In attendance

Maria Athelogou, PhD (Chair)  Marios Gavrielides, PhD  Adele Peskin, PhD  Ying Tang, PhD
Hubert Beaumont, PhD  Gregory Goldmacher, MD, PhD  Nicholas Petrick, PhD
Andrew Buckler, MS  Michael McNitt-Gray, PhD  Ehsan Samei, PhD
Heang-Ping Chan, PhD  Nancy Obuchowski, PhD  Jenifer Siegleman, MD, MPH  RSNA
Matthew Fuld, PhD  Eric Perlman, MD  Daniel Sullivan, MD

Presentation: Inter-algorithm Performance Investigation Studies (Dr Athelogou)

- Dr. Athelogou presented an overview of the past phantom and clinical algorithm challenges and how these would support CT Vol Profile refinement
- A manuscript has been submitted to Academic Radiology based on the phantom study component
- The clinical component focused on test-retest results while defining new metrics for clinical study
- Take-away message was that 8 of 12 algorithms performed up to QIBA compliance standards
- This groundwork provided data in support of the current CT Vol Claim language and established a foundation to build compliance testing upon in the future
- Continued 3A studies will require funding support for both design and data analysis

Source Precision Estimates (Dr Obuchowski)

- Caution voiced regarding the current CT Vol claim, based on longitudinal scenarios; this was deemed a very difficult scenario to obtain acceptable statistical precision
- A larger sample size will be needed to support the claim with statistical power
- A total estimate of precision is needed based on more challenging lesions shapes, sizes and anatomical positions
- Scanner and reader variability is needed; need to test for “actor” compliance
- Dr Peskin’s complete set of synthetic lesions would be most helpful; would require a carefully chosen clinical dataset to apply synthetic lesions for testing

Ideas for Future 3A TFG (Dr Athelogou & Mr Buckler)

- Creation of a platform (independent laboratory) to perform a multi-reader, multi-algorithm, multi-scanner study, i.e. a new vendor algorithm challenge in 2015-2016
  - This would bring algorithm developers and radiologists together
  - Vendors would be asked to volunteer algorithms for testing.
  - Participants would be able to test software remotely, providing anonymity and security via a cloud-based solution
  - The new study would be a volunteer effort unless additional funding is made available for 2015 – 2016. It is possible that some groundwork could be done without funding, saving funds for the study analysis.
- Simulation, or synthetic data will also prove very useful Dr Goldmacher will discuss the 3A TFG plans with the other CT Vol Co-chairs and dedicate a future Biomarker Cmte t-con to this topic for broader discussion and feedback

Next call: TBD - Group focus in January is to brainstorm possible study designs