



Integrating
the Healthcare
Enterprise



Multi-Country Working Group (MCWG) on Image Information Sharing

An IHE-Europe Taskforce

Approved by MCWG on April 23, 2024

Multi-country Working Group (MCWG) Timeline

**Initial MCWG
concept and need
identified
@IHE Experience
days
(IHE Connectathon Montreux)**

September 2022

**Pre-MCWG
defines scope
and
operating
principles**

Q4 2022

**Creation decision by
MCWG membership
IHE-Europe Executive
Committee approval of
the MCWG taskforce**

Support by



December 2022

**Sharing of
existing
experience:
Venetto,
Quebec, France**

Q2 2023

**Completion of work
on first 3 sets of
MCWG
Recommendations***

Q1 2024

MCWG created

* All three presentation recordings are available to MCWG members
(Contact Arianna: secretariat@ihe-europe.net)

MCWG Scope and objectives

Scope:
Deployment of interoperability for
Imaging Exchange

- **National or regional level**
- Complementary to Cross-Border imaging exchange focus of EU Commission (eHN, JA9).

Goal:
Deliver design analysis for specific
extensions

- Extensions are needed to **effectively deploy IHE Profiles, DICOM, FHIR** and other standards within countries' ehealth services. Complementary to eHDSI for Cross-Border.

Benefits:
Pool expertise and resources

- **Direct engagement with active national deployments**
- Perform analysis of specific issues
- **Seek increased consistency** between such deployments.

Deliverables:
Analysis results as MCWG
recommendations.

- Mature and complete with multi-country consensus
- Offered for adoption and **easily included into national interoperability frameworks.**

**MCWG plenary
meetings**
every two weeks, 1-hour T-con

- **All members engage in MCWG governance** (within rules of an IHE-Europe Task Force)
- **All members prioritize topics for recommendations.** Each topic is addressed by a dedicated Focus Group including 3-4 Members or designees, committed to deliver recommendations on the topic in less than two months
- **All members review and comment on draft recommendations and approve final recommendations**

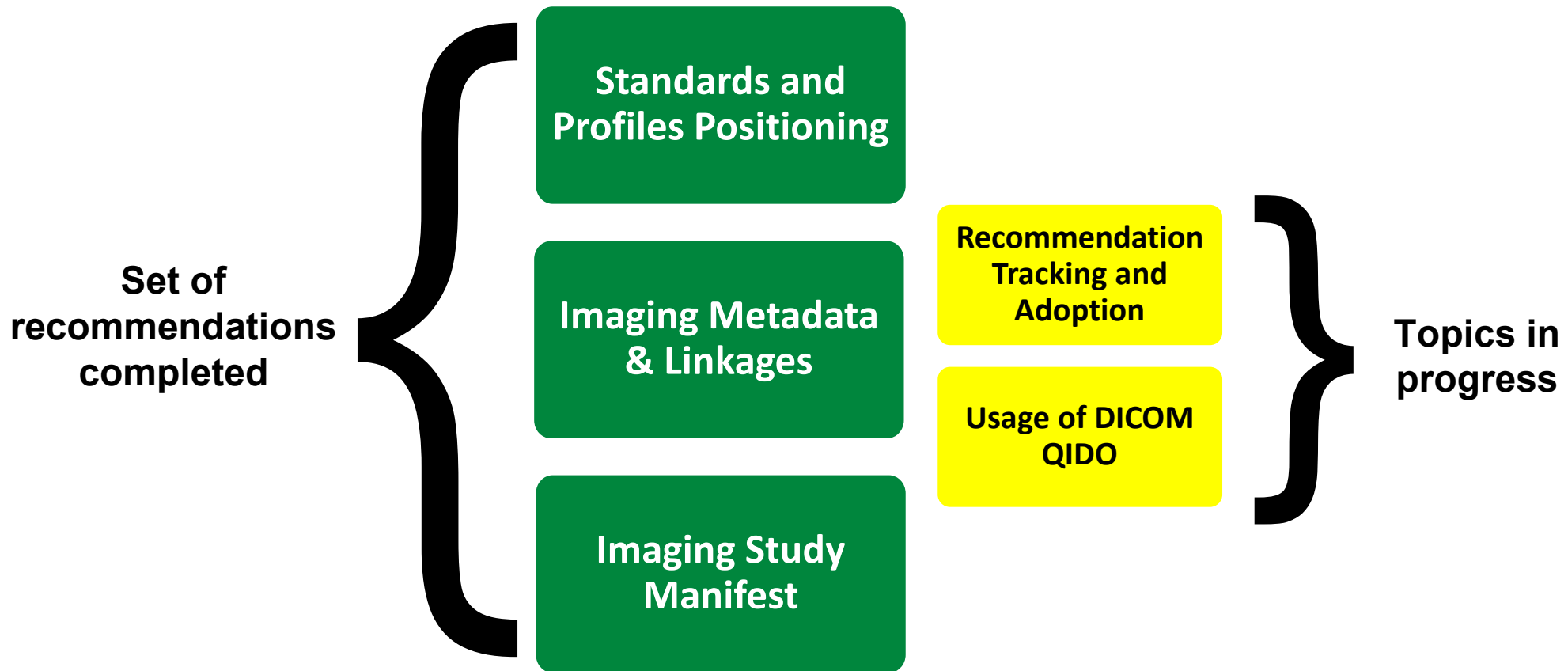
**Currently includes
representatives from
10 countries**

