COMMISSION OF THE EUROPEAN COMMUNITIES

COM(74) 1423 final

Brussels, 18 September 1974

Proposal for a

COUNCIL DECISION

adopting a first 3 year plan of action in the field of
information and documentation in science and technology

(submitted to the Council by the Commission)

Plan of action in the field of scientific and technical information

(Communication from the Commission to the Council)

On 24 June 1971, the Council adopted a resolution for the coordination of the activities of Member States in the field of information and documentation in science and technology (IDST).

The Resolution laid down two objectives: the encouragement of progress in IDST and the progressive establishment of a European network of documentation and information.

The means of achieving those objectives were to be, in particular:

(a) encouraging initiatives directed at the rational development of IDST systems, by the permanent association of which the European network could be formed;

(b) establishing rules and methods for the operation of the network to ensure its coherence;

(c) promoting the training of specialists and the education of users;

(d) promoting technological progress in the science and methodology of documentation.

At the same time, the Council set up the Committee for Information and Documentation in Science and Technology (CIDST) to assist the Commission and the PREST Group in the prepatatory work on projects and other activities implementing the Resolution. The tasks of PREST in this respect have now been assumed by CREST, set up by the Council on 14 January 1974.

During the first two years of its existence, thorough-going and worth-while discussions have taken place in this Committee and in the working parties it appointed to study, for example, the technical aspects of the network, problems concerning charges for services provided, the agricultural, environmental and medical sectors and the question of patents.

In its scientific and technological policy programme of 25 July 1973 (COM(73) 1250), the Commission reviewed the situation in the IDST field and outlined a plan of action. In its Resolution of 14 January 1974 concerning a first programme of action for the European Communities in the field of science and technology, the Council noted with interest the Commission's intention to present to it proposals for actions concerning scientific and technical information.

It seemed clear, both to the CIDST and to the Commission, that technical and commercial developments in the field of information and documentation had become so rapid and so fragmented that there was a considerable risk that the establishment of a rational European network would become impossible if practical action were not taken without delay.

In accordance with item 2 of the Resolution of 24 June 1971, overall guidelines will be laid down by the Council. The Commission proposes that the latter should decide to proceed from the exploratory to the experimental stage, by implementing a three-year plan of action.

The plan would provide for the establishment of systems covering various sectors, e. g., the agricultural and environmental fields; for a number of evaluation and pilot projects to enable a start to be made on launching an operational network; and for the study of specific problems of horizontal integration (multilingual systems, standardisation, training of specialists, etc.).

The Commission considers that the expenditure necessary for the execution of the plan of action in 1975 is 1,840,000 AU. The corresponding amounts needed to ensure the progressive development of the action plan are estimated at 2.3 MAU for 1976 and 2.5 MAU for 1977 on the basis of 1974 prices, these amounts to be finally determined by the budget of the European Communities. The Commission will submit its proposals after consultation with CIDST and CREST.

Attached to the present communication are: the proposed decision, a technical dossier giving details of the plan of action and the opinion of the CIDST and the CREST.

Proposal for a

COUNCIL DECISION

adopting a first 3 year plan of action in the field of
information and documentation in science and technology

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,

Noting the report by the Committee for Information and
Documentation on Science and Technology (CIDST) and the opinion of the
Committee on Scientific and Technological Research (CREST),

Whereas a resolution was adopted by the Council and the
representatives of the Member States meeting within the Council on
24 June 1971 for the coordination of the activities of Member States
in the field of information and documentation on science and technology
(IDST),

Whereas the Heads of State or of Government, meeting in Paris
on 19 and 20 October 1972, expressed their intention to define the
objectives and promote the development of a common policy in the field
of science and technology,

Whereas, according to Article 2 of the Treaty, the Community
shall have as one of its tasks the promotion of harmonious development
of economic activities and a continuous and balanced expansion throughout
the Community,

Whereas the proliferation of information systems and their rapid but disparate progress as a result of the competition between public and private ventures, make the establishment of the European network envisaged by the Resolution of 24 June 1971 a matter of urgency,

Whereas the setting up of this network would effectively contribute to the achievement of the above-mentioned objectives of the Treaty,

Whereas the Treaty has not provided the necessary powers,

Whereas the Council adopted a Resolution on 14 January 1974 concerning a first plan of action for the European Communities in the field of science and technology,

HAS ADOPTED THIS DECISION

Article 1

An initial plan of action for the establishment of the European network of information and documentation on science and technology, as outlined in the annex, is hereby adopted for a period of three years to run from 1 January 1975. The annex forms an integral part of this decision.

Article 2

The Commission shall be responsible for the execution of this plan of action, assisted by the Committee for Information and Documentation in Science and Technology (CIDST). This committee and the Scientific and Technical Research Committee (CREST) shall be kept regularly informed of the progress of the work. Furthermore, the Commission shall submit a full report to the Council each year.

Article 3

The expenditure necessary for the execution of this Plan of Action in 1975 is indicated in the annex to this Decision.

Article 4

The Commission will decide the detailed activities to be carried out under the Plan of Action in 1976 and 1977 after consultation with CIDST and CREST.

On this basis, the Commission will determine the estimates of expenditure for 1976 and 1977 respectively, in accordance with the budgetary procedure.

Annex : First three year Plan of Action in the field of IDST.

FIRST 3-YEAR COMMUNITY PLAN OF ACTION IN THE FIELD OF INFORMATION AND DOCUMENTATION IN SCIENCE AND TECHNOLOGY

The expenditure necessary for the execution of this Plan of Action in 1975 is estimated at 1,840,000 AU. The corresponding amounts needed to ensure the progressive development of the action plan are estimated at 2,3 MAU for 1975 and 2,5 MAU for 1977 on the basis of 1974 prices, these amounts to be finally determined by the budget of the European Commission.

The plan's objectives include the following:

1. Sectoral Information Systems

The rapid development of sectoral information systems and their integration into a European network involves setting up Community systems, which are to be made compatible with the network, for example in the agricultural and environmental sectors, and examining the need for the creation of new systems in appropriate sectors, as well as supporting the rationalization and development of the various useful private ventures in existence, particularly in the industrial sphere.

The sum allocated for this purpose in 1975 is 550,000 AU.

