Orchestra eHealth Suite

RELEASE NOTES

OES / **RELEASE 20.1.1**

< E190001>

MODULE 20.1.1: Audit Repository
MODULE 20.1.1: Cross Community Connect
MODULE 20.1.1: DICOM Routing
MODULE 20.1.1: IHE Clients
MODULE 20.1.1: Terminology Server

Product	Orchestra eHealth Suite
Orchestra ESB Basis Version	Based on *Orchestra 4.8.1.1-HOTFIX-XT*
Version	**Release 20.1.1**
Datum	27.04.2020

CONTENT

The purpose of this document is to summarize the added scope of the modules Audit Repository, Cross Community Connect, DICOM Routing, IHE Clients, Terminology Server as part of the "Orchestra eHealth Suite" in Version R 20.1.1.

Furthermore, this document identifies new features , changes and fixes in this Release Version of the modules.

TARGET GROUP

This document is intended as release information for experts in health care information technology, including solution architects, project managers, consultants as well as developers and administrators.

The release 20.1.1 enhances the functionality of the previous released Orchestra Healthcare Edition Version 19.2.1. The following document gives an overview about the new added features.

Orchestra eHealth Suite
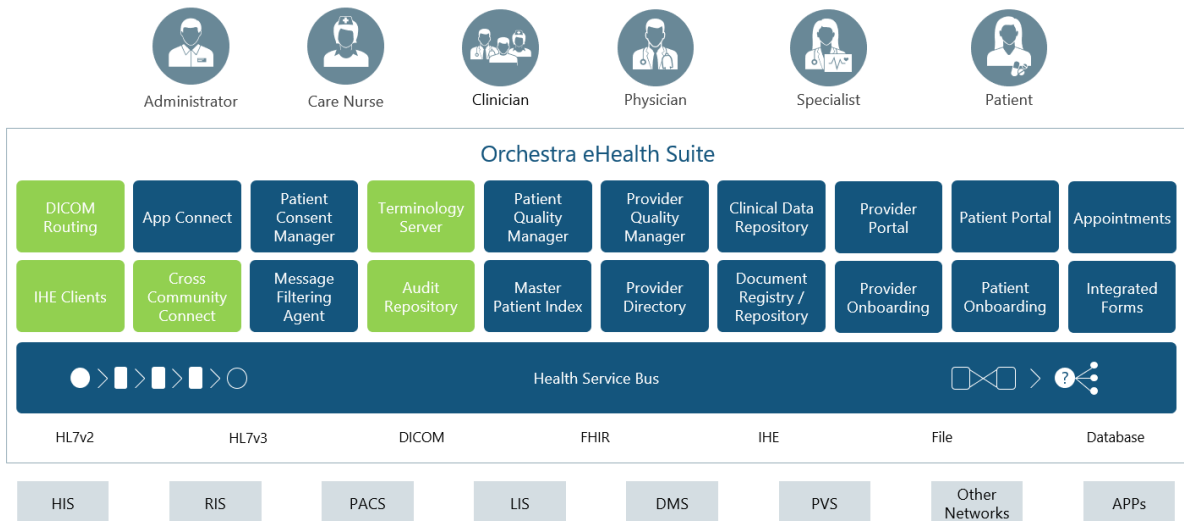
As software solution of the healthcare portfolio management, the x-tention group offers the Orchestra eHealth Suite (OES). The Suite offers variouse integrated intraoperable modules. In this document the following modules are considered:

- Audit Repository
- Cross Community Connect
- DICOM Routing
- IHE Clients
- Terminology Server

1. Release Changes

1.1 Features and Functionalities

1.1.1 Audit Repository
[OHE-1816 & OHE-1884 & OHE-1823]

- Logging enhancement: Errors and Error Messages are persisted in the ARR Reporting Module Table
- Audit messages can be saved when the source hostname is unknown

1.1.2 Cross Community Connect
[OHE-2063 & OHE-1978 & OHE-1877]

- RAD-75 XCA-I Initiating Imaging Gateway
- RAD-75 XCA-I Responding Imaging Gateway
- RAD-69 Imaging Document Consumer

