

XyDromatics VNA Migration — DICOM Conformance Statement

Document number: DOC-2026-139 **Title:** XyDromatics VNA Migration DICOM Conformance Statement
Version: v3 **Category:** DICOM Conformance Statement **Product:** XyDromatics VNA Migration v1.0 **Release version:** 1.0.1.154 **Classification:** Non-device software (FD&C Act §520(o)(1)(D)) **Owner:** Synthology Healthcare Solutions Group (SHSG) **Effective date:** (on approval) **Review cycle:** 1 year **Next review due:** TBD **Applies to:** XyDromatics VNA Migration v1.0.0 (slug [xydromatics_vna_migration](#))

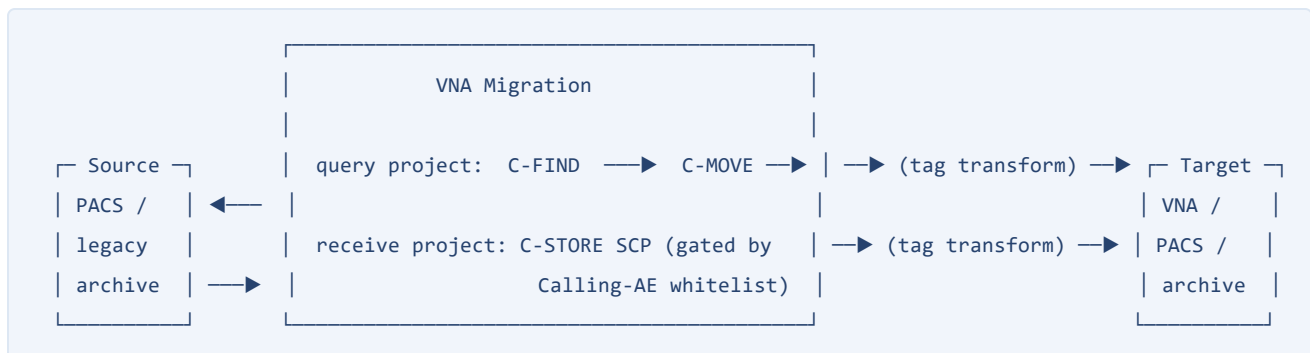
1. Conformance Statement Overview

XyDromatics VNA Migration is a batch migration and reconciliation component of the XyDromatics product family. It queries source archives, pulls studies by C-MOVE / C-GET, optionally receives pushed studies via C-STORE SCP (receive-mode projects), applies deterministic tag transformations per project configuration (when licensed), and forwards to a target archive via C-STORE SCU or STOW-RS. The services listed in the table below are **implemented and wired** in v1.0; services listed as *not supported* are deliberately absent from this release.

DICOM Service	v1.0 Support
Verification (C-ECHO) SCP	Yes
Verification (C-ECHO) SCU	Yes (pre-flight check against source + target)
Storage (C-STORE) SCP	Yes (for receive-mode push-in source projects)
Storage (C-STORE) SCU	Yes (to target archive)
Query/Retrieve (C-FIND) SCU	Yes (Study Root + Patient Root — queries source archive)
Query/Retrieve (C-MOVE) SCU	Yes (Study Root + Patient Root — pulls from source)
Query/Retrieve (C-GET) SCU	Yes (Study Root + Patient Root)
Query/Retrieve (C-FIND) SCP	Yes (Study Root + Patient Root — exposes in-flight staging)
Query/Retrieve (C-MOVE) SCP	Yes (Study Root + Patient Root — allows forwarding to alternate destinations)
Query/Retrieve (C-GET) SCP	Yes (Study Root + Patient Root)
Storage Commitment	Not supported (Migration is a transient staging system, not a long-term archive)
Modality Performed Procedure Step (MPPS)	Not supported
Modality Worklist (MWL)	Not supported
DICOMweb STOW-RS (SCU)	Yes (alternative to C-STORE SCU for target forwarding)
DICOMweb STOW-RS (SCP)	Yes (for receive-mode push-in over DICOMweb)
DICOMweb QIDO-RS (SCU)	Yes (alternative to C-FIND for querying DICOMweb-speaking source archives)
DICOMweb QIDO-RS (SCP)	Yes (exposes in-flight staging)
DICOMweb WADO-RS (SCU)	Yes (alternative to C-GET / C-MOVE for DICOMweb-speaking sources)
DICOMweb WADO-RS (SCP)	Yes
HL7 v2.x MLLP receiver	Not wired in v1.0. The <code>h17_ingest</code> license key is reserved for a future release; HL7 reconciliation is currently available only via file-drop ingest of HL7 messages.

