

QIBA Lung Density Biomarker Committee (BC)

March 23, 2016 at 2 PM CT

Draft Call Summary

In attendance

Matthew Fuld, PhD (Co-Chair)

David Lynch, MD (Co-Chair)

Andrew Buckler, MS

Bernice Hoppel, PhD

Edward Jackson, PhD

Philip Judy, PhD

Songtao Liu, MD

Jered Sieren, BSRT (R) MR CT

RSNA

Joe Koudelik

Julie Lisiecki

Phantom Scanning, Round II: Report

- The Vendors Task Force successfully completed scanning on 3 vendor platforms during the week of March 7 – 10th.
- Scanning occurred at U-Iowa (Monday) and at sites in Madison (Tuesday) and Marshfield, WI (Wednesday).
- Scanners used included: Siemens (2), GE (1), and Toshiba (1).
- Testing included: automatic exposure control (AEC), iterative reconstruction (IR), and vendor-specific harmonization protocols
 - Philips scanners were not included due to a lack of access to scanners in the region
 - In order to include Philips harmonization data, Dr. Fuld will try to obtain some scanning access in his area
- The Hounsfield Unit (HU) harmonization requirements for the Profile were largely met with this data acquisition
- Analysis of the data may take additional time
- Specific analysis software incorporating the additional foam designs from Dr. Chen-Mayer is not yet available
 - Dr. Alfonso Rodriguez (UW) offered to work on a software analysis solution for the group
 - Dr. Fuld noted that this may be challenging as vendors may not wish to release data for analysis
 - An automated software solution for all to use independently would be preferable
 - Dr. Fuld is following up with U-Iowa software developers; additional programming could take up to a month
 - No analysis software is currently available for the Alderson2 phantom
- The following phantoms were used in the scanning to test Dr. Fain's AEC protocol:
 - COPDGene2
 - The Alderson2
 - a 3-D printed NIST foams from Dr. Chen-Mayer
 - CTDI phantom (A computed tomography dose index (CTDI) QA phantom)
- Dr. Rodriguez is working on protocol harmonization for lung imaging to create efficient automatic exposure control settings across vendors
- Submitting an abstract with preliminary findings for RSNA 2016 was suggested
 - Dr. Fuld will follow up with Dr. Chen-Mayer offline to see if she is able to draft an abstract submission, as she has been working on preliminary analysis for publication

Proposed Project for Round-6:

- Dr. Judy proposed a project to test conformance and feasibility once the harmonization protocol is ready
- A test of harmonization procedures for the same scanners being used for lung cancer screening could be tested using the COPDGene2 Phantom to evaluate the protocol and demonstrate its practicality
 - Dr. Judy offered his help with this project but noted that he could not be the PI
 - It was noted that the PI should be located at an academic site, not a vendor site
- Dr. Fuld plans to follow up with Dr. Chen-Mayer offline to see if she might consider drafting a proposal as PI
 - Mr. Sieren volunteered assistance with this project, if needed

For next call: Group to discuss volume adjustment analysis for the Profile and next steps needed to complete the Profile

Next call: Wednesday, April 6, 2016 at 2 pm CT