1.1.3 DICOM Routing
[OHE-1880 & OHE-2116 & OHE-2108 & OHE-2111& OHE-2114 & OHE-2018& OHE-2007 & OHE-1867 & OHE-1864]

- Channels - journaling of DICOM messages
- C-MOVE&C-FIND have the option to send to dynamic SCP endpoints
- DIMSE Channel add IAN SCP
- Series Mode is available in Dicom Router
- DIMSE & DICOM Channels: enable tls protocols (e.g. TLSv1.2)

1.1.4 IHE Clients
[OHE-1997 & OHE-2091 & OHE-2092 & OHE-2120 & OHE-2050 & OHE-2096 & OHE-2037 & OHE-2045 & OHE-2130]

- Usage of a proxy is possible for IHE transactions (analog Environment Entry URL for SOAP)
- „Audit Enterprise Site ID" is configurable with a global variable
- Logging of Audit Trails Start/Stop is configurable
- IHE Clients are be able to register documents (optional parameter flag isRegisterOnly to methods where documents and/or folders will be added)
- Additional query parameter "XDSDocumentEntry.formatCode" available for GetAllQuery
- TSL error when using ATNA TLS without other channel TLS
- Orchestra Journaling enabled for IHE Client messages
- Document getSize and getHash methods added
- The ability to switch between "ObjectRef" and "LeafClass" for query transactions is given
- Add Folder - Folderuuid may be set explicitly (not autogenerated) with document.setUUID
- IHE Clients - Method getSubmissionSets

1.1.5 Terminology Server
[OHE-2064 & OHE-2084 & OHE-1494 & OHE-1496 & OHE-1497 & OHE-2035, & OHE-1495 & OHE-2129 & 2123 & OHE-2124 & OHE-2109]

- Major design enhancements of the UI, including:
  - Upgrade to ZK v8.5
  - Introducing new navigation
  - Introduction of new look & feel
  - Reworked import workflow
  - Added dynamic version indication for all modules
  - Finalized the translations to switch the UI language
- Web service that returns all associations belonging to one/two catalogues
- Ability to edit existing associations in the AssociationEditor
- Import & export methods for associations in the AssociationEditor
- Rework of import & exports (ClaML 2.0, CSV, SVS – code systems & value sets)
- Improved session handling
- Upgrade Hibernate to >= 5.2.17 and use typesafe implementation of createQuery
- Replacement of native MySQL functions within queries
- Support for MSSQL
- New and extensive separate documentation
- Introduced the collaboration environment

1.1.6 DB-Support
[OHE-1604]

- Make Hibernate dialect configurable in Component Configurations
- Provide full utf8 Support in TermServer

2. Quality Assurance

The modules were tested with automatic tests and manual test cases. The software is based on an IHE-architecture under usage of different industry standards.
The verification process included relevant IHE-workflows and guarantees a solid level of functionality.

The usability and functional correctness was tested and validated by the criteria of the IHE guidelines and under usage of different toolkits (e.g. NIS testing tool, IHE XDS-Toolkit).

The list below contains some minor issues discovered during the testing and quality assurance phase of the product.

2.1   Solved Issue

The following known issues from release 19.2.1 are solved with the version 20.1.1:

