DICOM Correction Proposal

STATUS	Final Text
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Correction Number CP-1798
Log Summary: Fix partly inconsistent list of VRs affected by certain types of Attribute Matching
Name of Standard PS3.4 2018d
Rationale for Correction: Various Sections in PS3.4 have not been updated for the latest additions of new DICOM value representations (VR) such as Unlimited Characters (UC) and Universal Resource Identifier or Universal Resource Locator (URI/URL) (UR). Also, listing those VRs that are not affected by a certain type of Attribute Matching sometimes creates confusion. E.g., Wild Card Matching for Attribute Tag (AT) is not intended and not possible since it is not a string representation. Wild card matching on Code String (CS) values was not forbidden in Section C.2.2.2.4, though there is incontinency with Section C.2.2.2.1.2 - clarify that wild card matching is allowed on CS. Some VRs need special handling, e.g. SQ. Fix the partly inconsistent list of VRs that are affected by certain types of Attribute Matching in PS3.4.
Correction Wording:

Change PS3.4 to consistently use “wild card” instead of “wildcard”.

Change PS3.4 to use “Wild Card Matching” instead of “wild card matching”; same for the other types of Attribute Matching.

Change PS3.4 Section C.2.2.2

C.2.2.2 Attribute Matching

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Matching requires special characters (i.e., "*","?","-", "=" and "\"), which need not be part of the character repertoire for the VR of the Key Attributes.

Note

1. For example, the "-" character is not valid for the DA, DT and TM VRs but is used for range matching. **The wild card characters "*" and "?" are not valid for the CS VR but are used for wild card matching.**
2. When character sets other than the default character repertoire are used, then the rules in PS3.5 apply, such as with respect to the use of the 05/12 "\" (BACKSLASH) (in ISO IR 6) or 05/12 "¥" (YEN SIGN) (in ISO IR 14).

Change PS3.4 Section C.2.2.2.1

C.2.2.2.1 Single Value Matching

If the value specified for a Key Attribute in a request is non-zero length and if it is **not of VR SQ and**:

a. ~~**not**~~ of VR ~~**of DA, TM or DT**~~**AE, CS, LO, LT, PN, SH, ST, UC, UR or UT** and contains no wild card characters**, or**

b. of VR of DA, TM or DT and contains a single value with no "-"**, or**

c. of any other VR

then single value matching shall be performed. Except for Attributes with a PN VR, only entities with values that match exactly the value specified in the request shall match. This matching is case-sensitive, i.e., sensitive to the exact encoding of the key Attribute value in character sets where a letter may have multiple encodings (e.g., based on its case, its position in a word, or whether it is accented).

Change PS3.4 Section C.2.2.2.1.2

C.2.2.2.1.2 Attributes of VR of ~~PN,~~ AE, CS, LO, LT, PN, SH, ST, ~~LT~~, UC, UR, and UT

The ~~**PN,**~~ AE, LO, **LT, PN,** SH, ST, ~~LT~~**, UC, UR**, and UT VRs allow the presence of wild card ~~**matching**~~ characters "*" and "?". **Wild card matching is also defined for CS values.** Single value matching against such characters is not supported. See Section C.2.2.2.4.

Change PS3.4 Section C.2.2.2.4

C.2.2.2.4 Wild Card Matching

If the Attribute is ~~**not of VR of DA, DT, TM, SL, SS, US, UL, FL, FD, OB, OW, OD, OF, OL, UN, DS, IS, AS, UI**~~ **AE, CS, LO, LT, PN, SH, ST, UC, UR, UT** and the value specified in the request contains any occurrence of an "*" or a "?", then "*" shall match any sequence of characters (including a zero-length value) and "?" shall match any single character. This matching is case sensitive, except for Attributes with a PN VR (e.g., Patient Name (0010,0010)).

For Attributes with a PN VR, including the case of extended negotiation of fuzzy semantic matching, wild card matching is implementation dependent and shall be specified in the conformance statement.

Note

1. Wild card matching on a value of "*" is equivalent to universal matching.

2. The wild card matching method specified by DICOM might not be supported by some non-DICOM multi-byte character text processors.

3. For multi-component group names, the component group delimiter "=" (3DH) may be present in the Key Attribute value, but may give unexpected results if the SCP does not support matching on separate components but interprets the entire value literally. E.g., "*=*" or "*=*=*" may or may not return all strings, and hence is not equivalent to "*", nor to universal matching.

4. ~~**Using a**~~**A**ttributes with VR of AE, LO, PN ~~**and**~~ SH**, and UC may contain wild card characters "*" and "?". Attempts to match on a string explicitly containing "*" or "?" will be treated as wild card matching and thus may return multiple results rather than a single one. There is no mechanism for** ~~**as matching keys will not allow**~~ single value matching on values that contain characters "*" and "?" **for these VRs** - such queries will always be treated as queries with wild card matching.

5. Attributes with VR of ST, LT and UT are intended for conveying narrative text and may contain wild card characters "*" and "?". Attempts to match on a string explicitly containing "*" or "?" will be treated as wild card matching and thus may return multiple results rather than a single one. **There is no mechanism for single value matching on values that contain characters "*" and "?" for these VRs - such queries will always be treated as queries with wild card matching.**

6. **Attributes with VR of UR may contain wild card characters "*" and "?" as delimiters. These characters are reserved according to IETF RFC3986 Section 2. Attempts to match on a string explicitly containing "*" or "?" will be treated as wild card matching and thus may return multiple results rather than a single one. There is no mechanism for single value matching on**

values that contain characters "*" and "?" for these VRs - such queries will always be treated as queries with wild card matching.