

JAHIS NEWS

Japanese Association of Healthcare Information Systems Industries

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JAHIS WILL OPEN A HOMEPAGE

We are preparing our homepage on the net. You will be able to read JAHIS NEWS No.4 at <http://www.meshnet.or.jp/jahis/>. We hope you will continue reading JAHIS NEWS.

Greeting

I was elected as the Chairman of JAHIS at the Board of Directors Meeting which was held immediately after the General Assembly held on June 3, 1996. I look forward to performing the duties of the Chairman with the kind guidance and support of all the members. Your assistance will be highly appreciated.

JAHIS was established in April 1994 with the participation of 172 companies which by far exceeded initial expectations. At present, JAHIS has 243 member companies, and is an organization which is essential for progress in the field of information systems in health, medical care and welfare services. I would like to express my heartfelt appreciation to Mr. Sekimoto, the first Chairman of JAHIS, and the many others concerned for their hard work.

As the tendency to have fewer children and the aging of society has been progressing in Japan at a rapid speed not previously experienced by any other country, people have come to have increasing interest in health. Their health, medical care and welfare needs have been also rapidly increasing. In response to these needs, such policies as the consolidation of links between health, medical care and welfare services and the New Gold Plan have been implemented by the national government. However, it is not easy to fully meet the public's needs with the current financial outlook. A great hope is placed in the sophistication and improved efficiency of the services through the utilization of information systems in health, medical care and welfare services in addition to the policy to introduce public nursing insurance.

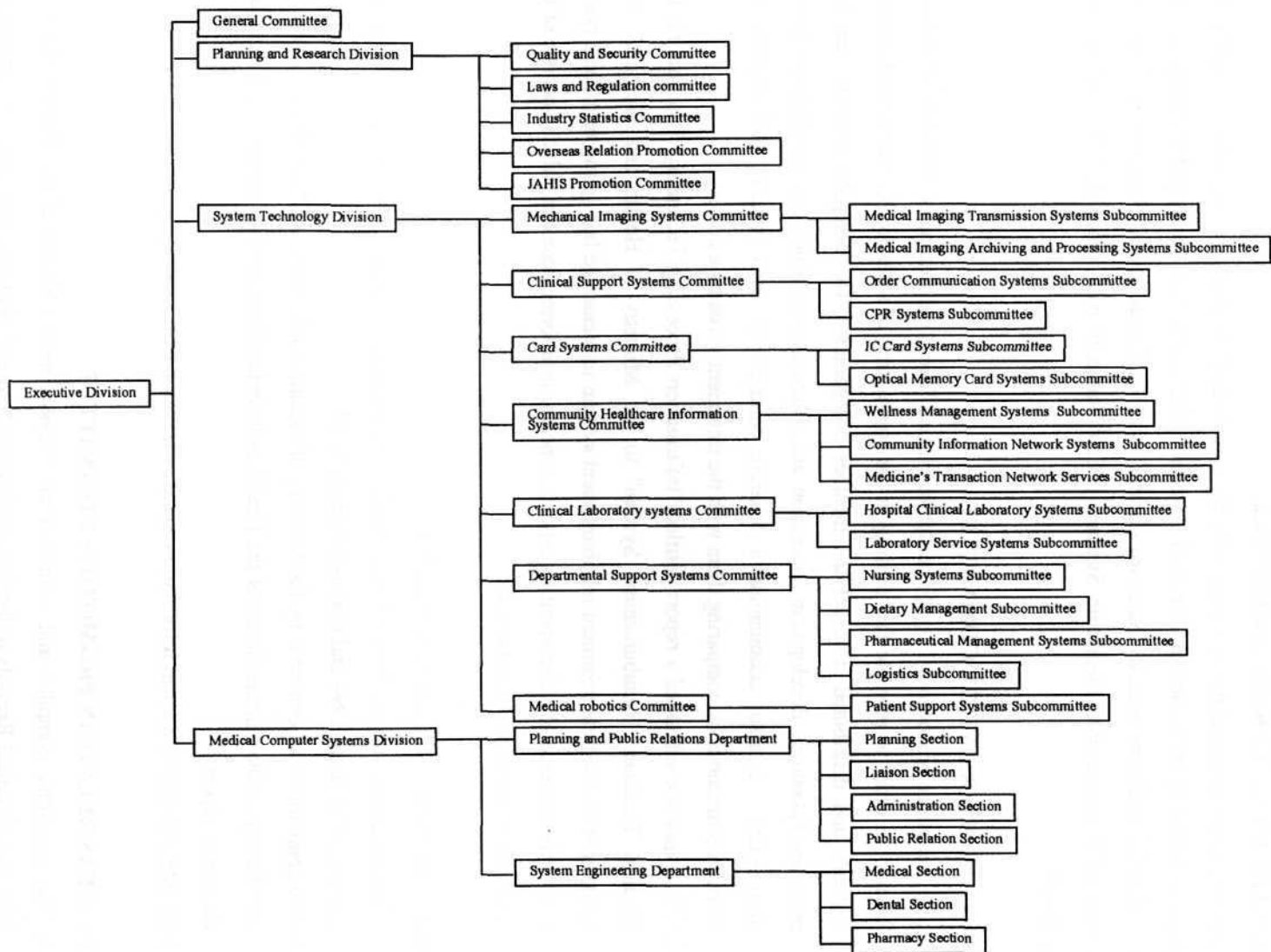
For this purpose, the Council on Information Processing in Health, Medical Care and Welfare Services, an advisory organization was established to develop the concept and promote specific subjects including the development of electronic processing of medical imaging, medical records and receipts, and the development of a system to link the health, medical care and welfare services. JAHIS is also expected to serve as a pioneer of electronic information processing in these national projects. While we at JAHIS welcome such a development, we also understand the gravity of our responsibility.

