Enhancing RTP planning

Philips Pinnacle³ SmartEnterprise configuration at MD Anderson Cancer Center

Who/where
The University of Texas MD Anderson Cancer Center is a premier cancer treatment center, with approximately 18,000 employees devoted to cancer research, education, prevention, and patient care. For eight of the ten past years, including 2011, MD Anderson has ranked No. 1 in cancer care in the "America's Best Hospitals" survey published by *U.S. News & World Report*.

Challenge
MD Anderson Cancer Center has 12 linear accelerators on its main campus and performs radiation therapy planning for more than 550 patients each day. Speed, accuracy, and efficiency in this process are of utmost importance.

Solution
MD Anderson is using the Pinnacle³ SmartEnterprise configuration to streamline radiation therapy planning through advantages in processing speed and increased access to data throughout the enterprise to expedite plan completion and approval. Initial data suggest planning efficiency has been increased by 30%. The centralized computing of SmartEnterprise also offers reduced maintenance costs.

Background

The mission of The University of Texas MD Anderson Cancer Center is to eliminate cancer in Texas, the nation, and the world through outstanding programs that integrate patient care, research and prevention, and through education for undergraduate and graduate students, trainees, professionals, employees and the public. The center is continually refining approaches to treatment, including radiation oncology treatment methods, to deliver the highest-quality patient care possible.

Leveraging thin-client technology

The Philips Pinnacle³ SmartEnterprise configuration leverages thin-client technology to centralize the Pinnacle³ radiation therapy planning system, offering superb flexibility and speed. All computing power and data storage is moved from the desktop into the facility's data center, centralizing computing to enhance accessibility, maintenance, and management of the system, as well as making remote access easy. SmartEnterprise has boosted capacity at MD Anderson. Floating licenses and smart cards have expanded access and improved flexibility of plan review while maintaining security.

Greater access to plan data throughout the enterprise is designed to streamline workflow. Hyper-threaded computing provides lightning-fast performance, allowing plans to be completed faster and multiple plans/solutions to be simultaneously worked on, then compared to select the most optimal plan.

Radiation therapy planning at MD Anderson

About 100 people are involved in radiation therapy planning at MD Anderson. Maintaining more than 80 Pinnacle³ workstations presented significant challenges.

Upgrades that required intervention on each workstation – even menial upgrades such as adjusting for Daylight Saving Time – previously took a great deal of time and effort. Now computing power is concentrated in five compute modules. Instead of having 80 units that are physically dispersed over the campus, MD Anderson now has five systems that are racked in the controlled environment of the data center.

Smaller, quieter, cooler

SmartEnterprise allows users to access Pinnacle³ through a thin-client network appliance to display the application. The user's keyboard, mouse, and LCD display connect to the thin-client device, providing a flexible, cost-effective, and scalable desktop solution. Thin-client devices are small, quiet, and use very little power. John Garcia, Clinical Supervisor – Medical Dosimetry, reports, "The new configuration requires minimal space on

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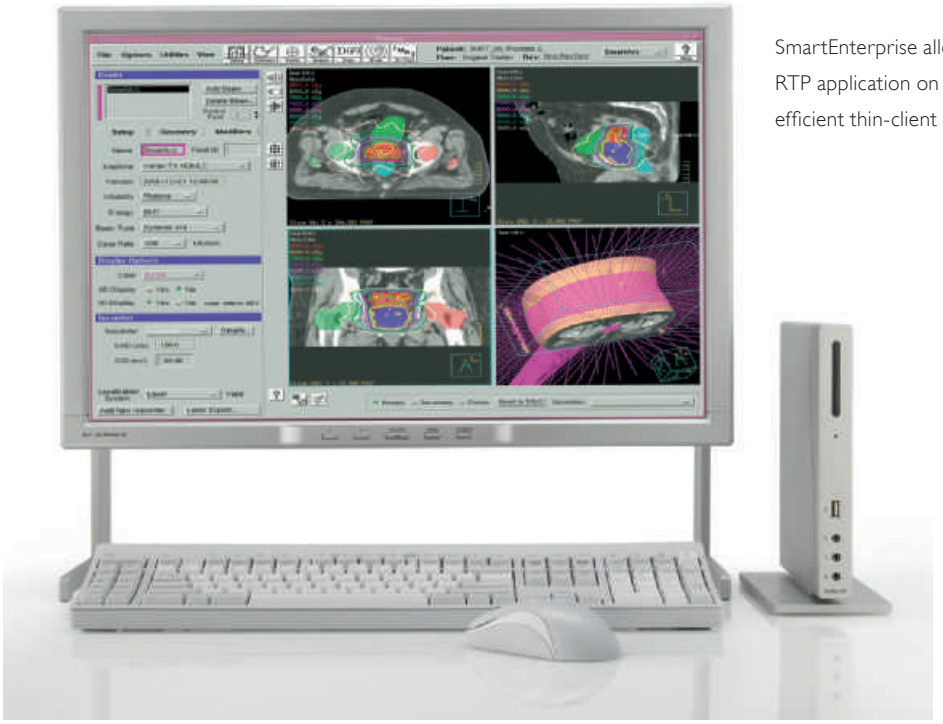
sense and simplicity



SmartEnterprise allows display of the Pinnacle[3] RTP application on cost-effective and space-efficient thin-client desktop devices.

our desks, while the previous configuration took up more space and generated quite a bit of heat. Every dosimetrist had a Pinnacle[3] workstation. When you put 20 to 30 of them in an office all running at the same time, it's loud and it gets quite hot."

Accuracy non-negotiable at MD Anderson

Garcia says, "Accuracy will always be number one for us, and we have not come across any issues with that. We have noticed an increase in power and speed of calculations, which at one time used to be a large bottleneck. At MD Anderson we have many people running IMRT at one time. We have noticed that speed has increased with SmartEnterprise."

Putting SmartEnterprise to the test

Downtime is not something that MD Anderson can easily afford, because of the number of patients treated daily and the resulting chain reaction of patient treatment postponements that would occur as a result of downtime.

MD Anderson was one of the earlier adopters of SmartEnterprise, and the system was tested before implementation with 30 dosimetrists doing mock work on a weekend. The team evaluated whether the system would perform under a heavy load.

Demonstrated greater efficiency

Garcia explains that the speed of SmartEnterprise saves time in the treatment planning process at MD Anderson. "Our initial research showed that we would be able to decrease our unit of measure per treatment plan by 30%, based on the speed of the system," he says. "Time savings equate to cost equates to efficiency for us."

Expediting plan approval

Garcia points out that, "There's a high level of specialty, accuracy, timeliness of the treatment planning process here. We're able to put these units into physician work areas and physician offices. It's easy to send an email, a page, or a phone call letting the doctor know the plan is ready to review. And we just close it down and they open it up at their convenience anywhere that they have access. It could be in an office or in the clinic where they're seeing patients," he says.

Meeting security requirements

MD Anderson modified the system and added a layer of security in which the users are being authenticated through the active directory using their institutional credentials. Garcia states, "The thin-client cards of Smart Enterprise have allowed us to meet our security standards. Any user has to have his or her name and password to access any data or even the system itself. It meets the security standards that we are required to adhere to."

Please visit www.philips.com/smartenterprise for more information

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