Supplementary Material

Inter-scanner Platform Calibration and Validation

QSM measurements on the Philips Achieva and Siemens Verio platforms were cross validated using a ferumoxytol phantom (see [1] for details). The QSM imaging protocols were identical to those used clinically. The purpose for this phantom experiment was to ensure that no bias was introduced when combining data from both platforms for analysis.

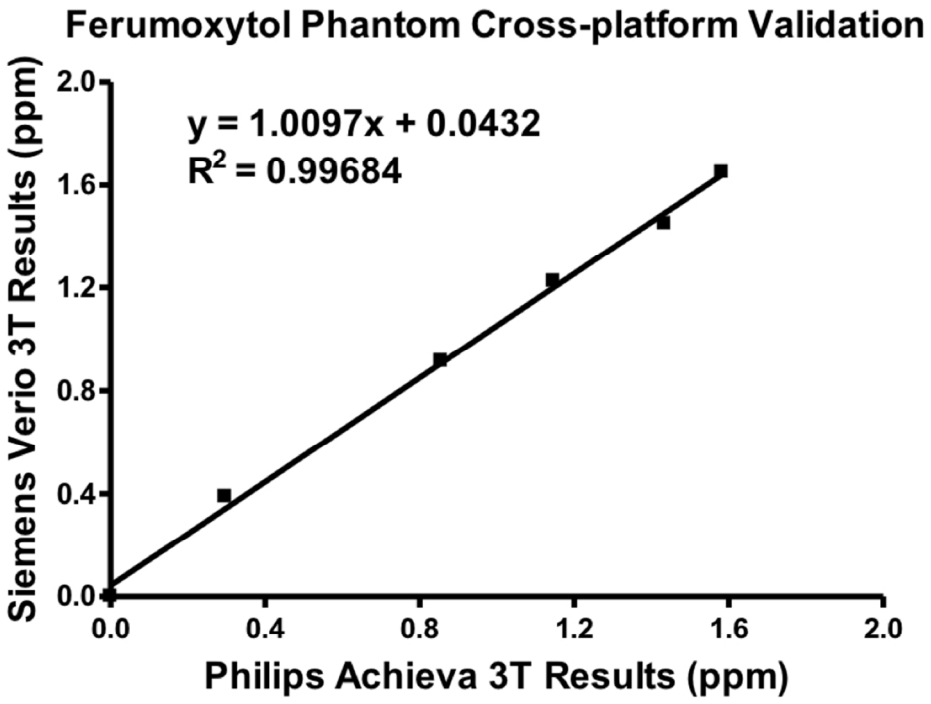
Susceptibility values in the ferumoxytol phantom were calculated and compared between the two platforms using region-of-interests (ROIs). Quantitative results from both platforms were correlated using linear regression.

Cross-platform Validation Results

The ferumoxytol phantom result is shown in Supplementary Figure 1. QSM was able to clearly differentiate various feruxmoytol concentrations with the data acquired on both Siemens and Philips 3T platforms. A strong positive correlation was found between the measurements made in Siemens and Philips platforms with a correlation coefficient of 0.998 ($p < 0.01$, $R^2 > 0.99$). This result provided confidence that QSM produced comparable measurements across those two instruments. The comparable results between the two hardware platforms supported the feasibility of multi-centered trials using QSM as an outcome measure.

Reference

1. Tan H, Liu T, Wu Y, et al. Evaluation of iron content in human cerebral cavernous malformation using quantitative susceptibility mapping. *Invest Radiol* 2014;49:498-504



Supplementary Figure 1. Cross-platform validation between Siemens Verio and Philips Achieva systems using a ferumoxytol phantom.
46x34mm (600 x 600 DPI)