

# Modality Worklist Service DICOM Conformance Statement

Version 1.2  
June 1, 2010

Date	Rev	Author	Modification
July 26, 2009	1.1	Songnian Qian	Initial Version
Jun 1, 2010	1.2	Yiquan Zhang	Revised

**VETinfo SYSTEMS, Inc., Webster Veterinary, IntraVet Software**

Modality Worklist Service DICOM Conformance Statement

---

**Table Of Contents**

**1. INTRODUCTION ..... 3**

1.1 PURPOSE ..... 3

1.2 SUPPORTING DOCUMENTS ..... 3

1.3 GLOSSARY..... 3

**2. IMPLEMENTATION MODEL ..... 4**

2.1 APPLICATION DATA FLOW DIAGRAM ..... 4

2.2 FUNCTIONAL DEFINITION OF THE MODALITY WORKLIST SERVICE..... 5

2.3 SEQUENCING OF REAL WORLD ACTIVITIES ..... 5

**3. APPLICATION ENTITY SPECIFICATION ..... 6**

3.1 THE MODALITY WORKLIST SERVICE AE SPECIFICATION..... 6

3.1.1 *Association Establishment Policies* ..... 6

3.1.1.1 General..... 6

3.1.1.2 Number of Associations ..... 6

3.1.1.3 Implementation Identifying Information..... 6

3.1.1.4 Associated Real-World Activity..... 6

3.1.1.5 Accepted Presentation Contexts ..... 6

3.1.1.6 SOP Specific Conformance for the Modality Worklist SOP Class..... 7

3.1.1.7 SOP Verification Conformance..... 9

**4. COMMUNICATION PROFILES ..... 10**

4.1 TCP/IP ..... 10

4.2 PHYSICAL MEDIA SUPPORT..... 10

**5. SUPPORT OF EXTENDED CHARACTER SETS ..... 11**

## Modality Worklist Service DICOM Conformance Statement

---

### 1. Introduction

---

#### 1.1 Purpose

The purpose of this document is to provide the DICOM conformance statement for the Modality Worklist Service.

#### 1.2 Supporting Documents

This document makes references to or assumes familiarity with the information contained in the following documents:

Digital Imaging And Communications in Medicine, Version 3

#### 1.3 Glossary

ACL	Access Control List
DICOM	Digital Imaging and Communications in Medicine
SCP	Service Class Provider
SCU	Service Class User
ACR-NEMA	American College of Radiology and National Electrical Manufacturer's Association
AE	Application Entity
DIMSE	DICOM Message Service Element
SOP	Service-Object Pair
PMS	Practice Management Software
TCP/IP	Transport Control Protocol/Internet Protocol
UID	Unique Identifier

Modality Worklist Service DICOM Conformance Statement

## 2. Implementation Model

The Modality Worklist Service provides the Modality Worklist to the modality. It implements the following DICOM service classes.

- DICOM Modality Worklist Find SCP (C-FIND)
- DICOM Verification SCP (C-ECHO)
- DICOM Modality Worklist Find Requests SCU (C-FIND)
- DICOM Verification Requests SCU (C-ECHO)

### 2.1 Application Data Flow Diagram

Figure 1 depicts the data flow diagram for the Modality Worklist Service.

