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PLAN FOR FURTHER DEVELOPMENT OF THE NATIONAL HEALTH INFORMATION SYSTEM FOR MALTA

Report on a Meeting

Copenhagen, 2-4 September 1985

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1. Introduction

The Basic Agreement concluded between the Government of Malta (hereinafter referred to as "the Government") and the World Health Organization (hereinafter referred to as "WHO") on 10 May 1967, provides the basis for relationships between the Government and WHO in the development of a health information system. The proposals in this document are to be interpreted in the light of the basic agreement.

The project description is drawn up in line with the World Health Assembly and Executive Board mandates on health information, in particular:

WHA30.46 Urges Member States to develop appropriate national health information systems and services to support the development, implementation and evaluation of their health services

EB61.R32 Urges Member States to collaborate with WHO in adapting and applying the methodology of WHO information systems development to the development of national health information systems to provide integral support for national health programmes

WHA31.20 Urges Member States to develop or strengthen their health information systems so as to provide adequate support to their management processes for health development and to contribute to the international exchange of health and related information

as well as the recommendation of the International Conference on Primary Health Care (Alma-Ata, USSR, September 1978) in particular

article 108 To plan and manage primary health care, the right kind of information is essential, but the collection of information has to be kept to the minimum required. It is important to identify only that relevant information which is going to be used in the community or the referral service.

Every level of the health system has its own information requirements concerning primary health care, and the same information may call for a different degree of elaboration and aggregation at each level;

and the Global Strategy for Health for All by the Year 2000 (Geneva 1981) in which the European Region has formulated 38 targets, of which particular reference is made to target 35

HFA Target 35 Before 1990, Member States should have health information systems capable of supporting their national strategies for health for all.

Cooperation between the Government and WHO to develop a National Health Information System for Malta based on extensive use of modern computer technology was initiated during the visit of Dr J. Asvall, then Director of Programme Management, in July 1984. As a follow-up, a WHO team visited Malta from 3 to 7 September 1984 to advise on further development of such a system.

At the beginning of December 1984 a WHO consultant, Director K. Floisand, Directorate of Organization and Management, Norway, visited Malta. The proposals for computer equipment and programming systems were evaluated. Specific recommendations for procurement were presented to the Government, who formally accepted them by the end of 1984.

In April 1985 the consultant again visited Malta. During this visit the equipment was installed and a report was prepared on the "Development Plan for the Health Information System in Malta".

The background and planning of further activities to establish a national health information system in Malta can be found in the following reports.

(1) EURO duty travel - Report on a visit to Malta by Dr J. Asvall and Dr J.P. Jardel — July 1984

(2) EURO duty travel - Report on a mission by Mr K. Floisand, Dr J.P. Jardel and Mr I. Vinther-Jorgensen — September 1984

(3) Report: Procurement recommendations by Mr K. Floisand, Norway, Mr J. Pace Bonello and Mr F. Abdilla of the Malta Government Computer Centre; Mr E. Causon and Mr I. Zammit of the Health Information Unit (available from EIS/EURO) — November/December 1984

(4) Report: Development Plan for the Health Information System in Malta by Mr K. Floisand, Mr P. Fenech Gonzi and Mr H. Attard — April 1985

The purpose of the present report is to provide a basis for decisions on the further development of the health information system in Malta.

2. Present status in the implementation of phase 1

2.1 Master Index consolidation

2.1.1 Implementation plan

Following the acquisition of equipment and system delivery and acceptance in April 1985, a plan of action was drawn up laying down target dates for the various activities connected with the consolidation of the Master Index and with the administrative changes needed when switching from the present manual procedures to computerized procedures. A copy of the plan of action is attached as Appendix 1. It will be seen that most of the targets have been achieved, but there has been a delay in recording data on patients registered after the date of delivery of the system.

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[a]The phases are described in (4.) above "Development Plan for the Health Information System in Malta" paras 2.2, 2.3 and 2.4

2.1.2 Operational use of Master Index

It is now envisaged that all patient records will have been registered by 30 September 1985, at which time the full computerized system will be operational and will run parallel to the present manual system. The manual system will be discontinued following successful trial of the computerized system and after the complete register has been printed, to be used as back up. For this purpose two printers are being acquired by the Department of Health. This will conclude phase 1 of the Development Plan.

