

## QIBA PDF–MRI (DWI) and IMI QuIC-ConCePT Next Steps T-con

Wednesday, 20-March-2013 at 1 PM CT

### Call Summary

#### Participants

Gudrun Zahlmann, PhD (Moderator)

Michael Boss, PhD

Thomas L. Chenevert, PhD

Daniel Sullivan, MD

#### RSNA

Fiona Miller

Joe Koudelik

#### General Discussion

##### Phantom Collaboration Overview

- IMI ice-water phantom has proven successful in qualifying European study sites
- IMI in possession of ice-water phantom measurement data already
- Dr Alan Jackson is currently overseeing the IMI data analysis activities
- IMI ice-water phantom utilizes a different design by having an acrylic outer shell, multiple internal compartments, and using sucrose/water as fill solution
- More details needed regarding the IMI phantom to better understand the IMI procedure/protocol
- QIBA ADC phantom still under development; testing new materials; completion date not certain but assumption is summer (July) 2013
  - Drs Boss and Chenevert to test base-properties of internal materials
  - Need to determine equilibrium speed for various materials; equilibrium control still needed
- How to analyze the QIBA phantom data remains a question; proposed was some collaborative process using the same methodology, i.e., software to be usable across all platforms
- Need to identify common metrics that matter, and possibly share the QIBA QC procedure
- Need to characterize prototype ADC phantom on both 1.5 and 7 T (research) scanners; can be done concurrently
- Dr Chenevert offered to help scan ADC phantom at U Mich once fabricated
- Protocol details and basic metrics used by both sides need to be shared
- Broader collaboration plan needed to answer many questions
- Both groups need to share their phantom details and protocols to better understand and compare the intricacies of both study

##### IMI Clinical Study Details and Timelines

- Drs Zahlmann and Waterton to follow up on which IMI studies have used the ice-water phantom, purpose of these studies, and current status of studies to help determine if the QIBA ADC phantom may be applicable to European site testing/qualification
- Further fleshing-out of study details needed; vague trial timelines need clarification as well

##### In-person 2 Hour meeting during 2013 ISMRM (Salt Lake City, Utah – April 22, 2013)

- Introduction (20 minutes)
- 3-Topics for discussion (70 minutes)
  - Topic #1: Phantom Collaboration

- IMI and QIBA could present their ice-water phantom designs, while QIBA present their ADC imaging protocol
    - IMI could share their experiences with phantom design, handling, etc
  - Topic #2: Data Analysis Procedure
  - Topic #3: Stability of PVP vs. Sucrose Phantom Fill Solutions
- Next Steps (30 minutes)

### **Quantitative Imaging Data Warehouse (QIDW)**

- DCE Phantom and DCE-MRI Digital Reference Object (DRO) data already uploaded
- Guidance still needed from data submitters as to measurement/analysis instructions
- Drs Boss and Chenevert to upload ADC material images (polyvinylpyrrolidone (PVP) in aqueous solution) for a possible ISMRM demo
- Dr Waterton to be invited to upload the IMI ice-water phantom data
- Note to restrict all uploads to phantom data for this initial data warehouse testing period

### **QIBA DWI Profile**

- Test/retest data needed for lung and liver studies
- QIBA DWI Lung Protocol to be developed
- Tech Ctte must focus on “doable” projects, i.e., within the scope of QIBA volunteer efforts
- Drs Boss and Guimaraes to use the existing DCE-MRI Profile as a guide to develop both liver and lung sections

### **Next steps:**

- Need to acquire IMI phantom images for comparison/reference
- Both groups need to share their phantom details to better understand the intricacies of both study protocols
- Drs Boss and Chenevert to upload ADC material images (polyvinylpyrrolidone (PVP) in aqueous solution) for a possible ISMRM demo
- Dr Waterton to be invited to upload the IMI ice-water phantom data
- Dr Boss to coordinate ISMRM meeting logistics