

# DICOM 3.0 Conformance Statement MIERIS MWL v 4.5

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## 1.0 Introduction

### 1.1 Scope and Audience

This is the DICOM conformance statement for the **MIERIS MWL 4.5** product  
Which supports:

DICOM Modality Work List Management (of the Query/Retrieve Services)  
as a Service Class Provider (SCP)

This document has been written using the guidelines provided in the DICOM standard  
This version of this document applies to Release 1.0 of **MIERIS MWL 4.5**  
Future Release of the product may support other DICOM Service

### 1.2 Reference

[1] ACR/NEMA Standards Publications, No PS3, DICOM Standards:

Part 1 - Introduction

Part 2 - Conformance

Part 3 - Information Object Definitions

Part 4 - Service Class Specifications

Part 5 - Data Structures and Encoding

Part 6 - Data Dictionary

Part 7 - Message Exchange

Part 8 - Network Communication Support

Part 9 - Point to Point Communication Support for Message Exchange

Part 10 - Media Storage and File Format for Media Interchange

Part 11 - Media Storage Application Profiles

Part 12 - Storage Functions and Media Formats for Data Interchange

Part 13 - Print Management Point-to-Point Communication Support

### 1.3 Definitions

The following are symbols and abbreviations used within this document.

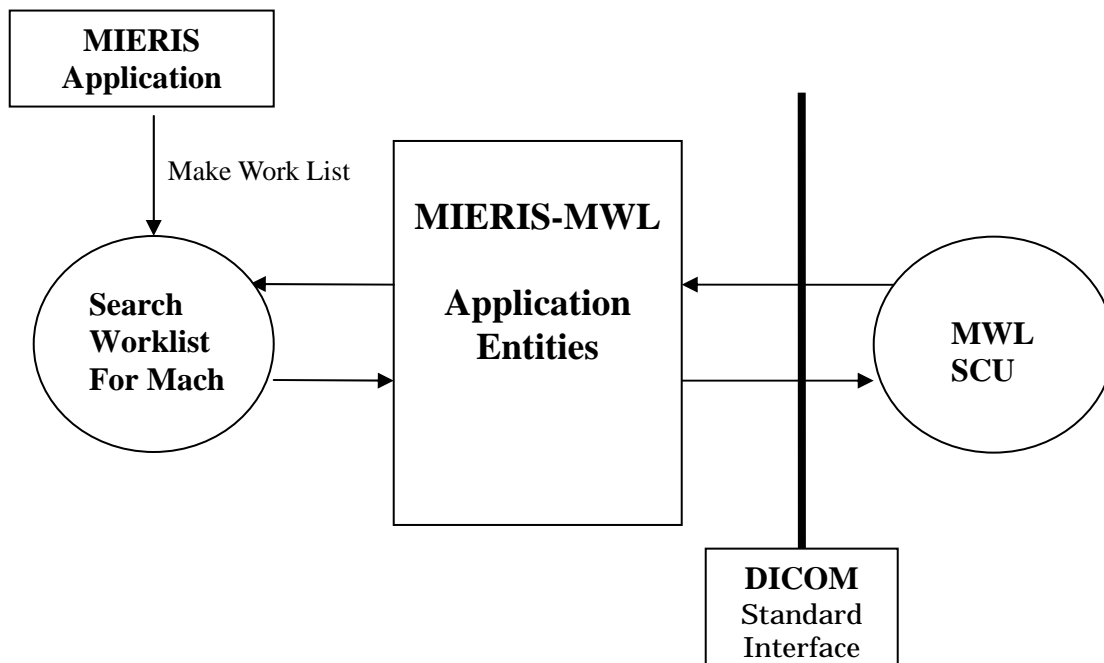
AE	Application Entity
ACR	American College of Radiology
DICOM	Digital Imaging and Communications in Medicine
DIMSE	DICOM Message Service Element
DIMSE-C	DICOM Message Service Element-Composite
DIMSE-N	DICOM Message Service Element-Normative
NEMA	National Electrical Manufacturers Association
OSI	Open Systems Interconnection
PDU	Protocol Data Unit
SCP	Service Class Provider
SCU	Service Class User
SOP	Service-Object Pair
TCP/IP	Transmission Control Protocol/Internet Protocol
UID	Unique Identifier