2.2 Further development of the Master Index

The Master Index will have to be improved and will gradually approach a full population register, which has so far not existed in Malta. Identity Card Nos. have been transcribed from the Electoral Register. About 50% of Identity Card Nos. have been ascertained; 25% of these have been recorded in the Master Index and the remainder will be recorded after completion of registration of "old" records. The task is expected to be completed by 31 October 1985.

Identity Card Nos. of new patients are being captured on registration. A further attempt will be made to obtain the relevant data on the 40-50% of patients already in the register whose Identity Card Nos. could not be ascertained from reference to the Electoral Register.

Sex of patients has been entered in the record automatically on the basis of first names, and date of birth is being recorded for all new patients. For existing patients, dates of birth are being ascertained from patient files, and these will be recorded in due course.

2.3 Ward registration and enquiry

Programmers from the Health Information Unit are preparing, with the help of INTERCOMP[a], a program to develop a ward registration and enquiry system. The system will also provide daily ward population statistics. Anticipated date for implementation of this system is 1 November 1985.

2.4 Staffing and training

The staff of the Health Information Unit at present consists of an administrative officer responsible for management and systems, and three programmers. Another officer undergoing a course in accounts at the university is attached to the Unit and works for five months every year. Data capture staff is provided on a temporary basis through the Worker Pupil scheme. A medical officer graduating in health planning and epidemiology is due to join the Unit.

Staff in the Health Information Unit and in the Medical Records Section have been trained in the use of the COSTAR Registration Option by INTERCOMP. A one week introductory course in MUMPS programming has also been conducted by INTERCOMP for programmers in the Health Information Unit and Government Computer Centre.

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[a] Representatives of suppliers in Malta

More advanced courses in COSTAR and MUMPS programming are scheduled for later this year.

3. Development plans for phase 2

3.1 Statement of objectives

Phase 2 will mean substantial investment in manpower and computer equipment to improve the delivery of health services to the population. In this section objectives are stated for delivery of such services in five areas:

- individual health profile development
- services to polyclinics
- services to Diabetes Clinic
- services to departments of St. Luke's Hospital
- services to the Craig Hospital in Gozo

3.1.1 Individual health profile development

A first step should be the enrichment of the medical records of patients by the incorporation of medical data in the form of an individual health profile. This will make the medical record meaningful and useful to the medical staff examining and treating patients, especially at polyclinic level where the files of patients are not physically available. The Health Status option of COSTAR could be used to record this data.

It is proposed that the individual health profile data should be built up on an encounter basis, i.e. as patients come into contact with the medical services. It is expected that during the first year of operation records would be established for about 50-60 000 patients. It is further proposed that the capture of data, in the first stage, should be carried out centrally using appropriate forms filled out by the medical staff. As medical staff are trained and as terminals are installed in the various localities, the registration of this data will be decentralized and the data will be recorded straight away by the medical staff coming in contact with the patients.

As regards the choice of individual medical profile, two alternatives are given in the report of 12 April. A definite decision on the data to be included will be made after further consultation with the medical staff in the various specialties during the final planning of phase 2. The program development for this application should be taken care of by the supplier as part of procurement for phase 2.

3.1.2 Services to polyclinics

It is envisaged that one of the main areas of development in phase 2 should be primary health care, and emphasis should be placed especially on improving the services rendered by the polyclinics. Besides contributing to health profile development by supplying data about individuals who visit the clinics, computer support should be provided for the administration of vaccination programmes. The Master Index will provide a useful basis for the gradual development of a system of general administration of patients in that particular area.

3.1.3 Services to Diabetes Clinic

Another area considered for inclusion in phase 2 is the Diabetes Clinic, where there is an ongoing WHO-sponsored programme. The medical and other staff of the Diabetes Clinic have gained experience in computerized systems through the limited applications at present operational on the Health Information Unit's small stand-alone microcomputers and at the Government Computer Centre. This is a well-defined and controllable application which would be ideal for further computerization. The experience already gained and the training which would result from further development would be useful in the general development of the health information system in Malta.

3.1.4 Services to departments of surgery, obstetrics and other departments at St. Luke's Hospital

In order to pave the way for the eventual operation of a comprehensive patient administration system, it is considered that phase 2 should provide for the installation of some computerized facilities in the ward areas at St. Luke's Hospital.

The use of work stations will vary from department to department. In departments where there is only limited experience in the use of advanced information systems the terminals would initially serve for enquiry, familiarization and training purposes; progressively after installation they would also be used for the capture of individual health profile data. In departments like obstetrics, where some experience has been built up through the use of existing facilities, the work station will also be used for statistics and analysis.

