Enovation XDS

Bridge

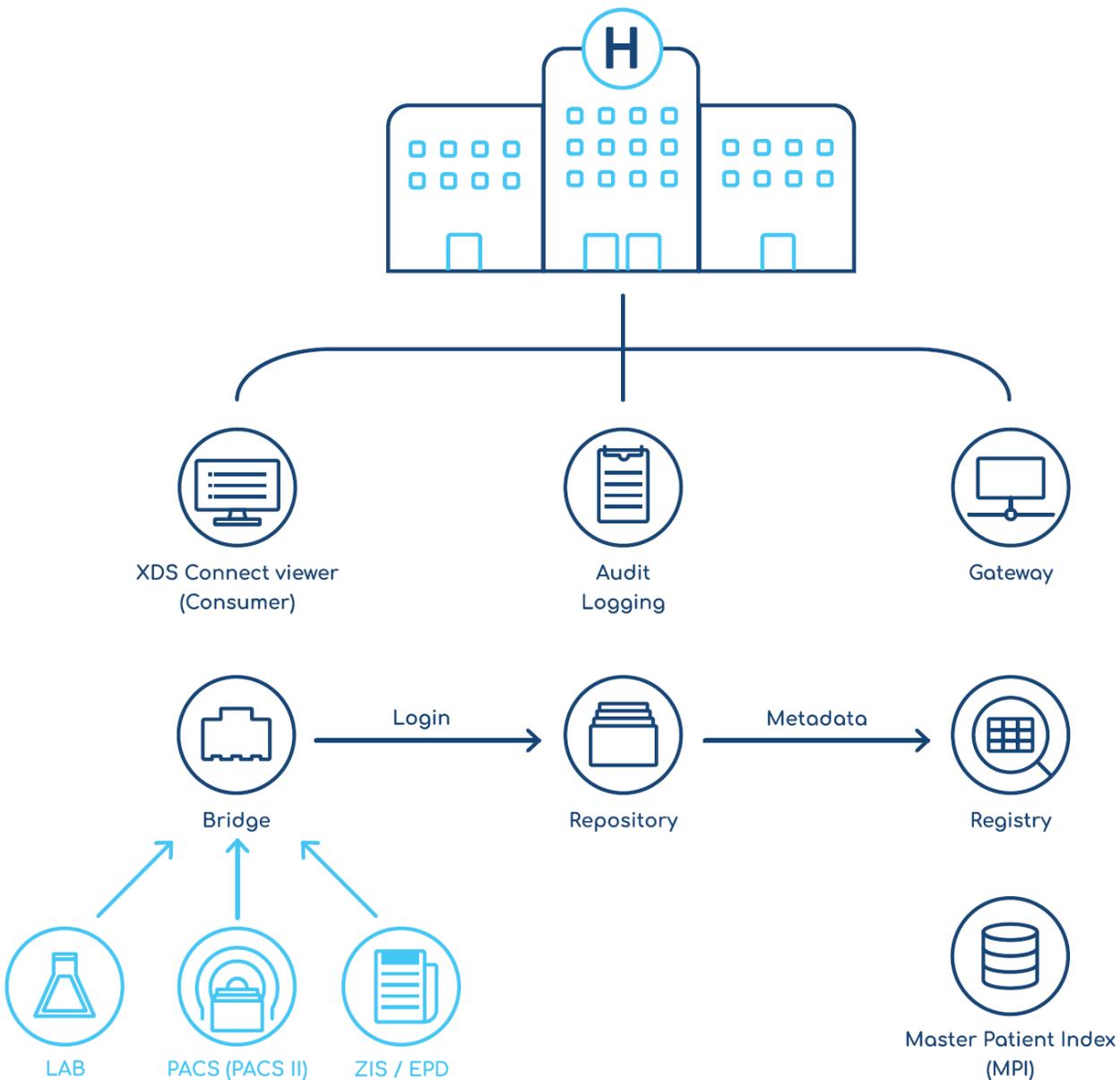Enables interoperability between your health information systems

Enovation XDS Bridge

The concept of interoperability is growing in significance within the healthcare market. Collaboration and the efficient exchange of healthcare information is essential when it comes to the provision of effective care. However, healthcare organisations still exchange medical imaging information with other healthcare organisations via CD/DVD. This is unsafe, costly and not in accordance with uniform standards, all of which can lead to errors. What if we could help healthcare organisations simplify the exchange of this healthcare information? This is possible with Enovation XDS Bridge.

