RSTAR is a computerized system for **R**adiology **S**torage, **T**ransfer, **A**nalysis, and **R**eporting developed by Massachusetts General Hospital. The first version of the system, µRSTAR (pronounced "micro-r-star"), comprises several medical image workstations and a central archive for the acquisition, storage, and display of diagnostic images such as Computed Tomography (CT) scans, Magnetic Resonance (MR) images, Nuclear Medicine studies, and Positron Emission Tomography (PET) scans.   Users can quickly and selectively search the archive for patient exams from any µRSTAR workstation in the department. An expert system automatically places images upon the display screens in the correct format. The images may then be viewed and manipulated at the workstation, and can be smoothed, sharpened, or otherwise modified with sophisticated image processing algorithms.

Images and patient demographic data are stored in a central VAX 6220 computer. The workstations, based on AT-class computers, control the user interface, the display of images, and simple image manipulation functions. The workstations are networked to the VAX server which manages the database, performs high-level image processing, and administers the system.

µRSTAR has proven to be an effective research tool with clinical applications. The system allows simultaneous access to medical images by multiple users, and provides radiologists with a powerful set of tools for image measurement and manipulation. Future versions of RSTAR will feature fiber optic image transmission, higher resolution displays, and greatly improved performance and functionality to support the primary diagnostic interpretation of radiological images at workstations throughout the hospital and beyond.

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