As training proceeds and as the medical personnel involved become more experienced, the work stations will be used to input more detailed medical data, scheduling, etc., leading towards full implementation of a comprehensive patient administration system.

The initial distribution of work stations will be decided on the basis of the use that can be made of them and following a firm commitment by the Head of Department to allocate the necessary staff. The gradual increase in the number of work stations should depend on the degree of utilization of the work stations initially provided.

3.1.5 Services to Craig Hospital in Gozo

In order to cover the whole population, which in this respect is considered very important, the development of the Health Information System will also apply to the island of Gozo.

One of the functions of Craig Hospital is to provide the services which are available in polyclinics in Malta and therefore the same facilities should be available. In addition, some facilities will be needed for a programmed development of the patient registration and enquiry system, for the gradual input of medical data and for other applications as in St. Luke's Hospital.

3.2 Systems development

The programs developed and used so far have mainly been in connection with creating and bringing the Master Index into operational use. These programs were developed as part of the initial contract, and have since been adapted to current needs by the supplier and by the Health Information Unit.

As a basis for the implementation of phase 2, it is very important to specify the main functions which, according to the previous section, should be provided for. These specifications have to be specific enough to serve as a basis for contractual negotiations with the supplier so that the corresponding application programs can be supplied as part of the total procurement for phase 2. These application programs will, first of all, have to cover data administration and the logical and physical representation in the database of the data necessary to cater for the specified functionality.

Secondly, COSTAR procedures should be provided by the supplier for the sets of functions given priority in connection with individual health profile data and its development, polyclinics programme and also the diabetes programme, obstetrics programme and surgical programme as part of the development at St. Luke's Hospital and Craig Hospital.

3.3 Staffing and training

In phase 2, the project will require the involvement of additional people, particularly in two areas.

One is the systems side, i.e., the use of the computer equipment and the development of application programs. The overall coordinating responsibility for these activities should still lie with the Health Information Unit.

The other is the user side, where comprehensive participation, especially by medical staff, will be mandatory and requires a clear distribution of responsibilities.

In the first area, it is not so much a question of allocation of people as of training and gaining experience. Efforts in this area have been made, but will have to be strengthened through closer cooperation with the supplier, both locally and in the United Kingdom. Necessary arrangements with the supplier must be provided for in the procurement contract for phase 2.

As emphasized in the Development Plan of 12 April, visits to institutions abroad and assignment of temporary WHO consultants to Malta should be scheduled for the near future.

In the second area, the participation by users has so far been limited to the very important task of consolidating the Master Index.

In phase 2, medical staff will have to be allocated to the project full- and part-time. It is especially important that at least one member of the medical staff at the Health Department is allocated full-time to the project and given the authority and responsibility for organizing the participation of medical staff from clinics and departments which are going to be active users of the system. This group should assume responsibility for:

- specification of computer-assisted functions which should be implemented in phase 2 and subsequent phases;

- adaptation of the organization and work procedures at the different locations where the specified functions are put into operation.

It is recommended that this group, with representatives from the clinics and departments, is formally organized and put to work immediately with a mandate to fulfil the points mentioned above. This work should be performed in close contact with the Health Information Unit.

3.4 Procurement plan for 1985

In the Development Plan of 12 April, three alternative models for increasing the capacity of the computer installation are discussed. The cost of the various configurations is discussed in terms of basic units called work stations. There are only small variations in the unit cost per work station in the alternatives, i.e., approximately US$ 6000 plus/minus 10-15%.

After some discussions of the alternatives, the conclusion is that alternative 2 would be best suited to meet the needs of phase 2. This alternative implies an additional MEGA-FRAME and together with the existing one, the two computers will be working back to back. Such an installation will alleviate the maintenance problem and secure a minimum service even if one computer breaks down. For 20 work stations the total cost will be approximately US$120 000.

The basis for contracting application programs should be a functional specification of the services to be provided for in phase 2.

The supplier should be required to specify in detail his offer in three areas:

- the proposed hardware configuration
- the software licenses required to support the applications, mainly MUMPS - COSTAR;
- development of application programs according to the functional specifications mentioned above.

Even if strong ties have been established between the Health Information System and the supplier chosen for phase 1, the hardware from Convergent Technologies and the MUMPS - COSTAR systems, there still are alternative suppliers of both hardware and software. Emphasis should be put on maintaining a competitive situation, and the offer from the supplier of phase 1 should at least be informally checked by contacting alternative suppliers.

