

From:
Sent: Thursday, January 06, 2011 6:24 PM
To: Anderson, Thomas (H USA)
Subject: DICOM Issue: Savescreen Window Settings are Incorrect.

I have included 4 attachments regarding a problem viewing ECAM savescreens on our PACS. Two files are the DICOM files directly from the ECAM and two are a listing of the DICOM tags as shown on our PACS. The DICOM tags indicate the ECAM is sending a value of 100 for both Window Center (0028,1050) and Window Width (0028,1051). When the PACS displays an ECAM savescreen these settings, the image is obviously not correctly windowed. If a user manually adjusts the window levels to 127/255, the savescreen comes close to the correct brightness/contrast. What causes this to happen?

From: Anderson, Thomas (H USA)
Sent: Friday, January 07, 2011 12:35 PM
To:
Subject: RE: DICOM Issue: Savescreen Window Settings are Incorrect.

Using an ordinary laptop, I opened the 2 DICOM files you sent using multiple DICOM viewers without incident. In each case, the color savescreen was properly windowed automatically, i.e., the window settings were correct. First I used a DICOM viewer named **OSIRIS**, and then I used a program called **syngo fastView**.

In both cases, the images were windowed automatically with Window Center and Window Width at 127/255; therefore, there is nothing wrong with the savescreens or their DICOM tags. Granted, the tags in each file contain 100 for both Window Center and Window Width, but those tags are not used for color savescreens.

For DICOM secondary capture images (aka, savescreens) with the Photometric Interpretation tag (0028,0004) set to "RGB", values for Window Width and Window Center should be ignored by the application displaying the image. According to the DICOM Standard (C.11.2.1.2 Window center and window width), "*These Attributes shall be used only for Images with Photometric Interpretation (0028, 0004) values of MONOCHROME1 and MONOCHROME2. They have no meaning for other Images.*"

Your issue is clearly on the PACS side, so either your PACS configuration needs to be modified (if possible) to react differently when it displays color savescreens, or the ECAM needs to be modified to only send black & white savescreens. Below is a DICOM Dumper display from one of the savescreens you sent.

NeoLogica DICOM Dumper

File Edit About

EXIT

- (0008,0016) - SOP Class UID
 - Value: 1.2.840.10008.5.1.4.1.1.7 — **UID for secondary capture image**
 - VR: UI
 - Value length: 26
- (0008,0018) - SOP Instance UID
- (0008,0020) - Study Date
- (0008,0021) - Series Date
- (0008,0023) - Content Date
- (0008,0030) - Study Time
- (0008,0031) - Series Time
- (0008,0033) - Content Time
- (0008,0050) - Accession Number
- (0008,0060) - Modality
- (0008,0064) - Conversion Type
- (0008,0070) - Manufacturer
- (0008,0090) - Referring Physician's Name
- (0008,2111) - Derivation Description
- (0010,0010) - Patient's Name
- (0010,0020) - Patient Id
- (0010,0030) - Patient's Birth Date
- (0010,0040) - Patient's Sex
- (0018,1012) - Date of Secondary Capture
- (0018,1014) - Time of Secondary Capture
- (0020,000D) - Study Instance UID
- (0020,000E) - Series Instance UID
- (0020,0011) - Series Number
- (0020,0013) - Instance Number
- (0020,0020) - Patient Orientation
- (0028,0002) - Samples per Pixel
- (0028,0004) - Photometric Interpretation
 - Value: RGB — **RGB=color**
 - VR: CS
 - Value length: 4