

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

Friday, August 31, 2012; 11 AM CT

Draft Call Summary

In attendance

Mark Palmeri, MD, PhD (Co-Chair)

Keith Wear, PhD (Co-Chair)

Paul L. Carson, PhD

Shigao Chen, PhD

Claude Cohen-Bacrie, MS

David Cosgrove, MD

Brian Garra, MD

Timothy J. Hall, PhD

Stephen McAleavey, PhD

Kathy Nightingale, PhD

Nicolas Rognin, MSc, PhD

Laurent Sandrin, PhD

Mickael Tanter, PhD

Ron Tosh, PhD

Hua Xie, PhD

RSNA

Fiona Miller

Julie Lisiecki

Moderator: Keith Wear, PhD

Mendeley Database Update (Dr. Palmeri)

- Dr. Palmeri has hired a student to work with tagging content for the database to maintain a consistent approach
- The student will request feedback from the group to help sort data
- So far the database has 214 papers and 33 users
- Dr. Palmeri is also in the process of creating a spreadsheet for reviewers to use when extracting data to maintain consistency; he will merge and clean up tags as part of the optimization process
 - RSNA staff to forward spreadsheet to the group when finalized
- **Tagging:**
 - Duplicates can be searched for and eliminated via the website or the desktop client
 - All members will have ability to tag, annotate and highlight entries
 - It is a good idea to perform a “sync” when making changes
 - Sometimes, group items may not be in your personal library
 - Consolidation of tags should be used to avoid multiple synonyms for the same item.
- For any questions, please contact Dr. Palmeri: mark.palmeri@duke.edu.

General Discussion Regarding Quantification of Measurements

- Paper suggested for reference: Noninvasive in-vivo liver fibrosis evaluations (Bavu et al., Ultrasound Med. Biol., 37, 1361-1373, 2011)
 - Compares two systems for evaluation of liver fibrosis studying 113 patients
- Items for further discussion:
 - Frequency ranges – need to know frequency ranges for the different devices
 - Echosens is said to be narrowband at 50 Hz, but does it have harmonics?
 - Should group velocity or phase velocity be used?
 - Methodology by which bandwidth would be characterized
 - Minimization of differences resulting in a unified metric
 - How to successfully standardize the methods of measurement or offer a corresponding conversion
 - Possibility of a “lookup table” suggested to preserve methodologies
 - Range of frequencies for each vendor system may be a useful metric
 - Group would like everyone to share estimates for center frequency and bandwidth.
 - To include method of how the measurements were obtained
 - Drs. Palmeri and Wear to follow up via email regarding what specifically can and cannot be shared.

Presentation: Simulating Shear Wave Propagation Model (Dr. McAleavey)

- Pros and cons of investigating parameters for shear wave were discussed
 - The downside of FE methods is that they require extensive hardware
 - FDTD methods are practical and can be very fast if you ignore compressional waves
 - A tool for general use could be developed – it would be like a Field II for shear waves

- The group agreed that such a general tool would be useful.

Next steps:

- Dr. Palmeri's student to continue compilation, tagging, and optimization of references
- Group system representatives to send center frequency and bandwidths for their systems to Dr. Palmeri, mark.palmeri@duke.edu or Dr. Wear, Keith.Wear@fda.hhs.gov.

Upcoming QIBA US SWS Calls

Date	Time (CT)	Day	Committee/ Subcommittee	Moderator
09/17/2012	1:00 pm CT	Monday	US SWS Technical Committee	Mr. Milkowski
09/24/2012	1:00 pm CT	Monday	Phantom Subcommittee	Drs. Hall/ Garra
09/28/2012	11:00 am CT	Friday	System Dependencies Subcommittee	Dr. Palmeri
10/01/2012	1:00 pm CT	Monday	Clinical Applications & Biological Targets Subcommittee	Dr. Samir

Conferences:

- **International Tissue Elasticity Conference (ITEC 2012): Ultrasound – Deaville, France (October 2 – 5)**
 - Dr. Hall will be giving a brief presentation on QIBA efforts.
- **IEEE Ultrasonics Symposium – Dresden, Germany (October 7-10)**

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