On the basis of the rapid progress in semiconductors, software, communication infrastructure, etc., information systems have been the subject of remarkable technological innovation in directions where the fields of application are expanding including networking, open systems, down-sizing, and the use of multi-media. Above all, the information literacy necessary to take full advantage of the new information technologies has made remarkable progress especially among the younger generation. Formerly, the fields of health, medical care and welfare services have had a tendency to be further behind other fields in information processing. Increasing needs for information processing as well as technological progress and increasing strength of the younger generation have prepared an environment in which information processing will make substantial progress.

Thus, the national government and these engaged in health, medical care and welfare services have great hopes for information processing. While the growth of the information processing market is

rapid, there are still many issues to be solved including the development of new technologies, the promotion of standardization, promotion of mutual understanding with users on the right fee for development and maintenance of software. I am determined to do my best, together with the members of JAHIS, to contribute to the development of information processing in the health, medical care and welfare services in Japan and the sound development of the medical information system industry. Your cooperation towards this end will be highly appreciated.

Tsutomu Kanai
Chairman, JAHIS
President, Hitachi, Ltd.



PLANNING AND RESEARCH DIVISION

QUALITY AND SECURITY COMMITTEE

The committee surveyed the literature with the objective of considering guidelines concerning the quality and security of medical information systems. The survey was conducted with emphasis on the "ISO/IEC Software Security Standard (Draft)" and the Tentative IEC Standard for Functional Security of Programmable Electronic Systems (PES)" subjects with which JAHIS is particularly concerned.

LAWS AND REGULATION COMMITTEE

- 1) The committee produced a 12-page pamphlet entitled "For Your Computer System to Be A Good Partner" in order to promote fair dealing in the contracting of software for medical information systems, and distributed it to all the member companies. The pamphlet explains the four processes (planning, development, operation and maintenance) which are essential for system introduction. It also recommends a separate contract for each process, and explains the software's functions by comparing them with the treatment given by a doctor.
- 2) The committee submitted a report entitled "Information Processing Technology Essential for the Medical Treatment Reimbursement System" to the Ministry of Health and Welfare. The revision of the medical treatment reimbursement system implemented last spring included a points system for issuance of a document to patients concerning informed consent, which was one of the measures proposed by the committee.

INDUSTRY STATISTICS COMMITTEE

- 1) The committee surveyed the sales of health and medical information systems achieved in the second half of fiscal 1994 and first half of fiscal 1995.
- 2) The committee was entrusted by the Ministry of Health and Welfare via MEDIS-DC to conduct the "Survey on the Current Status of the Health and Medical Information Industry", and submitted the survey report.

Note: MEDIS-DC = Medical Information Systems Development Center, Inc.

