

## DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2012/01/17
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Correction Number	CP-1172
Log Summary: Incompleteness of CP-1027	
Name of Standard	PS 3.4-2011
Rationale for Correction	CP-1027 defines an additional 4 <sup>th</sup> byte field in the SOP Class Extended Negotiation Sub-Item Structure in the A-Associate RQ and A-Associate AC to negotiate Timezone query adjustment, but does not update the specified maximal length of the sub-item from 3 to 4. There is also no default condition specified, if the field is absent.
Sections of documents affected	PS 3.4 C.5.1
Correction Wording:	

### C.5.1

#### C.5.1.1 SOP Class Extended Negotiation

The SOP Class Extended Negotiation allows, at Association establishment, peer DICOM AEs to exchange application Association information defined by specific SOP Classes. This is achieved by defining the Service-class-application-information field. The Service-class-application-information field is used to define support for relational-queries, combined date time matching, ~~and~~-fuzzy semantic matching of person names, **and timezone query adjustment**.

This negotiation is optional. If absent, the default conditions shall be:

- no relational-query support
- separate (independent) range matching of date and time attributes
- literal matching of person names with case sensitivity unspecified
- **timezone query adjustment unspecified**

The Association-requester, for each SOP Class, may use one SOP Class Extended Negotiation Sub-Item. The SOP Class is identified by the corresponding Abstract Syntax Name (as defined by PS 3.7) followed by the Service-class-application-information field. This field defines either a single sub-field:

- relational-query support by the Association-requester

or three sub-fields:

- relational-query support by the Association-requester
- combined date and time range matching by the Association-requester
- literal or fuzzy semantic matching of person names by the Association-requester

**or four sub-fields:**

- **relational-query support by the Association-requester**
- **combined date and time range matching by the Association-requester**
- **literal or fuzzy semantic matching of person names by the Association-requester**
- **timezone query adjustment by the Association-requester**

The Association-acceptor shall return a single byte field (single sub-field) if offered a single byte field (single sub-field) by the Association-requester. The Association-acceptor may return either a single byte field (single sub-field) or a three byte field (three sub-fields) if offered a three byte field (three sub-fields) by the Association-requester. A one byte response to a three byte request means that the missing sub-fields shall be treated as 0 values. **The Association-acceptor may return either a single byte field (single sub-field), a three byte field (three sub-fields) or a four byte field (three sub-fields) if offered a four byte field (four sub-fields) by the Association-requester. A one or three byte response to a four byte request means that the missing sub-field(s) shall be treated as 0 value(s).**

The Association-acceptor, for each sub-field of the SOP Class Extended Negotiation Sub-Item offered, either accepts the Association-requester proposal by returning the same value (1) or turns down the proposal by returning the value (0)

If the SOP Class Extended Negotiation Sub-Item is not returned by the Association-acceptor then relational-queries are not supported over the Association (default condition).

If the SOP Class Extended Negotiation Sub-Items do not exist in the A-ASSOCIATE indication they shall be omitted in the A-ASSOCIATE response.

**C.5.1.1.1 SOP Class Extended Negotiation Sub-Item Structure (A-ASSOCIATE-RQ)**

The SOP Class Extended Negotiation Sub-Item consists of a sequence of mandatory fields as defined by PS 3.7. Table C.5-1 defines the Service-class-application-information field for DICOM Query/Retrieve SOP Classes and Specialized DICOM Query/Retrieve SOP Classes which include the C-FIND operation. This field may be either one ~~or~~, three **or four** bytes in length (i.e., item bytes 2, 3 and 34 are optional).

**Table C.5-1—SOP CLASS EXTENDED NEGOTIATION SUB-ITEM (service-class-application-information field)—A-ASSOCIATE-RQ**

Item Bytes	Field Name	Description of Field
1	Relational-queries	This byte field defines relational-query support by the Association-requester. It shall be encoded as an

		unsigned binary integer and shall use one of the following values 0 – relational queries not supported 1 – relational queries supported
2	Date-time matching	This byte field defines whether or not combined date and time attribute range matching is requested by the Association-requester. It shall be encoded as an unsigned binary integer and shall use one of the following values 0 – combined matching not requested 1 – combined matching requested
3	Fuzzy semantic matching of person names	This byte field defines whether or not fuzzy semantic person name attribute matching is requested by the Association-requester. It shall be encoded as an unsigned binary integer and shall use one of the following values 0 – fuzzy semantic matching not requested 1 – fuzzy semantic matching requested
4	Timezone query adjustment	This byte field defines whether or not the Attribute Timezone Offset From UTC (0008,0201) shall be used to adjust the query meaning for time and datetime fields in queries. 0 - Timezone query adjustment not requested 1 – Timezone query adjustment requested

**C.5.1.1.2 SOP Class Extended Negotiation Sub-Item Structure (A-ASSOCIATE-AC)**

The SOP Class Extended Negotiation Sub-Item is made of a sequence of mandatory fields as defined by PS 3.7. Table C.5-2 defines the Service-class-application-information field for DICOM Query/Retrieve SOP Classes and Specialized DICOM Query/Retrieve SOP Classes which include the C-FIND operation. This field may be either one or three **or four** bytes in length (i.e., item bytes 2, 3 and 34 are optional)

