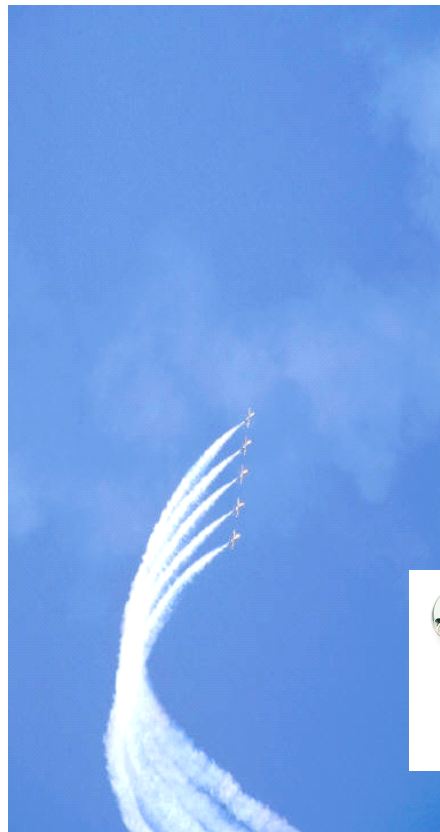




Rogan Dicom Modality Worklist Server



DICOM
Conformance
Statement





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1 Introduction

Rogan DICOM Modality WorklistServer is a DICOM Modality Worklist Server that accepts visit orders from a HIS or a RIS either through ASCII import, HL7 messages or manual data entry, and exports this data to Modalities that can act as DICOM Modality Worklist Clients.

Since it acts as a channel between the HIS/RIS and the Modalities, it is important to realize that the modalities can only receive data that is exported by the information system. If the IS (Information System) does not send a required field to Rogan DICOM Modality WorklistServer, the conformance cannot be guaranteed. Contact Rogan for a list of IS's that have been validated.