OVERSEAS RELATION PROMOTION COMMITTEE

- 1) The committee compiled and submitted the "Report on the Survey of the Current Status of Electronic Medical Records in the Group of Seven Nations", a project entrusted to the committee by MEDIS-DC.
- 2) The committee reconsidered its own role, and decided to carry out its activities in two groups, i.e., the Information Collection Group and the Information Transmission Group in the future.
- 3) The committee began a subscription to "e.med NEWS" issued by PTB Publications Ltd., England.

- 4) The committee issued and sent JAHIS NEWS No. 2 to related organizations overseas.

JAHIS PROMOTION COMMITTEE

- 1) The committee was entrusted to give an exhibition about the Medical Information Section by the Exhibition committee of the 24th General Assembly of the Japan Medical Society. The committee organized an exhibition with a floor space of 1,080 m² with cooperation of 15 member companies. On this occasion, the Exhibition Project Working Group was established within the committee.
- 2) The committee held the 2nd JAHIS Lecture Meeting on the theme of electronic medical record keeping.

SYSTEM TECHNOLOGY DIVISION

MEDICAL IMAGING SYSTEMS COMMITTEE

- 1) The committee selected 250 hospitals in the country and conducted a questionnaire survey concerning the current systems, subjects, problems and future of the medical imaging systems (No. of respondent hospitals: 63, Collection rate: 25%). As a result, it was determined that the greatest current need for systematization was in the field of radiology imaging (91%). In the future, the need was expected to be high for the ultrasonic imaging (46%). When choosing new equipment, respondents said that they placed the greatest importance to the imaging resolution (87%). On the subject of post-installation problems, many of them were concerned about the speed of retrieval and display of image data (63%). Many hoped that JAHIS would promote standardization.
- 2) The Medical Imaging Transmission Systems Subcommittee set up a model of a medical imaging system, identified the parts of interface between the elements of the model configuration which require standardization, and identified the important questions in configuring the system, in order to clarify the tasks for applying the DICOM Standard. The committee also surveyed and analyzed the recent trends in LAN/WAN technology and the trends in image compression technology.
- 3) The Medical Imaging Archiving and Processing Systems Subcommittee prepared the draft JIS concerning medical image information in cooperation with MEDIS-DC and Japan Industries Association of Radiation Apparatus.

CLINICAL SUPPORT SYSTEMS COMMITTEE

- 1) The Order Communication Systems Subcommittee, together with related subcommittees, translated into Japanese the HL7 protocol, the standard connection protocol between order communication systems and departmental support systems. The committee also held a lecture meeting on legal issues concerning prescription and order communication systems.

- 2) The CPR Systems Subcommittee considered the intended effects (on hospital management and health administration) of the "JAHIS's Proposed Classification of the Electronic Medical Record System" Ver. 1.0 which was issued last year (Refer to the last issue of JAHIS NEWS for details.), and revised it into Version 1.1. The committee also compiled a report on the trends in AI systems with the introduction of "DX Plain", the diagnosis support system developed by the Massachusetts General Hospital, U.S.A.

CARD SYSTEMS COMMITTEE

The committee submitted its proposals to related organizations concerning the systems which limit the expansion of the use of IC cards and operational problems from the technological standpoint, and made efforts to promote the current achievements. The committee completed the "Optical Memory Card Manual", and considered the details and methods of a survey of case studies, in order to specify the problems and evaluate the application technology.

COMMUNITY HEALTHCARE INFORMATION SYSTEMS COMMITTEE

- 1) The Wellness Management System Subcommittee focused on corporate health examinations and resident health examinations with the maximum number of examinees, and surveyed the terms which are used for examinations, diseases, and diagnoses, and the methods of representing data. A prototype methods for representing data was prepared using SGML (Standard Generalized Markup Language).
- 2) The Community Information Network Systems Subcommittee made a model for home-based elderly people support information system, and compiled proposals for standardization, promoting the system, and preparing the social environment. (Refer to the Topics on Page 10 for details.)

CLINICAL LABORATORY SYSTEMS COMMITTEE

The Hospital Clinical Laboratory Systems Subcommittee made two working groups to analyze and compare, ASTM and HL7 which serve as the basis for promoting standardization. The Laboratory Service Systems Subcommittee compared and considered ASTM in order to prepare the draft Rules for Clinical Examination Data Exchange Version 1.

