GE Healthcare

Integrated Registration

Multi-Modality Image Management

In Radiology practice today, multiple complementary imaging modalities are frequently relied on to image the same patient, as each modality provides unique anatomical and physiological information. 3D modalities such as CT and MRI provide information about the relationship of anomalous findings to surrounding structures and tissues. The Integrated Registration application provides you with a streamlined workflow to combine and display images from any two of the five major modalities (CT, MR, PET, SPECT, and X-ray angiography), aimed at improving your ability to provide more clinically relevant diagnostic information, and improving surgical and treatment planning.

Overview

Integrated Registration provides you with the capability to align and fuse two volumetric acquisitions from either the same or different acquisition modalities. With it, you can easily compare 3D anatomical images from CT, MR with PET, SPECT, and X-ray angiography[1] for a comprehensive analysis.

Highlights

- Load and register on the fly with drag and drop.
- Easy registration using automatic, manual and landmark methods.
- Multiple 2D and 3D fusion capabilities.
- Automatic registration propagation across series and one-click access to pre-defined protocols.
- Rigid and deformable registration.
- Drawing and saving of contours as RTSS DICOM objects.
- Access to regional registration on the fly for an easy review of challenging areas.
- Compatible with GE Advantage SIM MD and other standard treatment planning software.
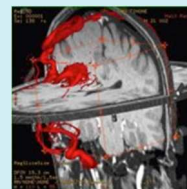
Features

- Allows you to load exams and series from CT, MR, PET, SPECT or XA together for registration in the same session.
- Offers you a choice of four automatic registration methods.
- Allows you to customize screen layouts to suit your review needs and provides comparison of a current exam with previous exams to let you evaluate disease progression and treatment efficacy.
- Combines functional and anatomical images from different modalities, providing you with enhanced perspective of the area of interest.
- Allows you to define one or more contours around relevant anatomy and save them as RTSS DICOM objects.
- Provides you the ability to save registered data as new DICOM series or as a registration DICOM object (does not include SPECT).
- Define volume of interest in one model for automatic report to another model for subsequent use in Radiation Therapy (RT) planning.[2]
- Provide referring physicians with clear, detailed reports.

System Requirements

- Available on AW Server 3.1 and above and recommended monitor resolution is up to dual 2MP (1600 × 1200) or a single 3MP (1536 × 2048).
- Available on AW4.7 and above

Image Requirements

Acquisition position and plane, slices resolution, number, thickness, and spacing may be different in the acquisition of the two exams to be registered.

Each image set should meet basic requirements, however:

- Field of view, matrix size, and display center should be the same for all images inside one series.
- Orientation should be the same for all images in the series.
- Series should include more than one image.
- Tilted acquisitions are not supported by mutual information based automatic algorithms; they can be registered with manual, landmark, or automatic "matching boundaries" registration methods.
- Datasets used as reference and moving should have some matching anatomical location.

Indications for Use

Integrated Registration provides easy means for comparison of three-dimensional (3D) images from Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Emission Tomography (PET or SPECT) and X-Ray Angiography images (XA). To help physicians in diagnostic radiology or therapy planning, Integrated Registration allows 3D registration between volumetric acquisitions that may come from the same acquisition modality or from different acquisition modalities.

Regulatory Compliance

This product complies with the European Council Directive 93/42/EEC Medical Device Directive as amended by European Council Directive 2007/47/EC.

References

[1]For XA modality series, Integrated Registration currently supports only 3D X-Ray Angiography images (stored as CT Image Storage DICOM objects) acquired with GE Innova equipment and reconstructed with the Innova3DXR application.
[2]Requires DICOM RT capability on RT planning system.

GE imagination at work

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