**DICOM Correction Proposal**

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<td>2016/03/14</td>
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<tr>
<td>Person Assigned</td>
<td>Jim Philbin</td>
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**Correction Number**

CP1576

**Log Summary:**
Support ‘text/plain’ media type in RS bulk data for string VR’s

**Name of Standard**
PS 3 2015b, Chapter 18, section 6.5.5

**Rationale for Correction:**
Retrieve Metadata calls can return bulk data URLs for VRs that contain character strings, for example DS, IS, LT, ST, UC, and UT. Its value can then be retrieved using Retrieve Bulkdata.

Currently, the only media type supported is ‘application/octet-stream’, where the content is encoded in binary. This requires user agents to decode the octets into a string. This can be very demanding, especially for ISO 2022.

It has been argued that it is unlikely that character strings will be moved to bulk data; however, since it is possible the Standard should support handling character strings as bulk data.

A practical example of where character text should be moved to bulk data is a private Siemens sopclass (1.3.12.2.1107.5.9.1) that stores multi-megabyte length xml in a UT private tag.

It is proposed that Retrieve Bulkdata supports the 'text/plain' media type for retrieval of character string VR’s. The encoding returned would be either UTF-8 (default), or the Selected Character Set for VRs that support the Specific Character Set (0008,0005) Attribute.

**Correction Wording:**

6.5.5 WADO-RS - RetrieveBulkdata

This action retrieves the bulk data for a given bulk data URL. The response is a single bulk data item.

6.5.5.1 Request

The specific Services resource to be used for the RetrieveBulkdata action shall be as follows:

- Resource
  - (BulkDataURL), where
    - (BulkDataURL) is the URL of a bulk data element. This may be the URL attribute of a BulkData element received in response to a WADO-RS RetrieveMetadataRequest.
    - The server shall always return the same bulk data for a specified BulkDataURL if the data is available.
    - If the resource specified by the BulkData URL is not available, the server shall return:
      - 404 - Not Found, if the server expects to be able to return the resource again in the future
• 410 - Gone, if the server does not expect the resource to be valid in the future
• The server determines the period of time a BulkData URL resource is available.

Method

GET

Headers

Accept

multipart/related; type=application/octet-stream

Specifies that the response can be Little Endian uncompressed bulk data.

multipart/related; type=(MediaType media-type)

Specifies that the response can be pixel data encoded using a (MediaType media-type) listed in Table 6.5-1 (including parameters).

Range

See [RFC 7233] Section 3.1. If omitted in the request the server shall return the entire bulk data object.

6.5.5.2 Response

The Server shall provide the document(s) indicated in the request. In order to parse the bulk data item values, it is necessary to also retrieve the corresponding metadata for the specified Study, Series, or Instance.

The Server shall return the document(s) or an error code when the document(s) cannot be returned. If the server cannot encode the pixel data using any of the requested media types, then an error status shall be returned.

All response formats have a content type of multipart/related with a message boundary separator. The response format depends on the Accept header specified in the request.

6.5.5.2.1 Bulk Data Response

• Content-Type:

  multipart/related; type=application/octet-stream; boundary={MessageBoundary}

• The single item in the response is one of:

  A bulk data value corresponding to a Data Element with a VR that is a character string encoding:

  • Content-Type: "text/plain" [*; charset="charset"

    For VRs that do not support Specific Character Set (0008,0005) encoding, the value shall be encoded in UTF-8, and the Acceptable Character Sets shall be ignored.

    For VRs that support Specific Character Set (0008,0005) encodings, the bulk data value shall be encoded in the Selected Character Set (see Section 6.1.2.4).

  • Content-Location: {BulkDataURL}

• an uncompressed bulk data element encoded in Little Endian binary format with the following headers:

  • Content-Type: application/octet-stream

  • Content-Location: {BulkDataURL}

• a compressed bulk data element from a SOP Instance encoded in a single-frame media type with the following headers:

  • Content-Type: {MediaType}

  • Content-Location: {BulkDataURL}
• If the Range header is specified in the request, the server shall return only the specified bytes of the bulk data object. See [RFC 7233] Section 4.