

QIBA Volumetric CT Group 3A Update

Thursday, 8 November 2012 at 11:30 AM CT (GMT-5)

Call Summary

In attendance

Maria Athelougou, PhD (Chair)

Peter Bajcsy, PhD

Hubert Beaumont, PhD

Andrew Buckler, MS

Barbara Croft, MD

Jovanna Danagouliau, PhD

Alden Dima, MS

Hyun Grace Kim, PhD

Nicholas Petrick, PhD

Daniel C. Sullivan, MD

RSNA

Joe Koudelik

Julie Lisiecki

Abstracts Have Been Submitted to:

- American Thoracic Society (ATS)
- The 3rd World Congress of Thoracic Imaging 2013

Monday, February 25, 2013 - Selected for QI-Bench Meeting (Gaithersburg, MD)

- February 25, 2013 was selected for the workshop and announcement of the next QIBA 3A Challenge
- Dr. Athelougou to check her schedule to determine if she can join the workshop via teleconference

Update from Dr. Beaumont

- Dr. Beaumont reviewed source code, etc. for DOS systems; QI-Bench uses LINUX
 - There may be some difficulty with conversion for testing
 - All indices used must be implementable on QI-Bench
- Mr. Buckler noted that it may be possible to create interfaces to Windows-based applications for testing
 - DICE, STAPLE, and the Charles Meyer probability map were all suggested methods

Guest participant: Dr. Peter Bajcsy, NIST

- Dr. Bajcsy was invited by Mr. Dima; he has expertise with microscopy and medical image processing
- 2-D microscopy and 3-D comparisons are of particular interest, with attention to similarity index metrics
- A goal is to help researchers utilize large data downloads with very large computations of terrabytes via the recommended Hadoop platform
- This platform aims to create a means to process terrabytes.
- Sampling for comparisons is critical as collections continue to grow
- Balance between effort and utility is needed for the QIBA 3A Challenge
- Dr. Bajcsy will consult with Mr. Dima to help determine the proper similarity metric for the Challenge data

Questions remain:

- How many lesions/ case?
- Data and metrics need to be chosen
- Do the lesions meet the evaluability criteria for level of performance as prescribed by QIBA?
- The paradigm and workflow may need distractor lesions as used in the QIBA 1B study
- The QIBA 1B study also found that readers using "locked sequential read" vs. a fully randomized methodology had a significant improvement in performance.

Topics of discussion per Dr. Athelougou for next call: *Thursday, December 6, 2012 at 11:30 AM CT.*

- Clarification of which data, and how it will be used in a proposed next Challenge
- Metrics for measurement and evaluation of algorithms with annotated data.

Doodle Poll Reminders – Please respond to RSNA doodle polls to aid staff in meeting preparations:

- Poster Meet-the-Expert Sessions (<http://doodle.com/qi8fhbm6m3wtzsvv>)