- **Austria, Belgium, Canada, Czechia, Denmark, Finland, France, Netherlands, Norway and Spain**
- MCWG is working on expanding that list. **Other countries European and non-European are welcome**

**MCWG produced 3 sets
of recommendations
in four months**

- Each set of recommendations corresponds a topic produced by a dedicated Focus Group.
- Recommendations **sufficiently mature, complete (multi country consensus) and stable to be offered for adoption into national interoperability frameworks.**
- The recommendations are initially delivered in a PowerPoint Slide Format.
- **Publicly available documents. MCWG members to ensure rapid feedback as they apply.**

Status Update on May 1st



1. Standards and Profiles Positioning

Topic description and scope

Scope

Standards
and Profiles
Positioning

Imaging
Metadata &
Linkages

Imaging
Study
Manifest

Recommen-
dation
Tracking and
Adoption

Usage of
QIDO

Use Case aligned with the
eHN Guidelines on Medical imaging studies and reports :

- search and select imaging studies of interest
- access to images
 - **links in report to server-side image viewer**
 - **to native DICOM images by a requester-side image viewer/processor.**

Choice of profiles and standards

- Position the role of HL7 FHIR in the sharing of imaging information architectures
- **Select profiles and standards for the use case** (FHIR/MHD, IHE/XDS-I, IHE/XCA-I, DICOM WADO-RS)

1. Standards and Profiles Positioning

Recommendation Highlights

Recommendations

Standards and Profiles Positioning

Imaging Metadata & Linkages

Imaging Study Manifest

Recommendation Tracking and Adoption

Usage of QIDO

Three different deployment architectures may coexist (See Note) :

- A. Country (or stand-alone Region) with a **central document registry** both with distributed PACS/VNAs
- B. Country with **federated document registries & regions** with distributed PACS/VNAs
- C. Country (or region) with a **central document registry and a central VNA**

Note: Manifest Document Repositories whether centralized or distributed is possible in all three architectures.

Imaging Study Manifest (DICOM KOS) used in all deployment architectures.

Transactions are from the following profiles:

- A, B or C: **IHE MHD** (FHIR based with document reference resource) + **DICOM WADO-RS** (Rest)
- A or C: **IHE XDS-I** (WS SOAP-Based) + **DICOM WADO-RS** (Rest)
- B : **XCA-I** (WS SOAP based) + **DICOM WADO-RS** (Rest)

2. Imaging Metadata & Linkages

Topic description and scope

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Ensuring effective sharing with linkages

- **For clinician as well as for imaging production**
- Both for imaging reports and imaging studies.
- Linkages with clinical orders and imaging procedure requests

Defining a robust imaging metadata strategy

- **For filtering access in queries** (key filtering elements) for imaging studies.
- **For selecting** among filtered imaging studies returned

