

LOGOS SYSTEMS INTRODUCES VOLUMEWORKS-CK

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Logos Systems Int'l today introduced their VolumeWorks-CK™ software package that analyzes non-isocentric diagnostic treatment plans for CyberKnife™ machine quality assurance.

VolumeWorks-CK compares the CyberKnife treatment plan XML file to the individual beams captured real-time by the Logos XRV-100 4D phantom during delivery, providing beam-by-beam verification of robot and collimator accuracy.

The treatment plan QA report generated by VolumeWorks-CK includes a summary which lists the average delivery error distance in millimeters of all the beams, the five beams that had the error distances of most significance, and the one beam that had the largest error distance.

Full Width Half Maximum (FWHM) beam width data is also reported, along with a comparison to Iris collimator commissioning values. Average and maximum FWHM differences are summarized in the QA report.

As an additional feature, VolumeWorks-CK reconstructs the x-ray beam vectors and profiles into colorful three-dimensional fluence volumes for visual confirmation of the overall treatment plan. The voxel array data is displayed onscreen in 3D along with dimension measurements.

When capturing a plan, the XRV-100 phantom is placed directly on the treatment couch. The phantom is composed of a scintillator imaging cone coupled with a sensitive CCD digital camera.

As each beam of radiation enters and exits the cone, it creates two spots of light by Compton scattering. The CCD camera digitizes those spots at rates up to 30 frames per second, and the software calculates the beam position, vector, profile and duration.

“For non-isocentric diagnostic treatment plans, VolumeWorks-CK is a breakthrough method of visualizing and verifying complex three-dimensional radiation fields,” said Brett Nelson, Managing Director of Logos Systems. “It takes radiotherapy machine quality assurance to the next level of sophistication and ease-of-use.”

About Logos Systems Int'l

Logos Systems Int'l, based in Scotts Valley, California, specializes in developing and manufacturing x-ray and proton beam calibration systems using its patented geometric scintillator technology. www.logosvisionsystem.com

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