2. Implementation of the Information Network

The starting point is feasibility and pilot studies. Specifications for equipment and software will then be drawn up and standards worked out for the management of the network and for its interaction with users. Only then will the first software be developed, equipment and telecommunication lines progressively installed, and the gradual adaptation of specialised information systems of the Member States to the network be undertaken.

The sum allocated for this purpose in 1975 is 660,000 AU.

3. Information Technology and Methodology

These support activities are aimed at establishing effective multilingual systems and standard formats for information exchanges, training of specialists in information technology, education of users, and improvement of systems' methodology, data banks and information and analysis-centres.

The sum allocated for this purpose in 1975 is 630,000 AU.

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The action taken to achieve all these objectives will be carried out mainly under contract with competent organisations in the Member States and may be extended to organisations of third countries under appropriate conditions, in conformity with the resolutions of the Council of 24 June 1971 and 14 January 1974.

Furthermore, the financial support in 1976 and 1977 of the conversion of national systems of scientific and technical information and documentation to the norm of the European network, with particular reference to the distribution of the expenditure between the Member States and the Community should be fully examined and agreed in good time.

Plan of Action 1975-77 : Detailed Proposals

One of the principal assets of Europe lies in the traditionally high intellectual ability and inventiveness of its peoples, reflected in a continuing high level of investment in the future through research. However, the proper exploitation of this considerable asset in techno- logical innovation requires that the ever increasing volume of scientific and technical information available be correctly, promptly and economically channelled through appropriate information transfer systems to those in our Community who need it.

It was, therefore, natural that, in its 24 June 1971 Resolution, the Council stressed that the keystone of an information policy worthy of Europe lay in the establishment and operation of a highly efficient and necessarily sophisticated information/documentation network linking together all the scientific information resources of the Member Countries. The establishment of an effective and economical network to bring scientific and technical information and documentation and the systems which process, store and supply it to all the users of the Community, on a basis of fair and equal access, is a major undertaking:

- appropriate to the European Community;

- capable of bringing considerable benefit and saving, both economic and intellectual, alike to scientists, industry, national administrations, educators and managers and the general public.

It is an undertaking whose immediate beginning, in the view of both the Commission and the Committee for information and documentation in science

and technology (CIDST) created under the 1971 Resolution, can no longer
be delayed without serious danger, but which requires extensive study,
experimentation and pilot operation at each step of the road. For this
reason, in close cooperation with CIDST, the Commission now proposes a
three year plan of action covering these phases and leading, only towards
the end of the period, to full substantive long-term operations for which
a fresh decision will be sought from the Council in due time.

The development of the enterprise falls naturally under three
heads:

- development of useful and necessary Community information
  systems;

- development of a common communications network to be the
  physical skeleton of the enterprise, and linkage of
  appropriate systems to it;

- methodological and technological support.

These headings are treated in the chapters that follow.

The detailed plans of action which follow remain flexible.
They reflect the existing discussions and consensus of opinion in the
CIDST, but are subject to further discussion and, in every case, to
further development or modification in the course of negotiations with
our partners who must carry out the bulk of the work, and in particular
with the heads of the specialised scientific and technical information
systems and centres of the Member States.

1. STID Systems

When the Council of Ministers, at its meeting of 24 June 1971, adopted its resolution aimed at coordinating actions of Member States in scientific and technical information, it stressed the need for setting up and developing sectoral information systems in a rational fashion.

A number of such systems are already operational; some are about to be established; others are planned.

The overall programme outlined below received the endorsement of CIDST at its meeting on 28/29 March 1974.

The Council foresaw already in 1971 that the sectoral systems should ultimately become part of the European Information and Documentation Network for Science and Technology (EURONET). Practical steps to this effect are covered in Chapter 2 below.

1.1.1. IDST System ENDS

Within the framework of the Euratom Treaty, the European Nuclear Documentation System (ENDS) was designed in 1960 and started its input operation in 1961. In 1967, the first output was provided. Now (1974) 1.5 million documents are stored, about 6,000 retrospective literature searches have been performed, services for 700 SDI profiles are provided, and an on-line dialogue is operated.

As a result of a meeting of the heads of the national nuclear energy documentation centres and other specialists from the Member States convened in Luxembourg on 25 January 1974, the following plans were made:

(1) The Commission will continue to operate the European Nuclear Documentation System (ENDS) for retrospective searches, but will limit the new input to the system to such documents as are covered by INIS.

(2) The European Nuclear Documentation System will be made "net-fitting" and become part of the network. The Commission will perform a test operation "on-line" with one or two national centres.

It is confidently expected that this will open the way to optimal use of the unique asset constituted by one of the most extensive collections of scientific documents in the world serviced by a small, but highly experienced staff.

The following operations are planned for 1975:

(a) Retrieval for retrospective literature searches
in batch processing.

(b) Retrieval for retrospective literature searches
in on-line mode in-house and experimentally outside.

(c) Retrieval for periodical literature searches (SDI).

(d) Contribution of EURATOM to the input of INIS.

By a resolution dated 24 June 1971, the Council of Ministers agreed to create a Community system for the collecting, processing and dissemination of information in the field of metallurgy.

According to the resolution and a subsequent agreement between the Commission and a number of national metallurgy information centres, these centres take care of the cataloguing, indexing and abstracting of the literature on the one hand, and the service to users on their territories on the other.

The Commission is responsible for the central storage, processing and distribution of the collected data.

The programme for 1975 includes:

(a) the keypunching and tape storage of approximately 9,000 worksheets supplied by some of the participants; other participants supply their contribution directly on magnetic tape;

(b) the preparation of microfiches for approximately 40,000 worksheets;

(c) the computer processing of the material supplied, including verification and correction of the cataloguing and indexing data, generic posting, merging of the material into a single data base, and preparation of tape copies for distribution;

(d) the updating of the metallurgy thesaurus in several language versions, and the printing of supplements, updated versions and KWIC indexes.

To sum up, SDIM should become fully operational in 1975 on a large scale and with full cooperation of the new Member States of the Communities.

1.2.1. EUR-AGRIS I (European contribution to AGRIS I, International Information System for Agricultural Science and Technology, established under the auspices of the FAO)

The aim of the project is to organise a joint contribution of the Member States of the Communities to the World Agricultural Bibliography AGRIS I, to be established under the auspices of the FAO.[1]

The first objective is to collect, select, catalogue, index and place at the disposal of AGRIS I bibliographical references to European agricultural literature, thus enabling the AGRIS I data processing centre to draw up a complete bibliography.

