

## Social Infrastructure

### ► Healthcare Systems and Services

#### Xario 200/100 Diagnostic Ultrasound Systems

Toshiba Medical Systems Corporation has developed two highly mobile mid-range compact diagnostic ultrasound systems, the Xario 200 and Xario 100, targeted at small and medium-sized hospitals and clinics.

The main features of these systems are as follows:

- Diagnosis supported by high image quality  
The Xario 200/100 systems inherit the sophisticated basic performance of the Aplio series and also feature a variety of newly developed transducers to cover a wide range of clinical applications.
- Lightweight, compact design  
A significant reduction in size and weight allows these systems to be easily moved to various locations in a hospital, such as outpatient areas and wards, in addition to examination rooms.
- Easy operation  
Optimal image quality and increased examination throughput are provided by a function that optimizes B-mode image quality or spectral Doppler waveforms with one-touch operation, as well as a function that optimizes various parameter settings according to the patient's body size and target region with a single button.



#### Vantage Elan 1.5-Tesla Magnetic Resonance Imaging System

Toshiba Medical Systems Corporation has developed the Vantage Elan 1.5-tesla magnetic resonance imaging (MRI) system, which achieves the smallest footprint and lowest power consumption in its class<sup>(\*)1</sup> without compromising image quality.

The main features of this system are as follows:

- Space- and energy-saving design  
The minimum footprint of this system is approximately 23 m<sup>2</sup> (approximately 30% smaller than the conventional model<sup>(\*)2</sup>), and power consumption is reduced by approximately 30% through optimized design of the gradient system and radio frequency (RF) transmission system.
- Easy operation  
This system runs on the latest platform, called M-Power, which provides intuitive operability corresponding to clinical workflows. "SpineLine," an optional software that assists with automatic positioning for spinal scanning, makes the examination more efficient and provides stable, high-quality images.
- Short installation period  
Shipment of the gantry in assembled form and automated system adjustment capability reduce the period required for system installation to five days (approximately 56% shorter than for the conventional model<sup>(\*)2</sup>). These features minimize the period during which MRI examinations cannot be performed due to system replacement.

(\*1) As of November 2013 (as researched by Toshiba Medical Systems Corporation)

(\*2) In comparison with the Toshiba EXCELART Vantage powered by Atlas (released in 2007)

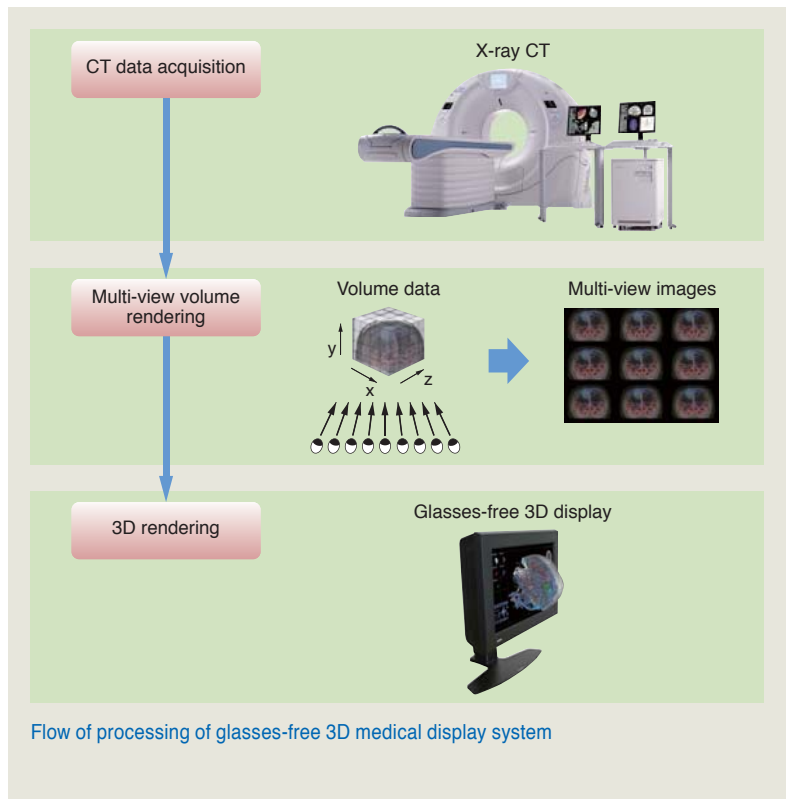


## Glasses-Free 3D Medical Display Technology

As part of Toshiba's new-concept innovation efforts, Toshiba Medical Systems Corporation has developed a glasses-free three-dimensional (3D) medical display technology that enables doctors to examine X-ray computed tomography (CT) images in 3D without using 3D glasses. This technology is based on the world's first glasses-free TVs, the 3D REGZA series .

In order to display CT images on a glasses-free 3D display, it is necessary to generate multiple images that are rendered by observing the CT volume data from the corresponding multiple viewpoints. However, such image rendering has a large computational cost and leads to slower data manipulation. We have reduced the cost by omitting computation for transparent voxels through off-line analysis of the CT volume data. Furthermore, we have combined multiple graphics processing units (GPUs) so that doctors can change viewpoints smoothly. By showing a 3D image sequence generated from spatio-temporal volume data captured by a Toshiba X-ray CT system such as the Aquilion ONE, doctors can observe internal organ motion in 3D.

We released glasses-free 3D medical displays with the above technologies in September 2013.



## In-home Healthcare Using Cloud Solution

Toshiba Solutions Corporation launched a new Web service for the elderly in October 2013 called the "In-home Healthcare Cloud Service for Seniors." This system allows seniors who are living at home to register their personal health data (blood pressure, weight, number of steps walked, etc.) in a tablet on a daily basis, and notifies them when they need to take medications. These health-related records can also be made available to their family members living elsewhere, to facilitate the appropriate provision of care by them.

The Web service consists of applications such as handwritten email, videophone, and text-to-speech, which are designed to enhance family communications and the sense of security of seniors.

We are planning to extend this healthcare system into the genres of entertainment and convenient services, in order to further support the well-being of the elderly.

