COMMISSION OF THE EUROPEAN COMMUNITIES

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INITIAL PROPOSALS FOR PRIORITY PROJECTS

IN DATA-PROCESSING

(Communication from the Commission to the Council)

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1. Foreword

The Council Resolution of 15 July 1974 on a Community policy for data-processing has provided the groundwork for an industrial policy in this vital sector of the economy.

In that Resolution, the Council states that it intends to give a Community orientation to policies for encouraging and promoting data-processing, and welcomes the Commission's intention to submit, in 1974, after appropriate consultations, priority proposals concerning:

a) a limited number of projects of European interest in the field of data-processing applications;

b) collaboration on standards and applications and in public procurement policy;

c) the promotion of industrial development projects in areas of common interest involving transnational cooperation.

In this Communication, the Commission outlines its initial proposal, comprising five projects, and indicates the course it proposes to follow in drawing up further proposals under the three headings mentioned above.

2. Initial proposal in the field of applications

2.1 The Commission has selected as the subject of its first proposal the field of applications because there appears to be a broad range of common interests at Community level. The promotion of new applications, notably in the public services, combines the two main aims of the Resolution : to satisfy user requirements while making economical use of the public resources by joint development and to create a strong European-based industry.

2.2 The criteria for the selection of the projects were as follows :

- they should satisfy an international requirement common to users in several Member States;

- they should tend to strengthen the competitive power of European industry and broaden its market.

2.3 Another factor that influenced this choice was the need for the users to be organized at European level and capable of dovetailing their respective requirements.

2.4 The Commission has worked in close collaboration with an "ad hoc" working party of senior data-processing officials in order to ascertain areas of priority. The proposals contained in this Communication were formulated after several stages of work involving the determination of projects, consultations and negotiations in the Member States.

2.5 The Commission also consulted the Committee on Scientific and Technological Research (CREST) to obtain its opinion on the technological research and development aspects of the projects. It should be noted, however, that the choice of projects was mainly guided by other considerations more directly in keeping with the broad guidelines of policy in this sector as set down in the Resolution.

Phases of the projects

2.6 For the purpose of defining and implementing a project, four distinct phases have to be completed :

1. the selection phase, which may call for an exploratory study, as mentioned in section 3.10;

2. a basic study (feasibility, quantification of requirements, selection of strategies, specification of the system (s));

3. development (implementation of all or some parts of the system);

4. utilisation (the system is placed in actual service).

Project n° 1 covers phase 3. Projects n° 2, 3, 4 and 5 come within Phase 2 and, when results are available, should lead to new proposals for Phase 3. There is no project covering Phase 4; the role of a Community data-processing policy is to act as a catalyst and not to provide user support.

2.7 The five proposed projects

The first project is concerned with the setting-up of a data bank for the matching of organs and blood. The concept has been formulated by a group of Community hospitals, which are already engaged in active collaboration; its aim is to use data-processing techniques to help in determining the compatibility of available organs (kidneys, and subsequently blood elements, skin, cornea, bone marrow, etc.) for patients for whom a transplant is vital. Every year, some 10,000 or 12,000 persons in Europe would die from irreversible failure of the kidneys, were it not for the technique of hemodialysis and/or transplantation. Of these two techniques transplantation is the one where there is a better chance of saving life at lower cost, provided that the efforts to secure compatibility between organs and patients can be made on a sufficiently wide scale. The implementation of the project would make available to the group of hospitals concerned the data-processing facilities required to achieve this aim.

2.8 The second project is a study on the automatic processing of data relating to imports and exports, the management of the agricultural market organisations and their financial control. A large volume of information which is needed for the administration of the Customs Union and for common agricultural policy is currently transmitted by post or telex. Having arrived in the Member States, these data frequently have to be converted to the required form for input to the local computer. Moreover, essential information on agricultural imports and exports is often not available soon enough, or not in the proper form, to enable the Community to take prompt decisions on important matters requiring action. The majority of the Member States are graduating to automatic data processing, but the rationalization of systems and a common applicational framework are essential if there is to be a link-up of national systems via the Commission. The object of the study is to define the projects which will have to be put in hand to achieve more effective processing and communication of data.

2.9 The third project concerns a need which was underlined by the Council (Ministers of Justice) in the session of 26th November 1974, namely for systems for retrieval of legal documents and access to Community law. On that occasion, the Council decided to set up a working party of legal experts to outline a policy which would be likely to meet the needs of the Community institutions and the Member States. This project is intended to provide support and assist the work of this group by a systematic examination of the user requirements in general, the problems of technical compatibility and intercommunication between the systems being set up or under study in the Member States and the Institutions of the Community.

2.10 The fourth project relates to a highly technical field affecting the safety of passengers and aeronautical equipment of the future, i.e. air traffic control. Data-processing systems are already in existence, and users in several Member States and third countries are associated in an international body, EUROCONTROL. Even at this stage, however, arrangements are having to be made for the replacement of these systems by a real-time processing system in the 1980's; furthermore, this problem is an international one which will call for substantial investment if the growing demands of the national air traffic control authorities and EUROCONTROL are to be met. The proposed study is aimed at detailed investigation of the solutions that are possible at Community level and how they can be translated into advanced data-processing techniques by the European computer industry, thus providing it with a major asset as regards competitiveness which would extend to other sectors as well.

2.11 The fifth project is of a different type: computer-aided design techniques, if sufficiently developed, might well find a broad spectrum of industrial applications. There are two key sectors in particular - the design of electronic logic circuits and the management of integrated design systems in the building sector (civil engineering, ship-building, etc.) - where the need for an assessment of the available techniques and the ascertainment of worthwhile developments is felt throughout the Community. The two studies are aimed at defining and evaluating the economic advantages of a development programme in these sectors.

The proposal for decision by the Council relating to the foregoing projects is contained in Annex A.

3. Preparation of subsequent proposals

3.1 Along with the work that led to its initial proposals (which may be followed by further proposals for computer application projects), the Commission has been making some preliminary investigations in the areas indicated by points 1) (b) and (c) of the Resolution with a view to drawing up fresh proposals in the first half of 1975 for projects to start in 1976.

3.2 As regards norms and standards, a working party of national experts has been set up by the Commission with the task of working out a general line of approach to the problem.

Another group is examining the possibilities of collaboration in the area of public procurement policy.

3.3 In regard to industrial development projects, the Commission has found, as a result of a series of discussions and investigations, that there is a vitally important area of common interest, namely that of software portability.. In plain terms, this is the ability to run programmes on different types of computers without having to worry about the make or the machine language used within the system. In some cases, the software industry has already made a start on the development of portability which also affects standardization, but no transnational action has so far been taken. The Commission intends, during the first few months of 1975, to draw up proposals on these lines which, if implemented, might have an important impact on user costs.

3.4 If no action of this kind is initiated at Community level, the cost of programme conversion in the Community during the next five years attributable to incompatibility of equipment is estimated at 1,000 MUA - a heavy burden which will have to be borne by the users. Action on the scale required would be more than the service bureaux could afford, and more than the hardware industry intends to invest.

3.5 A "software portability" programme would have to cover the development of "portable " products including system software, which is the actual link between the application programmes (written for specific user requirements) and the hardware itself.