OHE-2107	Responding Imaging Gateway - soap action rework & mtom handling
OHE-2106	Initiating Imaging Gateway - Partial Success message not correctly sent back
OHE-2101	C-FIND search based on file does not pass search fields
OHE-2100	XCA-I RAD-75 transfer syntax list is missing
OHE-2095	PDQv3-Client throws error by parsing correct response
OHE-2094	MPPS Router & invalid encoding
OHE-2090	C-FIND:PORT and AET are not optional
OHE-2088	Dicom Router max number of Instances in PM + Attribute Filter
OHE-2085	MHD: Event codes overriden at ITI-67 query response
OHE-2060	TermBrowser: Associations editor - codes not always listed
OHE-2052	Valueset CSV Import doesn´t work: set cannot be created;
OHE-2107	Responding Imaging Gateway - soap action rework & mtom handling
OHE-2106	Initiating Imaging Gateway - Partial Success message not correctly sent back
OHE-2101	C-FIND search based on file does not pass search fields
OHE-2100	XCA-I RAD-75 transfer syntax list is missing
OHE-2095	PDQv3-Client throws error by parsing correct response
OHE-2094	MPPS Router & invalid encoding
OHE-2106	Initiating Imaging Gateway - Partial Success message not correctly sent back
OHE-2101	C-FIND search based on file does not pass search fields
OHE-2100	XCA-I RAD-75 transfer syntax list is missing
OHE-2095	PDQv3-Client throws error by parsing correct response
OHE-2094	MPPS Router & invalid encoding
OHE-2122	Concepts should only be proposed from the main view
OHE-2113	Cannot view terminology codes from different pages
OHE-2112	Collaboration user cannot access TermBrowser at all if deactivated
OHE-2099	ClaML import ignores the <ModifiedBy> element
OHE-2097	Fix the user activation process for the collaboration environment
OHE-2081	Users can see information from other users
OHE-2061	Associations editor - associations between subconcepts not shown
OHE-2057	Codesystem CSV Import doesn´t transfer the OID into the database
OHE-2056	Aborting a running Valueset import leads to an error
OHE-2055	Valueset SVS Import into existing Valueset, from tab "Value Set (ELGA_SVS) doesn´t work
OHE-2054	Valueset SVS Import from tab "Value Set (ELGA_SVS") doesn´t work
OHE-2034	TermAdmin: Multiple code systems or value sets with the same name can be added

OHE-2020	*TermAdmin: The 'CDA Domäne' checkbox throws exception*
OHE-2019	*TermBrowser: Search by preferred and not preferred terms throws exception*
OHE-2006	*TermBrowser: Creating a code system with an already existing name doesn't show any warnings*
OHE-1980	*Concept not shown when imported via webservices*
OHE-1908	*Database tables are altered based on database version*
OHE-2047	*System Parameter with missing values is added to DB but not shown in UI*
OHE-2013	*TermBrowser: Value Sets tab doesn't exist in the main window*

3. Known Issues

OHE-1673	TermServer ExportCSV exports metadata parameters indeterministically
OHE-1695	ImportCSV in TermServer does not create parent associations
OHE-1908	Database tables are altered based on database version
OHE-1650	PDQ-Client-Channel-Config and PIX-Client-Channel-Config conflict with each other

The following functional (required) and quality (optional) set of issues was recommended to reach the state of a solid release. The published Release Candidate succeeded as final Release in terms of the quality management and the recommended set of issues was successfully tested: [OHE-2123&#OHE-2122&#OHE-2113&#OHE-2112&#OHE-2107&#OHE-2106&#OHE-2101&#OHE-2100&#OHE-2099&#OHE-2097&#OHE-2095&#OHE-2094&#OHE-2090&#OHE-2088&#OHE-2085&#OHE-2081&#OHE-2061&#OHE-2060&#OHE-2057&#OHE-2056&#OHE-2055&#OHE-2054&#OHE-2052&#OHE-2047&#OHE-2034&#OHE-2021&#OHE-2020&#OHE-2019&#OHE-2017&#OHE-2016&#OHE-2014&#OHE-2013&#OHE-2010&#OHE-2009&#OHE-2008&#OHE-2006&#OHE-2003&#OHE-2002&#OHE-1999&#OHE-1998&#OHE-1996&#OHE-1984&#OHE-1980&#OHE-1910&#OHE-1909&#OHE-1908&#OHE-1907&#OHE-1904&#OHE-1903&#OHE-1891&#OHE-1889&#OHE-1888&#OHE-1887&#OHE-1886&#OHE-1875&#OHE-1874&#OHE-1869&#OHE-1863&#OHE-1862&#OHE-1861&#OHE-1860&#OHE-1859&#OHE-1858&#OHE-1855&#OHE-1853&#OHE-1845&#OHE-1840&#OHE-1835&#OHE-1834&#OHE-1833&#OHE-1831&#OHE-1830&#OHE-1827&#OHE-1826&#OHE-1825&#OHE-1823&#OHE-1822&#OHE-1821&#OHE-1820&#OHE-1817&#OHE-1815&#OHE-1785&#OHE-1765&#OHE-1502&#OHE-1501&#OHE-1500]