Enovation has developed its own adaptor within the Enovation XDS suite to enable access to source systems for XDS architecture and data flow. The adapter is called Enovation XDS Bridge and is IHE certified on IHE Connectathons. Enovation XDS Bridge ensures that non-IHE-compliant systems can still adhere to the IHE-standards.

How does it work?

By using international (open) standards, systems from different suppliers can be connected to XDS environments. This is possible as long as these suppliers also support the IHE profiles. If the system is not compliant, Enovation XDS Bridge can offer a solution.

Unlocking PACS as XDS-I Source

Sharing DICOM images from the Picture Archiving and Communication System (PACS) or Vendor Neutral Archive (VNA) is possible through Enovation XDS Bridge via several scenarios: by way of a direct push, a notification or a report. The imaging tests are then logged in the XDS-I environment. To this end, the following IHE profiles are used:

○ XDS-I

○ XUA

○ ATNA

○ CT

The metadata required for successful logging in an XDS-I environment are configured in Enovation XDS Bridge with the use of DICOM tags or standard values.
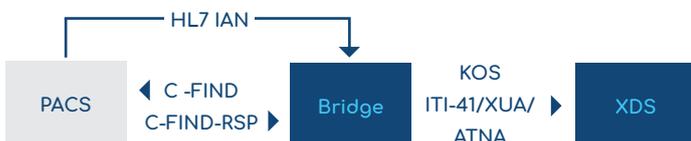
Via a push to the adapter from the PACS

The images are selected, with the Enovation XDS Bridge AE title as the target destination. As soon as the images are being sent, Enovation XDS Bridge receives a C-STORE and the images are transmitted into DICOM format. The adapter is able to place these DICOM files in its cache and create a DICOM KOS object. This KOS object contains links to the images from the PACS.

PACS	C STORE ▶	Bridge	KOS ITI-41/XUA/ ▶ ATNA	XDS

Via a notification

A modality logs imaging tests in the PACS, and a Instance Availability Notification (IAN) is sent. The imaging test is retrieved from the PACS on the basis of this HL7 IAN message.

PACS	◀ C -FIND C-FIND-RSP ▶	Bridge	KOS ITI-41/XUA/ ▶ ATNA	XDS

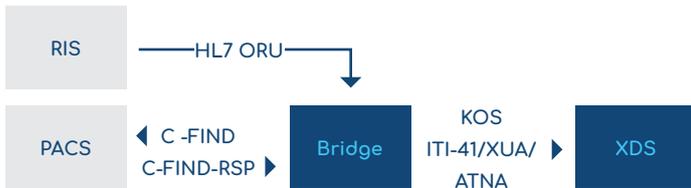*HL7 IAN (arrow from PACS to Bridge)*

If required, Enovation XDS Bridge can retrieve the imaging tests from the PACS in DICOM format using a C-MOVE, as long as the HL7 IAN message contains a studyInstanceUID. The advantage here is that the cache functionality can be utilised.
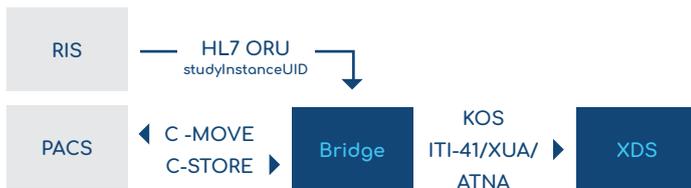
Unlocking PACS as XDS-I Source

From a report

A report of the imaging test is sent to the ZIS/EPD from the RIS. This often involves a communication server that can branch the message off to Enovation XDS Bridge. The report contains an accessionNumber or a studyInstanceUID for the imaging test within the PACS.

If the studyInstanceUID is available, a C-MOVE can be sent to the PACS to retrieve the imaging tests in DICOM format.

If a patient identifier is present in the HL7 message but not in the PACS, there is an option to use the patient identifier from the HL7 message in the transaction to the XDS-I environment.

Retrieving images

The DICOM images stay with the source within the XDS-I environments. As soon as an external party has retrieved the KOS object from the XDS-I environment, it will request the images from the source. Enovation XDS Bridge processes these IHE XDS-I transactions. The imaging tests are then retrieved from the Enovation XDS Bridge cache or from the PACS via DICOM transactions.