The second objective is an appropriate diffusion and exploitation of the output of AGRIS I in the countries of the Community.

In order to meet the FAO calendar, the pilot operation must start shortly; it will be carried out under the guidance of the Agriculture Working Group of CIDST.

The programme comprises:

- the scanning of scientific and technical agricultural journals and non-periodical documents,

- the processing of cover-to-cover analysed journals,

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(1) The prolongation of the test phase of AGRIS I was decided by the XVIIth FAO Conference, held in November 1973 in Rome.

- the translation into English of those document titles
  which are published in other languages of the Community,

- the description, cataloguing and

- the classification and indexing (subject control) of
  the selected documents,

- the recording of the input data on magnetic tapes and
  the processing of the data.

1.2.2. Agricultural Management Information System (AMIS)

AMIS is to be a co-ordinated documentation and information network for the European Community, serving agricultural policy in such relevant areas as agricultural economics, rural sociology and agricultural legislation.

It has the following aims:

— to co-ordinate existing services by sharing, on a Community basis, work and expertise. This would allow co-operating centres to concentrate on their own subject or mission specialisation;

— to improve the services offered through the use of electronic data processing and to investigate the possibilities of providing translation facilities so as to expand the scope of services to users;

— to examine the possibilities and investigate the need for extending the coverage within the relevant fields, particularly with regard to non-conventional literature and to provide mutual exchange of such documentation.

A Round Table of Experts, convened by the Commission on the recommendation of the CIDST Agriculture Working Group, is studying at present the possibilities of achieving the aims set out above.

The programme includes the following:

(a) the preparation of the contribution of the Commission to AMIS;

(b) an input test of merging various data bases in the Community;

(c) the compilation of a controlled vocabulary in the
AMIS field based on a preliminary draft already
prepared by the Commission and on work underway in
France and Germany;

(d) a study of the feasibility of providing a "back-up"
service, i.e. a mutual exchange of actual documents;

(e) a study of the user needs regarding management
information.

1.2.3. IDST System on Environment

In accordance with the Declaration of the Council of the European Communities on 22 November 1973 on the programme of action of the European Communities on the Environment[1], actions should be taken to co-ordinate environmental information systems in the Member States and create new systems whenever necessary. These systems should ultimately be integrated into the European IDST network[2] and take their place in a broader international framework. Studies and actions will be proposed and carried out by the Commission after consulting a group of national experts representing customer interests and the Committee for Information and Documentation in Science and Technology.

According to preliminary investigations by the two groups of experts, the following actions are planned for 1975:

1. Environmental Management Information

    (Studies on customer needs and requirements, existing information sources, definition and description of a system. Pilot project.)

2. European Inventory of Information sources and joint European contribution to UN programme

    (Inventory of research projects on environment, inventory of centres of excellence, inventory of documentation sources.)

3. European Analysis service for pollution control technology

    (Studies and starting implementation)

4. Studies and/or starting pilot projects

    (Environmental legislation information system, pilot file on conference papers, access to different information records, and other studies necessary for implementation of the programme.)

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(1) See Official Journal of the E.C., Vol. 16, No. C.112, 20 December 1973, Annex, Part II, Title 1, Chap. 11,c) Pages 34-37.

(2) According to the Council's Resolution of 24 June 1971 (O.J. No. C.122, 10.12.1971, p. 7)

1.3.1. Co-operation in Documentation and Information in Veterinary Science

A Round Table of Experts convened by the Commission on the recommendation of the CIDST Agriculture Working Group is at present studying the possibilities of widening existing bilateral contacts between individual countries within a European pattern. The preparatory work is designed to lead to the implementation of a co-operative system, probably in 1977 or 1978.

For the time being, the following studies or development operations, respectively, are planned or are already under way:

(a) Evaluation of existing data bases useful in veterinary medicine.

(b) Review articles
    The review articles should cover important topics in research and will be based on national contributions. A total number of 20-25 themes a year is envisaged. They should be published in at least 3 or 4 languages.

(c) Compilation of a common multilingual controlled vocabulary in veterinary science.
    This will be based on preparatory work performed mainly in the United Kingdom, Germany and France, as well as on studies already started in order to merge existing thesauri.

(d) Further studies and development of other aspects of veterinary documentation particularly on information analysis, processing of clinical data and disease reports.

(e) Design of a co-operative system.

1.3.2. Co-operation in Documentation and Information in Tropical and Sub-Tropical Agriculture (AGRITROP)

A Round Table of Experts convened by the Commission on the recommendation of the CIDST Agriculture Working Group is studying the possibilities to co-ordinate the work of specialised documentation centres in the Member States. The aim is the creation of a common data base which may be regarded as part of the Community's aid to developing countries and as the Community's input to the corresponding system being developed by the FAO.

To this end, three actions have been started or are planned:

1. Enquiry into users' needs based on preliminary studies of FAO and the British Department for Overseas Development.

2. Documentation of "development literature" (progress reports, feasibility studies, reports on development aid projects, etc.)

3. Compilation of a common multilingual controlled vocabulary in tropical and sub-tropical agriculture, based on preparatory work carried out mainly in France and the Netherlands.

1.3.3. Documentation of Agricultural Literature in Difficult Languages

The only specific bibliography on East European Agriculture ceased publication two years ago. Yet the Member States of the Communities have expressed their interest in covering agricultural literature in East European and other languages.

A small Round Table of Experts, convened by the Commission on the recommendation of the CIDST Agriculture Working Group, is studying this problem in order to co-ordinate dispersed activities in the Community, to improve the exchange of information and documents and to make existing facilities (secondary services and translation services) better known.

Studies on coverage, language barriers and user needs, as well as the compilation of a union catalogue of East European agricultural periodicals in West European Libraries, are envisaged.

1.3.4. Biomedical Information

The mandate of the Working Group "Biomedical Information" approved by the PREST Group on 15 December 1973, provides for the following studies:

- multilingual terminology and medical meta-languages;

- acquisition and processing of biomedical data (medical records and data banks);

- permanent inventory of biomedical research whether in hand or planned;

- elaboration of proposals for co-ordination and co-operation of the appropriate medical services in the European Community.

The studies mentioned involve investigations about the users and their needs, the elaboration of standardised medical records, i.e. survey of existing documentation systems (data banks, compilation of multilingual thesauri, etc.)