4. Compliancy Tests

4.1 IHE - Integrating the Healthcare Enterprise

The product has successfully participated at the last European IHE Connectathon and proved the compliancy with given IHE-profiles as well as interoperability with various products from vendors in the healthcare context. A detailed list of supported profiles is given in the IHE Integration Statement;

4.2 EFAv2.0 Consumer proof of conformity

- EFAv2.0 Member System
- EFAv2.0 Context Manager

4.3 Base of EPD-Box (verification at CH-Projectathons)

- patient data management
- document exchange
- security & authentication
- query to regional / supraregional communities
- communication with central services

5. Third-party Credits

The following libs are used for the healthcare specific parts of the Orchestra Healthcare Edition. The list excludes all directly in Orchestra Base used third party components.

Assimilable Terminology Server Service:
```
FHDortmund:        Termserver Version 2.1        - Apache License 2.0
```

Access Control Handling:
```
WSO2:              Balana Version 1.1.3          - Apache License 2.0
```

DICOM Router Handling:
```
dcm4che:           dcm4che Version 5.15.0        - Mozilla Public License version 1.1
```

DIMSE Handling:
```
dcm4che:           dcm4che Version 5.15.0        - Mozilla Public License version 1.1
```

The full list of artifacts is presented in the document "ArtifactDictionary 20.1.1".

6. Requirements

6.1.1 Server Requirements

The usage of a virtual environment (VM ware) must be given. The following system requirements can be understood as recommended requirements in the context of the modules. The actual memory requirements vary in the context of the processed IHE data according to medical specialty areas, data throughput, and log depth.

OS	CentOS 7
CPUs (per instance)	12+ cores (for Cross Community Connect) 8 cores (for DICOM Router) 8 cores (for IHE Clients) 8 cores (for Terminology Server) 12+ cores (for Audit Repository)
RAM	12+ GB (for Cross Community Connect) 12 GB (for DICOM Router) 8 GB (for IHE Clients) 12+ GB (for Terminology Server) 12+ GB (for Audit Repository)
storage	Following partition layout is recommended: hd 1: OS hd2: 25 GB – Orchestra application hd 3: 45 GB – Orchestra system DB (basing on log keep: 30 days) hd 4: 90 GB DB Table Data hd 5: 30 GB DB Logs hd 6: 50 GB Orchestra LTA hd 7: 20 GB Share for daily journal files hd 8 (for DICOM Router): high performance SSD (base setup 50GB) hd 9 (for Terminology Server): 30GB + 2GB per catalog In addition, the following calculation is recommended as the basis for IHE data persistence: - ATNA-log: 45 KB (per actor transaction) - DICOM: cache according to the local image-load (times max-receiving endpoints times 5) *general remark: Orchestra Health Service Bus and the Orchestra Health Record should be hosted on two independent instances; another separation depending on the logical system architecture (separation of DICOM Router & Service Bus; separation of Term-Server and Health Record; separation of different Record Actors; etc.) is recommended;*
DB	- MySQL Database 5.7(licenses not included); - MSSQL 2016 Database (licenses not included); High available databases are strongly recommended. Percona Xtra DB Cluster 5.7 using a dedicated Server (VM) each with 32 GB RAM, 12 high performance core CPUs.
3d party apps & JDK	- default linux package; Tomcat 7 (licenses not included); - Java 8 Oracle (licenses not included); - Amazon Corretto OpenJDK 8 (licenses not included);