**Table C.5-2—SOP CLASS EXTENDED NEGOTIATION SUB-ITEM (service-class-application-information field)—A-ASSOCIATE-AC**

Item Bytes	Field Name	Description of Field
1	Relational-queries	This byte field defines relational-query support for the Association-acceptor. It shall be encoded as an unsigned binary integer and shall use one of the following values 0 – relational-queries not supported 1 – relational-queries supported
2	Date-time matching	This byte field defines whether or not combined date and time attribute range matching will be performed by the Association-acceptor. It shall be encoded as an unsigned binary integer and shall use one of the

		following values 0 – combined matching not performed 1 – combined matching performed
3	Fuzzy semantic matching of person names	This byte field defines whether or not fuzzy semantic person name attribute matching will be performed by the Association-acceptor. It shall be encoded as an unsigned binary integer and shall use one of the following values 0 – fuzzy semantic matching not performed 1 – fuzzy semantic matching performed
4	Timezone query adjustment	This byte field defines whether or not the Attribute Timezone Offset From UTC (0008,0201) shall be used to adjust the query meaning for time and datetime fields in queries. 0 – Timezone adjustment of queries not performed 1 – Timezone adjustment of queries performed

#### K.5.1

##### K.5.1 SOP Class Extended Negotiation

The SOP Class Extended Negotiation allows, at Association establishment, peer DICOM AEs to exchange application Association information defined by specific SOP Classes. This is achieved by defining the Service-class-application-information field. The Service-class-application-information field is used to define support for fuzzy semantic matching of person names.

This negotiation is optional. If absent, the default conditions shall be:

- literal matching of person names with case sensitivity unspecified
- **timezone query adjustment unspecified**

The Association-requester, for each SOP Class, may use one SOP Class Extended Negotiation Sub-Item. The SOP Class is identified by the corresponding Abstract Syntax Name (as defined by PS 3.7) followed by the Service-class-application-information field. This field defines **either three sub-fields:**

- **reserved; shall always be 1**
- **reserved; shall always be 1**
- literal or fuzzy semantic matching of person names by the Association-requester

**or four sub-fields:**

- **reserved; shall always be 1**
- **reserved; shall always be 1**
- **literal or fuzzy semantic matching of person names by the Association-requester**
- **timezone query adjustment by the Association-requester**

The meaning of fuzzy semantic person name matching **and of timezone query adjustment** is as defined in K.2.2.2 and C.2.2.2.1.

**The Association-acceptor shall return a three byte field (three sub-fields) if offered a three byte field (three sub-fields) by the Association-requester. The Association-acceptor may return either a three byte field (three sub-fields) or a four byte field (three sub-fields) if offered a four byte field (four sub-fields) by the Association-requester. A three byte response to a four byte request means that the missing sub-field shall be treated as 0 values.**

The Association-acceptor, for each sub-field of the\_SOP Class Extended Negotiation Sub-Item offered, either accepts the Association-requester proposal by returning the same value (1) or turns down the proposal by returning the value (0).

If the SOP Class Extended Negotiation Sub-Item is not returned by the Association-acceptor then fuzzy semantic matching of person names is not supported **and timezone query adjustment is unspecified** over the Association (default condition).

If the SOP Class Extended Negotiation Sub-Items do not exist in the A-ASSOCIATE indication they shall be omitted in the A-ASSOCIATE response.

**K.5.1.1 SOP Class Extended Negotiation Sub-Item Structure (A-ASSOCIATE-RQ)**

The SOP Class Extended Negotiation Sub-Item consists of a sequence of mandatory fields as defined by PS 3.7. This field shall be three **or four** bytes in length.

**Table K.5.1-1—SOP CLASS EXTENDED NEGOTIATION SUB-ITEM (service-class-application-information field)—A-ASSOCIATE-RQ**

Item Bytes	Field Name	Description of Field
1	reserved	This byte field shall always be 1
2	reserved	This byte field shall always be 1
3	Fuzzy semantic matching of person names	This byte field defines whether or not fuzzy semantic person name attribute is requested by the Association-requester. It shall be encoded as an unsigned binary integer and shall use one of the following values 0 – fuzzy semantic matching not requested 1 – fuzzy semantic matching requested
4	Timezone query adjustment	This byte field defines whether or not the Attribute Timezone Offset From UTC (0008,0201) shall be used to adjust the query meaning for time and datetime fields in queries. 0 - Timezone query adjustment not requested 1 – Timezone query adjustment requested

Note: This Sub-Item is identical to Extended Negotiation Sub-Items as used by the Query/Retrieve SOP Classes. However, relational queries (Byte 1) are not relevant since the worklist information models are single level, and date-time matching (Byte 2) is already required by the worklist information models.

**K.5.1.2 SOP Class Extended Negotiation Sub-Item Structure  
(A-ASSOCIATE-AC)**

The SOP Class Extended Negotiation Sub-Item is made of a sequence of mandatory fields as defined by PS 3.7. This field shall be three or four bytes in length.

**Table K.5.1-2—SOP CLASS EXTENDED NEGOTIATION SUB-ITEM  
(service-class-application-information field)—A-ASSOCIATE-AC**

<b>Item Bytes</b>	<b>Field Name</b>	<b>Description of Field</b>
1	reserved	This byte field shall always be 1
2	reserved	This byte field shall always be 1
3	Fuzzy semantic matching of person names	This byte field defines whether or not fuzzy semantic person name attribute matching will be performed by the Association-acceptor. It shall be encoded as an unsigned binary integer and shall use one of the following values  0 – fuzzy semantic matching not performed 1 – fuzzy semantic matching performed
4	Timezone query adjustment	This byte field defines whether or not the Attribute Timezone Offset From UTC (0008,0201) shall be used to adjust the query meaning for time and datetime fields in queries.  0 – Timezone query adjustment not requested 1 – Timezone query adjustment requested