1.3.5. EUDISED – European Information System on Education

The only existing information system on education, ERIC, covers literature originating in the United States.

The Council of Europe, foreseeing the need for a European counterpart of ERIC, created a Working Group for the harmonisation of the terminology of educational programmes and curricula. This resulted in the creation of a tri-lingual thesaurus for EUDISED.

The programme includes:

(a) the study and management of the EUDISED thesaurus using the Commission's technical competence in thesaurus management;

(b) a feasibility study of the creation of a European information system on educational matters, in co-operation with the Member States and the Council of Europe.

1.4. Data banks, including data banks on materials, properties and social-economic information

Information users prefer more and more to gain immediate access to hard data instead of being referred to literature in which they possibly can find these data. The need for data banks arises also from the fact that, with these, comparisons and calculations can immediately be performed by computer.

The establishment of data banks requires an enormous effort. There are, therefore, not yet many in the Member States of the Community. Nevertheless such activities do exist, and it should be the task of the Commission to stimulate and to co-ordinate them: that is, to promote the application of common rules, to secure high quality standards, and to arrange co-ordinated processing of different contributions.

At its meeting on 29 March 1974, the CIDST agreed to start preparatory investigations in two sectors:

1. Materials Data

2. Social-economic Data

At least for the Materials Data Bank, certain organisations in the Member Countries have already shown their interest in co-operation. This co-operation should result in the operation of a pilot data bank by one of the contributing organisations or by the Commission in order to gain experience in operating data banks.

1.5. Studies of future systems

In the framework of the European Network (EURONET), ultimately all scientific and technical areas should be covered by information systems. In addition to the systems mentioned under 1.1. to 1.4., new systems will have to be created step by step or, alternatively, corresponding activities in the Member Countries will have to be co-ordinated.

The Council of Ministers, in its Resolution of 24 June 1971, agreed to support initiatives in this respect, and the CIDST, at its meeting of 28/29 March 1974, endorsed the necessity to start with preparatory investigations in the following areas:

- research and development in energy

- support for selected industrial information systems

- modern transport technology

- food technology

- water resources

- information and library activities

- current research projects

- science policy

1.6. Provision of documentation processing facilities

In order to enable the Community Institutions to play their role in the European Information Network (EURONET), the Commission is duty-bound:

- to exploit a limited number of sectoral information systems within the framework of the developing EURONET;

- to carry out limited pilot schemes and pre-testing (including debugging) of sectoral systems;

- constantly to seek ways of improving the performance of existing systems and to that end conduct appropriate tests and experiments;

- to maintain a high standard of expertise in advanced documentation techniques at all levels.

To the extent that these activities involve the execution of computer work by the services of the Commission, this work will be carried out by its computer centre when this last is set up in definitive form. In the meanwhile, the Commission will take appropriate steps to enable its centre to carry out these tasks.

The programme includes:

(a) extension of dedicated processing facilities for documentation purposes;

(b) linking the Luxembourg data bases and facilities with EURONET.

2. The Information Network

The Council of Ministers, at its meeting on 24 June 1971, agreed that a European network for scientific and technical information (EURONET) should be established as soon as practicable, in order to put all the information resources available at the disposal of the totality of potential users in the countries of the Community.

The implementation of such a far-reaching programme required a number of preliminary studies and consultations which have been carried out by the Commission in cooperation with CIDST and its technical advisory group.

The setting up of EURONET will take several years and this major undertaking, through co-operative effort, must therefore be carefully planned and implemented in stages.

Five fundamental phases are outlined in items 2.1. to 2.5. which, together, constitute the blueprint for action drawn up in co-operation with the experts of the Member States.

The costs and urgency of this project should be viewed in relation to the fact that the beneficiaries of an efficient EURONET will be many and widely spread. In fact, the scientific community as a whole, as well as industry, will ultimately derive direct profit from information properly processed and distributed. Moreover, the educational sector will also benefit from it, as will the public administrations of the Member States.

2.1. Preparatory studies for EURONET

These preparatory studies are designed to provide a basis
for the planning and development of the information network. Agree-
ment has been reached on a number of initial studies to be supple-
mented later by other surveys and analyses.

Inventory of information resources

In a study dealing with information resources, the compila-
tion of an inventory of data bases and information services has been
undertaken, based on existing national inventories and data collected
by means of a questionnaire.

In follow-up studies, both overlapping of and gaps between
data bases and services will be identified.

Evaluation of resources and services

The performance of the services offered by the information
network will directly depend on that of the individual information
retrieval systems connected to the network. It will, therefore, be
necessary, in certain cases, to perform system evaluations before
the network management can come to a decision concerning the
connection of systems to the network. It will also be necessary to
analyse certain data bases and their operations in order to collect
the relevant data for decisions on the usefulness of integrating
data bases into the systems.

Market studies

For the description of user needs, it will be necessary to
carry out market studies designed to identify the users of the
network and their needs. In these studies, quantitative and
qualitative user data will be collected on a Community basis. These
data derive from three kinds of study:

- studies designed to provide estimates of the number of potential users, their location and geographical dispersal, their subject background and activity. This could lead to identification of different user groups which may have different requirements for access and services;

- studies to throw light on the information awareness of different user groups, the extent of their access to, and use of, trained information personnel, and formal information resources;

- an evaluation of the more important user groups' reactions to different outputs from, and kinds of access to, information systems and existing networks.

The studies will be based, as far as possible, on national surveys and studies.

Economic evaluation

The results of the above mentioned studies will be the basis for the work involved in planning EURONET. In order to have the necessary data available for the economic evaluation of the various technical alternatives that might satisfy user needs and other requirements, certain further studies are envisaged.

In the first place, there are case studies. A variety of co-operative information systems exist and, in addition to the technical and organisational aspects, the economic aspects of their development and operation will have to be examined.

Secondly, other studies are proposed to deal with the economic implications of parameters such as multiple storing of data bases in the network systems, volume of data bases per system, configuration of the communication network, terminal speed.

Moreover, in a network environment, in which the user will be offered services originating from several systems, the concept of an adequate pricing policy for the network services has to be worked out. This pricing policy will lay down in advance to the system operators the conditions under which the services of their systems will be offered to the users of the network. These operators may, therefore, plan their own systems accordingly.

2.2. Feasibility studies and pilot projects for the computer communication network

The second step in the setting up of EURONET will be the development of advanced data transmission networks. The data networks planned by the Post Offices in the various countries of the European Communities are not expected to come into operation for general public use before 1985.