3.6 An adequate range of portable application and system software would make the users less dependent on their hardware, and permit a more active exchange of programmes (resulting in less duplication of work, which at present is very widespread) and greater freedom in the use of terminals. A project of this kind would afford an opportunity to develop additional norms and standards, thus providing greater market transparency. In this way, the programme contemplated by the Commission would acquire a wider significance than that of the current proposals and make a more direct impact on the computer industry and economic activities generally.

3.7 In the hardware sector, the Commission is also considering projects to be proposed in 1975, notably in connection with components and peripherals.

3.8 In regard to central processors, the two main European groups are each engaged in launching a new line of products. At the moment, the Commission does not intend to put forward any proposals in this field. It notes, however, that the evolution of techniques has made effective commercial collaboration more feasible than in the past; the present period, when new product series are being launched (i.e., before they take final shape in regard to software, and before new developments are under way), is a time when the chances of cooperation are best.

3.9 Finally, the Commission is now drawing up a proposal on leasing, which might offset some of the handicaps from which the smaller companies suffer, and which are made more acute by inflation.

3.10 To back up the proposals which it is preparing to put forward in the above-mentioned sectors, the Commission will have to rely on the results of a number of exploratory studies which are to be carried out in 1975; the aim will be to pinpoint, define and evaluate further projects relating to applications in industrial development of hardware and software and to the establishment of standards, leasing formulas, etc., which would be of common interest to the Community.

4. Financial implications

4.1 The financing of the five projects would require an overall amount of 4.008 Mua(1) spread over three years. The costs together with the annual breakdown are given in tabular form at the beginning of Chapter II, which goes on to discuss the methods of work and the machinery which will have to be set up.

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(1) The expenditure has been estimated on the basis of price forecasts at the beginning of 1975. The Commission may decide to adjust the amounts, depending on the actual date of the Council decision, in the light of the economic situation.

The amount of expenditure required will be entered each year in the budget of the European Communities according to estimates shown in Annex C.

4.2 The Commission is aware that projects 2, 3, 4, and 5 form only the first phase of possible development projects in respect of which the Council had requested forecasts of their effect on the budget over the next five years.(1) But the very purpose of these preliminary studies which are expected to extend over three years, is to determine in detail the subsequent phases and their budgetary implications. Therefore, when the results of the studies are available, the Commission will be able to specify these implications in fresh proposals.

4.3 With regard to the exploratory studies, which are needed for the reasons mentioned above, they would take about one year to complete and the amount which would have to be appropriated is estimated at 0,3 M a.u.(2)

4.4. A draft supplementary budget will be submitted in due course to cover the appropriations for the five projects and also the exploratory studies, for which there are neither funds nor a budget entry.

5. Report on developments in the data-processing sector in the Community

In accordance with the final point in the Resolution, the Commission will, during 1975, prepare a report on the state of data-processing. In this report, it will review developments in DP and the trend of national data-processing policies, and give its opinion on the advisability of embodying the Community projects in a multi-annual programme, as suggested in the Resolution.

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(1) See Resolution of 15th July 1974, paragraph 4.

(2) There are 15 studies, each costing on average 20,000 u.a., calculated on the basis of 4 men/month plus travel and subsistence expenses.

CHAPTER II - FINANCING AND MANAGEMENT OF PROJECTS

1. Breakdown of expenditure (forecast)

Project	Overall cost (a.u.)	1975	1976	1977
1. Data bank for matching organs and blood	1.360.500	92.500	1.237.500	30.500
2. Data processing systems in import/export, agricultural market organizations etc.	668.000	163.000	423.500	81.500
3. Systems for retrieval of legal information at Community level	437.500	111.500	269.000	57.000
4. Requirements for data processing systems in air traffic control	923.000	172.500	566.500	184.000
5. Computer-aided design				
i. Electronics study	313.000	110.000	203.000	
ii. Design-oriented systems	305.500	107.000	198.500	
Total expenditure	4.007.500	756.500	2.898.000	353.000

2. Comments on financing

2.1. Each of the projects proposed in the programme comprises either a study phase or a development phase. All the projects under consideration are transnational in operation and/or represent cases where the users, on account of the similarity of their requirements, have an interest in joint development as a means of husbanding their resources. It is for this reason that it is proposed that the funds be drawn from the Community budget.

2.2. An illustration may help to clarify the role which Community and national financing could play. The study on future data-processing requirements for air traffic control is aimed at investigating the needs and the feasibility of joint future development projects throughout the Community. A single team might be set up to study a specific problem under a single contract, but would also meet the more general requirement to promote qualified teams at the European industry level. If the study resulted in the identification of common development areas, it would likewise be appropriate for them to be financed jointly. When these joint development projects are put into operation by users in the Member States or EUROCONTROL, they will, of course, involve national or EUROCONTROL expenditure, as will also be the case with any subsequent development work to adapt the system to specific national requirements. In short, Community requirements would be covered by Community funds and national requirements by national funds.

2.3. As a general rule, however, if the development activity entrusted to industry is such as to enable it to become more competitive or to increase its efficiency, it has to undertake a reasonable proportion of the financial risks.

3. Project management and organization

3.1. The users, the Governments and the Commission all have a part to play in the successful launching of the applications programme. The Commission will be responsible for the execution of the projects, but, since the primary objective of Community data-processing policy is to stimulate European industry's capability, they will in the normal course be actually carried out by an industrial team.

3.2. For the management of this programme, the Commission proposes the setting-up of a "horizontal" body, the Consultative Committee on Data-Processing Projects, with which will be associated for each project a project leader and a Technical Committee representing the users.

A draft Council Decision setting up a Consultative Committee on Data-Processing Projects will be found in Annex B to this Communication.

Consultative Committee on Data-Processing Projects

3.3. This Committee is composed of one representative from each of the Member States. Each representative may arrange to be accompanied by specialists in the fields concerned. A representative of the Commission will chair the Committee. The Commission will provide the Secretariat services.

3.4. In respect to the role of the Committee, it will assist the Commission in the execution of actions in data-processing adopted by the Council, notably with regard to orientation, implementation, development and realisation of each project against objectives set.

Technical Committee

3.5. This will be a small working party of experts selected from among the users, which will meet regularly and provide a close liaison with the project leader on technical and development questions.

Its actual function is to translate user requirements into technical specifications, and provide a channel of communication between the users and the project. The working methods of the Technical Committee will vary according to the project.

Project leader (1)

3.6. The project leader will be a person with high-level training appropriate to the nature and scope of the project. The project leader will be assigned to the implementation of the project on a full-time basis.

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(1) See table on page 14 : Term of project leader's contract. This will be longer than the duration of the actual project as the project leaders will have to prepare the ground for the work prior to the commencement of the contract(s) and take part in the drafting of the overall findings after completion of the contract(s).

3.7. In the main, the project leader's duties may be said to consist in :

- the preparation of specifications for the invitation to tender;

- the day-to-day coordination, supervision and direction of work in close collaboration with the contractor(s);

- liaison at management level with the Commission, the Technical Committee and the contractor(s).

