

QIBA Quantitative CT Group 1C Subcommittee Update

Thursday, November 18, 2010; 1 PM CST

Call Summary

In attendance

Charles Fenimore, PhD, (Chair)

Andrew Buckler, MS

Baiyu Chen

Marios Gavrielides, PhD

Michael McNitt-Gray, PhD

Nicholas Petrick, PhD

Ganesh Saiprasad, PhD

Ehsan Samei, PhD

Ying Tang, PhD

RSNA

Joe Koudelik

Julie Lisiecki

Define the Imaging Protocol: Review Measurements on the ACR CT Phantom at the Various Sites

Prep for Imaging the FDA Anthropomorphic Phantom

- 1C input will be needed for Profile development
- Factors to consider: inter-scanner variation; variation of reading phantom modules - document in a draft basis now
- The imaging protocols are defined for four of the 5 sites; group aims to have completed FDA phantom imaging by February 28th, 2011.
- A reading phase of approximately 2 months will be followed by analysis. June 30th 2011 final Group 1C report due.

Protocol Acquisition Parameter Update

- 1) **Noise** - should be 17 +/- 1 (*the standard tool measurement was 17.5 though this varies at different viewing stations, with different software, and with different monitors*)
- 2) **Resolution** - should be 6 line pairs/cm
- 3) **Dose** - should be 50-70 mAs or less
- 4) **Phantom** - must be positioned/oriented within scanner gantry according to ACR specifications

Sites

- We reviewed imagery from four of the 5 sites: the University of Maryland, Duke, UCLA, and FDA.
- The images and data from imaging the ACR CT phantom allow setting of the parameters for the performance protocol. We will review the protocol and schedule the imaging of the FDA phantom.
- More detail will be provided on the next Monday call. Group 1C data is getting input into process profiles.

Profile Clarification

- The QIBA CT 1C protocol includes a performance-based branch, specified to deliver targeted resolution and noise.
 - Not every site needs to follow through with specific settings. Goal is to provide a series of protocol parameters to produce similar, not identical, image output across different scanners
- Want to set up for multiple-company process, while not discouraging innovation
 - goal to define the requirements for display, image acquisition and post processing

Next Steps:

- Review other image data sets; determine consensus whether images have sufficient resolution
- Work out a schedule among the participating sites to begin imaging of the FDA phantom.
- Come to consensus on the imaging protocol via email or on next call.
- Protocol procedure to be written so that it may be used on any device.
- Try to meet for breakfast at *RSNA 2010*, with whoever can make it.
- Dr. McNitt-Gray will try to obtain data from Toshiba – (Dr. Kirsten Boedeker) - more input needed concerning wider fields-of-view (FOV) on Toshiba systems

Next Call: The week after *RSNA 2010* – Wednesday, Dec 8th at 2 P.M. CST