

## LATEST ADVANCEMENT IN DIGITAL RADIATION ONCOLOGY IMAGING

**N**ucletron Corporation (Veenendaal, The Netherlands) is a radiotherapy company that specializes in the development, manufacture, sales, service, and support of the world's most innovative products for cancer treatment. The guiding principle of the company is the customer's demand for quality, safety, and reliability.

### Amorphous Silicon Detector Technology

The Nucletron **Simulix Evolution™** Simulator offers the latest advancement in imaging technology. The amorphous silicon detector provides clinicians with digital, high-resolution, distortion-free, almost film-like images, combining a high level of detail with true image geometry. "The quality of the images provided by Evolution is excellent," says Robert K. Brookland, MD, Chairman, Department of Radiation Oncology, Greater Baltimore Medical Center (Baltimore, MD). "The visualization is better than [what] we have achieved with other systems. This should improve the accuracy of the procedures, and, I hope, improve treatment outcomes."

"With Evolution, we don't need to use film in the simulation procedure, which reduces the patient exposure to radiation and shortens the overall procedure time," continues Dr. Brookland. "We also save

money because we don't have the film processing costs."

The Evolution system has a 41 x 41-cm detector, which offers the largest viewing area of any simulation system available today. The large viewing area gives the clinician a full anatomical view of the patient and reduces the need to reposition the detector and/or patient during the procedure. The automatic merge function of the Evolution system allows two or four images to be combined digitally, enabling the clinician to view extended—distance and mantle-field simulation quickly and easily.

### Brachytherapy Imaging

The high-resolution images provide the best level of detail required for insertion or verification of an applicator, needle, or permanent seed implant. Images derived from Evolution can be exported to

**PLATO™** or other compatible treatment-planning systems for accurate brachytherapy treatment planning. The unique design of the Simulix table provides tremendous flexibility for brachytherapy procedures.

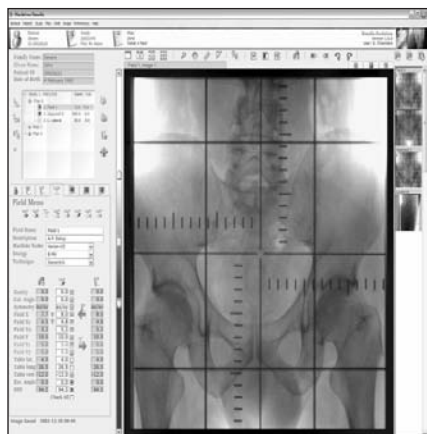
### Evolution Improves Efficiency

One of the essential features of Evolution is **Simplicity™**, an imaging workstation that is



designed with optimal workflow in mind. With Simplicity, workstation interaction is simple, and all important information is instantly accessible through a single viewing screen, allowing the clinician to focus fully on the patient and the procedure. The interface design is based on Windows™ elements and is laid out in a logical fashion, facilitating fast and efficient execution of all procedures.

Evolution can be used to verify positioning and reproducibility in IMRT procedures. In addition, 3-D treatment plans or digitally reconstructed radiographs can be imported from any DICOM-compatible treatment planning system to Evolution, to initiate field positions for comparison automatically, and verify MLC settings.



With Simplicity it is easy to establish simulator treatment fields accurately. **Electronic Simulation™** allows the clinician to set all aspects of the treatment field digitally, based on the digitally captured image. The simulator

then automatically adjusts to the new setup position for reimaging, which not only enables the user to increase the level of control, but also helps to reduce clinician time and radiation dose.

### Full Connectivity

Evolution includes full DICOM- and RTP-link connectivity, and it is easily connected to any other vendor's compatible system. "It was simple to integrate Evolution into our existing system," says Dr. Brookland. "The open design and easy intersystem planning and image communication make Evolution compatible with most existing radiotherapy systems."

### Oncentra™ Cone Beam CT

Nucletron currently has a work-in-progress for **Cone Beam CT** imaging with the Simulix Evolution. **Oncentra Cone Beam** will allow the user to acquire a volume of CT data on the simulator, which can be reconstructed into user-definable slices for setup verification and treatment-planning purposes. The Oncentra Cone Beam system will change the way simulation is performed and will provide a more efficient way to image for treatment planning. When combined with the Oncentra suite of products, Evolution is a fully integrated simulation system, providing all relevant information at the user's fingertips.

### A Cost-Effective Solution

Evolution is the most cost-effective simulator system currently available. It is reliable, accurate, and durable, and has low maintenance costs and versatile, efficient simulation tools. Damage to the equipment, as well as risk of patient injury, is avoided by **Softguard™** Prevention, a combination of programmed avoidance and touch-guard systems. Softguard facilitates throughput and allows the clinician to focus on the patient and simulation, not the equipment.

Simulix-HQ and Evolution customers can upgrade their existing system to Cone Beam CT when it becomes available. Timely access to the very latest simulator technology ensures that systems provided by Nucletron do not become obsolete, which protects the user's investment and ensures that patients receive the best possible care.



For more information concerning Nucletron, call 1-800-336-2249; contact a Nucletron representative at ASTRO, booth #2325; or visit the company Web site at [www.nucletron.com](http://www.nucletron.com)