2. Implementation Model

2.1 Application Data Flow



2.2 Functional Definition

VNA Migration is non-device software under FD&C Act §520(o)(1)(D) — software that transfers, stores, converts, and forwards medical-imaging data and performs no clinical function. Its functions are: electronic transfer of DICOM data from source to target systems; electronic staging storage during the migration window; electronic conversion consisting of both (a) DICOM transfer-syntax decoding/encoding per PS3.5 and (b) deterministic tag transformation per Licensee-authored rules (licensed feature `data_transforms`); and electronic display of per-study and per-job progress in the operator web UI. **VNA Migration is not a PACS, is not a long-term archive, and is not for clinical image interpretation.**

The `data_transforms` feature, when licensed, applies TagMorph + Normalize pipeline operations (per DOC-2026-YYY — Synthology.Shared.Dicom Data Transforms library) before forward. Transformations are audit-logged per-study and preserve an immutable before/after snapshot for the HIPAA retention period.

2.3 Sequencing of Real-World Activities — Project Lifecycle

VNA Migration organizes work into **migration projects** with a well-defined lifecycle state machine:

State	Description
<code>configuring</code>	Project is being edited; no DICOM traffic against the source.
<code>queued</code>	Project is ready to run; scheduling window not yet reached.
<code>receiving</code>	(Receive-kind projects only) Waiting for push-in; staging is accepting C-STORE.
<code>running</code>	(Query-kind projects) Executing C-FIND → C-MOVE batches.
<code>transforming</code>	Tag-transformation pipeline applied to staged studies.
<code>forwarding</code>	Forwarding to target via C-STORE SCU or STOW-RS.
<code>completed</code>	All studies in the project reached the target or were dead-lettered.
<code>failed</code>	Non-recoverable error; operator intervention required.
<code>paused</code>	Manual pause by operator; resumable.

A quiescence timer (no new objects received for N seconds) flips receive-kind projects from `receiving` to `transforming` automatically; the timer is per-project configurable (default 5 minutes).

3. AE Specifications

3.1 Application Entity Identification

VNA Migration exposes one AE for the Migration service by default. Deploying institution sets the AE Title and ports at install. Defaults:

Parameter	Default	Configurable at	Notes
Storage SCP AE Title	XYDROMATICS_MIG	MSI + Settings → DICOM	
Storage SCP port	11114	MSI + Settings → DICOM	TCP
Query/Retrieve SCP AE Title	XYDROMATICS_MIG	MSI + Settings → DICOM	
Query/Retrieve SCP port	11115	MSI + Settings → DICOM	TCP
SCU Calling AE Title	XYDROMATICS_MIG	Per-project overridable	Used against source + target
Web UI port	5202	MSI	HTTPS
DICOMweb base path	/dicomweb/	Not configurable	On Web UI port
HL7 MLLP port	2575 (reserved, not wired v1.0)	MSI	Not bound in v1.0

3.2 Association Policy

- Maximum PDU size accepted / proposed: 131 072 bytes
- Association timeout: 30 s; DIMSE timeout: 60 s
- Asynchronous operations: not negotiated
- Called AE title validation: enforced.
- **Calling AE title whitelist on Storage SCP:** mandatory for receive-kind projects; per-source-project Calling-AE list plus a global install-wide whitelist. Unlisted Calling AEs rejected with reason `calling-AE-title-not-recognized`.

3.3 Storage SCP (Receive-Mode) — Accepted SOP Classes

Accepts any Storage-class SOP class (`1.2.840.10008.5.1.4.1.1.*`). See VNA Repository Conformance Statement §3.3 for the representative list — VNA Migration accepts the same set.

Non-Storage SOP classes on Storage SCP are explicitly rejected.

3.4 Query/Retrieve — Supported SOP Classes (SCU and SCP)

SOP Class	SOP Class UID	SCU	SCP
Study Root Query/Retrieve Information Model — FIND	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes
Study Root Query/Retrieve Information Model — MOVE	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes
Study Root Query/Retrieve Information Model — GET	1.2.840.10008.5.1.4.1.2.2.3	Yes	Yes
Patient Root Query/Retrieve Information Model — FIND	1.2.840.10008.5.1.4.1.2.1.1	Yes	Yes
Patient Root Query/Retrieve Information Model — MOVE	1.2.840.10008.5.1.4.1.2.1.2	Yes	Yes
Patient Root Query/Retrieve Information Model — GET	1.2.840.10008.5.1.4.1.2.1.3	Yes	Yes
Verification	1.2.840.10008.1.1	Yes	Yes

3.5 Transfer Syntaxes

Same set as XyDromatics VNA Repository §3.5: all 12 of Implicit/Explicit VR (LE/BE/Deflated), JPEG Baseline/Extended/Lossless/LS/2000, and RLE are accepted on ingest. Query/Retrieve responses negotiate Explicit VR Little Endian or Implicit VR Little Endian.