Contractors

3.8. These will be consortia of European companies responsible for the actual execution of the work.

4. Summary table showing contract periods

	PROJECT	DURATION OF PROJECT IN MONTHS	TERM OF PROJECT LEADER'S CONTRACT IN MONTHS (1)	PROJECTS LEADER'S EXPENSES IN a.u. (2)	NO. OF MEETINGS OF TECHNICAL COMMITTEE(3)	AVERAGE NUMBER ATTENDING	EXPENSES FOR T.C. MEETINGS IN a.u. (4)
1.	Data bank for matching blood	22	24	100,000	13	9	23,500
2.	Data processing systems for import/export, agriculture organisations etc...	18	22	91,500	12	9	22,000
3.	Community system for legal information retrieval	18	22	91,500	12	9	22,000
4.	DP requirements for air traffic control	18	27	135,000	15	9	27,000
5.1.	Computer-aided design I	12	16 part-time	33,500	9	9	16,000
5.2.	Comptuer-aided design II	12	16 part-time	33,500	9	9	16,000

(1) Basis of calculation: 60,000 a.u. annually for the ATC and 50,000 a.u. annually for the other projects.

(2) The project leader will have to start work on preparations befor the project itself commences, and (except in the case of the data bank for blood matching, which is already in the development phase) continue after it has been completed, so that he can discuss the results of the studies with the Technical Committee.

(3) The number of meetings is calculated on the basis of one meeting every two months plus an initial meeting for coordination purposes.

(4) Basis of calculation: 200 a.u./man/day.

ANNEX A

PROPOSAL FOR A COUNCIL DECISION ADOPTING A NUMBER OF DRAFT PROJECTS ON DATA PROCESSING

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 235 thereof,

Having regard to the proposal from the Commission,

Having regard to the Opinion of the European Parliament,

Whereas the Council agreed, in its Resolution of 15 July 1974 on a Community policy for data-processing, with a view to giving a Community orientation to policies for encouraging and promoting data-processing, to adopt, on a proposal of the Commission, common projects of European interest in the field of applications of data-processing.

Whereas, to this end, a priority should be granted to projects likely to help to meet the needs of users and increase the capacity of the European-based data-processing industry to satisfy these needs on the European and world markets;

Whereas, in the interests of public health, an improved determination of the compatibility of organs and blood groups at Community level is required, and whereas a data-processing system for making such comparisons could help to save more human lives;

Whereas, as regards the administration of the Customs Union and the common agricultural policy, it is essential that import/export data, data on the agricultural market organisations and their financial control are rapidly communicated and processed;

Whereas the Council (Ministers of Justice) mentioned in particular, at its meeting of 26 November 1974, the need to establish an inter-Institutional legal information system, the advantage of making Community law fully accessible to the Member States and the need to define a development plan in order to ensure that legal data-processing systems under study or construction in the Member States and in the institutions of the Community are compatible;

Whereas the most efficient advanced data-processing systems are essential to meet the needs of European air traffic control in the future; whereas the development of such systems at national level would require considerable capital investments; whereas, to this end, the opportunities for developing joint solutions should be examined, taking into account the very considerable industrial interest in this area of technology;

Whereas improved computer-aided design techniques could strengthen the European electronics industry and could help to increase productivity in the construction industries;

Whereas the projects referred to above are seen to be necessary in order to attain certain Community objectives within the framework of the common market;

Whereas the Treaty establishing the European Economic Community has not provided the necessary powers of action to this end,

HAS ADOPTED THIS DECISION

Article 1

A total of five joint data-processing projects shall be adopted as from _ 1 July 1975 , with the following objectives :

1. Data bank for matching organs and blood; (22 months)

2. Study of data-processing systems for information on imports/exports; and on the management of agricultural market organisations and their financial control; (18 months)

3. Study of requirements for legal document retrieval systems in in the Community (18 months)

4. Study of systems required for real-time processing of air traffic control data in the 1980's; (18 months)

5. Study of developments in computer-aided design; (12 months)

The foregoing projects are defined under "Content of the Project" in the Annexes 1-5

Article 2

The necessary appropriations for carrying out these projects shall be entered in the budget of the European Communities.

Article 3

The Commission shall be responsible for carrying out the projects. It shall be assisted by the Consultative Committee on Data-Processing Projects.

The Commission shall present a report to the Council each year.

Done at Brussels .....

FOR THE COUNCIL

The President

1. PROJECT FOR THE DEVELOPMENT OF A DATA-BANK FOR ORGAN AND BLOODMATCHING SYSTEMS

Project Summary

The project covers the implementation of a development action with the object of providing the following Community-wide systems facilities :

a) A system for the exchange of information throughout the Community about potential kidney transplant recipients

b) A system for a similar exchange of information about potential blood- and/or bloodcomponent donors (the "Europdonor" project)

c) A system for an exchange of information about potential donors of other transplant material (e.g. skin, cornea, bone marrow).

d) The duration of the project is estimated to be 22 months.

I. INTRODUCTION.

Problem definition

I.1. Kidney transplantation

It has been estimated that 30-40 persons per million suffer from irreversible kidney failure each year in Western Europe; therefore some 10.000 to 12.000 people would die if treatment by haemodialysis and/or transplantation were not available.

In many patients it is advantageous to use both haemodialysis and transplantation. Intermittent haemodialysis, the principal method of treatment used at present, has several disadvantages :

i) it is neither curative, nor indefinitely palliative

ii) it is expensive (approx. $ 25.800 per annum)

iii) since the patient's life and health are dependent upon a twice weekly mechanical procedure severe psychological complications are not uncommon.

iv) haemodialysis replaces only some of the kidney's functions.

I.2. Transplantation of a viable kidney (from a living or cadaver donor) offers an alternative for these patients. The major problem in transplanting allografts is the rejection of the transplanted organ. In this rejection two of the main factors are : the genetic information (transplantation antigens) and the immunological reactivity of the patient. For these reasons it is essential that donor and recipient are well matched for the histocompatibility antigens (HL-A antigens, Human Leucocyte antigens or transplantion antigens). Due to the polymorphism of the relevant genetic system the probability of a good combination is small, and in 1967 Van Rood proposed an international collaboration to create a large central file of organ recipient data and thus to improve the likelihood of finding well matched donor-recipient combinations. If in one of the participating centres a cadaver donor became available the centrally stored information was used to select the best "matched" recipient(s). It is established that the chromosomal region which codes for the HL-A antigen plays a dominant role in determining the prognoses of a kidney allograft. This is confirmed by the fact that kidneys exchanged between HL-A identical siblings have an organ survival rate of about 90 % (even after four years) while mismatched sibling transplants survive for 50 % or less.

Originally the application of HL-A matching when donor and recipient were unrelated was rather disappointing. Today however, especially in Europe, there is almost unanimous agreement that HL-A matching is able to improve kidney allograft survival significantly even when donor and recipient are unrelated.

I.3. It is on this basis that the organ exchange organizations are functioning. That they are effective is shown by the analysis of the survival rate of kidneys transplanted under their auspices, and also by the fact that the average survival time of organs transplanted in these organizations is about 10-15 % better than the average survival times reported by the international kidney registry ("world registry"). Generally speaking each of the under mentioned organizations has on its file 800 or more patients. Such a file is large enough, when there are no complications, to

place all available kidneys. When, however, the recipient has been immunized by previous bloodtransfusions or transplantation the number of kidneys which are likely to be HL-A compatible is considerably restricted, so that these files then become too small and a more extensive internationalisation of the cooperative effort is necessary. This can be best done by the institution of a truly international European file which would contain details of all those patients who have, through previous immunisations, developed strong HL-A antibodies.

In some countries up to 40 % of potential recipients already have HL-A antibodies and the overall number may well increase as transplantation becomes more generally applied.

Follow-up analyses have further shown that grafted kidneys survive better when donor and recipient are matched for 3 or 4 antigens (the so called "Full House" match).

