WEB SERVICES AND PROTOCOL IOD FOR VOLUMETRIC RENDERING
WG-27
Letter Ballot

12 March 2024

CHANGES SINCE LAST REVIEW

1.) Update Part 17 content

    Reworked CT and MRI examples

    Updated MPR Orientation to Viewpoint Attribute conversion

2.) Updated behavior of `renderedvolumetricmetadata` to only return the Rendered Volume Response Module. WG-27 rationale:

- With HTTP/2 and later versions, a user agent can make a rendering request as usual, and the origin server could provide the Rendered Volume Response Module in a push notification.

- The ability of user agents to display video within a multipart/related response varies, so it may be impossible for some user agents to support direct viewing.

- The general trend in PS3.18 is to provide separate endpoints.

2024-03-12

CONVERTING MPR ORIENTATION TO VIEWPOINT ATTRIBUTES IN VOLUMETRIC RENDERING WEB SERVICES

MPR slab orientation attributes can be converted to camera attributes as follows:

- $\texttt{viewpointlookat} = T_{xyz} + X_{xyz} * W / 2 + Y_{xyz} * H / 2$

- $\texttt{viewpointposition} = V_{xyz} + Z_{xyz}$

- $\texttt{viewpointup} = Y_{xyz}$

- Where:
  - T_{xyz} = coordinates of the MPR Top Left Hand Corner (0070,1505) in mm
  - X_{xyz} = values from the direction cosine of the MPR View Width Direction (0070,1507)
  - Y_{xyz} = values from the direction cosine of the MPR View Height Direction (0070,1511)
  - Z_{xyz} = the vector cross products of X_{xyz} and Y_{xyz}
  - W = MPR View Width (0070,1508) in mm
  - H = MPR View Height (0070,1512) in mm
  - V_{xyz} = coordinates of the $\texttt{viewpointlookat}$ point

Removed distance (D): In orthographic projection the distance has no effect. The size of the object does not change with respect to the viewpoint (link).

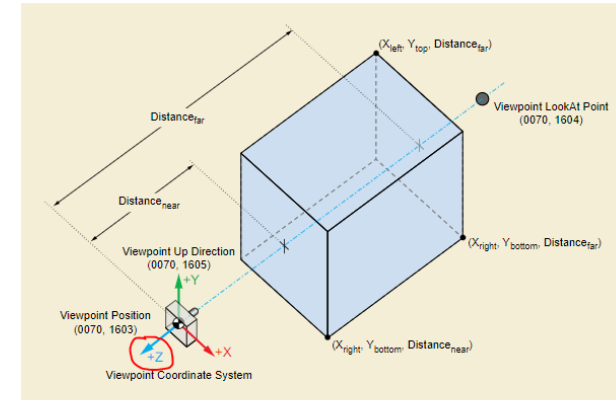It should be plus, as this formula is inverting the origin (link)

Figure C.11.30-1. ORTHOGRAPHIC Field of View Geometry

CHECKLIST

1.) PowerPoint overview - clear/complete for all stages (complete)

2.) Open/closed issues - Clear/complete for PC, All closed for LB, All gone for FT (closed issues reviewed in January, 1 updated in March)

3.) Add new attributes to Part 15 Annex E (de-identification) as appropriate (N/A)

4.) Add attributes for Creator RSA Digital Signature Profile (Part 15) (complete)

5.) Verify content item constraints (Part 16) (N/A)

6.) Confirm PS3.2 has obvious place to record any "shall describe in Conformance Statement" (complete)

7.) Part 18 Annex H (complete)

8.) Update Part 3 Annex F with directory record entries for new IODs (complete)