2. Imaging Metadata & Linkages

Recommendation Highlights

Recommendations

Standards and Profiles Positioning

Imaging Metadata & Linkages

Imaging Study Manifest

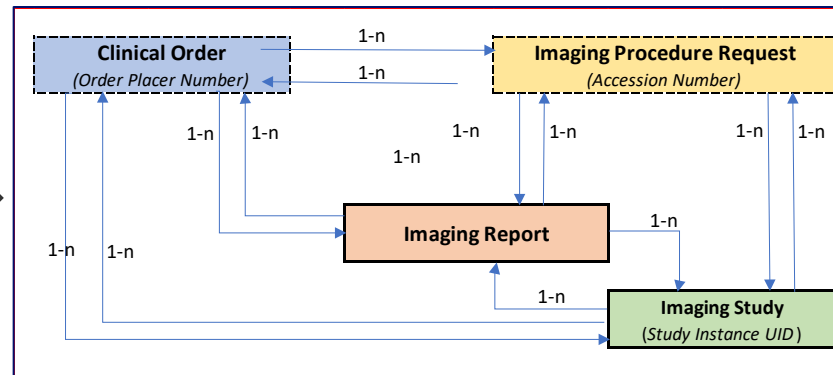
Recommendation Tracking and Adoption

Usage of QIDO

Filtering in queries :
Criteria needed for health professionals (imaging and others) when exploring a patient imaging records:

Linkages for relationships between various entities

Metadata element	Description	Query level
Anatomical Regions	Set by RIS per each imaging procedure code	1 (or 2)
Study level modality	Set by RIS per each imaging procedure code	1 (or 2)
Study Instance UID	Set by RIS (sometimes by modality)	2 (or 1)
Accession number	RIS generated imaging procedure request identifier	2 (or 1)
Order Placer number	From ordering module EHR/EMR	2 (or 1)
Imaging Procedure Code	Set by RIS per each performed procedure code	2



- Initial filtering request (level 1)
- Subsequent selection (level 2) among the list of responses to initial request

Use of Display Names and Codes Value Sets	➔	<ul style="list-style-type: none"> • Imaging Procedure • Laterality
Non-imaging specific metadata	➔	<ul style="list-style-type: none"> • Document Classes: Imaging or Report • Practice Setting (source Specialty=.
Workflow	➔	<ul style="list-style-type: none"> • Publication trigger • Imaging reports header data

3. Imaging Study Manifest

Topic description and scope

Scope

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Definition of Imaging Study Manifest

- Based on [eHN Guidelines on Medical imaging studies and reports](#)
- Consistent with DICOM and IHE XDS-I

Analysis of the detailed content of the imaging manifest (KOS)

- National and local patient IDs,
- Accession numbers,
- Additional content in study/series/instance descriptions for technical or clinical efficiency.

3. Imaging Study Manifest Recommendation Highlights

Recommendations

Standards and Profiles Positioning

Imaging Metadata & Linkages

Imaging Study Manifest

Recommendation Tracking and Adoption

Usage of QIDO

- DICOM KOS vs FHIR Document bundle (incl. Imaging Studies Resource). Choice of standard: DICOM KOS



DICOM KOS is a better use case match

- Neutral: Content match 90+% covered – Both are missing only a few standard attributes:
- **Imaging SW Alignment for consumption with 80% created from Imaging Data**
- **Much wider Adoption** – 84 vendors passed Connectathon testing of KOS Manifests (XDS-I). Over 100 sharing environments (Hospital, Regional, national) deployed in Europe
- Transaction to support sharing of manifests and workflows variants
- Key requirements on SOP Classes retrieved by WADO-RS
- Detailed recommendations for manifest content (what needs to be added, why and how)
 - Patient Identification,
 - Study Information,
 - Workflow/identifiers,
 - Series and Instance Information
- Retrieval
 - Locating the Referenced Studies, Series and Instances.
 - Management of retrieve URL and location OIDs
- Selection of Significant Images (IHE KIN)

Tracking and Adoption of Recommendations

On-going work

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Preparation of tools and strategy for survey of adoption

- Preparation of a checklist document listing the recommendations elements with brief explanations
- Preparation of list of target countries/jurisdictions
- Update of MCWG overview presentation

Adoption information collection and processing

- Meetings with representants of target countries/jurisdictions
- Distribution of checklist document
- Collection of results and gap analysis

Usage of QIDO

Ongoing work

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Usage of
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Cases for use of
DICOM QIDO

- Analysis on QIDO experience
- Identify Cases where directly related to national/regional image information sharing
- Determination of opportunities and limitations

