

ZEISS FORUM to Mach7 VNA Enterprise Imaging Migration and Integration Project

Executive Project Case Study

Penn Medicine Enterprise Imaging Modernization Initiative

Prepared By

Leo A. Jiwanmall, MBA, PMP®, MRSO®, R.T.(R)(MR)(CT)

Healthcare Technology • Enterprise Imaging • Imaging Informatics • Project Leadership

Project Duration: December 17, 2024 - August 6, 2025

Team Size: 23

Budget Range: \$500,000 - \$999,000

Industry: Healthcare

Imaging Informatics Hub

Bridging Clinical Imaging, Enterprise Technology, and Operational Excellence

Contents

1. Executive Overview
2. Business Objective
3. Executive Metrics Dashboard
4. Project Overview
5. Enterprise Imaging Architecture
6. Enterprise Imaging Migration Timeline
7. Project Wins
8. Lessons Learned
9. PMI Competencies Demonstrated
10. Strategic Value
11. Confidentiality Statement

Executive Overview

The ZEISS FORUM to Mach7 VNA Enterprise Imaging Migration Project supported Penn Medicine's enterprise imaging modernization strategy through the migration, validation, and integration of ophthalmology imaging data into a scalable vendor-neutral architecture.

The initiative focused on maintaining uninterrupted clinical operations while strengthening interoperability, preserving data integrity, improving workflow efficiency, and enhancing long-term accessibility of clinical imaging information across affiliated Penn Medicine facilities.

Through collaboration among clinical stakeholders, enterprise imaging teams, healthcare IT professionals, and vendor resources, the project contributed to a secure and operationally stable transition aligned with Penn Medicine's broader digital transformation objectives.

Executive Metrics Dashboard

Executive Metric	Value
Organization	Penn Medicine
Industry	Healthcare
Project Role	Team Lead / Project Manager

Executive Metric	Value
Team Size	23
Budget Range	\$500,000 - \$999,000
Project Duration	8 Months
Enterprise Platforms	ZEISS FORUM, Mach7 VNA
Integration Standards	DICOM, HL7, Mirth Connect
Environment Scope	Test & Production
Primary Focus Areas	Enterprise Imaging, Workflow Validation, Interoperability
Strategic Drivers	Data Integrity, Clinical Continuity, Enterprise Scalability

Business Objective

Support Penn Medicine's enterprise imaging strategy by successfully migrating and validating ophthalmology imaging data between ZEISS FORUM and the Mach7 Vendor Neutral Archive (VNA), while maintaining uninterrupted clinical operations, strengthening interoperability, and establishing a foundation for long-term scalability and enterprise-wide image accessibility.

Key objectives included:

- Ensuring data integrity throughout migration activities
- Maintaining interoperability between enterprise systems
- Supporting DICOM workflow validation
- Supporting HL7 interface integration and testing
- Minimizing operational disruption throughout the migration
- Improving scalability through vendor-neutral image management
- Supporting enterprise imaging governance and modernization objectives

Project Overview

As Team Lead and Project Manager, I supported Penn Medicine's enterprise imaging transformation initiative involving the migration and integration of imaging data across ZEISS FORUM Test and Production environments and the Mach7 Vendor Neutral Archive (VNA).

The project required close coordination among vendor Level 2 support teams, clinical stakeholders, imaging informatics personnel, and healthcare IT resources. Responsibilities included migration validation, issue resolution, workflow optimization, interoperability testing, user acceptance testing, production readiness assessment, and go-live support activities.

Mirth Connect (HL7) interface validation, DICOM workflow testing, and enterprise imaging workflow verification were performed to help ensure seamless access to imaging information while maintaining continuity of patient care and operational performance.

The project strengthened enterprise imaging capabilities, improved system performance and scalability, enhanced interoperability, and supported Penn Medicine's long-term digital transformation strategy.

Stakeholder Groups

Stakeholder Group	Responsibility
Clinical Stakeholders	Workflow validation and operational readiness
Ophthalmology Leadership	Clinical requirements and acceptance
Imaging Informatics Teams	Migration validation and integration support
Vendor Level 2 Support Teams	Technical troubleshooting and implementation support
Healthcare IT Resources	Infrastructure and interoperability management
Enterprise Imaging Leadership	Governance and strategic oversight

ENTERPRISE IMAGING ARCHITECTURE

Enterprise Imaging Architecture Overview

Layer	Component	Purpose
Source Imaging Platform	ZEISS FORUM	Ophthalmology image repository and image management platform
Migration Validation Layer	Testing Environment	Migration validation and workflow verification
Enterprise Archive Layer	Mach7 VNA	Vendor-neutral image storage and management
Integration Layer	Mirth Connect (HL7)	Clinical systems integration and message processing
Clinical Access Layer	Clinical Workstations	End-user access to imaging information
Enterprise Systems Layer	PACS & Enterprise Applications	Organization-wide imaging workflows
Health System Layer	Penn Medicine Facilities	Multi-site clinical image accessibility