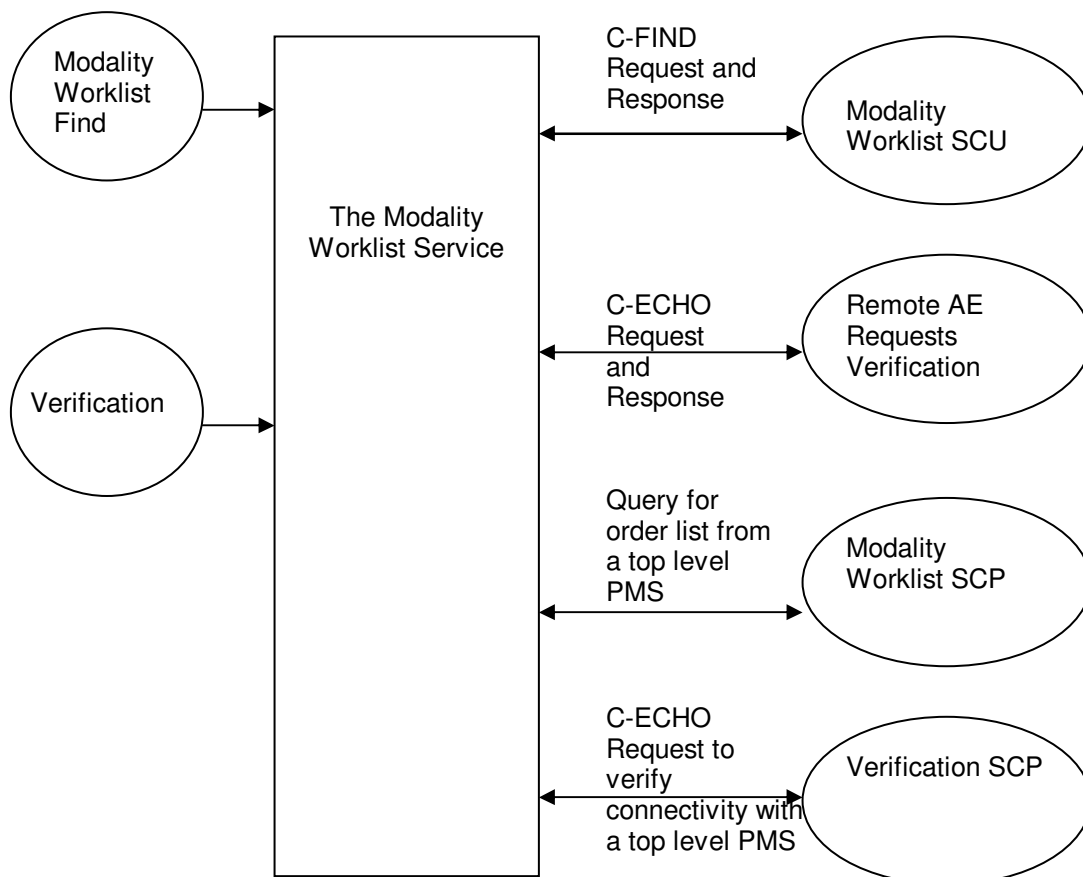


Figure 1 The Data Flow Diagram

## Modality Worklist Service DICOM Conformance Statement

---

The Modality Worklist Service queries the order information from a top-level practice manager and populates its modality worklist database.

The Modality Worklist Service may use the C-ECHO service to verify the connectivity with the top-level practice manager.

The modality worklist database may receive order data through a channel other than through a modality worklist query.

When the Modality Worklist Service receives a C-ECHO request from a peer node, it replies with a C-ECHO response message.

When the Modality Worklist Service receives a Modality Worklist C-FIND request, it uses the identifier data accompanied in the C-FIND request to match the data in its modality worklist database. The Modality Worklist Service issues a C-FIND response with the information of the order for each matched order. At last, it issues a C-FIND response with a success status.

### 2.2 Functional Definition of the Modality Worklist Service

A remote application (acting as an SCU) initiates a DICOM association request for the Modality Worklist service to the Modality Worklist Service. When the association is established, the application further issues one or more C-FIND requests to the Modality Worklist Service. Upon a Modality Worklist identifier is received from the peer Modality Worklist SCU, the Modality Worklist SCP in the Modality Worklist Service searches its database and returns one or more C-FIND responses, one for each matched item found in the database. The Modality Worklist Service supports broad search and searches with filters.

Per specific configurations, the Modality Worklist Service module may actively request for DICOM Modality Worklist service from a peer DICOM Modality Worklist SCP, in order to populate its Modality Worklist database with the queried data. The Modality Worklist Service initiates a DICOM Association with the peer Modality Worklist SCP node for the Modality Worklist service. Through the established DICOM Association, the Modality Worklist Service Module requests for Modality Worklist from the peer DICOM node. After it receives the Modality Worklist data, the Modality Worklist Service module populates its database with the received data.

The DICOM Verification (C-ECHO) SCP and SCU are implemented in the Modality Worklist Service to allow to test DICOM network connectivity between the Modality Worklist Service and a remote DICOM node.

### 2.3 Sequencing of Real World Activities

Not applicable.

## Modality Worklist Service DICOM Conformance Statement

---

### 3. Application Entity Specification

---

#### 3.1 The Modality Worklist Service AE Specification

The Modality Worklist Service Application Entity provides standard conformance to the DICOM 3.0 SOP classes listed in Table 1.

