

QIBA DCR-MRI Technical Committee Update
February 12, 2009, 11:00am CST
Call Overview

In attendance:

Michael H. Buonocore, MD, PhD (Co-Chair)
Jeffrey L. Evelhoch, PhD (Co-Chair)
Gudrun Zahlmann, PhD (Co-Chair)
Edward Ashton, PhD
Daniel P. Barboriak, MD
Geoffrey D. Clarke, PhD
Igor D. Grachev, MD, PhD
Sandeep N. Gupta, PhD
Edward F. Jackson, PhD
Gregory Karczmar, PhD

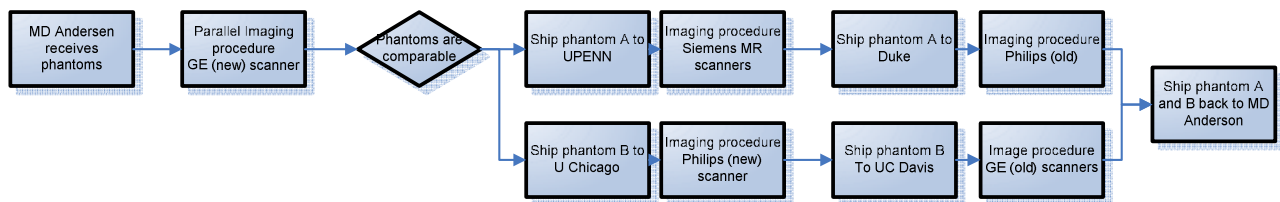
David E. Purdy, PhD
Stephen Russek, PhD
Annette Schmid, PhD
Mitchell Schnall, MD, PhD
Katherine Scott, PhD
John Waterton, PhD

RSNA
Susan Anderson
Joe Koudelik

General Discussion:

- Both phantoms, cuboids and NaCl fill solutions were delivered to Dr Jackson at MD Anderson in early February
- Dr Jackson showed slides of phantoms and initial quality control measurement results
- Initial tests:
 - Overall, phantoms compared favorably per Dr Jackson's initial QC assessment
 - IR and T1 scans performed
 - Variable flip angle performed (2-30 degrees)
 - ROI assigned in both phantoms
 - IR time plots shown good phantom correlation between spheres within both phantoms
 - VFA reflection time shown good correlation between both phantoms
 - Done in same series, in research mode
 - Longer T1 scans showed some variation though
- Unfortunately the testing revealed problems with one of the phantoms
- The phantoms are assembled differently
 - Only Phantom #66002 matches original plan (i.e. is correct)
 - Rotational variance between phantoms - top and bottom flipped 180 degrees
 - Alignment issues result - comparisons more difficult
 - Full DCE-MRI protocol not run yet
 - Re-indexing of 2nd phantom discussed but not deemed appropriate
- Proposed Phantom Correction:
 - Return 2nd phantom to manufacturer and have reassembled to match 1st phantom (Phantom Labs to repair immediately)
 - Dr Jackson to contact Josh Levy (Phantom Labs) for repair turn-around time approximation
 - Single phantom distribution to scanning sites until 2nd phantom is corrected
 - Begin the phantom measurements at the first site
 - Repaired 2nd phantom to be shipped to Dr Jackson for continued QC checks/measurements prior to shipping to scanning sites

- Scanning Process to Begin
 - Dr Jackson will begin 1st imaging procedures this weekend (Feb 14-15) on one phantom
 - Temperature of phantom (fill solution) at scanning should be documented
 - Scanner images to be sent to Dr Ashton at VirtualScopics
 - Dr Ashton ready to receive data as soon as possible
 - FTSP site set up to accept scanned phantom datasets
 - Will provide feedback once images received
 - Will propose project timeline based on image analysis
 - Will provide schedule for next DCE-MRI group update call
 - Description of data formats to be written by Dr Ashton
- Protocol with revised analysis section posted on the QIBA Wiki for reference
http://www2.rsna.org/re/QIBA_DCE_MRI/index.htm
- The original shipment diagram will be followed over a longer timeframe to accommodate for Phantom #2 issues



Additional Studies:

- Dr Buonocore working on additional RF bias and flip angle project
 - Applied to brain structures
 - Will apply algorithm to IRAT phantom data soon
 - Will provide details to the DCE-MRI Tech Committee soon (i.e. March '09)
- Dr Gatsonis to provide some statistical input to tighten-up the DCE-MRI analysis protocol
- Drs Zahlmann, Schnall and Purdy to acquire and provide detailed Siemens scanner acquisition parameters

Next Steps:

- Dr Jackson to contact Josh Levy (Phantom Labs) to inquire about the time frame for phantom repair
- Dr Jackson to keep everyone informed of phantom shipping details
- Dr Jackson to contact Dr Karczmar regarding shipping Phantom #1 to U Chicago
- Dr Evelhoch to send pdf version of protocol to Drs Purdy, Jackson and Rosen
- Dr Ashton to review initial data and work on analysis details
- Images can be posted to the QIBA Wiki to demonstrate progress
- Joe Koudelik (RSNA) to forward QIBA Wiki URL to DCE-MRI Tech Cmty and link to updated protocol
- Send materials for Wiki posting to Joe Koudelik (RSNA) jkoudeik@rsna.org
- DCE-MRI call summaries posted on the QIBA Wiki for reference