Enterprise Imaging Data Flow

Source System	Integration Standard	Destination
ZEISS FORUM	DICOM	Migration Validation Environment
Migration Validation Environment	DICOM	Mach7 VNA
Mirth Connect	HL7	Enterprise Clinical Systems
Mach7 VNA	Enterprise Imaging Workflows	PACS, Clinical Workstations, Penn Medicine Sites

Products & Technologies

- ZEISS FORUM
- Mach7 Vendor Neutral Archive (VNA)
- DICOM
- PACS
- Mirth Connect (HL7)
- Enterprise Imaging
- Clinical Systems Integration
- Interface Engine
- Workflow Validation
- Data Migration
- Test and Production Environments
- Vendor Level 2 Support

MIGRATION TIMELINE & PROJECT WINS

Enterprise Imaging Migration Timeline

Phase	Timeframe	Key Activities
Project Initiation & Planning	December 2024	Project kickoff, stakeholder identification, environment readiness
Testing & Validation	January - March 2025	Test migration, DICOM validation, HL7 testing, workflow assessment
User Readiness & UAT	April - May 2025	User acceptance testing, issue remediation, production readiness reviews
Production Migration	June - July 2025	Production migration activities, workflow validation, cross-site testing
Go-Live & Closure	August 2025	Go-live support, operational stabilization, project closure

Project Wins

Enterprise Imaging Modernization

Supported a strategic enterprise imaging initiative that advanced Penn Medicine's transition toward a scalable vendor-neutral imaging architecture, strengthening long-term image accessibility, interoperability, and technology sustainability.

Clinical Operations Continuity

Maintained continuity of clinical imaging operations throughout migration, validation, testing, and deployment activities, minimizing disruption to patient care and operational workflows.

Interoperability Enhancement

Strengthened interoperability between imaging and clinical systems through comprehensive DICOM workflow validation and HL7 interface testing using Mirth Connect.

Data Integrity Assurance

Participated in migration verification and quality assurance activities designed to preserve imaging data integrity across both test and production environments.

Cross-Functional Collaboration

Facilitated collaboration among enterprise imaging teams, vendor Level 2 support resources, healthcare IT teams, and clinical stakeholders to accelerate issue resolution and improve implementation readiness.

Operational Readiness

Supported user acceptance testing, production readiness reviews, and go-live activities that helped reduce operational risk and promote a stable deployment.

Enterprise Scalability

Contributed to infrastructure modernization efforts that enhanced enterprise imaging scalability and positioned Penn Medicine for future growth and technology innovation initiatives.

LESSONS LEARNED, PMI COMPETENCIES & STRATEGIC VALUE

Lessons Learned

Successful enterprise imaging transformations depend on structured governance, proactive stakeholder engagement, rigorous interoperability testing, and disciplined change management.

Key lessons learned include:

- Engage stakeholders early and consistently.
- Conduct detailed workflow validation before production deployment.
- Establish proactive risk management and mitigation strategies.
- Maintain close collaboration with vendor support teams.
- Validate interoperability across all integrated systems.
- Perform comprehensive testing in both non-production and production environments.
- Utilize structured communication and change management practices.

Organizations that invest in these practices are better positioned to reduce implementation risk, preserve operational continuity, and maximize strategic value from enterprise imaging investments.

PMI Competencies Demonstrated

Leadership & Stakeholder Management

- Stakeholder Engagement
- Communications Management
- Cross-Functional Collaboration

Technical & Project Management

- Integration Management
- Scope Management
- Quality Management
- Risk Management
- Change Management

Healthcare Technology Expertise

- Enterprise Imaging Governance

- DICOM Interoperability
- Clinical Systems Integration
- Workflow Optimization
- Production Readiness

Strategic Value

This initiative supported Penn Medicine's enterprise imaging transformation by improving interoperability, strengthening enterprise imaging governance, and enhancing accessibility of clinical imaging information.

Beyond technical integration, the project demonstrated the importance of governance, stakeholder collaboration, operational readiness, and disciplined execution in achieving successful healthcare technology modernization.

The outcomes contributed to improved scalability, stronger enterprise imaging capabilities, and alignment with long-term digital transformation objectives.

Confidentiality Statement

This document is intended for professional portfolio and educational purposes only.

Certain project details have been summarized or generalized to protect proprietary information, operational processes, vendor-specific implementation details, and organizational confidentiality. No protected health information (PHI) or restricted institutional information is included within this document.

Prepared By

Leo A. Jiwanmall, MBA, PMP®, MRSO®, R.T.(R)(MR)(CT)

Healthcare Technology • Enterprise Imaging • Imaging Informatics • Project Leadership

Imaging Informatics Hub

LeoJiwanmall.com