**Table 1 Conformance to SOP Classes**

SOP Class Name	SOP Class UID	Role
Verification SOP Class	1.2.840.10008.1.1	SCP/SCU
Modality Worklist Information Model – C-FIND SOP Class	1.2.840.10008.5.1.4.31	SCP/SCU

#### 3.1.1 Association Establishment Policies

##### 3.1.1.1 General

The DICOM application context is 1.2.840.10008.5.1.4.31. The SCP listens on a configurable port for association requests.

##### 3.1.1.2 Number of Associations

The Modality Worklist Service can accept as many associations as the operating system can support.

##### 3.1.1.3 Implementation Identifying Information

The Modality Worklist Service provides an implementation class UID, which is 1234567890.1998.310. The Modality Worklist Service provides an implementation version name of RIS1998310.

##### 3.1.1.4 Associated Real-World Activity

Not applicable.

##### 3.1.1.5 Accepted Presentation Contexts

The Modality Worklist Service supports the presentation context shown in Table 2.

Modality Worklist Service DICOM Conformance Statement

**Table 2 Presentation Context Supported by the Modality Worklist Service**

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Verification	1.2.840.10008.1.1	Implicit VR Little Endian Transfer Syntax	1.2.840.10008.1 .2	SCP/ SCU	None
Modality Worklist Management Find	1.2.840.10008.5.1.4.31	Implicit VR Little Endian Transfer Syntax	1.2.840.10008.1 .2	SCP/ SCU	None

**3.1.1.6 SOP Specific Conformance for the Modality Worklist SOP Class**

The Modality Worklist Service uses the keys listed in Table 3 in the query criteria, encoded in the Identifier Object.

**Table 3 Query Key Attributes in Modality Worklist Query**

Attribute Name	Tag	Matching Type
Patient Name	0010,0010	Universal, Wildcard, Exact
Patient ID	0010,0020	Universal, Wildcard, Exact
Accession Number	0008,0050	Universal, Exact
Modality	0008,0060	Universal, Exact
Scheduled Procedure Start Date	0040,0002	Universal, Range, Exact
Station AE Title	0040,0001	Universal, Exact

The Modality Worklist Service encodes attributes listed in Table 4 and Table 5 in the Modality Worklist Object Data. The attributes listed in Table 5 are for a veterinary usage.

**Table 4 Attributes returned with the C-FIND response**

Attribute Name	Tag	Description
Patient Name	0010,0010	
Patient ID	0010,0020	
Other Patient ID	0010,1040	
Patient ID Issuer	0038,0011	

# VETinfo SYSTEMS, Inc., Webster Veterinary, IntraVet Software

## Modality Worklist Service DICOM Conformance Statement

Patient Birth Date	0010,0030	
Other Patient Name	0010,1001	
Patient's Weight	0010,1030	
Pregnancy Status	0010,21C0	
Medical Alerts	0010,2000	
Patient Sex	0010,0040	
Accession Number	0008,0050	
Modality	0008,0060	
Scheduled Procedure Start Date	0040,0002	
Scheduled Procedure Start Time	0040,0003	
Scheduled Procedure Step ID	0040,0009	
Station AE Title	0040,0001	
Referring Physician Name	0008,0090	
Scheduled Procedure Step Description	0040,0007	
Scheduled Performing Physician Name	0040,0006	
Requested Procedure ID	0040,1001	
Reason for the Requested Procedure	0040,1002	
Requested Procedure Comments	0040,1400	
Study Instance UID	0020,000D	
Procedure Description	0032,1060	
Requesting Physician	0032,1032	
Order entered by	0040,2008	

**Table 5 Veterinary specific attributes returned with the C-FIND response**

Attribute Name	Tag	Description
Patient Species Description	0010,2201	
Patient Sex Neutered	0010,2203	ALTERED/UNALTERED
Patient Breed Description	0008,2292	
Responsible Person	0010,2297	
Responsible Person Role	0010,2298	
Responsible Organization	0008,2299	

**Modality Worklist Service DICOM Conformance Statement**

---

**3.1.1.7 SOP Verification Conformance**

The Modality Worklist Service provides standard conformance to this class.

## **4. Communication Profiles**

---

### **4.1 TCP/IP**

The Modality Worklist Service uses the TCP/IP stream socket from Microsoft WinSocket.

### **4.2 Physical Media Support**

Not applicable.

**5. Support of Extended Character Sets**

---

The Modality Worklist Service presently provides no support for extended character sets.