A solution must, therefore, be found for the EURONET to cover the interim period between 1975 and 1985.

As a result of the preparatory studies of 2.1., a number of information retrieval systems will be selected which will have to be connected to the information network. Potential users will be identified for each of these systems.

Thus, the potential user population for the systems selected for incorporation in the network will also be known.

A feasibility study for the communication network will be performed based on these data. In this study, the technical alternatives will be identified and specifications worked out.

In a dialogue with an information retrieval system, the user of a terminal must employ a well-defined command language. These languages are totally different from system to system. This is extremely inconvenient for the user who does not wish to switch from one language to another when switching from one system to another.

It is, therefore, recommended that a standardised command language be developed.

This study should also identify how much effort in the
programming would be needed to adapt a non-standardised command
language to a standardised one, or, in other words, how much the
development of a standardised user/system interface for a
particular system would cost.

To provide users with access to information stored in
various systems will also require the provision of advice to these
users on which system is most appropriate in each particular case.
Such an advisory service is essential in the cost-effective
operation of a network. It will help to minimise both user
retrieval effort and search costs, i.e. telecommunication costs
and data processing costs.

In the initial phase of network operations, this advisory
service will be a manual service at national level. In a feasibility
study, the possibilities for developing a computer-based referral
service will be investigated.

2.3. Creation of the communications network

As a result of the feasibility study on an interim communication facility for EURONET, a physical network will have to be set up.

The progressive installation of appropriate communication facilities is scheduled to begin in 1976. In 1975, the development of new software or modification of suitable existing software must also start. Two types of software have to be considered: supervisory software and application software.

The supervisory software will perform functions such as:

- statistics of network traffic;
- statistics of faults;
- routing of messages;
- failure detection;
- error recovery;
- availability of host processors;
- cost accounting.

The application software will perform message-handling functions such as transmission, validation, failure detection, reformatting.

Furthermore, interface software will need to be developed for protocol conversion between nodal points and hosts or data-base carrying processors. The Commission will carry out experiments with remote on-line information retrieval from data bases stored by it. These experiments must provide the information required for the design studies of the network. There are also plans to carry out experiments on the sharing of data transmission links with other systems providing remote user access, which will mean, from 1976 onwards, the leasing of a limited number of lines.

2.4. Network management studies

At the present stage of the network development, it is not known what organisational set-up will be chosen to carry out the network plans. Some assumptions, however, can be made:

- most of the executive work (installation, operation, maintenance, etc.) related to the communication network, terminals included, will be carried out under contract;

- the management of information retrieval systems and data banks that are to be linked to the network, will remain with their sponsoring organisations.

This will, of course, ease to some extent the management task of the network. The multilingual, multidisciplinary and multi- . ə national character of the network, however, will still make the management function a complex and arduous business. A separate study will, therefore, be made of the problems involved in managing the information network so that, by 1976, specifications for an optimal network management will be available.

Besides the aspect of managing the network, there still remains the question of the training of management both for the information network and the participating systems. It would seem desirable that this task be carried out at Community level.

2.5. Support for converting existing services

Support must be provided for certain information systems (existing or under development) in order to make them compatible with the European network and to put them in such a position as to serve the real needs of users in all the Member Countries of the Community.

As the installation of the communication network and user terminals is scheduled for 1976, network-compatible information retrieval systems and data banks will be needed by then. The most appropriate systems for incorporation in the network are those which already provide, or will do so in the near future, on-line access to stored data. Operators of such systems are expected to have the necessary experience and interest to adapt their systems to the requirements defined by the communication network and by the network management.

Adaptation activities are:

- system/network interface development;

- development or modification of transaction processing monitors;

- extension of configuration where needed;

- setting up of an abstracts distribution service.

In 1975, it would be desirable to obtain some technical advice on the merits of adapting certain systems. It would similarly be worthwhile to give support to promising initiatives from system operators. It is quite probable that in 1976 and for a few years to follow, only a limited part of the total field of science and technology will be covered by the adapted on-line systems. The Commission, therefore, proposes to exploit commercially

available data bases at á European level. In order to achieve this, four or five specifically oriented information centres within the Community could be extended in such a way as to make commercially available data bases available on-line through the network. Thus, a centre for physics could be extended in one country, one for chemistry in another, and so on. One can foresee the following cost factors:

- acquisition of data bases;
- extension of computer configuration;
- development of suitable software;
- recruitment of additional staff.

Member States must come to an agreement on the question of which centres would have to be chosen for this purpose, otherwise the European network will be at a disadvantage with other networks such as Tymshare which is based in the United States.

An improvement in the availability of information to users in the short term can be reached by inviting particularly promising systems to open their doors to users within the entire European Community. Some financial support will be required as soon as 1975 to encourage the necessary technical, linguistic and other adjustments. However, such conversions and most of the adaptations will come only in 1976 and later. Until then, appropriate financing will have to be found by seeking national contributions (public and/or private) as well as a Community contribution, the preparations of which are still to be determined.

3. Information Methodology and Technology

During the past decade, Europe has fallen behind in the development of advanced information technology and methodology which has made particularly rapid progress in the United States and, more recently, in Japan. There is, therefore, an imperative need to fill existing gaps, but at the same time, a serious effort must be made to solve problems that are specifically European.

These problems are due to the existence of language barriers and divergent approaches in the fields of standards, specialist education and technological development.

The Council fully recognised this difficulty when it called, in its 1971 Resolution, for the furthering of technological progress, in documentary data processing and the sciences of documentation and for the promotion of specialist training and education of users.

At two meetings of the CIDST, a complete consensus of opinion emerged to the effect that every endeavour should be made to overcome the deficiencies and to assist the Member States in establishing an appropriate, comprehensive and advanced technological infrastructure as a pre-requisite for the setting up of the European information network.

The steps and measures proposed are summarised in items 3.1. to 3.6.

3.1. Study and development of appropriate multilingual tools

There are two types of language problems in the context of the European network: terminology control and translation of text.

Terminology control implies the creation, maintenance and use of multilingual standardised vocabularies or thesauri.

Translation of text involves the conversion of the semantic content of the words, and the conversion of the syntactic structure of the statements from one language into another.