Consideration might be given therefore to add all full house recipients in the Community to this list to enable these to obtain a kidney with a survival rate that is better than those with an average match.

Existing facilities

I.4. THE FOLLOWING KIDNEY-EXCHANGE-ORGANIZATIONS EMPLOYING COMPUTER FACILITIES EXIST IN THE COMMUNITY :

- EUROTRANSPLANT - Leiden, Holland (Started in 67)
- SKANDIATRANSPLANT - Denmark (" in 68)
- FRANCETRANSPLANT - Paris (" in 69)
- The BRISTOL SYSTEM - U.K. (" in 71)

These Centres serve users in all Community countries. However the computer facilities at the four centres are mutually incompatible and this greatly limits their efficiency in the exchange of kidneys at an international level.

I.5. Europdonor

The initiation of an international (European) effort to use efficiently the blood and bone marrow of HL-A typed individuals for blood component therapy (e.g. leucocytes and platelets) and bone marrow transplantations was proposed in 1971. This proposal was not acted upon because of the difficulties in making it operational. It required a very large data file which exceeded the limits of the European transplantation organizations.

I.6. There was no computer system available to handle the data efficiently (registration, up-dating, analysis etc.). In spite of these limitations, the individual organizations have appreciated the importance of such a file and have considerably increased the size of their files by typing large numbers of individuals. The actual use of this file has however been extremely small because of the relative inaccessibility of the required information. Because of the enormous polymorphin of the HL-A system, the probability of an identical donor-recipient combination is extremely small. A file of at least 50.000 typed individuals is required for there to be a reasonable chance of finding an identical combination, particularly for the rarer combinations. This file must be readily accessible to all tissue typing laboratories of the Community. This necessitates a computer system and configuration which is not available with the existing centres in the Community.

I.7 Other applications for implementations on a common system

Such a computer system, which meets the requirements of the kidney transplant- and Europdonor project, would also be used for other transplantation applications such as skin, bone marrow- and cornea transplantation in the near future and heart, lung and liver transplantations as soon as these therapies become more generally applied.

II. SUMMARY OF REQUIREMENTS.

II.1. In order to meet the problem of speed and rapid matching, an urgent requirement exists to set-up a centralised computer file with communication links with the existing computer files in the four Member States (mentioned above).

The outline requirements for the service to be provided are the follows

II.1.1. Provision for access to data on 6.000 potential kidney transplant recipients

II.1.2. Provision for access to data on 50.000 potential blood and bone-marrow donors, estimated at 10 million bytes

II.1.3. Provision for expansion to include information for additional transplantation applications which might occupy a further 40 million bytes

II.1.4. The guaranteed availability of the system for at least the next 5 years, and preferably 10 years

II.1.5. Provision for the possibility of enquiry terminals to be telex, teletypes, or teletype compatible VDU's accessing the system via the public switched network

II.1.6. Provision for 10 users.

II.1.7. A nominally 24 hours per day, 7 days per week service.

III. USERS PROPOSALS

III.1. The users have proposed to create a European autonomous non-profitmaking foundation to administer the centralised computer facilities. The programme of the foundation would encompass a wide spectrum of thereapy related priority applications. Initially, however, it would implement kidney information exchange and Europdonor projects. Thereafter, on a continual basis it would undertake other urgent and related applications such as platelet data-matching register for use by regional centres in the Community, transplant-related research e.g., analysis of post-graft follow up data, Histocompatibility-analysis of associations between HL-A and disease. It is proposed that the development of the centralised system be funded by the Community whereas the responsibility for the exploitation and utilisation of the system would be taken by the foundation. The total cost of development for one-time funding by the Community is 1,360,500 a.u. whereas the estimated annual operational expenditure of 135,000 a.u. would be met by the European Foundation (through a development of the normal charging scheme already operated by existing transplant centres). Thereafter, the foundation is expected to be a self-generating independent and viable entity.

III.2. The economic justification for funding this project is a clear one; in particular the total investment cost can be offset in a little over two years by the savings in current national health budgets provided by the system.

A discussion of the proposed system for funding by the Community follows :

IV. CONTENT OF THE PROJECT

IV.1. The transplant data for all centres will be held in one uniform file. However, special interface programs will be written so that each participant can access the system, for both retrievals and updates, with the same data and format as he does at present.

The main advantages of this option are that the response time will be much improved since the local files will not have to be accessed, and, more important, no personnel will be needed locally at all times of day, to support the central system.

IV.2 System requirements

The system must be capable of performing the following functions :

1. Up-dating the main file and recipient/donor file
2. Selection of donor-recipient combinations for therapeutic purposes
3. Enabling access for research
4. For Europdonor a reservation procedure is required to insure that patients requiring multiple therapy will receive this at appropriate times
5. Management information
6. Costs reimbursement procedure
7. Teleprocessing
8. Duplication of information on separate discs
9. System-housekeeping

IV.3 Hardware configuration

If the alternative of an autonomous system is preferred the following hardware configuration is required :

1. A central processing unit with 128 K bytes of core memory. From these 128K, 48K will be needed for the operating system.
2. A console

3. Two disc units, capacity at least 48 M bytes each.
   Two disc units are required for duplication of the information on parallel discs for sufficient security and reliability
4. A tape unit
5. A line printer
6. A card reader
7. A papertape reader/punch
8. Teleprocessing controllers and interfaces for both teletype or teletype-compatible VDU terminals and telex terminals
9. 17 modems (one at each of the four local up-dating centres).

IV.4. Software requirement

To realise the above mentioned function it is necessary to possess a simple data base system with teleprocessing facility. Only small user programs need to be developed.

IV.5. Location

The location of the proposed computer system will be determined during the system specification development phase. The choice of location will be governed by:

- the need (or not) to locate the proposed systems within the locale of an existing transplant organisation;
- general feasibility and in particular the available PTT service (i.e. whether or not lines may be readily dialled in to or out from the site);
- operating costs (office, rental, salaries, staff employment overheads, PTT charges, etc).

IV.6. In view of the latter of these criteria it is proposed to settle the choice of a location as part of the business plan systems development phase. The possible locations to be considered in detail include Eurotransplant (Leiden) Francetransplant (Paris) and an independent location (Brussels).

STUDY OF
DATA PROCESSING SYSTEMS FOR INFORMATION ON IMPORTS/EXPORTS; AND ON THE MANAGEMENT OF AGRICULTURAL MARKET ORGANISATIONS AND THEIR FINANCIAL CONTROL

Project Summary

The project covers a major in-depth study whose objective is to determine longer term detailed requirements for a Community framework within which Member States and the Commission may develop, and link to mutual advantage, data processing systems concerning imports, exports and related aspects of managing the agricultural market and its financial control.

The duration of the study is expected to be 18 months.

I. INTRODUCTION

I.I. Background

I.I.1. Large volumes of data relating to imports and exports and certain agricultural transactions are exchanged between the Member States and the Commission. Certain of these data, eg. agricultural prices, levy rates, importations under quota etc., are urgently required for the application of the Community's agricultural and commercial policies. Other data, eg. the Common Customs Tariff Nomenclature and foreign trade statistics, are of a more routine nature. Large quantities of information required for the administration of the Customs Union and common agricultural policy are currently exchanged by typed letters or telex messages which, once received in the Member States, in the majority of cases, require conversion into yet another form for data input into the local computer. Useful savings could be achieved by the Community as a whole if advanced methods of data processing and data transmission could be used in the Commission and the Member States in a coordinated manner.