DEPARTMENT SUPPORT SYSTEMS COMMITTEE

- 1) The Nursing Systems Subcommittee further elaborated on the "JAHIS's Proposed Nursing Classification for the Information Systems" (Refer to the previous issue for details.), and considered the areas for standardization in more concrete terms. The subcommittee made presentations at related academic conferences and organized opinion exchanges in order to promote its achievements and get an external evaluation of them.
- 2) The Dietary Management Subcommittee considered the standardization of nutritional guidance, documentation, and interface with other systems.

- 3) The Pharmaceutical Management Systems Subcommittee continued to consider the standardization of the Medical Products Master and the interface with other systems.
- 4) The Logistics Subcommittee considered the interface between the logistics system and the order communication system. The subcommittee also analyzed the current status of the related parts of both systems, and compiled the report, "Analysis of the Current Status of the Interface between the Logistics System and the Order Communication System".

MEDICAL ROBOTICS COMMITTEE

- 1) The committee conducted a questionnaire survey of automated equipment for patients, and a questionnaire survey on the transportation of specimens out of clinical examination room.
- 2) The committee held the Automated Equipment System Case Presentation Meeting. Eight companies gave presentations on reception and reservation systems.

MEDICAL COMPUTER SYSTEMS DIVISION

(1) Promotion of the practical use of the Medical Accounting Base Master

- 1) The division prepared the Medical Treatment Master, and issued it to members for evaluation.
- 2) The approximately 30,000 items initially included in the Wound and Disease Classification Master were reduced to less than half under the supervision of the Term Management committee of the Japan Medical Society. The division considered the retrieval function and response to ICD10, and is planning to release the revised Master in fiscal 1996.
- 3) The Medical Products Master which had been distributed to the members upon request since 1991 was distributed to 53 members this year. In addition to the usual distribution on magnetic media twice a year and provision through facsimile, the division started to offer the Master via personal computer communication.
- 4) The division continued to consider, together with related divisions, application of the Translation Index for Medical Product Masters.

(2) Response to the revision of the medical treatment reimbursement system

In July 1994, the Tuberculosis Control Law and the Mental Hygiene Law were revised, resulting in the revision of the medical treatment reimbursement system. The division responded to this revision. This response to the regular revision (once in two years) of the medical treatment reimbursement implemented in April 1995 was the first one since JAHIS was established.

(3) Promotion of the receipt computer processing system

- 1) With the subsidy from the Ministry of Health and Welfare, the division started to develop the "Standard Master", an expanded version of the Medical Accounting Base Master for use at medium-sized and large-sized hospitals.
- 2) Towards the realization of a nationwide receipt computer processing system in 2001, pilot studies

were started in Himeji and Amagasaki Cities in Ehime Prefecture and Funabashi City in Chiba Prefecture.

(4) Promotion of standardization of the receipt format

- 1) In April 1997 it was decided to unify the receipt format size to A4 (formerly B5) and to specify four (medical outpatient, medical inpatient, dental and pharmaceutical). If this format is accepted, substantial reduction of revision work is expected.
- 2) Introduction of the OCR receipt processing system was continued from the previous year, and the four payment fund organizations introduced the system during this fiscal year.

Home-based Elderly People Support Information System

Activities and Tasks in Fiscal 1995

(This article is an extract from the results of a survey which was commissioned by the Institute For Personalized Information Environment.)

Community Healthcare Information Systems Committee

In fiscal 1995, with the aim of responding to the future development of the advanced information and communication society, and realizing practical home-based elderly people support information systems which meet the needs of elderly people, JAHIS considered the following on the basis of the report of the survey conducted with the theme of "needs and seeds" in fiscal 1994 (1) the modeling (concept designing) of the home-based elderly people support information system and selection of the areas for standardization, and (2) the promotion of the system, and considered what kind of information system elderly people truly want.

On the basis of observation of the current status, we classified the problems of existing information and communication systems covering "daily health management" and "security management centered on emergency calls" for which the elderly expressed a particularly urgent need. Taking into consideration the economy, operability, service and maintenance of the equipment, we proposed a new integrated information and communication equipment system.

In its proposals for equipment development, we wanted to create a market in which many different industries can freely participate, and to create of standards for equipment development so that buyers can obtain equipment easily, at low cost, without worrying about how to operate it. We also investigated not only the technological problems in equipment development but also how to disseminate equipment after development.

The following is a summary of conclusions and future tasks.

