

SafeCT[®]

Add-on Iterative Image Reconstruction

Product Overview



SafeCT Rationale

Concern over radiation risks from CT imaging is being addressed by professional organizations and regulatory bodies with initiatives aimed at reducing radiation in CT scans. The ALARA (“As Low As Reasonably Achievable”) principle has driven such campaigns as Image Gently for pediatric imaging and Image Wisely for the adult population. The wide acceptance of these principles and campaigns by most imaging departments and private practices has resulted in lower-quality images with higher noise levels, sometimes too poor for confident diagnostic reading. This is precisely where SafeCT iterative image construction serves a significant role. It transforms the low-quality images into high diagnostic-quality images.

SafeCT Description

Medic Vision's FDA-approved SafeCT is a universal iterative image reconstruction solution that substantially enhances the Signal-to-Noise Ratio (SNR) of CT images acquired over a wide range of exposure parameters on CT scanners of all vendors.

Using proprietary, patented, iterative, volumetric image reconstruction algorithms, SafeCT delivers diagnostic image quality to studies acquired with low-dose protocols on CT scanners of all brands and models. Over 100,000 patients have been scanned so far with low-dose protocols, using SafeCT to improve image quality to diagnostic levels.

SafeCT is a centralized network-based add-on system that supports any number of CT scanners, thus offering image enhancement functionality for the entire radiology department in hospitals and private imaging centers alike.

SafeCT is seamlessly integrated into the CT department network. It protects existing CT scanners against obsolescence, eliminating the need for newer and more expensive CT scanners capable of similar functionality.

SafeCT:

Simple integration
into clinical
workflow.



CT Scanner System



Low-quality
studies in
DICOM format



SafeCT Technology

SafeCT comprises four proprietary technology building blocks:

- **Patented iterative volumetric image reconstruction** algorithms provide increased SNR and improved image quality. These 3D algorithms significantly reduce noise and restore the fine details underneath the noise, preserving fine image details, low-contrast characteristics and sharp edge detail. SafeCT reconstructs CT studies to any reformat (axial, sagittal, and coronal) and slice thickness.
- **Parallel processing** of CT studies by multiple computing resources and servers provides image enhancement in real-time.
- **Innovative Grid computing technology** ensures a fail-safe, always-on, high-performance iterative image reconstruction functionality for any number of CT scanners.
- **Open, robust interface software** enables SafeCT to support CT scanners and PACS systems of all vendors and models without changing the clinical and operational workflow.

SafeCT Benefits

- **Unsurpassed image quality** of CT images acquired with low-dose protocols: SafeCT's volumetric algorithm significantly reduces CT image noise without losing spatial or contrast resolution. Integral filters are available and can be applied by the user in order to meet radiologists' preferences.
- **Compatibility** SafeCT is vendor neutral—it supports CT scanners and PACS systems of all vendors and models. Processed output images have the same “look and feel” as the standard full-dose images acquired on existing CT scanners.
- **Scalability:** SafeCT serves any number of CT scanners connected on a department network. It allows incremental growth—new CT scanners and sites can be added to meet the flexible and dynamic climate in which healthcare providers operate. Moreover, SafeCT software licenses are transferrable, allowing the replacement of existing CT scanners without having to purchase a new license or iterative reconstruction option from the CT vendor.
- **Cost savings:** No need to replace “older” CT scanners with new systems or to purchase costly OEM iterative reconstruction solutions in order to meet ALARA. SafeCT is priced at less than 50% of OEM iterative reconstruction solutions.

Enhanced-quality studies in DICOM format



PACS

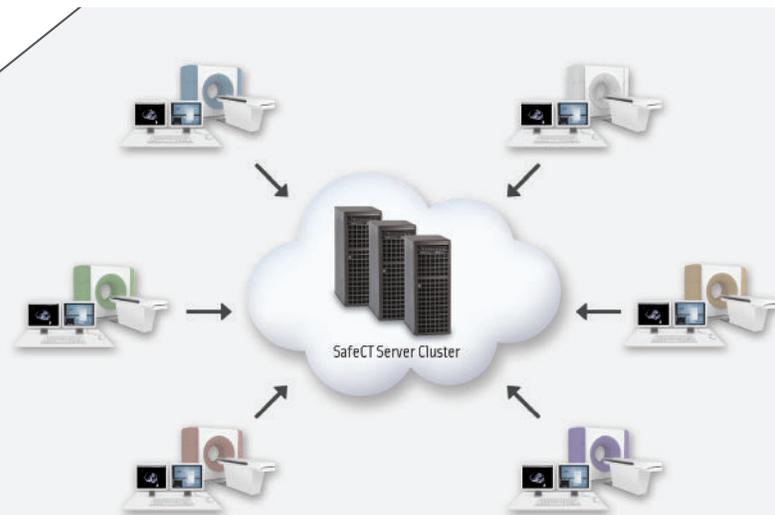


Workstation

- **Availability and performance:** Utilizing a cluster of SafeCT servers and proprietary GRID Computing technology, SafeCT provides continuous, fail-safe real-time iterative image reconstruction functionality to all CT scanners on a network through fail-over, load balancing and parallel processing.
- **Rapid processing:** Multiple Graphical Processing Units (GPU's) and shared computing resources enable fast parallel iterative image reconstruction. Typically, a full CT study containing 400 slices is processed within 90 seconds. Processing time may be further shortened by harnessing additional computing resources.
- **Uninterrupted and unchanged departmental workflow:** SafeCT operation is fully automatic and requires no operator interface. It integrates seamlessly into the existing CT department workflow, requiring no technologist intervention or physician training.
- **Quick installation and technologist training:** The entire installation, setup and training process, for all CT personnel, is typically accomplished in three days, with no need for CT scanner downtime.

SafeCT

Enterprise Edition:



Fail-safe network-based Iterative Image Reconstruction for multiple CT scanners of multiple brands and models in multiple locations.

Validation and Certification

SafeCT has been clinically validated at leading medical centers such as University of Pittsburgh Medical Center (UPMC, Pittsburgh, PA.), Massachusetts General Hospital (MGH, Boston, MA.) and Rambam Medical Center (Haifa, Israel). Clinical results have been presented in professional conferences, such as RSNA and ASNR, and published in professional journals. U.S. FDA clearance and European CE approval were received in 2011. Over 100,000 low-dose CT studies have been processed by SafeCT.

Reviews and Publications

In the November 2012 issue of *Journal of the American College of Radiology (JACR)*, Drs. John Johnson and Jon Robins of Imaging Healthcare Specialists (IHS) in San Diego stated: "...SafeCT has been successfully deployed at IHS, with a dramatic reduction in radiation dose while maintaining diagnostic image quality... we have concluded that the combination of smart CT protocols and SafeCT iterative reconstruction is a superior method of dose reduction... dose savings of up to 90% have been achieved in select patients."

According to *ECRI Institute's August 2012 Health Devices* article, "Optimizing CT Dose": "SafeCT may offer a more affordable option for facilities looking to provide iterative image reconstruction for a large number of CT scanners, compared to upgrading individual scanners. We highly recommend considering this system for new and existing CT systems that do not already have iterative reconstruction."

Installation and Training

The SafeCT installation process begins with a site survey in order to identify, document and communicate the specific environment where the system will be installed. The site survey is typically conducted over the phone or by e-mail.

SafeCT installation is performed by a Medic Vision Field Service Engineer to allow for a rapid and effective installation. No CT scanner downtime is required.

Customer Support

Medic Vision provides 24/7 high-level U.S.-based customer support and technical services via phone and online customer support system.