The details of the procurement will have to be settled during contract negotiations. An important point will then be the eventual price to be paid for the equipment and program systems already installed at the risk of the supplier, and which he has so far priced at US$18 000.

The conclusion is then that the procurement procedure should be based on alternative 2, installation of 20 work stations and the functional specifications of the services to be provided for in phase 2.

On the basis of the offer from the supplier, the Health Department should immediately enter into discussions, with WHO assistance if considered necessary. If agreement is reached between the supplier and the Health Department a draft contract should be sent to the WHO Regional Office for approval.

The time constraints on this process will be as follows:

- request for an offer from the supplier on the basis of a functional specification, by 1 October 1985;
- proposals from the supplier, by 15 October 1985;
- draft contract, by 1 November 1985;
- formal approval, by 7 November 1985;
- delivery, acceptance test and payment, by 20 December 1985.

4. Preliminary plan for phase 3

4.1 Statement of objectives

4.1.1 Development of medical data

It is envisaged that by the end of phase 2 the situation will be such that all the patients who have come into contact with the Health Services will have their medical profile recorded. In some areas, where there is already some knowhow and experience, the record will include additional medical data.

It is considered that in phase 3 the aims of recording medical data should be twofold:

(1) to make available a comprehensive system to all users who have access to the facilities in phase 2 and who have gained the necessary experience to operate the system;

(2) to expand the facilities available to other users, to make it mandatory on all of them to utilize these facilities and to provide the necessary training so that they can reach the required level of development for the operation of the comprehensive system.

4.1.2 Clinical services in hospitals and in primary health care

The use of the medical information system will enable medical consultants and practitioners to have readily available clinical information on the patients they are treating, to schedule appointments and follow up procedures, to manage immunization and other preventive programmes, and to conduct surveys and research in particular areas relevant to their speciality. In order to be fully utilized and in order that maximum benefits may be derived, the system should cover all areas of the medical services. It will therefore be necessary to provide facilities to all departments in St. Luke's Hospital, to the acute wards of Craig Hospital in Gozo as well as in the polyclinics.

At a later stage of development the system could be extended to the geriatric and psychiatric hospitals.

4.1.3 Management services

A primary objective in developing the information services is to provide management with statistical and analytical information relating to areas such as:

(1) comparative cost of hospital services and costs on a patient basis;

(2) evaluation of the effectiveness of preventive care programmes on the basis of percentage of the population reached by the programmes.

The above will of course be in addition to traditional information which is already being compiled in statistical form. The implementation of the comprehensive system will involve recording the length of stay in hospital, information on the treatment given and on medical/surgical interventions and tests carried out. This will provide the basis for costing these services. Eventually a link could possibly be established between the data on individual patients and the Drug Information System (at present in operation on different equipment) thus providing information on the cost of medicines prescribed for individual patients.

4.2 Systems development and staff requirements and training

The systems development in phase 3 will be closely connected to the objectives stated in the previous sections.

The framework for the development efforts will be the functional specifications made by the group of medical staff established under the full-time leadership of a medical officer from the Health Department.

On the one hand it is envisaged that a comprehensive system of data recording covering the various aspects of investigation, treatment and health of patients will have to be developed with the aim of providing information to medical staff in all the health services and analytical and statistical data to management. On the other hand, there will also be a need for certain specialized applications (e.g. the setting up of a cancer register) and systems for these will have to be drawn up.

As regards staff, the crucial aspect will not be so much one of additional staff, but of involving existing medical staff in the various health services in the development process. A process for gradually building up the experience of this staff will have started in phase 2 and will have to be accelerated in phase 3. Short appreciation and user courses reaching most medical personnel will have to be held during this phase.

With regard to more specialized higher level training, it is expected that two medical specialists will qualify in Community Medicine and Statistics in 1986 and these would receive appropriate training to be able to assist the medical doctor who will have been allocated to the project in phase 2.

In the Information Unit the process of training and adaptation would of course continue in order to enable the staff to develop the necessary systems and to have the operational responsibility for the central computer installation.

4.3 Procurement plan for 1986 and beyond

It follows from the objectives stated in the previous sections that phase 3 should mean that automated routines covering basic functions of a future Health Information System will gradually be built up.

The procurement plan, as proposed for 1985, will provide for work stations to be strategically placed in departments of St. Luke's hospital, in specialized clinics and in primary health care.

