

QIBA Volumetric CT Group 3A Update

Thursday, 20 December 2012 at 11:30 AM CT (GMT-5)

Call Summary

In attendance

Maria Athelougou, PhD (Chair)

Peter Bajcsy, PhD

Andrew Buckler, MS

Barbara Croft, PhD

Alden Dima, MS

Paul Garrett, PhD

Marios Gavrielides, PhD

Guillaume Orioux, MSc

Ying Tang, PhD

RSNA

Julie Lisiecki

Madeleine McCoy

General Updates

- It was agreed that study design input from potential participants could be collected prior to the QIBA 3A/ QI-Bench meeting on February 25, 2013, via a simple online tool, e.g. Survs or a Google Form
 - Responses could be tabulated before the kick-off meeting to help develop the agenda
 - Specific questions from the study organizers should be provided as soon as possible
- Mr. Dima needs at least 2 weeks advance notice, along with some paperwork and a photo ID, for any foreign nationals wishing to attend the Feb 25th meeting at NIST
 - This will be addressed in the email with registration and logistics details to go out in January

Discussion related to study design

- Difference between automatic vs. semi-automatic algorithms must be taken into account in terms of their effect on the study
 - This 3A study intends to use the same 1B data, with 5 readers, and individual algorithms
- At completion, the 3A study group will compare its results with those of the 5 readers from the 1B study
 - Complement to the 1B study: one reader per each method, with multiple methods
 - This is a measurement of change, where ground truth is zero
- There are a variety of sources of variability – including within the reader and algorithm groups
- No value has been determined as being “correct”
- STAPLE segmentation method deemed the best method from choices discussed
 - It was also decided that participants would perform as many other metrics (*on the list below*) as can be reasonably performed within the assigned time-frame, *yet to be determined*
 - A reference truth would be the result of using STAPLE
- It is important to note that not all formats support all metrics equally
 - Metric/ platform determination can be a question posed to potential participants
- Mr. Buckler offered funding for the effort through QI-Bench subject to detailed design discussions.

Pros and Cons of potential segmentation methods discussed:

- STAPLE
- DICE
- Soft Staple
- VOTE
- P-Map
- Jaccard
- Rand
- Bivariate

Materials needed for Formal Invitation to the QIBA 3A/ QI-Bench /kickoff & next challenge

- Invitation to February 2013 workshop
- Travel logistics
- Draft agenda
- Doodle poll vote to potential participants for a more scientifically rigorous time-intensive challenge (*yes or no*)
- Survey link for participants to respond to targeted questions regarding design of the challenge
- “Ready-Talk” teleconference details to be provided by NIST for off-site attendees

Next Steps: Mr. Dima to prepare QIBA 3A Clinical Challenge Kickoff Meeting Email once open issues have been resolved by the group.

Next calls: *Thursday, January 3, 2013 at 11:30 AM CT* and *Thursday, January 10, 2013 at 11:30 AM CT.*