I.I.2. Furthermore, essential information on imports and exports in the agricultural field is not available in time or in the right form required for making urgent and important Community policy decisions.

I.I.3. Fraud Control is another important area that requires timely information for effective detection.

I.I.4. The majority of the Member States are progressing rapidly in developing computer systems, some of which are very advanced, to meet the processing requirements of their Customs and Statistical administrations. Certain Member States are also studying the possibility of using computers more widely in the agricultural area.

I.I.5. Most Member States have expressed an interest in exploring the possibility of using more advanced computer and data transmission techniques for exchanging information with the Commission.
Interest is also developing in some Member States in the direct exchange between them of certain standard types of import/export data by EDP methods.

I.I.6. The Commission has an obligation to organise its own data handling methods in such a way as to provide an efficient service not only for its own purposes but also to the Member States and one which is, as far as possible, compatible with the var ous systems used by Member States.

I.I.7. There is a very great interest in the administrative, business and political world in the simplification of import/export procedures.

I.I.8. Member States and the Commission will continue to want to develop their own, independent EDP systems for the foreseeable future. These developments cannot reasonably be delayed but an overall Community framework is urgently required so that Community requirements can be fitted into the new systems as they are designed.

I.2. Work done in the Commission

I.2.1. In the light of the situation outlined above the Commission launched two interrelated preliminary surveys by independent consultants which have just been completed. The first is designed to outline strategies for the development of Community import/export information systems and the second, more specifically, to explore how computers might be used more effectively in the field of the application and management of the Common Agricultural Policy and its financial control.

I.2.2. These surveys, the results of which have just become known, confirm the urgent need for a Community framework for EDP development in the import/export and agricultural fields and indicate in some detail the steps required to develop this framework, as well as certain short to medium term improvements which should be made.

I.3. Further Action Required

I.3.1. The need to develop systems to meet short to medium term needs is so great that development work in Member States and the Commission, in respect of data and information concerning import/export and the management of the agricultural market and its financial control, needs to be pushed ahead as rapidly as possible. It is envisaged therefore that short to medium term measures will be taken where appropriate.

I.3.2. To meet longer term needs, and in order to establish a Community framework for coordinated and compatible systems development, a detailed study of the larger requirements in each of the Member States and the Commission will also be required. The scale and technical character of this work are such that the normal Community committee machinery needs to be supplemented by a study on the lines outlined above.

The results from the preliminary surveys will help orient the in-depth study.

II. CONTENT OF THE PROJECT

II.1. Using the information gathered during the preliminary surveys as a basis, the longer term in-depth study would cover the following fields in each of the Member States and the Commission. Detailed specifications of the study will be elaborated later by the users technical committee and the project manager.

II.1.1. An inventory of the basic functions or subsystems of the data-processing systems employed or planned in the Member States and the Commission (Such functions will include, for example, currency conversion, duty calculation, quota control, etc.).

II.1.2. Information required to be transmitted between Member States and the Commission.

II.1.3. Based on 2.1.1. and 2.1.2., the required elements in a Community system for imports, exports and management of the agricultural market and its financial control (Flexibility and security would be key-points in any such system).

II .1.4. Priorities for implementing these elements.

II .1.5. Data likely to be exchanged with third countries and third parties (such as airlines).

II .1.6. Systems requirements including the following :

- Contents, timing and volumes of input and output
- Type and contents of files
- Processing
- Communications
- Interfaces/links
- Requirements for reliability, security, availability, etc.
- Accountability and financial control
- Codes and Standards.

II .1.7. Outline alternative systems strategies as a basis for a recommendation for an overall Community framework for the development of import/export and agricultural management information systems including financial control.

II .1.8. Timetable for the development of a new Community system and problems arising from it.

II .1.9. Possibilities for shared development of systems, eg. computer typesetting for customs tariff and generalised software.

II .1.10. Recommended decisions necessary to bring Community import/export and agricultural systems into being.

II .1.11. Costs, benefits and other implications.

II .1.12. Any other considerations, in the scope and direction of the study, that the users technical committee may propose to include based on the preliminary studies, on their experience (in particular of any short to medium term actions taken as a result of these studies), and on requirements in the Community.

STUDY OF REQUIREMENTS FOR LEGAL DOCUMENT RETRIEVAL SYSTEMS IN THE COMMUNITY

Summary of the Project

The project covers an in-depth study of the existing requirements within the member states and the Institutions of the Community with the aim of drawing up a general framework for developing information retrieval systems Communitywide.

The estimated duration of the project is expected to be 18 months.

I. Introduction

I.1. Community Law is a recent creation which is linked with the setting up of the European Community itself. Application of this law, including its development in the member states, introduces a new dimension for public authorities, universities, and practising lawyers as well as for other important users, such as libraries and companies. Each member state must in particular be aware of the impact of Community legislation on its own national plan both precisely and speedily. Rapid access to this information, in whichever language and whatever form required, has become a necessity of member state users.

I.2. Taking into account the rapid development of Community legislation, the continuous updating of this information by manual methods has been seen to be impossible. An illustration of the problem is the addition in 1973 of 4,000 new texts to the then existing body of 25,000 texts adopted by Community institutions. The regular updating of the amendments to the acts was abandoned by the Council's Secretariat as being impossible to carry out.

I.3. The problem is common not only to Community institutions but to all member states and the urgent need for a common system affects the whole Community.

Distribution of Community legal documentation in the time, form and language required is not a simple task. The language problem creates additional difficulties in certain areas such as interpretation of jurisprudence.

I.4. Recognising the urgency of the problem and its importance, the European Parliament passed a resolution (Nr. 38 June 1974) requesting the Council to increase its efforts in the field of information distribution in the Community, whilst working in close collaboration with the Court of Justice.

I.5. Activity of the Commission and the Member States
Working in collaboration with other institutions
the Commission has set up a computerised legal document retrieval system (called CELEX) which essentially confronts the needs of the Community's Institutions. The complete text is stored in one single language but the titles and subject matters are indexed in various Community languages. Direct access to the system and to the information is limited to the Services of the Institutions.

I.6. At the same time, certain Member States have been developing national systems for dealing with legislation and/or jurisprudence.

Requirement

I.7. In order to respond to the urgent requirement for better distribution of Community law, it is suitable to proceed with study and work required enabling information in this fields to become accessible to users in all Member States. Moreover,
although legislative and legal structures vary in each Member State, the increasing integration of the economics within the Community and the increasing harmonisation and inter-relationship of national law and Community law makes the establishment of Community norms desirable, as also is the need for the compatibility of national and Community systems, particularly with regard to data organization and access to it.

I.8. In the long term it will be desirable to have systematic inter-connexion of legal documentation within the Community, utilising computerised techniques when these prove to be practicable.

I.9. At the conference held on 26th November 1974 within the Council, the Ministers of Justice adopted a resolution affirming, amongst other things, the necessity of setting up a computerised inter-institutional system for legal information; they decided to create a working group charged with presenting a preliminary report to the Committee of Permanent representatives.

I.10 The resolution takes note of the intention of the Commission to put forward proposals with the same aim. The Commission views it essential for the Working Group of the Council to rely on a systematic study of the data processing aspects of the problem and the needs within the Member States, as indicated below. Such a study would enable the Working Group to put into effect action proposals expeditiously. The Working Group could then consult with the Users' Technical Committee assigned, to assist in the technical aspects of the study proposal.

