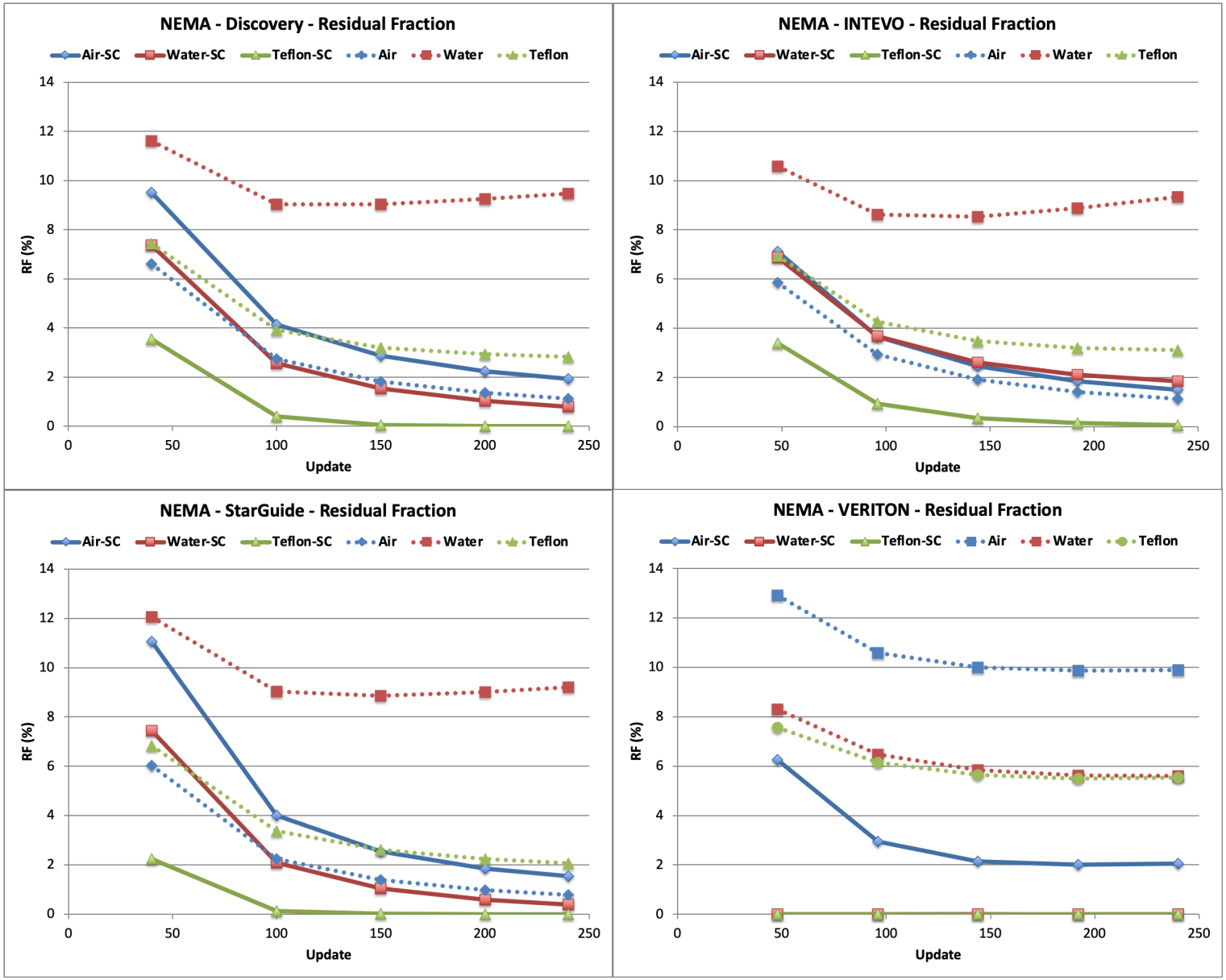
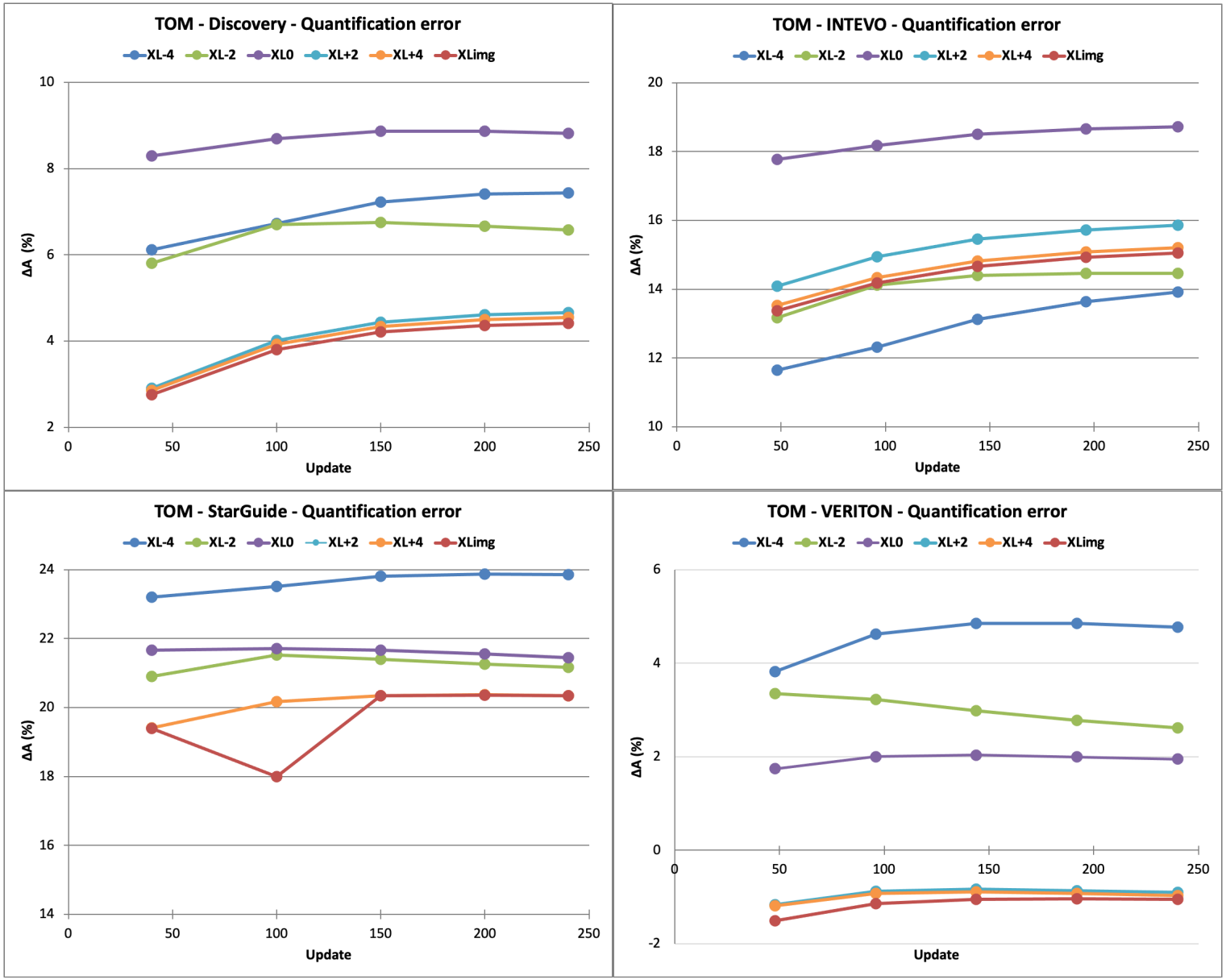
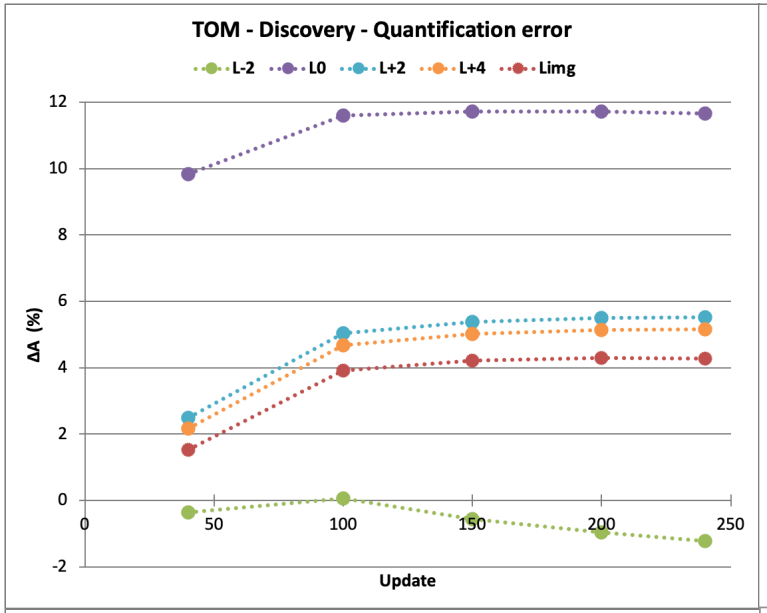
Additional File 1. Residual fraction versus number of OSEM updates for the three inserts of the NEMA phantom with and without scatter correction.

