AbstractID: 8902 Title: Making high volume OBI CBCT work in “the real world”

Purpose:
This report outlines the hurdles and successes encountered in integrating a Varian On-Board Imaging (OBI) system with an existing linear accelerator (linac) in a mixed vendor environment with the goal to perform high volume routine Cone Beam CT (CBCT),

Method and Materials:
Varian OBI was added to an existing linac concurrently with the requisite installations of an MV Portal Vision (PV) and a Varian 4D integrated treatment console (4DITC). The system was connected to an existing IMPAC MOSAIQ environment with a Philips Pinnacle planning system.

Results:
The integrated system is functioning and is used daily for more than 20 CBCT patients. Pending the OBI software update, patients are predominantly scanned with the “low dose protocol”. Isocenter accuracy and system safety checks have been implemented as routine quality assurance (QA) measures. Several glitches with the OBI system software have surfaced, which necessitated intervention from the vendor’s highest tiered technical support personnel. These glitches include unexplained loss of calibration data, non-functioning components, and the display of seemingly non-essential error messages, which appear to be unrelated to the functioning of the system. Furthermore, the robotic arms moving the kV source and imaging panel have at multiple instances crashed into themselves. For patient safety they are now only moved when in the lateral position. Workflow problems also have arisen with the recording of offsets and the preparation of the planning CT data set used for reference in CBCT.

Conclusion:
An add-on OBI system for CBCT is a viable clinical solution, which however requires much patience and persistence, especially in a mixed vendor environment.