Recommendations on the
use of QIDO

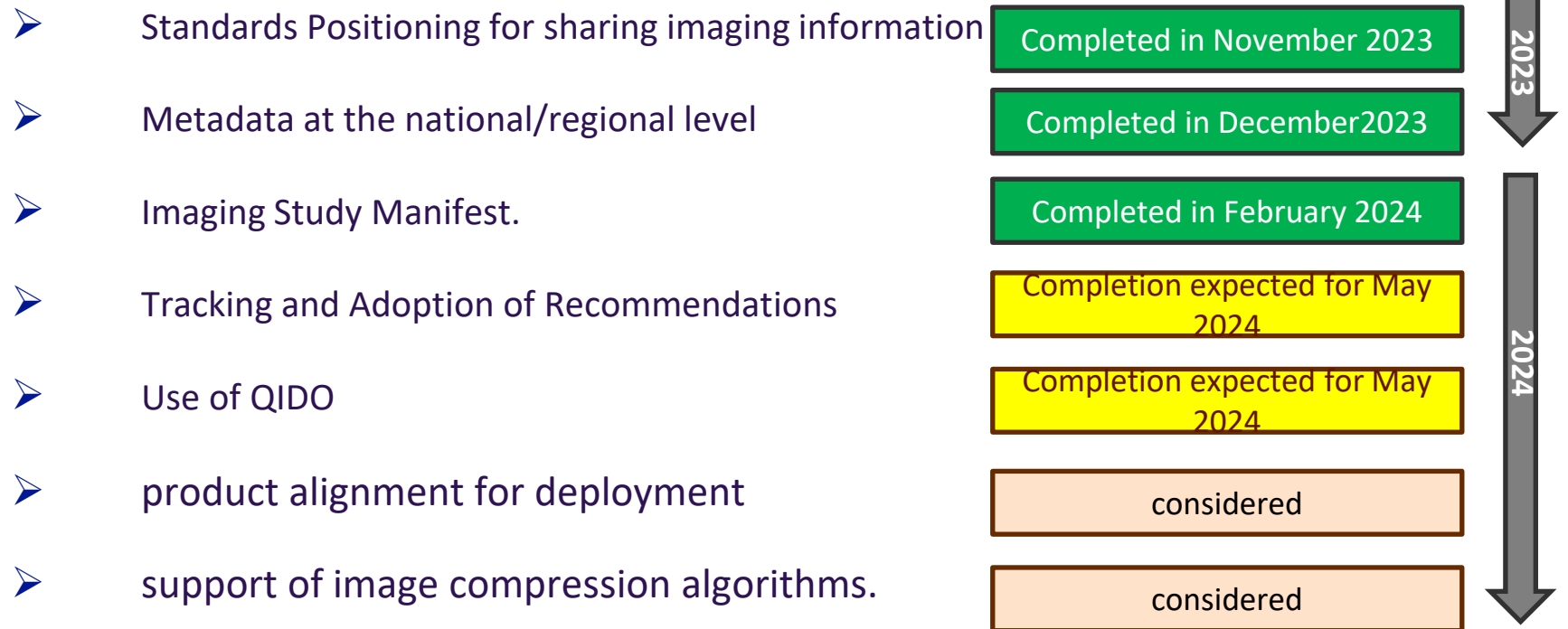
- Preparation of recommendations on the use of QIDO

NEXT STEPS AND TIMELINE

The Multi-Country Working Group on Imaging Information Sharing is well established and has delivered valuable refinements to the available standards and profiles for a consistent deployment across multiple countries.

These companion recommendations are compact and assemble significant technical, imaging expertise with more than 15 years of standards deployment experience.

- Standards and Profiles Positioning ✓ Finalized
- Imaging Metadata & Linkages ✓ Finalized
- Imaging Study Manifest ✓ Finalized
- Tracking and Adoption In progress
- Use of QIDO In progress
- ... others



CONCLUSION



IHE MCWG welcomes additional countries and looks forward to further collaborations with eHN groups and projects

Questions, Comments and Suggestions are welcome and should be sent to the IHE-Europe Secretariat: secretariat@IHE-Europe.net

- **Interested countries are welcome to attend the MCWG workshop on June 6, 2024 at the IHE-Europe Connectathon**
- **Status report during the IHE Experience Days, June 3 & 4, 2024 at the IHE-Europe Connectathon**

Trieste, Italy