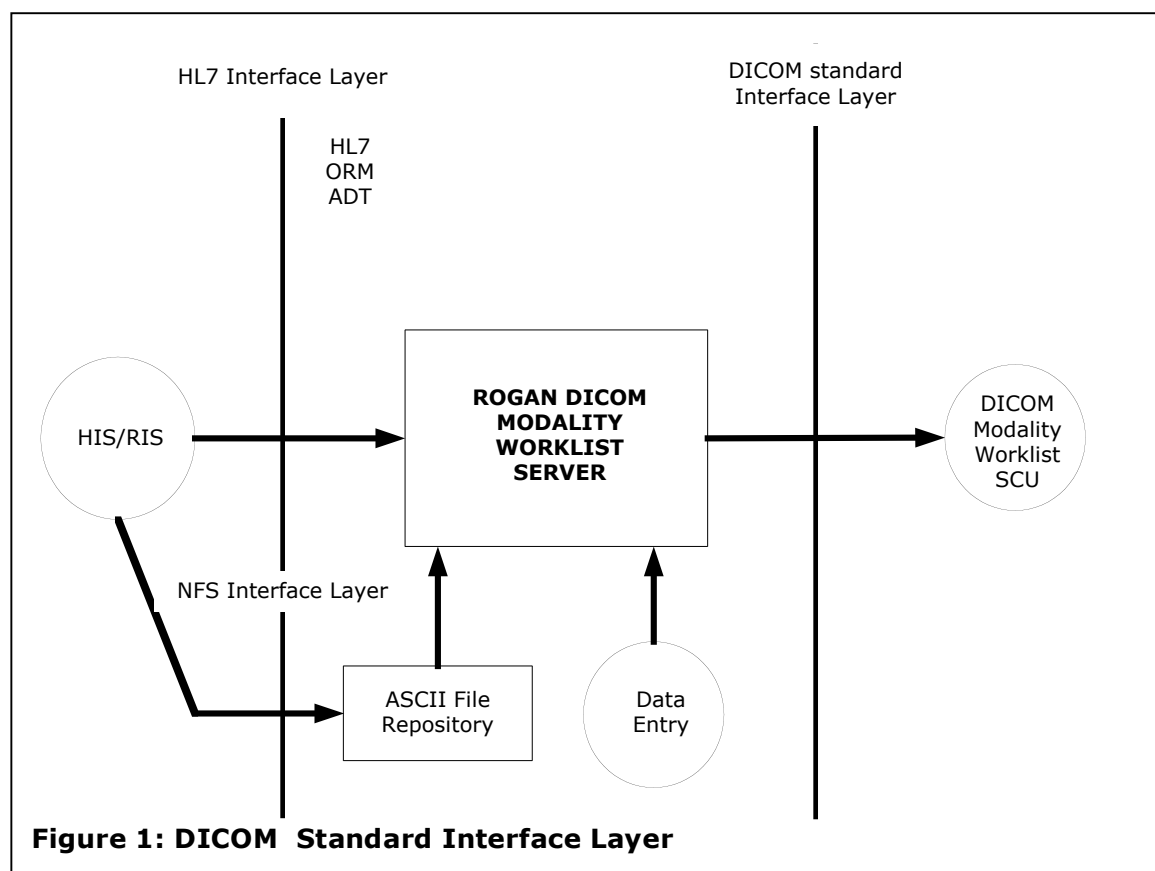
2 Implementation Model

2.1 Application Data Flow Diagram

Rogan DICOM Modality WorklistServer is located between the HIS/RIS and the Modalities in the following manner:

The actual input of the HIS/RIS data is provided by a separate product called LINK Pro, but as the availability of certain types of work list data is dependent on LINK Pro and its interaction with the IS, some of the configuration descriptions in this document refer to Link Pro.

2.2 Functional Definition of AE



The HIS actively sends out order messages to the Rogan DICOM Modality Worklist Server. They are kept there in a local database. When a modality desires to acquire images, it creates an association with Rogan DICOM Modality Worklist Server and sends a C-FIND-RQ message with a query. Rogan DICOM Modality Worklist Server performs the query and replies with a number of C-FIND-RSP messages, to return the matches found in the database, if any.

2.3 Sequencing of Real-world Activities

Not applicable.

3 AE Specifications

There is only one Application Entity. Rogan DICOM Modality Worklist Server responds to any AE Title that is sent in an association request, so the AE Title does not have to be configured.

3.1 Rogan DICOM Modality Worklist Server Specification

Rogan DICOM Modality Worklist Server provides Standard Conformance to the following DICOM V3.0 SOP Classes:

SOP Class name:	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	x	x
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	x	x

3.1.1 ASSOCIATION ESTABLISHMENT POLICIES

3.1.1.1 General

Rogan DICOM Modality Worklist Server is able to accept requested associations. The PDU size is unlimited.

3.1.1.2 Number of Associations

Rogan DICOM Modality Worklist Server can accept any number of concurrent associations, only limited by physical resources like memory and disk space.

3.1.1.3 Asynchronous Nature

No asynchronous messages are accepted.

3.1.1.4 Implementation Identifying Information

The Implementation Class UID is 1.2.528.1.1008.10000.201.
The current Implementation version name is ROGAN_DICOM_201

3.1.2 ASSOCIATION INITIATION POLICY

Not applicable.

3.1.3 ASSOCIATION ACCEPTANCE POLICY

Rogan DICOM Modality WorklistServer will accept an association from any DICOM AE.

3.1.3.1 Echo Request

3.1.3.1.1 Real-world Activity Associated with Echo Request

Rogan DICOM Modality WorklistServer receives an Echo request, commonly from an AE that acts as a modality, where it is generated by a user or automatically to poll the activity of Rogan DICOM Modality WorklistServer.

3.1.3.1.2 Accepted Presentation Context

The following Presentation Context will be accepted by Rogan DICOM Modality Worklist Server when receiving an Echo request:

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Verification SOP Class	1.2.840.10008.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	none

3.1.3.1.2.1 *SOP specific Conformance to the supported Verification SOP Class*
Not applicable.

3.1.3.1.3 Presentation context acceptance criterion

Not applicable, since there is only one context.

3.1.3.1.4 Transfer syntax selection policies

Not applicable, since there is only one context.

3.1.3.2 Find Request

3.1.3.2.1 Real-world Activity Associated with Find Request

Rogan DICOM Modality Worklist Server receives a Find request, commonly from an AE that acts as a modality, where it is generated by a user or automatically, in order to update the list of scheduled procedures.