As programme development proceeds, individual health profiles increase, medical staff gain experience and the operational use of the computer system grows, the demand for additional work stations, storage- and computing capacity are expected to build up very rapidly.

The procurement plan for 1985 is based on alternative 2 in the Development Plan of 12 April, and will significantly add to the capacity of the central installation. This will add security and make it safer to cater for maintenance.

However, the strategy outlined in previous reports, especially that on the visit by the WHO mission in September 1984, strongly recommends a distributed system as the best solution for Malta, i.e. decentralized computer resources at local units, each with capacity according to the services they provide, but still utilizing the central computer resource to the maximum by data communication.

In phase 3, it is strongly recommended that the procurement for 1986 follows this approach, which will mean that installation of computer equipment and systems should broadly follow alternative 3 in the Development Plan mentioned above.

This alternative is exemplified by a local computer similar to the one already installed and used for programme development at the Health Information Unit, the N-GEN with a full COSTAR system. With four work stations, 1 MB of memory and a 40 MB disk drive the cost of such a system is estimated at US$ 20 000, including the licences for programming systems.

Installation of distributed computer resources will be needed at the five polyclinics, at Craig Hospital in Gozo and at the Diabetes Clinic. The seven units, which will be additional to the proposed procurement for 1985, will cost US$ 140 000, but will then also free seven of the existing work stations at those locations. These seven work stations could be transferred to departments at St. Luke's Hospital, which will then have a total of 28 work stations installed by the end of 1986.

These proposals for 1986 will adapt very well to the existing central computer installation, and will also mean an optimal use of the critical personnel resources in the project.

5. Conclusions and recommendations

5.1 Status and recommendations

Phase 1 of the Development Plan of 12 April is nearly completed, and the Master Index will be fully operational from 1 October 1985 at St. Luke's Hospital. The general recommendation is that phase 2 of the Development Plan should now be started according to the following priorities.

(1) Establish an extended operational Master Index

- including ward identification for in-patients
- giving access to medical files

(2) Develop health profile data

- adding a record for every patient encounter

(3) Polyclinic programme

- contributing to the health profile data
- access to files
- scheduling of appointments
- inoculation and immunization administration

(4) Diabetes programme

- establishment of Diabetes Register (about 30 000)
- building up of extended health profile for diabetes
- administration of diabetic population
- providing statistical data, nationally and internationally

(5) Obstetrics programme

- maternity administration
- extended health profile for mother
- extended health profile for child

(6) Surgical programme

- familiarization and training of medical staff
- general administration of patients in hospitals

The recommendations imply:

- procurement of additional computer equipment consisting of 20 work stations in 1985 within the financial limit of US$120 000;

- inclusion in the procurement of fully operational application programs covering the high priority functions in the Health Information System;

- allocation of considerable resources by the Health Department, especially qualified medical staff, in a joint effort to develop the Health Information System according to the plans given in report.

- procurement of additional computer equipment in 1986, consisting of seven smaller computer systems (the N-GEN computer), each with four work stations, within the financial limit of US$140 000.

5.2 Activities in 1985

If the recommendations of this report are accepted, the following activities will have to be carried out.

(1) Prepare procurement requirement by 1 October

(2) Receive offers from the supplier by 15 October

(3) Evaluation, discussions and preparation of a contractual document by 1 November

(4) Approval by WHO by 7 November

(5) Acceptance of computer equipment and programs contracted for by 20 December

(6) Transfer of funds by the end of the year.

5.3 Activities in 1986

(1) The main activities in 1986 will be concerned with putting the computer equipment and programming systems procured in 1986 into operational use

(2) Preparation of functional specifications for phase 3 by medical staff, chaired by a medical officer from the Health Department, working full time on the project

(3) Planning, preparing procuring and installing the additional computer equipment and programming systems budgeted for in 1986

(4) Conducting extensive training programmes for medical staff and systems development staff

(5) Evaluation of the efforts so far towards developing a computer assisted Medical Information System. The evaluation should be completed before the end of 1986, and might be carried out by an external consultant

(6) Preparation of a strategy plan for further development of the Health Information System for the period 1987-1990.

5.4 Summary

The development and installation of an extensive Health Information System is a very ambitious undertaking, especially since information processing was largely carried out manually in Malta when the project started.

This report broadly outlines the activities already carried out and those planned for the period 1984-87, which will result in a computer assisted Health Information System in Malta by the end of 1987.