The programme includes:

(a) a thorough study of the contents, structure and utilisation of thesauri, based on a collection of all thesauri in use today and upon experience in their management;

(b) the elaboration of thesaurus guidelines (see also under "Standardisation", Item 3.2.);

(c) the development of a universal modular software package for the compilation, updating, printing and application of mono- and multilingual thesauri; the experimental management of one or several sectoral thesauri;

(d) the study of cost and efficiency of various methods proposed for the translation of text; in particular:

 - a pilot test of the TITUS system, involving the writing and automatic translation of normalised sentences;

 - the extension of the application of automatic indexing techniques to a multilingual environment (in cooperation with CETIS).

3.2. <u>Study and development of standards for the information network</u>

Operation of the information network implies the transfer
of information between various countries, languages, scientific
fields, data bases or network nodes. This transfer is feasible
only insofar as the information elements and the operational
routines are thoroughly standardised.

The programme includes:

(a) the development of a unique <u>magnetic tape</u> interchange
format for bibliographical data (in co-operation with
UNESCO and EUSIDIC);

(b) study of the cost and efficiency of alternative methods
for the <u>merging</u> and redistribution of sectoral <u>data bases</u>
into mission-oriented interdisciplinary data bases;

(c) the elaboration of guidelines covering the contents,
structure and use of <u>thesauri</u> to be developed within the
network (in co-operation with UNESCO and ISO);

(d) the study of existing <u>rules and guidelines</u> for cataloguing,
abstracting and indexing, based on a collection of rules
used in existing systems; elaboration of guidelines for
systems to be integrated in the network.

3.3. Information Analysis Centres

The methodology of literature information retrieval systems was developed over the last twenty years through the successive invention of Co-ordinate Indexing, Boolean Strategy, File Compression, Relevance Feedback, and On-Line Interactive Retrieval.

During this period, little attention was given (except in the USA) to the analysis and evaluation of subject content of the available literature.

Centres of expertise have evolved only in subject fields where an extensive need for directly usable, factual information existed.

The proposed programme includes:

(a) a typology covering the operational modes and utilisation patterns of existing information analysis facilities;

(b) a study of the need for new facilities, and the development of criteria and guidelines for the creation of such facilities;

(c) the experimental development of new information analysis facilities in selected subject fields.

Expenditures for this programme cannot be itemised with precision at the present time. They are, therefore, covered by the proposed credits for development studies (Item 3.6. of the budgetary plan).

3.4. Training of information specialists and education of users

An overall co-operative programme for the training of information specialists in Europe will have to be set up (resolution of the Council of 1971). In the meanwhile, it is necessary to undertake an interim programme comprising a number of limited actions to determine the real needs in quality, identify the main problem areas, and develop appropriate curricula. These actions constitute an extension of the efforts already made in some Member Countries with the aim of raising the general level of education and training throughout the Community.

It is also necessary to find ways and means to make potential users of EURONET aware of the benefits they will be able to draw from its use. The programme in 1975 includes:

(a) the organisation of a summer school, comprising a three-week course by a European group of first-class specialists;

(b) the convening of specialist discussion groups for the thrashing out of problems of timely interest or controversy;

(c) the sponsoring of short-term visits to centres of expertise in other countries;

(d) the organisation of seminars and workshops specifically designed for managers, system analysts, and other specialists responsible for the efficient operation of IDST systems;

(e) the definition of methods for developing the information consciousness of future system users during their university education;

(f) the elaboration of a programme of conferences, exhibitions, demonstrations, marketing, and other actions likely to promote the use of EURONET.

3.5. Development of information technology

In order to improve the performance of IDST systems and of the European IDST network, it will be necessary to develop new information technologies and, in the first instance, to carry out:

(a) study of cost and efficiency of various file structures in a network environment, including direct and inverted files, clustering techniques and dynamic file arrangements;

(b) an investigation of the European Programme Library, in order to identify programmes that can be used or adopted for use in the context of EURONET.

Conversely, all valuable software identified in the course of case studies or produced in the course of development studies will be fed into the European Programme Library.

3.6. Development Studies

Correct orientation of the creation of IDST systems and their integration into the information network implies a number of state-of-the-art and feasibility studies, the topics of which will be specified as the needs for new systems arise.

The following actions are already envisaged:

(a) a study of the contents, operational modes and utilisation pattern of existing data banks; the development of guidelines for the creation, updating and interrogation of data banks (in co-operation with CODATA);

(b) experimental development of data banks in selected subject fields including materials and socio-economic data (Item 1.4.);

(c) a study of the operational modes and utilisation patterns of existing information analysis centres; the study of the need, and the development of criteria and guidelines for the creation of new facilities (in co-operation with CODATA), (Item 3.3.);

(d) experimental development of new information analysis facilities in selected subject fields;

(e) study of co-operative industrial information systems and their rationalisation and development;

(f) the study of the need and feasibility of information
systems in subject fields of timely interest, including
research and development in the field of energy produc-
tion; the future technology of transportation; the
science and technology of food (in co-operation with
IFIS, the International Food Information Service);
European resources of water, wood and paper; information
science and library activities; inventories of European
research projects in various subject fields; science
policy; and many others, as they come into the headlines.

ACTION PROGRAMME ON INFORMATION AND DOCUMENTATION
IN SCIENCE AND TECHNOLOGY FOR THE PERIOD 1975 - 1977

OPINION OF CIDST

The Committee for Information and Documentation on Science and Technology,

Conscious of the rapid developments which have occurred within its field
of competence since it was set up in 1971,

Considering that, in the absence of prompt action, the various measures
agreed by the Council and, notably, the setting up of a European network of
scientific and technical information and documentation, run a serious risk
of being ineffective,

Taking account of the full discussions at its 9th and 10th sessions,

- Considers that the actions set out in Document CIDST/77/74 - Rev. 1 should
  be carried out by the Community according to the planned calendar,

- Recommends to the Commission to propose a comprehensive plan of action
  along these lines to the Council immediately,

- Considers that the budget of the Communities should cover the expenditures
  set out in Document CIDST/77/74 - Rev. 1 for the years 1975 - 1977,

- Stresses that in certain programmes the increase in 1976 and 1977 is due
  to the lead time foreseen in setting them up,

- Decides to transmit the present opinion to the Commission of the European
  Communities as well as to the Committee for Scientific and Technical
  Research (CREST).

The United Kingdom Delegation formally reserves its position.