## 2.0 Implementation model

The primary functions provided by **MIERIS MWL** are:

Respond to DICOM Basic Modality Worklist Queries using data retrieved from the repository

### 2.1 Application data flow diagram



## **2.2 Functional definition of Application Entities**

All **MIERIS MWL** DICOM-related network communication with imaging related client applications is accomplished using the DICOM protocol over a network using the TCP/IP protocol stack. The following functions are supported entity acts as a Service Class provider (SCP) for the following service classes:

DICOM Modality Work List Management (of the Query/Retrieve Services) as a Service Class Provider (SCP)

## **2.3 Sequencing of Real World Activities**

Not applicable.

### 3 Application Entity specifications

There are one DICOM application entities implemented . They are MIE\_MWL\_SCP it is DICOM Service Class Providers As such, both wait for associations rather than initiating them.

#### 3.1 AE Title

The AE Title as implemented on **MIERIS MWL** uses an AE title of MIE\_MWL\_SCP. It can be changed by the user

#### 3.2 AE SCP Classes

The **MIERIS MWL** server application provides standard conformance as:

- A DICOM 3.0 Verification SCP and
- A DICOM 3.0 Query/Retrieve SCP when servicing queries for Modality Work List

SOP Class UID	SOP Class Name
1.2.840.10008.1.1	Verification SOP Class
1.2.840.10008.5.1.4.31	Modality Work List Management

#### 3.3 MIE\_MWL\_SCP Association Establishment

##### 3.3.1 Application Context Name

All associations with the MIE\_MWL\_SCP are established using the DICOM 3.0. Application Context Name of “1.2.840.10008.3.1.1.1 ”.

##### 3.3.2 Number of Associations

The maximum number of associations is limited only by the available system, memory and internal operation systems TCP/IP stack limitations

##### 3.3.3 Asynchronous Nature

Not applicable

##### 3.3.4 Implementation Identification

The Implementation Class Unique Identifier (UID) for the MIE\_MWL\_SCP AE is “1.2.826.0.1.3680043.1.1.4.2.100.2”

This Implementation Identification is an example only and future names may change.

### 3.3.6 Version Name

The Implementation Version Name for the MIE\_MWL\_SCP is “DCMOBJX.X.XXX.X”. \*1  
 This version name is an example only and future names may change.

\*1 “X.X.XXX.X” is Software version

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
Modality Worklist C-FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

### 3.4.5 Modality Work List Requests

The following table identifies the match types used by the **MIERIS MWL** MWL SCP. The values in this table indicates how the received MWL attribute data is processed by the **MIERIS MWL** MWL SCP.

MWL Matching Key Types	
RV	Range Value match
SV	Single Value match
WC	Wild Card match
RET	Return value only

**MIERIS MWL** supports the following element for the MWL SOP class however, specific availability per site is dependant on the site’s data availability and system configuration. DICOM attributes not listed in this table are handled in that a zero-length attribute will be returned in response to a query for the specified attribute.