The Health Information System, as it is progressing will:

- cover the entire population of Malta;
- contain a basic individual health profile;
- take care of basic information processing in primary health care, in specialized clinics and at major departments of St. Luke's Hospital;
- serve as a basis for medical statistics and provide data to plan and carry out major health improvement programmes contributing to the WHO objectives referred to in the introduction of this report.

The investment and activities proposed in this report, may on one hand be very ambitious, but represent on the other hand the very minimal efforts necessary to achieve the objectives stated in this report.

Appendix 1

COMPUTERIZATION OF MEDICAL RECORDS

	Action taken	Action still to be taken	Target date	Present stage
1. Communications	(a) Communication lines to medical records and E. & A. Dept.			
		(b) installation of terminals	Completed 8 June 1985	Completed
2. Reorganization of data base	(a) Deletion of duplicates			
		(b) standardisation of locality names	Completed 8 June 1985	Completed
		(c) standardisation of surnames and names	15 June 1985	Completed
		(d) identification of deceased in and out of hospital from 1.1.85	15 June 1985	Completed
		(e) deletion and listing of records of deceased	22 June 1985	Completed
3. Packing of data		to be carried out by Intercomp	29 June 1985	Completed
4. Registration of records		(a) registration of "missing records"	10 July 1985	end of September
		(b) registration of files opened after transfer of data to new system	25 July 1985	end of September

5.	Limited search of data base on terminals	8 June 1985	Implemented
6.	Full registration and search by name and locality	1 August 1985	end of September
7.	Printing of list of records for backup purposes	1 August 1985	dependent on printing
8.	Manual transcription of I.D. Card Nos. (about 60%) from Electoral Register to list of files	31 July 1985	completed
9.	Recording of ID Nos. in data base	31 August 1985	gradual completion
10.	Activation of I.D. Nos. search key	10 September 1985	lack of storage (phase 2)

11. Further action will need to be taken

(a) to identify I.D. Card Nos. in respect of patients not traced in the Electoral Register

(b) to identify persons who died outside hospital since 1978 (data of implementation of present filing system).

Annex 2

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Health Statistical Services

Index: INFORMATION SYSTEMS

Malta
Caruana/Floisand/Fenech Gonzi/Vinter Jorgensen
September 1985

PLAN FOR FURTHER DEVELOPMENT OF THE NATIONAL HEALTH INFORMATION SYSTEM FOR MALTA

Conclusions: Phase 1 of the Development Plan dated 12 April is nearly completed, and the Master Index will be fully operational from 1 October 1985 at St. Luke's Hospital.

This report broadly outlines the activities already carried out and those planned for the period 1984-87, which will result in a computer assisted Health Information System in Malta by the end of 1987.

The investment and activities proposed in this report may on one hand be very ambitious, but represent on the other hand the very minimal efforts necessary to achieve the objectives stated. (See 5.4)

Recommendation	Action by	Comments
1. Phase 2 of the Development Plan should now be started, with the following priorities.		
(1) Establish an extended operational Master Index	Ministry of Health	
(2) Develop health profile data	"	
(3) Polyclinic programme	"	
(4) Diabetes programme	"	
(5) Obstetrics programme	"	
(6) Surgical programme	"	
(see 5.1)		
2. Activities in 1985 (see 5.2)		
(1) Prepare procurement requirement by 1 October	Ministry of Health/EURO	
(2) Receive offers from the supplier by 15 October	Ministry of Health	

(3)	Evaluation, discussions and preparation of a contractual document by 1 November	Ministry of Health/EURO	
(4)	Approval by WHO by 7 November	Ministry of Health/EURO	
(5)	Acceptance of computer equipment and programs contracted for by 20 December	Ministry of Health	
(6)	Transfer of funds by the end of the year.	EURO	

3. Activities in 1986 (see 5.3)

(1)	Put the computer equipment and programming systems procured in 1986 into operational use	Ministry of Health	
(2)	Prepare functional specifications for phase 3 by medical staff.	Ministry of Health/EURO	
(3)	Plan, prepare procurement and install the additional computer equipment and programming systems budgeted for in 1986.	Ministry of Health/EURO	
(4)	Conduct extensive training programmes for medical staff and systems development staff.	Ministry of Health	possibly visits abroad
(5)	Evaluate the efforts so far towards developing a computer assisted Medical Information System.	EURO	medical user oriented staff, e.g. PHC, SHR
(6)	Prepare a strategy plan for further development of the Health Information System for the period 1987-1990.	Ministry of Health/EURO	