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

Friday, June 14, 2013; 11 AM CT

Call Summary

Notes provided by Dr. Wear

In attendance

Keith Wear, PhD (Co-Chair)	Timothy J. Hall, PhD	Andy Milkowski, MS	**RSNA**
Paul L. Carson, PhD	Christopher Hazard, PhD	Laurent Sandrin, PhD	Joe Koudelik
Shigao Chen, PhD	Ted Lynch, PhD	Daniel C. Sullivan, MD	Julie Lisiecki
David Cosgrove, MD	Michael MacDonald, PhD	Hua Xie, PhD	
Brian Garra, MD			

Moderator: Keith Wear, PhD

1. The call summary from 2013-05-17 was approved
2. Shigao Chen presented results of his recent investigation into depth dependence of SWS measurements in CRS phantoms. CIRS provided a phantom with two acoustic windows on opposite sides. Shigao used a Verasonics data acquisition system with C4-2 curved array. Experiments showed consistent depth dependent trend from both sides, suggesting that depth dependent measurements in these CIRS phantoms are not due to inhomogeneity of the phantom. The effect is relatively small and may not warrant further investigation, unless a future visco-elastic phantom study shows a larger effect. However, such differences might be significant for challenging measurements, such as differentiating F1 from F2. Shigao offered to ship the phantom to other sites to investigate the effect. Tim Hall suggested that a cubic-shaped phantom would allow a great opportunity to investigate the possibility of spatial gradients of phantom physical properties. Ted Lynch indicated that a cubic-shaped phantom would be feasible to fabricate.
3. The group discussed Mark Palmeri's plan to compare SW spectra among different machines. SW spectral differences are known to be a confounder for SW speed. The set of nearly-identical CIRS phantoms provides a great opportunity to measure SW spectra for different machines on a standardized target. The group needs to standardize a protocol to properly control as many variables as possible. The group needs to standardize our way of describing spectra. For example, one option is SW Spectral Center Frequency (Hz), -6 dB low frequency (Hz), -6dB high frequency (Hz). Another option is submitting the entire spectrum.
4. The group discussed Mark Palmeri's plan to make available a database of FEM data at the Duke server. The data will be based on the CIRS elastic phantom(s) as a target. Multiple datasets will be generated in order to allow for a variety of parameters, such as probe focusing properties. The group was very appreciative of Dr. Palmeri's initiative.

Next QIBA US SWS calls:

- QIBA US SWS System Dependencies Subcommittee, **7/12/2013**, Friday, 11 am CT (Dr. Palmeri)
- QIBA US SWS Technical Committee, **7/15/2013**, Monday, 1 pm CT (Dr. Hall)
- QIBA US SWS Phantom Subcommittee, **7/22/2013**, Monday, 1 pm CT (Dr. Garra)

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