

## Short Notes

# Radionuclide Image Database Management System

Hou-Huan Hu, Liang-Chih Wu\* and Tsair Kao

Institute of Biomedical Engineering  
National Yang-Ming Medical College

\*Department of Nuclear Medicine  
Veterans General Hospital

### Abstract

Lots of images and reports are generated in the department of nuclear medicine every day. As the amount of images keeps increasing, it is hard and inefficient to handle these data manually. Accordingly, a picture archiving and communication system (PACS) is setting up in the department of nuclear medicine, Taipei-Veterans General Hospital. A PC-based radionuclide image processing system (RIPS) was developed as the image workstation in PACS. This thesis was attempted to design a radionuclide image database management system (RIDBMS) and provide the input images for RIPS. In order to solve these problems, we use four keys to construct RIDBMS. Firstly, it is a centralized system. Secondly, the standard in AAPM report No. 10 is adopted for describing image data. Thirdly, we select object-oriented model to develop RIDBMS. Fourthly, unique code is used as the heart of RIDBMS. By these methods, our system can manage 20 years data for the department of nuclear medicine. The volume of storage is less than 0.34% of the original volume. The cost of storage media is less than 30% of that of the diskettes. The system costs only about 3-4% of a radionuclide computer system such as SOPHY that is worth three million NT dollars. The system was designed in a menu driven approach so that it can be easily used by everybody in the department. In summary, RIDBMS can manage the storage and retrieval of radionuclide images and reports in a much more efficient and economic way than before.

Keywords : PACS, AAPM Standard, Object-Oriented Model, Unique Code.