II. Content of the project

In-depth study of requirements :

II.1. This study for developing the area of Community legal information would take into account the following tasks :

II.1.1. take an inventory of the data processing or other systems employed in the legal documentation centres in the Member States and record their plans for future developments;

II.1.2. explore and analyse the requirements of the users (Institutions, Governmental departments, professionals and others) for information with respect to content type, form of presentation etc.

II.1.3. collect and synthesise systems information on technical and documentation standards for exchange of files and selective information used at European and international level in this field, as a basis for decisions to be made on common standards;

II.1.3. to propose a long term development programme for the gradual and systematic set up of interconnections Community-wide with access to Member States, covering technical alternatives and evaluation of the likely effects of their adoption. If the necessity for using a network emerges, its technical characteristics should be studied taking into account the possibility of using networks being set up by Community Institutions such as EURONET and COST II;

II.1.4. make recommendations based on test-evaluations for the development of software related to the application characteristics and needs of legal document retrieval; such software may have wider application than this project;

II.1.5. make specific proposals for a phased priority system development in the Community, giving cost estimates and time-scale required for each phase.

II.1.6. These proposals could cover an extension and development of the actual system in the Commission with a view to meeting the wider interests of the Community in all the official languages, as well as the extension and development of related techniques in the Member States for giving effective access to Community law.

III. Additional action by the Commission

In addition to the development study proposed above, work is required on the development of the existing legal documentation retrieval system in order to translate the texts into different Community languages and to put them on suitable media (e.g. magnetic tape) for rapid distribution to Member States. In this way practical experience will be gained for the eventual development of the main system.

A STUDY OF REAL TIME DATA PROCESSING SYSTEMS REQUIRED FOR AIR TRAFFIC CONTROL (ATC) IN THE 1980'S

Project Summary

The project covers an initial study with the objective of determining the feasibility and justification for developing the design specifications of replacement data processing systems required in ATC in the 1980's.

The duration of the project is expected to be 18 months.

I. Introduction

I.1. Most of the administrations responsible for Air Traffic Control in Europe anticipate replacing their main ATC data processing systems during the second half of the 1980's. Also during this time the existing ATC DP systems will have to be improved continuously in order to enhance their performance for the growing functional needs of Air Traffic Control. The present systems have resulted from a variety of developments stretching over the past 15 years. This long development period required illustrates both the complexity of the system's requirements and the continuing and ongoing need for study and development work.

I.2. Substantial changes in design concepts of the future ATC DP systems can be foreseen due to the impact of technology and the changing traffic environment. ATC systems can therefore be expected to make a more important use of data processing techniques requiring features such as enhanced reliability, greater processing speed and efficiency, flexibility and expandibility.

I.3. In view of the anticipated changes in the nature of data processing requirements, some administrations in Europe are already contemplating studies on their own with the objective of making improvements and enhancements to existing systems and sub-systems and in order to continually update them to confront the needs in the 1980's.

I.4. The development of ATC data processing systems requires substantial investment that few countries in the world are in a position to accept on their own. Savings may be possible through a common approach at the European level when the next generation of equipment is developed. In addition there might be gains in operating efficiency if a more homogeneous European system can be developed, given the large volumes of data transmitted across Europe and the essentially international character of the requirement.

I.5. There is therefore advantage for both the National Administrations in the EEC Member States and European Agencies (Eurocontrol) to undertake a study in common. And in the context of Community data processing policy it is highly desirable that the European industry should participate and/or benefit from such a project as this would not only enhance its experience and capability in advanced DP techniques significantly, but would enable it to determine its ultimate role in fulfilling the requirements of ATC DP applications. The outcome of the study may be the identification for development certain modules or sub-systems. These could well be for use in ATC DP systems only or, alternatively, capable of wider application through adaptation. The reverse may also be the case, where sub-systems developed for non-ATC DP use could be viably adapted to confront the foreseen requirements for replacement systems in the 1980's.

I.6. Objectives of the study

An initial study, as a first phase, is required to determine the feasibility and justification of ultimately producing the design specifications for the replacement of existing ATC DP systems which can be developed using European equipment and expertise. As the concepts, techniques and skills required in developing ATC DP systems are among the most advanced in data processing applications, the "fall out" benefits to the industry, through participation in the study, in other DP application market areas, could be significant.

The outcome of the project may be the identification of fields for further study and specific areas for development, for example in sub-systems. Any further work in studies or development would, however, be the subject of subsequent decision, based on evaluation of results of the initial study.

I.7. The primary emphasis in this initial study would be on the ATC DP systems requirements as a whole and the replacement of the central processing systems. The study's approach and design considerations should allow for sufficient flexibility to interface both with the existing and projected future sub-systems which could be installed as improvements over the anticipated development period of the main system. The study should therefore take account of the possible developments in sub-systems that could have a significant impact on the design of the central system.

II. Content of the project

While the detailed programme of the broad study would be determined by a technical committee (see Working Method § III) the overall scope and direction of the study is outlined below:

II.1. Evaluation of the existing and projected systems with regard to their intended functions, identifying areas requiring improvement. Assessment of current developments and foreseen trends world-wide, in the design of ATC DP systems, system components and techniques which are likely to influence the design architecture of the ultimate central system e.g. the direction of developments in real time concepts and techniques. Review and evaluation of the current trend in technology of real time DP systems and a statement of the broad functional requirements of ATC DP systems.

II.2. Guided by characteristics of an anticipated ATC environment derived from input from users' requirements, identify the central DP functions, their interaction with peripheral sub-systems and their influence on the overall DP systems environment, for example:

II.2.1. the requirements of a database, its significant parameters (size, maintenance etc...) and the external factors influencing them e.g., automated ground/ground and air/ground data interchange, radar data transmission systems, problems related to the network connection of several systems;

II.2.2. identify the role of sub-systems functions (hardware and software) external to the data base and their impact on the overall systems design and structure (e.g. types of interfaces required, software versus handware solutions, special software tools, etc...). Examples of sub-systems are:

- EDD and plan-view displays and data input peripherals
- special purpose interface equipment
- conflict prediction and resolution programmes
- radar tracking programmes, operational data-display logic programmes, etc...

II.3. Identify significant changes forecast in computer or software system design which may require special study to determine their applicability to the future ATC DP systems. For example, impact of very large and low cost memories, failure tolerant systems and systems with self-diagnosis and self-repair capabilities, etc...

II.4. Review and evaluate the production and development capability, (in both hardware and software) of the European industry and assess its ability to meet future DP requirement, either with existing products and concepts, or with products being developed; in particular the specific gaps or weaknesses in technology and capability should be highlighted.

II.5. Outline and evaluate alternative systems approach strategies (e.g. centralised, decentralised systems) identifying different options in view of the anticipated world-wide developments and the foreseen European technological capability and make recommendations for a framework for future development work required to be done in studies and development phases leading to the ultimate design specifications of replacement systems.

II.6. Any other overall considerations, in the scope and direction of the study, that the technical steering committee may propose to include based on their experience and requirements in Europe.

III. Working method

III.1. The study will be undertaken by a team of high level experts representing a wide spectrum of European industrial skills and relevant experience. The actual study contract will be the subject of competitive tender.