<b>MWL Attributes</b>			
<b>Description / Module</b>	<b>Tag</b>	<b>Matching Key Type</b>	<b>Return Key Type</b>
<b>Scheduled Procedure Step</b>			
Scheduled Procedure Step Sequence	(0040,0100)		1
>Scheduled Station AE Title	(0040,0001)	SV	1
>Scheduled Procedure Step Start Date	(0040,0002)	SV, RV	1
>Scheduled Procedure Step Start Time	(0040,0003)	SV, RV	1
>Scheduled Procedure Step Location	(0040,0011)	RET	2
>Modality	(0008,0060)	SV	1
>Scheduled Performing Physician s Name	(0040,0006)	RET	2
>Scheduled Procedure Step Description	(0040,0007)	RET	1C
>Scheduled Station Name	(0040,0010)	RET	2
>Scheduled Procedure Step ID	(0040,0009)	RET	1
>Scheduled Protocol Code Sequence	(0040,0008)	RET	1C
>>Code Value	(0008,0100)	RET	1C
>>Coding Scheme Designator	(0008,0102)	RET	1C
>>Code Meaning	(0008,0104)	RET	3
<b>Requested Procedure</b>			
Requested Procedure ID	(0040,1001)	SV	1
Requested Procedure Description	(0032,1060)	RET	1C
Requested Procedure Code Sequence	(0032,1064)	RET	1C
>>Code Value	(0008,0100)	RET	1C
>>Coding Scheme Designator	(0008,0102)	RET	1C
>>Code Meaning	(0008,0104)	RET	3
Study Instance UID	(0020,000D)	RET	1
Referenced Study Sequence	(0008,1110)	RET	2
>Referenced SOP Class UID	(0008,1150)	RET	1C
>Referenced SOP Instance UID	(0008,1155)	RET	1C
Patient Transport Arrangements	(0040,1004)	RET	2
<b>Imaging Service Request</b>			
Accession Number	(0008,0050)	SV	2
Requesting Physician	(0032,1032)	RET	2
Requesting Service	(0032,1033)	RET	3
Requesting Physician s Name	(0008,0090)	RET	2
<b>Visit Identification</b>			
Admission ID	(0038,0010)	RET	2
<b>Visit Status</b>			
Current Patient Location	(0038,0300)	RET	2

Patient Identification			
Patient s Name	(0010,0010)	SV, WC	1
Patient ID	(0010,0020)	SV	1
Patient Demographic			
Patient s Birth Date	(0010,0030)	RET	2
Patient s Sex	(0010,0040)	RET	2
Confidentiality constraint on patient data	(0040,3001)	RET	2
Patient Medical			
Patient State	(0038,0500)	RET	2
Pregnancy Status	(0010,21C0)	RET	2
Contrast Allergies	(0010,2110)	RET	2
Patient s Weight	(0010,1030)	RET	2
Special Needs	(0038,0050)	RET	2

### 3.4.6 MWL C-Find Response Codes

The MIE\_MWL\_SCP AE responds to a C-Find request with the following response codes:

MWL C-Find Response Codes	
Response	Value
C_FIND_SUCCESS	0x0000
C_FIND_PENDING	0xFF00
C_FIND_CANCEL_REQUEST_RECEIVED	0xFE00
C_FIND_FAILURE_REFUSED_NO_RESOURCES	0xA700
C_FIND_FAILURE_UNABLE_TO_PROCESS	0xC000

### 3.4.7 MWL Search Constraints

The MWL search is a function of the criterion (data attributes) specified in the incoming C-FIND. The MWL SCP does not apply any default constraints on an incoming query, with the exception of the following.

1. If the incoming query is a time range with no date constraint, the current date will be used as the date constraint and the time range query will be executed under the current (today's) date.
2. For time ranges, a missing lower bound is substituted by 000000 and the missing upper bound is substituted by 235959.
3. If the incoming query is a time and date range, the time range is ignored if the date range is over more than one day.

## **4 Communication Profiles**

### **4.1 Supported Communications Stacks**

**MIERIS MWL** provides DICOM V3.0 TCP/IP Network Communication Support as defined in PS 3.8.

### **4.2 TCP/IP Stack**

**MIERIS MWL** inherits the TCP/IP stack from the MS Windows system upon which it executes.

### **4.3 Physical Media Support**

**MIERIS MWL** is indifferent to the physical medium over which TCP/IP executes; they inherit this from the MS Windows system upon which they execute.

## **5 EXTENSIONS / SPECIALIZATIONS / PRIVATIZATIONS**

No extended, specialized or private SOP classes are supported.  
No private transfer syntaxes are supported.