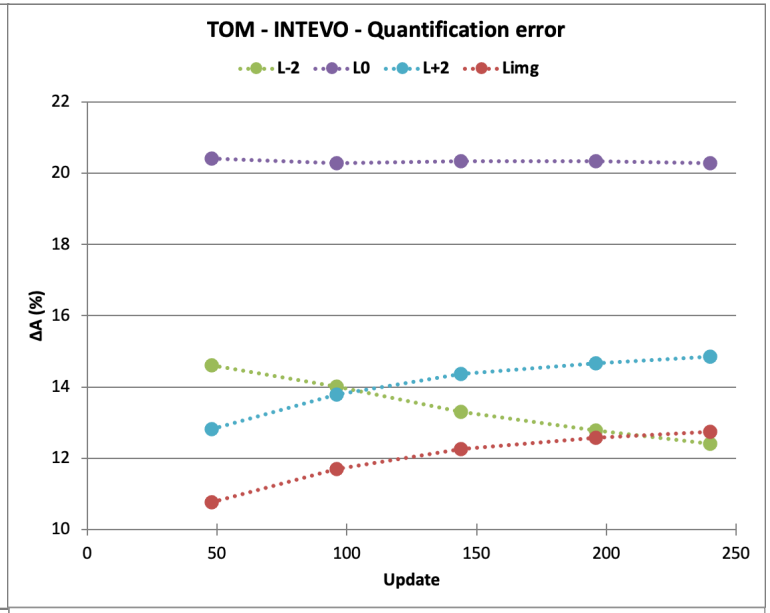


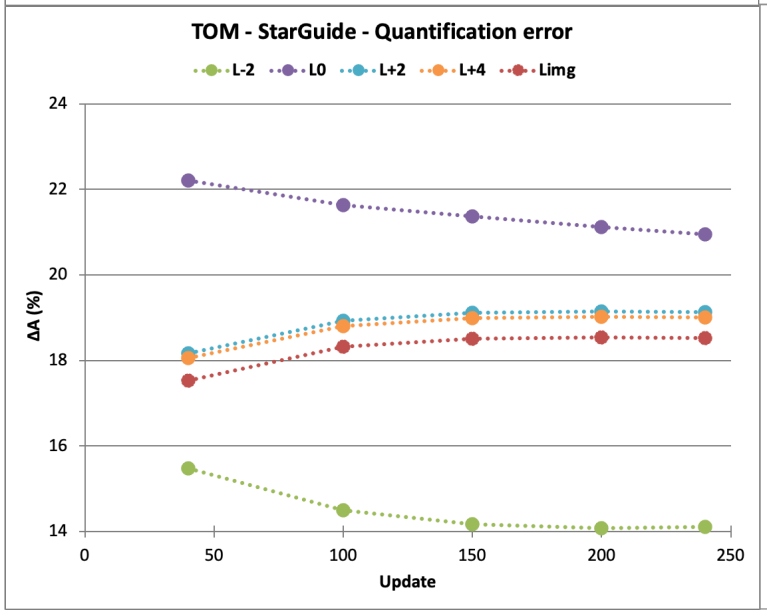
Additional File 2. Quantification error versus number of OSEM updates for background region of TOM phantom using XL as calibration phantom. For StarGuide, XL+2 and XL+4 points are almost identical.



Additional File 3. Quantification error versus number of OSEM updates for background region of TOM phantom using L as calibration phantom.