3.1.3.2.2 Accepted Presentation Contexts

The following Presentation Context will be accepted by Rogan DICOM Modality Worklist Server when receiving a Find request:

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Worklist Information model – FIND	1.2.840.10008.5.1.4.31	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	none

3.1.3.2.2.1 SOP Specific Conformance to the Supported Find SOP Classes

The supported keys are those listed as required, on the condition that they are indeed provided by the HIS/RIS.

A typical HL7 message that is accepted by Link Pro has the form

```
MSH|^~\&|XXXX| |||YYMMDDHHMMSS||ORM^O01|YYMMDDHHMMSS |P|2.2| ||AL|NE
PID| ||PATIENT ID| |PATIENT NAME| |DATE OF BIRTH| |GENDER
ORC|NW|ACCESSION NUMBER
OBR| |ACCESSION NUMBER| |PROCEDURE TYPE| |||||REASON FOR
PROCEDURE| ||REFERRING PHYSICIAN| |SEQUENCE NUMBER| |ROOM| |||||PROCEDURE
DATE/TIME
```

The configuration of Rogan LINK defines which of these fields are written to which database record. Currently, the default fields are:

PATIENT NAME

PATIENT ID

DATE OF BIRTH

GENDER

ACCESSION NUMBER

PROCEDURE TYPE

REASON FOR PROCEDURE

REFERRING PHYSICIAN

SEQUENCE NUMBER

ROOM

PROCEDURE DATE

PROCEDURE TIME

Up to 10 fields can be added to the Link Pro database to add extra fields.

When a Rogan DICOM Modality WorklistServer query is received, these database records are converted to Scheduled Procedures. Each field has a default mapping:

PATIENT NAME	0010,0010
PATIENT ID	0010,0020
DATE OF BIRTH	0010,0030
GENDER	0010,0040
ACCESSION NUMBER	0008,0050
PROCEDURE TYPE	0040,0007
REASON FOR PROCEDURE	0040,0100
REFERRING PHYSICIAN	0008,0090
SEQUENCE NUMBER	0020,0010
ROOM	0008,0060
PROCEDURE DATE	0040,0002
PROCEDURE TIME	0040,0003

On installation, the mapping can be redefined. For each DICOM group-element pair one can specify the database field from which it is filled. The same database field can be placed in multiple DICOM fields, to accommodate groups of different modalities that all expect the comments in different places, or, for example, the users wish the procedure type to be sent as the study description as well.

A translation table can be defined for each field. This allows for example the ROOM code to be converted to the DICOM Modality that is found in the corresponding physical room, and to the AE Title for that modality.

For each field, a default value can be defined. Even if the field is not in the database, this value can be added to each procedure.

In short, this allows the institution to export all HIS/RIS supplied data in a form that is acceptable for the modalities. If the HIS/RIS does not supply data that is required by the modality, there is an interoperability problem that cannot be solved by the type of middleware that Rogan DICOM Modality Worklist Server represents.

The current IS's for which Rogan DICOM Modality Worklist Server has been validated always contain one Procedure Step per Procedure.

3.1.3.2.3 Presentation Context Acceptance Criterion

Not applicable, since there is only one context.

3.1.3.2.4 Transfer Syntax Selection Policies

Not applicable.

4 Communication Profiles

4.1 Supported Communications Stacks

Rogan DICOM Modality Worklist Server provides DICOM V3.0 TCP/IP Network Communication Support as defined in PS 3.8

4.2 TCP/IP Stack

Rogan DICOM Modality Worklist Server uses the WinSock TCP/IP stack as provided by the Windows NT/2000 operating system.

4.2.1 Physical Media Support

HYPERWorklistServer can connect to any medium that supports TCP/IP or the PC-AT bus.

5 Extensions / Specializations / Privatizations

None.

6 Configuration

6.1 AE Title/Presentation Address Mapping

Not applicable.

6.2 Configurable Parameters

Most properties of Rogan DICOM Modality Worklist Server can be configured through the Windows registry.

The following are relevant for its DICOM properties.

- TCP/IP Port
- Extended character set
- Mapping of HIS/RIS data to DICOM fields

7 Support of Extended Character Sets

Rogan DICOM Modality Worklist Server supports a single extended character set to be defined. The default is ISO_IR 100.

It is assumed that this is the character set in which the IS delivers its data.

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