Text	Caller ID	Yes
remoteid	Text	Remote ID	Yes

Fax_outbox.xml File

The fax_outbox.xml file contains the following elements:

Name	Type	Description	Optional
fax_outbox_id	uint64	Unique ID for the fax in the outbox	Yes
file_name	Text	File name	Yes
access_id	Int32	Fax Account ID for the organization	Yes
faxdetailsid	uint64	Fax Details ID	Yes
faxnumber	Text	Fax number	Yes
subject	Text	Subject	Yes
sent_status	Text	Sent status	Yes
pages	Int32	Number of pages	Yes
fax_date	Date Time	Fax Date	Yes
epochtime	int64	Unix time	Yes