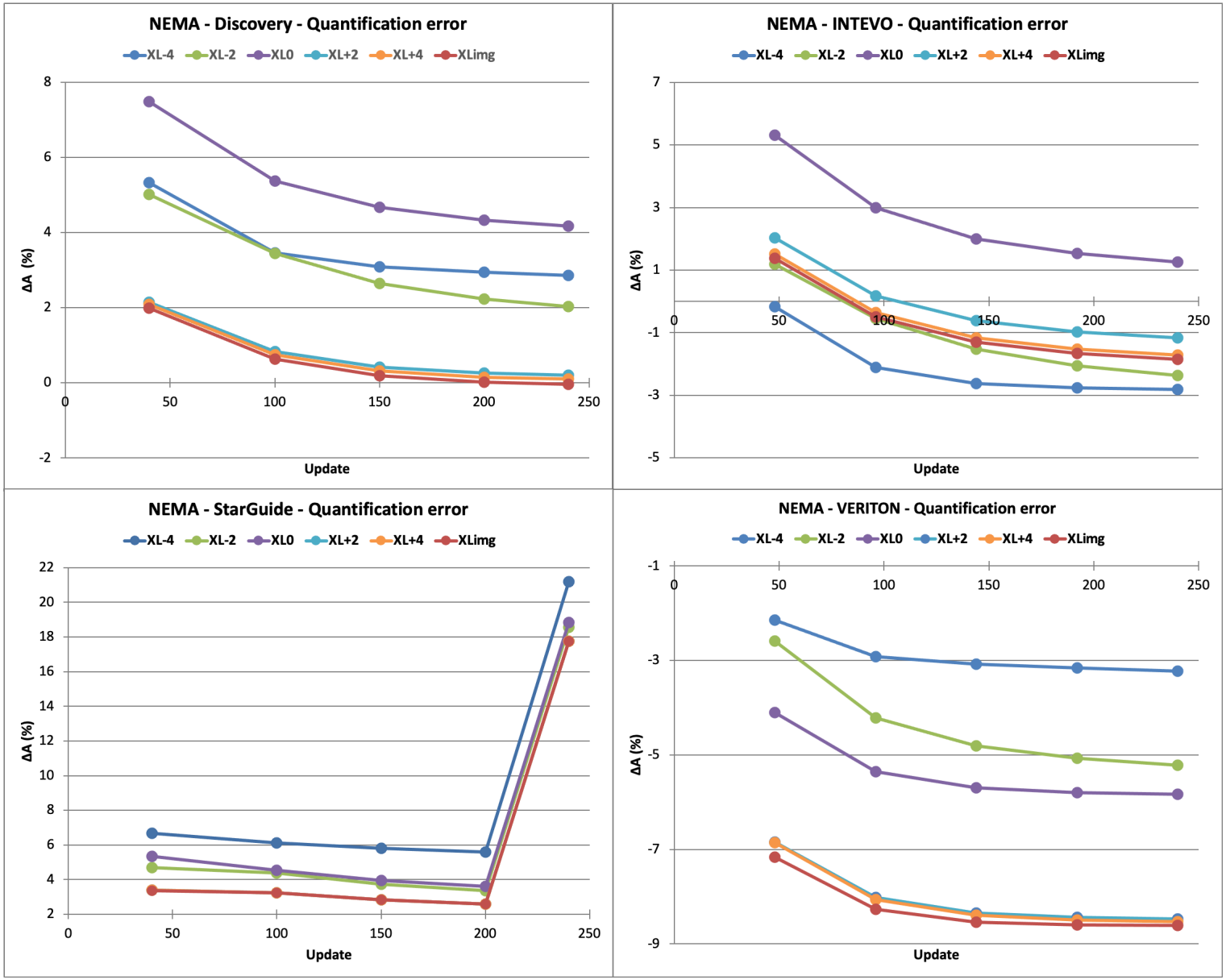




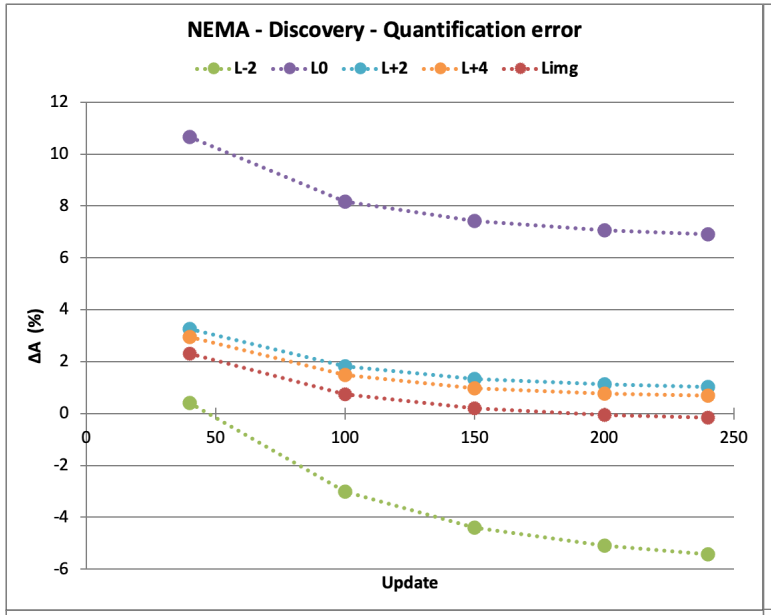


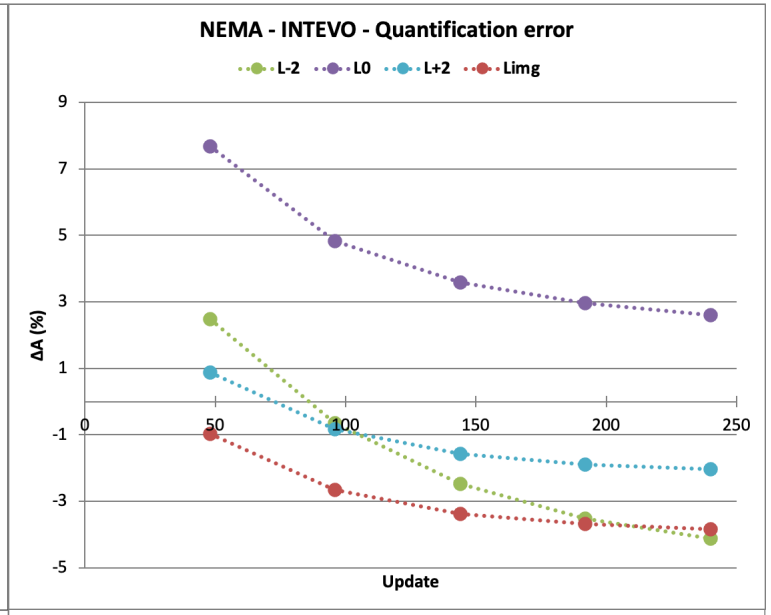
Data for V not available

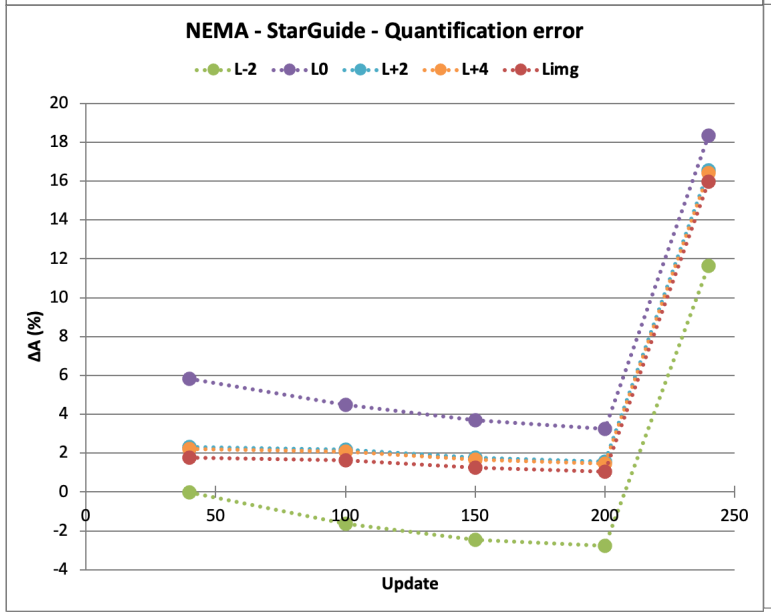
Additional File 4. Quantification error versus number of OSEM updates for uniform part of NEMA phantom using XL as calibration phantom.For StarGuide, XL+2, XL+4 and XLimg points are almost identical.