Unlocking Viewer as XDS-I Consumer

There are certain client requirements within the current XDS-I environments. For authorisation, the client must send more information than described in the XDS-I profile. Additional profiles such as IHE XUA are made compulsory. By using Enovation XDS Bridge, a viewer can connect to an XDS-I environment without it being invoked from another application.

Functionalities:
○ Transmitting user identity via IHE XUA
○ Securing connection to XDS environment by way of TLS
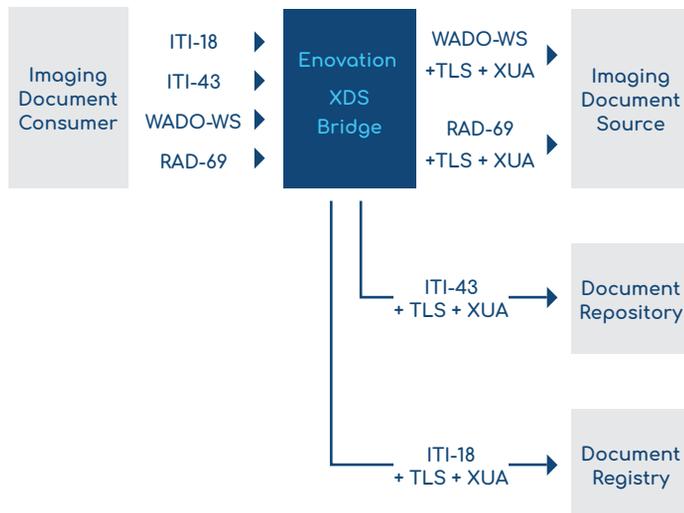
Retrieving documents
The following transactions are supported for retrieval of the documents:
○ ITI-18
○ ITI-43

Retrieving images
In addition, the following transactions are supported for retrieval of images:
○ WADO-WS
○ RAD-69

```
Imaging              ITI-18                WADO-WS          Imaging
Document             ITI-43     Enovation  +TLS + XUA       Document
Consumer             WADO-WS    XDS                         Source
                     RAD-69     Bridge     RAD-69
                                           +TLS + XUA

                                ITI-43                      Document
                                + TLS + XUA                 Repository

                                ITI-18                      Document
                                + TLS + XUA                 Registry
```

Adding personal information to SAML token

It is possible to enrich the SAML token (for XUA) with personal information (for example, a user ID or user role) by adding this information via the consumer to the ITI transaction call.

Unlocking XIS as XDS Source

Source systems such as a lab system, radiology system or EPD that produces documents instead of images can also be unlocked via Enovation XDS Bridge.

Depending on the situation, the Enovation XDS Bridge can add TLS and a SAML token to an ITI-41 (SOAP) transaction that is initi-ated by the XIS. Another option is for the XIS to log the document via a REST API. In addition, Enovation XDS Bridge generates an ATNA notification for the Audit Record Repository.

```
                    IHE ATNA  ──────►   XDS audit Record
                  ┌───────────────►      Repository
                  │
  ┌─────┐  ITI-41 │  ┌────────┐ ITI-41 met XUA ►  ┌──────────┐
  │ XIS │  of REST ► │ Bridge │                   │   XDS    │
  └─────┘           └────────┘                    │Repository│
                                                  └──────────┘
```

The advantages

Time-saving

Performance optimisation through images cache.

Accessible

Requires no adaptations to existing systems.

Safe

Enovation XDS Bridge creates a safe connection to XDS environments.

IHE compliant

Seamless integration with XDS environments through the use of IHE profiles.

Improved collaboration

Supports safe communication between healthcare organisations and the healthcare chain.

Would you like more information?

Would you like to find out how Enovation XDS Bridge could support your organisation? Please contact us to discuss your requirements -without obligation - or read about the possibilities on www.enovationgroup.com/enovation-xds-bridge

enovation®
care to connect

Enovation has been the party for communication in healthcare for over 35 years now. The company makes it possible to exchange information within and between healthcare institutions and between healthcare institutions and patients. Enovation uses its own innovative SaaS solutions, supplemented with solutions from partners. The solutions are based on (international) standards and can be seamlessly integrated into existing processes and information systems of healthcare institutions.