Ringholm offers training courses related to healthcare interoperability standards such as HL7, IHE and DICOM.

We are specialised in the provision of training courses, both
• in-company/on-site training courses, as well as
• white label training courses sold in cooperation with marketing partners.
## Training Courses

### An overview of healthcare interoperability standards - 0.5 or 1 day

This training course provides an overview of, and shows the relationships between, commonly used interoperability standards (e.g. CDA, DICOM, HL7 v2, HL7v3, FHIR, CDA, IHE XDS, SNOMED). The training course has two variants: a full day version for a wide audience, as well as half-day or two-hour version aimed at managers/executives.

The target audience includes project managers, clinicians and architects, as well as a more technical audience (e.g. software developers) for whom this overview acts as an introduction to interoperability standards in healthcare.

### HL7 version 2 - 2 days

This training course provides in-depth knowledge about the HL7 version 2 standard, inclusive of a brief overview of the HL7 version 2 based IHE Radiology/Laboratory profiles. HL7 version 2 is the most commonly used interoperability standard within a hospital environment.

The target audience includes those involved with the design, development, implementation, deployment and support of systems that use (or will use) the HL7 Version 2 standard.

### HL7 version 3 Messaging - 1 day / CDA - 1 day

These two training courses provide an overview of the HL7 version 3 standard, whereby the first training course focuses on the use of HL7 v3 messaging, and the second on the use of HL7 v3 e-documents, a.k.a. CDA (Clinical Document Architecture). HL7 version 3 and CDA are mostly used to support interoperability workflows between healthcare organisations.

The target audience includes those that require an introduction to the HL7 Version 3 and CDA standards, for those who need to implement it, and for those who need to understand how it will impact their system integration strategy.

### FHIR Overview - 1 day / FHIR Advanced - 2 days

These two training courses each provide hands-on experience with the HL7 FHIR standard. The FHIR Overview training course covers the core components of the standard; the Advanced training course covers topics such as the use of toolkits and server/client implementation best practices. FHIR is aimed at the development of apps and as serving as an Open API to unlock data contained in data silos.

The target audience includes those involved with the design, development, implementation, deployment and support of systems that use (or will use) the HL7 FHIR standard. The FHIR Advanced training course is primarily aimed at FHIR software implementers.

### IHE - 2 days / XDS Advanced - 2 days

These two training courses provide an overview of the IHE XDS profile family, regional/national information exchanges, and their relationships with Enterprise Content Management (ECM) and metadata standards. The XDS Advanced hands-on training course covers the implementation and testing of XDS/XDS-I/XCA transactions. The IHE XDS Profile is the most commonly used specification to share DICOM images and documents between healthcare provider organisations.

The target audience consists of those involved with the design, development, implementation, deployment and support of systems that use (or will use) the IHE XDS or IHE XDS-I standard, and of those working on an architecture for the exchange of documents (images as well as non-images) between departments and between organisations, in support of cross-organisational workflows.

### IHE Overview - 1 day

This training course provides an overview of the IHE methodology and the resulting IHE workflow profiles. Each profile standardizes a particular workflow and describes how existing base standards (such as HL7 v2 or DICOM) should be used to support that workflow. IHE workflow profiles are mainly used for the exchange of diagnostic imaging (e.g. in Radiology) and for the exchange of documents between organisations (XDS).

The target audience includes project managers, clinicians and architects, as well as a more technical audience (e.g. software developers) for whom this overview acts as an introduction to the use of IHE specifications in healthcare.

### DICOM Overview - 1 day / Advanced - 2 days

The DICOM Overview training course covers the characteristic elements of the DICOM standard, including conformance statements. The hands-on DICOM Advanced training course covers troubleshooting, advanced DICOM topics, as well as recent additions to the DICOM standard. The DICOM standard is used for the exchange of diagnostic images as well as image related workflow information.

The target audience consists of those involved with the design, development, implementation, deployment and support of systems that use (or will use) the DICOM standard. The DICOM Advanced training course is aimed at seasoned professionals who like to enhance their DICOM skills by looking at the DICOM protocol in depth, and who would like to be able to troubleshoot DICOM using test, validation and simulation tools.

### SNOMED Overview - 1 day

This training course provides an overview of the SNOMED CT terminology standard. The SNOMED CT standard is used in many projects as the core/reference terminology to code clinical information such as diagnoses, medications, allergies, etc.

The target audience consists of those involved in the design of clinical value sets/clinical data sets, or in the design of clinical software applications that use concept codes and ontological relationships as defined by SNOMED CT.

See [www.ringholm.com](http://www.ringholm.com) for detailed descriptions of these training courses as well as scheduled locations/dates.
Ringholm provides independent and commercial training courses related to various open standards (e.g. HL7, IHE, DICOM) in the field of healthcare systems integration. Our company is product independent, vendor independent and standard independent. Our tutors and consultants are involved in implementation projects and take part in the development process of systems integration and messaging related standards in order to keep abreast of new developments.

HL7 / IHE / DICOM / SNOMED Training Courses

Ringholm offers

- Regular open training courses: these are available via our marketing partners – please see our website for details.

- On-site training courses: please contact us should you require a (customised/bespoke) on-site training course. Such training courses mostly consist of components of the training courses listed in this flyer, combined with newly developed training modules – this to ensure that we meet your particular educational requirements.

  Clients include software vendors (e.g. Agfa, SAP and Siemens), healthcare provider organisations and regional/national healthcare information exchange networks.

- White-label training courses: most HL7 Affiliates and IHE country organisations don’t have the capacity nor the resources to deliver training courses listed in this flyer. Please contact us should you wish to outsource the delivery of your training courses, or wish to discuss other forms of cooperation (e.g. licensing a translated/localised version of the course materials, joint presentation of the materials).

  Clients include European HL7 and IHE country organisations (e.g. HL7 UK, IHE NL) as well as commercial resellers.

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