DCMTK - Bug #1140

DcmElement::getUncompressedFrameSize() may return incorrect size

2024-10-15 10:01 - Marco Eichelberg

Status:	Closed		**Start date:**	2024-10-15
Priority:	Normal		**Due date:**	
Assignee:	Marco Eichelberg		**% Done:**	100%
Category:	Library and Apps		**Estimated time:**	6:00 hours
Target version:	3.7.1+			
Module:			**Compiler:**	
Operating System:				

Description

When DcmElement::getUncompressedFrameSize() calculates the frame size for a compressed image where BitsAllocated=12, then the calculated frame size will be based on 12 bits/sample, while the decoders will most likely change BitsAllocated to 16 and use a larger frame size. Therefore, a buffer based on the calculation made by DcmElement::getUncompressedFrameSize() will be too small, and a buffer overrun will occur. This only affects images that violate the DICOM rule that BitsAllocated must be either 1 or a multiple of 8, but still should not cause buffer overruns.

In cases where BitsAllocated is not 1, 8, 16 or 32, DcmElement::getUncompressedFrameSize() should probably use the next higher value as basis for the calculation. Special handling for BitsAllocated=1 may also be needed because some decoders will support this, and others will generate an image with 8 bits/pixel. Therefore, an overloaded version of the routine that takes into account the specific decoder might be required for compressed pixel data.

History

#1 - 2024-10-15 10:05 - Marco Eichelberg

- File sample2.dcm added

- File sample1.dcm added

Reported 2024-10-14 by DCMTK forum user Swanwa.Liao.

#2 - 2024-12-28 18:24 - Marco Eichelberg

- Status changed from New to Closed

- Assignee set to Marco Eichelberg

- % Done changed from 0 to 100

- Estimated time set to 6:00 h

Closed by commit #99dade341 (public DCMTK) and #9ac7369ab (private modules).

Files

sample2.dcm	607 KB	2024-10-15	Marco Eichelberg
sample1.dcm	607 KB	2024-10-15	Marco Eichelberg