

QIBA Ultrasound Shear Wave Speed (SWS): System Dependencies Subcommittee

Friday, November 15, 2013; 11 AM CT

Call Summary

Notes provided by Dr. Palmeri

In attendance

Mark Palmeri, MD, PhD (Co-Chair)

Keith Wear, PhD (Co-Chair)

Shigao Chen, PhD

David Cosgrove, MD

Brian Garra, MD

Gilles Guennette, RDMS, RDCS, RVT

Timothy J. Hall, PhD

Christopher Hazard, PhD

Stephen McAleavey, PhD

Andy Milkowski, MS

Kathy Nightingale, PhD

Matthew Urban, PhD

Hua Xie, PhD

RSNA

Fiona Miller

Julie Lisiecki

Moderator: Mark Palmeri, MD, PhD

Call summary from previous call, 10-18-2013, reviewed and approved

Simulation tools discussed

Acoustic simulation packages to consider:

- Field II
- FOCUS
- KZK* (Gianmarco Pinton)
- PZFlex* (M. Urban)
- SimSonic (K. Wear to investigate potential users)
- Kwave* (M. Urban)
- * = nonlinear

FE Packages

- LS-DYNA
- FEBio
- Finite Difference (McAleavey)
- ANSYS
- ABACUS
- COMSOL

Ultrasonic displacement estimation

- Field II
- FOCUS (not ready for primetime)

Long term vision

- Elastic and viscoelastic materials
- Structures
- Boundary proximity
- Share code and results

Kathy's overview of VE phantom characterization

- Shearwave data not fit to specific model, but provide raw data analysis
- Group shear wave velocity
 - Displacement profiles
 - Velocity profiles

k-space and phase velocity plots

Compare data with those in early liver fibrosis studies

Accuracy of lateral beam locations and PRF

- Discussion of methods to measure beam locations and timing

- What is adequate accuracy?
- Tim: 1% uncertainty in tracking spacing (experimentally)
- Andy: being discussed on the manufacturer side of things
- Error most likely random, not systematic (Andy)
- Target 2% overall SWS error based on retrospective analysis (to be confirmed)
- David Cosgrove will determine the clinical perspective of target precision
- Differences b/w curvilinear, linear, etc.

Reminders about the QIBA Working Meeting and poster session at RSNA 2013 in December were provided.

Phantom and system dependency committees will start to have combined calls in December.

December Call Schedule:

<i>Date</i>	<i>Time (CT)</i>	<i>Day</i>	<i>Committee/ Subcommittee</i>	<i>Moderator</i>
12/09/2013	1:00 pm CT	Monday	US SWS Technical Committee	Mr. Milkowski – confirmed
12/16/2013	1:00 pm CT	Monday	COMBINED: System Dependencies / Phantom System Testing & Measurement Subcommittees Call	Dr. Wear - confirmed

It was proposed that there be a combination call for the System Dependencies/ Phantom subcommittees due to the number of people that overlap on both subcommittees. A first try for this will be this December call. If successful, a call schedule will be determined for the combined group.

A Clinical subcommittee call is being planned for January 2014.

RSNA 2013 Annual Meeting - QIBA Technical Committees Working Meeting:

Wednesday, December 4th | 2:30pm – 5:00pm | Chicago, McCormick Place | Room: **N136**

Please let us know whether you plan to attend by responding to the following

poll: <http://www.doodle.com/fwf76cegg78r75b>.

We appreciate your continued support and look forward to your participation - Thank You!

RSNA Staff attempt to identify and capture all committee members participating on WebEx calls. However, if multiple callers join simultaneously or call in without logging on to the WebEx, identification is not possible. Call participants are welcome to contact RSNA staff at QIBA@RSNA.org if their attendance is not reflected on the call summaries. [QIBA wiki](#)