1. Summary of the survey results

- (1) Sorting of the problems in the existing "home-based health management support systems" and "emergency call systems"

We surveyed the current status of "home-based health management support systems" and "emergency call systems" which are currently on the market, and analyzed the problems from the six viewpoints of the users and system operators.

1) The problems faced by the users

a. Functionality

- * It is difficult to understand how to operate the equipment unless the equipment has a large-sized screen display and audible operation guidance function.

b. Operability

- * Some elderly people are not accustomed to using this kind of equipment and do not understand how to operate the equipment.

c. Safety

- * Equipment should be safe even if the user makes a mistake.

d. Design

- * The design should be easy for an elderly person to carry by oneself.

e. Security

- * There is a concern about how personal data is transmitted to the doctor, etc.

f. Economy

- * The user should have to purchase the equipment with his own money.

2) System operator

a. Functionality

- * System functions should allow connection between different models.

b. Operability

- * Since the system operator at the center may not necessarily be familiar with computers, he may not be able to use the equipment if it is too complicated to operate.

c. Safety

- * When the system breaks down, there should be a quick backup system so that even a person unfamiliar with the equipment can restore it.

d. Design

- * The operating and displaying areas on the computer screen should use an easy-to-see color arrangement to make the system easy to operate.

e. Security

- * The security of personal information at the center is insufficient in current system.

f. Economy

- * The operating and initial introduction costs are too high.

(2) Sorting of the system requirements in developing new systems

After investigating the problems in the existing systems, we analyzed the system requirements in developing new systems on the basis of the following points.

1) Home equipment

a. Functionality

- * The equipment should have an easy-to-understand display of the results of measurements.
- * The equipment must be able to keep a record of the progress of the measurements.
- * The equipment must be able to transfer its measurements to external information and measurement equipment.

b. Operability

- * The equipment must offer simple, problem-free measurement.
- * Allowance should be made for misoperation.

c. Safety

- * The equipment can be used safely and without any anxiety.
- * The equipment should have excellent resistance to shock and water.
- * The equipment should be reliable and easy to maintain.

d. Design

- * The equipment should have a design which suits the tastes and particular needs of elderly people.

e. Security

The equipment should ensure privacy as it handles personal information.

f. Economy

- * The equipment should be low cost.
- * The maintenance costs should be low.

2) Central system

a. Functionality

- * The equipment should have an easy-to-understand display.
- * The equipment can receive collected data transferred from home equipment.
- * The equipment can transfer the measurement data to outside medical institutions and welfare facilities.

b. Operability

- * It should be easy to operate.
- * It should be tolerant of misoperation.

c. Safety

- * The equipment can be used safely and without any anxiety.
- * The equipment should be resistant to shock and water.
- * The equipment should be reliable and easy to maintain.

d. Design

- * The equipment should have a design which suits the tastes and particular needs of operators such as care workers.

e. Security

The equipment should ensure privacy as it handles personal information.

f. Economy

- * The equipment should be low cost.
- * The maintenance costs should be low.

(3) Modeling and standardization of the proposed home-based elderly people support information system

In proposing a model of the "home-based elderly people support information system", this year's report assumed the development of a digital communication network offering the order of 1 to 5 Mbps to all homes by the early part of the 21st century, and proposed a multi-media home information terminal assuming the provision of information services including image services such as TV phone and CATV using the above-mentioned network. We also proposed a central system which is able to receive information from homes. The following are the major functions of the home and central equipment.

1) Major functions of the home equipment

- a. Home information collection
- b. Health management support
- c. Emergency calling
- d. Measurement data transfer
- e. TV phone functions
- f. Network connectivity

2) Major functions of the central equipment

- a. Health management support function
- b. Emergency calling

It is expected that the time will come in the future when a variety of systems appear on the market as technology progresses and matures, and that people will be able to select home equipment and central systems freely according to their needs. In order for system buyers and users to be able to select a home-based elderly people support information system according to their objectives, needs and preferences, compatibility between systems must be maintained by means of standardization. The following is the status for standardization in the proposed model.

1) The standardization of home equipment

- a. Data items and their format/range
- b. Data communication

2) The standardization of the central system

- a. Interface with external systems
 - * Item identification code to be attached to measurement data

3) The standardization of the communication channel

- a. Communication protocol for external data transfer

(4) Proposal for promoting home-based support systems

We analyzed the obstacles in promoting the home-based elderly people support information system

in view of the future technological trends and standardization in the information and communication fields, and made a proposal for its promotion. The following are some of the obstacles in promoting the system, and proposals for its promotion.