On forward, VNA Migration honors the target archive's proposed transfer syntaxes; if the source-stored syntax is not accepted by the target, VNA Migration performs on-the-fly decompression and forwards as Explicit VR Little Endian.

3.6 Extended Negotiation

- Relational-Queries: not supported.
- Fuzzy Matching of Person Names: not supported.
- Combined Date-Time Matching: not supported.

3.7 Character Sets

Same set as VNA Repository §3.7: ISO_IR 100 / 101 / 144 / 192 / GB18030 accepted and retained.

4. DICOMweb Specification

4.1 STOW-RS

VNA Migration supports STOW-RS both as SCU (forwarding to DICOMweb-speaking targets) and SCP (receive-mode projects via DICOMweb push-in).

Method + Route	Description
POST /dicomweb/studies	Store instances (receive-mode)
POST /dicomweb/studies/{studyInstanceUID}	Store instances constrained to the indicated study

4.2 QIDO-RS

Same routes and query-key support as VNA Repository §4.2.

4.3 WADO-RS

Same routes as VNA Repository §4.3. Bulkdata + rendered-retrieve not supported.

5. HL7 v2.x

HL7 MLLP is not wired in v1.0. The `h17_ingest` license key is reserved for a future release and the MLLP port (TCP 2575) is not bound. Migration projects requiring HL7 metadata reconciliation in v1.0 shall:

1. Export the relevant HL7 messages from the source HIS/RIS as files; then
2. Drop them into `{DATAFOLDER}\h17_import\{project}\` where VNA Migration will pick them up during the `transforming` phase for ADT / ORM / ORU reconciliation against the corresponding DICOM studies.

When `h17_ingest` is wired in a future release, this Conformance Statement will be amended to declare the supported HL7 trigger events and the MLLP framing specifics.

6. Security

- TLS: same as VNA Repository §5.
- Authentication for DICOMweb: bearer token (same as Web UI auth).
- Authentication for DIMSE: Calling-AE whitelist; per-project + global.
- Audit: every query, retrieve, store, and forward writes an audit-log row with timestamp, Calling AE / user, StudyInstanceUID, SOP Instance UID, project-id, and outcome. Tag-transformation before/after snapshots are written separately for each transformed study.

7. Character Set and Language Support

Same as VNA Repository §6.

8. Codes and Controlled Terminology

VNA Migration does not author or interpret clinical codes. Code sequences are stored and forwarded verbatim, except where the project's `data_transforms` rules explicitly remap them (e.g., institution-specific procedure code harmonization during archive consolidation).

9. Annexes

9.1 IODs and Information Models

Agnostic to IOD content; validates only the indexing-critical UUIDs and demographic keys.

9.2 Data Dictionary of Private Attributes

VNA Migration preserves private attributes by default. The `data_transforms` pipeline can be configured per-project to strip or remap specific private tags; a rule targeting a private creator group must explicitly name the private-creator block.

9.3 Migration-Specific Implementation Notes

- **C-MOVE destination:** on query-kind projects, the effective C-MOVE destination AE is the VNA Migration AE itself; objects stream into the staging area as they arrive. VNA Migration then forwards from staging to the project's configured target.
- **Duplicate SOP Instance UID:** on receipt of a SOP Instance UID already present in staging, the default policy is `last-wins` (overwrite) to accommodate re-sends during retry loops. This is configurable to `first-wins` per-project.
- **Dead-letter:** studies that fail tag-transformation or target-forward after the configured retry count are moved to a project-scoped dead-letter queue with full error context for operator review.
- **Quiescence:** receive-kind projects flip from `receiving` to `transforming` when no C-STORE has arrived for the configured quiescence interval (default 5 minutes). Quiescence is per-project configurable.

9.4 Reserved (Future-Version) Services

- `hl7_ingest` (HL7 v2.x MLLP receiver on TCP 2575) — reserved
- `multi_destination` (fan-out to more than one target per project) — wired in v1.0 (gated by license; Conformance unaffected)

10. Cross-References

- EULA Annex: DOC-2026-134 (XyDromatics VNA Migration EULA Annex)
- Hardware & Software Requirements: DOC-2026-129 (XyDromatics VNA Migration HW/SW Requirements)
- Data Transforms library: (see `Synthology.Shared.Dicom` — standing memory `synthology_shared_dicom_transforms`)
- Receive-mode architecture: standing memory `migration_engine_receive_mode`
- Product-family regulatory posture: DOC-2026-114 v3 §8

Regulatory classification. Non-device software under the FD&C Act §520(o)(1)(D) software exclusion. This statement is published by Synthology Healthcare Solutions Group, LLC as a controlled document; the authoritative version is the approved record in the Synthology quality-management system.