

QIBA Volumetric CT Group 3A Update
Thursday, 21 August 2014 at 11:30 AM CT
Call Summary

In attendance

Maria Athelougou, PhD (Chair)
Hubert Beaumont, PhD
Andrew Buckler, MS
Marios Gavrielides, PhD

Lubomir Hadjiiski, PhD
Nancy Obuchowski, PhD
Nicholas Petrick, PhD

Daniel Sullivan, MD
Ying Tang, PhD
Amit Vasanji, PhD

RSNA

Joe Koudelik
Julie Lisiecki

Update: Paper for the Clinical Challenge

- Dr. Gavrielides has completed the process for FDA review.
 - Comments from FDA internal reviewers were forwarded to Mr. Buckler and Dr. Peskin.
- Dr. Peskin has begun the process for NIST review.

Discussion: Suggestions for future work of Group 3A

- Further exploration of utilizing the prior QIBA Group 1C phantom study data was considered, adding complexity by using multiple algorithms to test for dependencies among scanners and analysis software packages.
- The original Group 1C study used the following basic design:
 - 4 or 5 scanners
 - both spiculated and spherical nodules / phantom data
 - multiple reconstruction kernels
 - multiple readers utilizing one algorithm
- An updated 3A challenge using QIBA 1C as a starting point could focus on the following:
 - multiple scanners
 - multiple algorithms
 - multiple readers
- A new study design might include:
 - Running a pilot study analyzing phantoms only
 - Using the pilot data to plan data acquisition and design the power study for clinical use
 - Determining the variability in phantoms using scanners and algorithms prior to a clinical study would be helpful.
 - Tests for variability could be scaled-up using patient test/retest data
- Related to a modified 1C study for a new 3A challenge, some items for further investigation include:
 - Data presentation(Dr. Fenimore)
 - Volunteer(s) to review data
 - Volunteer readers
 - A QIBA-focused "Acquisition Group" for use by QIBA researchers across modalities
 - Consideration regarding incentive for volunteer participants
- Dr. Obuchowski briefly discussed her proposed 3-factorial test-retest study design, which would allow for randomization on multiple levels
- The group is still considering options and is open to ideas.
- Suggestions should be sent to Dr. Athelougou: Mathelougou@definiens.com.

Action items:

- Sometime after September 2014, Dr. Athelougou will invite a MICCAI representative to give a presentation about comparison of challenge methodologies for statistical evaluation of algorithm results.
- Practical suggestions for the future work of Group 3A to be sent to Dr. Athelougou: Mathelougou@definiens.com.

Next call: Thursday, **September 4, 2014** at 11:30 AM CT.