Doo. CIDST/77/74 Rev. 1

ACTION PROGRAMME ON INFORMATION AND DOCUMENTATION

IN SCIENCE AND TECHNOLOGY FOR THE 1975-1977 PERIOD

BUDGETARY PLAN

The management of scientific-technical and social-economic information resources at the European level will enter a new, more active phase from 1975 on. Considerably higher amounts will be required to achieve the tasks of the Commission and which are part of an overall set up submitted to CIDST.

The following budgetary proposals are centered around three main orientations defined by the Council of Ministers *).

1) The first is related to the rapid setting up of sectoral information systems, some being implemented, some being studied. These sectoral systems will require appropriation of 905,000 a.u. for 1975; this amount does not comprise the amounts required for the operation of existing systems, which will be financed by renewal of the 1974 budget (e.g. 420,000 a.u. in 1975).

2) The second group of tasks is related to the progressive establishment of the European information network, which the Commission will undertake in close cooperation with the authorities of the member countries. The budget proposed for 1975 comprises preparatory studies, feasibility studies, pilot tests and the preparation of an outline of the software required for network management.

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*) — Resolution dated 24.6.1971 on the European network
   — Resolution dated 24.6.1971 on metallurgy documentation
   — Action programme for environmental protection (22.11.1973)
   — Draft regulation on agricultural research

By the end of 1975 and during 1976 and 1977, the development of the
network will continue by the adaptation of on-line and the conversions
of off-line facilities.

The 1975 budget proposals comprise 1,040,000 a.u. for these tasks, but
considerably higher amounts will obviously be required in 1976 and 1977.
On the Community level, the objectives are to ensure a flexible overall
coordination of activities which guarantees access to the network under
equal conditions for all users in the Community and to promote harmonized
tarification practices.

3) At the same time the Community will have to make a vigorous effort
developing modern techniques for scientific-technical information trans-
fer and of solving specifically European problems such as the language
barrier; the tasks of this category also include an effort for the
training of specialists and the education of users. It is also envisaged
to entrust the Ispra Centre with a certain amount of advanced research.

This development effort requires appropriation of 805,000 a.u. for 1975.

***

The financing mode will necessarily vary as a function of the content and
the importance of each project or programme. In most cases it is envisaged
to use matching funds or subventions, e.g. for the conversion or Community-
wide extension of existing services. In other cases study and development
contracts will be concluded with companies and institutions of the member
countries.

RECAPITULATION

Main Orientations	Budget proposals (in 1000 a.u.)		
	1975	1976	1977
1. IDST systems	905	1006	1165
2. The information network	1040	2430	3060
3. Studies of methodology and information technology	805	870	950
Total:	2750	4306	5175

Remarks:

1. The operation of the nuclear and metallurgical information systems (ENDS and SDIM) will be financed by renewal of the 1974 budget appropriations of the Commission. They are cited in the following table for the sake of completeness only (p.m.).

2. The creation and operation of the information system on agricultural research projects will be financed by the DG VI (Agriculture) on amounts foreseen in the framework of a council's decision on agricultural research. It is also cited for completeness only.

3. The Study of other problems likely to arise in the coming years, the cost of which is still impossible to foresee in detail, is covered by a global amount of 300,000 a.u. under item 3.

DETAILED BUDGET PROPOSALS

	1975 (in thousands a.u.)	1976	1977
1. STID SYSTEMS	905	1006	1165
1.1 Existing systems: ENDS and SDIM	P.M.	P.M.	P.M.
1.2 Systems being implemented, including EUR-AGRIS-I, AMIS and Environment	385	361	330
1.3 Systems being prepared, including documentation for Veterinary medicine; tropical agriculture; agricultural literature in difficult languages; bio-medical information; education	220	245	335
1.4 Data banks, including data banks on materials properties; on social-economic information	P.M.	P.M.	P.M.
1.5 Studies of future systems, including systems covering research & development in energy production; modern transport technology; food technology; water resources; information and library activities; current research projects; science policy, etc.	P.M.	P.M.	P.M.
1.6 Provision of processing facilities for documentation purposes in order to enable the Community Institutions to play their role in the European information network	300	400	500

	1975 (in thousands a.u.)	1976	1977
2. THE INFORMATION NETWORK	1040	2430	3060
2.1 Preparatory studies to provide a basis for the planning and development of the information network for example: compilation of an inventory of information resources and associated studies on overlap and gaps between services; evaluation of resources & services; economic evaluation of the various options for information networks; market studies designed to identify users and their needs.	240	150	80
2.2 Feasibility studies and pilot projects connected with the planning of the coommunication network. for example: specification of hardware and software identification and specification of the standards for user/system interaction.	300	230	60
2.3 Creation of the communications network. for example: development of software of modification of suitable existing software; progressive installation of appropriate hardware facilities; leasing of lines (initially for experiments)	280	610	600
2.4 Network management studies. for example: study of the problems involved in managing the information network; establishment and operation of a suitable management structure.	50	110	120
2.5 Assistance to certain information systems (existing or under creation) in order to make them compatible with the European network and able to serve the real and different needs of the users in the countries of the Community.	170	1330	2200

	1975 (in thousands a.u.)	1976	1977
3. STUDIES OF METHODOLOGY AND INFORMATION TECHNOLOGY	805	870	950

3. STUDIES OF METHODOLOGY AND INFORMATION TECHNOLOGY

3.1 Study and development of suitable multilingual systems.

for example:

economics and effectiveness of different methods.

3.2 Work connected with the establishment of suitable standards for the information network.

for example:

formats for the exchange of information and messages;
citation of bibliographic references;
indexing languages and classifications.

3.3 Information analysis centres. Survey of operational modes and of arising needs.

3.4 Education and training.

for example:

promotion of user education;
training of information specialists.

3.5 Development of information technology.

for example:

study of file structures adapted to network operations;
study of available software.

3.6 Surveys and studies.

for example:
feasibility and development studies as the need for them arises.

