

MINUTES

DICOM WORKING GROUP FOUR (Compression)

Date and time: Wednesday, July 29, 2020
11:00am-12:00pm US ET

Presiding Officer: David Clunie, Chair

Secretariat: Shayna Knazik, DICOM/MITA

Voting Members Present

AetherAI	Pei-Chen Lin
Agfa US Corp	Bill Wallace
Carl Zeiss Meditec AG	Régis Deshayes
DICOM/MITA	Shayna Knazik
PixelMed	David Clunie
Sectra Imaging IT Solutions AB	Erik Edespong

Voting Members Not Present

*Agfa US Corp	Jos De Baerdemaeker
*Corista, LLC	Eric Wirch
DesAcc EMEA Ltd	Graham King
*GE Healthcare	Yongjian Bao
*Korean PACS Standards Committee	Hee-Joung Kim
*Neagen	Rami Hietala
*University of Warwick	Victor Sanchez

*Not present at two consecutive meetings and therefore not counted for quorum during this tcon

Others (Observers, Alt-voting, staff) Present

AAPM/Univ. of Arkansas for Medical Sciences	Larry Tarbox, Observer
AetherAI	Chia-Pin Kang, Observer
Affiliated Pathologists Medical Group	Eric Glassy, Observer
DesAcc EMEA Ltd	Konstantinos Alexopoulos, Observer
GE Healthcare	Steven Nichols, Observer
Philips	Nick Haarselhorst, Observer
Siemens Healthineers	Chris O'Donnell, Observer
StatRad	Chris Hafey, Observer
Roche Tissue Diagnostics	Uwe Horchner, Observer
vICTor Works	Victor Derks, Observer

1. Administrative Items:

- The group was welcomed and roll was taken.
- NEMA Antitrust and DICOM patent declaration rules were reviewed.
- The minutes from the July 15, 2020 teleconference were reviewed and approved.

2. General consideration for new compression schemes to add to DICOM, especially for:

- AI (including segmentations, contours and parametric maps)
- enterprise imaging
- digital pathology
- web browser based viewers (performing frame level access and progressive transmission)

3. Specific schemes considered included:

- On this teleconference, the group focused on what problems currently exist in compression (where are the biggest needs/gaps) versus potential solutions which can be discussed on future calls.
- Some problem use cases mentioned:
 - Chris Hafey brought up the fact that client-side rendering in web browsers -- there is no current DICOM-transfer syntax optimized for this use case.
 - Bill Wallace: uploading information without losing information, particularly from digital cameras, without recoding.
 - Chris O'Donnell: lossy ultrasound echo video needs to be much smaller.
 - Members were encouraged to reach out to Jan Wassenberg to get access to the JPEG-XL draft code.
 - David mentioned that another item for consideration is whether the group would like to do testing on quantitative thresholds for performance (reviewed history of pre-JPEG 2000 DICOM call for proposals and selection and evaluation methodology).
- **Action:** Shayna to add the following items to the next tcon agenda:
 1. "Why web browser performance is a problem?"
 2. "Not changing what came off the camera"
 3. "What characteristics of the ultrasound echo would be amenable to the new compression scheme?"
 4. "Would the group like to do testing on quantitative thresholds for performance?"
 5. "Should we add a transfer syntax for PNG (portable network graphics)?"

4. Standing agenda items for discussion:

- JPEG-XL: (now being finalized, open source codec available for testing)
- HTJ2K (faster, easier, less effective) esp. in browser viewer progressive role
- lossy and lossless variants of H.265 (HEVC) including HEIF for still images and volumes
- iSyntax (now openly documented)
- Other schemes for single bit compression (for segmentations), G4, JBIG, JBIG2, FLIF
- deflate and bzip2 for individual image frames +/- DICOMweb bulkdata components
- bzip2 for entire dataset (à la existing deflate) (e.g., for SR)

5. Next T-con

- WG-04 meets every other Wednesday from 11:00am-12:00pm US ET.
- The next tcon will take place on August 12th, 11am-12pm US ET.
- Dial-in information for all calls can be accessed in the [DICOM Calendar, which is available 24/7.](#)

6. Adjournment: the meeting was adjourned at 12:03pm US ET.