III.2. A project manager will be appointed by the Commission to manage the study contract. He would be a person of high level experience in data processing and, if possible, with a good knowledge of the ATC environment. The project manager will be supported and guided by a technical committee composed of technical representatives from national ATC authorities and Eurocontrol. Additionally, the services of technical experts in the Member States, including ATC agencies, should be made available to the project team, as and when required, to advise on specific topics in order to maintain an appropriate technical balance.

DEVELOPMENT STUDIES IN COMPUTER-AIDED DESIGN TECHNIQUES (CAD)

Project Summary :

The project covers two separate development studies in two specific key areas of research in the field of Computer-Aided-Design techniques. The object of these studies is to define and assess the economic benefits of a development programme in two key areas Logic Circuit Design and Integrated Design Systems Management and to draw up the specifications for further developments.

The duration of both projects is estimated to be 12 months.

Study n° 1 :

Subject : Study, definition and evaluation of Logic circuit design Aids in C.A.D.

1.I. Introduction

1.I.1. Statement of the Problem :

As the cost of both capital equipment and labour escalate the move to more sophisticated automated equipment has accelerated. Requirements for higher precision and more stringent control of such increasingly complicated equipment has caused a rapid growth in the use of digital logic systems.

1.I.2. The design of such logic systems may be broken down into the following activities :

- The expression and representation of the conceptual logical problem.
- The development of a definitive logical system design.
- The simulation of the logical system design.
- The implementation and optimisation of the logic design in a specified technology.
- The provision of design tools and schedules required in the production of the hardware of the logic system.

In the first two of these areas the provision of design aids has not been exploited. Whilst a redirection in work in simulation and optimisation may be indicated.

1.I.3. The designer faces an ever increasing range of optional technologies, speeds and complexity of logic packages and yet the tools generally available to aid his design strategy are minimal, even though the systems he designs are increasing in size and complexity. He relies on experience and intuition with the result that systems are difficult to fully analyse and test. Hence the effort which has gone into simulation and test pattern generation is an attempt to produce clean designs.

1.I.4. Formal design techniques have been the subject of printed literature for many years, and techniques which can lead to logic systems of very predictable behaviour exist, but the methods can only be applied in paper designs of the simple kind. What the designer is in need of are computer aids to enable these techniques to be extended to the larger more practical circuits. One can postulate that given such techniques the problems of simulation and testing would be simplified.

1.I.5. Rarely is the logic designer of a control system also the designer of the system to be controlled by it. Designers responsible for the mechanisms, of say an automated ware-house, are unlikely to be responsible for the design of the logic, software and hardware. A problem arises in communication between the two teams of designers, closely related to the problems of the logic design itself. Unambiguous descriptions of how a system shall behave is as difficult, and in many ways the same problem, as the logic design itself. Hence there is a very real need for a high level logic description language which would enable the mechanisms and logic designers to communicate unambiguously and permit the mechanism designer to participate in the logic design as he must surely do if fiascos are to be avoided.

1.I.6. Summary of the problem

To summarise, the expression of conceptual logical processes necessary to meet the specific control and monitoring requirements of complex systems is difficult and computer aids are necessary to improve this process as well as the system design itself to which it closely relates. At the present time a gulf exists between the conceptual logic, the paper design, which can be simulated and the prototype circuit which can be subjected to testing. It is the lack of aids at the design stage which is creating the need for more sophisticated simulation test procedures which at best can only partially predict performance.

1.I.7. Solution

The simple answer is to produce the design aids. But to attempt this step, all at once, would be unwise. A great deal of work is under way in Europe and the U.S.A. aimed at formalizing logic design in an attempt to improve integration but problems remain and there is undoubtedly scepticism among many designers even of the possibility. The solution therefore is an in-depth study of the techniques available and an evaluation of those in use as well as examining the opinions of a significant population of designers. The ultimate objective of the study would be to recommend how further development should proceed if it appeared to be desirable.

1.II. Content of project N° 1

The study programme would take into account the following areas :

1.II.1. identify and evaluate work on logic design aids taking place in industry, universities and research centres

1.II.2. list and attempt to give a qualitative assessment of all software in use or under development. (Involving representative European Industrial Organisations)

1.II.3. attempt to identify the gaps in software development

1.II.4. advice on portability of software

1.II.5. identify the problems of interfacing the design packages to be developed with existing and well established packages for chip design, PCB design and thick/thin film design as well as simulation and optimisation

1.II.6. examine the hardware hierarchy necessary to support such systems and communication interfaces

1.II.7. evaluate the economic trade-offs achieved by using these techniques where they already exist

1.II.8. examine possible data structures

1.II.9. recommend further work and the benefits likely to be achieved.

1.II.10 Evaluate Economic factors as follows :

Although it is the purpose of this study to examine the viability of computer aids for the logic designer, it would nevertheless be unrealistic to propose it, unless one is confident that there is scope for development of such aids. The economic benefits to be gained from the application of CAD to logic design could be extremely high. Design and perfection of a synchronous logic system for transfer lines and machine tools etc., can, with present methods, take years. CAD could reduce these times to months or less. Moreover the final design would produce a more reliable and near optional result thereby reducing cost of maintenance and down time of equipment. The savings could run into millions of accounting units but it remains an objective of the study to estimate how much.

1.II.11 The economic benefits of collaboration over the study are to be derived from the elimination of duplication and the problems of communication arising out of the language barrier, and a wide and balanced view.

Study no. 2

Subject: Study of Computer aided Design systems and their relation with Construction management

2.I. Introduction

2.I.1. Statement of the problem

The use of computer techniques is rapidly growing in all engineering disciplines. Certain areas have seen more widespread application of software than others, notably in the construction industries there are a large number of individual analysis and design programs, whilst the mechanical engineering industry make sporadic use of large analysis systems, e.g. finite element analysis techniques.
The current trend in all these areas is to look beyond individual computer applications, and instead consider the total design process from inception to construction and manufacture.

2.I.2. In the manufacturing industries it is recognised that the benefits of computers are likely to stem from applications embracing fabrication, stock control etc.

2.I.3. In the construction industry there is a demand for an integration of applications aimed at simplifying their use, as well as gradually moving towards an integration of the disciplines involved in the total construction process. Like the mechanical industries it is the manufacturing aspects of the total process, where the further economic use of computer aids are envisaged. (On average, design costs amount to about 10% of total costs).

2.I.4. The ship building industry is experiencing a similar trend. Although there is not the same abundance of individual (or "task orientated") programs as there is in building construction, nevertheless, the advantages of an integration of the various stages through a common design management system is recognised.

2.I.5. The system problems arising in all these areas are similar, stemming from the fact that their requirements are basically identical.

However, known systems developed with a similar, yet perhaps more modest aim, as well as current large scale developments, all highlight the

enormous magnitude of the task of any such development. No individual user can be expected to undertake on its own such a task in view of high development costs; even though the vast economic benefits stemming from such systems are widely recognised.

The technology inherent in a large computer system designed to aid in the management as well as analysis and design of a manufacturing process is known to be complex, and therefore it demands expertise which is hard to find. In fact, the experience required on the software side is likely to be derived only from related developments.

2.I.6. In conclusion, a wide range of industries are becoming increasingly aware of the computer as an aid in the entire manufacturing/construction process, from design inception to construction. However, the complexity of the problems and magnitude of investments required, generally prevent industry from embarking on development projects without substantial government aid. The type of system discussed in this project is most appropriately named Computer Based Design and Construction Management system

A Computer Aided Design System and its relationship with Construction Management

2.1.7. Giving a simple view of such a system it could be considered to consist of 3 main parts;

(i) a data base
(ii) a data management system
(iii) applications

2.1.8. The database may be divided into two parts, one containing constant, or basic data, the other part containing data relevant only to a specific project.