Additional File 5. Quantification error in percent versus number of OSEM updates for uniform part of NEMA phantom using L as calibration phantom.

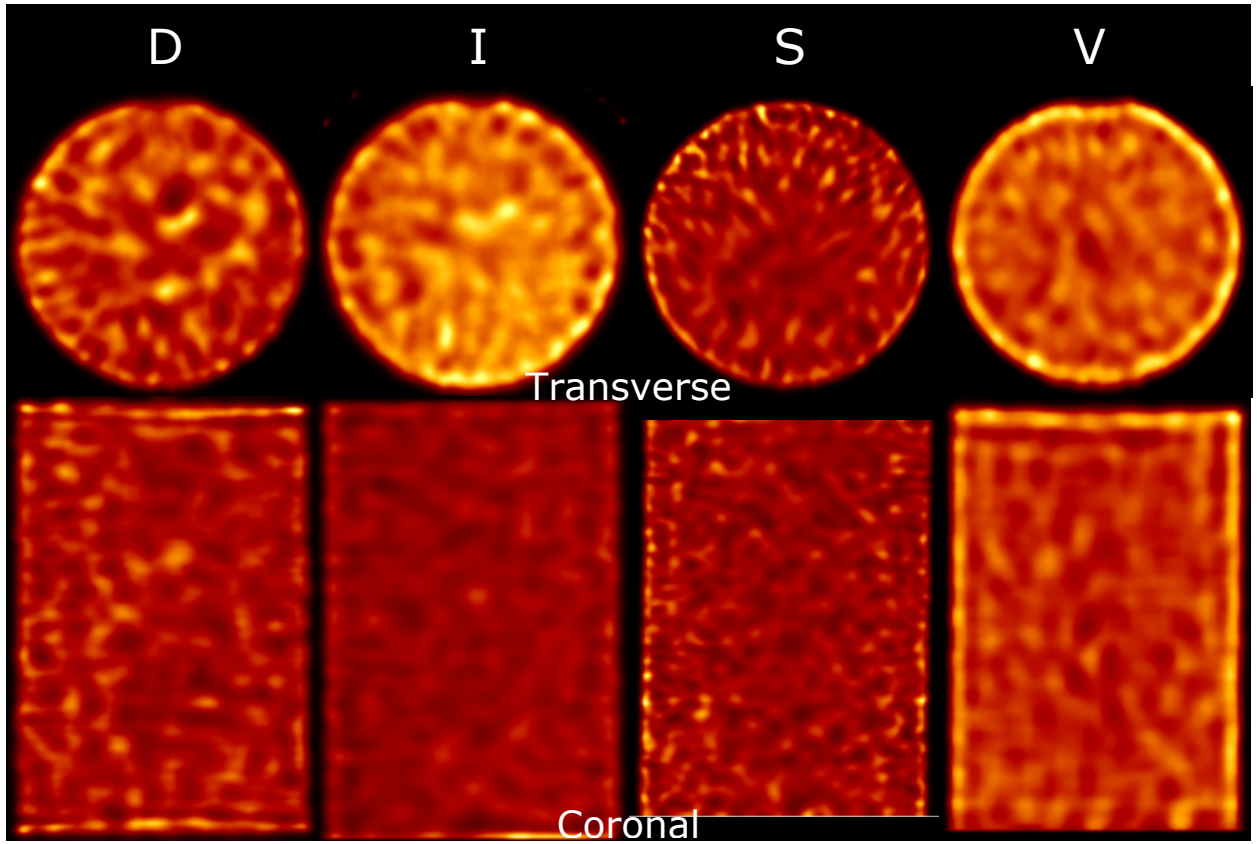






Data for V not available

Additional File 6. Illustrative transverse and coronal slices of XL uniform phantom for the four systems after 192 (I,V) or 200 (D,S) iterations with attenuation and scatter correction and resolution recovery. S axial field of view is 2 cm shorter than XL phantom height leading to a phantom image that is truncated in the axial direction. Sagittal slices are very similar to coronal slices.. Hot iron color scale from 0% to 110% of slice maximum.



Additional File 7. Illustrative transverse, coronal and sagittal slices of L uniform phantom for the four systems after 192 (I,V) or 200 (D,S) iterations with attenuation and scatter correction and resolution recovery. Hot iron color scale from 0% to 110% of slice maximum.