Sixth Generation Elekta Digital Control System Boosts Radiation Therapy System Speed and Performance

ATLANTA/PRNewswire/ -- The advanced functionality of Elekta's family of digital linear accelerators demands the highest degree of intelligent coordination. Elekta's latest control system, Integrity™ R1.1, meets this requirement through three tiers of safety, command of MLC interdigitation for exceptional field shaping, and support of virtually limitless options to adjust the radiation dose.
Integrity [1] R1.1 has undergone rigorous tests in eight international centers, which demonstrated safe reductions in treatment delivery times of as high as 30 percent. The receipt of 510(k) clearance for Integrity R1.1 enables U.S. medical centers to realize these treatment speed and safety benefits when Elekta begins delivery of the control systems.

"I appreciate the use of multiple measures to ensure correct treatment delivery," says Jonas Fontenot, Ph.D., physicist at Mary Bird Perkins Cancer Center (Baton Rouge, La.), which has been evaluating a previous release of Integrity since February 2011. "In addition, during Volumetric Modulated Radiation Therapy [VMAT], Integrity constantly captures delivery parameters and sends them back to our MOSAIQ® oncology information system [2], where they become part of the patient's electronic record."

Interdigitation and Continuously Variable Dose Rate (CVDR) boost efficiency
With interdigitation of MLCi2 enabled by Integrity R1.1, MLC capabilities have caught up with the ability of the treatment planning system to create fields with complex geometry. Because MLC leaves can move past one another – or interdigitate – clinicians can employ island fields in difficult cases, such as those involving multiple targets.

"Interdigitation is important for treating multiple targets – such as multiple brain mets – and also when there is a target geometry that consists of different dose objectives," Dr. Fontenot says. "For example, we may want to treat a primary target to 70 Gy and a nodal region to 57 Gy."

Quicker, smoother VMAT
Integrity R1.1 supports CVDR, which allows the dose rate to be adjusted to its ideal value during delivery of both dynamic and VMAT prescriptions. This option makes prescription delivery smoother and faster when compared to previous discrete dose rates.

"The additional dose rate options permit the control system to easily navigate complex dose modulation paths," he explains. "Less variability in gantry speed smoothes VMAT arc motion, which also translates to reduced delivery times."

Learn more at www.elekta.com/integrity [3].

Approval of indications may vary between different countries. Additional regulatory clearances may be required in some markets.

About Elekta
Elekta is a human care company pioneering significant innovations and clinical solutions for treating cancer and brain disorders. The company develops sophisticated, state-of-the-art tools and treatment planning systems for radiation therapy, radiosurgery and brachytherapy, as well as workflow enhancing software systems across the spectrum of cancer care. Stretching the boundaries of science and technology, providing intelligent and resource-efficient solutions that offer confidence to both healthcare providers and patients, Elekta aims to improve, prolong and even save patient lives.

Today, Elekta solutions in oncology and neurosurgery are used in over 6,000 hospitals worldwide. Elekta employs around 3,300 employees globally. The corporate headquarters is located in Stockholm, Sweden, and the company is listed on the Nordic Exchange under the ticker EKTAb. Website: www.elekta.com [4].

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