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DEVELOPMENT OF THE NUCLEAR MEDICINE DATA
SYSTEM:THE MCS-1060.
K.Suzuki,K.Tamura,T.Tamegai,S.Kimura,K.
Kawamura and M.Mori. Aloka Co.,Ltd.,Tokyo.

A data system is indispensable for re-
cent nuclear medicine imaging. The MCS-560,
the nuclear medicine data system we are
currently supplying,has capabilities of ac-
quisition and processing for nuclear cardi-
ology,general nuclear medicine and SPECT.
Now,the MCS-1060 has been developed to pro-
vide more computer power than the MCS-560.
The MCS-1060's features are as follows.
1. Enables to attach up to four radio-
isotope cameras and to acquire the data
from two cameras simultaneously.
2. Built-in two dual channel ADCs which
enable high count rate acquisition up to
250 kcps.
3. Provides versatile data acquisition mode
:static,dynamic,wholebody,dual isotope,list
mode,ECG multi gated,SPECT and video input.
4. Built-in the Array Processor and the
floating point Arithmetic Processing Unit,
they enable high-speed image reconstruction
,image processing and data analysis.
5. Built-in the 30M byte winchester hard
disk(optional second and third winchesters
available) and 40M byte streaming magnetic
tape,they enable large-capacity data strage
and high-speed data transfer.
6. Has compatibility of the image data and
utility programs with the MCS-560.
We believe that the MCS-1060 will be very
helpful for the diagnostics of present
nuclear medicine.

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DEVELOPMENT OF DATA COMMUNICATION IN THE DIGITAL
GAMMACAMERA SERIES.  A. Habara, S. Matsui, Y. Tani
(Toshiba Corp. Nasu)

Medical image data communication has been
developed using the special interface, type
PIM, with the medical image processor, model
GMS-55U, and the digital gammacamera series.
This technique is intended for bidirectional
communication between two data-bases, in
conformity with the protocol on telex
formulated by the Consultative Committee on
International Telegraph and Telephone
(CCITT). The following modes are available
for the data communication:
(1) Active reception
For retrieving the data-base of the party
concerned and receiving the images.
(2) Active transmission
For retrieving one's own data-base and
transmitting the images.
(3) Passive reception
For receiving the images transmitted from
the party concerned.
(4) Passive transmission
For transmitting the images at the request
of the party concerned.
The data-base communication has a trans-
mitting speed of one image in approximately
six seconds for a matrix size of 512 x 512.
On the other hand, communication with
VAX-11/750 is performed based on the
specifications for the interface DR-11W,
conforming to the same protocol. This
technological advance may present a prospect
for wider application of the gammacamera
series.

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DEVELOPMENT OF MULTI-MODALITY IMAGING(MMI)
PROGRAM.
F.Arai,Y.Oie,T.Maruyama,K.Koike,S.Kitagawa and
T.Nakamura. Hitachi Medical Corp.

Recently, the necessity has been greater for a multi-
modality imaging diagnosis intended for supporting the
medical diagnosis by organically integrating image data
produced from various modalities.
Our report concerns a multi-modality imaging(MMI) pro-
gram we developed as a support tool for overall image
diagnosis for use with our HARP-series radionuclide
image processor.
Since the MMI program includes a series of processes
from the entry of various modality data to the display
of them, we studied the following items :
(1) Input of various image data(online input, and offline
    input by magnetic tape or floppy disk)
(2) Image size and positional adjustments
(3) Extraction of necessary portions from image
(4) Multi-modality display
    -Parallel display
    -Shifted display
    -Integrated display (in 4 kinds)
Each of the above-mentioned functions will be explained
using various image data.

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DEVELOPMENT OF MULTI-PURPOSE DATABASE
SYSTEM FOR NUCLEAR-MEDICAL STUDY(2ND REPO-
RT). - IMAGE FILING BY OPTICAL DISK -
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Hitachi Medical Corp.

The image data used in the nuclear-medical studies
have been more and more diversified and increasing in
number, including data obtained from the data processor,
data acquired by digital camera, data from various moda-
lity for MMI (multi-modality imaging), etc.  These data
are recorded in magnetic tapes, but it takes a much time
and labor to retrieve the necessary data.  For storage of
image data and efficient access to any necessary data, we
developed, by adopting optical disk, a database system
which can be used for our HARP-series radionuclide data
processor.  We report here this database system.
Since the data management using optical disk needs a sys-
tem suitable for storage, compression, retrieval, etc. of
image data, we studied the following items :
(1) Functions to store image data reserved in the magne-
    tic disk and to store image data directly under the
    HARP protocols
(2) Function to select data for compression
(3) Function to designate plural data retrieval keys
(4) Interchangeability with optical disk for PACS