1) The obstacles

- a. Technological obstacles
- b. Economic obstacles
- c. Awareness-related obstacles
- d. Social obstacles

2) Proposal for promoting of the system

- a. Promotion of standardization
- b. Publicity of the proposed system
- c. Preparation of social environment

2. Future tasks

There is the need to refine the areas for standardization, evaluate the proposed model, and implement activities towards its popularization in the future on the basis of the survey of the existing systems, problems analyzed, the system requirements, preparation of a model of the home-based elderly people support information system, and the proposal for popularization of the system equipment as described in Chapter 1.

(1) Refining the areas for standardization

The items for standardization as mentioned in this year's survey report should be considered in detail. The following are points for consideration.

- (1) Sorting and deciding on the items to be measured by the home equipment;
- (2) Deciding on the "item codes" for the measurements;
- (3) Deciding on attributes and number of digits per measurement; and
- (4) Deciding on interface (communication) with external systems.

(2) Evaluation of the model system

The evaluation of the actual operation and management of the model system proposed in this year's report shall be carried out through simulation with a prototype.

1) Points for evaluation

In order to develop the model system proposed this year to an actually operable and usable level, an evaluation shall be carried out by establishing the evaluation methods and points for evaluation on the basis of the model items including functionality and operability. In particular, when evaluating the operability of home equipment, there is a need to consider the evaluation method and points for evaluation taking into account the fact that the users will be the elderly people.

On the basis of the system requirements as mentioned in this year's report, the points for evaluation shall be clarified. The items for standardization shall be also evaluated.

The following are examples of the points to be evaluated.

a. Evaluation of operability

The life-style and habits of the home-based elderly users should be taken into account, particularly for home equipment. For example, the evaluating method and points for evaluation should consider their speed of movement and physical strength.

b. Evaluation of functionality

The adequacy of the functions of the home terminal shall be evaluated according to whether the measurement items and interview items can be set up from the center to suit individual users and the design of the screen, forms, database, etc. of the central system.

c. Evaluation of credibility

Credibility is particularly required in the communication between the center system and home equipment. Therefore, transmission from the home equipment, receiving at the central system, and credibility of the transmitted and received data must be evaluated.

d. Evaluation of areas for standardization

By investigating the problems of linking with other systems, the appropriateness of the areas for standardization themselves shall be verified and evaluated.

2) Evaluation method

a. Appointment of monitors

Monitors shall be appointed in order to obtain information about the life-styles and habits of home-based elderly people who will use the equipment, how often they use the equipment, and the home equipment usage frequency, usage time, etc.

b. Simulation using a prototype

(a) Development of prototype

- * The details for development of a prototype shall be selected from the proposed operating models and a prototype developed.
- * A personal computer could be used as substitute for home equipment or the central system.

(b) Simulation

- * Simulation shall be carried out by using the prototype.

(c) Feedback

- * The evaluation results shall be compiled, and be fed back to the model system.

(3) Implementation of the activities towards promoting the system

Related organizations shall jointly carry out promotion as mentioned in this year's report. In concrete terms, this means carrying out the following activities.

1) Promotion of standardization

The market for support information systems for home-based elderly people is still at the embryo stage. The market is expected to increasingly expand in the future. At present, while the market is still immature, it is necessary to fully discuss standardization. Therefore, the Electronic Industry Association of Japan (EIAJ) will be asked to undertake an evaluation of the areas for standardization and promote the system.

2) Promotion of links with manufacturers towards the realization of standard-based products

In parallel with promotion of the above-mentioned standardization, industry organizations such as JAHIS shall promote links between coordination among manufacturers towards the realization of products that can be offered at low prices.

3) Joint evaluation of the model system

On the basis of the model system proposed this year, JAHIS shall take the initiative to coordinate the related industry organizations, and evaluate the operation of the model system. In concrete terms, a field and project model for evaluating the model system shall be selected and proposed. Discussion is necessary concerning promotion of the system and the possibility of developing an experimental product shall be considered.

4) Publicity activities (for individuals/local governments)

On the basis of the proposed model system, activities aimed at consolidating the social welfare environment shall be carried out through publicity activities including the production of pamphlets, and putting information on the WWW.

Overview of System Configuration