Item	1975	1976	1977
3.1	200	190	170
3.2	130	130	130
3.3	P.M.	P.M.	P.M.
3.4	75	150	250
3.5	100	100	100
3.6	300	300	300

O P I N I O N

of the Scientific and Technical Research Committee (CREST)
on the initial plan of action on scientific and technical
information and documentation (STID)
for the period 1975-1977

The Scientific and Technical Research Committee (CREST),

Having regard to the Council Resolutions of 24 June 1971 and
14 January 1974,

Conscious of the rapid developments which have occurred in the
field of scientific and technical information and documentation
since 1971,

Taking account of the Opinion of the Scientific and Technical
Information and Documentation Committee (STIDC) on the plan of
action on scientific and technical information and documentation
proposed by the Commission,

Taking account of its discussions on 22 May, 24 June and
11 July 1974,

Regards the scientific and technical content of the Commission
proposals as valid and considers that urgent action should be
undertaken by the Community in this sector, taking full account
of the interests of users,

Recommends to the Commission that it propose an initial three-
year plan of action along these lines to the Council together
with an estimate of the appropriations and staff required to
implement it,

R/2087 e/74 (RECH 12) nan/COD/amm   .../...

Recommends to the Commission that in drafting its proposals it take account of the work done by the national centres and of other European activities, that it study the possibility of carrying out certain projects by concerted action and, finally, that it take account of the Resolutions of 24 June 1971 and 14 January 1974 with regard to the association of third countries,

Considers that the Council decision on the three-year plan should involve provision in the Community budget for 1975 for expenditure in the order of 1.84 MUA,

Desires the plan of action to be implemented by the Commission in close co-operation with the CREST and the STIDC, these Committees being kept regularly informed of progress,

Considers that the amounts envisaged for 1976-1977 are only an indication of the trends expected in the progress of the programme. At all events the STIDC and the CREST should deliver an opinion annually on the budgetary implications of the future progress of the plan of action,

Recommends to the STIDC that it examine more closely the proposals on aid for the conversion of the existing services for which no financial estimate has been made for 1976 and 1977 (see Annex to the Annex), particularly from the twofold angle of co-ordinating and concerting work in the national centres,

Has decided to send this Opinion to the Commission and to the Council.

R/2087 e/74 (RECH 12) (ANNEX) nan/COD/amm

BUDGETARY PLAN
regarding Scientific and Technical Information and Documentation (STID) for 1975 and 1976 - 1977

At its meetings on 24 June and 11 and 12 July 1974, the CREST examined the STID budgetary plan proposed jointly by the Commission and the STIDC /see particularly CREST/21/74 + Add. 1_7.

Further to this examination, delegations will find attached:

(1) an STID budgetary plan for 1975 containing the amounts proposed by the STIDC and those recommended by the CREST;

(2) an overall estimate of expenditure for 1976 and 1977.

1. STID BUDGETARY PLAN FOR 1975

(in thousands of UA)

	Amount proposed by the CREST	Amount recommended by the CREST
CHAPTER I Scientific and technical information and documentation systems TOTAL	905	550
1.1. Existing systems: ENDS and SMDI	p.m.	p.m.
1.2. Systems being implemented, including AGRIS-I, AMIS and Environment	385	250
1.3. Systems being prepared, including documentation for Veterinary medicine; Tropical agriculture; agricultural literature in difficult languages; bio-medical information; education	220	100
1.4. Data banks, including data banks on materials properties; social-economic information	p.m.	p.m.
1.5. Studies of future systems, including systems covering research and development in energy production; modern transport technology; food technology; water resources; information and library activities; research projects; science policy, etc.	p.m.	p.m.
1.6. Provision of processing facilities for documentation purposes in order to enable the Community Institutions to play their role in the European information network	300	200

(in thousands of UA)

	Amount Proposed by the STIDC	Amount Recommended by the CREST
CHAPTER 2		
The information network TOTAL	1,040	660
2.1. Preparatory studies to provide a basis for the planning and development of the information network. For example: compilation of an inventory of information resources and associated studies on overlap and gaps between services; evaluation of resources and services; economic evaluation of the various options for information networks; market studies designed to identify users and their needs	240	150
2.2. Feasibility studies and pilot projects connected with the planning of the communication network. For example: specification of hardware and software identification and specification of the standards for user/system interaction	300	140
2.3. Creation of the communications network. For example: development of software or modification of suitable existing software; progressive installation of approximate hardware facilities; leasing of lines (initially as an experiment)	280	200
2.4. Network management studies. For example: study of the problems involved in managing the information network; establishment and operation of a suitable management structure	50	50
2.5. Assistance to certain information systems (existing or being created) in order to make them compatible with the European network and able to serve the real and different needs of the users in the countries of the Community	170	150

	Amount Proposed by the STIDC	Amount Recommended by the CREST
CHAPTER 3 Studies on methodology and information technology TOTAL	805	630
3.1. Study and development of suitable multilingual systems. For example: economics and effectiveness of different methods	200	180
3.2. Work connected with the establishment of suitable standards for the information network. For example: formats for the exchange of information and messages; citation of bibliographic references; indexing languages and classifications	130	100
3.3. Information analysis centres. Survey of operational modes and of arising needs.	p.m.	p.m.
3.4. Education and training. For example: promotion of the education of users; training of information specialists.	75	75
3.5. Development of information technology. For example: study of file structures adapted to network operations; study of available software	100	75
3.6. Surveys and studies. For example: feasibility and development studies as the need for them arises.	300	200
GRAND TOTAL	2,750	1,840

2. TOTAL ESTIMATES OF STID EXPENDITURE FOR 1976 AND 1977

As regards the financial years 1976 and 1977, there
are grounds for envisaging a total expenditure for each
of these three chapters of 2, 3 and 2.5 MUA respectively,
given that these figures are only an indication and that
they exclude in both cases conversion expenditure which
was initially anticipated in item 2.5. All figures are
given at today's monetary value, without making any
allowance for inflation.

The estimates for 1976 and 1977 have been drawn up
taking into account, in particular, the following points:

(1) The transition to the operational stage of the Euronet
network will require the preliminary development of
interface software at the terminal level, as well as
the completion of a certain number of pilot tests.

(2) It was thought possible in 1975 to reduce expenditure on
sectoral STID systems. However, from 1976, one must
anticipate the setting up of some new sectoral systems
and expect a measure of support for the industrial
information systems.

(3) As far as information technology and methodology are
concerned, expenditure for 1976 and 1977 has been
maintained at the 1975 level, with the exception, however,
of higher amounts being earmarked for the training of
specialists and the education of users following the
unanimous recommendation of STIDC members.

To sum up, the provisional estimates overall show an
increase of a little more than 30% between 1975 and 1976,
but a very much lesser rate of increase as from 1977.