2.1.9. The data management system, as the name implies, manages the data base for the user and allows him to perform the functions determined by the applications. It will manipulate and control new data generated by application programs, and update the database, as well as extract and order the data required for a particular application.

There are currently two approaches to the design of such a system. The first uses the data base as an integral part of the computational system, whilst in the other, the external applications have no direct linkage to the data base and may be written in a variety of different languages.

2.I.10. Benefits

It is difficult to quantify the economic benefits likely to accrue from such a system when applied in particular to design/manufacture processes. However, a similar system, dedicated to the design and construction of a particular building type have shown dramatic cost savings.

2.I.11. The design costs in the construction industry represent on average 10% of the total cost of the project. Tests have shown that the use of interactive design systems, which assist in rapid optimisation of the building type and layout, have helped reduce the design costs to about 6%.

2.I.12. In general, one of the advantages of a design and construction management system is that the data generated in the early stages of the design process can be projected through to construction or manufacture and the effects, therefore, of a design decision on the construction can be assessed before the design is progressed too far or is finalised. The impact this will have on the final product is manyfold.

2.I.13. Improved communication between the disciplines involved will lead to reduction in lead times, which again will result in better designs, because interactive optimisation of a variety of parameters is possible.

II. CONTENT OF PROJECT Nr. 2

2.II.1. There is only limited experience and expertise in the field of computer based design and construction management systems in the community. However, the demands for such systems are widespread. To reconcile this situation, a study will be carried out to identify the sources of expertise and existing systems, and attempt to identify the areas common to the variety of uses envisaged, thereby testing the feasibility of the approach outlined.

The ultimate objective would be to recommend how further development should proceed if it appeared feasible and desirable.

2.II.2. The study would have to embrace industry as well as research and development organisations throughout the Community and would cover the following areas in three phases with interim reports to be submitted at the termination of phases 1 & 2 and a final report.

2.II.3. Phase 1:

- Identify and draw on existing sources of expertise
- Examine the existing systems and those under development
- Identify gaps in software development
- Consider portability of software.

Phase 2:

- Examine hardware and system response requirements
- Examine the relationship between system design and size of application program
- Examine the economic benefit for the system to handle application programs which are independent of the data base

Phase 3:

Produce broad outline systems specification and strategies for their development

DRAFT DECISION OF THE COUNCIL SETTING UP A CONSULTATIVE COMMITTEE ON DATA-PROCESSING PROJECTS

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the draft decision put forward by the Commission,

Whereas the establishment of a Community policy on data-processing is one of the aims of the Community, as recognized in the Council Resolution of 15 July 1974;

Whereas, in order that the Commission may have the necessary data for the satisfactory implementation of the action programmes adopted by the Council as part of this policy, there must be provision for enlisting the cooperation of a body comprising representatives of the Member States;

Whereas a Consultative Committee on data-processing projects should be set-up for this purpose;

HAS ADOPTED THIS DECISION

Article 1

A Consultative Committee on data-processing projects, hereinafter called the "Committee", is hereby established.

Each Member State shall appoint a representative to the Committee. Each representative may call on the assistance of experts or advisers depending on the nature of the project.

The Chairman of the Committee shall be a representative of the Commission.

The Commission shall provide the secretariat services for the Committee.

The Committee shall adopt its own rules of procedure.

Article 2

The Committee shall assist the Commission in the execution of data-processing projects adopted by the Council, in particular as regards : the orientation, implementation development and completion of each project in keeping with the objectives in view.

Article 3

This Decision shall come into effect on .....

Done at Brussels, ...

FOR THE COUNCIL

The President

Estimate of financial implications

Attached you will find, in the form of financial summaries, separate estimates of the expenses foreseen for each project. These expenses cover the technical and implementation costs (especially those concerning the contractors, equipment, programming, project management, etc....) as well as the administration costs (especially those concerning the Consultative Committee, the Technical Committees, the Secretariat).

FINANCIAL SUMMARY FORM

1. Budgetary post concerned : Article 390

2. Title of project : Data-bank for organ and bloodmatching system.

3. Legal basis : Article 235 of the Treaty
Resolution of the Council dated 15th July, 1974

4. Objective of the Action : Creation of a central file to determine organ and blood group compatibility for transplants and tranfusions.

5. Total cost of Action and annual payments foreseen,

5.0 Total cost : 1,360,500 a.u.

5.1 Time-table for payments

1975	1976	1977
92,500	1,237,500	30,500

6. Financing : Provisions to be made in the future budgets.

FINANCIAL SUMMARY FORM

1. Budgetary post concerned : Article 390.

2. Title of project : Data processing systems for information on imports/exports; and on the management of agricultural market organisations and their financial control.

3. Legal basis : Article 235 of the Treaty
Resolution of the Council dated 15th July, 1974

4. Objective of the Action : Study of existing or projected data processing systems in the Community for import/export, data on the agricultural market and its financial management, with the objective of determining a framework for compatible and coordinated Community-wide development.

5. Total cost of Action and annual payments foreseen,

5.0 Total cost : 668,000 a.u.

		1975	1976	1977
5.1	Time-table for payments	163,000 U.A.	423,500 U.A.	81,500 U.A.

6. Financing : Provisions to be made in the future budgets.

Project n° 3

FINANCIAL SUMMARY FORM

1. Budgetary post concerned : Article 390

2. Title of project : Community needs in the field of legal documentation research systems.

3. Legal basis : - Article 235 of the Treaty.
- Resolution of the Council dated 15th July, 1974

4. Objective of the Action : Study of users' requirements and systems both existing or being developed in the Community with the aim of defining a framework for compatible development giving access to Community law.

5. Total cost of Action and annual payments foreseen

5.0 Total cost : 437,500 a.u.

5.1 Time-table for payments :

1975	1976	1977
111,500 U.A.	269,000 U.A.	57,000 U.A.

6. Financing : Provisions to be made in the future budgets.

FINANCIAL SUMMARY FORM

1. Budgetary post concerned : Article 390

2. Title of project : Data-processing systems necessary for air traffic control

3. Legal basis : Article 235 of the Treaty
Resolution of the Council of 15 th July, 1974

4. Objective of the Action : Study of data-processing systems for air traffic control and common European requirements to identify the developments and actions necessary to determine design specifications for replacement data-processing systems in 1980.

5. Total cost of Action and annual payments foreseen

5.0 Total cost : 923,000 a.u.

5.1 Time-table for payments :

1975	1976	1977
172,500	566,500	184,000

6. Financing : Provisions to be made in the future budgets.

FINANCIAL SUMMARY FORM

1. Budgetary post concerned : Article 390

2. Title of project : Computer Aided Design (CAD)

3. Legal basis : Article 235 of the Treaty
Resolution of the Council dated 15th July 1974

4. Objective of the Action : In each of the two CAD systems shown below, to identify developments in data-processing systems and to outline the specifications which could become the subject of subsequent developments.
   a. Logical circuit design in electronics
   b. Management of projects in the construction field.

5. Total cost of Action and annual payments foreseen

5.0 Total cost : 618.500 a.u.

5.1 Time table for payments :	1975	1976
	217.000	401.500

6. Financing : Provisions to be made in the future budgets.